

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 parameters 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 (40 cm) 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

* Other gratings are available on request.

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

* 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 available 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

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AVANTES
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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 parameters 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 (40 cm) 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

* Other gratings are available on request.

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

Grating (lines/mm)	Slit size (µm)					
	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 available 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

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NEW

AvaSpec-Mini-NIR

Small and Powerful OEM NIR Spectrometer

AvaSpec-Mini-NIR256-1.7



The latest addition to our CompactLine: the AvaSpec-Mini-NIR!

The AvaSpec-Mini-NIR is a compact near-infrared spectrometer, based on a combination of our popular AvaSpec-NIR256-1.7 and Mini-series.

This NIR spectrometer might not be as sensitive as our bigger NIR spectrometers, but this loss in sensitivity is greatly compensated by its size and robustness.

Like our other CompactLine spectrometers, this device is only the size of a deck of cards

and USB powered, which makes it easy to integrate into other devices, including but not limited to OEM handheld applications.

This versatile miniature near-infrared spectrometer is well suited for various applications, including food analysis and recycling.

Of course, the AvaSpec-Mini-NIR works seamlessly with our AvaSoft software and the Windows and Linux libraries we have available.

Technical Data

Optical bench	Symmetrical Czerny-Turner, 75 mm focal length, MK II
Wavelength range	900-1750 nm
Stray light	1%
Sensitivity HS in counts/μW per ms	665,000 (integral 1000-1750 nm)
Dynamic range HS	4750:1
Integration time HS	10 μ s – 300 ms
Signal/noise HS	1900:1
Dark noise HS	14 counts
Sensitivity LN in counts/μW per ms	38,000 (integral 1000-1750 nm)
Dynamic range LN	7500:1
Integration time LN	10 μ s – 5 seconds
Signal/noise LN	5000:1
Dark noise LN	9 counts
Detector	InGaAs array, 256 pixels
AD converter	16-bit, 500 kHz
Interface	USB2.0 (480 Mbps)/pigtailed (40 cm) USB-A
Sample speed with store to RAM	0.53 ms/scan
Data transfer speed	1.2 ms/scan
I/O	5 bidirectional programmable I/O: 1 analog out, 1 analog in, 1 x 5V
Power supply	Default USB power, 500 mA
Dimensions, weight	95 x 68 x 20 mm, 185 g
Temperature range	0-55°C

Grating selection table for AvaSpec-Mini-NIR

Use	Useable range (nm)	Spectral range (nm)	Lines/mm	Blaze (nm)	Order code
NIR	900-1750	725	200	1550	NIR200-1.6
NIR	900-1495	330-320	400	1210	NIR400-1.2
NIR	1250-1700	315-310	400	1600	NIR400-1.6
NIR	900-1450	210-195	600	1280	NIR600-1.3
NIR	1350-1735	185-170	600	1669	NIR600-1.7

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

Grating (lines/mm)	Slit size (μm)			
	50	100	200	500
200	6	12	24	50
400	3	6	12	25
600	2	4	8	18

* Typical values. Small deviations are possible.

Ordering information

AvaSpec-Mini-NIR256-1.7

- Miniature NIR fiber-optic spectrometer, 75 mm focal length, 256 pixel InGaAs detector, USB2 powered interface

Specify grating, wavelength range and options. Other gratings are possible on request.

Options

SLIT-XX

- Slit size, please specify XX = 50, 100, 200 or 500 μm

For non-OEM users, a preconfigured model will be available upon release



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