

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
<b>Optical bench</b>	Symmetrical Czerny-Turner, 75 mm focal length, MK-II	
<b>Wavelength range</b>	200-1100 nm	
<b>Stray light</b>	0.2-1%	0.2-1%
<b>Sensitivity</b>	337,500	261,000
<b>Detector</b>	HAM S11639, CMOS linear array, 2048 pixels (14 x 200 $\mu$ m)	HAM S13496, CMOS linear array, 4096 pixels (7 x 200 $\mu$ m)
<b>Signal/noise</b>	330:1	300:1
<b>Dynamic range</b>	3300	
<b>Dark noise</b>	16 cnts	
<b>AD converter</b>	16-bit, 6 MHz	
<b>Integration time</b>	30 $\mu$ s-40 s	30 $\mu$ s-50 s
<b>Interface</b>	USB 2.0 (480 Mbps)/pigtailed (40 cm) USB-A	
<b>Sample speed with on-board averaging</b>	3.0 ms/scan	6.5 ms/scan
<b>Data transfer speed</b>	4.6 ms/scan	8.9 ms/scan
<b>I/O</b>	5 bidirectional programmable I/O; 1 analog out; 1 analog in, 1 x 5V	
<b>Dimensions, weight</b>	95 x 68 x 20 mm, 175 g	
<b>Power supply</b>	Default USB power, 500 mA	
<b>Temperature range</b>	0-55°C	

You can find the full details and specifications of these miniature spectrometers on [www.avantes.com](http://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

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

You can find the full details and specifications of the AvaSpec-Mini-NIR on [www.avantes.com](http://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
<b>Implemented in</b>	AvaSpec-Mini2048CL/4096CL	AvaSpec-Mini-NIR
<b>Focal length</b>	75 mm	75 mm
<b>Numerical aperture</b>	0.07	0.07
<b>Wavelength range</b>	200-1100 nm	900-1750 nm
<b>Resolution (FWHM)</b>	0.05-20 nm	2-50 nm
<b>Stray light</b>	0.2-1%	<1%
<b>Gratings</b>	See available options	See available options
<b>Slits</b>	10, 25, 50, 100, 200, 500 $\mu\text{m}$	50, 100, 200, 500 $\mu\text{m}$
<b>Detector</b>	HAM-2048CL/4096CL	HAM-NIR256-1.7
<b>Detector lens</b>	UV/VIS-200	NA
<b>Order-sorting filter</b>	See available options	OSF-850-3/OSF-1000-3
<b>Dimensions, weight</b>	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

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