

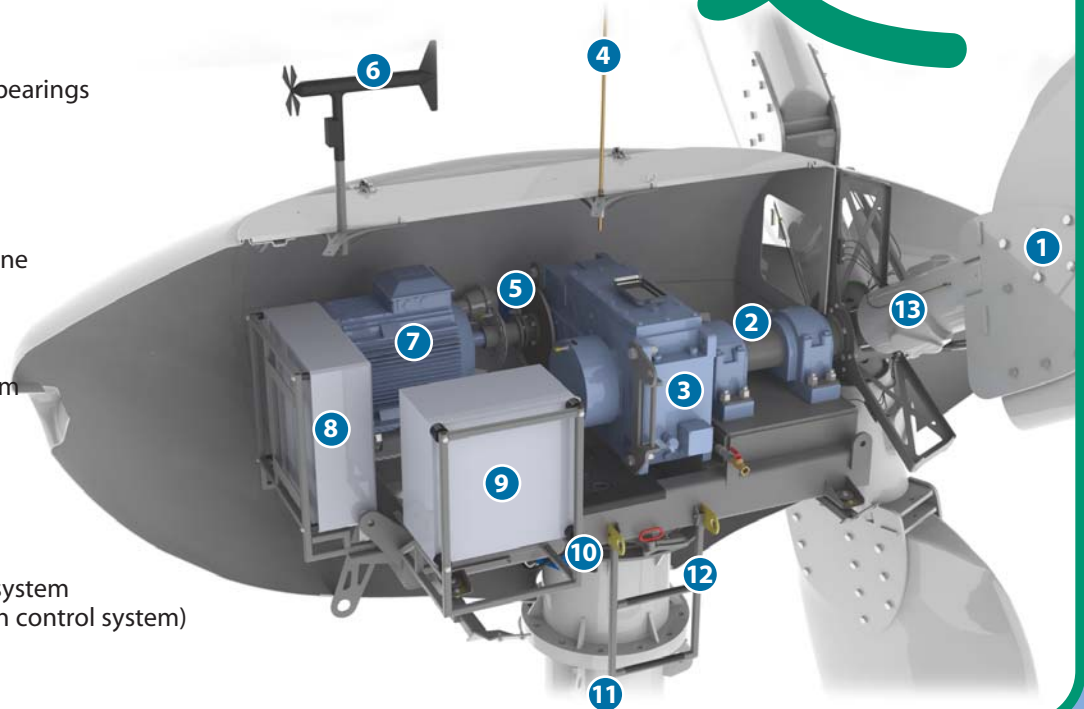
CLEAN ENERGY... JUST PLUG IT IN

Endurance<sup>®</sup>  
wind power

E-3120

## E-3120 50kw model

- 1 9m blade
- 2 Main shaft with two bearings
- 3 Gearbox
- 4 Lightning protection
- 5 Disk brake
- 6 Anemometer windvane
- 7 Generator
- 8 Control panel
- 9 Braking control system
- 10 Passive yaw control with brake
- 11 Tower
- 12 Access ladder
- 13 Aerodynamic safety system (patent pending pitch control system)



ENDURANCE WIND TURBINES GREEN ENERGY THAT WORKS

## TURBINE

Configuration	3 blades, horizontal axis, downwind
Rated power @ 11 m/s	50 kW
Applications	Direct Grid-Tie
Rotor speed	40 rpm
Cut-in wind speed	3.5 m/s (7.8 mph)
Cut-out wind speed	25 m/s (56 mph)
Survival wind speed	52 m/s (116 mph)
Design lifetime	30 years *
Overall weight	1476 kg (3250 lbs)

## ROTOR

Rotor diameter	19.2m (63 ft)
Swept area	290m <sup>2</sup> (3120 ft <sup>2</sup> )
Blade length	9 m (29.53 ft)
Blade material	Fiberglass / Epoxy
Power regulation	Stall control (constant speed)

## GENERATOR

Frequency	60 Hz
Voltage	480 V
Phase	Three phase
Type	Induction Generator

## BRAKE & SAFETY SYSTEMS

Main brake system	Rapid fail-safe brake on high speed shaft
Secondary safety	Pitch control system (for over speed regulation) using passive spring loaded mechanism (patent pending)
Automatic shut down triggered by :	<ul style="list-style-type: none"> <li>- Over speed</li> <li>- High wind speed</li> <li>- Grid failure</li> <li>- All other fault conditions</li> </ul>

## CONTROLS

PLC based	Includes remote monitoring software
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## WARRANTY

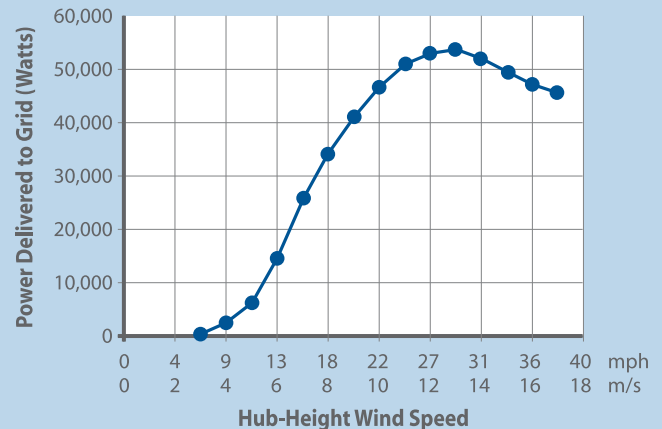
Turbine, controls	5 years
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## TOWERS

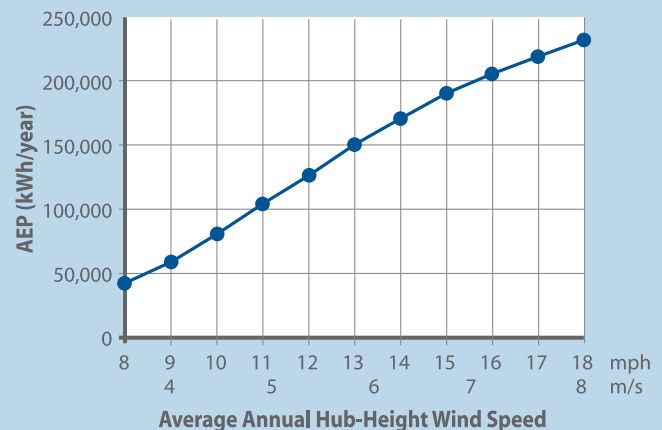
Types and heights	Standard Monopole 30.5m (100 ft)
	Standard Lattice 42.67m (140 ft)
	Custom heights available
Maintenance Access	Working space inside nacelle tower Top work platform and safety cable climbing system

\*Provided service and maintenance schedules are strictly followed

## POWER CURVE



## ANNUAL ENERGY PRODUCTION (AEP)



MODEL E-3120	
Wind Speed (mph)	AEP kWh per year
6	12,000
7	25,000
8	42,000
9	59,000
10	81,000
11	103,000
12	126,000
13	148,000
14	169,000
15	189,000
16	206,000
17	224,000
18	240,000

WIND SPEED Conversion Table		
m/s	km/h	mph
6	22	13
7	25	16
8	29	18
9	32	20
10	36	22
11	40	25
12	43	27
13	47	29
14	50	31
25	90	56
32	125	80
45	160	100
55	200	125