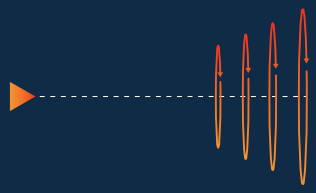
Wind speed at light speed

ZX Lidars

ZX TM Summary



ZX TM

Turbine-mounted wind measurements from horizontal profiling Lidar

The only Lidar to measure the full shear and veer wind profile of a wind turbine.
Accurately and automatically detect complex flow conditions such as wakes.
Operate in all environmental conditions with market-leading Lidar sensitivity.
Compensate for turbine movement automatically for accurate measurements above ground level, e.g. hub height.

ZX TM at a glance:

- Remotely measure the wind ahead of wind turbines from 10m to 400m+.
- See a turbine's true potential with an independent Power Performance Measurement.
- Remove cup anemometer or Nacelle Transfer Funciton uncertainty or calibration issues.
- Application and campaign-focussed User Interface ensuring ease of data handling.
- Standard industry-accepted methodologies and measurements for: Power Curves, Nacelle Transfer Function calibration including Yaw Alignment, and Wake Detection.
- Extensive 3 year service period ensuring the lowest cost of through-life ownership.
- Suitable for installation on all major turbine platforms.


ZXTM
ZX Lidars
ZX Lidars

Optimise wind turbines, wind farms and wind projects

Improve the Levelised Cost of Energy of a wind farm by:

- Producing more energy for the same cost.
- Reducing operating costs for the same production.
- Increasing project value with more certain wind measurements.

ZX TM features include:

- Lidar Control Unit (LCU) mounted in the nacelle, and a Lidar Optical Head (LOH) mounted on the Turbine Integration Kit (TIK) which is mounted on to the nacelle roof.
- 10 Horizontal measurement ranges and up to 15 Vertical Slices at each range – the most comprehensive measurement capability of any Lidar, delivering Rotor Equivalent Wind Speed and Slices for IEC Power Curves.
- High Lidar directional positional accuracy on turbine essential for any set point changes relative to rotor alignment using unique patented auto-alignment technique in addition to roll / inclination sensors on board.
- Extensive 3 year service life as standard.
- High availability with all laser energy focussed at each measurement range, with low susceptibility to turbine blades due to short measurement integration time (50Hz).
- “Application mode” software helping you to define Key Performance Indicators, campaign duration and to include turbine parameters, in addition to the initial installation and easy configuration of the Lidar.

ZXTM Specification

Measurements

Configurations	3” Lidar optical head, 15 or 30 degree half-angle scan 10+ horizontal ranges with configurable dwell times 15 vertical slices at each range across the rotor disk
Wind characteristics	Wind speed, shear, veer, wind yaw misalignment, turbulence, rotor equivalent wind speed (REWS), windlflow complexity
Scan & Data sample rate	Full rotor scan for REWS measurement 50Hz / 20ms measurements
Speed range	0.5 - 45 m/s (wind loading survivability up to 70 m/s)

Product

Weight	Lidar Optical Head (LOH): 20 kg Lidar Control Unit (LCU): 29 kg Turbine Integration Kit (TIK): 35kg
Size	LOH: 356 x 285 x 823 mm LCU: 209 x 513 x 630 mm Cable length: 10 m
IP Rating	LOH: IP 66 LCU: IP 65 Marine atmosphere compliant (IEC 60068-2-52) Operating humidity 0 to 100% RH
Ambient temperature range	LOH: -30 to 50˚C / LCU: -40 to 60˚C
Warranty and Maintenance	3 year warranty No factory maintenance or calibration required during 3 year service period
AC Power Requirements	Standard climate (0 to +40°C): 94 W Hot climate (+40 to +60°C): 180 W Cold Climate (-40 to 0°C): 275 W

Access

Interfaces	Ethernet M12 or RJ45 (adaptor cable) WLAN 802.11 Modbus (TCP) Cellular modem (optional)
Data storage	24 months
User interface	Web-based interface via laptop, mobile or tablet (see opposite)
Data outputs	CSV Files Compressed (Optionally Encrypted)
Timestamp	GPS, Local time offset, NTP

Your Lidar adventure starts today by speaking to ZX Lidars.

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