

CHM8k

Ceilometer

The LIDAR-based cloud height sensor / ceilometer CHM8k is prepared to work throughout the year and in any climate.



The CHM8k is the latest ceilometer from Lufft. Using the LIDAR technique, 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 10 km (32,800 ft) and is equipped with an integrated controller offering a fully embedded real-time calculation of all target parameters and comfortable user interfaces. The Lufft ceilometer series is prepared to work throughout the year and in any climate. Due to their double case structure combined with a window blower and an automatic heating system, the ceilometers are free of fogging, precipitation, freezing or overheating issues.

Measurement technology

Measuring principle	Lidar (optical, time of flight) measurement
Laser source	InGaAs diode

Measurement parameters

Description	aerosol backscatter profile
Observation range	0 to 10 km (0 to 32.808 ft)
Time resolution	2 to 600 s
Resolution	target parameters like cloud base height and vertical visibility are calculated and reported with a resolution of 1 m (= 3.3 ft), which covers also the resolution of 12.5 ft
Quality and auxiliary values	external and internal temperature, window status, laser status, receiver status

Target parameters

Quantities given in layers	cloud base height, cloud penetration depth, aerosol layer height
Accuracy (measured on hard target in 10 km distance)	±1% or ±20 ft
Additional quantities	cloud cover, vertical visibility, Sky Condition Index

Communication

Standard interfaces	RS-485 (ASCII communication); LAN (Web-Interface, (S-)FTP, NetTools)
Optional interfaces	DSL modem, RS-232 for service

Electrical parameters

Power supply	230 V AC or 115 V AC, $\pm 10\%$
Power consumption	250 W (standard); 800 W (in maximum heating mode)
UPS functionality (opt.)	internal backup battery for electronics, > 1 hrs

Laser-optical parameters

Light source	InGaAs diode
Wavelength	905 nm
Pulse energy	< 3 μJ
Pulse repetition frequency	8 kHz
Filter bandwidth	25 nm
Field of view receiver	1.1 mrad

Operating Safety

Environmental compliance	ISO 10109 - 11
Laser protection class, eye safety	1M, IEC 60825-1:2014
Protection level housing	IP 65
Electrical Safety	EN 61326 - 1 Class B
Certifications	CE
Eye safety according to	IEC/EN 60825-1

Operating Conditions

Operating temperature	-40 to +60 °C
Relative humidity	0 to 100 %
Max. wind strength	max. wind strength 55 m/s

Physical

Dimensions	500 x 500 x 1550 mm
Weight	70 kg (130 kg including packaging)