

CompactSpec II

Process UV/VIS Spectrometer System

CompactSpec II is a fast and robust UV/VIS spectrometer system in a stainless steel cabinet (IP65) with industrial PC and TFT touch screen monitor. Based on fast and reliable detector array and Xe flash lamp technology with high endurance it is ideal for demanding process

applications. An electronic multiplexer option makes real multi-channel operation possible. The system is available with various spectral ranges and resolutions. Fiber optics in combination with probes or flow-through cells allow inline measurements in pipes and reactors.



CompactSpec II

Applications:

- ü Colour Measurements
- ü Concentration
- ü Film Thickness
- ü Chemometrics

Advantages:

- ü modern diode array technology
- ü fast, precise, robust
- ü possible spectral range from 195 – 1000 nm
- ü wide dynamic range
- ü available in EEX p version

Multiplexing – Multi Channel Systems

For multi-point applications spectra of up to 3 sample channels can be taken simultaneously, therefore, the costs per measurement point is reduced dramatically. The tec5 multiplexer has no moving parts and is fast and reliable.

Simultaneous Referencing

A separate reference channel simultaneously compensates for variations of the Xe flash lamp and therefore guarantees drift free operation.

Process Communication

The CompactSpec system can be equipped with analog (4-20mA) and digital I/Os for process communication to transfer results and status information (e.g. system error, system warning, out-of-range signal) to a process control system. In addition, a remote control from an SPS or PLS is available to trigger a measurement cycle or to stop the continuous data acquisition for maintenance. Various add-on I/O-boards with and without opto-isolation are available. Other communication protocols (Profibus, Ethernet) can be integrated on customer request.

Monolithic Spectrometer Design

CompactSpec systems are based on the monolithic spectrometers from Carl Zeiss. The high light sensitivity and the extreme stability of these components allow together with the tec5 15/16-bit electronics very accurate measurements with high dynamic range. The modules are available with various wavelength ranges and resolutions. Two spectrometers with different wavelength ranges can be controlled in parallel.

Accessories



Equipped with appropriate fiber optics and probes the system can be adapted for your measurement task.

We assist you in finding the optimized solution.

Software Modules

- MultiSpec Pro process software with various data processing algorithms (e.g. color evaluation / chemometrics with The Unscrambler, NIRCal & GRAMS models)
- Instrument drivers for GRAMS/AI from Thermo Galactic (21 CFR part 11 compliant)
- Film thickness software TFPro UV-Vis



Process software MultiSpec Pro



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Light Source

The CompactSpec system is equipped with a Xenon flash lamp to cover the spectral range of 220 – 1000 nm. Xenon flash lamps show an outstanding high life time. Other light sources, like Halogen lamps (360nm – 1000 nm) or Deuterium/Halogen lamps (195nm – 1000 nm) are available as an option.

Technical Data:

Spectral sensor

(Specifications depend on applied module)

Spectral range: 195 – 390 nm (UV)
195 – 720 nm (UV-VIS)
250 – 785 nm (UV-VIS II)
310 – 1100 nm (VIS)

Resolution (Rayleigh): 3 - 10 nm

Pixel dispersion: 0,8 – 3,3 nm

Wavelength accuracy: 0,2 - 0,3 nm

Number of pixels: 256 (512, 1024)

Operating Electronics

Resolution: 15 Bit

Integration time: variable from 1.5 ms – 6 s

Industrial PC

Specifications: Pentium III Mobile with external Ethernet interface
Monitor: 12" TFT touch screen

Operating system: Windows XP Professional

Optical Interface

Standard SMA connectors

Other

Power supply: 110/220V, 50/60Hz

Dimensions (HxWxD) 500 x 500 x 220 [mm]

Weight: ca. 25 kg

Operating temperature: 5 °C – 35 °C
(without active cooling)