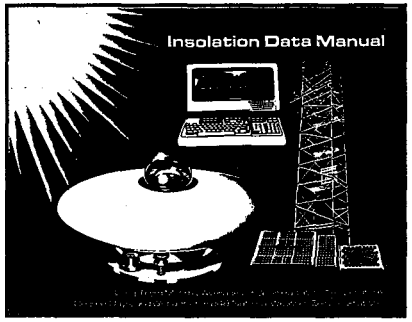
Insolation Data Manual

Long-term Monthly Averages of Solar Radiation, Temperature, Degree-days and Global K_T for 248 National Weather Service Stations

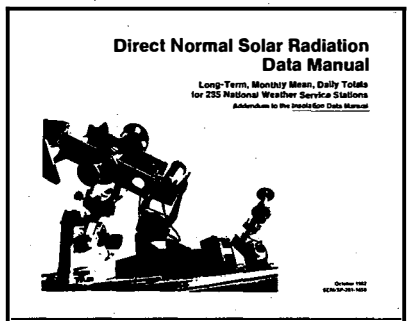
and

Direct Normal Solar Radiation Data Manual



Long-term, Monthly Mean, Daily Totals for 235 National Weather Service Stations

Addendum to the Insolation Data Manual



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Preface

This publication combines two previously published but out-of-print solar radiation manuals that have been requested frequently from the U.S. Superintendent of Documents. The two manuals are the *Insolation Data Manual*, published by the Solar Energy Research Institute (SERI) in October 1980 (SERI/SP-755-789), and its addendum, *Direct Normal Solar Radiation Data Manual*, published by SERI in October 1982 (SERI/SP-281-1658). Both manuals are reproduced without modifications in this reprint.

The data summaries in these manuals are based on data acquired by the U.S. National Weather Service from 1953 to 1975. A new, national solar radiation data base covering data for 1961 to 1990 is being produced by the Department of Energy's Resource Assessment Program under the Solar Radiation Resource Assessment Project at SERI. The expected date of completion is 1992. This reprint, therefore, serves as an interim source of solar radiation data until new manuals and maps can be produced from the updated national solar radiation data base.

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Section 1

Insolation Data

Insolation Data Manual

Long-term Monthly Averages of Solar Radiation, Temperature, Degree-days and Global $\overline{K}_T$ for 248 National Weather Service Stations

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Foreword

The Insolation Data Manual was created through the cooperative efforts of the Information Systems Division and the Renewable Resource Assessment Branch of the Solar Energy Research Institute (SERI) on behalf of the U.S. Department of Energy.

Much of the data presented in this manual is based on documentation accomplished by the National Climatic Center of the National Oceanic and Atmospheric Administration. From that data, the SERI Renewable Resource Assessment Branch calculated the global $\bar{K}_T$ presentations and created the global $\bar{K}_T$ contour maps which are unique to this manual.

All of the data presented here is available on the Insolation Data Base (INSOL) created and maintained by SERI's Data Base Development Branch as part of the Congressionally-mandated Solar Energy Information Data Bank (SEIDB), a national network providing information on developing solar technologies to government, the commercial, scientific and educational communities, and the public.

The production and distribution of this manual is the responsibility of SERI's Information Outreach and Dissemination Branch.

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Insolation Data Manual
SERI/SP-755-789
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Introduction

The number of individuals and businesses engaged in designing, installing and/or marketing solar energy conversion systems has been increasing rapidly in recent years. This trend has resulted in a growing need for solar radiation resource data for specific localities as well as for large geographic regions.

The Insolation Data Manual presents monthly averaged data which describes the availability of solar radiation at 248 National Weather Service (NWS) stations, principally in the United States. Monthly and annual average daily insolation and temperature values have been computed from a base of 24-25 years of data, generally from 1952-1975, and listed for each location. Insolation values represent monthly average daily totals of global radiation on a horizontal surface and are depicted using the three units of measurement: kJ/m^2 per day, Btu/ft^2 per day and langleys per day. Solar radiation data for 26 SOLMET stations are based on Standard Year Irradiance (SYI) corrected hourly measurements, while derived hourly estimations provide the basis for solar radiation values at the remaining 222 ERSATZ stations.[1]

Average daily maximum, minimum and monthly temperatures are provided for most locations in both Celsius and Fahrenheit. Heating and cooling degree-days were computed relative to a base of 18.3°C (65°F). For each station, global $\bar{K}_T$ (cloudiness index) values were calculated on a monthly and annual basis. Global $\bar{K}_T$ is an index of cloudiness and indicates fractional transmittance of horizontal radiation, from the top of the atmosphere to the earth's surface. The results of the global $\bar{K}_T$ computations have been plotted on contour maps in Appendix B, in addition to having been listed in the Data Tables.

Except for the unit conversions and global $\bar{K}_T$ calculations, the majority of data in this manual was taken directly from the National Climatic Center's *Input Data for Solar Systems*, Tape Deck 9744 (revised August 1979). Computations of global $\bar{K}_T$ and unit conversions were performed by the Renewable Resource Assessment Branch at the Solar Energy Research Institute (SERI). All of the data in this manual is also available through an on-line, searchable data base (INSOL) which is part of the Solar Energy Information Data Bank (SEIDB) maintained at SERI. The INSOL and other solar-related data bases can be accessed by remote users through national communication networks and other solar organizations, (see Appendix E for more information on the SEIDB).

Through special models (in development), the Renewable Resource Assessment Branch at SERI will generate the following data for inclusion in both the Insolation Data Base and a later supplement to this manual:

- average daily direct normal radiation
- average daily direct $\bar{K}_T$
- global radiation on inclined surfaces.

Other solar radiation and meteorological data will be added as the need arises.

A primary application of long-term averages of temperature and insolation data is in the design of solar energy systems. There is consensus among experts that design analysis of all collector types requires insolation and related meteorological data records for at least five and preferably ten years.[2] The 24-25 year period upon which the data presented in this manual was based, meets this requirement easily. The rehabilitation[3] of measured solar radiation data prior to summarization is another positive feature of this data.

The tables and maps in this manual provide a means for sizing a solar system and determining the environmental suitability for that system. Based on the insolation availability and temperature patterns at specific locations, a suitable collector size and design can be defined and the need for storage facilities determined. For a more sophisticated approach, the data can also be digitized and applied

to certain systems performance models. As such, the data provides a standardized basis from which to compare the performance of different systems at a given location. F-CHART, SOLCOST and RSVP/2 are examples of computer models that require long-term averages of insolation, temperature, heating and cooling degree-days and/or fraction of total possible insolation (i.e., global $\bar{K}_T$).[4]

On the Composite Map of Stations, it is important to note the distribution of the two kinds of stations: SOLMET stations (asterisks) and ERSATZ stations (dots). These station types are discussed in more detail in the following Technical Background section, and are listed separately in Appendix C. The Technical Background section also documents general computational methodologies pertinent to the use and application of the various parameters presented in the Data Tables.

Technical Background

This section is intended to provide sufficient technical background on the summarization processes and the presentation of insolation and temperature data to promote appropriate end-uses of the data. It also points out certain aspects of the data, including the manner in which it was reduced, which may limit subsequent applications. It must be emphasized that the data presented in this manual represents the best available at this particular time. These long-term monthly averages, collectively, can be used as a standard base of insolation and temperature statistics for general comparative or analytical purposes. For example, this data provides standardized input to various solar energy systems performance models, as mentioned earlier.

With the exception of global $\bar{K}_T$ values which are explained in Appendix A, detailed documentation of the data and data aggregation methodologies is deferred to the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), Environmental Data and Information Service, National Climatic Center (NCC), Asheville, North Carolina, and the following NCC references: *Input Data for Solar Systems; SOLMET Volume 1: User's Manual*; and *SOLMET Volume 2: Final Report*.[5]

Interpreting the Data Tables

The Data Tables contain the following information for each of the 248 stations:

Descriptive Station Information

- city in which the station is located
- state in which the station is located
- station identification (WBAN) number
- SOLMET (vs. ERSATZ) classification
- latitude (degrees, minutes; north)
- longitude (degrees, minutes; east or west)
- station elevation (meters and feet)

Long-term Averages for Each Month and Annually

- average daily maximum temperature (°C and °F)
- average daily minimum temperature (°C and °F)
- monthly average temperature (°C and °F)
- average heating degree-days [base 18.3 °C (65 °F)]
- average daily global solar radiation on a horizontal surface
  (daily insolation; kJ/m² per day, Btu/ft² per day, and langleys per day)
- global $\bar{K}_T$ (cloudiness index: range from zero to one)

While 248 stations are meteorological data recording sites, only the 26 SOLMET stations provide rehabilitated (corrected) solar radiation *measurements*. The other 222 stations carry solar radiation values which were derived from the corrected SOLMET measurements and relevant meteorological measurements at the station. These stations are known as ERSATZ stations. SOLMET stations and

ERSATZ stations are differentiated in the tables by the presence or absence of the word "SOLMET" next to the station number (an NCC-assigned WBAN number).[7] "Rehabilitated" and "derived" data are described further in the following discussions.

While every effort has been taken to produce reliable, standardized insolation information, relative accuracies between stations may vary. Users may note two conditions in particular, which should help verify the overall quality of data at any given station. The first factor to check is whether the station holds "rehabilitated" or "derived" insolation data. This information is available from three sources in this manual:

- Composite Station Map (asterisk or dot)
- Data Tables (presence or absence of the term "SOLMET" next to the station number)
- Table of ERSATZ (Derived) Stations and Associated SOLMET (Control) Stations, Appendix C.

The 26 SOLMET stations, in general, account for the most accurate solar radiation data because average insolation values are based on corrected hourly measurements. ERSATZ data stations, on the other hand, are characterized by solar radiation values which are only as good as the meteorological data at the respective sites and the models which use this data to estimate the solar radiation. Those interested in obtaining details on the exact nature of the data processing methodologies are referred to the two-volume set of SOLMET users manuals cited throughout this manual and listed in the Bibliography, Appendix F.

This final note regards the interpretation of "zero" values for temperature and degree-day data: the notation "ND" following a "zero" value indicates there is no data available. Any other occurrence of "zero" may be considered a valid average for the indicated month, i.e., a significant zero. (Compare Juneau, Alaska, and Zuni, New Mexico in the Data Tables.)

Accuracy of Metric and English Unit Representations

All of the data presented in this manual is available through SERI's on-line Insolation Data Base (INSOL). The data tables were generated directly from this data base. Most of the data originally came from the National Climatic Center tape, *Input Data for Solar Systems*, which provided primarily English unit values. In creating the on-line Insolation Data Base and subsequent Data Manual, some of the original values underwent unit conversion manipulations. The overall effect of manipulating units is not considered significant with respect to intended applications of these data. The unit conversion formulae which were part of the data reduction process are listed below for easy reference.

Conversion Formulae	Resulting Significant Decimals
°C = (°F − 32)/1.8	NN.DD
°F = (1.8 × °C) + 32	NNN.D
Degree-days (Base 18.3° C) = 5/9 × Degree-days (Base 65° F)	NNNNN
Degree-days (Base 65° F) = 1.8 × Degree-days (Base 18.3° C)	NNNNN
Btu/ft² = kJ/m² × 0.088114	NNNN.D
Langleys (Ly) = kJ/m² × 0.023901	NNN.D
$\bar{K}_T$(global) = See following discussion and Appendix A	.DDD

Computation of Temperature and Degree-Day Data

Average temperature values were based on a 1941-70 period of record. Hourly measurements were recorded from 1941 through 1964, while measurements were taken every three hours from 1965 through 1970. Monthly and annual averages

of daily maximum, minimum, and average temperatures, and heating and cooling degree-days over a 30-year-period were extracted from *Climatography of the United States No. 81* (by state) and *Local Climatological Data Annual Summaries for 1977*. The temperature data are presented in both Celsius (°C) and Fahrenheit (°F). Monthly and annually averaged heating and cooling degree-days are expressed relative to a base of 18.3° (65°F). Each degree that the *average* daily temperature is below (or above) the base temperature constitutes one heating (or cooling) degree-day unit.

"Rehabilitation" and "Derivation" of Solar Radiation Data

Rehabilitated solar radiation data is available for 26 SOLMET stations for the period 1952 through 1975. This data represents corrected hourly solar radiation *measurements*. Regression coefficients for computing solar radiation values from other surface weather observations (i.e., cloudiness, percent sunshine, etc.) were derived for 25 of the SOLMET stations.[8] These stations constitute "control stations" (see Appendix C). Each ERSATZ station is associated with a control station. The regression coefficients were applied to available meteorological data at each of the 222 ERSATZ stations, resulting in "derived" or modeled solar data for these locations. Insolation values are expressed as kJ/m² per day, Btu/ft² per day, or langleys per day (1 g·cal/cm² per day) and represent monthly average daily global solar radiation on a horizontal surface.

Some direct applications to solar design and conversion methods require knowledge of insolation on tilted surfaces. The models for converting global horizontal insolation to global on a tilt are currently undergoing extensive validation tests at SERI. The results of an approved methodology should be available within the next year and will be supplied in a supplement to this manual and through SERI's on-line Insolation Data Base. However, it is warned that results of such models are much less reliable than actual tilted-surface data (Boes, 1979).[9]

Interpolating insolation between the given stations is difficult due to effects such as topography and localized meteorological conditions. This means that users should use stations with characteristics as similar as possible to the preferred location.

Summary of Global $\bar{K}_T$ Computations

The monthly average global K_T ($\bar{K}_T$) represents the fraction of horizontal insolation transmitted through the atmosphere. It is a measure of cloudiness and other atmospheric conditions which attenuate solar radiation at a given location. Global $\bar{K}_T$ is used by scientists and engineers in designing solar systems and predicting performance.

Global $\bar{K}_T$ values were calculated for each station by the Renewable Resource Assessment Branch at SERI from data provided in SERI's Insolation Data Base. The methodology was modeled largely after that described in ***Applications of Solar Energy for Heating and Cooling of Buildings.***[10]

Full documentation of the computations employed, plus global $\bar{K}_T$ contour maps, are found in Appendices A and B. In very general terms, the methodology is summarized in the statements below.

1) $\bar{K}_T = \bar{H}/\bar{H}_o$ where:
   $\bar{H}$ is the average daily global radiation on a horizontal surface for a particular month; and $\bar{H}_o$ is the average horizontal extraterrestrial radiation (ETR).
2) Annual global $\bar{K}_T$ values were computed from annual totals of daily global radiation and extraterrestrial radiation (ETR).

3) The solar constant (1377 w/m²) was chosen to be consistent with the SOLMET Data Base.[11]
4) Low averages of global $\overline{K}_T$ imply very cloudy conditions, whereas large values imply clear sky conditions. Values range from zero to one.

Some basic applications of the global $\overline{K}_T$ parameter include the following:

- It can be used in models to convert measured global radiation on horizontal surfaces to that on tilted surfaces.[12]
- It can be used to determine direct normal radiation, given global radiation on a horizontal surface.[13]
- It can be used to determine the distribution of solar energy on a daily basis.[14]
- It is used as input to F-Chart, TRNSYS, and other solar system performance models.[15]

Updates

Based on historical archives, the data tabulated in this manual consists of mean values calculated exclusively for finite periods: 1952-1975 for insolation data and 1941-1970 for temperature data. Because this base of averaged data is exclusive, data collected after 1975 will not be integrated. However, there will be expansions to the existing data file. These will consist of adding derived data fields; i.e., average daily direct normal radiation, average daily direct $\overline{K}_T$, and average daily global radiation on inclined surfaces. Such data shall be the product of algorithms being developed by the Renewable Resource Assessment Branch at SERI. New methodologies and procedures associated with these algorithms will be appropriately documented by way of updates to both this manual and the on-line Insolation Data Base at SERI.

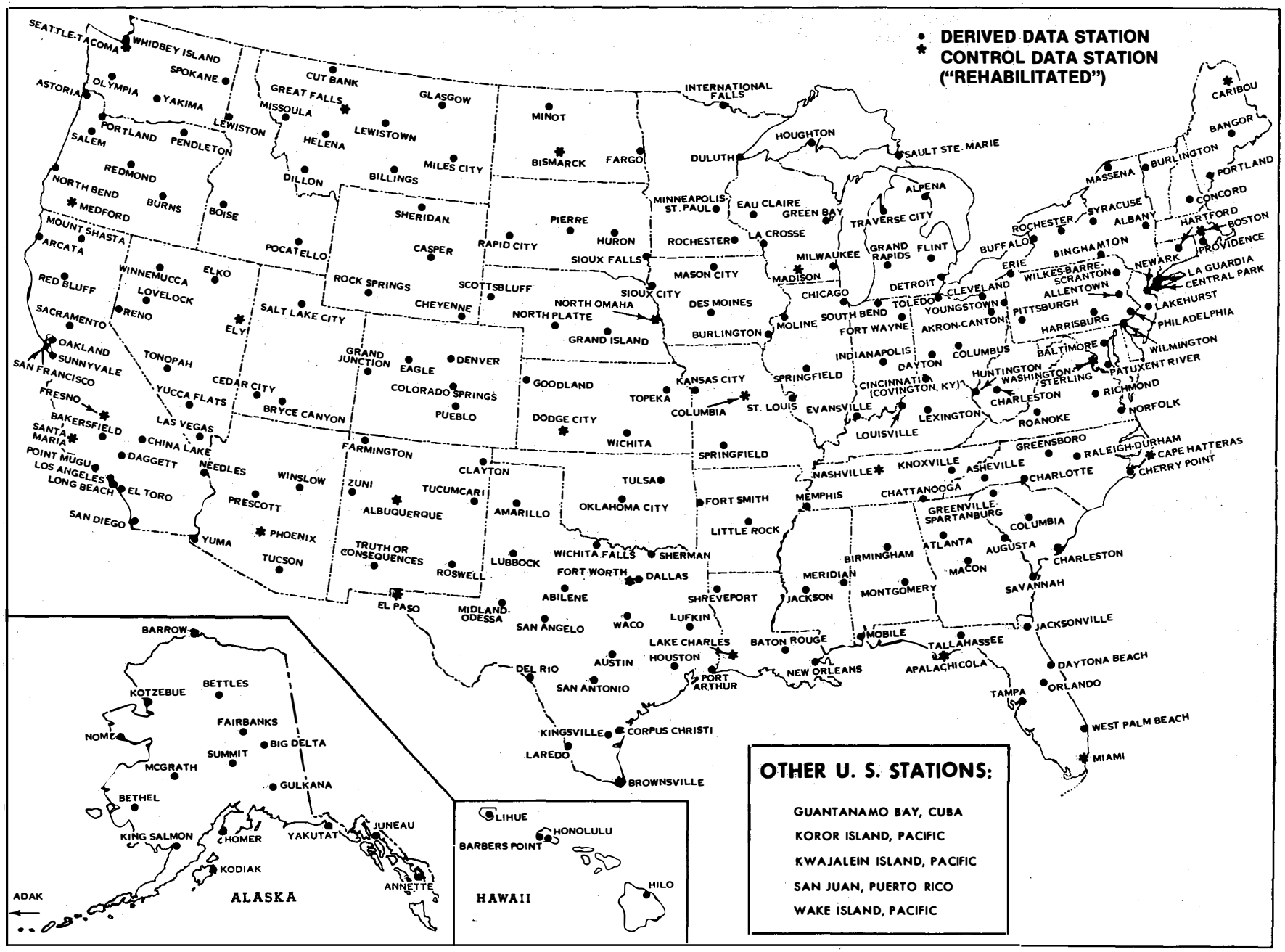
Connie L. Knapp
July 1980

References and Notes

Full citations and availability for these references are contained in the Bibliography, Appendix F.

1. National Oceanic and Atmospheric Administration. 1977 (Dec.). *SOLMET Volume 1: User's Manual, TD-9724, Hourly Solar Radiation-Surface Meteorological Observations;* and NOAA. 1979 (Feb.). *SOLMET Volume 2: Final Report, TD-9724, Hourly Solar Radiation-Surface Meteorological Observations.*
2. Hamilton, C.W.; Thomas, R.E. 1976 (Oct.). *Final Report on a Preliminary Investigation of User Requirements for Solar Radiation Data.*
3. See "Rehabilitation of Solar Data," Glossary, Appendix D.
4. Hughes, P.J.; Buckles, W.E.; Klein, S.A. 1978 (June). *F-CHART Version 3.0 Users Manual: An Interactive Program for Designing Solar Heating Systems*; and Solar Environmental Engineering Co. 1980 (Jan.). *SOLCOST: Solar Energy Program for Non-Thermal Specialists, ANSI Standard Fortran, Version 3.0, User's Guide for Batch Processing Interactive Input;* Booz-Allen & Hamilton. 1979 (Sept.). *Residential Solar Viability Program: RSVP/2 Users Manual.* NOTE: *F-CHART, SOLCOST* and *RSVP/2* are available through the SEIDB On-line Models Library maintained at SERI, Golden, Colorado.
5. See Bibliography, Appendix F, for details on these publications.
6. See reference 1.
7. See "WBAN," Glossary, Appendix D.
8. The SOLMET station, New York City (Central Park) was not used as a control station due to its special classification as a central urban area.
9. Boes, Eldon C. 1979 (Dec.). *Fundamentals of Solar Radiation.*
10. Jordan, R.C.; Liu, B.Y.H., ed. 1977. *Applications of Solar Energy for Heating and Cooling of Buildings.*
11. See reference 1.
12. Carter, E.A.; Patel, A.M. 1979 (Apr.). "Evaluation of Methods of Calculating Solar Radiation on an Inclined Surface." Woo, John, Jr. *Solar Radiation Data Forecasting and Interpolation Analysis, Final Report, part Three: Appendices.*
13. Randall, C.M.; Winston, M.E., Jr. 1977. *Hourly Insolation and Meteorological Data Bases Including Improved Direct Normal Insolation Estimates (Final Report).*
14. Collares-Pereira, Manual; Rabl, Ari. 1978 (June). *Simple Procedure for Predicting Long-Term Average Performance of Nonconcentrating and Concentrating Solar Collectors.*
15. University of Wisconsin. 1979 (June). *TRNSYS: A Transient System Simulation Program.* See also reference 4.

Composite Map of Stations



Data Tables Index

This is an index of weather station data tables by state or territory. Stations are arranged alphabetically by city or island within each state or territory. The Table of Stations, Appendix C, page 269, may be used as an index to station data tables by city or island.

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Data Tables

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	12.38	1.16	6.77	363	5	8019.0	0.414
Feb	14.27	2.27	8.27	287	5	10975.0	0.452
Mar	18.22	5.44	11.83	216	14	14709.0	0.480
Apr	24.05	10.55	17.33	64	34	18993.0	0.521
May	28.05	14.66	21.38	11	105	21074.0	0.524
June	31.33	19.11	25.22	0	206	21773.0	0.522
July	32.38	20.83	26.61	0	256	20539.0	0.502
Aug	32.05	20.38	26.22	0	244	19563.0	0.516
Sept	29.27	17.22	23.27	3	151	16508.0	0.501
Oct	24.33	10.44	17.38	76	46	13741.0	0.515
Nov	17.77	4.50	11.16	217	0	9736.0	0.466
Dec	13.05	1.61	7.33	341	0	7506.0	0.418
Ann	23.11	10.66	16.88	1580	1071	15261.0	0.494

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	54.3	34.1	44.2	653	9	706.6	191.7
Feb	57.7	36.1	46.9	517	9	967.1	262.3
Mar	64.8	41.8	53.3	389	25	1296.1	351.6
Apr	75.3	51.0	63.2	115	61	1673.5	454.0
May	82.5	58.4	70.5	20	189	1856.9	503.7
June	88.4	66.4	77.4	0	371	1918.5	520.4
July	90.3	69.5	79.9	0	461	1809.8	490.9
Aug	89.7	68.7	79.2	0	439	1723.8	467.6
Sept	84.7	63.0	73.9	5	272	1454.6	394.6
Oct	75.8	50.8	63.3	137	83	1210.8	328.4
Nov	64.0	40.1	52.1	391	0	857.9	232.7
Dec	55.5	34.9	45.2	614	0	661.4	179.4
Ann	73.6	51.2	62.4	2844	1928	1344.7	364.8

STATION NO. 13876

Birmingham, Alabama

LATITUDE: 33° 34′ N
LONGITUDE: 86° 45′ W
ELEVATION: 192 meters (629.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	16.16	5.16	10.66	250	12	9399.0	0.445
Feb	17.83	6.61	12.22	187	16	12479.0	0.484
Mar	20.83	9.55	15.22	122	26	15974.0	0.503
Apr	25.55	14.27	19.94	22	70	19540.0	0.528
May	29.44	18.05	23.77	0	168	21246.0	0.528
June	32.11	21.50	26.83	0	255	21205.0	0.511
July	32.50	22.55	27.55	0	286	19467.0	0.477
Aug	32.55	22.38	27.50	0	284	18629.0	0.487
Sept	30.27	20.22	25.27	0	208	16449.0	0.487
Oct	26.50	14.44	20.50	21	88	14739.0	0.526
Nov	20.83	8.61	14.72	117	8	10839.0	0.481
Dec	17.22	6.00	11.61	213	5	8616.0	0.437
Ann	25.16	14.11	19.66	935	1431	15715.0	0.495

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	61.1	41.3	51.2	450	22	828.2	224.6
Feb	64.1	43.9	54.0	337	29	1099.6	298.3
Mar	69.5	49.2	59.4	220	47	1407.5	381.8
Apr	78.0	57.7	67.9	40	126	1721.7	467.0
May	85.0	64.5	74.8	0	302	1872.1	507.8
June	89.8	70.7	80.3	0	459	1868.5	506.8
July	90.5	72.6	81.6	0	515	1715.3	465.3
Aug	90.6	72.3	81.5	0	511	1641.5	445.3
Sept	86.5	68.4	77.5	0	374	1449.4	393.1
Oct	79.7	58.0	68.9	38	158	1298.7	352.3
Nov	69.5	47.5	58.5	211	14	955.1	259.1
Dec	63.0	42.8	52.9	383	9	759.2	205.9
Ann	77.3	57.4	67.4	1683	2576	1384.7	375.6

LATITUDE: 30° 41′ N
LONGITUDE: 88° 15′ W
ELEVATION: 67 meters (219.8 feet)

STATION NO. 13894

Mobile, Alabama

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	14.38	2.83	8.61	308	7	8531.0	0.424
Feb	16.33	4.27	10.33	232	8	11496.0	0.461
Mar	19.83	7.33	13.61	166	19	15214.0	0.489
Apr	24.88	12.00	18.44	42	45	19621.0	0.535
May	28.66	16.22	22.44	4	131	21534.0	0.535
June	31.77	20.33	26.05	0	231	22384.0	0.538
July	32.50	21.94	27.22	0	275	20893.0	0.511
Aug	32.61	21.50	27.05	0	270	19812.0	0.520
Sept	30.27	18.61	24.44	0	183	16657.0	0.500
Oct	25.55	11.94	18.77	51	65	14318.0	0.525
Nov	19.55	5.94	12.77	170	3	10389.0	0.480
Dec	15.16	3.16	9.16	284	0	8164.0	0.436
Ann	24.27	12.16	18.22	1260	1243	15751.0	0.504

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	57.9	37.1	47.5	554	13	751.7	203.9
Feb	61.4	39.7	50.6	418	14	1013.0	274.8
Mar	67.7	45.2	56.5	299	34	1340.6	363.6
Apr	76.8	53.6	65.2	76	81	1728.9	469.0
May	83.6	61.2	72.4	7	236	1897.4	514.7
June	89.2	68.6	78.9	0	416	1972.3	535.0
July	90.5	71.5	81.0	0	495	1841.0	499.4
Aug	90.7	70.7	80.7	0	486	1745.7	473.5
Sept	86.5	65.5	76.0	0	329	1467.7	398.1
Oct	78.0	53.5	65.8	92	117	1261.6	342.2
Nov	67.2	42.7	55.0	306	5	915.4	248.3
Dec	59.3	37.7	48.5	511	0	719.4	195.1
Ann	75.7	53.9	64.8	2268	2237	1387.9	376.5

STATION NO. 13895

Montgomery, Alabama

LATITUDE: 32° 18′ N
LONGITUDE: 86° 24′ W
ELEVATION: 62 meters (203.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2624.0	0.324
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	4909.0 M	0.362
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8130.0	0.371
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11719.0	0.377
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13387.0	0.349
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13415.0	0.322
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	12715.0	0.317
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10766.0	0.315
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8617.0	0.335
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	5995.0	0.357
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	3495.0	0.356
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2125.0	0.317
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8158.0	0.339

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	231.2	62.7
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	432.6	117.3
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	716.4	194.3
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1032.6	280.1
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1179.6	320.0
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1182.0	320.6
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1120.4	303.9
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	948.6	257.3
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	759.3	206.0
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	528.2	143.3
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	308.0	83.5 M
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	187.2	50.8
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	718.8	195.0

LATITUDE: 51° 53′ N
LONGITUDE: 176° 38′ W
ELEVATION: 5 meters (16.4 feet)

STATION NO. 25704

Adak, Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	3.33	– 1.66	0.83	542	0	2019.0	0.323
Feb	5.27	– 0.11	2.61	440	0	4253.0	0.365
Mar	6.50	0.44	3.50	460	0	8138.0	0.403
Apr	9.33	2.61	6.00	370	0	13046.0	0.437
May	13.44	5.88	9.66	268	0	16718.0	0.443
June	16.11	8.94	12.55	176	3	16633.0	0.401
July	17.77	10.88	14.33	128	4	16333.0	0.410
Aug	18.11	11.05	14.61	117	0	13191.0	0.397
Sept	15.44	8.94	12.22	183	0	9218.0	0.381
Oct	10.94	5.61	8.27	311	0	4792.0	0.321
Nov	6.83	1.94	4.38	418	0	2481.0	0.312
Dec	4.50	– 0.22	2.16	501	0	1390.0	0.283
Ann	10.61	4.50	7.61	3918	7	9018.0	0.396

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.0	29.0	33.5	976	0	177.9	48.3
Feb	41.5	31.8	36.7	792	0	374.7	101.7
Mar	43.7	32.8	38.3	828	0	717.1	194.5
Apr	48.8	36.7	42.8	666	0	1149.5	311.8
May	56.2	42.6	49.4	482	0	1473.1	399.6
June	61.0	48.1	54.6	317	5	1465.6	397.5
July	64.0	51.6	57.8	230	7	1439.2	390.4
Aug	64.6	51.9	58.3	211	0	1162.3	315.3
Sept	59.8	48.1	54.0	329	0	812.2	220.3
Oct	51.7	42.1	46.9	560	0	422.2	114.5
Nov	44.3	35.5	39.9	752	0	218.6	59.3
Dec	40.1	31.6	35.9	902	0	122.5	33.2
Ann	51.1	40.1	45.7	7052	13	794.6	215.5

STATION NO. 25308

Annette, Alaska

LATITUDE: 55° 2′ N
LONGITUDE: 131° 34′ W
ELEVATION: 34 meters (111.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 22.22	– 29.61	– 25.94	1372	0	0.0	0.000
Feb	– 24.77	– 31.44	– 28.11	1300	0	837.0	0.374
Mar	– 22.55	– 29.88	– 26.22	1381	0	5567.0	0.534
Apr	– 14.16	– 22.33	– 18.27	1098	0	11919.0	0.524
May	– 4.33	– 9.99	– 7.16	790	0	12938.0	0.365
June	2.83	– 1.72	0.55	533	0	17336.0	0.406
July	6.83	0.55	3.72	452	0	16559.0	0.419
Aug	5.55	0.61	3.11	471	0	9712.0	0.346
Sept	0.77	– 2.66	– 0.94	578	0	4702.0	0.306
Oct	– 6.55	– 11.99	– 9.27	856	0	1426.0	0.279
Nov	– 14.77	– 21.33	– 18.05	1091	0	41.0	0.128
Dec	– 21.33	– 27.83	– 24.61	1331	0	0.0	0.000
Ann	– 9.55	– 15.66	– 12.61	11258	0	6753.0	0.399

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	– 8.0	– 21.3	– 14.7	2470	0	0.0	0.0
Feb	– 12.6	– 24.6	– 18.6	2340	0	73.8	20.0
Mar	– 8.6	– 21.8	– 15.2	2486	0	490.5	133.1
Apr	6.5	– 8.2	– 0.9	1976	0	1050.2	284.9
May	24.2	14.0	19.1	1422	0	1140.0	309.2
June	37.1	28.9	33.0	959	0	1527.5	414.3
July	44.3	33.0	38.7	814	0	1459.1	395.8
Aug	42.0	33.1	37.6	848	0	855.8	232.1
Sept	33.4	27.2	30.3	1040	0	414.3	112.4
Oct	20.2	10.4	15.3	1541	0	125.7	34.1
Nov	5.4	– 6.4	– 0.5	1964	0	3.6	1.0
Dec	– 6.4	– 18.1	– 12.3	2396	0	0.0	0.0
Ann	14.8	3.8	9.3	20264	0	595.0	161.4

LATITUDE: 71° 18′ N
LONGITUDE: 156° 47′ W
ELEVATION: 4 meters (13.1 feet)

STATION NO. 27502

Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 10.94	– 18.99	– 14.94	1031	0	1099.0	0.351
Feb	– 8.99	– 17.49	– 13.22	883	0	3594.0	0.442
Mar	– 6.49	– 16.38	– 11.44	923	0	8381.0	0.497
Apr	0.38	– 8.72	– 4.16	675	0	13623.0	0.496
May	9.16	– 0.16	4.50	428	0	16492.0	0.450
June	15.66	6.11	10.88	223	0	17232.0	0.418
July	16.61	8.55	12.61	177	0	14637.0	0.374
Aug	14.72	7.77	11.27	218	0	10441.0	0.332
Sept	11.00	3.44	7.22	333	0	7952.0	0.375
Oct	2.27	– 4.27	– 0.99	599	0	4203.0	0.367
Nov	– 4.66	– 11.77	– 8.22	796	0	1534.0	0.330
Dec	– 11.49	– 19.16	– 15.33	1043	0	553.0	0.276
Ann	2.27	– 5.94	– 1.83	7335	0	8312.0	0.409

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	12.3	– 2.2	5.1	1856	0	96.8	26.3
Feb	15.8	0.5	8.2	1589	0	316.7	85.9
Mar	20.3	2.5	11.4	1661	0	738.5	200.3
Apr	32.7	16.3	24.5	1215	0	1200.4	325.6
May	48.5	31.7	40.1	770	0	1453.2	394.2
June	60.2	43.0	51.6	401	0	1518.4	411.9
July	61.9	47.4	54.7	319	0	1289.7	349.8
Aug	58.5	46.0	52.3	392	0	920.0	249.6
Sept	51.8	38.2	45.0	599	0	700.7	190.1
Oct	36.1	24.3	30.2	1078	0	370.3	100.5
Nov	23.6	10.8	17.2	1433	0	135.2	36.7
Dec	11.3	– 2.5	4.4	1877	0	48.7	13.2
Ann	36.1	21.3	28.7	13203	0	732.4	198.7

STATION NO. 26615

Bethel, Alaska

LATITUDE: 60° 47′ N
LONGITUDE: 161° 48′ W
ELEVATION: 46 meters (150.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 20.72	– 29.49	– 25.11	1346	0	114.0	0.200
Feb	– 17.22	– 26.94	– 22.11	1132	0	1955.0	0.432
Mar	– 10.61	– 23.33	– 16.94	1093	0	6986.0	0.531
Apr	– 0.16	– 12.66	– 6.38	741	0	13940.0	0.563
May	10.88	– 0.16	5.38	401	0	19278.0	0.542
June	19.55	7.27	13.44	150	3	21077.0	0.508
July	20.11	8.61	14.38	128	6	17734.0	0.457
Aug	16.05	6.05	11.05	225	0	12201.0	0.415
Sept	9.00	– 0.16	4.44	416	0	7629.0	0.427
Oct	– 2.99	– 10.38	– 6.66	775	0	2861.0	0.371
Nov	– 14.55	– 22.55	– 18.55	1106	0	457.0	0.281
Dec	– 20.16	– 28.88	– 24.55	1329	0	0.0	0.000
Ann	– 0.88	– 11.05	– 5.94	8847	9	8686.0	0.482

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	– 5.3	– 21.1	– 13.2	2423	0	10.0	2.7
Feb	1.0	– 16.5	– 7.8	2038	0	172.3	46.7
Mar	12.9	– 10.0	1.5	1967	0	615.6	167.0
Apr	31.7	9.2	20.5	1334	0	1228.3	333.2
May	51.6	31.7	41.7	722	0	1698.7	460.8
June	67.2	45.1	56.2	270	5	1857.2	503.8
July	68.2	47.5	57.9	230	11 M	1562.6	423.9
Aug	60.9	42.9	51.9	405	0	1075.1	291.6
Sept	48.2	31.7	40.0	749	0	672.2	182.3
Oct	26.6	13.3	20.0	1395	0	252.1	68.4
Nov	5.8	– 8.6	– 1.4	1991	0	40.3	10.9
Dec	– 4.3	– 20.0	– 12.2	2392	0	0.0	0.0
Ann	30.4	12.1	21.3	15925	16	765.4	207.6

LATITUDE: 66° 55′ N
LONGITUDE: 151° 31′ W
ELEVATION: 205 meters (672.4 feet)

STATION NO. 26533

Bettles, Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	– 16.38	– 24.61	– 20.49	1203	0	521.0	0.320
Feb	– 10.88	– 20.88	– 15.88	958	0	2804.0	0.452
Mar	– 4.77	– 17.16	– 10.94	907	0	8072.0	0.541
Apr	4.05	– 6.99	– 1.44	593	0	14121.0	0.542
May	13.44	2.38	7.94	322	0	18949.0	0.526
June	19.50	8.38	13.94	142	11	20231.0	0.491
July	20.44	10.00	15.22	100	4	18315.0	0.471
Aug	17.83	7.44	12.66	178	3	13948.0	0.460
Sept	11.05	1.77	6.44	356	0	8703.0	0.447
Oct	0.05	– 7.66	– 3.77	685	0	3701.0	0.390
Nov	– 9.94	– 17.94	– 13.94	968	0	1051.0	0.354
Dec	– 15.99	– 24.16	– 20.11	1191	0	103.0	0.143 M
Ann	2.38	– 7.44	– 2.49	7610	18	9210.0	0.483

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	2.5	– 12.3	– 4.9	2165	0	45.9	12.5
Feb	12.4	– 5.6	3.4	1724	0	247.1	67.0
Mar	23.4	1.1	12.3	1633	0	711.3	192.9
Apr	39.3	19.4	29.4	1067	0	1244.3	337.5
May	56.2	36.3	46.3	580	0	1669.7	452.9
June	67.1	47.1	57.1	256	20	1782.6	483.5
July	68.8	50.0	59.4	180	7	1613.8	437.7
Aug	64.1 M	45.4	54.8	320	5	1229.0	333.4
Sept	51.9	35.2	43.6	641	0	766.9	208.0
Oct	32.1	18.2	25.2	1233	0	326.1	88.5
Nov	14.1	– 0.3	6.9	1742	0	92.6	25.1
Dec	3.2	– 11.5	– 4.2	2144	0	9.1	2.5
Ann	36.3	18.6	27.5	13698	32	811.5	220.1

STATION NO. 26415

Big Delta, Alaska

LATITUDE: 64° 0′ N
LONGITUDE: 145° 44′ W
ELEVATION: 388 meters (1272.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 18.99	– 29.77	– 24.38	1324	0	342.0	0.264
Feb	– 12.61	– 25.72	– 19.16	1050	0	2513.0	0.439
Mar	– 4.83	– 20.16	– 12.49	955	0	7651.0	0.530
Apr	4.66	– 8.16	– 1.72	601	0	13549.0	0.527
May	14.88	2.05	8.50	305	0	18199.0	0.507
June	21.50	8.44	15.00	117	17	19882.0	0.482
July	22.11	9.77	15.94	82	8	17506.0	0.451
Aug	18.77	7.16	13.00	168	3	12688.0	0.422
Sept	12.44	1.33	6.88	343	0	8051.0	0.423
Oct	0.83	– 8.38	– 3.77	685	0	3321.0	0.370
Nov	– 11.27	– 21.22	– 16.22	1036	0	841.0	0.327
Dec	– 18.61	– 28.49	– 23.55	1298	0	28.0	0.061
Ann	2.38	– 9.44	– 3.49	7968	28	8714.0	0.465

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	– 2.2	– 21.6	– 11.9	2383	0	30.1	8.2
Feb	9.3	– 14.3	– 2.5	1890	0	221.4	60.1
Mar	23.3	– 4.3	9.5	1719	0	674.2	182.9
Apr	40.4	17.3	28.9	1082	0	1193.9	323.8
May	58.8	35.7	47.3	549	0	1603.6	435.0
June	70.7	47.2	59.0	211	31	1751.9	475.2
July	71.8	49.6	60.7	148	14	1542.5	418.4
Aug	65.8	44,9	55.4	302	5	1118.0	303.3
Sept	54.4	34.4	44.4	617	0	709.4	192.4
Oct	33.5	16.9	25.2	1233	0	292.6	79.4
Nov	11.7	– 6.2	2.8	1865	0	74.1	20.1
Dec	– 1.5	– 19.3	– 10.4	2336	0	2.5	0.7
Ann	36.3	15.0	25.7	14342	50	767.8	208.3

LATITUDE: 64° 49′ N
LONGITUDE: 147° 52′ W
ELEVATION: 138 meters (452.6 feet)

STATION NO. 26411

Fairbanks, Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 16.72	– 26.88	– 21.83	1245	0	826.0	0.336
Feb	– 9.61	– 21.61	– 15.61	950	0	3250.0	0.445
Mar	– 2.16	– 17.33	– 9.72	869	0	8599.0	0.536
Apr	5.44	– 7.49	– 0.99	580	0	14804.0	0.551
May	12.83	0.27	6.55	365	0	18319.0	0.504
June	18.88	5.77	12.33	185	5	19949.0	0.485
July	20.05	7.55	13.83	141	0	18295.0	0.469
Aug	17.94	5.61	11.77	203	0	14202.0	0.459
Sept	12.05	0.83	6.44	356	0	9022.0	0.440
Oct	2.05	– 7.88	– 2.88	657	0	4426.0	0.417
Nov	– 10.11	– 18.66	– 14.38	981	0	1320.0	0.337
Dec	– 16.11	– 25.05	– 20.61	1207	0	323.0	0.228
Ann	2.88	– 8.72	– 2.88	7742	5	9445.0	0.477

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	1.9	– 16.4	– 7.3	2241	0	72.8	19.7
Feb	14.7	– 6.9	3.9	1710	0	286.4	77.7
Mar	28.1	0.8	14.5	1564	0	757.7	205.5
Apr	41.8	18.5	30.2	1044	0	1304.4	353.8
May	55.1	32.5	43.8	657	0	1614.2	437.8
June	66.0	42.4	54.2	333	9	1757.8	476.8
July	68.1 M	45.6	56.9	254	0	1612.0	437.3
Aug	64.3	42.1	53.2	365	0	1251.4	339.4
Sept	53.7	33.5	43.6	641	0	795.0	215.6
Oct	35.7	17.8	26.8	1183	0	390.0	105.8
Nov	13.8	– 1.6	6.1	1766	0	116.3	31.5
Dec	3.0	– 13.1	– 5.1	2173	0	28.5	7.7
Ann	37.2	16.3	26.8	13936	9	832.2	225.7

STATION NO. 26425

Gulkana, Alaska

LATITUDE: 62° 9′ N
LONGITUDE: 145° 27′ W
ELEVATION: 481 meters (1577.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	−2.22	−9.61	−5.88	751	0	1380.0	0.371
Feb	−0.11	−7.83	−3.94	623	0	3789.0	0.430
Mar	1.66	−6.55	−2.44	643	0	8617.0	0.491
Apr	5.72	−2.38	1.66	500	0	14167.0	0.506
May	10.16	1.22	5.72	391	0	17961.0	0.487
June	13.72	4.83	9.27	271	0	19867.0	0.482
July	15.61	6.94	11.27	218	0	18136.0	0.462
Aug	15.61	7.00	11.33	217	0	13491.0	0.424
Sept	12.66	4.00	8.33	300	0	8982.0	0.411
Oct	6.88	−0.94	3.00	475	0	4961.0	0.409
Nov	1.38	−5.66	−2.11	613	0	1990.0	0.377
Dec	−2.44	−9.33	−5.88	751	0	726.0	0.286
Ann	6.55	−1.55	2.50	5757	0	9506.0	0.457

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	28.0	14.7	21.4	1352	0	121.6	33.0
Feb	31.8	17.9	24.9	1121	0	333.9	90.6
Mar	35.0	20.2	27.6	1157	0	759.3	206.0
Apr	42.3	27.7	35.0	900	0	1248.3	338.6
May	50.3	34.2	42.3	704	0	1582.6	429.3
June	56.7	40.7	48.7	488	0	1750.6	474.8
July	60.1	44.5	52.3	392	0	1598.0	433.5
Aug	60.1	44.6	52.4	391	0	1188.7	322.4
Sept	54.8	39.2	47.0	540	0	791.4	214.7
Oct	44.4	30.3	37.4	855	0	437.1	118.6
Nov	34.5	21.8	28.2	1103	0	175.3	47.6
Dec	27.6	15.2	21.4	1352	0	64.0	17.4
Ann	43.8	29.2	36.5	10363	0	837.6	227.2

LATITUDE: 59° 38′ N
LONGITUDE: 151° 30′ W
ELEVATION: 22 meters (72.2 feet)

STATION NO. 25507

Homer, Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−1.61	−7.88	−4.72	715	0	1320.0	0.301
Feb	1.05	−5.49	−2.22	575	0	3205.0	0.334
Mar	3.44	−3.55	−0.05	570	0	6923.0	0.379
Apr	8.05	−0.38	3.83	435	0	11870.0	0.416
May	13.00	3.44	8.22	313	0	14655.0	0.395
June	16.66	6.88	11.77	196	0	16052.0	0.388
July	17.55	8.72	13.16	160	0	14508.0	0.368
Aug	16.83	7.88	12.38	184	0	11173.0	0.347
Sept	13.38	5.72	9.55	263	0	7250.0	0.322
Oct	8.44	2.44	5.44	399	0	3636.0	0.282
Nov	2.94	−2.44	0.27	541	0	1687.0	0.281
Dec	0.00	−5.27	−2.61	649	0	702.0	0.222
Ann	8.33	0.83	4.61	5003	0	7748.0	0.363

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	29.1	17.8	23.5	1287	0	116.3	31.5
Feb	33.9	22.1	28.0	1035	0	282.4	76.6
Mar	38.2	25.6	31.9	1026	0	610.0	165.5
Apr	46.5	31.3	38.9	783	0	1045.9	283.7
May	55.4	38.2	46.8	563	0	1291.3	350.3
June	62.0	44.4	53.2	353	0	1414.4	383.7
July	63.6	47.7	55.7	288	0	1278.4	346.8
Aug	62.3	46.2	54.3	331	0	984.5	267.0
Sept	56.1	42.3	49.2	473	0	638.8	173.3
Oct	47.2	36.4	41.8	718	0	320.4	86.9
Nov	37.3	27.6	32.5	974	0	148.6	40.3
Dec	32.0	22.5	27.3	1168	0	61.9	16.8
Ann	47.0	33.5	40.3	9005	0	682.7	185.2

STATION NO. 25309

Juneau, Alaska

LATITUDE: 58° 22′ N
LONGITUDE: 134° 35′ W
ELEVATION: 7 meters (23.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−6.11	−14.61	−10.33	888	0	1662.0	0.394
Feb	−4.11	−12.99	−8.55	752	0	4282.0	0.456
Mar	−1.88	−11.05	−6.44	768	0	9069.0	0.501
Apr	3.94	−4.55	−0.27	558	0	13682.0	0.482
May	10.72	1.00	5.88	385	0	16823.0	0.454
June	15.38	5.38	10.38	238	0	17483.0	0.423
July	16.94	8.00	12.50	181	0	15702.0	0.399
Aug	16.05	8.16	12.11	192	0	11864.0	0.369
Sept	12.66	4.27	8.50	295	0	8828.0	0.395
Oct	4.88	−3.16	0.88	540	0	5379.0	0.423
Nov	−1.66	−9.38	−5.49	715	0	2312.0	0.397
Dec	−6.88	−15.66	−11.27	917	0	1033.0	0.344
Ann	5.00	−3.72	0.66	6434	0	9010.0	0.425

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	21.0	5.7	13.4	1598	0	146.4	39.7
Feb	24.6	8.6	16.6	1354	0	377.3	102.3
Mar	28.6	12.1	20.4	1382	0	799.1	216.8
Apr	39.1	23.8	31.5	1004	0	1205.6	327.0
May	51.3	33.8	42.6	693	0	1482.3	402.1
June	59.7	41.7	50.7	428	0	1540.5	417.9
July	62.5	46.4	54.5	326	0	1383.6	375.3
Aug	60.9	46.7	53.8	346	0	1045.4	283.6
Sept	54.8	39.7	47.3	531	0	777.9	211.0
Oct	40.8	26.3	33.6	972	0	474.0	128.6
Nov	29.0	15.1	22.1	1287	0	203.7	55.3
Dec	19.6	3.8	11.7	1651	0	91.0	24.7
Ann	41.0	25.3	33.2	11581	0	793.9	215.3

LATITUDE: 58° 41′ N
LONGITUDE: 156° 39′ W
ELEVATION: 15 meters (49.2 feet)

STATION NO. 25503

King Salmon, Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	1.38	−3.16	−0.88	596	0	1694.0	0.358
Feb	2.05	−2.77	−0.33	522	0	4039.0	0.405
Mar	2.72	−2.66	0.05	566	0	8874.0	0.476
Apr	5.33	0.11	2.72	468	0	13707.0	0.476
May	8.83	3.61	6.22	375	0	15619.0	0.419
June	12.55	7.05	9.83	255	0	17363.0	0.420
July	15.05	9.50	12.27	187	0	15981.0	0.405
Aug	15.61	9.83	12.72	173	0	13212.0	0.408
Sept	12.72	7.22	10.00	250	0	9011.0	0.395
Oct	7.55	2.11	4.83	418	0	5552.0	0.418
Nov	3.88	−0.83	1.55	503	0	2344.0	0.369
Dec	1.27	−3.61	−1.16	604	0	1102.0	0.317
Ann	7.44	2.22	4.83	4922	0	9042.0	0.419

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	34.5	26.3	30.4	1073	0	149.3	40.5
Feb	35.7	27.0	31.4	940	0	355.9	96.5
Mar	36.9	27.2	32.1	1019	0	781.9	212.1
Apr	41.6	32.2	36.9	842	0	1207.8	327.6
May	47.9	38.5	43.2	675	0	1376.3	373.3
June	54.6	44.7	49.7	459	0	1529.9	415.0
July	59.1	49.1	54.1	337	0	1408.2	382.0
Aug	60.1	49.7	54.9	311	0	1164.2	315.8
Sept	54.9	45.0	50.0	450	0	794.0	215.4
Oct	45.6	35.8	40.7	752	0	489.2	132.7
Nov	39.0	30.5	34.8	905	0	206.5	56.0
Dec	34.3	25.5	29.9	1087	0	97.1	26.3
Ann	45.4	36.0	40.7	8860	0	796.7	216.1

STATION NO. 25501

Kodiak, Alaska

LATITUDE: 57° 45′ N
LONGITUDE: 152° 20′ W
ELEVATION: 34 meters (111.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 15.99	– 23.66	– 19.83	1183	0	96.0	0.164
Feb	– 15.94	– 24.33	– 20.16	1077	0	1863.0	0.409
Mar	– 13.27	– 22.83	– 18.05	1128	0	6746.0	0.512
Apr	– 5.38	– 15.72	– 10.55	866	0	13405.0	0.541
May	3.22	– 4.61	– 0.66	588	0	18643.0	0.524
June	9.77	2.94	6.38	358	0	20845.0	0.502
July	14.83	8.38	11.61	208	0	17345.0	0.447
Aug	13.27	7.44	10.38	246	0	11852.0	0.403
Sept	8.05	2.05	5.05	398	0	7358.0	0.411
Oct	– 1.83	– 7.49	– 4.66	712	0	2907.0	0.375
Nov	– 10.33	– 16.66	– 13.49	955	0	371.0	0.225
Dec	– 16.33	– 23.49	– 19.94	1186	0	0.0	0.000
Ann	– 2.49	– 9.83	– 6.16	8910	0	8453.0	0.468

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	3.2	– 10.6	– 3.7	2129	0	8.5	2.3
Feb	3.3	– 11.8	– 4.3	1939	0	164.2	44.5
Mar	8.1	– 9.1	– 0.5	2030	0	594.4	161.2
Apr	22.3	3.7	13.0	1559	0	1181.2	320.4
May	37.8	23.7	30.8	1058	0	1642.7	445.6
June	49.6	37.3	43.5	644	0	1836.7	498.2
July	58.7	47.1	52.9	374	0	1528.3	414.6
Aug	55.9	45.4	50.7	443	0	1044.3	283.3
Sept	46.5	35.7	41.1	716	0	648.3	175.9
Oct	28.7	18.5	23.6	1282	0	256.1	69.5
Nov	13.4	2.0	7.7	1719	0	32.7	8.9
Dec	2.6	– 10.3	– 3.9	2135	0	0.0	0.0
Ann	27.5	14.3	20.9	16038	0	744.8	202.0

LATITUDE: 66° 52′ N
LONGITUDE: 162° 38′ W
ELEVATION: 5 meters (16.4 feet)

STATION NO. 26616

Kotzebue, Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	– 17.49	– 27.88	– 22.72	1272	0	657.0	0.315
Feb	– 11.72	– 23.99	– 17.88	1014	0	2934.0	0.431
Mar	– 5.55	– 20.16	– 12.83	966	0	7861.0	0.505
Apr	3.16	– 9.27	– 3.05	641	0	13480.0	0.508
May	12.50	0.88	6.72	360	0	16890.0	0.466
June	18.94	7.33	13.16	158	3	18007.0	0.437
July	19.83	9.27	14.55	121	4	15658.0	0.402
Aug	16.72	7.16	11.94	198	0	11566.0	0.377
Sept	11.27	1.77	6.55	353	0	7888.0	0.393
Oct	0.22	– 7.66	– 3.72	683	0	3598.0	0.356
Nov	– 10.61	– 19.38	– 14.99	1000	0	1137.0	0.326
Dec	– 18.22	– 27.55	– 22.88	1277	0	221.0	0.202
Ann	1.55	– 9.11	– 3.77	8048	7	8325.0	0.428

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.5	– 18.2	– 8.9	2290	0	57.9	15.7
Feb	10.9	– 11.2	– 0.2	1825	0	258.5	70.1
Mar	22.0	– 4.3	8.9	1739	0	692.7	187.9
Apr	37.7	15.3	26.5	1154	0	1187.8	322.2
May	54.5	33.6	44.1	648	0	1488.2	403.7
June	66.1	45.2	55.7	284	5	1586.7	430.4
July	67.7	48.7	58.2	218	7	1379.7	374.2
Aug	62.1	44.9	53.5	356	0	1019.1	276.4
Sept	52.3	35.2	43.8	635	0	695.0	188.5
Oct	32.4	18.2	25.3	1229	0	317.0	86.0
Nov	12.9	– 2.9	5.0	1800	0	100.2	27.2
Dec	– 0.8	– 17.6	– 9.2	2299	0	19.5	5.3
Ann	34.8	15.6	25.2	14486	13	733.5	199.0

STATION NO. 26510

McGrath, Alaska

LATITUDE: 62° 58′ N
LONGITUDE: 155° 37′ W
ELEVATION: 103 meters (337.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 10.27	– 18.66	– 14.44	1016	0	338.0	0.238
Feb	– 10.16	– 19.61	– 14.88	930	0	2541.0	0.430
Mar	– 8.55	– 18.83	– 13.66	992	0	7163.0	0.490
Apr	– 2.77	– 11.77	– 7.27	768	0	13456.0	0.521
May	5.22	– 2.16	1.55	520	0	17852.0	0.497
June	11.22	3.77	7.50	325	0	19898.0	0.483
July	13.22	6.88	10.05	256	0	16049.0	0.413
Aug	12.55	6.50	9.55	272	0	11269.0	0.373
Sept	9.00	2.16	5.61	381	0	7641.0	0.398
Oct	1.33	– 5.22	– 1.94	628	0	3471.0	0.378
Nov	– 5.49	– 12.72	– 9.11	823	0	736.0	0.270
Dec	– 11.27	– 19.44	– 15.33	1043	0	33.0	0.059
Ann	0.33	– 7.44	– 3.55	7958	0	8371.0	0.444

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	13.5	– 1.6	6.0	1829	0	29.8	8.1
Feb	13.7	– 3.3	5.2	1674	0	223.9	60.7
Mar	16.6	– 1.9	7.4	1786	0	631.2	171.2
Apr	27.0	10.8	18.9	1382	0	1185.7	321.6
May	41.4	28.1	34.8	936	0	1573.0	426.7
June	52.2	38.8	45.5	585	0	1753.3	475.6
July	55.8	44.4	50.1	461	0	1414.1	383.6
Aug	54.6	43.7	49.2	490	0	993.0	269.3
Sept	48.2	35.9	42.1	686	0	673.3	182.6
Oct	34.4	22.6	28.5	1130	0	305.8	83.0
Nov	22.1	9.1	15.6	1481	0	64.9	17.6
Dec	11.7	– 3.0	4.4	1877	0	2.9	0.8
Ann	32.6	18.6	25.6	14324	0	737.6	200.1

LATITUDE: 64° 30′ N
LONGITUDE: 165° 26′ W
ELEVATION: 7 meters (23.0 feet)

STATION NO. 26617

Nome, Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 13.38	– 20.44	– 16.88	1091	0	634.0	0.331
Feb	– 10.27	– 17.99	– 14.11	908	0	2847.0	0.432
Mar	– 6.99	– 16.11	– 11.55	926	0	7922.0	0.517
Apr	0.50	– 9.94	– 4.72	691	0	14066.0	0.534
May	7.61	– 1.61	3.00	475	0	18531.0	0.513
June	14.44	4.38	9.44	266	0	18532.0	0.450
July	15.66	6.55	11.11	223	0	16016.0	0.412
Aug	13.33	5.05	9.22	282	0	11842.0	0.387
Sept	8.38	0.33	4.38	418	0	7982.0	0.402
Oct	– 0.88	– 8.05	– 4.44	706	0	3908.0	0.395
Nov	– 9.05	– 15.72	– 12.38	921	0	1212.0	0.367
Dec	– 12.66	– 19.66	– 16.16	1069	0	187.0	0.196
Ann	0.55	– 7.77	– 3.61	7982	0	8640.0	0.447

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	7.9	– 4.8	1.6	1964	0	55.9	15.2
Feb	13.5	– 0.4	6.6	1634	0	250.9	68.0
Mar	19.4	3.0	11.2	1667	0	698.0	189.3
Apr	32.9	14.1	23.5	1244	0	1239.4	336.2
May	45.7	29.1	37.4	855	0	1632.8	442.9
June	58.0	39.9	49.0	479	0	1632.9	442.9
July	60.2	43.8	52.0	401	0	1411.2	382.8
Aug	56.0	41.1	48.6	508	0	1043.4	283.0
Sept	47.1	32.6	39.9	752	0	703.3	190.8
Oct	30.4	17.5	24.0	1271	0	344.3	93.4
Nov	15.7	3.7	9.7	1658	0	106.8	29.0
Dec	9.2	– 3.4	2.9	1924	0	16.5	4.5
Ann	33.0	18.0	25.5	14368	0	761.3	206.5

STATION NO. 26414

Summit, Alaska

LATITUDE: 63° 20′ N
LONGITUDE: 149° 8′ W
ELEVATION: 733 meters (2404.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−0.44	−8.27	−4.33	702	0	1139.0	0.301
Feb	1.66	−6.16	−2.22	575	0	3012.0	0.339
Mar	3.27	−5.22	−0.94	597	0	7074.0	0.402
Apr	6.44	−1.94	2.27	481	0	11926.0	0.426
May	10.44	2.05	6.27	373	0	14384.0	0.390
June	13.55	6.11	9.83	255	0	15261.0	0.370
July	15.16	8.55	11.88	200	0	13702.0	0.349
Aug	15.33	7.83	11.61	208	0	10693.0	0.336
Sept	13.00	5.22	9.11	276	0	7201.0	0.329
Oct	8.50	1.16	4.83	418	0	3912.0	0.320
Nov	3.44	−3.22	0.11	546	0	1537.0	0.287
Dec	0.38	−6.27	−2.94	659	0	581.0	0.224
Ann	7.55	0.00	3.77	5296	0	7535.0	0.361

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.2	17.1	24.2	1264	0	100.4	27.2
Feb	35.0	20.9	28.0	1035	0	265.4	72.0
Mar	37.9	22.6	30.3	1075	0	623.3	169.1
Apr	43.6	28.5	36.1	866	0	1050.8	285.0
May	50.8	35.7	43.3	671	0	1267.4	343.8
June	56.4	43.0	49.7	459	0	1344.7	364.8
July	59.3	47.4	53.4	360	0	1207.3	327.5
Aug	59.6	46.1	52.9	374	0	942.2	255.6
Sept	55.4	41.4	48.4	497	0	634.5	172.1
Oct	47.3	34.1	40.7	752	0	344.7	93.5
Nov	38.2	26.2	32.2	983	0	135.4	36.7
Dec	32.7	20.7	26.7	1186	0	51.2	13.9
Ann	45.6	32.0	38.8	9533	0	663.9	180.1

LATITUDE: 59° 31′ N
LONGITUDE: 139° 40′ W
ELEVATION: 9 meters (29.5 feet)

STATION NO. 25339

Yakutat, Alaska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	18.22	3.11	10.66	237	0	11591.0	0.596
Feb	20.72	4.88	12.83	162	7	15595.0	0.641
Mar	23.61	7.11	15.38	102	11	20588.0	0.671
Apr	28.66	11.00	19.83	33	78	26725.0	0.733
May	33.83	15.33	24.61	0	197	30375.0	0.755
June	38.61	19.83	29.22	0	326	31087.0	0.745
July	40.44	25.27	32.88	0	451	28219.0	0.689
Aug	39.00	24.44	31.72	0	415	26019.0	0.686
Sept	36.88	20.61	28.77	0	313	22873.0	0.694
Oct	30.88	13.77	22.33	9	133	17892.0	0.669
Nov	23.72	7.11	15.44	101	14	13057.0	0.623
Dec	19.11	3.61	11.38	215	0	10577.0	0.587
Ann	29.50	13.00	21.27	862	1948	21216.0	0.686

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	64.8	37.6	51.2	427	0	1021.3	277.0
Feb	69.3	40.8	55.1	292	13	1374.1	372.7
Mar	74.5	44.8	59.7	184	20	1814.1	492.1
Apr	83.6	51.8	67.7	59	140	2354.8	638.8
May	92.9	59.6	76.3	0	355	2676.5	726.0
June	101.5	67.7	84.6	0	587	2739.2	743.0
July	104.8	77.5	91.2	0	812	2486.5	674.5
Aug	102.2	76.0	89.1	0	747	2292.6	621.9
Sept	98.4	69.1	83.8	0	563	2015.4	546.7
Oct	87.6	56.8	72.2	16	239	1576.5	427.6
Nov	74.7	44.8	59.8	182	25	1150.5	312.1
Dec	66.4	38.5	52.5	387	0	932.0	252.8
Ann	85.1	55.4	70.3	1552	3506	1869.4	507.1

SOLMET STATION NO. 23183

Phoenix, Arizona

LATITUDE: 33° 26′ N
LONGITUDE: 112° 1′ W
ELEVATION: 339 meters (1111.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	2.83	480	0	11533.0	0.617
Feb	0.0 ND	0.0 ND	4.72	381	0	15149.0	0.640
Mar	0.0 ND	0.0 ND	6.83	356	0	20168.0	0.668
Apr	0.0 ND	0.0 ND	11.11	218	0	25820.0	0.713
May	0.0 ND	0.0 ND	15.77	91	12	29837.0	0.742
June	0.0 ND	0.0 ND	20.61	18	86	31345.0	0.750
July	0.0 ND	0.0 ND	24.16	0	181	26209.0	0.640
Aug	0.0 ND	0.0 ND	22.77	0	137	23739.0	0.628
Sept	0.0 ND	0.0 ND	20.05	12	64	22182.0	0.681
Oct	0.0 ND	0.0 ND	14.00	141	7	17512.0	0.670
Nov	0.0 ND	0.0 ND	7.66	320	0	12938.0	0.639
Dec	0.0 ND	0.0 ND	3.66	454	0	10518.0	0.609
Ann	0.0 ND	0.0 ND	12.83	2475	490	20579.0	0.674

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	37.1	864	0	1016.2	275.7
Feb	0.0 ND	0.0 ND	40.5	686	0	1334.8	362.1
Mar	0.0 ND	0.0 ND	44.3	641	0	1777.1	482.0
Apr	0.0 ND	0.0 ND	52.0	392	0	2275.1	617.1
May	0.0 ND	0.0 ND	60.4	164	22	2629.1	713.1
June	0.0 ND	0.0 ND	69.1	32	155	2761.9	749.2
July	0.0 ND	0.0 ND	75.5	0	326	2309.4	626.4
Aug	0.0 ND	0.0 ND	73.0	0	247	2091.7	567.4
Sept	0.0 ND	0.0 ND	68.1	22	115	1954.5	530.2
Oct	0.0 ND	0.0 ND	57.2	254	13	1543.1	418.6
Nov	0.0 ND	0.0 ND	45.8	576	0	1140.0	309.2
Dec	0.0 ND	0.0 ND	38.6	817	0	926.8	251.4
Ann	0.0 ND	0.0 ND	55.1	4455	882	1813.3	491.9

LATITUDE: 34° 39′ N
LONGITUDE: 112° 26′ W
ELEVATION: 1531 meters (5021.7 feet)

STATION NO. 23184

Prescott, Arizona

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	17.50	3.44	10.50	245	0	12473.0	0.616
Feb	19.44	4.38	11.94	185	6	16252.0	0.649
Mar	21.94	6.44	14.22	135	7	21158.0	0.678
Apr	27.05	10.16	18.61	45	53	26818.0	0.730
May	32.00	14.16	23.11	0	151	30318.0	0.753
June	36.61	19.00	27.83	0	285	30978.0	0.745
July	36.83	23.44	30.16	0	366	26569.0	0.650
Aug	35.16	22.38	28.77	0	323	24774.0	0.650
Sept	33.94	19.50	26.72	0	251	22457.0	0.673
Oct	28.77	13.55	21.16	16	103	18180.0	0.665
Nov	22.33	7.11	14.72	122	14	13714.0	0.631
Dec	18.22	3.94	11.11	223	0	11301.0	0.600
Ann	27.50	12.27	19.88	973	1563	21249.0	0.679

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	63.5	38.2	50.9	441	0	1099.0	298.1
Feb	67.0	39.9	53.5	333	11	1432.0	388.4
Mar	71.5	43.6	57.6	243	13	1864.3	505.7
Apr	80.7	50.3	65.5	81	95	2363.0	641.0
May	89.6	57.5	73.6	0	272	2671.4	724.6
June	97.9	66.2	82.1	0	513	2729.6	740.4
July	98.3	74.2	86.3	0	659	2341.1	635.0
Aug	95.3	72.3	83.8	0	581	2182.9	592.1
Sept	93.1	67.1	80.1	0	452	1978.8	536.7
Oct	83.8	56.4	70.1	29	185	1601.9	434.5
Nov	72.2	44.8	58.5	220	25	1208.4	327.8
Dec	64.8	39.1	52.0	401	0	995.8	270.1
Ann	81.5	54.1	67.8	1751	2813	1872.3	507.9

STATION NO. 23160

Tucson, Arizona

LATITUDE: 32° 7′ N
LONGITUDE: 110° 56′ W
ELEVATION: 779 meters (2555.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	7.55	– 6.88	0.33	557	0	11174.0	0.605
Feb	11.83	– 3.99	3.94	402	0	15060.0	0.641
Mar	15.66	– 1.44	7.11	347	0	20201.0	0.673
Apr	21.16	2.94	12.05	193	5	25913.0	0.717
May	26.61	7.50	17.05	68	28	29446.0	0.732
June	32.11	12.05	22.11	7	121	30774.0	0.736
July	34.22	17.16	25.72	0	228	26635.0	0.650
Aug	32.55	16.38	24.50	0	191	24293.0	0.643
Sept	29.66	11.94	20.83	10	85	21879.0	0.674
Oct	22.88	5.16	14.05	140	7	17169.0	0.661
Nov	14.55	– 2.11	6.22	363	0	12703.0	0.634
Dec	8.16	– 6.16	1.00	537	0	10150.0	0.595
Ann	21.44	4.38	12.94	2629	668	20450.0	0.673

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	45.6	19.6	32.6	1003	0	984.6	267.1
Feb	53.3	24.8	39.1	724	0	1327.0	359.9
Mar	60.2	29.4	44.8	625	0	1780.0	482.8
Apr	70.1	37.3	53.7	347	9	2283.3	619.3
May	79.9	45.5	62.7	122	50	2594.6	703.8
June	89.8	53.7	71.8	13	218	2711.6	735.5
July	93.6	62.9	78.3	0	410	2346.9	636.6
Aug	90.6	61.5	76.1	0	344	2140.6	580.6
Sept	85.4	53.5	69.5	18	153	1927.8	522.9
Oct	73.2	41.3	57.3	252	13	1512.8	410.4
Nov	58.2	28.2	43.2	653	0	1119.3	303.6
Dec	46.7	20.9	33.8	967	0	894.4	242.6
Ann	70.6	39.9	55.3	4732	1202	1801.9	488.8

LATITUDE: 35° 1′ N
LONGITUDE: 110° 44′ W
ELEVATION: 1488 meters (4880.6 feet)

STATION NO. 23194

Winslow, Arizona

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	19.66	6.27	13.00	171	5	12440.0	0.625
Feb	22.55	7.83	15.22	106	20	16379.0	0.662
Mar	25.33	10.11	17.72	53	35	21781.0	0.703
Apr	29.77	13.72	21.77	13	116	27383.0	0.748
May	34.11	17.72	25.94	0	236	30963.0	0.769
June	38.22	21.55	29.88	0	346	31935.0	0.767
July	41.11	27.44	34.27	0	494	27843.0	0.681
Aug	40.22	27.33	33.77	0	478	26435.0	0.695
Sept	37.94	23.27	30.61	0	368	23277.0	0.701
Oct	32.11	16.66	24.38	2	190	18417.0	0.680
Nov	24.72	10.27	17.50	60	35	13786.0	0.644
Dec	20.11	6.88	13.50	153	3	11350.0	0.613
Ann	30.50	15.77	23.16	561	2330	21832.0	0.701

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	67.4	43.3	55.4	308	9	1096.1	297.3
Feb	72.6	46.1 M	59.4	191	36	1443.2	391.5
Mar	77.6	50.2	63.9	95	63	1919.2	520.6
Apr	85.6	56.7	71.2	23	209	2412.8	654.5
May	93.4	63.9	78.7	0	425	2728.3	740.0
June	100.8	70.8	85.8	0	623	2813.9	763.3
July	106.0	81.4	93.7	0	889	2453.4	665.5
Aug	104.4	81.2	92.8	0	860	2329.3	631.8
Sept	100.3	73.9	87.1	0	662	2051.0	556.3
Oct	89.8	62.0	75.9	4	342	1622.8	440.2
Nov	76.5	50.5	63.5	108	63	1214.7	329.5
Dec	68.2	44.4	56.3	275	5	1000.1	271.3
Ann	86.9	60.4	73.7	1010	4194	1923.7	521.8

STATION NO. 23195

Yuma, Arizona

LATITUDE: 32° 40′ N
LONGITUDE: 114° 36′ W
ELEVATION: 63 meters (206.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	9.94	−2.22	3.88	447	0	8440.0	0.462
Feb	12.55	0.00	6.27	337	0	11337.0	0.486
Mar	16.72	3.61	10.16	261	8	14886.0	0.498
Apr	23.44	10.11	16.77	73	26	18339.0	0.508
May	27.38	14.88	21.16	9	97	21700.0	0.540
June	31.66	19.44	25.55	0	216	23713.0	0.567
July	34.33	21.38	27.88	0	296	23439.0	0.572
Aug	34.16	20.72	27.44	0	282	21307.0	0.565
Sept	30.16	16.50	23.33	0	152	17040.0	0.526
Oct	24.72	9.94	17.33	75	43	13627.0	0.528
Nov	17.05	3.33	10.22	243	0	9663.0	0.487
Dec	11.22	−0.66	5.27	405	0	7735.0	0.459
Ann	22.77	9.77	16.27	1853	1123	15935.0	0.526

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	49.9	28.0	39.0	805	0	743.7	201.7
Feb	54.6	32.0	43.3	607	0	998.9	271.0
Mar	62.1	38.5	50.3	470	14	1311.7	355.8
Apr	74.2	50.2	62.2	131	47	1615.9	438.3
May	81.3	58.8	70.1	16	175	1912.1	518.7
June	89.0	67.0	78.0	0	389	2089.4	566.8
July	93.8	70.5	82.2	0	533	2065.3	560.2
Aug	93.5	69.3	81.4	0	508	1877.4	509.3
Sept	86.3	61.7	74.0	0	274	1501.5	407.3
Oct	76.5	49.9	63.2	135	77	1200.7	325.7
Nov	62.7	38.0	50.4	437	0	851.4	231.0
Dec	52.2	30.8	41.5	729	0	681.6	184.9
Ann	73.0	49.6	61.3	3335	2021	1404.1	380.9

LATITUDE: 35° 20′ N
LONGITUDE: 94° 22′ W
ELEVATION: 141 meters (462.5 feet)

STATION NO. 13964

Fort Smith, Arkansas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	10.05	−1.72	4.16	439	0	8299.0	0.445
Feb	12.11	−0.05	6.05	343	0	11381.0	0.482
Mar	16.55	3.72	10.16	261	7	14898.0	0.494
Apr	23.05	9.94	16.50	77	22	18280.0	0.505
May	27.44	14.50	21.00	11	93	21895.0	0.544
June	31.83	19.33	25.61	0	218	23907.0	0.572
July	33.66	21.16	27.44	0	282	23064.0	0.563
Aug	33.66	20.33	27.00	0	268	21115.0	0.559
Sept	29.88	16.00	22.94	2	141	17228.0	0.529
Oct	24.44	9.27	16.88	79	35	13940.0	0.534
Nov	16.88	3.38	10.16	245	0	9615.0	0.476
Dec	11.16	−0.49	5.33	402	0	7646.0	0.444
Ann	22.55	9.61	16.11	1863	1069	15939.0	0.523

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	50.1	28.9	39.5	790	0	731.3	198.4
Feb	53.8	31.9	42.9	617	0	1002.8	272.0
Mar	61.8	38.7	50.3	470	13	1312.7	356.1
Apr	73.5	49.9	61.7	139	40	1610.7	436.9
May	81.4	58.1	69.8	20	167	1929.3	523.3
June	89.3	66.8	78.1	0	392	2106.5	571.4
July	92.6	70.1	81.4	0	508	2032.3	551.3
Aug	92.6	68.6	80.6	0	482	1860.5	504.7
Sept	85.8	60.8	73.3	4	254	1518.0	411.8
Oct	76.0	48.7	62.4	142	63	1228.3	333.2
Nov	62.4	38.1	50.3	441	0	847.2	229.8
Dec	52.1	31.1	41.6	724	0	673.7	182.7
Ann	72.6	49.3	61.0	3353	1924	1404.4	381.0

STATION NO. 13963

Little Rock, Arkansas

LATITUDE: 34° 44′ N
LONGITUDE: 92° 14′ W
ELEVATION: 81 meters (265.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	6001.0	0.405
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8998.0	0.447
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	12856.0	0.469
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18006.0	0.519
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20912.0	0.525
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22263.0	0.530
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20516.0	0.501
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17923.0	0.487
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15233.0	0.502
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10618.0	0.463
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	6727.0	0.408
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	5329.0	0.400
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13782.0	0.486

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	528.8	143.4
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	792.9	215.1
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1132.8	307.3
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1586.6	430.4
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1842.6	499.8
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1961.7	532.1
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1807.7	490.4
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1579.3	428.4
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1342.2	364.1
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	935.6	253.8
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	592.7	160.8
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	469.6	127.4
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1214.4	329.4

LATITUDE: 40° 59′ N
LONGITUDE: 124° 6′ W
ELEVATION: 69 meters (226.3 feet)

STATION NO. 24283

Arcata, California

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	14.16	3.00	8.61	301	0	8698.0	0.477
Feb	17.38	5.22	11.33	196	0	12505.0	0.538
Mar	20.33	6.94	13.66	147	3	18099.0	0.606
Apr	24.16	9.94	17.05	77	39	23773.0	0.659
May	28.66	13.33	21.00	12	95	28476.0	0.709
June	33.05	16.83	24.94	0	201	31202.0	0.746
July	37.27	20.38	28.83	0	325	30455.0	0.743
Aug	35.83	19.22	27.55	0	286	27472.0	0.729
Sept	32.83	16.72	24.77	0	193	22605.0	0.699
Oct	26.94	11.83	19.38	30	63	16550.0	0.642
Nov	19.88	6.77	13.33	153	3	10694.0	0.540
Dec	14.11	3.55	8.83	294	0	7688.0	0.458
Ann	25.38	11.16	18.27	1213	1210	19851.0	0.656

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	57.5	37.4	47.5	542	0	766.4	207.9
Feb	63.3	41.4	52.4	353	0	1101.9	298.9
Mar	68.6	44.5	56.6	265	5	1594.8	432.6
Apr	75.5	49.9	62.7	139	70	2094.7	568.2
May	83.6	56.0	69.8	22	171	2509.1	680.6
June	91.5	62.3	76.9	0	362	2749.3	745.8
July	99.1	68.7	83.9	0	585	2683.5	727.9
Aug	96.5	66.6	81.6	0	515	2420.7	656.6
Sept	91.1	62.1	76.6	0	347	1991.8	540.3
Oct	80.5	53.3	66.9	54	113	1458.3	395.6
Nov	67.8	44.2	56.0	275	5	942.3	255.6
Dec	57.4	38.4	47.9	529	0	677.4	183.8
Ann	77.7	52.1	64.9	2183	2178	1749.2	474.5

STATION NO. 23155

Bakersfield, California

LATITUDE: 35° 25′ N
LONGITUDE: 119° 3′ W
ELEVATION: 150 meters (492.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10321.0	0.571
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13953.0	0.604
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	19689.0	0.662
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	25348.0	0.704
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	28923.0	0.720
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	31173.0	0.745
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	29646.0	0.723
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	29688.0	0.788
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22468.0	0.697
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	16712.0	0.652
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11731.0	0.597
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9542.0	0.574
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20766.0	0.688

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	909.4	246.7
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1229.5	333.5
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1734.9	470.6
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2233.5	605.8
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2548.5	691.3
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2746.8	745.1
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2612.2	708.6
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2615.9	709.6
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1979.7	537.0
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1472.6	399.4
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1033.7	280.4
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	840.8	228.1
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1829.8	496.3

LATITUDE: 35° 41′ N
LONGITUDE: 117° 41′ W
ELEVATION: 681 meters (2233.7 feet)

STATION NO. 93104

China Lake, California

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	8.50	305	0	10875.0	0.586
Feb	0.0 ND	0.0 ND	11.11	206	3	14535.0	0.617
Mar	0.0 ND	0.0 ND	13.72	150	7	20114.0	0.668
Apr	0.0 ND	0.0 ND	17.94	65	53	25809.0	0.713
May	0.0 ND	0.0 ND	22.38	7	133	29407.0	0.731
June	0.0 ND	0.0 ND	26.72	0	251	31394.0	0.751
July	0.0 ND	0.0 ND	30.72	0	383	29546.0	0.721
Aug	0.0 ND	0.0 ND	29.72	0	353	27040.0	0.716
Sept	0.0 ND	0.0 ND	26.22	0	236	22788.0	0.701
Oct	0.0 ND	0.0 ND	20.05	31	85	17201.0	0.661
Nov	0.0 ND	0.0 ND	13.05	164	6	12315.0	0.612
Dec	0.0 ND	0.0 ND	8.88	292	0	9942.0	0.580
Ann	0.0 ND	0.0 ND	19.11	1223	1516	20914.0	0.687

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	47.3	549	0	958.2	259.9
Feb	0.0 ND	0.0 ND	52.0	371	5	1280.7	347.4
Mar	0.0 ND	0.0 ND	56.7	270	13	1772.3	480.7
Apr	0.0 ND	0.0 ND	64.3	117	95	2274.1	616.9
May	0.0 ND	0.0 ND	72.3	13	239	2591.2	702.9
June	0.0 ND	0.0 ND	80.1	0	452	2766.3	750.3
July	0.0 ND	0.0 ND	87.3	0	689	2603.4	706.2
Aug	0.0 ND	0.0 ND	85.5	0	635	2382.6	646.3
Sept	0.0 ND	0.0 ND	79.2	0	425	2007.9	544.7
Oct	0.0 ND	0.0 ND	68.1	56	153	1515.6	411.1
Nov	0.0 ND	0.0 ND	55.5	295	11	1085.1	294.3
Dec	0.0 ND	0.0 ND	48.0	526	0	876.0	237.6
Ann	0.0 ND	0.0 ND	66.4	2201	2729	1842.8	499.9

STATION NO. 23161

Daggett, California

LATITUDE: 34° 52′ N
LONGITUDE: 116° 47′ W
ELEVATION: 588 meters (1928.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10747.0	0.557
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14027.0	0.579
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18274.0	0.598
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21886.0	0.601
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	23495.0	0.584
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	24901.0	0.597
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	26822.0	0.655
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	24457.0	0.645
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	19716.0	0.599
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15399.0	0.579
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11648.0	0.559
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9865.0	0.552
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18436.0	0.598

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	947.0	256.9
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1236.0	335.3
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1610.2	436.8
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1928.5	523.1
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2070.2	561.6
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2194.1	595.2
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2363.4	641.1
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2155.0	584.5
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1737.3	471.2
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1356.9	368.1
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1026.4	278.4
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	869.2	235.8
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1624.5	440.6

LATITUDE: 33° 40′ N
LONGITUDE: 117° 44′ W
ELEVATION: 116 meters (380.5 feet)

STATION NO. 93101

El Toro, California

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	12.66	2.11	7.38	339	0	7453.0	0.428
Feb	16.00	3.88	9.94	235	0	11489.0	0.510
Mar	19.22	5.11	12.16	191	0	17770.0	0.606
Apr	23.50	7.88	15.72	101	22	23749.0	0.664
May	28.27	11.05	19.66	28	69	28189.0	0.702
June	32.38	14.16	23.27	5	153	31014.0	0.740
July	36.77	17.16	27.00	0	268	30473.0	0.743
Aug	35.55	15.88	25.72	0	228	27502.0	0.733
Sept	32.77	13.61	23.22	0	148	22529.0	0.706
Oct	26.55	9.22	17.88	50	36	16220.0	0.646
Nov	18.94	4.88	11.94	191	0	10084.0	0.531
Dec	12.55	2.72	7.66	330	0	6516.0	0.408
Ann	24.61	9.00	16.83	1472	928	19416.0	0.651

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	54.8	35.8	45.3	610	0	656.7	178.1
Feb	60.8	39.0	49.9	423	0	1012.3	274.6
Mar	66.6	41.2	53.9	344	0	1565.8	424.7
Apr	74.3	46.2	60.3	182	40	2092.6	567.6
May	82.9	51.9	67.4	50	124	2483.8	673.7
June	90.3	57.5	73.9	9	275	2732.8	741.3
July	98.2	62.9	80.6	0	482	2685.1	728.3
Aug	96.0	60.6	78.3	0	410	2423.3	657.3
Sept	91.0	56.5	73.8	0	266	1985.1	538.5
Oct	79.8	48.6	64.2	90	65	1429.2	387.7
Nov	66.1	40.8	53.5	344	0	888.5	241.0
Dec	54.6	36.9	45.8	594	0	574.2	155.7
Ann	76.3	48.2	62.3	2650	1670	1710.8	464.1

SOLMET STATION NO. 93193

Fresno, California

LATITUDE: 36° 46′ N
LONGITUDE: 119° 43′ W
ELEVATION: 100 meters (328.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	18.44	6.22	12.33	188	0	10528.0	0.548
Feb	19.00	7.11	13.05	151	3	13789.0	0.571
Mar	19.83	8.16	14.00	137	0	18271.0	0.599
Apr	21.38	10.33	15.88	82	8	21991.0	0.604
May	23.22	12.38	17.83	39	23	23430.0	0.582
June	24.88	14.33	19.61	12	51	24286.0	0.582
July	28.22	16.44	22.33	0	125	26101.0	0.637
Aug	28.88	16.94	22.94	0	144	23830.0	0.629
Sept	28.50	15.66	22.11	3	117	19304.0	0.588
Oct	25.72	13.05	19.38	26	59	15053.0	0.567
Nov	22.61	9.11	15.88	86	12	11389.0	0.549
Dec	19.38	6.72	13.05	163	0	9610.0	0.540
Ann	23.33	11.38	17.38	892	547	18132.0	0.589

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	65.2	43.2	54.2	338	0	927.7	251.6
Feb	66.2	44.8	55.5	272	5	1215.0	329.6
Mar	67.7	46.7	57.2	247	0	1609.9	436.7
Apr	70.5	50.6	60.6	148	14	1937.7	525.6
May	73.8	54.3	64.1	70	41	2064.5	560.0
June	76.8	57.8	67.3	22	92	2139.9	580.5
July	82.8	61.6	72.2	0	225	2299.9	623.8
Aug	84.0	62.5	73.3	0	259	2099.8	569.6
Sept	83.3	60.2	71.8	5	211	1701.0	461.4
Oct	78.3	55.5	66.9	47	106	1326.4	359.8
Nov	72.7	48.4	60.6	155	22	1003.5	272.2
Dec	66.9	44.1	55.5	293	0	846.8	229.7
Ann	74.0	52.5	63.3	1606	985	1597.7	433.4

LATITUDE: 33° 49′ N
LONGITUDE: 118° 9′ W
ELEVATION: 17 meters (55.8 feet)

STATION NO. 23129

Long Beach, California

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	17.50	7.44	12.50	183	2	10510.0	0.549
Feb	17.83	8.33	13.11	150	3	13778.0	0.572
Mar	17.94	9.22	13.61	148	0	18370.0	0.603
Apr	18.83	10.94	14.88	108	5	22141.0	0.609
May	20.22	12.94	16.61	63	9	23374.0	0.581
June	21.27	14.77	18.05	39	31	24049.0	0.576
July	23.77	16.72	20.27	10	70	26188.0	0.639
Aug	24.33	17.33	20.83	8	85	23600.0	0.623
Sept	24.27	16.44	20.38	12	74	19082.0	0.581
Oct	22.72	14.16	18.44	42	46	14946.0	0.564
Nov	20.88	10.72	15.83	87	12	11393.0	0.551
Dec	19.16	8.50	13.83	155	0	9630.0	0.543
Ann	20.66	12.27	16.50	1010	341	18088.0	0.588

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	63.5	45.4	54.5	329	4	926.1	251.2
Feb	64.1	47.0	55.6	270	5	1214.0	329.3
Mar	64.3	48.6	56.5	266	0	1618.7	439.1
Apr	65.9	51.7	58.8	194	9	1950.9	529.2
May	68.4	55.3	61.9	113	16	2059.6	558.7
June	70.3	58.6	64.5	70	56	2119.1	574.8
July	74.8	62.1	68.5	18	126	2307.5	625.9
Aug	75.8	63.2	69.5	14	153	2079.5	564.1
Sept	75.7	61.6	68.7	22	133	1681.4	456.1
Oct	72.9	57.5	65.2	76	83	1317.0	357.2
Nov	69.6	51.3	60.5	157	22	1003.9	272.3
Dec	66.5	47.3	56.9	279	0	848.5	230.2
Ann	69.2	54.1	61.7	1818	614	1593.8	432.3

STATION NO. 23174

Los Angeles, California

LATITUDE: 33° 56′ N
LONGITUDE: 118° 24′ W
ELEVATION: 32 meters (105.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	5.44	−3.66	0.88	540	0	6364.0	0.436
Feb	8.50	−2.05	3.22	423	0	9731.0	0.489
Mar	10.55	−1.22	4.66	423	0	14186.0	0.520
Apr	14.72	1.11	7.94	311	0	19929.0	0.576
May	19.22	4.44	11.83	206	4	24809.0	0.623
June	23.33	7.77	15.55	98	15	27647.0	0.658
July	29.38	10.33	19.88	20	68	29252.0	0.714
Aug	28.55	9.22	18.88	35	52	25115.0	0.684
Sept	25.44	6.94	16.22	80	17	19694.0	0.651
Oct	18.27	3.27	10.77	234	0	13109.0	0.577
Nov	10.88	−0.16	5.38	388	0	7482.0	0.460
Dec	6.50	−2.61	1.94	508	0	5730.0	0.437
Ann	16.72	2.77	9.77	3272	158	16921.0	0.600

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	41.8	25.4	33.6	972	0	560.8	152.1
Feb	47.3	28.3	37.8	761	0	857.4	232.6
Mar	51.0	29.8	40.4	761	0	1250.0	339.1
Apr	58.5	34.0	46.3	560	0	1756.0	476.3
May	66.6	40.0	53.3	371	7	2186.0	593.0
June	74.0	46.0	60.0	176	27	2436.1	660.8
July	84.9	50.6	67.8	36	122	2577.5	699.2
Aug	83.4	48.6	66.0	63	94	2213.0	600.3
Sept	77.8	44.5	61.2	144	31	1735.3	470.7
Oct	64.9	37.9	51.4	421	0	1155.1	313.3
Nov	51.6	31.7	41.7	698	0	659.3	178.8
Dec	43.7	27.3	35.5	914	0	504.9	137.0
Ann	62.1	37.0	49.6	5890	284	1491.0	404.4

LATITUDE: 41° 19′ N
LONGITUDE: 122° 19′ W
ELEVATION: 1093 meters (3585.0 feet)

STATION NO. 24215

Mount Shasta, California

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	10.88	233	2	11177.0	0.600
Feb	0.0 ND	0.0 ND	13.61	145	12	15358.0	0.650
Mar	0.0 ND	0.0 ND	16.44	83	24	20713.0	0.687
Apr	0.0 ND	0.0 ND	21.33	23	113	26295.0	0.726
May	0.0 ND	0.0 ND	26.44	0	251	30095.0	0.748
June	0.0 ND	0.0 ND	31.27	0	388	31677.0	0.758
July	0.0 ND	0.0 ND	35.22	0	523	28839.0	0.704
Aug	0.0 ND	0.0 ND	34.05	0	487	25850.0	0.684
Sept	0.0 ND	0.0 ND	30.50	0	365	22863.0	0.702
Oct	0.0 ND	0.0 ND	23.50	5	166	17449.0	0.669
Nov	0.0 ND	0.0 ND	15.94	90	18	12754.0	0.632
Dec	0.0 ND	0.0 ND	11.50	211	0	10365.0	0.602
Ann	0.0 ND	0.0 ND	22.55	793	2353	21120.0	0.693

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	51.6	419	4	984.9	267.1
Feb	0.0 ND	0.0 ND	56.5	261	22	1353.3	367.1
Mar	0.0 ND	0.0 ND	61.6	149	43	1825.1	495.1
Apr	0.0 ND	0.0 ND	70.4	41	203	2317.0	628.5
May	0.0 ND	0.0 ND	79.6	0	452	2651.8	719.3
June	0.0 ND	0.0 ND	88.3	0	698	2791.2	757.1
July	0.0 ND	0.0 ND	95.4	0	941	2541.1	689.3
Aug	0.0 ND	0.0 ND	93.3	0	877	2277.7	617.8
Sept	0.0 ND	0.0 ND	86.9	0	657	2014.6	546.4
Oct	0.0 ND	0.0 ND	74.3	9	299	1537.5	417.0
Nov	0.0 ND	0.0 ND	60.7	162	32	1123.8	304.8
Dec	0.0 ND	0.0 ND	52.7	380	0	913.3	247.7
Ann	0.0 ND	0.0 ND	72.6	1427	4235	1861.0	504.8

STATION NO. 23179

Needles, California

LATITUDE: 34° 46′ N
LONGITUDE: 114° 37′ W
ELEVATION: 270 meters (885.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	12.50	5.94	9.22	282	0	8033.0	0.478
Feb	14.44	7.61	11.05	203	0	11547.0	0.526
Mar	15.66	8.44	12.05	194	0	16528.0	0.572
Apr	17.11	9.66	13.38	150	0	21814.0	0.614
May	18.55	11.33	14.94	107	0	25096.0	0.626
June	20.27	12.88	16.61	63	11	26670.0	0.636
July	20.94	13.55	17.27	44	11	26358.0	0.643
Aug	21.22	13.77	17.50	41	15	23295.0	0.624
Sept	22.38	13.66	18.05	32	24	19306.0	0.612
Oct	20.38	11.88	16.16	75	7	13755.0	0.559
Nov	16.66	9.16	12.94	161	0	9330.0	0.506
Dec	13.05	6.77	9.94	260	0	7343.0	0.478
Ann	17.77	10.38	14.11	1616	71	17423.0	0.591

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	54.5	42.7	48.6	508	0	707.8	192.0
Feb	58.0	45.7	51.9	365	0	1017.5	276.0
Mar	60.2	47.2	53.7	349	0	1456.3	395.0
Apr	62.8	49.4	56.1	270	0	1922.1	521.4
May	65.4	52.4	58.9	193	0	2211.3	599.8
June	68.5	55.2	61.9	113	20	2350.0	637.4
July	69.7	56.4	63.1	79	20	2322.5	630.0
Aug	70.2	56.8	63.5	74	27	2052.6	556.8
Sept	72.3	56.6	64.5	58	43	1701.1	461.4
Oct	68.7	53.4	61.1	135	13	1212.0	328.8
Nov	62.0	48.5	55.3	290	0	822.1	223.0
Dec	55.5	44.2	49.9	468	0	647.0	175.5
Ann	64.0	50.7	57.4	2909	128	1535.2	416.4

LATITUDE: 37° 44′ N
LONGITUDE: 122° 12′ W
ELEVATION: 2 meters (6.6 feet)

STATION NO. 23230

Oakland, California

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10523.0	0.553
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13845.0	0.578
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18564.0	0.611
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22142.0	0.609
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22902.0	0.569
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	23317.0	0.558
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	24041.0	0.587
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21959.0	0.580
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18246.0	0.557
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14709.0	0.557
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11421.0	0.555
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9717.0	0.552
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17616.0	0.574

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	927.2	251.5
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1219.9	330.9
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1635.7	443.7
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1951.0	529.2
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2018.0	547.4
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2054.6	557.3
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2118.3	574.6
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1934.9	524.8
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1607.7	436.1
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1296.1	351.6
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1006.4	273.0
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	856.2	232.2
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1552.2	421.0

STATION NO. 93111

Point Mugu, California

LATITUDE: 34° 7′ N
LONGITUDE: 119° 7′ W
ELEVATION: 4 meters (13.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	12.00	2.61	7.33	341	0	6471.0	0.422
Feb	15.27	4.66	10.00	233	0	10129.0	0.492
Mar	17.66	5.83	11.77	203	0	15369.0	0.553
Apr	22.00	8.50	15.27	121	29	21677.0	0.621
May	27.00	12.33	19.66	35	77	26953.0	0.675
June	31.83	16.50	24.16	4	179	29505.0	0.702
July	36.66	19.22	27.94	0	297	30320.0	0.740
Aug	35.38	17.83	26.61	0	256	26224.0	0.710
Sept	32.55	15.55	24.05	0	171	20941.0	0.683
Oct	25.72	10.94	18.33	45	45	13931.0	0.597
Nov	17.77	6.27	12.05	188	0	8017.0	0.472
Dec	12.61	3.38	8.00	320	0	5796.0	0.419
Ann	23.88	10.33	17.11	1493	1057	17944.0	0.626

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	53.6	36.7	45.2	614	0	570.2	154.7
Feb	59.5	40.4	50.0	419	0	892.5	242.1
Mar	63.8	42.5	53.2	365	0	1354.2	367.3
Apr	71.6	47.3	59.5	218	52	1910.0	518.1
May	80.6	54.2	67.4	63	139	2374.9	644.2
June	89.3	61.7	75.5	7	322	2599.8	705.2
July	98.0	66.6	82.3	0	535	2671.6	724.7
Aug	95.7	64.1	79.9	0	461	2310.7	626.8
Sept	90.6	60.0	75.3	0	308	1845.2	500.5
Oct	78.3	51.7	65.0	81	81	1227.5	333.0
Nov	64.0	43.3	53.7	338	0	706.4	191.6
Dec	54.7	38.1	46.4	576	0	510.7	138.5
Ann	75.0	50.6	62.8	2687	1903	1581.1	428.9

LATITUDE: 40° 9′ N
LONGITUDE: 122° 15′ W
ELEVATION: 108 meters (354.2 feet)

STATION NO. 24216

Red Bluff, California

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	11.66	2.83	7.27	342	0	6774.0	0.415
Feb	15.05	4.66	9.88	236	0	10661.0	0.495
Mar	17.83	5.50	11.66	206	0	16551.0	0.580
Apr	21.83	7.38	14.61	126	14	22739.0	0.644
May	26.00	9.88	17.94	66	54	27632.0	0.690
June	30.22	12.55	21.38	11	102	30458.0	0.726
July	33.83	14.16	24.00	0	175	30506.0	0.744
Aug	32.94	13.83	23.38	0	158	26878.0	0.722
Sept	30.94	12.94	21.94	2	111	21639.0	0.692
Oct	25.05	9.72	17.38	56	26	14923.0	0.617
Nov	17.55	5.77	11.66	200	0	8874.0	0.494
Dec	11.83	3.50	7.66	330	0	6110.0	0.411
Ann	22.88	8.55	15.72	1579	643	18645.0	0.638

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	53.0	37.1	45.1	616	0	596.9	161.9
Feb	59.1	40.4	49.8	425	0	939.4	254.8
Mar	64.1	41.9	53.0	371	0	1458.4	395.6
Apr	71.3	45.3	58.3	227	25	2003.6	543.5
May	78.8	49.8	64.3	119	97	2434.8	660.4
June	86.4	54.6	70.5	20	184	2683.8	728.0
July	92.9	57.5	75.2	0	315	2688.0	729.1
Aug	91.3	56.9	74.1	0	284	2368.3	642.4
Sept	87.7	55.3	71.5	4	200	1906.7	517.2
Oct	77.1	49.5	63.3	101	47	1314.9	356.7
Nov	63.6	42.4	53.0	360	0	781.9	212.1
Dec	53.3	38.3	45.8	594	0	538.4	146.0
Ann	73.2	47.4	60.3	2842	1157	1642.9	445.6

STATION NO. 23232

Sacramento, California

LATITUDE: 38° 31′ N
LONGITUDE: 121° 30′ W
ELEVATION: 8 meters (26.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	18.11	7.66	12.88	174	5	11073.0	0.557
Feb	18.66	8.77	13.72	131	0	14371.0	0.581
Mar	18.88	10.05	14.44	121	0	18517.0	0.598
Apr	19.77	12.11	15.94	80	8	21980.0	0.600
May	20.77	14.00	17.38	43	14	22730.0	0.565
June	21.72	15.50	18.61	28	37	23404.0	0.562
July	24.05	17.72	20.88	3	82	24814.0	0.607
Aug	25.16	18.55	21.88	0	111	23348.0	0.614
Sept	24.72	17.33	21.05	8	90	19491.0	0.587
Oct	23.22	14.66	18.94	23	42	15586.0	0.576
Nov	21.16	10.83	16.00	77	7	12060.0	0.564
Dec	18.94	8.44	13.72	142	0	10257.0	0.556
Ann	21.27	13.00	17.16	837	401	18136.0	0.583

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	64.6	45.8	55.2	313	9	975.7	264.7
Feb	65.6	47.8	56.7	236	0	1266.3	343.5
Mar	66.0	50.1	58.0	218	0	1631.6	442.6
Apr	67.6	53.8	60.7	144	14	1936.7	525.3
May	69.4	57.2	63.3	77	25	2002.8	543.3
June	71.1	59.9	65.5	50	67	2062.2	559.4
July	75.3	63.9	69.6	5	148	2186.5	593.1
Aug	77.3	65.4	71.4	0	200	2057.3	558.0
Sept	76.5	63.2	69.9	14	162	1717.4	465.9
Oct	73.8	58.4	66.1	41	76	1373.3	372.5
Nov	70.1	51.5	60.8	139	13	1062.7	288.2
Dec	66.1	47.2	56.7	256	0	903.8	245.2
Ann	70.3	55.4	62.9	1507	722	1598.0	433.5

LATITUDE: 32° 44′ N
LONGITUDE: 117° 10′ W
ELEVATION: 9 meters (29.5 feet)

STATION NO. 23188

San Diego, California

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	12.94	5.11	9.05	287	0	8031.0	0.476
Feb	14.77	6.55	10.66	214	0	11454.0	0.520
Mar	16.11	7.16	11.66	206	0	16514.0	0.571
Apr	17.50	8.33	12.94	161	0	21790.0	0.613
May	19.22	9.94	14.61	116	0	25258.0	0.630
June	21.22	11.66	16.44	66	10	26975.0	0.643
July	21.61	12.22	16.94	51	8	27142.0	0.662
Aug	22.00	12.38	17.22	46	12	24020.0	0.643
Sept	23.11	12.50	17.83	36	21	19770.0	0.626
Oct	21.27	10.88	16.11	76	7	13915.0	0.564
Nov	17.38	8.44	12.94	161	0	9322.0	0.504
Dec	13.50	6.05	9.83	263	0	7290.0	0.472
Ann	18.38	9.27	13.83	1690	60	17623.0	0.597

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	55.3	41.2	48.3	517	0	707.6	191.9
Feb	58.6	43.8	51.2	385	0	1009.3	273.8
Mar	61.0	44.9	53.0	371	0	1455.1	394.7
Apr	63.5	47.0	55.3	290	0	1920.0	520.8
May	66.6	49.9	58.3	209	0	2225.6	603.7
June	70.2	53.0	61.6	119	18	2376.9	644.7
July	70.9	54.0	62.5	92	14	2391.6	648.7
Aug	71.6	54.3	63.0	83	22	2116.5	574.1
Sept	73.6	54.5	64.1	65	38	1742.0	472.5
Oct	70.3	51.6	61.0	137	13	1226.1	332.6
Nov	63.3	47.2	55.3	290	0	821.4	222.8
Dec	56.3	42.9	49.7	473	0	642.4	174.2
Ann	65.1	48.7	56.9	3042	108	1552.8	421.2

STATION NO. 23234

San Francisco, California

LATITUDE: 37° 37′ N
LONGITUDE: 122° 23′ W
ELEVATION: 5 meters (16.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	17.05	3.50	10.27	250	0	9690.0	0.522
Feb	17.55	4.61	11.11	202	0	12948.0	0.550
Mar	17.94	5.16	11.55	210	0	17953.0	0.597
Apr	18.88	6.50	12.72	168	0	21801.0	0.603
May	19.66	8.16	13.94	136	0	24294.0	0.604
June	20.94	9.72	15.33	92	2	26654.0	0.637
July	22.11	11.33	16.72	62	12	26569.0	0.648
Aug	22.27	11.38	16.83	56	10	23898.0	0.633
Sept	23.27	10.66	17.00	52	12	19637.0	0.604
Oct	22.94	8.61	15.77	88	9	15360.0	0.590
Nov	20.66	6.05	13.38	150	0	11049.0	0.549
Dec	17.88	4.05	11.00	227	0	9123.0	0.533
Ann	20.11	7.50	13.83	1696	46	18248.0	0.599

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	62.7	38.3	50.5	450	0	853.8	231.6
Feb	63.6	40.3	52.0	364	0	1140.9	309.5
Mar	64.3	41.3	52.8	378	0	1581.9	429.1
Apr	66.0	43.7	54.9	302	0	1921.0	521.1
May	67.4	46.7	57.1	245	0	2140.6	580.7
June	69.7	49.5	59.6	166	4	2348.6	637.1
July	71.8	52.4	62.1	112	22	2341.1	635.0
Aug	72.1	52.5	62.3	101	18	2105.7	571.2
Sept	73.9	51.2	62.6	94	22	1730.3	469.3
Oct	73.3	47.5	60.4	158	16	1353.4	367.1
Nov	69.2	42.9	56.1	270	0	973.6	264.1
Dec	64.2	39.3	51.8	409	0	803.9	218.0
Ann	68.2	45.5	56.9	3053	83	1607.9	436.1

LATITUDE: 34° 54′ N
LONGITUDE: 120° 27′ W
ELEVATION: 72 meters (236.2 feet)

SOLMET STATION NO. 23273

Santa Maria, California h

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8371.0	0.492
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11774.0	0.532
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	16857.0	0.581
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22060.0	0.620
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	25839.0	0.644
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	27837.0	0.664
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	27706.0	0.676
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	24594.0	0.657
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	19969.0	0.631
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14168.0	0.572
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9570.0	0.514
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	7494.0	0.482
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18020.0	0.609

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	737.6	200.1
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1037.5	281.4
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1485.3	402.9
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1943.8	527.3
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2276.8	617.6
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2452.8	665.3
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2441.3	662.2
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2167.1	587.8
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1759.5	477.3
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1248.4	338.6
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	843.3	228.7
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	660.3	179.1
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1587.8	430.7

STATION NO. 23244

Sunnyvale, California

LATITUDE: 37° 25′ N
LONGITUDE: 122° 4′ W
ELEVATION: 12 meters (39.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	5.00	−8.83	−1.88	626	0	10108.0	0.626
Feb	6.44	−7.27	−0.38	524	0	13371.0	0.626
Mar	8.72	−5.11	1.83	511	0	17591.0	0.619
Apr	15.11	0.61	7.88	313	0	21917.0	0.622
May	20.22	5.88	13.05	167	3	24158.0	0.604
June	25.61	10.61	18.11	57	50	26884.0	0.640
July	29.11	13.88	21.50	5	103	25102.0	0.612
Aug	28.00	13.22	20.61	7	77	22986.0	0.618
Sept	23.83	8.27	16.05	86	17	19964.0	0.640
Oct	17.88	2.66	10.27	253	3	15419.0	0.641
Nov	9.88	−3.83	3.05	458	0	10716.0	0.603
Dec	6.16	−7.27	−0.55	585	0	8874.0	0.604
Ann	16.33	1.88	9.11	3596	256	18091.0	0.621

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	41.0	16.1	28.6	1127	0	890.7	241.6
Feb	43.6	18.9	31.3	943	0	1178.2	319.6
Mar	47.7	22.8	35.3	920	0	1550.0	420.4
Apr	59.2	33.1	46.2	563	0	1931.2	523.8
May	68.4	42.6	55.5	301	5	2128.7	577.4
June	78.1	51.1	64.6	103	90	2368.9	642.6
July	84.4	57.0	70.7	9	185	2211.8	600.0
Aug	82.4	55.8	69.1	13	139	2025.4	549.4
Sept	74.9	46.9	60.9	155	31	1759.1	477.2
Oct	64.2	36.8	50.5	455	5	1358.6	368.5
Nov	49.8	25.1	37.5	824	0	944.2	256.1
Dec	43.1	18.9	31.0	1053	0	781.9	212.1
Ann	61.4	35.4	48.4	6473	461	1594.1	432.4

LATITUDE: 38° 49′ N
LONGITUDE: 104° 43′ W
ELEVATION: 1881 meters (6169.7 feet)

STATION NO. 93037

Colorado Springs, Colorado

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	6.38	−8.77	−1.16	604	0	9534.0	0.613
Feb	7.88	−6.99	0.44	501	0	12790.0	0.614
Mar	10.05	−4.55	2.77	482	0	17368.0	0.621
Apr	16.11	1.05	8.61	291	0	21328.0	0.609
May	21.27	6.44	13.88	140	0	24229.0	0.607
June	26.72	11.05	18.88	44	61	26678.0	0.635
July	30.77	14.77	22.77	0	137	25792.0	0.629
Aug	29.88	14.11	22.00	0	115	23198.0	0.627
Sept	25.38	8.77	17.11	66	30	19597.0	0.636
Oct	19.33	2.88	11.11	226	2	14759.0	0.626
Nov	11.83	−3.66	4.11	426	0	10027.0	0.582
Dec	7.88	−7.27	0.33	557	0	8305.0	0.589
Ann	17.77	2.33	10.05	3342	347	17800.0	0.618

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	43.5	16.2	29.9	1087	0	840.1	227.9
Feb	46.2	19.4	32.8	902	0	1127.0	305.7
Mar	50.1	23.8	37.0	868	0	1530.4	415.1
Apr	61.0	33.9	47.5	524	0	1879.3	509.8
May	70.3	43.6	57.0	252	0	2134.9	579.1
June	80.1	51.9	66.0	79	110	2350.7	637.6
July	87.4	58.6	73.0	0	247	2272.6	616.5
Aug	85.8	57.4	71.6	0	207	2044.1	554.5
Sept	77.7	47.8	62.8	119	54	1726.8	468.4
Oct	66.8	37.2	52.0	407	4	1300.5	352.8
Nov	53.3	25.4	39.4	767	0	883.5	239.7
Dec	46.2	18.9	32.6	1003	0	731.8	198.5
Ann	64.0	36.2	50.1	6016	625	1568.4	425.4

STATION NO. 23062

Denver, Colorado

LATITUDE: 39° 45′ N
LONGITUDE: 104° 52′ W
ELEVATION: 1625 meters (5330.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−7.77	809	0	8559.0	0.548
Feb	0.0 ND	0.0 ND	−4.83	648	0	12234.0	0.586
Mar	0.0 ND	0.0 ND	−0.49	583	0	17043.0	0.608
Apr	0.0 ND	0.0 ND	5.50	385	0	21933.0	0.626
May	0.0 ND	0.0 ND	10.72	236	0	25595.0	0.641
June	0.0 ND	0.0 ND	14.94	105	3	28473.0	0.678
July	0.0 ND	0.0 ND	18.83	23	39	27062.0	0.660
Aug	0.0 ND	0.0 ND	17.61	43	21	23649.0	0.638
Sept	0.0 ND	0.0 ND	13.11	158	0	20051.0	0.650
Oct	0.0 ND	0.0 ND	7.11	347	0	14835.0	0.628
Nov	0.0 ND	0.0 ND	−0.61	568	0	9858.0	0.571
Dec	0.0 ND	0.0 ND	−6.49	770	0	7841.0	0.554
Ann	0.0 ND	0.0 ND	5.66	4681	65	18094.0	0.628

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	18.0	1456	0	754.2	204.6
Feb	0.0 ND	0.0 ND	23.3	1166	0	1078.0	292.4
Mar	0.0 ND	0.0 ND	31.1	1049	0	1501.7	407.3
Apr	0.0 ND	0.0 ND	41.9	693	0	1932.6	524.2
May	0.0 ND	0.0 ND	51.3	425	0	2255.3	611.7
June	0.0 ND	0.0 ND	58.9	189	5	2508.9	680.5
July	0.0 ND	0.0 ND	65.9	41	70	2384.5	646.8
Aug	0.0 ND	0.0 ND	63.7	77	38	2083.8	565.2
Sept	0.0 ND	0.0 ND	55.6	284	0	1766.8	479.2
Oct	0.0 ND	0.0 ND	44.8	625	0	1307.2	354.6
Nov	0.0 ND	0.0 ND	30.9	1022	0	868.6	235.6
Dec	0.0 ND	0.0 ND	20.3	1386	0	690.9	187.4
Ann	0.0 ND	0.0 ND	42.2	8426	117	1594.3	432.5

LATITUDE: 39° 39′ N
LONGITUDE: 106° 55′ W
ELEVATION: 1985 meters (6510.8 feet)

STATION NO. 23063

Eagle, Colorado

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	2.61	−8.61	−2.99	661	0	8980.0	0.563
Feb	6.66	−4.88	0.88	488	0	12699.0	0.599
Mar	11.55	−1.33	5.11	410	0	17630.0	0.624
Apr	18.11	3.77	10.94	224	0	22543.0	0.641
May	24.33	9.16	16.77	73	26	27008.0	0.675
June	29.94	13.66	21.83	11	116	29490.0	0.702
July	33.94	17.88	25.94	0	236	27977.0	0.682
Aug	31.72	16.44	24.11	0	178	24763.0	0.667
Sept	27.38	11.66	19.55	33	70	20818.0	0.670
Oct	19.94	5.50	12.72	180	6	15264.0	0.639
Nov	10.50	−1.88	4.33	420	0	10419.0	0.592
Dec	4.11	−6.88	−1.38	611	0	8300.0	0.573
Ann	18.38	4.55	11.50	3113	633	18824.0	0.649

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	36.7	16.5	26.6	1190	0	791.3	214.6
Feb	44.0	23.2	33.6	878	0	1119.0	303.5
Mar	52.8	29.6	41.2	738	0	1553.5	421.4
Apr	64.6	38.8	51.7	403	0	1986.4	538.8
May	75.8	48.5	62.2	131	47	2379.8	645.5
June	85.9	56.6	71.3	20	209	2598.5	704.8
July	93.1	64.2	78.7	0	425	2465.2	668.7
Aug	89.1	61.6	75.4	0	320	2182.0	591.9
Sept	81.3	53.0	67.2	59	126	1834.4	497.6
Oct	67.9	41.9	54.9	324	11	1345.0	364.8
Nov	50.9	28.6	39.8	756	0	918.1	249.0
Dec	39.4	19.6	29.5	1100	0	731.3	198.4
Ann	65.1	40.2	52.7	5603	1139	1658.7	449.9

STATION NO. 23066

Grand Junction, Colorado

LATITUDE: 39° 7′ N
LONGITUDE: 108° 32′ W
ELEVATION: 1475 meters (4838.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	7.50	−9.61	−1.05	601	0	10149.0	0.616
Feb	9.88	−6.88	1.50	471	0	13296.0	0.614
Mar	12.72	−3.88	4.44	430	0	17747.0	0.620
Apr	19.11	2.72	10.94	225	3	22198.0	0.627
May	24.16	8.11	16.16	82	15	24542.0	0.613
June	29.88	13.11	21.50	15	110	27626.0	0.658
July	32.83	16.44	24.66	0	196	26234.0	0.640
Aug	31.55	15.61	23.61	0	163	23855.0	0.640
Sept	27.50	10.44	19.00	30	50	20195.0	0.644
Oct	21.50	3.44	12.50	186	5	15445.0	0.635
Nov	13.61	−3.83	4.88	403	0	10825.0	0.598
Dec	9.00	−7.94	0.55	551	0	8877.0	0.591
Ann	19.94	3.16	11.55	2996	545	18416.0	0.628

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	45.5	14.7	30.1	1082	0	894.3	242.6
Feb	49.8	19.6	34.7	848	0	1171.6	317.8
Mar	54.9	25.0	40.0	774	0	1563.8	424.2
Apr	66.4	36.9	51.7	405	5	1956.0	530.6
May	75.5	46.6	61.1	148	27	2162.5	586.6
June	85.8	55.6	70.7	27	198	2434.2	660.3
July	91.1	61.6	76.4	0	353	2311.6	627.0
Aug	88.8	60.1	74.5	0	293	2102.0	570.2
Sept	81.5	50.8	66.2	54	90	1779.5	482.7
Oct	70.7	38.2	54.5	335	9	1360.9	369.2
Nov	56.5	25.1	40.8	725	0	953.8	258.7
Dec	48.2	17.7	33.0	992	0	782.2	212.2
Ann	67.9	37.7	52.8	5393	981	1622.7	440.2

LATITUDE: 38° 17′ N
LONGITUDE: 104° 31′ W
ELEVATION: 1439 meters (4719.9 feet)

STATION NO. 93058

Pueblo, Colorado

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.77	−8.83	−3.99	692	0	5419.0	0.381
Feb	2.05	−7.83	−2.88	594	0	8111.0	0.415
Mar	7.00	−2.99	2.00	506	0	11105.0	0.412
Apr	14.94	2.50	8.72	288	0	14924.0	0.434
May	21.27	7.88	14.61	125	10	17801.0	0.448
June	26.38	13.33	19.88	13	60	19130.0	0.455
July	28.94	16.22	22.61	0	132	18714.0	0.457
Aug	27.72	14.94	21.33	6	99	16135.0	0.441
Sept	23.61	10.55	17.11	58	22	13102.0	0.437
Oct	17.94	4.88	11.44	213	0	9679.0	0.432
Nov	10.33	−0.05	5.16	395	0	5644.0	0.355
Dec	2.66	−6.88	−2.11	633	0	4370.0	0.343
Ann	15.33	3.66	9.50	3527	324	12011.0	0.429

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65°F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	33.4	16.1	24.8	1246	0	477.5	129.5
Feb	35.7	17.9	26.8	1069	0	714.7	193.9
Mar	44.6	26.6	35.6	911	0	978.5	265.4
Apr	58.9	36.5	47.7	518	0	1315.0	356.7
May	70.3	46.2	58.3	225	18	1568.5	425.5
June	79.5	56.0	67.8	23	108	1685.6	457.2
July	84.1	61.2	72.7	0	238	1649.0	447.3
Aug	81.9	58.9	70.4	11	178	1421.7	385.6
Sept	74.5	51.0	62.8	104	40	1154.5	313.2
Oct	64.3	40.8	52.6	383	0	852.9	231.3
Nov	50.6	31.9	41.3	711	0	497.3	134.9
Dec	36.8	19.6	28.2	1139	0	385.1	104.4
Ann	59.6	38.6	49.1	6349	583	1058.3	287.1

STATION NO. 14740

Hartford, Connecticut

LATITUDE: 41° 56′ N
LONGITUDE: 72° 41′ W
ELEVATION: 55 meters (180.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15923.0	0.584
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18704.0	0.604
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21862.0	0.622
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	24060.0	0.630
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	23125.0	0.585
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22253.0	0.559
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	23633.0	0.598
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22726.0	0.590
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20700.0	0.572
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17983.0	0.554
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	16249.0	0.573
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14901.0	0.571
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20177.0	0.587

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1403.0	380.6
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1648.1	447.0
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1926.3	522.5
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2120.0	575.1
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2037.6	552.7
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1960.8	531.9
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2082.4	564.9
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2002.5	543.2
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1824.0	494.8
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1584.6	429.8
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1431.8	388.4
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1313.0	356.1
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1777.9	482.3

LATITUDE: 19° 54′ N
LONGITUDE: 75° 9′ W
ELEVATION: 16 meters (52.5 feet)

STATION NO. 11706

Guantanamo Bay, Cuba

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	4.55	−4.55	0.00	568	0	6485.0	0.415
Feb	5.66	−3.94	0.88	488	0	9386.0	0.450
Mar	10.61	0.00	5.33	402	0	13042.0	0.465
Apr	17.22	5.27	11.27	211	0	16798.0	0.480
May	22.83	10.88	16.88	71	26	19409.0	0.486
June	27.55	16.16	21.88	0	108	21365.0	0.509
July	29.72	18.94	24.33	0	186	20687.0	0.505
Aug	28.83	17.94	23.38	0	156	18324.0	0.495
Sept	25.66	14.22	19.94	17	66	14955.0	0.485
Oct	19.88	8.05	14.00	141	6	11166.0	0.473
Nov	12.88	2.33	7.61	321	0	7315.0	0.424
Dec	6.11	−3.16	1.50	521	0	5545.0	0.392
Ann	17.61	6.83	12.22	2744	551	13706.0	0.476

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	40.2	23.8	32.0	1022	0	571.4	155.0
Feb	42.2	24.9	33.6	878	0	827.0	224.3
Mar	51.1	32.0	41.6	724	0	1149.2	311.7
Apr	63.0	41.5	52.3	380	0	1480.1	401.5
May	73.1	51.6	62.4	128	47	1710.2	463.9
June	81.6	61.1	71.4	0	194	1882.6	510.6
July	85.5	66.1	75.8	0	335	1822.8	494.4
Aug	83.9	64.3	74.1	0	281	1614.6	438.0
Sept	78.2	57.6	67.9	31	119	1317.7	357.4
Oct	67.8	46.5	57.2	254	11	983.9	266.9
Nov	55.2	36.2	45.7	578	0	644.6	174.8
Dec	43.0	26.3	34.7	938	0	488.6	132.5
Ann	63.7	44.3	54.0	4939	992	1207.7	327.6

STATION NO.13781

Wilmington, Delaware

LATITUDE: 39° 40′ N
LONGITUDE: 75° 36′ W
ELEVATION: 24 meters (78.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	5.11	−4.99	0.05	566	0	6492.0	0.404
Feb	6.33	−4.38	1.00	485	0	9253.0	0.435
Mar	11.50	−0.61	5.44	399	0	12768.0	0.450
Apr	18.33	5.05	11.72	198	0	16557.0	0.470
May	23.61	10.33	17.00	72	31	19499.0	0.488
June	28.16	15.22	21.72	2	104	21573.0	0.514
July	30.22	17.83	24.05	0	177	20627.0	0.503
Aug	29.44	16.72	23.11	0	148	18356.0	0.494
Sept	25.94	12.77	19.38	23	55	15208.0	0.489
Oct	20.11	6.38	13.27	161	5	11392.0	0.475
Nov	13.11	0.94	7.05	338	0	7387.0	0.417
Dec	6.27	−4.05	1.11	533	0	5460.0	0.374
Ann	18.16	5.94	12.05	2783	522	13714.0	0.472

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	41.2	23.0	32.1	1019	0	572.0	155.2
Feb	43.4	24.1	33.8	873	0	815.3	221.2
Mar	52.7	30.9	41.8	718	0	1125.0	305.2
Apr	65.0	41.1	53.1	356	0	1458.9	395.7
May	74.5	50.6	62.6	130	56	1718.1	466.0
June	82.7	59.4	71.1	4	187	1900.9	515.6
July	86.4	64.1	75.3	0	319	1817.5	493.0
Aug	85.0	62.1	73.6	0	266	1617.4	438.7
Sept	78.7	55.0	66.9	41	99	1340.0	363.5
Oct	68.2	43.5	55.9	290	9	1003.8	272.3
Nov	55.6	33.7	44.7	608	0	650.9	176.6
Dec	43.3	24.7	34.0	959	0	481.1	130.5
Ann	64.7	42.7	53.7	5009	940	1208.4	327.8

LATITUDE: 38° 57′ N
LONGITUDE: 77° 27′ W
ELEVATION: 88 meters (288.6 feet)

SOLMET STATION NO. 93734

Washington / Sterling, District of Columbia

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	16.16	7.94	12.05	204	10	9679.0	0.447
Feb	17.27	9.16	13.22	161	17	12778.0	0.486
Mar	19.77	12.11	15.94	97	23	16728.0	0.521
Apr	23.88	16.38	20.16	16	71	21324.0	0.574
May	27.66	20.00	23.83	0	170	23726.0	0.590
June	30.22	23.11	26.66	0	250	22678.0	0.548
July	30.83	24.00	27.44	0	282	20582.0	0.505
Aug	30.94	24.00	27.50	0	284	19151.0	0.500
Sept	29.27	22.44	25.88	0	226	17425.0	0.512
Oct	25.72	17.38	21.55	12	112	15564.0	0.547
Nov	20.55	11.77	16.16	87	22	11804.0	0.511
Dec	17.05	8.66	12.88	176	7	9279.0	0.457
Ann	24.11	16.44	20.27	756	1479	16726.0	0.523

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	61.1	46.3	53.7	367	18	852.9	231.3
Feb	63.1	48.5	55.8	290	31	1125.9	305.4
Mar	67.6	53.8	60.7	175	41	1474.0	399.8
Apr	75.0	61.5	68.3	29	128	1878.9	509.7
May	81.8	68.0	74.9	0	306	2090.6	567.1
June	86.4	73.6	80.0	0	450	1998.3	542.0
July	87.5	75.2	81.4	0	508	1813.6	491.9
Aug	87.7	75.2	81.5	0	511	1687.5	457.7
Sept	84.7	72.4	78.6	0	407	1535.4	416.5
Oct	78.3	63.3	70.8	22	202	1371.4	372.0
Nov	69.0	53.2	61.1	157	40	1040.1	282.1
Dec	62.7	47.6	55.2	317	13	817.6	221.8
Ann	75.4	61.6	68.5	1361	2662	1473.8	399.8

SOLMET STATION NO. 12832

Apalachicola, Florida

LATITUDE: 29° 44′ N
LONGITUDE: 85° 2′ W
STATION ELEVATION: 6 meters (19.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	20.61	8.66	14.66	133	20	10877.0	0.495
Feb	21.33	9.27	15.33	116	32	13767.0	0.518
Mar	23.61	11.83	17.72	66	47	17567.0	0.544
Apr	26.77	15.11	20.94	9	87	21379.0	0.574
May	29.55	18.22	23.88	0	172	22336.0	0.555
June	31.33	21.33	26.33	0	240	20723.0	0.502
July	32.00	22.38	27.22	0	275	20247.0	0.498
Aug	31.88	22.66	27.27	0	277	19088.0	0.498
Sept	30.55	22.22	26.38	0	241	16769.0	0.490
Oct	27.44	18.44	22.94	2	145	14202.0	0.495
Nov	23.94	12.83	18.38	53	55	11752.0	0.502
Dec	21.22	9.44	15.33	117	25	9878.0	0.479
Ann	26.66	16.05	21.38	501	1621	16548.0	0.515

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	69.1	47.6	58.4	239	36	958.4	260.0
Feb	70.4	48.7	59.6	209	58	1213.1	329.0
Mar	74.5	53.3	63.9	119	85	1547.9	419.9
Apr	80.2	59.2	69.7	16	157	1883.8	511.0
May	85.2	64.8	75.0	0	310	1968.1	533.9
June	88.4	70.4	79.4	0	432	1826.0	495.3
July	89.6	72.3	81.0	0	495	1784.0	483.9
Aug	89.4	72.8	81.1	0	499	1681.9	456.2
Sept	87.0	72.0	79.5	0	434	1477.6	400.8
Oct	81.4	65.2	73.3	4	261	1251.4	339.4
Nov	75.1	55.1	65.1	95	99	1035.5	280.9
Dec	70.2	49.0	59.6	211	45	870.4	236.1
Ann	80.0	60.9	70.5	902	2918	1458.1	395.5

LATITUDE: 29° 11′ N
LONGITUDE: 81° 3′ W
STATION ELEVATION: 12 meters (39.4 feet)

STATION NO. 12834

Daytona Beach, Florida

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	18.11	6.94	12.55	193	13	10213.0	0.481
Feb	19.38	7.61	13.50	156	21	13214.0	0.510
Mar	22.33	10.05	16.22	97	32	17270.0	0.543
Apr	26.11	13.94	20.05	13	65	21060.0	0.569
May	29.22	17.72	23.50	0	160	22202.0	0.552
June	31.27	21.11	26.22	0	236	21395.0	0.516
July	32.22	22.22	27.22	0	275	20451.0	0.501
Aug	32.05	22.38	27.22	0	275	19227.0	0.503
Sept	30.00	21.33	25.66	0	220	16369.0	0.484
Oct	26.22	16.50	21.38	10	105	13881.0	0.494
Nov	21.88	10.55	16.22	89	26	11303.0	0.499
Dec	18.66	7.27	13.00	176	10	9279.0	0.468
Ann	25.61	14.83	20.22	737	1442	16322.0	0.514

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	64.6	44.5	54.6	347	23	899.9	244.1
Feb	66.9	45.7	56.3	281	38	1164.3	315.8
Mar	72.2	50.1	61.2	175	58	1521.7	412.8
Apr	79.0	57.1	68.1	23	117	1855.7	503.4
May	84.6	63.9	74.3	0	288	1956.3	530.7
June	88.3	70.0	79.2	0	425	1885.2	511.4
July	90.0	72.0	81.0	0	495	1802.0	488.8
Aug	89.7	72.3	81.0	0	495	1694.2	459.5
Sept	86.0	70.4	78.2	0	396	1442.3	391.2
Oct	79.2	61.7	70.5	18	189	1223.1	331.8
Nov	71.4	51.0	61.2	160	47	996.0	270.2
Dec	65.6	45.1	55.4	317	18	817.6	221.8
Ann	78.1	58.7	68.4	1327	2596	1438.2	390.1

STATION NO. 13889

Jacksonville, Florida

LATITUDE: 30° 30′ N
LONGITUDE: 81° 42′ W
STATION ELEVATION: 9 meters (29.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	24.22	14.83	19.55	29	67	12000.0	0.501
Feb	24.77	15.00	19.88	37	80	14912.0	0.528
Mar	26.38	17.22	21.83	9	117	18196.0	0.544
Apr	28.16	19.61	23.88	0	166	21098.0	0.560
May	29.61	21.50	25.55	0	223	20923.0	0.522
June	31.11	23.27	27.22	0	266	19383.0	0.475
July	31.72	24.16	27.94	0	297	20013.0	0.496
Aug	32.16	24.33	28.27	0	308	18497.0	0.480
Sept	31.27	23.88	27.61	0	278	16527.0	0.472
Oct	29.22	21.66	25.44	0	220	14784.0	0.490
Nov	26.61	18.05	22.33	7	127	12695.0	0.502
Dec	24.77	15.55	20.16	31	88	11566.0	0.510
Ann	28.33	19.94	24.16	114	2243	16716.0	0.506

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	75.6	58.7	67.2	52	121	1057.4	286.8
Feb	76.6	59.0	67.8	67	144	1314.0	356.4
Mar	79.5	63.0	71.3	16	211	1603.3	434.9
Apr	82.7	67.3	75.0	0	299	1859.0	504.3
May	85.3	70.7	78.0	0	401	1843.6	500.1
June	88.0	73.9	81.0	0	479	1707.9	463.3
July	89.1	75.5	82.3	0	535	1763.4	478.3
Aug	89.9	75.8	82.9	0	554	1629.8	442.1
Sept	88.3	75.0	81.7	0	500	1456.3	395.0
Oct	84.6	71.0	77.8	0	396	1302.7	353.4
Nov	79.9	64.5	72.2	13	229	1118.6	303.4
Dec	76.6	60.0	68.3	56	158	1019.1	276.4
Ann	83.0	67.9	75.5	205	4037	1472.9	399.5

LATITUDE: 25° 48′ N
LONGITUDE: 80° 16′ W
STATION ELEVATION: 2 meters (6.6 feet)

SOLMET STATION NO. 12839

Miami, Florida

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	21.38	10.00	15.72	109	28	11341.0	0.507
Feb	22.11	10.66	16.38	102	47	14112.0	0.525
Mar	24.44	13.16	18.83	52	67	17957.0	0.552
Apr	27.50	16.16	21.83	7	112	21541.0	0.577
May	30.38	18.94	24.66	0	196	22573.0	0.561
June	31.83	21.72	26.77	0	253	20783.0	0.504
July	32.11	22.72	27.44	0	282	20443.0	0.503
Aug	32.22	23.05	27.66	0	289	18989.0	0.495
Sept	31.05	22.38	26.72	0	251	16985.0	0.494
Oct	28.05	18.88	23.50	0	160	14803.0	0.511
Nov	24.55	13.83	19.22	41	68	12439.0	0.524
Dec	21.94	10.83	16.38	94	34	10510.0	0.500
Ann	27.27	16.88	22.11	407	1792	16873.0	0.522

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	70.5	50.0	60.3	196	50	999.3	271.1
Feb	71.8	51.2	61.5	184	85	1243.5	337.3
Mar	76.0	55.7	65.9	94	121	1582.3	429.2
Apr	81.5	61.1	71.3	13	202	1898.1	514.9
May	86.7	66.1	76.4	0	353	1989.0	539.5
June	89.3	71.1	80.2	0	455	1831.3	496.7
July	89.8	72.9	81.4	0	508	1801.3	488.6
Aug	90.0	73.5	81.8	0	520	1673.2	453.9
Sept	87.9	72.3	80.1	0	452	1496.6	406.0
Oct	82.5	66.0	74.3	0	288	1304.4	353.8
Nov	76.2	56.9	66.6	74	122	1096.1	297.3
Dec	71.5	51.5	61.5	169	61	926.1	251.2
Ann	81.1	62.4	71.8	733	3226	1486.7	403.3

STATION NO. 12841

Orlando, Florida

LATITUDE: 28° 33′ N
LONGITUDE: 81° 20′ W
STATION ELEVATION: 36 meters (118.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	17.88	5.00	11.44	226	12	9948.0	0.467
Feb	19.16	6.11	12.66	179	21	12911.0	0.497
Mar	22.27	9.11	15.72	103	22	16791.0	0.527
Apr	26.72	13.16	19.94	18	67	20689.0	0.559
May	30.38	17.11	23.77	0	168	21970.0	0.546
June	32.44	20.88	26.66	0	250	21367.0	0.516
July	32.55	22.00	27.27	0	277	19841.0	0.487
Aug	32.50	22.05	27.27	0	277	19014.0	0.497
Sept	30.77	20.38	25.61	0	218	16944.0	0.500
Oct	27.00	14.38	20.72	17	91	14955.0	0.531
Nov	21.88	8.00	14.94	113	11	11445.0	0.504
Dec	18.38	5.16	11.77	208	5	9225.0	0.463
Ann	26.00	13.61	19.83	868	1423	16258.0	0.511

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	64.2	41.0	52.6	407	22	876.6	237.8
Feb	66.5	43.0	54.8	322	38	1137.6	308.6
Mar	72.1	48.4	60.3	185	40	1479.5	401.3
Apr	80.1	55.7	67.9	32	121	1823.0	494.5
May	86.7	62.8	74.8	0	302	1935.9	525.1
June	90.4	69.6	80.0	0	450	1882.7	510.7
July	90.6	71.6	81.1	0	499	1748.3	474.2
Aug	90.5	71.7	81.1	0	499	1675.4	454.5
Sept	87.4	68.7	78.1	0	392	1493.0	405.0
Oct	80.6	57.9	69.3	31	164	1317.7	357.4
Nov	71.4	46.4	58.9	203	20	1008.5	273.5
Dec	65.1	41.3	53.2	374	9	812.9	220.5
Ann	78.8	56.5	67.7	1562	2561	1432.6	388.6

LATITUDE: 30° 23′ N
LONGITUDE: 84° 22′ W
STATION ELEVATION: 21 meters (68.9 feet)

STATION NO. 93805

Tallahassee, Florida

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	21.44	10.05	15.77	112	33	11470.0	0.505
Feb	22.16	10.94	16.55	97	48	14293.0	0.526
Mar	24.50	13.27	18.88	50	67	18087.0	0.553
Apr	28.00	16.44	22.22	5	121	21660.0	0.579
May	30.83	19.38	25.11	0	210	22677.0	0.564
June	32.16	22.22	27.22	0	266	20966.0	0.510
July	32.27	23.16	27.72	0	291	19891.0	0.490
Aug	32.44	23.33	27.88	0	296	18761.0	0.488
Sept	31.66	22.55	27.11	0	263	16933.0	0.491
Oct	28.83	18.61	23.72	0	167	15280.0	0.523
Nov	25.05	13.55	19.33	39	69	12572.0	0.522
Dec	22.22	10.66	16.44	93	35	10616.0	0.497
Ann	27.61	17.00	22.33	398	1870	16934.0	0.521

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	70.6	50.1	60.4	202	59	1010.7	274.1
Feb	71.9	51.7	61.8	175	86	1259.4	341.6
Mar	76.1	55.9	66.0	90	121	1593.7	432.3
Apr	82.4	61.6	72.0	9	218	1908.5	517.7
May	87.5	66.9	77.2	0	378	1998.2	542.0
June	89.9	72.0	81.0	0	479	1847.4	501.1
July	90.1	73.7	81.9	0	524	1752.7	475.4
Aug	90.4	74.0	82.2	0	533	1653.1	448.4
Sept	89.0	72.6	80.8	0	473	1492.0	404.7
Oct	83.9	65.5	74.7	0	301	1346.4	365.2
Nov	77.1	56.4	66.8	70	124	1107.8	300.5
Dec	72.0	51.2	61.6	167	63	935.4	253.7
Ann	81.7	62.6	72.2	716	3366	1492.1	404.7

STATION NO. 12842

Tampa, Florida

LATITUDE: 27° 58′ N
LONGITUDE: 82° 32′ W
STATION ELEVATION: 3 meters (9.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	23.88	13.27	18.61	46	54	11347.0	0.484
Feb	24.44	13.44	18.94	50	67	13990.0	0.503
Mar	26.27	15.66	21.00	13	96	17661.0	0.533
Apr	28.27	18.27	23.27	0	150	20593.0	0.548
May	30.05	20.50	25.27	0	215	20934.0	0.522
June	31.27	22.61	26.94	0	258	19365.0	0.473
July	32.00	23.38	27.72	0	291	20186.0	0.499
Aug	32.33	23.55	27.94	0	297	18877.0	0.490
Sept	31.27	23.72	27.50	0	275	16100.0	0.462
Oct	29.05	21.16	25.11	0	210	13889.0	0.466
Nov	26.38	16.94	21.66	12	112	12030.0	0.485
Dec	24.50	14.11	19.33	43	74	10875.0	0.491
Ann	28.33	18.88	23.61	166	2103	16321.0	0.497

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	75.0	55.9	65.5	83	97	999.8	271.2
Feb	76.0	56.2	66.1	90	121	1232.7	334.4
Mar	79.3	60.2	69.8	23	173	1556.2	422.1
Apr	82.9	64.9	73.9	0	270	1814.5	492.2
May	86.1	68.9	77.5	0	387	1844.6	500.3
June	88.3	72.7	80.5	0	464	1706.3	462.8
July	89.6	74.1	81.9	0	524	1778.7	482.5
Aug	90.2	74.4	82.3	0	535	1663.3	451.2
Sept	88.3	74.7	81.5	0	495	1418.6	384.8
Oct	84.3	70.1	77.2	0	378	1223.8	332.0
Nov	79.5	62.5	71.0	22	202	1060.0	287.5
Dec	76.1	57.4	66.8	77	133	958.2	259.9
Ann	83.0	66.0	74.5	299	3785	1438.1	390.1

LATITUDE: 26° 41′ N
LONGITUDE: 80° 6′ W
ELEVATION: 6 meters (19.7 feet)

STATION NO. 12844

West Palm Beach, Florida

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	10.77	0.77	5.77	389	0	8144.0	0.422
Feb	12.50	1.94	7.22	311	0	10996.0	0.454
Mar	16.16	5.05	10.61	246	6	14795.0	0.484
Apr	21.88	10.38	16.16	80	15	19136.0	0.525
May	26.11	15.11	20.61	15	85	21039.0	0.523
June	29.22	19.22	24.22	0	178	21720.0	0.521
July	30.27	20.77	25.55	0	223	20566.0	0.502
Aug	30.22	20.33	25.27	0	215	19390.0	0.511
Sept	27.33	17.44	22.38	4	126	16138.0	0.490
Oct	22.50	11.27	16.88	76	31	13618.0	0.511
Nov	16.61	4.88	10.77	226	0	10020.0	0.481
Dec	11.50	1.27	6.38	370	0	7652.0	0.428
Ann	21.27	10.72	16.00	1719	882	15268.0	0.495

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	51.4	33.4	42.4	700	0	717.6	194.6
Feb	54.5	35.5	45.0	560	0	968.9	262.8
Mar	61.1	41.1	51.1	443	11	1303.6	353.6
Apr	71.4	50.7	61.1	144	27	1686.2	457.4
May	79.0	59.2	69.1	27	153	1853.8	502.9
June	84.6	66.6	75.6	0	320	1913.8	519.1
July	86.5	69.4	78.0	0	401	1812.2	491.5
Aug	86.4	68.6	77.5	0	387	1708.5	463.4
Sept	81.2	63.4	72.3	7	227	1422.0	385.7
Oct	72.5	52.3	62.4	137	56	1199.9	325.5
Nov	61.9	40.8	51.4	407	0	882.9	239.5
Dec	52.7	34.3	43.5	666	0	674.2	182.9
Ann	70.3	51.3	60.8	3094	1588	1345.3	364.9

STATION NO. 13874

Atlanta, Georgia

LATITUDE: 33° 39′ N
LONGITUDE: 84° 26′ W
ELEVATION: 315 meters (1033.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	14.22	1.11	7.66	333	3	8523.0	0.437
Feb	15.83	2.27	9.05	263	4	11522.0	0.473
Mar	19.50	5.55	12.55	192	12	15188.0	0.495
Apr	24.94	10.38	17.66	50	30	19616.0	0.538
May	29.00	15.05	22.05	5	121	21167.0	0.526
June	32.00	19.27	25.66	0	220	21605.0	0.518
July	32.66	21.05	26.88	0	265	20468.0	0.500
Aug	32.33	20.55	26.44	0	251	18920.0	0.498
Sept	29.55	17.33	23.44	0	155	15998.0	0.485
Oct	25.00	10.66	17.83	57	42	13841.0	0.517
Nov	19.50	4.55	12.05	191	2	10401.0	0.495
Dec	14.83	1.16	8.00	320	0	8182.0	0.453
Ann	24.11	10.77	17.44	1415	1108	15453.0	0.500

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	57.6	34.0	45.8	599	5	751.0	203.7
Feb	60.5	36.1	48.3	473	7	1015.2	275.4
Mar	67.1	42.0	54.6	346	22	1338.3	363.0
Apr	76.9	50.7	63.8	90	54	1728.4	468.8
May	84.2	59.1	71.7	9	218	1865.1	505.9
June	89.6	66.7	78.2	0	396	1903.7	516.4
July	90.8	69.9	80.4	0	477	1803.5	489.2
Aug	90.2	69.0	79.6	0	452	1667.1	452.2
Sept	85.2	63.2	74.2	0	279	1409.6	382.4
Oct	77.0	51.2	64.1	103	76	1219.6	330.8
Nov	67.1	40.2	53.7	344	4	916.5	248.6
Dec	58.7	34.1	46.4	576	0	720.9	195.6
Ann	75.4	51.4	63.4	2547	1994	1361.6	369.3

LATITUDE: 33° 22′ N
LONGITUDE: 81° 58′ W
ELEVATION: 45 meters (147.6 feet)

STATION NO. 3820

Augusta, Georgia

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	14.83	2.72	8.77	301	5	8726.0	0.439
Feb	16.55	3.88	10.22	235	7	11572.0	0.468
Mar	20.22	7.00	13.61	165	19	15472.0	0.500
Apr	25.72	11.77	18.77	36	50	19704.0	0.538
May	30.00	16.05	23.05	3	149	21394.0	0.531
June	32.72	20.11	26.44	0	243	21783.0	0.523
July	33.38	21.50	27.44	0	282	20261.0	0.495
Aug	33.22	21.11	27.16	0	273	19495.0	0.513
Sept	30.33	18.27	24.33	0	180	16329.0	0.492
Oct	25.66	11.77	18.72	45	57	14153.0	0.523
Nov	19.94	5.77	12.88	168	5	10664.0	0.498
Dec	15.33	2.77	9.05	287	0	8273.0	0.448
Ann	24.83	11.88	18.38	1244	1274	15652.0	0.503

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	58.7	36.9	47.8	542	9	768.9	208.6
Feb	61.8	39.0	50.4	423	13	1019.7	276.6
Mar	68.4	44.6	56.5	297	34	1363.3	369.8
Apr	78.3	53.2	65.8	65	90	1736.2	470.9
May	86.0	60.9	73.5	5	268	1885.1	511.3
June	90.9	68.2	79.6	0	437	1919.4	520.6
July	92.1	70.7	81.4	0	508	1785.3	484.3
Aug	91.8	70.0	80.9	0	491	1717.8	465.9
Sept	86.6	64.9	75.8	0	324	1438.8	390.3
Oct	78.2	53.2	65.7	81	103	1247.1	338.3
Nov	67.9	42.4	55.2	302	9	939.6	254.9
Dec	59.6	37.0	48.3	517	0	729.0	197.7
Ann	76.7	53.4	65.1	2239	2293	1379.2	374.1

STATION NO. 3813

Macon, Georgia

LATITUDE: 32° 42′ N
LONGITUDE: 83° 39′ W
ELEVATION: 110 meters (360.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	16.16	3.72	9.94	268	8	9019.0	0.446
Feb	17.55	4.72	11.16	210	10	11846.0	0.473
Mar	20.83	8.00	14.44	142	21	15871.0	0.509
Apr	25.44	12.38	18.94	35	53	19990.0	0.544
May	29.33	16.55	22.94	0	144	21022.0	0.522
June	31.83	20.44	26.16	0	235	20931.0	0.503
July	32.66	21.83	27.27	0	277	20241.0	0.495
Aug	32.38	21.61	27.00	0	268	18396.0	0.483
Sept	29.66	19.38	24.55	0	186	15477.0	0.464
Oct	25.66	13.27	19.50	33	69	13808.0	0.505
Nov	20.72	7.16	13.94	140	8	10681.0	0.492
Dec	16.72	3.72	10.22	254	3	8554.0	0.454
Ann	24.88	12.72	18.83	1084	1287	15486.0	0.495

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	61.1	38.7	49.9	482	14	794.7	215.6
Feb	63.6	40.5	52.1	378	18	1043.8	283.1
Mar	69.5	46.4	58.0	256	38	1398.5	379.3
Apr	77.8	54.3	66.1	63	95	1761.4	477.8
May	84.8	61.8	73.3	0	259	1852.3	502.4
June	89.3	68.8	79.1	0	423	1844.3	500.3
July	90.8	71.3	81.1	0	499	1783.5	483.8
Aug	90.3	70.9	80.6	0	482	1620.9	439.7
Sept	85.4	66.9	76.2	0	335	1363.7	369.9
Oct	78.2	55.9	67.1	59	124	1216.7	330.0
Nov	69.3	44.9	57.1	252	14	941.1	255.3
Dec	62.1	38.7	50.4	457	5	753.7	204.4
Ann	76.8	54.9	65.9	1951	2317	1364.5	370.1

LATITUDE: 32° 8′ N
LONGITUDE: 81° 12′ W
ELEVATION: 16 meters (52.5 feet)

STATION NO. 3822

Savannah, Georgia

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13706.0	0.517
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	16354.0	0.539
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18670.0	0.537
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20808.0	0.546
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22386.0	0.564
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22976.0	0.573
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22905.0	0.576
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22370.0	0.580
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20595.0	0.573
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17645.0	0.553
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14747.0	0.533
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13229.0	0.523
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18866.0	0.554

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1207.7	327.6
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1441.0	390.9
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1645.1	446.2
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1833.5	497.3
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1972.5	535.0
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2024.5	549.1
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2018.3	547.5
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1971.1	534.7
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1814.7	492.2
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1554.8	421.7
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1299.4	352.5
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1165.7	316.2
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1662.4	450.9

STATION NO. 22514

Barbers Point, Hawaii

LATITUDE: 21° 19′ N
LONGITUDE: 158° 4′ W
ELEVATION: 10 meters (32.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	26.44	17.11	21.77	0	106	12708.0	0.464
Feb	26.33	17.00	21.66	0	94	14143.0	0.455
Mar	26.00	17.38	21.72	0	106	15305.0	0.435
Apr	26.55	18.11	22.33	0	120	16284.0	0.426
May	27.38	18.66	23.05	0	146	17625.0	0.446
June	28.16	19.16	23.66	0	160	18822.0	0.473
July	28.33	19.72	24.05	0	177	18436.0	0.467
Aug	28.61	20.11	24.38	0	187	18072.0	0.469
Sept	28.66	19.77	24.22	0	176	17554.0	0.484
Oct	28.44	19.27	23.88	0	172	15572.0	0.479
Nov	27.38	18.66	23.05	0	141	12539.0	0.441
Dec	26.33	17.61	22.00	0	113	11568.0	0.441
Ann	27.38	18.55	23.00	0	1703	15719.0	0.457

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	79.6	62.8	71.2	0	191	1119.8	303.7
Feb	79.4	62.6	71.0	0	169	1246.2	338.0
Mar	78.8	63.3	71.1	0	191	1348.6	365.8
Apr	79.8	64.6	72.2	0	216	1434.8	389.2
May	81.3	65.6	73.5	0	263	1553.0	421.3
June	82.7	66.5	74.6	0	288	1658.5	449.9
July	83.0	67.5	75.3	0	319	1624.5	440.6
Aug	83.5	68.2	75.9	0	337	1592.4	431.9
Sept	83.6	67.6	75.6	0	317	1546.8	419.6
Oct	83.2	66.7	75.0	0	310	1372.1	372.2
Nov	81.3	65.6	73.5	0	254	1104.9	299.7
Dec	79.4	63.7	71.6	0	203	1019.3	276.5
Ann	81.3	65.4	73.4	0	3065	1385.1	375.7

LATITUDE: 19° 43′ N
LONGITUDE: 155° 4′ W
ELEVATION: 11 meters (36.1 feet)

STATION NO. 21504

Hilo, Hawaii

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	26.27	18.50	22.38	0	125	13390.0	0.505
Feb	26.22	18.50	22.38	0	113	15847.0	0.522
Mar	26.50	19.05	22.77	0	137	18404.0	0.529
Apr	27.44	20.05	23.77	0	163	20380.0	0.535
May	28.66	21.22	24.94	0	205	22123.0	0.557
June	29.77	22.33	26.05	0	231	22748.0	0.568
July	30.44	23.00	26.72	0	260	22723.0	0.571
Aug	30.77	23.33	27.05	0	270	22318.0	0.579
Sept	30.77	23.00	26.88	0	256	20543.0	0.571
Oct	29.88	22.22	26.05	0	239	17481.0	0.548
Nov	28.44	21.00	24.72	0	191	14369.0	0.520
Dec	26.83	19.50	23.16	0	150	12853.0	0.508
Ann	28.50	21.00	24.77	0	2345	18598.0	0.546

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	79.3	65.3	72.3	0	225	1179.8	320.0
Feb	79.2	65.3	72.3	0	203	1396.3	378.8
Mar	79.7	66.3	73.0	0	247	1621.7	439.9
Apr	81.4	68.1	74.8	0	293	1795.8	487.1
May	83.6	70.2	76.9	0	369	1949.3	528.8
June	85.6	72.2	78.9	0	416	2004.4	543.7
July	86.8	73.4	80.1	0	468	2002.2	543.1
Aug	87.4	74.0	80.7	0	486	1966.5	533.4
Sept	87.4	73.4	80.4	0	461	1810.1	491.0
Oct	85.8	72.0	78.9	0	430	1540.3	417.8
Nov	83.2	69.8	76.5	0	344	1266.1	343.4
Dec	80.3	67.1	73.7	0	270	1132.5	307.2
Ann	83.3	69.8	76.6	0	4221	1638.7	444.5

STATION NO. 22521

Honolulu, Hawaii

LATITUDE: 21° 20′ N
LONGITUDE: 157° 55′ W
ELEVATION: 5 meters (16.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	25.50	18.00	21.77	0	108	12518.0	0.479
Feb	25.50	18.00	21.77	0	97	14750.0	0.491
Mar	25.50	18.55	22.05	0	117	16746.0	0.484
Apr	26.22	19.61	22.94	0	138	18620.0	0.489
May	27.44	20.83	24.16	0	181	20700.0	0.520
June	28.50	22.05	25.27	0	208	21197.0	0.527
July	28.88	22.61	25.77	0	230	21137.0	0.530
Aug	29.22	23.11	26.16	0	242	20634.0	0.535
Sept	29.33	22.66	26.00	0	230	19774.0	0.552
Oct	28.50	21.83	25.16	0	211	16449.0	0.519
Nov	27.11	20.88	24.00	0	170	13099.0	0.480
Dec	25.66	19.33	22.50	0	129	11951.0	0.480
Ann	27.27	20.61	23.94	0	2066	17298.0	0.510

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	77.9	64.4	71.2	0	194	1103.0	299.2
Feb	77.9	64.4	71.2	0	175	1299.7	352.5
Mar	77.9	65.4	71.7	0	211	1475.6	400.2
Apr	79.2	67.3	73.3	0	248	1640.7	445.0
May	81.4	69.5	75.5	0	326	1824.0	494.8
June	83.3	71.7	77.5	0	374	1867.8	506.6
July	84.0	72.7	78.4	0	414	1862.5	505.2
Aug	84.6	73.6	79.1	0	436	1818.1	493.2
Sept	84.8	72.8	78.8	0	414	1742.4	472.6
Oct	83.3	71.3	77.3	0	380	1449.4	393.1
Nov	80.8	69.6	75.2	0	306	1154.2	313.1
Dec	78.2	66.8	72.5	0	232	1053.1	285.6
Ann	81.1	69.1	75.1	0	3719	1524.2	413.4

LATITUDE: 21° 59′ N
LONGITUDE: 159° 21′ W
ELEVATION: 45 meters (147.6 feet)

STATION NO. 22536

Lihue, Hawaii a

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	2.50	−5.88	−1.66	620	0	5508.0	0.417
Feb	6.55	−2.66	1.94	458	0	9530.0	0.512
Mar	10.88	−0.83	5.05	411	0	14800.0	0.565
Apr	16.33	2.50	9.44	266	0	20733.0	0.611
May	21.44	6.72	14.11	140	9	25838.0	0.653
June	25.72	10.66	18.22	53	50	27955.0	0.665
July	32.50	14.72	23.61	0	163	29651.0	0.726
Aug	30.88	13.72	22.33	6	130	24928.0	0.687
Sept	25.33	9.16	17.27	70	38	19715.0	0.672
Oct	18.16	4.11	11.16	225	3	12913.0	0.600
Nov	9.38	−0.72	4.33	420	0	7130.0	0.478
Dec	3.94	−3.88	0.05	566	0	4962.0	0.423
Ann	17.00	3.94	10.50	3240	396	16972.0	0.620

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	36.5	21.4	29.0	1116	0	485.3	131.6
Feb	43.8	27.2	35.5	824	0	839.7	227.8
Mar	51.6	30.5	41.1	740	0	1304.1	353.7
Apr	61.4	36.5	49.0	479	0	1826.9	495.5
May	70.6	44.1	57.4	252	16	2276.7	617.6
June	78.3	51.2	64.8	95	90	2463.2	668.2
July	90.5	58.5	74.5	0	293	2612.7	708.7
Aug	87.6	56.7	72.2	11	234	2196.5	595.8
Sept	77.6	48.5	63.1	126	68	1737.2	471.2
Oct	64.7	39.4	52.1	405	5	1137.8	308.6
Nov	48.9	30.7	39.8	756	0	628.3	170.4
Dec	39.1	25.0	32.1	1019	0	437.2	118.6
Ann	62.6	39.1	50.9	5832	713	1495.5	405.6

STATION NO. 24131

Boise, Idaho L

LATITUDE: 43° 34′ N
LONGITUDE: 116° 13′ W
ELEVATION: 874 meters (2866.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.27	– 4.22	– 0.44	582	0	3855.0	0.337
Feb	7.77	– 1.05	3.38	418	0	6912.0	0.409
Mar	11.61	0.50	6.05	380	0	11571.0	0.466
Apr	16.66	3.66	10.16	245	0	16286.0	0.493
May	21.44	7.50	14.50	128	10	20910.0	0.533
June	25.50	11.16	18.33	46	46	22866.0	0.545
July	31.77	14.22	23.00	0	146	26509.0	0.652
Aug	30.61	13.27	21.94	9	121	21918.0	0.615
Sept	25.33	9.38	17.38	68	40	16281.0	0.578
Oct	17.33	4.61	11.00	227	0	9758.0	0.489
Nov	8.88	0.50	4.72	408	0	4685.0	0.355
Dec	5.00	– 1.88	1.55	520	0	3247.0	0.325
Ann	17.11	4.77	10.94	3035	365	13733.0	0.522

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	37.9	24.4	31.2	1048	0	339.7	92.1
Feb	46.0	30.1	38.1	752	0	609.0	165.2
Mar	52.9	32.9	42.9	684	0	1019.6	276.6
Apr	62.0	38.6	50.3	441	0	1435.0	389.3
May	70.6	45.5	58.1	230	18	1842.5	499.8
June	77.9	52.1	65.0	83	83	2014.8	546.5
July	89.2	57.6	73.4	0	263	2335.8	633.6
Aug	87.1	55.9	71.5	16	218	1931.3	523.9
Sept	77.6	48.9	63.3	122	72	1434.6	389.1
Oct	63.2	40.3	51.8	409	0	859.8	233.2
Nov	48.0	32.9	40.5	734	0	412.8	112.0
Dec	41.0	28.6	34.8	936	0	286.1	77.6
Ann	62.8	40.6	51.7	5463	657	1210.1	328.2

LATITUDE: 46° 23′ N
LONGITUDE: 117° 1′ W
ELEVATION: 438 meters (1436.6 feet)

STATION NO. 24149

Lewiston, Idaho

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/in²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.22	−9.99	−4.88	720	0	6119.0	0.450
Feb	3.66	−6.61	−1.44	553	0	10010.0	0.527
Mar	7.66	−3.94	1.88	510	0	15564.0	0.587
Apr	14.27	0.44	7.38	328	0	20659.0	0.606
May	20.05	4.83	12.44	186	3	25878.0	0.653
June	24.72	8.38	16.55	76	23	28143.0	0.670
July	31.55	12.27	21.94	0	113	29505.0	0.722
Aug	30.22	11.38	20.83	11	88	25415.0	0.698
Sept	24.27	6.16	15.22	106	13	20080.0	0.678
Oct	17.22	1.00	9.11	286	0	13655.0	0.624
Nov	7.72	−3.61	2.05	488	0	7816.0	0.511
Dec	1.94	−7.61	−2.83	656	0	5415.0	0.447
Ann	15.27	1.05	8.16	3923	242	17355.0	0.628

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	32.4	14.0	23.2	1296	0	539.2	146.3
Feb	38.6	20.1	29.4	995	0	882.0	239.2
Mar	45.8	24.9	35.4	918	0	1371.4	372.0
Apr	57.7	32.8	45.3	590	0	1820.3	493.8
May	68.1	40.7	54.4	335	5	2280.2	618.5
June	76.5	47.1	61.8	137	41	2479.8	672.6
July	88.8	54.1	71.5	0	203	2599.8	705.2
Aug	86.4	52.5	69.5	20	158	2239.4	607.4
Sept	75.7	43.1	59.4	191	23	1769.3	479.9
Oct	63.0	33.8	48.4	515	0	1203.2	326.4
Nov	45.9	25.5	35.7	878	0	688.7	186.8
Dec	35.5	18.3	26.9	1181	0	477.1	129.4
Ann	59.5	33.9	46.7	7061	436	1529.2	414.8

STATION NO. 24156

Pocatello, Idaho

LATITUDE: 42° 55′ N
LONGITUDE: 112° 36′ W
ELEVATION: 1365 meters (4477.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−0.27	−8.33	−4.27	701	0	5754.0	0.402
Feb	1.44	−6.55	−2.55	585	0	8620.0	0.439
Mar	7.00	−1.66	2.66	485	0	12562.0	0.464
Apr	15.16	4.66	9.94	251	0	16558.0	0.481
May	21.27	9.83	15.55	115	29	20302.0	0.511
June	27.00	15.72	21.38	14	106	22777.0	0.542
July	29.11	18.33	23.72	0	167	22060.0	0.539
Aug	28.50	17.83	23.16	4	153	19513.0	0.533
Sept	24.33	13.33	18.83	31	46	15365.0	0.511
Oct	18.33	7.55	13.00	175	10	10996.0	0.489
Nov	8.94	0.33	4.66	410	0	6419.0	0.402
Dec	1.83	−5.77	−1.94	628	0	4557.0	0.355
Ann	15.22	5.44	10.33	3403	513	13790.0	0.492

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.5	17.0	24.3	1262	0	507.0	137.5
Feb	34.6	20.2	27.4	1053	0	759.5	206.0
Mar	44.6	29.0	36.8	873	0	1106.9	300.2
Apr	59.3	40.4	49.9	452	0	1459.0	395.8
May	70.3	49.7	60.0	207	52	1788.9	485.2
June	80.6	60.3	70.5	25	191	2007.0	544.4
July	84.4	65.0	74.7	0	301	1943.8	527.3
Aug	83.3	64.1	73.7	7	275	1719.4	466.4
Sept	75.8	56.0	65.9	56	83	1353.9	367.2
Oct	65.0	45.6	55.4	315	18	968.9	262.8
Nov	48.1	32.6	40.4	738	0	565.6	153.4
Dec	35.3	21.6	28.5	1130	0	401.5	108.9
Ann	59.4	41.8	50.6	6125	923	1215.1	329.6

LATITUDE: 41° 47′ N
LONGITUDE: 87° 45′ W
ELEVATION: 190 meters (623.2 feet)

STATION NO. 14819

Chicago, Illinois

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−1.11	−10.55	−5.83	749	0	6073.0	0.419
Feb	1.27	−8.33	−3.49	611	0	9215.0	0.465
Mar	7.22	−3.11	2.05	504	0	12695.0	0.467
Apr	16.27	4.33	10.33	242	0	16564.0	0.480
May	22.22	10.11	16.16	102	35	19905.0	0.500
June	27.44	15.66	21.55	11	107	22351.0	0.532
July	29.55	17.66	23.61	0	165	22001.0	0.537
Aug	28.77	16.66	22.72	6	141	19459.0	0.530
Sept	24.44	11.77	18.11	43	37	15401.0	0.510
Oct	18.88	6.00	12.44	191	8	11302.0	0.499
Nov	8.94	−0.99	4.00	430	0	6748.0	0.417
Dec	1.44	−7.49	−2.99	661	0	4913.0	0.377
Ann	15.44	4.33	9.88	3552	496	13886.0	0.493

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	30.0	13.0	21.5	1348	0	535.1	145.2
Feb	34.3	17.0	25.7	1100	0	812.0	220.2
Mar	45.0	26.4	35.7	907	0	1118.6	303.4
Apr	61.3	39.8	50.6	436	0	1459.5	395.9
May	72.0	50.2	61.1	184	63	1753.9	475.7
June	81.4	60.2	70.8	20	193	1969.4	534.2
July	85.2	63.8	74.5	0	297	1938.6	525.8
Aug	83.8	62.0	72.9	11	254	1714.6	465.1
Sept	76.0	53.2	64.6	77	67	1357.0	368.1
Oct	66.0	42.8	54.4	344	14	995.9	270.1
Nov	48.1	30.2	39.2	774	0	594.6	161.3
Dec	34.6	18.5	26.6	1190	0	432.9	117.4
Ann	59.8	39.8	49.8	6394	893	1223.6	331.9

STATION NO. 14923

Moline, Illinois

LATITUDE: 41° 27′ N
LONGITUDE: 90° 31′ W
ELEVATION: 181 meters (593.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	1.55	−7.44	−2.94	659	0	6636.0	0.428
Feb	3.83	−5.66	−0.88	538	0	9770.0	0.470
Mar	9.27	−1.05	4.11	441	0	12972.0	0.464
Apr	17.55	5.88	11.72	201	3	17194.0	0.491
May	23.38	11.44	17.44	73	45	21171.0	0.530
June	28.50	16.94	22.72	6	138	23795.0	0.566
July	30.33	18.66	24.50	0	191	23358.0	0.570
Aug	29.44	17.61	23.55	4	166	20494.0	0.554
Sept	25.94	13.11	19.55	26	63	16500.0	0.536
Oct	20.05	7.22	13.66	156	11	12124.0	0.516
Nov	10.55	0.38	5.50	385	0	7679.0	0.447
Dec	3.44	−5.16	−0.83	594	0	5562.0	0.396
Ann	17.00	6.00	11.50	3087	620	14771.0	0.514

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	34.8	18.6	26.7	1186	0	584.7	158.6
Feb	38.9	21.8	30.4	968	0	860.9	233.5
Mar	48.7	30.1	39.4	794	0	1143.0	310.0
Apr	63.6	42.6	53.1	362	5	1515.0	411.0
May	74.1	52.6	63.4	131	81	1865.5	506.0
June	83.3	62.5	72.9	11	248	2096.7	568.7
July	86.6	65.6	76.1	0	344	2058.2	558.3
Aug	85.0	63.7	74.4	7	299	1805.8	489.8
Sept	78.7	55.6	67.2	47	113	1453.9	394.4
Oct	68.1	45.0	56.6	281	20	1068.3	289.8
Nov	51.0	32.7	41.9	693	0	676.6	183.5
Dec	38.2	22.7	30.5	1069	0	490.1	132.9
Ann	62.6	42.8	52.7	5557	1116	1301.5	353.0

LATITUDE: 39° 50′ N
LONGITUDE: 89° 40′ W
ELEVATION: 187 meters (613.4 feet)

STATION NO. 93822

Springfield, Illinois

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	5.27	−4.61	0.33	557	0	6515.0	0.392
Feb	7.44	−3.11	2.16	452	0	9343.0	0.429
Mar	12.55	1.11	6.83	362	6	13063.0	0.454
Apr	19.94	7.50	13.72	146	7	17032.0	0.481
May	25.00	12.44	18.72	52	65	20233.0	0.505
June	30.00	17.44	23.72	2	164	22502.0	0.536
July	31.61	19.27	25.44	0	220	21793.0	0.531
Aug	31.11	18.00	24.55	0	192	19691.0	0.528
Sept	27.44	13.72	20.61	18	87	15926.0	0.506
Oct	21.77	7.33	14.55	131	13	12336.0	0.505
Nov	12.88	1.38	7.16	335	0	7746.0	0.425
Dec	6.66	−3.05	1.83	511	0	5660.0	0.373
Ann	19.33	7.27	13.33	2571	757	14320.0	0.487

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	41.5	23.7	32.6	1003	0	574.1	155.7
Feb	45.4	26.4	35.9	814	0	823.2	223.3
Mar	54.6	34.0	44.3	652	11	1151.0	312.2
Apr	67.9	45.5	56.7	263	13	1500.8	407.1
May	77.0	54.4	65.7	94	117	1782.8	483.6
June	86.0	63.4	74.7	4	295	1982.7	537.8
July	88.9	66.7	77.8	0	396	1920.3	520.9
Aug	88.0	64.4	76.2	0	346	1735.1	470.6
Sept	81.4	56.7	69.1	32	157	1403.3	380.6
Oct	71.2	45.2	58.2	236	23	1087.0	294.8
Nov	55.2	34.5	44.9	603	0	682.5	185.1
Dec	44.0	26.5	35.3	920	0	498.7	135.3
Ann	66.8	45.1	56.0	4628	1363	1261.8	342.3

STATION NO. 93817

Evansville, Indiana

LATITUDE: 38° 3′ N
LONGITUDE: 87° 32′ W
ELEVATION: 118 meters (387.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.33	−7.83	−3.72	683	0	5166.0	0.349
Feb	1.94	−6.83	−2.44	581	0	7917.0	0.394
Mar	7.27	−2.27	2.50	491	0	11145.0	0.407
Apr	15.27	3.88	9.61	261	0	15442.0	0.445
May	21.22	9.38	15.33	120	26	18974.0	0.476
June	26.72	14.88	20.83	12	87	20901.0	0.497
July	28.66	16.88	22.77	0	139	20280.0	0.495
Aug	27.88	15.77	21.83	6	115	18094.0	0.492
Sept	24.38	11.66	18.05	50	41	.14454.0	0.476
Oct	18.11	5.83	12.00	201	5	10489.0	0.458
Nov	9.05	0.00	4.55	413	0	5860.0	0.356
Dec	2.05	−5.88	−1.88	626	0	4193.0	0.315
Ann	15.22	4.61	9.94	3449	415	12742.0	0.450

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	32.6	17.9	25.3	1229	0	455.2	123.5
Feb	35.5	19.7	27.6	1046	0	697.6	189.2
Mar	45.1	27.9	36.5	884	0	982.0	266.4
Apr	59.5	39.0	49.3	470	0	1360.7	369.1
May	70.2	48.9	59.6	216	47	1671.9	453.5
June	80.1	58.8	69.5	22	157	1841.7	499.6
July	83.6	62.4	73.0	0	250	1787.0	484.7
Aug	82.2	60.4	71.3	11	207	1594.3	432.5
Sept	75.9	53.0	64.5	90	74	1273.6	345.5
Oct	64.6	42.5	53.6	362	9	924.2	250.7
Nov	48.3	32.0	40.2	743	0	516.3	140.1
Dec	35.7	21.4	28.6	1127	0	369.5	100.2
Ann	59.4	40.3	49.9	6208	747	1122.7	304.5

LATITUDE: 41° 0′ N
LONGITUDE: 85° 12′ W
ELEVATION: 252 meters (826.6 feet)

STATION NO. 14827

Fort Wayne, Indiana

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	2.22	−6.83	−2.27	638	0	5624.0	0.361
Feb	4.05	−5.49	−0.72	533	0	8477.0	0.407
Mar	9.44	−0.94	4.27	435	0	11773.0	0.421
Apr	17.11	5.44	11.27	215	3	15870.0	0.453
May	22.72	10.83	16.77	88	40	19157.0	0.480
June	27.94	16.16	22.05	6	117	21201.0	0.505
July	29.66	18.11	23.88	0	172	20500.0	0.500
Aug	28.88	16.88	22.88	2	143	18652.0	0.504
Sept	25.38	12.72	19.05	35	56	15026.0	0.487
Oct	19.44	6.83	13.16	167	7	11088.0	0.470
Nov	10.27	0.44	5.38	388	0	6572.0	0.381
Dec	3.72	−4.94	−0.61	587	0	4728.0	0.335
Ann	16.77	5.77	11.27	3098	541	13222.0	0.459

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	36.0	19.7	27.9	1148	0	495.6	134.4
Feb	39.3	22.1	30.7	959	0	746.9	202.6
Mar	49.0	30.3	39.7	783	0	1037.4	281.4
Apr	62.8	41.8	52.3	387	5	1398.4	379.3
May	72.9	51.5	62.2	158	72	1688.0	457.9
June	82.3	61.1	71.7	11	211	1868.1	506.7
July	85.4	64.6	75.0	0	310	1806.3	490.0
Aug	84.0	62.4	73.2	4	257	1643.5	445.8
Sept	77.7	54.9	66.3	63	101	1324.0	359.1
Oct	67.0	44.3	55.7	301	13	977.0	265.0
Nov	50.5	32.8	41.7	698	0	579.1	157.1
Dec	38.7	23.1	30.9	1057	0	416.6	113.0
Ann	62.2	42.4	52.3	5576	974	1165.0	316.0

STATION NO. 93819

Indianapolis, Indiana

LATITUDE: 39° 44′ N
LONGITUDE: 86° 17′ W
ELEVATION: 246 meters (806.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−0.27	−8.61	−4.44	706	0	4718.0	0.329
Feb	1.16	−7.49	−3.16	602	0	7486.0	0.380
Mar	6.61	−2.99	1.83	511	0	11264.0	0.416
Apr	14.66	3.22	8.94	281	0	15745.0	0.457
May	20.77	8.50	14.66	136	22	19549.0	0.492
June	26.33	14.27	20.33	19	79	21812.0	0.519
July	28.22	16.50	22.38	3	128	21023.0	0.514
Aug	27.66	15.66	21.66	13	116	18911.0	0.516
Sept	23.72	11.55	17.66	54	34	14655.0	0.487
Oct	17.61	6.11	11.88	204	4	10318.0	0.458
Nov	8.44	−0.05	4.22	423	0	5642.0	0.352
Dec	1.72	−5.99	−2.11	633	0	3862.0	0.300
Ann	14.72	4.22	9.50	3590	386	12915.0	0.460

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.5	16.5	24.0	1271	0	415.7	112.8
Feb	34.1	18.5	26.3	1084	0	659.6	178.9
Mar	43.9	26.6	35.3	920	0	992.5	269.2
Apr	58.4	37.8	48.1	506	0	1387.4	376.3
May	69.4	47.3	58.4	245	40	1722.5	467.2
June	79.4	57.7	68.6	34	142	1921.9	521.3
July	82.8	61.7	72.3	5	230	1852.4	502.5
Aug	81.8	60.2	71.0	23	209	1666.3	452.0
Sept	74.7	52.8	63.8	97	61	1291.3	350.3
Oct	63.7	43.0	53.4	367	7	909.2	246.6
Nov	47.2	31.9	39.6	761	0	497.1	134.8
Dec	35.1	21.2	28.2	1139	0	340.3	92.3
Ann	58.5	39.6	49.1	6462	695	1138.0	308.7

LATITUDE: 41° 42′ N
LONGITUDE: 86° 19′ W
ELEVATION: 236 meters (774.1 feet)

STATION NO. 14848

South Bend, Indiana

Insolation and Temperature

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−0.16	−9.94	−5.05	725	0	6573.0	0.440
Feb	2.33	−7.55	−2.61	586	0	9744.0	0.482
Mar	8.11	−2.72	2.72	483	0	13223.0	0.481
Apr	16.72	4.72	10.72	231	2	17454.0	0.503
May	22.61	10.50	16.55	95	40	21286.0	0.534
June	27.72	16.05	21.88	8	115	24071.0	0.573
July	30.05	18.11	24.11 M	0	178	23661.0	0.578
Aug	29.22	17.27	23.27	4	157	20747.0	0.563
Sept	24.83	12.27	18.55	38	45	16076.0	0.528
Oct	19.27	6.61	12.94	177	11 M	12039.0	0.523
Nov	9.55	−0.94	4.33	420	0	7532.0	0.454
Dec	2.16	−7.05	−2.44	643	0	5455.0	0.405
Ann	16.05	4.77	10.44	3416	552	14822.0	0.522

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.7	14.1	22.9	1305	0	579.2	157.1
Feb	36.2	18.4	27.3	1055	0	858.6	232.9
Mar	46.6	27.1	36.9	869	0	1165.1	316.0
Apr	62.1	40.5	51.3	416	4	1537.9	417.2
May	72.7	50.9	61.8	171	72	1875.6	508.8
June	81.9	60.9	71.4	14	207	2121.0	575.3
July	86.1	64.6	75.4	0	320	2084.9	565.5
Aug	84.6	63.1	73.9	7	283	1828.1	495.9
Sept	76.7	54.1	65.4	68	81	1416.5	384.2
Oct	66.7	43.9	55.3	319	20	1060.8	287.7
Nov	49.2	30.3	39.8	756	0	663.7	180.0
Dec	35.9	19.3	27.6	1157	0	480.7	130.4
Ann	60.9	40.6	50.8	6149	994	1306.0	354.3

STATION NO. 14931

Burlington, Iowa

LATITUDE: 40° 47′ N
LONGITUDE: 91° 7′ W
ELEVATION: 214 meters (701.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 2.49	– 11.49	– 6.99	785	0	6590.0	0.456
Feb	0.27	– 8.99	– 4.33	634	0	9768.0	0.494
Mar	5.83	– 3.77	1.05	535	0	13397.0	0.493
Apr	15.38	4.00	9.72	258	0	17666.0	0.512
May	21.61	10.50	16.05	103	32	21194.0	0.533
June	26.55	16.16	21.38	14	106	24114.0	0.574
July	29.38	18.50	23.94	0	176	23796.0	0.581
Aug	28.44	17.44	22.94	7	150	20745.0	0.565
Sept	23.66	12.22	17.94	52	40	16273.0	0.540
Oct	18.27	6.44	12.38	194	10	12118.0	0.536
Nov	8.00	– 1.55	3.22	453	0	7471.0	0.463
Dec	0.44	– 8.22	– 3.88	688	0	5526.0	0.426
Ann	14.61	4.27	9.44	3727	515	14888.0	0.529

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	27.5	11.3	19.4	1413	0	580.7	157.5
Feb	32.5	15.8	24.2	1141	0	860.7	233.5
Mar	42.5	25.2	33.9	963	0	1180.5	320.2
Apr	59.7	39.2	49.5	464	0	1556.6	422.2
May	70.9	50.9	60.9	185	58	1867.5	506.6
June	79.8	61.1	70.5	25	191	2124.8	576.3
July	84.9	65.3	75.1	0	317	2096.8	568.7
Aug	83.2	63.4	73.3	13	270	1827.9	495.8
Sept	74.6	54.0	64.3	94	72	1433.9	388.9
Oct	64.9	43.6	54.3	349	18	1067.8	289.6
Nov	46.4	29.2	37.8	815	0	658.3	178.6
Dec	32.8	17.2	25.0	1238	0	486.9	132.1
Ann	58.3	39.7	49.0	6709	927	1311.8	355.8

LATITUDE: 41° 32′ N
LONGITUDE: 93° 39′ W
ELEVATION: 294 meters (964.3 feet)

STATION NO. 14933

Des Moines, Iowa

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−9.88	875	0	6284.0	0.467
Feb	0.0 ND	0.0 ND	−7.49	723	0	9490.0	0.504
Mar	0.0 ND	0.0 ND	−1.66	620	0	13255.0	0.502
Apr	0.0 ND	0.0 ND	7.61	321	0	17234.0	0.506
May	0.0 ND	0.0 ND	14.11	147	16	21510.0	0.543
June	0.0 ND	0.0 ND	19.55	35	72	23989.0	0.571
July	0.0 ND	0.0 ND	21.83	7	115	23653.0	0.579
Aug	0.0 ND	0.0 ND	21.05	17	101	20800.0	0.572
Sept	0.0 ND	0.0 ND	15.66	91	11	15950.0	0.540
Oct	0.0 ND	0.0 ND	10.27	253	4	11468.0	0.527
Nov	0.0 ND	0.0 ND	0.88	523	0	6808.0	0.449
Dec	0.0 ND	0.0 ND	−6.61	773	0	5030.0	0.420
Ann	0.0 ND	0.0 ND	7.11	4389	322	14623.0	0.531

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	14.2	1575	0	553.7	150.2
Feb	0.0 ND	0.0 ND	18.5	1301	0	836.2	226.8
Mar	0.0 ND	0.0 ND	29.0	1116	0	1168.0	316.8
Apr	0.0 ND	0.0 ND	45.7	578	0	1518.6	411.9
May	0.0 ND	0.0 ND	57.4	265	29	1895.3	514.1
June	0.0 ND	0.0 ND	67.2	63	130	2113.8	573.4
July	0.0 ND	0.0 ND	71.3	13	207	2084.2	565.3
Aug	0.0 ND	0.0 ND	69.9	31	182	1832.8	497.1
Sept	0.0 ND	0.0 ND	60.2	164	20	1405.4	381.2
Oct	0.0 ND	0.0 ND	50.5	455	7	1010.5	274.1
Nov	0.0 ND	0.0 ND	33.6	941	0	599.9	162.7
Dec	0.0 ND	0.0 ND	20.1	1391	0	443.2	120.2
Ann	0.0 ND	0.0 ND	44.8	7900	580	1288.5	349.5

STATION NO. 14940

Mason City, Iowa

LATITUDE: 43° 9′ N
LONGITUDE: 93° 20′ W
ELEVATION: 373 meters (1223.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−2.11	−13.49	−7.77	809	0	6453.0	0.464
Feb	0.72	−10.33	−4.77	647	0	9551.0	0.495
Mar	6.05	−4.77	0.66	547	0	13283.0	0.496
Apr	16.27	3.00	9.66	263	3	17906.0	0.523
May	22.50	9.61	16.05	105	34	21576.0	0.544
June	27.38	15.16	21.27	18	106	24101.0	0.573
July	30.38	17.72	24.05	0	180	24084.0	0.589
Aug	29.33	16.72	23.05	5	152	20941.0	0.573
Sept	24.05	10.77	17.44	62	36	16131.0	0.541
Oct	18.77	4.66	11.72	210	5	11781.0	0.532
Nov	8.33	−3.55	2.38	478	0	7293.0	0.467
Dec	0.72	−10.22	−4.72	715	0	5326.0	0.428
Ann	15.22	2.94	9.11	3862	517	14869.0	0.534

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	28.2	7.7	18.0	1456	0	568.6	154.2
Feb	33.3	13.4	23.4	1165	0	841.6	228.3
Mar	42.9	23.4	33.2	985	0	1170.4	317.5
Apr	61.3	37.4	49.4	473	5	1577.8	428.0
May	72.5	49.3	60.9	189	61	1901.1	515.7
June	81.3	59.3	70.3	32	191	2123.6	576.0
July	86.7	63.9	75.3	0	324	2122.1	575.6
Aug	84.8	62.1	73.5	9	274	1845.2	500.5
Sept	75.3	51.4	63.4	112	65	1421.4	385.5
Oct	65.8	40.4	53.1	378	9	1038.1	281.6
Nov	47.0	25.6	36.3	860	0	642.6	174.3
Dec	33.3	13.6	23.5	1287	0	469.3	127.3
Ann	59.4	37.3	48.4	6952	931	1310.2	355.4

LATITUDE: 42° 24′ N
LONGITUDE: 96° 23′ W
ELEVATION: 336 meters (1102.1 feet)

STATION NO. 14943

Sioux City, Iowa

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	5.88	−7.22	−0.66	588	0	9381.0	0.559
Feb	8.38	−4.88	1.77	463	0	12734.0	0.580
Mar	12.16	−1.99	5.11	410	0	16756.0	0.580
Apr	19.38	5.05	12.22	191	7	21402.0	0.603
May	24.55	10.94	17.77	63	46	23716.0	0.592
June	30.00	16.33	23.16	11	156	26763.0	0.638
July	33.00	19.38	26.22	0	244	26051.0	0.635
Aug	32.44	18.72	25.61	0	225	23326.0	0.624
Sept	27.44	13.50	20.50	22	87	19142.0	0.607
Oct	21.50	7.22	14.38	137	15	14761.0	0.600
Nov	12.88	−0.88	6.00	370	0	10142.0	0.551
Dec	7.00	−5.44	0.77	544	0	8306.0	0.542
Ann	19.55	5.88	12.72	2803	783	17707.0	0.601

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	42.6	19.0	30.8	1058	0	826.6	224.2
Feb	47.1	23.2	35.2	833	0	1122.0	304.4
Mar	53.9	28.4	41.2	738	0	1476.4	400.5
Apr	66.9	41.1	54.0	344	13	1885.8	511.5
May	76.2	51.7	64.0	113	83	2089.7	566.8
June	86.0	61.4	73.7	20	281	2358.2	639.7
July	91.4	66.9	79.2	0	439	2295.5	622.6
Aug	90.4	65.7	78.1	0	405	2055.3	557.5
Sept	81.4	56.3	68.9	40	157	1686.7	457.5
Oct	70.7	45.0	57.9	247	27	1300.7	352.8
Nov	55.2	30.4	42.8	666	0	893.7	242.4
Dec	44.6	22.2	33.4	979	0	731.9	198.5
Ann	67.2	42.6	54.9	5045	1409	1560.2	423.2

SOLMET STATION NO. 13985

Dodge City, Kansas

LATITUDE: 37° 46′ N
LONGITUDE: 99° 58′ W
ELEVATION: 787 meters (2581.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	5.27	−10.16	−2.44	643	0	8959.0	0.567
Feb	7.27	−7.88	−0.27	521	0	11981.0	0.569
Mar	10.16	−5.44	2.38	494	0	16159.0	0.574
Apr	17.38	1.16	9.27	271	0	20761.0	0.591
May	22.72	7.11	14.94	120	15	23397.0	0.585
June	28.61	12.61	20.61	30	98	26746.0	0.637
July	32.50	16.11	24.33	0	187	26324.0	0.642
Aug	31.50	15.22	23.38	0	158	23215.0	0.626
Sept	26.44	9.44	17.94	60	48	18641.0	0.602
Oct	20.16	2.88	11.55	215	5	14391.0	0.606
Nov	11.44	−4.27	3.61	441	0	9721.0	0.557
Dec	6.33	−8.49	−1.05	601	0	7884.0	0.550
Ann	18.33	2.33	10.33	3399	513	17348.0	0.600

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	41.5	13.7	27.6	1157	0	789.4	214.1
Feb	45.1	17.8	31.5	938	0	1055.7	286.4
Mar	50.3	22.2	36.3	889	0	1423.8	386.2
Apr	63.3	34.1	48.7	488	0	1829.3	496.2
May	72.9	44.8	58.9	216	27	2061.6	559.2
June	83.5	54.7	69.1	54	176	2356.7	639.3
July	90.5	61.0	75.8	0	337	2319.5	629.2
Aug	88.7	59.4	74.1	0	284	2045.6	554.9
Sept	79.6	49.0	64.3	108	86	1642.5	445.5
Oct	68.3	37.2	52.8	387	9	1268.0	344.0
Nov	52.6	24.3	38.5	794	0	856.6	232.3
Dec	43.4	16.7	30.1	1082	0	694.7	188.4
Ann	65.0	36.2	50.6	6118	923	1528.6	414.6

LATITUDE: 39° 22′ N
LONGITUDE: 101° 42′ W
ELEVATION: 1124 meters (3686.7 feet)

STATION NO. 23065

Goodland, Kansas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.50	−7.94	−2.22	637	0	7728.0	0.483
Feb	6.72	−5.16	0.77	491	0	10679.0	0.503
Mar	11.44	−1.27	5.11	413	4	14264.0	0.504
Apr	19.05	5.88	12.50	182	7	18630.0	0.529
May	24.33	11.77	18.05	65	57	21738.0	0.544
June	28.88	17.22	23.05	7	148	24132.0	0.575
July	31.77	19.55	25.66	0	227	24149.0	0.589
Aug	31.38	18.83	25.11	0	210	21676.0	0.584
Sept	26.88	13.33	20.11	30	83	17210.0	0.554
Oct	21.27	7.11	14.22	143	16	13013.0	0.544
Nov	12.38	−0.27	6.05	368	0	8757.0	0.497
Dec	5.44	−5.66	−0.11	571	0	6622.0	0.456
Ann	18.61	6.11	12.38	2912	756	15716.0	0.541

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.3	17.7	28.0	1147	0	680.9	184.7
Feb	44.1	22.7	33.4	884	0	941.0	255.2
Mar	52.6	29.7	41.2	743	7	1256.9	340.9
Apr	66.3	42.6	54.5	328	13	1641.6	445.3
May	75.8	53.2	64.5	117	103	1915.4	519.6
June	84.0	63.0	73.5	13	266	2126.4	576.8
July	89.2	67.2	78.2	0	409	2127.9	577.2
Aug	88.5	65.9	77.2	0	378	1910.0	518.1
Sept	80.4	56.0	68.2	54	149	1516.4	411.3
Oct	70.3	44.8	57.6	257	29	1146.6	311.0
Nov	54.3	31.5	42.9	662	0	771.6	209.3
Dec	41.8	21.8	31.8	1028	0	583.5	158.3
Ann	65.5	43.0	54.3	5242	1361	1384.8	375.6

STATION NO. 13996

Topeka, Kansas

LATITUDE: 39° 4′ N
LONGITUDE: 95° 38′ W
ELEVATION: 270 meters (885.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	5.22	−5.99	−0.38	580	0	8896.0	0.528
Feb	8.38	−3.66	2.38	446	0	12010.0	0.546
Mar	12.77	0.05	6.44	372	4	15951.0	0.552
Apr	20.05	7.27	13.66	152	12	20229.0	0.569
May	25.05	12.77	18.94	50	68	23104.0	0.576
June	30.27	18.33	24.33	3	183	25697.0	0.613
July	33.16	20.88	27.05	0	270	25405.0	0.619
Aug	32.77	20.16	26.50	0	253	23057.0	0.617
Sept	27.72	15.11	21.44	17	111	18341.0	0.581
Oct	21.83	8.83	15.33	117	24	14184.0	0.576
Nov	13.22	1.00	7.11	336	0	9883.0	0.535
Dec	6.83	−4.11	1.38	525	0	7830.0	0.508
Ann	19.77	7.55	13.66	2603	929	17049.0	0.577

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	41.4	21.2	31.3	1044	0	783.9	212.6
Feb	47.1	25.4	36.3	803	0	1058.2	287.1
Mar	55.0	32.1	43.6	670	7	1405.5	381.2
Apr	68.1	45.1	56.6	274	22	1782.5	483.5
May	77.1	55.0	66.1	90	122	2035.8	552.2
June	86.5	65.0	75.8	5	329	2264.3	614.2
July	91.7	69.6	80.7	0	486	2238.5	607.2
Aug	91.0	68.3	79.7	0	455	2031.6	551.1
Sept	81.9	59.2	70.6	31	200	1616.1	438.4
Oct	71.3	47.9	59.6	211	43	1249.8	339.0
Nov	55.8	33.8	44.8	605	0	870.8	236.2
Dec	44.3	24.6	34.5	945	0	689.9	187.1
Ann	67.6	45.6	56.6	4685	1672	1502.3	407.5

LATITUDE: 37° 39′ N
LONGITUDE: 97° 25′ W
ELEVATION: 408 meters (1338.2 feet)

STATION NO. 3928

Wichita, Kansas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	5.16	−4.16	0.50	552	0	6195.0	0.373
Feb	6.83	−3.22	1.83	462	0	8847.0	0.406
Mar	11.88	0.94	6.44	373	5	12478.0	0.434
Apr	18.88	7.00	12.94	167	6	16787.0	0.474
May	24.16	12.11	18.16	58	53	19827.0	0.495
June	28.61	16.94	22.77	4	137	21530.0	0.513
July	30.22	18.83	24.55	0	192	21000.0	0.512
Aug	29.72	18.00	23.88	0	173	19126.0	0.513
Sept	26.44	14.22	20.33	22	82	15458.0	0.491
Oct	20.44	8.22	14.33	136	12	11850.0	0.485
Nov	12.16	1.83	7.00	340	0	7460.0	0.409
Dec	6.50	−2.66	1.94	508	0	5510.0	0.363
Ann	18.44	7.33	12.88	2627	665	13839.0	0.471

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	41.3	24.5	32.9	994	0	545.9	148.1
Feb	44.3	26.2	35.3	832	0	779.5	211.5
Mar	53.4	33.7	43.6	671	9	1099.5	298.2
Apr	66.0	44.6	55.3	301	11	1479.2	401.2
May	75.5	53.8	64.7	104	95	1747.0	473.9
June	83.5	62.5	73.0	7	247	1897.1	514.6
July	86.4	65.9	76.2	0	346	1850.4	501.9
Aug	85.5	64.4	75.0	0	311	1685.3	457.1
Sept	79.6	57.6	68.6	40	148	1362.1	369.5
Oct	68.8	46.8	57.8	245	22	1044.2	283.2
Nov	53.9	35.3	44.6	612	0	657.3	178.3
Dec	43.7	27.2	35.5	914	0	485.5	131.7
Ann	65.2	45.2	55.2	4729	1197	1219.4	330.8

STATION NO. 93820

Lexington, Kentucky

LATITUDE: 38° 2′ N
LONGITUDE: 84° 36′ W
ELEVATION: 301 meters (987.3 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	5.55	−4.16	0.72	546	0	6191.0	0.374
Feb	7.22	−3.05	2.11	454	0	8958.0	0.413
Mar	12.22	1.11	6.66	367	5	12506.0	0.436
Apr	19.38	7.11	13.27	158	7	16646.0	0.470
May	24.22	12.16	18.22	58	55	19518.0	0.487
June	28.72	17.16	22.94	2	141	21603.0	0.515
July	30.72	19.11	24.94	0	205	20854.0	0.508
Aug	30.44	18.27	24.38	0	187	19069.0	0.511
Sept	26.94	14.27	20.61	19	87	15448.0	0.492
Oct	21.27	7.72	14.50	133	15	11828.0	0.485
Nov	12.72	1.72	7.22	333	0	7409.0	0.408
Dec	6.72	−2.72	2.00	506	0	5537.0	0.367
Ann	18.83	7.38	13.11	2580	704	13797.0	0.470

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	42.0	24.5	33.3	983	0	545.5	148.0
Feb	45.0	26.5	35.8	817	0	789.3	214.1
Mar	54.0	34.0	44.0	661	9	1102.0	298.9
Apr	66.9	44.8	55.9	284	13	1466.7	397.9
May	75.6	53.9	64.8	104	99	1719.8	466.5
June	83.7	62.9	73.3	4	254	1903.5	516.3
July	87.3	66.4	76.9	0	369	1837.5	498.4
Aug	86.8	64.9	75.9	0	337	1680.2	455.8
Sept	80.5	57.7	69.1 M	34	157	1361.2	369.2
Oct	70.3	45.9	58.1	239	27	1042.2	282.7
Nov	54.9	35.1	45.0	599	0	652.8	177.1
Dec	44.1	27.1	35.6	911	0	487.9	132.3
Ann	65.9	45.3	55.6	4644	1267	1215.7	329.8

LATITUDE: 38° 11′ N
LONGITUDE: 85° 44′ W
ELEVATION: 149 meters (488.7 feet)

STATION NO. 93821

Louisville, Kentucky

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	16.38	4.72	10.55	250	9	8910.0	0.420
Feb	18.05	6.22	12.16	186	13	11963.0	0.462
Mar	21.44	9.27	15.38	115	24	15655.0	0.492
Apr	26.11	14.27	20.22	18	75	19080.0	0.515
May	29.55	17.94	23.77	0	168	21236.0	0.528
June	32.38	21.27	26.83	0	255	21861.0	0.527
July	32.88	22.61	27.77	0	292	19812.0	0.486
Aug	32.83	22.27	27.55	0	286	19030.0	0.498
Sept	30.66	19.83	25.27	0	208	16619.0	0.491
Oct	26.88	13.66	20.27	30	90	14766.0	0.526
Nov	21.27	8.27	14.77	115	8	10445.0	0.461
Dec	17.61	5.55	11.61	211	3	8362.0	0.422
Ann	25.50	13.83	19.66	927	1436	15645.0	0.492

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	61.5	40.5	51.0	450	16	785.1	213.0
Feb	64.5	43.2	53.9	335	23	1054.1	285.9
Mar	70.6	48.7	59.7	207	43	1379.4	374.2
Apr	79.0	57.7	68.4	32	135	1681.2	456.0
May	85.2	64.3	74.8	0	302	1871.2	507.6
June	90.3	70.3	80.3	0	459	1926.3	522.5
July	91.2	72.7	82.0	0	526	1745.7	473.5
Aug	91.1	72.1 M	81.6	0	515	1676.8	454.8
Sept	87.2	67.7	77.5	0	374	1464.4	397.2
Oct	80.4	56.6	68.5	54	162	1301.1	352.9
Nov	70.3	46.9	58.6	207	14	920.4	249.6
Dec	63.7	42.0	52.9	380	5	736.8	199.9
Ann	77.9	56.9	67.4	1669	2585	1378.5	373.9

STATION NO. 13970

Baton Rouge, Louisiana

LATITUDE: 30° 32′ N
LONGITUDE: 91° 9′ W
ELEVATION: 23 meters (75.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	16.44	6.05	11.27	230	11	8267.0	0.386
Feb	18.11	7.50	12.83	170	16	11460.0	0.439
Mar	21.11	10.27	15.72	111	30	14906.0	0.467
Apr	25.66	15.27	20.50	14	79	17822.0	0.481
May	29.05	18.88	24.00	0	175	20989.0	0.521
June	32.00	22.11	27.05	0	261	22361.0	0.540
July	32.88	23.11	28.00	0	299	20289.0	0.498
Aug	32.88	22.88	27.88	0	296	18810.0	0.491
Sept	31.05	20.44	25.77	0	223	16855.0	0.497
Oct	27.55	14.66	21.11	20	106	15674.0	0.554
Nov	21.72	9.55	15.66	98	18	10402.0	0.455
Dec	17.88	6.83	12.38	187	3	8008.0	0.399
Ann	25.55	14.77	20.16	832	1521	15487.0	0.486

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	61.6	42.9	52.3	414	20	728.4	197.6
Feb	64.6	45.5	55.1	306	29	1009.8	273.9
Mar	70.0	50.5	60.3	200	54	1313.4	356.3
Apr	78.2	59.5	68.9	25	142	1570.4	426.0
May	84.3	66.0	75.2	0	315	1849.4	501.7
June	89.6	71.8	80.7	0	470	1970.3	534.5
July	91.2	73.6	82.4	0	538	1787.7	484.9
Aug	91.2	73.2	82.2	0	533	1657.4	449.6
Sept	87.9	68.8	78.4	0	401	1485.2	402.9
Oct	81.6	58.4	70.0	36	191	1381.1	374.6
Nov	71.1	49.2	60.2	176	32	916.6	248.6
Dec	64.2	44.3	54.3	337	5	705.6	191.4
Ann	78.0	58.6	68.3	1498	2738	1364.6	370.2

LATITUDE: 30° 7′ N
LONGITUDE: 93° 13′ W
ELEVATION: 3 meters (9.8 feet)

SOLMET STATION NO. 3937

Lake Charles, Louisiana

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	16.83	6.38	11.61	223	15	9472.0	0.440
Feb	18.38	7.77	13.11	166	19	12619.0	0.482
Mar	21.33	10.50	15.94	104	30	16056.0	0.502
Apr	25.77	14.88	20.33	16	76	20204.0	0.544
May	29.38	18.50	23.94	0	173	22331.0	0.555
June	32.00	21.77	26.88	0	256	22741.0	0.549
July	32.44	22.94	27.72	0	291	20581.0	0.505
Aug	32.55	22.83	27.72	0	291	19482.0	0.509
Sept	30.33	20.94	25.66	0	220	17178.0	0.505
Oct	26.61	15.33	21.00	22	105	15151.0	0.535
Nov	21.27	9.88	15.61	99	17	11038.0	0.481
Dec	17.88	7.38	12.66	181	6	8845.0	0.439
Ann	25.38	14.94	20.16	813	1503	16308.0	0.511

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	62.3	43.5	52.9	401	27	834.6	226.4
Feb	65.1 M	46.0	55.6	299	34	1111.9	301.6
Mar	70.4	50.9	60.7	187	54	1414.8	383.8
Apr	78.4	58.8	68.6	29	137	1780.3	482.9
May	84.9	65.3	75.1	0	311	1967.7	533.7
June	89.6	71.2	80.4	0	461	2003.8	543.5
July	90.4	73.3	81.9	0	524	1813.5	491.9
Aug	90.6	73.1	81.9	0	524	1716.6	465.6
Sept	86.6	69.7	78.2	0	396	1513.6	410.6
Oct	79.9	59.6	69.8	40	189	1335.0	362.1
Nov	70.3	49.8	60.1	178	31	972.6	263.8
Dec	64.2	45.3	54.8	326	11	779.4	211.4
Ann	77.7	58.9	68.3	1463	2705	1437.0	389.8

STATION NO. 12916

New Orleans, Louisiana

LATITUDE: 29° 59′ N
LONGITUDE: 90° 15′ W
ELEVATION: 3 meters (9.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	13.66	3.22	8.44	306	0	8651.0	0.432
Feb	15.77	4.77	10.27	231	5	11785.0	0.474
Mar	19.61	7.88	13.77	161	20	15225.0	0.490
Apr	24.94	13.27	19.11	36	59	18303.0	0.499
May	28.66	17.27	23.00	2	147	21406.0	0.532
June	32.27	21.22	26.77	0	253	23433.0	0.563
July	34.16	22.66	28.44	0	313	22856.0	0.559
Aug	34.33	22.50	28.44	0	313	21303.0	0.560
Sept	31.05	19.33	25.22	0	206	17635.0	0.530
Oct	26.27	13.16	19.72	38	82	14793.0	0.544
Nov	19.55	7.33	13.44	154	7	10539.0	0.490
Dec	14.94	4.11	9.55	272	0	8292.0	0.445
Ann	24.61	13.05	18.83	1203	1410	16185.0	0.519

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	56.6	37.8	47.2	551	0	762.3	206.8
Feb	60.4	40.6	50.5	416	9	1038.4	281.7
Mar	67.3	46.2	56.8	290	36	1341.5	363.9
Apr	76.9	55.9	66.4	65	106	1612.8	437.5
May	83.6	63.1	73.4	4	265	1886.2	511.6
June	90.1	70.2	80.2	0	455	2064.8	560.1
July	93.5	72.8	83.2	0	563	2013.9	546.3
Aug	93.8	72.5	83.2	0	563	1877.1	509.2
Sept	87.9	66.8	77.4	0	371	1553.9	421.5
Oct	79.3	55.7	67.5	68	148	1303.5	353.6
Nov	67.2	45.2	56.2	277	13	928.6	251.9
Dec	58.9	39.4	49.2	490	0	730.6	198.2
Ann	76.3	55.5	65.9	2165	2538	1426.1	386.8

LATITUDE: 32° 28′ N
LONGITUDE: 93° 49′ W
ELEVATION: 79 meters (259.1 feet)

STATION NO. 13957

Shreveport, Louisiana

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	5159.0	0.415
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8233.0	0.461
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	12412.0	0.485
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	16348.0	0.487
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	19623.0	0.498
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21075.0	0.502
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21100.0	0.517
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18289.0	0.508
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14240.0	0.494
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9517.0	0.457
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	5347.0	0.378
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	4297.0	0.392
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	12970.0	0.482

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	454.6	123.3
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	725.4	196.8
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1093.7	296.7
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1440.5	390.7
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1729.1	469.0
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1857.0	503.7
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1859.2	504.3
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1611.5	437.1
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1254.7	340.4
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	838.6	227.5
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	471.1	127.8
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	378.6	102.7
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1142.8	310.0

STATION NO. 14601

Bangor, Maine

LATITUDE: 44° 48′ N
LONGITUDE: 68° 49′ W
ELEVATION: 62 meters (203.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 6.77	– 16.94	– 11.83	935	0	4759.0	0.427
Feb	– 4.99	– 16.27	– 10.61	810	0	8217.0	0.494
Mar	0.44	– 9.77	– 4.66	712	0	12860.0	0.524
Apr	7.50	– 2.27	2.61	471	0	16050.0	0.488
May	15.72	3.88	9.83	263	0	17906.0	0.457
June	21.27	9.33	15.33	94	4	19945.0	0.475
July	24.22	12.27	18.27	46	45	20001.0	0.492
Aug	22.83	10.83	16.83	67	21	17031.0	0.480
Sept	18.16	6.33	12.27	181	0	12513.0	0.447
Oct	11.55	1.55	6.55	365	0	7812.0	0.397
Nov	3.44	– 4.11	– 0.33	560	0	4158.0	0.323
Dec	– 4.49	– 13.22	– 8.83	842	0	3524.0	0.364
Ann	9.05	– 1.55	3.77	5351	71	12065.0	0.462

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	19.8	1.5	10.7	1683	0	419.3	113.7
Feb	23.0	2.7	12.9	1458	0	724.0	196.4
Mar	32.8	14.4	23.6	1282	0	1133.1	307.4
Apr	45.5	27.9	36.7	848	0	1414.2	383.6
May	60.3	39.0	49.7	473	0	1577.8	428.0
June	70.3	48.8	59.6	169	7	1757.4	476.7
July	75.6	54.1	64.9	83	81	1762.4	478.0
Aug	73.1	51.5	62.3	121	38	1500.7	407.1
Sept	64.7	43.4	54.1	326	0	1102.6	299.1
Oct	52.8	34.8	43.8	657	0	688.3	186.7
Nov	38.2	24.6	31.4	1008	0	366.4	99.4
Dec	23.9	8.2	16.1	1516	0	310.5	84.2
Ann	48.3	29.2	38.8	9632	128	1063.1	288.4

LATITUDE: 46° 52′ N
LONGITUDE: 68° 1′ W
ELEVATION: 190 meters (623.2 feet)

SOLMET STATION NO. 14607

Caribou, Maine

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−0.44	−11.27	−5.83	749	0	5110.0	0.389
Feb	0.72	−10.83	−5.05	655	0	7739.0	0.417
Mar	4.88	−5.11	−0.11	571	0	11004.0	0.421
Apr	11.55	0.27	5.94	371	0	14798.0	0.437
May	17.55	5.38	11.50	211	0	17788.0	0.450
June	22.88	10.61	16.77	58	12	19425.0	0.462
July	26.16	13.83	20.00	15	66	18829.0	0.461
Aug	25.33	12.88	19.11	30	55	16580.0	0.457
Sept	21.05	8.55	14.83	111	6	13140.0	0.448
Oct	15.66	3.33	9.50	273	0	9333.0	0.435
Nov	8.61	−1.27	3.66	440	0	5212.0	0.351
Dec	1.61	−8.66	−3.49	676	0	4118.0	0.353
Ann	12.94	1.50	7.22	4165	140	11923.0	0.436

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.2	11.7	21.5	1348	0	450.3	122.1
Feb	33.3	12.5	22.9	1179	0	681.9	185.0
Mar	40.8	22.8	31.8	1028	0	969.6	263.0
Apr	52.8	32.5	42.7	668	0	1303.9	353.7
May	63.6	41.7	52.7	380	0	1567.4	425.2
June	73.2	51.1	62.2	104	22	1711.6	464.3
July	79.1	56.9	68.0	27	119	1659.1	450.0
Aug	77.6	55.2	66.4	54	99	1460.9	396.3
Sept	69.9	47.4	58.7	200	11 M	1157.8	314.1
Oct	60.2	38.0	49.1	491	0	822.4	223.1
Nov	47.5	29.7	38.6	792	0	459.3	124.6
Dec	34.9	16.4	25.7	1217	0	362.9	98.4
Ann	55.3	34.7	45.0	7497	252	1050.6	285.0

STATION NO. 14764

Portland, Maine

LATITUDE: 43° 39′ N
LONGITUDE: 70° 19′ W
ELEVATION: 19 meters (62.3 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	5.50	−3.94	0.77	544	0	6661.0	0.419
Feb	6.61	−3.49	1.55	470	0	9533.0	0.451
Mar	11.66	0.27	6.00	382	0	13190.0	0.467
Apr	18.44	5.77	12.11	188	0	16886.0	0.480
May	23.77	11.38	17.61	61	38	19451.0	0.487
June	28.44	16.44	22.44	0	125	21326.0	0.508
July	30.38	19.16	24.77	0	200	20691.0	0.505
Aug	29.50	18.16	23.83	0	170	18153.0	0.489
Sept	26.11	14.38	20.27	15	73	15097.0	0.486
Oct	20.16	8.00	14.11	138	7	11322.0	0.475
Nov	13.38	2.22	7.83	315	0	7494.0	0.427
Dec	6.61	−2.99	1.83	511	0	5667.0	0.392
Ann	18.38	7.11	12.77	2627	615	13789.0	0.476

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	41.9	24.9	33.4	979	0	586.9	159.2
Feb	43.9	25.7	34.8	846	0	840.0	227.8
Mar	53.0	32.5	42.8	688	0	1162.2	315.3
Apr	65.2	42.4	53.8	338	0	1487.9	403.6
May	74.8	52.5	63.7	110	68	1713.9	464.9
June	83.2	61.6	72.4	0	225	1879.1	509.7
July	86.7	66.5	76.6	0	360	1823.2	494.5
Aug	85.1	64.7	74.9	0	306	1599.5	433.9
Sept	79.0	57.9	68.5	27	131	1330.3	360.8
Oct	68.3	46.4	57.4	248	13	997.6	270.6
Nov	56.1	36.0	46.1	567	0	660.3	179.1
Dec	43.9	26.6	35.3	920	0	499.3	135.4
Ann	65.1	44.8	55.0	4729	1107	1215.0	329.6

LATITUDE: 39° 11′ N
LONGITUDE: 76° 40′ W
ELEVATION: 47 meters (154.2 feet)

STATION NO. 93721

Baltimore, Maryland

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	6902.0	0.419
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9784.0	0.452
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13405.0	0.468
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17457.0	0.493
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20006.0	0.500
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21483.0	0.512
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20618.0	0.503
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18466.0	0.495
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15402.0	0.491
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11587.0	0.476
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8021.0	0.443
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	6093.0	0.406
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14102.0	0.481

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	608.2	165.0
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	862.1	233.8
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1181.2	320.4
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1538.2	417.2
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1762.8	478.2
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1893.0	513.5
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1816.7	492.8
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1627.1	441.4
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1357.1	368.1
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1021.0	276.9
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	706.8	191.7
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	536.9	145.6
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1242.6	337.1

STATION NO. 13721

Patuxent River, Maryland

LATITUDE: 38° 17′ N
LONGITUDE: 76° 25′ W
ELEVATION: 14 meters (45.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	2.16	– 5.27	1.55	616	0	5396.0	0.387
Feb	3.05	– 4.83	– 0.88	538	0	8053.0	0.417
Mar	7.00	– 0.27	3.38	463	0	11535.0	0.431
Apr	13.50	4.88	9.22	273	0	15046.0	0.439
May	19.50	10.05	14.77	121	11	18391.0	0.463
June	24.77	15.16	20.00	15	65	20622.0	0.491
July	27.44	18.38	22.94	0	144	19852.0	0.485
Aug	26.27	17.38	21.83	4	112	16870.0	0.462
Sept	22.33	13.72	18.05	42	33	14298.0	0.479
Oct	17.33	8.61	13.00	167	0	10096.0	0.455
Nov	10.94	3.72	7.33	330	0	5707.0	0.365
Dec	4.05	– 2.99	0.55	551	0	4574.0	0.367
Ann	14.83	6.55	10.72	3122	367	12537.0	0.450

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	35.9	22.5	29.2	1109	0	475.5	129.0
Feb	37.5	23.3	30.4	968	0	709.6	192.5
Mar	44.6	31.5	38.1	833	0	1016.4	275.7
Apr	56.3	40.8	48.6	491	0	1325.8	359.6
May	67.1	50.1	58.6	218	20	1620.5	439.6
June	76.6	59.3	68.0	27	117	1817.1	492.9
July	81.4	65.1	73.3	0	259	1749.2	474.5
Aug	79.3	63.3	71.3	7	202	1486.5	403.2
Sept	72.2	56.7	64.5	76	59	1259.9	341.7
Oct	63.2	47.5	55.4	301	0	889.6	241.3
Nov	51.7	38.7	45.2	594	0	502.9	136.4
Dec	39.3	26.6	33.0	992	0	403.0	109.3
Ann	58.7	43.8	51.3	5620	661	1104.7	299.6

LATITUDE: 42° 22′ N
LONGITUDE: 71° 2′ W
ELEVATION: 5 meters (16.4 feet)

SOLMET STATION NO. 94701

Boston, Massachusetts

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−2.83	−12.94	−7.88	812	0	4109.0	0.335
Feb	−1.83	−13.38	−7.61	726	0	6998.0	0.395
Mar	2.66	−9.11	−3.22	668	0	11669.0	0.458
Apr	10.88	−1.94	4.50	415	0	15972.0	0.477
May	17.55	3.00	10.27	252	3	19524.0	0.496
June	23.50	8.55	16.05	83	15	21324.0	0.508
July	26.11	11.05	18.61	41	50	21388.0	0.525
Aug	25.16	10.61	17.88	61	47	17969.0	0.500
Sept	20.22	6.72	13.50	147	0	13119.0	0.457
Oct	14.94	2.05	8.50	305	0	8433.0	0.408
Nov	6.05	−2.83	1.61	501	0	4336.0	0.310
Dec	−0.55	−9.05	−4.77	716	0	3069.0	0.284
Ann	11.83	−0.61	5.61	4732	115	12326.0	0.460

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	26.9	8.7	17.8	1462	0	362.1	98.2
Feb	28.7	7.9	18.3	1307	0	616.6	167.3
Mar	36.8	15.6	26.2	1202	0	1028.2	278.9
Apr	51.6	28.5	40.1	747	0	1407.4	381.7
May	63.6	37.4	50.5	454	5	1720.3	466.6
June	74.3	47.4	60.9	149	27	1878.9	509.7
July	79.0	51.9	65.5	74	90	1884.6	511.2
Aug	77.3	51.1	64.2	110	85	1583.3	429.5
Sept	68.4	44.1	56.3	265	0	1156.0	313.6
Oct	58.9	35.7	47.3	549	0	743.1	201.6
Nov	42.9	26.9	34.9	902	0	382.1	103.6
Dec	31.0	15.7	23.4	1289	0	270.4	73.4
Ann	53.3	30.9	42.1	8518	207	1086.1	294.6

STATION NO. 94849

Alpena, Michigan

LATITUDE: 45° 4′ N
LONGITUDE: 83° 34′ W
ELEVATION: 210 meters (688.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−0.16	−7.11	−3.61	680	0	4737.0	0.341
Feb	0.94	−6.61	−2.83	592	0	7722.0	0.401
Mar	6.16	−2.44	1.88	510	0	11351.0	0.424
Apr	14.22	3.66	8.94	281	0	15877.0	0.463
May	20.27	9.05	14.66	132	18	19474.0	0.491
June	26.16	15.05	20.61	14	82	21178.0	0.504
July	28.38	17.44	22.94	0	145	20830.0	0.509
Aug	27.55	16.72	22.16	6	125	17880.0	0.490
Sept	23.44	12.66	18.05	44	36	14223.0	0.477
Oct	17.44	7.33	12.38	190	5	9943.0	0.449
Nov	8.72	1.33	5.05	398	0	5422.0	0.348
Dec	1.88	−4.55	−1.33	609	0	3898.0	0.313
Ann	14.61	5.22	9.94	3460	412	12711.0	0.457

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.7	19.2	25.5	1224	0	417.4	113.2
Feb	33.7	20.1	26.9	1066	0	680.4	184.6
Mar	43.1	27.6	35.4	918	0	1000.2	271.3
Apr	57.6	38.6	48.1 M	506	0	1399.0	379.5
May	68.5	48.3	58.4	238	32	1715.9	465.4
June	79.1	59.1	69.1 M	25	148	1866.1	506.2
July	83.1	63.4	73.3	0	261	1835.4	497.9
Aug	81.6	62.1	71.9	11	225	1575.5	427.3
Sept	74.2	54.8	64.5	79	65	1253.2	339.9
Oct	63.4	45.2	54.3	342	9	876.1	237.6
Nov	47.7	34.4	41.1	716	0	477.8	129.6
Dec	35.4	23.8	29.6	1096	0	343.5	93.2
Ann	58.3	41.4	49.9	6228	742	1120.0	303.8

LATITUDE: 42° 25′ N
LONGITUDE: 83° 1′ W
ELEVATION: 191 meters (626.5 feet)

STATION NO. 14822

Detroit, Michigan

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−1.16	−9.66	−5.38	735	0	4348.0	0.320
Feb	0.00	−9.16	−4.55	641	0	7223.0	0.381
Mar	5.22	−4.61	0.33	557	0	10859.0	0.410
Apr	13.61	1.83	7.72	318	0	15196.0	0.446
May	19.44	6.94	13.22	170	11	18818.0	0.475
June	25.00	12.55	18.77	36	49	20579.0	0.490
July	27.33	14.55	20.94	7	88	20392.0	0.499
Aug	26.50	13.66	20.11	20	75	17647.0	0.485
Sept	22.33	9.83	16.11	81	15	13568.0	0.458
Oct	16.61	4.72	10.66	240	3	9406.0	0.431
Nov	7.72	−0.77	3.50	445	0	4872.0	0.319
Dec	1.00	−6.83	−2.88	657	0	3506.0	0.290
Ann	13.61	2.77	8.22	3911	243	12201.0	0.442

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	29.9	14.6	22.3	1323	0	383.1	103.9
Feb	32.0	15.5	23.8	1154	0	636.4	172.6
Mar	41.4	23.7	32.6	1003	0	956.8	259.5
Apr	56.5	35.3	45.9	572	0	1339.0	363.2
May	67.0	44.5	55.8	306	20	1658.1	449.8
June	77.0	54.6	65.8	65	88	1813.3	491.9
July	81.2	58.2	69.7	13	158	1796.8	487.4
Aug	79.7	56.6	68.2	36	135	1554.9	421.8
Sept	72.2	49.7	61.0	146	27	1195.5	324.3
Oct	61.9	40.5	51.2	432	5	828.8	224.8
Nov	45.9	30.6	38.3	801	0	429.3	116.4
Dec	33.8	19.7	26.8	1183	0	308.9	83.8
Ann	56.5	37.0	46.8	7040	437	1075.1	291.6

STATION NO. 14826

Flint, Michigan

LATITUDE: 42° 58′ N
LONGITUDE: 83° 44′ W
ELEVATION: 233 meters (764.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 0.94	– 8.88	– 4.88	720	0	4194.0	0.308
Feb	0.33	– 8.66	– 4.16	630	0	7357.0	0.387
Mar	5.55	– 4.33	0.61	549	0	11512.0	0.434
Apr	14.05	2.00	8.05	308	0	16024.0	0.470
May	20.44	7.44	13.94	150	13	19920.0	0.503
June	26.16	13.11	19.66	24	64	22204.0	0.528
July	28.50	15.33	21.94	4	116	21726.0	0.531
Aug	27.72	14.50	21.11	15	101	19024.0	0.522
Sept	23.27	10.44	16.88	63	20	14324.0	0.483
Oct	17.27	4.88	11.11	227	3	9735.0	0.445
Nov	7.88	– 0.49	3.72	438	0	5058.0	0.330
Dec	1.05	– 6.22	– 2.55	647	0	3526.0	0.290
Ann	14.27	3.27	8.77	3778	319	12884.0	0.466

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	30.3	16.0	23.2	1296	0	369.6	100.2
Feb	32.6	16.4	24.5	1134	0	648.3	175.8
Mar	42.0	24.2	33.1	988	0	1014.4	275.1
Apr	57.3	35.6	46.5	554	0	1411.9	383.0
May	68.8	45.4	57.1	270	23	1755.2	476.1
June	79.1	55.6	67.4	43	115	1956.5	530.7
July	83.3	59.6	71.5	7	209	1914.4	519.3
Aug	81.9	58.1	70.0	27	182	1676.3	454.7
Sept	73.9	50.8	62.4	113	36	1262.1	342.4
Oct	63.1	40.8	52.0	409	5	857.8	232.7
Nov	46.2	31.1	38.7	788	0	445.7	120.9
Dec	33.9	20.8	27.4	1165	0	310.7	84.3
Ann	57.7	37.9	47.8	6800	574	1135.3	307.9

LATITUDE: 42° 53′ N
LONGITUDE: 85° 31′ W
ELEVATION: 245 meters (803.6 feet)

STATION NO. 94860

Grand Rapids, Michigan

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2772.0	0.253
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	5493.0	0.334
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10593.0	0.434
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15504.0	0.473
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18840.0	0.482
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20856.0	0.497
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20856.0	0.514
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17267.0	0.487
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11463.0	0.412
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	7611.0	0.390
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	3302.0	0.260
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2177.0	0.229
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11394.0	0.438

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	244.3	66.3
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	484.0	131.3
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	933.4	253.2
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1366.1	370.6
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1660.1	450.3
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1837.7	498.5
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1837.7	498.5
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1521.5	412.7
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1010.1	274.0
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	670.6	181.9
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	291.0	78.9
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	191.8	52.0
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1004.0	272.3

STATION NO. 14858

Houghton, Michigan h

LATITUDE: 47° 10′ N
LONGITUDE: 88° 30′ W
ELEVATION: 329 meters (1079.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 5.55	– 14.22	– 9.88	875	0	3686.0	0.323
Feb	– 4.61	– 14.05	– 9.33	774	0	6847.0	0.406
Mar	0.27	– 9.16	– 4.44	706	0	11673.0	0.471
Apr	8.44	– 1.55	3.44	446	0	15699.0	0.476
May	15.22	3.61	9.44	275	0	19158.0	0.489
June	21.11	8.50	14.83	111	6	20551.0	0.490
July	23.94	11.38	17.66	53	32	20826.0	0.512
Aug	23.00	11.61	17.33	69	38	17281.0	0.485
Sept	18.05	7.83	12.94	161	0	11906.0	0.423
Oct	12.66	3.11	7.88	323	0	7638.0	0.384
Nov	3.88	– 3.05	0.44	536	0	3765.0	0.287
Dec	– 2.88	– 10.38	– 6.61	773	0	2870.0	0.289
Ann	9.44	– 0.55	4.44	5107	77	11825.0	0.450

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	22.0	6.4	14.2	1575	0	324.8	88.1
Feb	23.7	6.7	15.2	1393	0	603.3	163.7
Mar	32.5	15.5	24.0	1271	0	1028.6	279.0
Apr	47.2	29.2	38.2	803	0	1383.3	375.2
May	59.4	38.5	49.0	495	0	1688.1	457.9
June	70.0	47.3	58.7	200	11	1810.8	491.2
July	75.1	52.5	63.8	95	58	1835.1	497.8
Aug	73.4	52.9	63.2	124	68	1522.7	413.0
Sept	64.5	46.1	55.3	290	0	1049.1	284.6
Oct	54.8	37.6	46.2	581	0	673.0	182.6
Nov	39.0	26.5	32.8	965	0	331.7	90.0
Dec	26.8	13.3	20.1	1391	0	252.9	68.6
Ann	49.0	31.0	40.0	9193	139	1041.9	282.6

LATITUDE: 46° 28′ N
LONGITUDE: 84°22′ W
ELEVATION: 221 meters (724.9feet)

STATION NO. 14847

Sault Ste. Marie, Michigan

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−6.22	761	0	3527.0	0.283
Feb	0.0 ND	0.0 ND	−6.27	688	0	6441.0	0.360
Mar	0.0 ND	0.0 ND	−1.83	625	0	11360.0	0.443
Apr	0.0 ND	0.0 ND	5.94	371	0	15948.0	0.475
May	0.0 ND	0.0 ND	11.55	215	5	19623.0	0.498
June	0.0 ND	0.0 ND	17.61	57	36	21704.0	0.517
July	0.0 ND	0.0 ND	20.38	18	82	21674.0	0.531
Aug	0.0 ND	0.0 ND	19.72	36	80	18264.0	0.507
Sept	0.0 ND	0.0 ND	15.22	98	5	13225.0	0.458
Oct	0.0 ND	0.0 ND	9.88	261	0	8556.0	0.410
Nov	0.0 ND	0.0 ND	2.72	468	0	4276.0	0.301
Dec	0.0 ND	0.0 ND	−3.38	673	0	2914.0	0.265
Ann	0.0 ND	0.0 ND	7.11	4276	208	12293.0	0.456

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	20.8	1370	0	310.8	84.3
Feb	0.0 ND	0.0 ND	20.7	1238	0	567.5	153.9
Mar	0.0 ND	0.0 ND	28.7	1125	0	1001.0	271.5
Apr	0.0 ND	0.0 ND	42.7	668	0	1405.2	381.2
May	0.0 ND	0.0 ND	52.8	387	9	1729.1	469.0
June	0.0 ND	0.0 ND	63.7	103	65	1912.4	518.7
July	0.0 ND	0.0 ND	68.7	32	148	1909.8	518.0
Aug	0.0 ND	0.0 ND	67.5	65	144	1609.3	436.5
Sept	0.0 ND	0.0 ND	59.4	176	9	1165.3	316.1
Oct	0.0 ND	0.0 ND	49.8	470	0	753.9	204.5
Nov	0.0 ND	0.0 ND	36.9	842	0	376.8	102.2
Dec	0.0 ND	0.0 ND	25.9	1211	0	256.8	69.6
Ann	0.0 ND	0.0 ND	44.8	7697	374	1083.2	293.8

STATION NO. 14850

Traverse City, Michigan

LATITUDE: 44° 44′ N
LONGITUDE: 85° 35′ W
ELEVATION: 192 meters (629.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 7.99	– 18.11	– 13.05	972	0	4410.0	0.395
Feb	– 5.49	– 16.66	– 11.05	822	0	7636.0	0.459
Mar	0.33	– 9.77	– 4.72	715	0	11740.0	0.478
Apr	8.77	– 1.49	3.66	440	0	15580.0	0.474
May	15.55	3.77	9.66	268	0	18642.0	0.476
June	20.94	9.05	15.00	107	7	20056.0	0.478
July	24.66	12.61	18.66	37	47	21044.0	0.518
Aug	23.55	12.05	17.83	57	42	17556.0	0.494
Sept	17.77	7.11	12.44	176	0	12427.0	0.444
Oct	12.38	2.33	7.38	339	0	8226.0	0.418
Nov	1.83	– 5.88	– 1.99	610	0	4321.0	0.335
Dec	– 5.27	– 14.27	– 9.77	871	0	3311.0	0.341
Ann	8.94	– 1.61	3.66	5420	97	12079.0	0.463

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	17.6	– 0.6	8.5	1750	0	388.6	105.4
Feb	22.1	2.0	12.1	1480	0	672.8	182.5
Mar	32.6	14.4	23.5	1287	0	1034.5	280.6
Apr	47.8	29.3	38.6	792	0	1372.8	372.4
May	60.0	38.8	49.4	482	0	1642.6	445.6
June	69.7	48.3	59.0	193	13	1767.2	479.4
July	76.4	54.7	65.6	67	85	1854.3	503.0
Aug	74.4	53.7	64.1	103	76	1546.9	419.6
Sept	64.0	44.8	54.4	317	0	1095.0	297.0
Oct	54.3	36.2	45.3	610	0	724.8	196.6
Nov	35.3	21.4	28.4	1098	0	380.7	103.3
Dec	22.5	6.3	14.4	1568	0	291.7	79.1
Ann	48.1	29.1	38.6	9756	175	1064.3	288.7

LATITUDE: 46° 50′ N
LONGITUDE: 92° 11′ W
ELEVATION: 432 meters (1417.0 feet)

STATION NO. 14913

Duluth, Minnesota

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−10.66	−22.83	−16.72	1086	0	4037.0	0.399
Feb	−6.99	−20.83	−13.88	902	0	7519.0	0.482
Mar	0.16	−12.83	−6.33	764	0	11870.0	0.501
Apr	9.50	−2.61	3.44	446	0	16385.0	0.507
May	16.94	3.16	10.05	256	0	19477.0	0.501
June	22.44	9.05	15.77	93	16	21033.0	0.502
July	25.66	11.88	18.77	36	50	21801.0	0.538
Aug	24.16	10.50	17.33	62	31	18366.0	0.523
Sept	17.88	5.38	11.66	202	0	12725.0	0.467
Oct	12.22	0.50	6.38	370	0	7988.0	0.427
Nov	0.27	−8.16	−3.94	668	0	3921.0	0.331
Dec	−7.72	−18.22	−12.94	969	0	3084.0	0.356
Ann	8.66	−3.72	2.50	5859	97	12350.0	0.486

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	12.8	−9.1	1.9	1955	0	355.7	96.5
Feb	19.4	−5.5	7.0	1624	0	662.5	179.7
Mar	32.3	8.9	20.6	1375	0	1045.9	283.7
Apr	49.1	27.3	38.2	803	0	1443.7	391.6
May	62.5	37.7	50.1	461	0	1716.2	465.5
June	72.4	48.3	60.4	167	29	1853.3	502.7
July	78.2	53.4	65.8	65	90	1921.0	521.1
Aug	75.5	50.9	63.2	112	56	1618.3	439.0
Sept	64.2	41.7	53.0	364	0	1121.3	304.1
Oct	54.0	32.9	43.5	666	0	703.9	190.9
Nov	32.5	17.3	24.9	1202	0	345.5	93.7
Dec	18.1	−0.8	8.7	1744	0	271.7	73.7
Ann	47.6	25.3	36.5	10546	175	1088.2	295.2

STATION NO. 14918

International Falls, Minnesota

LATITUDE: 48° 34′ N
LONGITUDE: 93° 23′ W
ELEVATION: 361 meters (1184.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−5.99	−15.99	−10.99	909	0	5266.0	0.425
Feb	−3.38	−13.83	−8.61	754	0	8669.0	0.487
Mar	2.72	−6.88	−2.05	632	0	12524.0	0.490
Apr	13.05	1.50	7.27	331	0	16364.0	0.488
May	19.94	7.94	13.94	150	14	19716.0	0.500
June	25.05	13.72	19.38	36	67	21875.0	0.521
July	28.00	16.33	22.16	6	125	22357.0	0.548
Aug	27.11	15.33	21.22	11	101	19146.0	0.532
Sept	21.50	9.61	15.55	96	12	14239.0	0.494
Oct	15.94	4.00	10.00	262	3	9756.0	0.469
Nov	4.77	−4.33	0.22	543	0	5452.0	0.387
Dec	−2.99	−11.88	−7.44	798	0	4010.0	0.368
Ann	12.11	1.27	6.72	4532	325	13281.0	0.494

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	21.2	3.2	12.2	1636	0	464.0	125.9
Feb	25.9	7.1	16.5	1357	0	763.9	207.2
Mar	36.9	19.6	28.3	1138	0	1103.5	299.3
Apr	55.5	34.7	45.1	596	0	1441.9	391.1
May	67.9	46.3	57.1	270	25	1737.3	471.2
June	77.1	56.7	66.9	65	121	1927.5	522.8
July	82.4	61.4	71.9	11	225	1970.0	534.4
Aug	80.8	59.6	70.2	20	182	1687.0	457.6
Sept	70.7	49.3	60.0	173	22	1254.7	340.3
Oct	60.7	39.2	50.0	472	5	859.6	233.2
Nov	40.6	24.2	32.4	977	0	480.4	130.3
Dec	26.6	10.6	18.6	1436	0	353.3	95.8
Ann	53.8	34.3	44.1	8158	585	1170.2	317.4

LATITUDE: 44° 53′ N
LONGITUDE: 93° 13′ W
ELEVATION: 255 meters (836.4 feet)

STATION NO. 14922

Minneapolis / St. Paul, Minnesota

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−5.61	−15.61	−10.61	897	0	5413.0	0.417
Feb	−3.11	−13.66	−8.38	748	0	8543.0	0.465
Mar	2.50	−7.16	−2.33	640	0	12278.0	0.472
Apr	12.72	1.16	6.94	341	0	16000.0	0.473
May	19.50	7.38	13.44	162	10	19243.0	0.487
June	24.66	13.05	18.88	43	60	21584.0	0.514
July	27.05	15.27	21.16	11	99	21664.0	0.531
Aug	26.33	14.27	20.33	19	81	18864.0	0.521
Sept	21.22	9.05	15.16	102	7	14186.0	0.486
Oct	15.77	3.72	9.77	269	3	9870.0	0.463
Nov	4.94	−4.33	0.33	540	0	5609.0	0.382
Dec	−2.83	−11.72	−7.27	793	0	4200.0	0.365
Ann	11.94	0.94	6.44	4570	263	13121.0	0.481

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	21.9	3.9	12.9	1615	0	477.0	129.4
Feb	26.4	7.4	16.9	1346	0	752.8	204.2
Mar	36.5	19.1	27.8	1152	0	1081.9	293.5
Apr	54.9	34.1	44.5	614	0	1409.8	382.4
May	67.1	45.3	56.2	292	18	1695.6	459.9
June	76.4	55.5	66.0	77	108	1901.9	515.9
July	80.7	59.5	70.1	20	178	1908.9	517.8
Aug	79.4	57.7	68.6	34	146	1662.2	450.9
Sept	70.2	48.3	59.3	184	13	1250.0	339.1
Oct	60.4	38.7	49.6	484	5	869.7	235.9
Nov	40.9	24.2	32.6	972	0	494.2	134.1
Dec	26.9	10.9	18.9	1427	0	370.1	100.4
Ann	53.5	33.7	43.6	8226	473	1156.1	313.6

STATION NO. 14925

Rochester, Minnesota

LATITUDE: 43° 55′ N
LONGITUDE: 92° 30′ W
ELEVATION: 402 meters (1318.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	14.66	2.11	8.38	316	7	8551.0	0.425
Feb	16.50	3.22	9.88	245	9	11648.0	0.467
Mar	20.38	6.33	13.38	173	20	15538.0	0.499
Apr	25.66	11.72	18.72	41	52	19388.0	0.528
May	29.44	15.77	22.61	3	136	22026.0	0.547
June	32.77	19.83	26.33	0	240	22973.0	0.552
July	33.72	21.44	27.61	0	287	21665.0	0.530
Aug	33.66	21.00	27.33	0	278	20207.0	0.531
Sept	31.11	17.77	24.44	0	183	17128.0	0.514
Oct	26.72	10.83	18.77	50	64	14429.0	0.529
Nov	20.27	5.55	12.94	167	5	10232.0	0.473
Dec	15.83	2.94	9.38	280	2	8044.0	0.430
Ann	25.05	11.55	18.33	1277	1289	15986.0	0.512

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	58.4	35.8	47.1	569	13	753.5	204.4
Feb	61.7	37.8	49.8	441	16	1026.4	278.4
Mar	68.7	43.4	56.1	311	36	1369.1	371.4
Apr	78.2	53.1	65.7	74	94	1708.4	463.4
May	85.0	60.4	72.7	5	245	1940.8	526.4
June	91.0	67.7	79.4	0	432	2024.2	549.1
July	92.7	70.6	81.7	0	517	1909.0	517.8
Aug	92.6	69.8	81.2	0	500	1780.5	483.0
Sept	88.0	64.0	76.0	0	329	1509.2	409.4
Oct	80.1	51.5	65.8	90	115	1271.4	344.9
Nov	68.5	42.0	55.3	301	9	901.6	244.6
Dec	60.5	37.3	48.9	504	4	708.8	192.3
Ann	77.1	52.8	65.0	2299	2320	1408.6	382.1

LATITUDE: 32° 19′ N
LONGITUDE: 90° 5′ W
ELEVATION: 101 meters (331.3 feet)

STATION NO. 3940

Jackson, Mississippi

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	14.66	1.88	8.27	319	7	8445.0	0.420
Feb	16.55	3.16	9.88	246	9	11488.0	0.461
Mar	20.38	6.33	13.38	173	20	15069.0	0.484
Apr	25.77	11.27	18.55	43	50	18859.0	0.514
May	29.55	15.27	22.44	3	131	21105.0	0.524
June	32.94	19.44	26.22	0	236	22275.0	0.535
July	33.61	21.05	27.33	0	278	20695.0	0.506
Aug	33.44	20.61	27.05	0	270	19739.0	0.518
Sept	30.50	17.55	24.05	0	171	16502.0	0.495
Oct	26.00	10.44	18.22	61	58	14273.0	0.524
Nov	19.83	4.83	12.33	183	3	10176.0	0.471
Dec	15.44	2.22	8.83	294	0	7938.0	0.424
Ann	24.88	11.16	18.05	1326	1239	15547.0	0.498

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	58.4	35.4	46.9	574	13	744.1	201.8
Feb	61.8	37.7	49.8	443	16	1012.3	274.6
Mar	68.7	43.4	56.1	311	36	1327.8	360.2
Apr	78.4	52.3	65.4	77	90	1661.7	450.7
May	85.2	59.5	72.4	5	236	1859.6	504.4
June	91.3	67.0	79.2	0	425	1962.7	532.4
July	92.5	69.9	81.2	0	500	1823.5	494.6
Aug	92.2	69.1	80.7	0	486	1739.3	471.8
Sept	86.9	63.6	75.3	0	308	1454.1	394.4
Oct	78.8	50.8	64.8	110	104	1257.7	341.1
Nov	67.7	40.7	54.2	329	5	896.6	243.2
Dec	59.8	36.0	47.9	529	0	699.4	189.7
Ann	76.8	52.1	64.5	2387	2230	1369.9	371.6

STATION NO. 13865

Meridian, Mississippi

LATITUDE: 32° 20′ N
LONGITUDE: 88° 45′ W
ELEVATION: 94 meters (308.3 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.33	−6.33	1.49	615	0	6940.0	0.430
Feb	5.94	−4.16	0.88	488	0	9928.0	0.465
Mar	10.72	0.00	5.38	405	4	13378.0	0.471
Apr	18.50	7.00	12.77	174	7	17317.0	0.491
May	23.61	12.38	18.00	65	54	21334.0	0.533
June	28.16	17.38	22.77	6	139	23714.0	0.565
July	30.77	19.50	25.16	0	211	24015.0	0.586
Aug	30.22	18.61	24.44	2	192	21312.0	0.573
Sept	26.33	14.00	20.16	23	78	16461.0	0.528
Oct	20.66	8.16	14.44	137	16	12493.0	0.520
Nov	12.00	1.22	6.61	351	0	7975.0	0.449
Dec	5.05	−4.16	0.44	554	0	5930.0	0.404
Ann	17.94	6.94	12.44	2823	705	15067.0	0.517

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.0	20.6	29.3	1107	0	611.5	165.9
Feb	42.7	24.5	33.6	878	0	874.8	237.3
Mar	51.3	32.0	41.7	729	7	1178.8	319.7
Apr	65.3	44.6	55.0	313	13	1525.9	413.9
May	74.5	54.3	64.4	117	97	1879.8	509.9
June	82.7	63.3	73.0	11	250	2089.5	566.8
July	87.4	67.1	77.3	0	380	2116.1	574.0
Aug	86.4	65.5	76.0	4	346	1877.9	509.4
Sept	79.4	57.2	68.3	41	140	1450.4	393.4
Oct	69.2	46.7	58.0	247	29	1100.8	298.6
Nov	53.6	34.2	43.9	632	0	702.7	190.6
Dec	41.1	24.5	32.8	997	0	522.5	141.7
Ann	64.3	44.5	54.4	5081	1269	1327.6	360.1

LATITUDE: 38° 49′ N
LONGITUDE: 92° 13′ W
ELEVATION: 270 meters (885.6 feet)

SOLMET STATION NO. 3945

Columbia, Missouri

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	2.05	−7.55	−2.72	652	0	7353.0	0.464
Feb	5.22	−4.94	0.16	508	0	10154.0	0.482
Mar	10.38	−0.77	4.83	418	0	13652.0	0.484
Apr	18.16	6.50	12.33	186	6	17875.0	0.509
May	23.44	12.22	17.83	70	55	21252.0	0.532
June	28.22	17.33	22.77	8	141	23601.0	0.562
July	31.11	19.38	25.27	0	215	23857.0	0.582
Aug	30.66	18.77	24.72	0	200	21136.0	0.570
Sept	26.00	13.94	20.00	27	77	16483.0	0.532
Oct	20.11	8.27	14.22	143	16	12396.0	0.521
Nov	10.77	0.61	5.72	378	0	8367.0	0.478
Dec	4.05	−4.83	−0.38	580	0	6372.0	0.443
Ann	17.50	6.55	12.05	2976	713	15208.0	0.525

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	35.7	18.4	27.1	1174	0	647.9	175.7
Feb	41.4	23.1	32.3	914	0	894.7	242.7
Mar	50.7	30.6	40.7	752	0	1202.9	326.3
Apr	64.7	43.7	54.2	335	11	1575.0	427.2
May	74.2	54.0	64.1	126	99	1872.6	507.9
June	82.8	63.2	73.0	14	254	2079.6	564.1
July	88.0	66.9	77.5	0	387	2102.1	570.2
Aug	87.2	65.8	76.5	0	360	1862.4	505.2
Sept	78.8	57.1	68.0	49	139	1452.4	394.0
Oct	68.2	46.9	57.6	257	29	1092.3	296.3
Nov	51.4	33.1	42.3	680	0	737.3	200.0
Dec	39.3	23.3	31.3	1044	0	561.5	152.3
Ann	63.5	43.8	53.7	5357	1283	1340.0	363.5

STATION NO. 3947

Kansas City, Missouri

LATITUDE: 39° 18′ N
LONGITUDE: 94° 43′ W
ELEVATION: 315 meters (1033.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	6.22	−5.22	0.50	552	0	7758.0	0.453
Feb	8.61	−3.05	2.77	435	0	10506.0	0.472
Mar	12.83	0.44	6.66	366	5	14016.0	0.482
Apr	20.00	7.22	13.61	152	11	18209.0	0.511
May	24.50	12.22	18.38	52	54	21356.0	0.533
June	29.00	17.16	23.11	5	148	23552.0	0.562
July	31.66	19.16	25.44	0	222	23414.0	0.571
Aug	31.61	18.44	25.05	3	211	21262.0	0.568
Sept	27.33	14.05	20.72	19	91	16804.0	0.530
Oct	21.72	8.22	15.00	126	22	12981.0	0.522
Nov	13.55	1.38	7.50	325	0	8799.0	0.470
Dec	7.61	−3.16	2.22	499	0	6840.0	0.437
Ann	19.55	7.22	13.38	2538	767	15458.0	0.521

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	43.2	22.6	32.9	994	0	683.6	185.4
Feb	47.5	26.5	37.0	783	0	925.7	251.1
Mar	55.1	32.8	44.0	659	9	1235.0	335.0
Apr	68.0	45.0	56.5	274	20	1604.5	435.2
May	76.1	54.0	65.1	94	97	1881.8	510.4
June	84.2	62.9	73.6	9	266	2075.3	562.9
July	89.0	66.5	77.8	0	400	2063.1	559.6
Aug	88.9	65.2	77.1	5	380	1873.5	508.2
Sept	81.2	57.3	69.3	34	164	1480.7	401.6
Oct	71.1	46.8	59.0	227	40	1143.8	310.3
Nov	56.4	34.5	45.5	585	0	775.3	210.3
Dec	45.7	26.3	36.0	898	0	602.7	163.5
Ann	67.2	45.0	56.1	4568	1381	1362.1	369.5

LATITUDE: 37° 14′ N
LONGITUDE: 93° 23′ W
ELEVATION: 387 meters (1269.4 feet)

STATION NO. 13995

Springfield, Missouri

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	4.38	−5.22	−0.38	580	0	7120.0	0.440
Feb	6.77	−3.33	1.72	465	0	10051.0	0.470
Mar	11.66	0.83	6.27	378	5	13672.0	0.481
Apr	19.44	7.77	13.61	151	9	17752.0	0.503
May	24.44	13.05	18.77	57	71	21237.0	0.531
June	29.38	18.22	23.83	5	170	23748.0	0.566
July	31.33	20.44	25.88	0	234	23260.0	0.567
Aug	30.66	19.50	25.11	0	210	20615.0	0.554
Sept	26.72	15.05	20.88	19	96	16560.0	0.531
Oct	21.00	9.11	15.05	124	22	12481.0	0.518
Nov	12.27	2.16	7.22	333	0	8152.0	0.457
Dec	5.94	−3.05	1.44	523	0	6022.0	0.409
Ann	18.66	7.88	13.27	2638	819	15056.0	0.517

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	39.9	22.6	31.3	1044	0	627.4	170.2
Feb	44.2	26.0	35.1	837	0	885.6	240.2
Mar	53.0	33.5	43.3	680	9	1204.7	326.8
Apr	67.0	46.0	56.5	272	16	1564.2	424.3
May	76.0	55.5	65.8	103	128	1871.3	507.6
June	84.9	64.8	74.9	9	306	2092.5	567.6
July	88.4	68.8	78.6	0	421	2049.5	555.9
Aug	87.2	67.1	77.2	0	378	1816.5	492.7
Sept	80.1	59.1	69.6	34	173	1459.2	395.8
Oct	69.8	48.4	59.1	223	40	1099.8	298.3
Nov	54.1	35.9	45.0	599	0	718.3	194.8
Dec	42.7	26.5	34.6	941	0	530.6	143.9
Ann	65.6	46.2	55.9	4748	1474	1326.6	359.9

STATION NO. 13994

St. Louis, Missouri

LATITUDE: 38° 45′ N
LONGITUDE: 90° 23′ W
ELEVATION: 172 meters (564.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−0.44	−10.83	−5.61	742	0	5516.0	0.467
Feb	2.83	−7.94	−2.55	585	0	8661.0	0.502
Mar	5.61	−4.94	0.33	557	0	13499.0	0.538
Apr	13.22	0.77	7.00	340	0	17322.0	0.521
May	18.72	6.27	12.50	185	4	21708.0	0.553
June	23.16	10.83	17.00	72	32	24669.0	0.588
July	29.77	14.44	22.11	5	122	27053.0	0.665
Aug	28.77	13.50	21.16	8	96	22952.0	0.642
Sept	21.83	8.05	14.94	122	21	16683.0	0.587
Oct	16.11	3.05	9.61	270	0	11199.0	0.552
Nov	7.22	−3.11	2.05	488	0	6371.0	0.471
Dec	2.11	−7.94	−2.88	657	0	4780.0	0.462
Ann	14.05	1.83	7.94	4036	276	15034.0	0.567

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.2	12.5	21.9	1336	0	486.0	131.8
Feb	37.1	17.7	27.4	1053	0	763.2	207.0
Mar	42.1	23.1	32.6	1003	0	1189.5	322.6
Apr	55.8	33.4	44.6	612	0	1526.3	414.0
May	65.7	43.3	54.5	333	7	1912.8	518.8
June	73.7	51.5	62.6	130	58	2173.7	589.6
July	85.6	58.0	71.8	9	220	2383.7	646.6
Aug	83.8	56.3	70.1	14	173	2022.4	548.6
Sept	71.3	46.5	58.9	220	38	1470.0	398.7
Oct	61.0	37.5	49.3	486	0	986.8	267.7
Nov	45.0	26.4	35.7	878	0	561.4	152.3
Dec	35.8	17.7	26.8	1183	0	421.2	114.2
Ann	57.3	35.3	46.3	7265	497	1324.7	359.3

LATITUDE: 45° 48′ N
LONGITUDE: 108° 32′ W
ELEVATION: 1088 meters (3568.6 feet)

STATION NO. 24033

Billings, Montana

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−8.77	840	0	4564.0	0.452
Feb	0.0 ND	0.0 ND	−5.33	662	0	7806.0	0.501
Mar	0.0 ND	0.0 ND	−2.88	657	0	12802.0	0.541
Apr	0.0 ND	0.0 ND	4.16	425	0	16851.0	0.522
May	0.0 ND	0.0 ND	9.77	265	0	21365.0	0.549
June	0.0 ND	0.0 ND	13.61	148	6	23212.0	0.554
July	0.0 ND	0.0 ND	18.00	45	35	25954.0	0.641
Aug	0.0 ND	0.0 ND	17.00	69	27	21524.0	0.614
Sept	0.0 ND	0.0 ND	11.77	204	7	15342.0	0.564
Oct	0.0 ND	0.0 ND	6.72	360	0	9888.0	0.529
Nov	0.0 ND	0.0 ND	−1.27	588	0	5451.0	0.461
Dec	0.0 ND	0.0 ND	−5.88	751	0	3795.0	0.439
Ann	0.0 ND	0.0 ND	4.72	5018	77	14046.0	0.553

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	16.2	1512	0	402.2	109.1
Feb	0.0 ND	0.0 ND	22.4	1192	0	687.8	186.6
Mar	0.0 ND	0.0 ND	26.8	1183	0	1128.0	306.0
Apr	0.0 ND	0.0 ND	39.5	765	0	1484.8	402.8
May	0.0 ND	0.0 ND	49.6	477	0	1882.6	510.6
June	0.0 ND	0.0 ND	56.5	266	11	2045.3	554.8
July	0.0 ND	0.0 ND	64.4	81	63	2286.9	620.3
Aug	0.0 ND	0.0 ND	62.6	124	49	1896.6	514.4
Sept	0.0 ND	0.0 ND	53.2	367	13	1351.8	366.7
Oct	0.0 ND	0.0 ND	44.1	648	0	871.3	236.3
Nov	0.0 ND	0.0 ND	29.7	1058	0	480.3	130.3
Dec	0.0 ND	0.0 ND	21.4	1352	0	334.4	90.7
Ann	0.0 ND	0.0 ND	40.5	9032	139	1237.6	335.7

STATION NO. 24137

Cut Bank, Montana

LATITUDE: 48° 36′ N
LONGITUDE: 112° 22′ W
ELEVATION: 1170 meters (3837.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−6.55	771	0	5975.0	0.492
Feb	0.0 ND	0.0 ND	−3.61	614	0	9604.0	0.546
Mar	0.0 ND	0.0 ND	−1.33	609	0	14518.0	0.572
Apr	0.0 ND	0.0 ND	5.05	398	0	18600.0	0.557
May	0.0 ND	0.0 ND	10.22	251	0	22575.0	0.574
June	0.0 ND	0.0 ND	14.16	132	7	24326.0	0.579
July	0.0 ND	0.0 ND	19.11	30	53	27147.0	0.666
Aug	0.0 ND	0.0 ND	18.11	47	40	22962.0	0.640
Sept	0.0 ND	0.0 ND	12.61	180	8	17263.0	0.602
Oct	0.0 ND	0.0 ND	7.22	344	0	11613.0	0.564
Nov	0.0 ND	0.0 ND	−0.11	553	0	6832.0	0.492
Dec	0.0 ND	0.0 ND	−4.49	707	0	5108.0	0.478
Ann	0.0 ND	0.0 ND	5.88	4641	110	15544.0	0.581

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	20.2	1388	0	526.5	142.8
Feb	0.0 ND	0.0 ND	25.5	1105	0	846.2	229.5
Mar	0.0 ND	0.0 ND	29.6	1096	0	1279.2	347.0
Apr	0.0 ND	0.0 ND	41.1	716	0	1638.9	444.6
May	0.0 ND	0.0 ND	50.4	452	0	1989.2	539.6
June	0.0 ND	0.0 ND	57.5	238	13	2143.5	581.4
July	0.0 ND	0.0 ND	66.4	54	95	2392.0	648.8
Aug	0.0 ND	0.0 ND	64.6	85	72	2023.3	548.8
Sept	0.0 ND	0.0 ND	54.7	324	14	1521.1	412.6
Oct	0.0 ND	0.0 ND	45.0	619	0	1023.3	277.6
Nov	0.0 ND	0.0 ND	31.8	995	0	602.0	163.3
Dec	0.0 ND	0.0 ND	23.9	1273	0	450.1	122.1
Ann	0.0 ND	0.0 ND	42.6	8354	198	1369.6	371.5

LATITUDE: 45° 15′ N
LONGITUDE: 112° 33′ W
ELEVATION: 1588 meters (5208.6 feet)

STATION NO. 24138

Dillon, Montana

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−7.27	−18.05	−12.66	961	0	4403.0	0.426
Feb	−3.66	−14.99	−9.33	774	0	7618.0	0.482
Mar	2.00	−9.55	−3.77	685	0	12540.0	0.525
Apr	12.77	−0.77	6.00	370	0	16888.0	0.521
May	19.27	5.38	12.33	191	5	20743.0	0.533
June	23.27	10.05	16.66	83	33	23232.0	0.554
July	29.05	13.66	21.38	8	102	24888.0	0.614
Aug	28.33	12.72	20.55	16	85	21142.0	0.601
Sept	21.33	6.66	14.00	146	16	15212.0	0.556
Oct	15.11	0.88	8.00	320	0	9957.0	0.526
Nov	3.94	−7.27	−1.66	600	0	5433.0	0.451
Dec	−3.05	−13.55	−8.27	825	0	3794.0	0.428
Ann	11.77	−1.22	5.27	4982	243	13821.0	0.541

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	18.9	−0.5	9.2	1730	0	388.0	105.2
Feb	25.4	5.0	15.2	1393	0	671.3	182.1
Mar	35.6	14.8	25.2	1233	0	1104.9	299.7
Apr	55.0	30.6	42.8	666	0	1488.1	403.6
May	66.7	41.7	54.2	344	9	1827.7	495.8
June	73.9	50.1	62.0	149	59	2047.1	555.3
July	84.3	56.6	70.5	14	184	2193.0	594.8
Aug	83.0	54.9	69.0	29	153	1862.9	505.3
Sept	70.4	44.0	57.2	263	29	1340.4	363.6
Oct	59.2	33.6	46.4	576	0	877.4	238.0
Nov	39.1	18.9	29.0	1080	0	478.7	129.9
Dec	26.5	7.6	17.1	1485	0	334.3	90.7
Ann	53.2	29.8	41.5	8968	437	1217.8	330.3

STATION NO. 94008

Glasgow, Montana

LATITUDE: 48° 13′ N
LONGITUDE: 106° 37′ W
ELEVATION: 700 meters (2296.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	– 1.49	– 11.33	– 6.38	766	0	4772.0	0.443
Feb	2.16	– 8.22	– 2.99	597	0	8173.0	0.503
Mar	4.66	– 6.33	– 0.83	594	0	13283.0	0.548
Apr	12.50	0.16	6.33	360	0	16895.0	0.517
May	18.33	5.27	11.83	203	0	20968.0	0.537
June	22.27	9.72	16.00	90	20	23849.0	0.569
July	28.72	12.72	20.72	10	83	26432.0	0.651
Aug	27.66	11.66	19.66	23	64	21937.0	0.620
Sept	21.11	7.00	14.05	144	16	15644.0	0.565
Oct	15.22	2.83	9.05	291	3	10493.0	0.543
Nov	6.33	– 3.49	1.44	506	0	5647.0	0.452
Dec	1.50	– 7.66	– 3.05	663	0	3815.0	0.409
Ann	13.27	1.00	7.16	4251	188	14326.0	0.554

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	29.3	11.6	20.5	1379	0	420.5	114.1
Feb	35.9	17.2	26.6	1075	0	720.2	195.3
Mar	40.4	20.6	30.5	1069	0	1170.4	317.5
Apr	54.5	32.3	43.4	648	0	1488.7	403.8
May	65.0	41.5	53.3	365	0	1847.6	501.2
June	72.1	49.5	60.8	162	36	2101.4	570.0
July	83.7	54.9	69.3	18	149	2329.0	631.8
Aug	81.8	53.0	67.4	41	115	1933.0	524.3
Sept	70.0	44.6	57.3	259	29	1378.5	373.9
Oct	59.4	37.1	48.3	524	5	924.6	250.8
Nov	43.4	25.7	34.6	911	0	497.6	135.0
Dec	34.7	18.2	26.5	1193	0	336.2	91.2
Ann	55.9	33.8	44.9	7652	338	1262.3	342.4

LATITUDE: 47° 29′ N
LONGITUDE: 111° 22′ W
ELEVATION: 1116 meters (3660.5 feet)

SOLMET STATION NO. 24143

Great Falls, Montana

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−2.05	−13.44	−7.72	807	0	4760.0	0.421
Feb	2.11	−9.49	−3.66	616	0	8044.0	0.479
Mar	5.38	−6.99	−0.77	592	0	13000.0	0.526
Apr	12.88	−0.99	5.94	371	0	16874.0	0.512
May	18.22	4.16	11.22	222	0	21111.0	0.539
June	22.00	8.16	15.11	107	11	23149.0	0.552
July	28.72	11.16	19.94	18	68	26486.0	0.652
Aug	27.77	10.22	19.00	31	52	21906.0	0.616
Sept	21.11	4.94	13.05	168	10	16030.0	0.571
Oct	14.83	−0.05	7.38	339	0	10512.0	0.530
Nov	5.88	−6.22	−0.16	555	0	5915.0	0.453
Dec	0.66	−10.38	−4.83	718	0	4135.0	0.420
Ann	13.11	−0.72	6.22	4550	142	14327.0	0.547

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	28.3	7.8	18.1	1453	0	419.4	113.8
Feb	35.8	14.9	25.4	1109	0	708.8	192.3
Mar	41.7	19.4	30.6	1066	0	1145.5	310.7
Apr	55.2	30.2	42.7	668	0	1486.8	403.3
May	64.8	39.5	52.2	400	0	1860.2	504.6
June	71.6	46.7	59.2	193	20	2039.8	553.3
July	83.7	52.1	67.9	32	122	2333.8	633.0
Aug	82.0	50.4	66.2	56	94	1930.2	523.6
Sept	70.0	40.9	55.5	302	18	1412.5	383.1
Oct	58.7	31.9	45.3	610	0	926.3	251.2
Nov	42.6	20.8	31.7	999	0	521.2	141.4
Dec	33.2	13.3	23.3	1292	0	364.4	98.8
Ann	55.6	30.7	43.2	8190	256	1262.4	342.4

STATION NO. 24144

Helena, Montana

LATITUDE: 46° 36′ N
LONGITUDE: 112° 0′ W
ELEVATION: 1188 meters (3896.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−7.16	790	0	4766.0	0.432
Feb	0.0 ND	0.0 ND	−4.55	641	0	7856.0	0.476
Mar	0.0 ND	0.0 ND	−2.49	646	0	12806.0	0.523
Apr	0.0 ND	0.0 ND	4.50	415	0	16391.0	0.500
May	0.0 ND	0.0 ND	9.77	265	0	20508.0	0.524
June	0.0 ND	0.0 ND	13.66	147	9	23368.0	0.557
July	0.0 ND	0.0 ND	18.61	38	66	25964.0	0.639
Aug	0.0 ND	0.0 ND	18.00	52	48	21580.0	0.608
Sept	0.0 ND	0.0 ND	12.22	193	13	15574.0	0.558
Oct	0.0 ND	0.0 ND	7.50	336	3	10271.0	0.525
Nov	0.0 ND	0.0 ND	0.11	546	0	5701.0	0.446
Dec	0.0 ND	0.0 ND	−4.16	697	0	4120.0	0.430
Ann	0.0 ND	0.0 ND	5.50	4770	141	14075.0	0.541

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	19.1	1422	0	420.0	113.9
Feb	0.0 ND	0.0 ND	23.8	1154	0	692.2	187.8
Mar	0.0 ND	0.0 ND	27.5	1163	0	1128.4	306.1
Apr	0.0 ND	0.0 ND	40.1	747	0	1444.3	391.8
May	0.0 ND	0.0 ND	49.6	477	0	1807.0	490.2
June	0.0 ND	0.0 ND	56.6	265	16	2059.0	558.5
July	0.0 ND	0.0 ND	65.5	68	119	2287.8	620.6
Aug	0.0 ND	0.0 ND	64.4	94	86	1901.5	515.8
Sept	0.0 ND	0.0 ND	54.0	347	23	1372.3	372.2
Oct	0.0 ND	0.0 ND	45.5	605	5	905.0	245.5
Nov	0.0 ND	0.0 ND	32.2	983	0	502.3	136.3
Dec	0.0 ND	0.0 ND	24.5	1255	0	363.0	98.5
Ann	0.0 ND	0.0 ND	41.9	8586	254	1240.2	336.4

LATITUDE: 47° 3′ N
LONGITUDE: 109° 27′ W
ELEVATION: 1264 meters (4145.9 feet)

STATION NO. 24036

Lewistown, Montana

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−3.27	−15.16	−9.22	854	0	5187.0	0.454
Feb	0.44	−11.99	−5.77	675	0	8458.0	0.501
Mar	5.33	−7.38	−0.99	599	0	13449.0	0.543
Apr	14.33	0.38	7.38	328	0	17500.0	0.530
May	20.50	6.44	13.50	160	10	21515.0	0.549
June	25.22	11.27	18.27	65	63	24353.0	0.580
July	31.61	15.44	23.55	5	167	26022.0	0.640
Aug	30.66	14.27	22.50	8	137	22437.0	0.630
Sept	23.05	7.88	15.50	120	35	16386.0	0.582
Oct	16.72	1.94	9.33	282	3	10903.0	0.547
Nov	6.16	−5.72	0.22	543	0	6254.0	0.476
Dec	0.11	−11.27	−5.55	740	0	4532.0	0.455
Ann	14.22	0.50	7.38	4382	417	14750.0	0.561

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	26.1	4.7	15.4	1537	0	457.0	124.0
Feb	32.8	10.4	21.6	1215	0	745.3	202.2
Mar	41.6	18.7	30.2	1078	0	1185.0	321.4
Apr	57.8	32.7	45.3	590	0	1542.0	418.3
May	68.9	43.6	56.3	288	18	1895.8	514.2
June	77.4	52.3	64.9	117	113	2145.8	582.1
July	88.9	59.8	74.4	9	301	2292.9	622.0
Aug	87.2	57.7	72.5	14	247	1977.0	536.3
Sept	73.5	46.2	59.9	216	63	1443.8	391.6
Oct	62.1	35.5	48.8	508	5	960.7	260.6
Nov	43.1	21.7	32.4	977	0	551.1	149.5
Dec	32.2	11.7	22.0	1332	0	399.3	108.3
Ann	57.6	32.9	45.3	7888	751	1299.7	352.5

STATION NO. 24037

Miles City, Montana

LATITUDE: 46° 26′ N
LONGITUDE: 105° 52′ W
ELEVATION: 803 meters (2633.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 1.88	– 10.61	– 6.22	761	0	3539.0	0.318
Feb	2.11	– 7.44	– 2.66	587	0	6516.0	0.393
Mar	6.55	– 5.11	0.72	546	0	11139.0	0.454
Apr	13.66	– 0.49	6.61	351	0	15686.0	0.477
May	18.83	3.61	11.22	220	0	20230.0	0.517
June	22.50	7.33	14.94	111	10	21937.0	0.523
July	29.05	9.38	19.22	21	49	26415.0	0.650
Aug	28.05	8.61	18.33	39	39	21346.0	0.601
Sept	21.55	4.33	12.94	167	5	15410.0	0.551
Oct	13.77	– 0.38	6.72	360	0	9221.0	0.469
Nov	4.88	– 4.61	0.16	545	0	4655.0	0.362
Dec	– 0.05	– 8.05	– 4.05	693	0	3033.0	0.314
Ann	13.27	– 0.27	6.50	4406	104	13261.0	0.508

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	28.6	12.9	20.8	1370	0	311.8	84.6
Feb	35.8	18.6	27.2	1057	0	574.2	155.7
Mar	43.8	22.8	33.3	983	0	981.5	266.2
Apr	56.6	31.1	43.9	632	0	1382.2	374.9
May	65.9	38.5	52.2	396	0	1782.5	483.5
June	72.5	45.2	58.9	200	18	1933.0	524.3
July	84.3	48.9	66.6	38	88	2327.5	631.3
Aug	82.5	47.5	65.0	70	70	1880.9	510.2
Sept	70.8	39.8	55.3	301	9	1357.8	368.3
Oct	56.8	31.3	44.1	648	0	812.5	220.4
Nov	40.8	23.7	32.3	981	0	410.2	111.3
Dec	31.9	17.5	24.7	1247	0	267.2	72.5
Ann	55.9	31.5	43.7	7931	187	1168.5	317.0

LATITUDE: 46° 55′ N
LONGITUDE: 114° 5′ W
ELEVATION: 972 meters (3188.2 feet)

STATION NO. 24153

Missoula, Montana

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.72	−11.55	−5.38	735	0	7505.0	0.507
Feb	3.72	−8.49	−2.38	580	0	10407.0	0.517
Mar	8.16	−4.27	1.94	508	0	14359.0	0.523
Apr	16.77	3.11	9.94	256	4	19207.0	0.554
May	22.61	9.27	15.94	102	28	22377.0	0.562
June	28.00	14.94	21.50	19	114	25448.0	0.605
July	31.50	17.72	24.61	3	197	25145.0	0.614
Aug	30.77	16.94	23.88	2	175	22011.0	0.598
Sept	25.11	10.88	18.00	59	49	17130.0	0.564
Oct	19.61	4.50	12.05	201	6	12911.0	0.563
Nov	10.16	−3.33	3.44	446	0	8381.0	0.508
Dec	3.22	−8.77	−2.77	654	0	6462.0	0.484
Ann	16.72	3.38	10.05	3569	575	15945.0	0.562

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	33.3	11.2	22.3	1323	0	661.3	179.4
Feb	38.7	16.7	27.7	1044	0	917.0	248.7
Mar	46.7	24.3	35.5	914	0	1265.2	343.2
Apr	62.2	37.6	49.9	461	7	1692.4	459.1
May	72.7	48.7	60.7	184	50	1971.7	534.8
June	82.4	58.9	70.7	34	205	2242.3	608.2
July	88.7	63.9	76.3	5	355	2215.6	601.0
Aug	87.4	62.5	75.0	4	315	1939.5	526.1
Sept	77.2	51.6	64.4	106	88	1509.4	409.4
Oct	67.3	40.1	53.7	362	11	1137.6	308.6
Nov	50.3	26.0	38.2	803	0	738.5	200.3
Dec	37.8	16.2	27.0	1177	0	569.4	154.4
Ann	62.1	38.1	50.1	6424	1035	1405.0	381.1

STATION NO. 14935

Grand Island, Nebraska

LATITUDE: 40° 58′ N
LONGITUDE: 98° 19′ W
ELEVATION: 566 meters (1856.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−1.61	−11.55	−6.55	771	0	7195.0	0.494
Feb	1.55	−8.83	−3.61	614	0	10124.0	0.509
Mar	6.72	−3.83	1.44	523	0	13874.0	0.509
Apr	16.11	3.83	10.00	253	3	17686.0	0.512
May	21.88	10.22	16.05	103	32	21252.0	0.534
June	26.77	15.66	21.22	18	105	24088.0	0.573
July	29.66	18.22	23.94	3	177	23906.0	0.584
Aug	28.88	17.44	23.16	5	155	21092.0	0.574
Sept	24.00	12.00	18.00	55	45	15584.0	0.516
Oct	18.83	6.00	12.44	190	7	11914.0	0.525
Nov	8.55	−2.05	3.27	451	0	7310.0	0.450
Dec	1.27	−8.33	−3.49	676	0	5802.0	0.443
Ann	15.22	4.05	9.66	3667	527	14986.0	0.531

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	29.1	11.2	20.2	1388	0	634.0	172.0
Feb	34.8	16.1	25.5	1105	0	892.1	242.0
Mar	44.1	25.1	34.6	941	0	1222.5	331.6
Apr	61.0	38.9	50.0	455	5	1558.4	422.7
May	71.4	50.4	60.9	185	58	1872.6	507.9
June	80.2	60.2	70.2	32	189	2122.5	575.7
July	85.4	64.8	75.1	5	319	2106.5	571.4
Aug	84.0	63.4	73.7	9	279	1858.5	504.1
Sept	75.2	53.6	64.4	99	81	1373.2	372.5
Oct	65.9	42.8	54.4	342	13	1049.8	284.8
Nov	47.4	28.3	37.9	812	0	644.1	174.7
Dec	34.3	17.0	25.7	1217	0	511.2	138.7
Ann	59.4	39.3	49.4	6601	949	1320.5	358.2

LATITUDE: 41° 22′ N
LONGITUDE: 96° 3 1′ W
ELEVATION: 404 meters (1325.1 feet)

SOLMET STATION NO. 94918

North Omaha, Nebraska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	2.55	−12.16	−4.77	716	0	7858.0	0.534
Feb	4.94	−9.33	−2.16	573	0	10876.0	0.543
Mar	8.44	−5.94	1.27	528	0	15128.0	0.553
Apr	16.33	1.22	8.77	290	3	19565.0	0.565
May	21.88	7.33	14.61	132	16	22558.0	0.567
June	27.00	12.94	20.00	36	86	25722.0	0.612
July	30.88	16.11	23.50	3	163	25843.0	0.631
Aug	30.38	15.16	22.77	4	142	22579.0	0.614
Sept	25.00	8.66	16.83	78	33	17764.0	0.586
Oct	19.44	1.66	10.55	243	0	13359.0	0.585
Nov	10.27	−5.66	2.33	480	0	8617.0	0.526
Dec	4.33	−10.11	−2.88	657	0	6869.0	0.519
Ann	16.77	1.66	9.22	3746	445	16395.0	0.579

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	36.6	10.1	23.4	1289	0	692.4	187.8
Feb	40.9	15.2	28.1	1031	0	958.3	259.9
Mar	47.2	21.3	34.3	950	0	1333.0	361.6
Apr	61.4	34.2	47.8	522	5	1724.0	467.6
May	71.4	45.2	58.3	238	29	1987.7	539.2
June	80.6	55.3	68.0	65	155	2266.5	614.8
July	87.6	61.0	74.3	5	293	2277.1	617.7
Aug	86.7	59.3	73.0	7	256	1989.5	539.7
Sept	77.0	47.6	62.3	140	59	1565.3	424.6
Oct	67.0	35.0	51.0	437	0	1177.1	319.3
Nov	50.5	21.8	36.2	864	0	759.3	206.0
Dec	39.8	13.8	26.8	1183	0	605.3	164.2
Ann	62.2	35.0	48.6	6743	801	1444.6	391.9

STATION NO. 24023

North Platte, Nebraska

LATITUDE: 41° 8′ N
LONGITUDE: 100° 41′ W
ELEVATION: 849 meters (2784.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.61	– 11.49	– 3.94	690	0	7669.0	0.538
Feb	6.16	– 8.94	– 1.38	552	0	10787.0	0.550
Mar	8.88	– 6.33	1.27	528	0	14838.0	0.549
Apr	15.77	0.00	7.88	313	0	18930.0	0.550
May	21.22	6.00	13.61	155	8	21940.0	0.552
June	26.50	11.11	18.83	50	65	25383.0	0.604
July	31.55	14.77	23.16	0	151	25918.0	0.633
Aug	30.50	13.50	22.00	4	118	22692.0	0.620
Sept	25.05	7.33	16.22	88	25	18146.0	0.604
Oct	18.88	1.27	10.11	255	0	12995.0	0.579
Nov	10.22	– 5.61	2.33	480	0	8208.0	0.515
Dec	4.88	– 9.77	– 2.44	643	0	6527.0	0.511
Ann	16.94	1.00	9.00	3763	370	16169.0	0.577

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.5	11.3	24.9	1242	0	675.7	183.3
Feb	43.1	15.9	29.5	994	0	950.5	257.8
Mar	48.0	20.6	34.3	950	0	1307.4	354.6
Apr	60.4	32.0	46.2	563	0	1668.0	452.4
May	70.2	42.8	56.5	279	14	1933.2	524.4
June	79.7	52.0	65.9	90	117	2236.6	606.7
July	88.8	58.6	73.7	0	272	2283.7	619.5
Aug	86.9	56.3	71.6	7	212	1999.5	542.4
Sept	77.1	45.2	61.2	158	45	1598.9	433.7
Oct	66.0	34.3	50.2	459	0	1145.0	310.6
Nov	50.4	21.9	36.2	864	0	723.2	196.2
Dec	40.8	14.4	27.6	1157	0	575.1	156.0
Ann	62.5	33.8	48.2	6773	666	1424.7	386.5

LATITUDE: 41° 52′ N
LONGITUDE: 103° 36′ W
ELEVATION: 1206 meters (3955.7 feet)

STATION NO. 24028

Scottsbluff, Nebraska

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	2.22	−11.99	−4.88	720	0	7818.0	0.525
Feb	5.33	−8.44	−1.55	556	0	11739.0	0.581
Mar	9.11	−5.83	1.66	516	0	16604.0	0.604
Apr	14.88	−2.16	6.38	358	0	21560.0	0.621
May	20.27	1.77	11.05	225	0	26140.0	0.656
June	25.27	5.33	15.33	105	15	28755.0	0.684
July	32.44	9.22	20.83	15	92	29767.0	0.727
Aug	31.22	7.66	19.44	33	67	26283.0	0.714
Sept	26.00	2.44	14.22	137	14	21479.0	0.706
Oct	18.77	−2.22	8.27	311	0	15009.0	0.653
Nov	9.44	−6.33	1.55	503	0	9216.0	0.556
Dec	3.44	−10.27	−3.38	673	0	7002.0	0.522
Ann	16.55	−1.72	7.44	4157	190	18448.0	0.650

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	36.0	10.4	23.2	1296	0	688.9	186.9
Feb	41.6	16.8	29.2	1001	0	1034.4	280.6
Mar	48.4	21.5	35.0	929	0	1463.0	396.9
Apr	58.8	28.1	43.5	644	0	1899.7	515.3
May	68.5	35.2	51.9	405	0	2303.3	624.8
June	77.5	41.6	59.6	189	27	2533.7	687.3
July	90.4	48.6	69.5	27	166	2622.9	711.5
Aug	88.2	45.8	67.0	59	121	2315.9	628.2
Sept	78.8	36.4	57.6	247	25	1892.6	513.4
Oct	65.8	28.0	46.9	560	0	1322.5	358.7
Nov	49.0	20.6	34.8	905	0	812.1	220.3
Dec	38.2	13.5	25.9	1211	0	617.0	167.4
Ann	61.8	28.9	45.4	7483	342	1625.5	440.9

STATION NO. 24121

Elko, Nevada

LATITUDE: 40° 50′ N
LONGITUDE: 115° 47′ W
ELEVATION: 1547 meters (5074.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.33	– 12.66	– 4.66	712	0	9300.0	0.587
Feb	5.22	– 9.83	– 2.27	577	0	12949.0	0.614
Mar	8.11	– 7.27	0.44	554	0	18227.0	0.646
Apr	13.50	– 3.22	5.16	395	0	22797.0	0.649
May	19.11	0.88	10.00	261	0	26224.0	0.656
June	24.27	4.27	14.27	133	12	28519.0	0.679
July	30.16	8.88	19.55	12	51	27772.0	0.677
Aug	29.00	8.22	18.61	34	42	25312.0	0.682
Sept	24.50	2.94	13.72	147	8	21963.0	0.708
Oct	17.55	– 1.99	7.77	327	0	15975.0	0.671
Nov	9.50	– 7.27	1.11	516	0	10514.0	0.601
Dec	4.66	– 11.11	– 3.22	668	0	8201.0	0.570
Ann	15.77	– 2.33	6.72	4341	115	18979.0	0.655

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.0	9.2	23.6	1282	0	819.5	222.3
Feb	41.4	14.3	27.9	1039	0	1141.0	309.5
Mar	46.6	18.9	32.8	997	0	1606.1	435.6
Apr	56.3	26.2	41.3	711	0	2008.7	544.9
May	66.4	33.6	50.0	470	0	2310.7	626.8
June	75.7	39.7	57.7	239	22	2512.9	681.6
July	86.3	48.0	67.2	22	92	2447.1	663.8
Aug	84.2	46.8	65.5	61	76	2230.3	605.0
Sept	76.1	37.3	56.7	265	14	1935.2	524.9
Oct	63.6	28.4	46.0	589	0	1407.6	381.8
Nov	49.1	18.9	34.0	929	0	926.4	251.3
Dec	40.4	12.0	26.2	1202	0	722.6	196.0
Ann	60.4	27.8	44.1	7814	207	1672.3	453.6

LATITUDE: 39° 17′ N
LONGITUDE: 114° 51′ W
ELEVATION: 1906 meters (6251.7 feet)

SOLMET STATION NO. 23154

Ely, Nevada

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	13.16	0.33	6.77	358	0	11099.0	0.623
Feb	16.27	2.72	9.50	250	3	15202.0	0.664
Mar	19.88	5.38	12.66	180	4	20695.0	0.699
Apr	25.27	10.00	17.66	70	50	26318.0	0.733
May	30.83	15.00	22.94	5	148	30033.0	0.748
June	36.22	19.66	27.94	0	288	31525.0	0.753
July	39.94	24.05	32.00	0	423	29376.0	0.716
Aug	38.61	22.94	30.77	0	385	26725.0	0.711
Sept	34.88	18.55	26.72	0	251	23121.0	0.720
Oct	27.22	11.72	19.50	41	77	17475.0	0.687
Nov	18.72	4.88	11.83	198	3	12319.0	0.635
Dec	13.72	0.94	7.33	341	0	9993.0	0.610
Ann	26.22	11.33	18.77	1445	1636	21157.0	0.704

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	55.7	32.6	44.2	644	0	978.0	265.3
Feb	61.3	36.9	49.1	450	5	1339.5	363.3
Mar	67.8	41.7	54.8	324	7	1823.5	494.6
Apr	77.5	50.0	63.8	126	90	2319.0	629.0
May	87.5	59.0	73.3	9	266	2646.3	717.8
June	97.2	67.4	82.3	0	518	2777.8	753.5
July	103.9	75.3	89.6	0	761	2588.4	702.1
Aug	101.5	73.3	87.4	0	693	2354.8	638.8
Sept	94.8	65.4	80.1	0	452	2037.3	552.6
Oct	81.0	53.1	67.1	74	139	1539.8	417.7
Nov	65.7	40.8	53.3	356	5	1085.5	294.4
Dec	56.7	33.7	45.2	614	0	880.5	238.8
Ann	79.2	52.4	65.8	2601	2945	1864.2	505.7

STATION NO. 23169

Las Vegas, Nevada

LATITUDE: 36° 5′ N
LONGITUDE: 115° 10′ W
ELEVATION: 664 meters (2177.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	0.0 ND	0.0 ND	−1.72	621	0	9124.0	0.594
Feb	0.0 ND	0.0 ND	1.77	463	0	13226.0	0.641
Mar	0.0 ND	0.0 ND	4.50	428	0	18799.0	0.675
Apr	0.0 ND	0.0 ND	9.16	275	0	24574.0	0.704
May	0.0 ND	0.0 ND	14.16	141	12	28993.0	0.726
June	0.0 ND	0.0 ND	18.66	47	57	31204.0	0.743
July	0.0 ND	0.0 ND	23.50	0	160	31594.0	0.771
Aug	0.0 ND	0.0 ND	21.83	9	117	28191.0	0.763
Sept	0.0 ND	0.0 ND	17.05	70	31	23007.0	0.749
Oct	0.0 ND	0.0 ND	10.66	237	0	16468.0	0.704
Nov	0.0 ND	0.0 ND	3.55	443	0	10546.0	0.619
Dec	0.0 ND	0.0 ND	−0.66	588	0	8108.0	0.583
Ann	0.0 ND	0.0 ND	10.22	3327	380	20320.0	0.709

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	28.9	1118	0	804.0	218.1
Feb	0.0 ND	0.0 ND	35.2	833	0	1165.4	316.1
Mar	0.0 ND	0.0 ND	40.1	770	0	1656.5	449.3
Apr	0.0 ND	0.0 ND	48.5	495	0	2165.3	587.3
May	0.0 ND	0.0 ND	57.5	254	22	2554.7	693.0
June	0.0 ND	0.0 ND	65.6	85	103	2749.5	745.8
July	0.0 ND	0.0 ND	74.3	0	288	2783.9	755.1
Aug	0.0 ND	0.0 ND	71.3	16	211	2484.0	673.8
Sept	0.0 ND	0.0 ND	62.7	126	56	2027.2	549.9
Oct	0.0 ND	0.0 ND	51.2	427	0	1451.1	393.6
Nov	0.0 ND	0.0 ND	38.4	797	0	929.3	252.1
Dec	0.0 ND	0.0 ND	30.8	1058	0	714.4	193.8
Ann	0.0 ND	0.0 ND	50.4	5989	684	1790.5	485.7

LATITUDE: 40° 4′ N
LONGITUDE: 118° 33′ W
ELEVATION: 1190 meters (3903.2 feet)

STATION NO. 24172

Lovelock, Nevada

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	7.44	−7.61	−0.05	570	0	9084.0	0.578
Feb	10.61	−4.99	2.83	433	0	13050.0	0.622
Mar	13.33	−4.11	4.61	425	0	18719.0	0.666
Apr	17.77	−1.33	8.22	303	0	24506.0	0.699
May	22.33	2.77	12.55	182	3	28635.0	0.717
June	26.88	5.83	16.38	80	22	30658.0	0.730
July	32.83	8.55	20.72	9	83	30552.0	0.745
Aug	31.66	7.11	19.38	27	60	27302.0	0.737
Sept	27.66	3.66	15.66	93	13	22672.0	0.733
Oct	21.11	−0.83	10.16	253	0	16240.0	0.685
Nov	13.50	−4.49	4.50	415	0	10354.0	0.596
Dec	8.00	−6.88	0.55	551	0	8007.0	0.562
Ann	19.44	−0.16	9.66	3345	182	19982.0	0.692

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	45.4	18.3	31.9	1026	0	800.4	217.1
Feb	51.1	23.0	37.1	779	0	1149.9	311.9
Mar	56.0	24.6	40.3	765	0	1649.4	447.4
Apr	64.0	29.6	46.8	545	0	2159.3	585.7
May	72.2	37.0	54.6	328	5	2523.1	684.4
June	80.4	42.5	61.5	144	40	2701.4	732.8
July	91.1	47.4	69.3	16	149	2692.1	730.2
Aug	89.0	44.8	66.9	49	108	2405.7	652.5
Sept	81.8	38.6	60.2	167	23	1997.7	541.9
Oct	70.0	30.5	50.3	455	0	1431.0	388.2
Nov	56.3	23.9	40.1	747	0	912.3	247.5
Dec	46.4	19.6	33.0	992	0	705.5	191.4
Ann	67.0	31.7	49.4	6021	328	1760.7	477.6

STATION NO. 23185

Reno, Nevada

LATITUDE: 39° 30′ N
LONGITUDE: 119° 47′ W
ELEVATION: 1341 meters (4398.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	– 0.99	599	0	10417.0	0.627
Feb	0.0 ND	0.0 ND	1.44	472	0	14460.0	0.664
Mar	0.0 ND	0.0 ND	4.22	437	0	20166.0	0.702
Apr	0.0 ND	0.0 ND	8.94	284	0	25545.0	0.721
May	0.0 ND	0.0 ND	13.83	149	10	29251.0	0.730
June	0.0 ND	0.0 ND	18.50	51	56	31641.0	0.754
July	0.0 ND	0.0 ND	22.77	0	139	30674.0	0.748
Aug	0.0 ND	0.0 ND	21.50	7	105	27668.0	0.742
Sept	0.0 ND	0.0 ND	17.50	60	35	23183.0	0.737
Oct	0.0 ND	0.0 ND	11.16	226	4	17256.0	0.706
Nov	0.0 ND	0.0 ND	4.33	420	0	11697.0	0.642
Dec	0.0 ND	0.0 ND	– 0.05	570	0	9383.0	0.619
Ann	0.0 ND	0.0 ND	10.27	3277	350	20945.0	0.713

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	30.2	1078	0	917.9	249.0
Feb	0.0 ND	0.0 ND	34.6	850	0	1274.1	345.6
Mar	0.0 ND	0.0 ND	39.6	787	0	1776.9	482.0
Apr	0.0 ND	0.0 ND	48.1	511	0	2250.9	610.6
May	0.0 ND	0.0 ND	56.9	268	18	2577.4	699.1
June	0.0 ND	0.0 ND	65.3	92	101	2788.0	756.3
July	0.0 ND	0.0 ND	73.0	0	250	2702.8	733.1
Aug	0.0 ND	0.0 ND	70.7	13	189	2437.9	661.3
Sept	0.0 ND	0.0 ND	63.5	108	63	2042.7	554.1
Oct	0.0 ND	0.0 ND	52.1	407	7	1520.5	412.4
Nov	0.0 ND	0.0 ND	39.8	756	0	1030.7	279.6
Dec	0.0 ND	0.0 ND	31.9	1026	0	826.8	224.3
Ann	0.0 ND	0.0 ND	50.5	5899	630	1845.5	500.6

LATITUDE: 38° 4′ N
LONGITUDE: 117° 8′ W
ELEVATION: 1653 meters (5421.8 feet)

STATION NO. 23153

Tonopah, Nevada

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	4.77	−9.05	−2.11	633	0	7837.0	0.528
Feb	8.16	−5.88	1.16	480	0	11662.0	0.579
Mar	11.05	−4.83	3.11	471	0	16707.0	0.608
Apr	16.11	−1.61	7.27	331	0	22329.0	0.644
May	21.27	2.94	12.11	199	6	26802.0	0.673
June	26.00	6.94	16.50	82	27	29159.0	0.694
July	32.83	10.50	21.66	3	106	30389.0	0.742
Aug	31.50	8.27	19.88	23	71	26647.0	0.724
Sept	26.61	3.61	15.11	110	13	21643.0	0.712
Oct	19.61	−1.49	9.05	287	0	15004.0	0.654
Nov	11.27	−5.38	2.94	461	0	9187.0	0.556
Dec	6.05	−7.88	−0.88	596	0	7017.0	0.524
Ann	17.94	−0.33	8.83	3682	226	18699.0	0.659

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	40.6	15.7	28.2	1139	0	690.5	187.3
Feb	46.7	21.4	34.1	864	0	1027.6	278.7
Mar	51.9	23.3	37.6	848	0	1472.1	399.3
Apr	61.0	29.1	45.1	596	0	1967.5	533.7
May	70.3	37.3	53.8	358	11	2361.6	640.6
June	78.8	44.5	61.7	148	49	2569.3	696.9
July	91.1	50.9	71.0	5	191	2677.7	726.3
Aug	88.7	46.9	67.8	41	128	2348.0	636.9
Sept	79.9	38.5	59.2	198	23	1907.1	517.3
Oct	67.3	29.3	48.3	517	0	1322.1	358.6
Nov	52.3	22.3	37.3	830	0	809.5	219.6
Dec	42.9	17.8	30.4	1073	0	618.3	167.7
Ann	64.3	31.4	47.9	6628	407	1647.6	446.9

STATION NO. 24128

Winnemucca, Nevada

LATITUDE: 40° 54′ N
LONGITUDE: 117° 48′ W
ELEVATION: 1323 meters (4339.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10820.0	0.626
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14450.0	0.645
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20022.0	0.685
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	25493.0	0.714
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	29248.0	0.729
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	31025.0	0.740
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	30113.0	0.734
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	27031.0	0.721
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22943.0	0.721
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17208.0	0.688
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11820.0	0.625
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9678.0	0.611
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20821.0	0.700

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	953.4	258.6
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1273.2	345.4
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1764.2	478.5
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2246.3	609.3
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2577.2	699.1
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2733.7	741.5
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2653.4	719.7
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2381.8	646.1
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2021.6	548.4
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1516.3	411.3
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1041.5	282.5
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	852.8	231.3
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1834.6	497.6

LATITUDE: 36° 57′ N
LONGITUDE: 116° 3′ W
ELEVATION: 1197 meters (3926.2 feet)

STATION NO. 3133

Yucca Flats, Nevada

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−0.38	−12.27	−6.33	764	0	5215.0	0.388
Feb	1.00	−11.49	−5.22	659	0	7786.0	0.414
Mar	5.77	−5.49	0.16	563	0	11049.0	0.419
Apr	13.72	−0.16	6.77	346	0	14948.0	0.439
May	20.33	5.27	12.83	175	4	17956.0	0.453
June	25.38	10.88	18.16	32	27	19345.0	0.460
July	28.11	13.72	20.94	8	90	19005.0	0.465
Aug	26.72	12.33	19.55	25	62	16516.0	0.454
Sept	22.44	8.05	15.27	101	9	12940.0	0.439
Oct	16.83	2.38	9.61	270	0	9273.0	0.427
Nov	8.83	−2.16	3.33	450	0	5251.0	0.347
Dec	1.44	−9.49	−3.99	692	0	4110.0	0.344
Ann	14.16	0.94	7.55	4088	193	11950.0	0.434

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.3	9.9	20.6	1375	0	459.5	124.6
Feb	33.8	11.3	22.6	1186	0	686.1	186.1
Mar	42.4	22.1	32.3	1013	0	973.6	264.1
Apr	56.7	31.7	44.2	623	0	1317.1	357.3
May	68.6	41.5	55.1	315	7	1582.2	429.2
June	77.7	51.6	64.7	58	49	1704.6	462.4
July	82.6	56.7	69.7	14	162	1674.6	454.2
Aug	80.1	54.2	67.2	45	112	1455.3	394.7
Sept	72.4	46.5	59.5	182	16	1140.2	309.3
Oct	62.3	36.3	49.3	486	0	817.1	221.6
Nov	47.9	28.1	38.0	810	0	462.7	125.5
Dec	34.6	14.9	24.8	1246	0	362.1	98.2
Ann	57.5	33.7	45.6	7358	347	1053.0	285.6

STATION NO. 14745

Concord, New Hampshire

LATITUDE: 43° 12′ N
LONGITUDE: 71° 30′ W
ELEVATION: 105 meters (344.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	6351.0	0.413
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9044.0	0.438
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	12585.0	0.452
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	16523.0	0.473
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18976.0	0.475
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20140.0	0.479
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	19328.0	0.472
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17395.0	0.471
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	14306.0	0.466
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10846.0	0.463
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	7052.0	0.414
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	5389.0	0.387
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13161.0	0.459

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	559.6	151.8
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	796.9	216.2
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1108.9	300.8
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1455.9	394.9
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1672.1	453.5
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1774.6	481.4
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1703.1	462.0
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1532.7	415.8
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1260.6	341.9
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	955.7	259.2
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	621.4	168.5
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	474.8	128.8
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1159.7	314.6

LATITUDE: 40° 2′ N
LONGITUDE: 74° 20′ W
ELEVATION: 37 meters (121.4 feet)

STATION NO. 14780

Lakehurst, New Jersey

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.61	– 4.27	– 0.33	578	0	6261.0	0.418
Feb	4.55	– 3.94	0.33	503	0	9000.0	0.444
Mar	9.33	0.22	4.77	420	0	12582.0	0.457
Apr	16.22	5.66	10.94	221	0	16440.0	0.473
May	22.00	11.16	16.61	79	26	19147.0	0.480
June	27.27	16.44	21.88	0	109	20375.0	0.485
July	29.77	19.55	24.66	0	196	19973.0	0.488
Aug	28.72	18.61	23.66	0	165	17759.0	0.482
Sept	25.00	14.77	19.88	18	65	14446.0	0.474
Oct	19.38	8.94	14.16	135	6	10792.0	0.468
Nov	12.33	3.44	7.88	313	0	6766.0	0.407
Dec	5.27	– 2.55	1.38	525	0	5157.0	0.382
Ann	16.94	7.33	12.16	2796	568	13225.0	0.465

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.5	24.3	31.4	1040	0	551.7	149.6
Feb	40.2	24.9	32.6	905	0	793.0	215.1
Mar	48.8	32.4	40.6	756	0	1108.7	300.7
Apr	61.2	42.2	51.7	398	0	1448.6	392.9
May	71.6	52.1	61.9	142	47	1687.1	457.6
June	81.1	61.6	71.4	0	196	1795.3	487.0
July	85.6	67.2	76.4	0	353	1759.9	477.4
Aug	83.7	65.5	74.6	0	297	1564.8	424.5
Sept	77.0	58.6	67.8	32	117	1272.9	345.3
Oct	66.9	48.1	57.5	243	11	950.9	257.9
Nov	54.2	38.2	46.2	563	0	596.2	161.7
Dec	41.5	27.4	34.5	945	0	454.4	123.3
Ann	62.5	45.2	53.9	5033	1022	1165.3	316.1

STATION NO. 14734

Newark, New Jersey

LATITUDE: 40° 42′ N
LONGITUDE: 74° 10′ W
ELEVATION: 9 meters (29.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	8.27	−4.72	1.77	513	0	11536.0	0.625
Feb	11.44	−2.55	4.44	388	0	15230.0	0.649
Mar	15.11	0.16	7.66	330	0	20060.0	0.668
Apr	21.16	5.22	13.22	156	3	25290.0	0.700
May	26.61	10.38	18.50	32	37	28805.0	0.716
June	31.94	15.38	23.66	0	161	30403.0	0.727
July	33.44	18.44	25.94	0	236	28243.0	0.689
Aug	32.05	17.44	24.77	0	200	25990.0	0.688
Sept	28.55	13.72	21.16	3	88	22377.0	0.689
Oct	22.05	7.05	14.55	121	3	17553.0	0.677
Nov	13.94	−0.11	6.94	341	0	12866.0	0.643
Dec	8.61	−3.94	2.33	496	0	10528.0	0.618
Ann	21.11	6.38	13.77	2384	731	20740.0	0.682

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	46.9	23.5	35.2	923	0	1016.5	275.7
Feb	52.6	27.4	40.0	698	0	1342.0	364.0
Mar	59.2	32.3	45.8	594	0	1767.6	479.5
Apr	70.1	41.4	55.8	281	5	2228.4	604.5
May	79.9	50.7	65.3	58	67	2538.1	688.5
June	89.5	59.7	74.6	0	290	2678.9	726.7
July	92.2	65.2	78.7	0	425	2488.6	675.0
Aug	89.7	63.4	76.6	0	360	2290.1	621.2
Sept	83.4	56.7	70.1	5	158	1971.7	534.8
Oct	71.7	44.7	58.2	218	5	1546.7	419.5
Nov	57.1	31.8	44.5	614	0	1133.7	307.5
Dec	47.5	24.9	36.2	893	0	927.7	251.6
Ann	70.0	43.5	56.8	4291	1316	1827.5	495.7

LATITUDE: 35° 3′ N
LONGITUDE: 106° 37′ W
ELEVATION: 1619 meters (5310.3 feet)

SOLMET STATION NO. 23050

Albuquerque, New Mexico

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	8.61	– 7.44	0.61	549	0	10913.0	0.620
Feb	10.11	– 5.61	2.27	449	0	14080.0	0.621
Mar	12.94	– 3.66	4.66	423	0	18744.0	0.637
Apr	18.66	2.22	10.44	239	0	23146.0	0.646
May	23.55	7.55	15.55	95	9	25216.0	0.628
June	28.55	12.72	20.66	21	91	27437.0	0.655
July	30.72	15.50	23.11	0	150	25916.0	0.632
Aug	29.83	15.05	22.44	2	130	23802.0	0.634
Sept	26.05	10.61	18.33	40	40	20450.0	0.639
Oct	20.72	4.55	12.66	180	4	16269.0	0.644
Nov	13.83	– 2.38	5.72	378	0	11665.0	0.608
Dec	9.61	– 6.16	1.72	515	0	9767.0	0.605
Ann	19.44	3.55	11.50	2895	426	18950.0	0.633

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	47.5	18.6	33.1	988	0	961.6	260.8
Feb	50.2	21.9	36.1	808	0	1240.6	336.5
Mar	55.3	25.4	40.4	761	0	1651.6	448.0
Apr	65.6	36.0	50.8	430	0	2039.5	553.2
May	74.4	45.6	60.0	171	16	2221.9	602.7
June	83.4	54.9	69.2	38	164	2417.6	655.8
July	87.3	59.9	73.6	0	270	2283.6	619.4
Aug	85.7	59.1	72.4	4	234	2097.3	568.9
Sept	78.9	51.1	65.0	72	72	1801.9	488.8
Oct	69.3	40.2	54.8	324	7	1433.5	388.8
Nov	56.9	27.7	42.3	680	0	1027.9	278.8
Dec	49.3	20.9	35.1	927	0	860.6	233.4
Ann	67.0	38.4	52.7	5211	767	1669.8	452.9

STATION NO. 23051

Clayton, New Mexico

LATITUDE: 36° 27′ N
LONGITUDE: 103° 9′ W
ELEVATION: 1515 meters (4969.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	– 1.88	626	0	10719.0	0.615
Feb	0.0 ND	0.0 ND	1.66	466	0	14537.0	0.645
Mar	0.0 ND	0.0 ND	4.77	420	0	19218.0	0.656
Apr	0.0 ND	0.0 ND	9.83	258	3	24206.0	0.677
May	0.0 ND	0.0 ND	15.27	102	7	27823.0	0.693
June	0.0 ND	0.0 ND	19.94	20	68	30251.0	0.722
July	0.0 ND	0.0 ND	23.88	0	172	28125.0	0.686
Aug	0.0 ND	0.0 ND	22.55	3	134	25559.0	0.681
Sept	0.0 ND	0.0 ND	18.11	37	30	21952.0	0.688
Oct	0.0 ND	0.0 ND	11.61	208	0	16782.0	0.669
Nov	0.0 ND	0.0 ND	4.00	430	0	11885.0	0.625
Dec	0.0 ND	0.0 ND	– 1.05	601	0	9500.0	0.595
Ann	0.0 ND	0.0 ND	10.72	3173	416	20046.0	0.672

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	28.6	1127	0	944.5	256.2
Feb	0.0 ND	0.0 ND	35.0	839	0	1280.9	347.4
Mar	0.0 ND	0.0 ND	40.6	756	0	1693.4	459.3
Apr	0.0 ND	0.0 ND	49.7	464	5	2132.9	578.5
May	0.0 ND	0.0 ND	59.5	184	13	2451.6	665.0
June	0.0 ND	0.0 ND	67.9	36	122	2665.5	723.0
July	0.0 ND	0.0 ND	75.0	0	310	2478.2	672.2
Aug	0.0 ND	0.0 ND	72.6	5	241	2252.1	610.9
Sept	0.0 ND	0.0 ND	64.6	67	54	1934.3	524.7
Oct	0.0 ND	0.0 ND	52.9	374	0	1478.7	401.1
Nov	0.0 ND	0.0 ND	39.2	774	0	1047.2	284.1
Dec	0.0 ND	0.0 ND	30.1	1082	0	837.1	227.1
Ann	0.0 ND	0.0 ND	51.3	5711	749	1766.3	479.1

LATITUDE: 36° 45′ N
LONGITUDE: 108° 14′ W
ELEVATION: 1677 meters (5500.6 feet)

STATION NO. 23090

Farmington, New Mexico

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	13.00	−6.22	3.38	463	0	11877.0	0.610
Feb	16.05	−3.99	6.05	343	0	15579.0	0.640
Mar	19.83	−0.61	9.61	270	0	20512.0	0.668
Apr	25.66	5.11	15.38	102	14	25167.0	0.690
May	30.22	10.27	20.27	11	71	27909.0	0.693
June	34.55	15.44	25.00	0	200	29624.0	0.710
July	34.83	17.61	26.22	0	244	27698.0	0.677
Aug	34.11	16.83	25.50	0	222	25442.0	0.670
Sept	30.27	12.38	21.33	9	99	21710.0	0.658
Oct	25.00	5.66	15.33	108	15	17331.0	0.648
Nov	18.22	−1.66	8.27	301	0	12840.0	0.612
Dec	13.77	−5.66	4.05	442	0	10803.0	0.598
Ann	24.61	5.44	15.05	2053	866	20541.0	0.664

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	55.4	20.8	38.1	833	0	1046.5	283.9
Feb	60.9	24.8	42.9	617	0	1372.7	372.4
Mar	67.7	30.9	49.3	486	0	1807.4	490.3
Apr	78.2	41.2	59.7	184	25	2217.6	601.5
May	86.4	50.5	68.5	20	128	2459.2	667.1
June	94.2	59.8	77.0	0	360	2610.3	708.0
July	94.7	63.7	79.2	0	439	2440.6	662.0
Aug	93.4	62.3	77.9	0	400	2241.8	608.1
Sept	86.5	54.3	70.4	16	178	1913.0	518.9
Oct	77.0	42.2	59.6	194	27	1527.1	414.2
Nov	64.8	29.0	46.9	542	0	1131.4	306.9
Dec	56.8	21.8	39.3	796	0	951.9	258.2
Ann	76.3	41.8	59.1	3695	1559	1810.0	491.0

STATION NO. 23043

Roswell, New Mexico

LATITUDE: 33° 24′ N
LONGITUDE: 104° 32′ W
ELEVATION: 1103 meters (3617.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	4.44	430	0	12685.0	0.648
Feb	0.0 ND	0.0 ND	7.16	312	0	16473.0	0.674
Mar	0.0 ND	0.0 ND	10.11	255	0	21409.0	0.696
Apr	0.0 ND	0.0 ND	15.27	104	12	26532.0	0.727
May	0.0 ND	0.0 ND	20.11	10	66	29018.0	0.721
June	0.0 ND	0.0 ND	24.94	0	198	30070.0	0.721
July	0.0 ND	0.0 ND	26.27	0	246	26838.0	0.656
Aug	0.0 ND	0.0 ND	25.22	0	213	25148.0	0.662
Sept	0.0 ND	0.0 ND	22.00	2	112	22019.0	0.666
Oct	0.0 ND	0.0 ND	16.27	80	16	17917.0	0.668
Nov	0.0 ND	0.0 ND	9.27	271	0	13807.0	0.655
Dec	0.0 ND	0.0 ND	4.88	416	0	11378.0	0.627
Ann	0.0 ND	0.0 ND	15.50	1884	865	21108.0	0.682

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	40.0	774	0	1117.7	303.2
Feb	0.0 ND	0.0 ND	44.9	562	0	1451.5	393.7
Mar	0.0 ND	0.0 ND	50.2	459	0	1886.4	511.7
Apr	0.0 ND	0.0 ND	59.5	187	22	2337.8	634.1
May	0.0 ND	0.0 ND	68.2	18	119	2556.9	693.6
June	0.0 ND	0.0 ND	76.9	0	356	2649.6	718.7
July	0.0 ND	0.0 ND	79.3	0	443	2364.8	641.5
Aug	0.0 ND	0.0 ND	77.4	0	383	2215.9	601.1
Sept	0.0 ND	0.0 ND	71.6	4	202	1940.2	526.3
Oct	0.0 ND	0.0 ND	61.3	144	29	1578.7	428.2
Nov	0.0 ND	0.0 ND	48.7	488	0	1216.6	330.0
Dec	0.0 ND	0.0 ND	40.8	749	0	1002.6	271.9
Ann	0.0 ND	0.0 ND	59.9	3391	1557	1859.9	504.5

LATITUDE: 33° 14′ N
LONGITUDE: 107° 16′ W
ELEVATION: 1481 meters (4857.7 feet)

STATION NO. 93045

Truth or Consequences, New Mexico

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	2.77	482	0	11448.0	0.623
Feb	0.0 ND	0.0 ND	5.05	371	0	14715.0	0.629
Mar	0.0 ND	0.0 ND	8.16	315	0	19433.0	0.648
Apr	0.0 ND	0.0 ND	13.83	144	9	23815.0	0.659
May	0.0 ND	0.0 ND	18.66	31	42	26257.0	0.653
June	0.0 ND	0.0 ND	23.94	3	170	28192.0	0.674
July	0.0 ND	0.0 ND	25.77	0	230	26657.0	0.650
Aug	0.0 ND	0.0 ND	24.83	0	201	24558.0	0.651
Sept	0.0 ND	0.0 ND	20.88	11	87	20761.0	0.640
Oct	0.0 ND	0.0 ND	14.83	120	11	16378.0	0.633
Nov	0.0 ND	0.0 ND	7.88	313	0	12174.0	0.610
Dec	0.0 ND	0.0 ND	3.66	454	0	10328.0	0.610
Ann	0.0 ND	0.0 ND	14.22	2248	753	19560.0	0.645

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	37.0	868	0	1008.7	273.6
Feb	0.0 ND	0.0 ND	41.1	668	0	1296.6	351.7
Mar	0.0 ND	0.0 ND	46.7	567	0	1712.3	464.5
Apr	0.0 ND	0.0 ND	56.9	259	16	2098.4	569.2
May	0.0 ND	0.0 ND	65.6	56	76	2313.6	627.6
June	0.0 ND	0.0 ND	75.1	5	306	2484.1	673.8
July	0.0 ND	0.0 ND	78.4	0	414	2348.9	637.1
Aug	0.0 ND	0.0 ND	76.7	0	362	2163.9	587.0
Sept	0.0 ND	0.0 ND	69.6	20	157	1829.3	496.2
Oct	0.0 ND	0.0 ND	58.7	216	20	1443.1	391.5
Nov	0.0 ND	0.0 ND	46.2	563	0	1072.7	291.0
Dec	0.0 ND	0.0 ND	38.6	817	0	910.0	246.8
Ann	0.0 ND	0.0 ND	57.6	4046	1355	1723.5	467.5

STATION NO. 23048

Tucumcari, New Mexico

LATITUDE: 35° 11′ N
LONGITUDE: 103° 36′ W
ELEVATION: 1231 meters (4037.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−0.94	597	0	11193.0	0.607
Feb	0.0 ND	0.0 ND	1.44	472	0	14722.0	0.628
Mar	0.0 ND	0.0 ND	4.22	437	0	19151.0	0.638
Apr	0.0 ND	0.0 ND	8.94	281	0	24594.0	0.681
May	0.0 ND	0.0 ND	13.66	146	0	28066.0	0.698
June	0.0 ND	0.0 ND	18.55	37	44	29531.0	0.706
July	0.0 ND	0.0 ND	21.88	0	112	25699.0	0.627
Aug	0.0 ND	0.0 ND	20.77	7	83	23586.0	0.625
Sept	0.0 ND	0.0 ND	17.38	50	22	21505.0	0.663
Oct	0.0 ND	0.0 ND	11.38	215	0	16982.0	0.655
Nov	0.0 ND	0.0 ND	4.50	415	0	12350.0	0.618
Dec	0.0 ND	0.0 ND	0.00	568	0	10130.0	0.596
Ann	0.0 ND	0.0 ND	10.16	3230	262	19792.0	0.652

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	30.3	1075	0	986.3	267.5
Feb	0.0 ND	0.0 ND	34.6	850	0	1297.2	351.9
Mar	0.0 ND	0.0 ND	39.6	787	0	1687.5	457.7
Apr	0.0 ND	0.0 ND	48.1	506	0	2167.1	587.8
May	0.0 ND	0.0 ND	56.6	263	0	2473.0	670.8
June	0.0 ND	0.0 ND	65.4	67	79	2602.1	705.8
July	0.0 ND	0.0 ND	71.4	0	202	2264.4	614.2
Aug	0.0 ND	0.0 ND	69.4	13	149	2078.3	563.7
Sept	0.0 ND	0.0 ND	63.3	90	40	1894.9	514.0
Oct	0.0 ND	0.0 ND	52.5	387	0	1496.4	405.9
Nov	0.0 ND	0.0 ND	40.1	747	0	1088.2	295.2
Dec	0.0 ND	0.0 ND	32.0	1022	0	892.6	242.1
Ann	0.0 ND	0.0 ND	50.3	5814	472	1744.0	473.0

LATITUDE: 35° 6′ N
LONGITUDE: 108° 48′ W
ELEVATION: 1965 meters (6445.2 feet)

STATION NO. 93044

Zuni, New Mexico

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	−0.88	−10.83	−5.83	749	0	5181.0	0.378
Feb	0.38	−9.83	−4.72	645	0	7813.0	0.410
Mar	5.88	−4.33	0.77	544	0	11189.0	0.421
Apr	14.44	2.05	8.27	301	0	15153.0	0.444
May	20.94	7.61	14.27	140	15	17817.0	0.449
June	26.33	13.11	19.72	21	63	19632.0	0.467
July	28.83	15.61	22.22	5	125	19576.0	0.479
Aug	27.44	14.33	20.88	12	91	17011.0	0.467
Sept	23.16	10.05	16.61	75	23	13282.0	0.448
Oct	17.11	4.44	10.77	234	0	9275.0	0.422
Nov	8.94	−0.49	4.22	423	0	5188.0	0.337
Dec	1.16	−7.94	−3.38	673	0	4039.0	0.330
Ann	14.50	2.83	8.66	3826	318	12096.0	0.437

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	30.4	12.5	21.5	1348	0	456.5	123.8
Feb	32.7	14.3	23.5	1161	0	688.4	186.7
Mar	42.6	24.2	33.4	979	0	985.9	267.4
Apr	58.0	35.7	46.9	542	0	1335.2	362.2
May	69.7	45.7	57.7	252	27	1569.9	425.8
June	79.4	55.6	67.5	38	113	1729.9	469.2
July	83.9	60.1	72.0	9	225	1724.9	467.9
Aug	81.4	57.8	69.6	22	164	1498.9	406.6
Sept	73.7	50.1	61.9	135	41	1170.3	317.5
Oct	62.8	40.0	51.4	421	0	817.3	221.7
Nov	48.1	31.1	39.6	761	0	457.1	124.0
Dec	34.1	17.7	25.9	1211	0	355.9	96.5
Ann	58.1	37.1	47.6	6887	572	1065.8	289.1

STATION NO. 14735

Albany, New York

LATITUDE: 42° 45′ N
LONGITUDE: 73° 48′ W
ELEVATION: 89 meters (291.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−1.83	−9.33	−5.55	740	0	4378.0	0.312
Feb	−1.05	−9.22	−5.11	656	0	6535.0	0.337
Mar	3.83	−4.61	−0.38	580	0	9774.0	0.364
Apr	12.22	1.83	7.05	338	0	14091.0	0.411
May	18.33	7.33	12.83	177	7	16977.0	0.428
June	23.61	12.83	18.22	41	38	19082.0	0.454
July	25.83	15.33	20.61	11	82	18830.0	0.460
Aug	24.88	14.33	19.61	22	61	16168.0	0.442
Sept	20.77	10.50	15.66	95	15	12837.0	0.429
Oct	15.11	5.22	10.16	253	0	8843.0	0.397
Nov	6.94	−0.11	3.44	446	0	4696.0	0.299
Dec	−0.38	−6.99	−3.66	682	0	3373.0	0.269
Ann	12.38	3.11	7.77	4047	205	11299.0	0.405

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	28.7	15.2	22.0	1332	0	385.8	104.6
Feb	30.1	15.4	22.8	1181	0	575.8	156.2
Mar	38.9	23.7	31.3	1044	0	861.2	233.6
Apr	54.0	35.3	44.7	608	0	1241.6	336.8
May	65.0	45.2	55.1	319	13	1495.9	405.8
June	74.5	55.1	64.8	74	68	1681.4	456.1
July	78.5	59.6	69.1	20	148	1659.2	450.1
Aug	76.8	57.8	67.3	40	110	1424.6	386.4
Sept	69.4	50.9	60.2	171	27	1131.1	306.8
Oct	59.2	41.4	50.3	455	0	779.2	211.4
Nov	44.5	31.8	38.2	803	0	413.8	112.2
Dec	31.3	19.4	25.4	1228	0	297.2	80.6
Ann	54.3	37.6	46.0	7285	369	995.6	270.1

LATITUDE: 42° 13′ N
LONGITUDE: 75° 59′ W
ELEVATION: 499 meters (1636.7 feet)

STATION NO. 4725

Binghamton, New York

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−1.22	−7.99	−4.61	711	0	3960.0	0.291
Feb	−0.55	−7.94	−4.22	631	0	6201.0	0.327
Mar	3.88	−3.77	0.05	566	0	10083.0	0.380
Apr	11.83	2.44	7.16	335	0	14923.0	0.437
May	17.94	7.72	12.83	178	7	18119.0	0.457
June	23.94	13.50	18.72	32	43	20470.0	0.487
July	26.38	15.94	21.16	6	94	20160.0	0.493
Aug	25.33	15.05	20.22	18	76	17173.0	0.472
Sept	21.55	11.27	16.44	76	20	13072.0	0.442
Oct	15.66	5.94	10.83	232	0	8902.0	0.407
Nov	7.83	0.83	4.33	420	0	4578.0	0.299
Dec	0.88	−5.44	−2.27	638	0	3215.0	0.265
Ann	12.77	3.94	8.38	3848	242	11738.0	0.425

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	29.8	17.6	23.7	1280	0	348.9	94.6
Feb	31.0	17.7	24.4	1136	0	546.4	148.2
Mar	39.0	25.2	32.1	1019	0	888.5	241.0
Apr	53.3	36.4	44.9	603	0	1314.9	356.7
May	64.3	45.9	55.1	320	13	1596.5	433.1
June	75.1	56.3	65.7	58	77	1803.7	489.3
July	79.5	60.7	70.1	11	169	1776.4	481.8
Aug	77.6	59.1	68.4	32	137	1513.2	410.5
Sept	70.8	52.3	61.6	137	36	1151.8	312.4
Oct	60.2	42.7	51.5	418	0	784.4	212.8
Nov	46.1	33.5	39.8	756	0	403.4	109.4
Dec	33.6	22.2	27.9	1148	0	283.3	76.8
Ann	55.0	39.1	47.1	6926	436	1034.3	280.5

STATION NO. 14733

Buffalo, New York

LATITUDE: 42° 56′ N
LONGITUDE: 78° 44′ W
ELEVATION: 215 meters (705.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−9.72	870	0	4440.0	0.360
Feb	0.0 ND	0.0 ND	−8.49	751	0	7038.0	0.396
Mar	0.0 ND	0.0 ND	−2.44	643	0	11094.0	0.434
Apr	0.0 ND	0.0 ND	5.66	380	0	15241.0	0.455
May	0.0 ND	0.0 ND	12.27	194	6	18310.0	0.465
June	0.0 ND	0.0 ND	17.94	43	31	20186.0	0.481
July	0.0 ND	0.0 ND	20.56	12	81	19869.0	0.487
Aug	0.0 ND	0.0 ND	19.27	31	61	16842.0	0.468
Sept	0.0 ND	0.0 ND	15.11	106	10	12753.0	0.443
Oct	0.0 ND	0.0 ND	9.16	284	0	8356.0	0.402
Nov	0.0 ND	0.0 ND	2.16	485	0	4402.0	0.313
Dec	0.0 ND	0.0 ND	−6.61	773	0	3339.0	0.307
Ann	0.0 ND	0.0 ND	6.22	4576	190	11822.0	0.440

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	14.5	1566	0	391.2	106.1
Feb	0.0 ND	0.0 ND	16.7	1352	0	620.1	168.2
Mar	0.0 ND	0.0 ND	27.6	1157	0	977.5	265.2
Apr	0.0 ND	0.0 ND	42.2	684	0	1342.9	364.3
May	0.0 ND	0.0 ND	54.1	349	11	1613.4	437.6
June	0.0 ND	0.0 ND	64.3	77	56	1778.7	482.5
July	0.0 ND	0.0 ND	69.0	22	146	1750.7	474.9
Aug	0.0 ND	0.0 ND	66.7	56	110	1484.0	402.5
Sept	0.0 ND	0.0 ND	59.2	191	18	1123.7	304.8
Oct	0.0 ND	0.0 ND	48.5	511	0	736.3	199.7
Nov	0.0 ND	0.0 ND	35.9	873	0	387.9	105.2
Dec	0.0 ND	0.0 ND	20.1	1391	0	294.2	79.8
Ann	0.0 ND	0.0 ND	43.2	8237	342	1041.7	282.6

LATITUDE: 44° 56′ N
LONGITUDE: 74° 51′ W
ELEVATION: 63 meters (206.6 feet)

STATION NO. 94725

Massena, New York

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	3.61	– 3.38	0.11	565	0	5679.0	0.381
Feb	4.55	– 3.05	0.77	491	0	8183.0	0.405
Mar	9.11	0.94	5.05	411	0	11770.0	0.428
Apr	15.94	6.38	11.16	215	0	15479.0	0.446
May	21.88	11.72	16.83	76	30	18569.0	0.466
June	26.94	17.00	22.00	0	112	19410.0	0.462
July	29.55	20.00	24.77	0	200	19155.0	0.468
Aug	28.55	19.11	23.83	0	170	16834.0	0.457
Sept	24.88	15.50	20.22	16	72	13774.0	0.452
Oct	19.33	10.33	14.83	116	7	10161.0	0.441
Nov	12.22	4.88	8.55	293	0	6048.0	0.364
Dec	5.22	– 1.38	1.94	508	0	4585.0	0.341
Ann	16.83	8.16	12.50	2693	593	12471.0	0.439

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.5	25.9	32.2	1017	0	500.4	135.7
Feb	40.2	26.5	33.4	884	0	721.0	195.6
Mar	48.4	33.7	41.1	740	0	1037.1	281.3
Apr	60.7	43.5	52.1	387	0	1363.9	370.0
May	71.4	53.1	62.3	137	54	1636.2	443.8
June	80.5	62.6	71.6	0	202	1710.3	463.9
July	85.2	68.0	76.6	0	360	1687.8	457.8
Aug	83.4	66.4	74.9	0	306	1483.3	402.3
Sept	76.8	59.9	68.4	29	130	1213.7	329.2
Oct	66.8	50.6	58.7	209	13	895.3	242.9
Nov	54.0	40.8	47.4	527	0	532.9	144.6
Dec	41.4	29.5	35.5	914	0	404.0	109.6
Ann	62.3	46.7	54.5	4847	1067	1098.9	298.1

SOLMET STATION NO. 94728

New York City (Central Park), New York

LATITUDE: 40° 47′ N
LONGITUDE: 73° 58′ W
ELEVATION: 57 meters (187.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.16	−3.11	0.05	566	0	6215.0	0.416
Feb	4.00	−2.77	0.61	496	0	9017.0	0.446
Mar	8.38	1.16	4.77	420	0	12683.0	0.461
Apr	15.16	6.66	10.94	221	0	16531.0	0.476
May	21.00	12.05	16.55	80	25	19184.0	0.481
June	26.33	17.55	21.94	0	110	20450.0	0.487
July	28.94	20.72	24.83	0	201	20248.0	0.494
Aug	27.83	19.77	23.83	0	170	17968.0	0.488
Sept	24.00	16.05	20.05	16	68	14528.0	0.477
Oct	18.38	10.55	14.50	124	5	10788.0	0.469
Nov	11.77	5.16	8.50	295	0	6730.0	0.405
Dec	5.00	−1.05	2.00	506	0	5184.0	0.385
Ann	16.16	8.55	12.38	2727	582	13294.0	0.468

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	37.7	26.4	32.1	1019	0	547.6	148.5
Feb	39.2	27.0	33.1	893	0	794.5	215.5
Mar	47.1	34.1	40.6	756	0	1117.6	303.1
Apr	59.3	44.0	51.7	398	0	1456.6	395.1
May	69.8	53.7	61.8	144	45	1690.4	458.5
June	79.4	63.6	71.5	0	198	1801.9	488.8
July	84.1	69.3	76.7	0	362	1784.1	483.9
Aug	82.1	67.6	74.9	0	306	1583.2	429.5
Sept	75.2	60.9	68.1	29	122	1280.1	347.2
Oct	65.1	51.0	58.1	223	9	950.6	257.8
Nov	53.2	41.3	47.3	531	0	593.0	160.9
Dec	41.0	30.1	35.6	911	0	456.8	123.9
Ann	61.1	47.4	54.3	4909	1048	1171.4	317.7

LATITUDE: 40° 46′ N
LONGITUDE: 73° 54′ W
ELEVATION: 16 meters (52.5 feet)

STATION NO. 14732

New York City (Laguardia), New York

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−0.38	−8.49	−4.44	706	0	4134.0	0.307
Feb	0.33	−8.38	−3.99	625	0	6350.0	0.337
Mar	5.05	−3.94	0.55	551	0	10253.0	0.388
Apr	13.33	2.27	7.83	315	0	15198.0	0.446
May	19.55	7.61	13.61	158	12	18231.0	0.460
June	25.55	13.22	19.38	25	57	20619.0	0.491
July	27.88	15.66	21.77	5	112	20210.0	0.494
Aug	26.72	14.72	20.72	14	88	17239.0	0.474
Sept	22.83	10.83	16.83	70	25	13161.0	0.446
Oct	16.88	5.66	11.27	221	0	8874.0	0.408
Nov	8.83	0.61	4.72	408	0	4584.0	0.302
Dec	1.61	−5.72	−2.05	632	0	3188.0	0.266
Ann	14.00	3.66	8.83	3732	295	11837.0	0.430

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.3	16.7	24.0	1271	0	364.3	98.8
Feb	32.6	16.9	24.8	1125	0	559.5	151.8
Mar	41.1	24.9	33.0	992	0	903.4	245.1
Apr	56.0	36.1	46.1	567	0	1339.2	363.2
May	67.2	45.7	56.5	284	22	1606.4	435.7
June	78.0	55.8	66.9	45	103	1816.8	492.8
July	82.2	60.2	71.2	9	202	1780.8	483.0
Aug	80.1	58.5	69.3	25	158	1519.0	412.0
Sept	73.1	51.5	62.3	126	45	1159.7	314.6
Oct	62.4	42.2	52.3	398	0	781.9	212.1
Nov	47.9	33.1	40.5	734	0	403.9	109.6
Dec	34.9	21.7	28.3	1138	0	280.9	76.2
Ann	57.2	38.6	47.9	6718	531	1043.0	282.9

STATION NO. 14768

Rochester, New York

LATITUDE: 43° 7′ N
LONGITUDE: 77° 40′ W
ELEVATION: 169 meters (554.3 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−0.33	−8.99	−4.66	712	0	4370.0	0.324
Feb	0.38	−8.61	−4.11	628	0	6484.0	0.344
Mar	5.27	−3.99	0.66	547	0	10105.0	0.383
Apr	13.61	2.44	8.05	308	0	15025.0	0.441
May	19.77	7.77	13.77	151	10	17908.0	0.452
June	25.38	13.38	19.38	25	57	20177.0	0.480
July	27.77	16.11	21.94	6	117	19948.0	0.488
Aug	26.77	15.11	20.94	10	91	17064.0	0.469
Sept	22.94	11.27	17.11	66	30	13225.0	0.448
Oct	16.88	5.83	11.38	217	0	8822.0	0.405
Nov	9.05	0.88	5.00	400	0	4525.0	0.298
Dec	1.66	−5.99	−2.16	635	0	3238.0	0.270
Ann	14.11	3.77	8.94	3710	306	11741.0	0.426

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.4	15.8	23.6	1282	0	385.1	104.4
Feb	32.7	16.5	24.6	1130	0	571.3	155.0
Mar	41.5	24.8	33.2	985	0	890.4	241.5
Apr	56.5	36.4	46.5	554	0	1323.9	359.1
May	67.6	46.0	56.8	272	18	1577.9	428.0
June	77.7	56.1	66.9	45	103	1777.9	482.3
July	82.0	61.0	71.5	11	211	1757.7	476.8
Aug	80.2	59.2	69.7	18	164	1503.6	407.8
Sept	73.3	52.3	62.8	119	54	1165.3	316.1
Oct	62.4	42.5	52.5	391	0	777.3	210.9
Nov	48.3	33.6	41.0	720	0	398.7	108.2
Dec	35.0	21.2	28.1	1143	0	285.3	77.4
Ann	57.4	38.8	48.1	6678	551	1034.5	280.6

LATITUDE: 43° 7′ N
LONGITUDE: 76° 7′ W
ELEVATION: 124 meters (406.7 feet)

STATION NO. 14771

Syracuse, New York

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	9.11	−2.61	3.27	466	0	8190.0	0.449
Feb	10.33	−2.11	4.11	398	0	11024.0	0.474
Mar	14.61	0.83	7.72	328	0	14822.0	0.496
Apr	20.77	5.77	13.27	155	3	18925.0	0.525
May	24.88	10.33	17.61	55	33	20478.0	0.510
June	28.05	14.83	21.44	7	101	21047.0	0.503
July	29.05	17.00	23.05	0	146	20157.0	0.492
Aug	28.77	16.55	22.66	0	135	18461.0	0.490
Sept	25.55	13.00	19.27	27	56	15444.0	0.478
Oct	20.61	6.94	13.77	149	8	13022.0	0.506
Nov	14.55	1.27	7.94	311	0	9633.0	0.487
Dec	9.61	−2.16	3.72	452	0	7463.0	0.445
Ann	19.66	6.66	13.16	2353	484	14889.0	0.492

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	48.4	27.3	37.9	839	0	721.7	195.7
Feb	50.6	28.2	39.4	716	0	971.4	263.5
Mar	58.3	33.5	45.9	590	0	1306.0	354.3
Apr	69.4	42.4	55.9	279	5	1667.6	452.3
May	76.8	50.6	63.7	99	59	1804.4	489.4
June	82.5	58.7	70.6	13	182	1854.5	503.0
July	84.3	62.6	73.5	0	263	1776.1	481.8
Aug	83.8	61.8	72.8	0	243	1626.7	441.2
Sept	78.0	55.4	66.7	49	101	1360.8	369.1
Oct	69.1	44.5	56.8	268	14	1147.4	311.2
Nov	58.2	34.3	46.3	560	0	848.8	230.2
Dec	49.3	28.1	38.7	814	0	657.6	178.4
Ann	67.4	44.0	55.7	4235	871	1311.9	355.9

STATION NO. 3812

Asheville, North Carolina

LATITUDE: 35° 26′ N
LONGITUDE: 82° 32′ W
ELEVATION: 661 meters (2168.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	11.27	3.44	7.38	339	0	7781.0	0.425
Feb	11.72	3.61	7.66	298	0	10806.0	0.463
Mar	14.38	6.22	10.33	254	6	15053.0	0.503
Apr	19.05	10.83	14.94	104	2	20132.0	0.558
May	23.22	15.66	19.44	26	60	22264.0	0.554
June	26.94	20.05	23.50	0	157	23105.0	0.552
July	28.77	22.27	25.55	0	223	21797.0	0.532
Aug	28.55	21.94	25.27	0	215	19355.0	0.513
Sept	26.38	19.88	23.16	0	145	16688.0	0.515
Oct	21.83	15.05	18.44	42	45	12899.0	0.499
Nov	17.27	9.33	13.33	153	3	9906.0	0.498
Dec	12.66	4.72	8.72	297	0	7475.0	0.442
Ann	20.16	12.77	16.50	1517	861	15605.0	0.515

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	52.3	38.2	45.3	610	0	685.6	186.0
Feb	53.1	38.5	45.8	536	0	952.2	258.3
Mar	57.9	43.2	50.6	457	11	1326.4	359.8
Apr	66.3	51.5	58.9	187	4	1773.9	481.2
May	73.8	60.2	67.0	47	108	1961.8	532.1
June	80.5	68.1	74.3	0	283	2035.9	552.2
July	83.8	72.1	78.0	0	401	1920.6	521.0
Aug	83.4	71.5	77.5	0	387	1705.4	462.6
Sept	79.5	67.8	73.7	0	261	1470.4	398.9
Oct	71.3	59.1	65.2	76	81	1136.6	308.3
Nov	63.1	48.8	56.0	275	5	872.9	236.8
Dec	54.8	40.5	47.7	535	0	658.7	178.7
Ann	68.3	55.0	61.7	2731	1550	1375.0	373.0

LATITUDE: 35° 16′ N
LONGITUDE: 75° 33′ W
ELEVATION: 2 meters (6.6 feet)

SOLMET STATION NO. 93729

Cape Hatteras, North Carolina

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	11.16	0.05	5.61	394	0	8160.0	0.444
Feb	12.72	0.61	6.66	326	0	11020.0	0.472
Mar	16.77	3.88	10.33	256	8	14952.0	0.499
Apr	22.61	9.38	16.00	80	10	19236.0	0.533
May	26.77	14.11	20.44	18	84	21059.0	0.524
June	30.22	18.50	24.38	0	181	21802.0	0.521
July	31.27	20.38	25.83	0	232	20779.0	0.507
Aug	30.77	19.94	25.38	0	218	19236.0	0.510
Sept	27.77	16.61	22.22	5	122	16065.0	0.496
Oct	22.83	10.16	16.50	84	27	13317.0	0.515
Nov	16.88	4.22	10.55	233	0	9823.0	0.493
Dec	11.38	0.22	5.83	387	0	7631.0	0.451
Ann	21.77	9.83	15.83	1787	886	15257.0	0.503

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	52.1	32.1	42.1	709	0	719.0	195.0
Feb	54.9	33.1	44.0	587		971.0	263.4
Mar	62.2	39.0	50.6	461	14	1317.5	357.4
Apr	72.7	48.9	60.8	144	18	1695.0	459.8
May	80.2	57.4	68.8	32	151	1855.6	503.3
June	86.4	65.3	75.9	0	326	1921.1	521.1
July	88.3	68.7	78.5	0	418	1830.9	496.6
Aug	87.4	67.9	77.7	0	392	1695.0	459.8
Sept	82.0	61.9	72.0	9	220	1415.6	384.0
Oct	73.1	50.3	61.7	151	49	1173.4	318.3
Nov	62.4	39.6	51.0	419	0	865.5	234.8
Dec	52.5	32.4	42.5	697	0	672.4	182.4
Ann	71.2	49.7	60.5	3217	1595	1344.4	364.7

STATION NO. 13881

Charlotte, North Carolina

LATITUDE: 35° 13′ N
LONGITUDE: 80° 56′ W
ELEVATION: 234 meters (767.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8588.0	0.463
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11635.0	0.494
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15735.0	0.523
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20358.0	0.563
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21843.0	0.543
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22002.0	0.526
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20765.0	0.507
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18547.0	0.491
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	16198.0	0.498
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13274.0	0.510
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10290.0	0.512
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	8148.0	0.476
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15615.0	0.513

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	756.7	205.3
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1025.2	278.1
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1386.5	376.1
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1793.8	486.6
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1924.7	522.1
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1938.7	525.9
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1829.7	496.3
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1634.3	443.3
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1427.3	387.1
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1169.6	317.3
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	906.7	245.9
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	718.0	194.7
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1375.9	373.2

LATITUDE: 34° 54′ N
LONGITUDE: 76° 53′ W
ELEVATION: 11 meters (36.1 feet)

STATION NO. 13754

Cherry Point, North Carolina

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	9.33	– 1.94	3.72	452	0	8118.0	0.455
Feb	10.77	– 1.27	4.77	379	0	11009.0	0.481
Mar	15.22	2.27	8.77	302	6	14903.0	0.504
Apr	21.61	7.88	14.77	112	6	19103.0	0.532
May	26.05	12.94	19.50	32	68	21200.0	0.528
June	29.66	17.38	23.55	0	156	22166.0	0.529
July	30.83	19.38	25.11	0	210	21150.0	0.516
Aug	30.11	18.77	24.44	0	189	19255.0	0.512
Sept	26.94	14.88	20.94	13	91	16088.0	0.501
Oct	21.77	8.44	15.11	116	16	12953.0	0.509
Nov	15.61	2.50	9.05	278	0	9524.0	0.491
Dec	9.94	– 1.55	4.22	437	0	7475.0	0.456
Ann	20.66	8.33	14.50	2125	745	15245.0	0.507

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	48.8	28.5	38.7	814	0	715.3	194.0
Feb	51.4	29.7	40.6	682	0	970.0	263.1
Mar	59.4	36.1	47.8	544	11	1313.2	356.2
Apr	70.9	46.2	58.6	202	11	1683.2	456.6
May	78.9	55.3	67.1	58	122	1868.0	506.7
June	85.4	63.3	74.4	0	281	1953.1	529.8
July	87.5	66.9	77.2	0	378	1863.6	505.5
Aug	86.2	65.8	76.0	0	340	1696.6	460.2
Sept	80.5	58.8	69.7	23	164	1417.6	384.5
Oct	71.2	47.2	59.2	209	29	1141.3	309.6
Nov	60.1	36.5	48.3	500	0	839.2	227.6
Dec	49.9	29.2	39.6	787	0	658.7	178.7
Ann	69.2	47.0	58.1	3825	1341	1343.3	364.4

STATION NO. 13723

Greensboro, North Carolina

LATITUDE: 36° 5′ N
LONGITUDE: 79° 57′ W
ELEVATION: 270 meters (885.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	10.55	−1.11	4.72	422	0	7875.0	0.438
Feb	11.77	−0.49	5.66	354	0	10703.0	0.465
Mar	16.11	3.00	9.55	278	6	14478.0	0.488
Apr	22.33	8.16	15.27	100	8	18661.0	0.519
May	26.33	13.00	19.66	26	68	20522.0	0.511
June	29.77	17.27	23.55	0	156	21156.0	0.505
July	30.94	19.55	25.27	0	215	20151.0	0.491
Aug	30.44	19.00	24.72	0	198	18287.0	0.486
Sept	27.50	15.38	21.44	6	100	15629.0	0.485
Oct	22.44	8.88	15.66	103	20	12545.0	0.491
Nov	16.72	3.22	10.00	250	0	9217.0	0.472
Dec	11.05	−0.83	5.11	410	0	7213.0	0.437
Ann	21.33	8.77	15.05	1952	774	14703.0	0.488

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	51.0	30.0	40.5	760	0	693.9	188.2
Feb	53.2	31.1	42.2	637	0	943.1	255.8
Mar	61.0	37.4	49.2	500	11	1275.7	346.0
Apr	72.2	46.7	59.5	180	14	1644.3	446.0
May	79.4	55.4	67.4	47	122	1808.3	490.5
June	85.6	63.1	74.4	0	281	1864.1	505.6
July	87.7	67.2	77.5	0	387	1775.6	481.6
Aug	86.8	66.2	76.5	0	356	1611.3	437.1
Sept	81.5	59.7	70.6	11	180	1377.1	373.5
Oct	72.4	48.0	60.2	185	36	1105.4	299.8
Nov	62.1	37.8	50.0	450	0	812.1	220.3
Dec	51.9	30.5	41.2	738	0	635.6	172.4
Ann	70.4	47.8	59.1	3514	1393	1295.5	351.4

LATITUDE: 35° 52′ N
LONGITUDE: 78° 47′ W
ELEVATION: 134 meters (439.5 feet)

STATION NO. 13722

Raleigh / Durham, North Carolina

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−7.16	−19.33	−13.22	978	0	5298.0	0.472
Feb	−4.16	−16.44	−10.27	801	0	8803.0	0.528
Mar	1.88	−9.61	−3.83	687	0	13257.0	0.539
Apr	12.66	−0.49	6.11	366	0	16562.0	0.503
May	19.50	5.38	12.44	188	6	20974.0	0.536
June	24.33	11.00	17.66	67	47	23376.0	0.557
July	29.05	14.05	21.55	10	110	24782.0	0.610
Aug	28.61	12.72	20.66	19	91	21298.0	0.599
Sept	21.83	6.50	14.16	140	15	15372.0	0.549
Oct	15.72	0.66	8.22	313	0	10302.0	0.522
Nov	4.11	−7.61	−1.72	601	0	5757.0	0.445
Dec	−3.33	−14.88	−9.11	850	0	4232.0	0.434
Ann	11.94	−1.49	5.22	5024	270	14168.0	0.542

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	19.1	−2.8	8.2	1760	0	466.8	126.6
Feb	24.5	2.4	13.5	1442	0	775.7	210.4
Mar	35.4	14.7	25.1	1237	0	1168.1	316.9
Apr	54.8	31.1	43.0	659	0	1459.3	395.8
May	67.1	41.7	54.4	338	11	1848.1	501.3
June	75.8	51.8	63.8	121	85	2059.8	558.7
July	84.3	57.3	70.8	18	198	2183.6	592.3
Aug	83.5	54.9	69.2	34	164	1876.7	509.0
Sept	71.3	43.7	57.5	252	27	1354.5	367.4
Oct	60.3	33.2	46.8	563	0	907.8	246.2
Nov	39.4	18.3	28.9	1082	0	507.3	137.6
Dec	26.0	5.2	15.6	1530	0	372.9	101.1
Ann	53.5	29.3	41.4	9043	486	1248.4	338.6

SOLMET STATION NO. 24011

Bismarck, North Dakota

LATITUDE: 46° 46′ N
LONGITUDE: 100° 45′ W
ELEVATION: 502 meters (1646.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 9.22	– 19.77	– 14.49	1017	0	4709.0	0.423
Feb	– 6.33	– 17.33	– 11.83	844	0	8009.0	0.482
Mar	0.83	– 9.49	– 4.33	702	0	12460.0	0.508
Apr	11.44	– 0.05	5.72	378	0	16748.0	0.510
May	19.33	5.72	12.55	185	6	20822.0	0.532
June	24.38	11.88	18.16	53	48	22629.0	0.539
July	28.22	14.77	21.50	7	105	24059.0	0.592
Aug	27.55	13.77	20.66	18	90	20715.0	0.583
Sept	20.88	7.88	14.38	130	11	14796.0	0.529
Oct	14.66	1.94	8.33	310	0	9917.0	0.504
Nov	2.88	– 6.66	– 1.88	606	0	5190.0	0.403
Dec	– 5.61	– 15.49	– 10.55	895	0	3828.0	0.396
Ann	10.77	– 1.05	4.88	5150	262	13657.0	0.523

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	15.4	– 3.6	5.9	1831	0	414.9	112.5
Feb	20.6	0.8	10.7	1519	0	705.7	191.4
Mar	33.5	14.9	24.2	1264	0	1097.9	297.8
Apr	52.6	31.9	42.3	680	0	1475.7	400.3
May	66.8	42.3	54.6	333	11	1834.7	497.7
June	75.9	53.4	64.7	95	86	1993.9	540.9
July	82.8	58.6	70.7	13	189	2119.9	575.0
Aug	81.6	56.8	69.2	32	162	1825.3	495.1
Sept	69.6	46.2	57.9	234	20	1303.7	353.6
Oct	58.4	35.5	47.0	558	0	873.8	237.0
Nov	37.2	20.0	28.6	1091	0	457.3	124.0
Dec	21.9	4.1	13.0	1611	0	337.3	91.5
Ann	51.4	30.1	40.8	9270	472	1203.4	326.4

LATITUDE: 46° 54′ N
LONGITUDE: 96° 48′ W
ELEVATION: 274 meters (898.7 feet)

STATION NO. 14914

Fargo, North Dakota

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	– 13.38	983	0	4355.0	0.423
Feb	0.0 ND	0.0 ND	– 10.66	812	0	7444.0	0.472
Mar	0.0 ND	0.0 ND	– 4.66	712	0	11852.0	0.497
Apr	0.0 ND	0.0 ND	5.05	398	0	16576.0	0.512
May	0.0 ND	0.0 ND	11.55	213	3	20955.0	0.538
June	0.0 ND	0.0 ND	16.66	83	33	22412.0	0.535
July	0.0 ND	0.0 ND	20.44	15	80	23805.0	0.588
Aug	0.0 ND	0.0 ND	19.55	38	76	20433.0	0.581
Sept	0.0 ND	0.0 ND	13.44	158	12	14493.0	0.530
Oct	0.0 ND	0.0 ND	7.83	325	0	9642.0	0.511
Nov	0.0 ND	0.0 ND	– 2.27	618	0	4976.0	0.414
Dec	0.0 ND	0.0 ND	– 9.61	866	0	3518.0	0.398
Ann	0.0 ND	0.0 ND	4.50	5226	205	13372.0	0.523

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	7.9	1769	0	383.7	104.1
Feb	0.0 ND	0.0 ND	12.8	1462	0	655.9	177.9
Mar	0.0 ND	0.0 ND	23.6	1282	0	1044.3	283.3
Apr	0.0 ND	0.0 ND	41.1	716	0	1460.6	396.2
May	0.0 ND	0.0 ND	52.8	383	5	1846.4	500.8
June	0.0 ND	0.0 ND	62.0	149	59	1974.8	535.7
July	0.0 ND	0.0 ND	68.8	27	144	2097.6	569.0
Aug	0.0 ND	0.0 ND	67.2	68	137	1800.4	488.4
Sept	0.0 ND	0.0 ND	56.2	284	22	1277.0	346.4
Oct	0.0 ND	0.0 ND	46.1	585	0	849.6	230.5
Nov	0.0 ND	0.0 ND	27.9	1112	0	438.5	118.9
Dec	0.0 ND	0.0 ND	14.7	1559	0	310.0	84.1
Ann	0.0 ND	0.0 ND	40.1	9407	369	1178.3	319.6

STATION NO. 24013

Minot, North Dakota

LATITUDE: 48° 16′ N
LONGITUDE: 101° 17′ W
ELEVATION: 522 meters (1712.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	1.05	– 7.44	– 3.16	666	0	4860.0	0.327
Feb	2.22	– 6.99	– 2.38	580	0	7371.0	0.366
Mar	7.44	– 2.83	2.33	496	0	10942.0	0.399
Apr	15.16	3.16	9.16	275	0	15401.0	0.444
May	21.00	8.61	14.83	128	20	18928.0	0.475
June	26.33	13.94	20.16	18	73	20872.0	0.497
July	28.11	16.00	22.05	5	120	20279.0	0.495
Aug	27.38	15.16	21.27	8	100	18110.0	0.492
Sept	23.72	11.50	17.61	56	34	14434.0	0.475
Oct	17.61	6.00	11.83	205	3	10300.0	0.449
Nov	9.22	0.38	4.83	405	0	5728.0	0.347
Dec	2.50	– 5.44	– 1.44	613	0	4008.0	0.300
Ann	15.16	4.33	9.77	3457	352	12603.0	0.444

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	33.9	18.6	26.3	1199	0	428.2	116.2
Feb	36.0	19.4	27.7	1044	0	649.5	176.2
Mar	45.4	26.9	36.2	893	0	964.1	261.5
Apr	59.3	37.7	48.5	495	0	1357.0	368.1
May	69.8	47.5	58.7	230	36	1667.8	452.4
June	79.4	57.1	68.3	32	131	1839.1	498.9
July	82.6	60.8	71.7	9	216	1786.9	484.7
Aug	81.3	59.3	70.3	14	180	1595.7	432.8
Sept	74.7	52.7	63.7	101	61	1271.8	345.0
Oct	63.7	42.8	53.3	369	5	907.6	246.2
Nov	48.6	32.7	40.7	729	0	504.7	136.9
Dec	36.5	22.2	29.4	1103	0	353.2	95.8
Ann	59.3	39.8	49.6	6223	634	1110.5	301.2

LATITUDE: 40° 55′ N
LONGITUDE: 81° 26′ W
ELEVATION: 377 meters (1236.6 feet)

STATION NO. 14895

Akron / Canton, Ohio

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	4.27	−5.33	−0.49	583	0	5680.0	0.355
Feb	5.94	−[illegible].55	0.72	493	0	8380.0	0.395
Mar	11.00	−0.22	5.38	401	0	11659.0	0.412
Apr	18.33	5.94	12.16	189	4	15872.0	0.451
May	23.55	11.05	17.33	76	45	18980.0	0.475
June	28.44	16.11	22.27	5	123	20849.0	0.496
July	30.27	18.11	24.22	0	182	20098.0	0.490
Aug	29.88	17.22	23.55	0	163	18549.0	0.499
Sept	26.50	13.27	19.88	24	71	14885.0	0.479
Oct	20.27	7.22	13.77	150	9	11233.0	0.470
Nov	11.77	1.27	6.55	353	0	6679.0	0.379
Dec	5.55	−3.72	0.94	538	0	4908.0	0.338
Ann	18.00	6.38	12.22	2816	600	13148.0	0.453

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	39.7	22.4	31.1	1049	0	500.5	135.8
Feb	42.7	23.8	33.3	887	0	738.4	200.3
Mar	51.8	31.6	41.7	722	0	1027.3	278.7
Apr	65.0	42.7	53.9	340	7	1398.5	379.4
May	74.4	51.9	63.2	137	81	1672.4	453.6
June	83.2	61.0	72.1	9	221	1837.1	498.3
July	86.5	64.6	75.6	0	328	1770.9	480.4
Aug	85.8	63.0	74.4	0	293	1634.4	443.3
Sept	79.7	55.9	67.8	43	128	1311.6	355.8
Oct	68.5	45.0	56.8	270	16	989.8	268.5
Nov	53.2	34.3	43.8	635	0	588.5	159.6
Dec	42.0	25.3	33.7	968	0	432.5	117.3
Ann	64.4	43.5	54.0	5069	1080	1158.5	314.3

STATION NO. 93814

Cincinnati (Covington, KY), Ohio

LATITUDE: 39° 4′ N
LONGITUDE: 84° 40′ W
ELEVATION: 271 meters (888.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.77	−6.49	−2.83	656	0	4408.0	0.303
Feb	1.66	−6.22	−2.27	577	0	6822.0	0.343
Mar	6.72	−2.16	2.27	497	0	10467.0	0.384
Apr	14.44	3.61	9.05	278	0	15315.0	0.443
May	20.22	8.94	14.61	135	20	19079.0	0.479
June	25.66	14.16	19.94	22	70	20919.0	0.498
July	27.55	16.22	21.88	5	115	20745.0	0.507
Aug	26.88	15.33	21.11	9	95	17961.0	0.489
Sept	23.44	11.94	17.72	52	34	14067.0	0.466
Oct	17.55	6.61	12.11	196	3	9839.0	0.434
Nov	9.33	1.33	5.33	390	0	5290.0	0.326
Dec	2.44	−4.38	−0.94	597	0	3608.0	0.276
Ann	14.72	4.88	9.83	3418	340	12377.0	0.439

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	33.4	20.3	26.9	1181	0	388.4	105.4
Feb	35.0	20.8	27.9	1039	0	601.1	163.1
Mar	44.1	28.1	36.1	895	0	922.3	250.2
Apr	58.0	38.5	48.3	500	0	1349.5	366.0
May	68.4	48.1	58.3	243	36	1681.1	456.0
June	78.2	57.5	67.9	40	126	1843.3	500.0
July	81.6	61.2	71.4	9	207	1827.9	495.8
Aug	80.4	59.6	70.0	16	171	1582.6	429.3
Sept	74.2	53.5	63.9	94	61	1239.5	336.2
Oct	63.6	43.9	53.8	353	5	867.0	235.2
Nov	48.8	34.4	41.6	702	0	466.1	126.4
Dec	36.4	24.1	30.3	1075	0	317.9	86.2
Ann	58.5	40.8	49.7	6152	612	1090.6	295.8

LATITUDE: 41° 24′ N
LONGITUDE: 81° 51′ W
ELEVATION: 245 meters (803.6 feet)

STATION NO. 14820

Cleveland, Ohio

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	2.44	– 6.44	– 1.99	630	0	5212.0	0.338
Feb	4.00	– 5.88	– 0.94	540	0	7681.0	0.371
Mar	9.61	– 1.61	4.00	444	0	11117.0	0.399
Apr	17.11	4.16	10.66	232	0	15354.0	0.439
May	22.72	9.61	16.16	97	30	18691.0	0.468
June	27.72	14.94	21.33	7	97	20572.0	0.490
July	29.33	16.88	23.11	0	148	19916.0	0.486
Aug	28.72	15.61	22.16	4	123	18619.0	0.504
Sept	25.33	11.50	18.44	42	45	14545.0	0.473
Oct	19.11	5.55	12.33	190	4	10726.0	0.458
Nov	10.50	0.22	5.38	388	0	6103.0	0.358
Dec	3.72	– 5.16	– 0.72	590	0	4394.0	0.315
Ann	16.72	4.94	10.83	3167	449	12744.0	0.444

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	36.4	20.4	28.4	1134	0	459.3	124.6
Feb	39.2	21.4	30.3	972	0	676.8	183.6
Mar	49.3	29.1	39.2	799	0	979.6	265.7
Apr	62.8	39.5	51.2	418	0	1352.9	367.0
May	72.9	49.3	61.1	175	54	1646.9	446.7
June	81.9	58.9	70.4	13	175	1812.7	491.7
July	84.8	62.4	73.6	0	266	1754.9	476.0
Aug	83.7	60.1	71.9	7	221	1640.6	445.0
Sept	77.6	52.7	65.2	76	81	1281.6	347.6
Oct	66.4	42.0	54.2	342	7	945.1	256.4
Nov	50.9	32.4	41.7	698	0	537.8	145.9
Dec	38.7	22.7	30.7	1062	0	387.2	105.0
Ann	62.1	40.9	51.5	5701	808	1122.9	304.6

STATION NO. 14821

Columbus, Ohio

LATITUDE: 40° 0′ N
LONGITUDE: 82° 53′ W
ELEVATION: 254 meters (833.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	2.11	−6.44	−2.16	635	0	5552.0	0.359
Feb	3.66	−5.49	−0.88	538	0	8232.0	0.397
Mar	8.94	−1.16	3.88	447	0	11637.0	0.417
Apr	16.50	5.00	10.77	229	2	15924.0	0.455
May	22.22	10.66	16.44	92	33	19286.0	0.483
June	27.55	16.11	21.83	7	112	21264.0	0.506
July	29.27	18.00	23.66	0	165	20537.0	0.501
Aug	28.55	17.00	22.77	3	141	18675.0	0.505
Sept	25.00	13.05	19.05	35	56	14958.0	0.486
Oct	18.88	7.16	13.05	170	7	10996.0	0.468
Nov	10.05	0.77	5.44	386	0	6402.0	0.374
Dec	3.50	−4.77	−0.61	587	0	4625.0	0.330
Ann	16.38	5.83	11.11	3133	520	13174.0	0.458

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	35.8	20.4	28.1	1143	0	489.2	132.7
Feb	38.6	22.1	30.4	968	0	725.4	196.8
Mar	48.1	29.9	39.0	805	0	1025.4	278.1
Apr	61.7	41.0	51.4	412	4	1403.1	380.6
May	72.0	51.2	61.6	166	59	1699.4	461.0
June	81.6	61.0	71.3	13	202	1873.7	508.2
July	84.7	64.4	74.6	0	297	1809.6	490.9
Aug	83.4	62.6	73.0	5	254	1645.5	446.4
Sept	77.0	55.5	66.3	63	101	1318.0	357.5
Oct	66.0	44.9	55.5	306	13	968.9	262.8
Nov	50.1	33.4	41.8	695	0	564.1	153.0
Dec	38.3	23.4	30.9	1057	0	407.5	110.5
Ann	61.5	42.5	52.0	5639	936	1160.8	314.9

LATITUDE: 39° 54′ N
LONGITUDE: 84° 13′ W
ELEVATION: 306 meters (1003.7 feet)

STATION NO. 93815

Dayton, Ohio

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.22	−8.22	−3.99	692	0	4935.0	0.342
Feb	1.77	−7.27	−2.72	589	0	7722.0	0.391
Mar	7.22	−2.99	2.11	502	0	11311.0	0.417
Apr	15.27	2.88	9.11	276	0	15707.0	0.455
May	21.38	8.38	14.88	127	20	19485.0	0.490
June	26.94	14.00	20.50	17	82	21316.0	0.507
July	28.77	16.00	22.38	2	128	20986.0	0.513
Aug	28.00	15.05	21.55	10	110	18340.0	0.500
Sept	24.27	11.00	17.66	55	35	14477.0	0.480
Oct	18.22	5.11	11.66	210	3	10340.0	0.458
Nov	8.88	−0.49	4.22	423	0	5648.0	0.351
Dec	1.88	−6.38	−2.22	637	0	4033.0	0.312
Ann	15.22	3.94	9.61	3545	380	12858.0	0.457

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	32.4	17.2	24.8	1246	0	434.8	118.0
Feb	35.2	18.9	27.1	1060	0	680.4	184.6
Mar	45.0	26.6	35.8	904	0	996.7	270.3
Apr	59.5	37.2	48.4	497	0	1384.0	375.4
May	70.5	47.1	58.8	229	36	1716.9	465.7
June	80.5	57.2	68.9	31	148	1878.2	509.5
July	83.8	60.8	72.3	4	230	1849.2	501.6
Aug	82.4	59.1	70.8	18	198	1616.0	438.3
Sept	75.7	51.8	63.8	99	63	1275.6	346.0
Oct	64.8	41.2	53.0	378	5	911.1	247.1
Nov	48.0	31.1	39.6	761	0	497.7	135.0
Dec	35.4	20.5	28.0	1147	0	355.4	96.4
Ann	59.4	39.1	49.3	6381	684	1133.0	307.3

STATION NO. 94830

Toledo, Ohio

LATITUDE: 41° 36′ N
LONGITUDE: 83° 48′ W
ELEVATION: 211 meters (692.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.55	−7.61	−3.49	676	0	4370.0	0.299
Feb	1.50	−7.38	−2.94	595	0	6656.0	0.334
Mar	6.83	−3.16	1.83	511	0	10102.0	0.370
Apr	14.66	2.72	8.72	288	0	14507.0	0.419
May	20.50	7.94	14.22	143	16	17999.0	0.452
June	25.72	13.16	19.44	23	56	19964.0	0.475
July	27.66	15.33	21.50	5	102	19677.0	0.481
Aug	26.88	14.44	20.66	12	85	17095.0	0.465
Sept	23.27	10.77	17.05	65	27	13549.0	0.448
Oct	17.16	5.66	11.44	213	0	9662.0	0.425
Nov	8.83	0.33	4.61	411	0	5181.0	0.318
Dec	2.00	−5.55	−1.77	623	0	3578.0	0.272
Ann	14.66	3.88	9.27	3570	287	11862.0	0.420

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	33.0	18.3	25.7	1217	0	385.1	104.4
Feb	34.7	18.7	26.7	1071	0	586.5	159.1
Mar	44.3	26.3	35.3	920	0	890.1	241.4
Apr	58.4	36.9	47.7	518	0	1278.3	346.7
May	68.9	46.3	57.6	257	29	1586.0	430.2
June	78.3	55.7	67.0	41	101	1759.1	477.2
July	81.8	59.6	70.7	9	184	1733.8	470.3
Aug	80.4	58.0	69.2	22	153	1506.3	408.6
Sept	73.9	51.4	62.7	117	49	1193.9	323.8
Oct	62.9	42.2	52.6	383	0	851.4	230.9
Nov	47.9	32.6	40.3	740	0	456.5	123.8
Dec	35.6	22.0	28.8	1121	0	315.3	85.5
Ann	58.4	39.0	48.7	6426	517	1045.2	283.5

LATITUDE: 41° 16′ N
LONGITUDE: 80° 40′ W
ELEVATION: 361 meters (1184.1 feet)

STATION NO. 14852

Youngstown, Ohio

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	8.66	– 3.33	2.66	485	0	9089.0	0.498
Feb	11.44	– 1.11	5.16	368	0	11973.0	0.515
Mar	15.44	2.50	9.00	295	6	15890.0	0.532
Apr	22.00	9.50	15.77	100	23	19581.0	0.543
May	25.94	14.38	20.16	20	76	21768.0	0.542
June	30.55	19.22	24.88	0	196	24331.0	0.581
July	33.66	21.33	27.50	0	284	24155.0	0.589
Aug	33.61	20.88	27.27	0	277	22134.0	0.587
Sept	29.27	16.27	22.77	6	140	17638.0	0.545
Oct	23.44	10.33	16.88	82	37	13989.0	0.543
Nov	16.05	3.00	9.55	263	0	10225.0	0.516
Dec	10.38	– 1.55	4.44	430	0	8233.0	0.490
Ann	21.72	9.27	15.50	2052	1042	16584.0	0.548

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	47.6	26.0	36.8	873	0	800.9	217.2
Feb	52.6	30.0	41.3	662	0	1055.0	286.2
Mar	59.8	36.5	48.2	531	11	1400.1	379.8
Apr	71.6	49.1	60.4	180	41	1725.4	468.0
May	78.7	57.9	68.3	36	137	1918.1	520.3
June	87.0	66.6	76.8	0	353	2143.9	581.5
July	92.6	70.4	81.5	0	511	2128.4	577.3
Aug	92.5	69.6	81.1	0	499	1950.3	529.0
Sept	84.7	61.3	73.0	11	252	1554.2	421.6
Oct	74.2	50.6	62.4	148	67	1232.6	334.4
Nov	60.9	37.4	49.2	473	0	901.0	244.4
Dec	50.7	29.2	40.0	774	0	725.4	196.8
Ann	71.1	48.7	59.9	3694	1876	1461.3	396.4

STATION NO. 13967

Oklahoma City, Oklahoma

LATITUDE: 35° 24′ N
LONGITUDE: 97° 36′ W
ELEVATION: 397 meters (1302.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	8.33	−3.27	2.55	488	0	8304.0	0.468
Feb	11.22	−0.99	5.11	370	0	11101.0	0.486
Mar	15.38	2.72	9.05	293	5	14816.0	0.502
Apr	22.11	9.83	16.00	97	27	18189.0	0.507
May	26.22	14.66	20.44	15	80	20680.0	0.515
June	30.72	19.61	25.16	0	205	22932.0	0.547
July	33.77	21.88	27.83	0	294	23044.0	0.562
Aug	33.72	21.11	27.44	0	282	21170.0	0.563
Sept	29.33	16.50	22.94	5	143	16714.0	0.521
Oct	23.88	10.44	17.16	79	43	13208.0	0.520
Nov	16.00	3.33	9.66	260	0	9390.0	0.485
Dec	10.05	−1.38	4.33	433	0	7482.0	0.459
Ann	21.72	9.55	15.66	2044	1082	15586.0	0.519

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	47.0	26.1	36.6	878	0	731.7	198.5
Feb	52.2	30.2	41.2	666	0	978.2	265.3
Mar	59.7	36.9	48.3	527	9	1305.5	354.1
Apr	71.8	49.7	60.8	175	49	1602.7	434.7
May	79.2	58.4	68.8	27	144	1822.2	494.3
June	87.3	67.3	77.3	0	369	2020.6	548.1
July	92.8	71.4	82.1	0	529	2030.5	550.8
Aug	92.7	70.0	81.4	0	508	1865.4	506.0
Sept	84.8	61.7	73.3	9	257	1472.7	399.5
Oct	75.0	50.8	62.9	142	77	1163.8	315.7
Nov	60.8	38.0	49.4	468	0	827.4	224.4
Dec	50.1	29.5	39.8	779	0	659.3	178.8
Ann	71.1	49.2	60.2	3679	1948	1373.3	372.5

LATITUDE: 36° 12′ N
LONGITUDE: 95° 54′ W
ELEVATION: 206 meters (675.7 feet)

STATION NO. 13968

Tulsa, Oklahoma

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	8.05	1.44	4.77	420	0	3572.0	0.308
Feb	10.33	2.55	6.44	332	0	6189.0	0.363
Mar	11.16	2.61	6.88	355	0	9827.0	0.394
Apr	13.11	4.44	8.77	286	0	14223.0	0.430
May	15.72	6.83	11.27	218	0	18252.0	0.465
June	17.66	9.50	13.61	141	0	18450.0	0.440
July	19.83	11.22	15.55	90	4	19820.0	0.487
Aug	20.16	11.22	15.72	83	2	17010.0	0.477
Sept	19.77	9.50	14.66	111	0	13427.0	0.475
Oct	16.11	6.94	11.55	210	0	8093.0	0.403
Nov	11.88	4.22	8.05	308	0	4395.0	0.330
Dec	9.22	2.72	6.00	382	0	2958.0	0.292
Ann	14.44	6.11	10.27	2941	7	11351.0	0.430

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	46.5	34.6	40.6	756	0	314.7	85.4
Feb	50.6	36.6	43.6	598	0	545.3	147.9
Mar	52.1	36.7	44.4	639	0	865.9	234.9
Apr	55.6	40.0	47.8	515	0	1253.2	339.9
May	60.3	44.3	52.3	392	0	1608.3	436.2
June	63.8	49.1	56.5	254	0	1625.7	441.0
July	67.7	52.2	60.0	162	7	1746.4	473.7
Aug	68.3	52.2	60.3	149	4	1498.8	406.6
Sept	67.6	49.1	58.4	200	0	1183.1	320.9
Oct	61.0	44.5	52.8	378	0	713.1	193.4
Nov	53.4	39.6	46.5	554	0	387.3	105.0
Dec	48.6	36.9	42.8	688	0	260.6	70.7
Ann	58.0	43.0	50.5	5294	13	1000.2	271.3

STATION NO. 94224

Astoria, Oregon

LATITUDE: 46° 9′ N
LONGITUDE: 123° 53′ W
ELEVATION: 7 meters (23.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	1.88	−9.44	−3.77	685	0	5561.0	0.422
Feb	5.27	−6.44	−0.55	528	0	8988.0	0.484
Mar	8.83	−4.33	2.27	497	0	13472.0	0.514
Apr	14.50	−0.99	6.77	346	0	18710.0	0.552
May	19.16	3.22	11.22	223	2	23293.0	0.589
June	23.27	6.72	15.00	113	13	25872.0	0.616
July	29.77	10.61	20.22	16	75	27918.0	0.683
Aug	28.55	9.33	18.94	37	56	23636.0	0.652
Sept	24.11	4.94	14.55	125	12	18386.0	0.627
Oct	17.00	0.00	8.50	305	0	11832.0	0.550
Nov	8.44	−4.27	2.11	486	0	6736.0	0.452
Dec	3.05	−7.61	−2.27	638	0	4886.0	0.417
Ann	15.33	0.16	7.77	4006	160	15774.0	0.576

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	35.4	15.0	25.2	1233	0	490.0	132.9
Feb	41.5	20.4	31.0	950	0	792.0	214.8
Mar	47.9	24.2	36.1	895	0	1187.1	322.0
Apr	58.1	30.2	44.2	623	0	1648.6	447.2
May	66.5	37.8	52.2	401	4	2052.4	556.7
June	73.9	44.1	59.0	203	23	2279.7	618.4
July	85.6	51.1	68.4	29	135	2460.0	667.3
Aug	83.4	48.8	66.1	67	101	2082.7	564.9
Sept	75.4	40.9	58.2	225	22	1620.1	439.4
Oct	62.6	32.0	47.3	549	0	1042.6	282.8
Nov	47.2	24.3	35.8	875	0	593.5	161.0
Dec	37.5	18.3	27.9	1148	0	430.5	116.8
Ann	59.6	32.3	46.0	7211	288	1389.9	377.0

LATITUDE: 43° 35′ N
LONGITUDE: 119° 3′ W
ELEVATION: 1271 meters (4168.9 feet)

STATION NO. 24134

Burns, Oregon

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	6.77	−1.66	2.55	488	0	4618.0	0.331
Feb	11.00	−0.72	5.16	368	0	8369.0	0.434
Mar	13.72	0.44	7.11	347	0	12854.0	0.480
Apr	17.66	2.55	10.11	246	0	18597.0	0.543
May	22.05	6.00	14.05	138	6	23080.0	0.581
June	26.33	9.50	17.94	52	40	25851.0	0.615
July	31.94	12.11	22.05	6	121	28094.0	0.687
Aug	31.00	11.61	21.33	11	105	24067.0	0.659
Sept	27.83	8.16	18.00	49	39	18033.0	0.605
Oct	19.66	4.11	11.88	200	0	11144.0	0.503
Nov	11.50	1.22	6.38	358	0	5723.0	0.366
Dec	6.77	−0.49	3.16	470	0	3821.0	0.306
Ann	18.88	4.38	11.66	2738	312	15354.0	0.552

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	44.2	29.0	36.6	878	0	406.9	110.4
Feb	51.8	30.7	41.3	662	0	737.4	200.0
Mar	56.7	32.8	44.8	625	0	1132.6	307.2
Apr	63.8	36.6	50.2	443	0	1638.7	444.5
May	71.7	42.8	57.3	248	11	2033.7	551.6
June	79.4	49.1	64.3	94	72	2277.8	617.9
July	89.5	53.8	71.7	11	218	2475.5	671.5
Aug	87.8	52.9	70.4	20	189	2120.6	575.2
Sept	82.1	46.7	64.4	88	70	1589.0	431.0
Oct	67.4	39.4	53.4	360	0	981.9	266.4
Nov	52.7	34.2	43.5	644	0	504.3	136.8
Dec	44.2	31.1	37.7	846	0	336.7	91.3
Ann	66.0	39.9	53.0	4928	562	1352.9	367.0

SOLMET STATION NO. 24225

Medford, Oregon

LATITUDE: 42° 22′ N
LONGITUDE: 122° 52′ W
ELEVATION: 396 meters (1298.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	7.00	351	0	4977.0	0.375
Feb	0.0 ND	0.0 ND	8.11	286	0	7995.0	0.428
Mar	0.0 ND	0.0 ND	8.27	311	0	12006.0	0.457
Apr	0.0 ND	0.0 ND	9.50	265	0	17135.0	0.504
May	0.0 ND	0.0 ND	11.72	205	0	21076.0	0.532
June	0.0 ND	0.0 ND	13.83	135	0	22628.0	0.538
July	0.0 ND	0.0 ND	15.00	104	0	23920.0	0.585
Aug	0.0 ND	0.0 ND	15.38	93	0	20267.0	0.558
Sept	0.0 ND	0.0 ND	14.66	111	0	15632.0	0.531
Oct	0.0 ND	0.0 ND	12.72	173	0	10130.0	0.469
Nov	0.0 ND	0.0 ND	10.05	248	0	5954.0	0.397
Dec	0.0 ND	0.0 ND	8.05	318	0	4322.0	0.366
Ann	0.0 ND	0.0 ND	11.22	2604	0	13837.0	0.504

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	44.6	632	0	438.5	119.0
Feb	0.0 ND	0.0 ND	46.6	515	0	704.5	191.1
Mar	0.0 ND	0.0 ND	46.9	560	0	1057.9	287.0
Apr	0.0 ND	0.0 ND	49.1	477	0	1509.8	409.5
May	0.0 ND	0.0 ND	53.1	369	0	1857.1	503.7
June	0.0 ND	0.0 ND	56.9	243	0	1993.8	540.8
July	0.0 ND	0.0 ND	59.0	187	0	2107.7	571.7
Aug	0.0 ND	0.0 ND	59.7	167	0	1785.8	484.4
Sept	0.0 ND	0.0 ND	58.4	200	0	1377.4	373.6
Oct	0.0 ND	0.0 ND	54.9	311	0	892.6	242.1
Nov	0.0 ND	0.0 ND	50.1	446	0	524.6	142.3
Dec	0.0 ND	0.0 ND	46.5	572	0	380.8	103.3
Ann	0.0 ND	0.0 ND	52.2	4687	0	1219.2	330.7

LATITUDE: 43° 25′ N
LONGITUDE: 124° 15′ W
ELEVATION: 5 meters (16.4 feet)

STATION NO. 24284

North Bend, Oregon

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.66	−3.72	0.00	568	0	3951.0	0.332
Feb	8.05	−0.38	3.83	406	0	6964.0	0.402
Mar	11.77	1.27	6.55	365	0	11844.0	0.471
Apr	16.61	4.33	10.50	235	0	17054.0	0.513
May	21.33	8.05	14.72	122	10	21852.0	0.556
June	25.72	11.55	18.66	38	48	24335.0	0.580
July	31.22	14.88	23.05	3	149	27189.0	0.668
Aug	29.72	14.16	21.94	7	118	22630.0	0.632
Sept	24.94	10.61	17.77	53	37	17048.0	0.599
Oct	17.44	5.44	11.44	213	0	10306.0	0.507
Nov	9.38	1.00	5.22	393	0	4975.0	0.366
Dec	5.44	−1.33	2.05	504	0	3325.0	0.319
Ann	17.11	5.50	11.33	2911	364	14289.0	0.538

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.6	25.3	32.0	1022	0	348.1	94.4
Feb	46.5	31.3	38.9	731	0	613.6	166.4
Mar	53.2	34.3	43.8	657	0	1043.6	283.1
Apr	61.9	39.8	50.9	423	0	1502.7	407.6
May	70.4	46.5	58.5	220	18	1925.5	522.3
June	78.3	52.8	65.6	68	86	2144.3	581.6
July	88.2	58.8	73.5	5	268	2395.7	649.8
Aug	85.5	57.5	71.5	13	212	1994.0	540.9
Sept	76.9	51.1	64.0	95	67	1502.2	407.5
Oct	63.4	41.8	52.6	383	0	908.1	246.3
Nov	48.9	33.8	41.4	707	0	438.4	118.9
Dec	41.8	29.6	35.7	907	0	293.0	79.5
Ann	62.8	41.9	52.4	5240	655	1259.1	341.5

STATION NO. 24155

Pendleton, Oregon

LATITUDE: 45° 41′ N
LONGITUDE: 118° 51′ W
ELEVATION: 456 meters (1495.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	6.44	0.27	3.38	463	0	3518.0	0.295
Feb	10.05	1.94	6.00	345	0	6289.0	0.362
Mar	12.38	2.77	7.61	332	0	10157.0	0.403
Apr	15.72	4.88	10.33	240	0	14841.0	0.446
May	19.44	7.94	13.72	146	3	18876.0	0.480
June	22.27	11.00	16.66	71	21	20116.0	0.479
July	26.11	12.88	19.50	26	63	23121.0	0.568
Aug	25.61	12.77	19.22	31	58	18995.0	0.530
Sept	23.27	10.27	16.77	66	19	13808.0	0.484
Oct	17.16	7.05	12.11	192	0	8212.0	0.403
Nov	11.16	3.61	7.38	328	0	4398.0	0.322
Dec	7.77	1.83	4.83	418	0	2949.0	0.282
Ann	16.44	6.44	11.44	2662	166	12107.0	0.455

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	43.6	32.5	38.1	833	0	310.0	84.1
Feb	50.1	35.5	42.8	621	0	554.1	150.3
Mar	54.3	37.0	45.7	598	0	895.0	242.8
Apr	60.3	40.8	50.6	432	0	1307.7	354.7
May	67.0	46.3	56.7	263	5	1663.2	451.2
June	72.1	51.8	62.0	128	38	1772.5	480.8
July	79.0	55.2	67.1	47	113	2037.3	552.6
Aug	78.1	55.0	66.6	56	104	1673.7	454.0
Sept	73.9	50.5	62.2	119	34	1216.7	330.0
Oct	62.9	44.7	53.8	346	0	723.6	196.3
Nov	52.1 M	38.5	45.3	590	0	387.5	105.1
Dec	46.0	35.3	40.7	752	0	259.8	70.5
Ann	61.6	43.6	52.6	4792	299	1066.8	289.4

LATITUDE: 45° 36′ N
LONGITUDE: 122° 36′ W
ELEVATION: 12 meters (39.4 feet)

STATION NO. 24229

Portland, Oregon

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−0.99	599	0	5574.0	0.437
Feb	0.0 ND	0.0 ND	2.11	454	0	8794.0	0.484
Mar	0.0 ND	0.0 ND	3.66	454	0	13507.0	0.522
Apr	0.0 ND	0.0 ND	6.89	343	0	19098.0	0.567
May	0.0 ND	0.0 ND	10.72	236	0	23600.0	0.598
June	0.0 ND	0.0 ND	14.55	122	8	25959.0	0.618
July	0.0 ND	0.0 ND	18.72	30	42	27762.0	0.680
Aug	0.0 ND	0.0 ND	17.66	56	35	23478.0	0.650
Sept	0.0 ND	0.0 ND	14.27	129	7	17977.0	0.618
Oct	0.0 ND	0.0 ND	9.11	286	0	11342.0	0.537
Nov	0.0 ND	0.0 ND	3.88	433	0	6492.0	0.449
Dec	0.0 ND	0.0 ND	0.77	544	0	4818.0	0.427
Ann	0.0 ND	0.0 ND	8.44	3690	94	15700.0	0.579

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	30.2	1078	0	491.1	133.2
Feb	0.0 ND	0.0 ND	35.8	817	0	774.9	210.2
Mar	0.0 ND	0.0 ND	38.6	817	0	1190.2	322.8
Apr	0.0 ND	0.0 ND	44.4	617	0	1682.8	456.5
May	0.0 ND	0.0 ND	51.3	425	0	2079.5	564.1
June	0.0 ND	0.0 ND	58.2	220	14	2287.4	620.4
July	0.0 ND	0.0 ND	65.7	54	76	2446.2	663.5
Aug	0.0 ND	0.0 ND	63.8	101	63	2068.7	561.1
Sept	0.0 ND	0.0 ND	57.7	232	13	1584.0	429.7
Oct	0.0 ND	0.0 ND	48.4	515	0	999.4	271.1
Nov	0.0 ND	0.0 ND	39.0	779	0	572.0	155.2
Dec	0.0 ND	0.0 ND	33.4	979	0	424.5	115.2
Ann	0.0 ND	0.0 ND	47.2	6642	169	1383.4	375.2

STATION NO. 24230

Redmond, Oregon

LATITUDE: 44° 16′ N
LONGITUDE: 121° 9′ W
ELEVATION: 940 meters (3083.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	7.38	0.11	3.77	451	0	3769.0	0.305
Feb	10.77	1.33	6.05	343	0	6674.0	0.375
Mar	12.72	1.88	7.33	341	0	10748.0	0.421
Apr	16.11	3.61	9.88	253	0	15552.0	0.464
May	20.05	6.27	13.16	163	3	19722.0	0.501
June	23.33	9.11	16.22	73	10	20980.0	0.499
July	28.00	10.38	19.22	23	51	24314.0	0.596
Aug	27.38	10.50	18.94	29	48	20141.0	0.560
Sept	24.72	8.50	16.61	66	15	15075.0	0.523
Oct	17.83	5.72	11.77	203	0	8732.0	0.420
Nov	11.66	3.00	7.33	330	0	4657.0	0.331
Dec	8.38	1.50	4.94	415	0	3145.0	0.289
Ann	17.38	5.16	11.27	2695	128	12793.0	0.476

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	45.3	32.2	38.8	812	0	332.1	90.1
Feb	51.4	34.4	42.9	617	0	588.1	159.5
Mar	54.9	35.4	45.2	614	0	947.0	256.9
Apr	61.0	38.5	49.8	455	0	1370.3	371.7
May	68.1	43.3	55.7	293	5	1737.8	471.4
June	74.0	48.4	61.2	131	18	1848.6	501.4
July	82.4	50.7	66.6	41	92	2142.4	581.1
Aug	81.3	50.9	66.1	52	86	1774.7	481.4
Sept	76.5	47.3	61.9	119	27	1328.3	360.3
Oct	64.1	42.3	53.2	365	0	769.4	208.7
Nov	53.0	37.4	45.2	594	0	410.3	111.3
Dec	47.1	34.7	40.9	747	0	277.1	75.2
Ann	63.3	41.3	52.3	4851	230	1127.2	305.8

LATITUDE: 44° 55′ N
LONGITUDE: 123° 1′ W
ELEVATION: 61 meters (200.1 feet)

STATION NO. 24232

Salem, Oregon

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	30.22	23.83	27.33	0	278	15854.0	0.473
Feb	30.27	23.88	27.05	0	244	17689.0	0.495
Mar	30.61	24.00	27.27	0	277	18509.0	0.492
Apr	31.16	24.33	27.72	0	281	19199.0	0.505
May	31.11	24.44	27.77	0	292	17791.0	0.479
June	30.94	24.22	27.55	0	276	16518.0	0.454
July	30.61	24.00	27.27	0	277	16369.0	0.448
Aug	30.55	24.11	27.33	0	278	16828.0	0.451
Sept	30.83	24.27	27.55	0	276	17327.0	0.463
Oct	31.05	24.38	27.72	0	291	17099.0	0.472
Nov	31.11	24.33	27.72	0	281	16442.0	0.482
Dec	30.66	24.11	27.38	0	280	15194.0	0.464
Ann	30.72	24.22	27.50	0	3337	17068.0	0.473

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	86.4	74.9	81.2	0	500	1397.0	378.9
Feb	86.5	75.0	80.7	0	439	1558.6	422.8
Mar	87.1	75.2	81.1	0	499	1630.9	442.4
Apr	88.1	75.8	81.9	0	506	1691.7	458.9
May	88.0	76.0	82.0	0	526	1567.6	425.2
June	87.7	75.6	81.6	0	497	1455.5	394.8
July	87.1	75.2	81.1	0	499	1442.3	391.2
Aug	87.0	75.4	81.2	0	500	1482.8	402.2
Sept	87.5	75.7	81.6	0	497	1526.8	414.1
Oct	87.9	75.9	81.9	0	524	1506.7	408.7
Nov	88.0	75.8	81.9	0	506	1448.8	393.0
Dec	87.2	75.4	81.3	0	504	1338.8	363.2
Ann	87.3	75.6	81.5	0	6007	1503.9	407.9

STATION NO. 40309

Koror Island, Pacific Islands

LATITUDE: 7° 20′ N
LONGITUDE: 134° 29′ E
ELEVATION: 33 meters (108.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	29.44	25.22	27.33	0	278	17862.0	0.543
Feb	29.66	25.27	27.44	0	255	19882.0	0.563
Mar	29.94	25.33	27.61	0	287	20386.0	0.545
Apr	29.88	25.44	27.66	0	280	19752.0	0.518
May	30.00	25.38	27.66	0	289	18463.0	0.492
June	30.11	25.38	27.72	0	281	18276.0	0.496
July	30.38	25.27	27.83	0	294	18268.0	0.494
Aug	30.72	25.38	28.05	0	301	19147.0	0.510
Sept	30.72	25.38	28.05	0	291	18334.0	0.490
Oct	30.66	25.38	28.00	0	299	17308.0	0.482
Nov	30.00	25.27	27.61	0	278	16551.0	0.494
Dec	29.72	25.44	27.55	0	286	16461.0	0.514
Ann	30.11	25.33	27.72	0	3424	18391.0	0.512

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	85.0	77.4	81.2	0	500	1573.9	426.9
Feb	85.4	77.5	81.4	0	459	1751.9	475.2
Mar	85.9	77.6	81.7	0	517	1796.3	487.2
Apr	85.8	77.8	81.8	0	504	1740.4	472.1
May	86.0	77.7	81.8	0	520	1626.8	441.3
June	86.2	77.7	81.9	0	506	1610.4	436.8
July	86.7	77.5	82.1	0	529	1609.7	436.6
Aug	87.3	77.7	82.5	0	542	1687.1	457.6
Sept	87.3	77.7	82.5	0	524	1615.5	438.2
Oct	87.2	77.7	82.4	0	538	1525.1	413.7
Nov	86.0	77.5	81.7	0	500	1458.4	395.6
Dec	85.5	77.8	81.6	0	515	1450.4	393.4
Ann	86.2	77.6	81.9	0	6163	1620.5	439.6

LATITUDE: 8° 44′ N
LONGITUDE: 167° 44′ E
ELEVATION: 8 meters (26.2 feet)

STATION NO. 40604

Kwajalein Island, Pacific Islands

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	27.55	22.50	25.00	0	206	15313.0	0.555
Feb	27.61	22.38	25.00	0	186	17841.0	0.571
Mar	28.05	22.72	25.38	0	218	20556.0	0.582
Apr	28.38	23.05	25.72	0	221	22179.0	0.580
May	29.22	23.94	26.55	0	255	23317.0	0.591
June	30.16	24.88	27.50	0	275	23223.0	0.586
July	30.61	25.00	27.77	0	292	21841.0	0.554
Aug	31.00	25.22	28.11	0	303	21244.0	0.552
Sept	30.88	25.38	28.11	0	293	19730.0	0.543
Oct	30.33	24.83	27.55	0	286	17826.0	0.546
Nov	29.38	24.44	26.88	0	256	16306.0	0.569
Dec	28.38	23.38	25.88	0	234	14877.0	0.562
Ann	29.27	23.94	26.61	0	3030	19521.0	0.566

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	81.6	72.5	77.0	0	371	1349.3	366.0
Feb	81.7	72.3	77.0	0	335	1572.0	426.4
Mar	82.5	72.9	77.7	0	392	1811.3	491.3
Apr	83.1	73.5	78.3	0	398	1954.3	530.1
May	84.6	75.1	79.8	0	459	2054.6	557.3
June	86.3	76.8	81.5	0	495	2046.3	555.1
July	87.1	77.0	82.0	0	526	1924.5	522.0
Aug	87.8	77.4	82.6	0	545	1871.9	507.8
Sept	87.6	77.7	82.6	0	527	1738.5	471.6
Oct	86.6	76.7	81.6	0	515	1570.7	426.1
Nov	84.9	76.0	80.4	0	461	1436.8	389.7
Dec	83.1	74.1	78.6	0	421	1310.9	355.6
Ann	84.7	75.1	79.9	0	5454	1720.1	466.6

STATION NO. 41606

Wake Island, Pacific Islands

LATITUDE: 19° 17′ N
LONGITUDE: 166° 39′ E
ELEVATION: 4 meters (13.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	2.05	– 6.77	– 2.33	640	0	5987.0	0.399
Feb	3.27	– 6.16	– 1.44	553	0	8665.0	0.427
Mar	8.72	– 1.94	3.38	463	0	12238.0	0.444
Apr	16.27	3.61	9.94	251	0	15998.0	0.460
May	22.05	9.11	15.61	105	21	18576.0	0.466
June	27.22	14.38	20.83	11	86	20166.0	0.480
July	29.66	17.05	23.38	0	156	20030.0	0.489
Aug	28.22	15.88	22.05	3	118	17546.0	0.476
Sept	24.38	11.88	18.16	47	42	14051.0	0.461
Oct	18.66	5.83	12.27	191	3	10509.0	0.455
Nov	10.94	0.44	5.72	378	0	6449.0	0.387
Dec	3.72	– 5.22	– 0.72	590	0	4885.0	0.361
Ann	16.27	4.83	10.55	3237	428	12925.0	0.454

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	35.7	19.8	27.8	1152	0	527.5	143.1
Feb	37.9	20.9	29.4	995	0	763.5	207.1
Mar	47.7	28.5	38.1	833	0	1078.3	292.5
Apr	61.3	38.5	49.9	452	0	1409.6	382.4
May	71.7	48.4	60.1	189	38	1636.8	444.0
June	81.0	57.9	69.5	20	155	1776.9	482.0
July	85.4	62.7	74.1	0	281	1764.9	478.7
Aug	82.8	60.6	71.7	5	212	1546.0	419.4
Sept	75.9	53.4	64.7	85	76	1238.1	335.8
Oct	65.6	42.5	54.1	344	5	926.0	251.2
Nov	51.7	32.8	42.3	680	0	568.2	154.1
Dec	38.7	22.6	30.7	1062	0	430.4	116.8
Ann	61.3	40.7	51.0	5827	770	1138.9	308.9

LATITUDE: 40° 39′ N
LONGITUDE: 75° 26′ W
ELEVATION: 117 meters (383.8 feet)

STATION NO. 14737

Allentown, Pennsylvania

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	– 0.16	– 7.49	– 3.83	687	0	3922.0	0.278
Feb	0.27	– 7.83	– 3.77	618	0	6546.0	0.336
Mar	4.66	– 3.66	0.50	552	0	10445.0	0.388
Apr	11.94	2.27	7.11	336	0	15423.0	0.449
May	17.61	7.50	12.55	186	7	18684.0	0.470
June	23.05	13.11	18.11	44	37	20957.0	0.499
July	25.22	15.55	20.38	13	77	20800.0	0.508
Aug	24.44	14.94	19.72	23	66	16512.0	0.451
Sept	21.22	11.44	16.33	78	18	13633.0	0.455
Oct	15.66	6.11	10.88	230	0	9387.0	0.421
Nov	8.05	0.94	4.50	415	0	4723.0	0.299
Dec	1.55	– 4.83	– 1.61	618	0	3151.0	0.249
Ann	12.77	4.00	8.38	3806	207	12015.0	0.430

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.7	18.5	25.1	1237	0	345.6	93.7
Feb	32.5	17.9	25.2	1112	0	576.8	156.5
Mar	40.4	25.4	32.9	994	0	920.4	249.6
Apr	53.5	36.1	44.8	605	0	1359.0	368.6
May	63.7	45.5	54.6	335	13	1646.3	446.6
June	73.5	55.6	64.6	79	67	1846.6	500.9
July	77.4	60.0	68.7	23	139	1832.8	497.1
Aug	76.0	58.9	67.5	41	119	1454.9	394.7
Sept	70.2	52.6	61.4	140	32	1201.3	325.8
Oct	60.2	43.0	51.6	414	0	827.1	224.4
Nov	46.5	33.7	40.1	747	0	416.2	112.9
Dec	34.8	23.3	29.1	1112	0	277.6	75.3
Ann	55.0	39.2	47.1	6851	373	1058.7	287.2

STATION NO. 14860

Erie, Pennsylvania

LATITUDE: 42° 5′ N
LONGITUDE: 80° 11′ W
ELEVATION: 225 meters (738.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.16	−5.27	−1.05	601	0	6078.0	0.398
Feb	4.72	−4.44	0.16	508	0	8750.0	0.426
Mar	10.38	−0.44	5.00	413	0	12291.0	0.442
Apr	17.83	5.27	11.55	205	0	16008.0	0.459
May	23.61	10.88	17.27	71	38	18752.0	0.470
June	28.33	16.11	22.22	0	118	20480.0	0.487
July	30.44	18.55	24.50	0	191	20015.0	0.488
Aug	29.22	17.33	23.27	0	155	17597.0	0.476
Sept	25.55	13.33	19.44	28	61	14374.0	0.469
Oct	19.38	7.00	13.22	162	4	10602.0	0.455
Nov	11.61	1.50	6.55	353	0	6567.0	0.388
Dec	4.50	−3.88	0.33	557	0	5076.0	0.368
Ann	17.38	6.33	11.88	2902	569	13049.0	0.456

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	37.7	22.5	30.1	1082	0	535.6	145.3
Feb	40.5	24.0	32.3	914	0	771.0	209.1
Mar	50.7	31.2	41.0	743	0	1083.0	293.8
Apr	64.1	41.5	52.8	369	0	1410.5	382.6
May	74.5	51.6	63.1	128	68	1652.3	448.2
June	83.0	61.0	72.0	0	212	1804.6	489.5
July	86.8	65.4	76.1	0	344	1763.6	478.4
Aug	84.6	63.2	73.9	0	279	1550.5	420.6
Sept	78.0	56.0	67.0	50	110	1266.6	343.6
Oct	66.9	44.6	55.8	292	7	934.2	253.4
Nov	52.9	34.7	43.8	635	0	578.6	157.0
Dec	40.1	25.0	32.6	1003	0	447.3	121.3
Ann	63.3	43.4	53.4	5224	1024	1149.8	311.9

LATITUDE: 40° 13′ N
LONGITUDE: 76° 51′ W
ELEVATION: 106 meters (347.7 feet)

STATION NO. 14751

Harrisburg, Pennsylvania

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	4.50	– 4.22	0.16	563	0	6302.0	0.407
Feb	5.66	– 3.61	1.05	483	0	9017.0	0.435
Mar	10.66	0.27	5.50	397	0	12577.0	0.450
Apr	17.50	5.72	11.61	203	0	16273.0	0.465
May	23.38	11.27	17.33	67	37	18838.0	0.472
June	28.33	16.44	22.38	0	123	20555.0	0.489
July	30.44	19.27	24.88	0	203	19953.0	0.487
Aug	29.33	18.16	23.77	0	168	17869.0	0.483
Sept	25.77	14.33	20.05	21	72	14542.0	0.472
Oct	19.94	8.27	14.11	138	7	10878.0	0.463
Nov	13.05	2.72	7.88	313	0	7028.0	0.410
Dec	6.22	– 2.66	1.77	513	0	5339.0	0.381
Ann	17.88	7.16	12.55	2702	613	13264.0	0.461

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	40.1	24.4	32.3	1013	0	555.3	150.6
Feb	42.2	25.5	33.9	869	0	794.5	215.5
Mar	51.2	32.5	41.9	715	0	1108.2	300.6
Apr	63.5	42.3	52.9	365	0	1433.9	388.9
May	74.1	52.3	63.2	121	67	1659.9	450.2
June	83.0	61.6	72.3	0	221	1811.2	491.3
July	86.8	66.7	76.8	0	365	1758.1	476.9
Aug	84.8	64.7	74.8	0	302	1574.5	427.1
Sept	78.4	57.8	68.1	38	130	1281.4	347.6
Oct	67.9	46.9	57.4	248	13	958.5	260.0
Nov	55.5	36.9	46.2	563	0	619.3	168.0
Dec	43.2	27.2	35.2	923	0	470.4	127.6
Ann	64.2	44.9	54.6	4864	1103	1168.7	317.0

STATION NO. 13739

Philadelphia, Pennsylvania

LATITUDE: 39° 53′ N
LONGITUDE: 75° 15′ W
ELEVATION: 9 meters (29.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	1.83	−6.22	−2.16	635	0	4817.0	0.319
Feb	2.94	−5.94	−1.49	555	0	7096.0	0.348
Mar	8.44	−1.66	3.38	463	0	10697.0	0.387
Apr	16.05	4.11	10.11	246	0	14942.0	0.429
May	21.55	9.27	15.44	115	25	18178.0	0.456
June	26.38	14.27	20.33	14	74	19992.0	0.476
July	28.05	16.27	22.16	3	122	19171.0	0.468
Aug	27.16	15.22	21.22	8	98	17141.0	0.465
Sept	23.83	11.50	17.66	54	34	13720.0	0.449
Oct	17.72	5.77	11.77	206	3	10157.0	0.438
Nov	9.61	0.72	5.16	395	0	5728.0	0.342
Dec	2.94	−4.66	−0.83	594	0	3936.0	0.289
Ann	15.55	4.88	10.22	3294	359	12131.0	0.425

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	35.3	20.8	28.1	1143	0	424.4	115.1
Feb	37.3	21.3	29.3	999	0	625.3	169.6
Mar	47.2	29.0	38.1	833	0	942.6	255.7
Apr	60.9	39.4	50.2	443	0	1316.6	357.1
May	70.8	48.7	59.8	207	45	1601.7	434.5
June	79.5	57.7	68.6	25	133	1761.6	477.8
July	82.5	61.3	71.9	5	220	1689.2	458.2
Aug	80.9	59.4	70.2	14	176	1510.4	409.7
Sept	74.9	52.7	63.8	97	61	1208.9	327.9
Oct	63.9	42.4	53.2	371	5	895.0	242.8
Nov	49.3	33.3	41.3	711	0	504.7	136.9
Dec	37.3	23.6	30.5	1069	0	346.8	94.1
Ann	60.0	40.8	50.4	5929	646	1068.9	289.9

LATITUDE: 40° 30′ N
LONGITUDE: 80° 13′ W
ELEVATION: 373 meters (1223.4 feet)

STATION NO. 94823

Pittsburgh, Pennsylvania

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.83	−7.55	−3.33	671	0	5165.0	0.354
Feb	1.83	−7.05	−2.61	586	0	7815.0	0.393
Mar	7.05	−2.66	2.22	499	0	11250.0	0.413
Apr	14.94	3.33	9.16	275	0	15197.0	0.440
May	21.11	8.77	14.94	121	16	18052.0	0.454
June	26.11	13.77	19.94	15	63	19974.0	0.475
July	28.33	16.27	22.33	3	127	19811.0	0.484
Aug	27.05	15.11	21.11	10	96	17174.0	0.468
Sept	23.11	11.16	17.16	64	29	13606.0	0.450
Oct	17.22	5.66	11.44	217	3	10175.0	0.448
Nov	9.33	0.44	4.88	403	0	5558.0	0.342
Dec	2.27	−5.55	−1.61	618	0	4175.0	0.318
Ann	14.94	4.33	9.66	3487	337	12329.0	0.437

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	33.5	18.4	26.0	1208	0	455.1	123.4
Feb	35.3	19.3	27.3	1055	0	688.6	186.8
Mar	44.7	27.2	36.0	898	0	991.3	268.9
Apr	58.9	38.0	48.5	495	0	1339.1	363.2
May	70.0	47.8	58.9	218	29	1590.6	431.5
June	79.0	56.8	67.9	27	113	1760.0	477.4
July	83.0	61.3	72.2	5	229	1745.6	473.5
Aug	80.7	59.2	70.0	18	173	1513.3	410.5
Sept	73.6	52.1	62.9	115	52	1198.9	325.2
Oct	63.0	42.2	52.6	391	5	896.6	243.2
Nov	48.8	32.8	40.8	725	0	489.7	132.8
Dec	36.1	22.0	29.1	1112	0	367.9	99.8
Ann	58.9	39.8	49.4	6277	607	1086.4	294.7

STATION NO. 14777

Wilkes-Barre / Scranton, Pennsylvania

LATITUDE: 41° 20′ N
LONGITUDE: 75° 44′ W
ELEVATION: 289 meters (947.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	27.72	20.44	24.11	0	178	15044.0	0.536
Feb	27.83	20.22	24.05	0	160	17431.0	0.551
Mar	28.66	20.50	24.61	0	194	20291.0	0.571
Apr	29.11	21.44	25.27	0	208	21460.0	0.561
May	29.77	22.66	26.22	0	244	20575.0	0.523
June	30.55	23.33	26.94	0	258	20621.0	0.522
July	30.55	23.77	27.16	0	273	21265.0	0.542
Aug	30.83	23.94	27.38	0	280	20862.0	0.542
Sept	30.88	23.66	27.27	0	268	19004.0	0.521
Oct	30.77	23.16	27.00	0	268	17197.0	0.522
Nov	29.44	22.38	25.94	0	228	15522.0	0.533
Dec	28.38	21.38	24.88	0	203	14025.0	0.521
Ann	29.55	22.22	25.88	0	2767	18608.0	0.537

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	81.9	68.8	75.4	0	320	1325.6	359.6
Feb	82.1	68.4	75.3	0	288	1535.9	416.6
Mar	83.6	68.9	76.3	0	349	1787.9	485.0
Apr	84.4	70.6	77.5	0	374	1890.9	512.9
May	85.6	72.8	79.2	0	439	1812.9	491.8
June	87.0	74.0	80.5	0	464	1817.0	492.9
July	87.0	74.8	80.9	0	491	1873.7	508.3
Aug	87.5	75.1	81.3	0	504	1838.2	498.6
Sept	87.6	74.6	81.1	0	482	1674.5	454.2
Oct	87.4	73.7	80.6	0	482	1515.3	411.0
Nov	85.0	72.3	78.7	0	410	1367.7	371.0
Dec	83.1	70.5	76.8	0	365	1235.8	335.2
Ann	85.2	72.0	78.6	0	4981	1639.6	444.7

LATITUDE: 18° 26′ N
LONGITUDE: 66° 0′ W
ELEVATION: 19 meters (62.3 feet)

STATION NO. 11641

San Juan, Puerto Rico

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	2.33	– 6.33	– 1.99	630	0	5745.0	0.401
Feb	3.11	– 5.99	– 1.44	553	0	8381.0	0.426
Mar	7.05	– 1.66	2.72	483	0	11710.0	0.433
Apr	13.72	3.22	8.50	295	0	15592.0	0.452
May	19.33	8.27	13.83	143	4	18784.0	0.472
June	24.61	13.61	19.11	20	43	20150.0	0.479
July	27.27	17.22	22.27	0	124	19241.0	0.470
Aug	26.55	16.11	21.33	5	98	17007.0	0.464
Sept	22.83	12.00	17.44	51	25	13719.0	0.456
Oct	17.72	6.33	12.05	194	0	10290.0	0.457
Nov	11.11	1.44	6.27	361	0	6100.0	0.381
Dec	4.22	– 4.77	– 0.27	577	0	4750.0	0.369
Ann	15.00	4.94	10.00	3317	295	12622.0	0.450

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	36.2	20.6	28.4	1134	0	506.2	137.3
Feb	37.6	21.2	29.4	995	0	738.5	200.3
Mar	44.7	29.0	36.9	869	0	1031.8	279.9
Apr	56.7	37.8	47.3	531	0	1373.9	372.7
May	66.8	46.9	56.9	257	7	1655.1	449.0
June	76.3	56.5	66.4	36	77	1775.5	481.6
July	81.1	63.0	72.1	0	223	1695.4	459.9
Aug	79.8	61.0	70.4	9	176	1498.6	406.5
Sept	73.1	53.6	63.4	92	45	1208.8	327.9
Oct	63.9	43.4	53.7	349	0	906.7	245.9
Nov	52.0	34.6	43.3	650	0	537.5	145.8
Dec	39.6	23.4	31.5	1039	0	418.5	113.5
Ann	59.0	40.9	50.0	5971	531	1112.2	301.7

STATION NO. 14765

Providence, Rhode Island

LATITUDE: 41° 44′ N
LONGITUDE: 71° 26′ W
ELEVATION: 19 meters (62.3 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	15.44	2.94	9.22	289	6	8446.0	0.427
Feb	16.61	3.88	10.27	232	7	11296.0	0.459
Mar	19.88	7.27	13.61	166	20	15192.0	0.492
Apr	24.55	11.66	18.11	38	31	19660.0	0.537
May	28.38	16.16	22.27	2	125	21111.0	0.524
June	30.94	20.05	25.50	0	215	20926.0	0.502
July	31.72	21.77	26.77	0	261	20416.0	0.499
Aug	31.44	21.44	26.44	0	251	17991.0	0.473
Sept	29.16	18.83	24.00	0	170	15822.0	0.477
Oct	25.05	12.83	18.94	41	60	13536.0	0.502
Nov	20.22	6.72	13.50	150	5	10601.0	0.498
Dec	16.00	3.16	9.61	270	0	8179.0	0.445
Ann	24.11	12.22	18.16	1192	1154	15265.0	0.491

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	59.8	37.3	48.6	520	11	744.2	201.9
Feb	61.9	39.0	50.5	418	13	995.3	270.0
Mar	67.8	45.1	56.5	299	36	1338.6	363.1
Apr	76.2	53.0	64.6	68	56	1732.3	469.9
May	83.1	61.1	72.1	4	225	1860.2	504.6
June	87.7	68.1	77.9	0	387	1843.9	500.2
July	89.1	71.2	80.2	0	470	1798.9	488.0
Aug	88.6	70.6	79.6	0	452	1585.3	430.0
Sept	84.5	65.9	75.2	0	306	1394.1	378.2
Oct	77.1	55.1	66.1	74	108	1192.7	323.5
Nov	68.4	44.1	56.3	270	9	934.1	253.4
Dec	60.8	37.7	49.3	486	0	720.7	195.5
Ann	75.4	54.0	64.7	2146	2077	1345.1	364.8

LATITUDE: 32° 54′ N
LONGITUDE: 80° 2′ W
ELEVATION: 12 meters (39.4 feet)

SOLMET STATION NO. 13880

Charleston, South Carolina

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	13.83	1.05	7.44	337	0	8645.0	0.452
Feb	15.38	1.94	8.66	273	2	11582.0	0.481
Mar	19.16	5.50	12.33	200	13	15378.0	0.505
Apr	24.94	10.72	17.83	46	31	19824.0	0.545
May	29.16	15.33	22.27	6	129	21505.0	0.534
June	32.38	19.55	26.00	0	230	22095.0	0.529
July	33.33	21.27	27.33	0	278	20902.0	0.510
Aug	32.77	20.77	26.77	0	261	19324.0	0.510
Sept	29.66	17.50	23.61	0	160	16334.0	0.498
Oct	25.05	10.72	17.88	62	48	13748.0	0.519
Nov	19.38	4.77	12.11	189	2	10455.0	0.506
Dec	14.38	1.16	7.77	327	0	8195.0	0.463
Ann	24.11	10.83	17.50	1443	1159	15666.0	0.510

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	56.9	33.9	45.4	607	0	761.7	206.6
Feb	59.7	35.5	47.6	491	4	1020.5	276.8
Mar	66.5	41.9	54.2	360	23	1355.0	367.5
Apr	76.9	51.3	64.1	83	56	1746.8	473.8
May	84.5	59.6	72.1	11	232	1894.9	514.0
June	90.3	67.2	78.8	0	414	1946.9	528.1
July	92.0	70.3	81.2	0	500	1841.8	499.6
Aug	91.0	69.4	80.2	0	470	1702.7	461.9
Sept	85.4	63.5	74.5	0	288	1439.3	390.4
Oct	77.1	51.3	64.2	112	86	1211.4	328.6
Nov	66.9	40.6	53.8	340	4	921.2	249.9
Dec	57.9	34.1	46.0	589	0	722.1	195.9
Ann	75.4	51.5	63.5	2597	2086	1380.4	374.4

STATION NO. 13883

Columbia, South Carolina

LATITUDE: 33° 57′ N
LONGITUDE: 81° 7′ W
ELEVATION: 69 meters (226.3 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	10.88	0.55	5.72	391	0	8280.0	0.446
Feb	12.27	1.50	6.88	320	0	11144.0	0.473
Mar	16.44	4.55	10.50	250	7	15077.0	0.501
Apr	22.22	9.94	16.11	80	13	19263.0	0.533
May	26.61	14.61	20.61	16	86	20869.0	0.519
June	29.94	18.83	24.38	0	181	21769.0	0.521
July	30.88	20.55	25.72	0	228	20770.0	0.507
Aug	30.44	20.05	25.27	0	215	19284.0	0.511
Sept	27.22	16.83	22.05	5	116	15952.0	0.491
Oct	22.44	10.50	16.50	80	23	13392.0	0.515
Nov	16.55	4.50	10.55	233	0	9990.0	0.497
Dec	11.33	0.72	6.05	380	0	7607.0	0.444
Ann	21.44	10.27	15.88	1757	873	15283.0	0.502

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	51.6	33.0	42.3	704	0	729.6	197.9
Feb	54.1	34.7	44.4	576	0	981.9	266.4
Mar	61.6	40.2	50.9	450	13	1328.5	360.4
Apr	72.0	49.9	61.0	144	23	1697.3	460.4
May	79.9	58.3	69.1	29	155	1838.9	498.8
June	85.9	65.9	75.9	0	326	1918.2	520.3
July	87.6	69.0	78.3	0	410	1830.1	496.4
Aug	86.8	68.1	77.5	0	387	1699.2	460.9
Sept	81.0	62.3	71.7	9	209	1405.6	381.3
Oct	72.4	50.9	61.7	144	41	1180.0	320.1
Nov	61.8	40.1	51.0	419	0	880.3	238.8
Dec	52.4	33.3	42.9	684	0	670.3	181.8
Ann	70.6	50.5	60.6	3163	1571	1346.6	365.3

LATITUDE: 34° 54′ N
LONGITUDE: 82° 13′ W
ELEVATION: 296 meters (970.9 feet)

STATION NO. 3870

Greenville / Spartanburg, South Carolina

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 4.77	– 16.88	– 10.83	903	0	5540.0	0.437
Feb	– 1.83	– 13.83	– 7.83	732	0	8451.0	0.467
Mar	4.00	– 7.33	– 1.66	620	0	12639.0	0.490
Apr	14.38	0.88	7.66	320	0	17364.0	0.516
May	20.94	6.77	13.88	151	13	21240.0	0.538
June	26.11	12.88	19.50	40	75	23845.0	0.568
July	30.44	15.88	23.16	5	154	24772.0	0.607
Aug	29.72	14.83	22.27	7	129	21476.0	0.595
Sept	23.38	8.44	15.94	93	22	16091.0	0.554
Oct	17.22	2.27	9.77	267	0	11216.0	0.532
Nov	6.33	– 5.94	0.22	543	0	6550.0	0.455
Dec	– 1.44	– 12.77	– 7.11	788	0	4600.0	0.410
Ann	13.72	0.44	7.11	4474	395	14482.0	0.535

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F Ñ	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	23.4	1.6	12.5	1625	0	488.2	132.4
Feb	28.7	7.1	17.9	1318	0	744.7	202.0
Mar	39.2	18.8	29.0	1116	0	1113.7	302.1
Apr	57.9	33.6	45.8	576	0	1530.0	415.0
May	69.7	44.2	57.0	272	23	1871.5	507.7
June	79.0	55.2	67.1	72	135	2101.1	569.9
July	86.8	60.6	73.7	9	277	2182.8	592.1
Aug	85.5	58.7	72.1	13	232	1892.3	513.3
Sept	74.1	47.2	60.7	167	40	1417.8	384.6
Oct	63.0	36.1	49.6	481	0	988.3	268.1
Nov	43.4	21.3	32.4	977	0	577.1	156.6
Dec	29.4	9.0	19.2	1418	0	405.3	109.9
Ann	56.7	32.8	44.8	8053	711	1276.1	346.1

STATION NO. 14936

Huron, South Dakota

LATITUDE: 44° 23′ N
LONGITUDE: 98° 13′ W
ELEVATION: 393 meters (1289.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−9.11	850	0	6015.0	0.474
Feb	0.0 ND	0.0 ND	−6.44	693	0	9024.0	0.498
Mar	0.0 ND	0.0 ND	−1.22	606	0	13692.0	0.531
Apr	0.0 ND	0.0 ND	7.94	311	0	18316.0	0.544
May	0.0 ND	0.0 ND	14.11	148	17	22316.0	0.565
June	0.0 ND	0.0 ND	19.66	41	81	24909.0	0.593
July	0.0 ND	0.0 ND	24.00	3	178	25854.0	0.634
Aug	0.0 ND	0.0 ND	23.27	5	158	22613.0	0.627
Sept	0.0 ND	0.0 ND	16.72	84	36	16979.0	0.585
Oct	0.0 ND	0.0 ND	10.39	250	4	11936.0	0.567
Nov	0.0 ND	0.0 ND	1.00	520	0	7067.0	0.491
Dec	0.0 ND	0.0 ND	−5.83	749	0	5018.0	0.447
Ann	0.0 ND	0.0 ND	7.88	4265	476	15312.0	0.566

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	15.6	1530	0	530.0	143.8
Feb	0.0 ND	0.0 ND	20.4	1247	0	795.1	215.7
Mar	0.0 ND	0.0 ND	29.8	1091	0	1206.5	327.3
Apr	0.0 ND	0.0 ND	46.3	560	0	1613.9	437.8
May	0.0 ND	0.0 ND	57.4	266	31	1966.4	533.4
June	0.0 ND	0.0 ND	67.4	74	146	2194.8	595.4
July	0.0 ND	0.0 ND	75.2	5	320	2278.1	617.9
Aug	0.0 ND	0.0 ND	73.9	9	284	1992.5	540.5
Sept	0.0 ND	0.0 ND	62.1	151	65	1496.1	405.8
Oct	0.0 ND	0.0 ND	50.7	450	7	1051.7	285.3
Nov	0.0 ND	0.0 ND	33.8	936	0	622.7	168.9
Dec	0.0 ND	0.0 ND	21.5	1348	0	442.2	119.9
Ann	0.0 ND	0.0 ND	46.2	7677	857	1349.2	366.0

LATITUDE: 44° 23′ N
LONGITUDE: 100° 17′ W
ELEVATION: 526 meters (1725.3 feet)

STATION NO. 24025

Pierre, South Dakota

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	1.22	– 12.44	– 5.61	742	0	6154.0	0.477
Feb	3.11	– 10.05	– 3.44	610	0	9380.0	0.512
Mar	5.94	– 6.83	– 0.44	582	0	13946.0	0.537
Apr	14.00	0.00	7.00	340	0	18035.0	0.534
May	19.66	6.05	12.88	177	8	21415.0	0.542
June	24.61	11.11	17.88	74	61	24187.0	0.576
July	30.16	14.88	22.55	7	138	25229.0	0.618
Aug	29.94	14.00	22.00	9	123	22275.0	0.616
Sept	23.72	7.94	15.83	106	31	17227.0	0.591
Oct	17.55	2.44	10.00	263	5	12071.0	0.568
Nov	8.61	– 4.88	1.88	493	0	7339.0	0.502
Dec	3.33	– 9.49	– 3.05	663	0	5407.0	0.473
Ann	15.16	1.05	8.11	4068	367	15222.0	0.560

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	34.2	9.6	21.9	1336	0	542.3	147.1
Feb	37.6	13.9	25.8	1098	0	826.5	224.2
Mar	42.7	19.7	31.2	1048	0	1228.8	333.3
Apr	57.2	32.0	44.6	612	0	1589.1	431.1
May	67.4	42.9	55.2	319	14	1887.0	511.8
June	76.3	52.0	64.2	133	110	2131.2	578.1
July	86.3	58.8	72.6	13	248	2223.0	603.0
Aug	85.9	57.2	71.6	16	221	1962.7	532.4
Sept	74.7	46.3	60.5	191	56	1517.9	411.7
Oct	63.6	36.4	50.0	473	9	1063.6	288.5
Nov	47.5	23.2	35.4	887	0	646.7	175.4
Dec	38.0	14.9	26.5	1193	0	476.4	129.2
Ann	59.3	33.9	46.6	7322	661	1341.3	363.8

STATION NO. 24090

Rapid City, South Dakota

LATITUDE: 44° 3′ N
LONGITUDE: 103° 4′ W
ELEVATION: 966 meters (3168.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−4.11	−15.72	−9.88	875	0	6044.0	0.458
Feb	−1.27	−12.77	−6.99	709	0	9103.0	0.490
Mar	4.27	−6.55	−1.11	602	0	13076.0	0.499
Apr	14.33	1.33	7.83	315	0	17510.0	0.516
May	20.94	7.61	14.27	143	17	21492.0	0.543
June	26.05	13.50	19.77	36	79	23832.0	0.567
July	29.50	16.38	22.94	5	148	24396.0	0.597
Aug	28.77	15.44	22.11	10	127	20933.0	0.577
Sept	22.77	9.27	16.05	91	23	16000.0	0.545
Oct	17.05	3.11	10.11	258	3	11409.0	0.530
Nov	6.38	−5.16	0.61	531	0	6895.0	0.463
Dec	−1.33	−11.99	−6.66	775	0	5006.0	0.427
Ann	13.61	1.22	7.44	4354	399	14641.0	0.535

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	24.6	3.7	14.2	1575	0	532.6	144.5
Feb	29.7	9.0	19.4	1276	0	802.1	217.6
Mar	39.7	20.2	30.0	1084	0	1152.2	312.5
Apr	57.8	34.4	46.1	567	0	1542.9	418.5
May	69.7	45.7	57.7	257	31	1893.7	513.7
June	78.9	56.3	67.6	65	142	2099.9	569.6
July	85.1	61.5	73.3	9	266	2149.6	583.1
Aug	83.8	59.8	71.8	18	229	1844.5	500.3
Sept	73.0	48.7	60.9	164	41	1409.8	382.4
Oct	62.7	37.6	50.2	464	5	1005.3	272.7
Nov	43.5	22.7	33.1	956	0	607.5	164.8
Dec	29.6	10.4	20.0	1395	0	441.1	119.6
Ann	56.5	34.2	45.4	7837	718	1290.1	349.9

LATITUDE: 43° 34′ N
LONGITUDE: 96° 44′ W
ELEVATION: 435 meters (1426.8 feet)

STATION NO. 14944

Sioux Falls, South Dakota

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	9.94	– 0.83	4.55	427	0	7156.0	0.387
Feb	11.88	0.16	6.05	347	3	9744.0	0.415
Mar	16.22	3.55	9.88	268	6	13349.0	0.445
Apr	22.72	8.94	15.83	91	16	17588.0	0.487
May	27.22	13.33	20.27	28	88	19655.0	0.489
June	30.83	18.05	24.44	0	183	20784.0	0.497
July	31.94	20.05	26.00	0	237	19693.0	0.480
Aug	31.66	19.44	25.55	0	223	18499.0	0.490
Sept	28.55	15.77	22.16	5	120	15156.0	0.467
Oct	23.05	8.94	16.00	101	28	12577.0	0.485
Nov	15.94	2.83	9.38	268	0	8772.0	0.438
Dec	10.50	– 0.33	5.11	410	0	6587.0	0.387
Ann	21.72	9.16	15.44	1947	908	14130.0	0.465

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	49.9	30.5	40.2	769	0	630.5	171.0
Feb	53.4	32.3	42.9	625	5	858.6	232.9
Mar	61.2	38.4	49.8	482	11	1176.2	319.1
Apr	72.9	48.1	60.5	164	29	1549.7	420.4
May	81.0	56.0	68.5	50	158	1731.9	469.8
June	87.5	64.5	76.0	0	329	1831.4	496.8
July	89.5	68.1	78.8	0	427	1735.2	470.7
Aug	89.0	67.0	78.0	0	401	1630.0	442.1
Sept	83.4	60.4	71.9	9	216	1335.5	362.2
Oct	73.5	48.1	60.8	182	50	1108.2	300.6
Nov	60.7	37.1	48.9	482	0	772.9	209.7
Dec	50.9	31.4	41.2	738	0	580.4	157.4
Ann	71.1	48.5	59.8	3505	1634	1245.1	337.7

STATION NO. 13882

Chattanooga, Tennessee

LATITUDE: 35° 2′ N
LONGITUDE: 85° 12′ W
ELEVATION: 210 meters (688.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	9.38	0.11	4.77	420	0	7044.0	0.392
Feb	11.11	0.83	6.00	350	4	9799.0	0.425
Mar	15.77	4.11	9.94	268	8	13514.0	0.455
Apr	22.22	9.22	15.72	96	17	18146.0	0.504
May	26.55	13.83	20.22	26	84	20465.0	0.509
June	30.05	18.22	24.16	0	175	21581.0	0.515
July	31.11	20.16	25.66	0	227	20477.0	0.499
Aug	30.72	19.55	25.16	0	211	18906.0	0.502
Sept	27.77	16.22	22.00	5	115	15698.0	0.487
Oct	22.11	10.00	16.05	97	26	12721.0	0.498
Nov	14.94	4.11	9.55	263	0	8611.0	0.440
Dec	9.88	0.61	5.27	405	0	6462.0	0.390
Ann	21.00	9.72	15.38	1932	871	14452.0	0.479

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	48.9	32.2	40.6	756	0	620.7	168.4
Feb	52.0	33.5	42.8	630	7	863.4	234.2
Mar	60.4	39.4	49.9	482	14	1190.8	323.0
Apr	72.0	48.6	60.3	173	31	1598.9	433.7
May	79.8	56.9	68.4	47	151	1803.3	489.1
June	86.1	64.8	75.5	0	315	1901.6	515.8
July	88.0	68.3	78.2	0	409	1804.3	489.4
Aug	87.3	67.2	77.3	0	380	1665.9	451.9
Sept	82.0	61.2	71.6	9	207	1383.2	375.2
Oct	71.8	50.0	60.9	175	47	1120.9	304.0
Nov	58.9	39.4	49.2	473	0	758.7	205.8
Dec	49.8	33.1	41.5	729	0	569.4	154.4
Ann	69.8	49.5	59.7	3478	1568	1273.4	345.4

LATITUDE: 35° 49′ N
LONGITUDE: 83° 59′ W
ELEVATION: 299 meters (980.7 feet)

STATION NO. 13891

Knoxville, Tennessee

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	9.66	– 0.22	4.72	422	0	7748.0	0.420
Feb	11.72	1.33	6.55	330	0	10722.0	0.457
Mar	16.00	5.05	10.55	253	12	14505.0	0.483
Apr	22.61	11.27	16.94	72	31	18598.0	0.515
May	27.33	15.88	21.61	12	113	21392.0	0.532
June	31.50	20.27	25.88	0	226	23204.0	0.555
July	33.11	21.94	27.55	0	286	22380.0	0.546
Aug	32.55	21.16	26.88	0	265	20700.0	0.548
Sept	29.05	17.11	23.11	3	147	16693.0	0.514
Oct	23.83	10.61	17.22	78	44	13670.0	0.527
Nov	16.38	4.61	10.50	235	0	9269.0	0.463
Dec	10.94	0.94	5.94	383	0	7134.0	0.419
Ann	22.05	10.83	16.44	1792	1127	15501.0	0.510

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	49.4	31.6	40.5	760	0	682.7	185.2
Feb	53.1	34.4	43.8	594	0	944.8	256.3
Mar	60.8	41.1	51.0	455	22	1278.1	346.7
Apr	72.7	52.3	62.5	130	56	1638.7	444.5
May	81.2	60.6	70.9	22	203	1884.9	511.3
June	88.7	68.5	78.6	0	407	2044.6	554.6
July	91.6	71.5	81.6	0	515	1972.0	534.9
Aug	90.6	70.1	80.4	0	477	1824.0	494.8
Sept	84.3	62.8	73.6	5	265	1470.9	399.0
Oct	74.9	51.1	63.0	140	79	1204.5	326.7
Nov	61.5	40.3	50.9	423	0	816.7	221.5
Dec	51.7	33.7	42.7	689	0	628.6	170.5
Ann	71.7	51.5	61.6	3226	2029	1365.9	370.5

STATION NO. 13893

Memphis, Tennessee

LATITUDE: 35° 3′ N
LONGITUDE: 89° 59′ W
ELEVATION: 87 meters (285.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	8.66	−1.66	3.50	460	0	6578.0	0.369
Feb	10.50	−0.55	5.00	373	0	9349.0	0.409
Mar	15.11	3.38	9.27	291	10	12822.0	0.433
Apr	21.83	9.33	15.61	97	16	17518.0	0.488
May	26.55	14.05	20.27	25	85	20709.0	0.516
June	30.83	18.72	24.77	0	193	22278.0	0.532
July	32.33	20.55	26.44	0	251	21462.0	0.523
Aug	31.77	19.83	25.83	0	232	19712.0	0.524
Sept	28.61	15.83	22.22	5	122	15865.0	0.494
Oct	22.88	9.22	16.05	100	29	12641.0	0.497
Nov	15.00	3.16	9.11	276	0	8072.0	0.416
Dec	9.77	−0.49	4.66	423	0	5908.0	0.361
Ann	21.16	9.27	15.22	2053	941	14410.0	0.480

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	47.6	29.0	38.3	828	0	579.6	157.2
Feb	50.9	31.0	41.0	671	0	823.8	223.5
Mar	59.2	38.1	48.7	524	18	1129.8	306.5
Apr	71.3	48.8	60.1	175	29	1543.6	418.7
May	79.8	57.3	68.5	45	153	1824.8	495.0
June	87.5	65.7	76.6	0	347	1963.0	532.5
July	90.2	69.0	79.6	0	452	1891.1	513.0
Aug	89.2	67.7	78.5	0	418	1736.9	471.1
Sept	83.5	60.5	72.0	9	220	1397.9	379.2
Oct	73.2	48.6	60.9	180	52	1113.8	302.1
Nov	59.0	37.7	48.4	497	0	711.3	192.9
Dec	49.6	31.1	40.4	761	0	520.6	141.2
Ann	70.1	48.7	59.4	3695	1694	1269.7	344.4

LATITUDE: 36° 7′ N
LONGITUDE: 86° 41′ W
ELEVATION: 180 meters (590.4 feet)

SOLMET STATION NO. 13897

Nashville, Tennessee

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	13.16	−0.16	6.50	366	0	10484.0	0.523
Feb	15.50	2.16	8.83	266	0	13421.0	0.539
Mar	19.61	5.38	12.50	196	16	17887.0	0.576
Apr	25.38	11.50	18.44	57	61	20921.0	0.570
May	28.83	16.00	22.44	6	133	23122.0	0.574
June	33.11	20.55	26.83	0	255	25066.0	0.602
July	35.16	22.44	28.83	0	325	24277.0	0.594
Aug	35.16	22.16	28.66	0	320	22200.0	0.583
Sept	30.83	18.11	24.50	0	185	18131.0	0.545
Oct	25.55	12.33	18.94	49	68	14930.0	0.549
Nov	19.00	5.55	12.27	186	5	11439.0	0.531
Dec	14.55	1.38	8.00	320	0	9798.0	0.525
Ann	24.66	11.44	18.05	1450	1370	17640.0	0.565

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	55.7	31.7	43.7	659	0	923.8	250.6
Feb	59.9	35.9	47.9	479	0	1182.6	320.8
Mar	67.3	41.7	54.5	353	29	1576.1	427.5
Apr	77.7	52.7	65.2	103	110	1843.4	500.0
May	83.9	60.8	72.4	11	239	2037.4	552.6
June	91.6	69.0	80.3	0	459	2208.7	599.1
July	95.3	72.4	83.9	0	585	2139.1	580.2
Aug	95.3	71.9	83.6	0	576	1956.1	530.6
Sept	87.5	64.6	76.1	0	333	1597.6	433.3
Oct	78.0	54.2	66.1	88	122	1315.5	356.8
Nov	66.2	42.0	54.1	335	9	1007.9	273.4
Dec	58.2	34.5	46.4	576	0	863.3	234.2
Ann	76.4	52.6	64.5	2610	2466	1554.3	421.6

STATION NO. 13962

Abilene, Texas

LATITUDE: 32° 26′ N
LONGITUDE: 99° 41′ W
ELEVATION: 534 meters (1751.5 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	9.66	−5.27	2.22	499	0	10897.0	0.594
Feb	11.66	−3.11	4.27	393	0	14112.0	0.604
Mar	15.55	−0.44	7.55	333	0	18508.0	0.618
Apr	21.61	5.61	13.61	152	11	22915.0	0.635
May	26.22	11.05	18.66	45	55	25100.0	0.624
June	31.11	16.22	23.66	5	165	27159.0	0.649
July	33.00	18.83	25.94	0	236	25881.0	0.631
Aug	32.44	18.16	25.33	0	217	23868.0	0.633
Sept	28.27	13.72	21.00	11	91	19980.0	0.617
Oct	22.72	7.83	15.27	114	20	15928.0	0.616
Nov	15.55	0.27	7.94	311	0	11722.0	0.589
Dec	10.83	−3.61	3.61	456	0	9892.0	0.585
Ann	21.55	6.61	14.11	2323	796	18830.0	0.621

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	49.4	22.5	36.0	898	0	960.2	260.4
Feb	53.0	26.4	39.7	707	0	1243.5	337.3
Mar	60.0	31.2	45.6	599	0	1630.8	442.4
Apr	70.9	42.1	56.5	274	20	2019.1	547.7
May	79.2	51.9	65.6	81	99	2211.7	599.9
June	88.0	61.2	74.6	9	297	2393.1	649.1
July	91.4	65.9	78.7	0	425	2280.5	618.6
Aug	90.4	64.7	77.6	0	391	2103.1	570.5
Sept	82.9	56.7	69.8	20	164	1760.5	477.5
Oct	72.9	46.1	59.5	205	36	1403.5	380.7
Nov	60.0	32.5	46.3	560	0	1032.9	280.2
Dec	51.5	25.5	38.5	821	0	871.6	236.4
Ann	70.8	43.9	57.4	4181	1433	1659.2	450.1

LATITUDE: 35° 14′ N
LONGITUDE: 101° 42′ W
ELEVATION: 1098 meters (3601.4 feet)

STATION NO. 23047

Amarillo, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	15.55	4.05	9.83	268	4	9811.0	0.460
Feb	17.66	6.00	11.83	191	8	12763.0	0.491
Mar	21.50	9.00	15.27	123	28	16217.0	0.509
Apr	26.11	14.55	20.33	24	84	18216.0	0.492
May	29.55	18.38	24.00	0	175	20809.0	0.517
June	33.16	21.88	27.55	0	276	23515.0	0.568
July	35.22	23.16	29.22	0	337	23895.0	0.586
Aug	35.50	23.05	29.27	0	339	21918.0	0.573
Sept	31.88	20.22	26.05	0	231	18227.0	0.538
Oct	27.38	14.94	21.16	21	109	15131.0	0.537
Nov	21.22	8.88	15.05	113	15	11198.0	0.492
Dec	17.22	5.33	11.27	221	2	9364.0	0.469
Ann	26.00	14.11	20.05	965	1615	16755.0	0.526

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	60.0	39.3	49.7	482	7	864.5	234.5
Feb	63.8	42.8	53.3	344	14	1124.6	305.0
Mar	70.7	48.2	59.5	221	50	1428.9	387.6
Apr	79.0	58.2	68.6	43	151	1605.1	435.4
May	85.2	65.1	75.2	0	315	1833.6	497.4
June	91.7	71.4	81.6	0	497	2072.0	562.0
July	95.4	73.7	84.6	0	607	2105.5	571.1
Aug	95.9	73.5	84.7	0	610	1931.3	523.9
Sept	89.4	68.4	78.9	0	416	1606.1	435.6
Oct	81.3	58.9	70.1	38	196	1333.3	361.6
Nov	70.2	48.0	59.1	203	27	986.7	267.6
Dec	63.0	41.6	52.3	398	4	825.1	223.8
Ann	78.8	57.4	68.1	1737	2907	1476.4	400.5

STATION NO. 13958

Austin, Texas

LATITUDE: 30°18′ N
LONGITUDE: 97° 42′ W
ELEVATION: 189 meters (619.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	20.83	10.55	15.72	125	43	10359.0	0.433
Feb	22.61	12.27	17.44	83	58	12886.0	0.457
Mar	24.77	14.88	19.83	49	96	16545.0	0.495
Apr	28.38	19.27	23.83	0	165	19715.0	0.523
May	30.61	21.88	26.27	0	246	21870.0	0.545
June	32.55	23.88	28.22	0	296	24006.0	0.587
July	33.77	24.38	29.11	0	333	25109.0	0.622
Aug	33.88	24.27	29.11	0	333	23008.0	0.597
Sept	32.16	22.88	27.55	0	276	19224.0	0.549
Oct	29.27	19.22	24.27	2	187	16330.0	0.542
Nov	25.27	14.83	20.05	19	71	11968.0	0.475
Dec	22.38	11.83	17.11	80	42	9787.0	0.433
Ann	28.05	18.33	23.22	361	2152	17567.0	0.532

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	69.5	51.0	60.3	225	77	912.8	247.6
Feb	72.7	54.1	63.4	149	104	1135.4	308.0
Mar	76.6	58.8	67.7	88	173	1457.8	395.4
Apr	83.1	66.7	74.9	0	297	1737.2	471.2
May	87.1	71.4	79.3	0	443	1927.1	522.7
June	90.6	75.0	82.8	0	533	2115.3	573.8
July	92.8	75.9	84.4	0	599	2212.5	600.1
Aug	93.0	75.7	84.4	0	599	2027.3	549.9
Sept	89.9	73.2	81.6	0	497	1693.9	459.5
Oct	84.7	66.6	75.7	4	337	1438.9	390.3
Nov	77.5	58.7	68.1	34	128	1054.5	286.0
Dec	72.3	53.3	62.8	144	76	862.4	233.9
Ann	82.5	65.0	73.8	650	3874	1547.9	419.9

LATITUDE: 25° 54′ N
LONGITUDE: 97° 26′ W
ELEVATION: 6 meters (19.7 feet)

SOLMET STATION NO. 12919

Brownsville, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	19.16	7.83	13.50	168	18	10192.0	0.446
Feb	21.00	9.61	15.33	110	26	13022.0	0.477
Mar	24.16	12.33	18.27	66	65	16228.0	0.495
Apr	27.83	17.44	22.66	0	132	18640.0	0.498
May	30.33	20.61	25.50	0	222	21182.0	0.527
June	32.88	23.11	28.00	0	290	23762.0	0.578
July	34.66	24.00	29.33	0	341	24810.0	0.612
Aug	34.88	24.11	29.50	0	346	22593.0	0.588
Sept	32.22	22.22	27.22	0	266	19146.0	0.554
Oct	28.94	17.61	23.27	3	157	16073.0	0.548
Nov	24.00	12.55	18.27	45	43	11833.0	0.489
Dec	20.72	9.38	15.05	121	20	9587.0	0.446
Ann	27.55	16.72	22.16	516	1930	17256.0	0.530

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	66.5	46.1	56.3	302	32	898.1	243.6
Feb	69.8	49.3	59.6	198	47	1147.4	311.2
Mar	75.5	54.2	64.9	119	117	1429.9	387.9
Apr	82.1	63.4	72.8	0	238	1642.4	445.5
May	86.6	69.1	77.9	0	400	1866.4	506.3
June	91.2	73.6	82.4	0	522	2093.8	567.9
July	94.4	75.2	84.8	0	614	2186.1	593.0
Aug	94.8	75.4	85.1	0	623	1990.8	540.0
Sept	90.0	72.0	81.0	0	479	1687.0	457.6
Oct	84.1	63.7	73.9	5	283	1416.3	384.2
Nov	75.2	54.6	64.9	81	77	1042.7	282.8
Dec	69.3	48.9	59.1	218	36	844.7	229.1
Ann	81.6	62.1	71.9	929	3474	1520.5	412.4

STATION NO. 12924

Corpus Christi, Texas

LATITUDE: 27° 46′ N
LONGITUDE: 97° 30′ W
ELEVATION: 13 meters (42.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	12.83	2.05	7.44	337	0	9323.0	0.471
Feb	15.11	4.16	9.66	242	0	12156.0	0.493
Mar	19.11	7.33	13.22	174	16	16136.0	0.522
Apr	24.61	13.55	19.11	39	62	18463.0	0.505
May	28.38	18.00	23.22	0	151	21433.0	0.532
June	32.55	22.55	27.55	0	276	24229.0	0.582
July	35.05	24.61	29.83	0	356	24083.0	0.589
Aug	35.38	24.38	29.88	0	358	22133.0	0.582
Sept	31.11	20.16	25.66	0	220	18012.0	0.543
Oct	25.77	14.16	20.00	30	82	14482.0	0.536
Nov	19.11	7.44	13.27	157	6	10627.0	0.499
Dec	14.33	3.66	9.00	289	0	8853.0	0.481
Ann	24.44	13.50	19.00	1272	1530	16661.0	0.536

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	55.1	35.7	45.4	607	0	821.5	222.8
Feb	59.2	39.5	49.4	436	0	1071.1	290.5
Mar	66.4	45.2	55.8	313	29	1421.8	385.7
Apr	76.3	56.4	66.4	70	112	1626.8	441.3
May	83.1	64.4	73.8	0	272	1888.5	512.3
June	90.6	72.6	81.6	0	497	2134.9	579.1
July	95.1	76.3	85.7	0	641	2122.1	575.6
Aug	95.7	75.9	85.8	0	644	1950.2	529.0
Sept	88.0	68.3	78.2	0	396	1587.1	430.5
Oct	78.4	57.5	68.0	54	148	1276.1	346.1
Nov	66.4	45.4	55.9	283	11	936.4	254.0
Dec	57.8	38.6	48.2	520	0	780.1	211.6
Ann	76.0	56.3	66.2	2290	2754	1468.1	398.2

LATITUDE: 32° 51′ N
LONGITUDE: 96° 51′ W
ELEVATION: 149 meters (488.7 feet)

STATION NO. 13960

Dallas, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	17.44	3.38	10.44	249	4	10876.0	0.497
Feb	20.33	6.00	13.16	157	12	13685.0	0.517
Mar	24.66	9.33	17.00	90	48	17931.0	0.557
Apr	29.50	14.94	22.22	8	125	19287.0	0.518
May	32.33	18.94	25.66	0	227	20736.0	0.515
June	35.61	22.44	29.05	0	321	22969.0	0.556
July	37.33	23.44	30.38	0	373	23314.0	0.573
Aug	36.94	23.11	30.05	0	363	21977.0	0.573
Sept	33.27	20.27	26.77	0	253	17979.0	0.526
Oct	28.38	15.11	21.77	18	125	15430.0	0.539
Nov	22.33	8.27	15.33	102	12	12024.0	0.516
Dec	18.33	4.16	11.27	218	0	10244.0	0.499
Ann	28.05	14.11	21.11	846	1868	17204.0	0.536

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	63.4	38.1	50.8	448	7	958.3	259.9
Feb	68.6	42.8	55.7	283	22	1205.8	327.1
Mar	76.4	48.8	62.6	162	86	1580.0	428.6
Apr	85.1	58.9	72.0	14	225	1699.5	461.0
May	90.2	66.1	78.2	0	409	1827.1	495.6
June	96.1	72.4	84.3	0	578	2023.9	549.0
July	99.2	74.2	86.7	0	671	2054.3	557.2
Aug	98.5	73.6	86.1	0	653	1936.5	525.3
Sept	91.9	68.5	80.2	0	455	1584.2	429.7
Oct	83.1	59.2	71.2	32	225	1359.6	368.8
Nov	72.2	46.9	59.6	184	22	1059.5	287.4
Dec	65.0	39.5	52.3	392	0	902.6	244.8
Ann	82.5	57.4	70.0	1523	3362	1515.9	411.2

STATION NO. 22010

Del Rio, Texas

LATITUDE: 29° 22′ N
LONGITUDE: 100° 55′ W
ELEVATION: 313 meters (1026.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	13.88	−0.99	6.44	368	0	12769.0	0.625
Feb	16.94	1.27	9.11	258	0	16798.0	0.666
Mar	20.50	4.61	12.55	182	3	21668.0	0.692
Apr	25.83	9.61	17.72	49	31	26823.0	0.729
May	30.66	14.00	22.33	0	123	29514.0	0.733
June	34.94	18.72	26.83	0	255	30443.0	0.732
July	34.77	21.05	27.94	0	297	27806.0	0.680
Aug	33.77	20.11	26.94	0	267	25927.0	0.680
Sept	30.77	16.11	23.44	0	153	22552.0	0.674
Oct	25.83	9.72	17.77	51	33	18601.0	0.676
Nov	18.94	2.77	10.88	223	0	14115.0	0.644
Dec	14.33	−0.61	6.88	355	0	11697.0	0.614
Ann	25.11	9.72	17.44	1487	1165	21559.0	0.687

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	57.0	30.2	43.6	662	0	1125.1	305.2
Feb	62.5	34.3	48.4	464	0	1480.1	401.5
Mar	68.9	40.3	54.6	328	5	1909.3	517.9
Apr	78.5	49.3	63.9	88	56	2363.5	641.1
May	87.2	57.2	72.2	0	221	2600.6	705.4
June	94.9	65.7	80.3	0	459	2682.5	727.6
July	94.6	69.9	82.3	0	535	2450.1	664.6
Aug	92.8	68.2	80.5	0	481	2284.5	619.7
Sept	87.4	61.0	74.2	0	275	1987.1	539.0
Oct	78.5	49.5	64.0	92	59	1639.0	444.6
Nov	66.1	37.0	51.6	401	0	1243.7	337.4
Dec	57.8	30.9	44.4	639	0	1030.7	279.6
Ann	77.2	49.5	63.4	2677	2097	1899.7	515.3

LATITUDE: 31° 48′ N
LONGITUDE: 106° 24′ W
ELEVATION: 1194 meters (3916.3 feet)

SOLMET STATION NO. 23044

El Paso, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	13.16	1.05	7.11	347	0	9139.0	0.461
Feb	15.44	3.11	9.27	253	0	12136.0	0.492
Mar	19.22	6.27	12.77	186	13	15993.0	0.517
Apr	24.61	12.27	18.44	48	52	18345.0	0.501
May	28.22	16.72	22.50	0	131	21454.0	0.533
June	32.66	21.27	27.00	0	260	24434.0	0.586
July	35.27	23.33	29.33	0	341	24459.0	0.598
Aug	35.61	23.16	29.38	0	342	22502.0	0.592
Sept	31.38	19.33	25.38	0	211	18400.0	0.555
Oct	26.22	13.33	19.77	33	78	14673.0	0.543
Nov	19.72	6.72	13.22	159	6	10645.0	0.499
Dec	14.83	2.77	8.83	294	0	8690.0	0.472
Ann	24.72	12.44	18.61	1323	1437	16739.0	0.538

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	55.7	33.9	44.8	625	0	805.3	218.4
Feb	59.8	37.6	48.7	455	0	1069.4	290.1
Mar	66.6	43.3	55.0	335	23	1409.2	382.2
Apr	76.3	54.1	65.2	86	94	1616.5	438.5
May	82.8	62.1	72.5	0	236	1890.4	512.8
June	90.8	70.3	80.6	0	468	2153.0	584.0
July	95.5	74.0	84.8	0	614	2155.2	584.6
Aug	96.1	73.7	84.9	0	616	1982.7	537.8
Sept	88.5	66.8	77.7	0	380	1621.3	439.8
Oct	79.2	56.0	67.6	59	140	1292.9	350.7
Nov	67.5	44.1	55.8	286	11	938.0	254.4
Dec	58.7	37.0	47.9	529	0	765.7	207.7
Ann	76.5	54.4	65.5	2381	2587	1474.9	400.1

SOLMET STATION NO. 3927

Fort Worth, Texas

LATITUDE: 32° 50′ N
LONGITUDE: 97° 3′ W
ELEVATION: 164 meters (537.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	17.00	5.27	11.16	231	8	8766.0	0.407
Feb	18.88	7.00	12.94	163	12	11737.0	0.449
Mar	22.11	9.88	16.00	105	32	14724.0	0.460
Apr	26.33	15.16	20.77	12	86	17277.0	0.466
May	29.94	18.66	24.33	0	186	20143.0	0.500
June	32.94	21.61	27.27	0	268	21541.0	0.520
July	34.33	22.66	28.50	0	315	20747.0	0.509
Aug	34.61	22.44	28.55	0	316	19137.0	0.500
Sept	32.27	20.11	26.22	0	236	16694.0	0.491
Oct	28.61	14.61	21.61	13	115	14477.0	0.511
Nov	22.77	9.50	16.16	86	21	10486.0	0.457
Dec	18.77	6.33	12.55	185	6	8280.0	0.411
Ann	26.55	14.44	20.50	796	1605	15334.0	0.480

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	62.6	41.5	52.1	416	14	772.4	209.5
Feb	66.0	44.6	55.3	293	22	1034.2	280.5
Mar	71.8	49.8	60.8	189	58	1297.4	351.9
Apr	79.4	59.3	69.4	22	155	1522.3	412.9
May	85.9	65.6	75.8	0	335	1774.9	481.4
June	91.3	70.9	81.1	0	482	1898.1	514.9
July	93.8	72.8	83.3	0	567	1828.1	495.9
Aug	94.3	72.4	83.4	0	569	1686.2	457.4
Sept	90.1	68.2	79.2	0	425	1471.0	399.0
Oct	83.5	58.3	70.9	23	207	1275.6	346.0
Nov	73.0	49.1	61.1	155	38	924.0	250.6
Dec	65.8	43.4	54.6	333	11	729.6	197.9
Ann	79.8	58.0	68.9	1433	2889	1351.1	366.5

LATITUDE: 29° 59′ N
LONGITUDE: 95° 22′ W
ELEVATION: 33 meters (108.2 feet)

STATION NO. 12960

Houston, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10354.0	0.451
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13178.0	0.481
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	16282.0	0.496
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18871.0	0.503
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21156.0	0.527
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	23105.0	0.562
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	23963.0	0.591
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	21807.0	0.567
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18438.0	0.532
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15774.0	0.536
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11738.0	0.482
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	9639.0	0.445
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	17025.0	0.522

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	912.3	247.5
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1161.2	315.0
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1434.7	389.2
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1662.8	451.0
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1864.1	505.6
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2035.9	552.2
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2111.5	572.7
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1921.5	521.2
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1624.6	440.7
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1389.9	377.0
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1034.3	280.5
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	849.3	230.4
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1500.1	406.9

STATION NO. 12928

Kingsville, Texas

LATITUDE: 27° 31′ N
LONGITUDE: 97° 49′ W
ELEVATION: 17 meters (55.8 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	13.61	166	20	10882.0	0.474
Feb	0.0 ND	0.0 ND	16.05	98	34	13568.0	0.495
Mar	0.0 ND	0.0 ND	19.77	48	93	17201.0	0.524
Apr	0.0 ND	0.0 ND	24.61	0	188	19599.0	0.523
May	0.0 ND	0.0 ND	27.38	0	280	22152.0	0.551
June	0.0 ND	0.0 ND	30.00	0	350	23527.0	0.573
July	0.0 ND	0.0 ND	31.05	0	394	24187.0	0.596
Aug	0.0 ND	0.0 ND	30.94	0	391	22801.0	0.593
Sept	0.0 ND	0.0 ND	28.27	0	298	19353.0	0.559
Oct	0.0 ND	0.0 ND	24.16	4	185	15982.0	0.543
Nov	0.0 ND	0.0 ND	18.44	41	44	11812.0	0.486
Dec	0.0 ND	0.0 ND	14.77	128	17	10095.0	0.467
Ann	0.0 ND	0.0 ND	23.27	486	2298	17597.0	0.540

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	56.5	299	36	958.9	260.1
Feb	0.0 ND	0.0 ND	60.9	176	61	1195.5	324.3
Mar	0.0 ND	0.0 ND	67.6	86	167	1515.6	411.1
Apr	0.0 ND	0.0 ND	76.3	0	338	1726.9	468.4
May	0.0 ND	0.0 ND	81.3	0	504	1951.9	529.5
June	0.0 ND	0.0 ND	86.0	0	630	2073.1	562.3
July	0.0 ND	0.0 ND	87.9	0	709	2131.2	578.1
Aug	0.0 ND	0.0 ND	87.7	0	704	2009.1	545.0
Sept	0.0 ND	0.0 ND	82.9	0	536	1705.3	462.6
Oct	0.0 ND	0.0 ND	75.5	7	333	1408.2	382.0
Nov	0.0 ND	0.0 ND	65.2	74	79	1040.8	282.3
Dec	0.0 ND	0.0 ND	58.6	230	31	889.5	241.3
Ann	0.0 ND	0.0 ND	73.9	875	4136	1550.5	420.6

LATITUDE: 27° 32′ N
LONGITUDE: 99° 28′ W
ELEVATION: 158 meters (518.2 feet)

STATION NO. 12907

Laredo, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	11.88	−3.99	3.94	446	0	11700.0	0.606
Feb	13.88	−2.05	5.94	346	0	15113.0	0.624
Mar	17.66	1.11	9.38	282	5	19997.0	0.654
Apr	23.77	7.27	15.55	105	22	24602.0	0.675
May	28.05	12.50	20.27	16	76	27191.0	0.676
June	32.55	17.55	25.05	0	201	28876.0	0.692
July	33.55	19.38	26.50	0	253	27371.0	0.668
Aug	32.94	18.61	25.77	0	230	25063.0	0.661
Sept	28.77	14.55	21.66	4	104	20656.0	0.628
Oct	23.72	8.50	16.11	90	21	16662.0	0.626
Nov	17.27	1.33	9.33	270	0	12666.0	0.608
Dec	12.88	−2.55	5.16	408	0	10606.0	0.593
Ann	23.11	7.66	15.38	1969	915	20042.0	0.650

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	53.4	24.8	39.1	803	0	1030.9	279.6
Feb	57.0	28.3	42.7	623	0	1331.7	361.2
Mar	63.8	34.0	48.9	508	9	1762.0	477.9
Apr	74.8	45.1	60.0	189	40	2167.8	588.0
May	82.5	54.5	68.5	29	137	2395.9	649.9
June	90.6	63.6	77.1	0	362	2544.4	690.2
July	92.4	66.9	79.7	0	455	2411.8	654.2
Aug	91.3	65.5	78.4	0	414	2208.4	599.0
Sept	83.8	58.2	71.0	7	187	1820.1	493.7
Oct	74.7	47.3	61.0	162	38	1468.2	398.2
Nov	63.1	34.4	48.8	486	0	1116.1	302.7
Dec	55.2	27.4	41.3	734	0	934.5	253.5
Ann	73.6	45.8	59.7	3544	1647	1766.0	479.0

STATION NO. 23042

Lubbock, Texas

LATITUDE: 33° 39′ N
LONGITUDE: 101° 49′ W
ELEVATION: 988 meters (3240.6 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	9.33	282	3	9010.0	0.434
Feb	0.0 ND	0.0 ND	11.22	206	7	12134.0	0.476
Mar	0.0 ND	0.0 ND	14.44	142	21	15617.0	0.495
Apr	0.0 ND	0.0 ND	19.61	31	69	18429.0	0.499
May	0.0 ND	0.0 ND	23.38	0	156	21185.0	0.526
June	0.0 ND	0.0 ND	26.83	0	255	23326.0	0.562
July	0.0 ND	0.0 ND	28.33	0	310	22770.0	0.558
Aug	0.0 ND	0.0 ND	28.38	0	311	21155.0	0.554
Sept	0.0 ND	0.0 ND	25.27	0	208	17372.0	0.517
Oct	0.0 ND	0.0 ND	20.11	28	83	15306.0	0.551
Nov	0.0 ND	0.0 ND	14.00	142	12	10932.0	0.492
Dec	0.0 ND	0.0 ND	10.44	244	0	8712.0	0.449
Ann	0.0 ND	0.0 ND	19.27	1077	1440	16329.0	0.517

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	48.8	508	5	793.9	215.3
Feb	0.0 ND	0.0 ND	52.2	371	13	1069.2	290.0
Mar	0.0 ND	0.0 ND	58.0	256	38	1376.1	373.3
Apr	0.0 ND	0.0 ND	67.3	56	124	1623.9	440.5
May	0.0 ND	0.0 ND	74.1	0	281	1866.7	506.3
June	0.0 ND	0.0 ND	80.3	0	459	2055.3	557.5
July	0.0 ND	0.0 ND	83.0	0	558	2006.4	544.2
Aug	0.0 ND	0.0 ND	83.1	0	560	1864.1	505.6
Sept	0.0 ND	0.0 ND	77.5	0	374	1530.7	415.2
Oct	0.0 ND	0.0 ND	68.2	50	149	1348.7	365.8
Nov	0.0 ND	0.0 ND	57.2	256	22	963.3	261.3
Dec	0.0 ND	0.0 ND	50.8	439	0	767.6	208.2
Ann	0.0 ND	0.0 ND	66.7	1939	2592	1438.8	390.3

LATITUDE: 31° 14′ N
LONGITUDE: 94° 45′ W
ELEVATION: 96 meters (314.9 feet)

STATION NO. 93987

Lufkin, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global K_T Cloudiness Index
Jan	14.33	– 1.44	6.44	368	0	12271.0	0.603
Feb	16.72	0.83	8.77	267	0	15691.0	0.624
Mar	20.77	4.00	12.38	193	9	20868.0	0.668
Apr	26.16	9.66	17.94	54	42	24880.0	0.677
May	30.27	14.50	22.38	0	127	27579.0	0.685
June	33.77	19.38	26.61	0	248	29081.0	0.699
July	35.00	20.83	27.94	0	297	27116.0	0.663
Aug	34.66	20.61	27.66	0	289	25082.0	0.658
Sept	31.05	17.11	24.11	0	173	20926.0	0.626
Oct	26.22	11.33	18.77	45	58	17269.0	0.629
Nov	19.72	3.94	11.83	197	2	13348.0	0.611
Dec	15.61	– 0.22	7.72	328	0	11346.0	0.599
Ann	25.38	10.05	17.72	1456	1250	20455.0	0.652

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	57.8	29.4	43.6	662	0	1081.2	293.3
Feb	62.1	33.5	47.8	481	0	1382.6	375.0
Mar	69.4	39.2	54.3	347	16	1838.8	498.8
Apr	79.1	49.4	64.3	97	76	2192.3	594.7
May	86.5	58.1	72.3	0	229	2430.1	659.2
June	92.8	66.9	79.9	0	446	2562.4	695.1
July	95.0	69.5	82.3	0	535	2389.3	648.1
Aug	94.4	69.1	81.8	0	520	2210.1	599.5
Sept	87.9	62.8	75.4	0	311	1843.9	500.2
Oct	79.2	52.4	65.8	81	104	1521.6	412.7
Nov	67.5	39.1	53.3	355	4	1176.1	319.0
Dec	60.1	31.6	45.9	590	0	999.7	271.2
Ann	77.7	50.1	63.9	2621	2250	1802.4	488.9

STATION NO. 23023

Midland / Odessa, Texas

LATITUDE: 31° 56′ N
LONGITUDE: 102° 12′ W
ELEVATION: 871 meters (2856.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	16.38	5.77	11.11	233	9	9076.0	0.421
Feb	18.33	7.27	12.83	167	13	12150.0	0.464
Mar	21.38	9.83	15.61	112	28	15356.0	0.480
Apr	25.72	15.22	20.50	18	83	18266.0	0.492
May	29.05	18.72	23.88	0	172	21232.0	0.528
June	32.16	22.05	27.11	0	263	22824.0	0.551
July	33.33	23.33	28.33	0	310	20952.0	0.514
Aug	33.66	23.11	28.38	0	311	19705.0	0.515
Sept	31.44	20.66	26.05	0	231	17330.0	0.510
Oct	27.38	14.72	21.05	19	103	14997.0	0.529
Nov	21.61	9.66	15.66	102	22	10814.0	0.471
Dec	17.88	6.72	12.33	190	4	8562.0	0.424
Ann	25.72	14.77	20.27	843	1554	15939.0	0.499

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	61.5	42.4	52.0	419	16	799.7	216.9
Feb	65.0	45.1	55.1	301	23	1070.6	290.4
Mar	70.5	49.7	60.1	202	50	1353.1	367.0
Apr	78.3	59.4	68.9	32	149	1609.5	436.6
May	84.3	65.7	75.0	0	310	1870.8	507.5
June	89.9	71.7	80.8	0	473	2011.1	545.5
July	92.0	74.0	83.0	0	558	1846.2	500.8
Aug	92.6	73.6	83.1	0	560	1736.3	471.0
Sept	88.6	69.2	78.9	0	416	1527.0	414.2
Oct	81.3	58.5	69.9	34	185	1321.4	358.4
Nov	70.9	49.4	60.2	184	40	952.9	258.5
Dec	64.2	44.1	54.2	342	7	754.4	204.6
Ann	78.3	58.6	68.5	1517	2797	1404.4	381.0

LATITUDE: 29° 57′ N
LONGITUDE: 94° 1′ W
ELEVATION: 7 meters (23.0 feet)

STATION NO. 12917

Port Arthur, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	15.05	0.88	8.00	320	0	10915.0	0.527
Feb	17.33	3.05	10.22	229	0	13714.0	0.539
Mar	21.50	6.38	13.94	159	23	18227.0	0.579
Apr	26.88	12.22	19.55	41	77	21004.0	0.570
May	30.27	16.88	23.61	0	165	23045.0	0.572
June	34.11	21.00	27.55	0	276	24810.0	0.597
July	36.05	22.44	29.27	0	339	24089.0	0.590
Aug	36.05	22.22	29.16	0	336	22310.0	0.585
Sept	31.33	18.38	24.88	0	196	18240.0	0.543
Oct	26.44	12.61	19.55	40	78	15170.0	0.548
Nov	20.27	5.83	13.05	165	7	11846.0	0.535
Dec	16.33	1.77	9.05	287	0	10154.0	0.526
Ann	25.94	12.00	19.00	1244	1501	17794.0	0.564

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	59.1	33.6	46.4	576	0	961.8	260.9
Feb	63.2	37.5	50.4	412	0	1208.4	327.8
Mar	70.7	43.5	57.1	286	41	1606.1	435.6
Apr	80.4	54.0	67.2	74	139	1850.7	502.0
May	86.5	62.4	74.5	0	297	2030.6	550.8
June	93.4	69.8	81.6	0	497	2186.1	593.0
July	96.9	72.4	84.7	0	610	2122.6	575.8
Aug	96.9	72.0	84.5	0	605	1965.8	533.2
Sept	88.4	65.1	76.8	0	353	1607.2	436.0
Oct	79.6	54.7	67.2	72	140	1336.7	362.6
Nov	68.5	42.5	55.5	297	13	1043.8	283.1
Dec	61.4	35.2	48.3	517	0	894.7	242.7
Ann	78.7	53.6	66.2	2239	2702	1567.9	425.3

STATION NO. 23034

San Angelo, Texas

LATITUDE: 31° 22′ N
LONGITUDE: 100° 30′ W
ELEVATION: 582 meters (1909.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	16.44	4.33	10.38	250	4	10162.0	0.466
Feb	18.66	6.33	12.50	172	8	13097.0	0.496
Mar	22.50	9.50	16.00	107	35	16456.0	0.512
Apr	26.83	14.88	20.88	17	93	18298.0	0.492
May	30.11	18.72	24.44	0	189	21501.0	0.534
June	33.55	22.22	27.88	0	286	23481.0	0.568
July	35.33	23.22	29.27	0	339	24072.0	0.591
Aug	35.50	23.00	29.27	0	339	22098.0	0.577
Sept	32.11	20.44	26.27	0	238	18589.0	0.545
Oct	27.66	15.11	21.38	17	112	15322.0	0.537
Nov	21.72	9.00	15.38	99	11	11450.0	0.493
Dec	18.11	5.44	11.77	207	3	9614.0	0.471
Ann	26.55	14.33	20.44	872	1663	17012.0	0.531

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	61.6	39.8	50.7	450	7	895.4	242.9
Feb	65.6	43.4	54.5	310	14	1154.0	313.0
Mar	72.5	49.1	60.8	193	63	1450.0	393.3
Apr	80.3	58.8	69.6	31	167	1612.3	437.3
May	86.2	65.7	76.0	0	340	1894.5	513.9
June	92.4	72.0	82.2	0	515	2069.0	561.2
July	95.6	73.8	84.7	0	610	2121.1	575.3
Aug	95.9	73.4	84.7	0	610	1947.1	528.2
Sept	89.8	68.8	79.3	0	428	1638.0	444.3
Oct	81.8	59.2	70.5	31	202	1350.1	366.2
Nov	71.1	48.2	59.7	178	20	1008.9	273.7
Dec	64.6	41.8	53.2	373	5	847.1	229.8
Ann	79.8	57.8	68.8	1570	2993	1499.0	406.6

LATITUDE: 29° 32′ N
LONGITUDE: 98° 28′ W
ELEVATION: 242 meters (793.8 feet)

STATION NO. 12921

San Antonio, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	5.38	401	0	9009.0	0.467
Feb	0.0 ND	0.0 ND	7.72	297	0	11773.0	0.487
Mar	0.0 ND	0.0 ND	11.27	228	9	15501.0	0.507
Apr	0.0 ND	0.0 ND	17.61	63	41	18276.0	0.502
May	0.0 ND	0.0 ND	21.77	7	114	21017.0	0.522
June	0.0 ND	0.0 ND	26.33	0	240	23994.0	0.575
July	0.0 ND	0.0 ND	28.66	0	320	23569.0	0.576
Aug	0.0 ND	0.0 ND	28.72	0	322	21922.0	0.578
Sept	0.0 ND	0.0 ND	24.44	0	186	17932.0	0.545
Oct	0.0 ND	0.0 ND	18.77	50	63	14392.0	0.541
Nov	0.0 ND	0.0 ND	11.88	196	0	10428.0	0.501
Dec	0.0 ND	0.0 ND	7.11	347	0	8441.0	0.473
Ann	0.0 ND	0.0 ND	17.50	1591	1298	16355.0	0.531

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	41.7	722	0	793.8	215.3
Feb	0.0 ND	0.0 ND	45.9	535	0	1037.4	281.4
Mar	0.0 ND	0.0 ND	52.3	410	16	1365.9	370.5
Apr	0.0 ND	0.0 ND	63.7	113	74	1610.4	436.8
May	0.0 ND	0.0 ND	71.2	13	205	1851.9	502.3
June	0.0 ND	0.0 ND	79.4	0	432	2114.2	573.5
July	0.0 ND	0.0 ND	83.6	0	576	2076.8	563.3
Aug	0.0 ND	0.0 ND	83.7	0	580	1931.6	524.0
Sept	0.0 ND	0.0 ND	76.0	0	335	1580.1	428.6
Oct	0.0 ND	0.0 ND	65.8	90	113	1268.1	344.0
Nov	0.0 ND	0.0 ND	53.4	353	0	918.9	249.2
Dec	0.0 ND	0.0 ND	44.8	625	0	743.8	201.7
Ann	0.0 ND	0.0 ND	63.5	2864	2336	1441.1	390.9

STATION NO. 13923

Sherman, Texas

LATITUDE: 33° 43′ N
LONGITUDE: 96° 40′ W
ELEVATION: 233 meters (764.2 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	14.11	2.55	8.33	310	0	9449.0	0.460
Feb	16.38	4.61	10.50	222	3	12442.0	0.492
Mar	20.22	7.77	14.00	155	21	16201.0	0.516
Apr	25.44	13.77	19.61	31	69	18296.0	0.497
May	29.11	18.05	23.61	0	163	20128.0	0.500
June	33.27	22.11	27.72	0	281	23974.0	0.577
July	35.66	23.88	29.77	0	355	24177.0	0.592
Aug	35.94	23.72	29.83	0	356	22222.0	0.583
Sept	31.94	20.16	26.05	0	231	18169.0	0.542
Oct	26.88	14.27	20.61	28	98	14768.0	0.535
Nov	20.38	7.88	14.16	133	8	10858.0	0.493
Dec	15.83	3.94	9.88	261	0	9111.0	0.476
Ann	25.44	13.55	19.50	1143	1590	16650.0	0.529

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	57.4	36.6	47.0	558	0	832.6	225.8
Feb	61.5	40.3	50.9	400	5	1096.3	297.4
Mar	68.4	46.0	57.2	279	38	1427.5	387.2
Apr	77.8	56.8	67.3	56	124	1612.1	437.3
May	84.4	64.5	74.5	0	293	1773.6	481.1
June	91.9	71.8	81.9	0	506	2112.4	573.0
July	96.2	75.0	85.6	0	639	2130.3	577.9
Aug	96.7	74.7	85.7	0	641	1958.1	531.1
Sept	89.5	68.3	78.9	0	416	1600.9	434.3
Oct	80.4	57.7	69.1	50	176	1301.3	353.0
Nov	68.7	46.2	57.5	239	14	956.7	259.5
Dec	60.5	39.1	49.8	470	0	802.8	217.8
Ann	77.8	56.4	67.1	2057	2862	1467.1	398.0

LATITUDE: 31° 37′ N
LONGITUDE: 97° 13′ W
ELEVATION: 155 meters (508.4 feet)

STATION NO. 13959

Waco, Texas

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	11.94	– 1.44	5.27	405	0	9783.0	0.512
Feb	14.50	0.88	7.72	297	0	12744.0	0.530
Mar	18.77	4.00	11.38	227	12	16704.0	0.548
Apr	25.22	10.61	17.94	62	50	20006.0	0.550
May	29.27	15.44	22.38	7	132	22894.0	0.569
June	34.38	20.33	27.38	0	271	25210.0	0.604
July	37.33	22.38	29.88	0	358	24587.0	0.600
Aug	37.44	22.00	29.72	0	353	22348.0	0.590
Sept	32.38	17.55	25.00	0	200	18179.0	0.554
Oct	26.22	11.50	18.88	51	68	14656.0	0.554
Nov	18.88	4.27	11.61	205	3	10864.0	0.526
Dec	13.44	0.11	6.77	358	0	9066.0	0.512
Ann	25.00	10.66	17.83	1613	1450	17253.0	0.561

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	53.5	29.4	41.5	729	0	862.0	233.8
Feb	58.1	33.6	45.9	535	0	1122.9	304.6
Mar	65.8	39.2	52.5	409	22	1471.9	399.2
Apr	77.4	51.1	64.3	112	90	1762.8	478.2
May	84.7	59.8	72.3	13	238	2017.3	547.2
June	93.9	68.6	81.3	0	488	2221.4	602.5
July	99.2	72.3	85.8	0	644	2166.5	587.7
Aug	99.4	71.6	85.5	0	635	1969.2	534.1
Sept	90.3	63.6	77.0	0	360	1601.8	434.5
Oct	79.2	52.7	66.0	92	122	1291.4	350.3
Nov	66.0	39.7	52.9	369	5	957.3	259.7
Dec	56.2	32.2	44.2	644	0	798.8	216.7
Ann	77.0	51.2	64.1	2903	2610	1520.2	412.4

STATION NO. 13966

Wichita Falls, Texas

LATITUDE: 33° 58′ N
LONGITUDE: 98° 29′ W
ELEVATION: 314 meters (1029.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−6.77	778	0	10370.0	0.616
Feb	0.0 ND	0.0 ND	−4.88	650	0	14024.0	0.638
Mar	0.0 ND	0.0 ND	−1.83	625	0	19121.0	0.662
Apr	0.0. ND	0.0 ND	3.16	455	0	24207.0	0.681
May	0.0 ND	0.0 ND	7.88	323	0	27848.0	0.695
June	0.0 ND	0.0 ND	12.28	183	0	30131.0	0.718
July	0.0 ND	0.0 ND	16.44	71	12	27509.0	0.671
Aug	0.0 ND	0.0 ND	15.50	97	10	24476.0	0.655
Sept	0.0 ND	0.0 ND	11.61	201	0	21789.0	0.690
Oct	0.0 ND	0.0 ND	6.00	382	0	16625.0	0.675
Nov	0.0 ND	0.0 ND	−0.72	571	0	11523.0	0.625
Dec	0.0 ND	0.0 ND	−5.33	733	0	9286.0	0.604
Ann	0.0 ND	0.0 ND	4.44	5073	22	19742.0	0.669

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	19.8	1400	0	913.7	247.9
Feb	0.0 ND	0.0 ND	23.2	1170	0	1235.7	335.2
Mar	0.0 ND	0.0 ND	28.7	1125	0	1684.8	457.0
Apr	0.0 ND	0.0 ND	37.7	819	0	2133.0	578.6
May	0.0 ND	0.0 ND	46.2	581	0	2453.8	665.6
June	0.0 ND	0.0 ND	54.1	329	0	2655.0	720.2
July	0.0 ND	0.0 ND	61.6	128	22	2423.9	657.5
Aug	0.0 ND	0.0 ND	59.9	175	18	2156.7	585.0
Sept	0.0 ND	0.0 ND	52.9	362	0	1919.9	520.8
Oct	0.0 ND	0.0 ND	42.8	688	0	1464.9	397.4
Nov	0.0 ND	0.0 ND	30.7	1028	0	1015.3	275.4
Dec	0.0 ND	0.0 ND	22.4	1319	0	818.2	221.9
Ann	0.0 ND	0.0 ND	40.0	9131	40	1739.5	471.9

LATITUDE: 37° 42′ N
LONGITUDE: 112° 9′ W
ELEVATION: 2313 meters (7586.6 feet)

STATION NO. 23159

Bryce Canyon, Utah

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	– 1.83	625	0	10014.0	0.595
Feb	0.0 ND	0.0 ND	0.61	496	0	13389.0	0.609
Mar	0.0 ND	0.0 ND	3.55	458	0	18562.0	0.642
Apr	0.0 ND	0.0 ND	8.38	298	0	23746.0	0.668
May	0.0 ND	0.0 ND	13.44	156	4	28001.0	0.699
June	0.0 ND	0.0 ND	18.33	47	47	30708.0	0.732
July	0.0 ND	0.0 ND	22.88	0	141	28410.0	0.693
Aug	0.0 ND	0.0 ND	21.83	3	111	25436.0	0.681
Sept	0.0 ND	0.0 ND	17.33	63	33	22339.0	0.708
Oct	0.0 ND	0.0 ND	10.83	235	3	16566.0	0.673
Nov	0.0 ND	0.0 ND	3.77	436	0	11263.0	0.610
Dec	0.0 ND	0.0 ND	– 0.66	588	0	8915.0	0.580
Ann	0.0 ND	0.0 ND	9.88	3409	341	19779.0	0.670

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	28.7	1125	0	882.4	239.3
Feb	0.0 ND	0.0 ND	33.1	893	0	1179.8	320.0
Mar	0.0 ND	0.0 ND	38.4	824	0	1635.6	443.7
Apr	0.0 ND	0.0 ND	47.1	536	0	2092.4	567.6
May	0.0 ND	0.0 ND	56.2	281	7	2467.3	669.3
June	0.0 ND	0.0 ND	65.0	85	85	2705.8	734.0
July	0.0 ND	0.0 ND	73.2	0	254	2503.3	679.0
Aug	0.0 ND	0.0 ND	71.3	5	200	2241.3	607.9
Sept	0.0 ND	0.0 ND	63.2	113	59	1968.4	533.9
Oct	0.0 ND	0.0 ND	51.5	423	5	1459.7	395.9
Nov	0.0 ND	0.0 ND	38.8	785	0	992.4	269.2
Dec	0.0 ND	0.0 ND	30.8	1058	0	785.5	213.1
Ann	0.0 ND	0.0 ND	49.8	6136	614	1742.8	472.7

STATION NO. 93129

Cedar City, Utah

LATITUDE: 37° 42′ N
LONGITUDE: 113° 6′ W
ELEVATION: 1712 meters (5615.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.00	−7.49	−2.22	637	0	7253.0	0.486
Feb	6.33	−4.83	0.77	491	0	11221.0	0.555
Mar	10.44	−2.05	4.22	437	0	16505.0	0.600
Apr	16.55	2.55	9.55	263	0	21498.0	0.619
May	22.44	6.77	14.61	131	16	26811.0	0.673
June	27.38	10.61	19.00	48	68	29063.0	0.692
July	33.77	15.83	24.83	0	201	29395.0	0.718
Aug	32.33	14.83	23.61	2	166	25576.0	0.694
Sept	26.83	9.61	18.22	58	55	20920.0	0.687
Oct	19.11	3.55	11.33	223	6	14678.0	0.637
Nov	10.00	−2.16	3.94	431	0	8942.0	0.539
Dec	3.88	−5.83	−0.94	597	0	6467.0	0.480
Ann	17.66	3.44	10.55	3323	515	18194.0	0.640

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	37.4	18.5	28.0	1147	0	639.1	173.4
Feb	43.4	23.3	33.4	884	0	988.7	268.2
Mar	50.8	28.3	39.6	787	0	1454.3	394.5
Apr	61.8	36.6	49.2	473	0	1894.3	513.8
May	72.4	44.2	58.3	236	29	2362.4	640.8
June	81.3	51.1	66.2	86	122	2560.9	694.6
July	92.8	60.5	76.7	0	362	2590.1	702.6
Aug	90.2	58.7	74.5	4	299	2253.6	611.3
Sept	80.3	49.3	64.8	104	99	1843.3	500.0
Oct	66.4	38.4	52.4	401	11	1293.3	350.8
Nov	50.0	28.1	39.1	776	0	787.9	213.7
Dec	39.0	21.5	30.3	1075	0	569.8	154.6
Ann	63.8	38.2	51.0	5981	927	1603.1	434.9

LATITUDE: 40° 46′ N
LONGITUDE: 111° 58′ W
ELEVATION: 1288 meters (4224.6 feet)

STATION NO. 24127

Salt Lake City, Utah

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	−3.38	−13.55	−8.44	830	0	4373.0	0.346
Feb	−2.11	−12.83	−7.44	721	0	6887.0	0.381
Mar	3.33	−6.61	−1.61	618	0	10670.0	0.414
Apr	11.83	0.33	6.11	366	0	14711.0	0.437
May	18.94	6.38	12.66	183	8	17864.0	0.453
June	24.72	12.16	18.44	35	38	19621.0	0.467
July	27.22	14.72	21.00	11	93	19533.0	0.479
Aug	25.72	13.55	19.66	27	68	16740.0	0.464
Sept	21.11	9.22	15.16	106	11	12736.0	0.439
Oct	14.83	3.77	9.33	278	0	8404.0	0.400
Nov	6.83	−1.27	2.77	466	0	4251.0	0.296
Dec	−0.94	−9.55	−5.22	730	0	3214.0	0.288
Ann	12.33	1.38	6.88	4375	220	11584.0	0.428

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	25.9	7.6	16.8	1494	0	385.3	104.5
Feb	28.2	8.9	18.6	1298	0	606.8	164.6
Mar	38.0	20.1	29.1	1112	0	940.2	255.0
Apr	53.3	32.6	43.0	659	0	1296.2	351.6
May	66.1	43.5	54.8	329	14	1574.1	427.0
June	76.5	53.9	65.2	63	68	1728.9	469.0
July	81.0	58.5	69.8	20	167	1721.1	466.9
Aug	78.3	56.4	67.4	49	122	1475.0	400.1
Sept	70.0	48.6	59.3	191	20	1122.2	304.4
Oct	58.7	38.8	48.8	500	0	740.5	200.9
Nov	44.3	29.7	37.0	839	0	374.6	101.6
Dec	30.3	14.8	22.6	1314	0	283.2	76.8
Ann	54.2	34.5	44.4	7875	396	1020.7	276.9

STATION NO. 14742

Burlington, Vermont

LATITUDE: 44° 28′ N
LONGITUDE: 73° 9′ W
ELEVATION: 104 meters (341.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	9.33	0.11	4.72	422	0	7698.0	0.444
Feb	10.00	0.38	5.22	367	0	10576.0	0.471
Mar	14.05	3.83	8.94	295	4	14537.0	0.497
Apr	19.83	8.83	14.33	125	5	19029.0	0.533
May	24.55	14.00	19.27	29	58	21421.0	0.534
June	28.61	18.61	23.61	0	158	22701.0	0.542
July	30.33	21.05	25.72	0	228	21032.0	0.513
Aug	29.38	20.50	24.94	0	205	19069.0	0.509
Sept	26.44	17.72	22.11	5	118	15839.0	0.497
Oct	21.16	11.83	16.50	78	21	12291.0	0.491
Nov	15.83	5.88	10.88	223	0	9207.0	0.486
Dec	10.33	1.11	5.72	391	0	7080.0	0.446
Ann	20.00	10.33	15.16	1937	800	15040.0	0.505

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	48.8	32.2	40.5	760	0	678.3	184.0
Feb	50.0	32.7	41.4	661	0	931.9	252.8
Mar	57.3	38.9	48.1	531	7	1280.9	347.4
Apr	67.7	47.9	57.8	225	9	1676.7	454.8
May	76.2	57.2	66.7	52	104	1887.5	512.0
June	83.5	65.5	74.5	0	284	2000.3	542.6
July	86.6	69.9	78.3	0	410	1853.2	502.7
Aug	84.9	68.9	76.9	0	369	1680.2	455.8
Sept	79.6	63.9	71.8	9	212	1395.6	378.6
Oct	70.1	53.3	61.7	140	38	1083.0	293.8
Nov	60.5	42.6	51.6	401	0	811.3	220.1
Dec	50.6	34.0	42.3	704	0	623.8	169.2
Ann	68.0	50.6	59.3	3487	1440	1325.2	359.5

LATITUDE: 36° 54′ N
LONGITUDE: 76° 12′ W
ELEVATION: 9 meters (29.5 feet)

STATION NO. 13737

Norfolk, Virginia

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	8.55	– 2.44	3.05	473	0	7171.0	0.423
Feb	9.94	– 1.77	4.11	398	0	9954.0	0.450
Mar	14.55	1.94	8.27	316	4	13737.0	0.474
Apr	21.27	7.33	14.33	125	5	17772.0	0.500
May	25.77	12.50	19.16	35	61	19997.0	0.499
June	29.66	17.16	23.44	0	153	21250.0	0.507
July	31.22	19.72	25.50	0	222	20138.0	0.491
Aug	30.33	18.83	24.61	0	194	18165.0	0.486
Sept	27.16	15.00	21.11	11	95	15297.0	0.483
Oct	21.77	8.55	15.16	112	15	11720.0	0.474
Nov	15.88	2.94	9.44	266	0	8319.0	0.448
Dec	9.50	– 1.77	3.88	447	0	6432.0	0.415
Ann	20.44	8.16	14.33	2188	751	14163.0	0.479

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	47.4	27.6	37.5	851	0	631.9	171.4
Feb	49.9	28.8	39.4	716	0	877.1	237.9
Mar	58.2	35.5	46.9	569	7	1210.4	328.3
Apr	70.3	45.2	57.8	225	9	1566.0	424.8
May	78.4	54.5	66.5	63	110	1762.0	477.9
June	85.4	62.9	74.2	0	275	1872.4	507.9
July	88.2	67.5	77.9	0	400	1774.4	481.3
Aug	86.6	65.9	76.3	0	349	1600.6	434.2
Sept	80:9	59.0	70.0	20	171	1347.9	365.6
Oct	71.2	47.4	59.3	202	27	1032.7	280.1
Nov	60.6	37.3	49.0	479	0	733.0	198.8
Dec	49.1	28.8	39.0	805	0	566.7	153.7
Ann	68.8	46.7	57.8	3938	1352	1248.0	338.5

STATION NO. 13740

Richmond, Virginia

LATITUDE: 37° 30′ N
LONGITUDE: 77° 20′ W
ELEVATION: 50 meters (164.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	7.55	−2.66	2.44	492	0	7496.0	0.439
Feb	8.83	−2.05	3.38	418	0	10207.0	0.460
Mar	13.50	1.27	7.38	339	0	14028.0	0.483
Apr	19.94	6.61	13.27	157	5	17948.0	0.504
May	24.50	11.50	18.00	56	46	20018.0	0.499
June	28.33	15.77	22.05	0	113	21357.0	0.509
July	29.94	18.00	24.00	0	175	20385.0	0.497
Aug	29.38	17.38	23.38	0	156	18387.0	0.491
Sept	26.38	13.61	20.00	17	67	15414.0	0.486
Oct	21.05	7.55	14.33	130	6	12259.0	0.494
Nov	14.22	2.11	8.16	305	0	8679.0	0.465
Dec	8.11	−2.16	3.00	475	0	6705.0	0.429
Ann	19.33	7.22	13.27	2392	572	14407.0	0.486

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	45.6	27.2	36.4	886	0	660.5	179.2
Feb	47.9	28.3	38.1	752	0	899.4	244.0
Mar	56.3	34.3	45.3	610	0	1236.1	335.3
Apr	67.9	43.9	55.9	283	9	1581.5	429.0
May	76.1	52.7	64.4	101	83	1763.9	478.5
June	83.0	60.4	71.7	0	203	1881.9	510.5
July	85.9	64.4	75.2	0	315	1796.2	487.2
Aug	84.9	63.3	74.1	0	281	1620.2	439.5
Sept	79.5	56.5	68.0	31	121	1358.2	368.4
Oct	69.9	45.6	57.8	234	11	1080.2	293.0
Nov	57.6	35.8	46.7	549	0	764.7	207.4
Dec	46.6	28.1	37.4	855	0	590.8	160.3
Ann	66.8	45.0	55.9	4306	1030	1269.5	344.3

LATITUDE: 37° 19′ N
LONGITUDE: 79° 58′ W
ELEVATION: 358 meters (1174.2 feet)

STATION NO. 13741

Roanoke, Virginia

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	6.66	−0.88	2.88	478	0	3051.0	0.275
Feb	9.77	0.22	5.00	373	0	5707.0	0.345
Mar	12.00	0.44	6.22	375	0	9590.0	0.391
Apr	15.50	2.50	9.00	280	0	14245.0	0.434
May	19.55	4.88	12.22	189	0	18520.0	0.473
June	22.16	7.72	14.94	109	7	19217.0	0.458
July	25.77	9.27	17.55	49	25	21707.0	0.534
Aug	25.11	9.11	17.11	57	19	17577.0	0.495
Sept	22.27	7.22	14.77	110	3	13130.0	0.470
Oct	16.22	4.44	10.33	247	0	7221.0	0.368
Nov	10.72	1.77	6.27	361	0	3851.0	0.300
Dec	7.66	0.61	4.16	439	0	2514.0	0.261
Ann	16.11	3.94	10.05	3072	56	11361.0	0.436

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	44.0	30.4	37.2	860	0	268.8	72.9
Feb	49.6	32.4	41.0	671	0	502.9	136.4
Mar	53.6	32.8	43.2	675	0	845.0	229.2
Apr	59.9	36.5	48.2	504	0	1255.2	340.5
May	67.2	40.8	54.0	340	0	1631.9	442.6
June	71.9	45.9	58.9	196	13	1693.3	459.3
July	78.4	48.7	63.6	88	45	1912.7	518.8
Aug	77.2	48.4	62.8	103	34	1548.8	420.1
Sept	72.1	45.0	58.6	198	5	1156.9	313.8
Oct	61.2	40.0	50.6	445	0	636.3	172.6
Nov	51.3	35.2	43.3	650	0	339.3	92.0
Dec	45.8	33.1	39.5	790	0	221.5	60.1
Ann	61.0	39.1	50.1	5530	101	1001.1	271.5

STATION NO. 24227

Olympia, Washington

LATITUDE: 46° 58′ N
LONGITUDE: 122° 54′ W
ELEVATION: 61 meters (200.1 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	6.33	0.55	3.44	461	0	2970.0	0.275
Feb	9.16	2.22	5.72	353	0	5618.0	0.345
Mar	10.83	2.55	6.72	360	0	9640.0	0.397
Apr	13.88	4.61	9.27	271	0	14680.0	0.449
May	17.83	7.55	12.72	173	0	19451.0	0.498
June	20.55	10.33	15.44	92	6	20449.0	0.488
July	23.94	12.11	18.05	44	36	25515.0	0.629
Aug	23.22	12.05	17.66	45	25	18343.0	0.519
Sept	20.38	10.22	15.33	94	4	13025.0	0.470
Oct	15.22	7.16	11.22	220	0	7447.0	0.385
Nov	10.22	3.77	7.00	340	0	3827.0	0.306
Dec	7.44	1.94	4.72	422	0	2396.0	0.257
Ann	14.88	6.27	10.61	2880	71	11947.0	0.462

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	43.4	33.0	38.2	830	0	261.7	71.0
Feb	48.5	36.0	42.3	635	0	495.0	134.3
Mar	51.5	36.6	44.1	648	0	849.4	230.4
Apr	57.0	40.3	48.7	488	0	1293.5	350.9
May	64.1	45.6	54.9	311	0	1713.9	464.9
June	69.0	50.6	59.8	166	11	1801.8	488.8
July	75.1	53.8	64.5	79	65	2248.2	609.8
Aug	73.8	53.7	63.8	81	45	1616.3	438.4
Sept	68.7	50.4	59.6	169	7	1147.7	311.3
Oct	59.4	44.9	52.2	396	0	656.2	178.0
Nov	50.4	38.8	44.6	612	0	337.2	91.5
Dec	45.4	35.5	40.5	760	0	211.1	57.3
Ann	58.8	43.3	51.1	5184	128	1052.7	285.5

LATITUDE: 47° 27′ N
LONGITUDE: 122° 18′ W
ELEVATION: 122 meters (400.2 feet)

STATION NO. 24233

Seattle / Tacoma, Washington

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 0.49	– 6.88	– 3.66	682	0	3575.0	0.335
Feb	3.88	– 3.72	0.11	510	0	6876.0	0.425
Mar	7.88	– 1.77	3.05	473		11810.0	0.489
Apr	13.88	1.77	7.83	315	0	16966.0	0.520
May	19.16	6.00	12.61	181	4	21767.0	0.558
June	23.11	9.66	16.38	80	21	23638.0	0.564
July	29.05	12.83	20.94	11	92	26754.0	0.659
Aug	27.72	12.22	20.00	26	77	22040.0	0.624
Sept	22.50	8.16	15.33	108	18	16289.0	0.589
Oct	14.50	3.05	8.77	296	0	9543.0	0.496
Nov	5.44	– 1.55	1.94	491	0	4514.0	0.364
Dec	1.05	– 4.44	– 1.66	620	0	2896.0	0.314
Ann	14.00	2.94	8.50	3797	215	13889.0	0.538

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	31.1	19.6	25.4	1228	0	315.0	85.4
Feb	39.0	25.3	32.2	918	0	605.9	164.3
Mar	46.2	28.8	37.5	851	0	1040.6	282.3
Apr	57.0	35.2	46.1	567	0	1494.9	405.5
May	66.5	42.8	54.7	326	7	1918.0	520.3
June	73.6	49.4	61.5	144	38	2082.8	565.0
July	84.3	55.1	69.7	20	166	2357.4	639.4
Aug	81.9	54.0	68.0	47	139	1942.0	526.8
Sept	72.5	46.7	59.6	194	32	1435.3	389.3
Oct	58.1	37.5	47.8	533	0	840.9	228.1
Nov	41.8	29.2	35.5	884	0	397.7	107.9
Dec	33.9	24.0	29.0	1116	0	255.2	69.2
Ann	57.2	37.3	47.3	6835	387	1223.8	332.0

STATION NO. 24157

Spokane, Washington

LATITUDE: 47° 38′ N
LONGITUDE: 117° 32′ W
ELEVATION: 721 meters (2364.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	3211.0	0.313
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	6037.0	0.384
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	10416.0	0.438
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	15265.0	0.472
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	19980.0	0.513
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	20656.0	0.493
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	22483.0	0.555
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	18074.0	0.514
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	13316.0	0.487
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	7434.0	0.395
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	4048.0	0.338
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	2644.0	0.301
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	11964.0	0.469

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	282.9	76.7
Feb	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	531.9	144.3
Mar	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	917.8	249.0
Apr	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1345.1	364.8
May	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1760.5	477.5
June	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1820.1	493.7
July	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1981.1	537.4
Aug	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1592.6	432.0
Sept	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1173.3	318.3
Oct	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	655.0	177.7
Nov	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	356.7	96.8
Dec	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	233.0	63.2
Ann	0.0 ND	0.0 ND	0.0 ND	0 ND	0 ND	1054.2	286.0

LATITUDE: 48° 21′ N
LONGITUDE: 122° 40′ W
ELEVATION: 17 meters (55.8 feet)

STATION NO. 24255

Whidbey Island, Washington

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	2.44	−7.44	−2.49	646	0	4143.0	0.365
Feb	7.83	−3.77	2.05	455	0	7561.0	0.450
Mar	12.66	−1.77	5.44	399	0	12737.0	0.515
Apr	17.83	1.55	9.72	258	0	18132.0	0.550
May	22.83	5.88	14.38	132	10	22794.0	0.582
June	26.50	9.61	18.05	52	43	24614.0	0.587
July	31.16	11.83	21.50	11	109	26762.0	0.658
Aug	29.94	10.66	20.33	20	82	22411.0	0.630
Sept	25.72	6.83	16.27	81	20	16834.0	0.599
Oct	18.16	1.88	10.05	256	0	10109.0	0.509
Nov	9.16	−2.05	3.55	443	0	5042.0	0.386
Dec	3.94	−4.72	−0.38	580	0	3346.0	0.339
Ann	17.33	2.38	9.88	3338	266	14540.0	0.554

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	36.4	18.6	27.5	1163	0	365.1	99.0
Feb	46.1	25.2	35.7	819	0	666.2	180.7
Mar	54.8	28.8	41.8	718	0	1122.3	304.4
Apr	64.1	34.8	49.5	464	0	1597.7	433.4
May	73.1	42.6	57.9	238	18	2008.5	544.8
June	79.7	49.3	64.5	94	77	2168.8	588.3
July	88.1	53.3	70.7	20	196	2358.1	639.6
Aug	85.9	51.2	68.6	36	148	1974.7	535.6
Sept	78.3	44.3	61.3	146	36	1483.3	402.3
Oct	64.7	35.4	50.1	461	0	890.7	241.6
Nov	48.5	28.3	38.4	797	0	444.3	120.5
Dec	39.1	23.5	31.3	1044	0	294.8	80.0
Ann	63.2	36.3	49.8	6008	479	1281.2	347.5

STATION NO. 24243

Yakima, Washington

LATITUDE: 46° 34′ N
LONGITUDE: 120° 32′ W
ELEVATION: 325 meters (1066.0 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	6.44	– 3.72	1.38	525	0	5656.0	0.344
Feb	7.88	– 2.88	2.50	443	0	8018.0	0.371
Mar	12.88	1.00	6.94	356	3	11457.0	0.400
Apr	19.94	6.55	13.27	159	7	15386.0	0.435
May	24.77	11.27	18.05	62	53	18606.0	0.465
June	28.55	15.88	22.22	5	122	20155.0	0.480
July	29.77	17.94	23.88	0	172	19095.0	0.466
Aug	29.11	17.11	23.11	0	148	17186.0	0.461
Sept	26.11	13.27	19.72	25	67	14436.0	0.461
Oct	20.61	7.11	13.88	148	10	11034.0	0.454
Nov	13.22	1.66	7.44	326	0	6958.0	0.385
Dec	7.33	– 2.66	2.33	496	0	4995.0	0.334
Ann	18.88	6.88	12.88	2550	586	12748.0	0.435

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	43.6	25.3	34.5	945	0	498.4	135.2
Feb	46.2	26.8	36.5	797	0	706.5	191.6
Mar	55.2	33.8	44.5	641	5	1009.5	273.8
Apr	67.9	43.8	55.9	286	13	1355.7	367.7
May	76.6	52.3	64.5	112	95	1639.4	444.7
June	83.4	60.6	72.0	9	220	1775.9	481.7
July	85.6	64.3	75.0	0	310	1682.5	456.4
Aug	84.4	62.8	73.6	0	266	1514.3	410.8
Sept	79.0	55.9	67.5	45	121	1272.0	345.0
Oct	69.1	44.8	57.0	266	18	972.3	263.7
Nov	55.8	35.0	45.4	587	0	613.1	166.3
Dec	45.2	27.2	36.2	893	0	440.1	119.4
Ann	66.0	44.4	55.2	4590	1055	1123.3	304.7

LATITUDE: 38° 22′ N
LONGITUDE: 81° 36′ W
ELEVATION: 290 meters (951.2 feet)

STATION NO. 13866

Charleston, West Virginia

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	6.05	−3.55	1.27	528	0	5970.0	0.364
Feb	7.44	−2.88	2.27	449	0	8591.0	0.398
Mar	12.61	1.00	6.83	360	3	12108.0	0.423
Apr	19.72	6.55	13.16	162	7	16430.0	0.465
May	24.55	11.50	18.05	63	55	19411.0	0.485
June	28.55	16.27	22.44	6	129	20924.0	0.498
July	29.83	18.22	24.05	0	177	20073.0	0.489
Aug	29.22	17.27	23.27	0	155	17933.0	0.481
Sept	26.11	13.50	19.83	25	70	14819.0	0.473
Oct	20.44	7.44	13.94	147	11	11395.0	0.469
Nov	13.00	2.00	7.50	325	0	7236.0	0.401
Dec	7.00	−2.55	2.22	499	0	5303.0	0.354
Ann	18.72	7.05	12.88	2568	610	13349.0	0.456

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	42.9	25.6	34.3	950	0	526.0	142.7
Feb	45.4	26.8	36.1	808	0	757.0	205.3
Mar	54.7	33.8	44.3	648	5	1066.9	289.4
Apr	67.5	43.8	55.7	292	13	1447.7	392.7
May	76.2	52.7	64.5	113	99	1710.4	463.9
June	83.4	61.3	72.4	11	232	1843.7	500.1
July	85.7	64.8	75.3	0	319	1768.7	479.8
Aug	84.6	63.1	73.9	0	279	1580.1	428.6
Sept	79.0	56.3	67.7	45	126	1305.8	354.2
Oct	68.8	45.4	57.1	265	20	1004.1	272.4
Nov	55.4	35.6	45.5	585	0	637.6	172.9
Dec	44.6	27.4	36.0	898	0	467.3	126.7
Ann	65.7	44.7	55.2	4622	1098	1176.2	319.1

STATION NO. 3860

Huntington, West Virginia

LATITUDE: 38° 22′ N
LONGITUDE: 82° 33′ W
ELEVATION: 255 meters (836.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−11.27	917	0	5126.0	0.414
Feb	0.0 ND	0.0 ND	−9.22	771	0	8471.0	0.475
Mar	0.0 ND	0.0 ND	−2.61	649		12373.0	0.484
Apr	0.0 ND	0.0 ND	6.94	341	0	16182.0	0.483
May	0.0 ND	0.0 ND	13.44	162	11	19075.0	0.484
June	0.0 ND	0.0 ND	18.94	36	54	21244.0	0.506
July	0.0 ND	0.0 ND	21.38	7	102	21408.0	0.525
Aug	0.0 ND	0.0 ND	20.22	20	79	18393.0	0.511
Sept	0.0 ND	0.0 ND	14.83	112	7	13575.0	0.471
Oct	0.0 ND	0.0 ND	9.27	280	0	9375.0	0.451
Nov	0.0 ND	0.0 ND	0.00	550	0	5113.0	0.362
Dec	0.0 ND	0.0 ND	−7.77	809	0	3868.0	0.354
Ann	0.0 ND	0.0 ND	6.16	4660	255	12850.0	0.478

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	11.7	1651	0	451.7	122.5
Feb	0.0 ND	0.0 ND	15.4	1388	0	746.4	202.5
Mar	0.0 ND	0.0 ND	27.3	1168	0	1090.2	295.7
Apr	0.0 ND	0.0 ND	44.5	614	0	1425.9	386.8
May	0.0 ND	0.0 ND	56.2	292	20	1680.8	455.9
June	0.0 ND	0.0 ND	66.1	65	97	1871.9	507.8
July	0.0 ND	0.0 ND	70.5	13	184	1886.3	511.7
Aug	0.0 ND	0.0 ND	68.4	36	142	1620.7	439.6
Sept	0.0 ND	0.0 ND	58.7	202	13	1196.1	324.5
Oct	0.0 ND	0.0 ND	48.7	504	0	826.1	224.1
Nov	0.0 ND	0.0 ND	32.0	990	0	450.5	122.2
Dec	0.0 ND	0.0 ND	18.0	1456	0	340.8	92.4
Ann	0.0 ND	0.0 ND	43.1	8388	459	1132.3	307.1

LATITUDE: 44° 52′ N
LONGITUDE: 91° 29′ W
ELEVATION: 273 meters (895.4 feet)

STATION NO. 14991

Eau Claire, Wisconsin

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\overline{K}_T$ Cloudiness Index
Jan	– 4.49	– 13.94	– 9.22	854	0	5121.0	0.406
Feb	– 2.66	– 12.88	– 7.77	731	0	8227.0	0.456
Mar	2.83	– 6.61	– 1.88	626	0	12532.0	0.487
Apr	12.27	0.83	6.55	353	0	16327.0	0.485
May	18.77	6.16	12.50	187	6	19512.0	0.495
June	24.33	11.77	18.05	50	42	21652.0	0.515
July	27.05	14.27	20.66	12	84	21432.0	0.525
Aug	26.16	13.50	19.83	30	76	18406.0	0.510
Sept	21.00	8.88	14.94	106	4	13823.0	0.477
Oct	15.33	3.72	9.55	272	0	9313.0	0.443
Nov	5.44	– 3.11	1.16	515	0	5278.0	0.368
Dec	– 1.88	– 10.44	– 6.16	759	0	3969.0	0.356
Ann	12.00	1.00	6.50	4498	214	12966.0	0.480

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	23.9	6.9	15.4	1537	0	451.2	122.4
Feb	27.2	8.8	18.0	1316	0	724.9	196.6
Mar	37.1	20.1	28.6	1127	0	1104.2	299.5
Apr	54.1	33.5	43.8	635	0	1438.6	390.2
May	65.8	43.1	54.5	337	11	1719.3	466.4
June	75.8	53.2	64.5	90	76	1907.8	517.5
July	80.7	57.7	69.2	22	151	1888.5	512.2
Aug	79.1	56.3	67.7	54	137	1621.8	439.9
Sept	69.8	48.0	58.9	191	7	1218.0	330.4
Oct	59.6	38.7	49.2	490	0	820.6	222.6
Nov	41.8	26.4	34.1	927	0	465.1	126.1
Dec	28.6	13.2	20.9	1366	0	349.7	94.9
Ann	53.6	33.8	43.7	8096	385	1142.5	309.9

STATION NO. 14898

Green Bay, Wisconsin

LATITUDE: 44° 29′ N
LONGITUDE: 88° 8′ W
ELEVATION: 214 meters (701.9 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	– 3.88	– 13.83	– 8.83	842	0	5462.0	0.420
Feb	– 1.27	– 12.05	– 6.66	700	0	8679.0	0.471
Mar	4.44	– 5.49	– 0.49	583	0	12493.0	0.479
Apr	14.33	3.00	8.66	290	0	16186.0	0.478
May	20.72	9.27	15.00	124	21	19439.0	0.492
June	25.77	14.72	20.27	21	80	21625.0	0.515
July	28.33	16.94	22.66	5	140	21569.0	0.528
Aug	27.61	16.11	21.88	9	119	18911.0	0.522
Sept	22.11	11.00	16.55	72	18	14095.0	0.482
Oct	16.55	5.38	11.00	233	6	9800.0	0.459
Nov	6.11	– 2.33	1.88	493	0	5605.0	0.381
Dec	– 1.33	– 9.99	– 5.66	743	0	4193.0	0.363
Ann	13.27	2.72	8.00	4120	386	13172.0	0.483

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	25.0	7.1	16.1	1516	0	481.3	130.5
Feb	29.7	10.3	20.0	1260	0	764.7	207.4
Mar	40.0	22.1	31.1	1049	0	1100.8	298.6
Apr	57.8	37.4	47.6	522	0	1426.2	386.9
May	69.3	48.7	59.0	223	38	1712.8	464.6
June	78.4	58.5	68.5	38	144	1905.5	516.9
July	83.0	62.5	72.8	9	252	1900.5	515.5
Aug	81.7	61.0	71.4	16	214	1666.3	452.0
Sept	71.8	51.8	61.8	130	32	1242.0	336.9
Oct	61.8	41.7	51.8	419	11	863.5	234.2
Nov	43.0	27.8	35.4	887	0	493.9	134.0
Dec	29.6	14.0	21.8	1337	0	369.5	100.2
Ann	55.9	36.9	46.4	7416	695	1160.6	314.8

LATITUDE: 43° 52′ N
LONGITUDE: 91° 15′ W
ELEVATION: 205 meters (672.4 feet)

STATION NO. 14920

La Crosse, Wisconsin

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−3.66	−13.22	−8.44	830	0	5847.0	0.434
Feb	−1.38	−11.61	−6.49	695	0	9125.0	0.484
Mar	4.00	−5.99	−0.99	599	0	12892.0	0.488
Apr	13.33	1.44	7.38	328	0	15870.0	0.466
May	19.61	7.00	13.33	165	10	19784.0	0.499
June	24.94	12.55	18.77	40	53	22107.0	0.526
July	27.44	14.88	21.16	7	95	21953.0	0.537
Aug	26.66	14.05	20.38	21	85	19385.0	0.533
Sept	21.61	9.16	15.38	96	7	14747.0	0.499
Oct	16.05	3.83	9.94	263	3	10338.0	0.475
Nov	6.11	−3.11	1.50	505	0	5722.0	0.377
Dec	−1.22	−9.99	−5.61	742	0	4414.0	0.368
Ann	12.77	1.55	7.16	4294	255	13515.0	0.491

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	25.4	8.2	16.8	1494	0	515.2	139.7
Feb	29.5	11.1	20.3	1251	0	804.0	218.1
Mar	39.2	21.2	30.2	1078	0	1136.0	308.1
Apr	56.0	34.6	45.3	590	0	1398.4	379.3
May	67.3	44.6	56.0	297	18	1743.2	472.9
June	76.9	54.6	65.8	72	95	1947.9	528.4
July	81.4	58.8	70.1	13	171	1934.4	524.7
Aug	80.0	57.3	68.7	38	153	1708.1	463.3
Sept	70.9	48.5	59.7	173	13	1299.4	352.5
Oct	60.9	38.9	49.9	473	5	910.9	247.1
Nov	43.0	26.4	34.7	909	0	504.2	136.8
Dec	29.8	14.0	21.9	1336	0	388.9	105.5
Ann	55.0	34.8	44.9	7729	459	1190.9	323.0

SOLMET STATION NO. 14837

Madison, Wisconsin

LATITUDE: 43° 8′ N
LONGITUDE: 89° 20′ W
ELEVATION: 262 meters (859.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	−2.61	−11.44	−6.99	785	0	5441.0	0.401
Feb	−0.94	−9.66	−5.27	661	0	8358.0	0.441
Mar	4.11	−4.77	−0.33	578	0	12357.0	0.466
Apr	12.55	1.50	7.05	338	0	16373.0	0.480
May	18.33	6.27	12.33	193	7	20070.0	0.506
June	24.05	12.00	18.05	50	41	22438.0	0.534
July	26.88	15.16	21.05	8	92	22264.0	0.545
Aug	26.50	14.83	20.66	20	92	19509.0	0.536
Sept	21.94	10.38	16.16	77	12	14870.0	0.502
Oct	16.33	4.77	10.55	244	3	10304.0	0.472
Nov	6.88	−1.94	2.50	475	0	5954.0	0.390
Dec	−0.27	−8.44	−4.33	702	0	4295.0	0.355
Ann	12.83	2.38	7.61	4135	250	13519.0	0.489

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	27.3	11.4	19.4	1413	0	479.4	130.0
Feb	30.3	14.6	22.5	1190	0	736.5	199.8
Mar	39.4	23.4	31.4	1040	0	1088.8	295.3
Apr	54.6	34.7	44.7	608	0	1442.7	391.3
May	65.0	43.3	54.2	347	13	1768.4	479.7
June	75.3	53.6	64.5	90	74	1977.1	536.3
July	80.4	59.3	69.9	14	166	1961.8	532.1
Aug	79.7	58.7	69.2	36	166	1719.0	466.3
Sept	71.5	50.7	61.1	139	22	1310.3	355.4
Oct	61.4	40.6	51.0	439	5	907.9	246.3
Nov	44.4	28.5	36.5	855	0	524.6	142.3
Dec	31.5	16.8	24.2	1264	0	378.4	102.7
Ann	55.1	36.3	45.7	7443	450	1191.2	323.1

LATITUDE: 42° 57′ N
LONGITUDE: 87° 54′ W
ELEVATION: 211 meters (692.1 feet)

STATION NO. 14839

Milwaukee, Wisconsin

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.88	– 10.72	– 4.88	720	0	7754.0	0.570
Feb	3.16	– 8.94	– 2.88	594	0	11502.0	0.606
Mar	5.88	– 6.99	– 0.55	585	0	16355.0	0.617
Apr	13.05	– 1.16	5.94	371	0	20959.0	0.614
May	18.94	4.05	11.50	215	3	25008.0	0.631
June	24.61	8.55	16.61	81	30	28387.0	0.675
July	30.61	12.72	21.66	7	110	28765.0	0.704
Aug	29.77	11.94	20.88	9	88	25256.0	0.694
Sept	23.38	6.27	14.83	127	22	19855.0	0.670
Oct	16.33	1.05	8.72	297	0	13831.0	0.632
Nov	7.11	– 5.05	1.05	518	0	8684.0	0.568
Dec	2.33	– 8.77	– 3.22	668	0	6744.0	0.556
Ann	14.66	0.22	7.44	4197	254	17758.0	0.643

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	33.6	12.7	23.2	1296	0	683.2	185.3
Feb	37.7	15.9	26.8	1069	0	1013.5	274.9
Mar	42.6	19.4	31.0	1053	0	1441.1	390.9
Apr	55.5	29.9	42.7	668	0	1846.8	500.9
May	66.1	39.3	52.7	387	5	2203.6	597.7
June	76.3	47.4	61.9	146	54	2501.3	678.5
July	87.1	54.9	71.0	13	198	2534.6	687.5
Aug	85.6	53.5	69.6	16	158	2225.4	603.6
Sept	74.1	43.3	58.7	229	40	1749.5	474.6
Oct	61.4	33.9	47.7	535	0	1218.7	330.6
Nov	44.8	22.9	33.9	932	0	765.2	207.6
Dec	36.2	16.2	26.2	1202	0	594.2	161.2
Ann	58.4	32.4	45.4	7555	457	1564.7	424.4

STATION NO. 24089

Casper, Wyoming

LATITUDE: 42° 55′ N
LONGITUDE: 106° 28′ W
ELEVATION: 1612 meters (5287.4 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	3.44	−9.49	−2.99	661	0	8691.0	0.591
Feb	4.83	−8.16	−1.66	560	0	12118.0	0.606
Mar	6.38	−6.88	−0.22	575	0	16264.0	0.595
Apr	13.00	−1.11	5.94	371	0	20093.0	0.580
May	18.38	4.27	11.33	218	0	22637.0	0.569
June	23.55	8.94	16.27	86	25	25626.0	0.610
July	28.72	12.50	20.61	12	82	25307.0	0.618
Aug	27.72	11.77	19.77	17	62	22307.0	0.607
Sept	22.66	6.38	14.55	125	11	18923.0	0.624
Oct	16.55	1.05	8.83	294	0	14093.0	0.618
Nov	8.61	−4.72	1.94	491	0	9338.0	0.570
Dec	4.61	−7.72	−1.55	616	0	7615.0	0.576
Ann	14.88	0.55	7.72	4030	181	16918.0	0.598

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	38.2	14.9	26.6	1190	0	765.8	207.7
Feb	40.7	17.3	29.0	1008	0	1067.8	289.6
Mar	43.5	19.6	31.6	1035	0	1433.1	388.7
Apr	55.4	30.0	42.7	668	0	1770.5	480.2
May	65.1	39.7	52.4	392	0	1994.6	541.0
June	74.4	48.1	61.3	155	45	2258.0	612.5
July	83.7	54.5	69.1	22	148	2229.9	604.9
Aug	81.9	53.2	67.6	31	112	1965.6	533.2
Sept	72.8	43.5	58.2	225	20	1667.4	452.3
Oct	61.8	33.9	47.9	529	0	1241.8	336.8
Nov	47.5	23.5	35.5	884	0	822.8	223.2
Dec	40.3	18.1	29.2	1109	0	671.0	182.0
Ann	58.8	33.0	45.9	7254	326	1490.7	404.4

LATITUDE: 41° 9′ N
LONGITUDE: 104° 49′ W
ELEVATION: 1872 meters (6140.2 feet)

STATION NO. 24018

Cheyenne, Wyoming

Insolation and Temperature Data

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.0 ND	0.0 ND	−7.11	788	0	8341.0	0.579
Feb	0.0 ND	0.0 ND	−4.77	647	0	12363.0	0.626
Mar	0.0 ND	0.0 ND	−1.72	621	0	17365.0	0.640
Apr	0.0 ND	0.0 ND	4.50	415	0	22061.0	0.639
May	0.0 ND	0.0 ND	10.22	251	0	26605.0	0.669
June	0.0 ND	0.0 ND	14.94	110	8	29217.0	0.695
July	0.0 ND	0.0 ND	20.11	10	65	28908.0	0.706
Aug	0.0 ND	0.0 ND	18.94	27	46	25424.0	0.693
Sept	0.0 ND	0.0 ND	13.55	149	6	20797.0	0.690
Oct	0.0 ND	0.0 ND	7.05	349	0	14821.0	0.656
Nov	0.0 ND	0.0 ND	−0.72	571	0	9378.0	0.583
Dec	0.0 ND	0.0 ND	−5.22	730	0	7384.0	0.570
Ann	0.0 ND	0.0 ND	5.83	4672	126	18555.0	0.660

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	0.0 ND	0.0 ND	19.2	1418	0	735.0	199.4
Feb	0.0 ND	0.0 ND	23.4	1165	0	1089.4	295.5
Mar	0.0 ND	0.0 ND	28.9	1118	0	1530.1	415.0
Apr	0.0 ND	0.0 ND	40.1	747	0	1943.9	527.3
May	0.0 ND	0.0 ND	50.4	452	0	2344.3	635.9
June	0.0 ND	0.0 ND	58.9	198	14	2574.4	698.3
July	0.0 ND	0.0 ND	68.2	18	117	2547.2	690.9
Aug	0.0 ND	0.0 ND	66.1	49	83	2240.2	607.7
Sept	0.0 ND	0.0 ND	56.4	268	11	1832.5	497.1
Oct	0.0 ND	0.0 ND	44.7	628	0	1305.9	354.2
Nov	0.0 ND	0.0 ND	30.7	1028	0	826.3	224.1
Dec	0.0 ND	0.0 ND	22.6	1314	0	650.6	176.5
Ann	0.0 ND	0.0 ND	42.5	8410	227	1635.0	443.5

STATION NO. 24027

Rock Springs, Wyoming

LATITUDE: 41° 36′ N
LONGITUDE: 109° 4′ W
ELEVATION: 2056 meters (6743.7 feet)

	Maximum Daily Temp. °C	Minimum Daily Temp. °C	Average Monthly Temp. °C	Heating Degree Days Base 18.3 °C	Cooling Degree Days Base 18.3 °C	Total Global Radiation kJ/m²	Global $\bar{K}_T$ Cloudiness Index
Jan	0.83	– 13.05	– 6.11	757	0	5873.0	0.472
Feb	3.33	– 10.11	– 3.38	608	0	8945.0	0.500
Mar	6.16	– 7.27	– 0.55	585	0	13673.0	0.534
Apr	13.50	– 0.61	6.44	356	0	17446.0	0.520
May	18.88	4.55	11.72	208	3	21367.0	0.542
June	23.50	8.77	16.16	93	28	24470.0	0.582
July	30.05	12.55	21.33	15	108	26432.0	0.648
Aug	29.61	11.66	20.66	17	89	22766.0	0.632
Sept	22.72	6.05	14.38	136	17	17044.0	0.591
Oct	16.94	0.61	8.77	296	0	11409.0	0.547
Nov	7.77	– 6.22	0.77	526	0	6705.0	0.473
Dec	3.11	– 10.33	– 3.61	680	0	5009.0	0.456
Ann	14.72	– 0.27	7.22	4282	247	15095.0	0.561

	Maximum Daily Temp. °F	Minimum Daily Temp. °F	Average Monthly Temp. °F	Heating Degree Days Base 65 °F	Cooling Degree Days Base 65 °F	Total Global Radiation Btu/ft²	Total Global Radiation Langleys
Jan	33.5	8.5	21.0	1363	0	517.5	140.4
Feb	38.0	13.8	25.9	1094	0	788.2	213.8
Mar	43.1	18.9	31.0	1053	0	1204.8	326.8
Apr	56.3	30.9	43.6	641	0	1537.2	417.0
May	66.0	40.2	53.1	374	5	1882.7	510.7
June	74.3	47.8	61.1	167	50	2156.2	584.9
July	86.1	54.6	70.4	27	194	2329.0	631.8
Aug	85.3	53.0	69.2	31	160	2006.0	544.1
Sept	72.9	42.9	57.9	245	31	1501.8	407.4
Oct	62.5	33.1	47.8	533	0	1005.3	272.7
Nov	46.0	20.8	33.4	947	0	590.8	160.3
Dec	37.6	13.4	25.5	1224	0	441.4	119.7
Ann	58.5	31.5	45.0	7708	445	1330.1	360.8

LATITUDE: 44° 46′ N
LONGITUDE: 106° 58′ W
ELEVATION: 1209 meters (3965.5 feet)

STATION NO. 24029

Sheridan, Wyoming

Appendix A

Global $\overline{K}_T$ Methodology

Global $\bar{K}_T$ Methodology

by Thomas L. Stoffel

As a general introduction to the global $\bar{K}_T$ parameter found in the Insolation Data Base, the following text will:

- define the concept,
- introduce the extraterrestrial radiation component,
- describe the details of the global $\bar{K}_T$ computations, and
- introduce the proper use of the contour maps.

The K_T parameter, or cloudiness index, was introduced by Liu and Jordan (1960)[1] as a means of simplifying the application of available insolation data to solar design problems.[2] The global $\bar{K}_T$ is defined as the ratio of monthly mean values of daily global radiation on a horizontal surface ($\bar{H}$), a measured quantity, divided by the amount of extraterrestrial radiation on a horizontal surface ($\bar{H}_o$), which can be computed. That is,

$$\bar{K}_T = \bar{H}/\bar{H}_o \tag{1}$$

The value of this ratio ranges from zero to one since it represents that portion of the radiation available at the top of the atmosphere which is actually received at the earth's surface.

The values for $\bar{H}$ in Eq. (1) were taken directly from the *Input Data for Solar Systems*[3] magnetic tape files in the computation of global $\bar{K}_T$. Computing the monthly and annual averages of $\bar{H}_o$ in Eq. (1) for each of the 248 stations required only the station location and month of the year. Most of the discussion that follows is a development of the calculation of monthly mean daily extraterrestrial radiation on a horizontal surface.

The amount of radiation available at the top of the atmosphere on a unit area surface, normal to the solar beam is a function of the sun's irradiance and the sun-earth distance,

$$I_{o_{dn}} = I_o \times (\bar{R}/R)^2 \tag{2}$$

where,

I_o = the solar constant (1377 Wm^{-2}) or the irradiance at the mean sun-earth distance[4]

$\bar{R}$ = mean sun-earth distance

R = actual sun-earth distance for a specific day of the year

$$(\bar{R}/R)^2 = 1.00011 + 0.034221 \cos\beta + 0.001280 \sin\beta + 0.000719 \cos(2\beta) + 0.000077 \sin(2\beta) \tag{3}$$

where the angle is defined,

$$\beta = \frac{2\pi d}{365} \tag{4}$$

and d is the day of the year minus 1.[5]

The instantaneous irradiance on a *horizontal* unit area surface at the top of the atmosphere (H_o) is obtained by multiplying Eq. (2) by the cosine of the incidence angle (i), the angle between the direct beam and the normal to the horizontal surface,

$$\cos(i) = \sin\phi \sin\delta + \cos\phi \cos\delta \cos\omega \tag{5}$$

where,

ϕ = station latitude

δ = solar declination

$= 0.006918 - 0.3999912 \cos\beta + 0.070257 \sin\beta - 0.006758 \cos 2\beta + 0.000907 \sin 2\beta - 0.002697 \cos 3\beta + 0.001480 \sin 3\beta$ (radians)

ω = hour angle.

The instantaneous irradiance on a *horizontal* surface, Eq. (2), becomes,

$$H_o = I_o \times (\bar{R}/R)^2 \times (\sin\phi \sin\delta + \cos\phi \cos\delta \cos\omega) \tag{6}$$

The daily sum of H_o can be computed by integrating Eq. (6) over a daylight period defined by the sunset hour angle (ω_s),

$$\cos(\omega_s) = -\tan\phi \tan\delta \quad \text{(for solar zenith angle} = 90°) \tag{7}$$

$$H_{do} = I_o \times (\bar{R}/R)^2 \int_{-\omega_s}^{\omega_s} (\sin\phi \sin\delta + \cos\phi \cos\delta \cos\omega)\, d\,(24/2\pi\omega) \quad (8)$$

Each hour is equal to $2\pi/24$ radians (15 degrees) of hour angle (ω). Performing the integration, the daily horizontal extraterrestrial radiation (ETR) becomes,

$$H_{do} = (24/\pi)\,(I_o)\,(\bar{R}/R)^2(\omega_s \sin\phi \sin\delta + \cos\phi \cos\delta \sin\omega_s) \quad (9)$$

The monthly mean values of the horizontal ETR ($\bar{H}_o$) were computed from the daily totals at each station,

$$\bar{H}_o = (1/n) \sum_{i=1}^{n} H_{do_i} \quad (10)$$

where,

n = the number of days in the month.

Similarly, the annual values of $\bar{H}$ were computed at each station,

$$\bar{H}_o = (1/365) \sum_{i=1}^{365} H_{do_i} \quad (11)$$

The monthly and annual values of global $\bar{K}_T$ were computed according to Eq. (1) for each station in this manner.

The results of these computations were tabulated for each station and contour maps were prepared to depict the relative distribution of global $\bar{K}_T$. It should be emphasized that interpolation of global $\bar{K}_T$ values between stations was required to produce these maps and as a result, the maps do not account for any local or small-scale effects which could change the value at any particular location.

References and Notes

Full citations and availability for these references are contained in the Bibliography, Appendix F.

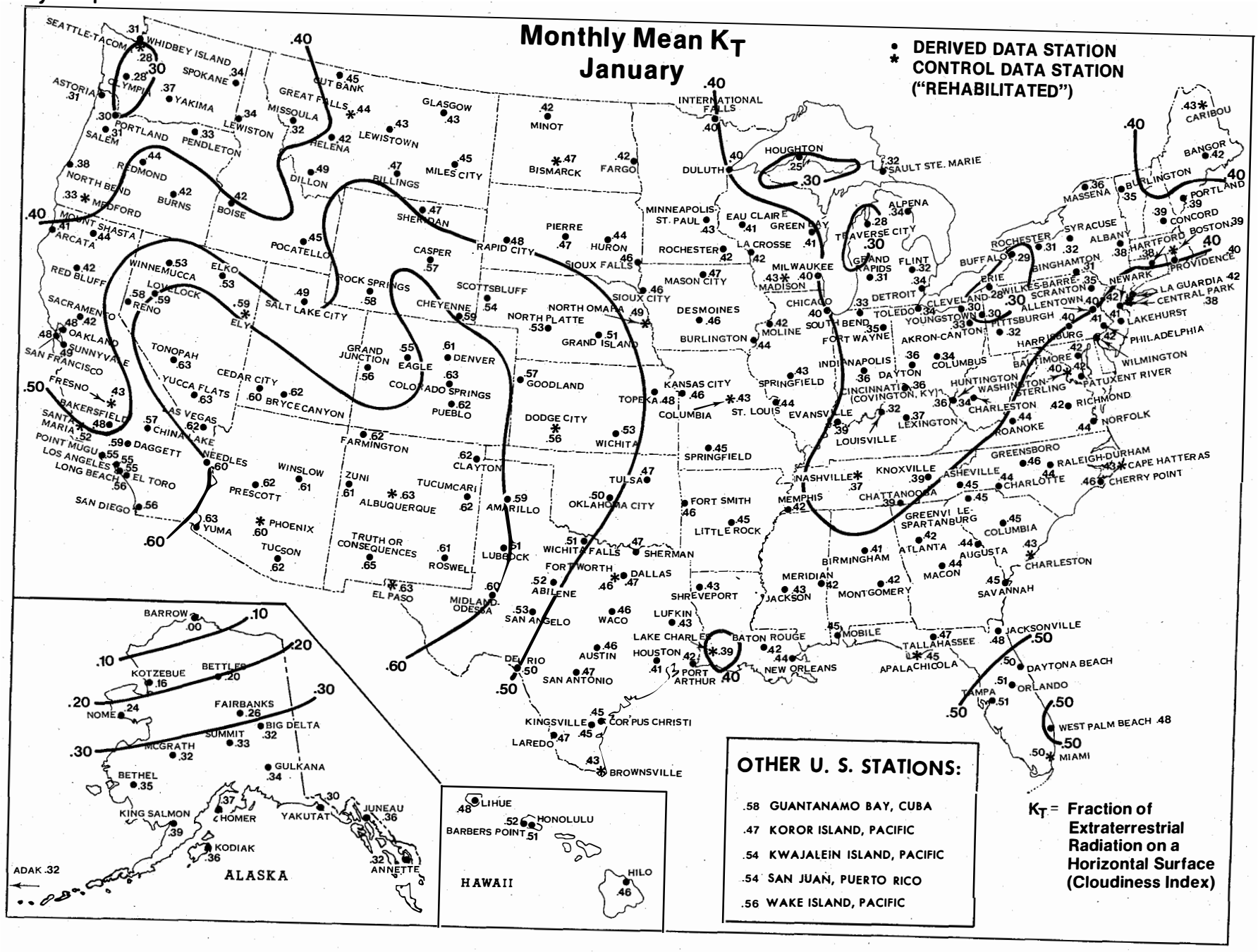
1. Liu, B.Y.H.; Jordan, R.C. 1960 (July). "The Interrelationship and Characteristic Distribution of Direct, Diffuse and Total Solar Energy Radiation," *Solar Energy*. Vol. 4 (No. 3): pp. 1-19.
2. See also: Collares-Pereira, Manual; Rabl, Ari. 1978 (June). *Simple Procedure for Predicting Long-Term Average Performance of Nonconcentrating and Concentrating Solar Collectors.*
3. Cinquemani, V.; Owenby, J.R.; Baldwin, R.G. 1979 (Aug.). *Input Data for Solar Systems.*
4. National Oceanic and Atmospheric Administration. 1977 (Dec.). *SOLMET Volume 1: User's Manual, TD-9724, Hourly Solar Radiation-Surface Meteorological Observations.*
5. Partridge, G.W.; Platt, C.M.R. 1976. *Radiative Processes in Meteorology and Climatology.*

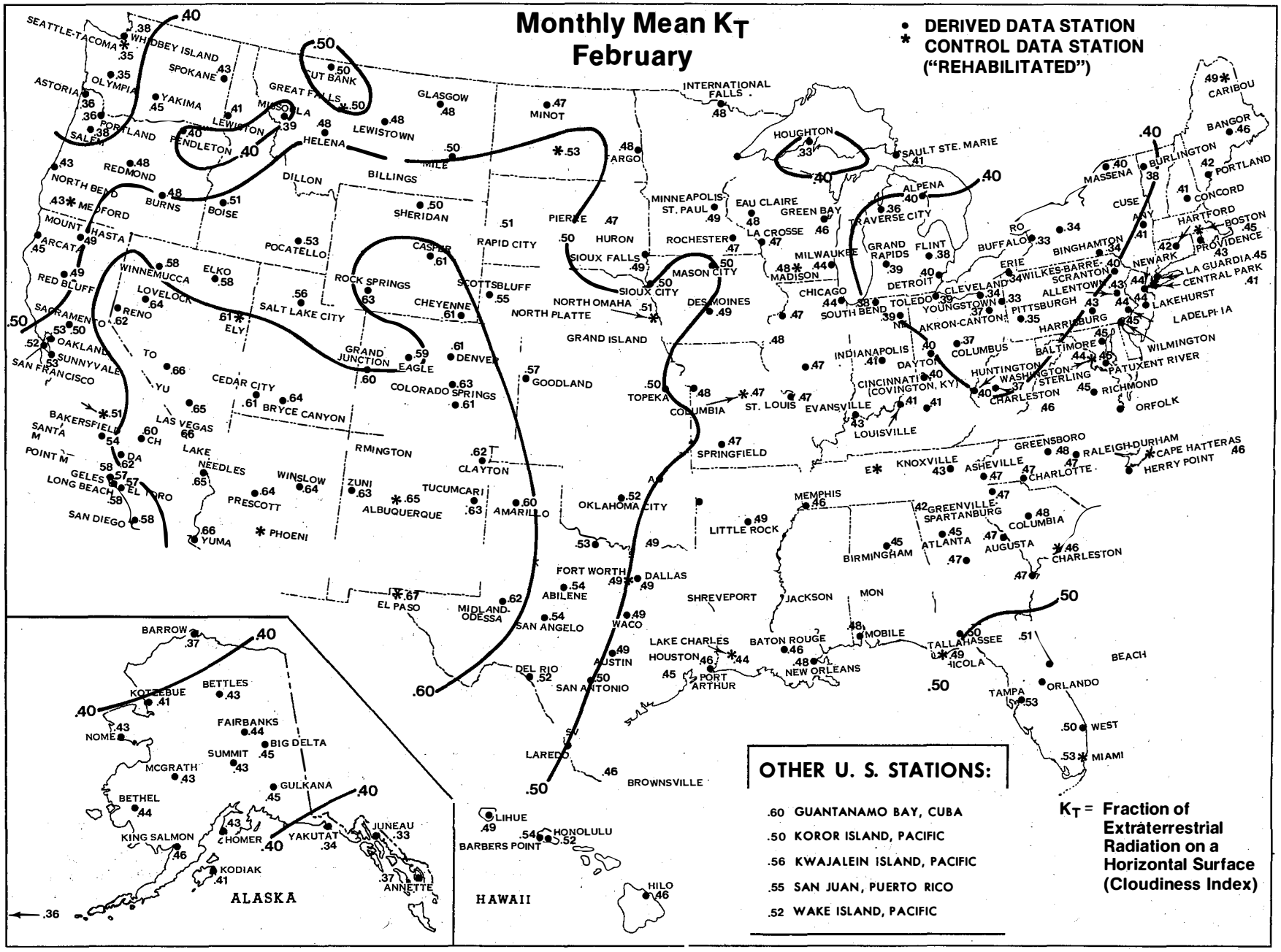
Appendix B

Global $\overline{K}_T$ Contour Maps

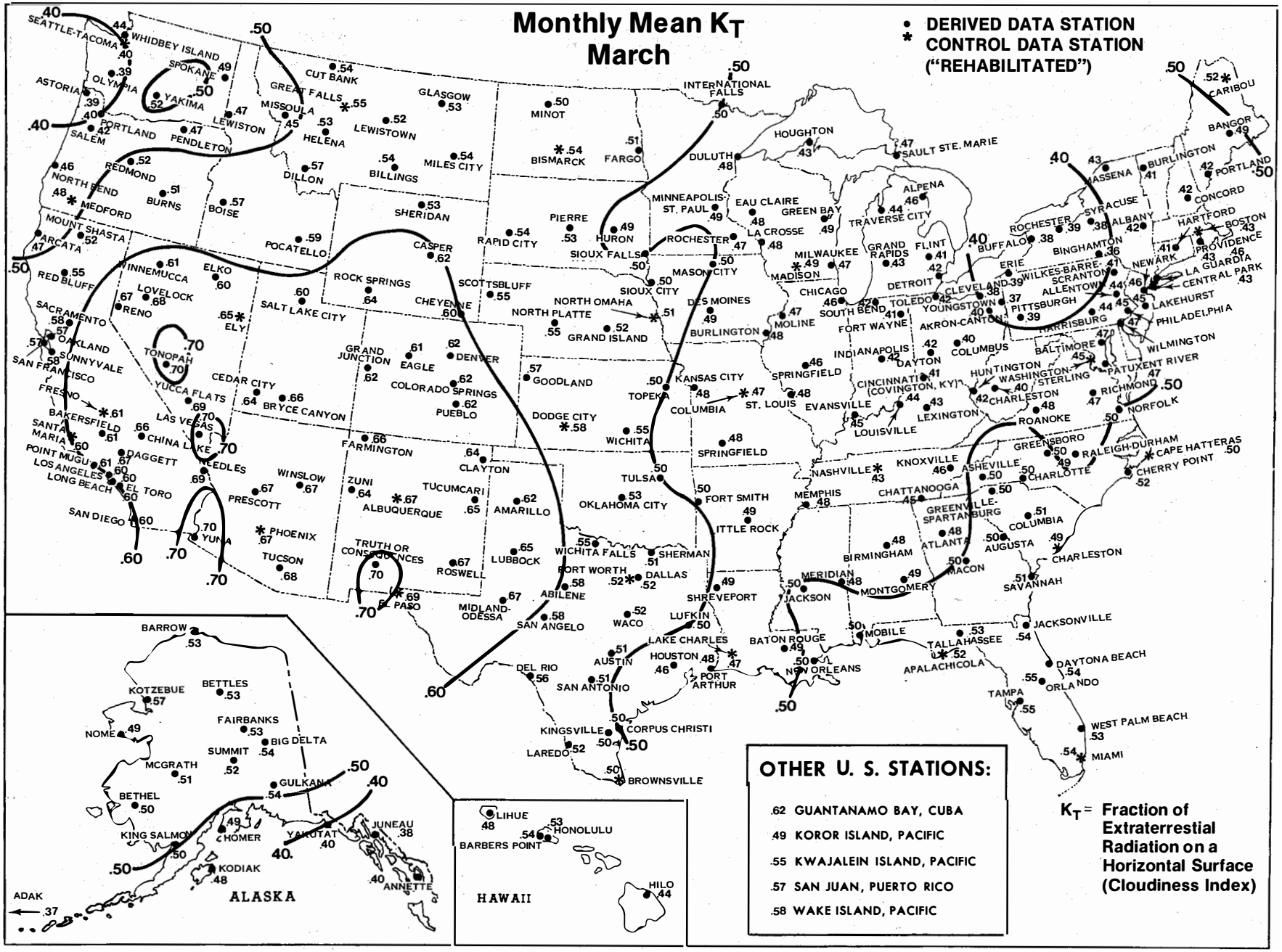
Global $\overline{K}_T$ Contour Maps

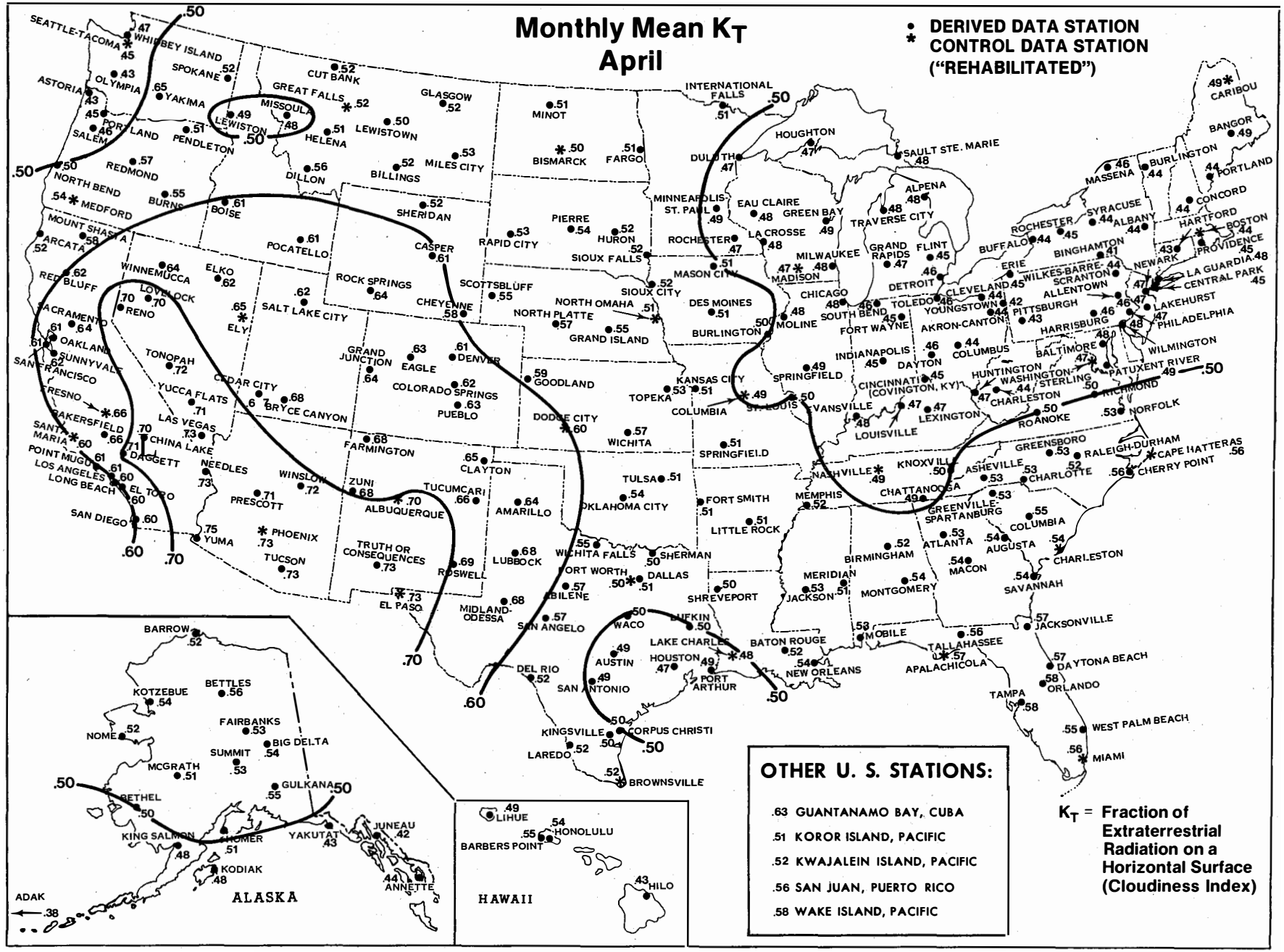
by Stephen D. Whitaker



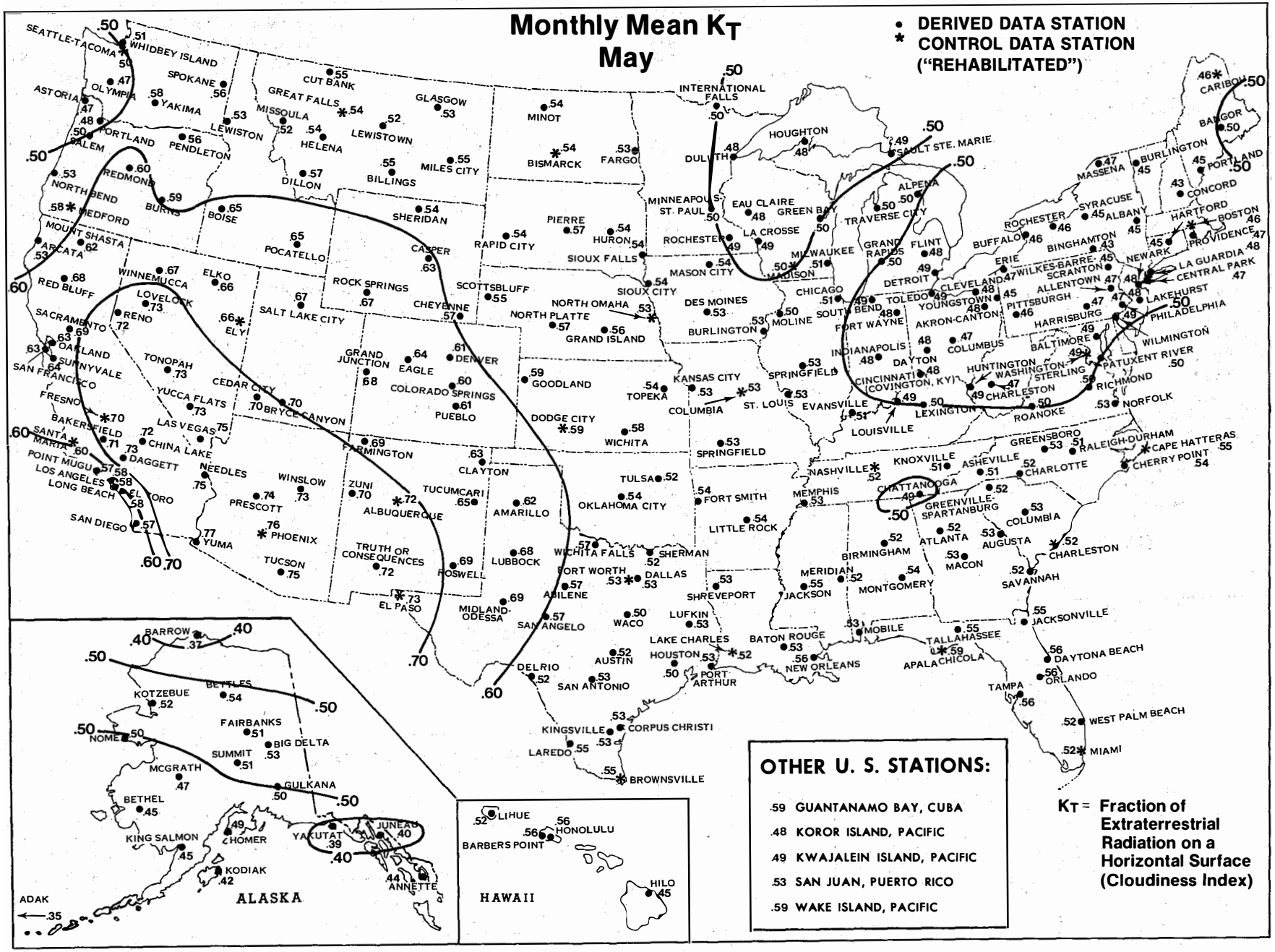

Monthly Mean K_T
February
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.60 GUANTANAMO BAY, CUBA
.50 KOROR ISLAND, PACIFIC
.56 KWAJALEIN ISLAND, PACIFIC
.55 SAN JUAN, PUERTO RICO
.52 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII

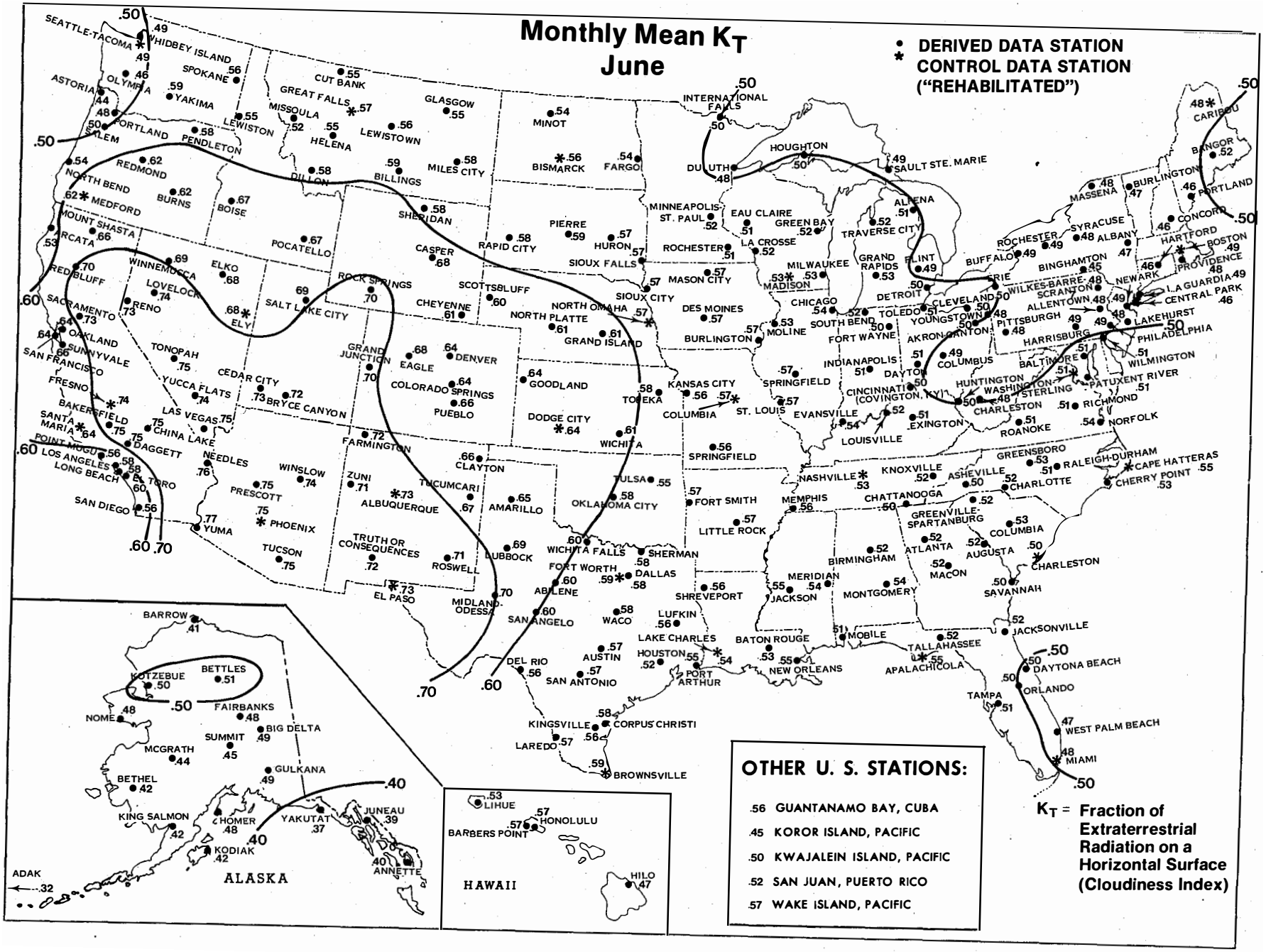
Appendix B


Monthly Mean K_T
March
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.62 GUANTANAMO BAY, CUBA
.49 KOROR ISLAND, PACIFIC
.55 KWAJALEIN ISLAND, PACIFIC
.57 SAN JUAN, PUERTO RICO
.58 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII


Monthly Mean K_T
April
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.63 GUANTANAMO BAY, CUBA
.51 KOROR ISLAND, PACIFIC
.52 KWAJALEIN ISLAND, PACIFIC
.56 SAN JUAN, PUERTO RICO
.58 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII

Appendix B


Monthly Mean K_T
May
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.59 GUANTANAMO BAY, CUBA
.48 KOROR ISLAND, PACIFIC
.49 KWAJALEIN ISLAND, PACIFIC
.53 SAN JUAN, PUERTO RICO
.59 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII


Monthly Mean K_T
June
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.56 GUANTANAMO BAY, CUBA
.45 KOROR ISLAND, PACIFIC
.50 KWAJALEIN ISLAND, PACIFIC
.52 SAN JUAN, PUERTO RICO
.57 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII

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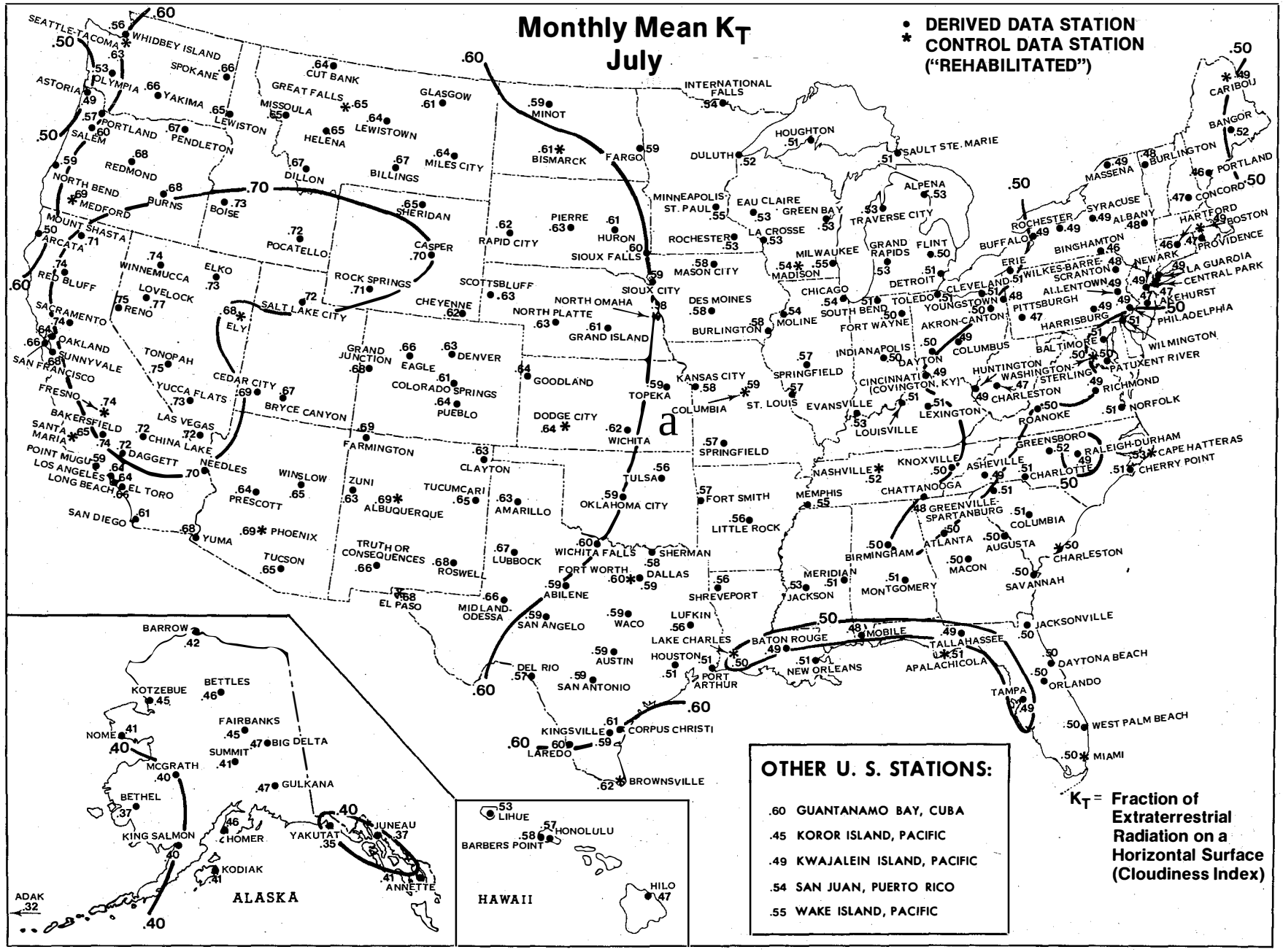
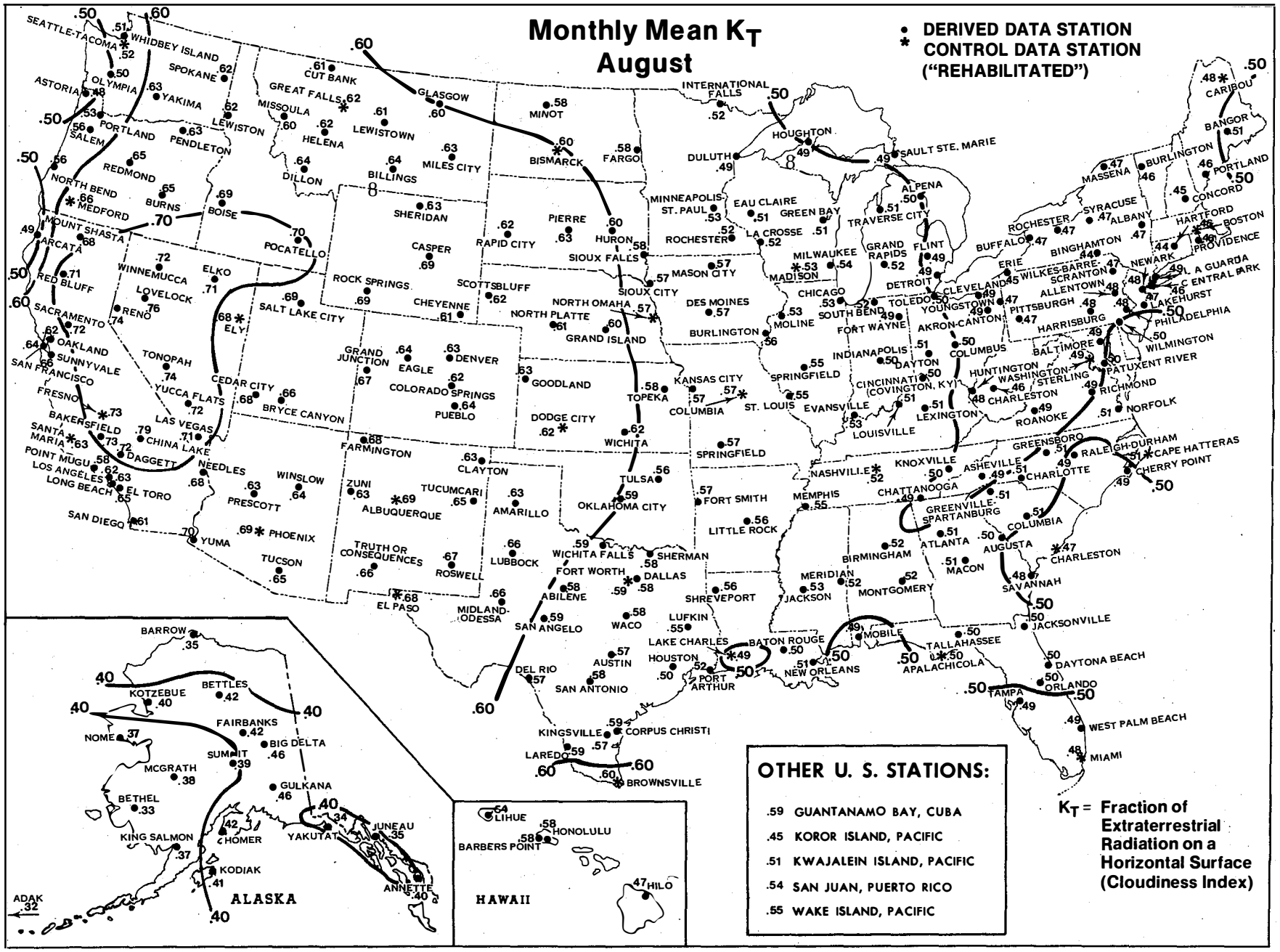
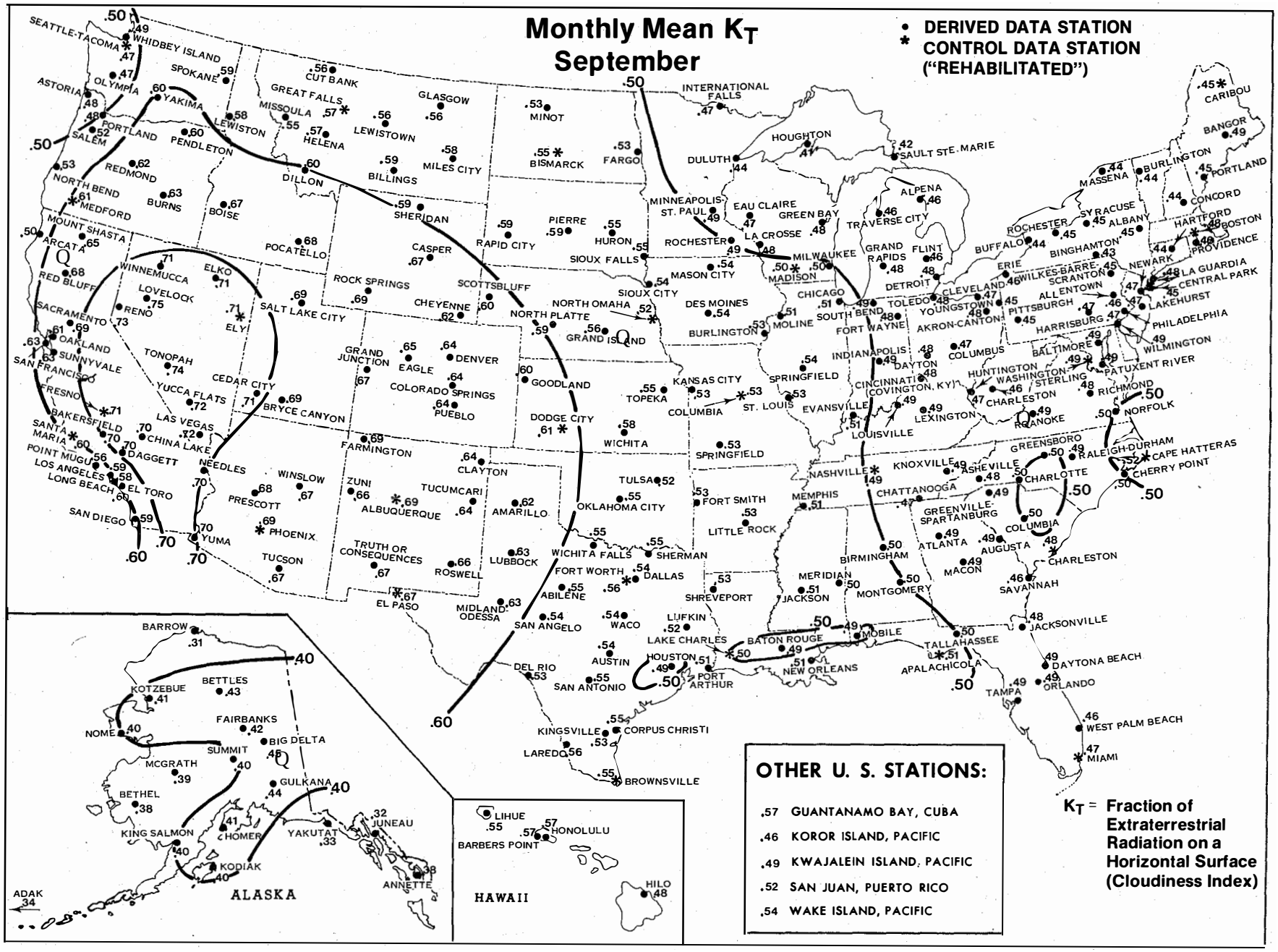
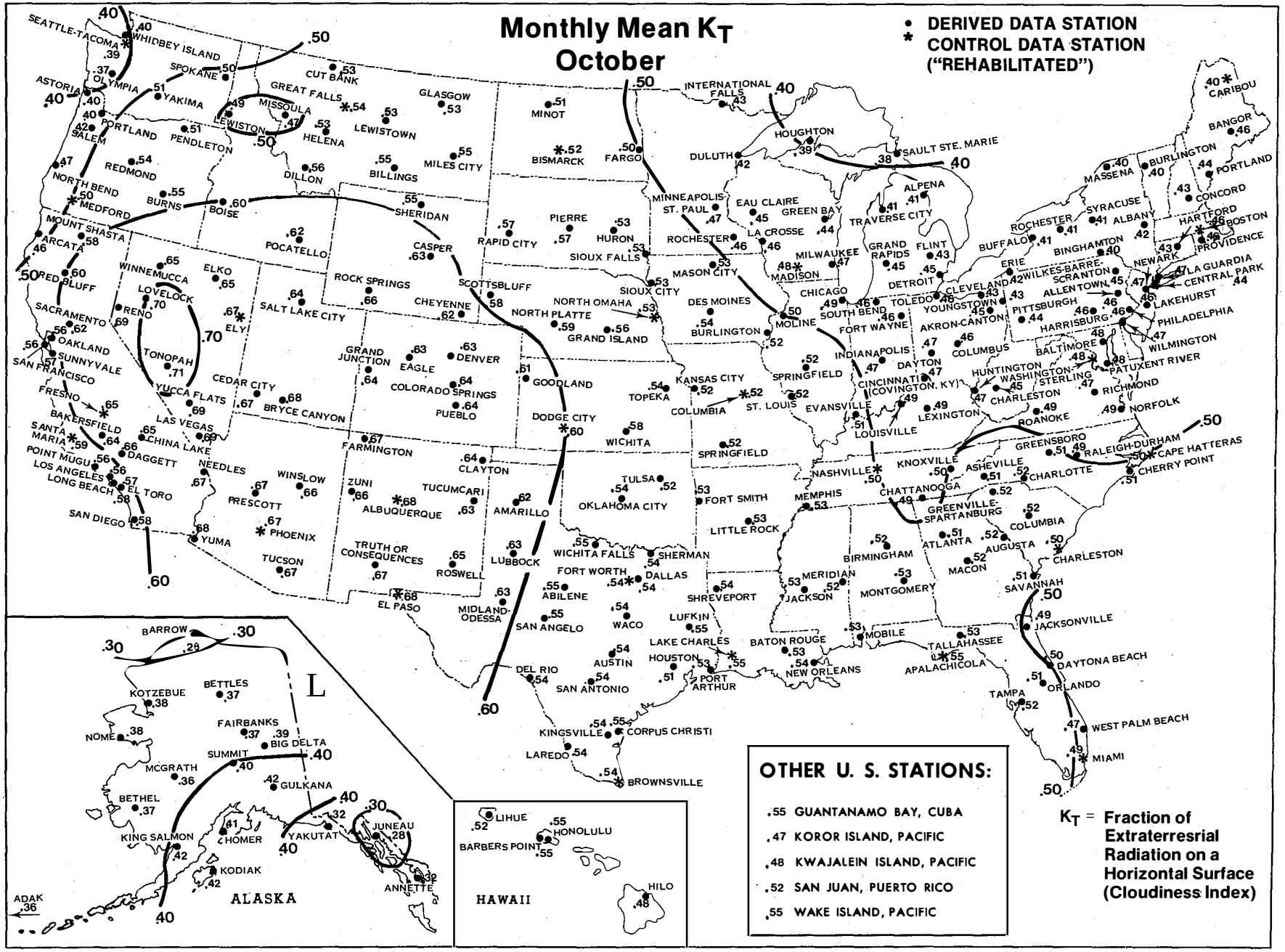

Monthly Mean K_T
July
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.60 GUANTANAMO BAY, CUBA
.45 KOROR ISLAND, PACIFIC
.49 KWAJALEIN ISLAND, PACIFIC
.54 SAN JUAN, PUERTO RICO
.55 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII

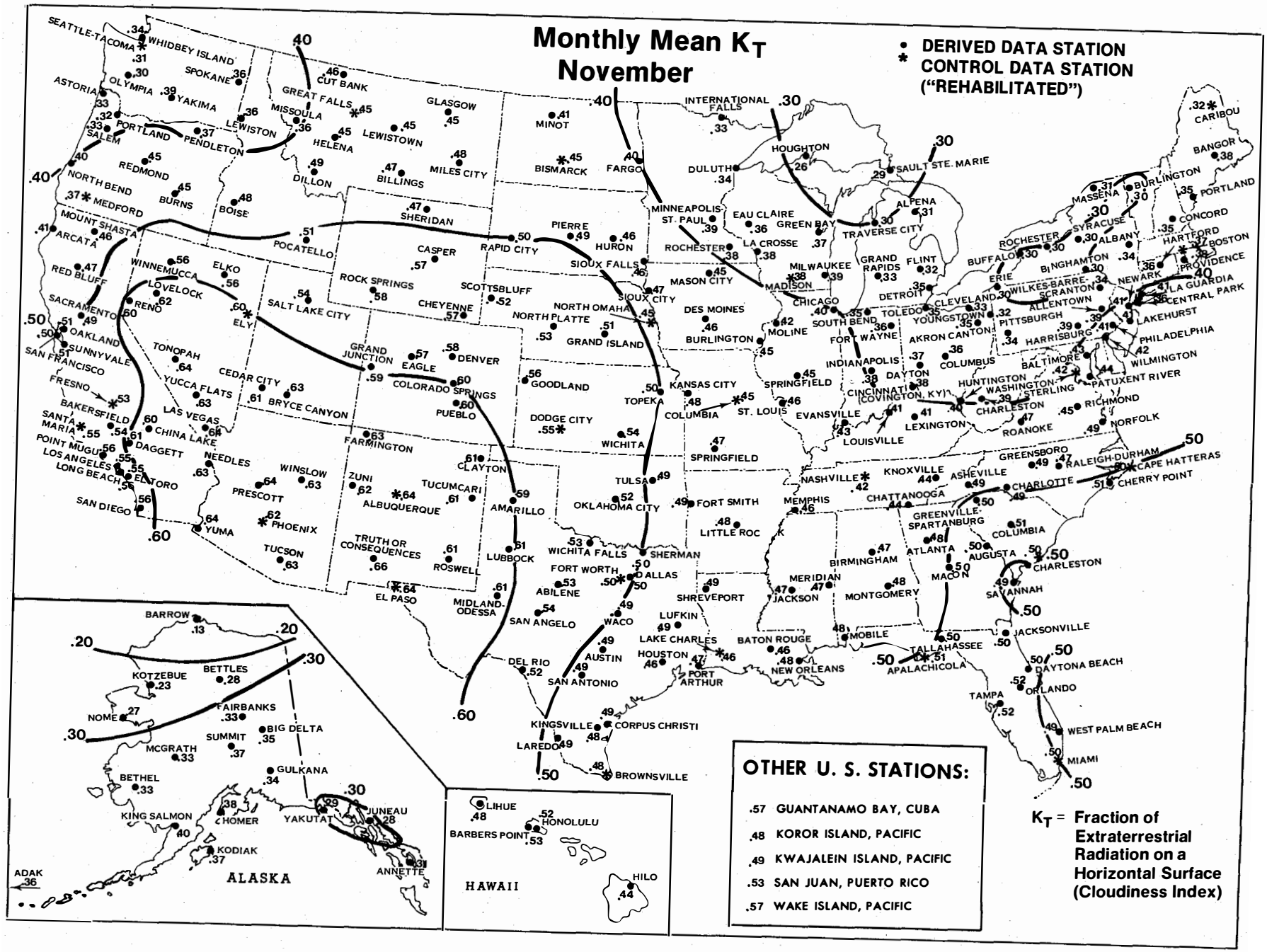

Monthly Mean K_T
August
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.59 GUANTANAMO BAY, CUBA
.45 KOROR ISLAND, PACIFIC
.51 KWAJALEIN ISLAND, PACIFIC
.54 SAN JUAN, PUERTO RICO
.55 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII

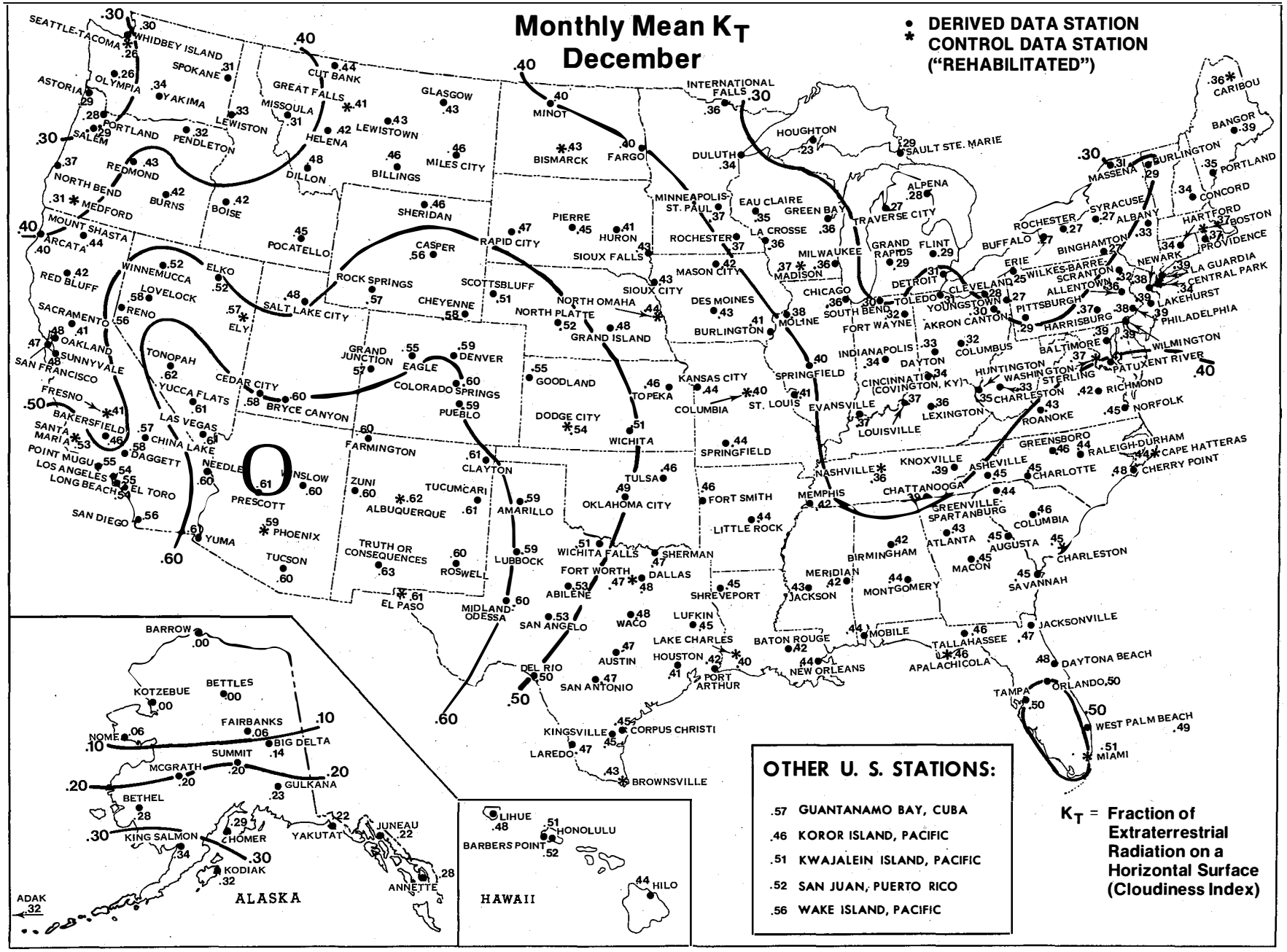
Appendix B


Monthly Mean K_T
September
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.57 GUANTANAMO BAY, CUBA
.46 KOROR ISLAND, PACIFIC
.49 KWAJALEIN ISLAND, PACIFIC
.52 SAN JUAN, PUERTO RICO
.54 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII


Monthly Mean K_T
October
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.55 GUANTANAMO BAY, CUBA
.47 KOROR ISLAND, PACIFIC
.48 KWAJALEIN ISLAND, PACIFIC
.52 SAN JUAN, PUERTO RICO
.55 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterresrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII

Appendix B


Monthly Mean K_T
November
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.57 GUANTANAMO BAY, CUBA
.48 KOROR ISLAND, PACIFIC
.49 KWAJALEIN ISLAND, PACIFIC
.53 SAN JUAN, PUERTO RICO
.57 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII


Monthly Mean K_T
December
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.57 GUANTANAMO BAY, CUBA
.46 KOROR ISLAND, PACIFIC
.51 KWAJALEIN ISLAND, PACIFIC
.52 SAN JUAN, PUERTO RICO
.56 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII

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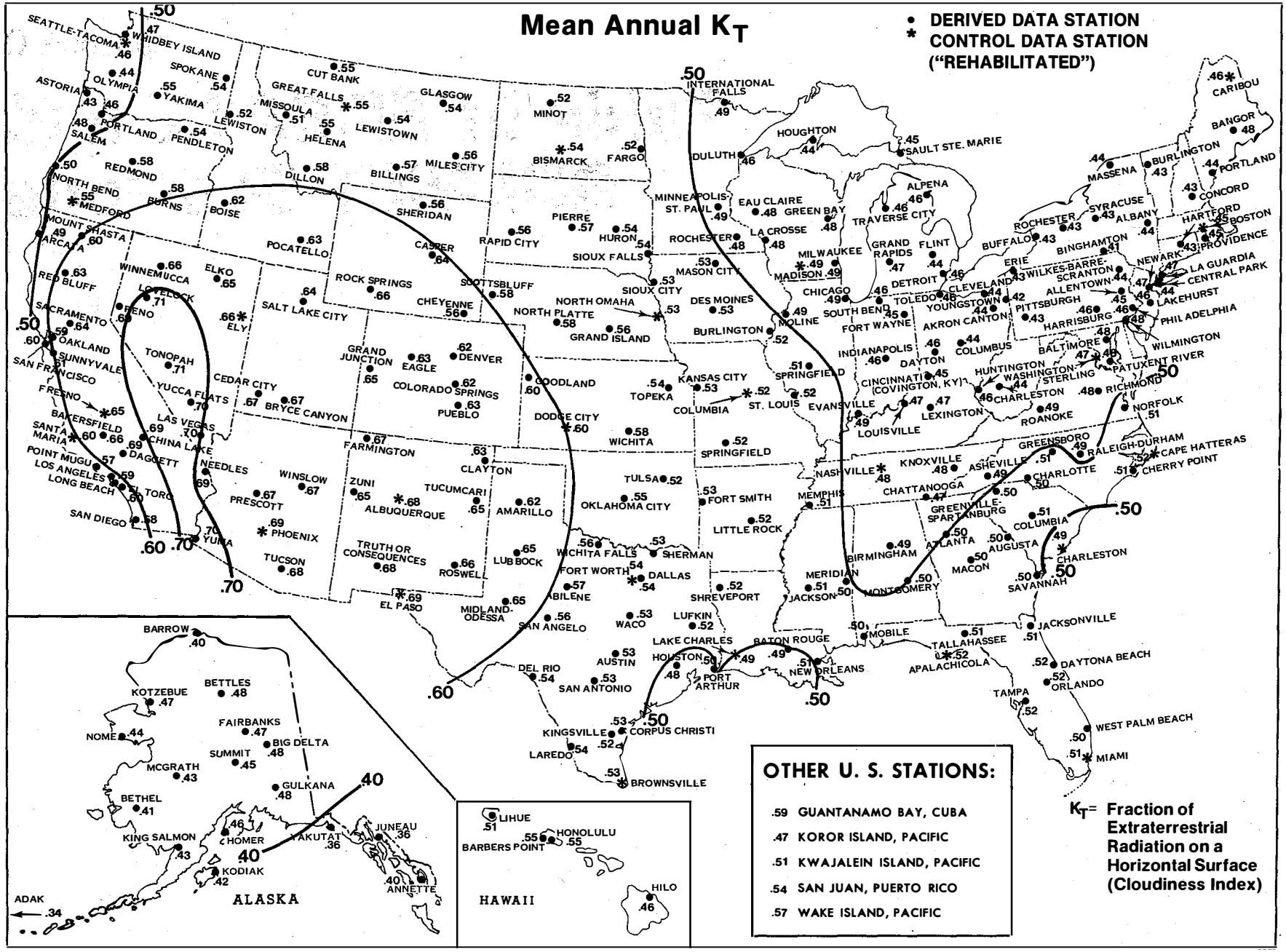
Mean Annual K_T
• DERIVED DATA STATION
* CONTROL DATA STATION
("REHABILITATED")
OTHER U. S. STATIONS:
.59 GUANTANAMO BAY, CUBA
.47 KOROR ISLAND, PACIFIC
.51 KWAJALEIN ISLAND, PACIFIC
.54 SAN JUAN, PUERTO RICO
.57 WAKE ISLAND, PACIFIC
K_T = Fraction of Extraterrestrial Radiation on a Horizontal Surface (Cloudiness Index)
ALASKA
HAWAII

Appendix C

Table of ERSATZ and SOLMET Stations

Data Stations

ERSATZ (derived) data stations, their respective SOLMET rehabilitated data control stations (in parentheses), and the pages on which their data appear.

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Akron-Canton, Ohio (25), p. 167
Albany, New York (7), p. 150
Allentown, Pennsylvania (25), p. 187
Alpena, Michigan (17), p. 102
Amarillo, Texas (10), p. 207
Annette, Alaska (24), p. 6
Arcata, California (18), p. 29
Asheville, North Carolina (20), p. 158
Astoria, Oregon (24), p. 176
Atlanta, Georgia (20), p. 64
Augusta, Georgia (20), p. 65
Austin, Texas (13), p. 208
Bakersfield, California (14), p. 30
Baltimore, Maryland (25), p. 99
Bangor, Maine (7), p. 96
Barbers Point, Hawaii (19), p. 68
Barrow, Alaska (24), p. 7
Baton Rouge, Louisiana (16), p. 92
Bethel, Alaska (24), p. 8
Bettles, Alaska (15), p. 9
Big Delta, Alaska (15), p. 10
Billings, Montana (15), p. 119
Binghamton, New York (25), p. 151
Birmingham, Alabama (20), p. 2
Boise, Idaho (12), p. 72
Bryce Canyon, Utah (12), p. 227
Buffalo, New York (25), p. 152
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Burlington, Vermont (7), p. 230
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Charlotte, North Carolina (20), p. 160
Chattanooga, Tennessee (20), p. 202
Cherry Point, North Carolina (6), p. 161
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Cincinnati, Ohio (25), p. 168
Clayton, New Mexico (10), p. 144
Cleveland, Ohio (25), p. 169
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Corpus Christi, Texas (5), p. 210
Cut Bank, Montana (15), p. 120
Daggett, California (14), p. 32
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Appendix D

Glossary

Glossary

Diffuse Radiation - Solar radiation that has been scattered in passing through the earth's atmosphere. It is equal to the global radiation less the direct normal component.

Direct $\bar{K}_T$ - For a particular month, the ratio of the average daily direct normal radiation to the average daily direct normal extraterrestrial radiation (ETR). When multiplied by 100, this ratio is the average percentage of possible radiation from the sun's disk.

Direct Normal Radiation - Solar beam radiation coming from the sun's disk (measured by a pyrheliometer). As used in this manual, the average daily sum of direct normal solar radiation.

ERSATZ Stations - Network stations in the U.S. where hourly radiation data were computed from observations of cloud cover and/or percentage of possible sunshine, as opposed to being measured with a radiometer.

Extraterrestrial Radiation (ETR) - The amount of solar radiation incident at the top of the atmosphere which is a function of the time of year, time of day, and latitude. The ETR can be calculated for any location when the date, time, and latitude are specified. A solar output of 1377 Wm^{-2} was used in the computations for this manual.

Global $\bar{K}_T$ - For a particular month, the ratio of the average daily global radiation to the average daily extraterrestrial radiation (ETR) on a horizontal surface.

Global Radiation - The sum of the direct, diffuse, and ground reflected solar radiation components incident on a flat surface of any orientation.

Heating/Cooling Degree-Days - Degree-days are expressed relative to a base of 18.3° C (65° F). Each degree that the mean daily temperature is below (or above) the base temperature constitutes one heating (or cooling) degree-day unit.

Insolation - The sum of direct, diffuse and ground reflected solar radiation components striking a surface of any orientation, summed over a given time period, such as daily, monthly or annually.

Pyranometer - A solar instrument (radiometer) that measures the sum of diffuse and direct normal radiation. (See "Global Radiation").

Phyrheliometer - An instrument (radiometer) for measuring the intensity of the direct normal solar or beam radiation component.

Radiometer - Any sensing instrument designed to measure radiation.

Rehabilitation of Solar Data - Measured global solar radiation data were adjusted for various known sensor inaccuracies at 26 selected SOLMET stations. Wherever possible, missing hourly data were filled using modeling techniques described in the SOLMET User's Manual, Vol. 2.

SOLMET Stations - The 26 National Weather Service (NWS) monitoring stations reporting hourly solar radiation and surface weather observations.

Total Global Radiation - As used in this manual, the average daily sum of global radiation on a horizontal surface as measured by a pyranometer.

WBAN - Weather Bureau Army and Navy identification number assigned to each observing station by the National Climatic Center. Cited as "Station No." or "SOLMET Station No." in the Data Tables.

Appendix E

Solar Energy Information Data Bank (SEIDB)

Solar Energy Information Data Bank (SEIDB)

The Solar Energy Information Data Bank is a national information network developed and operated by the Solar Energy Research Institute (SERI) under contract to the Department of Energy (DOE). The SEIDB network links central SEIDB operations at SERI with participating member organizations who, in turn, serve the solar information needs of their particular constituencies. Current participating members include DOE's four regional solar energy centers (the Mid-American Solar Energy Complex, the Northeast Solar Energy Center, the Southern Solar Energy Center, and the Western Solar Utilization Network) and the National Solar Heating and Cooling Information Center (NSHCIC) operated by the Franklin Research Center under contract to the Department of Housing and Urban Development. Network operations are currently being extended to encompass the participation of the state solar offices which are funded by the regional solar centers.

Products and services available through the SEIDB network include:

Information Dissemination - This service produces and distributes a variety of solar information products, including up-to-date directories, fact sheets, bibliographies, bulletins, promotional materials, and audio-visuals. An automated user profile system is used to ensure that needed information is packaged, announced, and delivered to the appropriate audience at the right time and place, and in the most useful format.

Information Center Serices - The Solar Energy Information Center at SERI maintains the nation's most comprehensive collection of solar-related publications and audiovisual productions. An online bibliographic data base, known as Solar Biblio, is being developed by the Center to assist in literature searches for documents held at SERI and elsewhere. Services provided by the Center for qualified users include technical reference services, document acquisition and delivery, interlibrary loans, literature searches, the preparation of bibliographies and literature reviews, and the preparation of abstracting and indexing bulletins.

On-line Data Bases - This service collects, validates, stores and provides on-line accessibility to data on a variety of solar-related subjects. In addition to the data bases developed and maintained by SERI, the SEIDB system also provides on-line access to several of the data bases developed and maintained by NSHCIC. Nationwide on-line access to the SEIDB data bases is currently provided through a commercial time-sharing service pending acquisition of a data base host system at SERI.

On-line Solar Simulation Models - An on-line models library, offering a full range of design tools for solar applications, is being assembled for access by SEIDB network users. These models are maintained on Control Data Corporation CYBER computers at the SERI Computer Center and are accessible nationwide through the TYMNET® value-added telecommunications network. Twenty-five models are expected to be available on-line by 1981.

Inquiry and Referral Services - Toll-free phone services at NSHCIC and SERI provide the SEIDB network with total subject coverage in responding to the public's need for solar information. Questions on passive and active heating, and cooling are handled by NSHCIC; inquiries on other solar technologies may be directed to SERI. Where appropriate, inquiries are referred to the DOE Technical Information Center for non-solar bibliographic information, and to the DOE Energy Information Administration's National Energy Information Center for general statistical information on energy resources, demand, and production.

How to Obtain Information

The following phone numbers may be used to obtain information from the SEIDB:

National Solar Heating and Cooling Information Center - responds to public questions regarding passive and active solar heating and cooling applications, including solar water heating.
(800) 523-2929
In Pennsylvania: (800) 462-4983
In Alaska and Hawaii: (800) 523-4700

National Alcohol Fuels Information Center - responds to public inquiries on questions related to alcohol fuels.
(800) 525-5555
In Colorado: (800) 332-8339

Solar Energy Information Center - provides technical reference, interlibrary loans, literature searches and bibliographic services on solar-related subjects for the United States Congress, DOE agencies, other Federal agencies, and their contractors.
Commercial: (303) 231-1415
FTS: 327-1415

Document Distribution Service - responds to requests for limited quantities of SERI-produced technical reports, SEIDB publications, and other information products.
Commercial: (303) 231-1158
FTS: 327-1158

In addition to these services, a toll-free number will be announced in the near future for a National Solar Inquiry and Referral Service. This service will respond to public inquiries on solar-related subjects other than the heating and cooling applications currently handled by the NSHCIC hotline. These include wood combustion, wind energy, photovoltaics, biomass conversion, agricultural and industrial process heat, and solar thermal conversion. Public questions on these subjects are being received on (303) 231-7303 until the toll-free number becomes available.

Written requests for information from SERI may be sent to the attention of the appropriate SEIDB service at the following address:

Solar Energy Research Institute
1617 Cole Boulevard
Golden, CO 80401

Regional Resources

The appropriate regional solar energy center should be contacted for local assistance and information on solar commercial applications involving passive solar heating and cooling, solar hot water, industrial process heat, small wind machines, and wood combustion.

Mid-American Solar Energy Center
8140 26th Ave. South
Bloomington, MN 55420
(612) 853-0400
Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Ohio, Nebraska, North Dakota, South Dakota, Wisconsin

Northeast Solar Energy Center
470 Atlantic Avenue
Boston, MA 02110
(617) 292-9250
Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

Southern Solar Energy Center
61 Perimeter Park
Atlanta, GA 30341
(404) 458-8765
Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, Virginia, West Virginia, Virgin Islands

Appendix E

Western SUN
Pioneer Park Building
715 SW Morrison Street
Portland, OR 97205
(503) 241-1222

Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Network Participation and On-line-Access

Organizations involved in the collection, processing, and dissemination of solar-related information are encouraged to participate as members of the SEIDB network. Network membership is currently open to Federal and state agencies and their contractors, universities, and other not-for-profit organizations engaged in the development or promotion of solar energy. Access to the SEIDB online data bases and models is available to all network members. Training on the use of these systems is being offered periodically throughout the year at the SERI facilities in Golden, Colorado.

Qualified organizations interested in network membership should call the SEIDB network coordinator at (303) 231-1032 or FTS 327-1032.

Appendix F

Bibliography

Bibliography

Use the following addresses when seeking information about publications available from:

NCC Publications
National Climatic Center
Federal Building
Asheville, NC 28801

NTIS National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

SERI Document Distribution Service
Solar Energy Research Institute
1617 Cole Boulevard
Golden, CO 80401

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Notes

Section 2

Direct Normal Solar Radiation Data

Direct Normal Solar Radiation Data Manual

Long-Term, Monthly Mean, Daily Totals for 235 National Weather Service Stations

Addendum to the Insolation Data Manual

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Thomas L. Stoffel

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Foreword

The *Direct Normal Solar Radiation Data Manual* was developed through the cooperative efforts of the Technical Information Office and the Renewable Resource Assessment and Instrumentation Branch of the Solar Energy Research Institute (SERI) on behalf of the U.S. Department of Energy (DOE).

The direct normal data presented here represent only a small part of a larger data base which provided the basis for the DOE/SERI *Solar Radiation Energy Resource Atlas of the United States* (1981). The *Direct Normal Solar Radiation Data Manual* is an addendum to an earlier DOE/SERI publication, the *Insolation Data Manual: Long-Term Monthly Averages of Solar Radiation, Temperature, Degree-Days, and Global K_T for 248 National Weather Service Stations* (Knapp, Stoffel, and Whitaker 1980). The data are estimates based on the Aerospace Direct Insolation Prediction Algorithm developed by The Aerospace Corporation and documentation compiled by the National Climatic Center of the National Oceanic and Atmospheric Administration.

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Section 1 0

Data Documentation

1.1 Introduction

The purpose of this report is to provide average monthly data that depict the long-term geographic distribution of U.S. direct normal solar radiation — solar radiation incident on a surface perpendicular to the sun's rays. Comprising up to 80% of the incoming total global solar radiation, the direct normal component is particularly important in the design and performance analysis of most solar energy systems and applications. Unfortunately, a comprehensive base (i.e., five years or more) of direct normal measurements has not yet been compiled for the United States or any given region within it. Hence, the interim data presented in this report are the result of a technique developed for estimating hourly direct normal solar radiation at selected locations. Specifically, long-term, monthly mean, daily totals of direct normal solar radiation were derived for 235 National Weather Service (NWS) stations, using a variation of The Aerospace Direct Insolation Prediction Algorithm (ADIPA) (Randall and Biddle 1981). This model was applied to approximately 23 years of solar radiation (global horizontal) and meteorological data available in the SOLMET and ERSATZ data bases. Both data bases cover a period generally from 1953 to 1975 and are maintained by the National Climatic Center (NCC) of the National Oceanic and Atmospheric Administration (NOAA). The SOLMET (SOLar METeorological) data base contains corrected measurements of hourly global horizontal solar radiation and meteorological data for 26 stations (Figure 1). The ERSATZ data base contains corrected hourly meteorological data and modeled hourly global horizontal data for 222 stations.*

The ADIPA technique for estimating direct normal solar radiation from global horizontal values in the SOLMET and ERSATZ data bases is summarized in Section 2.0. The majority of the direct normal data (i.e., for 209 ERSATZ stations) was generated for inclusion in the *Solar Radiation Energy Resource Atlas of the United States*† (DOE/SERI 1981). These data are tabulated on microfiche as monthly and annual mean daily totals for the 23-year period and are available from NCC. Direct normal estimates for the 26 SOLMET stations are similarly tabulated on microfiche and are also graphically presented in the Atlas in the form of run length plots for two different years and bar graphs which show average (23 years) hourly values for each month. The data tables in Section 2.0 are the result of extracting the long-term monthly and annual mean values from the microfiche just described. Contour maps depicting the seasonal (monthly) and geographic distribution of direct normal solar radiation in the United States, based on 235 NWS stations,‡ are provided in Appendix A of this report. Other contour maps in the Atlas depict the distribution of direct normal solar radiation above four threshold levels: 0.180, 0.360, 0.720, and 1.440 MJ/m^2-hr. §

Although all of the direct normal values are estimates, which reflect the accuracy of the algorithm and the input global radiation data used, their importance lies in the long-term period of record. As mentioned, the long-term averages are particularly useful to design engineers and performance analysts working to optimize solar systems in given locations. Ideally, direct normal data would be available for many more stations than are provided here. The limited network size is due to sparse meteorological and, in particular, solar radiation monitoring activities prior to 1976. Application of information in the data tables and on the contour maps, therefore, must be done with discretion because topographic and local meteorological conditions may vary significantly between a given station and a location of interest. The overall sparsity of stations precludes meaningful interpolation of values between the stations presented. Users are advised to select stations with climatic and topographic characteristics comparing most closely to their preferred location when specific data are lacking for that location.

In summary, this report presents long-term monthly and annual averages of direct normal solar radiation for 235 NWS stations, including a discussion of the basic derivation process. This effort is in response to a generally recognized need for reliable direct normal data and the recent availability of 23 years of hourly averages for 235 stations. The relative inaccessibility of these data on microfiche further justifies reproducing at least the long-term averages in a useful format. In

* Estimates of the hourly global horizontal radiation data for the 222 ERSATZ stations were made by the Air Resources Laboratory (ARL) of NOAA by applying regression techniques, derived from the meteorological and radiation measurements at the SOLMET stations to the ERSATZ meteorological data (Knapp, Stoffel, and Whitaker 1980; NOAA 1979).

† The *Solar Radiation Energy Resource Atlas of the United States* (1981) is the result of an extensive cooperative effort between SERI; DOE; ARL and NCC of NOAA; the Sandia Laboratories; EG&G, Inc.; and The Aerospace Corporation. The book portion of the Atlas can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, GPO Stock No. 061-000-00570-6. Microfiche for individual stations are available through NCC, with specific ordering information provided in Appendix A of the Atlas.

‡ The SOLMET and ERSATZ data bases actually account for 248 stations (26 SOLMET and 222 ERSATZ). However, because of technical difficulties, direct normal solar radiation data are available for only 209 of the ERSATZ stations.

§ The information presented in the threshold maps is useful in the design or selection of solar systems which operate above certain solar radiation levels. The average daily values shown in these maps were computed by summing the hourly values of the radiation above each of the preselected threshold levels.

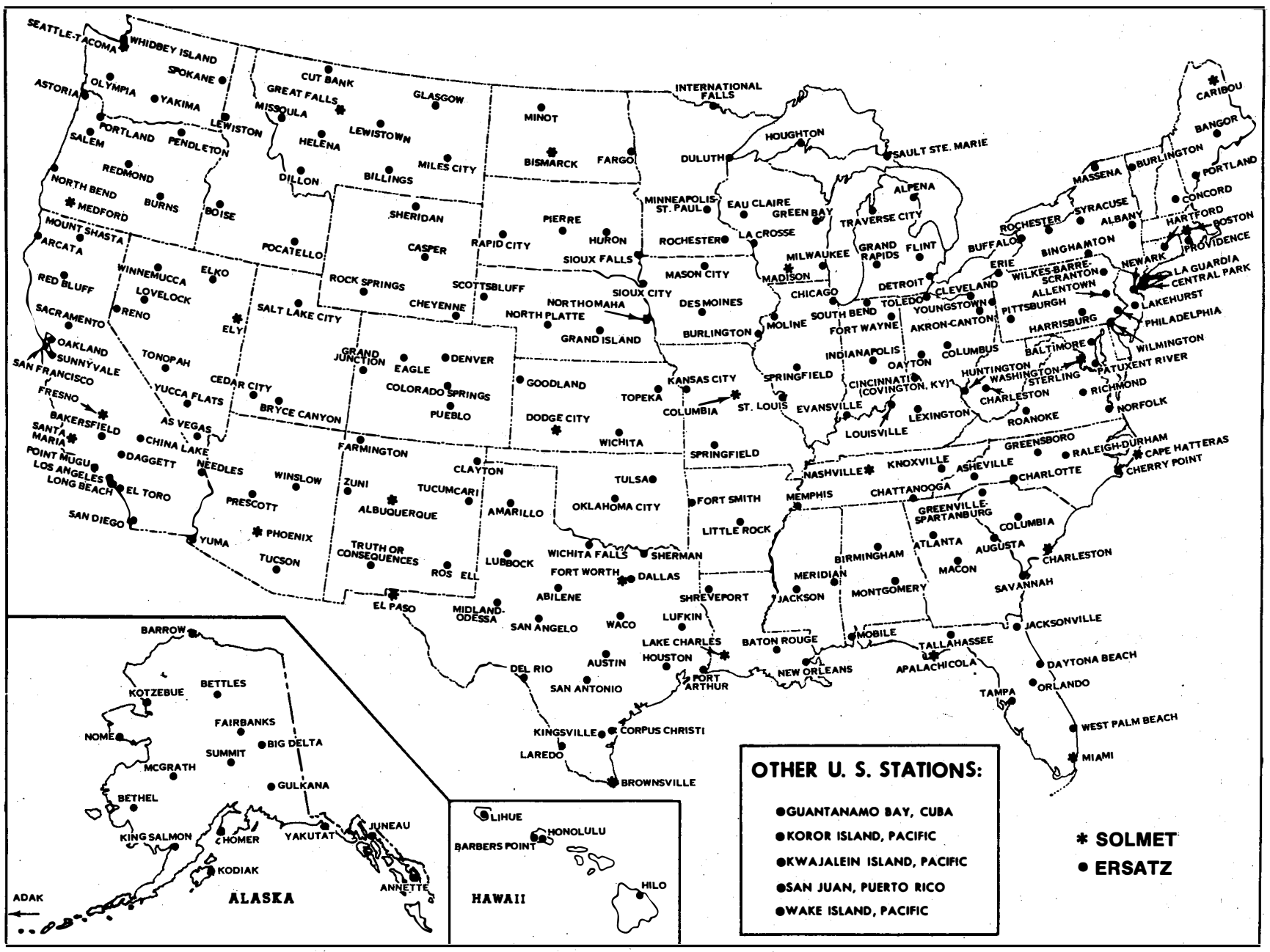

Figure 1. SOLMET/ERSATZ Station Network

addition to a definition of terms and an overview of the ADIPA model, a discussion of model validation results is presented in Section 1.2. A list of references is provided at the end of Section 1.0.

The direct normal estimates are tabulated in Section 2.0 for each of the 235 NWS stations. The long-term monthly and annual averages are listed in three typical units of measure: kJ/m²-day, kWh/m²-day, and Btu/ft²-day. The stations are arranged alphabetically, three per page, by city or island within each state or territory. Station identification numbers and SOLMET or ERSATZ designations are also included. More detailed information about individual stations is provided in Appendix B. This appendix gives the actual location (i.e., latitude, longitude), elevation, and periods of record for original meteorological measurements and global horizontal solar radiation for each of the SOLMET and ERSATZ stations. The long-term direct normal solar radiation data are also presented graphically, on monthly and annual contour plots, in Appendix A.

1.2 Discussion of Methodology

1.2.1 Background

Prior to the implementation of the NOAA/DOE Solar Monitoring Network in 1976, routine measurements of the direct normal component of solar radiation were available from only a few locations in the United States. As a result, several methods have been developed for estimating this parameter over hourly, daily, monthly, and annual time scales from more readily available measurements (Collares-Pereira and Rabl 1979; Hay 1976; Liu and Jordan 1960; Boes 1975). The problem of adequately reproducing the temporal variability of direct normal solar radiation on time scales of an hour limited the usefulness of these techniques. Under contract to the National Science Foundation (NSF) in 1973-74, The Aerospace Corporation began developing an improved technique based on a correlation between measurements of direct normal and global horizontal solar radiation. This work was a necessary part of a larger effort to provide a performance analysis for solar thermal electric power plants in the southwestern region of the United States.

Later, in 1975-77, revisions to the original regression techniques were made with funding from the Energy Research and Development Administration (ERDA) through Sandia Laboratories. DOE funded subsequent revisions as part of an effort to rehabilitate existing meteorological data, important to the solar energy conversion technologies, stored in the NCC archives. The resulting model, ADIPA, is described in this section. Significantly, ADIPA is regarded as *interim* methodology for computing hourly direct normal solar radiation from measurements of hourly global horizontal solar radiation. As more measurements become available, research will continue to improve the modeling techniques. The complete description of the methods developed at Aerospace, used in generating the hourly direct normal values for the rehabilitated SOLMET data base, can be found in Randall and Whitson (1977). Following the completion of the 26-station SOLMET project,* generation of the *Solar Radiation Energy Resource Atlas of the United States* required similar calculations of the direct normal component for an additional 209 stations. A simplified version of the Aerospace technique was used in this project and is the model described in this section.

1.2.2 Definition of Terms

Insolation is a measure of the solar radiation energy per unit area for a given time interval (i.e., minute, hour, day) on a surface of prescribed orientation. Three components describe the total insolation: direct, diffuse, and global.

Direct normal insolation (I) is the solar radiation on a surface perpendicular to the rays of the sun. Measurements of this component are made with a pyrheliometer usually having a 5.7° field of view. These instruments must be mounted in a tracking device.

Diffuse insolation (D) describes the scattered solar radiation due to the effects of dust particles, clouds, and atmospheric gases. If the surface receiving diffuse radiation is not horizontal, then reflected radiation from the surrounding ground area will also contribute to the diffuse insolation. A hemispheric field of view is assumed.

Global insolation (H), measured with a pyranometer, is the sum of the direct (modified for projection angle effects) and diffuse (sky and ground-reflected) insolation components incident on a flat surface of any orientation. In the case of a horizontal surface, the global insolation is the sum of the diffuse insolation (D) and the vertical component of the direct normal:

$$H = I \cos(z) + D \qquad (1)$$

where cos(z) is the cosine of the solar zenith angle (z) defined by the sun's direct radiation and the local vertical.

The zenith angle changes in the course of a day from 90° at sunrise to 0° when the sun is directly overhead.

* A 27th station, Stephenville, Texas, was processed, but data were only available for the period October 1974 - December 1975 and are not included in this discussion.

The concept of extraterrestrial radiation (ETR) is useful in eliminating the effects of geographic location (latitude) on the computation of the insolation components by normalizing them to a maximum theoretical amount, the ETR. The extraterrestrial direct normal solar radiation (I_O) is defined as the direct normal insolation at the top of the earth's atmosphere. Not affected by the scattering or absorbing constituents of the air, I_O varies because of the elliptical orbit of the earth about the sun and is calculated by:

$$I_O = (R_O/R)^2 S \tag{2}$$

where
R_O = mean earth-sun distance,
R = actual earth-sun distance for a given day,
S = 1377 W/m² (solar constant).

The instantaneous global insolation above the earth's atmosphere (H_O) is the direct component projected onto a horizontal surface, but without the diffuse component which does not exist above the atmosphere.

$$H_O = I_O \cos(z). \tag{3}$$

The normalization of the direct and global insolation components at the surface of the earth is achieved by considering them as percentages of extraterrestrial solar radiation.

The percent possible direct (PPD) insolation fraction is the ratio:

$$PPD = I/I_O. \tag{4}$$

The percent possible global (PPG) insolation fraction is the ratio:

$$PPG = H/H_O. \tag{5}$$

Methods for determining the solar zenith angle for any time and location on the earth's surface are widely available (Partridge and LaPlatt 1976; Taylor 1981; Walraven 1978).

1.2.3 **Description of the Model**

The ADIPA model for estimating hourly direct normal insolation is based on a correlation between direct and global insolation using a unique set of simultaneous measurements of both these radiation components taken from the best available sources in 1977 (Table 1). These hourly data values were carefully reviewed for accuracy and assembled for the development of the model.

Table 1. Data sets for development of regression of direct insolation on global insolation
(After Randall and Biddle 1981, pp. 1-5.)

Station Name Altitude	Period of Record
Livermore, CA 148.1 m (486 ft)	1 Aug 74 - 3 Oct 75
Raleigh, NC 134.4 m (441 ft)	20 Mar 75 - 1 Apr 76
Fort Hood, TX 239.2 m (1080 ft)	1 Sep 74 - 30 Jun 76
Maynard, MA 61.9 m (203 ft)	1 Jan 75 - 31 Dec 76
Albuquerque, NM 1619.7 m (5314 ft)	1 Jan 62 - 31 Dec 62

Two representative scatter diagrams are shown in Figure 2. The horizontal scale is percent possible global insolation (PPG). The vertical scale is percent possible direct normal insolation (PPD). From these scatter diagrams and for those of the complete data set, it is possible to compute the mean curve for PPD as a function of PPG as shown in Figure 3. The ADIPA model does account for a statistical variation about the mean correlation and improves the model's ability to estimate the hourly values of direct normal as required for the SOLMET data base rehabilitation. For the purposes of the Atlas and the data presented in this report, however, this statistical variation was assumed not to affect the long-term averages (e.g., monthly mean daily totals) and was not included in the calculations of direct normal solar radiation.

As a means of improving the quality of the regression on PPG, a number of transformations of PPD were examined. The final composite regression was selected in terms of the quantity PPD/T(z)

where

$$T(z) = 0.8847[\exp{-0.106f(z)}]. \tag{6}$$

Equation 6 is in turn a function of the solar zenith angle (z)

where

$$f(z) = \begin{cases} \sec(z), & z \leq 82° \quad (7) \\ h\,k(z), & z > 82°. \quad (8) \end{cases}$$

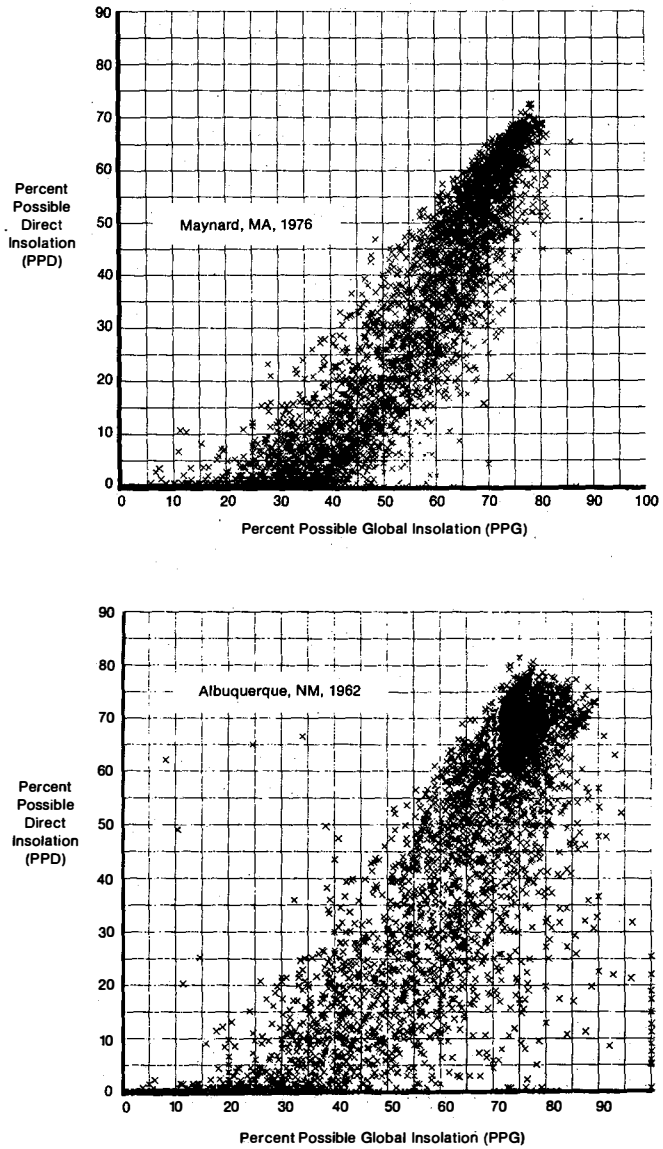

Figure 2. Comparison of coincident global and direct insolation at relatively clear (Albuquerque, NM) and cloudy (Maynard, MA) locations. Each plotting symbol represents an hourly average value. (Melton 1978, p. 10.)

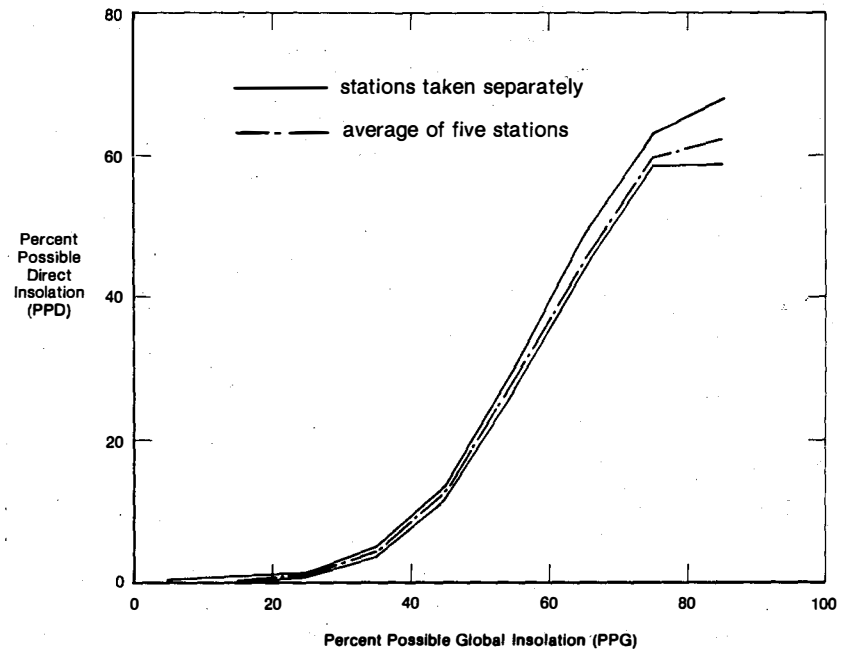

Figure 3. Bounds on preliminary regression for five stations: percent possible direct (PPD) versus percent possible global (PPG) insolation. (After Randall and Biddle 1981, pp. 1-8.)

The effective airmass function, k(z), is for large zenith angles as presented in Table 2. A pressure correction incorporates effects of station elevation

$$h = \begin{cases} 1 \text{ for altitudes} \leq 350.5 \text{ m (1150 ft)} & (9) \\ p^2 \text{ for altitudes} > 350.5 \text{ m (1150 ft)} & (10) \end{cases}$$

where
h = station elevation modifier
p = standard atmospheric pressure at that altitude divided by the standard sea-level pressure.

Dividing PPD by T(z) essentially removes a known dependency of PPD on the slant range air mass [a function of zenith angle (z)].

Table 2. Effective airmass function for large zenith angles. (Randall and Biddle 1981, pp. 1-9.)

Zenith Angle, z Î (degrees)	k(z) Î
82	7.1853
83	8.0
84	9.0
85	10.4
86	12.5
87	15.6
88	18.0
89	20.0
90	22.0

For each data pair (PPD,PPG) from the five data sets, a new pair [PPD/T(z),PPG] was formed. The regression was calculated using these new data pairs and the results were averaged for the five data stations as shown in Figure 4. Also shown in this figure are two sample distributions of the data spread using the Maynard, Massachusetts, measurements. This indicates the potential errors that may exist between any hourly measurement of direct normal and the estimate based on the mean curve relationship with global insolation. The data were grouped into 10% bins in PPG. Seasonal factors proved to be important, and a distinct average PPD/T(z) was computed for each month of the year, except for extremely high values of PPD for which the data were grouped independent of month. The results are shown in Table 3.

The results in Table 3 can be interpreted as a prediction of PPD/T(z) which is a function of PPG and the month of the year (m). This estimating function is denoted g(PPG,m). At a location for which an historical record of PPG is available, a corresponding record of PPD/T(z) can be calculated using the g(PPG,m) function defined by Table 3. In the full model used for generating the SOLMET data base, statistical variation around this expected value was simulated. This statistical simulation was omitted in the estimates for the ERSATZ data base, since only mean values are reported.

When the station altitude and solar time corresponding to the data series PPG are known, the corresponding function T(z) can be computed as described above, and the expected value of PPD can be obtained by

$$PPD = PPD/T(z) \times T(z). \quad (11)$$

Direct normal insolation in absolute units is obtained by

$$I = PPD \times I_o. \quad (12)$$

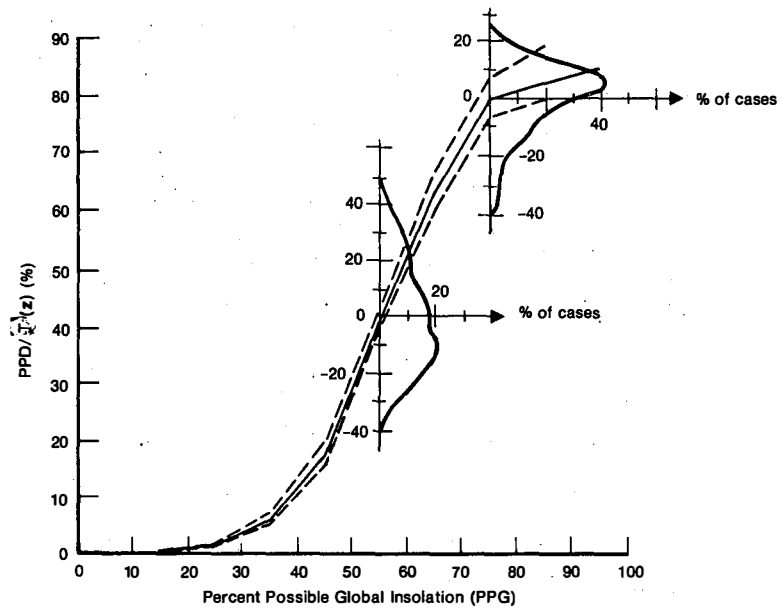

Figure 4. Plot of expected PPD/T(z) with sample distribution for Maynard, MA, data. The broken curves define the envelope containing the mean values of the five separate data sets. The solid curve between the broken lines is the mean of the five data sets. (After Randall and Biddle 1981, pp. 1-12.)

1.2.4 Model Validation

The accuracy of the complete ADIPA model was evaluated (Randall and Biddle 1981; Randall and Whitson 1977) by comparing the agreement of statistical descriptors of monthly performance, such as means and standard deviations, rather than the agreement of individual hourly values. Error analyses of the model are dependent upon the averaging time scale. An analysis of the yearly mean estimated direct normal insolation using measurements from Fort Hood, Texas, Maynard, Massachusetts, Raleigh, North Carolina, and Livermore, California, resulted in a mean error at all sites of -0.66% with a range of -3.78% to +2.15%.* The monthly averages at the same locations show a mean error at all sites of +0.02% with a range of -4.89% to +4.67%.** Two independent evaluations of the complete ADIPA technique were also reported (Hall et al. 1980; Turner and Mujahid 1980). Conflicting statistics from these studies are summarized in Table 4.

* See Table 4-1 in Randall and Whitson (1977).

**See Table 4-6 in Randall and Whitson (1977).

Table 3. Regression relation (g) of direct insolation [PPD/T(z)] on global insolation (PPG).
(After Randall and Biddle 1981, pp. 1-10.)

PPG (%)	g (PPG, month) (%)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.85	0.30	0.30	0.10	0.00	0.50	0.20	0.60	0.30	0.40	0.40	0.40
25	0.95	1.10	0.70	1.40	1.00	1.50	2.40	1.80	0.90	1.30	1.60	0.80
35	6.40	4.60	4.40	5.10	6.00	4.60	8.00	8.20	4.10	5.60	6.30	5.60
45	15.80	16.10	14.60	15.40	13.70	18.90	18.30	24.50	16.20	22.30	21.50	23.70
55	49.90	45.00	35.00	31.40	38.80	33.60	36.40	45.70	39.50	48.00	51.20	58.30
65	78.20	65.70	59.20	54.00	55.40	58.80	59.50	60.50	61.80	65.40	75.40	74.60
75	85.10	83.60	77.30	76.10	72.90	72.70	74.80	74.10	75.70	81.70	85.70	85.50
85	83.04	83.04	83.04	83.04	83.04	83.04	83.04	83.04	83.04	83.04	83.04	83.04
95	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00

Note: g (PPG, month) = PPD/T (z).

It is apparent from the comparisons that all factors that affect the accuracy of the results from the estimation algorithm are not known. Further evaluations of the method, both complete and modified versions, are planned using carefully evaluated sets of high quality data for multiyear periods from a wide variety of climatic regions.

The modified version of the ADIPA technique for estimating the direct normal insolation presented in this report has not been evaluated for its accuracy. Until measurements are available for a variety of stations and over sufficient time frames (1-year minimum), meaningful evaluations cannot be made.

Table 4. Median percent difference* between hourly estimated and hourly observed direct insolation
(After Randall and Biddle 1981, pp. 1-23.)

	Albuquerque	Argonne	Barstow W. Assoc.	Barstow LBL	China Lake	Ft. Hood	Toronto	Vancouver
1976								
Jan	—	—	-0.2	—	—	—	—	—
Feb	—	—	-5.2	—	—	—	—	—
Mar	—	—	-6.2	—	—	—	—	—
Apr	—	—	-5.8	—	—	—	—	—
May	—	—	-7.1	—	—	—	—	—
Jun	-6.0	—	-11.0	—	—	—	—	—
Jul	-11.4	—	-8.8	—	—	—	—	—
Aug	-9.4	—	-13.0	—	-24.0	-14.4	—	—
Sep	—	—	-1.6	—	—	—	—	—
Oct	-19.8	—	-9.6	—	-16.5	—	—	—
Nov	-22.1	—	-14.5	—	-12.6	-0.15	+23.8	—
Dec	-11.7	—	-7.5	—	-6.9	+0.1	+26.3	—
1977								
Jan	-13.5	—	-1.5	—	+0.3	-3.6	+45.7	—
Feb	-15.2	—	-10.4	—	-8.5	—	+25.4	—
Mar	—	—	-4.9	—	—	-0.2	+0.9	—
Apr	-9.1	—	-9.8	—	—	—	+0.8	—
May	-11.9	—	-7.8	—	—	—	-6.4	—
Jun	—	—	-17.2	—	—	—	-3.8	—
Jul	-8.6	—	-14.0	—	—	—	+1.9	—
Aug	—	—	-7.7	-19.4	—	—	+4.7	-14.5
Sep	—	-5.4	-12.1	-19.8	—	—	-0.5	+0.3
Oct	-10.0	-15.7	-8.9	-18.8	—	—	-0.9	+5.8
Nov	-16.0	-2.2	-5.6	-16.4	—	—	+7.6	+0.3
Dec	-20.8	-0.6	-2.8	-16.5	—	—	+3.6	+0.4
1978								
Jan	—	—	—	—	—	—	+54.4	+6.3
Feb	—	—	—	—	—	—	+42.5	+2.5
Mar	—	—	—	—	—	—	+5.5	+2.9
Apr	—	+6.8	—	—	—	—	—	+15.6
May	—	—	—	-16.7	—	—	—	-0.9
Jun	—	—	—	-19.3	—	—	—	+4.0
Jul	—	—	—	—	—	—	—	-2.3

* Differences in percent of observed direct insolation, where negative values signify that hourly estimates are less than observed levels.

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Section 2.0

Direct Normal Data Tables for 235 National Weather Service Stations

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13876 BIRMINGHAM, AL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9756	859.6	2.71
FEB	11374	1002.2	3.16
MAR	12907	1137.3	3.59
APR	15388	1355.9	4.27
MAY	16230	1430.1	4.51
JUN	15977	1407.8	4.44
JUL	14842	1307.8	4.12
AUG	15974	1407.5	4.44
SEP	14086	1241.2	3.91
OCT	15328	1350.6	4.26
NOV	12397	1092.3	3.44
DEC	9964	878.0	2.77
ANN	13687	1206.0	3.80

STATION NO 13894 MOBILE, AL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9288	818.4	2.58
FEB	11361	1001.1	3.16
MAR	12434	1095.6	3.45
APR	13609	1199.1	3.78
MAY	14808	1304.8	4.11
JUN	13760	1212.4	3.82
JUL	12059	1062.6	3.35
AUG	13239	1166.5	3.68
SEP	12239	1078.4	3.40
OCT	15032	1324.5	4.18
NOV	12172	1072.5	3.38
DEC	9459	833.5	2.63
ANN	12458	1097.7	3.46

STATION NO 13895 MONTGOMERY, AL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10130	892.6	2.81
FEB	11809	1040.5	3.28
MAR	13346	1176.0	3.71
APR	15916	1402.4	4.42
MAY	16874	1486.8	4.69
JUN	16810	1481.2	4.67
JUL	15170	1336.7	4.21
AUG	16112	1419.7	4.48
SEP	14080	1240.6	3.91
OCT	15836	1395.4	4.40
NOV	13269	1169.2	3.69
DEC	10955	965.3	3.04
ANN	14201	1251.3	3.95

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 25704 ADAK, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	2617	230.6	.73
FEB	4191	369.3	1.16
MAR	5312	468.1	1.48
APR	6374	561.6	1.77
MAY	5787	509.9	1.61
JUN	4906	432.3	1.36
JUL	5230	460.8	1.45
AUG	5178	456.3	1.44
SEP	5040	444.1	1.40
OCT	5503	484.9	1.53
NOV	4451	392.2	1.24
DEC	2568	226.3	.71
ANN	4763	419.7	1.32

STATION NO 25308 ANNETTE, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3005	264.8	.83
FEB	4900	431.8	1.36
MAR	7785	686.0	2.16
APR	11268	992.9	3.13
MAY	12992	1144.8	3.61
JUN	10805	952.1	3.00
JUL	11862	1045.2	3.30
AUG	10285	906.3	2.86
SEP	7846	691.3	2.18
OCT	4267	376.0	1.19
NOV	3118	274.7	.87
DEC	1830	161.2	.51
ANN	7508	661.6	2.09

STATION NO 26615 BETHEL, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	1708	150.5	.47
FEB	5967	525.8	1.66
MAR	11092	977.4	3.08
APR	14099	1242.3	3.92
MAY	13143	1158.1	3.65
JUN	11942	1052.3	3.32
JUL	9546	841.1	2.65
AUG	6475	570.5	1.80
SEP	6642	585.3	1.85
OCT	4886	430.5	1.36
NOV	2228	196.3	.62
DEC	691	60.9	.19
ANN	7364	648.9	2.05

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 26415 BIG DELTA, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	785	69.2	.22
FEB	5002	440.7	1.39
MAR	12616	1111.6	3.50
APR	16291	1435.5	4.53
MAY	18751	1652.2	5.21
JUN	17708	1560.3	4.92
JUL	16562	1459.3	4.60
AUG	14075	1240.2	3.91
SEP	10060	886.4	2.79
OCT	5362	472.5	1.49
NOV	2027	178.6	.56
DEC	39	3.4	.01
ANN	9960	877.6	2.77

STATION NO 26411 FAIRBANKS, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	326	28.7	.09
FEB	3895	343.2	1.08
MAR	11178	984.9	3.11
APR	14818	1305.7	4.12
MAY	16998	1497.8	4.72
JUN	16924	1491.2	4.70
JUL	15307	1348.8	4.25
AUG	11720	1032.7	3.26
SEP	9119	803.5	2.53
OCT	4944	435.6	1.37
NOV	1558	137.3	.43
DEC	7	.6	0.00
ANN	9196	810.3	2.55

STATION NO 26425 GULKANA, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	1116	98.3	.31
FEB	5183	456.7	1.44
MAR	12212	1076.0	3.39
APR	16277	1434.2	4.52
MAY	16703	1471.8	4.64
JUN	16819	1482.0	4.67
JUL	16350	1440.7	4.54
AUG	14201	1251.3	3.95
SEP	10135	893.0	2.82
OCT	6977	614.8	1.94
NOV	2402	211.6	.67
DEC	297	26.2	.08
ANN	9909	873.1	2.75

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 25507 HOMER, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	2279	200.8	.63
FEB	5857	516.1	1.63
MAR	11120	979.8	3.09
APR	14416	1270.3	4.00
MAY	15161	1335.9	4.21
JUN	15972	1407.4	4.44
JUL	15187	1338.2	4.22
AUG	11514	1014.5	3.20
SEP	8493	748.4	2.36
OCT	6716	591.8	1.87
NOV	3496	308.0	.97
DEC	1006	88.6	.28
ANN	9280	817.7	2.58

STATION NO 25309 JUNEAU, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	1969	173.5	.55
FEB	3816	336.2	1.06
MAR	6810	600.1	1.89
APR	10205	899.2	2.83
MAY	10870	957.8	3.02
JUN	10676	940.7	2.97
JUL	9617	847.4	2.67
AUG	8020	706.7	2.23
SEP	5271	464.4	1.46
OCT	3026	266.6	.84
NOV	2226	196.1	.62
DEC	760	67.0	.21
ANN	6112	538.6	1.70

STATION NO 25503 KING SALMON, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3007	265.0	.84
FEB	6630	584.2	1.84
MAR	11358	1000.8	3.16
APR	13224	1165.2	3.67
MAY	13034	1148.5	3.62
JUN	11975	1055.2	3.33
JUL	10997	969.0	3.05
AUG	8616	759.2	2.39
SEP	7808	688.0	2.17
OCT	7671	675.9	2.13
NOV	4481	394.8	1.24
DEC	2012	177.3	.56
ANN	8408	740.9	2.34

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 25501 KOKIAK, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	2721	239.8	.76
FEB	5634	496.4	1.57
MAR	10207	899.4	2.84
APR	12941	1140.3	3.60
MAY	11384	1003.1	3.16
JUN	12257	1080.0	3.40
JUL	11709	1031.7	3.25
AUG	11112	979.1	3.09
SEP	8256	727.5	2.29
OCT	7751	683.0	2.15
NOV	4502	396.7	1.25
DEC	1827	161.0	.51
ANN	8342	735.0	2.32

STATION NO 26510 MCGRATH, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	929	81.9	.26
FEB	5001	440.7	1.39
MAR	11253	991.5	3.13
APR	14849	1308.4	4.13
MAY	14347	1264.2	3.99
JUN	13157	1159.3	3.66
JUL	11604	1022.5	3.22
AUG	8939	787.7	2.48
SEP	7618	671.3	2.12
OCT	4596	405.0	1.28
NOV	1945	171.4	.54
DEC	140	12.3	.04
ANN	7870	693.5	2.19

STATION NO 26617 NOME, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	345	30.4	.10
FEB	4544	400.4	1.26
MAR	10270	904.9	2.85
APR	16194	1426.9	4.50
MAY	17603	1551.1	4.89
JUN	18343	1616.3	5.10
JUL	13264	1168.7	3.68
AUG	9255	815.5	2.57
SEP	7859	692.5	2.18
OCT	4819	424.6	1.34
NOV	907	79.9	.25
DEC	7	.6	0.00
ANN	8844	779.3	2.46

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 26414 SUMMIT, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	1063	93.7	.30
FEB	5249	462.5	1.46
MAR	12298	1083.6	3.42
APR	16923	1491.2	4.70
MAY	18769	1653.8	5.21
JUN	15124	1332.6	4.20
JUL	13371	1178.2	3.71
AUG	10543	929.0	2.93
SEP	9077	799.8	2.52
OCT	7203	634.7	2.00
NOV	3056	269.3	.85
DEC	169	14.9	.05
ANN	9417	829.8	2.62

STATION NO 25339 YAKUTAT, AK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	1578	139.0	.44
FEB	3596	316.9	1.00
MAR	7420	653.8	2.06
APR	10491	924.4	2.91
MAY	10424	918.5	2.90
JUN	8933	787.1	2.48
JUL	8160	719.0	2.27
AUG	7282	641.6	2.02
SEP	5380	474.1	1.49
OCT	4171	367.5	1.16
NOV	2133	187.9	.59
DEC	627	55.2	.17
ANN	5857	516.1	1.63

STATION NO 23183 PHOENIX, AZ (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	18380	1619.5	5.11
FEB	21414	1886.9	5.95
MAR	23523	2081.5	6.56
APR	28978	2553.4	8.05
MAY	31903	2811.1	8.86
JUN	31638	2787.8	8.79
JUL	27926	2460.7	7.76
AUG	26957	2375.3	7.49
SEP	25795	2272.9	7.17
OCT	23621	2081.3	6.56
NOV	20267	1785.8	5.63
DEC	17689	1558.6	4.91
ANN	24855	2190.1	6.90

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23184 PRESCOTT, AZ (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20686	1822.7	5.75
FEB	22480	1980.8	6.24
MAR	25006	2203.4	6.95
APR	29886	2633.4	8.30
MAY	33622	2962.6	9.34
JUN	34781	3064.7	9.66
JUL	26357	2322.4	7.32
AUG	24981	2201.2	6.94
SEP	27006	2379.6	7.50
OCT	25402	2238.3	7.06
NOV	22987	2025.5	6.39
DEC	20122	1773.0	5.59
ANN	26114	2301.0	7.25

STATION NO 23160 TUCSON, AZ (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20650	1819.6	5.74
FEB	22975	2024.4	6.38
MAR	25406	2238.6	7.06
APR	30253	2665.7	8.40
MAY	33068	2913.8	9.19
JUN	32899	2898.9	9.14
JUL	25719	2266.2	7.14
AUG	25190	2219.6	7.00
SEP	25411	2239.1	7.06
OCT	24783	2183.7	6.88
NOV	22063	1944.1	6.13
DEC	19365	1706.3	5.38
ANN	25616	2257.1	7.12

STATION NO 23194 WINSLOW, AZ (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	19740	1739.4	5.48
FEB	22375	1971.6	6.22
MAR	25067	2208.8	6.96
APR	30051	2647.9	8.35
MAY	32924	2901.1	9.15
JUN	33518	2953.4	9.31
JUL	26471	2332.5	7.35
AUG	25503	2247.2	7.08
SEP	26190	2307.7	7.28
OCT	24557	2163.8	6.82
NOV	22423	1975.8	6.23
DEC	18994	1673.6	5.28
ANN	25650	2260.1	7.13

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23195 YUMA, AZ (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	19923	1755.5	5.53
FEB	22929	2020.4	6.37
MAR	25702	2264.7	7.14
APR	30460	2684.0	8.46
MAY	33213	2926.5	9.23
JUN	33712	2970.5	9.37
JUL	29073	2561.7	8.08
AUG	27488	2422.1	7.64
SEP	26556	2340.0	7.38
OCT	24754	2181.2	6.88
NOV	21660	1908.5	6.02
DEC	19007	1674.8	5.28
ANN	26211	2309.6	7.28

STATION NO 13964 FORT SMITH, AR (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11935	1051.6	3.32
FEB	13590	1197.5	3.78
MAR	14068	1239.6	3.91
APR	15448	1361.2	4.29
MAY	17879	1575.4	4.97
JUN	19773	1742.3	5.49
JUL	20510	1807.2	5.70
AUG	19639	1730.5	5.46
SEP	16000	1409.8	4.44
OCT	15882	1399.4	4.41
NOV	13533	1192.4	3.76
DEC	11464	1010.1	3.18
ANN	15823	1394.2	4.40

STATION NO 13963 LITTLE ROCK, AR (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11348	999.9	3.15
FEB	13494	1189.0	3.75
MAR	13916	1226.2	3.87
APR	15101	1330.6	4.20
MAY	17795	1568.0	4.94
JUN	20040	1765.8	5.57
JUL	19693	1735.2	5.47
AUG	19123	1685.0	5.31
SEP	16145	1422.6	4.49
OCT	16266	1433.3	4.52
NOV	13068	1151.5	3.63
DEC	10945	964.4	3.04
ANN	15605	1375.0	4.34

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24283 ARCATA, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7354	648.0	2.04
FEB	9442	832.0	2.62
MAR	10728	945.3	2.98
APR	14717	1296.8	4.09
MAY	15705	1383.8	4.36
JUN	17186	1514.3	4.77
JUL	15360	1353.4	4.27
AUG	14188	1250.2	3.94
SEP	13594	1197.8	3.78
OCT	11101	978.2	3.08
NOV	7586	668.4	2.11
DEC	6971	614.2	1.94
ANN	12000	1057.4	3.33

STATION NO 23155 BAKERSFIELD, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10969	966.5	3.05
FEB	14776	1302.0	4.10
MAR	19214	1693.0	5.34
APR	24425	2152.2	6.79
MAY	28740	2532.4	7.98
JUN	32729	2883.9	9.09
JUL	32591	2871.7	9.05
AUG	30394	2678.1	8.44
SEP	26596	2343.5	7.39
OCT	22092	1946.6	6.14
NOV	15185	1338.0	4.22
DEC	10059	886.3	2.79
ANN	22345	1968.9	6.21

STATION NO 93104 CHINA LAKE, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16515	1455.2	4.59
FEB	18800	1656.5	5.22
MAR	23094	2034.9	6.42
APR	28056	2472.1	7.79
MAY	30478	2685.5	8.47
JUN	33619	2962.3	9.34
JUL	32074	2826.2	8.91
AUG	30381	2677.0	8.44
SEP	27398	2414.1	7.61
OCT	23533	2073.6	6.54
NOV	19166	1688.8	5.32
DEC	17023	1500.0	4.73
ANN	25036	2206.0	6.96

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23161 DAGGETT, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	17535	1545.1	4.87
FEB	19835	1747.7	5.51
MAR	23761	2093.7	6.60
APR	28819	2539.4	8.01
MAY	31267	2755.1	8.69
JUN	33815	2979.6	9.39
JUL	31518	2777.2	8.76
AUG	29949	2638.9	8.32
SEP	27323	2407.5	7.59
OCT	23933	2108.8	6.65
NOV	19857	1749.7	5.52
DEC	17392	1532.5	4.83
ANN	25437	2241.4	7.07

STATION NO 93101 EL TORO, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16015	1411.1	4.45
FEB	17772	1566.0	4.94
MAR	18490	1629.2	5.14
APR	20093	1770.5	5.58
MAY	19364	1706.2	5.38
JUN	20951	1846.1	5.82
JUL	25732	2267.3	7.15
AUG	24150	2128.0	6.71
SEP	20032	1765.1	5.56
OCT	18040	1589.6	5.01
NOV	16611	1463.7	4.61
DEC	15632	1377.4	4.34
ANN	19419	1711.1	5.39

STATION NO 93193 FRESNO, CA (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9338	822.8	2.59
FEB	13594	1197.8	3.78
MAR	19504	1718.6	5.42
APR	24704	2176.8	6.86
MAY	28780	2535.9	8.00
JUN	32322	2848.0	8.98
JUL	32591	2871.7	9.05
AUG	30426	2681.0	8.45
SEP	26530	2337.7	7.37
OCT	21737	1915.3	6.04
NOV	14430	1271.5	4.01
DEC	8490	748.1	2.36
ANN	21905	1930.1	6.09

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23129 LONG BEACH, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	15525	1368.0	4.31
FEB	17299	1524.3	4.81
MAR	18637	1642.2	5.18
APR	20500	1806.3	5.69
MAY	19519	1719.9	5.42
JUN	19902	1753.6	5.53
JUL	24624	2169.7	6.84
AUG	23172	2041.8	6.44
SEP	19143	1686.8	5.32
OCT	17416	1534.6	4.84
NOV	16031	1412.6	4.45
DEC	14968	1318.9	4.16
ANN	18907	1666.0	5.25

STATION NO 24215 MOUNT SHASTA, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9729	857.3	2.70
FEB	12749	1123.4	3.54
MAR	14718	1296.9	4.09
APR	19430	1712.1	5.40
MAY	24029	2117.3	6.68
JUN	28483	2509.8	7.91
JUL	32870	2896.3	9.13
AUG	29025	2557.5	8.06
SEP	24509	2159.6	6.81
OCT	18581	1637.2	5.16
NOV	11034	972.2	3.07
DEC	9617	847.4	2.67
ANN	19602	1727.2	5.45

STATION NO 23230 OAKLAND, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11283	994.2	3.13
FEB	14074	1240.1	3.91
MAR	16903	1489.4	4.70
APR	21271	1874.3	5.91
MAY	22829	2011.6	6.34
JUN	24478	2156.9	6.80
JUL	25264	2226.1	7.02
AUG	23133	2038.3	6.43
SEP	20440	1801.1	5.68
OCT	16779	1478.5	4.66
NOV	12903	1136.9	3.58
DEC	11333	998.6	3.15
ANN	18409	1622.1	5.11

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 93111 POINT MUGU, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	15792	1391.5	4.39
FEB	17574	1548.5	4.88
MAR	19443	1713.2	5.40
APR	20962	1847.0	5.82
MAY	19064	1679.8	5.30
JUN	18273	1610.1	5.08
JUL	21157	1864.2	5.88
AUG	19962	1758.9	5.55
SEP	17136	1509.9	4.76
OCT	16966	1494.9	4.71
NOV	16302	1436.4	4.53
DEC	15587	1373.4	4.33
ANN	18190	1602.8	5.05

STATION NO 24216 RED BLUFF, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8578	755.8	2.38
FEB	11972	1054.9	3.33
MAR	15794	1391.7	4.39
APR	21841	1924.5	6.07
MAY	26832	2364.3	7.45
JUN	30490	2686.6	8.47
JUL	33150	2921.0	9.21
AUG	29619	2609.8	8.23
SEP	25508	2247.6	7.09
OCT	18944	1669.2	5.26
NOV	11229	989.4	3.12
DEC	8402	740.3	2.33
ANN	20237	1783.2	5.62

STATION NO 23232 SACRAMENTO, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8105	714.2	2.25
FEB	12320	1085.6	3.42
MAR	17603	1551.1	4.89
APR	23673	2085.9	6.58
MAY	27912	2459.4	7.75
JUN	31874	2808.5	8.85
JUL	33158	2921.7	9.21
AUG	30145	2656.2	8.37
SEP	25901	2282.2	7.20
OCT	20057	1767.3	5.57
NOV	12266	1080.8	3.41
DEC	7975	702.7	2.22
ANN	20954	1846.3	5.82

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23188 SAN DIEGO, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16243	1431.2	4.51
FEB	18000	1586.1	5.00
MAR	18718	1649.3	5.20
APR	20027	1764.7	5.56
MAY	17955	1582.1	4.99
JUN	18065	1591.8	5.02
JUL	22274	1962.7	6.19
AUG	21917	1931.2	6.09
SEP	19153	1687.6	5.32
OCT	18053	1590.7	5.02
NOV	16982	1496.4	4.72
DEC	15894	1400.5	4.42
ANN	18612	1640.0	5.17

STATION NO 23234 SAN FRANCISCO, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11282	994.1	3.13
FEB	13797	1215.7	3.83
MAR	16867	1486.2	4.69
APR	21220	1869.8	5.89
MAY	23230	2046.9	6.45
JUN	25192	2219.8	7.00
JUL	26877	2368.2	7.47
AUG	24630	2170.2	6.84
SEP	21389	1884.7	5.94
OCT	17108	1507.5	4.75
NOV	12948	1140.9	3.60
DEC	11066	975.1	3.07
ANN	18823	1658.6	5.23

STATION NO 23273 SANTA MARIA, CA (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	14351	1264.5	3.99
FEB	16316	1437.7	4.53
MAR	19235	1694.9	5.34
APR	20847	1836.9	5.79
MAY	22025	1940.7	6.12
JUN	24840	2188.8	6.90
JUL	25532	2249.7	7.09
AUG	23661	2084.9	6.57
SEP	20234	1782.9	5.62
OCT	19116	1684.4	5.31
NOV	16044	1413.7	4.46
DEC	14720	1297.0	4.09
ANN	19776	1742.5	5.49

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23244 SUNNYVALE, CA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11436	1007.7	3.18
FEB	13929	1227.3	3.87
MAR	16931	1491.9	4.70
APR	21067	1856.3	5.85
MAY	23917	2107.4	6.64
JUN	26609	2344.6	7.39
JUL	27796	2449.2	7.72
AUG	25670	2261.9	7.13
SEP	21902	1929.9	6.08
OCT	17614	1552.0	4.89
NOV	13357	1176.9	3.71
DEC	11247	991.0	3.12
ANN	19315	1701.9	5.37

STATION NO 93037 COLORADO SPRINGS, CO (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	21549	1898.8	5.99
FEB	22328	1967.4	6.20
MAR	23135	2038.5	6.43
APR	24352	2145.8	6.76
MAY	24015	2116.1	6.67
JUN	27024	2381.2	7.51
JUL	25151	2216.2	6.99
AUG	24983	2201.4	6.94
SEP	24871	2191.5	6.91
OCT	23855	2102.0	6.63
NOV	21254	1872.8	5.90
DEC	19607	1727.7	5.45
ANN	23510	2071.6	6.53

STATION NO 23062 DENVER, CO (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20001	1762.4	5.56
FEB	21343	1880.6	5.93
MAR	22589	1990.4	6.28
APR	23501	2070.8	6.53
MAY	24147	2127.7	6.71
JUN	26495	2334.6	7.36
JUL	26352	2322.0	7.32
AUG	25472	2244.4	7.08
SEP	24530	2161.4	6.81
OCT	22841	2012.6	6.35
NOV	19662	1732.5	5.46
DEC	18189	1602.7	5.05
ANN	22932	2020.6	6.37

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23063 EAGLE, CO (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16310	1437.1	4.53
FEB	18990	1673.3	5.28
MAR	20764	1829.6	5.77
APR	23019	2028.3	6.39
MAY	26106	2300.3	7.25
JUN	29915	2635.9	8.31
JUL	28430	2505.1	7.90
AUG	26031	2293.7	7.23
SEP	24575	2165.4	6.83
OCT	22152	1951.9	6.15
NOV	18123	1596.9	5.03
DEC	16258	1432.6	4.52
ANN	22568	1988.6	6.27

STATION NO 23066 GRAND JUNCTION, CO (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16835	1483.4	4.68
FEB	19477	1716.2	5.41
MAR	21404	1886.0	5.95
APR	23866	2102.9	6.63
MAY	28079	2474.2	7.80
JUN	30816	2715.3	8.56
JUL	29053	2560.0	8.07
AUG	27262	2402.2	7.57
SEP	25412	2239.2	7.06
OCT	22399	1973.7	6.22
NOV	18911	1666.3	5.25
DEC	16970	1495.3	4.71
ANN	23388	2060.8	6.50

STATION NO 93058 PUEBLO, CO (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20691	1823.2	5.75
FEB	21220	1869.8	5.89
MAR	22636	1994.5	6.29
APR	24173	2130.0	6.72
MAY	23994	2114.2	6.67
JUN	27616	2433.4	7.67
JUL	26382	2324.6	7.33
AUG	26001	2291.1	7.22
SEP	24509	2159.6	6.81
OCT	23153	2040.1	6.43
NOV	20458	1802.6	5.68
DEC	18683	1646.2	5.19
ANN	23298	2052.9	6.47

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14740 HARTFORD, CT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	6954	612.7	1.93
FEB	8568	755.0	2.38
MAR	9093	801.2	2.53
APR	11038	972.6	3.07
MAY	12759	1124.2	3.54
JUN	13432	1183.5	3.73
JUL	13058	1150.6	3.63
AUG	12324	1085.9	3.42
SEP	10742	946.5	2.98
OCT	10333	910.5	2.87
NOV	6087	536.3	1.69
DEC	5390	474.9	1.50
ANN	9988	880.1	2.77

STATION NO 11706 GUANTANAMO BAY, CU (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	19832	1747.5	5.51
FEB	20110	1772.0	5.59
MAR	19940	1757.0	5.54
APR	20671	1821.4	5.74
MAY	18011	1587.0	5.00
JUN	16942	1492.8	4.71
JUL	19659	1732.2	5.46
AUG	19710	1736.7	5.48
SEP	17560	1547.3	4.88
OCT	17539	1545.4	4.87
NOV	19260	1697.1	5.35
DEC	10290	906.7	2.86
ANN	19040	1677.7	5.29

STATION NO 13781 WILMINGTON, DE (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8555	753.8	2.38
FEB	10358	912.7	2.88
MAR	11802	1039.9	3.28
APR	13167	1160.2	3.66
MAY	14553	1282.3	4.04
JUN	15977	1407.8	4.44
JUL	15745	1387.4	4.37
AUG	15206	1339.9	4.22
SEP	13114	1155.5	3.64
OCT	12233	1077.9	3.40
NOV	9048	797.3	2.51
DEC	7552	665.4	2.10
ANN	12284	1082.4	3.41

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 93734 WASHINGTON,DC/STERLING, VA (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8766	772.4	2.44
FEB	10453	921.1	2.90
MAR	11775	1037.5	3.27
APR	13602	1198.5	3.78
MAY	15204	1339.7	4.22
JUN	16702	1471.7	4.64
JUL	15348	1352.4	4.26
AUG	15236	1342.5	4.23
SEP	13509	1190.3	3.75
OCT	12587	1109.1	3.50
NOV	9669	852.0	2.69
DEC	7462	657.5	2.07
ANN	12510	1102.3	3.48

STATION NO 12832 APALACHICOLA, FL (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11403	1004.8	3.17
FEB	13402	1180.9	3.72
MAR	15366	1354.0	4.27
APR	18687	1646.6	5.19
MAY	20151	1775.6	5.60
JUN	17946	1581.3	4.99
JUL	15638	1377.9	4.34
AUG	15733	1386.3	4.37
SEP	15183	1337.8	4.22
OCT	17069	1504.0	4.74
NOV	14877	1310.9	4.13
DEC	11866	1045.6	3.30
ANN	15615	1375.9	4.34

STATION NO 12834 DAYTONA BEACH, FL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12193	1074.4	3.39
FEB	13515	1190.9	3.75
MAR	14616	1287.9	4.06
APR	16710	1472.4	4.64
MAY	16683	1470.0	4.63
JUN	13207	1163.7	3.67
JUL	13375	1178.5	3.72
AUG	14124	1244.5	3.92
SEP	12270	1081.2	3.41
OCT	13461	1186.1	3.74
NOV	13700	1207.2	3.81
DEC	12035	1060.5	3.34
ANN	13825	1218.2	3.84

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13889 JACKSONVILLE, FL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11579	1020.3	3.22
FEB	13218	1164.7	3.67
MAR	14917	1314.4	4.14
APR	16599	1462.6	4.61
MAY	16757	1476.5	4.66
JUN	14432	1271.7	4.01
JUL	13787	1214.8	3.83
AUG	14513	1278.8	4.03
SEP	12050	1061.8	3.35
OCT	13253	1167.8	3.68
NOV	13361	1177.3	3.71
DEC	11370	1001.9	3.16
ANN	13821	1217.8	3.84

STATION NO 12839 MIAMI, FL (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	13894	1224.3	3.86
FEB	14988	1320.7	4.16
MAR	15504	1366.1	4.31
APR	16068	1415.8	4.46
MAY	14776	1302.0	4.10
JUN	12401	1092.7	3.44
JUL	13591	1197.6	3.78
AUG	12797	1127.6	3.56
SEP	11377	1002.5	3.16
OCT	13579	1196.5	3.77
NOV	14095	1242.0	3.92
DEC	14441	1272.5	4.01
ANN	13957	1229.8	3.88

STATION NO 12841 ORLANDO, FL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	13316	1173.3	3.70
FEB	14244	1255.1	3.96
MAR	15470	1363.1	4.30
APR	17090	1505.9	4.75
MAY	17111	1507.7	4.75
JUN	13305	1172.4	3.70
JUL	13869	1222.1	3.85
AUG	13892	1224.1	3.86
SEP	12630	1112.9	3.51
OCT	14745	1299.2	4.10
NOV	15155	1335.4	4.21
DEC	13345	1175.9	3.71
ANN	14510	1278.5	4.03

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 93805 TALLAHASSEE, FL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10631	936.7	2.95
FEB	12161	1071.6	3.38
MAR	13763	1212.7	3.82
APR	15764	1389.0	4.38
MAY	16155	1423.5	4.49
JUN	14211	1252.2	3.95
JUL	12693	1118.4	3.53
AUG	14054	1238.4	3.90
SEP	13137	1157.6	3.65
OCT	15638	1377.9	4.34
NOV	13734	1210.2	3.82
DEC	11034	972.2	3.07
ANN	13585	1197.0	3.77

STATION NO 12842 TAMPA, FL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	13100	1154.3	3.64
FEB	14291	1259.2	3.97
MAR	15473	1363.4	4.30
APR	17192	1514.9	4.78
MAY	17207	1516.2	4.78
JUN	13624	1200.5	3.78
JUL	12853	1132.5	3.57
AUG	13411	1181.7	3.73
SEP	12218	1076.6	3.39
OCT	15309	1348.9	4.25
NOV	15103	1330.8	4.20
DEC	13319	1173.6	3.70
ANN	14425	1271.0	4.01

STATION NO 12844 WEST PALM BEACH, FL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12384	1091.2	3.44
FEB	13374	1178.4	3.72
MAR	14236	1254.4	3.95
APR	15060	1327.0	4.18
MAY	15022	1323.6	4.17
JUN	12350	1088.2	3.43
JUL	14031	1236.3	3.90
AUG	13849	1220.3	3.85
SEP	11164	983.7	3.10
OCT	12394	1092.1	3.44
NOV	13061	1150.9	3.63
DEC	13350	1176.3	3.71
ANN	13361	1177.3	3.71

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13874 ATLANTA, GA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10253	903.4	2.85
FEB	11562	1018.8	3.21
MAR	13184	1161.7	3.66
APR	15814	1393.4	4.39
MAY	16348	1440.5	4.54
JUN	16198	1427.3	4.50
JUL	14996	1321.4	4.17
AUG	16012	1410.9	4.45
SEP	13816	1217.4	3.84
OCT	15324	1350.3	4.26
NOV	13451	1185.2	3.74
DEC	10598	933.8	2.94
ANN	13972	1231.1	3.88

STATION NO 3820 AUGUSTA, GA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10839	955.1	3.01
FEB	12425	1094.8	3.45
MAR	13811	1216.9	3.84
APR	16225	1429.6	4.51
MAY	16139	1422.1	4.48
JUN	15778	1390.3	4.38
JUL	14616	1287.9	4.06
AUG	14956	1317.8	4.15
SEP	13319	1173.6	3.70
OCT	15401	1357.0	4.28
NOV	13944	1228.7	3.87
DEC	11757	1036.0	3.27
ANN	14106	1242.9	3.92

STATION NO 3813 MACON, GA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11030	971.9	3.06
FEB	12464	1098.3	3.46
MAR	14126	1244.7	3.92
APR	16396	1444.7	4.55
MAY	16726	1473.8	4.65
JUN	16276	1434.1	4.52
JUL	14415	1270.2	4.00
AUG	15886	1399.8	4.41
SEP	13728	1209.6	3.81
OCT	15848	1396.4	4.40
NOV	14387	1267.7	4.00
DEC	11661	1027.5	3.24
ANN	14418	1270.4	4.01

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 3822 SAVANNAH, GA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10866	957.4	3.02
FEB	12290	1082.9	3.41
MAR	14145	1246.4	3.93
APR	16417	1446.6	4.56
MAY	16124	1420.8	4.48
JUN	15120	1332.3	4.20
JUL	14675	1293.1	4.08
AUG	14156	1247.3	3.93
SEP	11947	1052.7	3.32
OCT	14576	1284.3	4.05
NOV	13770	1213.3	3.83
DEC	11621	1024.0	3.23
ANN	13815	1217.3	3.84

STATION NO 22514 BARBERS POINT, HI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	14815	1305.4	4.12
FEB	15432	1359.8	4.29
MAR	14162	1247.9	3.93
APR	14353	1264.7	3.99
MAY	16445	1449.0	4.57
JUN	17483	1540.5	4.86
JUL	18360	1617.8	5.10
AUG	19242	1695.5	5.35
SEP	17569	1548.1	4.88
OCT	17266	1521.4	4.80
NOV	16618	1464.3	4.62
DEC	15684	1382.0	4.36
ANN	16460	1450.4	4.57

STATION NO 21504 HILO, HI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12447	1096.8	3.46
FEB	11306	996.2	3.14
MAR	9301	819.5	2.58
APR	8221	724.4	2.28
MAY	9761	860.1	2.71
JUN	11394	1004.0	3.17
JUL	11691	1030.1	3.25
AUG	12432	1095.4	3.45
SEP	12305	1084.2	3.42
OCT	12726	1121.3	3.54
NOV	11149	982.4	3.10
DEC	11240	990.4	3.12
ANN	11168	984.1	3.10

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 22521 HONOLULU, HI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	14018	1235.2	3.89
FEB	14401	1268.9	4.00
MAR	13737	1210.4	3.82
APR	13778	1214.0	3.83
MAY	16006	1410.4	4.45
JUN	17192	1514.9	4.78
JUL	18190	1602.8	5.05
AUG	19158	1688.1	5.32
SEP	17646	1554.9	4.90
OCT	17089	1505.8	4.75
NOV	15772	1389.7	4.38
DEC	14720	1297.0	4.09
ANN	15986	1408.6	4.44

STATION NO 22536 LIHUE, HI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12637	1113.5	3.51
FEB	12668	1116.2	3.52
MAR	11436	1007.7	3.18
APR	11214	988.1	3.12
MAY	13764	1212.8	3.82
JUN	14800	1304.1	4.11
JUL	15271	1345.6	4.24
AUG	16083	1417.1	4.47
SEP	15999	1409.7	4.44
OCT	15229	1341.9	4.23
NOV	13026	1147.8	3.62
DEC	12848	1132.1	3.57
ANN	13759	1212.4	3.82

STATION NO 24131 BOISE, ID (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7599	669.6	2.11
FEB	12574	1107.9	3.49
MAR	16597	1462.4	4.61
APR	21562	1899.9	5.99
MAY	26454	2331.0	7.35
JUN	28729	2531.4	7.98
JUL	33306	2934.7	9.25
AUG	28846	2541.7	8.01
SEP	25289	2228.3	7.03
OCT	19125	1685.2	5.31
NOV	10868	957.6	3.02
DEC	7588	668.6	2.11
ANN	19915	1754.8	5.53

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24149 LEWISTON, ID (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3995	352.0	1.11
FEB	6774	596.9	1.88
MAR	10549	929.5	2.93
APR	13136	1157.5	3.65
MAY	17854	1573.2	4.96
JUN	20116	1772.5	5.59
JUL	27876	2456.3	7.74
AUG	23924	2108.0	6.65
SEP	18834	1659.5	5.23
OCT	12220	1076.8	3.39
NOV	5138	452.7	1.43
DEC	3704	326.4	1.03
ANN	13722	1209.1	3.81

STATION NO 24156 POCATELLO, ID (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9564	842.7	2.66
FEB	13955	1229.6	3.88
MAR	18697	1647.5	5.19
APR	21654	1908.0	6.02
MAY	27138	2391.2	7.54
JUN	29364	2587.4	8.16
JUL	33258	2930.5	9.24
AUG	29815	2627.1	8.28
SEP	25696	2264.2	7.14
OCT	20761	1829.3	5.77
NOV	12752	1123.6	3.54
DEC	9120	803.6	2.53
ANN	21020	1852.2	5.84

STATION NO 14819 CHICAGO, IL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8323	733.4	2.31
FEB	10413	917.5	2.89
MAR	12252	1079.6	3.40
APR	13731	1209.9	3.81
MAY	16711	1472.5	4.64
JUN	18948	1669.6	5.26
JUL	18794	1656.0	5.22
AUG	18050	1590.5	5.01
SEP	14830	1306.7	4.12
OCT	13303	1172.2	3.70
NOV	8309	732.1	2.31
DEC	6313	556.3	1.75
ANN	13347	1176.1	3.71

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14923 MOLINE, IL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8865	781.1	2.46
FEB	11751	1035.4	3.26
MAR	12447	1096.8	3.46
APR	13536	1192.7	3.76
MAY	15740	1386.9	4.37
JUN	17821	1570.3	4.95
JUL	18394	1620.8	5.11
AUG	17756	1564.6	4.93
SEP	14652	1291.0	4.07
OCT	13632	1201.2	3.79
NOV	8738	769.9	2.43
DEC	7048	621.0	1.96
ANN	13374	1178.4	3.72

STATION NO 93822 SPRINGFIELD, IL (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9729	857.3	2.70
FEB	12229	1077.5	3.40
MAR	12069	1063.4	3.35
APR	14208	1251.9	3.95
MAY	17810	1569.3	4.95
JUN	20339	1792.2	5.65
JUL	20615	1834.1	5.78
AUG	19506	1718.8	5.42
SEP	16423	1447.1	4.56
OCT	14967	1318.8	4.16
NOV	10704	943.2	2.97
DEC	8238	725.9	2.29
ANN	14765	1301.0	4.10

STATION NO 93817 EVANSVILLE, IN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8315	732.7	2.31
FEB	9987	880.0	2.77
MAR	11174	984.6	3.10
APR	13129	1156.8	3.65
MAY	15588	1373.5	4.33
JUN	17529	1544.6	4.87
JUL	17288	1523.3	4.80
AUG	17111	1507.7	4.75
SEP	14245	1255.2	3.96
OCT	14007	1234.2	3.89
NOV	9679	852.9	2.69
DEC	7240	637.9	2.01
ANN	12956	1141.6	3.60

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14827 FORT WAYNE, IN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	5712	503.3	1.59
FEB	7756	683.4	2.15
MAR	8421	742.0	2.34
APR	10706	943.3	2.97
MAY	13600	1198.4	3.78
JUN	14733	1298.2	4.09
JUL	14943	1316.7	4.15
AUG	14844	1308.0	4.12
SEP	12084	1064.8	3.36
OCT	11194	986.3	3.11
NOV	5942	523.6	1.65
DEC	4510	397.4	1.25
ANN	10385	915.1	2.88

STATION NO 93819 INDIANAPOLIS, IN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	6280	553.4	1.74
FEB	8417	741.7	2.34
MAR	9235	813.7	2.57
APR	11054	974.0	3.07
MAY	13748	1211.4	3.82
JUN	15096	1330.2	4.19
JUL	15053	1326.4	4.18
AUG	15580	1372.8	4.33
SEP	12861	1133.2	3.57
OCT	11914	1049.8	3.31
NOV	7065	622.5	1.96
DEC	5391	475.0	1.50
ANN	10988	968.2	3.05

STATION NO 14848 SOUTH BEND, IN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	5563	490.2	1.55
FEB	7766	684.3	2.16
MAR	9670	852.1	2.69
APR	12326	1086.1	3.42
MAY	15351	1352.6	4.26
JUN	17112	1507.8	4.75
JUL	16995	1497.5	4.72
AUG	16809	1481.1	4.67
SEP	13148	1158.5	3.65
OCT	11540	1016.8	3.21
NOV	6191	545.5	1.72
DEC	4353	383.6	1.21
ANN	11421	1006.3	3.17

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14931 BURLINGTON, IA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10046	885.2	2.79
FEB	12468	1098.6	3.46
MAR	12757	1124.1	3.54
APR	14735	1298.4	4.09
MAY	17900	1577.2	4.97
JUN	20748	1828.2	5.76
JUL	21451	1890.1	5.96
AUG	19933	1756.4	5.54
SEP	15978	1407.9	4.44
OCT	15136	1333.7	4.20
NOV	10633	936.9	2.95
DEC	8495	748.5	2.36
ANN	15037	1325.0	4.18

STATION NO 14933 DES MOINES, IA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10490	924.3	2.91
FEB	13460	1186.0	3.74
MAR	13833	1218.9	3.84
APR	15798	1392.0	4.39
MAY	18136	1598.0	5.04
JUN	21373	1883.3	5.94
JUL	21899	1929.6	6.08
AUG	20398	1797.3	5.67
SEP	16797	1480.1	4.67
OCT	15876	1398.9	4.41
NOV	11020	971.0	3.06
DEC	8927	786.6	2.48
ANN	15678	1381.5	4.36

STATION NO 14940 MASON CITY, IA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10802	951.8	3.00
FEB	13475	1187.3	3.74
MAR	14281	1258.4	3.97
APR	15444	1360.8	4.29
MAY	19042	1677.9	5.29
JUN	21410	1886.5	5.95
JUL	22139	1950.8	6.15
AUG	21058	1855.5	5.85
SEP	17087	1505.6	4.75
OCT	15640	1378.1	4.34
NOV	10297	907.3	2.86
DEC	8667	763.7	2.41
ANN	15793	1391.6	4.39

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14943 SIOUX CITY, IA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10644	937.9	2.96
FEB	13030	1148.1	3.62
MAR	13972	1231.1	3.88
APR	16454	1449.8	4.57
MAY	18588	1637.9	5.16
JUN	21119	1860.9	5.87
JUL	22495	1982.1	6.25
AUG	20997	1850.1	5.83
SEP	16854	1485.1	4.68
OCT	15440	1360.5	4.29
NOV	10929	963.0	3.04
DEC	8703	766.9	2.42
ANN	15783	1390.7	4.38

STATION NO 13985 DODGE CITY, KS (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16505	1454.3	4.59
FEB	18404	1621.7	5.11
MAR	19471	1715.7	5.41
APR	21827	1923.3	6.06
MAY	22637	1994.6	6.29
JUN	26086	2298.5	7.25
JUL	25834	2276.3	7.18
AUG	24609	2168.4	6.84
SEP	21676	1910.0	6.02
OCT	20313	1789.9	5.64
NOV	17019	1499.6	4.73
DEC	15410	1357.8	4.28
ANN	20826	1835.1	5.79

STATION NO 23065 GOODLAND, KS (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	17316	1525.8	4.81
FEB	18476	1628.0	5.13
MAR	19769	1741.9	5.49
APR	21750	1916.5	6.04
MAY	22123	1949.3	6.15
JUN	25956	2287.1	7.21
JUL	26406	2326.7	7.34
AUG	25049	2207.2	6.96
SEP	21947	1933.8	6.10
OCT	21441	1889.3	5.96
NOV	17661	1556.2	4.91
DEC	15854	1397.0	4.40
ANN	21159	1864.4	5.88

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13996 TOPEKA, KS (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12205	1075.4	3.39
FEB	14048	1237.8	3.90
MAR	14487	1276.5	4.02
APR	17085	1505.4	4.75
MAY	18530	1632.8	5.15
JUN	20867	1838.7	5.80
JUL	22183	1954.6	6.16
AUG	21442	1889.3	5.96
SEP	17656	1555.7	4.90
OCT	16696	1471.2	4.64
NOV	13261	1168.5	3.68
DEC	10490	924.3	2.91
ANN	16591	1461.9	4.61

STATION NO 3928 WICHITA, KS (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	15059	1326.9	4.18
FEB	16595	1462.3	4.61
MAR	17676	1557.5	4.91
APR	19803	1744.9	5.50
MAY	20656	1820.1	5.74
JUN	23168	2041.4	6.44
JUL	24293	2140.6	6.75
AUG	23576	2077.4	6.55
SEP	19554	1723.0	5.43
OCT	18822	1658.5	5.23
NOV	15774	1389.9	4.38
DEC	13537	1192.8	3.76
ANN	19055	1679.0	5.29

STATION NO 93820 LEXINGTON, KY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7716	679.9	2.14
FEB	9041	796.6	2.51
MAR	10227	901.1	2.84
APR	12643	1114.0	3.51
MAY	14730	1297.9	4.09
JUN	16277	1434.2	4.52
JUL	16047	1414.0	4.46
AUG	16182	1425.9	4.50
SEP	13490	1188.7	3.75
OCT	13220	1164.9	3.67
NOV	8994	792.5	2.50
DEC	6877	606.0	1.91
ANN	12136	1069.4	3.37

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 93821 LOUISVILLE, KY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7448	656.3	2.07
FEB	9119	803.5	2.53
MAR	10201	898.9	2.83
APR	12269	1081.1	3.41
MAY	14188	1250.2	3.94
JUN	16215	1428.8	4.50
JUL	15768	1389.4	4.38
AUG	16024	1411.9	4.45
SEP	13246	1167.2	3.68
OCT	12988	1144.4	3.61
NOV	8809	776.2	2.45
DEC	6824	601.3	1.90
ANN	11938	1051.9	3.32

STATION NO 13970 BATON ROUGE, LA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9446	832.3	2.62
FEB	11711	1031.9	3.25
MAR	13088	1153.2	3.64
APR	13895	1224.3	3.86
MAY	15737	1386.7	4.37
JUN	16042	1413.5	4.46
JUL	13983	1232.1	3.88
AUG	14735	1298.4	4.09
SEP	13434	1183.7	3.73
OCT	15705	1383.8	4.36
NOV	12085	1064.9	3.36
DEC	9997	880.9	2.78
ANN	13328	1174.4	3.70

STATION NO 3937 LAKE CHARLES, LA (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8859	780.6	2.46
FEB	11445	1008.5	3.18
MAR	12429	1095.2	3.45
APR	12664	1115.9	3.52
MAY	15613	1375.7	4.34
JUN	17146	1510.8	4.76
JUL	15006	1322.2	4.17
AUG	14714	1296.5	4.09
SEP	13747	1211.3	3.82
OCT	15340	1351.7	4.26
NOV	12232	1077.8	3.40
DEC	9738	858.1	2.71
ANN	13250	1167.5	3.68

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 12916 NEW ORLEANS, LA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10440	919.9	2.90
FEB	12894	1136.1	3.58
MAR	13744	1211.0	3.82
APR	15895	1400.6	4.42
MAY	17702	1559.8	4.92
JUN	17671	1557.1	4.91
JUL	15217	1340.8	4.23
AUG	15476	1363.7	4.30
SEP	14320	1261.8	3.98
OCT	16342	1440.0	4.54
NOV	13225	1165.3	3.67
DEC	10845	955.6	3.01
ANN	14484	1276.2	4.02

STATION NO 13957 SHREVEPORT, LA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10651	938.5	2.96
FEB	12906	1137.2	3.59
MAR	13808	1216.7	3.84
APR	14307	1260.6	3.97
MAY	16581	1461.0	4.61
JUN	18899	1665.3	5.25
JUL	19141	1686.6	5.32
AUG	18926	1667.6	5.26
SEP	16057	1414.8	4.46
OCT	17124	1508.9	4.76
NOV	14280	1258.3	3.97
DEC	11491	1012.5	3.19
ANN	15360	1353.4	4.27

STATION NO 14601 BANGOR, ME (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7752	683.1	2.15
FEB	10589	933.0	2.94
MAR	12752	1123.6	3.54
APR	14161	1247.8	3.93
MAY	16203	1427.7	4.50
JUN	16634	1465.7	4.62
JUL	17488	1540.9	4.86
AUG	16532	1456.7	4.59
SEP	13834	1219.0	3.84
OCT	11280	993.9	3.13
NOV	6945	612.0	1.93
DEC	6831	601.9	1.90
ANN	12595	1109.8	3.50

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14607 CARIBOU, ME (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7108	626.3	1.97
FEB	10869	957.7	3.02
MAR	13892	1224.1	3.86
APR	14474	1275.4	4.02
MAY	14612	1287.5	4.06
JUN	16133	1421.5	4.48
JUL	16845	1484.3	4.68
AUG	15408	1357.7	4.28
SEP	12012	1058.4	3.34
OCT	8835	778.5	2.45
NOV	4920	433.5	1.37
DEC	5149	453.7	1.43
ANN	11692	1030.2	3.25

STATION NO 14764 PORTLAND, ME (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7383	650.5	2.05
FEB	9114	803.1	2.53
MAR	9841	867.1	2.73
APR	11580	1020.4	3.22
MAY	13619	1200.0	3.78
JUN	14429	1271.4	4.01
JUL	13752	1211.	3.82
AUG	13563	1195.1	3.77
SEP	11535	1016.4	3.20
OCT	10499	925.1	2.92
NOV	6171	543.8	1.71
DEC	5836	514.2	1.62
ANN	10618	935.6	2.95

STATION NO 93721 BALTIMORE, MD (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8830	778.0	2.45
FEB	10606	934.5	2.95
MAR	11931	1051.3	3.31
APR	13228	1165.6	3.67
MAY	14557	1282.7	4.04
JUN	15816	1393.6	4.39
JUL	15652	1379.2	4.35
AUG	14960	1318.2	4.16
SEP	13241	1166.7	3.68
OCT	12538	1104.8	3.48
NOV	9469	834.4	2.63
DEC	7572	667.2	2.10
ANN	12374	1090.3	3.44

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13721 PATUXENT RIVER, MD (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8581	756.1	2.38
FEB	10342	911.3	2.87
MAR	11606	1022.7	3.22
APR	13291	1171.1	3.69
MAY	14773	1301.7	4.10
JUN	15717	1384.9	4.37
JUL	15270	1345.5	4.24
AUG	15090	1329.6	4.19
SEP	13368	1177.9	3.71
OCT	12597	1110.0	3.50
NOV	10020	882.9	2.78
DEC	8018	706.5	2.23
ANN	12397	1092.3	3.44

STATION NO 94701 BOSTON, MA (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7622	671.6	2.12
FEB	9219	812.3	2.56
MAR	10833	954.5	3.01
APR	12439	1096.1	3.46
MAY	15225	1341.5	4.23
JUN	16656	1467.6	4.63
JUL	15106	1331.1	4.20
AUG	13905	1225.2	3.86
SEP	13444	1184.6	3.73
OCT	11783	1038.2	3.27
NOV	7100	625.6	1.97
DEC	6565	578.5	1.82
ANN	11655	1027.0	3.24

STATION NO 94849 ALPENA, MI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4894	431.2	1.36
FEB	8181	720.9	2.27
MAR	11648	1026.4	3.24
APR	13503	1189.8	3.75
MAY	15670	1380.7	4.35
JUN	16786	1479.1	4.66
JUL	17901	1577.3	4.97
AUG	16180	1425.7	4.49
SEP	11581	1020.4	3.22
OCT	8659	763.0	2.41
NOV	4384	386.3	1.22
DEC	3291	290.0	.91
ANN	11097	977.8	3.08

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14822 DETROIT, MI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	5216	459.6	1.45
FEB	7918	697.7	2.20
MAR	9486	835.8	2.64
APR	12006	1057.9	3.34
MAY	14672	1292.8	4.08
JUN	15596	1374.2	4.33
JUL	16101	1418.7	4.47
AUG	14845	1308.1	4.12
SEP	12293	1083.2	3.41
OCT	10632	936.8	2.95
NOV	5420	477.6	1.51
DEC	4222	372.0	1.17
ANN	10715	944.1	2.98

STATION NO 14826 FLINT, MI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4596	405.0	1.28
FEB	7217	635.9	2.00
MAR	8915	785.5	2.48
APR	11082	976.5	3.08
MAY	13824	1218.1	3.84
JUN	14829	1306.6	4.12
JUL	15600	1374.6	4.33
AUG	14671	1292.7	4.08
SEP	11234	989.9	3.12
OCT	9662	851.4	2.68
NOV	4473	394.1	1.24
DEC	3500	308.4	.97
ANN	9983	879.6	2.77

STATION NO 94860 GRAND RAPIDS, MI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4553	401.2	1.26
FEB	8068	710.9	2.24
MAR	10897	960.2	3.03
APR	13406	1181.3	3.72
MAY	16219	1429.1	4.51
JUN	18149	1599.2	5.04
JUL	18354	1617.2	5.10
AUG	17354	1529.1	4.82
SEP	13081	1152.6	3.63
OCT	10821	953.5	3.01
NOV	5488	483.6	1.52
DEC	4010	353.3	1.11
ANN	11719	1032.6	3.26

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14847 SAULT STE. MARIE, MI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4892	431.1	1.36
FEB	8607	758.4	2.39
MAR	12804	1128.2	3.56
APR	13741	1210.8	3.82
MAY	15749	1387.7	4.38
JUN	16216	1428.9	4.50
JUL	17635	1553.9	4.90
AUG	15274	1345.9	4.24
SEP	9811	864.5	2.73
OCT	7539	664.3	2.09
NOV	3615	318.5	1.00
DEC	3755	330.9	1.04
ANN	10820	953.4	3.01

STATION NO 14850 TRAVERSE CITY, MI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3197	281.7	.89
FEB	6464	569.6	1.80
MAR	11096	977.7	3.08
APR	13425	1182.9	3.73
MAY	15671	1380.8	4.35
JUN	17265	1521.3	4.80
JUL	18187	1602.5	5.05
AUG	16215	1428.8	4.50
SEP	11266	992.7	3.13
OCT	8746	770.6	2.43
NOV	4082	359.7	1.13
DEC	2750	242.3	.76
ANN	10720	944.6	2.98

STATION NO 14913 DULUTH, MN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7326	645.5	2.04
FEB	10979	967.4	3.05
MAR	13230	1165.7	3.68
APR	13356	1176.9	3.71
MAY	14719	1296.9	4.09
JUN	15344	1352.0	4.26
JUL	17933	1580.1	4.98
AUG	16013	1411.0	4.45
SEP	11332	998.5	3.15
OCT	9513	838.2	2.64
NOV	5344	470.9	1.48
DEC	5409	476.6	1.50
ANN	11718	1032.5	3.26

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14918 INTERNATIONAL FALLS, MN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	6944	611.9	1.93
FEB	11531	1016.0	3.20
MAR	14003	1233.9	3.89
APR	15677	1381.4	4.36
MAY	16675	1469.3	4.63
JUN	17576	1548.7	4.88
JUL	20177	1777.9	5.61
AUG	17963	1582.8	4.99
SEP	12694	1118.5	3.53
OCT	9912	873.4	2.75
NOV	5036	443.7	1.40
DEC	5359	472.2	1.49
ANN	12806	1128.4	3.56

STATION NO 14922 MINNEAPOLIS/ST. PAUL, MN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8710	767.5	2.42
FEB	12181	1073.3	3.38
MAR	13663	1203.9	3.80
APR	14240	1254.7	3.96
MAY	16073	1416.3	4.47
JUN	17697	1559.4	4.92
JUL	19474	1715.9	5.41
AUG	17911	1578.2	4.98
SEP	13754	1211.9	3.82
OCT	11673	1028.6	3.24
NOV	7127	628.0	1.98
DEC	6239	549.7	1.73
ANN	13237	1166.4	3.68

STATION NO 14925 ROCHESTER, MN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8777	773.4	2.44
FEB	11825	1041.9	3.28
MAR	13204	1163.5	3.67
APR	13608	1199.1	3.78
MAY	15542	1369.5	4.32
JUN	17309	1525.2	4.81
JUL	18583	1637.4	5.16
AUG	17566	1547.8	4.88
SEP	13566	1195.4	3.77
OCT	11795	1039.3	3.28
NOV	7343	647.0	2.04
DEC	6575	579.3	1.83
ANN	12983	1144.0	3.61

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 3940 JACKSON, MS (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10360	912.9	2.88
FEB	12159	1071.4	3.38
MAR	13943	1228.6	3.87
APR	15456	1361.9	4.29
MAY	17497	1541.7	4.86
JUN	17720	1561.4	4.92
JUL	16647	1466.8	4.62
AUG	16839	1483.8	4.68
SEP	14935	1316.0	4.15
OCT	16216	1428.9	4.50
NOV	13105	1154.7	3.64
DEC	10692	942.1	2.97
ANN	14641	1290.1	4.07

STATION NO 13865 MERIDIAN, MS (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9656	850.8	2.68
FEB	11582	1020.5	3.22
MAR	12850	1132.3	3.57
APR	14474	1275.4	4.02
MAY	15871	1398.5	4.41
JUN	16478	1451.9	4.58
JUL	14925	1315.1	4.15
AUG	15929	1403.6	4.43
SEP	13768	1213.2	3.82
OCT	15691	1382.6	4.36
NOV	12768	1125.0	3.55
DEC	10227	901.1	2.84
ANN	13693	1206.5	3.80

STATION NO 3945 COLUMBIA, MO (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10132	892.8	2.81
FEB	12409	1093.4	3.45
MAR	13145	1158.3	3.65
APR	15122	1332.5	4.20
MAY	18213	1604.8	5.06
JUN	20529	1808.9	5.70
JUL	21974	1936.2	6.10
AUG	20563	1811.9	5.71
SEP	16130	1421.3	4.48
OCT	15183	1337.8	4.22
NOV	11368	1001.7	3.16
DEC	9058	798.1	2.52
ANN	15336	1351.3	4.26

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 3947 KANSAS CITY, MO (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11075	975.9	3.08
FEB	12512	1102.5	3.48
MAR	13008	1146.2	3.61
APR	15132	1333.3	4.20
MAY	17451	1537.7	4.85
JUN	19653	1731.7	5.46
JUL	21467	1891.5	5.96
AUG	20266	1785.7	5.63
SEP	16107	1419.3	4.47
OCT	15175	1337.1	4.22
NOV	12114	1067.4	3.37
DEC	9868	869.5	2.74
ANN	15337	1351.4	4.26

STATION NO 13995 SPRINGFIELD, MO (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11719	1032.6	3.26
FEB	13104	1154.6	3.64
MAR	13576	1196.2	3.77
APR	15947	1405.2	4.43
MAY	17993	1585.4	5.00
JUN	20001	1762.4	5.56
JUL	21034	1853.4	5.84
AUG	20318	1790.3	5.64
SEP	16481	1452.2	4.58
OCT	15817	1393.7	4.39
NOV	12808	1128.6	3.56
DEC	10529	927.8	2.92
ANN	15792	1391.5	4.39

STATION NO. 13994 ST. LOUIS, MO (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10184	897.4	2.83
FEB	12050	1061.8	3.35
MAR	12701	1119.1	3.53
APR	14823	1306.1	4.12
MAY	17456	1538.1	4.85
JUN	19929	1756.0	5.54
JUL	20210	1780.8	5.61
AUG	19224	1693.9	5.34
SEP	15999	1409.7	4.44
OCT	14961	1318.3	4.16
NOV	11270	993.0	3.13
DEC	8605	758.2	2.39
ANN	14797	1303.8	4.11

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24033 BILLINGS, MT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9923	874.4	2.76
FEB	12432	1095.4	3.45
MAR	15638	1377.9	4.34
APR	16194	1426.9	4.50
MAY	19831	1747.4	5.51
JUN	23569	2076.8	6.55
JUL	29035	2558.4	8.07
AUG	26041	2294.6	7.23
SEP	19865	1750.4	5.52
OCT	16569	1460.0	4.60
NOV	10762	948.3	2.99
DEC	9403	828.5	2.61
ANN	17475	1539.8	4.85

STATION NO 24137 CUT BANK, MT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8493	748.4	2.36
FEB	11757	1036.0	3.27
MAR	15422	1358.9	4.28
APR	16219	1429.1	4.51
MAY	19854	1749.4	5.52
JUN	21695	1911.6	6.03
JUL	28260	2490.1	7.85
AUG	24577	2165.6	6.83
SEP	18542	1633.8	5.15
OCT	14857	1309.1	4.13
NOV	9882	870.7	2.75
DEC	7674	676.2	2.13
ANN	16470	1451.2	4.58

STATION NO 24138 DILLON, MT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10747	947.0	2.99
FEB	14339	1263.5	3.98
MAR	17338	1527.7	4.82
APR	17947	1581.4	4.99
MAY	21216	1869.4	5.89
JUN	22873	2015.4	6.35
JUL	29744	2620.9	8.26
AUG	26402	2326.4	7.33
SEP	21252	1872.6	5.90
OCT	17610	1551.7	4.89
NOV	12076	1064.1	3.35
DEC	10150	894.4	2.82
ANN	18485	1628.8	5.14

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 94008 GLASGOW, MT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7440	655.6	2.07
FEB	10967	966.3	3.05
MAR	14583	1285.0	4.05
APR	15878	1399.1	4.41
MAY	18469	1627.4	5.13
JUN	21099	1859.1	5.86
JUL	25832	2276.2	7.18
AUG	23510	2071.6	6.53
SEP	17851	1572.9	4.96
OCT	14724	1297.4	4.09
NOV	9413	829.4	2.61
DEC	7286	642.0	2.02
ANN	15619	1376.3	4.34

STATION NO 24143 GREAT FALLS, MT (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8008	705.6	2.22
FEB	11950	1053.0	3.32
MAR	15970	1407.2	4.44
APR	16165	1424.4	4.49
MAY	19387	1708.3	5.39
JUN	22917	2019.3	6.37
JUL	28413	2503.6	7.89
AUG	24586	2166.4	6.83
SEP	18489	1629.1	5.14
OCT	14516	1279.1	4.03
NOV	9391	827.5	2.61
DEC	6819	600.8	1.89
ANN	16414	1446.3	4.56

STATION NO 24144 HELENA, MT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7577	667.6	2.10
FEB	10863	957.2	3.02
MAR	14644	1290.3	4.07
APR	15055	1326.6	4.18
MAY	19012	1675.2	5.28
JUN	21123	1861.2	5.87
JUL	28398	2502.3	7.89
AUG	24633	2170.5	6.84
SEP	18760	1653.0	5.21
OCT	14947	1317.0	4.15
NOV	9663	851.4	2.68
DEC	7300	643.2	2.03
ANN	16035	1412.9	4.45

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24036 LEWISTOWN, MT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8159	718.9	2.27
FEB	11123	980.1	3.09
MAR	14874	1310.6	4.13
APR	14819	1305.8	4.12
MAY	18192	1603.0	5.05
JUN	21551	1898.9	5.99
JUL	27667	2437.9	7.69
AUG	24060	2120.0	6.68
SEP	18032	1588.9	5.01
OCT	14866	1309.9	4.13
NOV	9457	833.3	2.63
DEC	7763	684.0	2.16
ANN	15916	1402.4	4.42

STATION NO 24037 MILES CITY, MT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9279	817.6	2.58
FEB	12404	1093.0	3.45
MAR	15948	1405.2	4.43
APR	16959	1494.3	4.71
MAY	19726	1738.1	5.48
JUN	23018	2028.2	6.39
JUL	27330	2408.2	7.59
AUG	25301	2229.4	7.03
SEP	19558	1723.3	5.43
OCT	16171	1424.9	4.49
NOV	10941	964.1	3.04
DEC	8867	781.3	2.46
ANN	17156	1511.7	4.77

STATION NO 24153 MISSOULA, MT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3838	338.2	1.07
FEB	6620	583.3	1.84
MAR	10444	920.3	2.90
APR	12661	1115.6	3.52
MAY	17353	1529.0	4.82
JUN	19189	1690.8	5.33
JUL	28511	2512.2	7.92
AUG	23692	2087.6	6.58
SEP	17637	1554.1	4.90
OCT	11514	1014.5	3.20
NOV	5609	494.2	1.56
DEC	3604	317.6	1.00
ANN	13437	1184.0	3.73

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14935 GRAND ISLAND, NE (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	13547	1193.7	3.76
FEB	15283	1346.6	4.25
MAR	16397	1444.8	4.56
APR	19454	1714.2	5.40
MAY	20561	1811.7	5.71
JUN	23864	2102.8	6.63
JUL	24804	2185.6	6.89
AUG	23026	2028.9	6.40
SEP	18915	1666.7	5.25
OCT	18114	1596.1	5.03
NOV	13974	1231.3	3.88
DEC	12120	1067.9	3.37
ANN	18354	1617.2	5.10

STATION NO 94918 NORTH OMAHA, NE (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11767	1036.8	3.27
FEB	13590	1197.5	3.78
MAR	14371	1266.3	3.99
APR	16352	1440.8	4.54
MAY	18603	1639.2	5.17
JUN	21524	1896.6	5.98
JUL	22255	1961.0	6.18
AUG	21020	1852.2	5.84
SEP	16066	1415.6	4.46
OCT	15806	1392.7	4.39
NOV	11204	987.2	3.11
DEC	9492	836.4	2.64
ANN	16019	1411.5	4.45

STATION NO 24023 NORTH PLATTE, NE (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	14831	1306.8	4.12
FEB	16565	1459.6	4.60
MAR	18109	1595.7	5.03
APR	20036	1765.5	5.57
MAY	20658	1820.3	5.74
JUN	24205	2132.8	6.72
JUL	25757	2269.6	7.16
AUG	23847	2101.3	6.62
SEP	20326	1791.0	5.65
OCT	19437	1712.7	5.40
NOV	14951	1317.4	4.15
DEC	13680	1205.4	3.80
ANN	19383	1707.9	5.38

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24028 SCOTTSBLUFF, NE (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	14989	1320.7	4.16
FEB	17096	1506.4	4.75
MAR	17889	1576.3	4.97
APR	19129	1685.5	5.31
MAY	20082	1769.5	5.58
JUN	23960	2111.2	6.66
JUL	26179	2306.7	7.27
AUG	24443	2153.8	6.79
SEP	21498	1894.3	5.97
OCT	19153	1687.6	5.32
NOV	14435	1271.9	4.01
DEC	13520	1191.3	3.76
ANN	19378	1707.5	5.38

STATION NO 24121 ELKO, NV (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	13666	1204.2	3.80
FEB	17450	1537.6	4.85
MAR	19940	1757.0 μ	5.54
APR	22824	2011.1	6.34
MAY	27157	2392.9	7.54
JUN	30489	2686.5	8.47
JUL	33603	2960.9	9.33
AUG	31103	2740.6	8.64
SEP	28301	2493.7	7.86
OCT	23268	2050.2	6.46
NOV	15821	1394.1	4.40
DEC	13415	1182.0	3.73
ANN	23116	2036.8	6.42

STATION NO 23154 ELY, NV (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	22261	1963.3	6.19
FEB	23846	2101.2	6.62
MAR	27238	2400.0 μ	7.57
APR	28923	2548.5	8.03
MAY	30441	2682.3	8.46
JUN	33142	2920.3	9.21
JUL	33158	2921.7	9.21
AUG	33090	2915.7	9.19
SEP	32870	2896.3	9.13
OCT	28881	2544.8	8.02
NOV	23470	2068.0	6.52
DEC	21392	1884.9	5.94
ANN	28246	2488.9	7.85

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23169 LAS VEGAS, NV (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	19566	1724.0	5.44
FEB	23263	2049.8	6.46
MAR	26085	2298.5	7.25
APR	30604	2696.6	8.50
MAY	32676	2879.2	9.08
JUN	33865	2984.0	9.41
JUL	31304	2758.3	8.70
AUG	29665	2613.9	8.24
SEP	28521	2513.1	7.92
OCT	25432	2240.9	7.07
NOV	21040	1853.9	5.84
DEC	18775	1654.3	5.22
ANN	26740	2356.2	7.43

STATION NO 24172 LOVELOCK, NV (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16966	1494.9	4.71
FEB	21047	1854.5	5.85
MAR	24361	2146.5	6.77
APR	28451	2506.9	7.90
MAY	32122	2830.4	8.92
JUN	34689	3056.6	9.64
JUL	36438	3210.7	10.12
AUG	33829	2980.8	9.40
SEP	30625	2698.5	8.51
OCT	25784	2271.9	7.16
NOV	19024	1676.3	5.28
DEC	16188	1426.4	4.50
ANN	26652	2348.4	7.40

STATION NO 23185 RENO, NV (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16939	1492.6	4.71
FEB	20648	1819.4	5.74
MAR	24202	2132.5	6.72
APR	28304	2494.0	7.86
MAY	31543	2779.4	8.76
JUN	33716	2970.9	9.37
JUL	34763	3063.1	9.66
AUG	32390	2854.0	9.00
SEP	29784	2624.4	8.27
OCT	25146	2215.7	6.99
NOV	18369	1618.6	5.10
DEC	15894	1400.5	4.42
ANN	25998	2290.8	7.22

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23153 TONOPAH, NV (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20062	1767.7	5.57
FEB	23520	2072.4	6.53
MAR	26888	2369.2	7.47
APR	30385	2677.3	8.44
MAY	32864	2895.8	9.13
JUN	35379	3117.4	9.83
JUL	34748	3061.8	9.65
AUG	32814	2891.4	9.12
SEP	30611	2697.3	8.50
OCT	26985	2377.8	7.50
NOV	21671	1909.5	6.02
DEC	19486	1717.0	5.41
ANN	27968	2464.4	7.77

STATION NO 24128 WINNEMUCCA, NV (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	13423	1182.8	3.73
FEB	17045	1501.9	4.74
MAR	19713	1737.0	5.48
APR	24007	2115.4	6.67
MAY	28073	2473.6	7.80
JUN	31127	2742.7	8.65
JUL	34503	3040.2	9.58
AUG	31617	2785.9	8.78
SEP	28476	2509.1	7.91
OCT	23048	2030.9	6.40
NOV	15598	1374.4	4.33
DEC	13283	1170.4	3.69
ANN	23358	2058.2	6.49

STATION NO 14745 CONCORD, NH (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7483	659.4	2.08
FEB	9088	800.8	2.52
MAR	9862	869.0	2.74
APR	11823	1041.8	3.28
MAY	13735	1210.2	3.82
JUN	14192	1250.5	3.94
JUL	13893	1224.2	3.86
AUG	13395	1180.3	3.72
SEP	10906	961.0	3.03
OCT	10159	895.2	2.82
NOV	5998	528.5	1.67
DEC	5565	490.4	1.55
ANN	10517	926.7	2.92

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14780 LAKEHURST, NJ (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8108	714.4	2.25
FEB	9609	846.7	2.67
MAR	10769	948.9	2.99
APR	12507	1102.0	3.47
MAY	13425	1182.9	3.73
JUN	13701	1207.2	3.81
JUL	13240	1166.6	3.68
AUG	13422	1182.7	3.73
SEP	11644	1026.0	3.23
OCT	11400	1004.5	3.17
NOV	8219	724.2	2.28
DEC	7035	619.9	1.95
ANN	11097	977.8	3.08

STATION NO 14734 NEWARK, NJ (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8582	756.2	2.38
FEB	10090	889.1	2.80
MAR	11451	1009.0	3.18
APR	13121	1156.1	3.65
MAY	14426	1271.1	4.01
JUN	14836	1307.3	4.12
JUL	14895	1312.5	4.14
AUG	14599	1286.4	4.06
SEP	12581	1108.6	3.50
OCT	11937	1051.8	3.32
NOV	8247	726.7	2.29
DEC	7135	628.7	1.98
ANN	11834	1042.7	3.29

STATION NO 23050 ALBUQUERQUE, NM (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	21162	1864.7	5.88
FEB	22799	2008.9	6.33
MAR	24537	2162.1	6.82
APR	27900	2458.4	7.75
MAY	30487	2686.3	8.47
JUN	31983	2818.2	8.88
JUL	28969	2552.6	8.05
AUG	28104	2476.4	7.81
SEP	26685	2351.3	7.41
OCT	25097	2211.4	6.97
NOV	22544	1986.4	6.26
DEC	20598	1815.0	5.72
ANN	25914	2283.4	7.20

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23051 CLAYTON, NM (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	21620	1905.0	6.01
FEB	22053	1943.2	6.13
MAR	23897	2105.7	6.64
APR	25386	2236.9	7.05
MAY	24934	2197.0	6.93
JUN	27197	2396.4	7.56
JUL	25519	2248.6	7.09
AUG	25471	2244.4	7.08
SEP	24519	2160.5	6.81
	24311	2142.1	6.75
NOV	21913	1930.8	6.09
DEC	20408	1798.2	5.67
ANN	23941	2109.5	6.65

STATION NO 23043 ROSWELL, NM (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20112	1772.1	5.59
FEB	22432	1976.6	6.23
MAR	24022	2116.7	6.67
APR	27076	2385.8	7.52
MAY	28258	2489.9	7.85
JUN	30179	2659.2	8.38
JUL	28058	2472.3	7.79
AUG	26831	2364.2	7.45
SEP	24388	2148.9	6.77
OCT	23686	2087.1	6.58
NOV	21123	1861.2	5.87
DEC	19149	1687.3	5.32
ANN	24620	2169.4	6.84

STATION NO 93045 TRUTH OR CONSEQUENCES, NM (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	22987	2025.5	6.39
FEB	24957	2199.1	6.93
MAR	26529	2337.6	7.37
APR	30495	2687.0	8.47
MAY	31056	2736.5	8.63
JUN	31427	2769.2	8.73
JUL	26871	2367.7	7.46
AUG	26725	2354.8	7.42
SEP	25402	2238.3	7.06
OCT	25595	2255.3	7.11
NOV	24460	2155.3	6.79
DEC	21352	1881.4	5.93
ANN	26484	2333.6	7.36

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23048 TUCUMCARI, NM (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	21679	1910.2	6.02
FEB	22338	1968.3	6.21
MAR	24222	2134.3	6.73
APR	25904	2282.5	7.20
MAY	26070	2297.1	7.24
JUN	28105	2476.4	7.81
JUL	26584	2342.4	7.39
AUG	26176	2306.5	7.27
SEP	24308	2141.9	6.75
OCT	23602	2079.7	6.56
NOV	21891	1928.9	6.08
DEC	20601	1815.2	5.72
ANN	24297	2140.9	6.75

STATION NO 14735 ALBANY, NY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8338	734.7	2.32
FEB	10605	934.4	2.95
MAR	12209	1075.8	3.39
APR	14805	1304.5	4.11
MAY	16545	1457.8	4.60
JUN	18120	1596.6	5.03
JUL	19151	1687.5	5.32
AUG	17769	1565.7	4.94
SEP	14363	1265.6	3.99
OCT	12227	1077.4	3.40
	7261	639.8	2.02
DEC	6236	549.5	1.73
ANN	13150	1158.7	3.65

STATION NO 4725 BINGHAMTON, NY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4283	377.4	1.19
FEB	5576	491.3	1.55
MAR	7219	636.1	2.01
APR	9744	858.6	2.71
MAY	11461	1009.9	3.18
JUN	12709	1119.8	3.53
JUL	13236	1166.3	3.68
AUG	12315	1085.1	3.42
SEP	10040	884.7	2.79
OCT	8660	763.1	2.41
NOV	4115	362.6	1.14
DEC	3086	271.9	.86
ANN	8553	753.6	2.38

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14733 BUFFALO, NY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3610	318.1	1.00
FEB	4956	436.7	1.38
MAR	7735	681.6	2.15
APR	10871	957.9	3.02
MAY	13047	1149.6	3.62
JUN	14720	1297.0	4.09
JUL	15269	1345.4	4.24
AUG	13716	1208.6	3.81
SEP	10341	911.2	2.87
OCT	8567	754.9	2.38
NOV	3743	329.8	1.04
DEC	2777	244.7	.77
ANN	9136	805.0	2.54

STATION NO 94725 MASSENA, NY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7173	632.0	1.99
FEB	10122	891.9	2.81
MAR	13264	1168.7	3.68
APR	15464	1362.6	4.30
MAY	18036	1589.2	5.01
JUN	19576	1724.9	5.44
JUL	20236	1783.1	5.62
AUG	18058	1591.2	5.02
SEP	14089	1241.4	3.91
OCT	11103	978.3	3.08
NOV	5989	527.7	1.66
DEC	5209	459.0	1.45
ANN	13210	1164.0	3.67

STATION NO 94728 NEW YORK CITY(CENTRAL PARK), NY (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7557	665.9	2.10
FEB	8815	776.7	2.45
MAR	10741	946.4	2.98
APR	12318	1085.4	3.42
MAY	14244	1255.1	3.96
JUN	13886	1223.6	3.86
JUL	13830	1218.6	3.84
AUG	13408	1181.4	3.72
SEP	11841	1043.4	3.29
OCT	10732	945.6	2.98
NOV	7189	633.5	2.00
DEC	6076	535.4	1.69
ANN	10901	960.5	3.03

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14732 NEW YORK CITY(LA GUARDIA), NY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7294	642.7	2.03
FEB	8787	774.3	2.44
MAR	10104	890.3	2.81
APR	11224	989.0	3.12
MAY	12721	1120.9	3.53
JUN	12826	1130.2	3.56
JUL	12912	1137.7	3.59
AUG	12267	1080.9	3.41
SEP	10783	950.1	3.00
OCT	10181	897.1	2.83
NOV	6723	592.4	1.87
DEC	6077	535.5	1.69
ANN	10166	895.8	2.82

STATION NO 14768 ROCHESTER, NY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4025	354.7	1.12
FEB	5255	463.0	1.46
MAR	8001	705.0	2.22
APR	11373	1002.1	3.16
MAY	13321	1173.8	3.70
JUN	15049	1326.0	4.18
JUL	15412	1358.0	4.28
AUG	13930	1227.4	3.87
SEP	10734	945.8	2.98
OCT	8537	752.2	2.37
NOV	3768	332.0	1.05
DEC	2767	243.8	.77
ANN	9369	825.5	2.60

STATION NO 14771 SYRACUSE, NY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4619	407.0	1.28
FEB	5772	508.6	1.60
MAR	7833	690.2	2.18
APR	11249	991.2	3.12
MAY	13006	1146.0	3.61
JUN	14429	1271.4	4.01
JUL	15123	1332.5	4.20
AUG	13658	1203.5	3.79
SEP	10891	959.6	3.03
OCT	8580	756.0	2.38
NOV	3866	340.6	1.07
DEC	2925	257.7	.81
ANN	9348	823.7	2.60

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 3812 ASHEVILLE, NC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11403	1004.8	3.17
FEB	12770	1125.2	3.55
MAR	14021	1235.4	3.90
APR	15850	1396.6	4.40
MAY	15681	1381.7	4.36
JUN	15326	1350.4	4.26
JUL	14449	1273.2	4.01
AUG	14704	1295.6	4.08
SEP	12884	1135.3	3.58
OCT	15014	1322.9	4.17
NOV	13566	1195.4	3.77
DEC	11125	980.3	3.09
ANN	13903	1225.0	3.86

STATION NO 93729 CAPE HATTERAS, NC (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10427	918.8	2.90
FEB	12426	1094.9	3.45
MAR	14547	1281.8	4.04
APR	18147	1599.0	5.04
MAY	18668	1644.9	5.19
JUN	19066	1680.0	5.30
JUL	17568	1548.0	4.88
AUG	16355	1441.1	4.54
SEP	15294	1347.6	4.25
OCT	14246	1255.3	3.96
NOV	13823	1218.0	3.84
DEC	11127	980.4	3.09
ANN	15146	1334.6	4.21

STATION NO 13881 CHARLOTTE, NC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11066	975.1	3.07
FEB	12398	1092.4	3.44
MAR	14147	1246.5	3.93
APR	16058	1414.9	4.46
MAY	16217	1428.9	4.51
JUN	16398	1444.9	4.56
JUL	15561	1371.1	4.32
AUG	15967	1406.9	4.44
SEP	13852	1220.6	3.85
OCT	15192	1338.6	4.22
NOV	13644	1202.2	3.79
DEC	11287	994.5	3.14
ANN	14323	1262.1	3.98

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13754 CHERRY POINT, NC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11339	999.1	3.15
FEB	13054	1150.2	3.63
MAR	14797	1303.8	4.11
APR	17340	1527.9	4.82
MAY	17259	1520.8	4.79
JUN	16495	1453.4	4.58
JUL	15194	1338.8	4.22
AUG	14393	1268.2	4.00
SEP	13418	1182.3	3.73
OCT	14515	1279.0	4.03
NOV	14151	1246.9	3.93
DEC	12010	1058.2	3.34
ANN	14499	1277.6	4.03

STATION NO 13723 GREENSBORO, NC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11463	1010.1	3.18
FEB	12770	1125.2	3.55
MAR	14321	1261.9	3.98
APR	15981	1408.1	4.44
MAY	16690	1470.6	4.64
JUN	17100	1506.7	4.75
JUL	16318	1437.8	4.53
AUG	16366	1442.1	4.55
SEP	14398	1268.7	4.00
OCT	15071	1328.0	4.19
NOV	13549	1193.9	3.76
DEC	11411	1005.5	3.17
ANN	14627	1288.8	4.06

STATION NO 13722 RALEIGH/DURHAM, NC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7813	688.4	2.17
FEB	9784	862.1	2.72
MAR	11918	1050.1	3.31
APR	14295	1259.6	3.97
MAY	15245	1343.3	4.24
JUN	15303	1348.4	4.25
JUL	14341	1263.6	3.98
AUG	14084	1241.0	3.91
SEP	12220	1076.8	3.39
OCT	12025	1059.6	3.34
NOV	9665	851.6	2.68
DEC	7760	683.8	2.16
ANN	12046	1061.4	3.35

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24011 BISMARCK, ND (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8970	790.4	2.49
FEB	12762	1124.5	3.55
MAR	15394	1356.4	4.28
APR	16236	1430.6	4.51
MAY	19742	1739.5	5.48
JUN	21989	1937.5	6.11
JUL	25327	2231.7	7.04
AUG	23372	2059.4	6.49
SEP	17692	1558.9	4.91
OCT	14401	1268.9	4.00
NOV	9214	811.9	2.56
DEC	7473	658.5	2.08
ANN	16070	1416.0	4.46

STATION NO 14914 FARGO, ND (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7693	677.9	2.14
FEB	11097	977.8	3.08
MAR	13617	1199.8	3.78
APR	15164	1336.2	4.21
MAY	18046	1590.1	5.01
JUN	19529	1720.8	5.43
JUL	23324	2055.2	6.48
AUG	21596	1902.9	6.00
SEP	15862	1397.7	4.41
OCT	13318	1173.5	3.70
NOV	7341	646.8	2.04
DEC	6572	579.1	1.83
ANN	14455	1273.7	4.02

STATION NO 24013 MINOT, ND (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7662	675.1	2.13
FEB	10725	945.0	2.98
MAR	13424	1182.8	3.73
APR	15583	1373.1	4.33
MAY	19049	1678.5	5.29
JUN	19988	1761.2	5.55
JUL	23755	2093.1	6.60
AUG	22188	1955.1	6.16
SEP	16482	1452.3	4.58
OCT	13865	1221.7	3.85
NOV	8013	706.1	2.23
DEC	6631	584.3	1.84
ANN	14809	1304.9	4.11

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14895 AKRON/CANTON, OH (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	5175	456.0	1.44
FEB	6610	582.4	1.84
MAR	8566	754.8	2.38
APR	11003	969.5	3.06
MAY	13770	1213.3	3.83
JUN	15173	1337.0	4.22
JUL	15174	1337.0	4.22
AUG	15149	1334.8	4.21
SEP	12389	1091.6	3.44
OCT	11050	973.7	3.07
NOV	5708	503.0	1.59
DEC	4095	360.8	1.14
ANN	10342	911.3	2.87

STATION NO 93814 CINCINNATI(COVINGTON, KY), OH (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	6186	545.1	1.72
FEB	7761	683.9	2.16
MAR	8643	761.6	2.40
APR	10824	953.7	3.01
MAY	13091	1153.5	3.64
JUN	14540	1281.2	4.04
JUL	14437	1272.1	4.01
AUG	15065	1327.4	4.19
SEP	12406	1093.1	3.45
OCT	12079	1064.3	3.36
NOV	7133	628.5	1.98
DEC	5353	471.7	1.49
ANN	10642	937.7	2.96

STATION NO 14820 CLEVELAND, OH (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4295	378.4	1.19
FEB	5877	517.8	1.63
MAR	7847	691.4	2.18
APR	11080	976.3	3.08
MAY	14154	1247.2	3.93
JUN	15440	1360.5	4.29
JUL	16082	1417.0	4.47
AUG	14924	1315.0	4.15
SEP	11861	1045.1	3.29
OCT	10211	899.7	2.84
NOV	4880	430.0	1.36
DEC	3324	292.9	.92
ANN	10020	882.9	2.78

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14821 COLUMBUS, OH (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	5526	486.9	1.54
FEB	6933	610.9	1.93
MAR	8258	727.6	2.29
APR	10618	935.6	2.95
MAY	13011	1146.5	3.61
JUN	14436	1272.0	4.01
JUL	14341	1263.6	3.98
AUG	14445	1272.8	4.01
SEP	12217	1076.5	3.39
OCT	11459	1009.7	3.18
NOV	6240	549.8	1.73
DEC	4703	414.4	1.31
ANN	10199	898.7	2.83

STATION NO 93815 DAYTON, OH (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	6453	568.6	1.79
FEB	8022	706.9	2.23
MAR	9122	803.8	2.53
APR	11420	1006.3	3.17
MAY	14029	1236.2	3.90
JUN	15530	1368.4	4.31
JUL	15368	1354.1	4.27
AUG	15631	1377.3	4.34
SEP	12918	1138.3	3.59
OCT	12015	1058.7	3.34
NOV	6959	613.2	1.93
DEC	5308	467.7	1.47
ANN	11080	976.3	3.08

STATION NO 94830 TOLEDO, OH (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	5468	481.8	1.52
FEB	7636	672.8	2.12
MAR	9052	797.6	2.51
APR	11550	1017.7	3.21
MAY	14657	1291.5	4.07
JUN	15737	1386.7	4.37
JUL	16317	1437.8	4.53
AUG	15458	1362.1	4.29
SEP	12565	1107.2	3.49
OCT	11312	996.7	3.14
NOV	5793	510.4	1.61
DEC	4463	393.3	1.24
ANN	10851	956.1	3.01

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14852 YOUNGSTOWN, OH (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4349	383.2	1.21
FEB	5754	507.0	1.60
MAR	7629	672.2	2.12
APR	10133	892.9	2.81
MAY	12783	1126.4	3.55
JUN	14000	1233.6	3.89
JUL	14471	1275.1	4.02
AUG	13619	1200.0	3.78
SEP	11072	975.6	3.08
OCT	10011	882.1	2.78
NOV	4817	424.4	1.34
DEC	3395	299.1	.94
ANN	9356	824.4	2.60

STATION NO 13967 OKLAHOMA CITY, OK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	14077	1240.4	3.91
FEB	15188	1338.3	4.22
MAR	16446	1449.1	4.57
APR	17679	1557.8	4.91
MAY	17912	1578.3	4.98
JUN	20676	1821.8	5.74
JUL	21878	1927.8	6.08
AUG	21179	1866.2	5.88
SEP	17112	1507.8	4.75
OCT	17047	1502.1	4.74
NOV	15328	1350.6	4.26
DEC	13448	1185.0	3.74
ANN	17343	1528.2	4.82

STATION NO 13968 TULSA, OK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11831	1042.5	3.29
FEB	13132	1157.1	3.65
MAR	14144	1246.3	3.93
APR	14862	1309.6	4.13
MAY	15726	1385.7	4.37
JUN	18018	1587.6	5.01
JUL	19639	1730.5	5.46
AUG	19373	1707.0	5.38
SEP	15277	1346.1	4.24
OCT	15177	1337.3	4.22
NOV	13079	1152.4	3.63
DEC	11051	973.7	3.07
ANN	15122	1332.5	4.20

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 94224 ASTORIA, OR (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3134	276.1	.87
FEB	5201	458.3	1.44
MAR	6940	611.5	1.93
APR	9065	798.8	2.52
MAY	12364	1089.4	3.43
JUN	11572	1019.7	3.21
JUL	15102	1330.7	4.20
AUG	13931	1227.5	3.87
SEP	12007	1058.0	3.34
OCT	7578	667.7	2.11
NOV	4024	354.6	1.12
DEC	2619	230.8	.73
ANN	8648	762.0	2.40

STATION NO 24225 MEDFORD, OR (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4430	390.3	1.23
FEB	8936	787.4	2.48
MAR	11957	1053.6	3.32
APR	16207	1428.1	4.50
MAY	20658	1820.3	5.74
JUN	24441	2153.6	6.79
JUL	29686	2615.8	8.25
AUG	26049	2295.3	7.24
SEP	20071	1768.5	5.58
OCT	13012	1146.5	3.61
NOV	5907	520.5	1.64
DEC	3596	316.9	1.00
ANN	15448	1361.2	4.29

STATION NO 24284 NORTH BEND, OR (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	5531	487.4	1.54
FEB	8062	710.4	2.24
MAR	10061	886.5	2.79
APR	13541	1193.2	3.76
MAY	16604	1463.0	4.61
JUN	18040	1589.6	5.01
JUL	21350	1881.2	5.93
AUG	19011	1675.1	5.28
SEP	15269	1345.4	4.24
OCT	10983	967.8	3.05
NOV	6726	592.7	1.87
DEC	5042	444.3	1.40
ANN	12543	1105.2	3.48

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24229 PORTLAND, OR (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	2842	250.4	.79
FEB	5415	477.1	1.50
MAR	7732	681.3	2.15
APR	10382	914.8	2.88
MAY	13951	1229.3	3.88
JUN	14984	1320.3	4.16
JUL	21227	1870.4	5.90
AUG	17872	1574.8	4.96
SEP	13660	1203.6	3.79
OCT	7618	671.3	2.12
NOV	3922	345.6	1.09
DEC	2477	218.3	.69
ANN	10204	899.1	2.83

STATION NO 24230 REDMOND, OR (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8227	724.9	2.29
FEB	11048	973.5	3.07
MAR	14038	1236.9	3.90
APR	18410	1622.2	5.11
MAY	22663	1996.9	6.30
JUN	25852	2277.9	7.18
JUL	30799	2713.8	8.56
AUG	26979	2377.2	7.49
SEP	21665	1909.0	6.02
OCT	15135	1333.6	4.20
NOV	9318	821.0	2.59
DEC	7673	676.1	2.13
ANN	17688	1558.6	4.91

STATION NO 24232 SALEM, OR (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3125	275.4	.87
FEB	5778	509.1	1.61
MAR	8361	736.7	2.32
APR	11211	987.8	3.11
MAY	14997	1321.4	4.17
JUN	16194	1426.9	4.50
JUL	23278	2051.1	6.47
AUG	19845	1748.6	5.51
SEP	15121	1332.4	4.20
OCT	8563	754.5	2.38
NOV	4307	379.5	1.20
DEC	2617	230.6	.73
ANN	11151	982.6	3.10

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 40309 KOROR ISLAND, PC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	13298	1171.7	3.69
FEB	13315	1173.2	3.70
MAR	11435	1007.6	3.18
APR	11867	1045.6	3.30
MAY	10895	960.0	3.03
JUN	9662	851.4	2.68
JUL	10034	884.1	2.79
AUG	11154	982.8	3.10
SEP	10990	968.4	3.05
OCT	13055	1150.3	3.63
NOV	14510	1278.5	4.03
DEC	13574	1196.1	3.77
ANN	11975	1055.2	3.33

STATION NO 40604 KWAJALEIN ISLAND, PC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	18360	1617.8	5.10
FEB	18127	1597.2	5.04
MAR	15065	1327.4	4.19
APR	12571	1107.7	3.49
MAY	11906	1049.1	3.31
JUN	12180	1073.2	3.38
JUL	12478	1099.5	3.47
AUG	14354	1264.8	3.99
SEP	12897	1136.4	3.58
OCT	13795	1215.5	3.83
NOV	15643	1378.4	4.35
DEC	17140	1510.3	4.76
ANN	14531	1280.4	4.04

STATION NO 41606 WAKE ISLAND, WK (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	17455	1538.0	4.85
FEB	17635	1553.9	4.90
MAR	17069	1504.0	4.74
APR	16692	1470.8	4.64
MAY	18209	1604.5	5.06
JUN	18450	1625.7	5.13
JUL	17038	1501.3	4.73
AUG	17403	1533.4	4.83
SEP	15965	1406.7	4.44
OCT	16908	1489.8	4.70
NOV	19346	1704.7	5.37
DEC	18517	1631.6	5.14
ANN	17556	1546.9	4.88

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14737 ALLENTOWN, PA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7509	661.6	2.09
FEB	9117	803.3	2.53
MAR	10508	925.9	2.92
APR	11978	1055.4	3.33
MAY	13330	1174.6	3.70
JUN	14252	1255.8	3.96
JUL	14753	1299.9	4.10
AUG	14209	1252.0	3.95
SEP	11751	1035.4	3.26
OCT	11232	989.7	3.12
NOV	7270	640.6	2.02
DEC	6146	541.5	1.71
ANN	11016	970.7	3.06

STATION NO 14860 ERIE, PA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	3524	310.5	.98
FEB	5668	499.4	1.57
MAR	8186	721.3	2.27
APR	11451	1009.0	3.18
MAY	13772	1213.5	3.83
JUN	15676	1381.3	4.35
JUL	16458	1450.2	4.57
AUG	14733	1298.2	4.09
SEP	11282	994.1	3.13
OCT	9435	831.4	2.62
NOV	3899	343.6	1.08
DEC	2532	223.1	.70
ANN	9739	858.1	2.71

STATION NO 14751 HARRISBURG, PA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	7653	674.3	2.13
FEB	9417	829.8	2.62
MAR	10615	935.3	2.95
APR	12134	1069.2	3.37
MAY	13683	1205.7	3.80
JUN	14780	1302.3	4.11
JUL	14867	1310.0	4.13
AUG	14290	1259.1	3.97
SEP	12213	1076.1	3.39
OCT	11357	1000.7	3.15
NOV	7491	660.1	2.08
DEC	6496	572.4	1.80
ANN	11259	992.1	3.13

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13739 PHILADELPHIA, PA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8072	711.3	2.24
FEB	9618	847.5	2.67
MAR	11043	973.0	3.07
APR	12434	1095.6	3.45
MAY	13719	1208.8	3.81
JUN	14772	1301.6	4.10
JUL	14588	1285.4	4.05
AUG	14560	1282.9	4.04
SEP	12381	1090.9	3.44
OCT	11732	1033.8	3.26
NOV	8396	739.8	2.33
DEC	7036	620.0	1.95
ANN	11539	1016.7	3.21

STATION NO 94823 PITTSBURGH, PA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4915	433.1	1.37
FEB	6152	542.1	1.71
MAR	7837	690.5	2.18
APR	10033	884.0	2.79
MAY	12532	1104.2	3.48
JUN	13664	1204.0	3.80
JUL	13518	1191.1	3.76
AUG	13477	1187.5	3.74
SEP	11629	1024.7	3.23
OCT	10729	945.4	2.98
NOV	5699	502.2	1.58
DEC	3779	333.0	1.05
ANN	9514	838.3	2.64

STATION NO 14777 WILKES-BARRE/SCRANTON, PA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	5705	502.7	1.58
FEB	7533	663.8	2.09
MAR	8892	783.5	2.47
APR	10934	963.4	3.04
MAY	12640	1113.8	3.51
JUN	13923	1226.8	3.87
JUL	14480	1275.9	4.02
AUG	13584	1196.9	3.77
SEP	11074	975.8	3.08
OCT	10192	898.1	2.83
NOV	5443	479.6	1.51
DEC	4347	383.0	1.21
ANN	9909	873.1	2.75

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 11641 SAN JUAN, PR (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16289	1435.3	4.53
FEB	16407	1445.7	4.56
MAR	16212	1428.5	4.50
APR	15642	1378.3	4.35
MAY	13634	1201.3	3.79
JUN	14247	1255.4	3.96
JUL	16200	1427.4	4.50
AUG	16669	1468.8	4.63
SEP	14402	1269.0	4.00
OCT	15498	1365.6	4.31
NOV	16639	1466.1	4.62
DEC	15815	1393.5	4.39
ANN	15636	1377.8	4.34

STATION NO 14765 PROVIDENCE, RI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8327	733.7	2.31
FEB	9698	854.5	2.69
MAR	10742	946.5	2.98
APR	12635	1113.3	3.51
MAY	14717	1296.8	4.09
JUN	15563	1371.3	4.32
JUL	14294	1259.5	3.97
AUG	14115	1243.7	3.92
SEP	12124	1068.3	3.37
OCT	11876	1046.4	3.30
NOV	7552	665.4	2.10
DEC	6852	603.8	1.90
ANN	11551	1017.8	3.21

STATION NO 13880 CHARLESTON, SC (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10604	934.4	2.95
FEB	12206	1075.5	3.39
MAR	13711	1208.1	3.81
APR	16354	1441.0	4.54
MAY	16042	1413.5	4.46
JUN	14886	1311.7	4.14
JUL	14762	1300.7	4.10
AUG	13312	1173.0	3.70
SEP	12414	1093.8	3.45
OCT	14126	1244.7	3.92
NOV	13843	1219.8	3.85
DEC	11196	986.5	3.11
ANN	13624	1200.5	3.78

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13883 COLUMBIA, SC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11596	1021.8	3.22
FEB	12986	1144.2	3.61
MAR	14591	1285.7	4.05
APR	16870	1486.5	4.69
MAY	16907	1489.7	4.70
JUN	16872	1486.7	4.69
JUL	15589	1373.6	4.33
AUG	15874	1398.7	4.41
SEP	14206	1251.7	3.95
OCT	15488	1364.7	4.30
NOV	14513	1278.8	4.03
DEC	12297	1083.5	3.42
ANN	14821	1305.9	4.12

STATION NO 3870 GREENVILLE/SPARTANBURG, SC (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11106	978.6	3.09
FEB	12580	1108.5	3.49
MAR	14250	1255.6	3.96
APR	16124	1420.8	4.48
MAY	16084	1417.2	4.47
JUN	16247	1431.6	4.51
JUL	15333	1351.1	4.26
AUG	15907	1401.6	4.42
SEP	13730	1209.8	3.81
OCT	15405	1357.4	4.28
NOV	14086	1241.2	3.91
DEC	11195	986.4	3.11
ANN	14343	1263.8	3.98

STATION NO 14936 HURON, SD (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9098	801.7	2.53
FEB	11534	1016.3	3.20
MAR	13530	1192.2	3.76
APR	16298	1436.1	4.53
MAY	18879	1663.5	5.24
JUN	21368	1882.8	5.94
JUL	24244	2136.2	6.73
AUG	22578	1989.4	6.27
SEP	17808	1569.1	4.95
OCT	15439	1360.4	4.29
NOV	10306	908.1	2.86
DEC	7792	686.6	2.16
ANN	15764	1389.0	4.38

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24025 PIERRE, SD (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10474	922.9	2.91
FEB	12986	1144.2	3.61
MAR	15780	1390.4	4.38
APR	18051	1590.5	5.01
MAY	20882	1840.0	5.80
JUN	23343	2056.8	6.48
JUL	26400	2326.2	7.33
AUG	24807	2185.8	6.89
SEP	19734	1738.8	5.48
OCT	17301	1524.5	4.81
NOV	12004	1057.7	3.33
DEC	9136	805.0	2.54
ANN	17602	1551.0	4.89

STATION NO 24090 RAPID CITY, SD (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10811	952.6	3.00
FEB	13719	1208.8	3.81
MAR	16007	1410.4	4.45
APR	17813	1569.6	4.95
MAY	19514	1719.5	5.42
JUN	22382	1972.2	6.22
JUL	25606	2256.2	7.11
AUG	24693	2175.8	6.86
SEP	20844	1836.6	5.79
OCT	18220	1605.4	5.06
NOV	13171	1160.5	3.66
DEC	10573	931.6	2.94
ANN	17802	1568.6	4.95

STATION NO 14944 SIOUX FALLS, SD (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10534	928.2	2.93
FEB	13049	1149.8	3.63
MAR	14240	1254.7	3.96
APR	16398	1444.9	4.56
MAY	19243	1695.6	5.35
JUN	21457	1890.7	5.96
JUL	23490	2069.8	6.53
AUG	21674	1909.8	6.02
SEP	17552	1546.6	4.88
OCT	15722	1385.3	4.37
NOV	11075	975.9	3.08
DEC	8977	791.0	2.49
ANN	16135	1421.7	4.48

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13882 CHATTANOOGA, TN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8371	737.6	2.33
FEB	9588	844.8	2.66
MAR	10828	954.1	3.01
APR	13281	1170.2	3.69
MAY	14165	1248.1	3.94
JUN	14812	1305.1	4.11
JUL	13756	1212.1	3.82
AUG	14731	1298.0	4.09
SEP	12336	1087.0	3.43
OCT	13523	1191.6	3.76
NOV	10808	952.3	3.00
DEC	8125	715.9	2.26
ANN	12037	1060.6	3.34

STATION NO 13891 KNOXVILLE, TN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8459	745.4	2.35
FEB	9851	868.0	2.74
MAR	11124	980.2	3.09
APR	14161	1247.8	3.93
MAY	15390	1356.1	4.28
JUN	15827	1394.6	4.40
JUL	14899	1312.8	4.14
AUG	15381	1355.3	4.27
SEP	13281	1170.2	3.69
OCT	14150	1246.8	3.93
NOV	10820	953.4	3.01
DEC	8151	718.2	2.26
ANN	12636	1113.4	3.51

STATION NO 13893 MEMPHIS, TN (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9829	866.1	2.73
FEB	11645	1026.1	3.23
MAR	13047	1149.6	3.62
APR	15169	1336.6	4.21
MAY	16966	1494.9	4.71
JUN	18493	1629.5	5.14
JUL	17884	1575.8	4.97
AUG	18082	1593.3	5.02
SEP	14856	1309.0	4.13
OCT	15664	1380.2	4.35
NOV	12143	1070.0	3.37
DEC	9711	855.7	2.70
ANN	14471	1275.1	4.02

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13897 NASHVILLE, TN (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8303	731.6	2.31
FEB	10189	897.8	2.83
MAR	11342	999.4	3.15
APR	14220	1253.0	3.95
MAY	16244	1431.3	4.51
JUN	17277	1522.3	4.80
JUL	16601	1462.8	4.61
AUG	16601	1462.8	4.61
SEP	13632	1201.2	3.79
OCT	13913	1225.9	3.87
NOV	10175	896.6	2.83
DEC	7898	695.9	2.19
ANN	13046	1149.5	3.62

STATION NO 13962 ABILENE, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16154	1423.4	4.49
FEB	17068	1503.9	4.74
MAR	19306	1701.1	5.36
APR	19353	1705.3	5.38
MAY	19798	1744.5	5.50
JUN	21976	1936.4	6.10
JUL	22246	1960.2	6.18
AUG	20695	1823.5	5.75
SEP	17584	1549.4	4.88
OCT	17916	1578.7	4.98
NOV	17085	1505.4	4.75
DEC	16102	1418.8	4.47
ANN	18784	1655.1	5.22

STATION NO 23047 AMARILLO, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20077	1769.1	5.58
FEB	21112	1860.3	5.86
MAR	22254	1960.9	6.18
APR	24595	2167.2	6.83
MAY	24293	2140.6	6.75
JUN	26337	2320.7	7.32
JUL	25603	2256.0	7.11
AUG	25038	2206.2	6.96
SEP	22866	2014.8	6.35
OCT	22500	1990.5	6.28
NOV	20487	1805.2	5.69
DEC	19115	1684.3	5.31
ANN	22870	2015.2	6.35

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13958 AUSTIN, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12358	1088.9	3.43
FEB	13935	1227.9	3.87
MAR	14588	1285.4	4.05
APR	13631	1201.1	3.79
MAY	15287	1347.0	4.25
JUN	18751	1652.2	5.21
JUL	20731	1826.7	5.76
AUG	19238	1695.1	5.34
SEP	16299	1436.2	4.53
OCT	16585	1461.4	4.61
NOV	14640	1290.0	4.07
DEC	13054	1150.2	3.63
ANN	15771	1389.6	4.38

STATION NO 12919 BROWNSVILLE, TX (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11392	1003.8	3.16
FEB	12613	1111.4	3.50
MAR	13654	1203.1	3.79
APR	14858	1309.2	4.13
MAY	16648	1466.9	4.62
JUN	20009	1763.1	5.56
JUL	22721	2002.0	6.31
AUG	21116	1860.6	5.87
SEP	17126	1509.0	4.76
OCT	16784	1478.9	4.66
NOV	13684	1205.8	3.80
DEC	11356	1000.6	3.15
ANN	16018	1411.4	4.45

STATION NO 12924 CORPUS CHRISTI, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11370	1001.9	3.16
FEB	13065	1151.2	3.63
MAR	13461	1186.1	3.74
APR	13257	1168.1	3.68
MAY	15422	1358.9	4.28
JUN	19359	1705.8	5.38
JUL	22583	1989.9	6.27
AUG	20569	1812.4	5.71
SEP	17302	1524.5	4.81
OCT	17243	1519.3	4.79
NOV	14227	1253.6	3.95
DEC	11539	1016.7	3.21
ANN	15801	1392.3	4.39

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 22010 DEL RIO, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	14645	1290.4	4.07
FEB	15528	1368.2	4.31
MAR	17072	1504.3	4.74
APR	15443	1360.7	4.29
MAY	15077	1328.5	4.19
JUN	17380	1531.4	4.83
JUL	20034	1765.3	5.57
AUG	18441	1624.9	5.12
SEP	15241	1342.9	4.23
OCT	16369	1442.3	4.55
NOV	15988	1408.8	4.44
DEC	14600	1286.5	4.06
ANN	16328	1438.7	4.54

STATION NO 23044 EL PASO, TX (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	21525	1896.7	5.98
FEB	24103	2123.8	6.70
MAR	25955	2287.0	7.21
APR	29468	2596.5	8.19
MAY	31103	2740.6	8.64
JUN	31804	2802.4	8.84
JUL	28190	2483.9	7.83
AUG	27317	2407.0	7.59
SEP	25737	2267.8	7.15
OCT	25433	2241.0	7.07
NOV	23244	2048.1	6.46
DEC	20944	1845.5	5.82
ANN	26237	2311.8	7.29

STATION NO 3927 FORT WORTH, TX (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12659	1115.4	3.52
FEB	14412	1269.9	4.00
MAR	15857	1397.2	4.41
APR	15460	1362.2	4.29
MAY	17422	1535.1	4.84
JUN	20972	1847.9	5.83
JUL	22124	1949.4	6.15
AUG	21207	1868.6	5.89
SEP	17540	1545.5	4.87
OCT	16706	1472.0	4.64
NOV	14714	1296.5	4.09
DEC	13000	1145.5	3.61
ANN	16824	1482.4	4.67

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 12960 HOUSTON, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8986	791.8	2.50
FEB	11055	974.1	3.07
MAR	11208	987.6	3.11
APR	11340	999.2	3.15
MAY	13948	1229.0	3.87
JUN	15699	1383.3	4.36
JUL	15424	1359.1	4.28
AUG	14690	1294.4	4.08
SEP	13327	1174.3	3.70
OCT	14586	1285.2	4.05
NOV	12068	1063.4	3.35
DEC	9360	824.7	2.60
ANN	12648	1114.5	3.51

STATION NO 12928 KINGSVILLE, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11593	1021.5	3.22
FEB	13090	1153.4	3.64
MAR	13378	1178.8	3.72
APR	13494	1189.0	3.75
MAY	15264	1345.0	4.24
JUN	18195	1603.2	5.05
JUL	20948	1845.8	5.82
AUG	19186	1690.6	5.33
SEP	15842	1395.9	4.40
OCT	16431	1447.8	4.56
NOV	13862	1221.4	3.85
DEC	11467	1010.4	3.19
ANN	15244	1343.2	4.23

STATION NO 12907 LAREDO, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12369	1089.9	3.44
FEB	13303	1172.2	3.70
MAR	14250	1255.6	3.96
APR	14126	1244.7	3.92
MAY	16544	1457.8	4.60
JUN	18577	1636.9	5.16
JUL	20904	1841.9	5.81
AUG	20350	1793.1	5.65
SEP	16992	1497.2	4.72
OCT	16597	1462.4	4.61
NOV	13674	1204.9	3.80
DEC	12029	1059.9	3.34
ANN	15827	1394.6	4.40

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23042 LUBBOCK, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	19904	1753.8	5.53
FEB	21352	1881.4	5.93
MAR	23241	2047.9	6.46
APR	26145	2303.7	7.26
MAY	26841	2365.1	7.46
JUN	28744	2532.7	7.99
JUL	27713	2441.9	7.70
AUG	26140	2303.3	7.26
SEP	22395	1973.3	6.22
OCT	22151	1951.8	6.15
NOV	20614	1816.4	5.73
DEC	18600	1638.9	5.17
ANN	23662	2085.0	6.57

STATION NO 93987 LUFKIN, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10900	960.4	3.03
FEB	13173	1160.7	3.66
MAR	14079	1240.6	3.91
APR	14050	1238.0	3.90
MAY	16169	1424.7	4.49
JUN	18778	1654.6	5.22
JUL	19022	1676.1	5.28
AUG	18268	1609.7	5.07
SEP	16113	1419.8	4.48
OCT	17389	1532.2	4.83
NOV	14507	1278.3	4.03
DEC	11799	1039.7	3.28
ANN	15365	1353.9	4.27

STATION NO 23023 MIDLAND/ODESSA, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20014	1763.5	5.56
FEB	21403	1885.9	5.95
MAR	24147	2127.7	6.71
APR	26023	2293.0	7.23
MAY	27342	2409.2	7.60
JUN	28819	2539.4	8.01
JUL	27138	2391.2	7.54
AUG	25659	2260.9	7.13
SEP	22293	1964.3	6.19
OCT	22298	1964.8	6.19
NOV	21009	1851.2	5.84
DEC	19277	1698.6	5.36
ANN	23795	2096.7	6.61

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 12917 PORT ARTHUR, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9697	854.4	2.69
FEB	12003	1057.6	3.33
MAR	12394	1092.1	3.44
APR	12604	1110.6	3.50
MAY	15509	1366.6	4.31
JUN	17546	1546.0	4.87
JUL	15871	1398.5	4.41
AUG	15707	1384.0	4.36
SEP	14304	1260.4	3.97
OCT	15728	1385.9	4.37
NOV	12721	1120.9	3.53
DEC	10223	900.8	2.84
ANN	13699	1207.1	3.81

STATION NO 23034 SAN ANGELO, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16578	1460.8	4.61
FEB	17089	1505.8	4.75
MAR	19366	1706.4	5.38
APR	19107	1683.6	5.31
MAY	19375	1707.2	5.38
JUN	21584	1901.9	6.00
JUL	22059	1943.7	6.13
AUG	20755	1828.8	5.77
SEP	17537	1545.3	4.87
OCT	17871	1574.7	4.96
NOV	17420	1534.9	4.84
DEC	16405	1445.5	4.56
ANN	18773	1654.2	5.22

STATION NO 12921 SAN ANTONIO, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12980	1143.7	3.61
FEB	14386	1267.6	4.00
MAR	15099	1330.4	4.19
APR	13811	1216.9	3.84
MAY	15299	1348.1	4.25
JUN	18809	1657.3	5.23
JUL	21053	1855.1	5.85
AUG	19401	1709.5	5.39
SEP	16556	1458.8	4.60
OCT	16450	1449.5	4.57
NOV	14725	1297.5	4.09
DEC	13126	1156.6	3.65
ANN	15987	1408.7	4.44

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13923 SHERMAN, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12504	1101.8	3.47
FEB	13535	1192.6	3.76
MAR	14510	1278.5	4.03
APR	14599	1286.4	4.06
MAY	16173	1425.1	4.49
JUN	19985	1761.0	5.55
JUL	20473	1804.0	5.69
AUG	20392	1796.8	5.66
SEP	17167	1512.7	4.77
OCT	16655	1467.5	4.63
NOV	14881	1311.2	4.13
DEC	12729	1121.6	3.54
ANN	16148	1422.9	4.49

STATION NO 13959 WACO, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	12330	1086.4	3.43
FEB	14154	1247.2	3.93
MAR	15288	1347.1	4.25
APR	14326	1262.3	3.98
MAY	16037	1413.1	4.46
JUN	19697	1735.6	5.47
JUL	21590	1902.4	6.00
AUG	20116	1772.5	5.59
SEP	16623	1464.7	4.62
OCT	16548	1458.1	4.60
NOV	14644	1290.3	4.07
DEC	13299	1171.8	3.69
ANN	16236	1430.6	4.51

STATION NO 13966 WICHITA FALLS, TX (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	14398	1268.7	4.00
FEB	15613	1375.7	4.34
MAR	16816	1481.7	4.67
APR	17536	1545.2	4.87
MAY	19190	1690.9	5.33
JUN	21757	1917.1	6.04
JUL	22214	1957.4	6.17
AUG	21037	1853.7	5.84
SEP	17798	1568.3	4.94
OCT	17561	1547.4	4.88
NOV	15977	1407.8	4.44
DEC	14415	1270.2	4.00
ANN	17872	1574.8	4.96

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 23159 BRYCE CANYON, UT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	20463	1803.1	5.68
FEB	22902	2018.0	6.36
MAR	25329	2231.8	7.04
APR	28357	2498.6	7.88
MAY	31046	2735.6	8.62
JUN	33375	2940.8	9.27
JUL	30072	2649.8	8.35
AUG	27923	2460.4	7.76
SEP	28597	2519.8	7.94
OCT	25953	2286.8	7.21
NOV	21914	1930.9	6.09
DEC	19655	1731.9	5.46
ANN	26305	2317.8	7.31

STATION NO 93129 CEDAR CITY, UT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	18367	1618.4	5.10
FEB	20123	1773.1	5.59
MAR	23237	2047.5	6.46
APR	26602	2344.0	7.39
MAY	30473	2685.1	8.47
JUN	33619	2962.3	9.34
JUL	30790	2713.0	8.55
AUG	28624	2522.2	7.95
SEP	28810	2538.6	8.00
OCT	24869	2191.3	6.91
NOV	20043	1766.1	5.57
DEC	17358	1529.5	4.82
ANN	25260	2225.8	7.02

STATION NO 24127 SALT LAKE CITY, UT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	11725	1033.1	3.26
FEB	16134	1421.6	4.48
MAR	20009	1763.1	5.56
APR	22960	2023.1	6.38
MAY	28516	2512.7	7.92
JUN	30765	2710.8	8.55
JUL	32594	2872.0	9.05
AUG	29516	2600.8	8.20
SEP	26597	2343.6	7.39
OCT	22059	1943.7	6.13
NOV	14917	1314.4	4.14
DEC	11441	1008.1	3.18
ANN	22299	1964.9	6.19

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14742 BURLINGTON, VT (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	6688	589.3	1.86
FEB	9518	838.7	2.64
MAR	11977	1055.3	3.33
APR	14394	1268.3	4.00
MAY	17098	1506.6	4.75
JUN	18444	1625.2	5.12
JUL	19522	1720.2	5.42
AUG	17757	1564.6	4.93
SEP	13791	1215.2	3.83
OCT	11104	978.4	3.08
NOV	5444	479.7	1.51
DEC	4533	399.4	1.26
ANN	12540	1104.9	3.48

STATION NO 13737 NORFOLK, VA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10189	897.8	2.83
FEB	11818	1041.3	3.28
MAR	13722	1209.1	3.81
APR	15955	1405.9	4.43
MAY	17067	1503.8	4.74
JUN	18007	1586.7	5.00
JUL	16034	1412.8	4.45
AUG	15747	1387.5	4.37
SEP	13730	1209.8	3.81
OCT	13475	1187.3	3.74
NOV	12661	1115.6	3.52
DEC	10299	907.5	2.86
ANN	14064	1239.2	3.91

STATION NO 13740 RICHMOND, VA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	9207	811.3	2.56
FEB	10606	934.5	2.95
MAR	12256	1079.9	3.40
APR	13699	1207.1	3.81
MAY	14811	1305.1	4.11
JUN	15386	1355.7	4.27
JUL	14619	1288.1	4.06
AUG	14636	1289.6	4.07
SEP	13102	1154.5	3.64
OCT	12770	1125.2	3.55
NOV	10705	943.3	2.97
DEC	8788	774.3	2.44
ANN	12556	1106.4	3.49

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13741 ROANOKE, VA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10628	936.5	2.95
FEB	11627	1024.5	3.23
MAR	13048	1149.7	3.62
APR	14444	1272.7	4.01
MAY	15299	1348.1	4.25
JUN	16156	1423.6	4.49
JUL	15438	1360.3	4.29
AUG	15288	1347.1	4.25
SEP	13670	1204.5	3.80
OCT	14249	1255.5	3.96
NOV	12201	1075.1	3.39
DEC	9905	872.8	2.75
ANN	13504	1189.9	3.75

STATION NO 24227 OLYMPIA, WA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	2316	204.1	.64
FEB	4745	418.1	1.32
MAR	7098	625.4	1.97
APR	9632	848.7	2.68
MAY	13620	1200.1	3.78
JUN	13460	1186.0	3.74
JUL	19153	1687.6	5.32
AUG	15906	1401.5	4.42
SEP	11947	1052.7	3.32
OCT	5995	528.2	1.67
NOV	3098	273.0	.86
DEC	1819	160.3	.51
ANN	9094	801.3	2.53

STATION NO 24233 SEATTLE/TACOMA, WA (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	2524	222.4	.70
FEB	4963	437.3	1.38
MAR	7762	683.9	2.16
APR	11002	969.4	3.06
MAY	15620	1376.3	4.34
JUN	15895	1400.6	4.42
JUL	20664	1820.8	5.74
AUG	17051	1502.4	4.74
SEP	12417	1094.1	3.45
OCT	6970	614.2	1.94
NOV	3568	314.4	.99
DEC	2049	180.5	.57
ANN	10072	887.5	2.80

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24157 SPOKANE, WA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4541	400.1	1.26
FEB	8442	743.9	2.35
MAR	12497	1101.2	3.47
APR	15415	1358.3	4.28
MAY	20000	1762.3	5.56
JUN	21858	1926.0	6.07
JUL	28867	2543.6	8.02
AUG	24836	2188.4	6.90
SEP	19542	1721.9	5.43
OCT	12400	1092.6	3.44
NOV	5665	499.2	1.57
DEC	3589	316.2	1.00
ANN	14844	1308.0	4.12

STATION NO 24255 WHIDBEY ISLAND, WA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	2701	238.0	.75
FEB	5470	482.0	1.52
MAR	8232	725.4	2.29
APR	11327	998.1	3.15
MAY	15921	1402.9	4.42
JUN	15541	1369.4	4.32
JUL	20489	1805.4	5.69
AUG	16925	1491.3	4.70
SEP	12613	1111.4	3.50
OCT	6798	599.0	1.89
NOV	3725	328.2	1.03
DEC	2245	197.8	.62
ANN	10194	898.2	2.83

STATION NO 24243 YAKIMA, WA (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	4892	431.1	1.36
FEB	8719	768.3	2.42
MAR	12912	1137.7	3.59
APR	16640	1466.2	4.62
MAY	20716	1825.4	5.75
JUN	22455	1978.6	6.24
JUL	27809	2450.4	7.73
AUG	24546	2162.8	6.82
SEP	19636	1730.2	5.45
OCT	12812	1128.9	3.56
NOV	6383	562.4	1.77
DEC	4152	365.8	1.15
ANN	15176	1337.2	4.22

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 13866 CHARLESTON, WV (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	6203	546.6	1.72
FEB	7208	635.1	2.00
MAR	8433	743.1	2.34
APR	10407	917.0	2.89
MAY	12612	1111.3	3.50
JUN	13782	1214.4	3.83
JUL	12993	1144.9	3.61
AUG	12838	1131.2	3.57
SEP	11527	1015.7	3.20
OCT	11534	1016.3	3.20
NOV	7733	681.4	2.15
DEC	5449	480.1	1.51
ANN	10073	887.6	2.80

STATION NO 14991 EAU CLAIRE, WI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8260	727.8	2.29
FEB	11880	1046.8	3.30
MAR	13405	1181.2	3.72
APR	13945	1228.7	3.87
MAY	15013	1322.9	4.17
JUN	16747	1475.6	4.65
JUL	17907	1577.9	4.97
AUG	16685	1470.2	4.64
SEP	12450	1097.0	3.46
OCT	10698	942.6	2.97
NOV	6212	547.4	1.73
DEC	5782	509.5	1.61
ANN	12420	1094.4	3.45

STATION NO 14898 GREEN BAY, WI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8018	706.5	2.23
FEB	11054	974.0	3.07
MAR	13450	1185.1	3.74
APR	14005	1234.0	3.89
MAY	15448	1361.2	4.29
JUN	17338	1527.7	4.82
JUL	17899	1577.2	4.97
AUG	16430	1452.1	4.58
SEP	12611	1111.2	3.50
OCT	10255	903.6	2.85
NOV	6280	553.4	1.74
DEC	5910	520.8	1.64
ANN	12404	1093.0	3.45

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 14920 LA CROSSE, WI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8608	758.5	2.39
FEB	11659	1027.3	3.24
MAR	13191	1162.3	3.66
APR	13663	1203.9	3.80
MAY	15355	1353.0	4.27
JUN	17153	1511.4	4.77
JUL	18055	1590.9	5.02
AUG	17290	1523.5	4.80
SEP	12994	1145.0	3.61
OCT	11095	977.6	3.08
NOV	6937	611.2	1.93
DEC	6080	535.7	1.69
ANN	12681	1117.4	3.52

STATION NO 14837 MADISON, WI (SOLMET)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8841	779.0	2.46
FEB	11845	1043.7	3.29
MAR	13430	1183.4	3.73
APR	13869	1222.1	3.85
MAY	16440	1448.6	4.57
JUN	18296	1612.1	5.08
JUL	18924	1667.5	5.26
AUG	18189	1602.7	5.05
SEP	14503	1277.9	4.03
OCT	12273	1081.4	3.41
NOV	7479	659.0	2.08
DEC	6454	568.7	1.79
ANN	13389	1179.8	3.72

STATION NO 14839 MILWAUKEE, WI (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	8120	715.5	2.26
FEB	10576	931.9	2.94
MAR	12551	1105.9	3.49
APR	13867	1221.9	3.85
MAY	16406	1445.6	4.56
JUN	18651	1643.4	5.18
JUL	19196	1691.4	5.33
AUG	18091	1594.1	5.03
SEP	14228	1253.7	3.95
OCT	12095	1065.7	3.36
NOV	7541	664.5	2.09
DEC	6045	532.6	1.68
ANN	13128	1156.8	3.65

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

STATION NO 24089 CASPER, WY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16034	1412.8	4.45
FEB	19342	1704.3	5.37
MAR	21521	1896.3	5.98
APR	23099	2035.3	6.42
MAY	26307	2318.0	7.31
JUN	30244	2664.9	8.40
JUL	32175	2835.1	8.94
AUG	29941	2638.2	8.32
SEP	25692	2263.8	7.14
OCT	21856	1925.8	6.07
NOV	16817	1481.8	4.67
DEC	15110	1331.4	4.20
ANN	23199	2044.2	6.44

STATION NO 24018 CHEYENNE, WY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	18570	1636.3	5.16
FEB	20966	1847.4	5.82
MAR	21962	1935.2	6.10
APR	22009	1939.3	6.11
MAY	21882	1928.1	6.08
JUN	25261	2225.8	7.02
JUL	25954	2286.9	7.21
AUG	24596	2167.3	6.83
SEP	23745	2092.3	6.60
OCT	22218	1957.7	6.17
NOV	18539	1633.5	5.15
DEC	17193	1514.9	4.78
ANN	21887	1928.6	6.08

STATION NO 24027 ROCK SPRINGS, WY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	16971	1495.4	4.71
FEB	21202	1868.2	5.89
MAR	23349	2057.4	6.49
APR	25187	2219.3	7.00
MAY	29537	2602.6	8.21
JUN	32351	2850.6	8.99
JUL	32871	2896.4	9.13
AUG	30455	2683.5	8.46
SEP	27504	2423.5	7.64
OCT	23799	2097.0	6.61
NOV	18023	1588.1	5.01
DEC	16699	1471.4	4.64
ANN	24846	2189.3	6.90

MEAN DAILY DIRECT NORMAL INSOLATION

SOLMET/ERSATZ

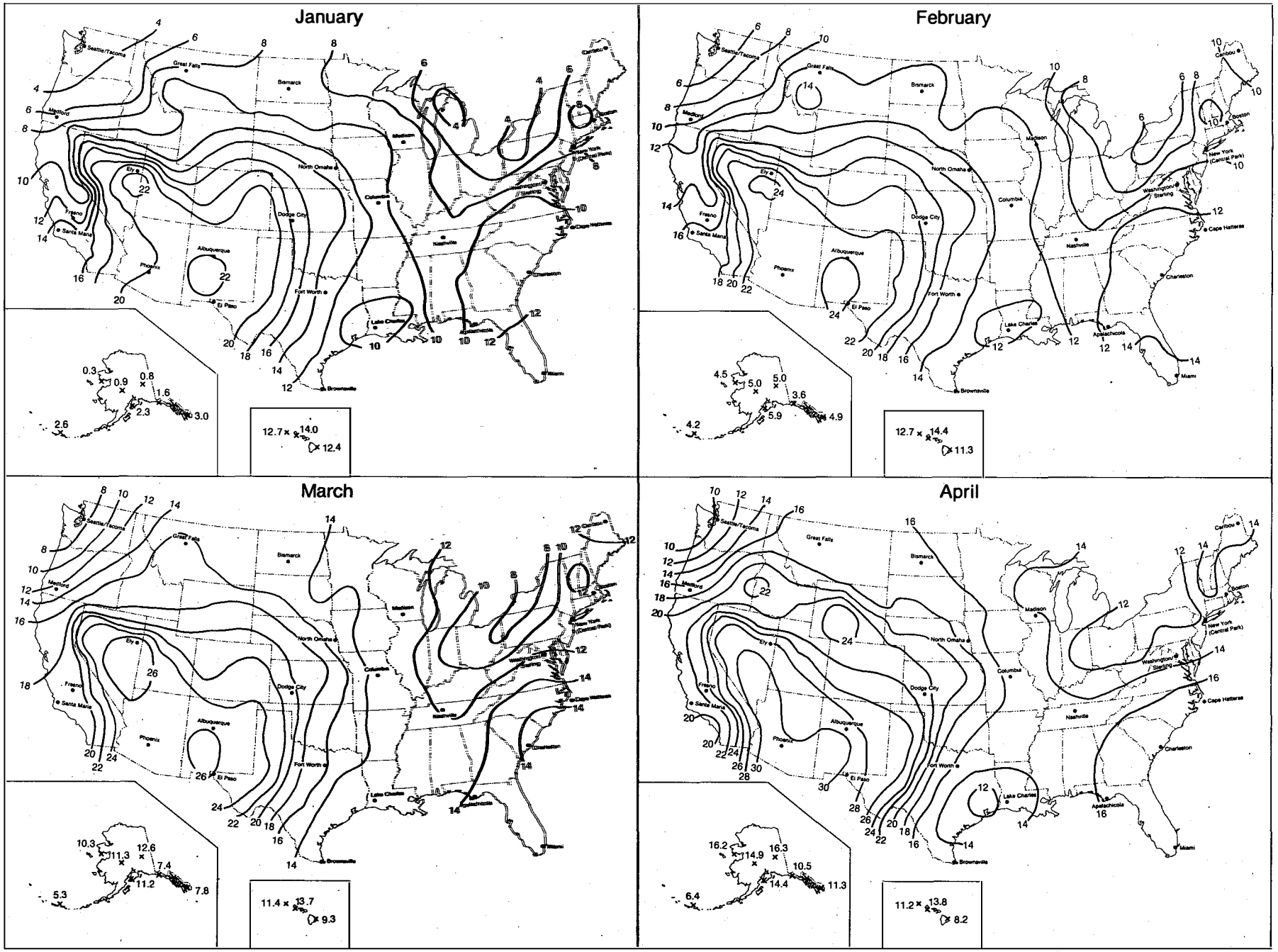
STATION NO 24029 SHERIDAN, WY (ERSATZ)

	KJ/M2-DAY	BTU/FT2-DAY	KWH/M2-DAY
JAN	10255	903.6	2.85
FEB	12575	1108.0	3.49
MAR	15473	1363.4	4.30
APR	16172	1425.0	4.49
MAY	19078	1681.0	5.30
JUN	22852	2013.6	6.35
JUL	27848	2453.8	7.74
AUG	25691	2263.7	7.14
SEP	20566	1812.2	5.71
OCT	16784	1478.9	4.66
NOV	11379	1002.6	3.16
DEC	9597	845.6	2.67
ANN	17388	1532.1	4.83

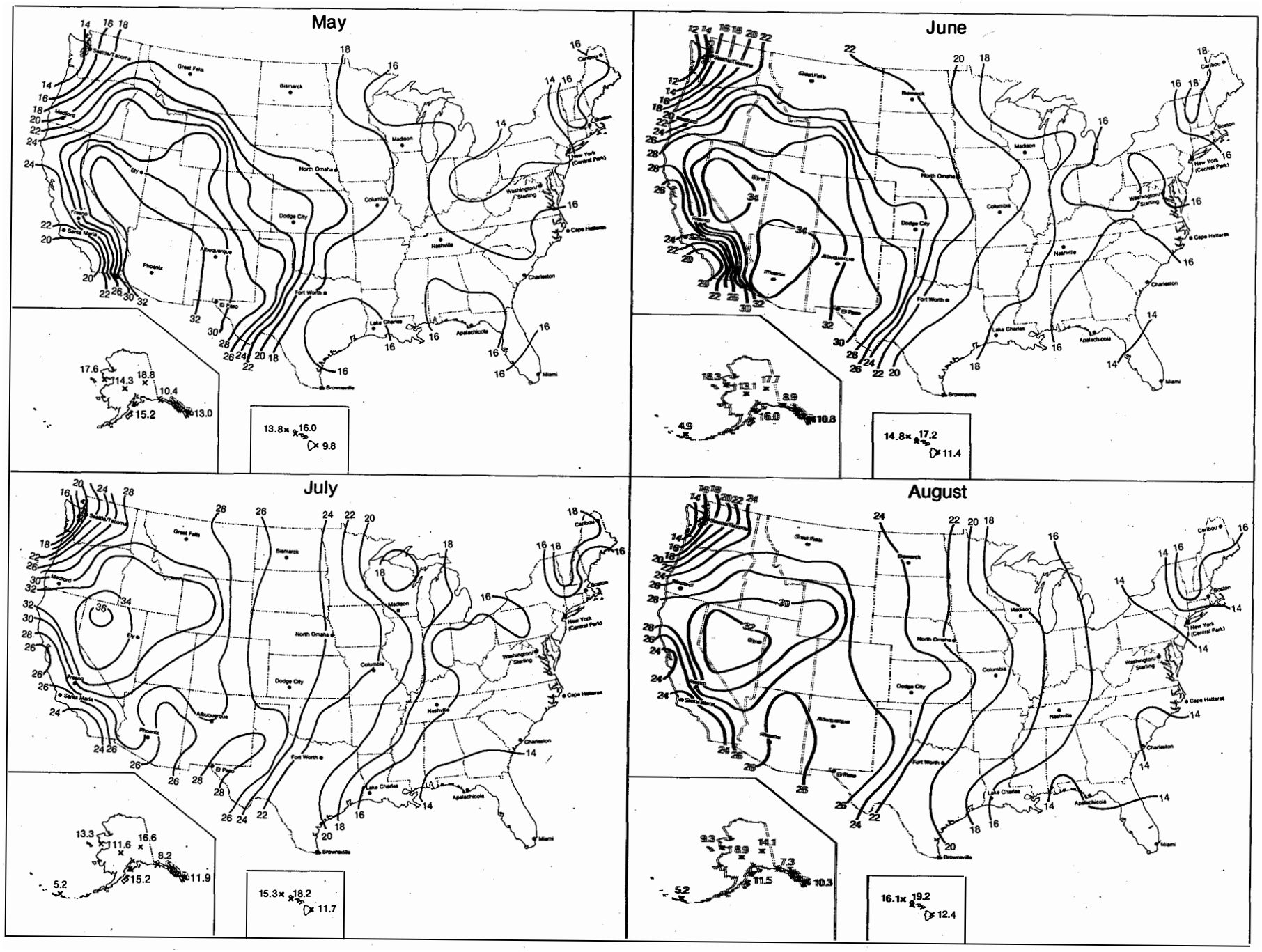
Appendix A

Direct Normal Solar Radiation Contour Maps

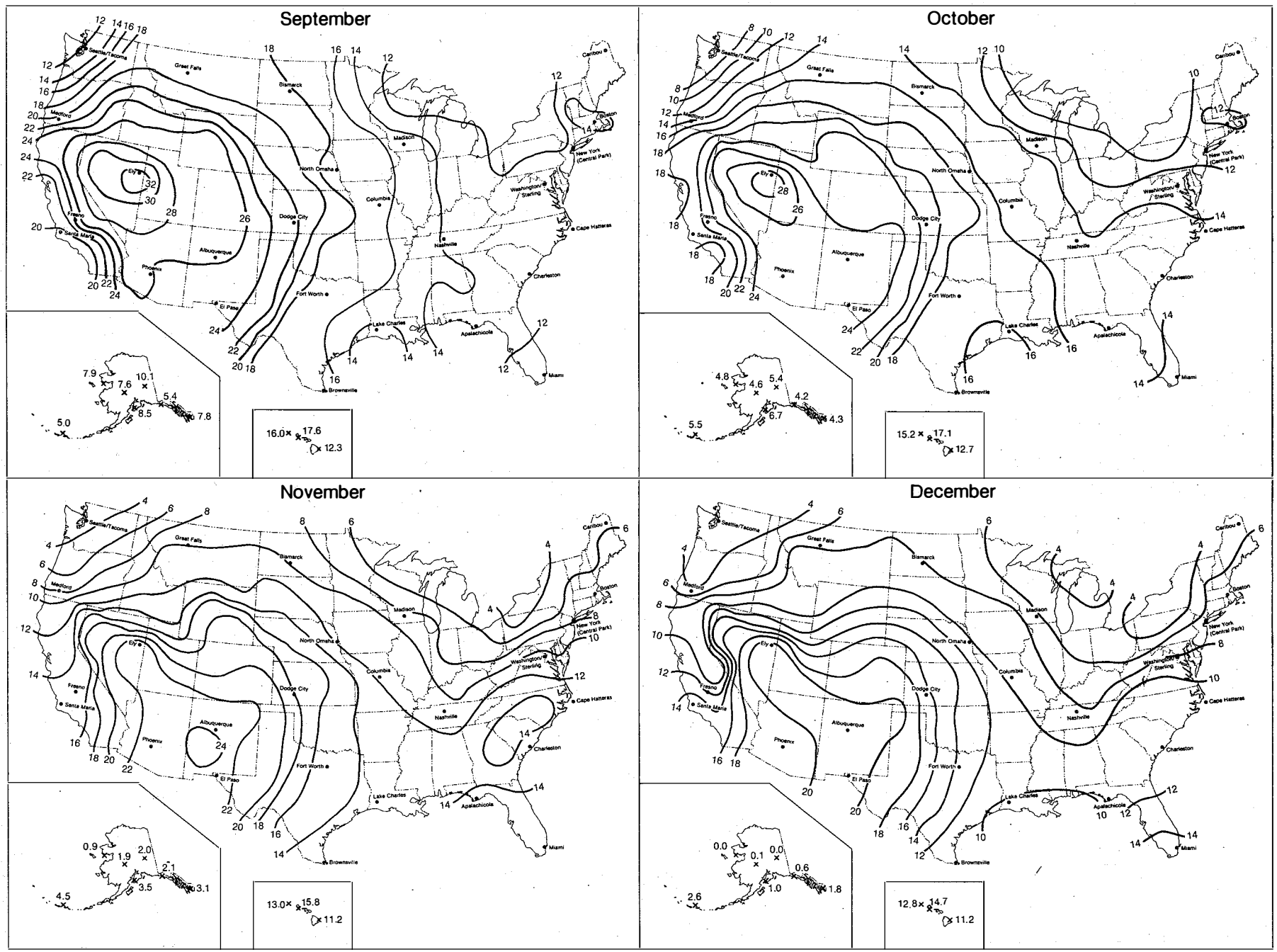
AVERAGE DAILY **DIRECT NORMAL** SOLAR RADIATION (MJ/m²)



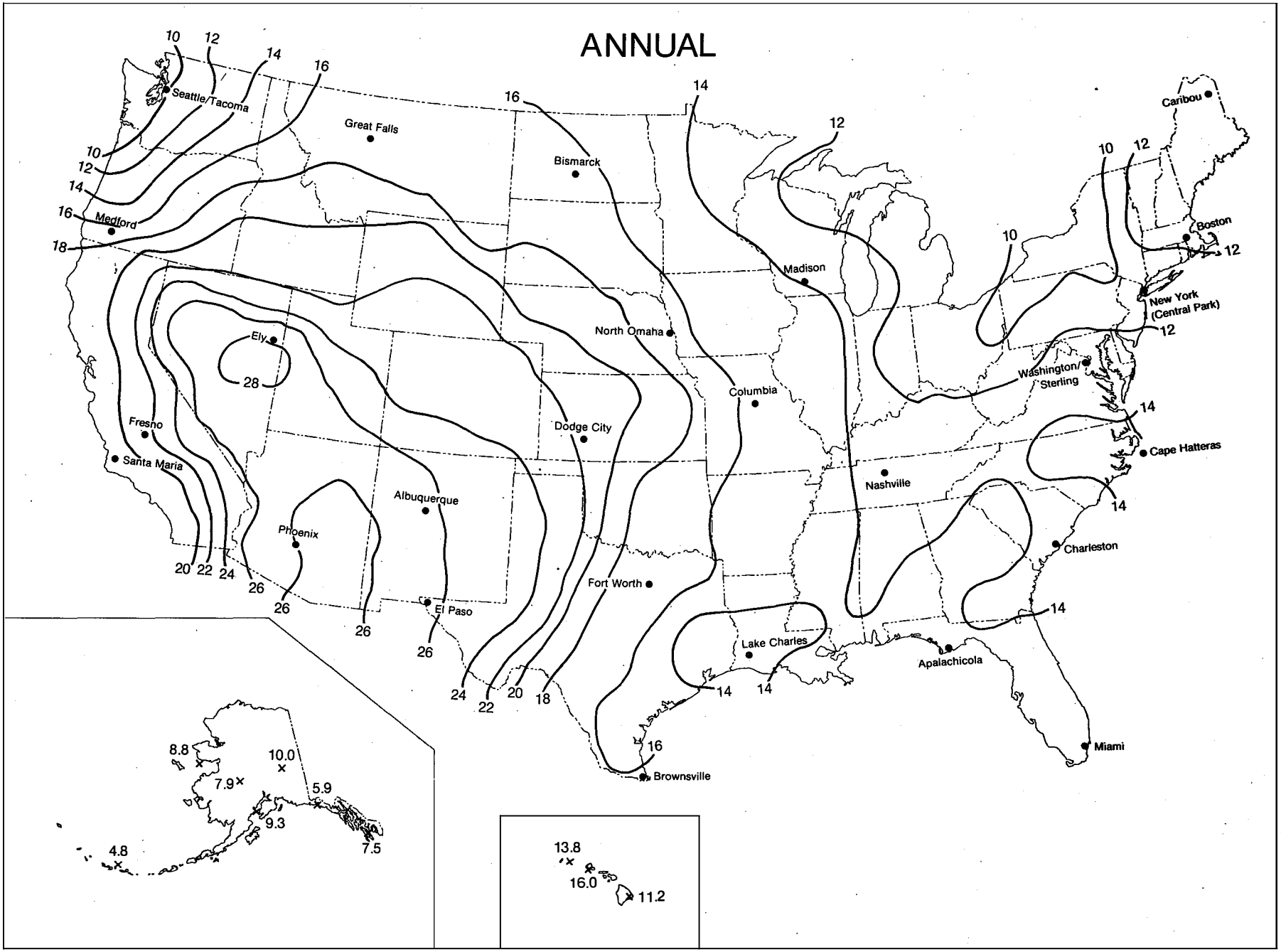
AVERAGE DAILY DIRECT NORMAL **SOLAR RADIATION** (MJ/m²) %



AVERAGE DAILY DIRECT NORMAL SOLAR RADIATION (MJ/m²)



AVERAGE DAILY DIRECT NORMAL SOLAR RADIATION (MJ/m²)



Appendix B

Station Histories

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
Birmingham	AL	13876	N33	34	W86	45	192	5201	-	7612
Mobile	AL	13894	N30	41	W88	15	67	5201	-	7612
Montgomery	AL	13895	N32	18	W86	24	62	5201	-	7612
Adak	AK	25704	N51	53	W176	38	5	5201	-	7612
Annette	AK	25308	N55	02	W131	34	34	5201	-	7612
**Barrow	AK	27502	N71	18	W156	47	4	5201	-	7612
Bethel	AK	26615	N60	47	W161	48	46	5201	-	7612
**Bettles	AK	26533	N66	55	W151	31	205	5201	-	7612
Big Delta	AK	26415	N64	00	W145	44	388	5201	-	7612
Fairbanks	AK	26411	N64	49	W147	52	138	5201	-	7612
Gulkana	AK	26425	N62	09	W145	27	481	5201	-	7612
Homer	AK	25507	N59	38	W151	30	22	5201	-	7612
Juneau	AK	25309	N58	22	W134	35	7	5201	-	7612
King Salmon	AK	25503	N58	41	W156	39	15	5201	-	7612
Kodiak	AK	25501	N57	45	W152	20	34	5201	-	7612
**Kotzebue	AK	26616	N66	52	W162	38	5	5201	-	7612
McGrath	AK	26510	N62	58	W155	37	103	5201	-	7612
Nome	AK	26617	N64	30	W165	26	7	5201	-	7612
Summit	AK	26414	N63	20	W149	08	733	5201	-	7610
Yakutat	AK	25339	N59	31	W139	40	9	5201	-	7612
*Phoenix	AZ	23183	N33	26	W112	01	347	5207	-	7512
Prescott	AZ	23184	N34	39	W112	26	1531	5201	-	7612
Tucson	AZ	23160	N32	07	W110	56	779	5201	-	7612
Winslow	AZ	23194	N35	01	W110	44	1488	5201	-	7612
Yuma	AZ	23195	N32	40	W114	36	63	5201	-	7612
Forth Smith	AR	13964	N35	20	W94	22	141	5201	-	7612
Little Rock	AR	13963	N34	44	W92	14	81	5201	-	7612
Arcata	CA	24283	N40	59	W124	06	69	5201	-	7612
Bakersfield	CA	23155	N35	25	W119	03	150	5201	-	7612
China Lake	CA	93104	N35	41	W117	41	681	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
Daggett	CA	23161	N34	52	W116	47	588	5201	-	7612
El Toro	CA	93101	N33	40	W117	44	116	5201	-	7612
*Fresno	CA	93193	N36	46	W119	43	102	5207	-	7512
Long Beach	CA	23129	N33	49	W118	09	17	5201	-	7612
**Los Angeles	CA	23174	N33	56	W118	24	32	5201	-	7612
Mount Shasta	CA	24215	N41	19	W122	19	1093	5201	-	7612
**Needles	CA	23179	N34	46	W114	37	270	5201	-	6412
Oakland	CA	23230	N37	44	W122	12	2	5201	-	7612
Point Mugu	CA	93111	N34	07	W119	07	4	5201	-	7612
Red Bluff	CA	24216	N40	09	W122	15	108	5201	-	7612
Sacramento	CA	23232	N38	31	W121	30	8	5201	-	7612
San Diego	CA	23188	N32	44	W117	10	9	5201	-	7612
San Francisco	CA	23234	N37	37	W122	23	5	5201	-	7612
*Santa Maria	CA	23273	N34	56	W120	25	80	5207	-	5410
" "	"	"	N34	54	W120	27	82	5411	-	6903
Sunnyvale	CA	23244	N37	25	W122	04	12	5201	-	7612
Colorado Springs	CO	93037	N38	49	W104	43	1881	5201	-	7612
Denver	CO	23062	N39	45	W104	52	1625	5201	-	7612
Eagle	CO	23063	N39	39	W106	55	1985	5201	-	7612
Grand Junction	CO	23066	N39	07	W108	32	1475	5201	-	7612
¶Pueblo	CO	93058	N38	17	W104	31	1439	5407	-	7612
Hartford	CT	14740	N41	56	W72	41	55	5201	-	7612
Guantanamo Bay	CU	11706	N19	54	W75	09	16	5201	-	7612
Wilmington	DE	13781	N39	40	W75	36	24	5201	-	7612
*Washington (Sterling, VA)	DC	93734	N38	50	W76	57	89	5308	-	6010
" "	"	"	N38	59	W77	28	86	6011	-	7512
*Apalachicola	FL	12832	N29	44	W84	59	14	5207	-	7505
" "	"	"	N29	44	W85	02	8	7505	-	7512
Daytona Beach	FL	12834	N29	11	W81	03	12	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
Jacksonville	FL	13889	N30	30	W81	42	9	5201	-	7612
*Miami	FL	12839	N25	48	W80	16	12	5207	-	7512
Orlando	FL	12841	N28	33	W81	20	36	5201	-	7401
Tallahassee	FL	93805	W30	23	W84	22	21	5201	-	7612
Tampa	FL	12842	N27	58	W82	32	3	5201	-	7612
West Palm Beach	FL	12844	N26	41	W80	06	6	5201	-	7612
Atlanta	GA	13874	N33	39	W84	26	315	5201	-	7612
Augusta	GA	03820	N33	22	W81	58	45	5201	-	7612
Macon	GA	03813	N32	42	W83	39	110	5201	-	7612
Savannah	GA	03822	N32	08	W81	12	16	5201	-	7612
Barbers Point	HI	22514	N21	19	W158	04	10	5201	-	7612
Hilo	HI	21504	N19	43	W155	04	11	5201	-	7612
Honolulu	HI	22521	N21	20	W157	55	5	5201	-	7612
Lihue	HI	22536	N21	59	W159	21	45	5201	-	7612
Boise	ID	24131	N43	34	W116	13	874	5201	-	7612
Lewiston	ID	24149	N46	23	W117	01	438	5201	-	7612
Pocatello	ID	24156	N42	55	W112	36	1365	5201	-	7612
Chicago	IL	14819	N41	47	W87	45	190	5201	-	7612
Moline	IL	14923	N41	27	W90	31	181	5201	-	7612
Springfield	IL	93822	N39	50	W89	40	187	5201	-	7612
Evansville	IN	93817	N38	03	W87	32	118	5201	-	7612
Fort Wayne	IN	14827	N41	00	W85	12	252	5201	-	7612
Indianapolis	IN	93819	N39	44	W86	17	246	5201	-	7612
South Bend	IN	14848	N41	42	W86	19	236	5201	-	7612
Burlington	IA	14931	N40	47	W91	07	214	5201	-	7612
Des Moines	IA	14933	N41	32	W93	39	294	5201	-	7612
Mason City	IA	14940	N43	09	W93	20	373	5201	-	7612
Sioux City	IA	14943	N42	24	W96	23	336	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
*Dodge City	KS	13985	N37	46	W99	58	800	5207	-	7512
Goodland	KS	23065	N39	22	W101	42	1124	5201	-	7612
Topeka	KS	13996	N39	04	W95	38	270	5201	-	7612
Wichita	KS	03928	N37	39	W97	25	408	5401	-	7612
Covington	KY	(See Cincinnati, OH)								
Lexington	KY	93820	N38	02	W84	36	301	5201	-	7612
Louisville	KY	93821	N38	11	W85	44	149	5201	-	7612
Baton Rouge	LA	13970	N30	32	W91	09	23	5201	-	7612
*Lake Charles	LA	03937	N30	13	W93	09	12	5207	-	6110
" "	"	"	N30	07	W93	13	18	6110	-	7512
New Orleans	LA	12916	N29	59	W90	15	3	5201	-	7612
Shreveport	LA	13957	N32	28	W93	49	79	5201	-	7612
Bangor	ME	14601	N44	48	W68	49	62	5201	-	7012
*Caribou	ME	14607	N46	52	W68	01	195	5207	-	7512
Portland	ME	14764	N43	39	W70	19	19	5201	-	7612
Baltimore	MD	93721	N39	11	W76	40	47	5201	-	7612
Patuxent River	MD	13721	N38	17	W76	25	14	5201	-	7612
*Boston	MA	94701	N42	21	W71	04	102	5207	-	6406
"	"	"	N42	22	W71	03	48	6406	-	6811
Alpena	MI	94849	N45	04	W83	34	210	5909	-	7612
Detroit	MI	14822	N42	25	W83	01	191	5201	-	7612
Flint	MI	14826	N42	58	W83	44	233	5201	-	7612
Grand Rapids	MI	94860	N42	53	W85	31	245	6311	-	7612
**Houghton	MI	14858	N47	10	W88	30	329	5201	-	6412
Sault Ste. Marie	MI	14847	N46	28	W84	22	221	5201	-	7612
Traverse City	MI	14850	N44	44	W85	35	192	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
Duluth	MN	14913	N46	50	W92	11	432	5201	-	7612
International Falls	MN	14918	N48	34	W93	23	361	5201	-	7612
Minneapolis/St. Paul	MN	14922	N44	53	W93	13	255	5201	-	7612
Rochester	MN	14925	N43	55	W92	30	402	5201	-	7612
¶Jackson	MS	03940	N32	19	W90	05	101	6307	-	7612
Meridian	MS	13865	N32	20	W88	45	94	5201	-	7612
Columbia	MO	03945	N38	58	W92	22	248	5207	-	7001
" "	"	"	N38	49	W92	13	277	7001	-	7512
¶Kansas City	MO	03947	N39	18	W94	43	315	7210	-	7612
Springfield	MO	13995	N37	14	W93	23	387	5201	-	7612
St. Louis	MO	13994	N38	45	W90	23	172	5201	-	7612
Billings	MT	24033	N45	48	W108	32	1088	5201	-	7612
Cut Bank	MT	24137	N48	36	W112	22	1170	5201	-	7612
Dillon	MT	24138	N45	15	W112	33	1588	5201	-	7306
¶Glasgow	MT	94008	N48	13	W106	37	700	5510	-	7612
*Great Falls	MT	24143	N47	29	W111	22	1125	5207	-	7512
Helena	MT	24144	N46	36	W112	00	1188	5201	-	7612
Lewistown	MT	24036	N47	03	W109	27	1264	5201	-	7612
Miles city	MT	24037	N46	26	W105	52	803	5201	-	7612
Missoula	MT	24153	N46	55	W114	05	972	5201	-	7612
Grand Island	NE	14935	N40	58	W98	19	566	5201	-	7612
*North Omaha	NE	94918	N41	22	W96	01	404	5706	-	7512
North Platte	NE	24023	N41	08	W100	41	849	5201	-	7612
Scottsbluff	NE	24028	N41	52	W103	36	1206	5201	-	7612
Elko	NV	24121	N40	50	W115	47	1547	5201	-	7612
*Ely	NV	23154	N39	17	W114	51	1914	5112	-	7512
Las Vegas	NV	23169	N36	05	W115	10	664	5201	-	7612
Lovelock	NV	24172	N40	04	W118	33	1190	5201	-	7612
Reno	NV	23185	N39	30	W119	47	1341	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
Tonopah	NV	23153	N38	04	W117	08	1653	5201	-	7612
Winnemucca	NV	24128	N40	54	W117	48	1323	5201	-	7612
**Yucca Flats	NV	03133	N36	57	W116	03	1197	6112	-	7612
Concord	NH	14745	N43	12	W71	30	105	5201	-	7612
Lakehurst	NJ	14780	N40	02	W74	20	37	5201	-	7612
Newark	NJ	14734	N40	42	W74	10	9	5201	-	7612
*Albuquerque	NM	23050	N35	03	W106	37	1627	5207	-	7512
Clayton	NM	23051	N36	27	W103	09	1515	5201	-	7612
**Farmington	NM	23090	N36	45	W108	14	1677	5201	-	7612
Roswell	NM	23043	N33	24	W104	32	1103	5201	-	6901
Truth or Consequences	NM	93045	N33	14	W107	16	1481	5201	-	7612
Tucumcari	NM	23048	N35	11	W103	36	1231	5201	-	7612
**Zuni	NM	93044	N35	06	W108	48	1965	5201	-	7212
Albany	NY	14735	N42	45	W73	48	89	5201	-	7612
Binghamton	NY	04725	N42	13	W75	59	499	5201	-	7612
Buffalo	NY	14733	N42	56	W78	44	215	5201	-	7612
Massena	NY	94725	N44	56	W74	51	63	5201	-	7612
*New York City (Central Park)	NY	94728	N40	47	W73	58	57	5207	-	7512
New York City (La Guardia)	NY	14732	N40	46	W73	54	16	5201	-	7612
Rochester	NY	14768	N43	07	W77	40	169	5201	-	7612
Syracuse	NY	14771	N43	07	W76	07	124	5201	-	7612
Asheville	NC	03812	N35	26	W82	32	661	5201	-	7612
*Cape Hatteras	NC	93729	N35	13	W75	41	UNK	5207	-	5702
" "	"	"	N35	16	W75	33	6	5703	-	7512
Charlotte	NC	13881	N35	13	W80	56	234	5201	-	7612
Cherry Point	NC	13754	N34	54	W76	53	11	5201	-	7612
Greensboro	NC	13723	N36	05	W79	57	270	5201	-	7612
Raleigh/Durham	NC	13722	N35	52	W78	47	134	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
*Bismarck	ND	24011	N46	46	W100	45	506	5207	-	7512
Fargo	ND	14914	N46	54	W96	48	274	5201	-	7612
Minot	ND	24013	N48	16	W101	17	522	5201	-	7612
Akron/Canton	OH	14895	N40	55	W81	26	377	5201	-	7612
Cincinnati (Convington, KY)	OH	93814	N39	04	W84	40	271	5201	-	7612
Cleveland	OH	14820	N41	24	W81	51	245	5201	-	7612
Columbus	OH	14821	N40	00	W82	53	254	5201	-	7612
Dayton	OH	93815	N39	54	W84	13	306	5201	-	7612
Toledo	OH	94830	N41	36	W83	48	211	5201	-	7612
Youngstown	OH	14852	N41	16	W80	40	361	5201	-	7612
Oklahoma City	OK	13967	N35	24	W97	36	397	5201	-	7612
Tulsa	OK	13968	N36	12	W95	54	206	5201	-	7612
Astoria	OR	94224	N46	09	W123	53	7	5201	-	7612
Burns	OR	24134	N43	35	W119	03	1271	5201	-	7612
*Medford	OR	24225	N42	22	W122	52	405	5112	-	7512
North Bend	OR	24284	N43	25	W124	15	5	5201	-	7612
**Pendleton	OR	24155	N45	41	W118	51	456	5201	-	7612
Portland	OR	24229	N45	36	W122	36	12	5201	-	7612
Redmond	OR	24230	N44	16	W121	09	940	5201	-	7612
Salem	OR	24232	N44	55	W123	01	61	5201	-	7612
Koror Island	PC	40309	N07	20	E134	29	33	5201	-	7612
Kwajalein Island	PC	40601	N08	43	E167	44	3	5201	-	5204
" "	"	40604	N08	44	E167	44	8	5204	-	7612
Wake Island	WK	41606	N19	17	E166	39	4	5201	-	7612
Allentown	PA	14737	N40	39	W75	26	117	5201	-	7612
Erie	PA	14860	N42	05	W80	11	225	5201	-	7612
Harrisburg	PA	14751	N40	13	W76	51	106	5201	-	7612
Philadelphia	PA	13739	N39	53	W75	15	9	5201	-	7612
Pittsburg	PA	94823	N40	30	W80	13	373	5201	-	7612
**Wilkes-Barre/Scranton	PA	14777	N41	20	W75	44	289	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
San Juan	PR	11631	N18	28	W66	06	15	5201	-	5505
" "	"	11641	N18	26	W66	00	19	5505	-	7612
Providence	RI	14765	N41	44	W71	26	19	5201	-	7612
*Charleston	SC	13880	N32	54	W80	02	21	5207	-	7512
Columbia	SC	13883	N33	57	W81	07	69	5201	-	7612
¶Greenville/Spartanburg	SC	03870	N34	54	W82	13	296	6210	-	7612
Huron	SD	14936	N44	23	W98	13	393	5201	-	7612
Pierre	SD	24025	N44	23	W100	17	526	5201	-	7612
Rapid City	SD	24090	N44	03	W103	04	966	5201	-	7612
Sioux Falls	SD	14944	N43	34	W96	44	435	5201	-	7612
Chattanooga	TN	13882	N35	02	W85	12	210	5201	-	7612
Knoxville	TN	13891	N35	49	W83	59	299	5201	-	7612
Memphis	TN	13893	N35	03	W89	59	87	5201	-	7612
*Nashville	TN	13897	N36	07	W86	41	186	5207	-	7512
Abilene	TX	13962	N32	26	W99	41	534	5201	-	7612
Amarillo	TX	23047	N35	14	W101	42	1098	5201	-	7612
Austin	TX	13958	N30	18	W97	42	189	5201	-	7612
*Brownsville	TX	12919	N25	54	W97	26	15	5207	-	7512
Corpus Christi	TX	12924	N27	46	W97	30	13	5201	-	7612
Dallas	TX	13960	N32	51	W96	51	149	5201	-	7401
Del Rio	TX	22010	N29	22	W100	55	313	6303	-	7612
*El Paso	TX	23044	N31	48	W106	24	1205	5207	-	7512
*Fort Worth	TX	03927	N32	49	W97	21	226	5207	-	5304
" "	"	"	N32	50	W97	03	175	5305	-	7407
Houston	TX	12960	N29	59	W95	22	33	6906	-	7612
Kingsville	TX	12928	N27	31	W97	49	17	5201	-	7612
¶Laredo	TX	12907	N27	32	W99	28	158	6504	-	7012
Lubbock	TX	23042	N33	39	W101	49	988	5201	-	7612
Lufkin	TX	93987	N31	14	W94	45	96	5201	-	7612
Midland/Odessa	TX	23023	N31	56	W102	12	871	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Record YRMO		
Port Arthur	TX	12917	N29	57	W94	01	7	5201	-	7612
San Angelo	TX	23034	N31	22	W100	30	582	5201	-	7612
San Antonio	TX	12921	N29	32	W98	28	242	5201	-	7612
Sherman	TX	13923	N33	43	W96	40	233	5201	-	7012
*/**Stephenville	TX	13901	N32	13	W98	11	399	7410	-	7512
Waco	TX	13959	N31	37	W97	13	155	5201	-	7612
Wichita Falls	TX	13966	N33	58	W98	29	314	5201	-	7612
Bryce Canyon	UT	23159	N37	42	W112	09	2313	5201	-	7612
Cedar City	UT	93129	N37	42	W113	06	1712	5201	-	7612
Salt Lake City	UT	24127	N40	46	W111	58	1288	5201	-	7612
Burlington	VT	14742	N44	28	W73	09	104	5201	-	7612
Norfolk	VA	13737	N36	54	W76	12	9	5201	-	7612
Richmond	VA	13740	N37	30	W77	20	50	5201	-	7612
Roanoke	VA	13741	N37	19	W79	58	358	5201	-	7612
Olympia	WA	24227	N46	58	W122	54	61	5201	-	7612
*Seattle/Tacoma	WA	24233	N47	27	W122	18	137	5112	-	7512
Spokane	WA	24157	N47	38	W117	32	121	5201	-	7612
Whidbey Island	WA	24255	N48	21	W122	40	17	5201	-	7612
Yakima	WA	24243	N46	34	W120	32	325	5201	-	7612
Charleston	WV	13866	N38	22	W81	36	290	5201	-	7612
**Huntington	WV	03860	N38	22	W82	33	255	6112	-	7612
Eau Claire	WI	14991	N44	52	W91	29	273	5201	-	7612
Green Bay	WI	14898	N44	29	W88	08	214	5201	-	7612
La Crosse	WI	14920	N43	52	W91	15	205	5201	-	7612
*Madison	WI	14837	N43	08	W89	20	271	5207	-	7512
Milwaukee	WI	14839	N42	57	W87	54	211	5201	-	7612

STATION HISTORIES

ERSATZ Stations *SOLMET Stations	State	Station No.	Latitude Deg	Latitude Min	Longtitude Deg	Longtitude Min	Station Elev (m)	Period of Time YRMO		YRMO
Casper	WY	24089	N42	55	W106	28	1612	5201	-	7612
Cheyenne	WY	24018	N41	09	W104	49	1872	5201	-	7612
Rock Springs	WY	24027	N41	36	W109	04	2056	5201	-	7612
Sheridan	WY	24029	N44	46	W106	58	1209	5201	-	7612

*SOLMET station. Information reflects solar radiation (global horizontal) observations and not necessarily collateral meteorological observations. Two lines of information for one station indicate a change in the location of that station.

**Direct normal solar radiation data is not available for this station.

¶The majority of meteorological observations for this ERSATZ station were obtained at the indicated location; i.e., data prior to this period of record were obtained at a nearby location.

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