

DIAL Atmospheric Profiler DA10

Enhanced severe weather forecasting and climate modeling with advanced, real-time water vapor profiles



Key benefits

Improve forecast modeling and data assimilation

Quickly get extensive research-grade data in near real-time in all weather conditions, suitable for NWP modeling with common data formats for easy integration. DA10 doubles as a super ceilometer with ultrapure profiles.

Establish or enhance operational networks

Improve geographical data coverage to enhance your forecasting capabilities, and create a new or integrate in your existing observation network with affordable pricing. DA10 easily goes from box to operation in one hour, running autonomously with no operator or consumables.

Stay focused with secure, always-on operation

Industry-leading, integrated software security keeps your instrument and data intact so you can focus on what is important to you. Save time with the rugged, calibration-free design that is built to last with little to no maintenance.

Work with proven technology developed by the industry experts

Built on more than 85 years of fact-based observation, DA10 features patented transmitter technology and has been proven in customer field campaigns from tropical to arctic conditions. Individual factory verification ensures top performance, while Vaisala expertise keeps you covered with 24/7 global support.

Measuring water vapor in the atmosphere has always been a manual, time-consuming and expensive process, led by the observation community. Until now. The revolutionary Vaisala DA10 differential absorption lidar (DIAL) is the industry's first atmospheric profiler with continuous and autonomous water vapor monitoring within the boundary layer, providing meteorologists and forecasters with 24/7 monitoring of atmospheric humidity for improved severe weather warnings.

While globally coordinated upper-air observations provide an overall picture of humidity patterns, DA10 continuously measures water vapor in the boundary layer, in any location, under any conditions. DA10 unlocks access to extensive, research-grade data suitable for NWP modeling that has not been readily available before, and doubles as a super ceilometer with ultrapure profiles.

When combined with weather and climate modelling, meteorological services gain access to highly accurate and reliable local observations, vital for issuing early warning alerts for local communities in advance of dangerous weather conditions, like thunderstorms and flash flooding.

Key features

- **Water vapor profiling** up to 4 km
- **Uncertainty data** is included for easy data assimilation
- **Attenuated backscatter profiling** up to 18 km
- **NetCDF data format** is plug-and-play for modeling, and compatible with third-party visualization tools
- **Comprehensive system security** down to the user level plus remote firmware upgrades fortifies data management and data sources
- **Single lens technology** minimizes multiple scattering for improved detection in harsh conditions, while excellent overlap ensures low altitude detection (below 200 m)
- **Optimized near and far range optics** provide excellent full-range measurement profiles
- **Superior signal-to-noise ratio** ensures high level of detail in profiles
- **Clouds and sky condition reporting** - DA10 works as super ceilometer and includes ceilometer functions

Why Vaisala?

Expertise and innovation

Your communities rely on you to provide the most reliable and accurate weather information to ensure a better and safer daily life. We are here to help you realize that.

As the day-to-day impacts from climate change and extreme weather events continue to grow, Vaisala is innovating and equipping meteorology professionals to better understand, forecast, and explain the phenomena. Backed by 85 years of proven weather measurement expertise, meteorologists in more than 170 countries trust Vaisala solutions to help them make informed decisions.

Performance and support you can count on

You're covered if questions arise with 24/7 global support—now and in the future—plus project capabilities and training so you can get the most from your system. With decades of experience providing the best technologies and the finest support, Vaisala's philosophy of partnership is unmatched in the industry.

DIAL in
smarter, faster,
continuous humidity profiling

Trusted weather observations for a sustainable future

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vaisala.com/meteorology

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