Libellula® 20kW

Wind is our challenge

Libellula 20kW *is a small wind turbine designed to maximize* ***efficiency*** *in energy production,* ***simplicity*** *of installation,* ***safety*** *and* ***reliability****.*

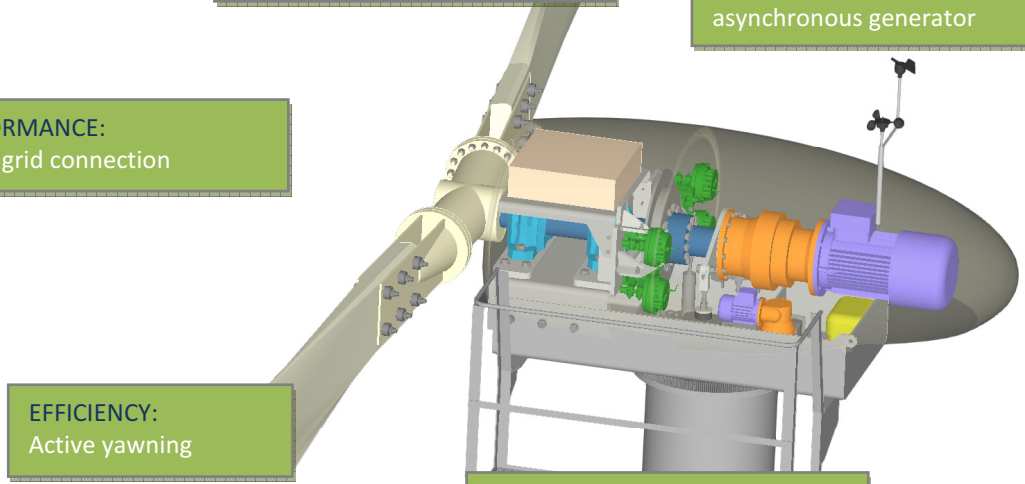
Libellula 20kW *can be installed on grid or off-grid. The large rotor (17,4m) and the direct grid connection (no inverter losses) grant* ***high performances*** *even at low wind speeds.*

Libellula 20kW *is the ideal wind turbine for farms, small industries and communities. With an average wind speed of 6 m/s, it will produce around 75.000 kWh/year.*

SIMPLICITY:
2 bladed large rotor

RELIABILITY:
Planetary gearbox and asynchronous generator

PERFORMANCE:
Direct grid connection



EFFICIENCY:
Active yawning

SAFETY:
n.4 independent brake calipers

www.aria-srl.it

ARIA *Libellula*® *20kW* - MAIN TECHNICAL DATA

GENERAL

cut-in wind speed	3 m/sec.
rated wind speed	10 m/sec
cut-out wind speed	25 m/sec.
extreme wind speed	V_{e50} = 52,5 m/sec.
IEC class	III A
rated power	20kW
grid voltage	400V 3 ph 50Hz

ROTOR

number of blades	2
diameter	17.4 m
speed	46.23 rpm
power regulation	passive stall

GEARBOX

type	2 stages – planetary gear
ratio	1:32.9

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	20 m (other on request)
material	hot dip galvanized steel
ascent	external ladder

CONTROL SYSTEM

type	n.2 PLC
remote diagnostic	YES

YAW SYSTEM

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

SAFETY

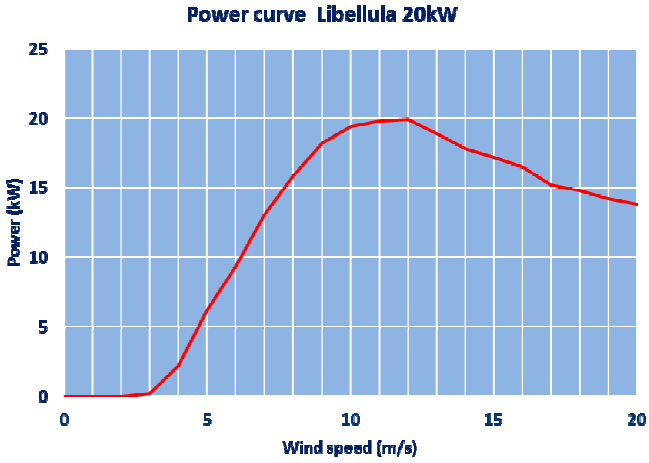
disk brake	on main rotor shaft
independent brake calipers	n.4

WEIGHTS

rotor	600 kg
nacelle including rotor	2000 kg
tower	4000 kg

Power curve
The curve is valid assuming 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 at different annual mean wind speeds are calculated from the power curve data assuming a Rayleigh wind speed distribution, no losses and 100% availability.



Annual Energy Production Libellula 20kW (K_{Weib}=2)							
Mean wind speed (m/s)	4	4,5	5	5,5	6	6,5	7
Gross annual energy production (kWh/y)	35.200	46.200	56.800	66.800	75.700	83.600	90.200

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

ARIA s.r.l. a socio unico

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