



DURAG GROUP

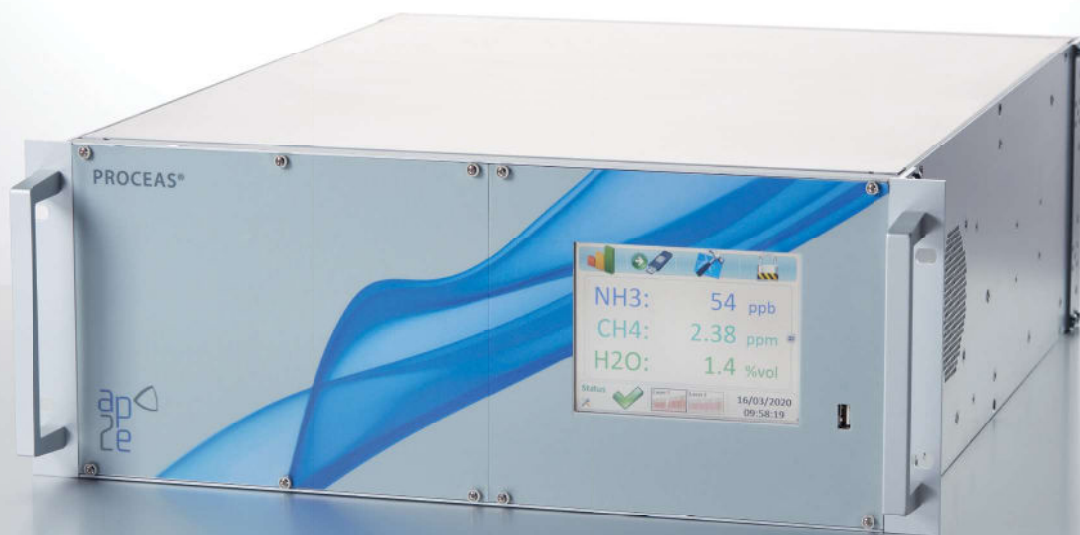
Ambient Air Monitoring: Emissions at a glance –
because counting counts more



ACHEMA
PULSE

ProCeaS[®] Air

N₂O, CH₄, CO₂, NH₃ and H₂O, OFCEAS Laser Analyzer



Features

- Continuous measurement
- Multi components
- High resolution laser technology
- Patented OFCEAS IR laser technology
- No optical moving parts
- Patented Low Pressure Sampling System
- No instrument air consumption
- Maintenance: yearly

Benefits

- Measurement without interferences regardless of the matrix
- High sensitivity
- Self-calibrating system (no span gases required)
- Very fast response time
- Ultra-precise measurement
- Negligible drift
- High availability of the system
- No water condensation from sampling point to analyzer due to Low Pressure Sampling

Technical data

Analyzer (1/2)	
Technique	OFCEAS
Power supply	110 ... 230 VAC, 50 ... 60 Hz
Power consumption	150 W (max), 80 W (average)
Dimensions	Rack 19", 4U
Weight	20 kg
Data outputs	Ethernet, ModBus (TCP/IP, RS), analog, USB

Analyzer (2/2)	
Fittings	1/4" or OD6
Pumping system	External Closed loop (optional)
Sample conditions	-40 ... 50 °C (temperature) <99% RH non condensing Atm +/- 100 mbar (pressure) 0.2 slm, 0.33 slm (for NH ₃)
Ambient conditions	10 ... 40 °C (temperature) <99% RH non condensing

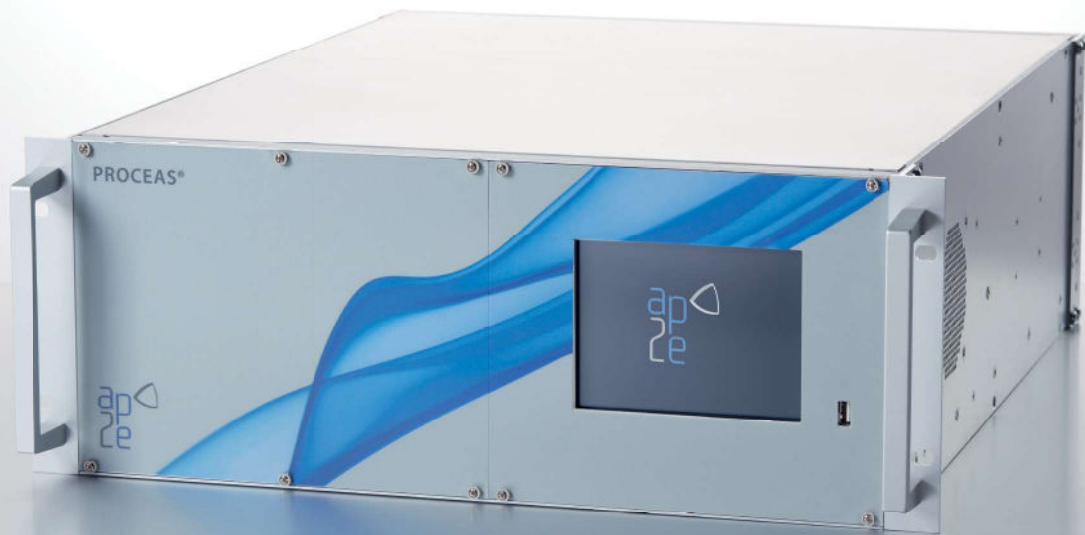
Performances specifications (N ₂ O, CH ₄ , CO ₂ , NH ₃ and H ₂ O, in Ambient Air)						
Gas		N ₂ O	CH ₄	CO ₂	NH ₃	H ₂ O
Lower detection limit (3σ, 300 sec)		<6 ppb	<6 ppb	<500 ppb	<6 ppb	<360 ppm
Precision (1σ)	1 sec	5 ppb + 0.1% of reading	5 ppb + 0.1% of reading	300 ppb + 0.1% of reading	<5 ppb	<300 ppm
	10 sec	4 ppb + 0.1% of reading	4 ppb + 0.1% of reading	1 ppb + 0.1% of reading	<4 ppb	<200 ppm
	300 sec	2 ppb + 0.1% of reading	2 ppb + 0.1% of reading	180 ppb + 0.1% of reading	<2 ppb	<120 ppm
Measurement interval		1 sec	1 sec	1 sec	1 sec	1 sec
Response time/fall time (10 ... 90%)		<2 sec	<2 sec	<2 sec	<30 sec	<30 sec
Measurement range	Guaranteed Operational	0.1 ... 200 ppm 0 ... 400 ppm	1 ... 15 ppm 0 ... 20 ppm	300 ... 5 000 ppm 0 ... 2% vol	0 ... 1 000 ppb 0 ... 10 ppm	0 ... 3% vol 0 ... 5% vol
Cross-sensitivity on N ₂ O	No cross-sensitivity with CO ₂ (up to 5% vol), CH ₄ (up to 500 ppm), NH ₃ (up to 10 ppm), C ₂ H ₆ (up to 200 ppm), C ₂ H ₄ (up to 50 ppm) and C ₂ H ₂ (up to 20 ppm)					

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Performances in Air			
Gas	Standard ranges	LoD*	Response time*
CO	0 ... 50 ppb; 0 ... 30 ppm	1 ppb	<2 sec
CO ₂	0 ... 300 ppm; 0 ... 2% vol	<0.5 ppm	<2 sec
COS	0 ... 50 ppb; 0 ... 10 ppm	1 ppb	<2 sec
CH ₄	0 ... 1 ppm; 0 ... 50 ppm	1 ppb	<2 sec
CHOH	0 ... 1 ppm; 0 ... 100 ppm	1 ppb	<10 sec
HF	0 ... 100 ppb; 0 ... 1 ppm	0.05 ppb	<90 sec

Performances in Air			
Gas	Standard ranges	LoD*	Response time*
HCl	0 ... 100 ppb; 0 ... 1 ppm	0.05 ppb	<30 sec
NH ₃	0 ... 300 ppb; 0 ... 5 ppm	0.1 ppb	<30 sec
H ₂ S	0 ... 300 ppb; 0 ... 5 ppm	2 ppb**	<2 sec
N ₂ O	0 ... 300 ppb; 0 ... 250 ppm	2 ppb	<2 sec
H ₂ O	0 ... 5% vol	360 ppm	<30 sec
Linearity: <1% range, R ² >0,999 Repeatability: 3*LoD or +/-0,5% relative			

* Response time: 10% to 90%

* LoD: 3σ over a period of 60 sec, σ: Standard deviation

** For H₂S, LoD: 1σ, 5 min

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