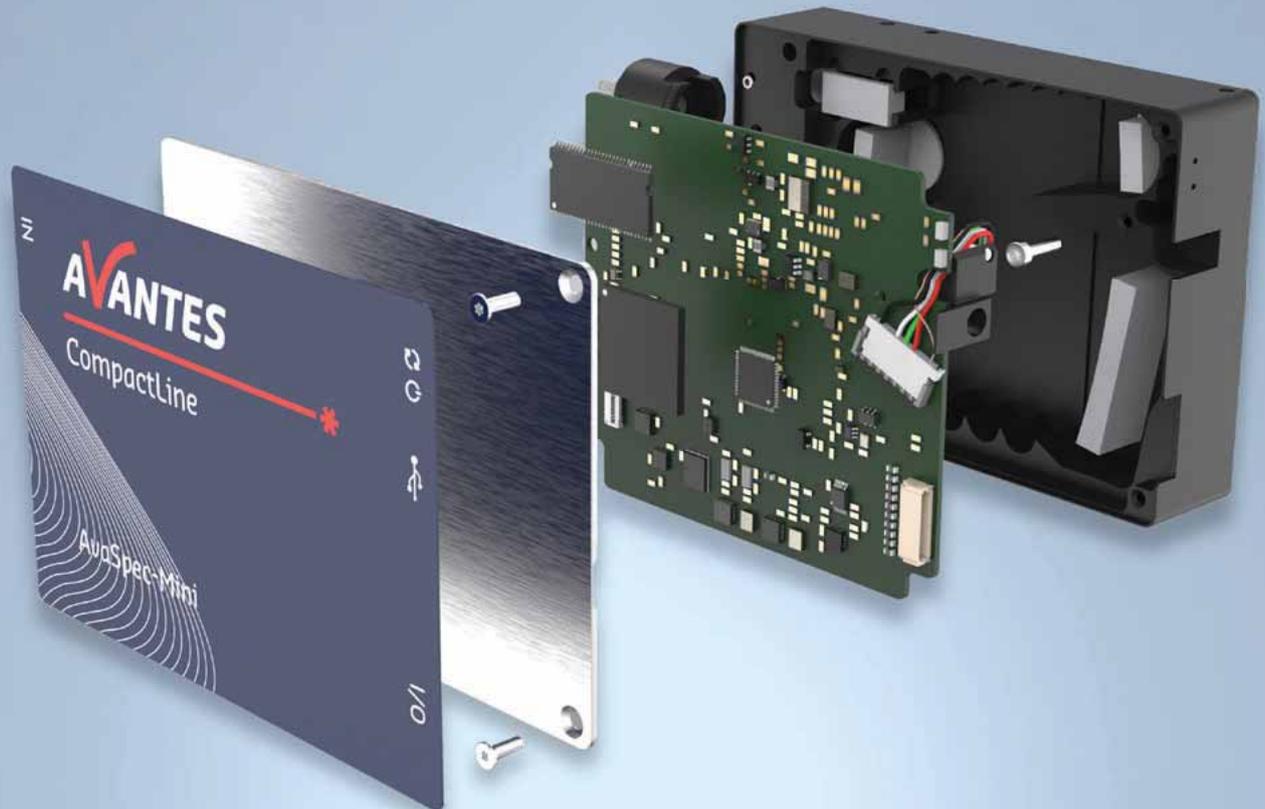


BROCHURE

COMPACTLINE

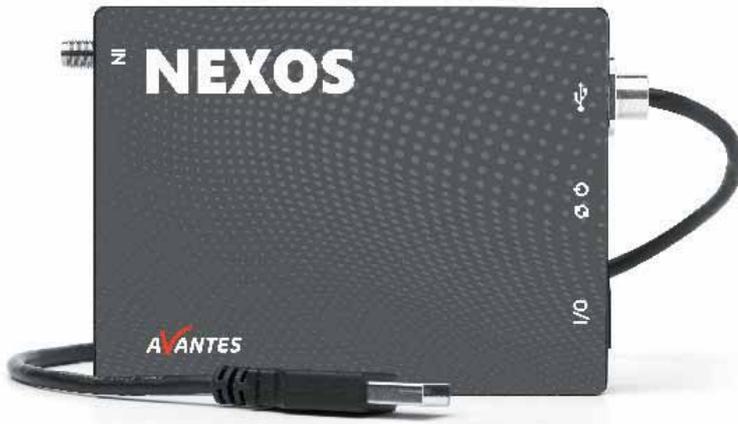
Miniature Spectrometers Redefined



NEXOS™ SPECTROMETER



COMPACTLINE



Meet the NEXOS™ spectrometer, a compact device optimized for the best performance in system integration. This device is compatible with Avantes light sources, accessories, and AvaSoft software.

POWERFUL.
VERSATILE.
COMPACT.

NEXOS™ SPECTROMETERS

To be suitable for everyone, we offer three variations to match your application's needs.

1. NEXOS™ USB

Available with 2048 or 4096 pixel detector, and USB-powered with strengthened pigtail

2. NEXOS™ Link

Allows you to use a different communication protocol (RS232 or SPI) for smooth integration

3. NEXOS™ Bench Only

The Bench Only let's you combine our optical engine with your own electronics

WHY CHOOSE NEXOS™?

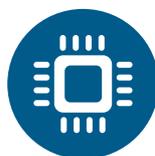
- Small size
- Improved optical bench design
- Smooth product or system integration
- Produced with AvaMation for unsurpassed inter-instrument reproducibility & scalability
- Superior stray light performance
- High signal-to-noise ratio
- USB-powered with pigtail
- Multiple variations available

APPLICATIONS & INDUSTRIES

The NEXOS™ spectrometers are suitable for a wide range of applications and industries, including;



Agriculture & Food
Food Sorting
Precision Agriculture



Semiconductor
Thin Film Coating
End-Point Detection



Environmental
Contamination &
Pollution Monitoring



(Bio)Medical
Blood Analysis
Cancer Detection



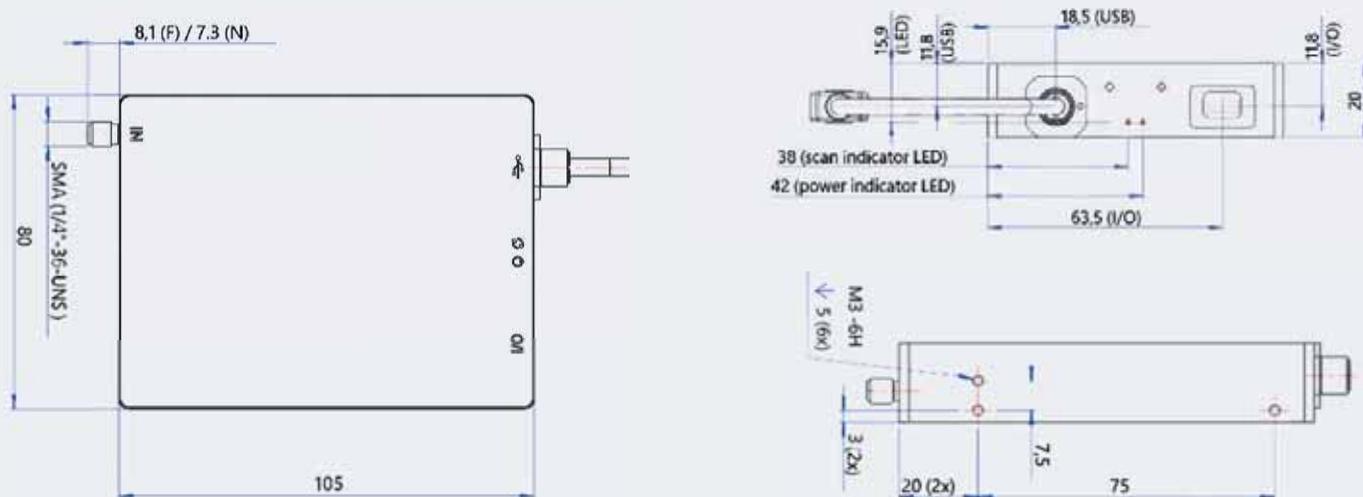
System Integration
Integrate into your
product or system

SPECIFICATIONS NEXOS™ SPECTROMETER

The information on this page relates to the USB-powered NEXOS™ spectrometer.

	NEXOS™ 2K	NEXOS™ 4K
Optical Bench	Symmetrical Czerny-Turner design, 75 mm focal length; NEXOS™ spectrometer bench	
Wavelength range	190 - 1100 nm	
Stray light	0.1 - 1% (typical value 300l/mm, blaze 300 nm < 0.3%)	
Detector	HAM S11639, CMOS linear array, 2048 pixels (14x200 μm)	HAM S13496, CMOS linear array, 4096 pixels (7x200μm)
Signal/Noise	375:1	365:1
Dynamic Range	4500	
Dark noise	15 cnts	
AD converter	16-bit, 6 MHz	
Integration time	9 μs – 30 s	
Interface	USB 2.0 (480Mbps) / pigtailed (38cm) USB-A	
Sample speed on-board averaging	0.36 ms/scan	0.70 ms/scan
Data transfer speed	0.79 ms/scan	1.12 ms/scan
Digital I/O	5 bidirectional programmable I/O; 1 Analog out, 1 Analog in, 1x5V	
Dimensions, weight	105 x 80 x 20 mm, 277,5 grams	
Power supply	Default USB power, 500 mA	
Temperature range	5-55 °C	

DIMENSIONS



Dimensions in mm



FULL PRODUCT OVERVIEW & SPECIFICATIONS

Scan the QR-code for the full product overview, gratings, ordering options, and more. Discover the flexibility of the NEXOS™ spectrometer and find your ideal variation.

Discover all our empowering spectroscopy solutions on our website www.avantes.com

We reserve the right to make changes without prior notice. While every effort has been made to ensure all information in this document is accurate, Avantes accepts no liability for any inaccuracies.

ABOUT THE COMPACTLINE

Spectroscopy redefined, that is what we consider our CompactLine spectrometers to be. In applications where size matters, the AvaSpec CompactLine offers spectrometers with one of the smallest form factors on the market today. Because of the small size, these spectrometers are perfectly suited for integration into OEM systems and handheld devices.

Reducing the size does not compromise the performance of these instruments. With multiple configurations available, the AvaSpec-Mini series can be applied for numerous applications in various industries.

Equipped with CMOS detectors and advanced electronics and communications, the AvaSpec-Mini series offers both high resolution and speed. Manufactured with AvaMation, our semi-automated production process, the CompactLine is ready for the future!

BENEFITS

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



COMPACTLINE SPECTROMETERS

Since spectroscopy is used for numerous applications, we have defined our spectrometers in different lines:



AvaSpec-Mini2048CL & AvaSpec-Mini4096CL

The AvaSpec-Mini-CL series is available with a 2048 pixel CMOS detector or our first-to-the-market 4096-pixel array. Enjoy the speed and enhanced native UV/NIR response of CMOS with an incredible resolution of up to 0.09 nm. The low stray-light design allows levels from as low as 0.2%. The fast response time boasts data transfer speeds as fast as 4.6 ms/scan, and integration times ranging from 30 μ s to 50 s. Also available as preconfigured model.



AvaSpec-Mini-NIR

With its wavelength range of 900-1750 nm and small form factor, the Mini-NIR is very versatile and easy to integrate into other devices, including but not limited to handheld applications. Think about grain analysis, material identification in recycling or quality control in the dairy industry. Just like the AvaSpec-Mini, the Mini-NIR has no moving parts, is very robust and can be used in all kinds of environments.

Naturally, all CompactLine products work seamlessly with our AvaSoft software. We offer custom DLL libraries for partners who have their own software.

SPECIFICATIONS COMPACTLINE SPECTROMETERS

	AvaSpec-Mini2048CL	AvaSpec-Mini4096CL	AvaSpec-Mini-NIR
Optical bench	Symmetrical Czerny-Turner 75 mm focal length, MK2		
Wavelength range	200-1100 nm		900-1750 nm
Stray light	0,2 - 1%		1%
Sensitivity HS in counts / μ W per ms	N/A	N/A	665,000 (integral 1000-1750 nm)
Dynamic range HS	N/A	N/A	4750:1
Integration time HS	N/A	N/A	10 μ s–300 ms
Signal/noise HS	N/A	N/A	1900:1
Dark noise HS	N/A	N/A	14 counts
Sensitivity LS in counts / μ W per ms	N/A	N/A	38,000 (integral 1000-1750 nm)
Dynamic range LS	N/A	N/A	7500:1
Integration time LS	N/A	N/A	10 μ s–5 seconds
Signal/noise LS	N/A	N/A	5000:1
Dark noise LS	N/A	N/A	9 counts
Sensitivity	337,500	261,000	N/A
Dynamic range	3300		N/A
Dark noise	16 counts		N/A
Integration time	30 μ s-40 s	30 μ s-50 s	N/A
Signal/noise	330:1	300:1	N/A
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)	InGaAs array, 256 pixels
AD convertor	16-bit, 6 MHz		16-bit, 500 kHz
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	0.53 ms/scan
Data transfer speed	4.6 ms/scan	8.9 ms/scan	1.2 ms/scan
I/O	5 bi-directional 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		

MORE INFORMATION

Click [here](#) for more information about gratings, resolution and extra options



OEM CUSTOMERS - BENCH ONLY

For seamless integration into different systems we offer our AvaBench optical bench series, 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.

SPECIFICATIONS

	AvaBench-75-MN2048CL/4096CL	AvaBench-Mini-NIR256-1.7
Implemented in	AvaSpec-Mini2048CL/4096CL	AvaSpec-Mini-NIR
Focal length	75 nm	
Numerical aperture	0.078	
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 on our website	
Slits	10, 25, 50, 100, 200, 500 μ m	50, 100, 200, 500 μ m
Detectors	HAM-2048CL/4096CL	HAM-NIR256-1.7
Detector lens	UV/VIS-200	NA
Order-sorting filter	See options on our website	OSF-850-3/OSF-1000-3
Dimensions, weight	95 x 68 x 20 mm, 185 g	

SUITABLE INDUSTRIES

The AvaSpec-Mini spectrometers are suited for numerous applications in various industries:



Agriculture & Food



(Bio)Medical



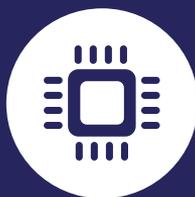
Chemistry



Environmental



Lighting



Semiconductor

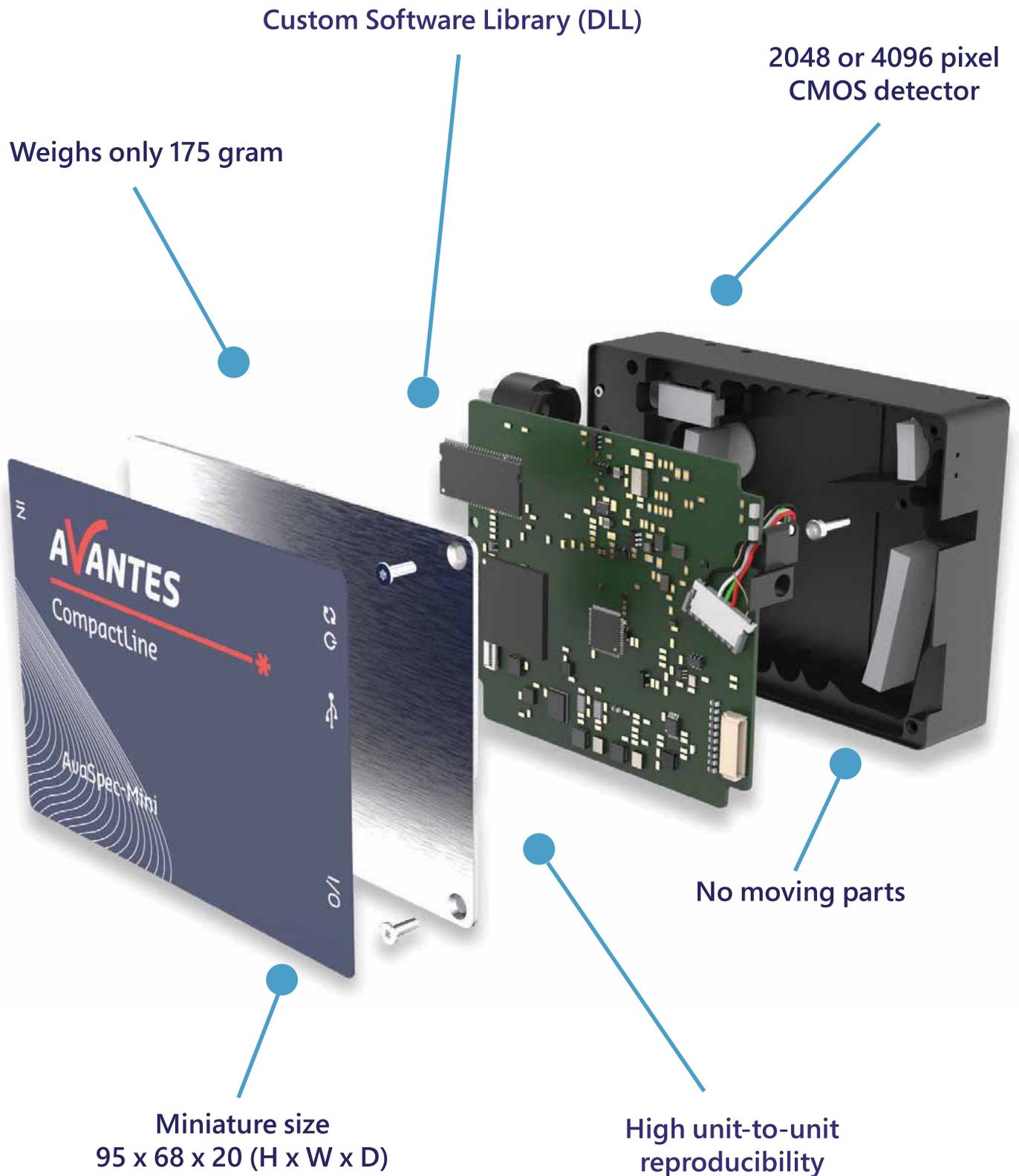


Gemology



Original Equipment
Manufacturers

TAKE A LOOK INSIDE



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Watch our CompactLine video

Click [here](#) to watch our CompactLine video and discover its endless possibilities