

# Flame NIR+ Spectrometer



## Compact, High-sensitivity NIR Spectrometer

The **Flame-NIR+** combines a compact, high-performance optical bench with an uncooled InGaAs array detector for spectral response from 970-1700 nm. The Flame-NIR+ has better sensitivity and a wider spectral range than

comparable spectrometers. This allows users to detect weaker levels of NIR light at lower limits of detection and with shorter integration times.

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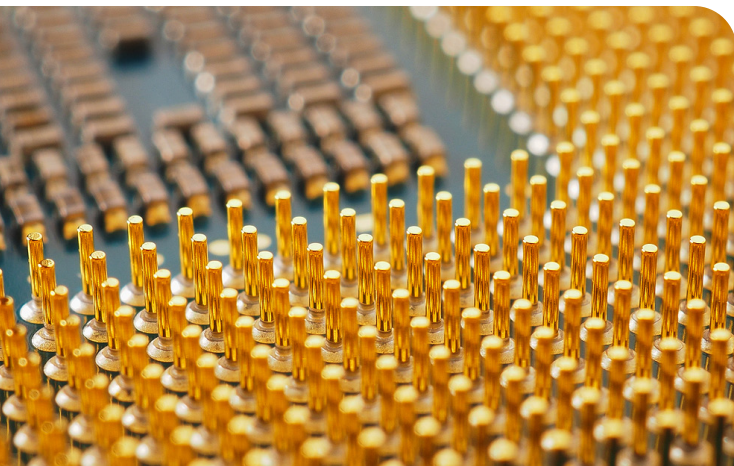
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## At a Glance

**Wavelength Range:** 970-1700 nm

**Optical Resolution:** ~11nm (FWHM, 25um slit)

**Dynamic Range:** 3400:1

**Signal-to-Noise Ratio:** 6000:1  
(single acquisition)

**Dynamic Range:** 7200:1

**Thermal Stability:** 0.08 nm/° C  
(over 670 nm range)

**Scan Rate (Maximum):** ~400 Hz\*

**Power:** 5V USB

**Size:** 89.1 mm x 63.3 mm x 31.9 mm

**Temperature (operation):** 0° C-55° C

**Weight:** 265 g

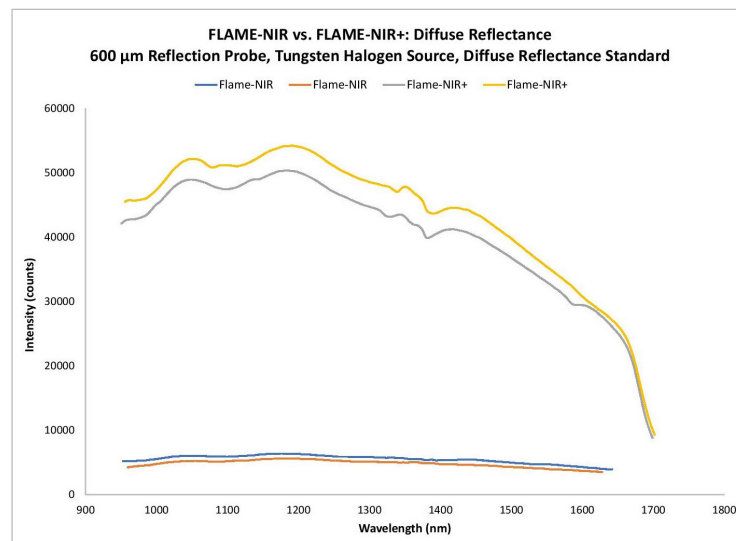
\*When used with a standard,  
non-real time computer OS.



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

## Versatile, Affordable NIR for Food, Pharma and More

Flame-NIR+ offers enhanced sensitivity from 970-1700 nm,  
and is ideal for identifying and characterizing various samples.



Raw reflectance spectra of PTFE show increased sensitivity with Flame-NIR+.

|                                    |                                                                                                                                                                                                      |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Food & Agriculture                 | <ul style="list-style-type: none"> <li>Freshness and sweetness of fruits and vegetables</li> <li>Fat and protein content of meat</li> <li>Quality parameters of seeds and grains</li> </ul>          |
| Life Sciences & Pharmaceuticals    | <ul style="list-style-type: none"> <li>Freshness and sweetness of fruits and vegetables</li> <li>Fat and protein content of meat</li> <li>Quality parameters of seeds and grains</li> </ul>          |
| Chemical & Commodity Manufacturing | <ul style="list-style-type: none"> <li>Chemometric modeling for QC in hydrocarbons extraction and processing</li> <li>Identification of various types and colors of plastics in recycling</li> </ul> |

## Flame-NIR+ Features and Benefits

| Features                     | Benefits                                                                                                                                                                                                       |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Small yet rugged design      | Its small size – just 89.1 mm x 63.3 mm x 31.9 mm – makes Flame-NIR+ ideal for integrating into portable and handheld systems. With no moving parts, the spectrometer holds up well in demanding environments. |
| High sensitivity             | Flame-NIR+ has up to 6x increased sensitivity compared with earlier models, offering lower limits of detection and allowing for shorter integration times.                                                     |
| Low unit to unit variability | Precision alignment and assembly techniques have reduced unit to unit variance in almost every aspect, including uncalibrated sensitivity.                                                                     |
| Low power                    | Drawing <250 mA at 5V, Flame-NIR+ can be powered almost anywhere – and integrated into other devices and industrial process control environments.                                                              |