

ISD-15-BTS2048-VL

<https://www.gigahertz-optik.de/en-us/product/ISD-15-BTS2048-VL>

Product tags: VIS



Description

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 which permits direct mounting onto integrating spheres (e.g. the ISD-15) for measurement of luminous flux. 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.



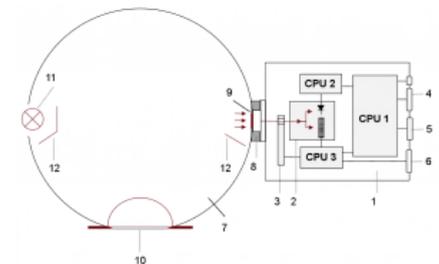
Use of the BTS2048-VL for front-end and back-end LED binning

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 also has an exceptionally wide dynamic range with a minimum integration time of just 2 μ s. This, is 1000 times shorter than conventional devices (typically milliseconds), hereby makes it possible to achieve an OD3 factor. Additionally, the internal OD1 and OD2 filters increase the dynamic range up to 9 orders of magnitude and the fast 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.

The ISD-15-V01-BTS2048-VL 2pi luminous flux spectroradiometer is a compact module that can be integrated in LED test systems.

Enhancement of the BTS2048-VL to a 2Pi luminous intensity spectroradiometer

The BTS2048-VL can be combined directly with integrating spheres in order to measure luminous intensity. With its compact design, light weight, and no need of a connecting light guide, the integrating sphere and spectroradiometer form a monolithic module that can be conveniently integrated in complete test systems for front-end and back-end LED binning. It is supplied as a fully calibrated module. The module can be recalibrated as a single entity. Eliminating the need for connecting light guides enables convenient recalibration with low uncertainty. The [BN-LHSF-2P-20](#) 2pi calibration lamp can be used to perform the recalibration directly in the test system using the supplied user software.



1) BTS2048-VL 2) BiTec sensor with Si photodiode, CCD spectroradiometer 3) Filter wheel with OD1, OD2 and shutter 4) USB 2.0 Interface 5) High speed ethernet Interface 6) Trigger In/Out 7) Diffuser in sphere surface level 8) Measurement port with protection dome window and knife-edge design 11) Auxiliary lamp 12) Baffle

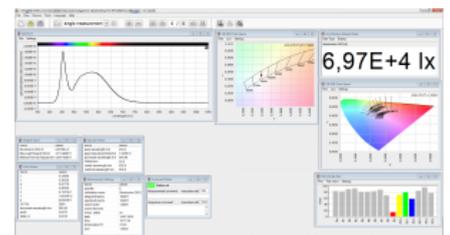
The [modular integrating sphere concept](#) from Gigahertz-Optik GmbH allow for customization and hence the best possible adaptation of the integrating sphere to the specific application.

The ISD-15-V01 integrating sphere for industrial LED binning

The ISD-15-V01 has many properties that make it perfect for luminous flux measurements in combination with the BTS2048-VL spectroradiometer. It has a 150 mm (6 inch) diameter and offers a good compromise in terms of 2pi acceptance and light throughput for high sensitivity. The 35 mm diameter measurement port has a knife edge for unrestricted light entry. A transparent dome behind the measurement port is integrated to protect the coating of the sphere from contamination in industrial environments. The sphere features an auxiliary lamp to compensate for the self-absorption effects. Illumination with the auxiliary lamp is done through a diffusor window.

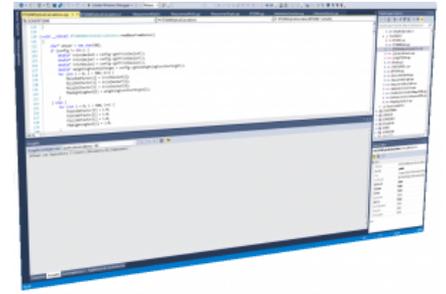
Calibration

One essential quality feature of photometric devices is their precise and traceable calibration. The ISD-15-V01 -BTS2048-VL 2pi luminous flux spectroradiometer is calibrated at Gigahertz-Optik's DAkkS-accredited (D-K-15047-01-00) calibration laboratory for the *spectral responsivity* and *spectral irradiance* in line with ISO/IEC 17025. The calibration is performed with a [BN-LHSF-2P-20](#) calibration lamp that has 2pi radiation characteristics in the integrating sphere. Every device comes with its respective calibration certificate.



Software for system integration

Gigahertz-Optik offers the S-SDK-BTS2048 software development kit for integration of the ISD-15-BTS2048-VL 2pi luminous flux spectroradiometer with the system software of the user's LED test systems.



Specifications

General

Short description	2pi luminous flux spectroradiometer as an integration module for LED test systems for front-end and back-end LEDs based on the luminous flux, spectrum, color, and Color rendering index
Main features	Integrating sphere with a 15 cm diameter and a 35 mm measurement port that is protected against contamination. High-quality CCD sensor spectroradiometer
Measurement range	Luminous flux: Integral 0.03 mlm to 100 klm, Spectral for typical white LEDs: 2 lm to 16000 klm Spectral radiant flux: 1E-7 W/nm to 7E2 W/nm Spectral range: 350 nm to 1050 nm
typical applications	2pi luminous flux spectroradiometer for integration in LED test systems. In-line quality assurance of LED circuit boards, LED matrices, LED spot lamps
Calibration	Factory calibration. Traceable to international calibration standards

Configurable with

Produktname	Product Image	Description	Show product
S-SDK-BTS2048		Software Development Kit for BTS2048 variants.	https://www.gigahertz-optik.de/en-us/product/S-SDK-BTS2048
BN-LHSF-2P-20		Calibration standard lamp for 2π spectral flux, total flux and CCT. Features: 100W tungsten halogen lamp with UMPA-1.0-HL mount. 20mm dia diffuser. Optional calibration.	https://www.gigahertz-optik.de/en-us/product/BN-LHSF-2P-20

Purchasing information

Article-Nr	Modell	Description
Product		
15306340	ISD-15-V01	Integrating sphere, entrance port with dome window, auxiliary lamp with baffle, detector port with UMPF-1.0-HL and baffle, port caps.
15298281	BTS2048-VL	Measuring device, hard cover box, users guide, S-BTS2048 software, calibration certificate.
15298687	BTS2048-VL-TEC	Measuring device, hard cover box, users guide, S-BTS2048 software, calibration certificate.
Calibration		
15300771	K-BTS2048-VL-Phi-2-V1	Calibration of the total flux responsivity in lm and W of the BTS2048-VL with optional integrating sphere. Calibration standard with 2Pi light distribution for sphere illumination by an measurement port. Spectral range 350-1050nm. Calibration certificate.
Re-calibration		
15300770	K-BTS2048-VL-E	Calibration of the illuminance, irradiance responsivity and wavelength of the BTS2048-VL. Spectral range 280-1050nm. Calibration certificate.
15300771	K-BTS2048-VL-Phi-2-V1	Calibration of the total flux responsivity in lm and W of the BTS2048-VL with optional integrating sphere. Calibration standard with 2Pi light distribution for sphere illumination by an measurement port. Spectral range 350-1050nm. Calibration certificate.
Software		
15298470	S-SDK-BTS2048	Software development kit, software CD with users guide.