NO_2 Hybrid Open-Path / MAX-DOAS System

Airyx OPC-VIS-LED-300 - Precise DOAS measurements for advanced gas and aerosol monitoring.

DESCRIPTION

Hybrid combination of Open Path DOAS and MAX-DOAS in single instrument

Accurate ground level concentrations of NO_2 and Glyoxal via active open path measurements. Optional multi path capability.

Vertical gas (NO_2, HCHO, SO_2, and more) and Aerosol Optical Depth profiles via MAX-DOAS method

OPEN PATH / MAX-DOAS PRINCIPLE

Motorized telescope points on reflectors or sky

Gases are quantified from characteristic absorption spectrum

Aerosol Optical Depth is retrieved by spectroscopic O_4 measurements

KEY FEATURES

ACCURATE CONTACT FREE MEASUREMENT
No losses in tubing & filters.

CALIBRATION FREE
DOAS (Differential Optical Absorption Spectroscopy) technology, no calibration gases. No drift due to automatic zero reference

PLUG & PLAY SETUP
Camera-supported auto-alignment for instant deployment and complex measurement geometries.

RUGGED & FLEXIBLE
Weatherproof housing, optional tripod

APPLICATIONS

AIR QUALITY MONITORING

TRAFFIC EMISSIONS

INDUSTRIAL PROCESS CONTROL & FENCE LINE MONITORING

TRACE GAS & AEROSOL SPATIAL DISTRIBUTION ANALYSIS

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DIFFERENT THINKING.
BETTER MEASURING.

OPC-VIS-LED-300 TECHNICAL DETAILS

Data Quality									
Open Path detectable Gases	NO_2, Glyoxal								
Limit of Detection @ 500 m light path dependent on light path & visibility	NO_2: 2 ppbv Glyoxal: 2 ppbv								
MAX-DOAS detectable Gases	NO_2	SO_2	HCHO	BrO	H_2O	O_4	HONO	IO	Glyoxal
LOD slant column / molec. cm^{-2} *1 in units of $molec^2\ cm^{-5}$	4e14	4e15	3e15	1e13	5e21	1e41*1	2e14	5e12	2e14
LOD surface conc. / pptv *2 in units of %	16	160	120	0.4	0.02*2	-	8	0.2	8
Time Resolution	up to 5 seconds								

Optics	
Light Source	High Power LED, peak at 450 nm
Telescope	UV Lens Telescope, Focal Length 300 mm
Spectrometer	Spectral Range 300 – 550 nm, Resolution <0.5 nm (FWHM) Temperature stabilised
Distance to reflector	50 – 1000 m

Instrument features	
Weather-proof	IP64, Dew Point Monitoring, Window Wiper Suitable for Outdoor Installation
Motorisation	Azimuthal (0° to 360°) and Elevation (-40° to 75°)
Temperature Control	Two-Staged stabilised Spectrometer and Housing
Smart Setup	Integrated Camera and Searchlight for Identification of Light Path
Additional Sensors	Ambient Temperature & Pressure, internal Dew Point

Control & Connection	
Control Unit	Embedded PC; Windows 11 IoT
Data Interfaces	Internal Data Storage, LAN, WiFi, UIDEP Protocol support
Power Supply & Consumption	12 V, 50 W max.

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Product page

Contact us