

ISS-15-RGBW

<https://www.gigahertz-optik.com/en-us/product/iss-15-rgbw/>

Product tags:



Description

Integrating sphere light sources offer a very uniform luminance or radiance distribution. This is the reason for the name **Uniform Light Source**. One of the main applications of the integrating sphere light source is pixel balancing of digital image sensors and cameras. This is also known as white balance. Within the scope of the adjustment, sensitivity differences of individual pixels or pixel groupings are detected and corrected by a homogeneous illumination of all pixels. In order to detect possible linearity errors or even to correct them, the white balance is performed at different intensities in many applications. This type of digital image processing is a basic requirement for autonomous locomotion of vehicles, mobile robots and driverless transport systems.

The model shown here corresponds to an example configuration. Gigahertz Optik GmbH is an expert in setting up your individual configuration to meet your requirements. So you can contact us with your special requirements!

Integrating sphere

The 15 cm integrating sphere is coated with ODP97 (Bariumsulfate), offers monitor detector and a 38.1 mm entrance optic. Other configurations are possible on request. See drawing in the download section.

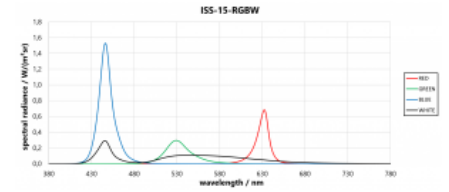
LED light source

A RGBW LED is used as a light source. The LEDs can be operated individually and together. E.g. a RGB LEDs is support on request for [fulfilling the specifications of the EMVA 1288 standard](#) of the European Machine Vision Association. The dynamic range of LEDs in CW operation is relatively low. The integrating sphere light source therefore offers, in addition to the current setting, a aperture for intensity adjustment with constant LED current. Standard is a manual variable aperture, remote control is possible on request.

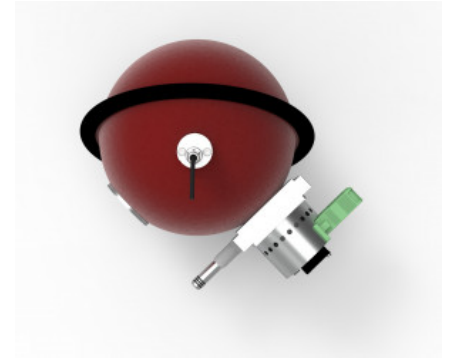
Short and long term luminance stability

For the best possible short-term and long-term stability of the luminance, the LEDs are operated in current mode. In addition, the intensity is measured by a [PD-11 Monitor Detector](#). The LED control and regulation is done by the optional control electronics. It offers four precision power supplies as well as a touch-screen display and RS232, USB and Ethernet interfaces for manual or remote operation. Same is given for the tungston lamp.

Traceable calibration



Light source with RGBW LED



ISS-15-RGBW for EMVA 1288 in Top View

The luminance calibration of the uniform light source is carried out in Gigahertz Optik's [ISO 17025 GmbH calibration laboratory for optical radiation measurements](#). In addition to the calibration of luminance, the spectral radiance and luminance distributions are confirmed in the calibration certificate.

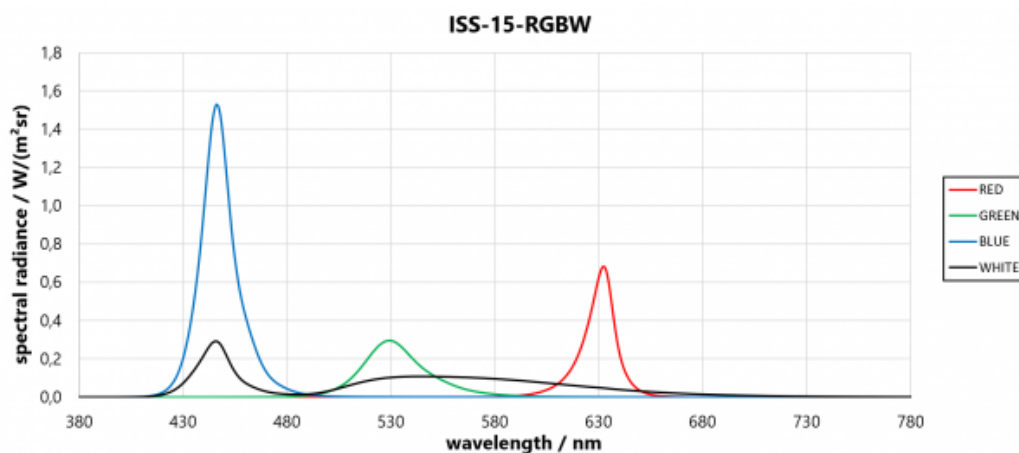
Specifications

General

Short description	Integrating sphere light source with homogeneous light field for use as a reference lamp for pixel matching of image sensors and cameras as well as luminance and radiance standard. Equipped with LED light source as well as variable screens for intensity control in accordance to EMVA 1288
Main features	38.1 mm Diameter light Output port.
Measurement range	RGBW LED spectral range
Typical applications	Reference lamp for pixel matching of image sensors and cameras as well as luminance and radiance standard. Various LED wavelengths are possible on request, e.g. to meet EMVA 1288.
Calibration	Calibration of the spectral radiance. Calibration certificate with description of the calibration procedure, reference standards applied, traceability and calibration uncertainty.

Product

Spectral distribution @ 500 mA:

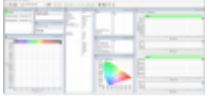


Radiance	typical radiance @500 mA L_e in W/(m²sr)	Red 12.6	Green 10.82
Warm-up time	Heat-up process typically takes 10 to 15 minutes but depends strongly on the LED current used		
Current	<ul style="list-style-type: none"> • If all four LEDs are powered at the same time a max. of 700 mA for all channels is possible. • For single LEDs 1500 mA are possible. 		
Miscellaneous			
Temperature range	Operation (electronics and sphere): (10 to 30) °C		
Dimensions	see download section		

Downloads

Type	Description	File-Type	Download
ISS-15-RGBW	Drawing	pdf	https://www.gigahertz-optik.com/assets/V127948.pdf

Configurable with

Product Name	Product Image	Description	Go to product
S-ISS		Application Software for Uniform Light Sources (ISS)	https://www.gigahertz-optik.com/en-us/product/s-iss/

Purchasing information

Article-Nr	Modell	Description
Product		
15313647	ISS-15-RGBW	ISS-15-15313647 system including calibration and electronic device
15309242	ED-SC-4x20-MD	Electronic devices with 4 channels

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](#).

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