



# OZ Optics

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## HIGH-RESOLUTION OPTICAL SPECTROMETERS

### PRELIMINARY

#### Features:

- Handheld and rugged design
- Wide spectral range with high spectral resolution
- Transmission grating provides exceptional signal throughput and high signal to noise ratio (SNR)
- Built-in filter to suppress grating second-order noise
- Low cost with flexible operating options

#### Applications:

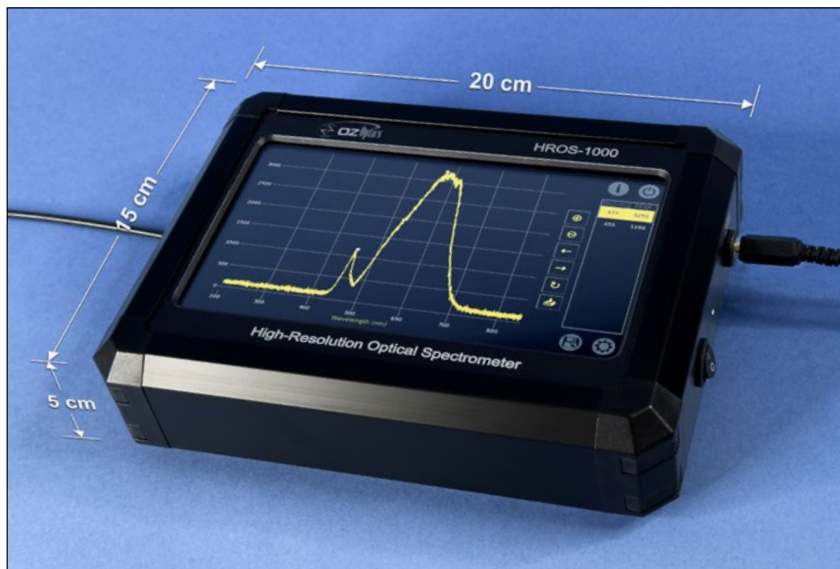
- Full spectrum analysis
- Quality control for food industry
- Chemical identification
- Recent applications ranging from smart farming to pharmaceutical tests

#### Product Description:

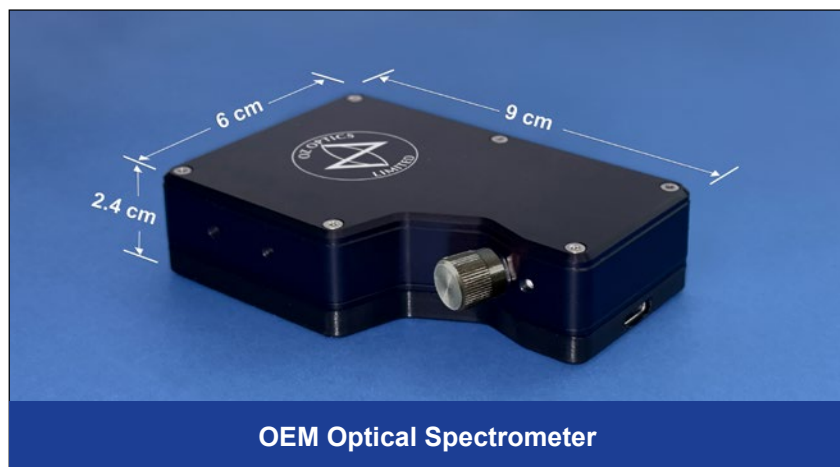
OZ Optics presents a cost-effective and high-end optical spectrometer. A special transmission grating is designed to realize exceptional sensitivity while reaching high signal-to-noise ratio (SNR), with an excellent spectral resolution over the entire operating wavelength range. A sensitive and high pixel density CMOS chip is customized to suppress grating high-order noise. The spectrometer is integrable in well-established systems and can be remotely controlled via a USB port through an intuitive GUI.

The spectrometer is also offered as a stand-alone instrument with a built-in touch screen and enhanced GUI in a palm-sized enclosure as illustrated in Figure 1. Thus, plug-and-play features are realized while the data are can be saved on an external USB flash drive. In addition to advanced optical hardware, sophisticated optical spectroscopy software and **SpectraGryph\*** libraries provide rapid analysis of spectra and informative reports can be shared via an external USB flash drive. Customized optical inputs including a set of fiber focusers or collimators along with wave division multiplexers are optionally offered to enable both fiber delivery applications and free-space scanning.

\*SpectraGryph: optical spectroscopy software <https://effemm2.de/spectragryph/index.html>



Stand-alone Optical Spectrometer



OEM Optical Spectrometer

## Specifications:

Parameter	Typical Value
Wavelength Range	200 nm to 800 nm
Optical Resolution	1 nm FWHM
Integration Time	4 milliseconds to 10 seconds
Dark Noise	< 25 counts at 4 milliseconds exposure
Input Fiber Connector [1]	SMA-905
Signal to Noise Ratio	>3000:1
Grating	1250 lp/mm Fused Silica transmission grating
Entrance slit	30 $\mu$ m
Numerical aperture	0.25
Enhanced sensitivity lens	D-Lens on CMOS
Stray Light	< 1%
Operating temperature range [2] (Non-condensing)	10 °C - 45 °C

Dimensions	Stand-alone	20 x 15 x 5 cm body
	OEM	9 x 6 x 2.4 cm body
Weight	Stand-alone	1.2 Kg
	OEM	169 g
Electrical Connector	Stand-alone	USB port
	OEM	16 pin 1 mm pitch FFC
Vertical range		50,000 counts
Inputs/Outputs		SPI with 2 chip selects, accumulator reset, device reset and external trigger
Trigger Modes		internal or external source, single, multiple accumulate, multiple average
Power Consumption		3.3 V 60 mA

Note:

1 Other receptacle available upon request.

2 Temperature Drift compensation is attached along with the CoC.

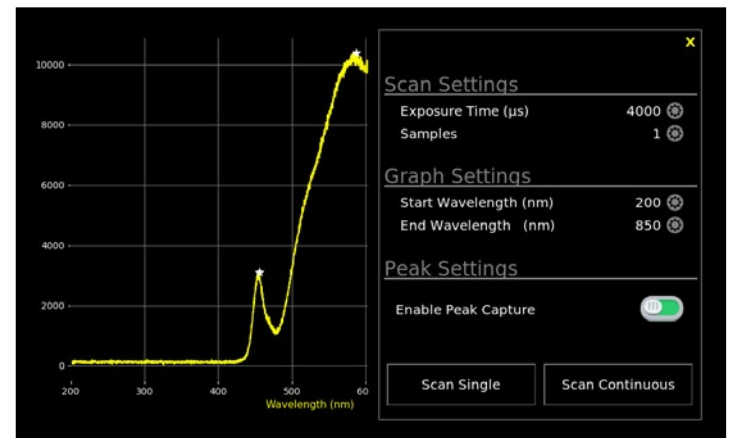
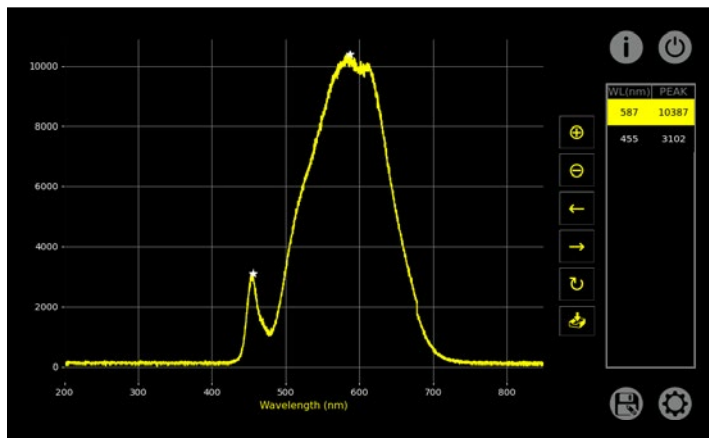


Figure 1. Spectrometer GUI showing a measured spectrum along with the control buttons.

## Part Number:

### Ordering Information For Custom Parts: (Spectrometers)

**HROS-V-W-S-X**

**V**= Instrument version  
 100 = For handheld instrument controlled by external computer  
 1000= For stand-alone instrument with touchscreen control

**W**= UV/VIS: 200–800 nm  
 VIS/NIR: 400–1050 nm  
 UV/VIS/NIR: 200–1050 nm

**X**= Optical Receptacle:  
 5 = SMA-905 (default)  
 Other receptacle available upon request.

**S**= Slit Width ( $\mu$ m): 30 (default)  
 20  
 40  
 70