



# 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.

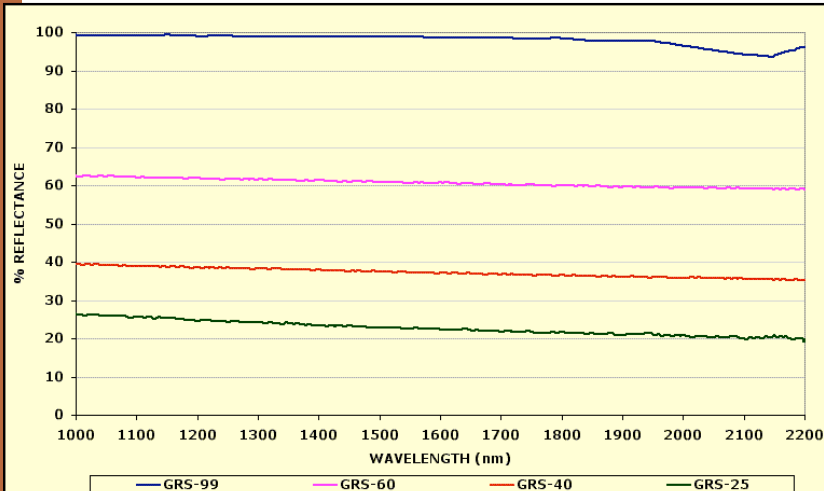
## FEATURES

- 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

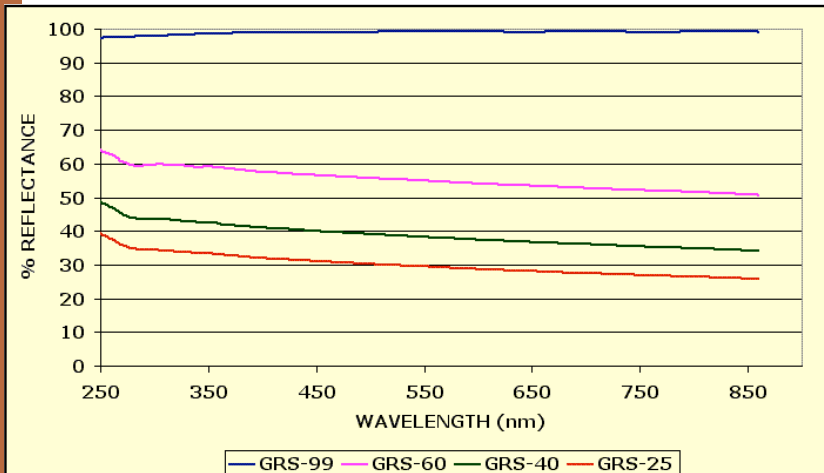
**TYPICAL REFLECTANCE**



**TYPICAL REFLECTANCE  
GRAY SCALE STANDARDS SET**

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

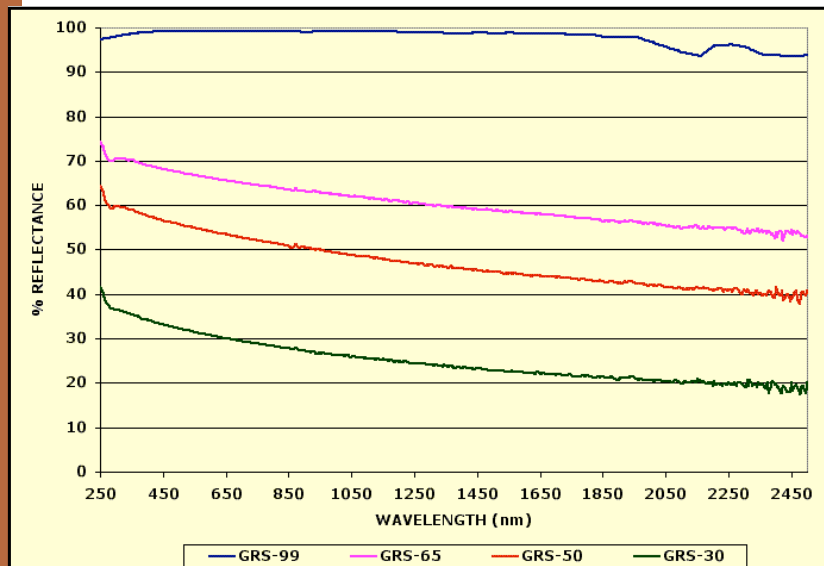
Available with reflectance values of 99%, 75%, 50% and 10%



**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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As part of our product improvement program, specifications are subject to change without notice.