

ISS-50-LU-FE

<https://www.gigahertz-optik.com/en-us/product/iss-50-lu-fe/>

Product tags:



Description

Uniformity adjustment of fisheye cameras

Digital cameras with fisheye and super-wide angle lenses are characterized by viewing angles of up to $>180^\circ$. Since these cameras map a hemispherical image in front of the objective lens on the image plane, reference light sources with a hemispherical illuminating field are required for uniformity matching. Please see our technical article "[Integrating sphere source for homogeneity and white balance of fisheye cameras](#)".



Fig. 1: ISS-50-LH-FE integrating sphere source

Integrating sphere source with spherical illuminated field

Integrating sphere based 'uniform light sources' offer luminous fields with highly uniform light distribution. In order to provide Fisheye cameras with a hemispherical illuminating field for uniformity matching, the camera must be placed in the center of the integrating sphere. This requirement significantly increases the design complexity of the integrating sphere and its associated light sources and baffles.



Fig. 2: Open integrating sphere with transparent dome

White balance with different light spectra

Together with the uniformity adjustment, a white balance can be set for color cameras. In order to optimize the camera's performance under different lighting conditions, the uniformity and white balance should be carried out at more than one color temperature.

Integrating sphere sources from a modular range

A special feature of the modular integrating sphere system of Gigahertz-Optik GmbH is the range of standardized assemblies. Integrating spheres of different diameters, mounting racks, port frames, port adapters, light sources, apertures, mounts for interchangeable filters and much more are produced as standard components. Configurations using these standard parts can be designed quickly in 3D CAD. As necessary, custom assemblies can also be manufactured. Please see our technical article "[Modular Integrating Sphere Concept](#)".



Fig. 3: Electronic unit for system control, power supply and monitoring

Control electronics and lamp power supplies

The electronic modules of the RM series of Gigahertz-Optik GmbH form a useful addition to the modular integrating sphere system. The 19" rack-mountable modules can be used to build high-quality electronic units for system control, power supply and monitoring. RS232, USB and Ethernet interfaces are available for remote control.

ISS-50-LU-FE integrating sphere sourceComprises:

- Integrating sphere with 50 cm diameter
- Test device positioning in sphere center via light-tight tube
- Transparent dome with a diameter of 70 mm
- 3x halogen light sources on 120 ° pitch for uniform light distribution
- ODP97 coating of all relevant assemblies
- 3x remote controlled filter wheels each with 3 filter holders for optical correction filters
- Baffle to ensure homogeneous light propagation
- Individually adjustable apertures for intensity adjustment of each lamp (color temperature-neutral)
- Monitor detector for luminance and color temperature of the hemispherical light field
- System controller for manual and remote control operation.

Calibration and adjustmentThe supplied calibration comprises:

- Traceable calibration of the spectral radiance for the spectral range 300 nm to 1100 nm
- Calculation of the luminance and color temperature from the spectral measurement data
- Matching each lamp to the specified color temperature
- Matching the monitor detector to the output luminance and color temperature
- Calibration certificate including calibration procedure, the calibration references used, the measured values and Calibration uncertainties.
- Optional: Calibration of luminance distribution

Specifications

General	
Short description	Integrating sphere source with hemispherical illuminated field and up to three switchable color temperatures of the illumination.
Main features	Integrating sphere source with the facility to position the test device in the sphere center. Three halogen lamps each with three filter wheel-mounted correction filters. Individual adjustment of luminance and color temperature for each lamp. Quick change of color temperature.
Measurement range	Integrating sphere: 50 cm diameter Dome: 70 mm in diameter Test device size: max. Xx mm diameter Luminance: tba Color temperatures: tba Electronic unit: Three lamp power supplies, optometer, system controller, interfaces for remote control (RS232, USB, Ethernet)
Typical applications	Uniformity and white balance of super-wide angle and fisheye cameras.

Calibration	Spectral radiance, luminance and color temperature with calibration certificate.
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Purchasing information

Article-Nr	Modell	Description
Product		
15298621	ISS-50-LH-FE	Integrating sphere source with electronics and calibration. Due to the need for individual adjustment to the requirements of your intended use, please contact our sales department. We will be glad to help you at any time and will support you with your questions and specific requirements.

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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