Laser precipitation disdrometer measuring all precipitation types

- **Parameters measured**
  Precipitation type, intensity, drop size distribution, radar reflectivity
- **Measurement technology**
  Laser (optical)
- **Product highlights**
  Simultaneous measurement of 32 classes for particle sizes and velocities
- **Interfaces**
  SDI-12 / RS-485, pulse
- **Article number**
  70.210.001.3.0

The OTT Parsivel^2 is a modern laser disdrometer for comprehensive measurement of all precipitation types. The Parsivel^2 captures both the size and speed of falling particles, classifying them into one of 32 separate size and velocity classes. The raw data are used to calculate the type, amount, intensity and kinetic energy of the precipitation, the visibility in the precipitation, and the equivalent radar reflectivity

Device	Laser-optical disdrometer

Optical sensor, laser diode	
Wavelength	650 nm

Output power (peak)	0.2 mW
Laser Class	1 (IEC/EN 60825-1:2014)

Measuring surface (W x D)	**180 x 30 mm (54 cm²), detection of border events**

Measuring ranges	
Particle size	Liquid precipitation: 0.2 ... 8 mm Solid precipitation: 0.2 ... 25 mm
Particle velocity	0.2 ... 20 m/s

Classification	
Size and velocity classes	32
Measurement accuracy	± 1 size class (0.2 ... 2 mm) ± 0.5 size class (> 2 mm)

Types of precipitation	
Number	8
Types	Drizzle, drizzle/rain, rain, mixed rain/snow, snow, snow grains, sleet, hail

Outputs	
Reports	WMO 4680/4677 (SYNOP), 4678 (METAR/SPECI) and NWS tables
Differentiation of precipitation types	Drizzle, rain, hail, snow > 97 % (compared to a weather observer)
Snow depth intensity	Volume equivalent

Intensity and accuracy	
Precipitation intensity	0.001 ... 1,200 mm/h
Accuracy	±5 % (liquid) /± 20 % (solid)

Radar reflectivity Z	**-9.999 ... 99.999 dBz**
Kinetic energy	0 ... 999.999 J/(m²h)

Visibility in precipitation (MOR)	**0 ... 20,000 m**
De-icing protection	Microprocessor controlled heating

Electrical data	
Power supply electronics	10 ... 28 V DC, reverse polarity protection
Sensor head heating system	Optimum heating output can be guaranteed with a power supply voltage of at least 20 V DC
Power consumption (without heating)	65 mA @ 24 V DC
Heating capacity sensor heads	50 W (default) 100 W (adjustable)
Lightning protection	Integrated

Interfaces (configurable)	
RS-485	For all values incl. spectral data (EIA-485; 1,200 ... 57,600 Baud)
SDI-12	For calculated values
Ausgaberelais	For pulse output of the precipitation amount in 0.1 mm/pulse with max. 2 Hz pulse rate
USB	For PC connection (configuration and service)

Mechanical data	
Material	Powder-coated aluminium housing
Weight	Max. 6.4 kg
Dimensions (H x W x D)	670 x 600 x 114 mm
Installation	2 inch pipe, Ø 50 ... 62 mm

Environmental conditions	
Temperature range	-40 ... +70 °C
Relative humidity	0 ... 100 %
Protection	IP65, resistant to salt spray

Standards	EN 61326-1: 2013, CE compliant 2014/30/EU, CE compliant
ASDO configuration software supplied (basic version)	