Ocean Insight

Flame-NIR+ Spectrometer

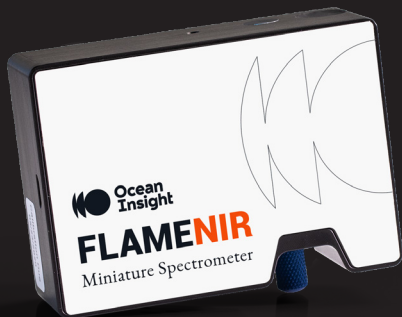# Compact, High-sensitivity NIR Spectrometer

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.
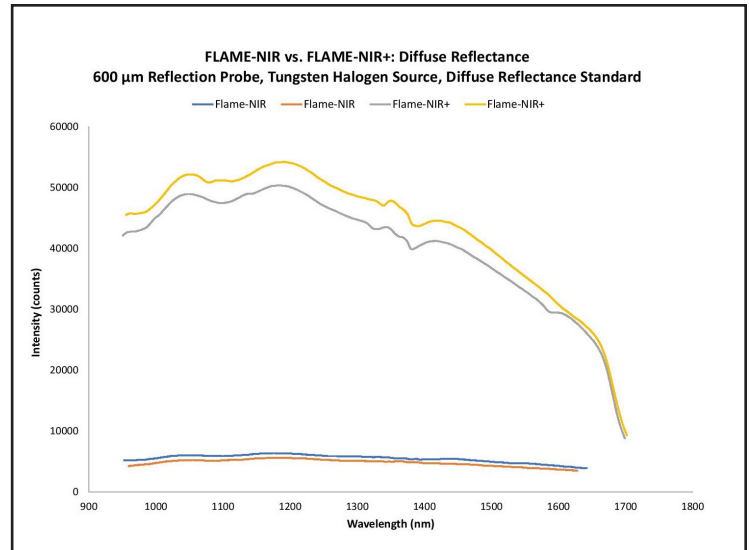
Versatile, Affordable NIR for Food, Pharma and More

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

FLAME-NIR vs. FLAME-NIR+: Diffuse Reflectance
600 μm Reflection Probe, Tungsten Halogen Source, Diffuse Reflectance Standard

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

At a Glance

Wavelength range: 970-1700 nm

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

SNR: 6000:1 (single acquisition)

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

Weight: 265 g

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

Food & Agriculture	• Freshness and sweetness of fruits and vegetables • Fat and protein content of meat • Quality parameters of seeds and grains
Life Sciences & Pharmaceuticals	• Identification of pharmaceutical ingredients • Portable diagnostics for blood glucose and blood flow
Chemical & Commodity Manufacturing	• Chemometric modeling for QC in hydrocarbons extraction and processing • 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	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.