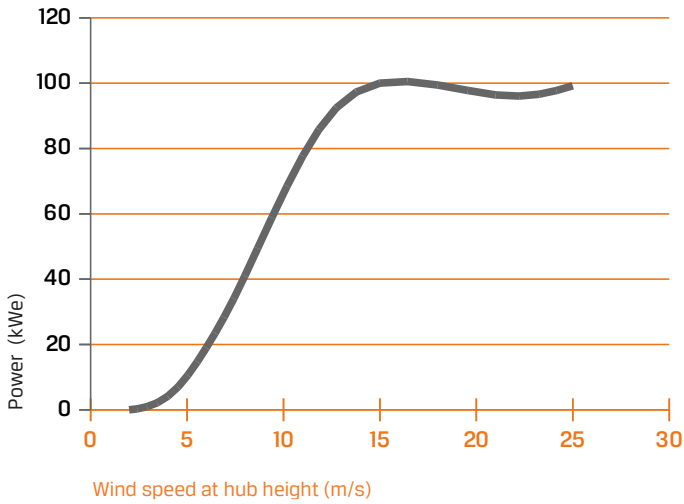


Specifications

NPS 100-21 Class II Power Curve

21m Rotor, Standard Air Density

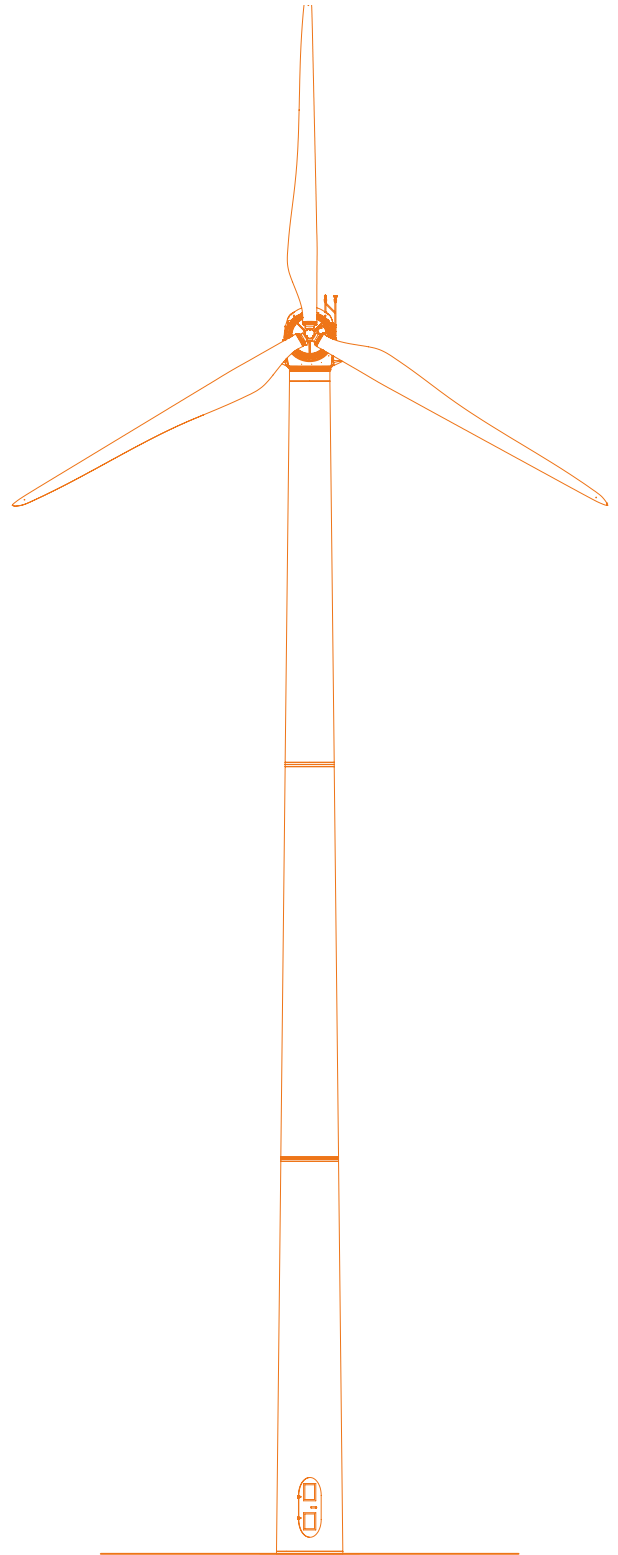
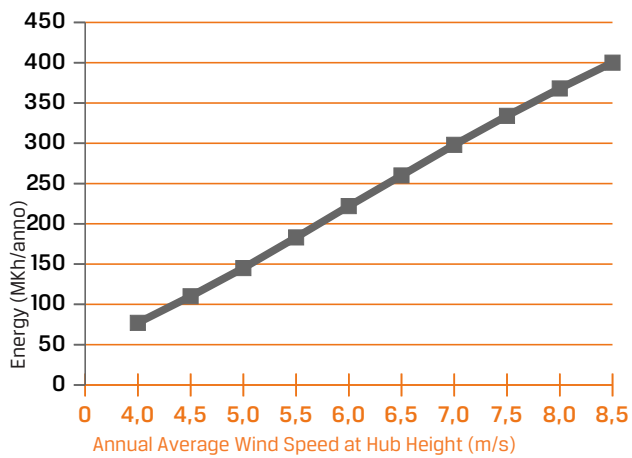
wind speed (m/s)	1	2	3	4	5	6	7	8	9	10					
electric power (kWe)	0	0	0.5	4.1	10.5	19	29.4	41.0	54.3	66.8					
	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	77.7	86.4	92.8	97.8	100	99.9	99.2	99.4	97.5	96.8	96.4	96.3	96.8	98.0	99.2



Annual Energy Production: 21-Meter Rotor

Standard Air Density, Rayleigh Wind Speed Distribution

	(mph)	8.9	10	11	12	13	15	16	17	18	19
Average annual wind speed (m/s)		4.0	4.5	5.0	5.5	6.0	6.5	7	7.5	8.0	8.5
Annual energy output (MWh/yr)		77	110	145	183	222	260	298	334	368	400



NPS 100-21

IEC Class II



General Configuration

Model	Northern Power® 100-21
Design Class	IEC WTGS III/S air density 1.225 Kg/m ³ , average annual wind below 8.5 m/s (19 mph), 50-yr peak gust below 59.5 m/s (133 mph)
Design Life	20 years
Rotor Diameter	21 m (69 ft)
Tower Types	Tubular steel monopole
Hub Height Options	37 m (121 ft) / 30 m (98 ft) / 23 m (75 ft) on tubular monopole
Orientalion	Upwind, 3 blade
Yaw System	Active yaw drive with wind direction/speed sensors and automatic cable unwind
Power Regulation	Variable speed, stall control
Certification	UL1741, UL1004-4, CSA C22.2 No.107.1-01, CSA C22.2 No. 100.04, CE compliant, CEI 0-21

Performance

Rated Wind Speed	14.5 m/s (32.4 mph)
Cut-in Wind Speed	3.5 m/s (7.8 mph)
Cut-out Wind speed	25 m/s (56 mph)
Extreme Wind Speed	59.5 m/s (133 mph)

Weight

Rotor (21 meter) & Nacelle (standard)	7,200 kg (16,100 lbs)
Tower (37 meter)	14,000 kg (30,800 lbs)

Drive Train

Gearbox Type	No gearbox (direct drive)
Generator Type	Permanent magnet

All specifications subject to change without notice.

Braking System

Redundant Braking System (per IEC 61400-1)	Generator dynamic brake and multiple spring-applied calipers
---	--

Control System

Controller Type	DPS-based multiprocessor embedded platform
Converter Type	Pulse-width modulated IGBT frequency converter
Monitoring System	SmartView® remote monitoring system, ModBus TPC over ethernet

Electrical System

Rated Electrical Power	100 kW, 3 Phase, 400 VAC, 50Hz
Power Factor	Set point adjustable between 0.9 lagging and 0.9 leading
Reactive Power	+/- 45 kVAR

Noise

Apparent Noise Level	55 dBa at 40 meters from nacelle (131 ft)
-----------------------------	---

Environmental Specifications

Temperature Range Operational	-20°C to 50°C (-4°F to 122°F)
Temperature Range Storage	-40°C to 55°C (-40°F to 131°F)
Lightning Protection	Receptors in blades, nacelle lightning rod and electrical surge protection

* Standard conditions: air density of 1.225 kg/m³, equivalent to 15°C (59°F), at sea level.
NPS, Northern Power, SmartView & Hurricane Resistant are registered trademarks of Northern Power Systems.