NEW

AvaSpec-NIR256/512-1.7-EVO
NIRLine Near-Infrared Spectrometer

AvaSpec-NIR256/512-1.7-EVO

For measurements in the near-infrared range out to 1.7 µm, Avantes offers a new series of uncooled spectrometer configurations. The AvaSpec-NIR256-1.7-EVO and the AvaSpec-NIR512-1.7-EVO offer the same high-sensitivity optical bench with the next generation of electronics. Both instruments deliver the same exceptional performance specifications such as a sample speed of only 0.53 ms/scan and integration times as fast as 20 µs, as the Avantes instruments you have come to trust.

For applications where resolution is key, or more datapoints for modelling are required, the 512 pixel detector will be the best choice.

The AvaSpec-NIR256/512-1.7-EVO spectrometers pair the same trusted InGaAs array detectors with our ultra low-noise electronics board featuring USB3 and Giga-Ethernet connection port. Digital and analog I/O ports enable external triggering and control over the shutter and pulsed lightsources and choose from two distinct software-controlled gain-setting modes, high-sensitivity mode (HS, default) and the low-noise (LN) mode.

These affordable, uncooled instruments are USB powered and are available with a choice of four gratings and replaceable slits to match the bandwith and requirements fitting your application.

Technical Data

	AvaSpec-NIR256-1.7-EVO	AvaSpec-NIR512-1.7-EVO
Optical bench	Symmetrical Czerny-Turner, 50 mm focal length,	
Wavelength range	900-1750 nm	
Resolution (slit & grating dependent)	2 - 50 nm	
Stray light	<1%	
Sensitivity HS in counts /µW per ms	8,200,000 (integral 1000-1750 nm)	3,800,000 (integral 1000-1750 nm)
Dynamic range HS	6000:1	
Integration time HS	20 µs – 500 ms	
Signal/noise HS	1900:1	
Sensitivity LN in counts /µW per ms	469,000 (integral 1000-1750 nm)	222,000 (integral 1000-1750 nm)
Dynamic range LN	9000:1	
Integration time LN	20 µs – 20 seconds	
Signal/noise LN	5000:1	
Detector	InGaAs linear array, 256 pixels, 50 µm x 500 µm	InGaAs linear array, 512 pixels, 25 µm x 500 µm
AD converter	16-bit, 500 kHz	16-bit, 500 kHz
Interface	USB3.0 high speed, 5 Gbps, Gigabit Ethernet 1 Gbps	
Sample speed with on-board averaging	0.53 ms/scan	
Data transfer speed	0.53 ms/scan (USB3)	
Digital IO	HD-26 connector, 2 Analog in, 2 Analog out, 13 Digital IO bi-directional, trigger, synchronization, strobe, laser	
Power supply	Default USB power, 600 mA or external 12VDC, 320mA (4W)	
Dimensions, weight	185 x 100 x 184 mm, 2700 grams	

Grating Selection Table

Use	Useable range (nm)	Spectral range (nm)	Lines/mm	Blaze (nm)	Order code
NIR	900 - 1750	850	200	1500	NIR200-1.5
NIR	1000 - 1700	340	400	1600	NIR400-1.6
NIR	900 - 1400	200	600	1200	NIR600-1.2
NIR	1300 - 1600	152	600	1600	NIR600-1.6

Resolution Table (FWHM in nm)

	Slit size (µm)				
Grating (lines/mm)	25*	50	100	200	500
200	6	8	12	22	50
400	2.5	3	6	12	25
600	n.a.	2	4	8	18

* only for AvaSpec-NIR512

Options

SLIT-XX-RS	• Replaceable slit with SMA connector, specify slit size XX = 25*, 50, 100 or 200 µm
SLIT-XX-RS-FCPC	• As SLIT-XX-RS, but with FC/PC connector

* only for AvaSpec-NIR512

For external triggering, Avantes offers the AvaTrigger; featuring optical triggering, an external TTL and manual triggering through the push of a button.