Ocean Insight

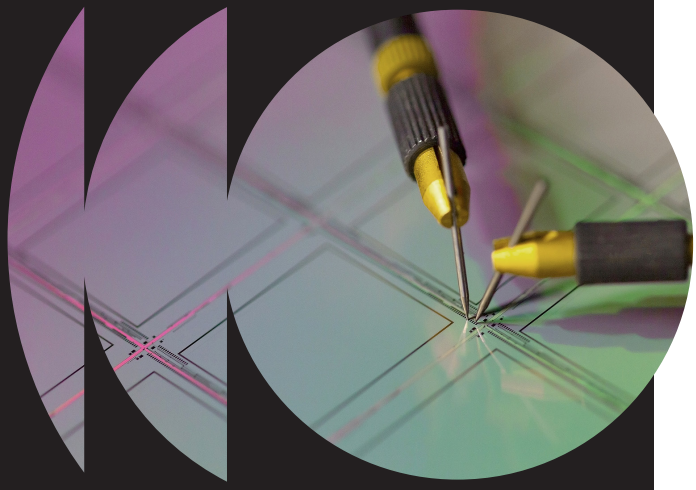
NIRQuest+ NIR Spectrometers

GMP
GENERAL MICROTECHNOLOGY & PHOTONICS

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.



At a Glance

NIRQuest+1.7: 900-1700 nm
NIRQuest+2.2: 900-2200 nm
NIRQuest+2.5: 900-2500 nm
Entrance aperture (slit): 25 µm
Order-sorting: OF1-RG830 longpass filter; transmits >830 nm
Thermal stability: thermoelectric cooling to -20 °C for low dark current
Optical resolution: ~3.4-10.8 nm (FWHM) depending on model
Relative sensitivity gain: up to 2.5x versus previous models
SNR: up to 15000:1 depending on model
Integration time: 1 ms-200 ms

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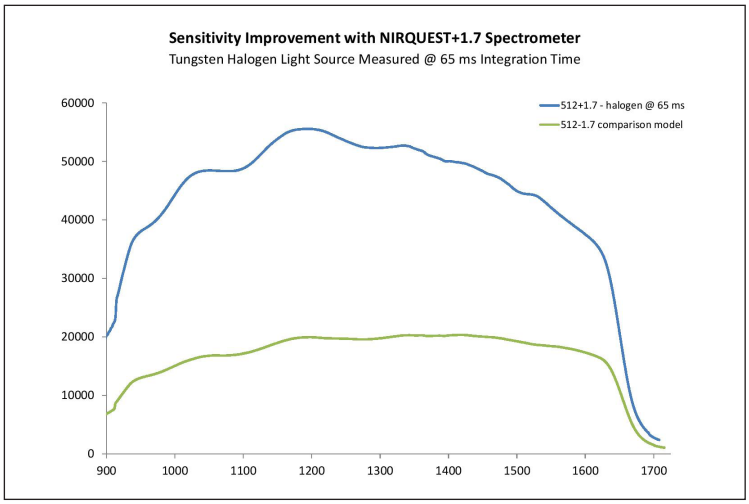
Sample Spectra for NIRQuest+1.7 Spectrometer

With improved sensitivity compared with earlier NIR spectrometer models, the NIRQuest+ family offers lower limits of detection and allows for shorter integration times.



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.