

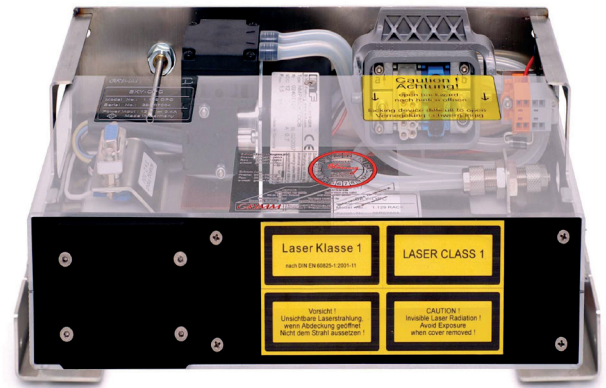
# IN-FLIGHT AEROSOL SPECTROMETER

## SkyOPC 11-S

The model 11-S (SkyOPC) is developed for precise real-time aerosol research in-flight and other applications with changing air pressure conditions. The built-in differential pressure sensor combined with an external pump provides full flexibility when measuring in the troposphere.

The 11-S consists of two modules: the docking station and the aerosol spectrometer. The docking station is a fix installation onboard the aircraft and integrates all pneumatic and electrical connections for the spectrometer. The instrument itself is simply locked into this docking station and instantly ready to measure.

A constantly regulated sample volume is guaranteed regardless of flying altitude and associated pressure by the differential pressure sensor.



### FEATURES

- real-time measurements
- sample flow independent of atmospheric pressure
- fast scanning down to 1 s
- 31 size channels within 6 s
- size and mass distribution
- $PM_{10}$ ,  $PM_{2.5}$ ,  $PM_1$
- optional pressure, humidity and temperature sensors
- easy and secure handling due to docking station
- online and offline data analysis

### APPLICATIONS

- research airplanes
- tropospheric research
- vertical profiling
- cloud droplet research

**pressure  
independent**

**cloud  
research**

**count &  
mass**

**0.25 - 32  $\mu$ m**

**real - time  
precision**

# TECHNICAL DATA

## SPECIFICATIONS

measured values	particle size and mass distribution
particle size range	0.25 – 32 µm
size channels	31
particle number	0 – 3 000 000 p/L
dust mass	0 – 100 000 µg/m <sup>3</sup>
reproducibility	> 97% of total measuring range

## FUNCTION

particle detection principle	light scattering at single particles with diode laser; detection volume aerodynamically focused, no border zone error
time resolution	6 s (standard), 1, 2, 3 s (fast mode)
volume flow rate	1.2 L/min, with external pump volume controlled by critical orifice
rinsing air flow rate	0.4 L/min, with internal pump volume controlled by critical orifice

## HANDLING

operation	PC with GRIMM software
interfaces	RS-232, PCMCIA memory card
analog input	1 port (0 – 10 V) for external sensor
power supply	in: 12 VDC, 24 VDC optional
operating conditions	0 to +40 °C (32 to 104 °F), RH < 95%, non-condensing, non-corrosive, or explosive gases
absolute pressure range	120 - 1100 mbar
storage and transport	-20 to +50°C (-4 - 122°F), RH < 95%
dimensions (hxwxd)	docking-station 7.2 x 18.2 x 25.5 cm (2.8 x 7.2 x 10 in) spectrometer 6.0 x 16.0 x 25 cm (2.4 x 6.3 x 9.8 in)
complete	7.2 x 18.2 x 25.5 cm (2.8 x 7.2 x 10 in)
weight	docking-station: 1.3 kg (2.9 lbs) spectrometer: 1.6 kg (3.5 lbs)
complete	2.9 kg (6.4 lbs)