Data Sheet

VIAVI MicroNIR™
PAT-W

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

Rugged and scalable, the MicroNIR PAT-W process spectrometer is a wireless system for real-time process monitoring in blend homogeneity, loss on drying, compaction, content uniformity, and other process analytical technology (PAT) applications.

With proven Viavi linear variable filter (LVF) technology, the PAT-W has the smallest form factor in the process monitoring instrument market in a fit-for-purpose design. This makes it ideal for use with processing equipment of all sizes, with the performance and stability to enable smart and efficient manufacturing.

The easy-to-use MicroNIR PAT-W 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 harsh process environments. Its stainless steel/brushed aluminum cabinet resists dust and water to IP65/67 standards and cleans easily. Onboard WiFi communication permits installation on tumble blenders for real-time monitoring of blend uniformity.

MicroNIR PAT-W Instrument

MicroNIR PAT-W Ring Assembly

Benefits

- Non-destructive, non-invasive, and real-time near-infrared analysis
- User-selectable WiFi or Ethernet for system control and data communication
- User-replaceable, rechargeable Li-ion battery with over 8 hours of continuous run time
- Onboard multiaxis sensor for positional triggering in tumble blender monitoring applications
- Pushbutton, timer and external optical sensor-enabled trigger options
- Real-time Moving Block analysis for endpoint determination in blending, drying, granulation and coating processes
- Washable, IP65 & IP67 rated enclosure
- Integrated PC enables seamless real-time data transfer from spectrometer to PC

Applications

Pharmaceutical Manufacturing

- Blend and content uniformity
- Fluid bed drying
- Granulation

Food and Feed Manufacturing

- Moisture, protein, fat

Industrial Processing

- Reaction monitoring , polymers, petrochemicals

Standard Accessories

The MicroNIR PAT-W includes the following standard accessories:

- Optical trigger assembly and 24 V power supply
- WiFi router
- Two batteries and charger
- 99% reference standard
- Rugged carrying case

PAT-W shown with standard lid mount kit with weld-in flange

Software

The MicroNIR PAT-W 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.

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	TCP/IP Cat5 Ethernet 802.11g WiFi
Weight	1210 g (including 239 g battery)
Size	168 x 139 x 131 mm (L x W x H)
Power	Rechargeable Li ion battery: 7.5 V @6400 mA*hr for >8 hr run time External: 110-240 V AC
Operating system	Microsoft Windows 7, 8 and 10
Included software	MicroNIR Pro
Operating temperature	0 to 40° C (non-condensing)
Enclosure	Stainless steel and aluminum 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.