SPECTROMETERS — GL OPTIC | LIGHT MEASUREMENT SOLUTIONS

peo PHOTONICS

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Partner GL Optic

Product offering

GL SPECTIS 1.0

GL SPECTIS 1.0 Touch

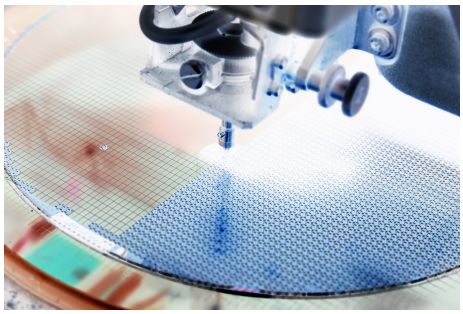
GL SPECTIS 1.0 Touch + Flicker

GL SPECTIS 4.0 M

GL SPECTIS 5.0 Touch

GL SPECTIS 1.0

This high-quality and easy to operate device gives you all you need for reliable light measurement. Implementing this practical instrument in your development and production environments can help you improve the light quality of your product and accelerate development.



Don’t let the small size fool you. GL SPECTIS 1.0 handheld spectroradiometer can measure any light source and provide the results you need. Evaluate products meet spec before you buy, develop better products faster, or ensure your products are manufactured properly. GL SPECTIS 1.0 can be configured to do it all.

Depending on your application you can use this handheld spectroradiometer as an illuminance / irradiance meter when you connect it to your PC, you can plug it to a small integrating sphere for single LEDs color and lumen measurements or combine it with a larger integrating sphere for the testing of luminous flux and efficacy of LEDs. Luminance testing is also possible with the use of dedicated additional PROBES.

With its coded and interchangeable measurement head, GL SPECTIS 1.0 can be combined with optical probes, integrating spheres or goniometers to measure any type of light sources, displays as well as LED lights. Thanks to its high sensitivity and accuracy, it is the perfect solution for light measurement.

This handheld spectroradiometer is calibrated to provide absolute values of illuminance and color but also provides detailed spectral power distribution and irradiance values [mW/m2]. Use this on optical bench or tripod to create a measurement setup connected to PC.
Available luminance optical probes can be connected and calibrated with this handheld spectroradiometer to measure flat emitting surfaces like displays, screens and back lights. The integrated coding system in all spectrometers automatically downloads the appropriate calibration file and measures [cd/m2].
Connect this handheld spectroradiometer with our GL OPTI SPHERE 48 to measure luminous flux (lumen) and color of single LEDs. This is ideal for incoming QC and evaluation of LEDs, drivers and other components during development.
Pair this universal light measurement spectrometer with our small GLG 8-850 goniometer or the large GLG 30-1800 system for accurate LED lighting measurements and get photometric files and colorimetric data at once.

Key features:

- high sensitivity and precise calibration
- low noise and stable measurements
- ready to work when connected to PC (after about 10 min)
- small size and low energy consumption
- powered via USB connection

Applications include final lamp assessment and testing of complete lighting installations. The GL SPECTIS 1.0 is an excellent choice for common LED measurement applications.

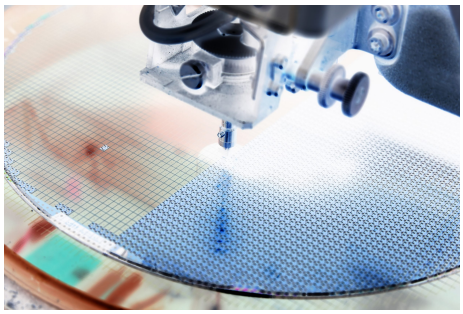
For more information, simply complete the contact form, and a member of our team will be in touch

shortly.

GL SPECTIS 1.0 Touch

GL SPECTIS 1.0 Touch portable spectrometer offers unmatched performance and flexibility. With an interchangeable detector, the system can be used for wide range of applications and measurement geometries. Use in the field, the lab or both!

This intuitively-operated instrument is ideal for lamp and luminaire manufacturers, installers and lighting auditors who want to control and improve the quality of LED lighting products. From incoming component testing, through the research and development up to the final product testing and verification.



GL SPECTIS 1.0 Touch was designed based on the experience gained from our original non-touchscreen model, the GL SPECTIS 1.0. The goal was to create a spectral LED light meter for customers who wanted to have a simple solution without any sacrifice in optical performance and dependability.

This battery-operated standalone device is ideal for different light measurement applications – from the laboratory to field testing. Through extensive engineering in the design and calibration procedures, this device provides the highest accuracy of any handheld spectral light measurement device. We understand that light measurement is not an easy task, but thanks to the GL SPECTIS 1.0 Touch, you no longer need to be an expert to make professional LED lamps evaluation.

Measure any light source and get the results you need. Evaluate products meet spec before you buy, develop products faster, or ensure your products are manufactured properly. GL SPECTIS 1.0 Touch can do it all.

Keep up on the latest industry requirements and metrics with our lifetime upgrades. From standard quantities like spectrum, lux and CCT to new requirements like TM-30, PAR/PPFD and EML.

GL SPECTIS 1.0 Touch spectral meter is unlike any other handheld on the market. With a range of interchangeable accessories your SPECTIS can grow with your business from standard illuminance [lx] measurement to luminous flux [lm], and luminance [cd/m2] measurement.

More than just a handheld device, it can be combined with other accessories for a wide range of applications:

Simple way to turn your illuminance spectrometer into a single LED tester to measure luminous flux, color CRI, and TM30 rendering properties. Install the GL OPTI SPHERE 48 directly on the device for quick and precise LED testing.
Measure any flat light emitting surface with GL SPECTIS 1.0 Touch and optional GL OPTI PROBE 1.0 for luminance and radiance. Connect via fiber optic on tripod or directly on the LED/OLED surface.
For aquarium or underwater LED lighting, use our LED light meter with optional water-tight probe for evaluation of submarine, aquarium, or other underwater installations.
For horticulture or agriculture lighting, evaluate effective irradiance values (PAR, PPFD, etc.)

using our spectral light and PAR meter, with advanced analysis via GL SPECTROSOFT M.

Key features:

- Completely portable device
- Color LCD Touch screen
- Communication features: USB cable, SDcard slot
- Android based operating system
- Up to 4 hours on battery

Applications include quality control and improvement of LED lighting products, incoming component testing, research and development of lamps and luminaires, final product testing and verification, and field or laboratory measurements for lighting audits.

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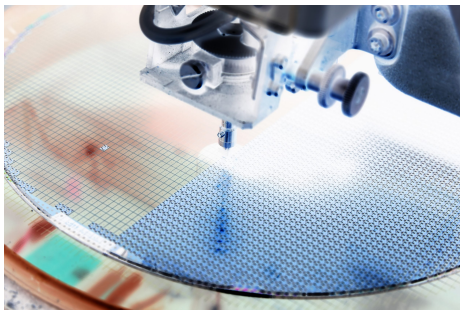
GL SPECTIS 1.0 Touch + Flicker

An upgraded version of the very successful GL SPECTIS 1.0 Touch spectral light meter. This variant takes portable light measurement to a new level. This innovative light spectrometer instrument can now measure flicker of light in addition to the extensive range of standard photometric and colorimetric values available on the GL SPECTIS 1.0 Touch for color and intensity all within seconds.



GL SPECTIS 1.0 Touch light flicker meter is now equipped with additional electronics and fast photodiode to measure flicker frequency, flicker index and flicker ratio. Designed and developed in consultation with industry leaders and standards committees, this device provides all the measurement quantities required to accurately measure and understand flicker.

Stay ahead of the competition by incorporating flicker measurements in your suite of optical testing. While still only an emerging requirement in many areas, characterizing flicker will soon become the norm. New metrics like SVM and California Title 24, we have it covered! Read more about flicker measurments and new requirements on GL blog.

Why use multiple measurement devices to characterize your light when it can all be captured with a single portable light spectrometer. Less devices to carry, and less reports to combine. Get it all with the push of a button. Use it to collect spectral and flicker data in the lab or field. Need additional analysis or reporting capabilities? Use our optional GL SPECTROSOFT M.

GL SPECTIS 1.0 Touch light flicker meter offers a great standalone solution, but can also be paired with a range of accessories. From integrating spheres to goniometers, in the lab or the field, this system has you covered. Configure the system to measure illuminance, flicker metrics or luminous flux and even luminance of LEDs using an optional optical probe.

When the first “flicker-free” football stadium lighting was installed at Chelsea Arena in the UK, GL Optic was asked to provide a device which could be used as an auditing tool to check the newly installed lighting. The contractor needed to evaluate the photometric and colorimetric values including illumination [lx], color temperature (CCT), color rendering properties of LED (CRI), television index (TI) and additionally verify if it was a flicker-free installation.

This project triggered the development of the GL SPECTIS 1.0 Touch + Flicker, improving on our existing GL SPECTIS 1.0 Touch by integrating an additional electronic circuit board with the fast photodiode to capture the optical flicker characteristics. The result is possibly the best handheld flicker spectroradiometer on the market. Covering an exceptional wide range of frequencies with accuracy equal to some laboratory devices.

GL Optic takes an active part in a Philips (currently Signify) Working Group which is focused on establishing new flicker metric standards throughout the industry. Thanks to this direct cooperation we have an opportunity to compare and evaluate our accuracy daily using the reference standard provided by Philips. We are also able to include the latest flicker metrics like flicker index, flicker percent and flicker frequency together with the latest SVM (Stroboscopic Visibility Measure) – a new standard to assess how the lighting

installation might influence human visibility performance.

GL SPECTIS 1.0 Touch + Flicker meter is an intuitively operated touchscreen portable light spectrometer, equally suited to the lab as it is in the field. With a range of software analysis capabilities and extensive suite of accessories, this device is in a category all its own.

More than just a handheld device, it can be combined with accessories for a wide range of applications:

Measure lighting installations to check illumination [lx], CCT, CRI, TM 30-15 flicker index, flicker percent, SVM for visual effects, and circadian metrics like EML and S/P ratio.
Use GL SPECTIS 1.0 Touch + Flicker light spectrometer to measure very high frequencies up to 12 kHz for broadcasting and studio lighting evaluation. Includes CCT, CRI, and TLCI indices verification.
Connect with GL OPTI SPHERE 48 to measure flux and color of single LEDs. Supports binning verification and quality control during development and incoming QC of LEDs, drivers, and other components.
Available luminance optical probes can be connected and calibrated to measure flat emitting surfaces like displays, screens, and backlights. The spectrometer automatically downloads calibration files and measures [cd/m2].

Key features:

- Compact, portable, solidly built
- Intuitive, color LCD touch screen user interface
- Laboratory Grade accuracy and repeatability
- Dark current and temperature compensation
- Automatic accessory detection and calibration loading
- Use standalone, or in conjunction with system accessories

Applications include quality control and improvement of LED lighting products, incoming component testing, research and development of lamps and luminaires, final product testing and verification, and field or laboratory measurements for lighting audits.

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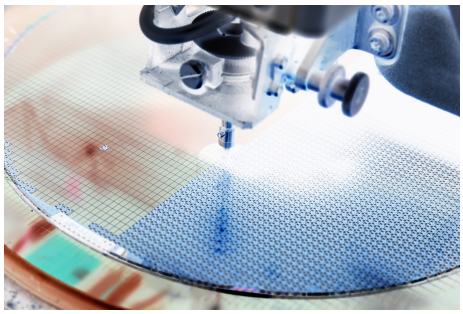
GL SPECTIS 4.0 M

High-precision modular spectroradiometer with CCD Back-Thinned cooled (or thermally stabilized) sensor is delivering high resolution and increased sensitivity. Based on the customizable design and available accessories it can be used for variety of applications, both in laboratory and industrial settings.



The primary goal in designing the new spectroradiometer was to develop a new modular technology for optical radiation measurements. The idea was to design an instrument which could be tailored to customers individual needs and still maintain laboratory grade accuracy.

Thermal stabilization applied directly to the detector reduces noise and the values of dark current, which directly improves the measurement capabilities of low-level signals, especially in the ultraviolet range (e.g. LED UV-C). The solution will also ensure independence from the ambient temperature in the application range.

The variable optical path module ensures flexibility in adjustment of the optical properties of the system to the nature of the measured signal by changing the aperture and filters. This solution allows the user to quickly adapt the instrument to particular measurement needs, often eliminating the need to install a dedicated measuring probe for each application. All while maintaining calibration parameters for all optical path configurations.

GL SPECTIS 4.0 M high-end spectroradiometer features the latest optical solutions for precise light quality control in a variety of applications. For demanding measurement applications in the laboratory or production environment, it is equipped with Peltier module, which reduces measurement uncertainty due to lower signal noise and minimized dark current levels.

With its universal modular design, GL SPECTIS 4.0 M is a perfect choice to easily build a dedicated measuring instrument. By adding an extra filter it is possible to extend spectral range for specific needs. When connected to an integrating sphere, the measurement of total luminous flux and radiant power is possible. When combined with luminance / radiance telescopic probes, specialized evaluation of optical radiation related hazards and light quality can be performed.

We value proper calibration procedures and smart system design. Each spectroradiometer is individually calibrated and before the Absolute Spectral Calibration process, various pre-calibration stages are performed, such as wavelength calibration, non-linearity correction, and stray-light examination.

Key Features:

- Spectral range from 200 nm to 1050 nm
- Measurement uncertainties of only ±0.0015 for standard chromaticity coordinates
- Integration times from 10 ms to 60 s
- Measurements illuminance levels of 1 lx feasible
- Dynamic range of the device is increased towards lower signal levels

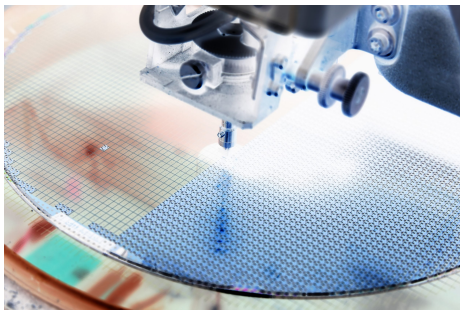
- Cooled back-thinned detector to minimize dark current & noise levels
- Variable optical path for specific applications
- Shutter – for automatic dark current compensation
- Additional probes with quick connector and automatic detection
- Ethernet connection
- Dedicated GL AUTOMATION 4.0 M software for spectral analysis
- Optional filters on demand
- Rack housing available
- Increasing the dynamic range can be increased towards higher signal levels using advanced filters

Applications include laboratory and industrial measurements, daily quality control of LED production, UV and photobiological safety assessment and development of new designs of lighting fixtures.

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

GL SPECTIS 5.0 Touch

With the GL SPECTIS 5.0 Touch optical spectrometer, the accuracy and configurability of portable light measurement devices has been taken to a new level. Until now, photometric and radiometric accuracy this high was only available in high end lab systems. Using this state-of-the-art spectral light measurement instrument, you can get lab grade data anywhere you go. Our light spectrometers are individually calibrated to deliver precise results quickly, with options to include our industry leading GL SPECTROSOFT M for advanced analysis and reporting.



This truly unique LED spectrometer can be configured to cover an extended spectral range from UV to NIR using a single sensor, calibrated for absolute measurements from 200 nm to 1050 nm. The practical design of this instrument allows for various types of measurements for a range of different applications. From UV measurements in Photobiological Safety tests through lab accuracy VIS range LED lamps evaluation to IR range tests of LEDs in medical application. GL SPECTIS 5.0 optical spectrometer has you covered.

GL SPECTIS 5.0 Touch optical light meter features a large laboratory grade back thinned CCD sensor from Hamamatsu delivering extraordinary stability over longer exposure times. The device is calibrated with the use of reference standards which are traceable to national laboratories and confirmed by the globally recognized factory calibration. Electronic dark current levels are monitored automatically with intelligent compensation for any drift due to temperature fluctuations.

GL SPECTIS 5.0 portable spectroradiometer uses the latest photonics technology to provide an easy-to-use, precise and practical tool for lighting professionals. When you have a demanding measurement applications outside laboratory, or you need immediate dependable results, this fully self-contained optical spectrometer is the ideal solution. Connect to a PC for use in the lab, production or other industrial location where light or any other optical radiation must be measured.

With the universal concept and design of the GL SPECTIS 5.0 Touch, you can easily expand your measurement system by adding any one of our integrating spheres or additional accessories. Measure irradiance with standard diffusor or fiber optic probes. Connect to spheres for flux measurement or combine this instrument with luminance / radiance telescope for specialized evaluation of hazards and quality.

The idea to create an extended spectral range, high performance in a portable spectroradiometer was raised many times during contact with customers using our other handheld spectrometers for LED testing. Many users of our laboratory instrumentation were also asking if it would be possible to have the same accuracy in a smaller device so that you don’t have to carry bulky laboratory devices into the field.

This was the origin of the GL SPECTIS 5.0 Touch light spectrometer which was designed by merging the practical self-contained features of our GL SPECTIS 1.0 series with the top end accuracy optical system coming from a typical laboratory instrument. The result is one of the premier solutions in the market for advanced LED and optical radiation measurements for general lighting, medical, electronic and scientific applications.

Key Features:

- extended spectral range from 200 to 1050nm
- very high resolution: 2.5nm optical and 0.5nm data point
- OSR system for Stray Light Reduction
- touch screen display
- photometric and radiometric calibration
- Dark Current Compensation
- Micro SD
- variety of integrating spheres and probes available
- automatic accessory detection
- laboratory accuracy

Applications include advanced LED and optical radiation measurements for general lighting, medical, electronic, and scientific purposes, as well as specialized laboratory-grade measurements of light sources and optical components.

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