brainco www.brainco.com.ar

UV Sentry

Open Path Multi-gas UVDOAS Analyzer

Cost Effective Perimeter & LDAR Monitoring

- Ammonia
- Benzene
- Carbon Disulfide
- Chlorine
- Formaldehyde
- Naphthalene
- Nitrogen Dioxide
- Nitrogen Monoxide
- Sulfur Dioxide
- Toluene
- Xylenes

The UV Sentry offers perimeter monitoring with among the lowest cost per meter monitored of any modern gas analysis system. A single analyzer is capable of monitoring more than one kilometer of fenceline. Gapless perimeter monitoring not possible with point sensor technology is the norm, and long life low maintenance design ensures continued value for monitoring investments.

MODBUS TCP Integration

VNC Remote Control

Part per Trillion Sensitivity

Automated Reporting

Automated Alarms

Simple .csv or .txt Data Logging

Easily configured for your application

Tripod mount or fixed installation

Optional Hazardous Location Hardware

Direct SAFER Systems Integration

UV Sentry Corrosive Atmosphere Option, Purged and Vortex Cooled

CONTACT:

Cerex Monitoring Solutions, LLC.
1816 Briarwood Industrial Ct. Ste D
Atlanta, GA. 30329
678-570-6662
www.cerexms.com

...Precise, Species Specific Fugitive Emissions Quantification

CEREX MONITORING SOLUTIONS
www.cerexms.com

www.brainco.com.ar

Cost Effective Perimeter and LDAR Monitoring

Multi-Compound Detection Capabilities

Offering real time quantification of multiple compounds, the Cerex UV Sentry provides dramatic cost savings in perimeter monitoring applications. One analyzer is capable of monitoring linear path lengths in excess of 1000 meters, while reliably delivering accurate measurement data without reporting inflated concentrations due to interferent background gases. The UV Sentry is offered fully configured to meet the requirements of your air quality monitoring application. Changing target gases incurs no additional costs and is simple as copying and pasting.

Low Maintenance Costs, Increased Uptime

The UV Sentry is designed for fully autonomous continuous operation. Inherent calibration eliminates the need for time consuming and expensive routine calibration. Quality assurance audits require only small quantities of primary standard gas. Synthetic background implementation zeros the analyzer without concern for background gas concentrations. The UV source and air filters are the only consumables. The source carries a 2000 hour manufacturer half-life warranty. Optical surfaces are sealed and may be cleaned with household cleaner.

Left: Standard UV Sentry

Below: C1 Div 2 A-D HAZLOC Option

CEREX MONITORING SOLUTIONS
www.cerexms.com

Cerex Monitoring Solutions, LLC.
1816 Briarwood Industrial Court, Suite D
Atlanta, GA. 30329
678-570-6662

Low Cost Installation and Integration

For many installations complete perimeter monitoring may be achieved with only two power and communication installation locations. MODBUS TCP and VNC via Ethernet are standard communication and remote control protocols.

Enhanced Early Detection Performance

Part per trillion to low part per billion detection limits and wide dynamic ranges enhance early leak detection and release characterization. Concentrations of gases below the detection thresholds of traditional sensor arrays are readily detectable with the UV Sentry and without interference from water vapor. Early detection translates into quicker response times, reduced environmental impact, decreased plant downtime and reduced exposure. The analyzer cannot be poisoned, and even after exposure to high concentrations of gas, clear down is immediate.

Direct Integration with SAFER Systems Modeling

The UV Sentry seamlessly integrates with SAFER Systems' emergency response software. SAFER's patented software is used in conjunction with Cerex hardware in several different ways; pre-emergency for preparation and training, during an emergency for emergency response, and post-emergency for future event mitigation, regulatory reporting, and litigation response. The complete solution utilizes live streaming data from on-site weather stations and Cerex gas detection sensors to generate a visualized model of the chemical plumes or soot clouds released during an emergency. The models automatically update as weather/sensor data changes so that emergency response teams know who or what will be impacted by the emergency (whether on-site or off-site), who needs to be evacuated or shelter in place, and how long the event will last. In the case of highly flammable chemicals, the models show where the combustion particulates will be deposited as well as the chemical composition of the soot clouds. All of the models and data are archived so they can be used for post-emergency analysis of the event, in response to odor complaints and litigation, and for reporting to regulatory agencies when needed. Not only can response teams use pre-defined scenarios prior to an emergency, but they can also use the archived data and models to base their emergency drills and training on actual events that may have occurred.

Core Data Acquisition and Integrated Meteorological Monitoring

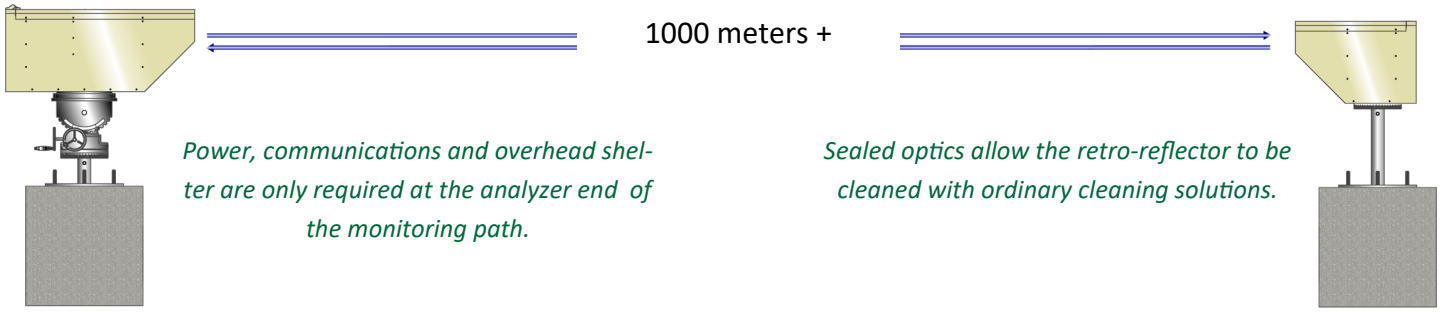
With optional inputs the UV Sentry may be configured to acquire and integrate data from ancillary analyzers and meteorological monitoring hardware to offer definitive records of site conditions.

Open Path UVDOAS Principle of Operation

The Cerex UV Sentry operates by sending a beam of UV light through the open air. The UV beam is reflected back to the analyzer by a retro-reflector array (mono-static), where the absorption due to target gases is measured and recorded. The analyzer uses a classical least squares regression analysis to compare the measured absorption spectrum to calibrated reference absorption spectra files. Beer's Law is used to report accurate gas concentrations.

Mono-static Design and Installation

The UV Sentry mounts to a precision pan and tilt head which may be used with a tripod for rapid deployment, or with a fixed mount for permanent installations. The retro-reflector array is housed in a protective enclosure and may be tripod or fixed mounted to a mast, pole or superstructure. Power and overhead shelter are typically required only at the analyzer end of the monitoring path. Maximum path length depends upon the UV source chosen for the analyzer and the target gases. For the deuterium source maximum path length is approximately 225 meters, for a Xenon source path lengths in excess of 1 Km are possible.



Power, communications and overhead shelter are only required at the analyzer end of the monitoring path.

Sealed optics allow the retro-reflector to be cleaned with ordinary cleaning solutions.

Features

Software and hardware features are specifically designed to simplify integration , automate operation and reduce maintenance. Tedious calibrations are unnecessary and the use of synthetic background functionality allows continuous and accurate quantification of gases that are always present without the need for complex background acquisition procedures.

UV Sentry Features

- Simultaneous multi-gas detection capabilities
- Part per trillion minimum detection limits (gas specific)
- Inherent calibration: No need for ongoing calibrations
- Automated background acquisition
- Automated synthetic background implementation
- Integrated touchscreen computer with Windows®
- User configurable alarms and data acquisition rate
- Integrated WiFi , LAN, WAN, USB
- MOBUS TCP and Ethernet VNC Networking
- Integrated instrument air conditioning

CEREX MONITORING SOLUTIONS
www.cerexms.com

Cerex Monitoring Solutions, LLC.
1816 Briarwood Industrial Court, Suite D
Atlanta, GA. 30329
678-570-6662

Detection Performance

Real time spectral subtraction and synthetic background implementation allow the UV Sentry to report accurate concentrations of target gases without concern for interferent gas species.

Single Gas Minimum Detection Limits for Deuterium and Xenon Sources

	Path Integrated MDL (PPM-m)	
Compound	**Xenon Source**	**Deuterium Source**
Acrolein (C_3H_4O)	8	8
Ammonia (NH_3)	0.6*	0.20
Acetaldehyde (C_2H_4O)	3.20	3.00
1,3 Butadiene (C_4H_6)	*Non-detect*	0.20
Benzene (C_6H_6)	0.27	0.27
Carbon Disulfide (CS_2)	13.31	0.20
Chlorine (Cl_2)	5.00	5.00
Ethylbenzene ($C_6H_5CH_2CH_3$)	0.30	0.30
Formaldehyde (CH_2O)	3.20	3.20
Mercury (Hg)	0.00002	0.00002
Naphthalene ($C_{10}H_8$)	0.20	0.20
Nitrogen Oxide (NO)	0.29*	0.29
Nitrogen Dioxide (NO_2)	3.04*	3.04
Ozone (O_3)	2.00	2.00
Phenol (C_6H_5OH)	0.30	0.30
Styrene (C_8H_8)	0.60	0.60
Sulfur Dioxide (SO_2)	0.68	0.32
Toluene (C_7H_8)	0.84	0.84
m-Xylene (C_8H_{10})	0.35	0.35
o-Xylene (C_8H_{10})	3.77	3.77
p-Xylene (C_8H_{10})	0.24	0.24

Common Options

Options

- Integrated Meteorological Monitoring
- Analog inputs, integrated data logging
- Collocated Particulate Monitoring
- Modbus RTU, 4-20mA, 0-5VDC
- RS-232, 422, 485 output
- USB Cellular Modem or RF Modem
- Internal Flow Through QA Cell
- External QA Cell
- Extended Temperature Range
- Alarm driven control outputs
- HAZLOC Z-Purge, Air Conditioning
- Intermediate Mirrors

Cellular Modem provides remote access to user interface, data and alarms

Consumables

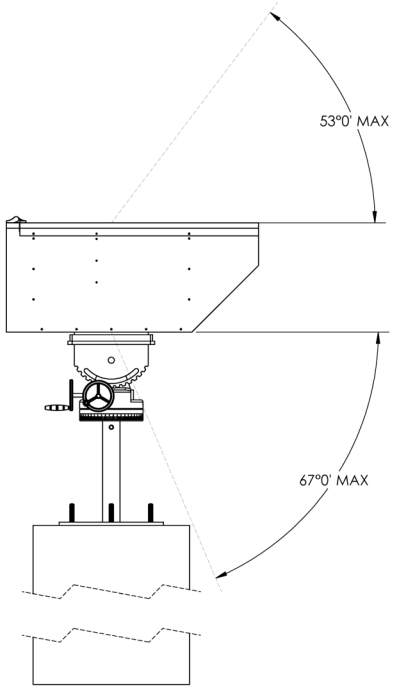
Only two consumables: The UV source and filters.

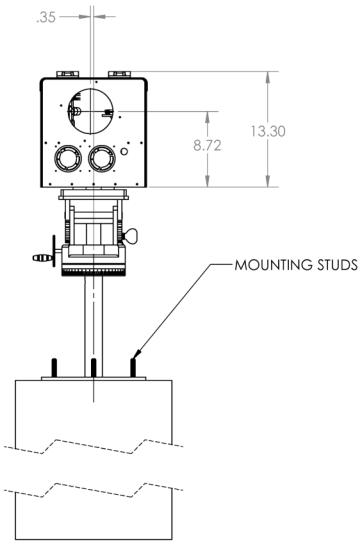
UV sources are warranted for a 2000 hour half life. Typical operation exceeds 3000 hours and the UV source is field replaceable.

CEREX MONITORING SOLUTIONS, LLC.

UV Sentry Multi-Gas Analyzer Specifications

Analyzer	UV Sentry
Application	Open Path Mono-static Multi-Gas Analyzer
Bulb Life	2000 Hour Half-Life Warranty (Xenon and Deuterium)
Operating Temperature	0 to +40°C (extended ranges optional)
Power	120 or 220 VAC,6 A
Operating Humidity	0-100%
Power	120 or 240VAC, 100W (DC Optional)
Enclosure	Steel, Aluminum
Weight	53 Lbs.
Dimensions	29 x 13.3 x 12.3 (in)
Mounting	Pan and Tilt Head via Dovetail
Dynamic Range	Application Specific
Background Drift (TYP)	Not Applicable
Linearity Drift (TYP)	< 2%, Self-Compensating
Accuracy / Precision	> 5% Reading / 5% Reading TYP
Technology	UVDOAS
UV Source	Application Specific: Deuterium or Xenon
Data Output	.CSV via Ethernet and WiFi, ASCII via MODBUS TCP/IP
Data Output Options	RS-232, 422, 485, RF Stream, MODBUS RTU, MODBUS TCP/IP, Email, 4-20mA, 0-5VDC
Networking	LAN, optional cellular modem, optional radio modem





Individual gas species detection

Data and alarms can automatically be sent to email addresses, website or control room.

Analog outputs available (4-20ma, VDC)

Inherent calibration

No ongoing calibration required.

Synthetic Background

Eliminates need for clean air background acquisition.

User-configurable alarms

Fail to safe operation

Call for a technology demonstration +1 678-570-6662

CEREX MONITORING SOLUTIONS
www.cerexms.com

CONTACT:

Cerex Monitoring Solutions
1816 Briarwood Industrial Court, Suite D
Atlanta, GA. 30329
678-570-6662
www.cerexms.com