GL OPTIC

Powered by Innovation

GL Optic is the brand name of JUST Normlicht GmbH, Germany, the world's leading supplier of standardized light solutions for the printing and graphic arts industries. Since 2009 under the brand of GL Optic, JUST has been developing and distributing a complete product line of precise spectral light measuring devices.

Product List

GL SPECTROMETERS

Our smart spectrometers are operated by touchscreen, exchange data using a micro SD card and interact via hardware triggering … and all of this without compromising on accuracy.

micro SD   USB 2.0

GL OPTI SPHERES

The LED application market is growing as are your measurement needs. GL Optic offers you the right integrating sphere for your size of product: from 48mm to 2m diameter or more.
All spectrometers connect to any size sphere through a direct connection.

GL ACCESSORIES

Changing from Lux to Lumen and then to cd/m^2 is as easy as connecting a new accessory to your spectrometer. Automatically, the system recalibrates to the new setup so you are always sure you are using the correct absolute spectral calibration.

GL SPECTROSOFT

This analytical PC based software has been developed for laboratory applications, field work in production quality control and for general lighting assessment purposes.

MADE IN EUROPE

GL Optic products are made in Europe, sold and serviced on all continents.
We are a German Limited Company, which offers precise light measuring instruments and complex solutions for spectral light measurement systems. In our product line you will find intelligently designed, intuitive and accurate goniometers and other measuring systems such as: spectrometers, integrating spheres, goniometers, programmable sources of LED light and analytical software.

GL OPTIC **SPECTROMETERS**

Our spectrometers are versatile instruments for lab, field, process and OEM environments with no compromise on accuracy.
That's why we call them "smart".

Not only since the introduction of LED technology, the lighting market has been continually intensifying requirements on spectrometers to attain accurate measurement results.

GL Optic offers a wide range of spectrometers using different sensor technology (such as CMOS, CCD, back-thinned CCD) and combines them with innovative touch screen operation.

USB direct transfer, Micro SD Cards and Li-Ion batteries in most of our devices allow the user to take the product where the measurement is needed in the field. Hardware triggering and rack mount systems provide easy integration into production line environments.

GL **SPECTIS 1.0**
Precise Light Measurement Technology in a handy size.

GL SPECTIS 1.0 is a high quality, easy to operate measuring device that gives you all you need for reliable light measurement. Check out the unique capabilities of the GL SPECTIS 1.0.

TECHNICAL DATA SHEET	
Absolute Spectroradiometric accuracy	4%
Spectral Range	340 – 780 nm / 640 – 1050 nm (optional)
Detector Technology	CMOS, 256 pixels
Datapoint interval	~ 1.7 nm / ~ 1.8 nm
Integration time	10 ms – 10 s
Signal : Noise Ratio	1000 : 1
Stray Light	2*10E-3
Dimensions	72 x 115 x 19 mm; 120 g

Hardware trigger & software capable | USB 2.0 connection | 16 bit A/D conversion.
Please inquire for complete specifications.

GL **SPECTIS 1.0 Touch**
The world's first smart spectrometer.

GL SPECTIS 1.0 Touch is the world's first intuitively operated touch screen version of our successful SPECTIS 1.0 product line. Often copied but never duplicated this is a reliable and versatile device for accurate absolute spectral measurement.

TECHNICAL DATA SHEET	
Absolute Spectroradiometric accuracy	4%
Spectral Range	340 – 780 nm / 640 – 1050 nm (optional)
Detector Technology	CMOS, 256 pixels
Datapoint interval	~ 1.7 nm / ~ 1.8 nm
Integration time	10 ms – 10 s
Signal : Noise Ratio	1000 : 1
Stray Light	2*10E-3
Dimensions	74 x 145 x 24 mm; 315 g

Hardware & Software trigger | USB 2.0 connection | Micro SD Card | 16 bit A/D conversion | Li-Ion battery.
Please inquire for complete specifications.

GL **SPECTIS 1.0 T Flicker**
GL SPECTIS 1.0 T Flicker integrates the accurate measurement of light flicker with all the measurement quantities of the GL SPECTIS 1.0 Touch.

GL **SPECTIS 5.0 Touch**

Discover the new compact size laboratory grade spectrometer.

With the new GL SPECTIS 5.0 Touch we expanded our smart, touch screen technology into laboratory grade equipment. The wide wavelength range allows for measurement according to many standards including Photobiological Safety (EN 62471, when spectrometer is a part of PSM System) and measurement of SSL products (IESNA LM-79-08, CIE S 025/E:2015).

TECHNICAL DATA SHEET	
Absolute Spectroradiometric accuracy	4%
Spectral Range	VIS 340 – 850 nm UV-VIS 200 – 800 nm VIS-NIR 380 – 1050 nm UV-VIS-NIR 200 – 1050 nm
Detector Technology	CCD back thinned
Optical Resolution (FWHM)	2.5 nm – 3.5 nm
Integration time	10 ms – 10 s
Signal : Noise Ratio	1000 : 1
Stray Light	2*10E-4
Dimensions	111 x 210 x 58 mm; 1.5 kg
Featuring temperature monitored sensor system	

Hardware & Software trigger | USB 2.0 connection | Micro SD Card | 16 bit A/D conversion | Li-Ion battery. Please inquire for complete specifications.

GL **SPECTIS 6.0**

Rack mounted laboratory grade spectrometer module.

With the new GL SPECTIS 6.0 we expand our high-end spectrometers into mass production and large laboratory setups for high speed measurement of SSL products (IESNA LM-79-08, CIE S 025/E:2015), LED wafers, large streetlamps and luminaries.

TECHNICAL DATA SHEET	
Absolute Spectroradiometric accuracy	4%
Spectral Range	VIS 340 – 850 nm UV-VIS 200 – 800 nm VIS-NIR 380 – 1050 nm UV-VIS-NIR 200 – 1050 nm
Detector Technology	CCD back thinned
Optical Resolution (FWHM)	2.5 nm – 3.5 nm
Integration time	10 ms – 10 s
Signal : Noise Ratio	1000 : 1
Stray Light	2*10E-4
Dimensions	2U 19"	480 x 262 x 88,9 mm; 2.5 kg
Featuring temperature monitored sensor system	

Hardware & Software trigger | USB 2.0 connection | 16 bit A/D conversion. Please inquire for complete specifications.

GL **SPECTIS 8.0**

Advanced spectroradiometer with Optical Stray Light Reduction*
for high precision light assessment.
*patent pending

The GL SPECTIS 8.0 is a unique, integrated spectroradiometer containing high sensitivity back thinned CCD image sensor and the revolutionary Optical Stray Light Reduction* method. GL SPECTIS 8.0 brings spectral light measurement to a new higher level than ever seen before.

TECHNICAL DATA SHEET	
Absolute Spectroradiometric accuracy	3%
Spectral Range	300 – 800 nm
Detector Technology	CCD back thinned, cooled (5°C)
Optical Resolution (FWHM)	1 nm
Integration time	10 ms – 10 s
Signal : Noise Ratio	2000 : 1
Stray Light	3*10E-4
Dimensions	20 x 175 x 320 mm; 7.1 kg

USB 2.0 connection | 16 bit A/D conversion. Please inquire for complete specifications.

GL **OPTI SPHERES**

All our spheres connect to any 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 (LED based Auxiliary correction source).

Using no fiber means you are not losing your calibration when changing between different sphere sizes. The system automatically detects and uses the correct calibration file. The spheres also come with LED auxiliary correction sources, 2Pi and 4Pi configurations and a 98% reflectivity in the visible range.

Our high reflection $BaSO_4$ coating is 98% reflective within the visible wavelength range. And other materials such as optical PTFE or gold are available as custom options in addition to other sphere sizes (1.5m, 3m, 4m).

GL **OPTI SPHERE 48**

The measurement of radiant power, luminous flux, color temperature, color coordinates and color rendering index (CRI) of LEDs.

GL OPTI SPHERE 48 is an accessory for our GL SPECTIS 1.0, GL SPECTIS 1.0 Touch and GL SPECTIS 5.0 Touch for luminous flux measurement of LEDs and other small light sources.

TECHNICAL DATA SHEET	
Sphere inner diameter	48 mm
Entrance aperture diameter	9 mm
Spectral range (coating)	340 – 1700 nm
Material (Sphere / Coating)	Aluminum / $BaSO_4$
Dimensions	52 x 88 x 51 mm
Weight	126 g

GL **OPTI SPHERE 205**

The ultimate solution for radiant power and luminous flux measurements of LEDs and LED modules.

The GL OPTI SPHERE 205 is designed for the measurement of radiant power and luminous flux of LEDs and other light sources compliant with the recommendation of the CIE Technical Committee published in Technical Report CIE 127:2007. The sphere is suitable for IESNA LM-79-08 and CIE S 025/E:2015 compliant measurements.

TECHNICAL DATA SHEET	
Sphere inner diameter	205 mm
Entrance aperture diameter	50 mm
Spectral range (coating)	340 – 1700 nm
Material (Sphere / Coating)	Aluminium / $BaSO_4$
Auxiliary source	White LED
Dimensions	265 x 270 x 225 mm
Weight	3.3 kg

GL **OPTI SPHERE 500**

The best solution for luminous flux and radiant power measurements of LED retrofit lamps.

The set is equipped with adapters and sockets for most popular retrofit bulbs. The GL OPTI SPHERE 500 is designed for the measurement of luminous flux and radiant power of LED replacement lamps and LED modules. The sphere is suitable for IESNA LM-79-08 and CIE S 025/E:2015 compliant measurements.

TECHNICAL DATA SHEET	
Sphere inner diameter	500 mm
Entrance aperture diameter	80 mm
Spectral range (coating)	340 – 1700 nm
Material (Sphere / Coating)	Composite / $BaSO_4$
Auxiliary source	White LED
Dimensions	620 x 760 x 590 mm
Weight	17.5 kg

GL **OPTI SPHERE 1100**

Measurement of luminous flux and radiant power of large LED modules and LED luminaries.

The GL OPTI SPHERE 1100 has been designed for the measurement of Luminous Flux and Radiant Power of LED Luminaries and big LED modules as well as for other light sources compliant with the recommendation of the CIE Technical Committee published in Technical Report CIE 127:2007. The sphere is suitable for IESNA LM-79-08 and CIE S 025/E:2015 compliant measurements.

TECHNICAL DATA SHEET	
Sphere inner diameter	1100 mm
Entrance aperture diameter	168 mm
Spectral range (coating)	340 – 1700 nm
Material (Sphere / Coating)	Composite / $BaSO_4$
Auxiliary source	White LED
Dimensions	1260 x 1800 x 1220 mm
Weight	60 kg

GL **OPTI SPHERE 2000,** GL **OPTI SPHERE 3000**

The ultimate solution for radiant power and luminous flux measurements of LEDs and LED modules.

GL OPTI SPHERE 2000 and GL OPTI SPHERE 3000 have been designed for the measurement of luminous flux and radiant power of LED Luminaries and big LED modules as well as for other light sources compliant with the recommendation of the CIE Technical Committee published in Technical Report CIE 127:2007. The sphere is suitable for IESNA LM-79-08 and CIE S 025/E:2015 compliant measurements.

TECHNICAL DATA SHEET	GL **OPTI SPHERE 2000**	GL **OPTI SPHERE 3000**
Sphere inner diameter	2000 mm	3000 mm
Entrance aperture diameter	660 mm	1000 mm
Spectral range (coating)	340 – 1700 nm	340 – 1700 nm
Material (Sphere / Coating)	Steel / $BaSO_4$	Steel / $BaSO_4$
Auxiliary source	White LED	Halogen
Dimensions	2200 x 2200 x 2300 mm	4200 x 3500 x 3300 mm
Weight	200 kg	1100 kg

GL **OPTIC ACCESSORIES**

From single LED emitter measurement to complete luminaire testing, GL Optic provides comprehensive light measurement solutions.

Changing from Lux to Lumen and then to cd/m^2 is as easy as connecting a new accessory to your spectrometer. Automatically the system re-calibrates to the new scenario and you have the peace of mind that you are always using the correct absolute spectral calibration file.

The advanced optical design of our accessories allows you to increase the usability of your GL SPECTIS series spectrometer without the need to purchase a new measurement device. You can upgrade your existing GL SPECTIS series device for luminance measurements, calculating PAR values and even measure under water – anything is possible.

Please inquire for custom solutions.

GL **OPTI PROBE 1.0.10 LUMINANCE**

For measurement of luminance [cd/m^2] and color coordinates (x, y) conforming to CIE standards.

This optical probe from GL Optic is an accessory which is designed to be used with our GL SPECTIS 1.0 or GL SPECTIS 1.0 Touch for luminance measurement of flat LCD and OLED panels, plasma FPDs and other backlit sources. It is also the perfect solution for testing projection displays as well as for OLED light sources, or traffic and emergency sign measurement.

TECHNICAL DATA SHEET	
Measuring point diameter	10 mm
Fiber optic length	1.5 m
Spectral range	400 – 730 nm
Dimensions	44 x 62 x 14 mm

Various additional optical probes are available to perform different measurement tasks. Please inquire for detailed specification.

GL **OPTI LIGHT LED 127**

The uniform, programmable, multichannel LED light available in one box.

The reference luminance standard for the calibration of optical instruments. Free selection of color temperatures and color coordinates out of available color space. Long-lasting, stable performance by a unique, multilevel calibration method (patent pending).

TECHNICAL DATA SHEET	
Sphere inner Diameter	127 mm
Aperture (exit port) diameter	47 mm
Spectral range	385 – 750 nm
Uniformity	+/- 1% over 2000 operating hours
Luminance range	100 – 3000 cd/m^2
Colorimetric stability	+/- 0.0020%
Dimensions	216 x 227 x 130 mm

GL **OPTI LIGHT LED 127 CLC**
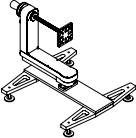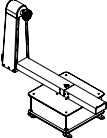Same as GL OPTI LIGHT 127 LED but with closed loop calibration using a high accuracy Photodiode.

GL **GONIO SPECTROMETER**

Comprehensive solution for spectral angular measurement of LED lamps and luminaires.

Introducing new C-type gonio spectrometer systems in C-γ (gamma) coordinate for the measurement of SSL source and luminaries. The system stands out with its elegant, robust mechanical design and intuitive operation. Photometric data can be saved in the most popular and widely used EULUMDAT (LDT) or IES file formats.

TECHNICAL DATA SHEET

GL **GONIO SPECTROMETER**	GLG-2-300	GLG-20-1500
Application	Single LED, LED modules, compact LED luminaires	Large LED modules and large luminaires
CIE Goniometer type	• Far Field Type C with horizontal optical axis • DUT moving • 2 axis stepper motors • Belt drive system	• Far Field Type C with the horizontal axis • DUT moving • 3 axis stepper motors • Direct drive system
Angular range C axis	± 180°	± 180°
Angular range γ axis	± 180° theoretical (usable depending on geometry due to shadowing)	± 180° theoretical (usable depending on geometry due to shadowing)
Angular positioning precision	0.1°	0.1°
Maximum DUT dimension	≤ 300 mm (diameter or diagonal)	≤ 1500 mm (diameter or diagonal)
Maximum load	2 kg	20 kg

GL **SPECTROSOFT**

Your tool for the analysis, interpretation, presentation and reporting of your data.

GL SPECTROSOFT is an optional software package. It is a helpful tool for laboratory applications, field work in production quality control and for general light assessment purposes. The software interface gives the user quick access to useful information and functions such as correlated color temperature CCT, chromaticity error, color peak, color dominant, and color rendering index CRI (CIE 13.3).

The program calculates color coordinate values according to CIE standards. Additionally it can calculate scotopic and photopic values, PAR and PPFD, McAdam's ellipses and much more...

GL SPECTROSOFT v. 3.0 NEW FEATURES

• Lighting Audit, a tool which uses plans from the CAD system and verifies lux levels.
• Spectrum Mixer for the measuring of various spectra and simulating the photometric performance of color and spectrum mixing.
• TM-30-15
• MacAdam ellipses and Duv +/-
• PASS/FAIL function for production applications
• Personalized report generator using templates prepared with any text editor
• Peripheral devices management such as current sources, power supplies, TEC controllers
• Command line for LabVIEW™ and other systems

REMAINING FEATURES

• Measurement of LEDs compliant with CIE 127:2007, IESNA LM-79-08 and CIE S 025/E:2015
• Absolute or relative measurements
• Flexible data interpretation
• Helpful tools for easy analysis and interpretation of measured spectra
• Calculation of metamerism index MI Index (CIE 51.2)
• Measurement procedure conforming to the ISO 3664:2009
• Comparison window: presentation of the collective measurements chart
• Selected Results window: presentation of selected results
• Binning Tool: brightness and color groups selection for LEDs
• Transmission and Reflection measurement

GL OPTIC

Light measurement solutions

- ◉ **OFFICE**
- ◉ **RESELLERS**
- ◉ **CLIENTS**

◉ OFFICES

GERMANY	**FRANCE**	**USA**	**POLAND**
JUST Normlicht GmbH	JUST Normlicht France Sàrl	JUST Normlicht Inc.	GL Optic R&D Center Sp. z o.o.
Vertrieb + Produktion	3, Rue Louis Pasteur	2000 Cabot Blvd. West Suite 120	ul. Poznańska 70
Tobelwasenweg 24	67240 Bischwiller	Langhorne, PA 19047-2408	62-040 Puszczykowo
D-73235 Weilheim/Teck	Phone: +33 (0)3 8806 2822	United States	Tel: +48 61 819 40 03
Phone: +49 7023 9504 0	Fax: +33 (0)3 8806 2823	Phone: +1 267 852-2200	office@gloptic.com
Fax: +49 7023 9504 52	info@just-normlicht.fr	Fax: +1 267 852-2207	
info@just-normlicht.de		sales@justnormlicht.com	

◉ **RESELLERS** – For International Reseller List please visit our website: **www.gloptic.com**