

LASER PRECIPITATION MONITOR

The new generation
of high quality and
reliable precipitation
identification sensor

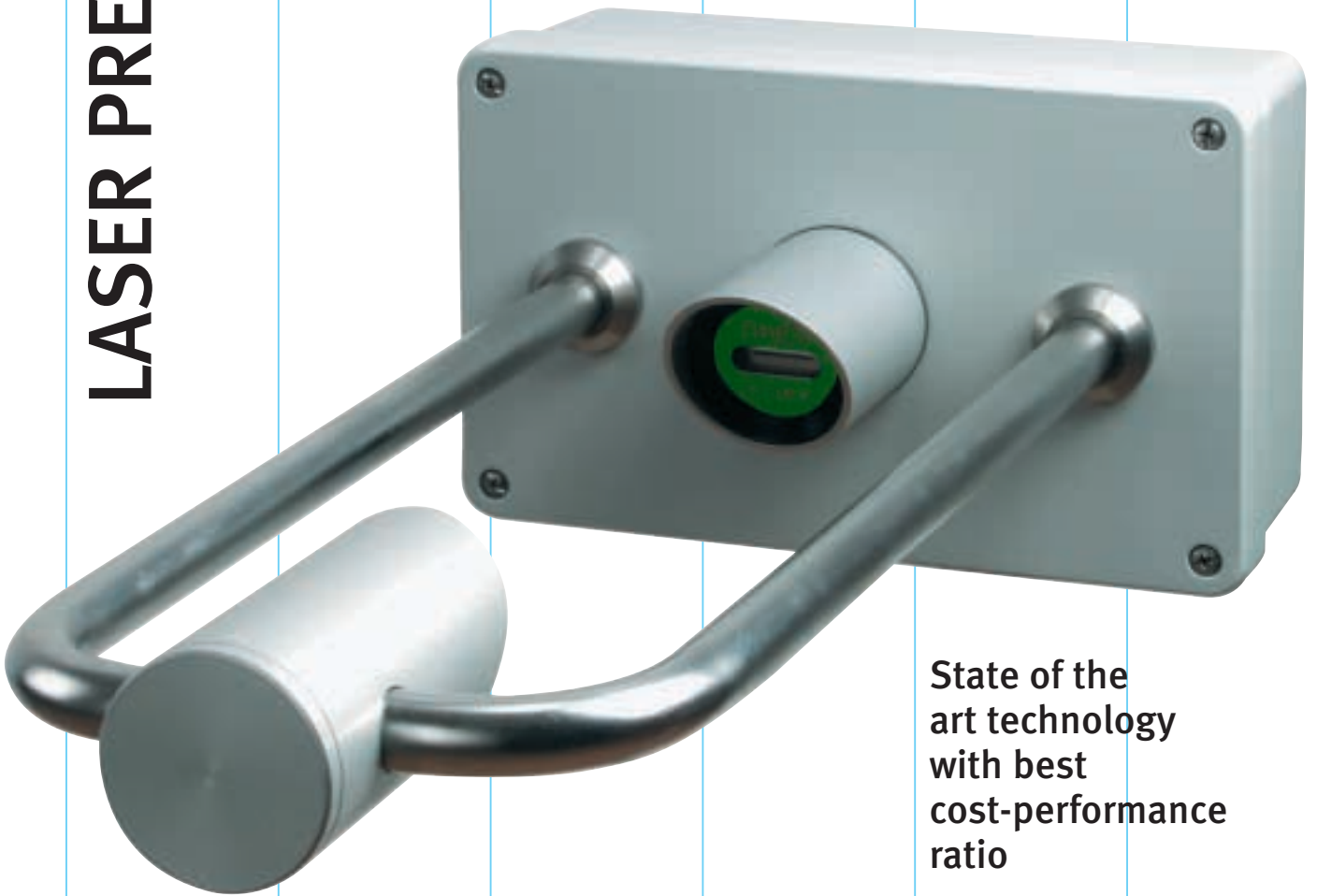
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Thies
CLIMA



State of the
art technology
with best
cost-performance
ratio

T H E W O R L D O F W E A T H E R D A T A

Laser precipitation monitor



The **Thies Laser Disdrometer** is especially designed for the use in several applications. The optical laser basing measuring principle guarantees a reliable and accurate measurement of all known kinds of precipitation. It is possible to measure the amount, the intensity also as the particle size and the velocity of precipitation. A main advantage of this sensor is to measure particles down to 0,16 mm diameter.

The sensor detects and discriminates the different arts of precipitation as drizzle, rain, hail, snow, snow grains, graupel (small hail / snow pellets), and ice pellets with his reliable Laser optic.

The system calculates the intensity (rain rate), volume and the spectrum of the different kinds of precipitation and makes necessary plausibility checks.

Latest state of the art technology like DSP, and high quality optical components stand for safely measurement.

All data will be transmitted via a galvanic isolated RS485 interface to further systems with different protocols and formats. SYNOP according table 4680, and METAR according table 4678 are implemented.

Typical applications

- traffic control
- meteorological monitoring
- scientific examination
- airport observation systems
- hydrology





The device is nearly maintenance-free, and the optical components are secured against environmental influence. Integrated heaters guarantee a reliable use all over the year. A special technology eliminates a possible influence of extrinsic light. The sensor controls itself via different features in order to compensate temperature, and dirt influences.

For communication the RS 485 output as well as two digital outputs are available. In order to integrate other important meteorological parameters, the sensor is prepared to connect additional sensors like wind speed, wind direction, temperature and humidity. All measured values will be transmitted via the RS485 output. The use of flash memory allows remote software uploads.



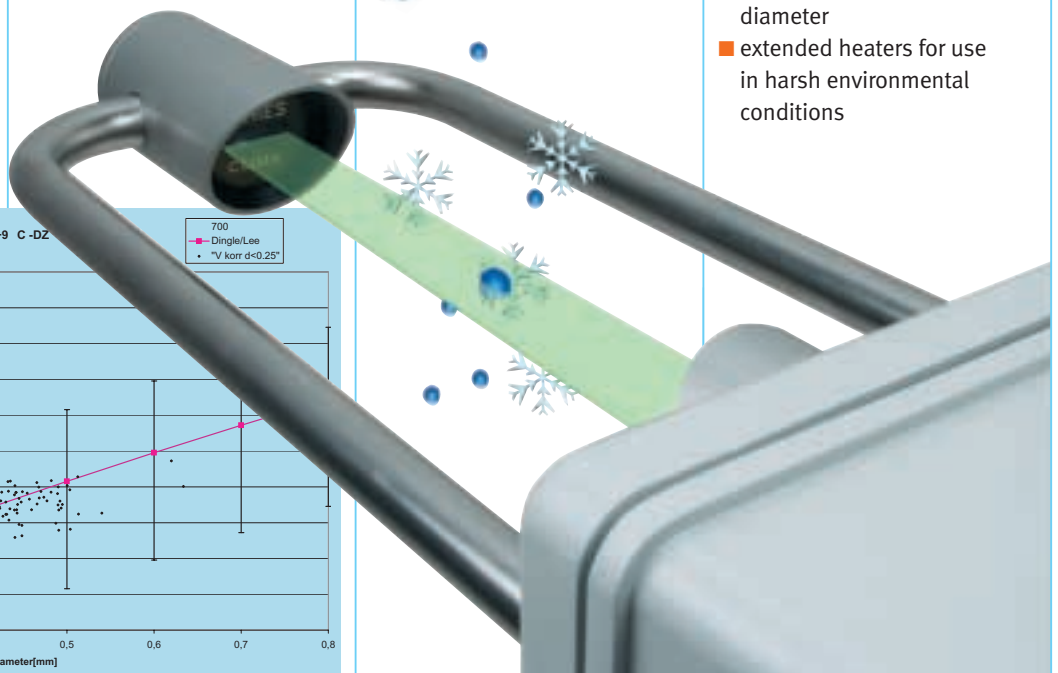
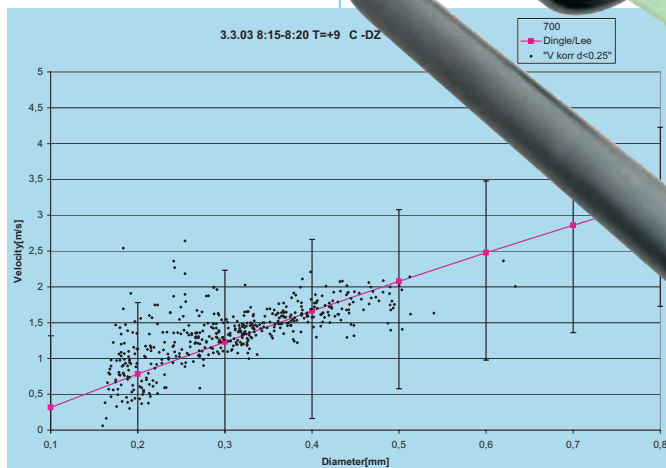
Also for use in harsh environmental conditions

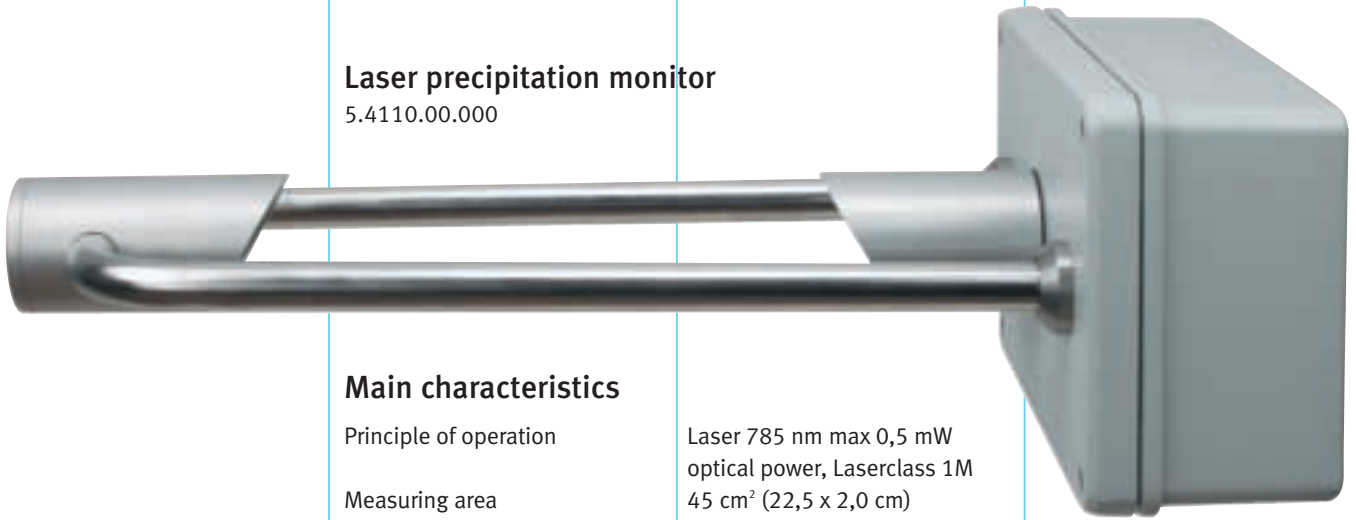


The main advantages in one view

- rugged, compact, and light
- nearly maintenance-free
- easy mounting
- DSP for computing power
- EMC protected housing
- particle size from 0,16 mm diameter
- extended heaters for use in harsh environmental conditions

A typical distribution of drizzle





Laser precipitation monitor

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Main characteristics

Principle of operation	Laser 785 nm max 0,5 mW optical power, Laserclass 1M
Measuring area	45 cm ² (22,5 x 2,0 cm) 7 inch 2 (8,858x 0,787 inch)
Environmental	-40...+70°C; 0 ..100% rH Optional -60...+70°C; 0...100% rH
Protection	IP 65
Mounting	Mast 48mm...102mm; 1,9...4 inch
Power	24 V AC /750 mA, alternative 230 VAC or 115 VAC incl. std. heaters
Housing	al die cast, stainless steel (270x 170x 540) mm
Weight	4,8 kg
Data output	RS485 1200...115200 Bd, full duplex 2 opt. coupler 24 V DC 1 mA
Optional inputs	PT100, 0-1 V, 0-1000 Hz, serial synchronous

Precipitation

Particle size	0,16...7 mm
Particle velocity	0,2 ... 20 m/s
Distinction for kind of precipitation drizzle, rain, hail, snow	> 97 % in compar. with synopt. observer
Minimum intensity	0,005 mm/h drizzle
Maximum intensity	250 mm/h



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