

ISA measuring head (In Situ Spectral Analyser)
compact, all-purpose spectrometer measuring head
Article-No. 461 6002

DOC 461 6002-E-1.1-DS



Properties

- optical sensor linked by fibre optic to the analysis unit
- recording across the complete absorption spectrum 200 nm – 710 nm
- suitable for a wide temperature range
- sensor adaptable to different media with an easy to adjust measuring-path-length (0.5 – 20 mm)
- storage of raw data and calibrated data
- calibration adjustment by remote maintenance
- software for calibration and service
- up to 99 different parameters
- cleaning of measuring-path with compressed air
- easy installation
- high cost-efficiency

Applications

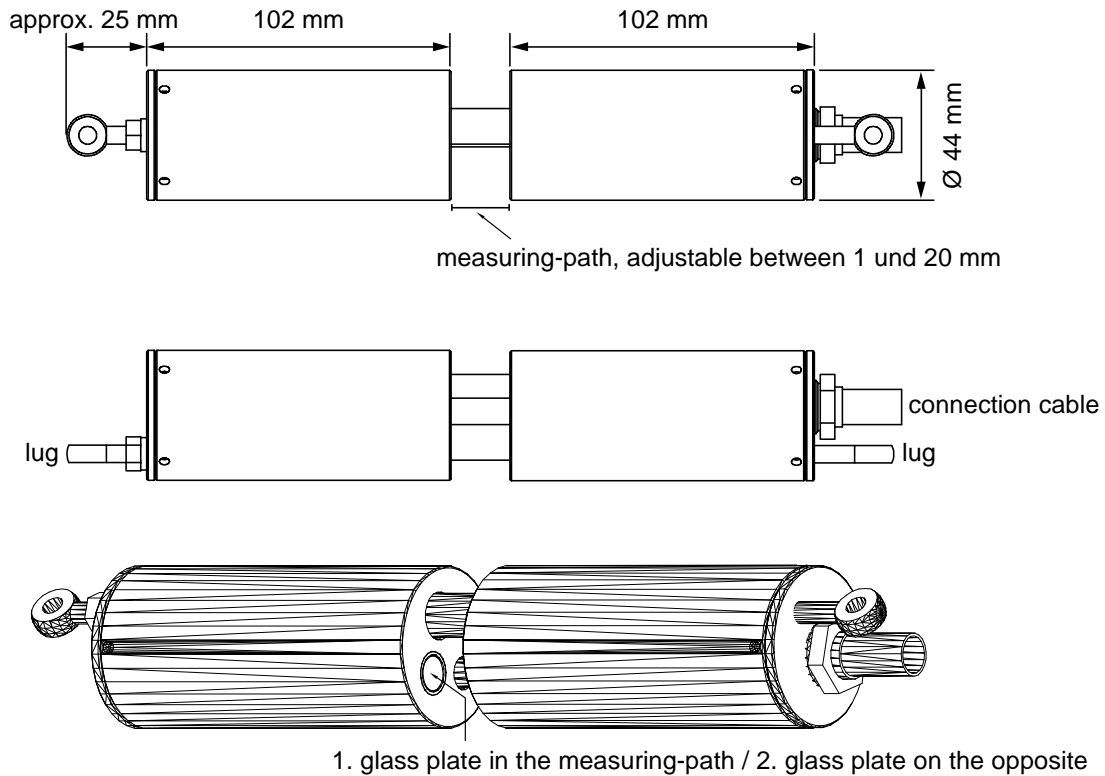
- process control
- wastewater monitoring
- drinking water monitoring
- industrial effluent monitoring
- environmental water monitoring

Parameter	
Nitrate: NO ₃ /NO ₃ -N Measuring range: 0.1 - 1000 mg/l NO ₃ -N in water (depends on path length) Measuring accuracy: ±5 % related to measuring range *	TOC Measuring range: 0.01 – 25000 mg/l (depends on path length) Measuring accuracy: ±5 % - 10% related to measuring range *
COD Measuring range: 0 – 30000 mg/l (depends on path length) Measuring accuracy: ±5 % - 10% related to measuring range *	further parameters with calibration . see example parameters at end of this document.

*Calibration by laboratory analysis. Resolution and accuracy depend on the quality of laboratory analysis and the stability of the comparison matrix.

Technical data	
Measuring principle	UV-VIS spectral analysis
Wavelength range	200 nm to 710 nm
Measuring path length	0.5 mm to 20 mm
Measuring interval	≥ 60 s
Light source	Xenon flash lamp
Material	Stainless steel (1.4404); optionally: titanium
Ambient temperature	0 °C up to +110 °C
Ambient pressure	max. 6 bar
Power consumption	3 W
Weight	1.5 kg

Dimensions



IP Code: IP68

ATEX-characterisation

The sensor head of the spectrometer has the following ATEX-characterisation*:

Ex II 3/- G Ex op is IIA T4 Gb/-

see Manual ISA 4.2 ATEX-notes for the version ISA T3

* If a separate ATEX certificate is enclosed, this certificate is valid.

II 2/- G Ex op is IIB T4 Gb/- is available on request.

Extract of obtainable UV/VIS Parameters

Parameter	Parameter	Principle: UV/VIS light Range: 200-710 nm	Range / Unit	
Spectrometer		Reference	Range min (unpolluted)	Range max (waste water)
All absorbent materials	-	-	-	-
Ammonium	NH ₄ ⁺ (Eq)	NH ₄ standard	0-5 mg/l	0-100 mg/l
Benzene / BTEX	BTEX (Eq)	Photometric	value limit at 5 µg/l	
Biological Oxygen Demand	BOD (Eq)	Oxygen measurement	0-5 mg/l (unpolluted)	150-300 mg/l (waste water)
Chemical Oxygen Demand	COD (Eq)	Photometric	0-1000 mg/l	0-30.000 mg/l
Colour	Colour (Eq)	Depends on colour (e.g. Hazen)	0-10 Brix	0-100 Brix
Contamination Alarm	-	Adjustable	-	-
Dissolved Organic Carbon	DOC (Eq)	DIN EN 1484: 1997-08	0-10 mg/l (rivers)	0-50 mg/l (moors)
Fingerprint	-	Reference solution	-	-
Nitrates	NO ₃ -N (Eq)	NO ₃ standard	0-20 mg/l	0-50 mg/l
	NO ₂ -N (Eq)	Photometric	0-20 mg/l	0-500 mg/l
Orthophosphate	PO ₄ ³⁻ P (Eq)	PO ₄ standard	0-5 mg/l	0-20 mg/l
Ozone	O ₃ (Eq)	Photometric	limit value at 0,05 mg/l	
Phenols	-	DIN H16 / DIN 38048	-	-
SAC254 / UV 254	SAC254 / UV254 (Eq)	DIN 38404 absorption 254 nm	0-10 1/m	0-2000 1/m
Total Organic Carbon	TOC (Eq)	Potassium Hydrogen Phthalate	0-500 mg/l	0-5000 mg/l
Total Suspended Solids	TSS (Eq)	Photometric	0-1000 mg/l	0-15000 mg/l
Turbidity	FNU / NTU (Eq)	Formazin	0-100 NTU	0-2000 NTU
Water Quality Index	WQI	Formula derived from DO, BOD, COD, AN, SS, pH	-	-

(Eq): equivalent