PICARRO

US EPA NESHAP and NSPS Ready ☑

Continuous Emissions Monitoring System (CEMS)

for Ethylene Oxide (EO)

Picarro's CEMS leverages 25 years of experience in continuous monitoring and emissions quantification. The system provides accurate, reliable and continuous monitoring, helping you meet all compliance requirements.

The Picarro CEMS solution is designed to provide:

- Accurate and reliable quantification of emissions
- Real-time determination of reduction efficiency
- Time-sharing of up to three emission sources
- Compliant DAS for automated reporting, turn-key operation and calibration
- Seamless integration with existing emissions and facility control systems
- Ongoing support, maintenance, and system updates to maximize system longevity and performance

COMPREHENSIVE SOLUTION

Picarro's advanced, real-time monitoring solutions establish a new standard in delivering reliable and defensible data. Our commitment to your success goes beyond the sale of a system. We provide ongoing technical support and guidance through an evolving regulatory landscape. With access to the latest monitoring platforms and a complete service offering, you can have confidence in meeting regulatory compliance and a clear path to operational success. With a comprehensive approach, we redefine what CEMS stands for in the market—presenting it not just as a Continuous Emissions Monitoring System, but as a Comprehensive Emissions Management Solution.

KEY FEATURES

Sample Probe

Continuous extractive analysis of process gases. Intelligent design for precision gas guidance, filtration, and trouble-free upkeep.

Data Acquisition System (DAS)

Robust software platform used to monitor, analyze and report emissions and removal efficiency data. MCERTS certified for regulatory conformity and highest levels of quality control.

Heated Sample Line

A robust design featuring an inner sample line, a calibration line, and a thermally conducting and supporting body made of a protective braiding and/or corrugated umbilical.

Calibration

Scheduling and automation of a high-precision calibration system to comply with the requirements found in PS-19. Cylinder fill tracking and automatic user notification.

Flow Monitoring

Integrated, continuous in-situ measurement of velocity, temperature, and absolute pressure of gas flows in abatement systems stacks.

Data Quality

Proven technology platform, immune to negative and false positive readings. An EO limit of detection (LOD: <0.2 ppb) compliant with current (PS-19) and future performance requirements.

Explore Picarro's emissions monitoring solutions for confident compliance and operational success in an evolving regulatory landscape.

TECHNICAL DATA

Measurement (Ethylene Oxide)	
Measurement Technique	Cavity Ring-Down Spectroscopy (CRDS)
Compliance	EPA Performance Specification 19 (PS-19)
Limit of Detection (LOD)*	≤ 0.2 ppb
Span	0.2 ppb – 100 ppm
Response Time (RT)*	≤ 10 seconds
7-Day Calibration Drift*	≤ 0.16%
Measurement Error (ME)*	≤ 0.15%
Other compounds reported	CO_2, CH_4 and H_2O (O_2 Option)
Sample Temperature and RH	< 99% R.H non-condensing at 80°C, no drying required
Purge Gas	UHP Nitrogen or Zero-Air, 40 psi
Reference Gas	5 to 1000 ppm (± 2-5%) Ethylene Oxide in a Nitrogen balance, 40 psi
Calibration (Daily) (PS-19, Procedure 7)	Automated MFC based dilution to < 10 ppb Automated above span

* Picarro CEMS performance as defined by PS-19 testing result. Available upon request.

Data Acquisition System (DAS)	
Features	Touchscreen Display, Custom Dashboards, Multiple User Access, Control Programming and Scripting, Data Storage and Redundancy, Report Generation, Multi-Source Monitoring
Compliance Reporting	US EPA, MCERTS

Inputs and Outputs	
Protocol Support	Modbus TCP/IP Serial 4-20mA Digital I/O (Modbus and OPC)

Gas and Sample Supply	
Sampling points	1-4
Heated Sampling Line (HSL)	Protective Braiding and/or Corrugated Umbilical, Integrated Calibration Line, Frost Protection, Sample Dewpoint Control
Sampling Probe	Continuous gas sampling of high temperature and high humidity processes. Quick filter changeouts, low dead volume, overboard calibration ready. Dilution and blowback options available.
Flow Monitoring	Stainless Steel, Dynamic Pressure Probe, Integrated Control Unit, Analog Outputs, Zero and Span Point Checks, Protective Casing - IP55 Flange DN 80 PN 6 mount

Installation	
Main Power Supply	208V 3 phase 50 A
Power Draw	*Exact power draw based on site-specifics(e.g., line-lengths)*
Certification	CE and CSA (UL on request)
Material	Chemical and abrasion resistant steel
Dimensions	600 x 800 x 1800 mm (23.6 x 31.5 x 70.9 in)
Weight	< 225 kg (500 lbs)
Protection	IP 55 NEMA (12, 4, 4x available)
Operating Temperature	10 to 35°C (50 to 95 F)
Storage Temperature	-10 to 50°C (14 to 122 F)

PICARRO

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