

Avantes' CompactLine

Small Yet Powerful

Miniature Spectroscopy Redefined



CompactLine

Spectroscopy redefined, that is what we consider our CompactLine series of spectrometers to be.

In cases where size matters, the AvaSpec CompactLine family offers spectrometers with one of the smallest form factors on the market today. This compact size enables easier integration of our spectrometers into OEM and handheld devices.

Squeezing down the size hardly compromises the performance of our CompactLine instruments and with the multiple configurations available, the AvaSpec-Mini series can be used for numerous applications in various industries.

Since the AvaSpec-Mini is produced using a semi-automated production process, we can ensure high unit-to-unit reproducibility. Equipped with CMOS detectors and advanced electronics and communications, these miniature spectrometers offer both high resolution and speed!

Highlights



- ✳ Size of a deck of cards
- ✳ Easy to integrate
- ✳ Suitable for harsh environments
- ✳ USB powered
- ✳ Temperature and wavelength stability
- ✳ 2048 or 4096 pixel detector
- ✳ High unit-to-unit reproducibility
- ✳ Well suited for various applications

Specifications

Technical Data

	AvaSpec-Mini2048CL	AvaSpec-Mini4096CL
Optical bench	Symmetrical Czerny-Turner, 75 mm focal length, MK-II	
Wavelength range	200-1100 nm	
Stray light	0.2-1%	0.2-1%
Sensitivity	337,500	261,000
Detector	HAM S11639, CMOS linear array, 2048 pixels (14 x 200 μ m)	HAM S13496, CMOS linear array, 4096 pixels (7 x 200 μ m)
Signal/noise	330:1	300:1
Dynamic range	3300	
Dark noise	16 cnts	
AD converter	16-bit, 6 MHz	
Integration time	30 μ s-40 s	30 μ s-50 s
Interface	USB 2.0 (480 Mbps)/pigtailed (40 cm) 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, 1 x 5V	
Dimensions, weight	95 x 68 x 20 mm, 175 g	
Power supply	Default USB power, 500 mA	
Temperature range	0-55°C	

You can find the full details and specifications of these miniature spectrometers on www.avantes.com

AvaSpec-Mini-NIR

NEW

The latest addition to our CompactLine is the AvaSpec-Mini-NIR. This miniature near-infrared spectrometer is based on a combination of our popular AvaSpec-NIR256-1.7 and the AvaSpec-Mini series.

With its wavelength range of 900-1750 nm and its small form factor, the AvaSpec-Mini-NIR is very versatile and easy to integrate into other devices, including but not limited to handheld applications. Since the AvaSpec-Mini-NIR has no moving parts, it is very robust and can be used in virtually any environment.

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

Applications



The AvaSpec-Mini-NIR is compact and versatile, which makes it perfect for various applications, including food analysis and recycling.

Some applications the AvaSpec-Mini-NIR is especially well suited for are fertilizer analysis, quality control in the dairy industry, wheat and grain analysis, identification of recyclable materials and moisture content measurements.

Of course, the AvaSpec-Mini-NIR can be used for any near-infrared application in the wavelength range of 900 to 1750 nm.

We look forward to seeing what else the AvaSpec-Mini-NIR will be utilized for!

Specifications

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

You can find the full details and specifications of the AvaSpec-Mini-NIR on www.avantes.com

Bench-Only Spectrometers

For seamless integration into different systems we offer our AvaBench optical bench series. These benches are available with or without our circuit board.



Our miniature bench, the AvaBench-75-MN (CompactLine) features a Czerny-Turner design with a fiber-optic entrance connector (SMA), collimating focusing mirrors and a diffraction grating.

This miniature bench is also available in the near-infrared range. All AvaBenches are highly customizable and versatile. Visit our website to see all the available options!

Technical Data

	AvaBench-75-MN2048CL/4096CL	AvaBench-Mini-NIR256-1.7
Implemented in	AvaSpec-Mini2048CL/4096CL	AvaSpec-Mini-NIR
Focal length	75 mm	75 mm
Numerical aperture	0.07	0.07
Wavelength range	200-1100 nm	900-1750 nm
Resolution (FWHM)	0.05-20 nm	2-50 nm
Stray light	0.2-1%	<1%
Gratings	See available options	See available options
Slits	10, 25, 50, 100, 200, 500 μm	50, 100, 200, 500 μm
Detector	HAM-2048CL/4096CL	HAM-NIR256-1.7
Detector lens	UV/VIS-200	NA
Order-sorting filter	See available options	OSF-850-3/OSF-1000-3
Dimensions, weight	95 x 68 x 20 mm, 185 g	95 x 68 x 20 mm, 185 g

About Avantes

Avantes is the leading innovator in the development of fiber-optic spectroscopy instruments and systems with over 25 years of experience in developing customer-defined configurations.

With a long history of consulting with clients across diverse industries and applications, Avantes is an experienced partner, equipped to guide customers who want a solution tailored to their application and research needs. Avantes offers customers the peace of mind that the instruments they purchase will meet, and exceed, their expectations.

Through our headquarters in Apeldoorn, the Netherlands and offices in the USA and China, our sales engineers work closely with our customers to recommend the optimal measurement solution. In addition to our direct offices, Avantes has an extensive network of distributors in over 35 countries who are ready to assist you.

Our production team, which is located at our headquarters in the Netherlands, is dedicated to quality workmanship and has a relentless drive to exceed customer expectations.

Contact one of our knowledgeable sales engineers today to find the perfect setup tailored to your application.



AVANTES

MEMBER OF THE NYNOMIC GROUP

For more information or support, please contact us at:

Avantes Headquarters

Oude Apeldoornseweg 28
7333 NS, Apeldoorn
The Netherlands
Tel: +31 (0) 313 670170
info@avantes.com
www.avantes.com

Avantes Inc.

500 S. Arthur Ave., Unit 500
Louisville, CO 80027
United States of America
Tel: +1 (303) 410 8668
infoUSA@avantes.com
www.avantesUSA.com

Avantes China

Room 1209-1210, ULO Park
No. 601 Apartment of Wang-
jing Yuan, Chaoyang District
Beijing, 100102 P.R. China
Tel: +86 10 84574045
info@avantes.com.cn
www.avantes.cn

