Technical Data
Lufft Ceilometer CHM 8k



Highest confidence under low clouds with maximum data availability and minimum maintenance

- **Parameters measured**
  Aerosol backscatter profile, cloud base height, cloud penetration depth, aerosol layer height, cloud cover, vertical visibility, Sky Condition Index

- **Measurement technology**
  Optical (LIDAR)

- **Product highlights**
  Measuring range of up to 8 km (26.246 ft), simple & eye-safe, service-friendly due to modularity, various data telegrams, sensitivity in the range of the Lufft CHM 15k, suitable for the most demanding environments

- **Interfaces**
  RS485 (ASCII communication), LAN (Web-Interface, (S-)FTP, NetTools); optional: DSL modem, RS485 full-duplex

- **Article number**
  8349.01-010

The new Lufft CHM 8k ceilometer empowers meteorologists at weather services and airports to make the right decisions with highest confidence and minimal maintenance. Especially in the critical height below 1 km, the Lufft CHM 8k detects cloud bases in any place and season with outstanding precision and reliability. Internal data storage and a battery backup enable unmatched sensor uptime and data availability even at the harshest conditions.

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Using the Lidar technology, it detects backscatter aerosol profiles / structure in multiple layers, cloud bases, cloud penetration depths as well as vertical visibility and issues the sky condition index. It has an operating range of up to 8,000m (26,200 ft) and is equipped with an integrated controller offering a fully embedded real-time calculation of all target parameters and comfortable user interfaces.

Measuring principle	Lidar (light detection and ranging)

Measuring parameters	
Aerosol backscatter profile	
Measuring range	0 m ... 10 km (0 ... 32,808 ft)
Time resolution	2 ... 600 s
Range resolution	5 m
Reported Range resolution	5 - 30 m in 5 m steps
Cloud base heights, Cloud penetration depths	1 - 9 layer (configurable); 3 layer preset
Cloud detection range	5 m ... 8 km (16 ... 26.246 ft)
Distance measurement accuracy against hard target	'Greater of ±5 m (±16 ft) or ±0.2%
Additional measuring quantities	Cloud cover in octas (WMO 2700), Vertical visibility, Aerosol layer heights (mixing layer, boundary layer), sky condition index
Quality and auxiliary values	External and internal temperature; window, laser and receiver status, input voltage control, humidity

Communication	
Standard interfaces	RS485 half-dublex (ASCII communication), LAN (Web-Interface, (S-)FTP, NetTools)
Optional interfaces	DSL modem, full dublex

Electrical parameters	
Power supply	230 VAC or 115 VAC, ±10 %
Mains frequency	50, 60 hz
Power consumption	250 W (w/o housing heater) 450 W (with housing heater)
UPS functionality (opt.)	Internal backup battery for electronics (1 hour covering all operating conditions)

Laser-optical parameters	
Light source	Laser diode
Wavelength	905 nm
Pulse energy	2 µJ max. (1,6 µJ typ.)
Pulse repetition frequency	8 kHz
Filter Bandwidth	25 nm
Field of view receiver	1.1 mrad

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Operating Safety	
General Safety	IEC 61010-1 (TUEV Rheinland certified) UL 61010-1 (TUEV SÜD certified) AS 61010.1 (Australien und Neuseeland) CAN/CSA-C22.2 No. 61010-1 (TUEV SÜD certified)
Laser protection class	1M, IEC 60825-1:2014; complies with CFR 1040.10
Protection level housing	IEC 60529: IP66
EMC	EN 61326 - 1 Klasse B FCC: 47 CFR Part 15, Class B
Certifications	CE (230 VAC); 115 VAC version compatible with FCC/ CSA
International standards	Complies with ICAO frangibility requirements

Operating Conditions	
Operating Conditions	ISO 10109 - 11
Temperature range	-40...+60 °C
Relative humidity	0...100 %
Wind load	60 m/s

Physical	
Dimensions	500 x 500 x 1550 mm
Weight	70 kg (130 kg incl. Packaging)