

External Integrating Sphere

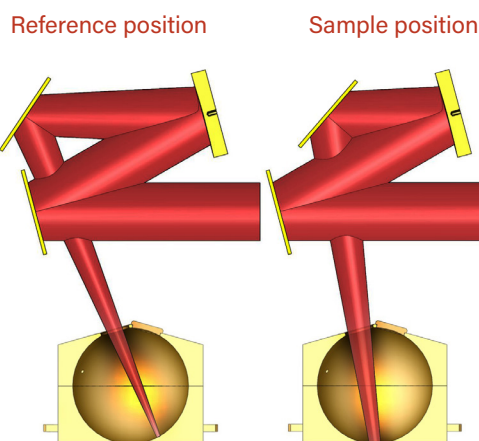
AT A GLANCE

- ▶ Accommodates large-sized samples
- ▶ 4-inch sphere, gold-coated, Lambertian scatterer for high performance measurements
- ▶ 8-degree hemispherical diffuse reflection measurement with specular exclusion port
- ▶ Manual translation mirror to switch between the reference and sample position
- ▶ Integrated, high-performance MCT detector
- ▶ Utilizes external spectrometer beam to allow for the analysis of oversized samples positioned under the sphere
- ▶ Fully purgeable enclosure

The External Integrating Sphere utilizes the external beam of the spectrometer and is ideal for large samples due to the additional sampling space realized by positioning samples outside the confines of the instrument's sample compartment. It is the preferred sphere for highly precise reflectivity measurements.

OPTICAL DESIGN

The internal optics of the External Integrating Sphere focus light from the external beam of the spectrometer into a 4-inch gold-plated integrating sphere. A translation mirror is moved manually using the mirror position lever, located on the enclosure of the accessory for precise movement between the sample and reference positions. In the sample position, incident light is 8° from normal. Specular reflection may be excluded by opening a port at the top of the sphere. The detector port is 90° from the sample port.



Optical diagram of the FTIR external beam path for reference and sample positions.

Accurate measurement of both solid- and liquid-phase samples is possible with the 4-inch External Integrating Sphere. By utilizing highly-accurate Taylor methodology for measurement, high-quality components, and sensitive MCT detection, the External Integrating Sphere offers low-noise, highly accurate measurements for a wide range of samples.

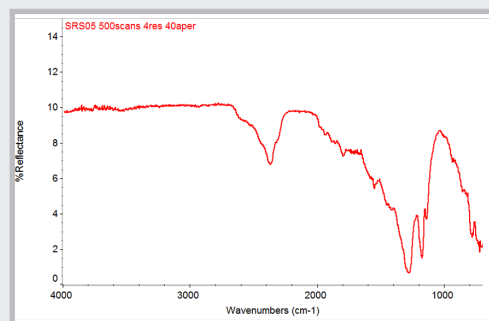


SPECIFICATIONS

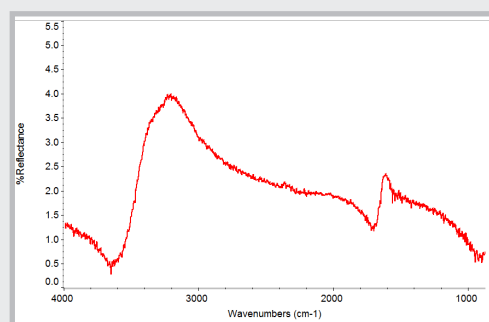
Optical Design	Downward-looking sample sphere
Angle of Incidence	8 degrees
Sphere Diameter and Surface	101.6 mm (4") gold-coated Lambertian surface
Sample Port Size	20 mm
Specular Exclusion Port	Standard
Spectral Range, MCT Detectors	Wide-band: 5000–500 cm^{-1} Mid-band: 5000–650 cm^{-1} Narrow-band: 5000–800 cm^{-1}
FTIR Placement	Right or Left Side

APPLICATION

The External Integrating Sphere offers precision measurements for samples spanning from high to low reflectance. By using the external beam of the spectrometer, this accessory can accommodate small to large samples.



Reflectivity standard spectrum, highlighting the quality data for a low-reflectivity sample.



Water reflectivity spectrum, collected using the External Integrating Sphere.

PART NUMBER	DESCRIPTION
048-13XXL	Mid-Infrared External Integrating Sphere Accessory – Left Includes sphere, purge enclosure and tubing.
048-13XXR	Mid-Infrared External Integrating Sphere Accessory – Right Includes sphere, purge enclosure and tubing.
<p>Notes: Replace XX with your spectrometer's Instrument Code listed on page 191. Accessory uses the spectrometer's external beam. Spectrometer must be equipped to accept an external detector.</p>	
<p>Detector (<i>must select one</i>)</p>	
048-3360	Wide-Band MCT Detector for External Sphere
048-3260	Mid-Band MCT Detector for External Sphere
048-3160	Narrow-Band MCT Detector for External Sphere
<p>Options</p>	
048-3000	Diffuse Gold Reference