



NIRQuest

Near-Infrared Measurement

No matter what your work demands, NIRQuest® has you covered. The NIRQuest Series of Near-Infrared Spectrometers delivers excellent performance, accuracy and reliability.

These small-footprint spectrometers cover various ranges (depending on your configuration) from 800-2500 nm and are ideal for demanding applications ranging from moisture detection and chemical analysis to high-resolution laser and optical fiber characterization.

Features

- Multiple detector options covering various ranges from ~800-2500 nm
- Low dark noise and wide dynamic range performance
- Wide range of grating and optical bench options to optimize your setup
- External hardware triggering function for capturing data when an external event occurs or to trigger an event after data acquisition

Each NIRQuest spectrometer model is preset with optical bench and grating options appropriate for many NIR applications. However, we also offer a full range of slit, filter and grating options to optimize your setup for higher resolution needs or other similar performance requirements.

Operating software for NIRQuest is SpectraSuite (required) and OmniDriver is an optional development package. Software is priced separately.

NIRQuest spectrometers are backed by our industry-exclusive 3-Year Warranty. For added protection and annual maintenance, consider an optional ASP-NIR or TTS-NIR Service Package.

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Models	Wavelength Range	Best for These Application Needs
NIRQuest512-XR	800-1600 nm	Response at Shortwave NIR wavelengths (<900 nm)
NIRQuest512	900-1700 nm	Optimum response at ~1600 nm and good optical resolution (~3.0 nm FWHM)
NIRQuest512-1.9	1100-1900 nm	Good response from 1100-1900 nm with good optical resolution ~3.1 nm (FWHM)
NIRQuest256-2.1	900-2050 nm	Good response at higher wavelengths (peak detector response at ~1900 nm) and optical resolution <8.0 nm (FWHM)
NIRQuest512-2.2	900-2200 nm	Good response across 900-2200 nm without sacrificing optical resolution performance (~4.6 nm FWHM)
NIRQuest512-2.5	900-2500 nm	Good optical resolution (~6.3 nm FWHM) and low dark noise at long integration times
NIRQuest256-2.5	900-2500 nm	Good response at higher wavelengths (peak detector response at ~2200 nm) and optical resolution <10.0 nm (FWHM)

Complete Your System with Light Sources and Accessories

The LS-1 and HL-2000 Tungsten Halogen Light Sources are versatile, broadband light source options for your NIRQuest spectrometer. Our Cool Red light source provides illumination from 1000-5000 nm.

Low OH content optical fibers and probes are optimized for response from 400-2100 nm. Look for assemblies with the VIS-NIR designation to ensure best performance with your NIRQuest. We also offer fluoride and chalcogenide fibers for longer wavelengths.

Several standard and optional longpass filters are available for different combinations of NIRQuest spectrometers. OF-1-CGA780 (transmits >780 nm), OF1-RG830 (longpass NIR filter) and OF1-CGA1000 (transmits >1000 nm) are among the options.

Also, we offer two spectrometer wavelength calibration sources appropriate for use with NIRQuest spectrometers: the AR-1 Argon Source (696-1704 nm) and the XE-1 Xenon Source (916-1984). Recalibration of your NIRQuest requires the use of reference light sources like these that emit well-defined wavelengths.

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Convenient NIR Spectroscopy



Each NIRQuest Spectrometer has a fixed optical bench, fiber input and an In GaAs array of detector elements. Array-based systems are a must for capturing transient phenomena and are recommended for high-speed acquisition applications. Spectroscopic performance parameters for each model are outlined in the tables below. Additional specifications are available at www.oceanoptics.com.

NIRQuest spectrometers are useful tools for various NIR applications. Here are just a sampling:

- Moisture detection in grains
- Chemical composition
- Oil and fat content of foods
- High-resolution laser analysis
- Biological samples analysis
- Materials analysis
- Transmission/reflection of thin films

Spectroscopic	NIRQuest512-XR	NIRQuest512	NIRQuest512-1.9
Wavelength range:	800-1600 nm w/Grating NIR3	900-1700 nm w/Grating NIR3	1100-1900 w/ Grating NIR3
Optical resolution (FWHM):	~3.1 nm w/25 μ m slit	~3.1 nm w/25 μ m slit	~3.1 nm w/25 μ m slit
Signal-to-noise ratio at full signal:	>15000:1 @ 100 ms integration; >13000:1 @ 1000 ms integration	>15000:1 @ 100 ms integration; >13000:1 @ 1000 ms integration	>10000:1 @ 100 ms integration
A/D resolution	16-bit	16-bit	16-bit
Dark noise:	6 RMS counts @ 100 ms 12 RMS counts @ 1 s	6 RMS counts @ 100 ms 12 RMS counts @ 1 s	6 RMS counts @ 100 ms 12 RMS counts @ 250 ms
Dynamic range:	150M (system); 15K:1 for a single acquisition	150M (system); 15K:1 for a single acquisition	7.5M (system); 10K:1 for a single acquisition
Integration time:	1 ms -120 seconds	1 ms -120 seconds	1 ms -1 second
Noise Equivalent Power:	0.5pW	0.5pW	10.0pW

Spectroscopic	NIRQuest256-2.1	NIRQuest512-2.2	NIRQuest512-2.5	NIRQuest256-2.5
Wavelength range:	900-2050 nm w/Grating NIR2	900-2200 nm w/Grating NIR2	900-2500 nm w/Grating NIR1	900-2500 nm w/Grating NIR1
Optical resolution (FWHM):	~7.6 nm w/25 μ m slit	~5.0 nm w/25 μ m slit	~6.3 nm w/25 μ m slit	~ 9.5 nm w/25 μ m slit
Signal-to-noise ratio at full signal:	10000:1 @ 100 ms integration	10000:1 @ 100 ms integration	4000:1 @ 10 ms integration	7500:1 @ 10 ms integration
A/D resolution	16-bit	16-bit	16-bit	16-bit
Dark noise:	6 RMS counts @ 100 ms 12 RMS counts @ 250 ms	6 RMS counts @ 100 ms 12 RMS counts @ 250 ms	16 RMS counts @ 10 ms 24 RMS counts @ 30 ms	8 RMS counts @ 10 ms 12 RMS counts @ 30 ms
Dynamic range:	15M (system); 10K:1 for a single acquisition	7.5M (system); 10K:1 for a single acquisition	100K (system); 4K:1 for a single acquisition	500K (system); 7.5K:1 for a single acquisition
Integration time:	1 ms-2 s	1 ms-1 s	1 ms – 30 ms	1 ms-60 ms
Noise Equivalent Power:	5.0pW	10.0pW	100.0pW	25.0pW

SPECTROMETERS | SAMPLING ACCESSORIES | WORLD CLASS SERVICE



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