

DetectUV-DOAS™-OP

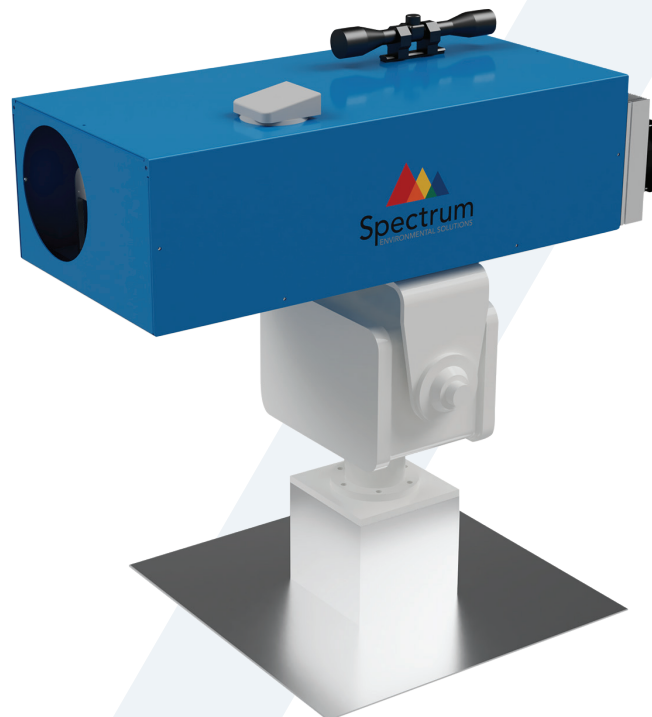
The Future of High-Performance Fenceline Air Monitoring Instruments

Spectrum Environmental Solutions' DetectUV-DOAS™-OP is the next generation of Open Path (OP) environmental monitoring instruments using Differential Optical Absorption Spectroscopy (DOAS). Compact and rugged, this device is compliant with USEPA TO16r and ASTM 1982 design guidelines. Easy alignment and high signal throughput allows for single-digit part per billion detection limits to be realized for many of the 500+ compounds in Spectrum's library. Each DetectUV-DOAS-OP instrument is capable of monitoring path lengths up to 1,500 meters (round trip) and when equipped with a pan/tilt positioner, can scan multiple paths.

Built-in reference cells enable periodic reference gas comparison for quality assurance. With meteorological data, DetectUV-DOAS-OP is integrated into a fenceline monitoring solution providing near real-time leak and release emissions detection from the facility. Coupled with Spectrum's Tsunami™ data management system and SmartPath, the DetectUV-DOAS-OP is the backbone of the most advanced, secure, integrated, LAN or cloud-based fenceline monitoring solution in the industry.

How It Works

Spectrum's DetectUV-DOAS-OP transmits a safe ultraviolet beam through the air along a clear path. Differential optical absorption spectroscopy (DOAS) uses the unique absorption of specific electromagnetic energy wave length by chemicals in the ultraviolet (UV), visible (V), and near infrared (NIR) spectrum to identify and quantify individual compounds. Gas-phase compounds are detected as they drift across the path. Systematic data validation, periodic on-site instrument challenges, and quality assurance audits ensure optimum performance and data quality. DetectUV-DOAS-OP is a versatile and highly efficient means of air monitoring.



Regulatory Uses

- SCAQMD Rule 1180
- BAAQMD Rule 12-15
- US EPA Hazardous Organic NESHAP (HON)

Applications

- Fenceline Ambient Air Monitoring
- Industrial Worker Exposure Monitoring
- Community Monitoring
- Multi-Source Monitoring

Key Features

Tsunami™ Software

Tsunami is the Spectrum developed, state-of-the-art, data visualization and presentation package. This software is cloud based and is highly configurable to the client's requirements. The software was developed, in part, to conform to the SCAQMD Rule 1180 requiring public access capability to data generated by industrial fenceline monitoring systems. However, the client may choose to use the system solely for internal, proprietary purposes. Notification and alarm functions can be configured for real-time text, email, or voice messaging. Finally, the system can deliver real-time data that organizes and disseminates information resulting from complicated algorithm beyond the concentrations from the UV-DOAS by combining concentrations with meteorological data to accomplish evaluations such as radial plume mapping.

NuWAVE™ Software

NuWave™ is the Spectrum-developed state-of-the-art software package that powers DetectUV-DOAS-OP. NuWave is designed for ease of use for the novice UVDOAS operator, while including options for the skilled spectroscopist.

NuWave's powerful, real-time, dynamic features include:

- Background generation algorithms
- Spectral shifting
- Convolution optimization
- Meteorological integration
- Simultaneous Multi-Temporal Spectral averaging
- SmartPath™ Machine Learning

Additionally, post-collection spectral utilities include:

- Straight-forward visual data validation
- Visual method optimization and data reprocessing

Specifications

- UV-DOAS Specifications:
 - Data Frequency: 2 seconds or greater
 - Output: 4-20 mA, RS-232, RS485, or cellular LAN link
 - Operating Temperature: 32° to 100°F
- Physical Specifications
 - Base unit: 38.5" L x 19" W x 12" H | Weight: 70lbs
 - Power: 4A (120 VAC)

Ongoing Operation and Maintenance

As a company who not only builds analytical monitors but also uses them for short and longer-term projects, we can provide exceptional operation and routine maintenance for your systems. Whether it be custom software applications, performing specialty projects, or the general upkeep of the equipment, the team at Spectrum Environmental Solutions will provide a full-service product. Additionally, we carry an extensive inventory of spare parts should there be instrument issues and can return the instruments to service with very little down time.



DetectUV-DOAS™-OP

How Can We Help You?

From FTIR, RAMAN, UV-DOAS, and optical remote sensing instrumentation, to real-time measurements, software integration and complete environmental consulting, Spectrum Environmental Solutions can help you with your full emissions program.