BTS256-LED Plus Concept

http://www.gigahertz-optik.de/en-us/product/bts256-led-plus-concept

Product tags:

Description

Manufacturers of LED based products ranging from general lighting to niche products such as bicycle lamps and headlamps require various measurement capabilities to ensure product performance and quality.

For example, the tolerance classifications in LED binning often exceed those permitted by the application or do not match the end use operating conditions thereby requiring device testing and selection. Therefore, manufacturers benefit from versatile, cost effective and accurate light meters that meet the differing measurement requirements of product development, goods-in inspection and testing of single LEDs, measurement of assembled LED arrays and single LEDs, as well as quality control of the final products.

BTS256-LED for measurement of the luminous flux, spectrum, color, and color rendering index of single LEDs

The Plus concept for flexible use of the BTS256-LED

The BTS256-LED Plus concept is based on the BTS256-LED, a compact spectral light meter that can be used to measure the luminous flux, spectrum, color, and color rendering index of LEDs. One key feature of the BTS256-LED is its conical measurement port that makes it possible to perform measurements of assembled single LEDs even within array formats.

With the optional accessories, the range of functions of the BTS256-LED device can be easily enhanced to suit different applications. One distinguishing feature of this spectroradiometer is its precision bayonet socket for attaching accessory equipment. This eliminates the need for connecting light guides which avoids the common reproducibility problems experienced when connecting and disconnecting light guides and thereby maintains traceable calibration.

BTS256-LED with the optional diffuser window for illuminance measurement

Optional components of the BTS256-LED Plus concept

The **BTS256-LED-DA** diffuser window can be used to extend the measurement functions of the BTS256-LED, making it possible to measure the illuminance. It provides the required cosine correction over a +/-60° degree field of view and is therefore only recommended for measurement of directional lamps specifications. For the illuminance measurement of extended light sources Gigahertz-Optik GmbH offers the MSC15 and BTS256-EF light meters. BTS256-LED-DA specifications.

The **BTS256-LED-IB** illuminance adapter is designed for measurement of the averaged LED intensity according to CIE 127 Condition B. When combined with the internal integrating sphere of the BTS256-LED, this adapter provides extremely high uniformity across the 1 cm² measurement area specified within the CIE 127. BTS256-LED-IB specifications.

The BTS256-LED may also be used with **external integrating spheres** from the ISD series enabling 4-Pi luminous flux measurements in spheres up to 100cm diameter and 2-Pi measurements with ports up to 254 mm. The 2-Pi measurement port of the ISD-21 has a maximum diameter of 63.5 mm, whereas the maximum diameter of the ISD-50 is 127 mm. The fully opening ISD-50HF and ISD-100HF integrating spheres are well-suited for measurement of 4-Pi lamps thanks to their height-adjustable sample holders at the center of the sphere. These spheres can also be fitted with a 2-Pi measurement port (127 mm or 254 mm diameter) that remains closed when not in use. All spheres are equipped with an auxiliary lamp. The ISD-100HFT sphere rotates in its stand conveniently allowing measurements to be made taking into account the thermal effects in different operating orientations of the devices under test. External ISD-Series spheres also increase the maximum level of luminous flux that can be measured by the BTS256-LED.

The GB-GD-360-R40-2 goniometer can be used to enhance the BTS256-LED in order to perform illuminance distribution measurements of 2π lamps.

BTS256-LED with the optional diffuser window for illuminance measurement

Calibration of the BTS256-LED

One essential quality feature of photometric devices is their precise and traceable calibration. Calibration of the BTS256-LED with the optional accessories is done in 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 description can be found in the datasheets of the BTS256-LED with the corresponding accessories.

BTS256-LED with optional luminous intensity adapter for measurement of the averaged LED intensity according to CIE 127

BTS256-LED with an optional 21 cm diameter integrating sphere that has a maximum measurement port diameter of 63.5 mm

BTS256-LED with an optional 50 cm diameter integrating sphere that has a maximum measurement port diameter of 127 mm.

BTS256-LED with an optional 50 cm diameter integrating sphere that has a sample holder for 4π lamps.

BTS256-LED with an optional 100 cm diameter integrating sphere that has a sample holder for 4π lamps.

BTS256-LED with an optional goniometer for 2π lamps.

Specifications

General	
Short description	Universal spectroradiometer for measurement of the luminous flux, spectrum, color, and color rendering index of single LEDs with optional accessories for the illuminance, luminous intensity, luminous flux of LED arrays, lamps, and luminous intensity distribution.
Main features	Compact measurement device with a bayonet connector for easy and precise connection of accessory equipment.
Measurement range	Measurement parameter depending on accessory equipment, Spectral range: 360 nm - 830 nm, bandwidth: 5 nm with optical bandwidth correction according to CIE 214
typical applications	Design, inspection of single LEDs on incoming products, quality control of assembled single LEDs, LED matrices, and LED lamps in production processes
Calibration	Depending on the measurement parameters of the respective accessory. Factory calibration traceable to international calibration standards.

Downloads

Type	Description	File-Type	Download
Brochure	Light measurement solutions for general and specialized lighting	pdf	http://www.gigahertz-optik.de/assets/Uploads/generallighting-broschuere-DINA4-hoch-v2.pdf

Configurable with

Produktname	Product Image	Description	Show product
BTS256-LED-DA		Compact Bi-Tec measurement device for the measurement of illuminance and luminous flux. Features: Bajonett adapter with diffusor for the BTS256-LED, +/-30° cosine corrected field of view, spectral radiant power, color temperature, CRI, chromaticity coordinates, etc.	http://www.gigahertz-optik.de/en-us/product/BTS256-LED-DA
BTS256-LED-IB		Compact Bi-Tec measurement device for the measurement of ILED-B. Features: Bajonett adapter with ILED-B geometry according CIE 127, spectral data, color temperature, CRI, chromaticity coordinates, etc.	http://www.gigahertz-optik.de/en-us/product/BTS256-LED-IB
ISD-21-BTS256-LED		System for the luminous flux and light color measurement of individual 2π light emitting diodes up to 63.5mm. Features: Integrating sphere with 21cm diameter and auxiliary lamp, compact spectral light meter with Bi-Tec sensor for acurate measurement of the luminous flux, spectral radiant power, CCT, CRI, chromaticity coordinates, etc.	http://www.gigahertz-optik.de/en-us/product/BTS256-LED-ISD-21

Produktname	Product Image	Description	Show product
ISD-50-BTS256-LED		System for the luminous flux and light color measurement of individual 2π light emitting diodes up to 100mm. Features: Integrating sphere with 50cm diameter and auxiliary lamp, compact spectral light meter with Bi-Tec sensor for acurate measurement of the luminous flux, spectral radiant power, CCT, CRI, chromaticity coordinates, etc.	http://www.gigahertz-optik.de/en-us/product/BTS256-LED-ISD-50-V01
ISD-50HF-BTS256-LED		System for the luminous flux measurement of 4π (optional 2π and 4π) light fixtures inside a sphere. Features: Integrating sphere with 50cm hemispherical shell for opening and closing and auxiliary lamps. Light meter with Bi-Technology sensor for acurate measurement of luminous flux, spectral radiant power, CCT, CRI, chromaticity coordinates, etc.	http://www.gigahertz-optik.de/en-us/product/ISD-50HF-BTS256-LED
ISD-100HF-BTS256-LED		System for the luminous flux measurement of 2π and 4π light fixtures inside a sphere. Features: Integrating sphere with a 1000 mm diameter, hemispherical shell for opening and closing, auxiliary lamp. Light meter for acurate measurement of luminous flux, spectral radiant power, CCT, CRI, chromaticity coordinates, User software, etc. Options: quadripole test sockets.	http://www.gigahertz-optik.de/en-us/product/BTS256-LED-ISD-100HF-V01
ISD-100HF-V02-BTS256-LED		System for the luminous flux measurement of 2π and 4π light fixtures inside a sphere. Features: Integrating sphere with a 1000 mm diameter, extra measurement ports for 2π luminaires with diameters of up to 254mm and auxiliary lamp. Light meter for acurate measurement of luminous flux, spectral radiant power, CCT, CRI, chromaticity coordinates, User software, etc.	http://www.gigahertz-optik.de/en-us/product/BTS256-LED-ISD-100HF-V02
GB-GD-360-RB40-2-BTS256-LED		Goniometersystem for the luminous flux and light color measurement of individual 2π light emitting diodes with an adjustable measurement distance up to 2000mm. Features: Goniometer, compact spectral light meter with Bi-Tec sensor for acurate measurement of the luminous flux, spectral radiant power, CCT, CRI, chromaticity coordinates, IES, EULUMDAT, etc.	http://www.gigahertz-optik.de/en-us/product/BTS256-LED-GB-GD-360-RB40-2
S-SDK-BTS256		Software Development Kit for BTS256 variants.	http://www.gigahertz-optik.de/en-us/product/S-SDK-BTS256

Purchasing information

Article-Nr	Modell	Description
Product		
15308420	BTS256-LED	Measurement device, BTS256-LED-CA10 cone adapter, USB cable, hard-top casing, operation manual, S-BTS256 software, calibration certificate.
Options		
15297959	BTS256-LED-DA	Diffuser window adapter with bayonet connector. Calibration of the illuminance (lx)

Article-Nr	Modell	Description
15298508	BTS256-LED-IB	Adapter for BTS256-LED Tester to measure the "Averaged LED Intensity" in accordance to the CIE 127 measurement set-up B with 100mm measurement distance (0.01sr). Including calibration K-BTS256-LED-IB-I with merged BTS256-LED tester. Calibration certificate.
15298130	ISD-21-V01	Integrating sphere with 63.5 mm port, Detector port for the BTS256-LED. Baffle for shadowing of the measurement port. Auxiliary lamp, table stand
15298128	ISD-50-V01	Integrating sphere, 80mm port reducer, Detector port for the BTS256-LED. Aperture for shadowing of the measurement port. Auxiliary lamp
15298101	ISD-50HF-V01	Integrating sphere with 500mm diameter. One hemisphere can be opened. Height-adjustable sample holder. Detector port for the BTS256-LED. Two-direction baffle for shadowing the sphere center and measurement port. Auxiliary lamp, table stand.
15298102	ISD-50HF-V02	Integrating sphere with 500mm diameter. One hemisphere can be opened. Height-adjustable sample holder. Measurement port with 127mm diameter. Removable port plug. Detector port for the BTS256-LED. Two-direction baffle for shadowing the sphere center and measurement port. Auxiliary lamp, table stand.
15298049	ISD-100HF-V01	Integrating sphere with 1000mm diameter. One hemisphere can be opened. Height-adjustable sample holder. Detector port for the BTS256-LED. Aperture for shadowing of lamps in the sphere center. Auxiliary lamp, table stand.
15298050	ISD-100HF-V02	Integrating sphere with 1000mm diameter. One hemisphere can be opened. Height-adjustable sample holder. Measurement port with 254mm diameter. Removable port plug. Detector port for the BTS256-LED. Two-direction baffle for shadowing the sphere center and measurement port. Auxiliary lamp.
15298760	ISD-100HFT-V01	Turnable Integrating sphere with 1000mm diameter. One hemisphere can be opened. Height-adjustable sample holder.
15298761	ISD-100HFT-V02	Turnable Integrating sphere with 1000mm diameter. One hemisphere can be opened. 254 mm Diameter port with portplug. Height-adjustable sample holder.
Software		
15298218	S-SDK256	Software Development Kit for the implementation of the BTS256 or variants into custom made software