

# CLOUD DROPLET ANALYZER



The Cloud Droplet Analyzer is an optical aerosol spectrometer for high-resolution measurement of the size distribution and number concentration of cloud aerosols.

## OPERATION PRINCIPLE

### AEROSOL SPECTROMETER FOR IN-SITU CLOUD MONITORING

The Cloud Droplet Analyzer uses the recognized measurement technique of optical light scattering according to ISO 21501-1 on individual particles and is equipped with an LED light source of high light intensity, high light stability and long service life.

It is equipped with a Sigma-2 sampling head in accordance with VDI 2119, which enables representative sampling even in strong winds. An automatically controlled heater on the sampling head prevents icing and thus enables reliable sampling even in adverse climatic conditions.



## BENEFITS

- Continuous and simultaneous measurement of particle number concentration and particle size distribution
- Intuitive and simple operation
- Remote monitoring, operation and maintenance easily possible
- No radioactive material
- No consumables
- Low energy consumption
- Low maintenance
- On-site calibration possible

## DATASHEET

|                                   |   |
|-----------------------------------|---|
| Measuring principle               | Optical light scattering at single particles  |
| Reported data                     | Particle size distribution, particle number concentration, mean volume diameter, equivalent diameter, water content |
| Measurement range (number $C_N$ ) | 0 – 200 particles/cm <sup>3</sup>   |
| Measurement range (size)          | 0.6–40 $\mu\text{m}$ , 0.8–100 $\mu\text{m}$  |
| Volume flow                       | 5 l/min   |
| Size channels                     | 64 (32/decade)  |
| Time resolution                   | 1 s–24 h  |
| Interfaces                        | USB, Ethernet (LAN), RS-232/485   |
| User interface                    | Touchscreen, 800 • 480 pixel, 7" (17.78 cm)   |
| Protocols                         | UIDEP, UDP, ASCII, MODBUS   |
| Software                          | PDAnalyze   |
| Data acquisition                  | Digital, 20 MHz processor, 256 raw data channels  |
| Light source                      | Long term stable LED  |
| Housing                           | Weatherproof housing IP55   |
| Operating system                  | Windows 10 IoT Enterprise   |
| Power supply                      | 115–230 V, 50/60 Hz   |
| Installation conditions           | -30-+40 °C, <95% rH, non-condensing, max. 4.000 m (above sea level)   |
| Sampling head                     | Sigma-2 passive collector, heatable with automated control  |
| Dimensions                        | Ca. 1,150 • 742 • 404 mm (H x W x D)  |
| Weight                            | Approx. 40 kg   |
| Noise emission                    | < 60 dB(A)  |
| Power consumption                 | Normal operation: approx. 60 W, max. 200 W  |

## APPLICATIONS

- Cloud research
- Ice nucleation events
- Environmental research



Mehr Informationen:  
<https://www.palas.de/product/cda>