AvaSpec-NIR256/512-2.5-HSC-EVO
NIRLine Near-infrared Fiber Optic Spectrometer

AvaSpec-NIR256-2.5-HSC-EVO

The new and improved versions of our NIR spectrometers offer more sensitivity, less weight and less size. They are based on a 100mm optical bench with a NA of 0.13 offering optimal balance between resolution and sensitivity.

The 2.5-HSC series feature 256 or 512 pixel InGaAs detectors and are available in multiple configurations. These instruments are perfect for grain, corn, wheat, soya, polymers but also for medical uses, process monitoring and other analysis. The 256 pixel detectors offer best sensitivity for most applications.

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

Also available on the –HSC is the userselectable gain setting mode: LN(low- noise, standard setting), which gives you a longer integration time and higher signal to noise ratio, or HS (high-sensitivity) for measuring in lowlight conditions. Analog and digital IO ports enable external triggering and control of shuttered and pulsed light sources from the AvaLight series.

The EVO instruments use the AS7010 electronics board offering USB3 (10 times faster than USB2), Gigabit Ethernet and better signal processing.

Technical Data

Spectrometer platform	AvaSpec-NIR256-2.5-HSC-EVO	AvaSpec-NIR512-2.5-HSC-EVO
Optical Bench	TE-cooled Symmetrical Czerny Turner, 100 mm focal length	
Wavelenght Range	1000-2500 nm	
Resolution (slit & grating dependent)	4.4-85.0 nm	2.6-85.0 nm
Pixel Dispersion (with NIR 075-1.7 grating)	6.2 nm	3.1 nm
Stray-light	<1.0%	
Sensitivity HS in counts / µW per ms (1000-2500 nm)	990,000	480,000
Signal/Noise HS	1800:1	1900:1
Integration time HS	10 µs-5 ms	
Sensitivity LN in counts / uW per ms (1000-2500nm)	55,000	26,600
Signal/Noise LN	4000:1	3700:1
Integration time LN	10 µs-100 ms	
Detector	inGaAs linear array with 2-stage TE-cooling, 256 pixel	inGaAs linear array with 2-stage TE-cooling, 512 pixel
Pixel size (WxH)	50 x 250 µm	25 x 250 µm
AD converter	16 bit, 500kHz	
Interface	USB 3.0 high-speed, 5 Gbps Gigabit Ethernet 1 Gbps	
Sample speed with on-board averiging	0.54 ms/scan (USB3)	
Data transfer speed	1.11 ms/scan (USB3)	
Digital IO	HD-26 connector, 2 Analog in, 2 Analog out, 13 Digital bi-directional, trigger, sync, strobe, laser	
Power supply	12 V, 40W	
Operating Temperature range	0-40ºC	
Cooling	45ºC versus ambient	
Dimensions, weight	185 x 145 x 185 mm, 3.5 kg	

Grating Selection Table for AvaSpec-NIR 256/512-2.5-HSC-EVO

Use	Useable range (nm)	Spectral range (nm)	Lines/mm	Blaze (nm)	Order code
NIR	1000-2500	1500	75	1700	NIR075-1.7
NIR	1350-2500	1173-1150*	100	2500	NIR100-2.5
NIR	1000-2500	750-660*	150	2000	NIR150-2.0
NIR	1000-2500	815-700*	150	2600	NIR150-2.6
NIR	1000-2500	574-530*	200	1500	NIR200-1.5

**Depends on the starting wavelength of the grating; the higher the wavelength, the bigger the dispersion and the smaller the range to select.*

Resolution Table (FWMH in nm) for AvaSpec-NIR256/512-2.5-HSC-EVO

	Slit size (µm)				
Grating (lines/mm)	**25***	**50**	**100**	**200**	**500**
75	8.9	12.9	16.0	33.9	84.5
100	7.2	9.5	12.0	20.0	50.0
150	4.0	5.7	7.0	12.8	32.0
200	2.6	4.4	5.2	9.3	23.3

** Only for AvaSpec-NIR 512*

Ordering Information

AvaSpec-NIR256-2.5-HSC-EVO	• NIR Spectrometer, 100 mm Avabench, 256 pixel InGaAs detector 2stage TEC, high-speed USB 3.0 and ETH interface, incl. AvaSoft-Basic, USB cable, specify OSF-1000, NIR grating and wavelength range and Slit-xx-RS
AvaSpec-NIR512-2.5-HSC-EVO	• NIR Spectrometer, 100 mm Avabench, 512 pixel InGaAs detector 2stage TEC, high-speed USB 3.0 and ETH interface, incl. AvaSoft-Basic, USB cable, specify OSF-1000, NIR grating and wavelength range and Slit-xx-RS

Options

SLIT-XX-RS	• Slit size, please specify XX = 25, 50, 100, 200 or 500 µm

This instrument is perfect for grain, corn, wheat, soya and other analysis.