

## GRIMM EDM 280

Optical aerosol spectrometer for regulatory air quality monitoring

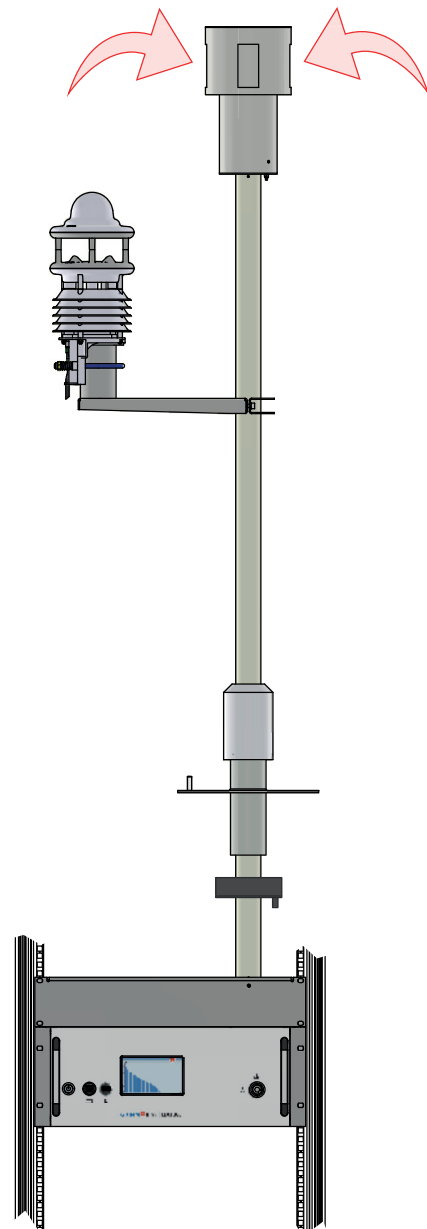
- **Compliant with air quality monitoring directives and standards:** QAL1 certified PM monitor (TÜV & MCERTs) for PM<sub>10</sub> and PM<sub>2.5</sub> measurements
- **High resolution, real-time monitoring:** Delivers certified 1-minute PM readings with full aerosol flow analysis, ensuring exceptional accuracy without border zone errors
- **New: On-site quality assurance:** Optional field verification and calibration kit – no need for factory return, reducing downtime and operational costs



As a member of DURAG GROUP since 2015, GRIMM AEROSOL TECHNIK combines over 40 years of expertise in optical aerosol particle measurement with the strength of a global leader, offering comprehensive solutions and prompt local support through an extensive international network.

## FEATURES AND BENEFITS

- **Real-time, accurate air quality monitoring**  
Delivers complete and precise detection without under- or overestimation. Certified for 1-minute measurement intervals – unique in its class. Aerodynamically focused detection volume compliant with ISO 21501-1, ensuring precise measurements without border zone errors; total aerosol flow analyzed in optical cell.
- **Certified for regulatory air quality monitoring**  
QAL1-certified (TÜV & MCERTs) for PM<sub>10</sub> and PM<sub>2.5</sub> measurements in accordance with EN 12341, EN 16450, EN 15267 and VDI 4202-3. Approved by LCSQA for use in regulatory air quality monitoring networks.
- **Comprehensive, optical particle measurement**  
Measures the widest range of particle sizes (0.178 to 29.4 µm), including TSP, PM<sub>10</sub>, PM<sub>2.5</sub>, PM<sub>4</sub>, PM<sub>1</sub>, and PM<sub>coarse</sub>. Provides full particle size distribution in 72 size channels.
- **High-precision laser technology**  
Equipped with a monochromatic laser that minimizes the influence of particle composition, ensuring consistent and reliable results.
- **Low maintenance, long service life**  
No consumables required. Durable laser with a lifespan of over 10 years. Internal particle-free purge air system reduces considerably maintenance needs.
- **NEW: On-site calibration without factory return**  
The EDM 280 requires no routine adjustments thanks to its drift-free factory-set optical system. Includes optionally a Field Verification and Calibration Kit – with a dual-size aerosol generator for two-point linearity checks – for on-site quality assurance and continuous operation without data loss.
- **Compact, modular design**  
19" rack design, vibrations resistant and compatible with existing AQMS cabinets or mobile monitoring laboratories, where space might be limited.
- **Fast and easy installation**  
Designed for quick setup by a single person in 30 minutes. The analyzer can be removed from the rack cabinet without dismantling the sampling system – simply unlock the connection and release the device.
- **High compatibility and integration**  
The EDM 280 offers enhanced integration compatibility with other air quality monitors or air pollution DAHS and reporting software, ensuring seamless incorporation into different AAQMS stations and air quality monitoring networks.



## TECHNICAL DATA

<b>Detection principle</b>	Light scattering at single particles with diode laser; detection volume aerodynamically focused (ISO 21501-1), no border zone error
<b>Measured mass fractions</b>	TSP, PM <sub>10</sub> , PM <sub>4</sub> , PM <sub>2.5</sub> , PM <sub>1</sub> , PM <sub>coarse</sub>
<b>Certifications</b>	TÜV and MCERTs QAL1 certified, LCSQA approved
<b>Particle size range</b>	0.178 µm < Do < 29.4 µm (Do = optical latex equivalent diameter)
<b>Size channels</b>	72, channel boundaries equidistant, 32 channels per decade
<b>Mass concentration</b>	0 ... 12,000 µg/m <sup>3</sup> for PM <sub>10</sub> 0 ... 5,100 µg/m <sup>3</sup> for PM <sub>2.5</sub> (with 10% coincidence error for Arizona Dust A1 ultrafine)
<b>Detection limit</b>	0.1 µg/m <sup>3</sup>
<b>Zero level</b>	≤ 0.1 µg/m <sup>3</sup>
<b>Sample volume flow</b>	1.2 l/min, accuracy ≤ ±2%, constant at the orifice plate by regulation
<b>Internal purge air</b>	0.3 to 0.5 l/min, protection of laser optics, reference air for self-test
<b>Storage interval</b>	Selectable, 6 seconds, 1, 5, 10, 15, 30, 60 minutes, daily average value
<b>Communication interface</b>	RS-232 (selectable up to 115,200 baud/s), USB-B, Ethernet, USB flash drive (USB 2.0), data logger
<b>Data protocol (ASCII)</b>	GRIMM-Protocol, Modbus TCP, GESYTEC / Bayern-Hessen Protocol, UIDEP Protocol

<b>Meteo sensor</b>	<ul style="list-style-type: none"> <li>• Temperature: -50 ... 60 °C, ±0.2 °C (-20 ... 50 °C), otherwise ±0.5 °C (&gt; -30 °C)</li> <li>• Relative humidity: 0 ... 100% RH, ±2% RH</li> <li>• Air pressure: 300 ... 1200 hPa, ±0.5 hPa (0 ... 40 °C)</li> </ul>
<b>Operation</b>	Via touch display or PC via data interface
<b>Power supply</b>	Wide range power supply 100 ... 240 VAC + 24 V at 50 ... 60 Hz, 4 A
<b>Power consumption</b>	<ul style="list-style-type: none"> <li>• Typical 25 W (continental warm)</li> <li>• Typical 40 W (tropical humid)</li> <li>• Typical 80 W (polar cold)</li> <li>• Max. 220 W (maximum equipment, all heaters at maximum power)</li> </ul>
<b>Ambient conditions (sample air on site)</b>	<ul style="list-style-type: none"> <li>• Temperature: -40 ... 60 °C</li> <li>• Relative humidity: 100% (-40 °C) ... 30% (60 °C) or maximum 60 g/m<sup>3</sup> absolute humidity</li> <li>• Ambient pressure: 530 ... 1,080 hPa</li> </ul>
<b>Conditions (measuring container)</b>	<ul style="list-style-type: none"> <li>• Temperature: 5 ... 40 °C</li> <li>• Relative humidity: 5 ... 90%, non-condensing</li> </ul>
<b>Transport and storage</b>	-20 ... +50 °C, RH < 95% (non-condensing)
<b>Dimensions (H x W x D)</b>	<ul style="list-style-type: none"> <li>• 19" spectrometer: 180.5 x 434 x 320 mm (7.1 x 17 x 12.6")</li> <li>• Sampling tube holder: 88.9 x 441 x 156 mm (3.5 x 17.4 x 6.1")</li> <li>• Standard sampling tube with sampling head: 1,650 (L until sampling inlet) x Ø45 (tube)/Ø105 mm (Sigma-2-Head)</li> </ul>
<b>Weight</b>	<ul style="list-style-type: none"> <li>• Total: 20.5 kg (5.5 lbs); with meteo sensor 157 L, 2.35 kg (5.2 lbs)</li> <li>• 19" spectrometer: 10.45 kg (23 lbs)</li> <li>• Sampling tube holder: 2.4 kg (5.3 lbs)</li> <li>• Sampling tube with sampling head: 5.3 kg (11.7 lbs)</li> </ul>

## ACCESSORIES

**199** Stand-alone, fully air-conditioned weather protection housing, providing space for EDM 280 and other 19" rack instruments

**NEW** Field Calibration Kit EDM 280 for on-site calibration (see image on the right)

## OPTIONS

Different options for weather sensor and sampling tube lengths available.



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