# 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 within 900-1700 nm. The spectrometer is ideal for applications in food integrity, biomedical sciences and pharmaceuticals production.

## 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 Spectra for Plastics**
— Acrylic — Polystyrene

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

## At a Glance

**Range:** 900-1700 nm (detector)
950-1650 nm (preconfigured)

**Resolution:** ~10.0 nm
(FWHM, 25µm slit)

**SNR:** 6000:1

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

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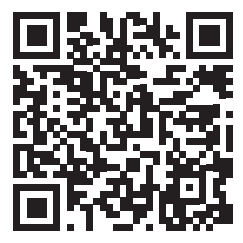(over 670 nm range)

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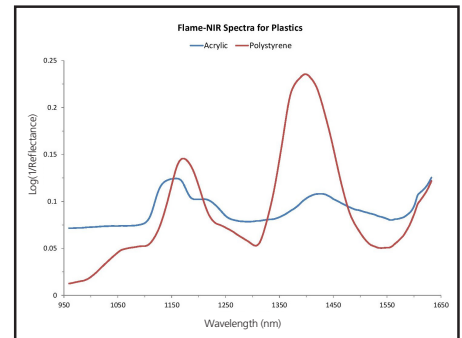
*When used with a standard, non-real time computer OS.*

| | |
|---|---|
| **Food & Agriculture** | • Freshness and sweetness of fruits and vegetables<br>• Fat and protein content of meat<br>• Quality parameters of seeds and grains |
| **Life Sciences & Pharmaceuticals** | • Identification of pharmaceutical ingredients<br>• Portable diagnostics for blood glucose and blood flow |
| **Light & Laser** | • Measurement of laser center wavelength and stability<br>• NIR irradiance and background monitoring in and out of the lab |
| **Chemical & Commodity Manufacturing** | • Chemometric modeling for QC in hydrocarbons extraction and processing<br>• Identification of various types and colors of plastics in recycling |

## 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** | Despite a compact footprint, the Flame-NIR optical bench and InGaAs detector deliver superior sensitivity compared with other miniature NIR designs. |
| **User-interchangeable slit design** | Take control with interchangeable slits that allow users to vary spectrometer throughput and resolution in minutes. |
| **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 -- including in OEM devices and in industrial process control environments. |

**Learn more online at www.oceanoptics.com**

**Contact an Ocean Optics Application Scientist for details and pricing**

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