

Hybrid Open Path Compact DOAS v.100

PRECISE OPEN-PATH AND VERTICAL MAX-DOAS MEASUREMENTS FOR ADVANCED GAS AND AEROSOL MONITORING



KEY FEATURES

- ACCURATE GAS DETECTION: NO₂, Glyoxal with proven DOAS technology
- VERTICAL PROFILES: MAX-DOAS retrievals of NO₂, H₂O, Glyoxal, HCHO, HONO, O₃, O₄, SO₂, IO, BrO, OCIO & aerosol opt. prop.
- COMPACT & FLEXIBLE: Active Open-Path and passive MAX-DOAS in one instrument
- **RUGGED & MOBILE**: Weatherproof (IP64), optional battery operation
- CALIBRATION FREE: DOAS technology, no calibration gases, no drift

APPLICATIONS

- Air quality & workplace monitoring
- Industrial emission & process control
- Satellite validation (near surface)
- Boundary layer chemistry studies
- Fence line monitoring
- Spatial distribution analysis



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DESCRIPTION

The Airyx Open Path Compact (OPC) instrument uniquely combines active and passive DOAS techniques in one compact unit. It employs a LED light source and retro reflectors for precise multi-path open path measurements, while its fully motorized telescope head allows flexible applications like tomography and fence line monitoring. Additionally, the OPC can perform passive MAX-DOAS for vertical gas profiling. A temperature-stabilized, high-resolution compact spectrometer allow accurate spectral data recording critical to high-quality atmospheric gas analysis.

TECHNICAL DETAILS

Optics	UV Lens Telescope, Focal Length of 300mm	
Light Source	LED 450 nm ^(*)	
Detectable Gases Limit of Detection /ppb [@ 500m path length, 1min]	NO ₂	Glyoxal
	2.2	2.2
	depend on conditions such as visibility, path length	
Detectable Gases Passive MAX-DOAS Mode	NO₂, H₂O, Glyoxal, HCHO, HONO, O₃, O₄, SO₂, IO, BrO, OClO	
Time Resolution	up to 5s for one Light Path	
Path Length to Reflector	up to 1000 m (**)	
Compact Spectrometer	Spectral Range 300 to 550nm & Resolution (FWHM) < 0.5 nm Temperature Stabilized	
Motorization	Azimuthal (0 $^{\circ}$ to 360 $^{\circ}$) and Elevation (-40 $^{\circ}$ to 75 $^{\circ}$)	
Housing	IP64 housing, Internal Heating, Dew Point Monitoring	
Control Unit	Integrated Embedded PC, WIN10 IOT	
Temperature Control	Heating (Cooling on request)	
Additional Sensors	Elevation, Ambient Temperature and Pressure, Internal Dew Point	
Data Interfaces	Internal data storage, LAN, WiFi, Machine2Machine	
Power Supply / Consumption	24V, 50 W max. (12V Version & Battery Operation on Request)	

^(*) Other LED configurations matching other gas species are possible. Contact us for custom solutions.

 $^{(^{**}) \} Longer \ path \ lengths \ require \ more \ retro \ reflector \ arrays \ and/or \ longer \ integration \ durations \ for \ sufficient \ signal-to-noise \ ratios.$



Weather proof housing enables mobile, short and long-term applications.



Two OPCs measuring on different reflectors mounted at the KNMI MetMast, Cabauw, NL.