THE STANDARD FOR MOBILE ENVIRONMENTAL DUST MONITORING

MODEL EDM 164

For more than 30 years GRIMM aerosol spectrometers are successfully used all over the world and appreciated by thousands of users. The EDM 164 (Environmental Dust Monitor) combines reliable optical detection for counting and classifying dust particles in a compact and mobile weather housing. The all-rounder with no limits for all your applications! The EDM 164 is suitable for short or long-term continuous monitoring of dust pollution and enables real time data analysis for dust and meteorological measurement data.

This configuration sets the EDM 164 into the worldwide leading position of mobile environmental dust monitoring for any common application such as dust mass, PM values, total counts or particle size distribution. The best choice for reliable environmental monitoring e.g. PM monitoring, source identification or pollution control at construction and mining sites.

YOUR BENEFITS

- Fully automatic monitoring system with remote access
- Extremely energy-efficient, low maintenance, no consumables
- Real-time monitoring of PM values (PM_{10}, $PM_{2.5}$ and PM_1) and particle number
- Additional information for particle size and mass distribution
- High precision over 31 size channels with great reproducibility
- Versatile data acquisition and communication (data logger with GSM via internet)
- Self-test for all optical and pneumatic components ensures high quality standards
- Internal rinsing air protects the laser and detector in the optical cell
- Meteorological sensors for wind speed and direction, precipitation, T and RH
- 11 size channels < 1 µm for precise submicron detection (forest fire monitoring)
- Total inlet volume flow (1.2 liter/min) is entirely analyzed in the optical cell
- Excellent counting statistics and reproducibility at low and high dust concentrations

APPLICATIONS

- Mobile and simultaneous monitoring of PM_{10}, $PM_{2.5}$ and PM_1
- Hot-Spot monitoring
- Public site and urban monitoring
- Source identification
- Quantification of diffusive emissions according to VDI 4285 part 3
- Early warning system for forest fires

PM_{10} | **$PM_{2.5}$** | **PM_1** | **0.25-32 µm** | **REAL-TIME**

TECHNICAL DATA

SPECIFICATIONS

Measured mass fraction	PM_{10}, $PM_{2.5}$ and PM_1
Particle size range	0.25 – 32 µm
Size channels	31 in total 0.25/0.28/0.3/0.35/0.4/0.45/0.5/0.58/0.65/0.7/0.8/1/1.3/1.6/2 /2.5/3/3.5/4/5/6.5/7.5/8.5/10/12.5/15/17.5/20/25/30/32 [µm]
Particle number	0 – 3 000 000 particles/liter
Dust mass	0.1 µg/m³ – 100 mg/m³
Reproducibility	± 3% of total measuring range
Additional	GPS positioning as well as TSP (Total Suspended Particles), TC (Total Counts) and particle number for all size channels (size distribution)

FUNCTION

Detection principle	Light scattering at single particles Detection volume aerodynamically focused, no boarder zone error
Optical cell	Diode laser 660 nm, P_{max} = 60 mW, P_{nom} 0.5/32 mW CW (multiplex)
Detector	Super fast signal processing with 2 µs pulse, 2 x 16 raw data channels
Time resolution	6 s, 31 channels (selectable storage intervals 6 s, 1, 5, 10, 15, 30, 60 min)
Sample flow rate	1.2 l/min, ± 3% constant due self regulation
Internal rinsing air	0.4 l/min, protects laser optics, reference air for self-test
Sampling inlet	Heated, constant 30°K above ambient temperature

HANDLING

Operation	Keypad, data logger or PC with GRIMM software (wireless or data cable)
Interfaces	Data logger (4 x RS-232, RS-485, Ethernet, µSD, GSM) or RS-232
Analogue input	3 values (0 – 10 V), for auxiliary sensors
Power supply	in: 110 – 230 VAC, 50 – 60 Hz, out: 12 VDC, 2.5 A
Power input	22 W standard, $I_{max.}$: 1.4 A
Dimensions	Housing: 45 x 44 x 21 cm / 17.7 x 17.3 x 8.3 inches (L x W x H) Total height with meteorological sensor: 85 cm / 33.5 inches
Weight	20 kg / 44.1 lbs
Operating conditions	+4 to +40°C (39 – 104°F), RH < 95 %, non-condensing
Sample air	-20 to +60°C (39 – 140°F), RH <95% 1013 hPa +/- 120 hPa

This technical data might be changed without notice.

Dealer:

E_EDM-164_V1.0

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