

Beam Weather Station for traffic management

Providing a unique combination of insights for traffic management and air quality monitoring



Key benefits

Get accurate insights for multiple applications

Suitable for numerous traffic management applications such as rerouting to reduce congestion and air pollution, and much more. Ideal for data-driven decision making and emergency preparedness to ensure the safety of travelers and transportation personnel.

Start now with simple and flexible setup

Quick to set up with a wide variety of sensors. Install and relocate on existing infrastructure like street poles, traffic signal masts or overhead bridges to easily fill observation gaps along busy roads.

Choose your connectivity and communication

Flexible communication and data transfer options for easy sharing let you choose the setup that works for you. Use Vaisala or your own SIM card for connectivity, and 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.

Local road weather and air quality measurements are essential along busy roads for many applications. For example, traffic management teams can anticipate adverse conditions and relieve congestion to ensure traveler safety, or reduce emissions through traffic rerouting and signal timing. The data can aid strategic decision-making for transportation planning, infrastructure development and policy formulation.

Vaisala Beam Weather Station BWS500 is a powerful, flexible and compact air quality and road weather station that provides key measurements for timely and accurate decisions. Built to scale for your needs, the Beam Weather Station is perfectly suited for optimizing traffic management and monitoring air quality.

Wirelessly and securely transfer the measurement data directly from the Beam Weather Station to your own system, or visualize select 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.

Key features

- **A flexible, scalable platform** that extends from standalone to a network using accurate and reliable sensors
- **Key measurements** including weather parameters, road weather parameters, such as pavement temperature and road condition, carbon dioxide (CO₂) and the six most important air pollutants, solar radiation, water and snow depth, visibility and present weather
- **Compact, easy-to-deploy package** suitable for a wide variety of locations
- **Versatile integration and connectivity** using your own system or use Vaisala cloud services for select measurements
- **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)
Vaisala DSC211 Remote Surface State Sensor	Uses proven laser technology to identify water, ice, slush, snow, frost, and determine grip — even with heavy traffic
Vaisala DST111 Remote Surface Temperature Sensor	Measures infrared radiation day and night, applying intelligence signal processing for outstanding accuracy
Additional compatible sensors	Can include solar radiation, water and snow depth, or visibility and present weather
Vaisala Edge Gateway EGW501 (required)	Enables secure data transfer between Beam station and data collection and visualization system
Vaisala cloud services (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

Why Vaisala?

The industry's most dependable road weather technology

Vaisala road weather technology solutions lead the industry thanks to superior data qualities and a continuing commitment to innovation and research and development. They are built on 85 years of weather measurement experience and solutions, trusted in over 170 countries from the north pole to the south pole and even on Mars.

Insight every day

The combined power of our weather and environmental solutions provide dependable intelligence people can confidently act on to make better decisions. With Vaisala, you can count on our 360 degree solutions that are extensively put to the test across the world and proven to consistently provide superior performance.

Keep roadways safe and efficient in any season.
Achieve full road network visibility with Vaisala technologies.

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