NASA Remote Sensing Validation Data: Saudi Arabia Calibration History

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Calibration History Data

The table below shows the calibration history for sensors deployed at the Saudi Network Station you have selected. The dates are the date of installation of the sensor. The application code is

D = Diffuse sky measurement

N = Normal Incidence (Direct Beam)

G = Global horizontal measurement

UL = Upwelling longwave

DL = Downwelling longwave

RS = Reflected shorwave

CAV = Cavity radiometer

The Cal Factor column is the single, cosine weighted composite responsivity, Rs. The reciprocal of Rs multiplied by 1000 is the factor used during data collection. The following ten columns are the "calibration vector" showing the responsivity as a function of zenith angle, from Z= 0 to Z = 90 degrees, in 9 degree wide bins. These are the factors used to post-process the data and correct for individual radiometer cosine response variations. The figure at the bottom of this page shows typical cosine response variations derived during our outdoor radiometer calibration and characterization.

Calibration History for Sensors Deployed in the Saudi Network

Station	Date	Time	Instrument	Code	Composite	V 0-9	V 9-18	V 18-27	V 27-36	V 36-45	V 45-54	V 54-63	V 63-72	V 72-81	V 81-90

Abha	7/23/97	1335	30242F3	D	8.650										
Abha	7/23/97	1335	30244F3	G	8.770	8.800	8.800	8.790	8.780	8.750	8.720	8.710	8.750	8.680	8.660
Abha	7/23/97	1330	30192E6	N	8.550										
Abha	6/23/98	1755	30215F3	D	8.237										
Abha	6/23/98	1755	30246F3	G	8.891	8.950	8.960	8.940	8.910	8.880	8.840	8.810	8.700	8.700	8.400
Abha	6/23/98	1745	30177E6	N	7.944										
Abha	9/5/99	1125	30209F3	D	8.227										
Abha	9/5/99	1125	30213F3	G	7.870	7.970	7.960	7.940	7.900	7.850	7.790	7.760	7.740	7.620	7.370
Abha	9/5/99	1125	30175E6	N	7.533										
Abha	9/6/00	1155	30249F3	D	7.882										
Abha	9/6/00	1145	30250F3	G	8.101	8.300	8.300	8.280	8.200	8.110	7.960	7.800	7.630	7.430	7.230
Abha	9/6/00	1205	30173E6	N	7.798										
Abha	8/14/01	1210	30247F3	D	7.954										
Abha	8/14/01	1225	30210F3	G	7.607	7.870	7.830	7.790	7.710	7.590	7.470	7.320	7.140	6.770	6.220
Abha	8/14/01	1220	30188E6	N	8.098										

Abha	7/16/02	1145	30208F3	D	7.305										
Abha	7/16/02	1130	30222F3	G	6.748	6.980	6.950	6.910	6.840	6.750	6.630	6.460	6.300	6.010	5.730
Abha	7/16/02	1155	30195E6	N	8.417										
Al-Ahsa	11/16/97	1610	30252F3	D	8.300										
Al-Ahsa	11/16/97	1610	30251F3	G	8.720	8.790	8.790	8.770	8.740	8.700	8.670	8.640	8.640	8.480	8.310
Al-Ahsa	11/16/97	1610	30175E6	N	7.500										
Al-Ahsa	7/5/99	1120	30240F3	D	8.676										
Al-Ahsa	7/5/99	1120	30222F3	G	7.383	7.460	7.470	7.450	7.410	7.370	7.310	7.260	7.260	7.170	6.990
Al-Ahsa	7/5/99	1120	30182E6	N	7.946										
Al-Ahsa	6/19/00	1215	30210F3	D	8.127										
Al-Ahsa	6/19/00	1155	30202F3	G	8.972	9.080	9.070	9.040	9.000	8.960	8.890	8.830	8.830	8.670	8.490
Al-Ahsa	6/19/00	1200	30176E6	N	8.005										
Al-Ahsa	3/19/01	0955	30211F3	D	9.031										
Al-Ahsa	3/19/01	0945	30248F3	G	7.765	7.950	7.940	7.920	7.870	7.770	7.670	7.540	7.340	7.020	6.810

Al-Ahsa	3/19/01	0930	30178E6	N	7.853										
Al-Ahsa	4/10/02	1340	30244F3	G	8.050	8.250	8.230	8.200	8.130	8.040	7.940	7.810	7.690	7.380	7.070
Al-Ahsa	4/10/02	1345	30190E6	N	8.008										
Al-Jouf	12/10/97	0835	30201F3	D	8.136										
Al-Jouf	12/10/97	0835	30209F3	G	8.391	8.460	8.450	8.440	8.410	8.390	8.340	8.300	8.280	8.180	8.140
Al-Jouf	12/10/97	0820	30189E6	N	8.723										
Al-Jouf	6/29/99	1545	30217F3	D	8.452										
Al-Jouf	6/29/99	1545	30241F3	G	8.545	8.620	8.640	8.620	8.600	8.560	8.470	8.440	8.400	8.220	7.790
Al-Jouf	6/29/99	1545	30178E6	N	7.825										
Al-Jouf	8/12/00	0900	30245F3	D	8.175										
Al-Jouf	8/12/00	0825	30206F3	G	7.423	7.620	7.610	7.570	7.500	7.410	7.300	7.160	7.040	6.800	6.550
Al-Jouf	8/12/00	0840	30191E6	N	8.210										
Al-Jouf	7/24/01	1240	31224F3	D	7.930										
Al-Jouf	7/24/01	1225	30251F3	G	7.987	8.230	8.190	8.160	8.090	7.970	7.870	7.740	7.540	7.160	6.670

Al-Jouf	7/24/01	1215	30177E6	N	7.847										
Al-Jouf	4/29/02	1320	30246F3	D											
Al-Jouf	4/29/02	1310	31222F3	G	7.982	8.130	8.110	8.080	8.030	7.960	7.890	7.810	7.770	7.550	7.340
Al-Jouf	4/29/02	1325	30194E6	N	8.593										
Al-Madinah	12/14/97	1455	30213F3	D	8.025										
Al-Madinah	12/14/97	1455	30208F3	G	8.116	8.170	8.170	8.160	8.130	8.120	8.080	8.030	8.010	7.960	7.890
Al-Madinah	12/14/97	1455	30187E6	N	7.546										
Al-Madinah	6/30/99	1335	30216F3	D	8.133										
Al-Madinah	6/30/99	1335	30207F3	G	8.649	8.690	8.720	8.710	8.690	8.650	8.590	8.540	8.560	8.450	8.250
Al-Madinah	6/30/99	1335	31133E6	N	8.536										
Al-Madinah	7/24/00	1000	31223F3	D	7.392										
Al-Madinah	7/24/00	0940	30214F3	G	7.815	8.010	8.010	7.970	7.900	7.810	7.700	7.540	7.400	7.180	6.970
Al-Madinah	7/24/00	0955	30193E6	N	8.050										
Al-Madinah	6/11/01	0820	30209F3	D	7.753										

Al-Madinah	6/11/01	0800	30212F3	G	7.853	8.070	8.050	8.020	7.960	7.860	7.730	7.570	7.400	7.090	6.860
Al-Madinah	6/11/01	0840	30189E6	N	8.729										
Al-Madinah	5/15/02	1330	30250F3	D	7.974										
Al-Madinah	5/15/02	1325	30249F3	G	7.827	8.010	7.990	7.960	7.900	7.810	7.730	7.620	7.520	7.220	6.920
Al-Madinah	5/15/02	1320	30185E6	N	7.938										
Al-Qaisumah	9/8/97	1040	30248F3	D	8.360										
Al-Qaisumah	9/8/97	1040	30250F3	G	8.690	8.800	8.790	8.770	8.730	8.690	8.620	8.550	8.490	8.420	8.350
Al-Qaisumah	9/8/97	1040	30195E6	N	8.360										
Al-Qaisumah	8/18/98	1150	30206F3	D	8.023										
Al-Qaisumah	8/18/98	1150	30245F3	G	8.698	8.740	8.750	8.730	8.710	8.690	8.660	8.630	8.650	8.550	8.500
Al-Qaisumah	8/18/98	1150	30188E6	N	8.124										
Al-Qaisumah	8/24/99	1240	30219F3	D	7.521										
Al-Qaisumah	8/24/99	1240	30252F3	G	8.170	8.250	8.250	8.230	8.210	8.170	8.110	8.060	8.040	7.890	7.680
Al-Qaisumah	8/24/99	1240	30192E6	N	8.465										

Al-Qaisumah	8/12/00	0925	31222F3	D	8.105										
Al-Qaisumah	8/12/00	0930	30246F3	G	8.348	8.540	8.540	8.500	8.440	8.350	8.250	8.090	7.930	7.650	7.360
Al-Qaisumah	8/12/00	0915	30190E6	N	8.083										
Al-Qaisumah	7/10/01	0735	30253F3	D	7.778										
Al-Qaisumah	7/10/01	0745	30204F3	G	7.753	8.010	7.970	7.930	7.860	7.740	7.620	7.460	7.290	6.900	6.500
Al-Qaisumah	7/10/01	0740	30193E6	N	8.033										
Al-Qaisumah	6/21/02	1555	31224F3	D	7.832										
Al-Qaisumah	6/21/02	1600	30213F3	G	7.187	7.420	7.400	7.360	7.280	7.180	7.050	6.890	6.700	6.450	6.210
Al-Qaisumah	6/21/02	1625	30178E6	N	7.869										
Gizan	7/24/97	2155	30211F3	D	9.730										
Gizan	7/24/97	2150	30216F3	G	8.220	8.300	8.290	8.270	8.260	8.210	8.160	8.120	8.130	8.000	7.640
Gizan	7/24/97	2155	30194E6	N	8.600										
Gizan	6/24/98	1215	30214F3	D	8.328										
Gizan	6/24/98	1215	31222F3	G	8.669	8.660	8.670	8.660	8.650	8.650	8.660	8.650	8.750	8.750	8.760

Gizan	6/24/98	1215	30193E6	N	8.009										
Gizan	9/11/99	1400	30208F3	D	7.925										
Gizan	9/11/99	1400	30201F3	G	7.960	8.080	8.080	8.060	8.020	7.960	7.870	7.790	7.750	7.570	7.420
Gizan	9/11/99	1400	30189E6	N	8.696										
Gizan	9/5/00	0905	30222F3	D	6.897										
Gizan	9/5/00	0815	30218F3	G	7.995	8.160	8.150	8.150	8.080	7.990	7.870	7.750	7.640	7.460	7.270
Gizan	9/5/00	0830	30182E6	N	7.996										
Gizan	8/28/01	1340	30202F3	D	8.376										
Gizan	8/28/01	1115	31225F3	G	7.794	8.000	7.970	7.940	7.880	7.780	7.690	7.560	7.430	7.080	6.760
Gizan	8/28/01	1110	30176E6	N	8.069										
Gizan	7/17/02	1025	30200F3	D	6.846										
Gizan	7/17/02	1010	31251F3	G	7.942	8.160	8.160	8.130	8.050	7.950	7.820	7.640	0.000	0.000	0.000
Gizan	7/17/02	1040	30179E6	N	7.184										
Jeddah	6/15/97	1400	30241F3	D	8.690										

Jeddah	6/15/97	1400	30240F3	G	8.900	8.940	8.930	8.930	8.920	8.890	8.850	8.860	8.900	8.810	8.800
Jeddah	6/15/97	1355	30178E6	N	7.760										
Jeddah	8/31/98	1235	30204F3	D	8.482										
Jeddah	8/31/98	1235	30203F3	G	8.597	8.670	8.660	8.650	8.640	8.600	8.560	8.510	8.540	8.420	8.010
Jeddah	8/31/98	1235	30191E6	N	8.177										
Jeddah	7/24/99	1220	30250F3	D	8.581										
Jeddah	7/24/99	1220	30220F3	G	8.752	8.840	8.840	8.810	8.770	8.740	8.700	8.630	8.600	8.520	8.300
Jeddah	7/24/99	1220	30173E6	N	7.833										
Jeddah	7/5/00	1355	30215F3	D	7.815										
Jeddah	7/5/00	1430	31224F3	G	8.094	8.260	8.250	8.220	8.170	8.100	8.000	7.870	7.750	7.530	7.310
Jeddah	7/5/00	1335	31134E6	N	8.486										
Jeddah	6/11/01	1025	30217F3	D	7.960										
Jeddah	6/11/01	1045	30252F3	G	7.647	7.800	7.800	7.790	7.730	7.660	7.540	7.420	7.290	7.100	6.910
Jeddah	6/11/01	1050	30179E6	N	7.797										
Jeddah	3/11/02	1130	30242F3	D	7.966										

Jeddah	3/11/02	1205	30207F3	G	7.953	8.150	8.130	8.090	8.030	7.940	7.840	7.720	7.620	7.320	7.020
Jeddah	3/11/02	1140	30187E6	N	7.562										
Qassim	3/2/98	1410	30202F3	D	9.099										
Qassim	3/2/98	1420	30200F3	G	7.639	7.700	7.690	7.680	7.650	7.630	7.600	7.560	7.560	7.490	7.370
Qassim	3/2/98	1400	30176E6	N	8.019										
Qassim	7/5/99	1140	30218F3	D	8.609										
Qassim	7/5/99	1140	30242F3	G	8.529	8.620	8.620	8.610	8.570	8.530	8.460	8.410	8.380	8.240	8.010
Qassim	7/5/99	1140	30195E6	N	8.414										
Qassim	7/26/00	1240	31225F3	D	7.948										
Qassim	7/26/00	1250	30247F3	G	8.142	8.330	8.340	8.320	8.240	8.140	8.030	7.870	7.710	7.440	7.170
Qassim	7/26/00	1305	30177E6	N	7.811										
Qassim	6/6/01	0830	30220F3	D	8.198										
Qassim	6/6/01	0735	30219F3	G	7.076	7.250	7.240	7.230	7.160	7.080	6.950	6.810	6.680	6.530	6.380
Qassim	6/6/01	0820	30175E6	N	7.542										

Qassim	7/14/02	1810	30217F3	D	7.825										
Qassim	7/14/02	1805	30211F3	G	8.847	9.100	9.070	9.040	8.960	8.850	8.730	8.460	8.330	8.040	7.750
Qassim	7/14/02	1815	30192E6	N	8.444										
Sharurah	7/21/97	1405	30218F3	D	8.750										
Sharurah	7/21/97	1405	30207F3	G	8.770	8.790	8.790	8.790	8.770	8.750	8.730	8.730	8.790	8.710	8.720
Sharurah	7/21/97	1405	30182E6	N	7.940										
Sharurah	6/22/98	1420	30247F3	D	8.606										
Sharurah	6/22/98	1420	31225F3	G	8.638	8.660	8.670	8.650	8.640	8.630	8.610	8.580	8.630	8.590	8.720
Sharurah	6/22/98	1420	31134E6	N	8.397										
Sharurah	9/15/99	1200	30200F3	D	7.393										
Sharurah	9/15/99	1200	30212F3	G	8.421	8.520	8.510	8.490	8.450	8.410	8.340	8.290	8.280	8.170	7.980
Sharurah	9/15/99	1200	30181E6	N	7.722										
Sharurah	9/3/00	1430	30242F3	D	8.052										
Sharurah	9/3/00	1420	30244F3	G	8.146	8.300	8.300	8.290	8.230	8.150	8.040	7.920	7.790	7.600	7.410

Sharurah	9/3/00	1435	31133E6	N	8.714										
Sharurah	6/25/01	1145	30213F3	D	7.301										
Sharurah	6/25/01	1130	30200F3	G	6.949	7.120	7.110	7.090	7.040	6.950	6.860	6.720	6.570	6.310	6.140
Sharurah	6/25/01	1120	30192E6	N	8.462										
Sharurah	3/11/02	1445	30216F3	D	7.423										
Sharurah	3/11/02	1405	30206F3	G	7.254	7.460	7.440	7.400	7.340	7.240	7.130	7.000	6.900	6.620	6.340
Sharurah	3/11/02	1415	30173E6	N	7.834										
Solar Village	1/4/97	1005	30206F3	D	8.140										
Solar Village	1/4/97	1005	30245F3	G	8.860	8.870	8.870	8.860	8.850	8.830	8.820	8.840	8.910	8.840	8.860
Solar Village	1/4/97	1005	30190E6	N	7.970										
Solar Village	3/2/98	1350	30212F3	D	8.554										
Solar Village	3/2/98	1410	30210F3	G	8.375	8.460	8.450	8.440	8.410	8.380	8.320	8.260	8.240	8.120	7.780
Solar Village	3/2/98	1350	30185E6	N	7.899										
Solar Village	7/6/99	1340	30248F3	D	8.247										

Solar Village	7/6/99	1340	30211F3	G	9.702	9.760	9.760	9.760	9.730	9.690	9.620	9.600	9.640	9.540	9.420
Solar Village	7/6/99	1340	30179E6	N	7.752										
Solar Village	9/3/00	0825	30207F3	D	8.049										
Solar Village	9/3/00	0830	30216F3	G	7.660	7.800	7.800	7.810	7.750	7.670	7.550	7.430	7.320	7.150	6.980
Solar Village	9/3/00	0840	30194E6	N	8.586										
Solar Village	8/13/01	0815	31223F3	D	7.262										
Solar Village	8/13/01	0805	30215F3	G	7.647	7.880	7.850	7.820	7.750	7.630	7.520	7.370	7.210	6.850	6.590
Solar Village	8/13/01	0820	31134E6	N	8.519										
Solar Village	7/1/02	1805	30201F3	D	7.283										
Solar Village	7/1/02	1755	30218F3	G	7.784	8.030	8.010	7.970	7.880	7.780	7.650	7.420	7.290	7.040	6.780
Solar Village	7/1/02	1815	30182E6	N	7.980										
Solar Village BSRN	3/2/98	1350	30212F3	D	8.554										
Solar Village BSRN	3/2/98	1410	30210F3	G	8.375	8.460	8.450	8.440	8.410	8.380	8.320	8.260	8.240	8.120	7.780

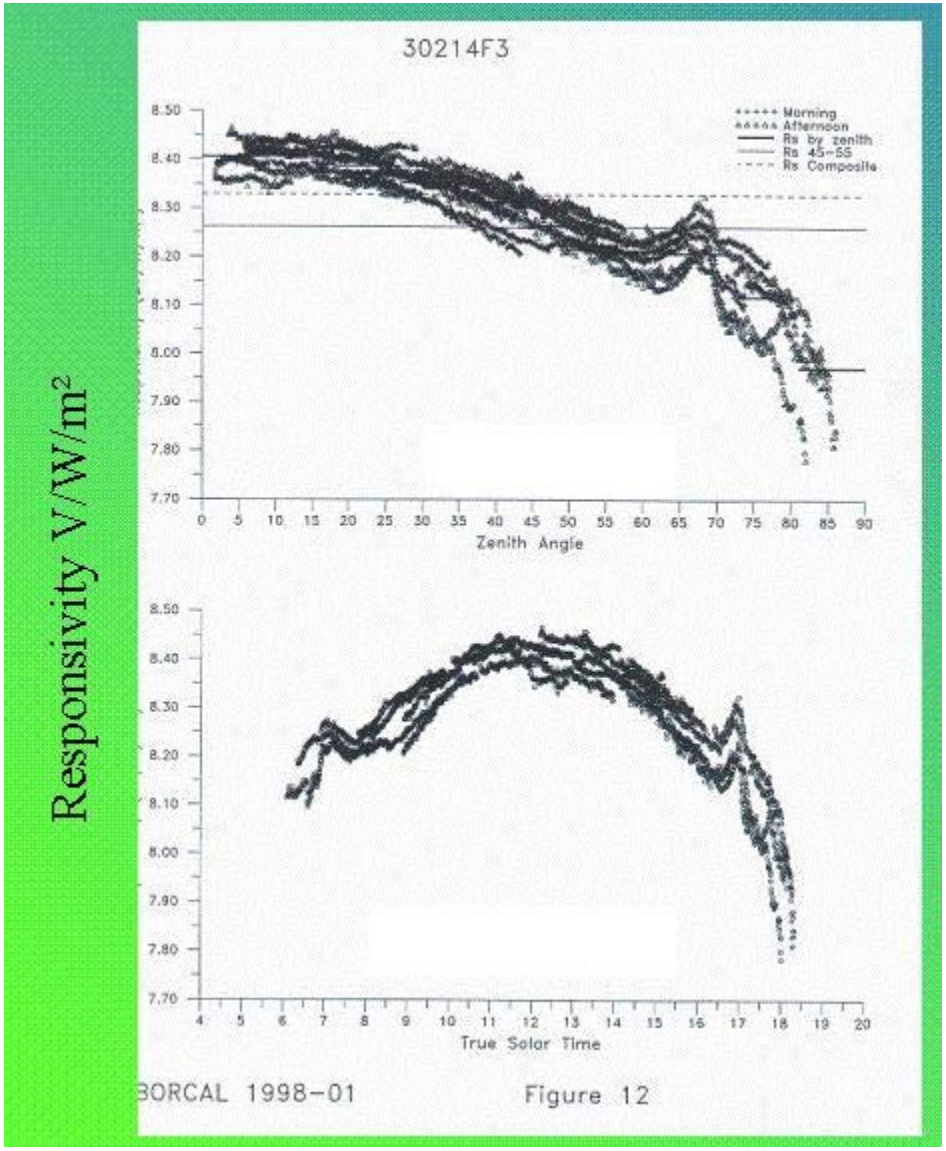
Solar Village BSRN	3/2/98	1350	30185E6	N	7.899										
Solar Village BSRN	9/12/98	0000	32084F3	UL	4.340										
Solar Village BSRN	9/12/98	0000	32085F3	DL	4.150										
Solar Village BSRN	9/12/98	0000	30221F3	RS	8.143										
Solar Village BSRN	9/12/98	0000	31107AHF	CAV	1.042										
Solar Village BSRN	7/6/99	1340	30248F3	D	8.247										
Solar Village BSRN	7/6/99	1340	30211F3	G	9.702	9.760	9.760	9.760	9.730	9.690	9.620	9.600	9.640	9.540	9.420
Solar Village BSRN	7/6/99	1340	30179E6	N	7.752										
Solar Village BSRN	9/3/00	0825	30207F3	D	8.049										
Solar Village BSRN	9/3/00	0830	30216F3	G	7.660	7.800	7.800	7.810	7.750	7.670	7.550	7.430	7.320	7.150	6.980

Solar Village BSRN	9/3/00	0840	30194E6	N	8.586										
Solar Village BSRN	8/13/01	0815	31223F3	D	7.262										
Solar Village BSRN	8/13/01	0805	30215F3	G	7.647	7.880	7.850	7.820	7.750	7.630	7.520	7.370	7.210	6.850	6.590
Solar Village BSRN	8/13/01	0820	31134E6	N	8.519										
Solar Village BSRN	11/21/01	1440	32690F3	DL	4.000										
Solar Village BSRN	12/8/01	1226	32085F3	DL	4.150										
Solar Village BSRN	7/1/02	1805	30201F3	D	7.283										
Solar Village BSRN	7/1/02	1755	30218F3	G	7.784	8.030	8.010	7.970	7.880	7.780	7.650	7.420	7.290	7.040	6.780
Solar Village BSRN	7/1/02	1815	30182E6	N	7.980										
Tabouk	7/28/97	1010	30253F3	D	8.470										

Tabouk	7/28/97	1010	30219F3	G	7.850	7.910	7.910	7.890	7.870	7.840	7.800	7.770	7.780	7.710	7.650
Tabouk	7/28/97	1010	30181E6	N	7.710										
Tabouk	6/29/99	1035	30244F3	D	8.639										
Tabouk	6/29/99	1035	30249F3	G	8.381	8.440	8.450	8.430	8.410	8.380	8.320	8.290	8.300	8.190	7.930
Tabouk	6/29/99	1035	30194E6	N	8.649										
Tabouk	7/3/00	1030	30203F3	D	8.048										
Tabouk	7/3/00	1040	30204F3	G	7.904	8.120	8.110	8.080	8.000	7.900	7.790	7.610	7.460	7.170	6.890
Tabouk	7/3/00	1045	30188E6	N	8.116										
Tabouk	5/29/01	0900	30201F3	D	7.391										
Tabouk	5/29/01	0915	30208F3	G	7.428	7.620	7.610	7.580	7.520	7.430	7.340	7.190	7.000	6.720	6.520
Tabouk	5/29/01	0905	30195E6	N	8.399										
Tabouk	4/15/02	1805	30240F3	D	8.112										
Tabouk	4/15/02	1800	30245F3	G	8.076	8.250	8.240	8.210	8.150	8.060	7.980	7.870	7.760	7.480	7.200
Tabouk	4/15/02	1820	30191E6	N	8.177										

Wadi Al-Dawaser	10/28/97	1645	30249F3	D	8.490										
Wadi Al-Dawaser	10/28/97	1630	30217F3	G	8.650	8.750	8.740	8.720	8.680	8.630	8.570	8.510	8.500	8.420	8.340
Wadi Al-Dawaser	10/28/97	1630	30179E6	N	7.740										
Wadi Al-Dawaser	8/17/98	1405	31224F3	D	8.579										
Wadi Al-Dawaser	8/17/98	1405	31223F3	G	7.944	7.950	7.960	7.950	7.940	7.940	7.930	7.910	7.960	7.960	7.980
Wadi Al-Dawaser	8/17/98	1405	30190E6	N	8.032										
Wadi Al-Dawaser	9/6/99	1140	30251F3	D	8.569										
Wadi Al-Dawaser	9/6/99	1140	30253F3	G	8.295	8.380	8.380	8.370	8.340	8.300	8.240	8.180	8.150	7.980	7.610
Wadi Al-Dawaser	9/6/99	1140	30185E6	N	7.902										
Wadi Al-Dawaser	9/10/00	1535	30240F3	D	8.193										

Wadi Al-Dawaser	9/10/00	1525	30241F3	G	8.094	8.270	8.260	8.250	8.190	8.100	7.970	7.840	7.670	7.490	7.310
Wadi Al-Dawaser	9/10/00	1530	30187E6	N	7.580										
Wadi Al-Dawaser	7/14/01	0905	30214F3	D	7.625										
Wadi Al-Dawaser	7/14/01	0920	30203F3	G	7.897	8.100	8.070	8.050	8.000	7.890	7.800	7.670	7.510	7.160	6.690
Wadi Al-Dawaser	7/14/01	0900	30181E6	N	7.648										
Wadi Al-Dawaser	7/9/02	0610	30252F3	D	7.565										
Wadi Al-Dawaser	7/9/02	0600	30248F3	G	7.642	7.870	7.850	7.820	7.740	0.000	0.000	0.000	0.000	0.000	0.000
Wadi Al-Dawaser	7/9/02	0625	31133E6	N	8.526										



Typical cosine response variations derived during outdoor radiometer calibration and characterization.