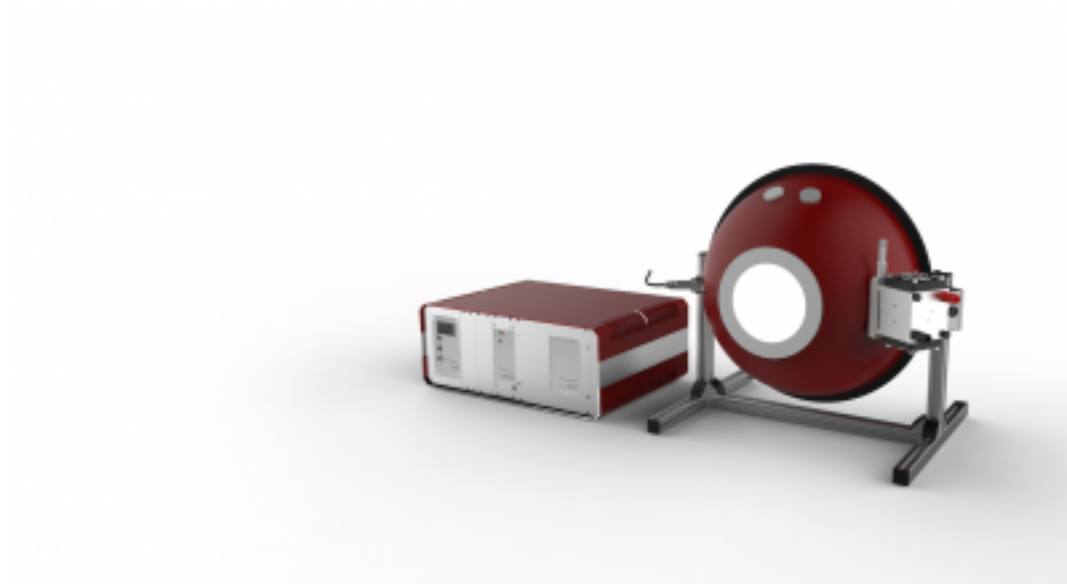


ISS-30-VA

<https://www.gigahertz-optik.com/en-us/product/iss-30-va>

Product tags:



Description

Calibration standards for spectral radiance

Spectroradiometers and other instruments suitable for measuring spectral radiance are typically constructed with lens based entrance optics. To calibrate and correct these measuring systems, a uniform light source of sufficient size is required as a reference, calibrated in spectral radiance.



ISS-30-VA-V01

Calibration standards for spectral radiance and uniformity

Multi-spectral and hyper-spectral spectral systems produce multi-spectral and hyper-spectral images. In addition to the calibration and the matching of these systems for spectral radiance, a uniformity adjustment of the pixel sensitivity is required. Calibration standards for spectral radiance and uniformity must be characterized by a highly uniform light output field.



ISS-30-VA-V01

Light output port

In order to reduce the influence of reflections and shadows at the edges of the illuminated field, the output port has to be implemented with a thin edge, so-called 'knife edge'. Additionally, it is recommended that the outer 10 % of the exit port's diameter is not used.

Integrating sphere source ISS-30-VA-V01

The integrating sphere source ISS-30-VA-V01 is based on a 30 cm diameter sphere and offers a 100 mm diameter knife-edged output port. The precision coating of the hollow spheres with barium sulfate combined with the diffuse-emitting light source ensure the best possible uniformity within the output light field. Other Diameters of the light Output ports are available on request.



Diffuse-illuminating light source with variable aperture

One essential component of a uniform light source is a diffuse-emitting light source. The LS-OK30 from Gigahertz-Optik which is incorporated in the ISS-30-VA, employs a diffuse reflector for this purpose. In order to avoid unwanted radiation in the sphere due to diffraction effects at the

Fig.: Electronics for control, power supply and monitoring

source's aperture, an additional diffuse window is installed between aperture and entrance port of the sphere.

Monitor Detector

The ISS-30-VA incorporates a photometric monitor to ensure the reproducible setting of the output luminance which is also displayed on the control unit.

Control unit with lamp power supply

The control electronics supplied with the ISS-30-VA includes a power supply for the operation of the lamp and a measurement channel for the monitor detector. The LPS-100 power supply unit from Gigahertz-Optik GmbH impresses with its high resolution and stability of current regulation. In addition, the lamp is gently switched on and off with a ramp function.

Calibration

- The 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 the lamp to the specified color temperature;
- matching the monitor detector to the output luminance;
- 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 100 mm diameter output port with manually adjustable intensity. Integrating sphere with 30 cm diameter. Electronics in the 19" benchtop housing.
Main features	High uniformity of the output by careful coating of the hollow sphere and incorporation of diffuse irradiating light source.
Measurement range	Calibrated spectral range: 300 nm to 1100 nm Luminance: max. 3500 cd / m² Spectral radiance: see graph with spectral radiance CCT: 2960 K Setting range of intensity: (0 - 3500) cd / m² (at CCT 2960K with LH-100F-UV)

typical applications	Calibration standard for spectral radiance and uniformity for spectroradiometers, multispectral and hyperspectral sensors and camera systems, and the like.	
Calibration	Spectral radiance 300 nm to 1100 nm	
Calibration		
Calibration uncertainty	luminance (cd/m ²):	± 3,5%
	color temperature [K]:	± 2%
Specification		
Luminance	Range: Continuous adjustable (0 - 3500) cd/m ² (at CCT 2960K with LH-100F-UV) VA 100 % offen: 3500 cd/m ² (at CCT 2960K with LH-100F-UV) VA 10 % offen: 350 cd/m ² (at CCT 2960K with LH-100F-UV) VA 1 % offen: 35 cd/m ² (at CCT 2960K with LH-100F-UV)	
Light Output Port	100 mm	
Lamp Connection	Two Banana type plugs	
Specifications	300 mm Bariumsulfate sphere with 100 mm light entrance port	
Graphs		
Uniformity	related to area: better ± 0.25 % (within 90% of port diameter) related to angle: better ± 0.5 % within 20° [image src="/var/www/html/web/assets/4f5836eb8a/Homogenitaet-ISS-30-VA-Winkel2.png" id="6392" width="600" height="250" class="leftAlone ss-htmleditorfield-file image" title="Homogenitaet ISS 30 VA Winkel2"]	

Purchasing information

Article-Nr	Modell	Description
Product		
15309350	ISS-30-VA-V01	Integrating sphere source with 100 mm light field. Electronics.

Article-Nr	Modell	Description
15306956	ISS-30-VA-V02	Integrating sphere source with 75 mm light field. Electronics. Note: The specification will vary to the ISS-30-VA-V01.
Calibration		
15300617	KLW-S3-05	Calibration spectral radiation density 300 nm - 1100 nm with open aperture. Calibration certificate.
Options		
15300265	KLW-16-02	Luminous distribution at light emission port. XY scan with a measuring spot size of approx. 1/20 of the light field size. Calibration certificate.