

SSL Resource

Integrating Sphere Catalogue 2024/I



INTEGRATING SPHERE CATALOGUE

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DUT's spectroradiometric measurement modes:

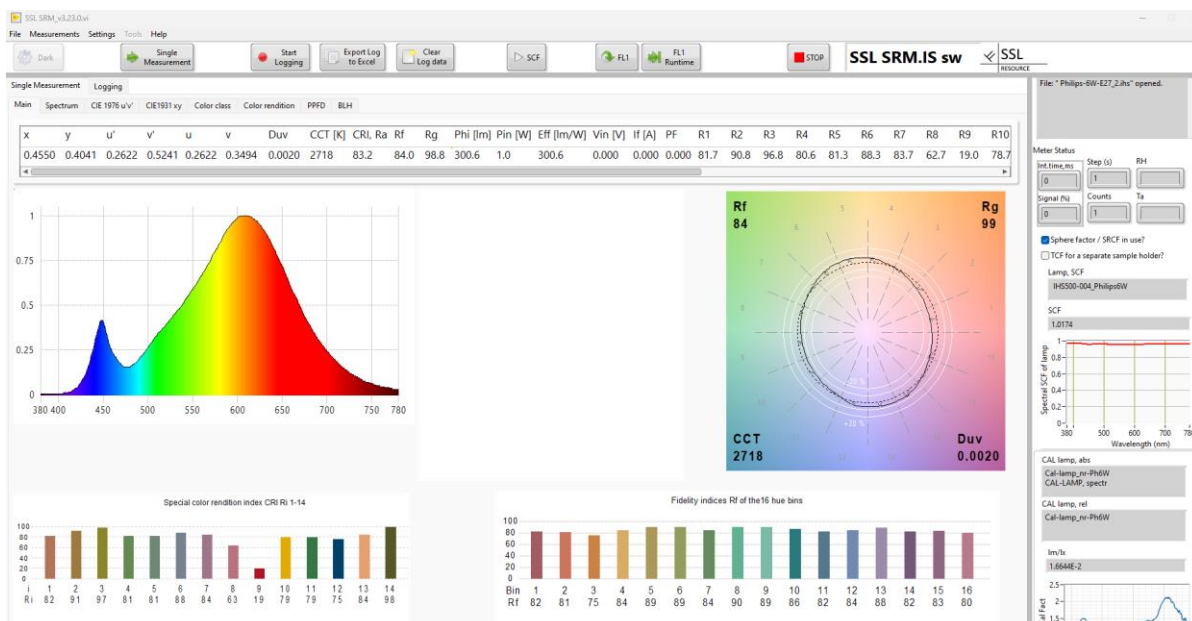
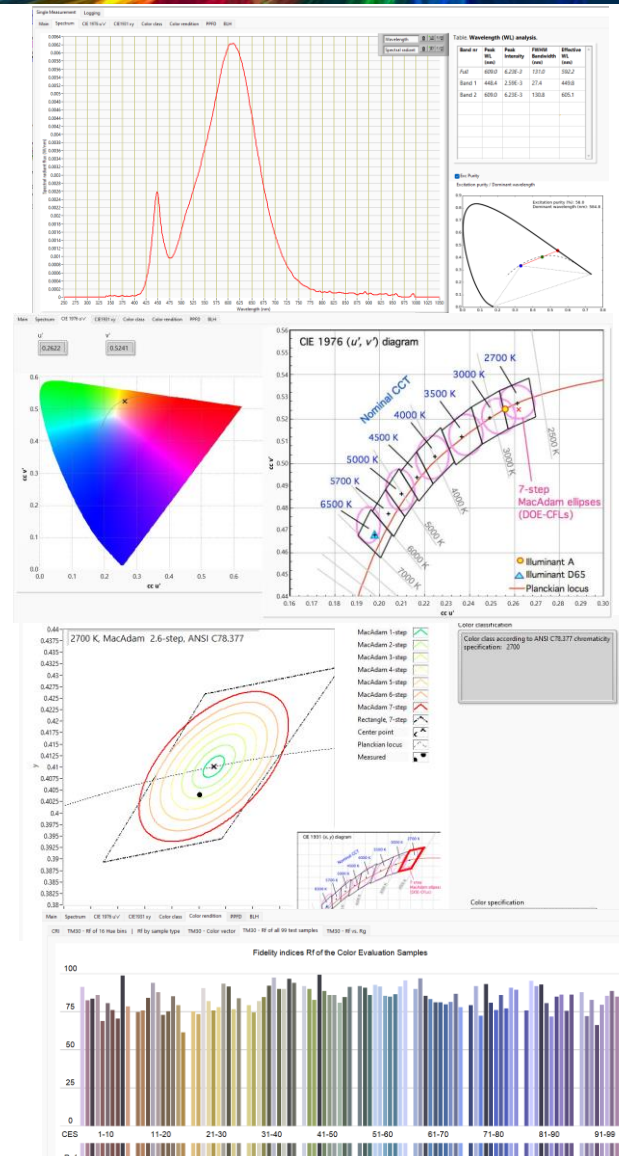
1. Single measurement mode
2. Stability/Logging mode

Spectral Correction with Auxiliary lamp for

- ✓ DUT's absorption/reflection effect
- ✓ sample holder's absorption/reflection effect

MEASUREMENT PARAMETERS

- ✓ Total luminous flux and efficacy
- ✓ Total spectral radiant flux
- ✓ Correlated color temperature CCT (K)
- ✓ Color rendering index CRI
- ✓ Color fidelity index Rf and gamut index Rg according to TM30-18
- ✓ Color coordinates CIE1931 xy, CIE 1960 uv, CIE1976 u'v'
- ✓ Peak wavelengths of (multi-)LED sources
- ✓ Wavelength bandwidths
- ✓ Flicker according to IEEE 1789
- ✓ Pst LM and SVM flicker



SSL HEMISPHERE

- TEST PORTS



Measurement of Round light.

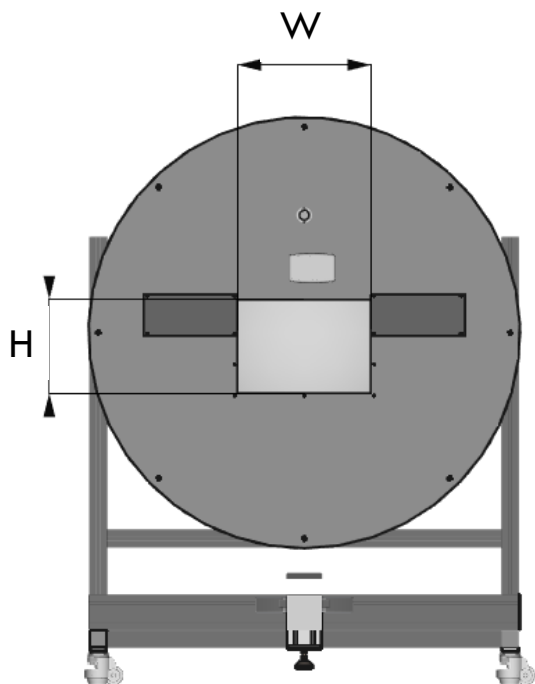


Measurement of Linear light

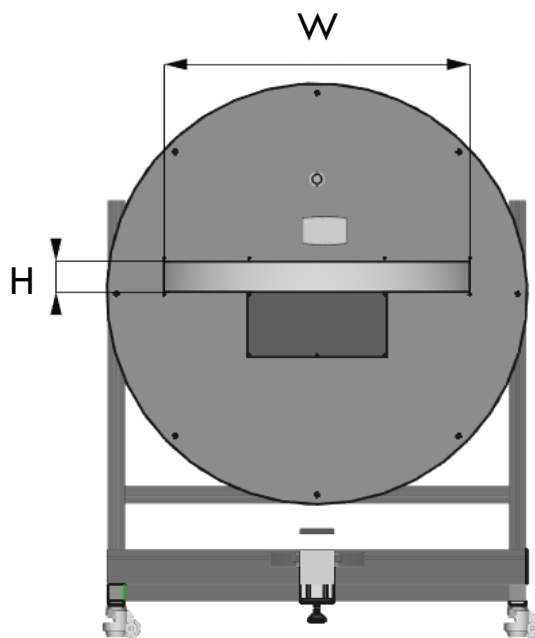
Product		SPHERE 5 F	SPHERE 15	SPHERE 50	SPHERE 100	SPHERE 150	SPHERE 175
Diameter (mm)		5	150	500	1000	1500	1750
Sample port (mm)	Round	9	26	90	170	250	300
	Rectang ular	NA	10 x 120	40 x 400	80 x 800	120 x 1200	140 x 1400

SSL HEMISPHERE PR

- TEST PORTS with Port Reducers



Rectangular port



Linear port

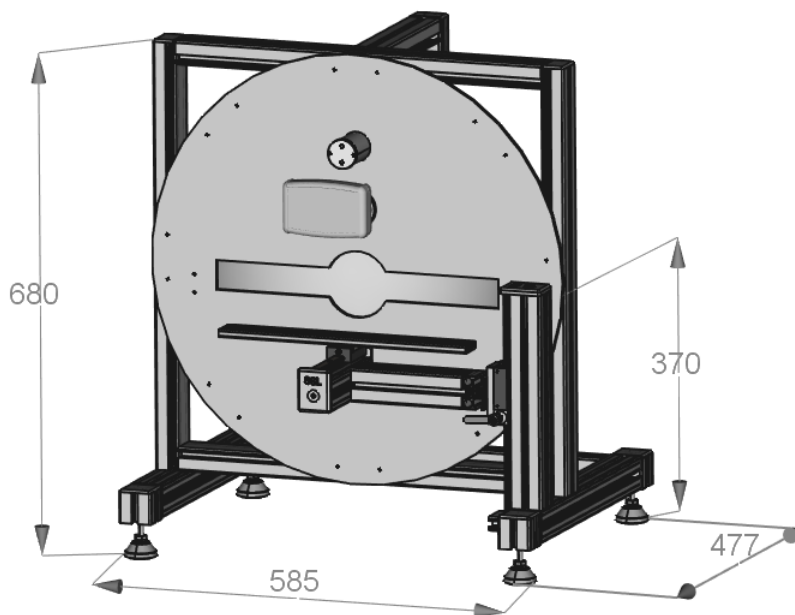
Product			Fractional port area	SPHERE PR 50	SPHERE PR 100	SPHERE PR 150	SPHERE PR 175
Inner Diameter (mm)				500	1000	1500	1750
Sample port (mm)	Rectangular*	H x W	3%	160 x 160	340 x 340	510 x 510	600 x 600
	Linear	H x W	5%	40 x 400	80 x 800	120 x 1200	140 x 1400

*Customization possible.

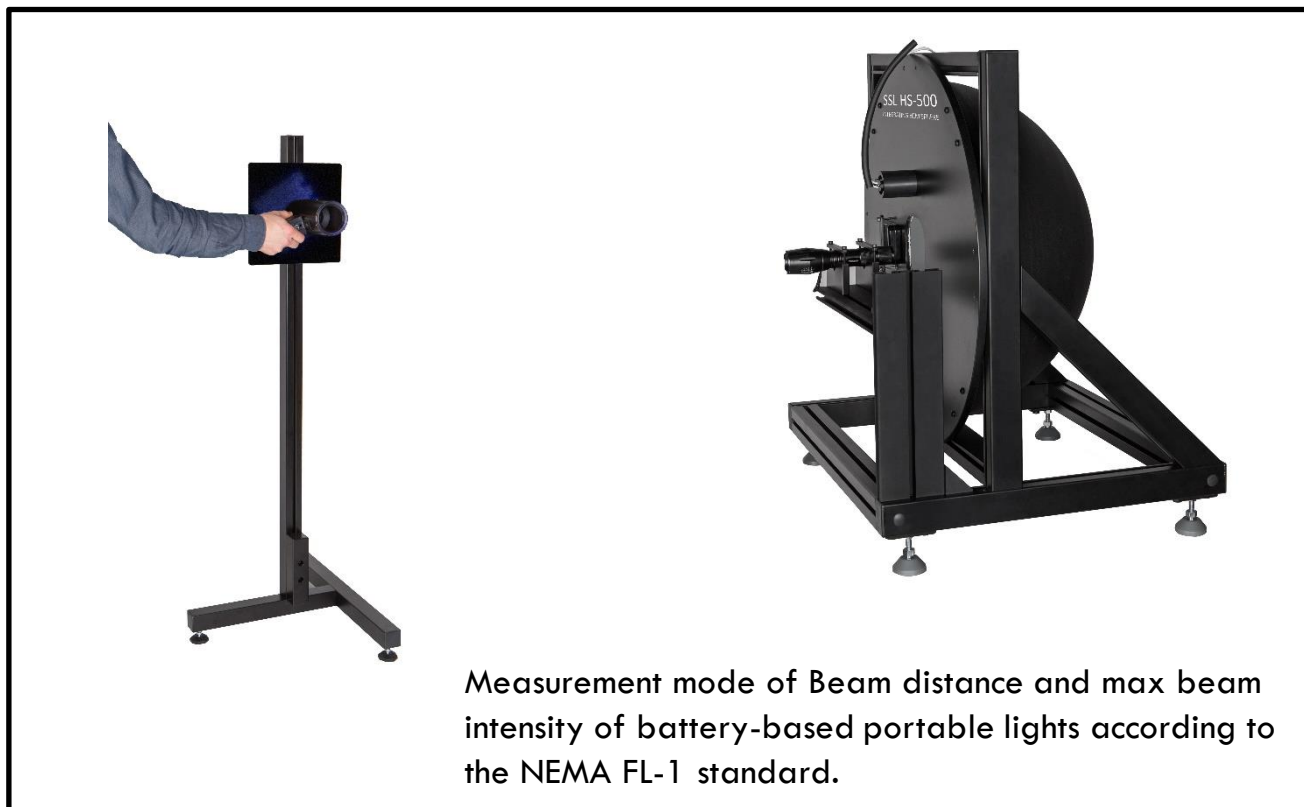
INTEGRATING HEMISPHERE SSL SPHERE 50



Measurement mode of luminous flux and runtime

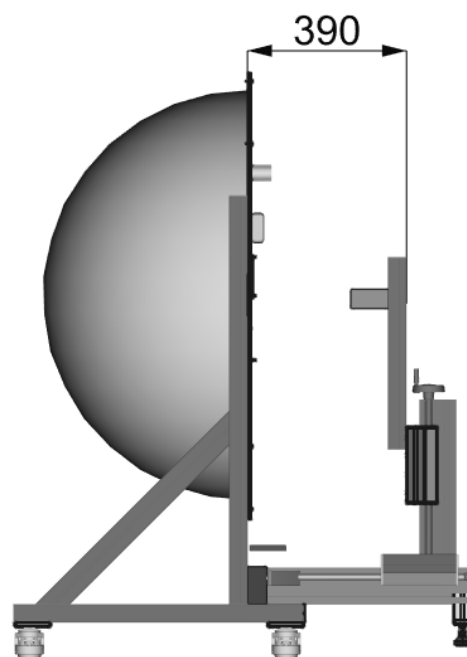
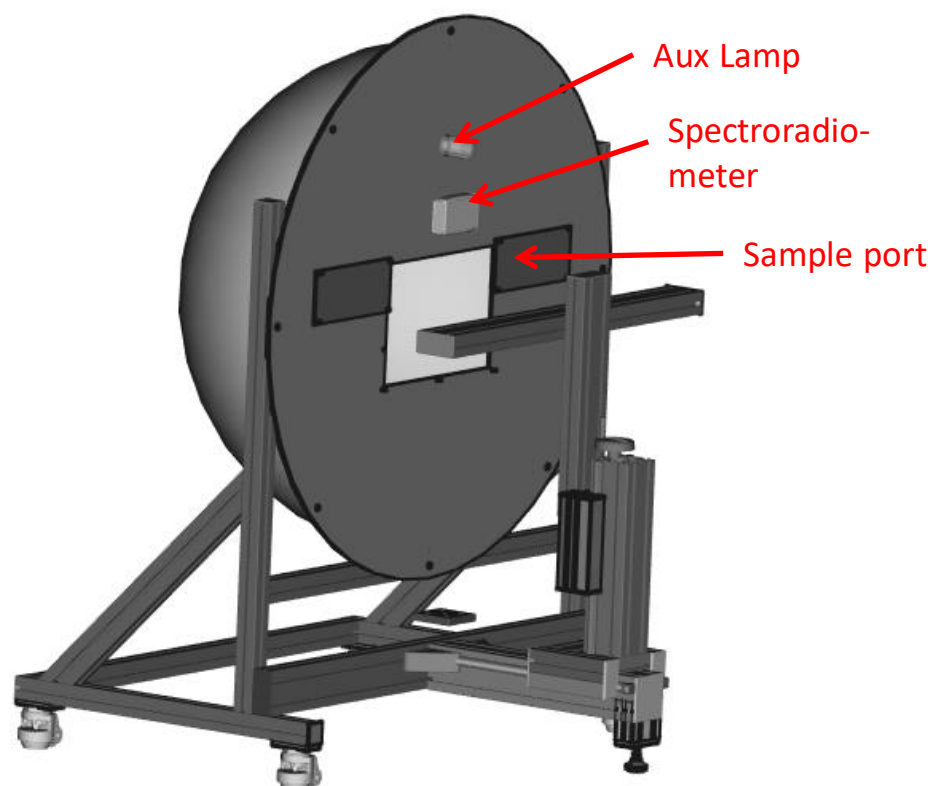


Dimensions.

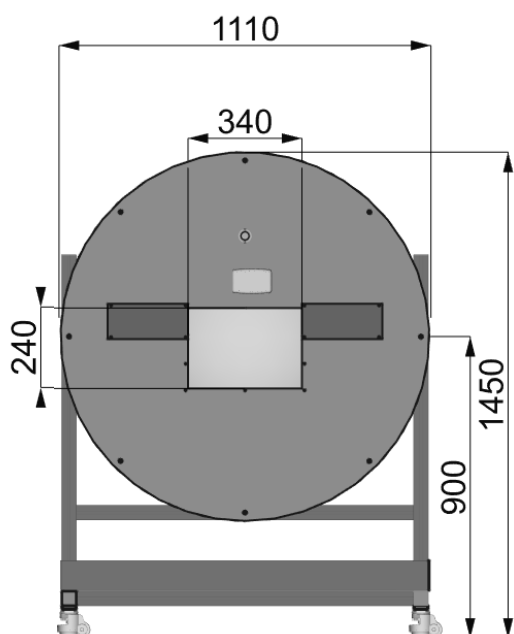


Measurement mode of Beam distance and max beam intensity of battery-based portable lights according to the NEMA FL-1 standard.

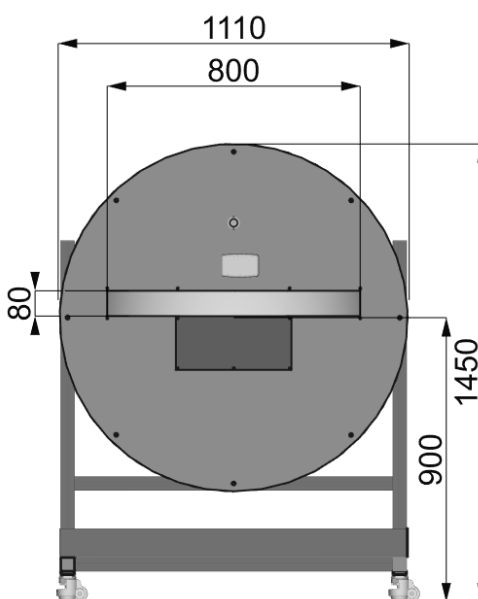
INTEGRATING HEMISPHERE SSL SPHERE 100



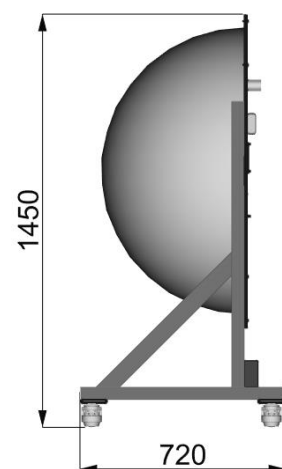
Adjustment range for sample



Rectangular sample port



Linear sample port



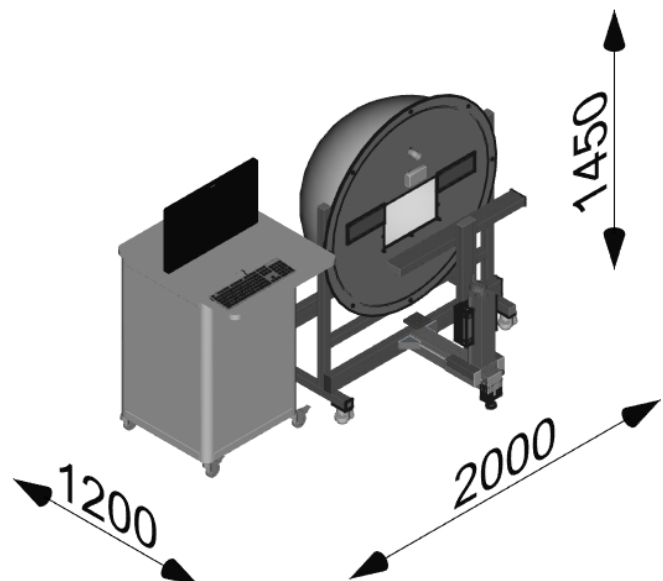
Transportation dimensions

SSL SPHERE 100

- SPECIFICATION

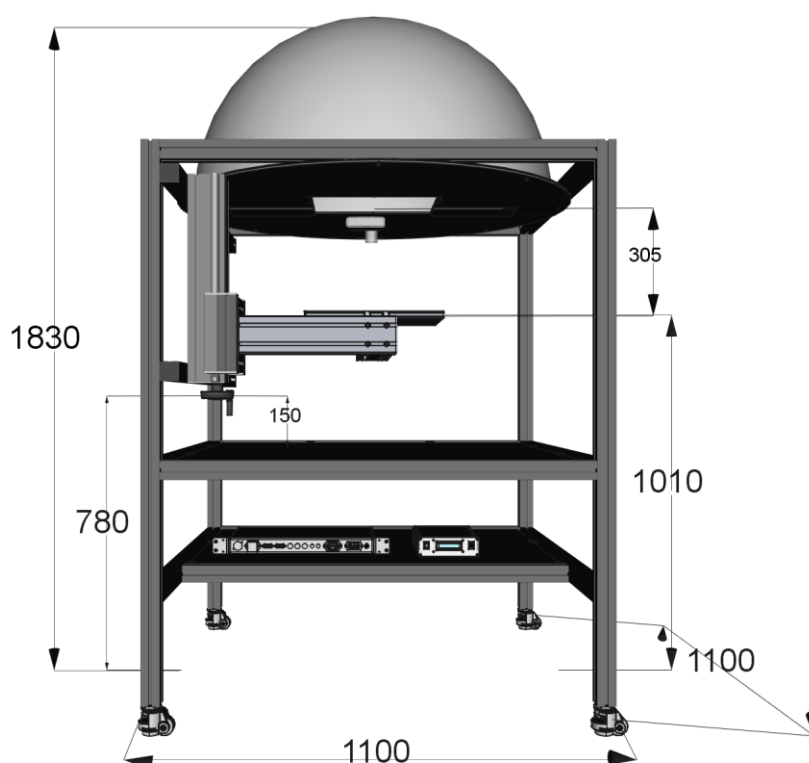
Product Code	SSL IHS-1000	
Application area	General lighting sources and automotive lighting sources with hemispherical light output	
Height, Width, and Length	1.2 m, 1.2 m, 1.5 m, 60 kg	
Sphere inner diameter	100 cm	
Material	Aluminum with BaSO ₄ coating	
Height of optical axis	Approximately 90 cm	
Test port opening (Max size of luminous area of DUT)	SPHERE 100: 80cm x 8 cm / $r = 17\text{cm}$ SPHERE PR 100: 34cm x 34cm and 80cm x 8cm using exchangeable port reducers. Other: please contact us for customization	
Auxiliary light source	LED	
Spectrometer	SSL SPEKTRI 80	S-680.VRW 5nm
Wavelength range	380 – 780 nm	350 – 1050 nm
Wavelength bandwidth	9-11 nm	3-5 nm
Luminous flux measurement range*	5 – 50 000 lm	5 – 350 000 lm

*Can be customized

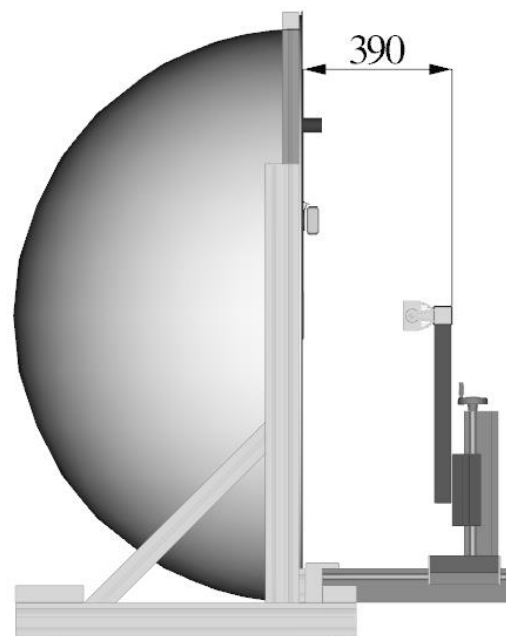
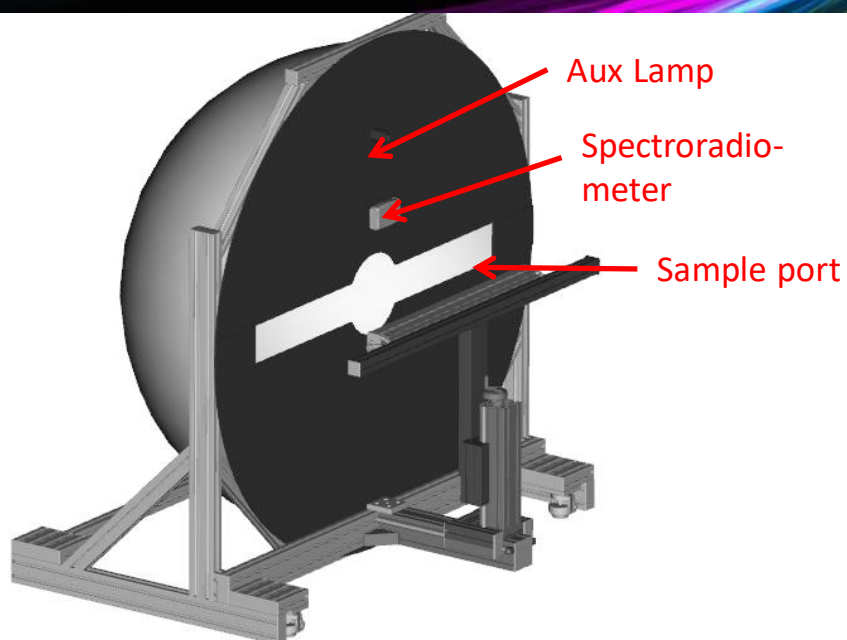


INTEGRATING HEMISPHERE SSL SPHERE 100.ver

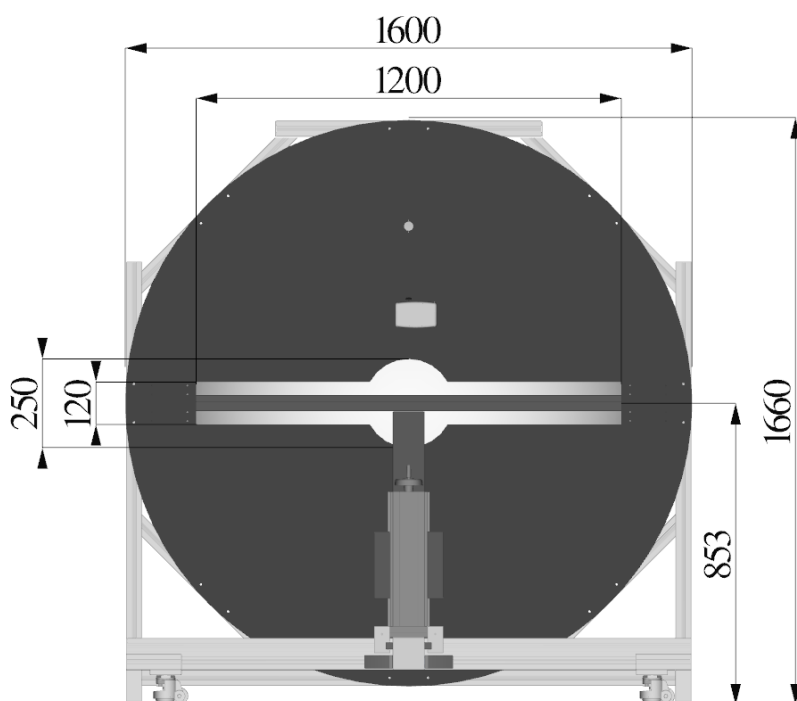
- ✓ 1m hemisphere (BaSO₄ coating)
- ✓ Castors with adjustable feet
- ✓ Equipment shelf
- ✓ 2-axis sample holder
- ✓ Motorized vertical axis: trapezoid screw with stepper motors and software control, handwheel
- ✓ Motorized Horizontal axis (depth direction): SBI rail, ball screw and stepper motors
- ✓ Manual Horizontal axis (width direction): Al profile slot



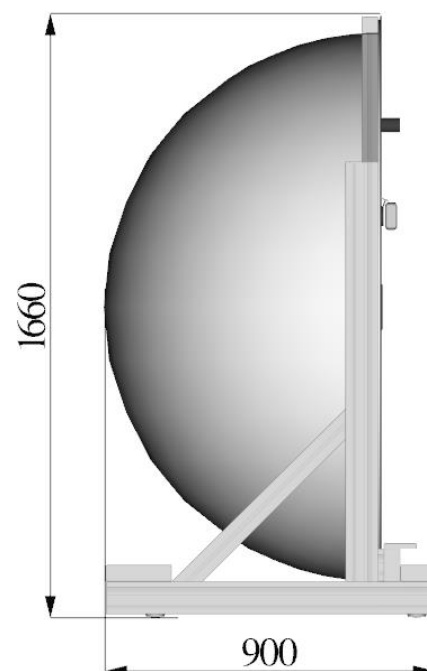
INTEGRATING HEMISPHERE SSL SPHERE 150



Adjustment range for sample



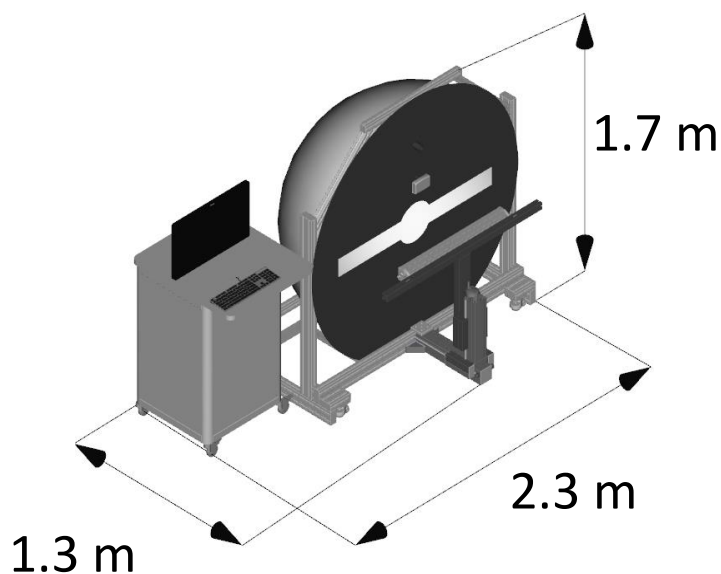
Dimensions of sample port and total width.



Transportation dimensions

SPECIFICATION – SSL SPHERE 150

Product Code	SSL IHS-1500	
Application area	General lighting sources and automotive lighting sources with hemispherical light output	
Electrical device integration	The measurement carrier includes electrical device rack holder. The rack holder is of size 19" rack integration with unoccupied 8U space for AC/DC power supply / meter)	
Height, Width, and Length	1.7 m, 1.3 m, 1.6 m, 120 kg	
Sphere inner diameter	150 cm	
Material	Aluminum with BaSO ₄ coating	
Height of optical axis	Approximately 85 cm	
Test port opening (Max size of luminous area of DUT)	SPHERE 150: 120cm x 12 cm, / r = 250mm SPHERE PR 150: 51cm x 51cm Other: please contact us for customization	
Auxiliary light source	LED	
Spectrometer	SSL SPEKTRI 80	S-680.VRW 5nm
Wavelength range	380 – 780 nm	320 – 1050 nm
Wavelength bandwidth	9-11 nm	3-5 nm
Luminous flux measurement range	10 – 100 000 lm	10 – 700 000 lm

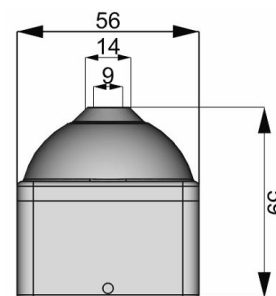


Luminous flux meter SSL SPHERE 5 F



TEST SYSTEM for Single LEDs and Miniature Light Sources

Product Code	SSL IS-50					
Application area	Spectral radiant flux, luminous flux					
Dimensions	59mm, 56mm, 56mm, 185 g					
Sphere inner diameter	5 cm					
Surface coating	BaSO ₄ (inner surface), Black (outer surface)					
Test port opening	9 mm					
Auxiliary light source (optional)	integrated into S-90.Adv (standard) S-80.Phi: External light source with bifurcated optical fiber					
Spectroradiometer	Compatible with SPEKTRI 80/90 models.					
Wavelength range	380 – 780 nm					
Bandwidth	9-11 nm					
Luminous flux range (lm)	S-80.PAR	S-80.Color	S-90.Lab	S-90.Probe	S-90.Adv	S-80.Phi
	0.3 – 450	0.1 – 200	0.5 – 200	15 – 8 000 ¹ 0.5 – 300 ²	2 – 1000	2 – 5000



SPHERE 5 F dimensions

¹Probe 1, ²Probe 2



SPHERE 5 F with
fiber optic



SPHERE 5 F with SPEKTRI 80 &
Android app



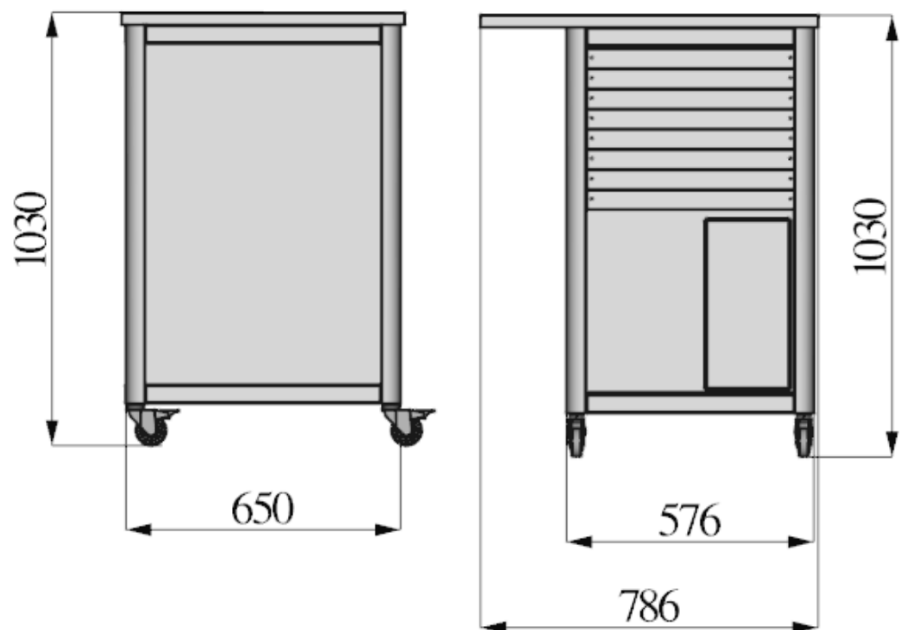
SPHERE 5 F with S-90.Lab

FULL SPHERES – SPHERE F

Product name	SPHERE 30 F	SPHERE 50 F	SPHERE 100 F	SPHERE 150 F	SPHERE 200 F
Product code	IS-300	IS-500	IS-1000	IS-1500	IS-2000
Width x Depth, Height	42 cm x 31 cm, 44 cm, 13 kg	65 cm x 51 cm, 73 cm, 30 kg	1.3 m, 1.1 m, 1.5 m, 80 kg	1.9 m, 1.6 m, 1.82 m, 130 kg Opening size: 2.6 m x 2.6 m	2.3 m x 2.1 m, 2.4 m, 180 kg Opening size: 3.3 m x 3.4 m
Sphere inner diameter	30 cm	50 cm	100 cm	150 cm	200 cm
Material	Aluminum with BaSO ₄ coating				
Height of optical axis	~25 cm	~43 cm	~94 cm	~98 cm	~130 cm
2pi port diameter	50mm	100mm	170mm	380mm	700mm
4pi port	internal plate 55mm x 70mm		internal plate 300mm x 400mm		
Auxiliary light source	LED				
Spectrometer	SPEKTRI 80			S-680.VRW 5nm	
Wavelength range	380 – 780 nm			350 – 1050 nm	
Wavelength bandwidth	9-11 nm			3-5 nm	



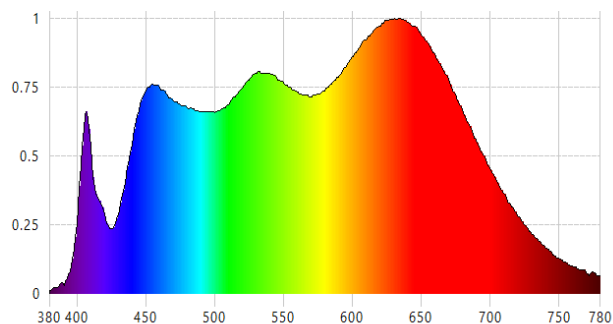
MOBILE RACK CABINET SSL RACK-2



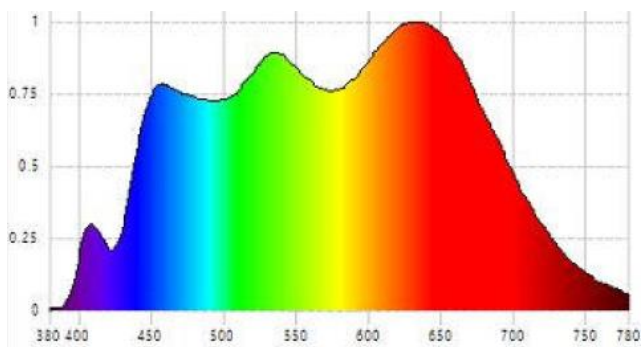
19" rack holder with Computer container and table for display

- 8U space for positioning all required power supplies
- Shelf for computer
- Lockable wheels
- Size: 78 cm x 67 cm x 103 cm
- Weight: 24 kg
- Total weight with DC power supply, computer and display approximately ~47 kg

Calibration Light Source



DEVICE CODE	SSL LS LED90-10x10.Phi_e
Luminous intensity (cd)	350 cd
Total Flux (lm)	1000 lm
Total optical power (W)	5
Input current (A)	0.7
Input power (W)	17
Stabilization time (min)	15 min
Spectrum	see below
Dimensions (W x D x H, cm)	20 x 20 x 5
Calibration quantity	Total Spectral Radiant Flux (W/nm) Luminous flux (lm)
Wavelength range	380-780 nm



DEVICE CODE	SSL LS LED90-30x2.Phi_e
Luminous intensity (cd)	350 cd
Total Flux (lm)	130 lm
Input current (A)	0.13
Input power (W)	3.2
Stabilization time (min)	15 min
Spectrum	see below
Dimensions (W x D x H, cm)	30 x 2 x 2
Calibration quantity	Total Spectral Radiant Flux (W/nm) Luminous flux (lm)
Wavelength range	380-780 nm

ORDERING INFORMATION

HEMISPHERES

SSL SPHERE 15	Integrating hemisphere spectroradiometer testing system. Includes the hemisphere, AUX LED with USB
SSL SPHERE 50	controller, Detector port.
SSL SPHERE 100	Integrating hemisphere spectroradiometer testing system. Includes the hemisphere with 2-axis sample holder
SSL SPHERE 150	(vertical axis with a lead screw and handwheel) AUX LED with USB controller, Detector port.
SSL SPHERE 175	
SSL SPHERE 100.ver	Integrating hemisphere spectroradiometer testing system. Includes the hemisphere, AUX LED with USB controller, Detector port. Motorized 2-axis sample holder. Device rack shelf integrated.

FULL SPHERES

SSL SPHERE 5 F	50mm handheld integrating sphere with 2pi port.
SPHERE 30 F	
SPHERE 50 F	
SPHERE 100 F	Integrating sphere spectroradiometer testing system. Includes the full sphere with 2pi and 4pi ports, AUX LED with USB controller, Detector port.
SPHERE 150 F	
SPHERE 200 F	

SOFTWARES

SSL SRM.IS sw	Spectral test software for CRI, CCT, lumens, spectrum, TM30-18, peak/eff WL, WL bandwidth, PAR/PPF, Color class, SDCM... Automated software routines for sphere spectral/level calibration, and for spectral self-reflection/absorption correction factor test of the sample
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SPECTRORADIOMETERS (examples below)

SSL S-90.Lab	SPEKTRI 90, Laboratory spectroradiometer. Popular for SPHERE 5 F.
SSL S-80.USB	SPEKTRI 80 spectroradiometer. Entrance optics can be modified to meet the lumen measurement range.
SSL S-80.Phi	SPEKTRI 80, Lumen spectroradiometer with bifurcated fiber and external USB powered AUX LED light source.
S-680.VRW	SP spectroradiometer. Wavelength range 350-1050nm. USB readout, optical bandwidth 3-5nm

Power meter and power sources

Several AC power meters and supplies integrated. Ask model to be quoted.

Standard lamps with traceable calibration certificates

SSL LS LED90-30x2	Calibration lamp for total spectral radiant flux, 30cm x 2cm, 130 lm, 3.2W. LED. 380-780 nm.
SSL LS LED90-10x10	Calibration lamp for total spectral radiant flux, 10cm x 10cm, 1000lm, 17W. LED. 380-780 nm.
SSL LS HAL50a	Calibration lamp for relative spectral radiant flux. 500 lm, 50W. Halogen GU5.3. 340-1050 nm.

Other options

SSL SRM.Flicker-2	Add-on Flicker package, includes Flicker software tool of SRM.IS sw, L-50 photocurrent meter, LH22.2-f10 measuring head, dual branch fiber compatible with S-680, S-80 and LH measuring heads.
SSL FL1 add-on	Includes Add-on sw tool for photometric performance of Flash Lights (NEMA FL-1 standard) and FL-1 tripod. Compatible with the SPHERE 50.
SSL RACK-2	19" rack table for computer and display, 8U space for power supplies, Lockable wheels
SSL-PC	Measurement computer with needed communication cards and installation work (drivers and software)
SSL-onsite-service-d	Test system first installation and basic training including example measurements on customer site (1-3 days)
SSL-online-service-x	Test system remote installation and training through Teams/Teamviewer (x hours)



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