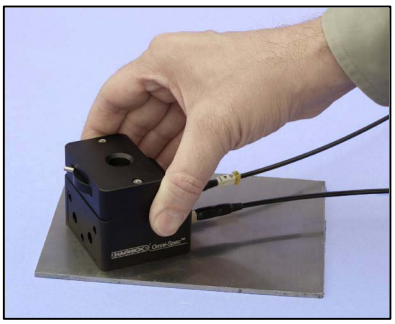
OMNI-SPEC™

The Omni-Spec™ is a 45º specular reflectance probe for studying samples outside of the spectrometer sample compartment. Designed to interface to virtually any spectrometer via fiber optics, this compact accessory comes with input and output SMA connectors that can be readily attached to a fiber optic coupler, such as the Harrick FiberMate2™. It is ideal for specular reflectance analysis of samples up to 1.5 meters away from the spectrometer. The Omni-Spec™ is offered with a selection of fiber optics for use in the Vis, NIR and mid-IR. A USB2 video camera is also offered for real-time imaging and photographic documentation of the sample.

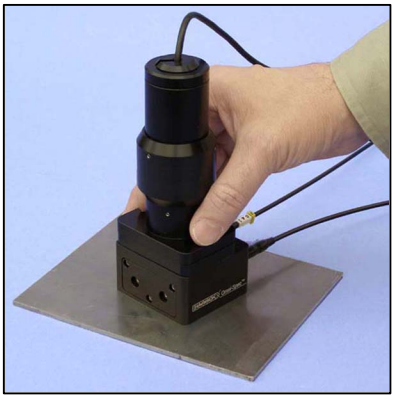
APPLICATIONS



- Ideal for examining a wide variety of samples, including optical coatings, opaque substrates and films on opaque substrates, and contaminants on reflective surfaces.
- Also useful for in-line diffuse reflectance measurements of powders and rough-surfaced solids.
- Photographic documentation of samples undergoing specular reflectance measurements.

FEATURES

- Compact and convenient to use.
- Suitable for use from the UV to the IR. For best performance, an MCT detector is recommended in the mid-IR.
- 45º nominal incident angle.
- Two standard 905 SMA connectors for connecting suitable fiber optic cables.
- Optical fiber optics available in 1.5 m long sets:
  - VIS/Near-IR fiber optics for use from 350 nm to 2250 nm.
  - Near/Mid-IR fiber optics for use from 6500 cm^{-1} to 1700 cm^{-1}.
  - Mid-IR fiber optics for use from 2000 cm^{-1} to 600 cm^{-1}.
- Optional video imaging and illumination system (shown in lower photo):
  - Magnifies the image for easy viewing.
  - Directly views the sampling surface.
  - Includes software for illumination, real-time viewing and storing the images.
  - USB2 compatible.
  - CE marked.
- Optional reference for mid-IR and Vis/Near-IR studies.



INCLUDES

- Omni-Spec™ specular reflectance probe.
- Sets of two 1.5 m fibers must be ordered separately.
- Use with a fiber optic coupler, such as the Harrick FiberMate2™.

ORDERING INFORMATION

	CATALOG NO.
Omni-Spec™ specular reflectance probe	OMN-SPC
VIS/Near-IR Fiber Set (350 nm to 2250 nm)	OMN-F-UVN
Near/Mid- IR Fiber Set (CIR fibers, 6500 cm^{-1} to 1700 cm^{-1})	OMN-F-CIR
Mid-IR Fiber Set (PIR fibers, 2000 cm^{-1} to 600 cm^{-1})	OMN-F-PIR

OPTIONS AND REPLACEMENT PARTS

Digital Camera for the Omni-Spec™	OMN-CAM
Reference Mirror	MOP-117
FiberMate2™	FM2-XXX*

**XXX indicates spectrometer make and model*

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The Omni-Spec™ is a valuable tool for specular reflectance and in-line diffuse reflectance measurements of samples outside of the sample compartment. The Omni-Spec™ fiber optic probe is designed for reflectance measurements up to 1.5m away from the spectrometer. It interfaces to the spectrometer using two fiber optic cables and a fiber optic coupler, such as the Harrick FiberMate2™. The Omni-Spec™ features all front-surface Al mirrors, allowing operation over a wide spectral range. The Omni-Spec™ is fully enclosed, shielded from light in the UV-Vis and provided with a purge enclosure for IR measurements. Fibers are available for the UV-Vis, NIR, and mid-IR. Note that an MCT detector is recommended for mid-IR applications.

The Omni-Spec™ is offered with an optional digital camera for real-time viewing and photographic documentation of the sample. This camera also is a useful for positioning the accessory over small spots.

Figures 1 through 4 show spectra of several different samples recorded using the Omni-Spec™ connected to the FiberMate2™ using appropriate fibers for the wavelength range. Figures 1 and 2 show that this combination can be used to distinguish colors from shiny plastics and papers in the visible. Figures 3 and 4 demonstrate the use of the Omni-Spec™ to spectroscopically examine coatings on metal substrates. It is interesting to note that that the PIR fiber can be used up to around 3200 cm^{-1} although it shows significant degradation in the signal-to-noise ratio above 2000 cm^{-1}.

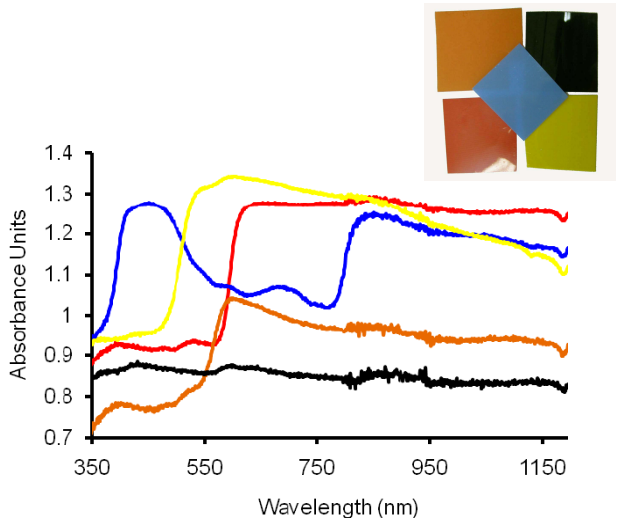

Figure 1. Specular reflectance of plastic shim. The color of the spectrum corresponds to the color of the plastic.

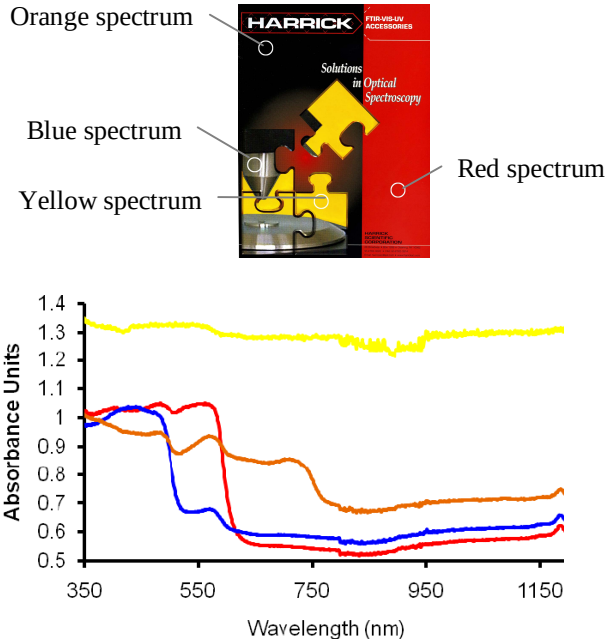

Figure 2. Specular reflectance of a catalog cover.

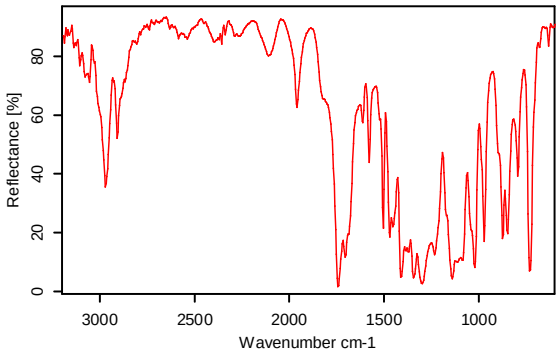

Figure 3. Specular reflectance of a 12 μm mylar film on an Al mirror measured with a PIR fiber.

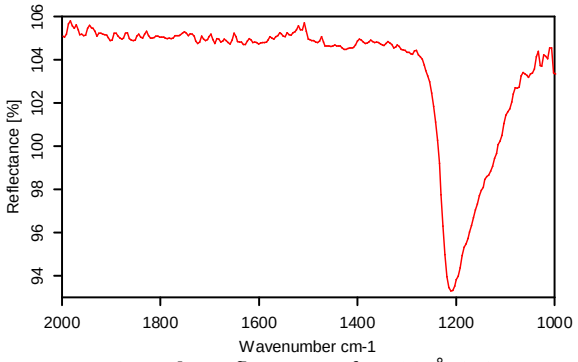

Figure 4. Specular reflectance of a 500 Å SiO coating on Al measured with a CIR fiber.