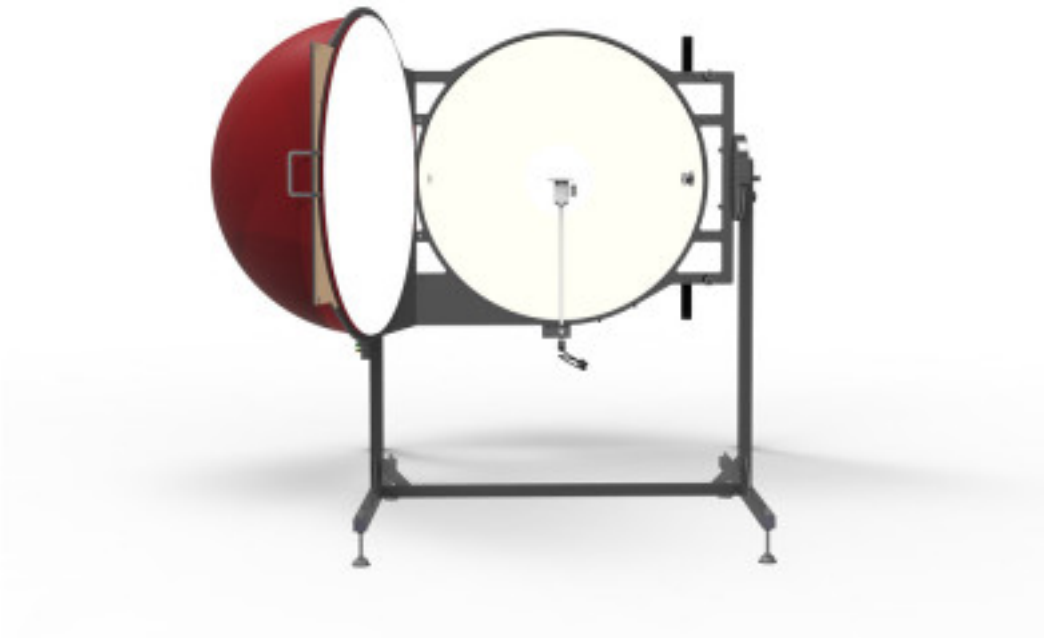
ISD-100HFT-BTS256-LED

https://www.gigahertz-optik.com/en-us/product/bts256-led-isd-100hft-v01/

Product tags: VIS



Description

The lamp position influences the luminous flux

LED lamps are often manufactured with integral driver circuitry. Here, the lamp orientation (base up, base down, etc) position can have a significant effect on the junction temperature of the LEDs due to the altered heat flow. Luminous flux, spectrum and color are directly related to junction temperature. The lifetime of LEDs is also reduced as junction temperature is increased. The measurement of photometric properties of LED lamps in the different positions is therefore highly recommended. The ISD-100HFT-BTS256-LED light meter from Gigahertz-Optik is a spectroradiometer with a rotatable, 100 cm diameter, integrating sphere. This combination can be used to measure the luminous flux, spectrum, color, and color rendering index of LED lamps operating in any orientation.

BTS256-LED spectroradiometer with rotatable 1 m Diameter integrating sphere for 2 pi and 4pi LED lamps

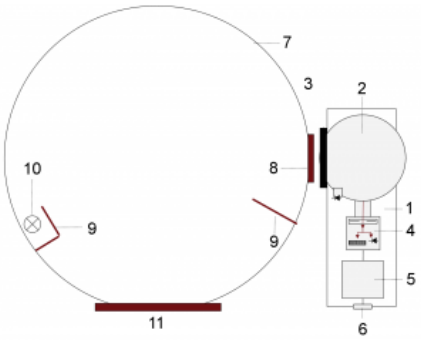
The BTS256-LED light meter

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.

The lamp position can be changed by simply rotating the sphere

Enhancement of the BTS256-LED using the ISD-100HFT-V01 or ISD-100HFT-V02 integrating sphere

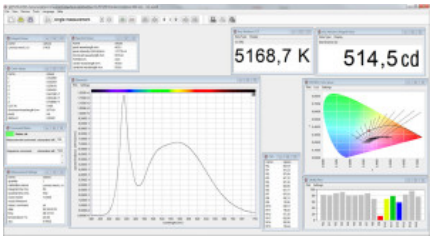
A special feature of the ISD-100HFT-V01 sphere is that it can be rotated around its frame. This allows for the operation of LED lamps in standing (lamp base down), lying (lamp base horizontal), and hanging (lamp base up) positions. One hemisphere can be opened to allow easy access to the sample holder. The height of the sample holder can be adjusted for perfect positioning of the LED lamp at the center of the sphere. In order to operate the test lamps outside the integrating sphere, the ISD-100HFT-V02 version has an extra measurement port that has a 254 mm diameter. This remains closed when not in use. Both variants are equipped with an auxiliary lamp. The BTS256-LED can also be used without the sphere.



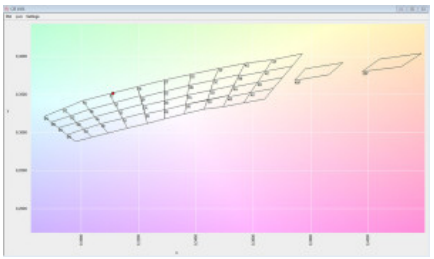
Calibration

One essential quality feature of photometric devices is their precise and traceable calibration. The ISD-100-HFT with the BTS256-LED 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. Calibration for the luminous flux is performed using a BN-LHSF-104, which is placed at the sphere center. Spheres with an additional measurement port require additional calibration with a BN-LHSF-2P-20 calibration lamp, which has 2pi radiation characteristics in the integrating sphere. Every device version comes with its respective calibration certificate.

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



The S-BTS256 user software for the luminous flux with integrated and external sphere.



CIE 1931 chromaticity diagram with binning fields

Specifications

General

Short description	• ISD-100HFT-V01-BTS256-LED: Spectroradiometer for measurement of the luminous flux, spectrum, color, and color rendering index for different lamp positions. Operation with the LED lamps at the center of the sphere • ISD-100HFT-V02-BTS256-LED: Spectroradiometer for measurement of the luminous flux, spectrum, color, and color rendering index for different lamp positions. Operation with the LED lamps at the center of the sphere or outside the sphere

Main features	• ISD-100HFT-V01-BTS256-LED: Integrating sphere with a 100 cm diameter. 180° Rotation possible. One hemisphere can be opened. Height-adjustable sample holder. Spectroradiometer can be used without the integrating sphere to measure single LEDs • ISD-100HFT-V02-BTS256-LED: Integrating sphere with a 100 cm diameter. 180° rotation possible. One hemisphere can be opened. Additional measurement port with a 254 mm diameter. Height-adjustable sample holder. Spectroradiometer can be used without the integrating sphere to measure single LEDs
Measurement range	20 lm to 3,200,000 lm, 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	
Calibration uncertainty	Luminous flux calibration +/-8%
Input optic - ISD-100HFT-V01	Turnable Integrating sphere with barium sulfate coating. 1000mm internal diameter. An openable hemisphere. Port plugs for closure of the measurement port. UMSH-AP-1000 height-adjustable sample holder.
General	This device is based on the BTS256-LED, please find detailed specification there.
Spectral Detector	
Typical measurement time	BTS256-LED: max. 1000 lm ≤ 5ms (white light) BTS256-LED: min. 10 mlm ≤ 30s (white light) BTS256-LED with ISD-100HF-V01: max. 3200000 lm ≤ 5ms (white light) BTS256-LED with ISD-100HF-V01: min. 25 lm ≤ 30s (white light)
Integral Detector	
max. luminous flux	BTS256-LED typ. 70000lm BTS256-LED with ISD-100 typ. 32000klm
Noise equivalent luminous flux	BTS256-LED Tester typ. 0.05 mlm BTS256-LED Tester with ISD-100 typ. 40 mlm

Configurable with

Product Name	Product Image	Description	Go to product
UMLA-SHAP-E27		Bulbs measuring socket for the use with integrating spheres. Features: E27 socket. Quadrupole connecting the lamp to a galvanically isolated power supply and voltage measurement	https://www.gigahertz-optik.com/en-us/product/umla-shap-e27/
UMLA-SHAP-E14		Bulbs measuring socket for the use with integrating spheres. Features: E14 socket. Quadrupole connecting the lamp to a galvanically isolated power supply and voltage measurement	https://www.gigahertz-optik.com/en-us/product/umla-shap-e14/

Product Name	Product Image	Description	Go to product
UMLA-SHAP-G9		Bulbs measuring socket for the use with integrating spheres. Features: G9 socket. Four-line connection of the lamp socket for a separate power supply and voltage measurement.	https://www.gigahertz-optik.com/en-us/product/umla-shap-g9/
UMLA-SHAP-GU10		Bulbs measuring socket for the use with integrating spheres. Features: GU10 socket. Four-line connection of the lamp socket for a separate power supply and voltage measurement.	https://www.gigahertz-optik.com/en-us/product/umla-shap-gu10/
UMLA-SHAP-GU5.3		Bulbs measuring socket for the use with integrating spheres. Features: GU5.3 socket. Four-line connection of the lamp socket for a separate power supply and voltage measurement.	https://www.gigahertz-optik.com/en-us/product/umla-shap-gu5.3/
UMLA-SHAP-GX53		Bulbs measuring socket for the use with integrating spheres. Features: GX53 socket. Four-line connection of the lamp socket for a separate power supply and voltage measurement.	https://www.gigahertz-optik.com/en-us/product/umla-shap-gx53/
BN-LHSF-2P-20		Calibration standard lamp for 2π spectral flux, total flux and CCT	https://www.gigahertz-optik.com/en-us/product/bn-lhsf-2p-20/
BN-LLSF-2P		LED based calibration standard according CIE reference spectrum L41 (CIE 251) lamp for luminous flux or irradiance including electrical supply and temperature stabilization	https://www.gigahertz-optik.com/en-us/product/bn-llsf-2p/

Purchasing information

Article-Nr	Modell	Description
Product		
15298760	ISD-100HFT-V01	180° turnable sphere with 1m diameter. One hemisphere to open. Heigth adjustable sample holder. Detectorport with baffle for BTS256-LED. Stand. Auxiliary lamp.
15298761	ISD-100HFT-V02	180° turnable sphere with 1m diameter. One hemisphere to open. Additional 254mm / 10 inch measurement port with plug. Heigth adjustable sample holder, detectorport with baffle for BTS256-LED. Stand. 100W auxiliary lamp.
15308420	BTS256-LED	Measurement device, BTS256-LED-CA10 cone adapter, USB cable, hard-top casing, operation manual, S-BTS256 software, calibration certificate.
Calibration		
15300227	K-BTS256-LED-U-I	Calibration of the BTS256-LED with external integrating sphere

Article-Nr	Modell	Description
Re-calibration		
15300226	K-BTS256-LED-I	Recalibration of the BTS256-LED Tester. Only possible with the 10mm cone adapter
15300227	K-BTS256-LED-U-I	Calibration of the BTS256-LED with external integrating sphere
Options		
	UMLA-SHAP	Test sockets (E27, E14, G9, GU10, GU5.3, GX53) for ISD-100HF-V02 sample holders

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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.

Gigahertz Optik GmbH (Headquarter)

Tel.: +49 (0)8193-93700-0
Fax: +49 (0)8193-93700-50
info@gigahertz-optik.de

An der Kaelberweide 12
82299 Tuerkenfeld, Germany

Gigahertz-Optik, Inc. (US office)

Phone: +1-978-462-1818
info-us@gigahertz-optik.com

Boston North Technology Park
Bldg B - Ste 205
Amesbury, MA 01913 USA