

Evaluation Line

Compact Diode Array Spectrometer Unit
with separate UV-VIS Light Sources

Compact and high-grade diode array based spectrometer unit with outstanding performance for feasibility studies and measurement tasks in research, development and industry. A battery version allows mobile use, e.g. for environmental survey.



- modern diode array technology
- available spectral ranges:
 - 200 – 720 nm with Zeiss MMS UV-VIS
 - 250 – 785 nm with MMS UV-VIS II
 - 310 – 1100 nm with MMS 1
- fast, accurate, robust
- large dynamic range
- external shutter control
- USB high-speed interface
- multiple software support
- battery version for mobile use

Light Source Units

Various compact light source units are available such as a combined deuterium/halogen light source for operation in the UV/VIS range (Heraeus FiberLight), a Xe flashlamp (PE RSL-3100) as well as a 7W Halogen lamp. The miniaturized lamps, optimized for low power operation, are mainly useful for transmission measurements. The power and the TTL signals for the shutter control are supplied via a flat-ribbon cable from the LOE unit.

Different light source units are offered which cover the spectral range from 200 to 1100 nm.

Easy adaptation of light guides and fiber-optic probes is possible by use of standard SMA connectors on the front panel.

Spectrometer Unit LOE-MMS

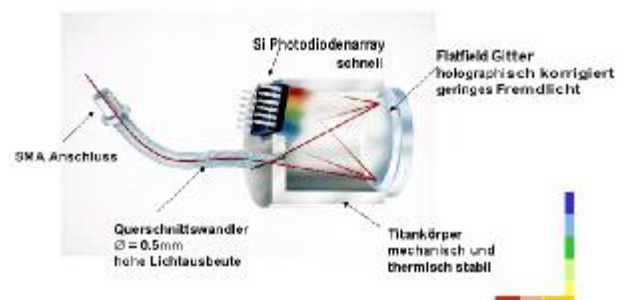
This spectrometer unit consists of a spectrometer module and an operating electronics.

tec5 Operating Electronics

The tec5 15 bit Laptop Operating Electronics LOE unit offers precise acquisition of spectral data over a wide dynamic range. The data are transferred to a PC or a notebook by a USB interface (RS-232 as an option). For in-house operation, an external power supply is used. Alternatively, for mobile use, the LOE is available with a battery pack and a recharging device. As an option, a PSU version with a DC supply of 9-36V DC can be provided, too.

Carl Zeiss Spectral Sensors

The Evaluation Line is based on Zeiss MMS monolithic miniature spectrometers with simultaneous readout. Its main features are high signal-to-noise ratio, outstanding wavelength accuracy and long-term stability.



Customer Specific Measurement Systems

For applications in process or production control, tec5 offers the high-end MultiSpec Spectrometer System. In addition, we design solutions matched to customers' demands.

Software Modules

- MultiSpec Pro / MultiSpec Pro *lite*, powerful 32 Bit software packages for laboratory and process.
- 32 Bit function libraries under LabVIEW™ and C++/ VB/ Delphi with program examples for writing own application software.
- Driver for GRAMS/AI™
- Further support available upon request



MultiSpec Pro spectroscopy software

Accessories

Fiber-optic components, cuvette holders, immersion probes, as well as adaptation of these components to your needs are also available.

Technical Data

Spectrometer Unit LOE-MMS

Spectral range: MMS UV-VIS: 200 – 720 nm
MMS UV-VIS II: 250 – 785 nm
MMS 1: 310 – 1100 nm

Spectral resolution (according to Rayleigh's criterion):
< 7 nm (< 10 MMS 1)

Pixel dispersion: 2.2 nm / pixel (3.3 nm MMS 1)

Wavelength. acc.: 0.2 nm (0.3 nm MMS 1)

Number of pixels: 256

Temperature drift: < 0.006 nm/K (< 0.02 nm MMS 1)

Dynamic range: 15 Bit (32,768 Counts)

Noise: < 3 counts standard deviation

Measur. time: 1.5 ms – 6 s

Light Source Units

LS-C UV-VIS

Spectral range: 200 – 1100 nm
Power: 6 W total
Lifetime: > 2000 hrs (halogen lamp)
> 1000 hrs (deuterium lamp)
(50% power decrease @ 250 nm)
Stability: < 1 x 10⁻³ AU @ 250 nm

LS-C FX

Spectral range: 220 – 900 nm (Xe flashlamp)
Power: 2 W
Lifetime: 10⁹ flashes
Stability: < 2% flash to flash
(can be improved by averaging)

LS-C Hal

Spectral range: 400 – 1100 nm (halogen lamp)
Power: 7 W
Lifetime: > 2000 h
Stability: < 1 x 10⁻³ AU @ 500 nm

Interfaces

Optical: Standard SMA connector
PC: high-speed USB 2.0
(1.1 compatible), optional RS-232

Miscellaneous

Power supply: 110/220 V, 50/60 Hz
(external supply, incl.)
Battery version: Operating time ca. 4 hrs(w/o LS unit)
Dimensions: 220 x 150 x 72 [mm] (per unit)
Weight: ca. 1.5 kg (LOE-MMS)
ca. 1 kg (LS-C UV-VIS)
Operating temp.: 0°C - 50°C

Products (excerpt)

■ LOE-MMS UV-VIS	P/O 11-0138003-02
■ LOE-MMS UV-VIS II	P/O 11-0138003-03
■ LOE-MMS 1	P/O 11-0138003-01
■ LOE-MMS UV-VIS BV	P/O 11-0138004-02
■ LOE-MMS UV-VIS II BV	P/O 11-0138004-03
■ LOE-MMS 1 BV	P/O 11-0138004-01
■ LS-C UV-VIS	P/O 11-0202041-00
■ LS-C FX	P/O 11-0202042-00
■ LS-C Hal	P/O 11-0202043-00



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