

NR Spectrometers



Precision and Performance for Demanding NIR Applications

The **NR** spectrometer sets a new standard in NIR analysis, offering advanced capabilities that address the most challenging spectroscopic applications. Designed for precision, consistency, and adaptability, the NR is ideal for detecting subtle spectral features, measuring low-concentration samples and performing in demanding environments.

NR spectrometers are available in two wavelength ranges - NR-512-1.7 (900-1700 nm) and NR512-2.2 (900-2200 nm). High gain versions are available for applications requiring higher sensitivity. NR spectrometers can be used in the lab or on a process line for applications including materials characterization, identification of plastics in recycling, and measurement of concentration in liquids.

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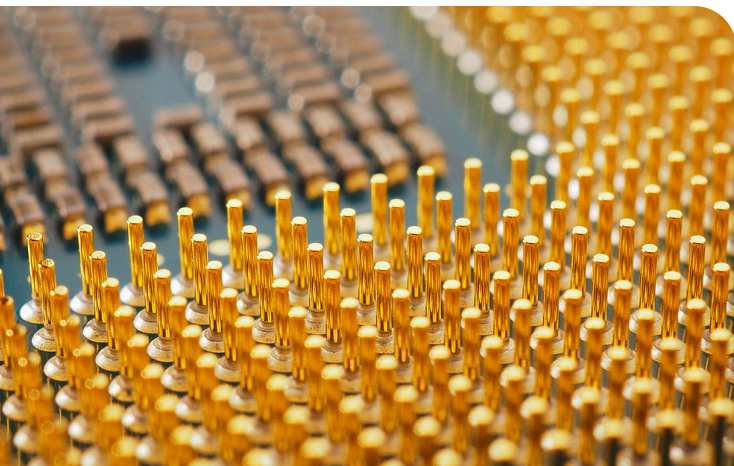
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At a Glance

Wavelength range:

NR512-1.7: 900-1700 nm

NR512-2.2: 897-2188 nm

Optical resolution: as low as 2.85 nm (FWHM)

Integration time: 1 ms- 8s (model dependent)

SNR: up to 10000
(model and version dependent)

Entrance aperture (slit): 25 μm
(other sizes available)

Thermal stability: thermoelectric cooling to
-25 $^{\circ}\text{C}$ for low dark current (model dependent)

Order-sorting:

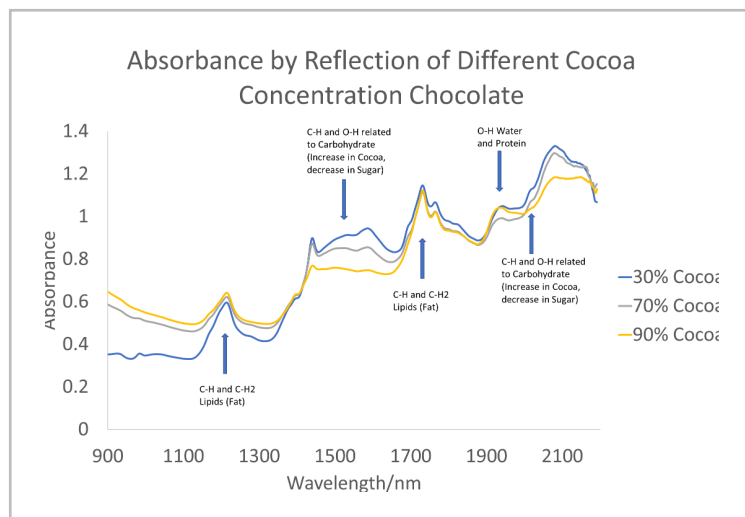
NR512-1.7: Longpass filter
(transmits >830) installed

NR512-2.2: Improved order sorting filter
(OD >4)

Sensitivity: High gain configurations available

Sample Spectra for the NR512-2.2

The NR excels at identifying spectral features in complex samples, uncovering details that other spectrometers may miss. Cleaner data and high gain options enable measurement of key quality factors for authentication and quality control.



Key Features and Benefits

The NR spectrometer is engineered with cutting-edge technology for complex NIR applications, including:

- **Analyzing complex samples:** Detect subtle spectral features with precision.
- **Low-light or low-concentration measurements:** Produce cleaner spectra for reliable measurements and lower limits of detection.
- **Detecting weak signals:** Amplified sensitivity for low-reflectance or strongly absorbing materials.
- **High-speed measurements:** Perfect for dynamic processes or samples moving on conveyor belts.
- **Thermal stability:** Cooled detector reduces dark noise for demanding environments.

The NR spectrometer is the solution for high-precision NIR analysis, offering unmatched sensitivity, stability, and clarity. Whether in research labs or industrial applications, the NR delivers results with confidence and accuracy.



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