

# THE STANDARD FOR ATMOSPHERIC RESEARCH



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**DURAG GROUP**

## MODEL EDM 665

For more than 30 years GRIMM environmental dust monitors (EDM) are successfully used by thousands of reputable organizations. The EDM 665 Wide Range Aerosol Spectrometer combines two technologies for particle counting and classifying in one device. A Scanning Mobility Particle Sizer (SMPS+C) with a butanol condensation particle counter for nanoparticles and an approved optical Aerosol Spectrometer (EDM 180) for dust particles. Designed and specifically built for atmospheric monitoring, the EDM 665 is a “fit for purpose” state-of-the-art system capable of making more accurate and higher resolution measurements than any other monitoring device on the market.

Just some of the outstanding features this high end system offers: records the entire particle size range from 5 nm to 32 µm, 71 high resolution particle size channels, a professional isothermal inlet with no loss of semi volatile compounds, an integrated long life pump for long term operation, weather sensor inputs and much more. The system requires very low maintenance and can be transported and deployed in the field for short or long term atmospheric monitoring projects.

This configuration sets the EDM 665 Wide Range Aerosol Spectrometer into the worldwide leading position of atmospheric particle monitoring for any common application.



## YOUR BENEFITS

- Real-time monitoring of the entire particle size range  
Fully automatic 24/7 monitoring-system
- Low maintenance, 30 days unattended operation, remote access
- Energy-efficient, sampling with isothermal drying system
- High precision with CPC and OPC at low and high concentrations
- Excellent counting statistics and reproducibility
- Low diffusion loss
- Versatile data acquisition and communication (data logger with GSM via internet)
- Self-test for all optical and pneumatic components ensures high quality standards
- Meteorological sensors for wind speed and direction, precipitation, T and RH
- Instrument parameters secured against data loss. On return of mains voltage the instrument automatically continues with measurement.

## APPLICATIONS

- Atmospheric monitoring of ultra-fine particles and dust
- Source identification
- Atmospheric science
- Traffic-emission monitoring
- Roadside monitoring



**SMPS+C**

**EDM 180**

**24/7**

**5 nm-32 µm**

**REAL-TIME**

# TECHNICAL DATA

## SPECIFICATIONS

### Particle counter

Measurement principle	Condensation particle counter
Working fluid	n-butanol
Particle size range	selectable M-DMA (5 – 350 nm) or L-DMA (10 – 1094 nm)
Minimum scan time	150 s
Concentration range	1 to 10 <sup>7</sup> particles/cm <sup>3</sup> , combined single particle count mode (up to 150 000 particles/cm <sup>3</sup> ) and photometric mode
Reproducibility	≤ 5 % for single particle count mode

### Aerosol Spectrometer

Measurement principle	Light scattering at single particles Detection volume aerodynamically focused, no border zone error
Particle size range	0.25 µm – 32 µm
Concentration range	1 to 2 000 000 particles/liter
Reproducibility	≤ 5 % of total measuring range

### Sampling system

Sampling and conditioning	1 m sampling pipe with sampling head. Isotherm humidity extraction via Nafion membrane, sensor-controlled, without loss of SVC (semi-volatile compounds)
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## FUNCTION

Weather housing	Stainless steel, powder coated, fully temperature controlled
Climate sensors	Wind speed and direction, precipitation, pressure, T and RH GPS-positioning
Total flow rate	1.5 l/min, ≤ 5 % difference to the nominal flow rate
Flow rate of sample air	0.3 l/min CPC, flow control with critical orifice, temperature stabilized, 1.2 l/min Aerosol Spectrometer, ± 3% constant due self-regulation

## HANDLING

Operation	Data logger and Netbook integrated in housing for online data, meteorological sensor and GPS position
Interfaces	Data logger, USB, GSM with SIM-card for mobile network
Power supply	230 VAC, 60 Hz, power input 750 W
Dimensions	Housing: 1070 x 650 x 2240 cm / 42.1 x 25.6 x 88.2 inches (L x W x H) Total height with meteorological sensor: 106.3 inches
Weight	250 kg ( 551 lbs)
<b>Operating conditions</b>	
Temperature range	-20 to +55°C (-4 – 131°F), RH<95%
Pressure range	CPC: 500 - 1100 hPa, Aerosol Spectrometer: 1013 hPa +/- 120 hPa. If measuring at high altitudes with low ambient pressure the sample volume needs to be adjusted via flowmeter and HyperTerminal

This technical data may be subject to change without notice.  
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