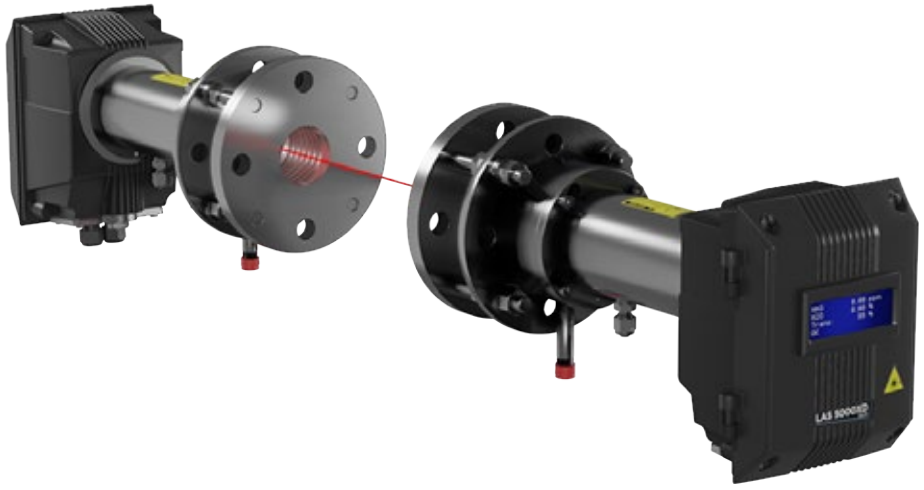
LAS 5000XD

In-Situ laser (TDLS) gas analyzer

PROCESS & EMISSIONS MONITORING SYSTEMS



WHY CHOOSE LAS 5000XD?

- ✓ No sampling system needed
- ✓ No gas temperature influence
- ✓ Gas matrix interference free
- ✓ Calibration free measurement
- ✓ High precision gas concentration measurement and fast response time
- ✓ **New** Embedded ClearPath functionality

KEY FEATURES

- 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)

CLEARPATH

Interference of relative humidity, O_2 or CO_2 is removed in purging areas.

Operator's benefits:

- No need for N_2 or dry air purge
- High accuracy of O_2 measurement
- High accuracy of H_2O measurement
- High accuracy of CO_2 measurement

Embedded web server

A WIDE RANGE OF APPLICATIONS FOR CEMS AND PROCESS

- Ammonia slip control (DeNox)
- Process and combustion control
- HF emission control in aluminum plant
- HCl/SO_2 abatement control
- Ethylene cracking furnace control
- HCl level in semiconductor production
- Ammonia concentration control in pet food, fertilizer plants, etc.

CUSTOMER BENEFITS

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

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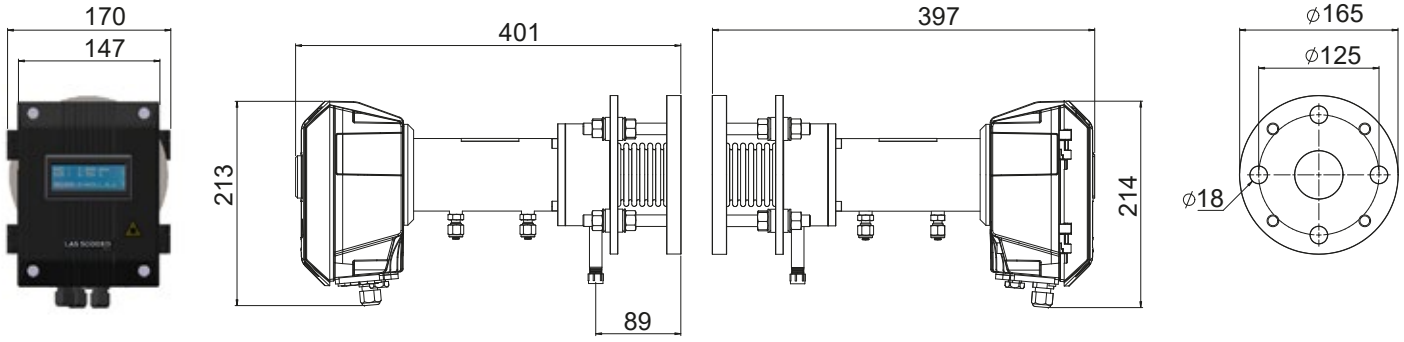

TECHNICAL SPECIFICATIONS

Concentration ranges:	
$NH_3 + H_2O$	0–10 ppm / 0–5000 ppm + 0–5% / 0–50%
HF	0–3 ppm / 0–500 ppm
CO ppm + H_2O	0-50 ppm / 0-1% + 0-10% / 0-50%
CO% + H_2O	0-1% / 0-100% + 0-10% / 0-50%
CO% + CO_2	0-1% / 0-100% + 0-1% / 0-100%
$CO_2 + H_2O$	0-1% / 0-100% + 0-10% / 0-50%
O_2	0-1%/ 0-100%
$HCl + H_2O$*	0-10 ppm / 0-5000 ppm + 0-10% / 0-50% (*gas temperature must be above 150°C).
Other gases	Available upon request: CH_4, H_2S, H_2, NO...
Technology	ADLAS (Advanced Detection Laser Absorption Spectroscopy) • Optimized Opto-Mechanical Design • Powerful Signal Processing and Algorithm • High Speed Low-Drift Electronics • 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) $NH_3 + H_2O$ / $HCl + H_2O$ / HF $CO + H_2O$ / 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	SS 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

Note - The technical specifications are defined in the following conditions: Gas temperature = 25 °C / gas pressure = 1013 mbar / pathlength = 100 cm / ambient temperature = 25 °C

OPTIONS

Junction Box :	Analog I/O (2 x 4-20 mA/2 x 4-20 mA) - Digital Output (2 relays)
Thermal Shield	Thickness: 20 mm (100°C<Tp<300°C) ; 40 mm (300°C<Tp<600°C) ; 60 mm (Tp above 600°C).
Audit Cell	
Inline Cell	
Alignment Tool	
Weather protection covers	

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