

AvaSpec-Mini (MK-II): CMOS inside Small and powerful OEM spectrometer



Looking for a very small spectrometer with a resolution of up to 0.1 nm? Then the AvaSpec-Mini is an ideal choice. It's only the size of a deck of cards, yet delivers a dynamic range better than 3000:1, stray-light levels lower than 0.2% and weighs only 175 grams. Easy to take anywhere you like.

The AvaSpec-Mini MK-II is produced with the latest automated production technology, providing excellent

unit-to-unit reproducibility and temperature stability. These are key parameters for OEM customers for reliable integration into their products. Many areas of research can be covered, such as light analysis, chemical research and Raman spectroscopy. The possibilities are endless.

Of course, the AvaSpec-Mini works seamlessly with Avantes spectroscopy software and the Windows and Linux libraries

Name	AvaSpec-Mini 2048CL	AvaSpec-Mini 4096CL
Optical Bench	Symmetrical Czerny-Turner, 75 mm focal length, MK II	
Wavelength range	200-1100 nm	
Stray-light	<0.2%	<0.2%
Sensitivity	337.500	261.000
Detector	HAM S11639 , CMOS linear array, 2048 pixels (14x200µm)	HAM S13496 , CMOS linear array, 4096 pixels (7x200µm)
Signal/Noise	330:1	300:1
Dynamic Range	3300	
Dark Noise	16 cnts	
AD converter	16-bit, 6 MHz	
Integration time	30µs - 50 s	
Interface	USB 2.0 (480 Mbps) / pigtailed (50cm) USB-A	
Sample speed with on-board averaging	3.0 ms/scan	6.5 ms/scan
Data transfer speed	4.6 ms/scan	8.9 ms/scan
I/O	5 bidirectional programmable I/O; 1 analog out; 1 analog in, 1x5V	
Dimensions, weight	95 x 68 x 20 mm, 175 grams	
Power supply	Default USB power, 500 mA	
Temperature range	0-55°C	

Grating selection table for AvaSpec-Mini

Use	Useable range (nm)	Spectral range (nm)	Lines/mm	Blaze (nm)	Order code
2048CL					
UV	200-400	167	1800	250	MN 1800-0.25
VIS	330-900	530	600	500	MN 600-0.50
NIR	550-1100	520	600	1000	MN 600-1.00
UV/VIS/NIR	200-1100	900	300	300	MN 300-0.30
VIS/NIR	360-1100	720	300	500	MN 300-0.50
4096CL					
UV	200-400	170	1800	250	MN 1800-0.25
VIS	330-900	535	600	500	MN 600-0.50
NIR	550-1100	525	600	1000	MN 600-1.00
UV/VIS/NIR	200-1100	900	300	300	MN 300-0.30
VIS/NIR	360-1100	720	300	500	MN 300-0.50

Resolution table (FWHM in nm) for AvaSpec-Mini*

Grating (lines/mm)	Slit size (μm)					
	10	25	50	100	200	500
2048 CL						
300	1.00	1.30	2.40	4.80	9.20	22.00
600	0.40-0.53	0.70	1.20	2.40	4.60	11.00
1800	0.10-0.18	0.22	0.34-0.42	0.80	1.60	3.60
4096CL						
300	0.50-0.70	1.20-1.30	2.17	4.60	9.00	20.00
600	0.30-0.36	0.58-0.68	1.17	2.20	4.50	10.00
1800	0.09-0.11	0.18	0.36-0.40	0.78	1.50	3.70

* Typical values. Small deviations are possible.

Ordering Information

AvaSpec-Mini2048CL	<ul style="list-style-type: none"> Mini Fiber-optic Spectrometer, 75 mm focal length, 2048 pixel CMOS detector, USB 2 powered interface, including DCL
AvaSpec-Mini4096CL	<ul style="list-style-type: none"> Mini Fiber-optic Spectrometer, 75 mm focal length, 4096 pixel CMOS detector, USB 2 powered interface, including DCL
<i>Specify grating, wavelength range and options. Other gratings are possible on request.</i>	

Options

SLIT-XX	<ul style="list-style-type: none"> Slit size, please specify XX = 10, 25, 50, 100, 200 or 500 μm (5 μm possible on request)
OSC	<ul style="list-style-type: none"> Order sorting coating for grating MN 600-0.50, recommended with OSF-305
OSC-UA	<ul style="list-style-type: none"> Order sorting coating for grating MN 300-0.30
OSC-VA	<ul style="list-style-type: none"> Order sorting coating for grating MN 300-0.50, recommended with OSF-305
OSF-YYY	<ul style="list-style-type: none"> Order-sorting filter for reduction of 2nd order effects, please specify YYY= 550 or 600 nm, depends on range

For non-OEM users a set of preconfigured models are available