

Libellula[®] 50kW

Wind is our challenge



*Libellula 50kW is a small wind turbine designed to maximize **efficiency** in energy production, **simplicity** of installation, **safety** and **reliability**.*

*Libellula 50kW can be installed on grid or off-grid. Its large rotor (19.4m) and its direct grid connection (no inverter) grant **high performances** even at low wind speeds.*

Libellula 50kW is the ideal wind turbine for farms, small industries and communities. With an average wind speed of 6 m/s, it will produce nearly 150.000 kWh/year.

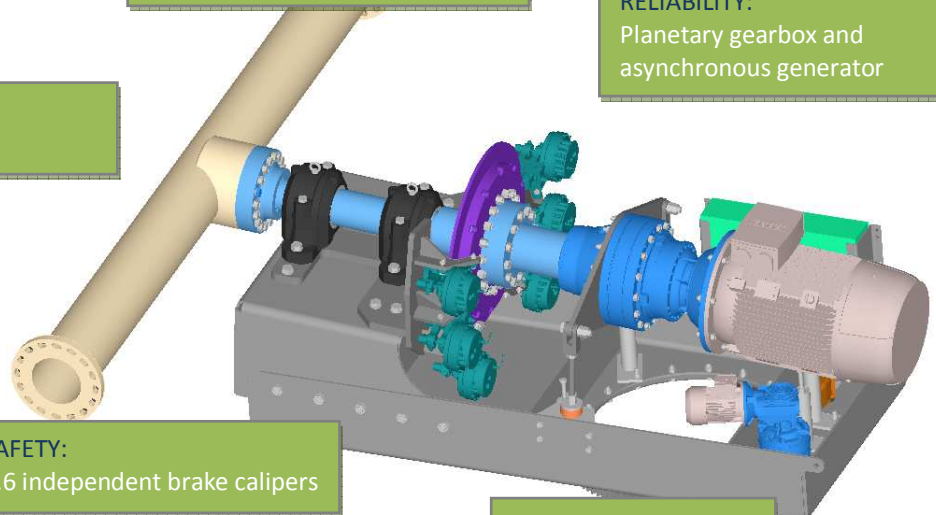
SIMPLICITY:
2 bladed large rotor

RELIABILITY:
Planetary gearbox and asynchronous generator

PERFORMANCE:
Direct grid connection

SAFETY:
n.6 independent brake calipers

EFFICIENCY:
Active yawning



ARIA Libellula® 50kW - MAIN TECHNICAL DATA

GENERAL

cut-in wind speed	3.5 m/sec.
rated wind speed	13 m/sec
cut-out wind speed	25 m/sec.
extreme wind speed	$V_{e50} = 52,5$ m/sec.
IEC class	III A
rated power	49kW
grid voltage	400V 3 ph 50Hz

ROTOR

number of blades	2
diameter	19.4 m
speed	53 rpm
power regulation	passive stall

GEARBOX

type	2 stages – planetary gear
ratio	1:28

MAIN GENERATOR

type	asynchronous - 4 poles
nominal voltage	400 V
frequency	50 Hz

CONNECTION

On-grid applications	direct grid connection
Off-grid applications	inverter + battery

TOWER

type	cylindrical pipe
number of sections	2
hub height	24
material	hot dip galvanized steel
ascent	external ladder

CONTROL SYSTEM

type	n.1 PLC
remote diagnostic	YES

YAW SYSTEM

type	active
yaw motors	n.1
yaw bearing	crown-bearing; externally geared

SAFETY

disk brake	on main rotor shaft
independent brake calipers	n.6

WEIGHTS

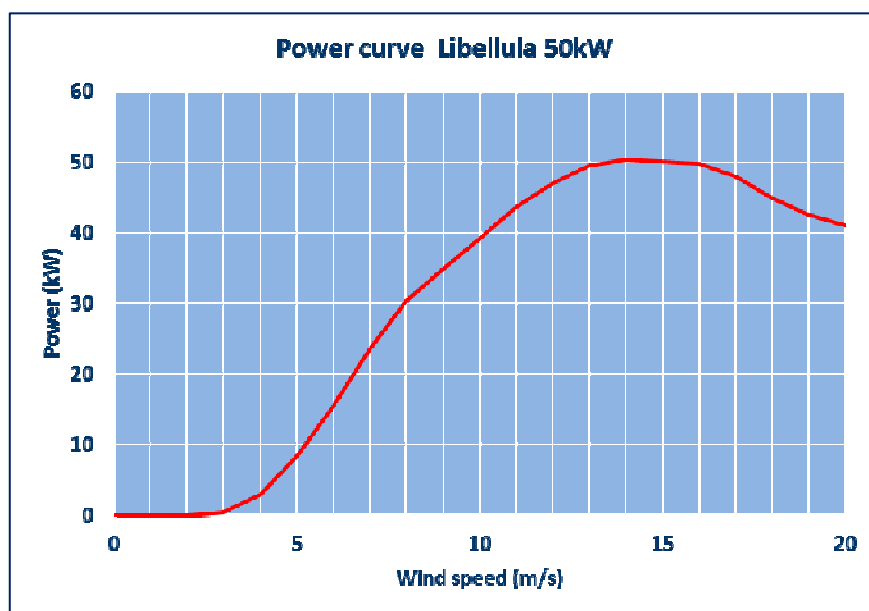
nacelle including rotor	2500 kg
tower	5500kg

Power curve

The curve data are valid for standard atmospheric conditions of 15° C air temperature, 1013 mbar air pressure and 1.225 kg/m³ air density, clean rotor blades and horizontal undisturbed air flow.

Estimated production

The annual energy production data for different annual mean wind speeds at hub height are calculated from the power curve data assuming a Rayleigh wind speed distribution, no losses and 100% availability.



Annual Energy Production Libellula 50kW ($K_{Weib}=2$)

Mean wind speed (m/s)	4	4,5	5	5,5	6	6,5	7
Gross annual energy production (kWh/y)	60.000	81.000	103.000	125.000	147.000	167.000	186.000

* We reserve the rights to change our products characteristics without notice.



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