

# BTS256-LED-IB

<http://www.gigahertz-optik.de/en-us/product/BTS256-LED-IB>

Product tags: VIS



## Description

BTS256-LED-IB for the measurement of "Average LED Intensity" ILED-B according CIE Dokument 127 with the BTS256-LED

The BTS256-LED-IB adapter is used to enhance the measurement functions of the [BTS256-LED](#) making it possible to measure the averaged LED intensity. The integrating sphere of the BTS256-LED ensures high responsivity homogeneity levels over the 1cm<sup>2</sup> measurement surface. The LED tester, with its Bi-Technology sensor, ensures precise measurement of the averaged LED intensity, luminous flux, spectral radiant power, color temperature, Ra and R1 to R15 color rendering index, xy and u'v'.

The BTS256-LED is a high-quality light meter for measurement of the luminous flux, luminous spectrum and luminous color of LEDs in the visible spectral range.

## BiTec light sensor for complex light measurement

One of the characteristic properties of the mobile light meter is its BiTec light sensor. This combines the characteristic properties of a silicon photodiode with those of a low-noise CMOS diode array. The BiTec sensor guarantees precise photometric, spectral-radiometric and colorimetric measurement values over a large dynamic range through mutual correction of the measurement signals of both sensors.

## Silicon photodiode detector, fast and linear

When taking into account the dynamic range, linearity and speed, silicon photodiodes have always been and are still the ultimate radiation detectors. A silicon photodiode is therefore incorporated in the BiTec light sensor of the BTS256-LED Tester. Its precise matching to the photometric  $V(\lambda)$  CIE responsivity is also ideal for LEDs due to the integration of the diode array's spectral measurement data.

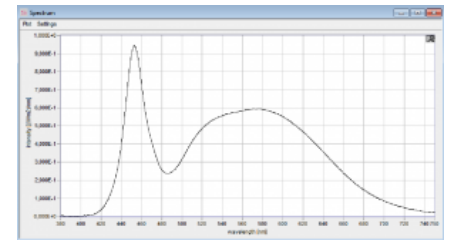
## Diode array detector for spectral measurement data

The low-noise CMOS diode array of the BiTec Light sensor provides precise measurement data required for the luminous spectrum. This data is then used for calculation of the color values as well as for optimization of the photometric responsivity.

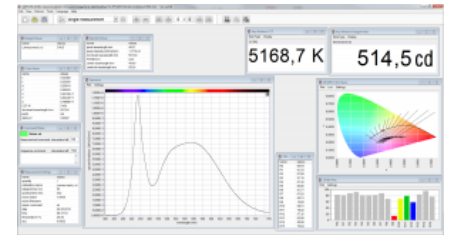
## Optimized Signal to Noise Ratio

The noise signal of a diode array detector has significant influence on the Signal to Noise Ratio and thereby affects the quality of the measurement signal. A remote controlled shutter in the BiTec light sensor enables online compensation of the dark signals that are dependent on the temperature and integration time.

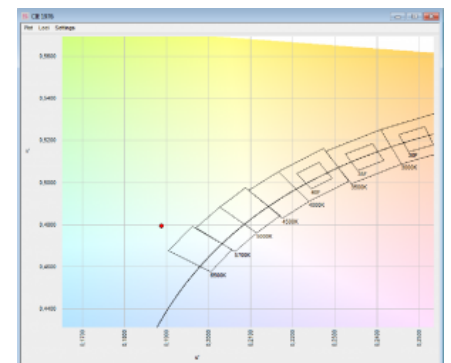
## Use with PC



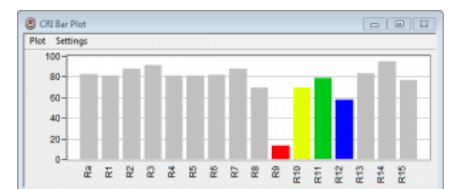
Full screen display of the luminous spectrum



S-BTS256 user software with modular desktop setup



CIE 1976 chromaticity table with binning fields



CRI Bar Plot

The BTS256-LED Tester has a USB 2.0 interface for use of the device with a PC. This enables both data exchange and battery charging.

## User software

The [S-BTS256](#) software included in the device's price provides all the necessary functions for the measurements, measurement data display and data transfer. The cutting-edge, flexible desktop concept of the software offers the user an individual constellation of the required measurement values. This can be a full screen filled with lux measurement values or a matrix with both numerical and graphical fields. Each desktop constellation can easily be saved for future use.

## Diverse photometric and colorimetric measurement quantities

A large span of measurement quantities is necessary for the verification and testing of LEDs. The BTS256-LED Tester offers twelve measurement quantities and thereby meets all the requirements for a modern light meter:

- $E_p$  Illuminance in lux
- $E_p$  Irradiance in  $W/m^2$
- $E_\lambda$  spectral irradiance
- $x, y$  CIE 1931 color coordinates
- $u', v'$  CIE 1976 color coordinates
- CT color temperature
- $\Delta uv$  deviation from the blackbody locus
- $\lambda_{dom}$  dominant wavelength
- $\lambda_p$  peak intensity wavelength
- $\lambda_{0,5}$  spectral half-width
- Purity color purity
- CRI  $R_a$  and  $R_1$  to  $R_{15}$  Color Rendering Index

## Software Development Kit

Gigahertz-Optik offers programmers the S-SDK-BTS256 Software Development Tool. This can be used with LabView from National Instruments, .NET from Microsoft and C/C++. The SDKs simplify integration of the BTS256-LED Tester in an internally developed software.

## Traceable calibration

The calibration is performed by Gigahertz-Optik's calibration laboratory for photometric measurands. The calibration is done using calibration standards traceable to national and international standards. Recalibration is recommended after every 12 months.

## Expandable for additional measurement quantities

The BTS256-LED Tester can be expanded for additional measurement quantities using the accessories offered:



*BTS256-LED Tester with 1m diameter integrating sphere*



*BTS256-LED Tester with GB-GD-360 goniometer*


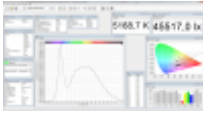
- Diffuser window for measurement of the illuminance of less extensive light sources.
- External integrating spheres for the luminous flux, luminous spectrum and luminous color of lamps and other luminaires.
- Goniometer for measurement of the luminous intensity distribution.

For detailed information, please refer to the respective data sheets.

## Specifications

General	
typical applications	Light meter for the ILED-B and color measurement. With other adapters luminous flux and spectral radiant power or illuminance and spectral irradiance are measurable.
Calibration uncertainty	+/-4% for Averaged LED Intensity (ILED-B)
Product	
General	This device is based on the <a href="#">BTS256-LED</a> , please find detailed specification there.
Integral Detector	
max. measurable ILED-B	100 Mcd
Noise equivalent ILED-B	7.5 mcd

## Configurable with

Produktname	Product Image	Description	Show product
S-SDK-BTS256		Software Development Kit for BTS256 variants.	<a href="http://www.gigahertz-optik.de/en-us/product/S-SDK-BTS256">http://www.gigahertz-optik.de/en-us/product/S-SDK-BTS256</a>
S-BTS256		Application software for BTS256 variants.	<a href="http://www.gigahertz-optik.de/en-us/product/S-BTS256">http://www.gigahertz-optik.de/en-us/product/S-BTS256</a>

## Purchasing information

Article-Nr	Modell	Description
Product		
15298508	BTS256-LED ILED-B Adapter	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.

Article-Nr	Modell	Description
15308420	BTS256-LED	Measurement device, BTS256-LED-CA10 cone adapter, USB cable, hard-top casing, operation manual, software CD, calibration certificate.
<b>Calibration</b>		
15300819	K-BTS256-LED-ILED-B	Recalibration of the BTS256-LED-IB
<b>Options</b>		
	ISD integrating spheres	External integrating spheres with diameters ranging from 21cm to 100cm (data sheet: BTS256-LED with ISD integrating sphere)
	GB-GD-360-V01	Goniometer (data sheet: BTS256-LED with GB-GD-360)
<b>Software</b>		
15298108	S-BTS256	User software for BTS256 and variants.
15298218	S-SDK-BTS256	Software Development Kit for the implementation of the BTS256 or variants into custom made software
<b>Accessories</b>		
Note:	BTS256-LED-X	The use of cone adapters with measurement ports larger or smaller than 10mm increases the measurement uncertainty and is only recommendable in applications where the standard units are not suitable.
15297954	BTS256-LED-CA5	Cone adapter with 5mm measurement port
102620-2	BTS256-LED-CA6	Cone adapter with 6mm measurement port
102620-3	BTS256-LED-CA7	Cone adapter with 7mm measurement port
102620-4	BTS256-LED-CA8	Cone adapter with 8mm measurement port
102620-5	BTS256-LED-CA9	Cone adapter with 9mm measurement port
15297955	BTS256-LED-CA10	Cone adapter with 10mm measurement port
102620-6	BTS256-LED-CA11	Cone adapter with 11mm measurement port
102620-7	BTS256-LED-CA12	Cone adapter with 12mm measurement port
102620-8	BTS256-LED-CA13	Cone adapter with 13mm measurement port
102620-9	BTS256-LED-CA14	Cone adapter with 14mm measurement port
15297959	BTS256-LED-DA	Diffuser window (BTS256-LED data sheet with BTS256-LED-DA)