

WindCube for offshore

Vertical profiling lidar for floating buoys and harsh marine environments



Key Benefits

Powerful technology in a compact package

Offshore WindCube lidars provide accurate wind measurement up to 200m+ over 12 simultaneous heights. They are also well-suited for floating lidar systems and commercial units with embedded WindCube lidars have been validated in accordance with the Carbon Trust roadmap of acceptance.

Reliable and efficient across the project lifecycle

WindCube boasts high reliability and is an ideal solution for demanding offshore wind resource assessment. Each lidar unit can easily find its place and can be moved and repurposed for a variety of projects, providing outstanding value over time.

Bankable data that reduces uncertainty and ensures more successful projects

WindCube provides accurate, bankable data to help you secure funding, reduce the cost of equity, and minimize risk. Thousands of customers and financial institutions across the globe already use WindCube data to make the best possible decisions.

Data at your fingertips with WindCube Insights software

WindCube comes packaged with WindCube Insights — an easy-to-use, secure, cloud-based tool that provides real-time insights, allowing you to access and manage your systems and data, whether you have one system or many.

WindCube,® the reference lidar for all phases of wind energy development and operations, has been engineered with a robust casing for integration into floating buoys and other harsh offshore locations, such as lighthouses, substations, and vessels.

With offshore wind development accelerating, this is a timely innovation for consistent, reliable, and accurate data, wherever you need it.

WindCube data has been validated by more than 100 independent studies and is accepted onshore and offshore by all international standards and guidelines. Many of the most pioneering and successful wind energy companies today rely on the WindCube lidar to push the industry forward to meet its potential for growth.



System at a glance

Offshore applications

- Support all phases of a project lifecycle (wind resource assessment, operations, optimization, research)
- Permanent met data for continuous wind monitoring and grid-loss compensation

Key features

Measurement across the entire rotor sweep up to 200m+ over 12 simultaneous heights

IEC compliance for contractual power performance testing (IEC 61400-12-1 ed2)

Low power consumption (45W) and easily deployed in small spaces, reducing operational costs and complexity

Includes WindCube Insights cloud-based data management system

High reliability increases data collection and reduces maintenance expense

3-year limited warranty and maintenance with optional onsite maintenance

Buoy integration (fixed feet for easy integration, more locks)

Suitable for harsh marine conditions (direct contact with waves)

Why Leosphere, A Vaisala Company?

Leosphere WindCube lidars are the most widely used solutions in wind energy. Trusted by developers, operators, manufacturers, service providers, and many more stakeholders, they provide the reliable data and business outcomes companies need to thrive. Thousands of WindCube units are in service around the globe with some of the world's largest wind energy clients, as well as plenty of smaller, emerging ones.

Support and services you can count on

Wind energy isn't just about technology. It's about having the backing of a global partner that can directly support your business end-to-end, with complementary services, robust customer service, and consultation. Today, WindCube lidar technology is also backed by 80 years of experience and worldwide services.

Specifications

Wind data provided	Wind speed, wind direction, turbulence intensity, vertical wind speed
Range	40m to 200m
Speed accuracy	0.1 m/s (in static mode)
Speed range	0 to 60+ m/s
Speed uncertainty	2-3% when used static; 3-4% when mounted on a buoy
Direction accuracy	2° (in static mode)
Beam geometry	4 inclined beams at 28° + 1 vertical beam
Power consumption	45 to 110W
Data storage	120GB industrial disk (10+ years of data); WindCube Insights secure cloud-based server
Communication	LAN, USB, 3G modem, Modbus RTU, Wi-Fi
Temperature range	-20°C to 40°C / -4°F to 104°F
Compliance	CE, FCC, ICES
Output data	1s/1, 2, 5, 10min averaged (user-defined); standard deviation; direction; CNR (signal-to-noise ratio); GPS coordinates; data availability
Data sampling rate	1Hz
Corrosion resistance	500h accelerated corrosion sea salt test; equivalent to 3-4 years of offshore applications
Waterproofness	IP67 waterproof casing; additional locks and belts
Software	Standard: WindCube Insights software Optional: Reprocess software for motion correction
Services	Standard: 3-year limited warranty Optional: 3-year warranty extension; 3-year maintenance
Other options	Geofencing



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