

# EXTOL WIND

High Performance Direct Drive Turbines

## Main Data

Model	EX-55/60-1000	EX-55/105-1000	EX-100/100-2500
Rotor diameter	55	55	100
Hub Height	60 mtr	105 mtr	100 mtr
Rated power	1000 Kw	1000 Kw	2500 Kw
Control	Pitch Control	Pitch Control	Pitch Control
Operation Mode	Variable Speed	Variable Speed	Variable Speed
Design Life	20 Years	20 Years	20 Years
IEC Wind Class	IIB	IIB /IIIA	IIB /IIIA

## Generator-Convertor System

Generator	Permanent magnet Synchronous Generator (PMSG)		
Protection Class	IP54	IP54	IP54
Nominal Voltage	690 V	690 V	690 V
Frequency	50 Hz/ 60 Hz	50 Hz/ 60 Hz	50 Hz/ 60 Hz
Power Factor	Unity +/- 5%	Unity +/- 5%	Unity +/- 5%
Rated Power	1000 Kw	1000 Kw	2500 Kw
RPM	27	27	17
Convertor System	Full Power Convertor System, IGBT- 4 Quadrant		
Cooling System	Natural Draft Air Cooling		
Drive Train	Direct Drive (Gearless)		

## Operation Data (Based on 10 min average wind speed)

Cut-in wind speed	3 m/s	3 m/s	3 m/s
Cut-out wind speed	24 m/s	24 m/s	24 m/s
Rated wind speed	12 m/s	12 m/s	11.5 m/s
Survival wind speed	59.5 m/s	42.5 m/s	42.5 m/s

## Yaw System

Type	Active	Active	Active
Yaw Drives	3 motors with planetary gear boxes		4 motors
Yaw Breaks	Hydraulic caliper	Hydraulic caliper	Hydraulic caliper

## Rotor

Swept Area	2375.82 m <sup>2</sup>	2375.82 m <sup>2</sup>	7857 m <sup>2</sup>
No of Blades	3	3	3
Blade Length	26.5 m	26.5 m	48.5 m
Blade Material	FRP-Epoxy	FRP-Epoxy	FRP-Epoxy
Tilt Angle	2.5 deg	2.5 deg	2.5 deg
Cone Angle	2.5 deg	2.5 deg	2.5 deg
Brake	3 Independent Aerodynamic Brake & Hydraulic : Active Disc Brake		

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## Tower

Tower Height	58 mtr	103 mtr	98 mtr
Type	Conical	Conical	Conical
Segment	3	4	4
Material	S355 Steel	S355 Steel	S355 Steel

## Ambient operating conditions

	Operating Condition		Survival	
Cold Climate	-30 C	40 C	-40 C	50 C
Hot Climate	0 C	50 C	- 5 C	50 C