WindCube Scan for Urban & Industrial Systems

VAISALA

Product Spotlight

3D scanning Doppler lidar for air quality monitoring and forecasts

Weather has a direct effect on air quality, and local wind and atmospheric boundary layer (ABL) dynamics are major factors influencing pollution dispersion. WindCube® Scan for Urban & Industrial Systems provides air quality forecasters with long-range, accurate wind and aerosol backscatter measurements to improve situational awareness of pollutant levels, their travel and their danger to communities.

Key benefits

Take advantage of full 3D scanning with typical ranges up to 10km and multiple scanning patterns that can be tailored for many campaign types: monitoring, atmospheric cross sectioning, wind profiling, and more.

Gain 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.

Count on the robust casing and heated scanner lens for high performance even in harsh conditions including humidity, dust, ice, heavy rain and snow.

Install in urban and industrial areas, and move and repurpose to support different projects. Go even further with 4G connectivity - no Ethernet cable needed.

Rely on Vaisala's industry-leading warranty and servicing package for sustained performance and accurate, reliable measurements.

Why Vaisala?

As the global leader in weather and environmental measurements, Vaisala empowers businesses and community leaders to build resilience to climate change and extreme weather events. Our 85+ years of expertise is grounded in science, innovation and our unwavering commitment to constantly evolving.

We boldly demonstrate that a culture of resilience and a connection to nature can create new ways of smarter, resilient living. We are champions for smarter, safer and more sustainable urban communities.

An accurate understanding of ABL fluctuations provides excellent awareness of pollutant levels. Wind assessment shows the transport of pollutants by wind, local-level recirculation and horizontal dispersion. These factors often drive the dispersion of pollutants: Measuring them can drive accurate decision-making and show which mitigation efforts are the most effective.

WindCube Scan for Urban & Industrial Systems performs simultaneous, state-of-the-art wind, aerosol backscatter, cloud and boundary layer height measurements 24/7 with high-level data processing. It is a versatile tool for recovering accurate wind and aerosol backscatter measurements, in real time, in any scanning geometry up to 6 km, 8 km, or 10 km (depending on model).

You can detect, locate and classify clouds and aerosol layers in the troposphere, as well as monitor the height of the ABL, thanks to the state-of-the-art structure detection algorithm. The technology is also useful for mines, ports and other industries that generate substantial particulate emissions which are carried by the wind in hard-to-predict ways.

Applications

· Urban air quality monitoring and forecasting
· Aerosol/dust emissions monitoring and tracking for mining, ports and other industries
· Boundary layer profiling for air quality observation networks
· Weather monitoring and decision support
· Atmospheric sciences and air quality research