

The spectro::lyser™

The submersible UV-Vis spectrometer

All spectro::lyser™ use the same well known principle of measurement: UV-Vis-Spectrometry. Although in the same housing, there are important differences between spectro::lysers: The optics (path-lengths, slits etc.), electronics and software are optimised for the respective substance in order to take full advantage of the dynamic range and spectral resolution. Therefore, our spectro::lyser's dynamic range and process accuracy can reach a level that was thought to be impossible until recently.

spectro::lyser™ have the unique potential to measure many different parameters under most diverse conditions. These conditions always have an influence on the measuring performance. Therefore, it is difficult to provide universal specifications that are valid for all media. The specifications below are of a general nature and are typical values without local calibration. In addition to these specifications, we develop specification sheets for each new application, or we provide you individual specifications after orienting measurements.

In order to obtain higher accuracy, all spectro::lyser™ can be calibrated locally supported by an automated procedure; we and our partners will be happy to do this calibration for you, although it is so simple that you can easily do it yourself.



*TAM Total Accuracy of Measurement

- spectro::lyser™**
- For spectral measurements in most media.
 - › Use the full UV-Vis-spectrum (200-380 or 190-750 nm)
 - › Use all s::can calibrations, and build your own (linear or non-linear, or polynomial fit) with our help and software "ana::tool"
 - › Differential process spectra
 - › Alarm or process control systems with the "delta-spectrometry" method
 - › Adaptation of the instrument to extreme medium properties with different pathlengths
 - › Surfactants, detergents, color, TSS, turbidity, suspensions, emulsions, oil-in-water and many more.

- Nitrate**
- For NO₃/NO₃-N measurements also in "difficult" media, like at high carbon or solids contents, from ground water to aeration tank
 - › Range: 0 (0,1) - 100 mg/l NO_x_eq (extendable)
 - › Repeatability: +/- 0,1 mg/l
 - › TAM*: better than +/- 0,3 mg/l (down to 0,01 mg/l possible)
 - › 15 sec / measurement

- Solids**
- Turbidity derived from spectral information correlates with solids even under most difficult conditions. The character of the particles is considered (i.e. particle size, colloids, bubbles, window blockage)
 - › Range: 0 (0,1) - 100 FTU in natural waters (other ranges possible)
 - › Range: 0 (10) - 5.000 mg/l solids in waste waters (up to 10 g/l possible)

- Orig. Carbon Parameters**
- Calibrations for T(D)OC_{eq}/COD_{eq}/BOD_{eq} available for measurements in natural and waste waters, drinking waters, process waters. TAM* depends much on quality of correlated standard method. Better TAM* achievable after local calibration.

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|-----------------------|---|--|
| | T(D)OC (natural and drinking waters) | |
| › Range (mg/l) | 0 (0,01) - 50 (extendable to 500) | |
| › Repeatability(mg/l) | +/- 0,1 (0,01 possible) | |
| › TAM* (mg/l) | +/- 0,3 (typ.) | |

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|-----------------------|-------------------------------|---------------|
| | COD_{influent} | BOD |
| › Range (mg/l) | 0 (1)-1.000 | 0(1)-500 |
| › Repeatability(mg/l) | +/- 5 | +/- 5 |
| › TAM* (mg/l) | +/- 10 (typ.) | +/- 20 (typ.) |
- › 20 sec / measurement
 - › Long time stability: typ. 3 months w.o. maintenance in the influent of WWTPs (w. autom. air pressure window cleaning)

- Single Substances**
- For the measurement of Benzene (Xylene, Toluene, Naphtalene, Nitrobenzene, Phenol etc.) in most media. Better TAM* with local calibration.

- › measuring range: 0 (0,01) - 100 mg/l B,T,X
- › Repeatability: +/- 0,05 mg/l (up to +/-0,005 mg/l possible)
- › TAM*:
 - natural waters: +/- 0,01 mg/l at constant matrices
 - +/- 0,5 mg/l at strongly fluctuating matrices
 - waste waters : ca. +/- 1 - 10 mg/l
- › 30 sec / measurement
- › Drift: No measureable drift over many weeks of measurement