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Product Spotlight

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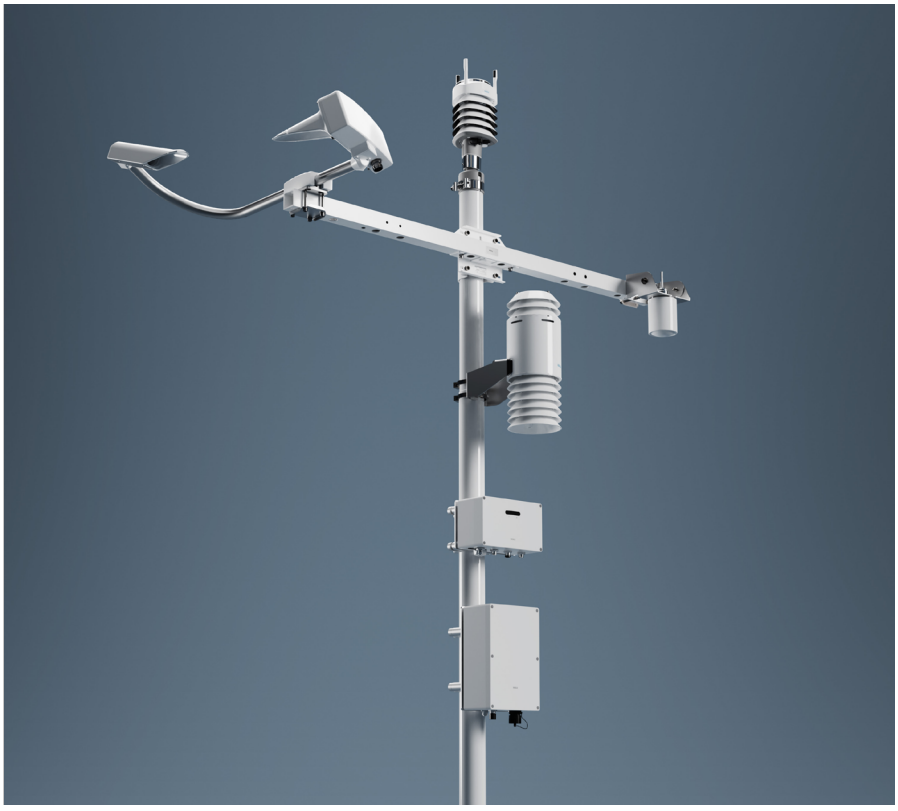
Beam Weather Station for urban and industrial systems

Providing a unique combination of insights for weather resilience and air quality monitoring



Local air quality and weather measurements are essential for situational awareness in urban and industrial areas. Cities can make informed decisions to protect people from weather and environmental hazards and plan infrastructure to minimize exposure. Industrial businesses can take proactive measures to safeguard employees and reduce the risk of environmental hazards to the public.

The powerful, flexible and compact Vaisala Beam Weather Station BWS500 provides the key measurements you need for timely and accurate decisions. Built to scale for your needs, Beam Station suits a wide variety of applications for enhancing weather resilience and air quality monitoring.

Wirelessly and securely transfer the measurements data directly from Beam Station to your own system, or visualize the measurements with Vaisala cloud services. Deploy as a standalone station or create a network of several stations for valuable insights on the most important weather parameters, air pollutants and other environmental parameters like precipitation depth.

Key benefits

Get accurate insights for multiple applications

Suitable for numerous urban applications such as monitoring air quality, tracking heat waves, supporting flood warning systems, and much more. Also excellent for weather and air quality fenceline monitoring for mining and other industries.

Start now with simple and flexible setup

Quick to set up with a wide variety of plug-and-play Vaisala and other selected partner sensors. Install and relocate on existing infrastructure like street poles, traffic signal masts or overhead bridges to easily fill observation gaps in urban areas, around industrial facilities or in hard-to-reach locations.

Choose your connectivity and communication

Flexible communication, including MQTT protocol, and data transfer options make it easy to transfer sensor observation data to the setup that works for you. Use Vaisala or your own SIM card for connectivity and also view station locations on a map.

Rely on uncompromising accuracy and security

Professional grade sensors provide reliable and accurate data from a wide variety of locations, while best-in-class data security protects your weather and environmental network and data from modern threats.

Depend on future-proof technology

Trust the only global company with 85 years of expertise offering the full package: weather and environmental sensors, network systems and data storage. You're covered with 24/7 global support.

Key features

- **A flexible, scalable platform** that extends from standalone to a system-level station using accurate and reliable Vaisala sensors plus additional compatible sensors
- **Key measurements** including weather parameters, carbon dioxide (CO_2) and the six most important air pollutants
- **Additional compatible measurements** can include solar radiation, water and snow depth, and visibility and present weather
- **Compact, easy-to-deploy station** suitable for a wide variety of locations
- **Versatile integration and connectivity** using Vaisala cloud or your own system, and Vaisala or your own sim card
- **Secure data transfer** via encrypted wireless data transfer
- **Remote access and service** with secure data communication
- **Data visualization and open API** for third-party integrations

Setup and communication options	Function
Vaisala Weather Transmitter WXT530 Series	Measures wind speed and direction, air pressure, temperature, humidity and rainfall
Vaisala Air Quality Transmitter AQT530	Measures nitrogen dioxide (NO_2), nitrogen monoxide (NO), ozone (O_3), carbon monoxide (CO), particulate matter $PM_{2.5}$ and PM_{10}
Vaisala CO_2 Probe GMP252	Measures ppm-level carbon dioxide (CO_2)
Additional compatible sensors	Can include solar radiation, water and snow depth, or visibility and present weather
Vaisala cloud service (or customer data integration system)	Collects and visualizes measurement data from the station for easy sharing with third-party systems
Tripod or mast	Provides stable, flexible mounting options
Vaisala Edge Gateway EGW501 (required)	Enables secure data transfer between Beam station and data collection and visualization system

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.

Trusted weather and environmental insights for resilient operations

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