



VERTICAL LIDAR

Wind profiling across turbine-relevant heights

2EN designs and operates Vertical LiDAR campaigns for wind resource assessment, site characterisation and measurements at heights that are difficult to cover with conventional meteorological masts.

VERTICAL-PROFILING PRINCIPLE

One compact ground-based system

Multiple measurement heights • Remote operation

Up to **400 m**

Measurement height

Remote

operation and monitoring





VERTICAL LIDAR

Vertical LiDAR in practice

Long-term experience, compact deployment and turbine-relevant measurement heights.

01

Since 2008

Remote LiDAR measurements

02

40+

LiDAR campaigns

03

Up to 400 m

Measurement height

FIELD EXPERIENCE

Since 2008, our team has operated WindCube LiDAR systems in mainland and island locations, including remote and complex sites. We cover campaign design, field deployment, remote monitoring, data quality and reporting.



A primary measurement system, a mast extension tool or a targeted measurement platform.

01

Wind resource assessment

Measurements at multiple heights reduce reliance on vertical extrapolation and provide direct information close to turbine hub height. The reviewed dataset can feed long-term correction, flow modelling and energy yield assessment.

02

Extend meteorological mast measurements

When a mast does not reach the required height, LiDAR can extend the measurement range while operating alongside the mast. Co-located data also support consistency checks and evaluation of vertical wind profiles.

03

Remote and constrained sites

The compact footprint and flexible installation make LiDAR useful where a tall mast is difficult or impractical to install. Autonomous power and remote communications support isolated locations.

04

Profiles, models and specialised applications

Vertical profiles support wind shear assessment, site characterisation and review of modelling assumptions. LiDAR can also support turbine- and project-specific measurement tasks where the setup and applicable standards allow.



The measurement strategy is defined around the site, the intended use of the data and practical field constraints.

01 Plan the campaign

We define the measurement objective, location, heights and duration around the site conditions and the intended use of the data. The setup also covers access, communications and power supply, and whether LiDAR will operate stand-alone or together with a meteorological mast.

02 Deploy and commission

We install, level and commission the LiDAR, establish remote communications and verify that the measurement setup is operating as intended. For off-grid sites, we can provide autonomous power solutions designed for continuous field operation.

03 Monitor and support

We collect data remotely and monitor system health, power, communications and data availability throughout the campaign. Remote diagnosis and field intervention are provided when required, with maintenance and equipment records maintained for traceability.



Campaign design · Deployment · Commissioning · Remote monitoring · Field support



VERTICAL LIDAR

Quality and traceability

Measurement quality is managed throughout the campaign, not only at the reporting stage.

CAMPAIGN QUALITY

- Verification before and after the campaign when required by the project or assessment framework
- System health, data completeness, signal quality and consistency checks throughout the measurement period
- Controlled equipment records, verification / calibration documentation and maintenance history
- Quality-controlled datasets and reporting with the applied filters, assumptions and limitations documented

ACCREDITED SCOPE

ISO/IEC 17025

Accredited Wind Measurement Laboratory

LiDAR wind speed

Wind speed measurements using LiDAR technology

IEC 61400-50-2

Applicable requirements included in the accredited scope



VERTICAL LIDAR

What you receive

A complete measurement package ready for engineering assessment and project decision-making.

DELIVERABLES

- Campaign design, measurement heights and deployment plan
- Installation, commissioning, remote monitoring and field support
- Quality-controlled LiDAR datasets and vertical wind profiles
- Measurement report with availability, quality control and relevant campaign records
- Data prepared for integration into wind resource and energy yield assessment, where required

MEASUREMENT CHAIN

01 One measurement platform



02 Multiple heights



03 WRA / AEP