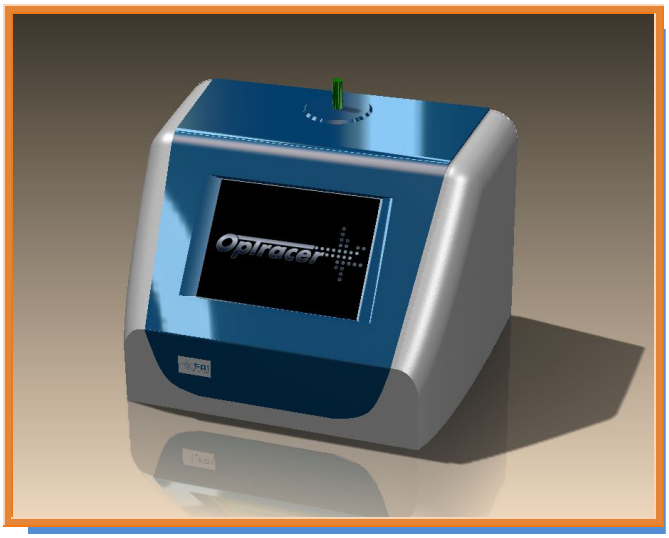
OPTICAL PARTICLE COUNTER

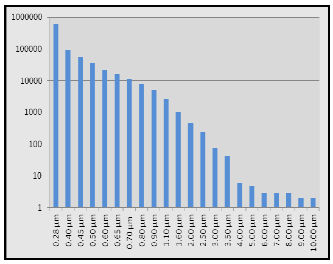


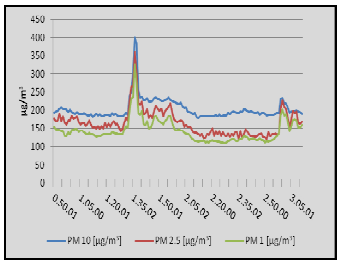
APPLICATIONS

- Characterization of the granulometric distribution time patterns of particulate matter in the range > 0.28 µm in support and integration of information about air quality condition
- Estimation of dust mass concentration for indoor/outdoor monitoring

CHARACTERISTICS

1. Operating flow rate 1,0 l/min
2. Flow rate control accuracy ± 2%
3. Detected granulometric class > 0.28 µm (optical diameter)
4. Reading cycle in continuous
5. Real-time estimate of the suspended PMx particulate matter mass concentration
6. Real time estimate of the Inhalable, Thoracic and Respirable fraction of the suspended particulate matter





Pictures in this document are just an indication. The case structure may be different from the one shown in the image above.

OPTracer

OPTracer is an optical particle counter for the characterization in real time and in continuous of the airborne particulate matter granulometric distribution in the range > 0.28 µm in up to 22 contiguous granulometric fractions.
The OPC system measures the number of particles in air by the "Light scattering" physical principle.

The mass calculation is obtained using two selectable methods:

1. Classical: density values and refraction index defined by user
2. Advanced: using real sampling data for the mass that can be set into the instrument for automatic calculation of the density. This adaptive algorithm grants a better mass estimation because calculated from real mass data.

This second way is more accurate and allow the user to characterize the site with a short campaign and to use the ***OPTracer*** stand alone for a reliable real-time mass evaluation.

Such a datum, suitably integrated with the PMx information, can give fundamental indications to determine the correlation with the emission sources and their type.

OPTracer system is equipped with a special optical configuration allowing to achieve a very high accuracy level in particle detection and class.

The ***OPTracer*** can work on batteries for more than 6 hours, and uses two batteries allowing the user to change one without stop sampling.

The ***OPTracer*** can work on batteries and on VAC.

The ***OPTracer*** can be connected for data acquisition in several way:

- Serial Port
- USB Port
- ETH Port
- Analog Port

The ***OPTracer*** can easily be equipped with external dilution system (optional) to allow to be used in high pollution sites.

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OPTICAL PARTICLE COUNTER

OpTracer

TECHNICAL SPECIFICATIONS

Measurement principle	Laser scattering	
Dimensional resolution	< 5 % at 0.4 µm – *ISO 21501-4*	
Dimensional sensitivity	0.28 µm (50 ± 10 % count efficiency) - *ISO 21501-4*	
Optical channels	22 optical channels (0.28 µm – 10 µm) with 8 calibrated (ISO 21501-4) thresholds [µm]: 0.28, 0.4, 0.5, 0.7, 1.1, 2.0, 3.0, 5.0	
Zero count	< 1 per minute	
Granulometric thresholds calibration	Factory Calibration: in compliance with the ISO 21501-4 (NIST) Field Calibration: recommended once every 12 months	
Sampling timing	6 sec – 1 min. The instrument gives average counts per liter (cpl).	
Sampling flow rate	1.0 L/min	
Flow rate control accuracy	± 2% of the nominal value	
Sampling line	The standard supply of the instrument includes the sampling line with a iso-kinetic probe and a zero test tool.	
Gravimetric Sampling	37 mm filter cartridge	
Typical applications	- Characterization of the temporal trends of the particulate matter granulometric distribution as a support and integration to information about air quality. - Real-time estimate of the PMx mass concentration of the airborne particulate matter	
User interface	Touch screen (5.7 inches - 640*480 resolution)	
Data logging	Internal, 200 MB on-board memory (more than 1.000.000 of samples stored)	
Data download	USB memory key, direct download on ETH or Serial port	
Data control, processing and acquisition	ASCII commands, data output in CSV format and enquiry by standard serial ports RS232 or LAN connection	
Analog Output	Up to 4 analog channels (free configurable)	
Alarm Out	Up to 4 programmable contacts	
Sampling Modes	- Direct Sampling - Profile configuration sampling	
Power supply	AC: 100-230 Vac (± 10%), 50-60 Hz DC: 12V at 2.5 A	
Batteries autonomy	More than 6 hours (the battery can be changed without sampling interruptions)	
Power-down	Operation in continuous – with power-down events management	
Operating conditions (inside the installation cabinet)	temperature from 0 °C to + 35 °C	
	Relative Humidity < 85% (with no condensate)	
Non operating or storage conditions	temperature from - 10 to + 60 °C	
	Relative Humidity < 85% (with no condensate)	
Sizes and Weights	*W x D x H [mm]* *250x200x192*	*WEIGHT [kg]* *4 (with batteries)*

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Accessories

Accessory	Description
External DilutionSystem	1:1-1:5 dilution system for high polluted environment sampling
External Temperature/RH Probe	This sensor allow to collect environmental sampling conditions of temperature and RH
Zero test toolkit	Kit allowing to check the zero test of the optical sensor
Filter cartridge for 37 mm filter membrane	Cartridge to collect sampled dust on 37 mm filter for analysis/weighing or other customer needs
PM 10 Inlet	Cut head to collect only PM 10 fraction