Ceilometer CL51

Product Spotlight

Providing trusted weather observations for a sustainable future

Accurate, reliable high range cloud detection under almost any conditions

Fast, accurate cloud and visibility detection is crucial to creating precise forecasting, situational awareness, and air quality reporting. Even when the weather is at its worst, Vaisala's CL51 captures the detailed cloud layer data needed to build precision simulations of existing conditions, including clouds above 15km (49,200ft). After all, the quality of weather modeling is only as good as the data you collect.

Key benefits

Advanced single-lens optics and processing provides improved performance over dual-lens systems, especially for low clouds and low inversion layers, precipitation, and fog.

Pulsed diode lidar for reliable operation and long life expectancy.

Full backscatter profiling with detailed accuracy and reliability in all weather conditions up to 15km (49,200ft).

Fast measurement technology that delivers accurate detection of the fine cloud base structure, such as the detection of thin stratus cloud patches below a solid cloud base.

Complete, preconfigured delivery, including main assembly, sensors, and power equipment for easy installation. Fits on the foundation of earlier Vaisala ceilometers for quick upgrades.

Why Vaisala?

As the global leader in weather and environmental measurements, Vaisala provides trusted weather observations for a sustainable future. With over 85 years of experience and customers in 170+ countries, from the North and South Poles to Mars, we help provide the most reliable and accurate weather and climate information for better and safer daily lives.

Our instruments and intelligence are known as the gold standard for precision and reliability. As a sustainability leader we enable meteorology professionals to better understand, forecast and explain climate change. We continue to channel our curiosity into climate action and new ways of enabling a better planet for all.

The CL51 was designed to tackle the specific challenges of cloud height and mixing layer height, especially for high range clouds. The automated system leverages a pulsed diode lidar technology and single-lens optics to gather highly detailed measurements on multiple cloud layers — even when physical visibility is limited — so you gain the comprehensive, actionable understanding of meteorological conditions you need, exactly when you need it.

Applications:

- Reliable cloud detection and reporting from low-level clouds up to high-level cirrus clouds
- Inputting cloud height and sky condition source data for situationalawareness and numerical weather prediction models
- Vertical profiling data to provide comprehensive understanding of the atmosphere all the way up to 15km
- Identifying the vertical extent of aerosol layers for reliable air quality monitoring and forecasting
- Automatic monitoring of boundary layer structures and verification of numerical weather forecasting and dispersion models
- Supporting air quality data processing systems to study the interaction between pollutants and meteorological factors