INTEGRATING SPHERES

peo PHOTONICS

Table of contents

Partner GL Optic

Product offering

GL OPTI SPHERE 48

GL OPTI SPHERE 205

GL OPTI SPHERE 500

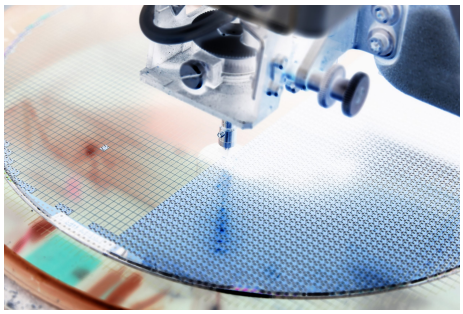
GL OPTI SPHERE 1100

GL Large OPTI SPHERES

GL OPTI SPHERE 48

GL OPTI SPHERE 48 is an integrating sphere accessory for our GL SPECTIS spectral light meters for the luminous flux measurement of small LED chips and other small light sources. This integrating sphere helps to achieve an ideal light distribution and proper measurement of lighting power. Use this for luminous flux, radiant power, color temperature CCT, color coordinates and color rendering properties (CIE CRI; IES TM-30) of LEDs.

This user friendly accessory is an ideal tool for everyday work of electronics engineers and LED modules developers. This is also very helpful for purchasing managers or purchasing agents to select the proper components, or anytime you are in need for quick & accurate LEDs measurement.



This small integrating sphere mounts directly on the spectral instrument providing the user with accurate and immediate photometric and radiometric data. The RFID code is automatically detected by the spectral meter, expanding the measurement capabilities of your GL SPECTIS device to single LED measurements.

Using this device you can get the results which are traceable to laboratory standards, enabling you to make smarter decisions regarding the LED quality and select the products you need for your development, or control the binning (color and flux groups) during the initial selection stage. You no longer need to ask the laboratory to measure these for you.

Working with different suppliers or buying different types of LEDs? Now you can easily check the light output and color of these components in a matter of seconds. Paired with the powerful GL SPECTROSOFT analysis suite, you can take it even further and performance extensive analysis throughout the development stage.

Key Features:

- Luminous flux and radiant power measurements
- High reflection BaSO4 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

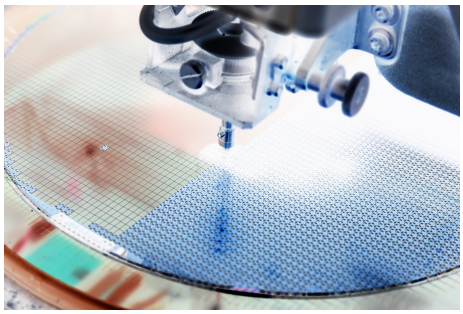
Applications include luminous flux and radiant power measurement of single LEDs and other small light sources, with direct mounting on the spectrometer.

For more information, simply complete the contact form, and a member of our team will be in touch shortly.

GL OPTI SPHERE 205

GL OPTI SPHERE 205 small integrating sphere offers an automated, easy to use alternative for measuring luminous flux and radiant power of LEDs and other small light sources. All measurements are compliant with the recommendation of the CIE Technical Committee published in the CIE 127:2007 Technical Report.

The intelligent design of the GL OPTI SPHERE enables different adapters to be installed and allow measurement of a wide number of light sources. Front emitting diodes conforming to CIE recommendations can be measured at the wall entrance in 2π geometry. Other types of LEDs should be measured at the center of the sphere in 4π geometry. Configure the system as required by your application.



Choose from a range of spectrometers, use SMA fiber optics or direct connections plus measure 2π or 4π. These are just a few of the hardware options available. Extend your capabilities even further with any one of our powerful software analysis and automation tools.

Designed as a tool for everyday use, the GL OPTI SPHERE 205 offers a great alternative to external labs or old technology devices. Get laboratory level color and radiometric accuracy in an instant on your desk, in your lab or on the production line.

The integration system design of the GL OPTI SPHERE allows users to obtain all light properties at the click of a button. Say goodbye to complex hardware and software, and take control of your optical development.

GL OPTI SPHERE 205 was developed to simplify light measurement for single LED’s and small LED modules. Traditional systems are challenging to use, often sensitive to small physical changes and unintuitive software that make it difficult to obtain consistent results independent of the user. With peripheral integration, automated sequences are possible and make this issue a thing of the past.

Key Features:

- Luminous flux and radiant power measurements
- High reflection BaSO4 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

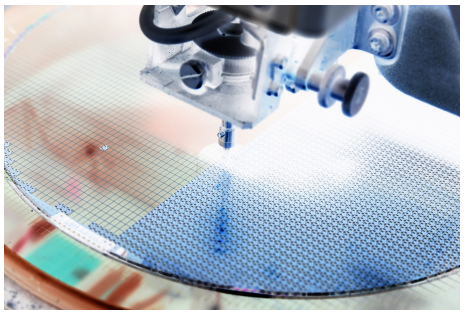
Applications include luminous flux and radiant power measurement of LEDs, LED modules, and other light sources.

For more information, simply complete the contact form, and a member of our team will be in touch shortly.

GL OPTI SPHERE 500

GL OPTI SPHERE 500 was designed specifically for growing lighting companies in the booming LED retrofit business that need a quick and reliable solution to test & measure medium sized lamps and LED modules. It offers an excellent choice for any LED luminaire manufacturer interested in characterizing the quality of their product. This 50 cm integrating sphere generates immediate measurements of luminous flux, color temperature, luminous efficacy and many other important light characteristics.

With its small dimensions, the GL OPTI SPHERE 500 is a perfect table top instrument providing laboratory accuracy, without the need for a dedicated laboratory or highly skilled technician. This calibrated system is conforming to CIE global standards and all American and European requirements for professional LED light measurement instrumentation. Choose between any of our spectrometer options to create a high performance, easy to use sphere spectroradiomemter setup.



This device is simple to install in a typical office setting, enabling engineers and R&D departments to measure lighting components on-site with speed and accuracy. Long lead times result from sending components and bulbs for laboratory testing, which eventually slows down the development cycle. They can now observe results right away upon the delivery of fresh LEDs or the fabrication of a new board.

This instrument can be easily installed in a standard office space allowing R&D departments and engineers quickly and accurately measure lighting components onsite. Sending lamps and components for testing in the lab means long lead times and ultimately slows down the development cycle. Now, when new LEDs are delivered or a new board is fabricated they can see results immediately.

This flexible integrating sphere system can easily be adopted to specific customer’s needs and turned into a production tester or a quick production control unit which will help to measure lamps, luminaires and modules as they are manufactured. Larger distribution companies use this for quality compliance testing of purchased products before they are released to the market.

The rapidly expanding LED retrofit lamp market demands quick & reliable solutions to test & measure small to medium-sized LED products. GL OPTI SPHERE 500 integrating sphere was produced to meet this need and delivers complete optical measurement of LED retrofit / replacement lamps with typical sockets like E27, E14 GU10 and others. As we rolled out the solution, it quickly became evident that this compact benchtop instrument is equally suited for use in a lighting laboratory as well as in R&D departments for immediate evaluation of components, prototypes and final products.

GL OPTI SPHERE 500 lowers the barrier of entry for professional light measurement. A dedicated metrologist or large dark lab are not required. Setup the system and start understanding your lamps in no time. The setup and operation ensure engineering staff generate accurate results even with only limited test experience. Our customers appreciate that you can just open the sphere, install the lamp inside and

measure. This sphere is equipped with all accessories and components you need and our GL SPECTROSOFT software interface will help you to do it right.

Key Features:

- Luminous flux and radiant power measurements
- High reflection BaSO4 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

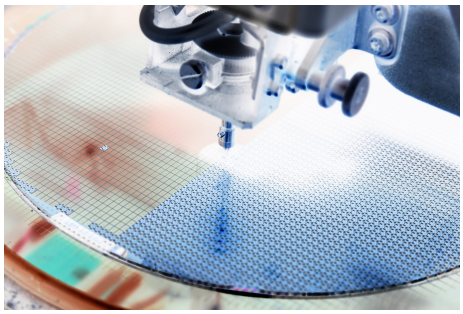
Applications include luminous flux and radiant power measurement of LED modules and retrofit lamps, with complete optical testing for small to medium-sized LED products.

For more information, simply complete the contact form, and a member of our team will be in touch shortly.

GL OPTI SPHERE 1100

GL OPTI SPHERE 1100 integrating sphere system has been designed for the luminous flux measurement and radiant power of mid-size LED luminaires and large LED modules, as well as other light sources compliant with the recommendations of the CIE Technical Committee published in the CIE 127:2007 Technical Report. It is the ideal solution for growing LED lighting manufacturers that do not have the space or budget for a 2M or 3M sphere.

This easy to use and complete integrating sphere system conforms to CIE S025 standard and American LM79 and other international standards. With a side-opening system that facilitates the easy installation of a variety of light sources, the GL OPTI SPHERE 1100 gives you full measurement flexibility that conforms to CIE recommendations. As with all integrating sphere options, the GL OPTI SPHERE 1100 can be paired with any of our spectrometers and software tools to deliver the measurement system you need.



By default, this integrating sphere system comes equipped with a mechanical stage that can be adapted to mount many different fixtures and LED module types. An optional lamp post installed in the center of the sphere makes it easy to install different A type products. Any of our high-performance spectrometers can connect to the sphere and is automatically detected by the software. Load the lamp, and let the software do the rest.

With a wide range of spectrometers and accessories available for the GL OPTI SPHERE 1100, you can select the best spectral range and features to fit your budget and technical requirements. Combine with our powerful GL SPECTROSOFT software and GL AUTOMATION add-on, to have a completely turnkey test station that anyone can use to obtain accurate and repeatable results.

This integrating sphere system is still small enough to be installed in an office or production floor space allowing R&D departments and engineers quickly and accurately measure lighting components onsite. Sending lamps and components for testing in the lab means long lead times and ultimately slows down the development cycle. Now, when new fixtures are delivered or a new board is fabricated the results are available immediately.

The rapidly expanding LED retrofit lamp market demands quick & reliable solutions to test & measure small to medium-sized LED fixtures. Everything from downlights to small strip lights and LED modules. GL OPTI SPHERE 1100 integrating sphere system was designed to meet this need and delivers complete optical measurement of LED retrofit / replacement lamps.

GL OPTI SPHERE 1100 integrating sphere system is a tool that can deliver exceptional luminous flux and color accuracy without the operational complexity associated with other photometric test equipment. A dedicated metrologist or large dark lab are not required. Setup the system and start evaluating your lamps in no time. Our customers appreciate that you can just open the sphere, install the lamp inside and measure.

This sphere is equipped with all accessories and components you need and our GL SPECTROSOFT software interface will help you to do it right.

Key Features:

- Luminous flux and radiant power measurements
- High reflection BaSO4 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

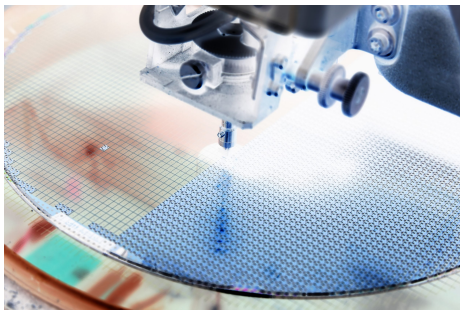
Applications include luminous flux and radiant power measurement of large LED modules, mid-size luminaires, and other light sources.

For more information, simply complete the contact form, and a member of our team will be in touch shortly.

GL Large OPTI SPHERES

GL OPTI SPHERE 1500, 2000 and 3000 are set of large integrating sphere and were designed for the measurement of large LED luminaires and modules for luminous flux, radiant power and color. These systems enable LM79 compliant testing and also comply with the recommendations of the CIE Technical Committee published in the CIE 127:2007 Technical Report.

The size of the sphere and the side-opening system facilitate the easy installation of a variety of light sources using additional adapters or holders, allowing full measurement flexibility. As with all our integrating sphere systems, this system can be equipped with any of our high-performance spectrometers and powerful automation and analysis software to produce a completely turnkey system that anyone can operate.



GL OPTI SPHERE comes in standard with a mechanical stage that can be adapted to mount many different fixtures and LED module types. An optional lamp post installed in the center of the sphere makes it easy to install different A type products. Any of our high-performance light spectrometers can connect to the sphere and they are automatically detected by the software when connected to the detector port. Load the lamp, and let the software do the rest.

With 1,5 m, 2 m and 3 m diameter sphere optional available, the sphere is optimized for integrating sphere measurement of large light fixtures. Used in a range of industries and calibrated to National reference standards, the GL LARGE OPTI SPHERES offers exceptional value in a market space crowded by either low price, low-performance systems or systems that are cost prohibitive to most growing companies.

With a wide range of light spectrometers and accessories available for the GL LARGE OPTI SPHERES, you can select the best spectral range and features to fit your budget and technical requirements. Combine with our powerful GL SPECTROSOFT software and GL AUTOMATION add-on, to have a completely turnkey test station that anyone can use to obtain accurate and repeatable results.

With more and more companies manufacturing commercial lighting fixtures, there is increasing demand for a reasonably priced, accurate and easy to use solution to test & measure large luminaires during development and as a QC measure in production. GL OPTI SPHERE 1500, 2000 and 3000 integrating sphere were developed to meet this need and offers a completely turnkey solution for all your light measurement needs, big or small.

GL Optic large integrating sphere deliver exceptional luminous flux and color accuracy without the operational complexity associated with other photometric test equipment. A dedicated metrologist or large dark lab are not required. Setup the system and start evaluating your lamps in no time. Our customers appreciate that you can just open the sphere, install the lamp inside and measure. This sphere is equipped with all accessories and components you need and our GL SPECTROSOFT software interface will help you to do it right.

Key Features:

- Luminous flux and radiant power measurements
- High reflection $BaSO_4$ 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

Applications include luminous flux and radiant power measurement of large LED modules, mid-size luminaires, and other light sources.

For more information, simply complete the contact form, and a member of our team will be in touch shortly.