

RUGGED OUTDOOR PM MONITOR EDM 365

The Stand-Alone Brother of the Approved EDM180

The mobile environmental dust monitor EDM 365 was developed and designed by Grimm for the mobile industrial use. This high-tech stand-alone system EDM 365 satisfies customers world-wide with its high precision and the low maintenance and operating costs. The EDM 365 detects airborne particles in real-time without the loss of the semi-volatile compounds.

Every single aerosol particle is detected in the optical measurement cell. This precise and reliable single particle count allows for a simultaneous measurement of the dust mass fractions PM₁₀, PM_{2.5}, PM₁ and also the particle size distribution in 31 size channels.

The outdoor weather protection housing is thermo-isolated with an automatic heating and proportional ventilation.



FEATURES

- equivalent to norms US-EPA, UK-MCERTS, CN-CMA
- weather-protected system in powder-coated stainless steel housing
- continuous use in harshest environments
- real-time measurement of PM₁₀, PM_{2.5}, PM₁, total counts (TC), and particle number distribution
- fully automated monitoring system with remote access
- extremely energy-efficient, low maintenance, no consumables
- no loss of semi-volatile compounds
- no radioactive source, insensitive to vibrations
- versatile data acquisition and communication (GSM data logger)
- self-test of all optical and pneumatic components for high quality standards
- rinsing air for protecting laser and detector in optical cell
- temperature and relative humidity sensors
- total inlet flow analyzed in optical cell
- excellent counting statistics and reproducibility at low and high dust concentrations

APPLICATIONS

- continuous PM measurements where no container can be placed
- AMS for PM networks
- industrial surveillance
- epidemiological studies
- monitoring of construction and mining sites

PM₁₀

PM_{2.5}

PM₁

0.25 - 35 µm

real-time

TECHNICAL DATA

SPECIFICATIONS

measured mass fraction	PM ₁₀ , PM _{2.5} , PM ₁
particle size range	0.25 – 32 µm
size channels	31
particle number	0 – 3 000 000 p/L
dust mass	0 – 100 000 µg/m ³
reproducibility	> 97% of total measuring range

FUNCTION

detection principle	light scattering at single particles
	detection volume aerodynamically focused, no border zone error
optical cell	diode laser 660 nm
detector	fast signal processing, 2 x 16 raw data channels
time resolution	selectable storage intervals 6 s; 1, 5, 10, 15, 30, 60 min
sample flow rate	1.2 L/min, ± 3% constant due to self-regulation
rinsing air	0.4 L/min, protection of laser optics, reference air for self-test
sampling inlet	isothermal humidity extraction via Nafion membrane, sensor-controlled, without loss of semi-volatile compounds (SVC)

HANDLING

operation	keypad, data logger or PC with GRIMM software or HyperTerminal
interfaces	RS-232 (GESYTEC)
analog input	1 port (0 - 10 V) for auxiliary sensors
power supply	in: 230 V/50 Hz; optional 115 V/60 Hz
power consumption	P _{max} = 150 W, I _{max} : 1.4 A
temperature range	- 20 to +60°C (-4 – 140°F), RH < 95%, non-condensing
absolute pressure range	900 - 1100 mbar
	adjustable sample flow rate at high altitudes over 2000 m
dimensions (h x w x d)	48.9 x 70 x 27.1 cm (19.3 x 27.6 x 10.7 in) without sample pipe
weight	36 kg (79.4 lbs)

ACCESSORIES

199	fully air-conditioned weather protection housing
1178	advanced GRIMM software for EDM180
1146	GPS sensor
158-TRH Kit	temperature and relative humidity sensor, with 3.5 meter cable and rain protection housing
157L	sensor for temperature, relative humidity, and barometric pressure
158L	sensor for temperature, relative humidity, barometric pressure, wind speed, and wind velocity
159L	sensor for temperature, relative humidity, barometric pressure, wind speed, wind velocity, and precipitation
180DL	data logger for our measurement equipment including the capability to transmit all data live via GSM onto a password-protected platform