

MicroNIR™ Pro ES

An ultra-compact, general-purpose spectrometer

The MicroNIR Pro 1700 ES is a lightweight and cost-effective near infrared (NIR) spectrometer that combines Viavi's high-precision optical coating technology with innovation in optical system design and miniaturization.

Integrating Viavi linear variable filter (LVF) technology as the dispersing element, the spectrometer contains the light source, collection optics, electronics, and LVF in a housing that is <50 mm in diameter, <45 mm tall, and only 64 g light. The spectrometer is USB-powered and can be used in diffuse reflection, transmission, or transflection modes.

A MicroNIR Pro package includes a number of accessories that either enhance ease-of-use or enable measuring with different configurations that best fit specific applications.

Standard Accessories

- Vial holder with 100 5 ml glass vials
- Standard collar for normal operation
- Windowed collar for powder and soft material measurement and easy cleaning
- 99% spectralon references for vial measurement and point-and-shoot operation
- Bracket with ¼-20 thread for ease of mounting on standard optical post or mount
- Softshell case for shipping and transportation

Options

- Transmission fixture for liquid sample measurement



Key Benefits

- Covers the first and second overtone spectral region: 950 – 1650 nm
- Enhanced electronic and mechanical design for better thermal control and system stability
- Real-time predictions and method management
- Powerful calibration model development tool

Applications

- Pharmaceutical
- Food, feed, and agriculture
- Industrial processing



Software

The MicroNIR Pro ES 1700 includes data acquisition, method development, user management, and real-time prediction software.

Within the model development software, a developer can perform spectral data pre-treatments with a full suite of industry-standard tools such as smoothing, derivatives, and baseline corrections.

Instrument performance qualification per USP 1119 test criteria and tools enabling 21 CFR part 11 are available. Embedded calibration development software powered by CAMO Software's The Unscrambler® X provides regression and classification algorithms and a complete set of chemometric tools for calibration model development and data investigation.

The MicroNIR Pro Lite version does not include the embedded calibration development software, but it is compatible with CAMO Software's Unscrambler X (version 10 or higher).



Specifications

Parameter	Specification
Illumination source	Two integrated vacuum tungsten lamps
Bulb life	>40,000 hr
Sample working distance	0 – 15 mm from window, 3 mm optimal
Dispersing element	Linear variable filter
Detector	128 pixel InGaAs photodiode array
Pixel size/pitch	30 μm x 250 μm /50 μm
Wavelength range	950 – 1650 nm (10,526 – 6060 cm^{-1})
Pixel-to-pixel interval	6.2 nm for 950 – 1650 nm
Spectral bandwidth (FWHM)	<1.25% of center wavelength (1% typical) (for example, @1000 nm, resolution is <12.5 nm)
Analog-to-digital convertor	16 bit
Dynamic range (Max)	1000:1
Measurement time (typical)	0.25 – 0.5 sec
Signal-to-noise ratio (typical)	23,000 (average of 100 scans)
Integration time	10 ms typical, minimum 10 μsec
Connectivity	USB 2.0
Weight	64 g (2.3 oz)
Size	45 x 50 mm (1.77 x 1.97 in)
Power	USB powered (<500 mA @5 V)
Data format	Unsb, CSV, and SPC output
Operating system	Windows 8.1, 8, and 7
Operating temperature	-20 – 50°C (noncondensing)
Storage temperature	-40 – 70°C (noncondensing)
CE mark	Yes
Package drop test	ISTA 2A

Ordering Information

For more information, please contact your local Viavi account manager or Viavi directly at 1-800-254-3684 worldwide or via e-mail at micronir@viavisolutions.com.

Visit our product information page at www.viavisolutions.com/micronir.



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