Real-time multi-channel particle monitor for aerosol profiling

Designed for environmental professionals who need to monitor and manage multiple outdoor dust and particle size fractions, simultaneously and in real-time.

The Dust Sentry Pro delivers simultaneous measurement of PM_{10}, $PM_{2.5}$, PM_1, TSP, and particulate counts for 8 different channels; 0.3, 0.5, 0.7, 1.0, 2.0, 3.0, 5.0, 10 microns.

What is it?

- Reduce failure and downtime thanks to this robust purpose-built outdoor dust profiler

- Set up and deploy in under 10 minutes – get live data flowing to your PC or mobile

- Reduce site visits using two-way communications – remotely troubleshoot, upgrade software, change settings, and calibrate

- Plug in all your devices – noise, weather, reference monitors – to the Dust Sentry Pro power and data interface and view data in one software dashboard

- Power up with quick and easy interface to solar and battery systems

- Respond in real-time via configurable email / SMS alerts

What can it measure?

- Multiple dust fractions, wind, weather and noise

PM_{10} $PM_{2.5}$ PM_1 TSP PP8

(wind icon) dB

Who is it for?

- **Industrial operators** who need to manage multiple dust and particulate fractions from site activities within regulatory or permitted limits:

  - Construction and remediation projects

  - Quarry and mine operators

  - Port and bulk handling terminals

  - Waste management sites

- **Environmental consultants** who need to measure multi-channel PM size fractions without the usual time and hassle of air monitoring projects

- **Regulatory authorities** who need to fill the gaps in the regulatory PM monitoring network

- **EHS managers** who need to demonstrate that they are providing a safe environment for the people in their care

- **Researchers** who want simultaneous and accurate data across a range of particulate profiles

Specifications I Dust Sentry Pro

Particle Module	Sizes	Range	Accuracy	Flow Rate	Lower Detectable Limit (2σ)
Profiler (Optical Particle Counter)	PM$_1$, PM$_{2.5}$, PM$_{10}$ AND TSP	PM$_1$ 200 µg/m^3 PM$_{2.5}$ 2000 µg/m^3 PM$_{10}$ 5000 µg/m^3 TSP 5000 µg/m^3	<±(5 µg/m^3 + 15% of reading)	1.0 LPM	<1 µg/m^3
Optional Particulate Counts	0.3, 0.5, 0.7, 1.0, 2.0, 3.0, 5.0, 10 microns	0-1000000 particles/L			

System Specifications	
Control System	Embedded fanless PC (Intel Celeron® N3350, 1.1GHz, dual core, 4GB RAM, 32GB SSD hard drive), Ubuntu Linux Operating System
Communications[1]	Standard: WIFI, Ethernet (LAN) Optional modem: Cellular IP 3G HSPA or 4G LTE
Software	**Aeroqual Connect** instrument operating system. **Aeroqual Cloud** instrument monitoring, management and technical support via secure cloud servers, accessed via web browser (IE, Firefox, Chrome, Safari). • Cloud standard features; configuration, calibration, diagnostics, remote technical support. • Cloud optional features; text (SMS) and email alerts, 3rd party sensor measurements, full data visualisation with charts, wind and pollution roses, data reporting with auto data export via FTP and API, full instrument event journal capture.
Data logging	32 GB Hard Drive (> 5 years data storage)
Outputs	2 x Relay (optional), 4 x 4-20 mA (optional)
Averaging period	1 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1 hr, 2 hr, 4 hr, 8 hr, 12 hr, 24 hr
Power requirements[2]	100-260 VAC (standard): 30[a] W / 24.7[b] W, Regulated 12 VDC (if required): 33[a] W / 27.2[b] W
Enclosure	Lockable IP65 GRP cabinet with integrated aluminum solar shield armor
PM Sampling System	Inlet: Omni-directional 36 cm (14.1 inches) heated inlet Pump: 12 V brushless DC diaphragm
Dimensions	483 H x 330 W x 187 D mm (19 H x 13 W x 7.4 D inches) Includes solar shield armor & mounting brackets
Weight[3]	< 13 kg (28.6 lbs)
Environmental operating range	-10 °C to +45 °C (14 °F to 113 °F)
Mounting	Pole, tripod and wall mounting brackets included
47mm Sample Filter (Optional)	47 mm filter for particle loading analysis
Factory Integrated & Tested Sensors (Optional)	Gill WindSonic (ultrasonic wind sensor), Vaisala WXT536 (weather transmitter), Met One MSO (weather transmitter), Cirrus MK427 Class 1 (noise sensor), Novalynx Pyranometer (solar radiation), BSWA 308 (sound level meter) Met-One BC-1060 (black carbon monitor), Met-One E-BAM PLUS (Beta-Attenuation Mass Monitor)

[1] 4G LTE not available in all markets.
[2,3] Configuration used for power and weight calculations: base unit, nephelometer, PM$_{10}$ sharp cut, modem, heater on.
[a] Configured as per note 2, and incl. Moxa modem.
[b] Configured as per note 2, and incl. Sierra modem.
[4] Dimensions are for enclosure. PM sampling inlet with cyclone adds 360 mm (14.17") to total height.

DUST SENTRY PRO 粉塵監測站 / 懸浮微粒監測站

戶外即時懸浮微粒監測站針對需要監控及管理粉塵排放而設計，粉塵監測站是以濁度計為基礎而發展的儀器，精確即時測量 PM10，PM2.5，PM1，或 TSP，且價格實惠。
和 TEOMs、 BAMs 此類缺乏短樣本週期精確度的參考當量監測器相比，粉塵監測站可提供一分鐘反應時間的精確報告且價格更低 (高達 5 倍價差)。此外，粉塵監測站堅固、可多次安裝並且可選配風力、噪音、天氣感測器以達到最大效用。

■ 特 色
- 使用者可選擇至每 1 分鐘間隔來測量及記錄數據
- 可精準測量 PM10、PM2.5、PM1、TSP
- 主機記憶體可儲存達 20 年以上的偵測資料
- 可由電子郵件及行動通訊系統存取資料及警示
- 堅韌防水的外殼、可屏蔽炎熱氣候中的熱能
- 可選購天氣、風速和風向、噪音和警報器之感測器

■ 用 途
- 建築工地環境監測
- 道路、隧道環境監測
- 礦場、砂石場周邊環境監測
- 垃圾運輸及處理廠環境監測

■ 規 格
測量方式：光散射濁度法
測定參數及範圍：0-2,000 μg/m^3；準確度：+/- (2 μg/m^3 + 5% 讀值)
可測量質量數：PM10、PM2.5、PM1 或 TSP
流量：2.0 L/min；進氣：36 cm 加熱進氣
警示：譯碼器、電子郵件或簡訊(選配)
螢幕：四行字元顯示
資料存取：32GB SD 記憶卡(>20 年資料儲存量)
儲存週期：1、5、10、15、30 分鐘及 1、2、4、8、12、24 小時
過濾器：47 mm GFA 環流過濾(選配)
軟體：包含資料存取軟體及設定軟體
輸出：RS232，4-20 mA / 2-10 V(選配)
安裝：立桿、三角架及壁掛式
無線傳輸(選配)：包含 GPS 之 GSM/GPRS 數據機；
　　　　　　　　Orbit DATA (雲端數據存取系統)
感測器(選配)：風速和風向；溫度/RH；雨量；大氣壓力；噪音等級 1(Closs1)
操作環境範圍：-10°C to +45°C；10 to 95% RH (NC)
電源：AC 100 ~ 260 V, 15 W(標準) 或 12(+/- 2.5%)VDC
外殼：可鎖式玻璃纖維強化塑膠製；防護等級 IP65
尺寸/重量：尺寸約 W330×D187×H483 mm(包含遮陽板及安裝架)；重量：<13 kg
認證：

ISO 9001 www.intlcert.com
MCERTS
FC C E C
(MCERTS pending)