

# Iskra AT5-1 Measured Power Curve – Summary

This document summarises the results of a power performance assessment on the Iskra AT5-1 5kW wind turbine with MKIII blades, installed at Iskra's test site 6 miles north-west of Loughborough, UK. The results are subject to change due to continued monitoring. The test was conducted in accordance with BS EN 61400-12:2006. The full report is available in Iskra document: "TR013 AT5-1 Wind Turbine Power Performance Assessment (MKIII)"

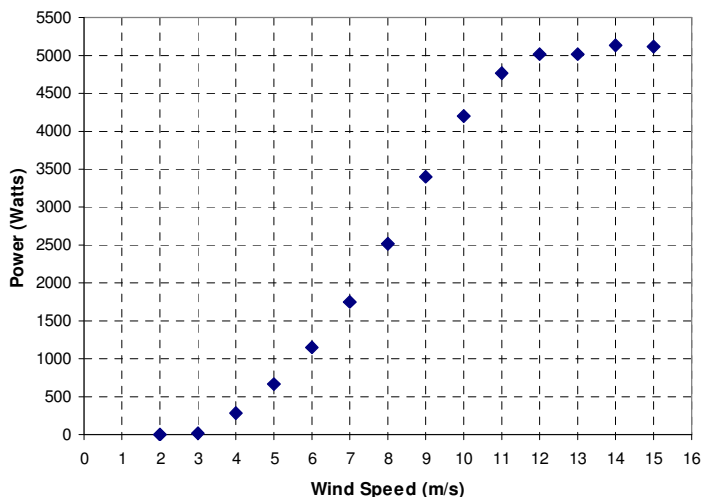
## Measured Power Curve Normalised to Sea-level Air Density

Hub Height Wind Speed (m/s)	Power Output (Watts)
2	0
3	22
4	279
5	660
6	1144
7	1755
8	2509
9	3392
10	4205
11	4768
12	5015
13	5015
14	5137
15	5112

### Turbine Characteristics:

Rated Power:	5 kW
Rotor Speed:	200 rpm nominal (variable)
Cut-in Wind Speed:	3 m/s (6.7mph)
Survival Wind Speed:	60 m/s (134 mph)
Rotor Diameter:	5.4m
Rotor Orientation:	Upwind
Number of Blades:	3
Blade Material:	GRP Composite
Control System:	Passive Blade Pitching
Gearbox:	None
Brake:	Electro-dynamic
Generator:	Permanent Magnet Alternator
Yaw Control:	Tail Vane
Tower Height:	12m or 15m
Tower:	Free-standing or Guyed

Measured Power Curve



Annual Mean Wind Speed at Hub Height (m/s)	Published Energy Yield Prediction (MWhrs/year)	Expected Actual Annual Energy Yield, Based on Measured Power Curve <sup>1</sup> (MWhrs/year)	Estimated Annual CO <sub>2</sub> Savings <sup>2</sup> (Tonnes CO <sub>2</sub> )
4	4.75	4.96	2.82
5	8.74	9.01	5.12
6	13.15	13.42	7.62
7	17.35	17.64	10.02
8	20.93	21.37	12.14

1) Assumes a standard Rayleigh wind speed distribution.

2) CO<sub>2</sub> emission factor taken from UK Building Regulations Part L: Conservation of Fuel and Power, L2A New Buildings other than Dwellings, Draft 2006 Edition.



*Note: The annual electricity consumption of a medium size home is in the region of 4 to 6 MWh.*