Data Sheet

VIAVI MicroNIR™
PAT-U

A fit-for-purpose near infrared (NIR) analyzer for quality-by-design (QbD) manufacturing

Rugged and scalable, the MicroNIR PAT-U process spectrometer is a next-generation system for real-time process monitoring in pharmaceutical, industrial and food process analytical technology (PAT) applications.

The PAT-U has the smallest form factor on the market in a fit-for-purpose design., making it ideal for use with processing equipment of all sizes, with the performance and stability to enable truly efficient manufacturing.

The easy-to-use MicroNIR PAT-U was designed for today's demanding GMP-regulated environments yet requires minimal system maintenance. It has no moving components or expensive fiber optic cables, enabling superior instrument stability and performance in process environments. Viavi's Linear Variable Filter (LVF) technology provides outstanding instrument-to-instrument repeatablility, allowing seamless calibration model transfer. Its stainless steel exterior and sapphire window resists dust and water to IP65/IP67 standards and cleans easily.

MicroNIR PAT-U Instrument

Benefits

- Non-invasive, real-time NIR analysis
- Washable, IP65 & IP67 rated enclosure
- MicroNIR Pro chemometric software integration
- USB communication
- Compact for easy integration

Applications

Pharmaceutical Manufacturing

- Fluid bed drying
- Feed Frame
- Granulation
- Content uniformity

Food and Feed Manufacturing

- Moisture, protein, fat

Industrial Processing

- Reaction monitoring
- Polymers
- Petrochemicals

Standard Accessories

The MicroNIR PAT-U includes the following standard accessories:

- Measurement collar with uncoated sapphire process window
- White reference target
- USB cable for data and power connection to PC
- Rugged carrying case

MicroNIR PAT-U Kit

Software

The MicroNIR PAT-U includes the VIAVI MicroNIR Pro software suite with features for data acquisition, calibration and method development, user management, and real-time prediction. Using MicroNIR Pro Software, a developer can process data and build complete

MicroNIR Pro Software

chemometric models using regression and classification algorithms including PCA, PLS, Spectral Match Value and Moving Block

analyses. Batch mode predictions on stored data are also supported.

MicroNIR Pro software also includes instrument performance qualification per EP 2.2.40 and USP 1119 test criteria and tools enabling Title 21 CFR Part 11 compliance. An enhanced OPC interface is optionally available for integration with process control systems.

Process Integration

The MicroNIR PAT-U can be mounted to process equipment sanitary flanges using a collet assembly and triclover clamp. A weld-in flange kit with sapphire process window is also available.

MicroNIR PAT-U with weld-in flange kit

Specifications

Parameter	Specification
Illumination source	Two integrated vacuum tungsten lamps rated for >40,000 hr lifetime @ < 1 W
Working distance	Range 0-15 mm; optimal results when samples are in contact with measurement collar window
Dispersing element	VIAVI linear variable filter (LVF)
Detector	128 pixel InGaAs photodiode array
Wavelength range	908-1676 nm (11,012-5966 cm-1)
Pixel-to-pixel interval	6.2 nm
Spectral resolution (FWHM)	<1.25% of center wavelength (e.g., resolution <12.5 nm @ 1000 nm)
Analog-to-digital converter	16 bit
Integration time	10 ms typical
Computer interface	USB 2.0
Weight	311 g
Size	45 mm diameter x 69 mm length
Power	USB powered (<500 mA @5V)
Operating system	Microsoft Windows 7, 8 and 10
Software included	MicroNIR Pro
Operating temperature	0 to 40º C (non-condensing)
Enclosure	Stainless steel body with sapphire window: dust and waterproof, sealed and cleanable to IP65 & IP67 standards

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.

VIAVI Solutions