



# Wind iris



## Wind Iris Turbine-mounted



Four years after its first introduction to the market by Avent, discover the new Wind Iris turbinemounted Lidar, bringing radical improvements in metrology and operations.

## One year of successful prototype testing and validation

In addition to environmental testing and certifications, several onsite campaigns on the new 4-beam Wind Iris showed:

- **100% uptime and high data availability** in all weather conditions (down to -30°C, in freezing conditions, and in clean air)
- **High correlation with IEC met mast measurements**, both in simple and complex terrain (0.1 m/s wind speed accuracy)
- **Full operational assessment in 3-6 weeks**, from yaw misalignment to power curve measurement and NTF verification

## Verify and optimise wind farm performance, turbine after turbine

### ■ Power curve measurements

Assess turbine performance with IEC equivalent or Operational power curves using an industry proven procedure, and evaluate the benefits of maintenance actions and performance upgrades with before/after power curves.

### ■ Yaw misalignment correction

Increase energy production with a direct, independent and automated measure of the yaw misalignment in a few days.

### ■ Nacelle transfer function characterization

Obtain an accurate site specific calibration for your nacelle anemometer and improve the value of your SCADA monitoring.

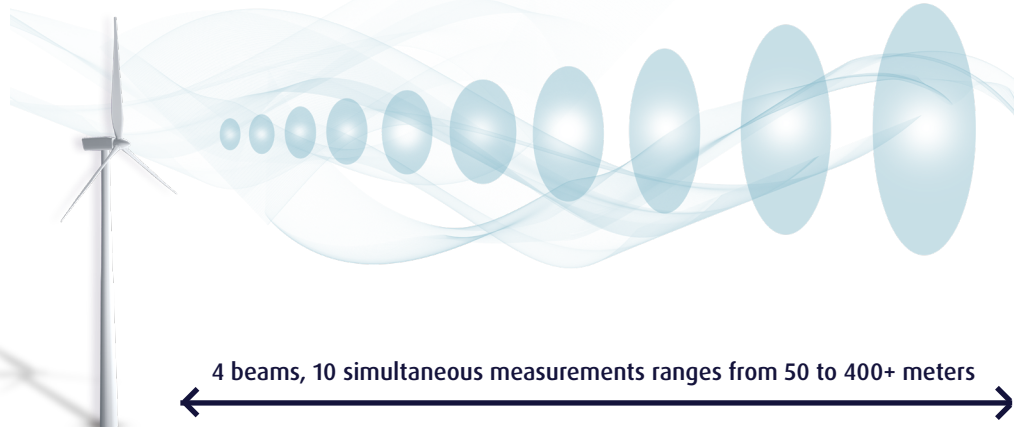
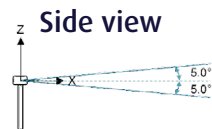
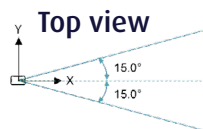
### ■ Advanced applications

Including site calibration, wind sector management or wakes analysis. Plus feed-forward turbine control applications with our dedicated entity Avent Lidar Technology.



# Wind data output at hub-height and through the rotor swept area

## Beam geometry:



## Reconstructed data output:

- Wind speed and Direction
- Shear and Veer
- Turbulence intensity

4 beams, 10 simultaneous measurements ranges from 50 to 400+ meters

## Key features

Comprehensive **hub-height and rotor equivalent measurements** for in-depth analysis on **all terrain types**

- **Constant accuracy** from 50 to 400+ meters, suitable for **all turbine sizes and types**
- **Straightforward installation** with lightweight system parts and embedded screen for configuration
- **Proven platform** benefiting from 4 years of customer feedback and **200+ turbine deployments experience**
- **Complete range of supporting services**, from installation to data analysis training and tools

## PERFORMANCE

Range	50 to 400+ meters
Data sampling rate	1 Hz
Measuring distances	10 user defined distances simultaneously
Speed accuracy	0.1 m/s
Speed range	-20 to +50 m/s
Direction accuracy	+/- 0.5°
Number of beams	4 beams
Beam geometry	Horizontal opening: 15° half angle Vertical opening: 5° half angle

## DATA

Output data	1s/10min radial and reconstructed wind data (see above) Yaw misalignment Tilt and roll angles CNR (signal to noise) Data availability
Data storage	64 GB – about 1.5 years @1Hz
Data format	ASCII (encoding), .CSV (file)
Communication	Ethernet (RJ45), CAN Bus (DB9), 3G modem (optional) + Peripheral (USB, HDMI, RS232)
Time synchronization	GPS, NTP

## OPERATIONS

Optical Head (OH)	L53cm, W36cm, H36 cm 21 kg
Processing Unit (PU)	L50cm, W37cm, H13 cm 12 kg
Tripod	14 kg
Connecting cables	Power: 8m length, Ø12.1mm Communications: 8m length, Ø9.6mm
Power consumption	180 W nominal
Temperature range	OH: -30°C/-22°F to +50°C/+122°F PU: -30°C/-22°F to +65°C/+149°F
Environnement	Housing classification IP65 Marine atmosphere compliant (IEC 60068-2-11) Operating humidity 0 to 100% RH
Safety	Class 1M / EN 60825-1
Compliance	CE

## For more information

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