Ocean Insight | NIRQuest Near-Infrared Spectrometer


Fast, Flexible, Rugged NIR Spectrometers

Its high-performance optical bench, low noise electronics and multiple configuration options make NIRQuest an excellent choice for NIR applications from 900-2500 nm. A replaceable slit design and optional internal shutter add measurement flexibility for applications including analyzing moisture and protein content in food, identifying and monitoring pharmaceutical ingredients and processes, and detecting contaminants in soil and wastewater. NIRQuest is available with a range of InGaAs array detector options to optimize measurement setups.
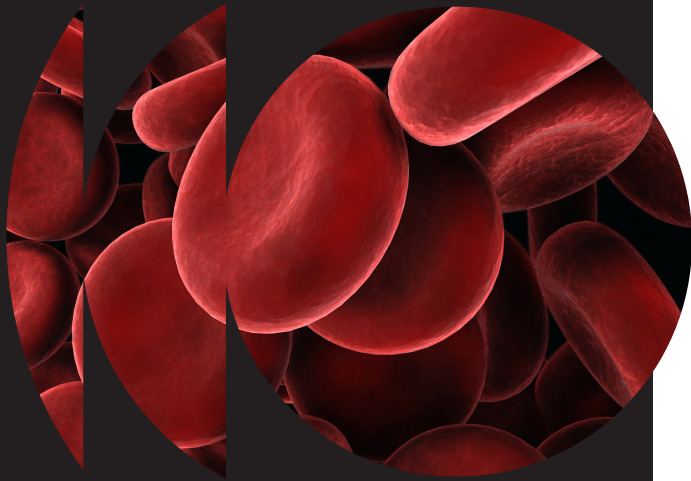
At a Glance

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Key specifications (based on NIRQuest512-1.7 model)

Detector: 512-pixel InGaAs diode array

Wavelength range: 900-1700 nm (other models up to 2500 nm available)

Optical resolution: ~3.1 nm (FWHM) with 25 µm slit (standard configuration)

Integration time: 1 ms-120 seconds

Data transfer speed: Full scan to memory every 5 ms with USB 2.0 port

SNR (at full signal): 15000:1 (at 100 ms integration time)

Dynamic range: 15000:1 (single acquisition)

Thermoelectric cooling: 21 °C to 38 °C below ambient

**Interchangeable slit design:** Select from slit widths of 5 µm-200 µm

Internal shutter (optional): Actuation time of 11 ms; signal attenuation 0 dB (100% attenuated)

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Advanced Optical Bench Features

All NIRQuest spectrometer models have a replaceable slit design, increasing measurement flexibility. The freedom to adjust the width of the slit helps eliminate configuration trade-offs by giving users the ability to adapt spectrometer performance, without the need for recalibration. Also, users can add to NIRQuest an optional internal shutter, to manage light throughput and dark measurements. The shutter is useful for applications where placing an external shutter is difficult, such as emissive setups and probe-based measurements. Also, internal shutters are more convenient for applications where light intensities change, requiring users to dynamically adjust integration times and renormalize the spectrometer. Operation via software makes shutter control as simple as a few keystrokes.
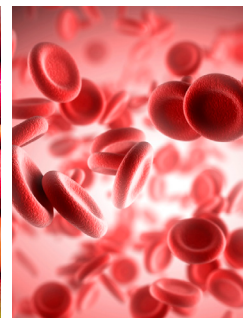
| On the Farm | In the Lab | On the Line |

Combine NIRQuest with our line of light sources, accessories and software for a wide range of application challenges.

Example Applications

- Determination of moisture and protein content in grains
- QA/QC inspection of pharmaceutical ingredients
- Measurement of blood oxygenation in tissue
- Component analysis of soil samples
- NIR laser characterization
- Hydrocarbons analysis in oil and gas
- Photoluminescence measurements of coated silicon wafers
- Determination of chemical composition and types of plastics

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For more information on the NIRQuest, please contact an Ocean Insight Application Scientist today.