



NWTC Dynamometer Specifications

		5.0 MW Dynamometer	2.5 MW Dynamometer	225 kW Dynamometer
Facility	Test Bay	-20 x 6 m (65' x 20') test article footprint - Test stand configuration TBD - Drive-through high bay for test article off-load	12.2 x 15.2 x 9 m (40 x 50 x 30 ft) test article area 3.7 x 6.4 m (12 x 21 ft) t-slotted anchor floor 1.74 x 8.77 x 3.13 m (5.7 x 28.75 x 10 ft) direct drive generator pit	2.3 x 4.6 m (7.5 x 15 ft) elevating slotted test article table, can accommodate up to approx. 8-10 ft diameter test article
	Lifting Capacity	-Dual 68,000 kg (75 ton) overhead cranes -14 m (45') max hook height	-45,00 kg (50 ton) overhead crane -9.14 m (30 ft) maximum hook height	-13,605 kg (15 ton) overhead crane
	Test Article Grid Connection	-13.2 kVAC, 60 Hz. -Outdoor pad for customer supplied transformer	-575, 600, 690, and 4160 VAC 60 Hz.	-120, 240 VAC (50 kVA) 60Hz. -480 VAC, 250 kVA max. -0-216 VDC, 20kVA (battery charging simulation)
	Cooling/Heating	-Forced ventilation with outside air -Gas and electric heated test bay, climate controlled control room	-Forced ventilation with outside air -Gas and electric heated test bay, climate controlled control room	-Passive ventilation with outside air -Heated test bay, climate controlled control room
Dynamometer	Prime Mover	-6 MW (8000 HP) AC induction motor -Variable Frequency Drive (VFD) with full regeneration capacity, 350 Hz. torque response -75:1 3-stage gear reducer	-2.5MW (3351 HP) 4160V, 415A AC Induction Motor -Variable Frequency Drive (VFD) with full regeneration capacity, 2 Hz. torque response -71.937:1 3-stage Epicyclic reducer	-225 kW (300 h.p.) variable speed induction motor, variable speed drive, harmonic filter - Rated power achieved @ 1800 rpm, 3600 max rpm. -Multiple gearboxes
	Rated power and speed to test article	0-12 rpm: torque limited to 4.5 MN-m (40 M in-lb) 12-24 rpm: power limited to 5.8 MW continuous	0-16.7 rpm: torque limited to 1.4 MN m 16.7-30.0 rpm: power limited to 2.5 MW	
	Drive Table	5 degree fixed inclination	3.66m (12 ft.) max height @ 0 degree tilt 0-6 degree tilt capacity	Fixed, concrete with steel weldment tables
	Control System	Same 2.5 MW dynamometer	-Torque and speed control modes -Ramp generation, arbitrary time series, and external command capability -100 Hz. update rate -Custom scripting and programming	-Torque and Speed modes
Non-Torque Loading		Max yaw or pitch moment 7.5 MN-m (66 M in-lb) Max radial force: 3.5 MN (800 k lb) Max thrust: 3.5 MN (800 k lb)	Radial capacity: 440 kN (100Kip) force, 152 mm (6 in.) stroke x 2 Thrust capacity: 156 kN (35 Kip) force, 254 mm (10 in.) stroke x 2	-na
Data Acquisition		Same 2.5 MW dynamometer	-500+ channel 24-bit, distributed data acquisition -Standalone power quality condition monitoring systems	-96 channel, 24 bit distributed data acquisition -Standalone power quality monitoring systems