

# NIR IntegratIR – Integrating Sphere



## FEATURES

- Optimized 2-inch gold-coated integrating sphere with high signal-to-noise ratio
- Fully integrated InGaAs detector, detector electronics and transfer optics
- Optional automated transmission analysis stage for pharmaceutical analysis
- 10-mm horizontal sampling port for easy sample placement
- Excellent qualitative and quantitative NIR analysis tool
- Economical alternative to dedicated near-infrared analyzers
- Optional rotating stage for averaging of heterogeneous samples
- Spectral range 12,200–3850  $\text{cm}^{-1}$
- In-sample-compartment design, compatible with most commercial FTIR spectrometers

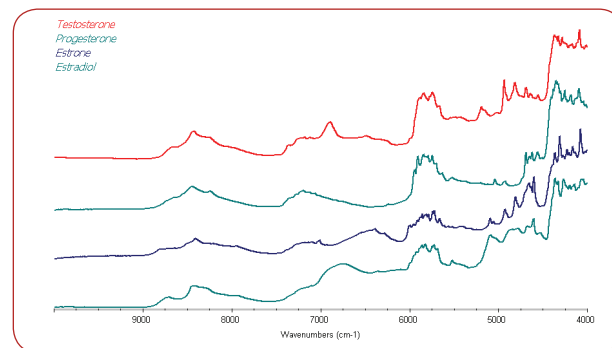
The  
PIKE

Technologies NIR IntegratIR™ is a near-infrared (NIR) integrating sphere for quantitative and qualitative measurements of a wide variety of solids and paste materials. The NIR IntegratIR collects reflected energy from a spherical perspective thereby capturing complete and quantitative response from the sample. Using near-infrared chemometrics, qualitative product identification and quantitative analysis may be performed on pharmaceutical, nutraceutical, chemical, polymer, textile, food, agricultural and other samples.

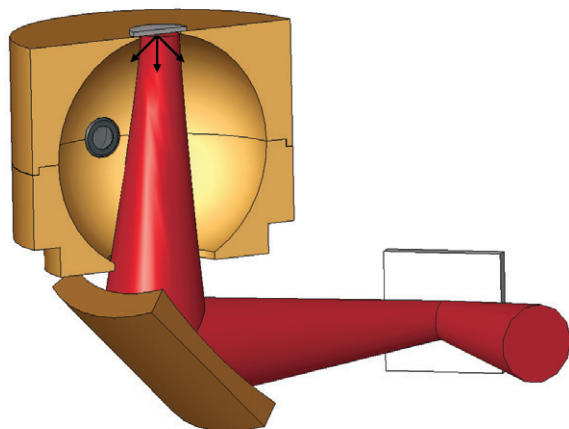
The NIR IntegratIR accessory features a 2-inch high reflectivity gold-coated integrating sphere and an extended range, high-speed, low-noise indium gallium arsenide (InGaAs) detector, transfer optics and interface electronics. The NIR IntegratIR fits into the sample compartment of most commercial FTIR spectrometers and its electronics interface as an external detector of the spectrometer. A 10-mm diameter horizontal sampling port makes the placement of samples onto the accessory easy. An optimized borosilicate window serves as a sampling port at the top of the integrating sphere. The window is bonded and sealed to protect the sphere from corrosive materials and contamination.

Sampling of tablets, packaging materials and plastics is easily accomplished by placing the sample directly on the window of the upward-looking sphere. Powders, creams, pastes or liquids containing reflective particles may be placed in disposable flat-bottom vials – eliminating the need for any sample cleanup. The vials may be held in place by a sample-positioning vial holder, resulting in more repeatable measurements.

High-quality spectra are produced quickly using the NIR IntegratIR – making qualitative and quantitative analysis of a wide variety of sample types efficient and reliable.



Qualitative analysis of steroids using the PIKE Technologies NIR IntegratIR. Samples are measured within glass vials.

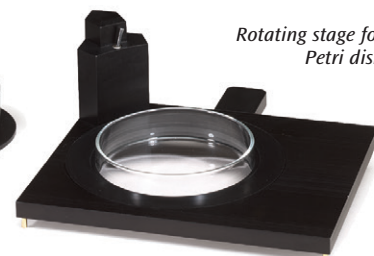


Optical diagram of the NIR IntegratIR.

For heterogeneous samples, PIKE Technologies offers a rotating stage for the NIR IntegratIR. With this option, one obtains an averaged result to eliminate variations in quantitative results for the chosen sample area.

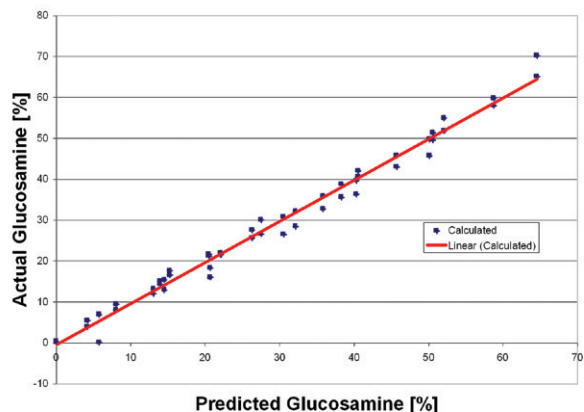


Rotating stage  
for beaker



Rotating stage for  
Petri dish

### Glucosamine in 6 Component Mixture



Quantitative measurement of active ingredient in a mixture of magnesium stearate, lactose, EMCOMPRESS®, cellulose and CAB-O-SIL®

The NIR IntegratIR comes complete with diffuse gold reference, sample holders and a removable general-purpose sample mounting plate. It is configured for each specific FTIR spectrometer and includes a pre-aligned mount for your instrument.

The NIR IntegratIR is a cost-effective, high-performance sampling option for laboratories with a standard FTIR spectrometer equipped with a near-infrared light source and beam splitter.

The optional transmission tablet analysis stage (below) for the NIR IntegratIR provides an automated tool for sampling 10 tablets of varying sizes. With this option you can measure formulation reproducibility or verify pharmaceutical composition.



NIR IntegratIR with optional transmission tablet analyzer

### ORDERING INFORMATION

PART NUMBER	DESCRIPTION
048-60XX	NIR IntegratIR Integrating Sphere Accessory <i>Includes 2" diffuse gold-coated integrating sphere, InGaAs detector, detector preamplifier, diffuse gold reference, vial holder, and 25 glass vials.</i>

Notes: Replace XX with your spectrometer's Instrument Code. [Click for List >](#)  
Your spectrometer must be capable of interfacing with an external detector.

### SAMPLING OPTIONS

PART NUMBER	DESCRIPTION
048-3000	Diffuse Gold Reference
162-5483	NIST Traceable NIR Reference Standard
162-5484	NIST Traceable NIR Reference Standard – Recertification
044-3010	Glass Vial Holder for 19-mm vials
048-2999	Glass Sample Vials, 19 x 65 mm (25 ea.)
048-0150	Rotating Stage for Petri dish for heterogeneous samples <i>Includes 100 x 20 mm Petri Dish</i>
048-0151	Rotating Stage Adapter for 500 mL beaker
048-0060	Automated Transmission Tablet Analysis Stage <i>Includes 3 tablet plates for 7.5, 8.5 and 10-mm tablets</i>

Note: Please contact us for other options. Stage rotates counterclockwise.