

WindCube Scan

Long-range, 3D wind data for efficient, safe port operations



Key benefits

The right data at the right time

WindCube Scan provides full 3D scanning with ranges up to 3km, 6km, or 10km (depending on model), as well as several scanning patterns for the wind observations. Ports can depend on outstanding uptime, data availability, and comprehensive insights that exceed what traditional wind sensors can provide.

At-a-glance insights and reporting

Get rich campaign insights through your choice of data management tools. WindCube Scan offers flexible data management through API requests, communication with an FTP server, or a user-friendly and robust graphical user interface.

A simple, unobtrusive, practical solution

WindCube Scan units are unobtrusive, and their rugged, industrial designs can withstand even the harshest marine environments. They are among the most flexible and accurate wind measurement technologies anywhere, and are used in the toughest conditions for offshore measurements.

Supported by the industry leader

WindCube Scan is supported by Vaisala's decades of experience, scientific leadership, and industry-standard support services — all of which enable customers to get the most from their equipment over long service lives.

Ports are growing larger, busier, and more densely filled with cranes, buildings, containers, and large ships. These structures interact with wind in complex ways, with different areas of a port often seeing dramatically different wind behavior and risk levels. At the same time, severe weather events are becoming more common around the globe due to climate change.

These factors put today's ports at increased risk of asset damage, injuries, and disrupted operations.

With modern, laser-based weather sensors, 3D spatial wind data providing detailed situational awareness can be captured in every corner of the port. WindCube® Scan is the industry's tool of choice for providing precise, spatial wind data at ranges up to more than 10km. It can create a virtual dome around the port area (the equivalent of thousands of anemometers), allowing users to measure, understand, and act on current — and ever-changing — conditions to maximize safety, efficiency, and operational continuity.

WindCube Scan at a glance

Applications

- Accurate, actionable remote wind observations for optimized port operation and safety decisions
- Creating a virtual dome around port areas for expanded situational awareness and short-term forecasting

Key features

Full 3D fast scan

Dedicated display software

Provides NetCDF files, a robust auto-documented format that gives flexibility to the user

API available for user's own configuration and data access

WindCube Scan series specifications

| | 100S | 200S | 400S |
|--------------------------------|---|--------|-------|
| Typical wind measurement range | 3km | 6km | 10km |
| Maximum range | 14.7km | 14.7km | >15km |
| Scanner rotation speed | Up to 30°/s | | |
| Accumulation time | From 0.1s to 10s | | |
| Data transfer | Ethernet/LAN | | |
| Data format | Export in NetCDF by graphic interface or to FTP server | | |
| API type | REST web API | | |
| API functionalities | Lidar configuration and monitoring; status/activities/logs monitoring; data download (JSON stream and NetCDF files) | | |
| Temperature range | -30°C to +45°C (-22° to 113 F°) | | |
| Power consumption | 500W to 1.600W | | |

Why Vaisala?

We are driven by passion, relentless curiosity, and the desire to create better societal and economic outcomes around the globe. Vaisala has led the way in observation technologies for 85+ years, and our solutions provide insight every day for partners around the globe, in all corners of the ocean, and even on Mars.

We bring the latest technologies to maritime applications and pair them with the most robust, global support and service network anywhere, ensuring that you'll have an ideal end-to-end partner for the life of your systems.

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