

We are ZX Lidars



Established in 2007, rebranded in 2018 from ZephIR Lidar, we are a leading global wind Lidar innovation and production company:

- Wind Lidar (Light Detection & Ranging) provides remote wind speed / direction measurements in replace of traditional tall met masts and in an advancement of turbine anemometry
- 5 Decades of Lidar R&D invested – invention and patent portfolio
- UK-based, UK-technology, Global Export
- 3 Facilities in the UK – Production Centre, R&D and Commercial Offices, Test Site
- Our Lidars are used onshore and offshore to better plan, design and operate wind farms
- Our Lidars are industry approved and used by the majority of ‘significant’ wind farm development / operation key stakeholders



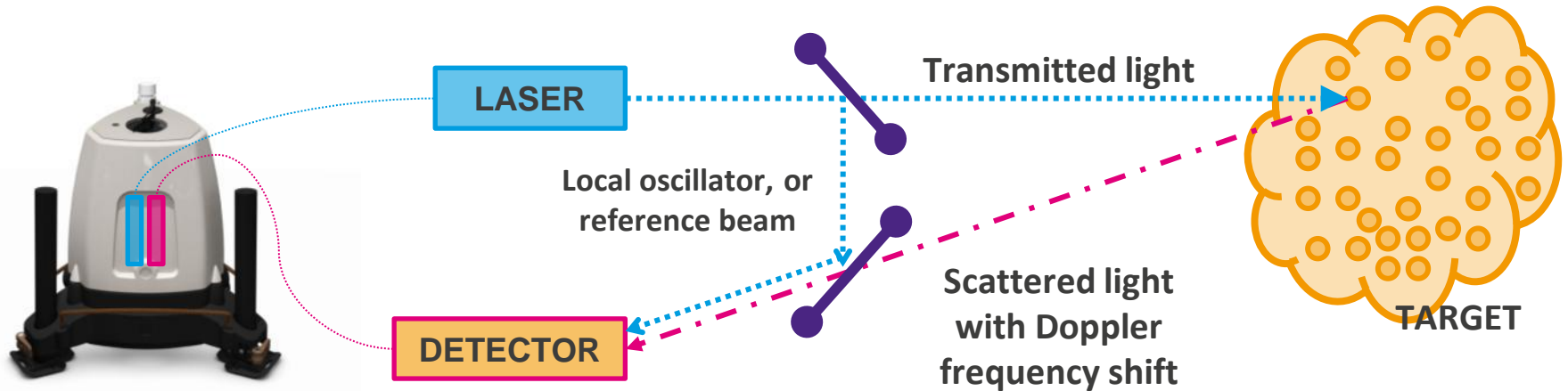
UK Wind Lidar Production



UK Remote Sensing Test Site



What is wind lidar?



- Atmospheric aerosol motion follows the wind
 - A laser is focussed at a point and scattered by the aerosols
 - The scattered radiation is Doppler shifted by the moving aerosols
 - The Doppler shift is proportional to the line-of-sight speed (LOS) of the aerosols
 - A detector records the beat between the received, scattered light and a reference beam to determine the Doppler shift
- ⇒ The LOS component of the wind speed is then determined

Our wind lidars

300



Onshore wind measurements from a vertical profiling Lidar from 10 to 200+ meters, fully IEC Classified with finance-grade data accepted by DNV GL

[PRODUCT INFO](#)

300M



Offshore wind measurements from a vertical profiling Lidar from 10 to 200+ metres with the longest service interval as standard of any Lidar

[PRODUCT INFO](#)

TM

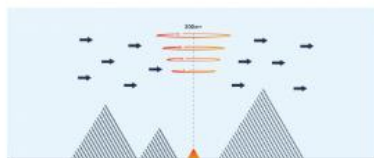


Onshore and offshore turbine-mounted horizontal wind Lidar for measurements from 10 to 400+ meters in front of a turbine.

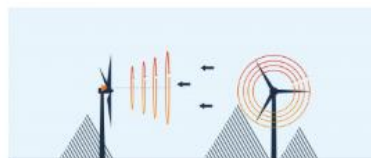
[PRODUCT INFO](#)

Use Cases

Lidar Weather Station



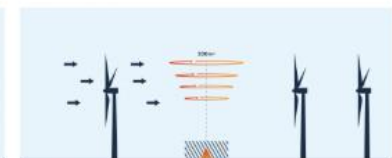
Power Curve Measurements from the turbine



Power Curve Measurements to IEC 61400-12-1: 2017



Permanent Met Lidar



HAPPY
BIRTHDAY!

World-first turbine-mounted lidar



Zephir prototype on a Nordex N90 turbine nacelle, 4 March 2003

Wishlist



- Low cost, narrow linewidth lasers
- Near diffraction limited focussing optics
- Diffraction limited beam steering optics, min. 3" aperture
- Low NEP detector modules near 1550 nm

Key laser requirements

- Runs > 5 years without need for servicing or maintenance (fit and forget)
- Price sensitive
- Single mode, CW output
- Fibre coupled
- O/P between 10 mW and 1.2 W
- Wavelength between 1510 nm and 1590 nm
- Instantaneous linewidth < 50 kHz
- Diffraction limited beam quality
- RIN requirements < -155 dB/Hz, no RIN peaks



Thank you for your attention!

