

# THE STANDARD FOR PORTABLE AEROSOL SPECTROMETER



## MODEL 11-C (CLASSIC)

For more than 30 years GRIMM aerosol spectrometers are successfully used all over the world and appreciated by thousands of users. The model 11-C combines in its compact and rugged design both reliable optical particle detection for counting and classifying dust particles as well as advanced data communication. The allrounder with no limits for all your applications! The 11-C is suitable for continuous measurements via power supply or flexible usage with a battery and remote control for real-time data acquisition and data analysis.



This configuration puts the 11-C into the worldwide leading position of portable aerosol spectrometers for any common application such as monitoring of inhalable and respirable dust, PM values, particle number concentration or particle size distribution. The best choice for reliable, flexible and real time measurements for indoor air quality, e.g. at workplaces, inside vehicles or for process analysis.

### YOUR BENEFITS

- Versatile data acquisition and communication (Bluetooth, USB, Ethernet, RS-232, SD card)
- Real-time monitoring of particle number, PM values (PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1</sub>) and dust mass
- Additional information for particle number, particle surface, and dust mass distribution
- Highest precision with 31 size channels and excellent reproducibility
- Integrated 47 mm PTFE-filter (GRIMM dual technology)
- Self-test for all optical and pneumatic components assures highest quality standards
- Internal rinsing air protects the laser and detector in the optical cell
- Optional sensors for temperature and relative humidity
- Ease of use via keypad or GRIMM software (wireless)
- 9 size channels < 1 µm for precise submicron detection
- Total inlet volume flow (1.2 liter/min) is analyzed in the optical cell
- Excellent counting statistics and reproducibility at low and high dust concentrations

### APPLICATIONS

- PM<sub>2.5</sub> in indoor environments according to VDI 4300, part 11
- Indoor air quality (IAQ) in buildings and vehicles
- Dust pollution measurements
- Process control in industry
- Workplace monitoring (inhalable, thoracic, respirable)



**Inha.,  
Thor., Resp.**

**PM<sub>10</sub>, PM<sub>2.5</sub>,  
PM<sub>1</sub>**

**Mass &  
Counts**

**0.25-35 µm**

**REAL-TIME**

# TECHNICAL DATA

## SPECIFICATION

Measurement range	Dust fractions (EN 481) inhalable, thoracic, and respirable PM <sub>10</sub> , PM <sub>2.5</sub> , and PM <sub>1</sub> number concentration, and size distribution
Particle size range	0.25 – 35 µm
Size channels	31 in total 0.25/0.30/0.35/0.41/0.49/0.58/0.68/0.80/0.94/1.1/1.3/1.5/1.8/2.1/2.5 3.0/3.5/4.1/4.9/5.8/6.8/8.0/9.4/11/13/15/18/21/25/30/35 [µm]
Particle number	0 – 2 000 000 particles/liter, diluter model 1159 available for higher concentrations
Dust mass	0.1 µg/m <sup>3</sup> – 100 mg/m <sup>3</sup>
Reproducibility	± 3% for total measuring range

## FUNCTION

Particle detection principle	Light scattering at single particles Detection volume aerodynamically focused, no border zone error
Optical cell	Diode laser 660 nm, P <sub>max</sub> = 60 mW, P <sub>nom</sub> 0.5/32 mW CW (multiplex)
Detector Time resolution	Super fast signal processing with 2 µs pulse length, 2 x 16 raw data channels 6 s, 31 channels (selectable storage intervals 6 s, 1, 5, 10, 15, 30, 60 min)
Volume 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
Sample collection	47 mm PTFE filter

## HANDLING

Operation	Keypad or PC with GRIMM software (wireless or data cable) Bluetooth,
Interfaces	USB, Ethernet, RS-232, SD card
Analog input	3 values (0 – 10 V), for external sensors
Power supply	in: 100 – 240 VAC, 47 – 63 Hz, out: 18 VDC, 2.5 A
Battery	Li-Ion-battery, 11.1 V, 4 Ah for 8 h operation
Power input	5.4 W standard, 14.4 W maximum during battery charging
Dimensions	27 x 13 x 7 cm / 10.5 x 4.8 x 2.6 inches (L x W x H)
Weight	2.1 kg / 4.6 lbs
Operating conditions	+4 to +40°C (39 – 104°F), RH < 95 %, non-condensing, non-corrosive or explosive gases
Storage and transport	-20 to +50°C (-4 – 122°F), RH < 95 %

This technical data may be subject to change without notice.  
Datasheet\_11-C\_ENG\_V2p0.pdf

Dealer: