



*Ceilometer CHM 15k „NIMBUS“  
Measuring clouds, aerosol height  
profiles and visibility*

**Jenoptik Laser Technology inside**

# Cloud Height

*The “NIMBUS” series is the second generation of proven CHM 15k ceilometers measuring aerosol height profiles using the LIDAR technique. They determine cloud base heights, penetration depths, mixing layer height and vertical visibility. Within their operating range of up to 15 kilometers (50 000 feet), they reliably detect multiple cloud layers and cirrus clouds. The “NIMBUS” series is equipped with an integrated controller offering improved range resolution and a comfortable web interface.*

1300m

1500m

# Ceilometer CHM 15k „NIMBUS“

## Measuring clouds, aerosol height profiles and visibility

### High optical sensitivity for exact results

Accurate results in day- and nighttime are obtained by

- a solid state laser source with long life-time
- small bandwidth filters
- a highly sensitive photo receiver

### Reliable operation in any climate

The CHM 15k 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 not interfered with fogging, precipitation, freezing or overheating.

### The data telegrams in detail

#### 1 - Standard data telegram

Output interval, date, time, detected cloud layers, penetration depths, vertical visibility, max. detection range, local altitude, unit (m/ft), system status, precipitation index, checksum

#### 2 - Extended data telegram

Standard telegram combined with additional status messages and device specific parameters

#### 3 - Raw data telegram

Extended telegram with measured raw data (in NetCDF format)

#### 4 - CHM 15k data telegram

Output interval, date, time, unit, sky condition index, total cloud cover, cloud layers, cloud penetration depths, VOR, max. detection range, quality index aerosol layer, aerosol layer heights, status, checksum

#### 5 - CHM 15k raw data telegram

CHM 15k data telegram with raw data Exemplary data telegram (standard)...; 29.05.06; 05:25; 00330; 01913; 07725; 0150; 0112; 0772; 01968; 08498; +060; m; 11111111; ...

Jenoptik Ceilometer CHM 15k„Nimbus“			Order No.
<b>Ceilometer</b>			<b>8350.00</b>
<b>Technical Data</b>	Dimensions (LxWxH)	500mm x 500mm x 1550mm	
	Weight	70 kg (130kg incl. packaging)	
<b>Operating conditions</b>	Temperature	-40°C...55°C	
	Relative humidity	0%...100%	
	Wind	55ms <sup>-1</sup>	
<b>Measuring parameters</b>	Measuring principle	Optical (LIDAR)	
	Measuring range (CBH) <sup>1</sup>	5m ... 15,000m (16ft ... 50,000ft)	
	Accuracy <sup>2</sup>	± 5m (± 16ft)	
	Range resolution	5m (16ft)	
	Sampling rate	100MHz	
	NetCDF raw data resolution	15m (full range, compact file sizes) 5m (5m to 150m range)	
	Time to measure	2s ... 600s (programmable)	
	Targets	Aerosols, clouds	
	Quantities to be measured	- CBH1, preset: 3 layers; maximum 9 layers - Cloud penetration depth - Cloud amount and sky condition index - Vertical visibility (VOR) - Height of aerosol layer - Aerosol backscatter profiles	
	Light source	Nd:YAG solid-state laser, wavelength 1064nm	
<b>Interfaces and software for data output and device configuration</b>	Standard interface	RS485, LAN	
	Optional interfaces	RS232 or Modem V.21, V.22, V.22bis	
	Communication	LAN Port: Web-Interface Serial Port: JO-DataClient Software or standard terminal programs	
	Optional software	Viewer-Software for convenient visualizing measured results	
<b>Electrical parameters</b>	Power supply	Standard: 230VAC, ± 10% Optional: 110VAC, ± 10%	
	Power consumption	250W (Standard) 800W (in maximum heating mode)	
	UPS functionality (opt.)	Internal backup battery for electronics, > 1 hrs	
<b>Operating safety</b>	Environmental requirements	ISO 10109-11	
	Laser protection class	1M according to IEC 60825-1:2007	
	Internal protection class	IP65	
	EMC	Class B, DIN EN 61326-1	
	Electrical safety	DIN EN 61010-1	
	Certifications	CE	

<sup>1</sup>CBH - Cloud Base Height <sup>2</sup> measured on hard target in 10 km distance

#### Benefits

- Great measuring range up to 15km (50,000ft)
- Enhanced multiple cloud layer detection
- Simple and eye-safe routine operation
- Service-friendly modular device setup
- Various data telegrams, including raw data
- GUI software for device control and display of measured backscatter data in NetCDF format

