



Tiger-i CEM

CEM Analyzer

GASES & CHEMICALS

CEMS

ENERGY

ATMOSPHERIC

SEMI & HB LED

SYNGAS

LABORATORY

Designed for Continuous Emissions Monitoring (CEM), the robust and compact Tiger-i CEM offers:

- Accuracy traceable to the world's major national reference labs
- Specificity – no interference
- Sub-ppb detection capability
- No periodic sensor replacement/maintenance
- Great sensitivity
- Wide dynamic range

Delivering your best measurements, the extremely versatile Tiger-i CEM is used for monitoring gas concentrations of target compounds, both for compliance and process control. The Tiger-i CEM analyzer represents the latest advancement in Continuous-Wave Cavity Ring-Down Spectroscopy designed for superior performance. It is an ideal, proven solution for MATS HCl compliance needs. As such, Tiger-i applications include continuous emissions monitoring of sources, such as cement kilns, power plants, paper mills, and refineries. Using Tiger Optics' Tiger-i CEM analyzer, you can verify concentrations of target compounds with parts-per billion accuracy, drift-

free stability, and virtually immediate response. The Tiger-i CEM detects HCl, NH₃, HF, H₂S, HCN, CO and CH₄, among other species. You will find our analyzer is easy to install, exceptionally intuitive to use, and effortless to maintain. The modern software enables you to easily configure the analyzer via its touchscreen display and to communicate with virtually any manufacturer's DAHS. Two units fits into one 19" rack mount. The robust design – free of moving parts – results in an analyzer that has a high mean time between failures (MTBF) and a very low cost of ownership (COO).

Tigeroptics

21ST CENTURY SPECTROSCOPY

Tiger-i CEM CEM Analyzer



Performance	
Operating range	See table below
Detection limit (LDL, 24 h peak-to-peak variation)	See table below
Sensitivity (3 σ)	See table below
Precision (1 σ , greater of)	\pm 0.75% or 1/3 of Sensitivity
Accuracy (greater of)	\pm 4% or LDL
Speed of response	See table below
Environmental conditions	10°C – 40°C 30% – 80% RH (non-condensing)
Storage temperature	-10°C – 50°C

Gas Handling System and Conditions*	
Wetted materials	316L stainless steel 10 Ra surface finish
Gas connections	1/4" male VCR inlet and outlet (1/4" Swagelok adapters included)
Leak tested to	1 x 10 ⁻⁹ mbar l / sec
Inlet pressure	0 – 10 psig (HCl and HF) 0 – 15 psig (all others)
Outlet pressure	Vacuum (<10 Torr)
Flow rate	~1 slpm
Sample gases	Air, diluted stack gas
Gas temperature	Up to 60°C

Performance:	Range [†]	LDL	Sensitivity	Speed of Response
Tiger-i CEM NH ₃	0 – 40 ppm	3.5 ppb	2.5 ppb	3 min to 95%
Tiger-i CEM HCl	0 – 4 ppm	1.0 ppb	0.75 ppb	2 min to 80%
Tiger-i CEM HF	0 – 1 ppm	0.2 ppb	0.15 ppb	2 min to 80%
Tiger-i CEM H ₂ S	0 – 500 ppm	50 ppb	38 ppb	3 min to 95%
Tiger-i CEM CO	0 – 2000 ppm	100 ppb	75 ppb	3 min to 95%
Tiger-i CEM HCN	0 – 15 ppm	1.5 ppb	1.1 ppb	3 min to 95%

*Vacuum source with >2 slpm @ 10 Torr required

[†]Higher ranges are available, please contact us.

U.S. Patent # 7,277,177

Tiger Optics, LLC

250 Titus Avenue, Warrington, PA 18976
Phone: +1 (215) 343 6600 • Fax: +1 (215) 343 4194
sales@tigeroptics.com • www.tigeroptics.com

Dimensions	H x W x D [in (mm)]
Standard sensor	8.75 x 8.5 x 23.6 (222 x 216 x 599)
Sensor rack (fits up to two sensors)	8.75 x 19 x 23.6 (222 x 483 x 599)

Weight

Standard sensor	33 lbs (15 kg)
-----------------	----------------

Electrical

Alarm indicators	2 user programmable 1 system fault Form C relays
Power requirements	90 – 240 VAC, 50/60 Hz
Power consumption	40 Watts max.
Signal output	Isolated 4–20 mA per sensor
User interfaces	5.7" LCD touchscreen 10/100 Base-T Ethernet 802.11g Wireless (optional) RS-232

Tigeroptics

21ST CENTURY SPECTROSCOPY