



Spectral-8

*A new standard in reagentless monitoring
from clean water to the harshest industrial environments*



Meet the difference

Real-time optical measurement of BOD, COD, TOC, NO₃ and many others ...

Whether for process control, compliance monitoring or early warning of quality issues, up to date water quality information is critical. It is therefore surprising that the most common solution remains the collection of grab samples, which provides intermittent information and with substantial delay. The alternative, bringing the lab to the field using wet chemical analysers, comes at very high costs.

The Spectral-8 offers the solution

The Spectral-8 UV/Vis spectrometer is an optical instrument for the continuous measurement of multiple parameter directly in the medium. Using full spectral information, it determines organics (COD, BOD, TOC, UV254), nitrate, turbidity, suspended solids, and many more, with a single device. Advanced algorithms provide accurate and reliable readings, and eliminate interferences (e.g. turbidity).



Applications

- Wastewater treatment plants (influent, effluent, process control)
- Industrial application (process water, wastewater treatment)
- Wastewater collection systems (load monitoring, corrosion protection)
- Water reclamation, reuse and irrigation
- Environmental monitoring (surface water monitoring)
- Aquaculture and fish farming
- Landfill leachate monitoring
- Drinking water (source monitoring, process control, early warning of contaminations)
- Ground water management
- more...



Real-time results, directly from the process

- Real time sensor
- In-situ installation (no sampling or sample pretreatment)
- 100% optical (no reagents, long term stable, simple to use)
- Small size sensor probe (allows in-situ and in-pipe installations)
- Minimal operating costs (no consumables, automatic cleaning, minimal maintenance)

Highly robust

- Suited for high temperature applications (0...110 °C)
- Available in both stainless steel and titanium, quartz windows
- Full spectral measurement for high specificity and compensation

Unparalleled flexibility

- Multiple parameters from one device
- Software supports development of own parameters and virtual sensors
- Variable path length – measurement range can be adjusted to the matrix
- Standard ATEX certification class III (ATEX class II optional)
- Wide range of communication interfaces
- Controller with full PLC functionality



Smart sensing solution

Fully integrated in the Eijkelkamp Web Portal for online visualization of measurement results and integration with your other monitoring solutions. Supports remote calibration and device configuration.



Available parameters

Parameter	Measurement range*	Parameter	Measurement range*
Biological Oxygen Demand (BODeq)	0...2000 mg/l	Turbidity	0...2000 NTU
Chemical Oxygen Demand (CODeq)	0...12000 mg/l	Total Suspended Solids (TSS)	0...15000 mg/l
Nitrate (NO ₃ -N)	0...100 mg/l	Colour	0...100 Hazen
Total Organic Carbon (TOCeq)	0...5000 mg/l	Ozone	0...10 mg/l
Dissolved Organic Carbon (DOCeq)	0...3000 mg/l	Phenol	0...20 mg/l
SAC254/UV254	0...2500 Abs/m	Fingerprint Alarm	

* dependent on application, indicative ranges only

Technical specifications

General	
Measuring principle	UV/Vis absorption spectroscopy
Wave lengths	Full scanning between 200...710 nm
Light source	Xenon flash lamp
Detector	256 pixel diode array, ~2 nm/pixel
Minimal measurement interval	10 sec.
Measuring path length	0.5...20 mm (freely selectable)
Accuracy standard solution	All parameters: +/- 1.9% + 1/OPL (OPL = optical path length in mm)

GDT-Pro Control (control system of spectrometer)	
Dimensions (L x W x H)	280 x 170 x 90 mm
Operating temperature	-20...+45 °C air temperature
Storage temperature	-10...+50 °C air temperature
Weight	Approx. 2.6 kg
IP protection class	IP65
Power supply	110...230 V AC (50...60Hz) or 24 V DC
Power consumption (nominal)	10 W
Data storage	512 MB or 2 GB circular memory
Virtual parameters	20 (up to 100 optional)
Interfaces	1x RS232/RS485 (MODBUS RTU), 1x CAN, 1x Ethernet 10/100 Mbit, 1x USB, 2x pulse input, 2x 4-20mA output, 2x relay output, GPRS/UMTS modem



Sensor probe	
Dimensions (Ø x L)	44 x 230 mm
Operating temperature	0...+110 °C water temperature
Weight	1.5 kg (excluding cable)
Length of fibre optic cable	2.5, 6 (standard), 10, 15 or 20 m
IP protection class	IP68
Pressure	0...6 bar (optional 0...10 bar)
Wetted Materials	Stainless steel (1.4404), quartz windows (Titanium optional)
Automated cleaning	Compressed air (oil free)
Warranty	1 year (extended warranty optional)

