

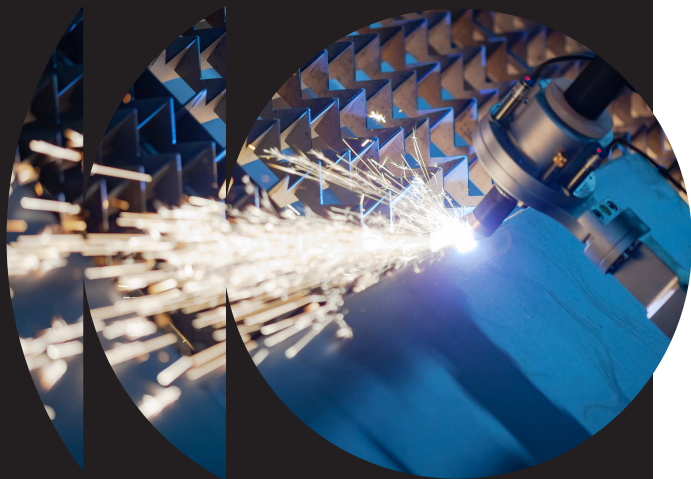


# HR4Pro High-resolution Spectrometers



## High Resolution, Great Thermal Stability

HR4Pro spectrometers are compact, high-resolution spectrometers distinguished by low stray light performance and great thermal stability for applications in lab, field and process environments. With a robust optical bench design and optimized components, the HR4Pro provides up to 10x improvement in thermal stability compared with similar small-bench spectrometers. Preconfigured HR4Pro models are available for UV-Vis (200-875 nm), Vis-NIR (350-1025 nm) and extended-range (200-1100 nm) measurements.



## At a Glance

**Wavelength range:** Preconfigured options within 200-1100 nm

**Optical resolution:** <1.0 nm (FWHM)

**Entrance aperture:** 10  $\mu\text{m}$  standard; replaceable slits available

**Order-sorting filter:** Yes

**Detector collection lens:** Yes

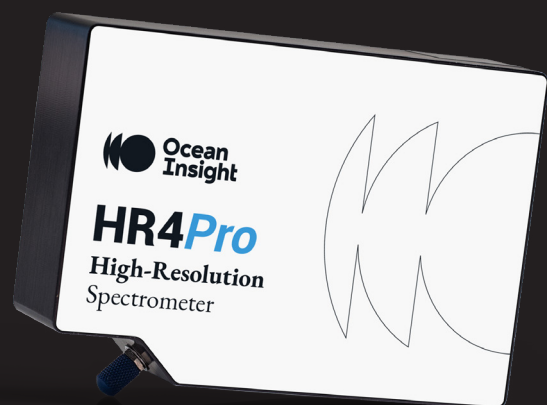
**Integration time:** 3.8 ms-10 s

**SNR:** 300:1

**Dark noise:** 6 counts RMS

**Corrected linearity:** 0.5% (NL)

**Input fiber connector:** SMA 905



## Advantages of HR4Pro Spectrometers

HR4Pro spectrometers comprise an attractive combination of small bench size, sub-nanometer optical resolution (FWHM) performance, and thermal stability-driven spectral accuracy for applications in challenging environments. Consider:

Benefits for Researchers	Benefits for Industrial Engineers and Integrators
Preconfigured units make model selection simple	Off-the-shelf options across UV-NIR wavelengths for initial testing
Low stray light ensures reliable results	10x thermal stability improvement vs. comparable spectrometers
Large-bench optical resolution performance at small-bench pricing	Excellent optical resolution in a unit ideal for integrating into other devices
Supported by in-house expertise across thousands of applications	Availability of our Lab Services team for project feasibility and consultation

## HR4Pro Preconfigured Spectrometers

HR4Pro model:	HR4Pro UV-Vis-ES	HR4Pro Vis-NIR-ES	HR4Pro XR-ES
<b>Wavelength range:</b>	200-875 nm	350-1025 nm	200-1100 nm
<b>Optical resolution (FWHM):</b>	<0.7 nm	<0.7 nm	~0.9 nm
<b>Thermal stability:</b>	0.3 pixels/ $^{\circ}\text{C}$	0.5 pixels/ $^{\circ}\text{C}$	0.6 pixels/ $^{\circ}\text{C}$
<b>Example applications:</b>	UV laser characterization; plasma gases analysis	Detection of atomic emission lines; LED characterization; flame analysis	Upwelling/downwelling measurements; thin film and solar panel analysis