

Embedded Control Spectrometer System

The tecSaaS (Spectrometer as a Sensor) is a stand-alone spectrometer system with an integrated light source, spectrometer module, and operating electronics. The system is operated via embedded control electronics which consist of integrated processing capabilities and a lean operating system for real-time spectral analysis. By using a modular firmware approach for different system capabilities, the tecSaaS is capable of evaluating complex algorithms, such as chemometrics or fast fourier transforms. Only the relevant results of the calculations are then communicated to process control over the process interface.

Light Source

Halogen version:

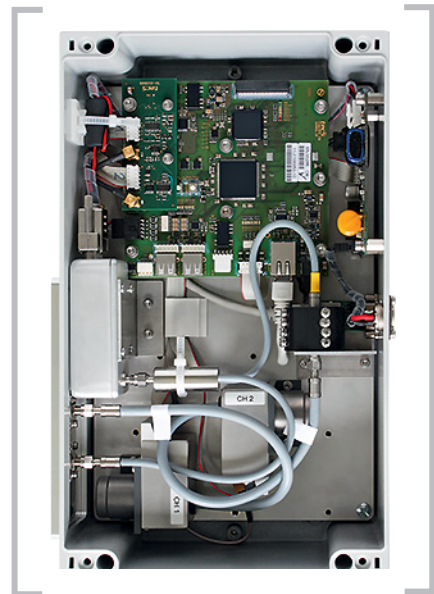
- Long lifetime halogen source
- Spectral range: 400 to 2200 nm
- Lifetime: 10,000 hrs
- Output power equivalent to LS-20H (MultiSpec series)
- Integrated shutter and lamp control

Flash lamp version:

- RSL3000 Xe flash source
- Spectral range: 250 to 2000 nm
- Lifetime: > 10⁸ flashes
- Flash rate up to 100Hz

LED or laser diode available on demand

Output: SMA, ϕ ca. 1 mm, NA = 0.22



Spectrometer

Spectral characteristics depend on integrated spectrometer module(s). Spectral ranges are available within UV-VIS-NIR and sensor technologies are based on CCD, NMOS, or InGaAs arrays. Please see the product information for the appropriate module for complete details.

- Permanently wavelength calibrated
- High through-put designs

Output: 1x or 2x SMA, ϕ = 0.6 mm, NA = 0.22

Electronics

- 16-Bit analog-to-digital converter
- 1 MHz effective readout frequency
- Readout time: ca. 1 ms (depends on spectrometer module)
- Integration times: ca. 1 ms to 6.5 s (depends on spectrometer module)
- CPU: ARM Cortex M4
- FPGA for additional data processing
- Data logging by SD card or USB stick possible

Electronic Interfacing

- Power Supply: +12 VDC, ~1 A
- Power supply: Female 5-pin port Binder Connector
- Communication: Ethernet 802.3 10/100 Base-T, cable length < 100 m
- ModBus, TCP/IP, RS232
- CAN, ISOBUS, others: on request

Software

- Integrated real-time operating system
- Setup and parameterization by MPT software
- MultiSpec Pro II equivalent application
- Integration of algorithm
- Chemometrical modules etc.

Housing

Weight: ca. 4 kg

Protection: IP65

Dimensions:

- 330 mm x 206 mm x 121 mm
- Housing can be customized

