

**GMP**

GENERAL  
MICROTECHNOLOGY  
& PHOTONICS



# Flame-NIR

## The Power of NIR in the Palm of Your Hand

The Flame-NIR spectrometer from Ocean Optics harnesses the power of near infrared spectroscopy in a compact, affordable instrument. Flame-NIR combines the small size of its optical bench with a high performance, uncooled InGaAs array detector for spectral response from ~1000-1650 nm. The spectrometer is ideal for applications in food integrity, biomedical sciences and pharmaceuticals production.



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## At a Glance

**Range:** ~1000-1650 nm for standard, preconfigured model

**Resolution:** ~10.0 nm (FWHM) for standard, preconfigured model

**SNR:** 6000:1

**Dynamic range:** 6000:1 (single acquisition)

**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 (excluding feet)

**Weight:** 265 g

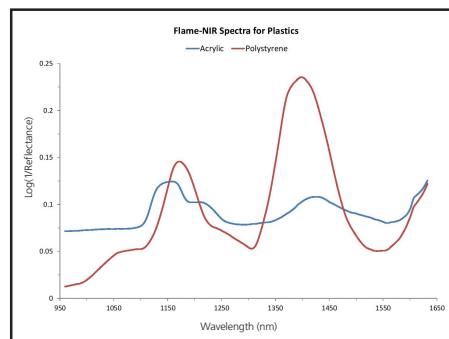
\*When used with a standard, non-real time computer OS.



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

NIR spectroscopy is a powerful method for identifying, classifying and characterizing an extensive range of samples. NIR spectroscopy is fast, non-destructive and requires little or no sample preparation.

Flame-NIR operation is as simple as plugging in the micro-USB connector. When combined with our light sources and sampling accessories, the Flame-NIR is ideal for reflectance, irradiance and transmission measurements:



Flame-NIR detects polymers within a mixed stream of plastic materials.

<b>Food &amp; Agriculture</b>	<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>
<b>Life Sciences &amp; Pharmaceuticals</b>	<ul style="list-style-type: none"> <li>• Identification of pharmaceutical Ingredients</li> <li>• Portable diagnostics for blood glucose and blood flow</li> </ul>
<b>Light &amp; Laser</b>	<ul style="list-style-type: none"> <li>• Measurement of laser center wavelength and stability</li> <li>• NIR irradiance and background monitoring in and out of the lab</li> </ul>
<b>Chemical &amp; Commodity Manufacturing</b>	<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
<b>Small yet rugged design</b>	Its small size -- just 89.3 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.
<b>High sensitivity</b>	Despite a compact footprint, the Flame-NIR optical bench and InGaAs detector deliver superior sensitivity compared with other miniature NIR designs.
<b>User-interchangeable slit design</b>	Take control with interchangeable slits that allow users to vary spectrometer throughput and resolution in minutes.
<b>Low unit to unit variability</b>	Precision alignment and assembly techniques have reduced unit to unit variance in almost every aspect, including uncalibrated sensitivity.
<b>Low power</b>	Drawing <250 mA at 5V, Flame-NIR can be powered almost anywhere -- including in OEM devices and in industrial process control environments.



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