GB-GD-360-RB40-2-BTS256-LED

https://www.gigahertz-optik.com/en-us/product/bts256-led-gb-gd-360-rb40-2/

Product tags: VIS

Description

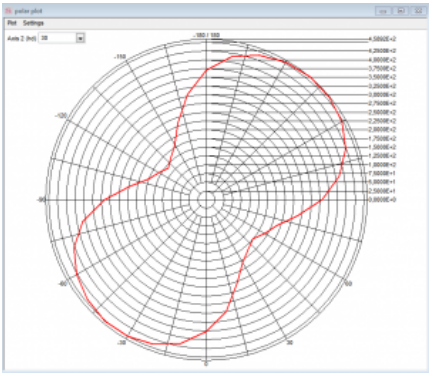
Measurement of the luminous intensity distribution

Luminous intensity distribution is used to specify the directional radiation characteristics of lamps. It is determined by 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.

BTS256-LED spectroradiometer with the GB-GD-360-RB40-2 goniometer

The BTS256-LED light meter

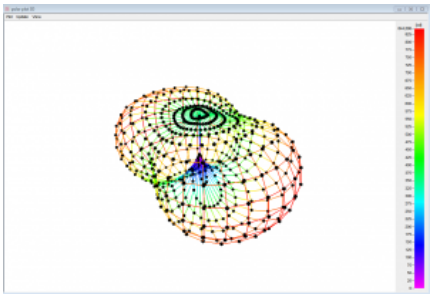
In its standalone mode, the compact BTS256-LED meter is designed for the convenient measurement of luminous flux, spectrum, color, and color rendering index of single LEDs. A key feature is the conical measurement port at the entry of the internal integrating sphere which enables the measurement of onboard LEDs. The bayonet connector used to attach the conical adapter makes it possible to combine the BTS256-LED with other accessory components. Gigahertz-Optik offers different accessories as part of the BTS256-LED Plus Concept which greatly extends the measurement capabilities of the BTS256-LED. These include the BTS256-LED-DA diffusor window which facilitates illuminance and luminous intensity measurements.



Display of the luminous intensity distribution in a polar diagram

Enhancement of the BTS256-LED using the GB-GD-360-RB40-2 goniometer

The BTS256-LED-DA spectroradiometer can be combined with the GB-GD-360-RB40-2 goniometer in order to measure luminous intensity distributions. Unlike other diode array spectrometers that are available on the market, the BiTec sensor of the BTS256-LED offers the option to perform the measurement with just its photometric photodiode. Its short measurement times allow for measurements that are much faster than conventional spectrometers. In cases where spectrum, color, and color rendering index are also needed, the array-based spectrometer of the BiTec sensor may be employed. The GB-GD-360-RB40-2 goniometer allows for the alignment of the test lamp to the device with two degrees of freedom. The rotary movements are controlled remotely via stepper motor drives. The turntable has an M4 holes arrangement for universal attachment of the test lamps. Four mini-sockets provide four-terminal connection. 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. The short distance is chosen for measurement of single LEDs with low intensity. The longer distance is better suited for measurement of extended LED arrays and LED lamps. The broad dynamic range of the GB-GD-360-RB40-2-BTS2048-VL makes it better suited for measurement of spot lamps that have a distinctive edge profile. The rail on the guide carriage is stiffened with a stable base. The BTS256-LED and BTS256-LED-DA can also be used without the goniometer.



Display of the luminous intensity distribution in a 3D diagram

Software

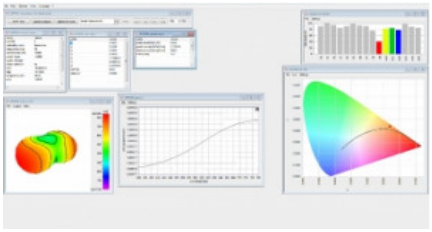
The S-BTS256 user software supports operation of the goniometer and display of measurement values. It can be used to create measurement sequences as well as configure different settings. The measurement data can be exported to standard formats such as IES, EULUMDAT, ASCII, and Excel. Besides the display of the luminous intensity distribution in polar graphs and 3D plots, the software can also be used to calculate the luminous flux as well as display the spectrum, color values, etc.

BTS256-LED for measurement of the

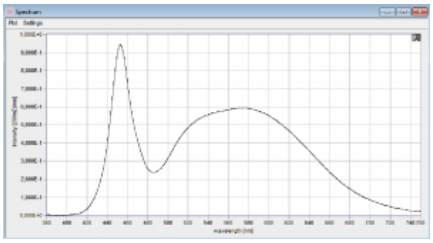
Calibration

One essential quality feature of photometric devices is their precise and traceable calibration. The BTS256-LED-DA is calibrated by Gigahertz-Optik's calibration laboratory that is accredited by DAkkS (D-K-15047-01-00) for the *spectral responsivity* and *spectral irradiance* according to ISO/IEC 17025. The calibration also included the corresponding accessory components. Every device is delivered with its respective calibration certificate.

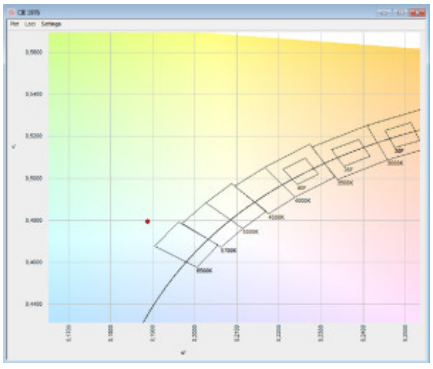
luminous flux, spectrum, color, and color rendering index of single LEDs



The S-BTS256 user software supports measurement and display of the luminous intensity distribution curve in 2D and 3D.



Full screen display of the luminous spectrum



CIE 1976 chromaticity diagram with binning fields

Specifications

General

Short description	Goniometer for measurement of the luminous intensity distribution of 2pi LED lamps. Wide dynamic range thanks to the variable measurement distance to the sample. Measurement of the luminous intensity, spectrum, color, and color Rendering index

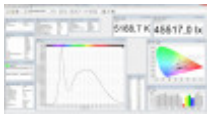
Main features	Goniometer with a 360 mm distance between the optical axis and guide rail. Remote-control with a stepper motor drive. Measurement device with BiTec light sensor for fast measurements of the luminous intensity and spectral measurements of the spectrum, color, and color rendering index. Spectroradiometer that can be used without the goniometer.
Measurement range	40 cd to 400000 cd (spectral), 0.2 cd to 250000 cd (integral) at a measurement distance of one meter, 360 nm to 830 nm.
Typical applications	Inspection of incoming products (LED lamps), quality assurance in production processes, design
Calibration	Factory calibration. Traceable to international standards
Product	
Typical applications	Light meter for the luminous flux, spectral radiant power, luminous intensity distribution and luminous color. Calculation of the luminous intensity from the illuminance and the measurement distance.
Calibration uncertainty	Luminous flux calibration ± 8% Illuminance ± 4%
Sensor	Bi-Technology sensor with a photometric broadband detector and a array spectrometer. Integrated aperture for automatic dark signal adjustment.
Goniometer Bench	Two-axes goniometer with step motor drive: Phi-axis (horizontal) ±90°, 0.1° resolution, 0.2° reproducibility Theta-axis (axial) ±18°, 0.2° resolution, 0.4° reproducibility Sample holder: 160mm diameter with 25 mm threaded bores pattern Four electrical terminals with terminal strip Sample depth - max. 100 mm Sample weight - max. 1kg Optical bench: 2 m long guide rails on a 2.5 m long rack Adjustable measurement device holder
Input optics	Bayonet adapter with diffuser window. 20 mm diameter of the diffuser window. ± 30° cosine corrected field of view. 5% cosine correction within the specified range.
General	This device is based on the BTS256-LED, please find detailed specification there.
Spectral Detector	
Typical measurement time	Max. luminous flux BTS256-LED: typ. 1100lm. Meas. time ≤ 5m Min. luminous flux BTS256-LED: typ. 10mlm. Meas. time ≤ 30s Max. illuminance BTS256-LED-DA: typ. 4000000lx. Meas. time ≤ 5ms Min. illuminance BTS256-LED-DA: typ. 40lx. Meas. time ≤ 30s Max. luminous intensity BTS256-LED-DA: typ. 4000000cd in 1m distance. Meas. time ≤ 5ms Min. luminous intensity BTS256-LED-DA: typ. 40cd in 1m distance. Meas. time ≤ 30s (Note: Measured by white light)
Optical Bandwidth	5 nm
Spectral range	(360 - 830) nm
Integral Detector	

Measurement range	Max. measurable luminous flux BTS256-LED: typ. 70000 lm Noise equivalent luminous flux BTS256-LED: typ. 0.05 mlm Max. measurable illuminance BTS256-LED-DA: typ. 250000 klx Noise equivalent illuminance BTS256-LED-DA: typ. 0.2 lx Max. measurable luminous intensity BTS256-LED-DA: typ. 250000 kcd in 1 m distance Noise equivalent luminous intensity BTS256-LED-DA typ. 0.2 cd in 1 m distance (Note: White Light)

Downloads

Type	Description	File-Type	Download
Dimensions	GB-GD-360-RB40-2	pdf	https://www.gigahertz-optik.com/assets/Uploads/103085-GB-GD-360-RB40-2.pdf

Configurable with

Product Name	Product Image	Description	Go to product
S-SDK-BTS256		Software Development Kit for BTS256 variants.	https://www.gigahertz-optik.com/en-us/product/s-sdk-bts256/
S-BTS256		Application software for BTS256 variants.	https://www.gigahertz-optik.com/en-us/product/s-bts256/
BTS256-LED Tester		Compact BiTec Spectroradiometer LED Tester for the Measurement of Total Luminous Flux of Single VIS and NIR LEDs	https://www.gigahertz-optik.com/en-us/product/bts256-led/
S-SDK-GB		Software Development Kit for GB variants (goniometer).	https://www.gigahertz-optik.com/en-us/product/s-sdk-gb/
BTS256-LED Plus Concept		The Plus concept describes the many applications that are possible with the BTS256-LED	https://www.gigahertz-optik.com/en-us/product/bts256-led-plus-concept/

Purchasing information

Article-Nr	Modell	Description
Product		
15298602	GB-GD-360-RB40-2	Photometer bench with moveable detector holder. Measurement distance 100mm to 2000mm. Two axis goniometer GB-GD-360. RS485 to USB converter and power supply.
15297922	GB-AD-300-100-LI	DUT alignment support tool. Case.
15308420	BTS256-LED	Measurement device, BTS256-LED-CA10 cone adapter, USB cable, hard-top casing, operation manual, software CD, calibration certificate.
15297959	BTS256-LED-DA	Diffuser window adapter with bayonet connector. Calibration of the illuminance (lx)
Re-calibration		
15300226	K-BTS256LED-Phi-S-V01	Recalibration of the BTS256-LED Tester. Only possible with the 10 mm cone adapter
15300729	K-BTS256LEDDA-E-S	Recalibration of the BTS256-LED Tester with BTS256-LED-DA adapter for illuminance (lx) and spectral irradiance responsivity.
Software		
15298218	S-SDK-BTS256	Software Development Kit for the implementation of the BTS256 or variants into custom made software

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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:

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- 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

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