



**iPM***portable*

## **iPM***portable* Environmental Monitor

The **Turnkey iPMportable** is a handheld portable environmental monitor designed for detecting and measuring dust, gases and fumes. It is highly effective for short-term air quality sampling in various environments, such as buildings, workplaces, and roadsides.

By default, iPMportable measures the PM10, PM4 (respirable), PM2.5 and PM1 size fractions by means of light diffraction. The optical sensor is identical to that used in our MCerts approved iPM instrument. It measures the size and number of the individual dust particles from 0.2 micron diameter upwards and generates a real-time spectrum of the particle sizes present in the air. Diffraction is well known to be independent of the refractive index of the particles and gives the most accurate measure of their concentration.

To accurately determine the PM dust concentrations a constant volumetric airflow is required.

Compliance with US EPA and MCerts equivalence standards demands the use of a pump with accurate flow control.

The iPMportable uses a pump to draw the air into the instrument through the inlet, the flow rate is measured and controlled by means of a precision Honeywell flow sensor. The pump is whisper quiet (< 30 dBA). The sampled air passes through a GF/B filter capsule which collects the dust for later analysis. Some of the filtered air is recirculated to keep the optical elements free of dust and dirt.



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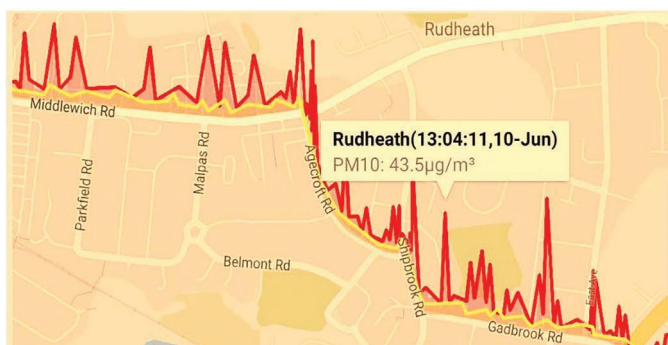


## KEY FEATURES OF THE **iPM**portable INCLUDE:

- **Real-time measurement** of multiple particle sizes and gases.
- **Internal sampling pump** and filter for sample collection.
- **Ergonomic design** for single-handed operation.
- **Internal memory** for recording results.
- **WiFi** interface with access to AirQWeb via Amazon Web Services
- **Smartphone mount** for either Android or IOS devices.
- **Inlet heating** with either constant temperature or humidity setpoint.
- **Flow controller** with user adjustable sample flow.

With the aid of a smartphone, the instrument can record its GPS location alongside the readings. The smartphone can be mounted on the **iPM**portable front panel in either landscape or portrait orientation.

Turnkey Apps are available to record video and audio streams from the smartphone alongside the readings as a site or location is surveyed, or to project the readings onto a satellite image or location map. A typical survey map is shown below.



Depending on its capabilities, the smartphone can also be used to securely push readings to the Turnkey AirQWeb database via the 4G or 5G network.

The **Turnkey iPM**portable stands out among environmental monitors for its portability and real-time measurement capabilities and a number of accessories can be plugged-in to enhance its capabilities still further

- An **iGAS**pod that measures up to five gases down to parts-per-billion (ppb) concentrations. Gases include NOx, VOC, Ozone and carbon dioxide
- A **Temperature and Humidity** sensor complete with Stevenson Screen
- An **Ultrasonic** wind speed and direction sensor and **iMET** station

These accessories allow the **iPM**portable to simultaneously measure and record up to 32 sensor channels. The time resolution can be adjusted from one second up to one hour.

**iPM**portable has a hot-swappable 12 Volt 3Ah Lithium battery that will power the instrument for up to 20 hours. Two battery packs are provided together with a fast 90 minute battery charger. The heated inlet is optional and its use may shorten the battery run time depending on temperature.

The instrument is supplied in a tough Pelicase and a tripod mount and sturdy tripod are available for semi-permanent installations.



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## Environmental Monitoring

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