

## WindCube vertical profiling lidar

Unrivalled wind profile measurement for urban and industrial air quality management and forecasting



### Key benefits

#### Unrivaled situational awareness

Accurate wind measurement up to 300m, with 20 simultaneous measurement heights per second, for an immediate view of the wind profile anywhere.

#### At-a-glance insights

Real-time insights and simple management for one unit or many with included WindCube Insights — Fleet software.

#### Easy deployment and connectivity

Small, lightweight and simple to deploy almost anywhere, including rooftops or other urban structures, industrial sites or remote locations.

#### Industry-leading support

Vaisala's decades of experience, scientific leadership and industry standard support services ensure you get the most from your equipment over its full life span.

Wind can either bring in pollutants or remove them, and severe pollution events often take place when local weather phenomena are dominating larger-scale synoptic forces. Local wind assessment significantly improves situational awareness of pollutants generation, their transport and their danger to communities. This information is needed for air quality forecasting in urban areas and for industrial pollutants dispersion modeling in case of accidental release.

Wind is a moving target, and air quality forecasters need accurate wind profile measurement to understand local complex winds and their impact on pollutant transport (e.g., local-level recirculation, horizontal dispersion). These factors often drive the dispersion of pollutants and accurate wind assessment can reduce uncertainty and enable better decision-making.

WindCube® lidars are known as the gold standard of lidar technology the world over. The WindCube vertical profiling lidar provides unrivalled wind profile measurement capabilities and services for accurate, real-time wind data around the clock.

A highly refined, mature technology, WindCube provides wind speed, wind direction, turbulence intensity, vertical wind speed and data availability up to 300m in height. It is compact, easy to install and highly reliable — suitable for urban, industrial and remote areas.

Also included is WindCube Insights — Fleet software, an easy-to-use, secure, cloud-based tool that provides real-time insights and simple management for one unit or many.

## WindCube at a glance

### Applications

- Urban air quality monitoring and forecasting
- Industrial pollutant dispersion modeling
- Weather monitoring and decision support
- Atmospheric sciences and air quality research

### Key features

**Pulsed lidar technology** providing constant accuracy up to 300m with excellent data availability

**WindCube Insights — Fleet** cloud-based software for fast insights and simple system management

**4G modem** for fast in-field communications and data transfer

**Unobtrusive design** with an affordable remote power pack for deployment almost anywhere

### Specifications

Wind data provided	Wind speed, wind direction, turbulence intensity, vertical wind speed, data availability
Range	40m to 300m
Simultaneous measurement heights	20 in 1s
Speed accuracy	0.1 m/s
Speed range	0 to 60+ m/s
Speed uncertainty	2-3%
Direction accuracy	2°
Beam geometry	4 inclined beams at 28° + 1 vertical beam
Data storage	120GB industrial disk (10 years of data); WindCube Insights secure cloud-based server
Communication	LAN, USB, 4G modem, Modbus RTU, Wi-Fi
Temperature range	-30°C to 45°C / -22°F to 113°F
Compliance	CE, FCC, ICES
Data sampling rate	1Hz; 1s/1, 2, 5, 10min averaged (user-defined)
Housing classification	IP 67 (inner racks)
Power consumption	45W
Weight	46kg
Dimensions	L55 cm, W56cm, H55 cm

### Why Vaisala?

With the right access to the right information, people become more aware, active, and committed. They gain a deeper connection to their environment and new ways of thinking about business and community.

Vaisala is driven by passion, relentless curiosity, and the desire to create a better world, as reflected by our guiding principles for urban weather and environment:

- 1. Exceptional products grounded in science and innovation** — Vaisala's scientific leadership and innovation in inventing unrivaled weather and environment products have reflected the spirit of our company for 85 years.
- 2. Insight every day** — The combined power of our weather and environmental solutions provide dependable intelligence people can confidently act on; enabling businesses and communities to make better decisions.
- 3. Champions for smarter, safer, more sustainable urban communities** — Vaisala empowers businesses and community leaders; helping them to fulfill their operational missions for their cities.
- 4. Inspired solutions rooted in the Finnish way** — Finland has boldly demonstrated that a culture of resilience and a connection to nature can create new ways of smarter, sustainable living.

# VAISALA

[vaisala.com/airquality](https://vaisala.com/airquality)



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