



# World Smallest Aerosol Spectrometer Model 11-A

## Applications

IAQ-Monitoring  
at workplaces  
in schools  
in public places...

Occupational studies

Filter-tests

Measuring of oil droplets

Air monitoring

Aerosol-Science

## Benefit

Measuring in real time

31 size channels

Particle concentration and  
Dust mass fractions

Particle sampling on  
integrated PTFE-filter

PM10, PM2.5 and PM1  
simultaneously

Work place monitoring  
according to EN 481

For dust, smoke and  
droplets

Portable

Easy to use



## High Definition Aerosol-Monitoring with Dual-Technology

The portable Aerosol spectrometer model 11-A detects in real time airborne aerosol particles in the size range  $0.25 \mu\text{m}$  to  $32 \mu\text{m}$  in 31 size channels and represents the results in particle concentration or particle mass.

In addition all particles were collected after optical detection on an integrated 47mm PTFE-filter inside of the spectrometer (Dual-Technology) for further investigation e.g. chemically, microscopically or gravimetrically.

## Portable, powerful, easy to use

Like other Grimm Aerosol spectrometer the model 11-A can be operated with battery or power supply. The data are shown on a display and are stored on a data storage card in the spectrometer. Due to the extensive accessories various applications can be handled like e.g. isokinetic sampling in stacks, at high wind speeds or in pressure air, simultaneous measurement of temperature, relative humidity and wind speed, long term measurements with a outdoor housing or the use of other additional sensors e.g. for PAH or surface area of nano particles.

## Powerful software

The data can be transferred online via USB or RS-232 connection by the Grimm Windows® Software on a computer for data presentation or analysis. The following application settings are possible:

- Particle concentration in counts/litre, for all size channels
- Dust mass concentration in  $\mu\text{g}/\text{m}^3$ , for all size channels
- Dust mass fractions PM10, PM2.5 und PM1, according to US EPA guideline
- Dust mass fractions inhalable, thoracic and alveolic, according to EN 481

With this software graphs can be realised easily and quickly, also statistical numbers or data exportation directly into Excel™.

## Specification

Principle: 90° light scattering and filter-sampling (Dual-Technology)

Particle concentration: 1 to 3,000,000 particles/litre

Dust mass: 0.1 to 100,000  $\mu\text{g}/\text{m}^3$

Reproducibility: 5 % for whole range

Light source: Diode-Laser ( $\lambda = 683 \text{ nm}$ ,  $P_{\text{max}} = 40 \text{ mW}$ )

Measuring range: 0.25  $\mu\text{m}$  to 32  $\mu\text{m}$  in 31 size channels

Volume flow: 1.2 litre/minute, volume controlled

Sampling time: 6 sec (normal), 1, 2, 3 sec (fast mode)

Data storage: intern 80 KByte, with storage card 4 MByte

Storage interval: 1 min to 1h selectable

Interface: RS-232 Interface

Power supply: 110...230 VAC, 50-60Hz,

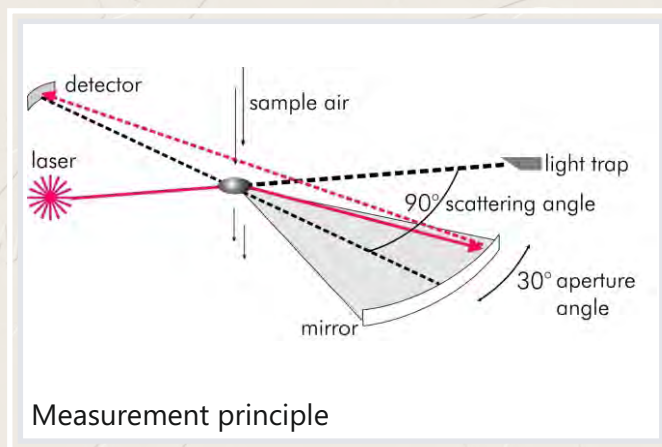
Battery: 12 VDC (6-8h)

Temperature range: 0 to +40 °C (32 to 104 °F)

Humidity range: relative humidity < 95 % (non condensing)

Dimensions (LxWxH): 24 x 13 x 7 cm

Weight: 2.4 kg (5.3 lb)



## LabView® Software 1.178

With the new **software 1.178** GRIMM programmed an excellent, user-friendly application software based on LabView®, which is compatible to all 32-/64-bit Windows operating systems from XP and up.

Data is displayed numerically or graphically as follows:

- Mass fraction in all channels as  $\mu\text{g}/\text{m}^3$  and at the same time the occupational health data in  $\mu\text{g}/\text{m}^3$  (in conformity with EN 481)
- Particle count concentration in all channels as particle/litre
- Presentation of immission as PM10, PM2.5, PM1 (not mass specific)

In addition to that, values of external climate sensors and service data of GRIMM devices can be displayed.

The presentation and output of the measurement data happens in real-time (6 second intervals) and is therefore suitable not only for data recording and data evaluation, but also for data presentation.

