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CERTA 1000

FINE DUST MEASUREMENT

The CERTA 1000 is a fine dust measurement system for regulatory ambient air quality measurements in a broad range of monitoring applications.

The CERTA 1000 provides continuous and simultaneous measurements of PM_1, $PM_{2.5}$, PM_4, PM_{10}, TSP, as well as particle number concentration in the one instrument.

APPROVALS

$PM_{2.5}$ and PM_{10} complies with the following:

- EN 12341
- EN 14907
- EN 15267-1
- EN 15267-2

FEATURES

- Continuous real-time measurements of PM values simultaneously
- Adjustable time resolution from one minute
- Minimal maintenance activities
- Easy to operate
- Intuitive and easy handling with long durability and reliable functionality
- LED light source with high stability
- No consumables
- Reduces operating costs
- No radioactive material.

APPLICATIONS

- Environmental monitoring networks (eg: mine sites and road tunnels)
- Immission
- Long term studies
- Source apportionment
- Propagation and distribution studies (volcano, bush fire, dust, cloud)
- Emission source classification
- Exhaust air monitoring
- Emission measurement.

OPERATION

The CERTA 1000 systems use approved measurement technology of optical light scattering of single particles and are equipped with an LED light source with a stable output. In addition, the systems provide a filter holder for the insertion of an absolute filter (ø 47 or 50 mm). This enables a subsequent chemical analysis of the aerosol composition.

The sampling system with a drying section (Intelligent Aerosol Drying System – IADS) prevents errors due to moisture ingress. An additional weather station offers reliable measurement values of ambient temperature, air pressure and relative humidity.

The aerosol sensor is an optical aerosol spectrometer which uses the principle of Lorenz-Mie scattered light analysis of single particles. A white light source is used to measure the particles as they move through the measurement volume. The white light source allows a precise calibration curve to be created.

SPECIFICATIONS

Reported data (simultaneous):	PM_1, $PM_{2.5}$, PM_4, PM_{10}, TSP
Measuring principle:	Optical light-scattering
Time resolution:	From 1 minute
Size channels:	64
Measurement range (number concentration):	0 - 20,000 particles/cm^3
Measurement range (size):	0.18 - 18 µm
Measurement range (mass):	0 - 1500 µg/m^3
Volume flow:	4.8 L/min
Aerosol flow:	5 L/min (0.3 m^3/h)
Operating temperature:	0 to 50 °C
Power supply:	115 - 230 V, 50 - 60 Hz
Power consumption:	140 W
Weight:	9.3 kg (control unit)
Dimensions:	180.5 x 450 x 320 mm
Housing:	Table housing

INTERFACE

User interface
- Touch screen, 800 x 480 pixels

Data acquisition
- Digital, 20 MHz processor, 256 raw data channels

Serial interface
- USB, Ethernet, RS232/485, WiFi

Operating system
- Windows embedded

Data logger storage
- 4 GB Compact Flash

OPTIONS & ACCESSORIES

Mounting brackets
- For rack mounting; optional all-weather shelter available

bsi. ISO 9001 Quality Management FS 603790 AS/NZS 4801 Occupational Health and Safety Management OHS 603791

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