

## tecSpec: (Integrated) Diode Array Spectrometer Unit

Compact diode array based spectrometer unit with outstanding performance for feasibility studies and measurement tasks in research, development and industry.

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

### Features

- UV to extended NIR wavelength ranges
- Based on Carl Zeiss Spectral Sensors
- Compact, maintenance-free and long-term stable
- Designed for fast spectral data acquisition  
Selectable USB or Ethernet Interface
- For integration in inspection and production machinery

### Applications

- Reaction monitoring
- End point detection
- Thin film measurements
- Color classification
- Concentration analysis
- Product and waste sorting
- Laboratory Research

### Spectrometer Unit tecSpec



tecSpec is a ready-to-use spectrometer module with SMA fiber input connector and a USB or Ethernet interface. Taking advantage of the high-performance spectrometer modules of Carl Zeiss and tec5 electronic components, it allows to acquire accurate spectral data while offering a compact format and maintenance-free operation.

The module is available in various wavelength ranges and allows high-speed analysis of ultra-violet, visible and near-infrared radiation with high dynamic range and a very good cost-performance ratio. Its mechanical design and universal functionality makes it an ideal choice for many applications in spectroscopy.

### Software Support

- Windows XP/7 driver included
- tec5 AdminTool included (configuration, testing, raw data acquisition)
- MultiSpecLite application program included
- Various Programmer Interfaces (SDK) are available

# Systems

## Product Information tecSpec

### Technical Data

#### tecSpec Spectrometer Units

(USB) ID: 11-014800 - (ETH) ID: 11-014810 -	Wavelength Range [nm]	Spectral Resolution [nm]	Wavelength Repeatability [nm]	Detector Array	Number of Pixel
3-01 MCS UV	195 – 620	Approx. 3	0.05	Si diode array	512
3-02 MCS UV VIS	300 – 720	Approx. 3	0.05	Si diode array	512
3-03 MCS VIS	360 – 780	Approx. 3	0.05	Si diode array	512
3-04 MCS NIR	695 – 1100	Approx. 3	0.05	Si diode array	512
3-05 MCS UV NIR	195 – 1020	Approx. 3 – 4	0.05	Si diode array	1024
2-00 MCS CCD UV	200 – 600	Approx. 3	0.1	Backthinned CCD array	532 x 64
2-01 MCS CCD UV NIR	200 – 980	Approx. 3 – 4	0.1	Backthinned CCD array	1044 x 64
1-01 PGS 1.7 tc	960 – 1690	Approx. 5	0.1	Multiplexed InGaAs	512
1-02 PGS 1.7 tc	960 – 1690	Approx. 10	0.1	Multiplexed InGaAs	256
1-03 PGS 2.0 tc	1340 – 2000	Approx. 6	0.1	Multiplexed InGaAs	256
1-04 PGS 2.2 tc	1000 – 2150	Approx. 16	0.1	Multiplexed InGaAs 512	256

For detailed specifications please refer to the data sheets of Carl Zeiss Spectral Sensors in use.

Electronic Identifier	Si-Photodiode Array	Backthinned CCD array	Multiplexed InGaAs
FEE-1M/	NMOS-1	CCD-2	NIR-2 or NIR-4
Dynamic Range	16 bit (65536 Counts)		15 bit (32768 Counts)
Noise Typ. SD	< 2 Counts	< 2 Counts	< 4 Counts
Integration Time	1.2 ms – 6.5 s	3.0 ms – 6.5 s	0.1 ms – 1.5 s
Interface (PC)	USB 2.0 (USB 1.1, USB 3.0 compatible), Ethernet 100BASE-T (10, 100, 1000 Mbits compatible)		

#### Miscellaneous

Power Supply	110 / 220 V; 50 / 60 Hz (External Power Supply)		
Dimensions (per unit) [mm <sup>3</sup> ]	235 x 175 x 115	290 x 175 x 115	235 x 175 x 115
Weight	Approx. 2.5 kg		
Operating Temperature	5°C – 35°C		

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