



AEP 15/55 Wind Turbine

Technical Specifications



(Formerly Auroville Energy Products-Wind)

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*One of 10 AEP 15/55
installed on Sagar
Island, West Bengal,
INDIA*

Please visit our Web-site at: <http://www.AurovilleWindSystems.com>

AEP 15/55 Specifications

System

Type	Grid Connected, 415V 50Hz
Configuration	Horizontal Axis Down Wind
Rotor Diameter	15 meters
Centerline Hub Height	25m (30m)

Performance Parameters

Rated Electrical Power	55kW
Rated Wind Speed	12 m/s
Cut-in	4.6 m/s
Shut down (high wind)	22.4 m/s
Peak (survival)	70 m/s
Estimated Annual Output	55.000 kWh @ 4.5 m/s 95.000 kWh @ 5.4 m/s 165.000 kWh @ 6.7 m/s

Rotor

Hub Type	Fixed Pitch
Rotor Diameter	15 meters
Swept Area	177 m ²
Number of Blades	3
Solidity factor	0.077
Rotational Speed	62 rpm
Location relative to tower	downs wind
Cone Angel	6 ⁰
Tilt Angel	0 ⁰
Tip Speed	48.6 m/s
Design Tip Speed Ratio	6:1

Blade

Length	7.2 m
Material	Glass Epoxy (GRE)
Airfoil	NREL, thick, modified
Twist	7 ⁰ Outer Blade
Root Chord	457 mm @ 4% 279 mm
Max Chord	749 mm @ 39% 2925 mm
Tip Chord	406 mm @ 100% 7500 mm
Chord Taper Ratio	+/- 2:1
Over speed Device	Electro magnetic tip brake
Hub attachment	Embedded female bolt receptors
Weight	150 kg

Generator

Type	3 phase, 4 pole, asynchronous
Rated Temperature	25 ⁰ C
Frequency	50 Hz
Voltage	415 V, 50Hz
KW @ rated Wind Speed	55 kW
KW @ peak continuous	60 kW
Rotational Speed	1500 rpm
Winding type	Ungrounded WYE
Insulation	Class F
Enclosure	Totally Enclosed
Frame Size	365 TC
Mounting	Direct mount on transmission
Options	Condensation Heater

Transmission

Type	Planetary
Housing	Cast Iron
Ratio (rotor sp./gen. sp.)	1 : 24.57
Design output	70 kW
Lubrication	Synthetic Gear Oil 320

Yaw System

Free rotation 360 degrees, passive

Drive Train Tower Interface

Structural casting	Yaw bearing mounted on tower top
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Tower

Type	Galvanized, 3-legged, free-standing,
bolted lattice	
Height	25 meter , (30 m)
Weight	3200 kg
Options	Self erecting version with Gin Pole

Foundation

Type	single RCC Pad or Pile Foundations
Anchor Bolts	Material IS 2062, dia 40 mm, 12 no

Control System

Type	PLC based
Inputs monitor	Wind Speed, Generator Speed, Grid
Outputs	Power, system status
Communication	Serial link
Enclosure	Fiber Glass (Stainless Steel)

Weights

Tower	3200 kg
Rotor and Drive Train	2420 kg

Brakes

Slow Speed Shaft	Tip-Brakes
High Speed Shaft	Dynamic Brake, Parking brake
Over speed Protection	Simultaneous deployment of tip-brakes and dynamic brake, delayed deployment of parking brake

Design Life

30 years

Design Standards

AWEA, EIA, IEC, IS

Operation

Fully automatic, no staff required

Scheduled Maintenance

by-annual inspection

