

NIRQuest+ NIR Spectrometers



High-sensitivity Near Infrared Analysis

NIRQuest+ spectrometers have an enhanced optical bench design for higher-sensitivity performance and are available in three convenient configurations – NIRQuest+1.7 (900-1700 nm), NIRQuest+2.2 (900-2200 nm) and NIRQuest+2.5 (900-2500 nm). The NIRQuest+ is our flagship NIR spectrometer.

NIRQuest+ spectrometers can be used in the lab or on the line, such as on a conveyor belt or in a sample stream. Applications include characterization of materials; identification of plastics in recycling; and measurement of chemical concentration of liquids.

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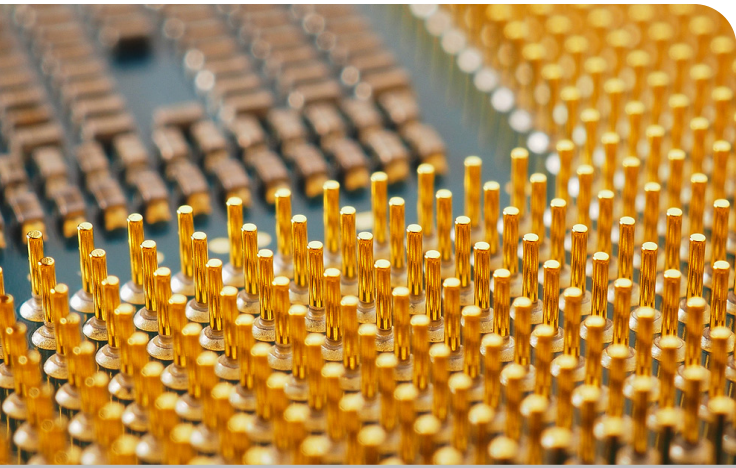
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At a Glance

Wavelength range:

NIRQuest+1.7: 900-1700 nm

NIRQuest+2.2: 900-2200 nm

NIRQuest+2.5: 900-2500 nm

Optical resolution: ~3.4-10.8 nm (FWHM) depending on model

Integration time: 1 ms-200 ms

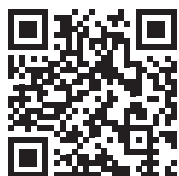
SNR: up to 15000:1 depending on model

Entrance aperture (slit): 25 μm

Thermal stability: thermoelectric cooling to -20 °C for low dark current

Order-sorting: OF1-RG830 longpass filter; transmits >830 nm

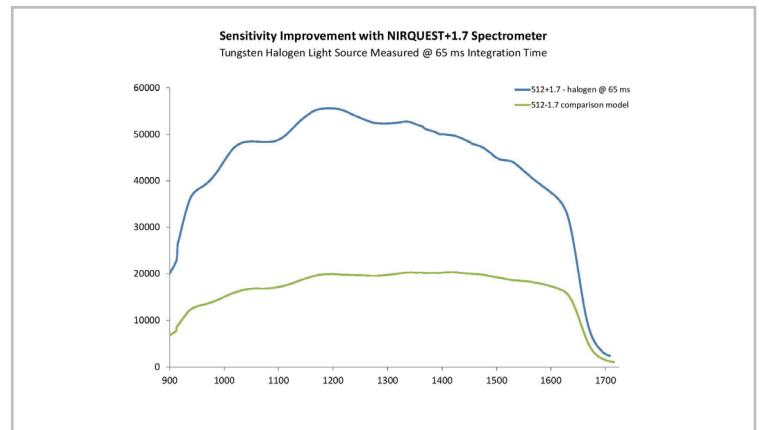
Relative sensitivity gain: up to 2.5x versus previous models



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

Sample Spectra for NIRQuest+1.7 Spectrometer

With improved sensitivity compared with earlier NIR spectrometer models, the NIRQuest+ family offers lower limits of detection and allows for shorter integration times. for analysis, and enable High Speed Averaging Mode, a function available with our newer-model spectrometers that dramatically improves spectrometer SNR performance.



Sample NIRQuest+ Applications

Here are three examples where enhanced NIRQuest+ sensitivity matters most:

- When measurement speed matters. With better sensitivity comes better signal-to-noise ratio (SNR) performance over a shorter time frame (integration time). This is ideal when you have samples moving on a conveyor belt, or liquids flowing in a process stream.
- Where low limits of detection (LOD) matter. Very small changes in absorbed signal are typical of harmonic overtones in the NIR. Higher sensitivity enables better measurement accuracy, particularly in low light conditions.
- When reflection measurements at longer wavelengths matter. Diffuse reflection measurements at longer wavelengths (to 2500 nm) often lack enough signal for good measurements. Higher sensitivity measures the reflection with much lower noise levels, resulting in “cleaner” spectra.