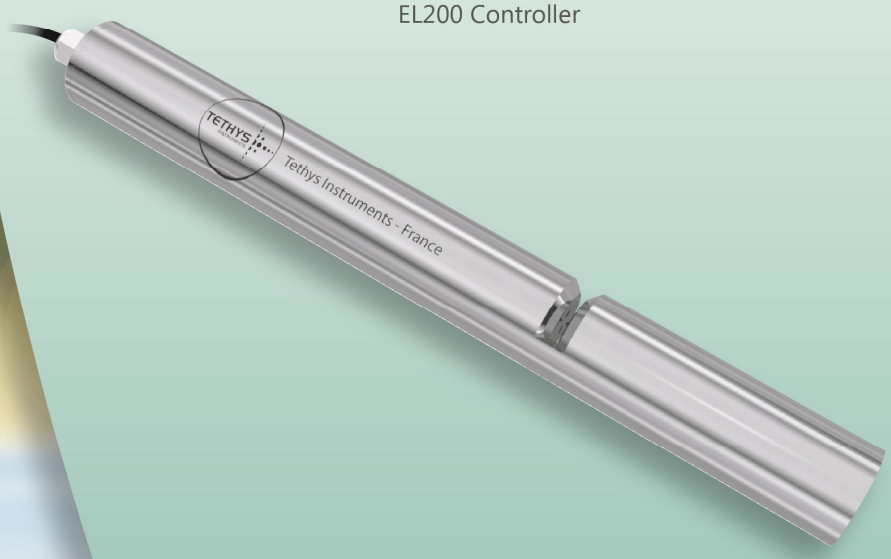
UV-VIS200

Full UV-Vis spectrum probe

EL200 Controller



TETHYS INSTRUMENTS

Specialist Of UV Spectroscopy

UV-VIS200 Full spectrum probe

Tethys full spectrum UV-Vis probe provides a simple way to measure a number of parameters among TSS, NO_3, COD, BOD, TOC, UV254 and colour for surface water or industrial/municipal waste water.

The full UV-Vis absorbance spectrum can also be transmitted for spectral analysis or recording.

It is based on a proven light source technology offering a long lifetime (> 10 years).

The probe must be calibrated for each application to gives a COD or BOD or TOC equivalent measurement, at condition that the sample composition stays relatively constant.

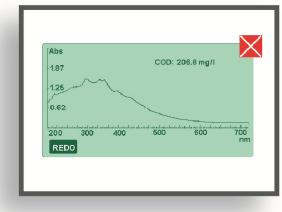
An automatic cleaning by compressed air enable a maintenance free operation over long period.

Its associated controller EL200 can control other probes like pH, dissolved oxygen, conductivity and Cl2 to provide a complete monitoring solution.

TETHYS INSTRUMENTS

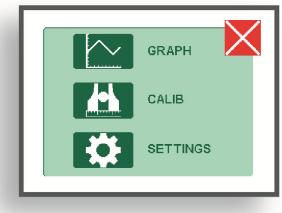
Full spectrum UV-Vis measurement

The probe calculates the full UV-Vis absorbance spectrum of the water sample. Different algorithms are available to extract the concentration of the different compounds absorbing in the UV or visible range.



User-Friendly Interface & Communication

The colour touch screen and intuitive interface available in 8 different languages makes very easy to test or configure the probe.



A USB port enable to download on any USB key the last 24hours recorded measurements as well as a diagnostic file containing the configuration and useful information for remote troubleshooting. The software of the controller can be upgraded by connecting a USB key.

The RS232 port and the RS485 port support the MODBUS protocol to transmit each measuring channel value to a SCADA system.
Additional parameters are available like status code, error code, calibration values. The full UV-Vis absorbance spectrum can also be read under the Modbus protocol as a table of 512 float values with starting wavelength and pitch.

Automatic cleaning

The EL200 delivers a free potential contact to drive a solenoid valve on compressed air to clean the probe. It can drive alternately an air compressor if no air network is available on site. The period and cleaning time are adjustable to adapt to different applications.

PROBE specifications

Measuring ranges:

Parameter	Optical path	Standard range Other ranges on request	Typical repeatability For low values (<10% FS)	Accuracy On standard solution
UV254	10 mm 3 mm 1 mm	0 - 200 Abs/m 0 - 600 Abs/m 0 - 2000 Abs/m	+/- 0.5 Abs/m +/- 2 Abs/m +/- 5 Abs/m	+/- 2 % +/- 2 % +/- 2 %
COD by UV correlation	10 mm 3 mm 1 mm	0 - 100 mg/l COD (river water) 0 - 2000 to 6000 mg/l COD (waste water) 0 - 6000 to 20000 mg/l COD (waste water)	+/- 0.2 mg/l COD +/- 5 mg/l COD +/- 20 mg/l COD	+/- 2 % +/- 2 % +/- 2 %
BOD by UV correlation	10 mm 3 mm 1 mm	0 - 100 mg/l BOD (river water) 0 - 2000 to 6000 m/l BOD (waste water) 0 - 6000 to 20000 mg/l BOD (waste water)	+/- 0.2 mg/l BOD +/- 5 mg/l BOD +/- 20 mg/l BOD	+/- 2 % +/- 2 % +/- 2 %
TOC by UV correlation	10 mm 3 mm 1 mm	0 - 100 mg/l TOC (river water) 0 - 2000 to 6000 m/l TOC (waste water) 0 - 6000 to 20000 mg/l TOC (waste water)	+/- 0.2 mg/l TOC +/- 5 mg/l TOC +/- 20 mg/l TOC	+/- 2 % +/- 2 % +/- 2 %
Nitrate NO_3	10 mm 3 mm 1 mm	0 - 15 mg/l NO_3 (0 - 4 mg/l N-NO_3) 0 - 50 mg/l NO_3 (0 - 15 mg/l N-NO_3) 0 - 150 mg/l NO_3 (0 - 40 mg/l N-NO_3)	+/- 0.1 mg/l NO_3 +/- 0.3 mg/l NO_3 +/- 1 mg/l NO_3	+/- 2 % +/- 2 % +/- 2 %
Colour (Hazen or APHA)	10 mm 3 mm 1 mm	0 - 100 Pt-Co 0 - 300 Pt-Co 0 - 1000 Pt-Co	+/- 0.5 mg/l Pt-Co +/- 2 mg/l Pt-Co +/- 5 mg/l Pt-Co	+/- 2 % +/- 2 % +/- 2 %
TSS equivalent	10 mm 3 mm 1 mm	0 - 500 mg/l TSS 0 - 1500 mg/l TSS 0 - 5000 mg/l TSS	+/- 0.5 mg/l TSS +/- 2 mg/l TSS +/- 5 mg/l TSS	+/- 2 % +/- 2 % +/- 2 %

Probe specification

Measuring method	UV-Vis spectroscopy
Wavelength	190-750 nm
Detector	512 pixels
Optical path	1 mm, 3 mm or 10 mm
Accuracy	+/- 2% on standard solution
Response time	< 1 min
Turbidity compensation	Integrated by reference wavelength method
Light source life time	> 10 years
Mounting	Immersion, maximum 10 meters
Probe cleaning system	By compressed air (can be controlled by the EL200)
Cable length	10 meters
Sensor protection	IP68
Operating temperature	0°C to 50°C
Operating pressure	0 Bar to 3 Bar
Velocity	3 m/s max
Body material	Stainless steel 316L (titanium as an option)
Wet materials	Quartz, FKM (Viton), Stainless steel or titanium (option)
Dimensions	54 x 500 mm
Weight	3 kg
Probe warranty	1 year
Conformity	CE, EN61010-1, EN61326

Parts references

UV-VIS200-H	**Full spectrum UV-Vis absorbance spectrum probe** Optical path: 1 mm Cable: 10 metres Has to be connected to an EL 200 controller
UV-VIS200-M	**Full spectrum UV-Vis absorbance spectrum probe** Optical path: 3 mm Cable: 10 metres Has to be connected to an EL 200 controller
UV-VIS200-L	**Full spectrum UV-Vis absorbance spectrum probe** Optical path: 10 mm Cable: 10 metres Has to be connected to an EL 200 controller
EL200	**Mono or multi channel controller only** (refer to product datasheet)

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