

## GL OPTI SPHERES

All our spheres connect to any GL spectrometer using a direct connection.

Integrating spheres have become a standard instrument in photometry and radiometry since R. Ulbricht's practical implementation of the light-collecting cubical box more than 115 years ago.

Today, GL Optic produces high reflectance integrating spheres using modern materials such as composite and combining them with the latest calibration technology. They are the optimal solution for luminous flux and radiant power measurement of single LEDs, LED luminaires and modules.

### Features:

- Luminous flux and radiant power measurements
- High reflection BaSO<sub>4</sub> coating with 98% reflection
- 2π and 4π configurations
- Suitable for compliance with international standards: EN 62471, IESNA LM-79-08, CIE 127:2007, CIE S 025/E:2015 and others



<b>GL OPTI SPHERE 48</b>	Luminous flux and radiant power measurement of single LEDs and other small light sources. Mounts directly on spectrometer.
<b>TECHNICAL DATA</b>	
Spectral range	340 – 1700 nm
Sphere inner diameter	48 mm
Sphere material	Aluminium
Inner coating	Barium Sulfate (BaSO <sub>4</sub> ) high-reflectance material (R98)
Outer coating	Black textured finish



<b>GL OPTI SPHERE 205</b>	Luminous flux and radiant power measurement of LEDs and other light sources
<b>TECHNICAL DATA</b>	
Spectral range	340 – 1700 nm
Sphere inner diameter	205 mm
Sphere material	Aluminium
Inner coating	Barium Sulfate (BaSO <sub>4</sub> ) high-reflectance material (R98)
Outer coating	Black textured finish



<b>GL OPTI SPHERE 500</b>	Luminous flux and radiant power measurement of LED modules and retrofit lamps
<b>TECHNICAL DATA</b>	
Spectral range	340 – 1700 nm
Sphere inner diameter	500 mm
Sphere material	Composite
Inner coating	Barium Sulfate (BaSO <sub>4</sub> ) high-reflectance material (R98)
Outer coating	Black finish



<b>GL OPTI SPHERE 1000</b>	Luminous flux and radiant power measurement of large LED modules and luminaires
<b>TECHNICAL DATA</b>	
Spectral range	340 – 1700 nm
Sphere inner diameter	1100 mm
Sphere material	Composite
Inner coating	Barium Sulfate (BaSO <sub>4</sub> ) high-reflectance material (R98)
Outer coating	Black finish



<b>GL OPTI SPHERE 2000</b>	Luminous flux and radiant power measurement of large LED modules and large luminaires
<b>TECHNICAL DATA</b>	
Spectral range	340 – 1700 nm
Sphere inner diameter	2000 mm
Sphere material	Carbon steel
Inner coating	Barium Sulfate (BaSO <sub>4</sub> ) high-reflectance material (R98)
Outer coating	Black textured finish



<b>GL OPTI SPHERE 3000</b>	Radiant power and luminous flux measurements
<b>TECHNICAL DATA</b>	
Spectral range	340 – 1700 nm
Sphere inner diameter	3000 mm
Sphere material	Carbon steel
Inner coating	Barium Sulfate (BaSO <sub>4</sub> ) high-reflectance material (R98)
Outer coating	Grey textured finish

## GL OPTI SPHERES

Reflectance properties	97%	97%	97%	97%	97%	97%	98%
Auxiliary light source	N/A	White LED	White LED	White LED	White LED or halogen	White LED or halogen	Halogen
Spectrometer port	Direct connection	Direct connection or SMA fiber-optic	Direct connection or SMA fiber-optic	Direct connection or SMA fiber-optic	Direct connection or SMA fiber-optic	Direct connection or SMA fiber-optic	Direct connection or SMA fiber-optic
Standards compliance	N/A	CE, LM 79, CIE 127:2007 CIE S 025/E:2015	CE, LM 79, CIE 127:2007 CIE S 025/E:2015	CE, LM 79, CIE 127:2007 CIE S 025/E:2015	CE, LM 79, CIE 127:2007 CIE S 025/E:2015	CE, LM 79, CIE 127:2007 CIE S 025/E:2015	CE, LM 79, CIE 127:2007 CIE S 025/E:2015
Maximum DUT dimensions in accordance with CIE S 025/E:2015	N/A	20 mm (diameter or diagonal)	50 mm (diameter or diagonal)	100 mm (diameter or diagonal)	200 mm (diameter or diagonal)	300 mm (diameter or diagonal)	300 mm (diameter or diagonal)
Maximum dimension for optimal measurement (1/3 x sphere diameter)	N/A	65 mm (diameter or diagonal)	165 mm (diameter or diagonal)	330 mm (diameter or diagonal)	665 mm (diameter or diagonal)	1000 mm (diameter or diagonal)	1000 mm (diameter or diagonal)
Maximum DUT weight	N/A	250 g	3 kg	3 kg	25 kg	25 kg	25 kg
Sphere frame	N/A	N/A	Hinged	Hinged	Hinged	Hinged	Hinged with electric powered opening mechanism
Sphere center positioning	N/A	N/A	N/A	N/A	N/A	N/A	Cross laser mechanism
Mechanical breadboard with post	N/A	For 4π measurement	For 4π measurement	For 4π measurement	For 4π measurement	For 4π measurement	For 4π measurement
USB source controller for auxiliary light source	N/A	With current source and relay switch for external power supply	With current source and relay switch for external power supply	With current source and relay switch for external power supply	With current source and relay switch for external power supply	With current source and relay switch for external power supply	With current source and relay switch for external power supply
Universal post with standard lamp sockets	N/A	N/A	E14, E27, GU10 and G4 for QTH lamp spectral flux source	E14, E27, GU10 and G4 for QTH lamp spectral flux source	E14, E27, GU10 and G4 for QTH lamp spectral flux source	E14, E27, GU10 and G4 for QTH lamp spectral flux source	E14, E27, GU10 and G4 for QTH lamp spectral flux source
External dimensions [W x H x D]	52 x 88 x 51 mm	265 x 270 x 225 mm	620 x 760 x 590 mm	1260 x 1800 x 1220 mm	2200 x 2200 x 2300 mm	4200 x 3500 x 3300 mm	4200 x 3500 x 3300 mm
Weight	0.126 kg	3.3 kg	17.5 kg	60 kg	200 kg	1100 kg	1100 kg

**Note:** Instrument, firmware and software specification are subject to change without prior notice. All information included in GL OPTIC datasheets and product information available in any form are carefully prepared and included information believed to be true. Please note that discrepancies may occur due to text and/or other errors or changes in the available technology. We advise to contact GL Optic before the use of the product to obtain the latest product specification.

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