



Insight into air pollution

Brochure

Sentinel Air Quality (SAQ) station

The Sentinel station is designed to deliver precise and real-time monitoring of air pollutants. Equipped with state-of-the-art sensors, it measures particulate matter (PM₁, PM_{2.5}, PM₄, PM₁₀), and gases such as O₃, CH₄, NH₃, and VOCs, ensuring compliance with health and safety regulations.

The station's rugged, industrial-grade enclosure guarantees durability in harsh environments, while its intuitive interface simplifies data access and analysis. This comprehensive solution enhances environmental monitoring, protecting workers, residents, and maintaining regulatory standards across various areas.

The Observator Sentinel station can be optionally equipped with radar for vehicle tracking and classification, noise and vibration sensor and full meteorological solutions from the Observator Instruments portfolio.

Features

- Stainless Steel 304 enclosure or marine grade Stainless Steel 316L enclosure
- Air sample conditioning
- Gas and PM sampling systems
- Climate controlled enclosure
- Controlled and measured air flow volume
- Particulate matter measurement: PM₁, PM_{2.5}, PM₄, PM₁₀, and TSP
- 4 gas measurements included as standard: O₃, CH₄, NH₃, TVOC
- Up to 7 gas measurements per station
- Optional gases to select: NO, NO₂, NO_x, CO, H₂S, HCl, CO₂, SO₂
- All integrated into 1 enclosure

General

Observer Sentinel stations are equipped to measure PM_{1} , $PM_{2.5}$, PM_{4} , PM_{10} , and TSP, and gases such as NO , NO_2 , NO_x , O_3 , CH_4 , CO , H_2S , NH_3 , HCl , CO_2 , SO_2 , and TVOC, all integrated into a single enclosure. Each station can measure up to seven gases and features a stainless steel 304 or stainless steel 316L enclosure with air sample conditioning, gas and PM sampling systems, and climate control. The controlled and measured air flow volume ensures accuracy, while the design allows easy access for maintenance and servicing. Installation is straightforward, with all necessary mounting elements included.

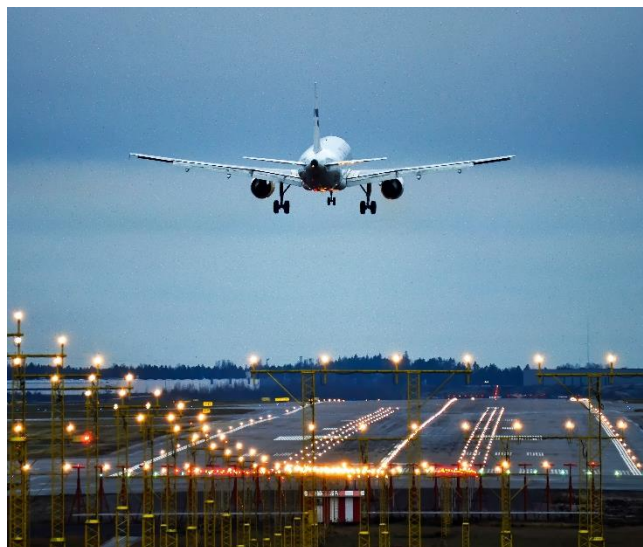
The Observer Sentinel stations come with comprehensive software support, including a Windows-based application for detailed data analysis and management. Additionally, mobile apps for both Android and Apple devices provide on-the-go access to real-time data and notifications. For those seeking enhanced accessibility and data security, optional cloud hosting and browser access are available, allowing users to monitor and manage air quality data from anywhere with an internet connection. This versatile software suite ensures that users can stay informed and maintain control over their air quality monitoring operations with ease.

Aviation

The Observer Sentinel station for Aviation is a specialized monitoring solution designed to meet the unique demands of airports and aviation-related environments. It features advanced sensors capable of measuring particulate matter (PM_{1} , $PM_{2.5}$, PM_{4} , PM_{10}), gases such as NO_x , O_3 , CO_2 , and VOCs, providing accurate and real-time air quality data.

The station is housed in a durable, weather-resistant enclosure, ensuring reliable performance in diverse airport conditions. With a user-friendly interface and seamless integration with existing airport systems, it enables effective air quality management to protect passengers, staff, and comply with environmental regulations.

The Observer Sentinel station comes as standard equipped noise sensor and can be optionally equipped with radar for vehicle tracking and classification and full meteorological solutions from Observer Instruments portfolio.



Marine

The Sentinel station for ports, harbours, and marine-related locations is a robust and reliable monitoring solution designed specifically for maritime environments. Equipped with advanced sensors, it accurately measures pollutants such as particulate matter, sulphur dioxide, nitrogen oxides, and volatile organic compounds, providing real-time data to ensure compliance with environmental regulations.

Its durable, weather-resistant construction ensures consistent performance in harsh marine conditions, while the user-friendly interface facilitates easy data access and analysis. This station plays a crucial role in safeguarding air quality, promoting sustainable operations, and protecting the health of workers and nearby communities.

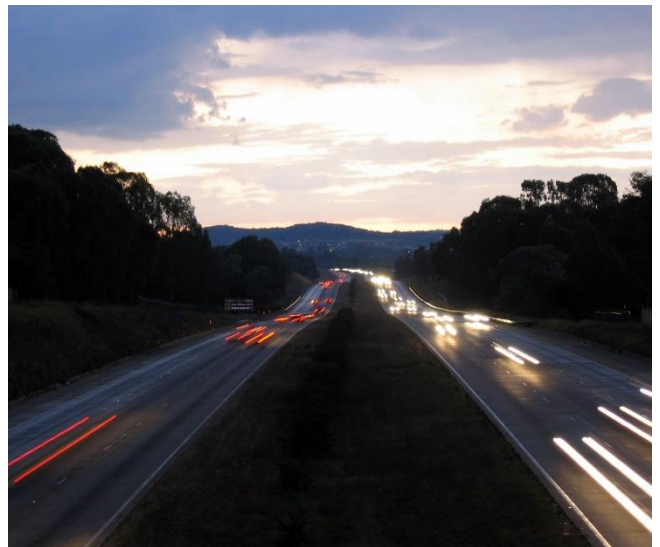
The Observator Sentinel station can be optionally equipped with radar for vehicle tracking and classification, noise and vibration sensor and full meteorological solutions from the Observator Instruments portfolio.

Road

The Sentinel station for roads and Intelligent Transportation Systems (ITS) is a monitoring solution specifically designed for transportation environments. It features high-precision sensors capable of measuring particulate matter (PM₁, PM_{2.5}, PM₄, PM₁₀), and key traffic-related gases such as NO_x, O₃, NH₃, TVOC, providing accurate real-time data to ITS.

Housed in a robust, weatherproof enclosure, it ensures reliable operation under all roadside conditions. The station's seamless integration into ITS networks and its user-friendly interface facilitate effective traffic management, pollution control, and enhanced environmental safety. By delivering critical air quality information, this station helps to improve urban planning, reduce emissions, and protect public health along busy roadways.

The Sentinel station comes as standard equipped with radar for vehicle tracking and classification, noise sensor and can be optionally equipped with full meteorological solutions from the Observator Instruments portfolio.



Specifications

Particulate Matter:

- Principle – Optical Particle Counter
- Classification – PM₁, PM_{2,5}, PM₄, PM₁₀, TSP
- Measurement range (size) – 0,35 – 40 µm
- Measurement range (mass) – 0 – 2 mg/m³
- Size channels – 24

Gases:

- Principle – Electrochemical
- Gases included as standard – O₃, CH₄, NH₃, TVOC
- Optional gases: NO, NO₂, NO_x, CO, H₂S, HCl, CO₂, SO₂
- Max amount per station – 7 gases
- Typical lifetime – 24 months

Power requirements:

- Power supply – 110/220Vac
- Power consumption – max 200W

Communication and data collection:

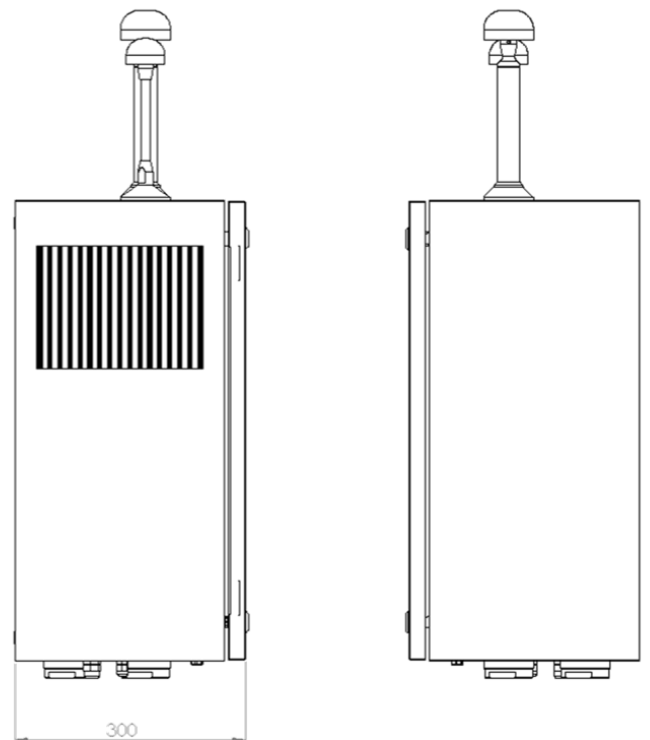
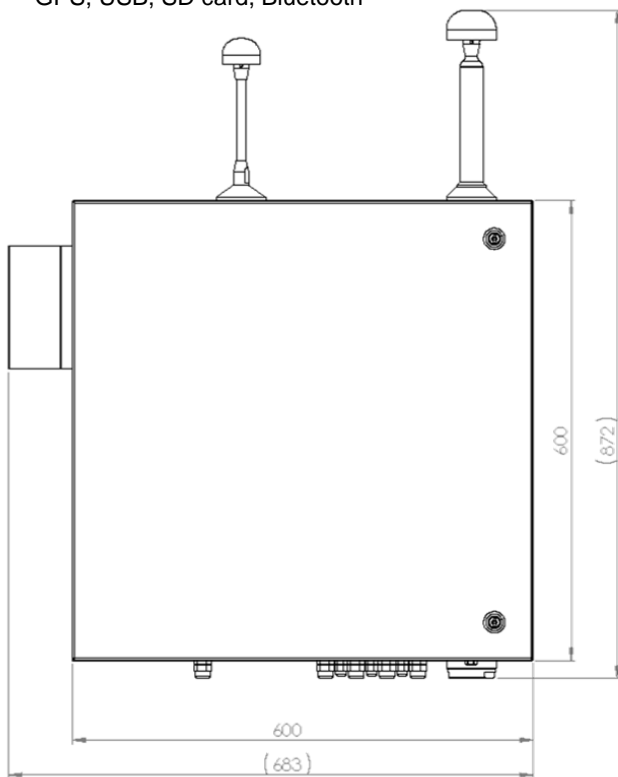
- WiFi, Ethernet LAN, GSM 3G, GSM 4G LTE, LoRaWAN, GPS, USB, SD card, Bluetooth

Environmental:

- Enclosure – Stainless Steel 304 or marine grade Stainless Steel 316L
- Operating temperature – -35°C to +60°C
- Dimensions – 600x600x300mm (without collectors)
- Weight – 40 kg
- Protection – IP65

Optional equipment:

- Class 1 Urban Noise Monitoring Terminal
- Side-fire dual-beam ITS radar sensor
- Meteorological sensors



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