AvaSpec-Mini4096CL
Small and powerful OEM spectrometer

This first-to-the-market, 4096 pixel CMOS array miniature spectrometer is the perfect combination of small size and high resolution (up to 0.09 nm)!

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-Mini4096CL is produced with the latest automated production technology, providing excellent unit-to-unit reproducibility and temperature stability. These are key para-meters for OEM customers for reliable integration into their products.

Many areas of research can be covered with this device, 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.

Technical Data

Optical bench	Symmetrical Czerny-Turner, 75 mm focal length, MK II
Wavelength range	200 - 1100 nm
Stray light	0.2 - 1%
Sensitivity	261.000
Detector	HAM S13496 , CMOS linear array, 4096 pixels (7x200µm)
Signal/noise	300:1
Dynamic range	3300
Dark noise	16 cnts
AD converter	16-bit, 6 MHz
Integration time	30 µs - 50 s
Interface	USB 2.0 (480 Mbps) / pigtailed (50cm) USB-A
Sample speed with on-board averaging	6.5 ms/scan
Data transfer speed	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
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*

	Slit size (µm)					
Grating (lines/mm)	**10**	**25**	**50**	**100**	**200**	**500**
	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-Mini4096CL	• Mini Fiber-optic Spectrometer, 75 mm focal length, 4096 pixel CMOS detector, USB 2 powered interface, including DCL
	Specify grating, wavelength range and options. Other gratings are possible on request.

Options

SLIT-XX	• Slit size, please specify XX = 10, 25, 50, 100, 200 or 500 µm (5 µm possible on request)
OSC	• Order sorting coating for grating MN 600-0.50, recommended with OSF-305
OSC-UA	• Order sorting coating for grating MN 300-0.30
OSC-VA	• Order sorting coating for grating MN 300-0.50, recommended with OSF-305
OSF-YYY	• Order-sorting filter for reduction of 2nd order effects, please specify YYY= 305, 395, 457, 515, 550 or 600 nm, depends on range
	For non-OEM users a set of preconfigured models are available

AvaSpec-Mini2048CL
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-Mini2048CL is produced with the latest automated production technology, providing excellent unit-to-unit reproducibility and temperature stability. These are key para-meters for OEM customers for reliable integration into their products.

Many areas of research can be covered with this device, 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.

Technical Data

Optical bench	Symmetrical Czerny-Turner, 75 mm focal length, MK II
Wavelength range	200 - 1100 nm
Stray light	0.2 - 1%
Sensitivity	337.500
Detector	HAM S11639 , CMOS linear array, 2048 pixels (14x200 µm)
Signal/noise	330:1
Dynamic range	3300
Dark noise	16 cnts
AD converter	16-bit, 6 MHz
Integration time	30 µs - 40 s
Interface	USB 2.0 (480 Mbps) / pigtailed (50cm) USB-A
Sample speed with on-board averaging	3.0 ms/scan
Data transfer speed	4.6 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

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

	Slit size (µm)					
Grating (lines/mm)	**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
	** Typical values. Small deviations are possible.*					

Ordering information

AvaSpec-Mini2048CL	• Mini Fiber-optic Spectrometer, 75 mm focal length, 2048 pixel CMOS detector, USB 2 powered interface, including DCL
	Specify grating, wavelength range and options. Other gratings are possible on request.

Options

SLIT-XX	• Slit size, please specify XX = 10, 25, 50, 100, 200 or 500 µm (5 µm possible on request)
OSC	• Order sorting coating for grating MN 600-0.50, recommended with OSF-305
OSC-UA	• Order sorting coating for grating MN 300-0.30
OSC-VA	• Order sorting coating for grating MN 300-0.50, recommended with OSF-305
OSF-YYY	• Order-sorting filter for reduction of 2nd order effects, please specify YYY= 305, 395, 457, 515, 550 or 600 nm, depends on range
	For non-OEM users a set of preconfigured models are available