



Diffuse Reflectance Standards

SphereOptics Diffuse Reflectance Standards are made from our proprietary Zenith reflectance material. This highly reflecting, PTFE-based material is resistant to heat, humidity and exposure to high levels of radiation, making it ideal for use as reflectance standards and calibration targets.

Our line of gray scale standards are generally used to determine the linearity of optical detector systems used in colorimeters, spectrophotometers and densitometers. Our diffuse 99% standard is used industry-wide for calibration of sphere systems, photometers, optical equipment, and spectrophotometers.

Calibration

Standards are available uncalibrated, or calibrated. Calibrations cover the UV/VIS, UV/VIS/NIR or NIR wavelength regions with calibration data in 20 or 50 nm increments. Data is provided in print and electronic formats. Custom calibrations are available.

SphereOptics maintains calibration laboratories in the United States and Germany with standards traceable to both the National Institute of Standards and Technology (NIST) and Physikalisch Technische Bundesanstalt (PTB).

Ordering information

Standards are available in 2 inch (50 mm) and 1.25 inch (30 mm) diameters with reflectance values ranging from our high reflectance white 99% to a 2% gray standard. Reflectance values include 99%, 75%, 50%, 25%, 10%, 5% and 2%. Standards are sold individually or in sets of two or four standards with varying reflectances. Each standard is packaged in a durable cup style holder with a protective cover.

OEM and Custom Standards

We welcome the opportunity to quote on custom and OEM reflectance standards. Please contact our sales engineering department for capabilities information.

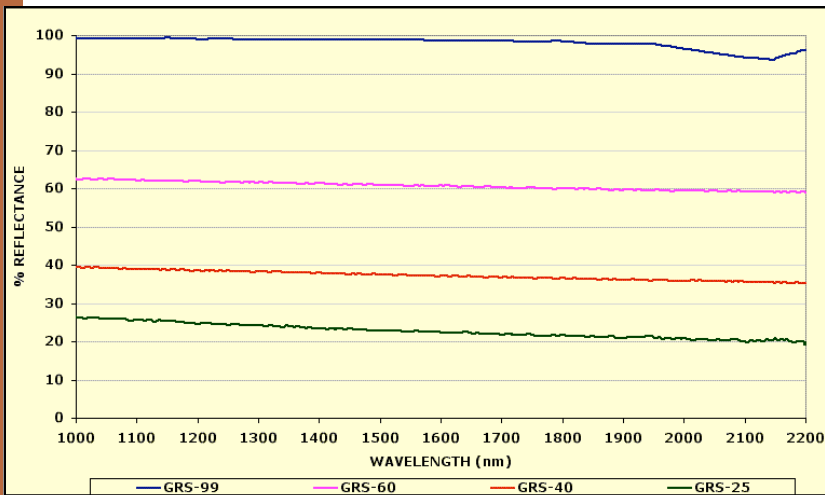
FEATURES

- High Reflectance
- Durable, Cleanable
- NIST Traceable Calibration

APPLICATIONS

- Calibration of
 - Sphere Systems
 - Photometers
 - Radiometers
 - Densitometers
 - Optical Equipment
 - Spectrophotometers
- Test Linearity of
 - Detector Systems
 - Colorimeters
 - Densitometers
 - Spectrophotometers

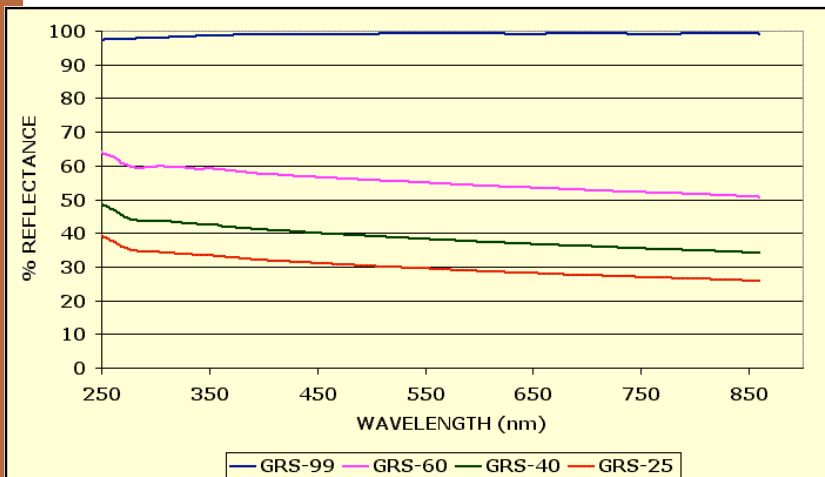
TYPICAL REFLECTANCE



**TYPICAL REFLECTANCE
GRAY SCALE STANDARDS SET**

Calibrated from 1000 to 2200 nm with calibration data provided in 20 nm steps.

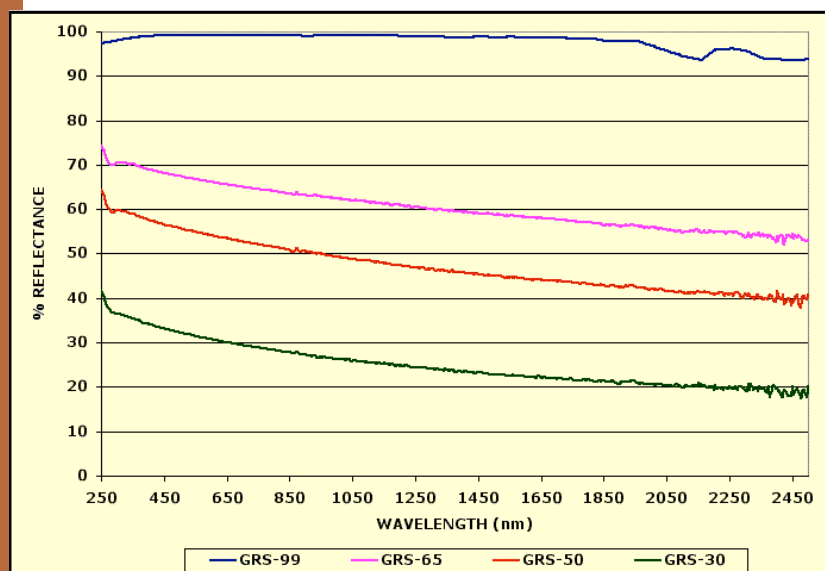
Available with reflectance values of 99%, 75%, 50% and 10%



**TYPICAL REFLECTANCE
UV/VIS GRAY SCALE
STANDARDS SET**

Calibrated from 250 to 850 nm with calibration data provided in 10 nm steps.

Available with reflectance values of 99%, 75%, 50%, 25%, 10%, 5% and 2%



**TYPICAL REFLECTANCE
UV/VIS-NIR GRAY SCALE
STANDARDS SET**

Calibrated 250 to 2500 nm with calibration data provided in 50 nm steps.

Available with reflectance values of 99%, 75%, 50, 25% and 10%

OTHER REFLECTIVITIES ARE AVAILABLE UPON REQUEST.

ORDERING INFORMATION

STANDARDS SETS

| Order Number | Wavelength Range | Diameter | Number of Standards | Reflectance Values |
|--------------|------------------|-----------------|---------------------|----------------------------------|
| SG 3086 | 250 to 2500 nm | 2 in (50 mm) | Two (2) | 99, 50% |
| SG 3087 | 250 to 2500 nm | 1.25 in (30 mm) | Two (2) | 99, 50% |
| SG 3088 | 250 to 2500 nm | 2 in (50 mm) | Four (4) | 99, 75, 50, 25% |
| SG 3089 | 250 to 2500 nm | 1.25 in (30 mm) | Four (4) | 99, 75, 50, 25% |
| SG 3044 | 250 to 2500 nm | 2 in (50 mm) | Eight (8) | 99, 75, 50, 25, 10, 5, 2 & Wave. |
| SG 3043 | 250 to 2500 nm | 1.25 in (30 mm) | Eight (8) | 99, 75, 50, 25, 10, 5, 2 & Wave. |
| SG 3090 | 250 to 860 nm | 2 in (50 mm) | Two (2) | 99, 50% |
| SG 3091 | 250 to 860 nm | 1.25 in (30 mm) | Two (2) | 99, 50% |
| SG 3092 | 250 to 860 nm | 2 in (50 mm) | Four (4) | 99, 75, 50, 25% |
| SG 3093 | 250 to 860 nm | 1.25 in (30 mm) | Four (4) | 99, 75, 50, 25% |
| SG 3094 | 1000 to 2200 nm | 2 in (50 mm) | Two (2) | 99, 50% |
| SG 3095 | 1000 to 2200 nm | 1.25 in (30 mm) | Two (2) | 99, 50% |
| SG 3096 | 1000 to 2200 nm | 2 in (50 mm) | Four (4) | 99, 75, 50, 25% |
| SG 3097 | 1000 to 2200 nm | 1.25 in (30 mm) | Four (4) | 99, 75, 50, 25% |

INDIVIDUAL STANDARDS

| Order Number | Wavelength Range | Diameter | Reflectance Value |
|--------------|------------------|-----------------|-------------------|
| SG 3051 | 250 to 2500 nm | 2 in (50 mm) | 99% |
| SG 3052 | 250 to 2500 nm | 1.25 in (30 mm) | 99% |
| SG 3069 | 250 to 2500 nm | 2 in (50 mm) | 75% |
| SG 3070 | 250 to 2500 nm | 1.25 in (30 mm) | 75% |
| SG 3071 | 250 to 2500 nm | 2 in (50 mm) | 50% |
| SG 3072 | 250 to 2500 nm | 1.25 in (30 mm) | 50% |
| SG 3073 | 250 to 2500 nm | 2 in (50 mm) | 25% |
| SG 3074 | 250 to 2500 nm | 1.25 in (30 mm) | 25% |
| SG 3082 | 250 to 2500 nm | 2 in (50 mm) | 10% |
| SG 3083 | 250 to 2500 nm | 1.25 (30 mm) | 10% |
| SG 3075 | 250 to 2500 nm | 2 in (50 mm) | 5% |
| SG 3076 | 250 to 2500 nm | 1.25 in (30 mm) | 5% |
| SG 3046 | 250 to 2500 nm | 2 in (50 mm) | 2% |
| SG 3047 | 250 to 2500 nm | 1.25 in (30 mm) | 2% |
| SG 3053 | 250 to 860 nm | 2 in (50 mm) | 99% |
| SG 3054 | 250 to 860 nm | 1.25 in (30 mm) | 99% |
| SG 3055 | 250 to 860 nm | 2 in (50 mm) | 75% |
| SG 3056 | 250 to 860 nm | 1.25 in (30 mm) | 75% |
| SG 3057 | 250 to 860 nm | 2 in (50 mm) | 50% |
| SG 3058 | 250 to 860 nm | 1.25 in (30 mm) | 50% |
| SG 3059 | 250 to 860 nm | 2 in (50 mm) | 25% |
| SG 3060 | 250 to 860 nm | 1.25 in (30 mm) | 25% |
| SG 3080 | 250 to 860 nm | 2 in (50 mm) | 10% |
| SG 3081 | 250 to 860 nm | 1.25 in (30 mm) | 10% |
| SG 3100 | 250 to 860 nm | 2 in (50 mm) | 5% |
| SG 3101 | 250 to 860 nm | 1.25 in (30 mm) | 5% |
| SG 3102 | 250 to 860 nm | 2 in (50 mm) | 2% |
| SG 3103 | 250 to 860 nm | 1.25 in (30 mm) | 2% |
| SG 3061 | 1000 to 2200 nm | 2 in (50 mm) | 99% |
| SG 3062 | 1000 to 2200 nm | 1.25 in (30 mm) | 99% |
| SG 3063 | 1000 to 2200 nm | 2 in (50 mm) | 60% |
| SG 3064 | 1000 to 2200 nm | 1.25 in (30 mm) | 60% |
| SG 3065 | 1000 to 2200 nm | 2 in (50 mm) | 40% |
| SG 3066 | 1000 to 2200 nm | 1.25 in (30 mm) | 40% |
| SG 3067 | 1000 to 2200 nm | 2 in (50 mm) | 25% |
| SG 3068 | 1000 to 2200 nm | 1.25 in (30 mm) | 25% |
| SG 3084 | 1000 to 2200 | 2 in (50 nm) | 10% |
| SG 3085 | 1000 to 2200 nm | 1.25 in (30 mm) | 10% |

CALIBRATIONS

- UV-VIS Calibrations are from 250 nm to 860 nm with calibration data provided in 10 nm steps.
- UV-VIS-NIR Calibrations are from 250 to 2500 nm with calibration data provided in 50 nm steps.
- NIR Calibrations are from 1000 to 2200 nm with calibration data provided in 20 nm steps.

SphereOptics also offers recalibration services that are traceable to national laboratory standards.



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