

OL 25RS, 25RS-S, 55RS, and 10RS-S Diffuse Specular Reflectance Standards

OL 25RS and OL 55RS Diffuse Reflectance Standards



The Optronic Laboratories' diffuse reflectance standards are available in 2 x 2 inch (OL 25RS) or 5 X 5 inch (OL 55RS) sizes.

The standards consist of pressed PTFE powder (Polytetrafluoroethylene) packed to a density of 1.0g/cm³ in a blackened aluminum holder. They are ideal as standards of diffuse reflectance, bi-directional reflectance distribution factor (BRDF), and as a target for irradiance to radiance conversion.

They are available in calibrated and uncalibrated versions:

- **OL 25RS-U and OL 55RS-U:** Uncalibrated
- **OL 25RS and OL 55RS:** Certified for hemispherical diffuse reflectivity relative to NIST¹ (350 - 2500nm)
- **Optional calibrations:**
 - Hemispherical diffuse reflectivity (350 - 2500nm)
 - Bi-directional reflectance distribution factor for any specified wavelength range (350 - 2500nm) and incidence/reflection angles² (e.g. 0°/45°)

¹ Based on the methods and results of: V.R. Weidner and J.J. Hsia, "Reflection Properties of Pressed Polytetrafluoroethylene Powder," J. Opt. Soc. Am. 71, 856-861(1981).

² A minimum angle of 20° between incidence and reflection is required.

OL 25RS-S and OL 10RS-S Specular Reflectance Standards

The Optronic Laboratories' specular reflectance standards are available in 2 x 2 inch (OL 25RS-S) or circular 1-inch diameter (OL 10RS-S) sizes. These are front surface coated aluminum mirrors with a magnesium fluoride overcoat. They are used as specular reflectance standards for a wide variety of instruments and applications.

They are only available in calibrated versions:

- **OL 25RS-S:** Calibrated for unpolarized specular reflectance at 10° incidence angle (350 - 1100nm)
- **OL 10RS-S:** Calibrated for unpolarized specular reflectance at 10° incidence angle (350 - 1100nm)
- **Optional calibrations:**
 - Over specified wavelength ranges (200nm-30µm)
 - At specified incidence angles (10° to 75° [OL 25RS-S] or 60° [OL 10RS-S])
 - At s-, p-, or other specified polarizations

Specular reflectance is based on the OL 750 Automated Spectroradiometric Measurement System with the OL 750-75MA Variable Angle Specular Reflectance Attachment. The measurement is performed using a "self-calibrating" technique that consists of performing a spectral scan with the detector measuring the incident flux. Following the calibration scan, the sample is placed in the sample holder, rotated to the specified incident angle, and reflected flux is measured. The specular reflectance is the ratio of the scans.

