



LAS 5000 XD

In Situ-Cross Duct Laser TDLS Gas Analyser



The In-Situ TDLS gas analyser has been designed for meeting the requirements of a large range of CEMS and Process applications.

LAS 5000XD uses Tunable Diode Laser Spectroscopy (TDLS) and comes in various models for measuring parameters such as $\text{NH}_3 + \text{H}_2\text{O}$, HF, CO + CO_2 , O_2 , HCl + H_2O , etc.

It combines robustness, fast response time (1s) and high accuracy measurement in harsh environments (ready for Ex Zone II).

KEY BENEFITS

- No sampling system needed
- No gas temperature influence
- Gas matrix interference free
- Calibration free measurement

KEY FEATURES

- New Embedded ClearPath functionality
- Highly sensitive and selective measurement
- High signal-to-noise ratio
- No measurement drift
- Response time 1 s
- Large dynamic range from ppm to %
- Real-time communication between Transmitter (Tx) and Receiver (Rx)
- Robust, ready for Ex Zone II (certification to come)

Thanks to ClearPath, interference of relative humidity, O_2 or CO_2 is removed in purging areas.

KEY BENEFITS

- Low maintenance and cost of ownership
- No need for N_2 or dry air purge: Oil & dust free air instrument is enough
- Process optimisation leading to reduction of operating costs

CLEARPATH

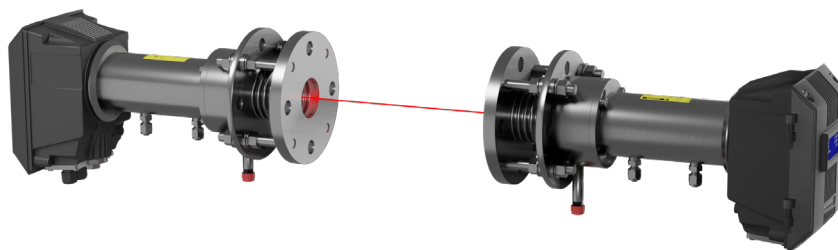
Interference of relative humidity, O₂ or CO₂ is removed in purging areas.

Operator's benefits:

- No need for N₂ or dry air purge
- High accuracy of O₂ measurement
- High accuracy of H₂O measurement
- High accuracy of CO₂ measurement

It uses a solid-state laser source with a wavelength that can be adjusted to the gas component unique spectrum, also called gas component "fingerprint".

TDLS method is a non-contact optical technology and therefore the emitter (laser source) as the sensor stays protected from any contamination or corrosion and so the maintenance operation and the cost of operation are very low compared to other technologies.

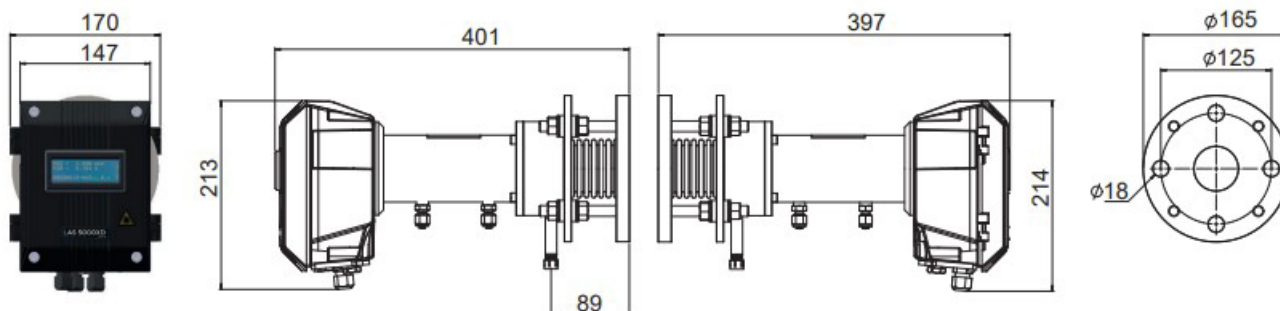


MEASURABLE PARAMETERS

Pollutant	Range
NH ₃ + H ₂ O	0–10 ppm / 0–5000 ppm + 0–5% / 0–40%
HF	0–3 ppm / 0–500 ppm
CO + H ₂ O	0–50 ppm / 0–1% + 0–5% / 0–40%
CO + CO ₂	0–1% / 0–100% + 0–1% / 0–100%

A WIDE RANGE OF APPLICATIONS FOR CEMS AND PROCESS

- Ammonia slip control (DeNox)
- Process and combustion control
- HF emission control in aluminum plant
- HCl/SO₂ abatement control
- Ethylene cracking furnace control
- HCl level in semiconductor production
- Ammonia concentration control in pet food, fertiliser plants, etc.



TECHNICAL SPECIFICATIONS	
Technology	ADLAS (Advanced Detection Laser Absorption Spectroscopy) <ul style="list-style-type: none"> • Optimised Opto-Mechanical Design • High Speed Low-Drift Electronics • Powerful Signal Processing and Algorithm • Independent Spectroscopy Technique
Lower Detection Limit	< 1% of FS
Response Time (0–90%) – Short	1 s
Lack of fit/Linearity	≤ ±1%
Flue Gas Temperature (°C max) NH ₃ + H ₂ O / HCl + H ₂ O / HF CO + H ₂ O / O ₂ / CO + CO ₂	+400°C (Depends on the concentration range) +1200°C (Depends on the concentration range)
Flue Gas Pressure	2 bars max (absolute)
Display on Tx	4 x 20 LCD
Communication	Modbus RTU (RS485) / Ethernet (RJ45) – Web server
Power supply type	+ 24 V DC, ripple and noise 50 mV
Power consumption	15 W (warm-up) < 15 W in standard use
Recommended T° (ambient)	-20°C to +55°C
IP index Tx & Rx enclosures	IP65
Flange specification requirement on stack	DN50 PN16, 2" – 150 lbs, Class 150
Flange material	S 316 L
Air consumption (main purge – necessary)	5-50 L/min (to adjust according to site conditions) (dry and oil free, ISO 8573.1 Class 2-3)
Air consumption (secondary purge – recommended)	2-3 L/min (dry and oil free, ISO 8573.1 Class 2-3)
Stack diameter compatibility	From 0.5 to 20 m