GB-GD-360-RB40-2-BTS2048-VL

https://www.gigahertz-optik.com/en-us/product/bts2048-vl-gb-gd-360-v01-2/

Product tags: VIS

Description

Measurement of the luminous intensity distribution

Luminous intensity distribution is used to specify the directional radiation characteristics of lamps. It is determined through numerous separate measurements of the luminous intensity. Every measurement detects the light emitted into the half space around the lamp under a different viewing angle. The measurement data are represented in polar plots and 3D graphs and output in standard formats e.g., IES, EULUMDAT, Excel, etc. This data can also be used to calculate the luminous flux.

The BTS2048-VL light meter

The high-quality [BTS2048-VL](#) CCD based spectroradiometer is internationally recognized as a high-end product. It is one of the most compact spectroradiometers on the market which enables direct system integration in many applications without the need for expensive, and potentially measurement degrading, light guides. Among its characteristic features is its diffusor window with cosine corrected field of view for the measurement of spectral irradiance and spectral illuminance. This also makes it possible to combine the BTS2048-VL with goniometers for the measurement of luminous intensity distributions. Its impressively wide dynamic range makes it ideal for the measurement of spot lamps that have a distinctive edge profile. More detailed information about the [BTS2048-VL](#) can be found in the respective data sheets. The unit is also available in the [BTS2048-VL-TEC](#) thermoelectric cooled version.

Enhancement of the BTS2048-VL with the GB-GD-360-RB40-2 goniometer

The BTS2048-VL spectroradiometer can be combined with the GB-GD-360-RB40-2 goniometer in order to measure luminous intensity distribution. Unlike most conventional spectroradiometers , the BiTec sensor of the BTS2048-VL makes it possible to perform measurements using just an internal photometric photodiode and hence measurements are much fasterIf the spectrum, color, and color rendering index are needed, the CCD based spectrometer may also be employed. This flexibility provided by the BiTec technology makes it ideal for goniometric measurements ([article on the BTS technology](#)). The GB-GD-360-RB40-2 goniometer facilitates the alignment of the test lamp for measurements with two degrees of freedom. The rotation movements are controlled remotely using stepper motor drives. The turntable has an M4 hole pattern for universal attachment of test lamps. Four mini-sockets allow for four-terminal electrical connections. The turntable enables fine tuning with 5 mm stroke and a coarse tuning with 100 mm stroke for alignment of test lamps in the goniometric axis. A removable stop is integrated to aid the alignment of the test lamp in the goniometric axis. The distance between the device and the test lamp can be varied between 100 mm and 2000 mm. Short distances are chosen for measurement of single LEDs with low intensity. Longer distances are more suitable for measurement of extended LED arrays and LED lamps. The rail on the guide carriage is stiffened by means of a stable base.

Software

The S-BTS2048 user software supports operation of the goniometer and display of measurement values. It can be used to create measurement sequences as well as configure different settings. The measurement data can be exported to standard formats such as IES, EULUMDAT, ASCII, and Excel. Besides the display of the luminous intensity distribution in 3D and polar graphs, the software can also be used to calculate the luminous flux as well as display the spectrum, color values, etc.

Calibration

One essential quality feature of photometric devices is their precise and traceable calibration. The BTS2048-VL is calibrated at Gigahertz-Optik's DAkkS-accredited (D-K-15047-01-00) calibration laboratory for *spectral responsivity* and *spectral irradiance* in line with ISO/IEC 17025. Calibrations are also performed for irradiance. Every device is delivered with its respective calibration certificate.
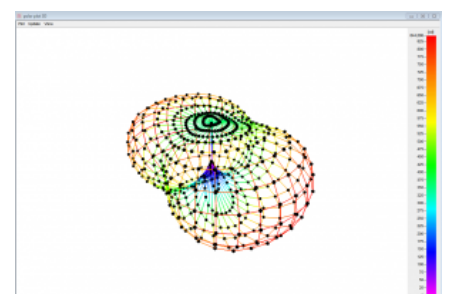

BTS2048-VL spectroradiometer with the GB-GD-360-RB40-2 goniometer
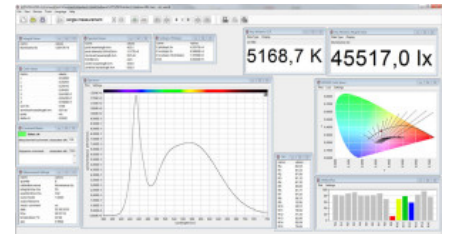

BTS2048-VL with BiTec detector for fast measurement sequences in goniometric applications
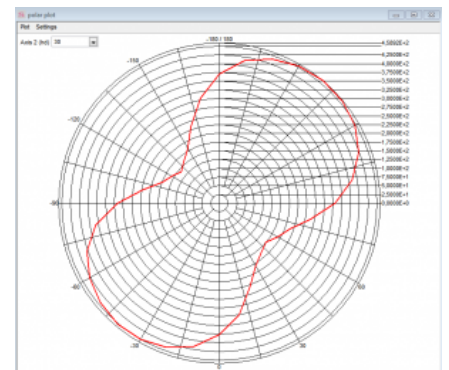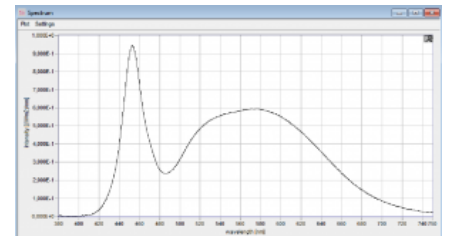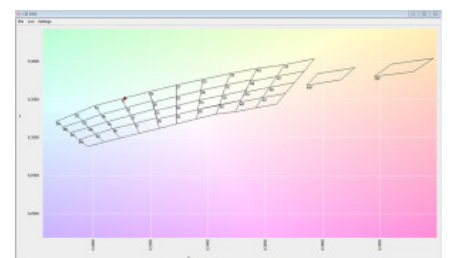

Polar Plot

Display of the luminous intensity distribution in a 3D diagram

S-BTS2048 user software interface

Graphical display of the lamp spectrum

CIE 1931 with binning fields

Specifications

General

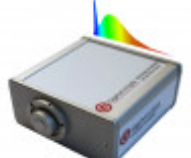| Short description	Goniometer for measurement of the luminous intensity distribution of 2pi lamps. Wide dynamic range with variable measurement distance. Measurement of luminous intensity, spectrum, color, and color rendering index
Main features	Goniometer with a distance of 360 mm between the optical axis and guide rails. Remote-control using a stepper motor drive. Spectroradiometer with BiTec light sensor for fast measurement of the luminous intensity (photometric Si photodiode) and spectral measurement (CCD sensor) of the spectrum, color, and color rendering index
Measurement range	6 cd to 1000000 cd (spectral), 0.1 cd to 3E8 cd (integral) at a measurement distance of 1 m. Spectral luminous intensity 360 nm to 830 nm, spectral radiant intensity 350 nm to 1050 nm.
Typical applications	incoming goods inspection of LED lamps, quality control during production, development purpuses
Calibration	Factory calibration. Traceable to international calibration standards

Product

Goniometer Bench	Two-axes goniometer with step motor drive: Phi-axis (horizontal) ± 90°, 0.1° resolution, 0.2° reproducibility Theta-axis (axial) ± 180°, 0.2° resolution, 0.4° reproducibility Sample holder: 160 mm diameter with 25 mm threaded bores pattern Four electrical terminals with terminal strip Sample depth - max. 100 mm Sample weight - max. 1 kg Optical bench: 2 m long guide rails on a 2.5 m long rack Adjustable measurement device holder
General	This device is based on the BTS2048-VL, please find detailed specification there.
Spectral Detector	
Spectral radiant intensity responsivity range	(1E-5 - 1E5) W/(sr nm) *1*2
Optical Bandwidth	2 nm
Spectral range	(350 - 1050) nm
Integral Detector	
Measurement range	Luminous intensity: (1E-1 - 3E8) cd
Specification	
Measured Quantity	Spectral radiant power (W/nm), total flux (lm), dominant wavelength, peak wavelength, center wavelength, centroid wavelength, x, y, u´, v´, X,Y,Z, delta uv, color temperature, color rendering index (CRI) Ra, R1-R15. Option without integrating sphere: in addition spectral irradiance (W/(m² nm)) and illuminance(lx). Option goniometer: in addition radiant intensity and luminous intensity distribution
Calibration	Spectral Radiant intensity

(350 - 399) nm:	OD0: ± 7 %	OD1: ± 8 %	OD2: ± 9 %
(400 - 800) nm:	OD0: ± 4 %	OD1: ± 4 %	OD2: ± 4 %
(801 - 1000) nm:	OD0: ± 6 %	OD1: ± 6 %	OD2: ± 6 %
(1001 - 1050) nm:	OD0: ± 7 %	OD1: ± 8 %	OD2: ± 9 %

Spectral radiant intensity responsivity (350 - 1050) nm

Miscellaneous	
Info	*1 Minimum: 500/1 S/N. Maximum at full scale control. *2 Maximum: Irradiation only allowed for a short time so as to avoid thermal damage

Downloads

Type	Description	File-Type	Download
BTS2048-Series Brochure	Not Just Another Spectrometer	pdf	https://www.gigahertz-optik.com/assets/Uploads-v2/BTS2048-broschuere-DINA4-hoch-V2-WEB.pdf

Configurable with

Product Name	Product Image	Description	Go to product
BTS2048-VL-TEC		Versatile Temperature Controlled High Speed and High Quality LED Spectroradiometer	https://www.gigahertz-optik.com/en-us/product/bts2048-vl-tec/
S-SDK-GB		Software Development Kit for GB variants (goniometer).	https://www.gigahertz-optik.com/en-us/product/s-sdk-gb/
BTS2048-VL		Versatile superb Speed and high Quality LED Spectroradiometer	https://www.gigahertz-optik.com/en-us/product/bts2048-vl/
BTS2048 Series		Compact spectroradiometers with excellent optical performance and BiTec technology for precise measurements for lab and field use.	https://www.gigahertz-optik.com/en-us/product/bts2048-series/

Purchasing information

Article-Nr	Modell	Description
Product		
15298602	GB-GD-360-RB40-2	2m goniometer bench with rack, 2-axes goniometer, adjustable detector or meter stand, power adapter for step-motor drive. RS232 interface
15298281	BTS2048-VL	BTS2048-VL, users guide, software CD, calibration certificate.
15298687	BTS2048-VL-TEC	Measuring device, hard cover box, users guide, S-BTS2048 software, calibration certificate.
Re-calibration		
15300769	K-BTS2048VL-E-S-V01	Calibration of the illuminance and spectral irradiance responsivity and wavelength of the BTS2048-VL. Spectral range 350 nm - 1050 nm. Calibration conducted in ND0 setting. Calibration certificate.
Accessories		
15297922	GB-AD-300-100-LI	DUT alignment support tool. Case.
15298610	GB-GD-360-DS-Z03	Adapter for attaching the BTS2048-VL

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We are known worldwide for excellent technical consulting and after sales support. Contact us to find together the best solution for you. Our services:

- Technical Consulting & Sales
- After-Sales Support
- Calibrations & Re-Calibrations (ISO/IEC 17025 Calibration Services, factory calibration, Calibration of Third-Party Products)
- Repairs & Updates
- OEM & Feasibility Consulting of Customized Solutions

Send us your inquiry or contact us by phone or e-mail. We would welcome your feedback too or review us on Google.

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