BTS2048-VL-CP-ILED-B-IS-1.0-HL

https://www.gigahertz-optik.com/en-us/product/bts2048-vl-cp-iled-b-is-1.0-hl/

Product tags: VIS , NIR

Description

Averaged LED intensity

In an attempt to bring some conformity to the data presented in LED manufacturers' literature, the CIE introduced the new term 'Averaged LED Intensity ' For this purpose CIE 127 defines measurement distance and the area over which it is to be performed. The commonly used 'Condition-B' specifies a measurement distance of 100mm and a sensor area of 100 mm² which must have extremely high uniformity over its entire area. The BTS2048-VL with the CP-ILED-B-IS-1.0-HL input lens is ideal for measurement of the "averaged LED intensity I_{LED-B}".


The BTS2048-VL-CP-ILED-B-IS-1.0-HL luminous intensity spectroradiometer to measure Averaged LED intensity (CIE127 B) is a compact module that can be integrated in LED test systems.

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 the expensive, and potentially measurement degrading, light guides. Among its characteristic features a diffuser window which permits direct mounting onto integrating spheres for measuring luminous flux. More detailed information about the BTS2048-VL, which is also available with thermo-electric cooling in the BTS2048-VL-TEC version, can be found in the respective data sheets.

S-BTS2048 user software

S-SDK-BTS2048 software development kit
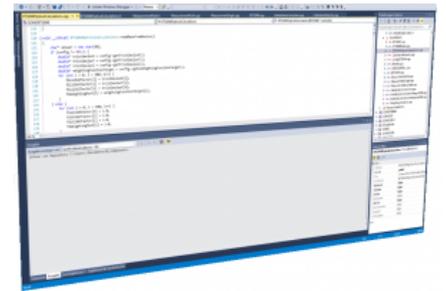
Use of the BTS2048-VL for front-end and back-end LED binning

The BTS2048-VL is ideally suited for use in industrial LED binning. In particular, it can be used to perform time-synchronized, pulsed measurements of LEDs as stipulated by CIE S025 or DIN 5032-9. This is necessary when one wants to account for thermal effects in measurements. The instantaneous, electronic zero setting of all pixels (electronic shutter) of the CCD sensor in conjunction with its trigger interface, results in perfect synchronization between the BTS2048-VL's measurement and the LED current supply. The device has an exceptionally wide dynamic range with a minimum integration time of just 2 µs. This is 1000 times shorter than in conventional devices (typically milliseconds). Additionally, the internal OD1 and OD2 filters increase the dynamic range up to 9 orders of magnitude and the Ethernet interface provides rapid data transfer. For users to integrate the device into their system, the BTS2048-VL is supplied with the powerful S-SDK-BTS2048 software development kit that comes with a few helpful examples.

Expanding the BTS2048-VL to a luminous intensity spectroradiometer

Measurement of "averaged LED intensity" in accordance with CIE127 measurement geometry is common in LED binning. The BTS2048-VL can be combined and calibrated with the CP-ILED-B-IS-1.0-HL (ILED B) adapter for luminous intensity, spectrum, color, and color rendering index measurements using the standard CIE average LED intensity condition B geometry. Thanks to its compact design, light weight, and absence of a light guide, the adapter and spectroradiometer form a monolithic module that can be conveniently integrated into complete test systems for front-end and back-end LED binning. It is supplied as a fully calibrated module. The 2pi luminous flux spectroradiometer can be taken from the test system as a complete module for recalibration. Eliminating the need for connecting light guides enables convenient recalibration with low uncertainty.

The CP-ILED-B-IS-1.0-HL adapter for industrial LED binning

The CP-ILED-B-IS-1.0-HL is designed for measurement of the "averaged LED intensity" (I_{LED-B}). Its 100 mm² detector area (11.28 mm diameter) is based on a compact integrating sphere with rugged [synthetic coating](#) which ensures the highest possible uniformity of responsivity over the entire reception surface. The integral tube adheres to the specified measurement distance of 100 mm and its inner surface is designed to minimise reflections. The output port of the sphere has an UMPF-1.0-HL connector for attachment to the BTS2048-VL.

Software for system integration

Gigahertz-Optik offers the [S-SDK-BTS2048](#) software development kit for integration of the BTS2048-VL-CP-ILED-B-IS-1.0-HL luminous intensity spectroradiometer with the system software of the user's LED test systems.

Calibration

One essential quality feature of photometric devices is their precise and traceable calibration. The BTS2048- VL-CP-ILED-B-IS-1.0-HL is calibrated in Gigahertz-Optik's DAkkS-accredited (D-K-15047-01-00) calibration laboratory. This accreditation is for the *spectral responsivity* and *spectral irradiance* of our laboratory in line with ISO/IEC 17025. Calibration is performed with the spot light source at a 100 mm distance from the reception surface. Every device is delivered with its respective calibration certificate.
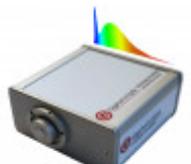
Specifications

General

Short description	Luminous intensity pectroradiometer as an integration module for LED test systems for front-end and back-end LED binning based on the luminous intensity (averaged LED intensity CIE127 B), spectrum, color, and color rendering index
Main features	Input optics according to CIE 127 B. High-quality CCD sensor spectroradiometer
Measurement range	ILED-B: Integral 0.15 mcd to 420 kcd. Spectral for typical white LEDs: 15 mcd to 150000 kcd Spectral radiant intensity: 2E-6 W/(sr nm) to 5E3 W/(sr nm) Spectral range: 350 nm to 1050 nm
Typical applications	Luminous intensity spectroradiometer for integration in LED test systems
Calibration	Factory calibration. Traceable to international standards
Specification	
Uniformity	better ± 1% within the active area of 1 cm²
Mounting	UMPA-1.0-HL
Mounting	tripod thread
BTS2048-VL with CP-ILED-B-IS-1.0-HL	Luminous intensity ILED-B: ± 4 % Spectral Radiant intensity ILED-B:

(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

spectral radiant intensity (ILED-B) responsivity range (spectral measurement): (5E-7 - 5E3) W/nm

measurement range ILED-B (integral measurement): (3E-4 - 1E6) cd

Spectral range	(350 - 1050) nm
Optical Bandwidth	2 nm

Downloads

Type	Description	File-Type	Download
BTS2048-Series Brochure	Not Just Another Spectrometer	pdf	https://www.gigahertz-optik.com/assets/BTS2048_broschuere_DINA4_hoch_V2_2022.pdf

Configurable with

Product Name	Product Image	Description	Go to product
BTS2048-VL		Versatile superb Speed and high Quality LED Spectroradiometer	https://www.gigahertz-optik.com/en-us/product/bts2048-vl/
BTS2048-VL-TEC		Versatile Temperature Controlled High Speed and High Quality LED Spectroradiometer	https://www.gigahertz-optik.com/en-us/product/bts2048-vl-tec/
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		
15298833	CP-ILED-B-IS-1.0-HL	Adapter for the measurement of the Averaged LED Intensity following CIE 127 B regulation. Set-up with integrating sphere for best possible uniformity of the measurement area. Direct mount to measurement instruments with UMPA-1.0-HL mount.
15298281	BTS2048-VL	Measuring device, hard cover box, users guide, software, calibration certificate.
15298687	BTS2048-VL-TEC	Measuring device, hard cover box, users guide, software, calibration certificate.
Calibration		
15300499	K-BTS2048VL-I-S-V01	Calibration of the spectral radiant intensity from 350 nm to 1050 nm as well as of the luminous intensity of the BTS2048-VL with ILED adapter in ND0 setting. Calibration certificate.

Contact, Calibration, Service & Support

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