

Technical data of Aventa® LoWind Turbine AV-7

Main data

Hub height	18.0 m
Rotor diameter	12.9 m
Rated power AC	6.5 kW
Cut-in wind speed	2.0 m/s
Design wind speed	6.0 m/s
Cut-out wind speed	14.0 m/s

Rotor

Diameter	12.9 m
Rotor area (swept)	129 m ²
Ratio of rated output to rotor area (swept)	50 W/m ²
Number of blades	3
Arrangement	upwind machine
Rotary speed	variable 20 – 66 rpm
Blade tip speed	max. 44 m/s

Tower

Hub height	18.0 m
Design	Tubular tower, no guying
Material	Concrete or steel

Generator

Design	permanently excited synchronous generator
Rotary speed	240 – 792 rpm
Grid connection	via inverter 3 x 400 V

Power transmission

Design	Belt drive
Speed-increasing ratio	1 : 12

Control and safety systems

Rotary speed control	pitch control
Power limitation	pitch control
Yaw mechanism	active (azimuth angle)
Braking system 1	electric
Braking system 2 (emergency stopping)	mechanical
Monitoring (total 40 parameters)	rotary speed vibration generator temperature generator output air temperature in nacelle
Storm safety device (50-year gust)	42 m/s

Weights

Nacelle without rotor	700 kg
Rotor	470 kg
Blades	117 kg
Tower	concrete 12'500 kg steel 2'100 kg

Noise emission

(assessment level according to LSV at 50 m distance) (LSV = Swiss Noise Control Act)	< 30 dBA
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Annual energy yield (at sea level, Weibull distribution = 1.5)

At average annual wind speed of:	2.5 m/s	8'000 kWh/a
	3.0 m/s	12'000 kWh/a
	3.5 m/s	16'000 kWh/a
	4.0 m/s	20'000 kWh/a
	4.5 m/s	24'000 kWh/a

Sites of application

Sites with a maximum average wind speed up to 4.5 m/s.

Aventa® Ltd. strives to continuously improve its AV-7 LoWind Turbine.

