

Avantes AvaSpec UV/VIS/NIR BT-CCD Spectrometer with Irradiance Calibration Package

#13-836



Avantes Spectrometers with Irradiance Calibration Package

Avantes Interchangeable Slit Compact Spectrometers feature high sensitivity, dynamic range, and responsivity from the UV to the NIR. Features include USB3.0 and Gigabit Ethernet connectivity, electronic shutter, and onboard processor and memory. Digital I/O ports control instrument triggering and synchronization functions. An included set of 4 interchangeable entrance slits at widths of 25, 50, 100, and 200 μ m facilitate fast configuration of signal throughput and resolution. An optional NIST traceable irradiance calibration package includes an FC/PC-keyed fiber-coupled cosine corrector and a 100 μ m wide slit. Avantes Interchangeable Slit Compact Spectrometers include software with advanced data collection and analysis functions, and an optional software development kit is sold separately.

General

Software:	AvaSoft-Full and AvaSoft-IRRAD
Integration Time:	2 μ s - 20s
Model Number:	AvaSpec-ULS2048XL-EVO-RS-UA-IRRAD
Note:	0.22 NA fiber patch cord is recommended, sold separately. Irradiance Calibration Package includes a fiber coupled transmissive PTFE near Cosine Corrector with FC/PC keyed slit plate and add-on software module.
Digitizer:	16-Bit or 65,535:1 @ 1 MHz
Input Port Termination:	SMA905
Grating:	Ruled Diffraction Grating: 300 Grooves/mm, Blazed @ 300nm
Optical Bench:	Crossed Czerny-Turner
Slit Width and Spectral Resolution:	25 μ m: 1.5nm 50 μ m: 2.5nm 100 μ m: 4.8nm 200 μ m: 9.2nm Irradiance: 100 μ m: 4.8nm
Fiber Grade:	Broadband
Irradiance Calibration Range (nm):	350 - 1100
Fiber and Slit Plate Termination:	FC/PC keyed
NIST Certification:	Yes
Calibration:	NIST Traceable Irradiance Calibration

Physical & Mechanical Properties

Weight (lbs):	3.1
Dimensions (mm):	175 x 127 x 44.5
Slit Height (μ m):	1000
Cosine Corrector Fiber Length (m):	1
Cosine Corrector Fiber Core Size Diameter (μ m):	200

Optical Properties

Stray Light (%):	<0.5
Spectrograph f/#:	7.5
Wavelength Range (nm):	200 - 1160

Sensor

Type of Sensor:	Back-Thinned CCD 2048 Pixel Linear Array
Pixel Size, H x V (μ m):	14 x 500
Dynamic Range:	13700

Electrical

Spectral Irradiance Sensitivity (1μ W/cm ² /nm):	460,000
Signal to Noise S/N Ratio:	525:1
Power Input:	USB 3.0: 5V @ 700mA
UV Quantum Efficiency (%):	>60 @ 200nm

Peak Quantum Efficiency (%):	>75 @ 450 - 700nm
Noise @ 25°C (Counts RMS):	Readout: 9.8 Dark: 4.5
Trigger Delay (µs):	0.28
Jitter (ns):	21

Hardware & Interface Connectivity

Computer Interface:	USB 3.0: 5Gbps Gigabit Ethernet: 1Gbps
Operating System:	Windows 7, 8, 8.1, 10 (32/64 Bits)
Digital I/O:	HD-26 connector, 2 Analog In, 2 Analog Out, 3 Digital In, 12 Digital Out, Trigger, Synchronization
Data Transfer Speed:	USB 3.0: 2.44 ms/scan

Material Properties

Cosine Corrector Material:	PTFE
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Environmental & Durability Factors

Operating Temperature (°C):	0 to +55
Thermal Drift:	±0.06 Pixel/°C
Operating Relative Humidity:	10 - 90% non-condensing

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