EXPLORE THE CLIMATE

CE376

Compact Automatic Aerosol LiDAR

The CE376 is the latest compact, eye-safe elastic backscatter LiDAR, featuring outstanding performances for the automated, continuous monitoring of aerosols.

It operates in the visible (green) and in the near infrared (NIR) with one depolarization channel for enhanced aerosol characterization.

The rugged, fully integrated system operates without shutdown, human attendance, authorization, nor maintenance. With its thermal enclosure, the LiDAR can withstand extreme environmental conditions.

The CE376 is particularly easy to install (indoor or outdoor with its thermal enclosure) and to transport to different sites.

It is therefore, the perfect solution to monitor industrial dust emissions, urban pollution, volcanic ash and all type of aerosol particles.

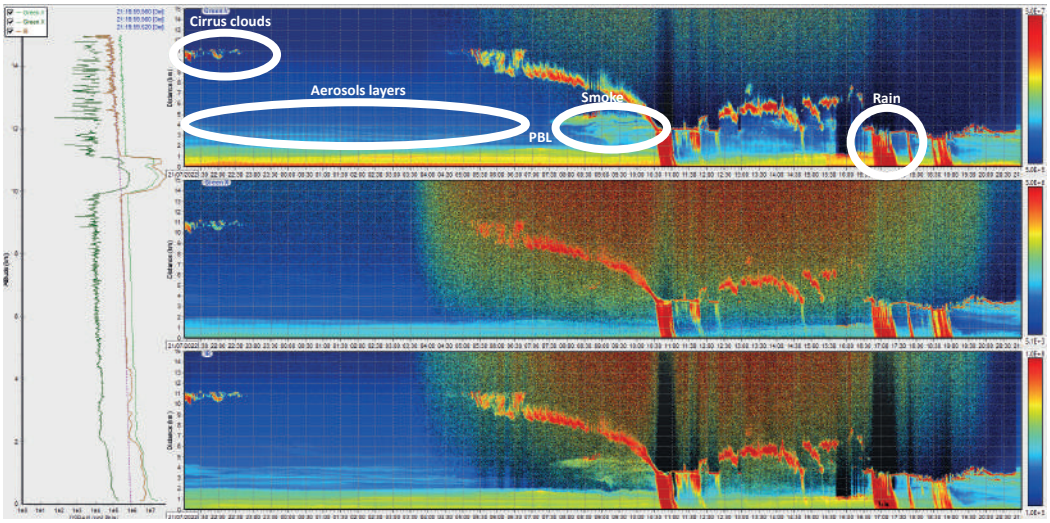
Features

- Aerosol measurements up to 15 km by night time (with typical AOD 0.2) and up to 6 km by day time (with typical AOD 0.1)
- Very short blind zone (< 100 m) with a full overlap from 1200 m (Green) / 700 m (NIR) range
- Real time «quicklook» visualization
- Automatic backscatter/extinction profiles (Klett inversion with AOD or LiDAR ratio)
- High stability and low maintenance
- Aerosol characterization for each layer and stratification analysis
- Eye safety compliance with EN-60825/ANSI Z136
- Planet Boundary Layer (PBL) and cloud detection
- Easy transportation ➡ Outdoor / indoor operation

Applications

- Air quality monitoring
- Climate change
- Airport / Aviation
- Atmospheric sciences
- Aerosol and cloud modelling
- Numerical Weather Prediction (NWP)

Software



(Left) LIDAR overlap-Range Corrected Signal (RCS) profiles at 532 nm (parallel and cross) and 808 nm, (Right) RCS Quicklooks for 532 nm parallel (top), 532 nm cross (middle) and 808 nm (bottom) (from LidarII acquisition and visualization software)

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Technical specifications

Source

Laser type	Green laser: frequency doubled Nd:YAG NIR laser: pulsed laser diode
Wavelengths	Green laser: 532 nm NIR laser: 808 nm
Pulse energy	Green laser: ~6 µJ NIR laser: ~4 µJ
Repetition rate	5 kHz
Pulse width	< 15 ns For IR ~200 ns

Optics

Instrument configuration	Biaxial system
Telescope diameter	96 mm for both emission and reception
Laser divergence	NIR: 460 µrad Green laser: < 50 µrad
FOV reception	NIR laser: 520 µrad Green laser: 230 µrad
Eye-safety	Yes: IEC 60825-1 compliant
Fuse characteristics	Slow blow T6.3A
FWHM bandwidth	Green laser: 0.2 nm NIR laser: 0.6 nm

Data

Data aquisition mode	Photon counting
Continuous acquisition	Yes
Acquisition time	1 s to 1200 s
Electronic range resolution	15 m
Electronic range	From 50 m to up to 30 km
Data transfer to PC	USB or Ethernet

Environmental conditions

Temperature range	+18°C to +28°C without thermal enclosure
Humidity range	5% to 75%

Power

Power supply	100-250 VAC / 50-60 Hz
Typical power consumption	40 W
Maximum power consumption	200 W

Mechanical Specifications

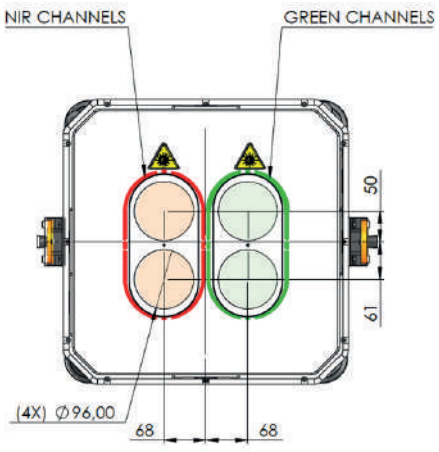
Transportability	Yes
Dimensions	713 x 463 x 691 mm
Weight	35 kg (might change depending on the option)

Thermal Enclosure (in option)

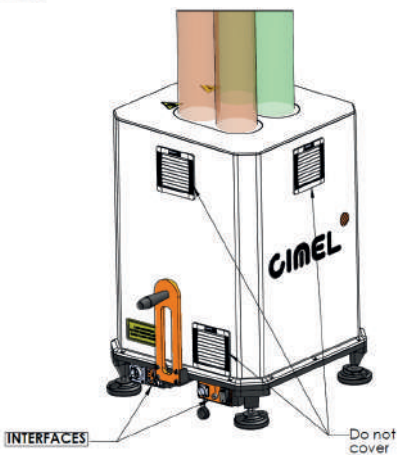
Temperature range (external)	-30°C to +55°C
Power supply	115-230 VAC (50 Hz / 60 Hz)
Typical power consumption	1300 W
Humidity range	0-100%
Dimensions	900 x 950 x 1300 mm
Weight	93 kg

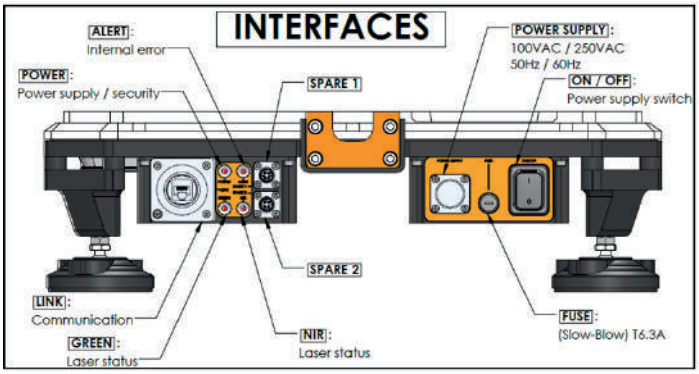
CE376 Models

Reference	Channels	Available bands
CE376-G	532 nm	- Vertical aerosols and clouds profile (Standard) - PBL
CE376-GP	532 nm, depolarization	- Standard - Non-sphericity (Particle shape) - PBL
CE376-N	808 nm	- Standard - PBL
CE376-GN	532 nm / 808 nm	- Standard - Spectral dependence (Particle size) - PBL
CE376-GPN	532 nm, depolarization / 808 nm	- Standard - Spectral dependence (Particle size) - Non-sphericity (Particle shape) - PBL



Dimensions are in mm





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