

# TURNING LUMINAIRE GONIOMETER FAMILY SSL C-1R

## ALL INCLUSIVE MEASUREMENT SYSTEM

- ✓ Accurate characterization of spatial photometric, colorimetric and spectrometric features of luminaires by C or B type goniophotometer
- ✓ Luminous flux and efficacy
- ✓ Input power and power factor
- ✓ Spatial color uniformity (SDCM)
- ✓ Total correlated color temperature (CCT), color rendering index (CRI) and spectral radiant flux distribution
- ✓ No need for integrating spheres



## SAVE TIME, SPACE AND MONEY

- ✓ Fast sample mounting by a motorized sample holder and remote control
- ✓ Automatic luminous area measurements
- ✓ Reliable LDT/IES measurements in standard height rooms
- ✓ Lab space and construction costs saving solution
- ✓ User-friendly and versatile test software
- ✓ Sample holders, installation and training service, etc.
- ✓ Fast colorimetric measurements

**Solution for testing any size of luminaires for general lighting, street lighting or automotive lighting.**



**Goniometer model C-1R.1600**

- Stable base with integrated electrical device rack for space saving solution. Easy to install, thanks to castor
- Third axis for automatic adjustment of the photometric center position to the turning axis in the C type measurement.



**Goniometer model C-1R.1200**

- B type measurement for automotive lights.

**Burning position correction for B and C type measurement to meet CIE S025 standard.**



**Goniometer model C-1R.1200**

- Measurement of burning position correction for B type



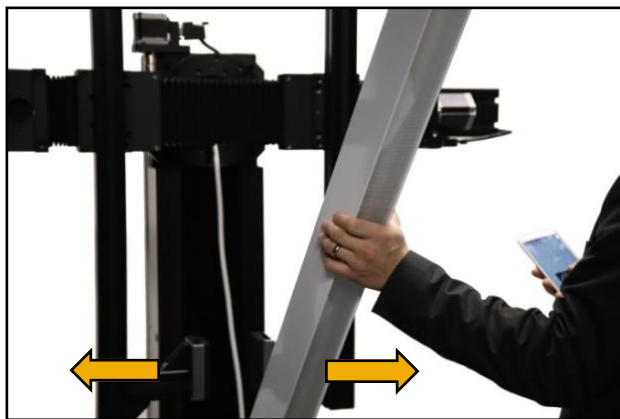
**Goniometer model C-1R.900**

- Measurement of burning position correction for C type

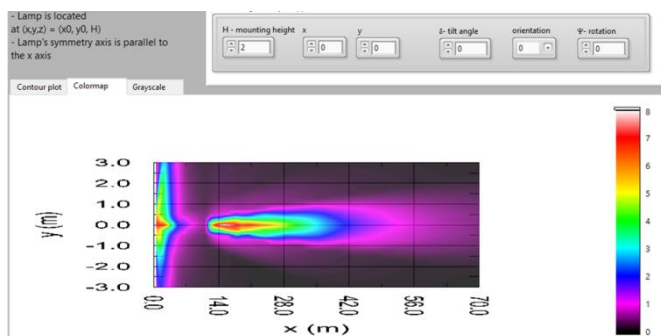
PRODUCT	SSL C-1R.900	SSL C-1R.1200	SSL C-1R.1600
Application area	up to small-medium sized SSL luminaires (e.g. LED panels / downlights)	long automotive headlamps, general lighting fixtures below 1.2m	long automotive headlamps, general lighting fixtures below 1.6m
Goniometer type	C type (B type) with horizontal optical axis one column (two columns) arrangement		
Gonio driver and controller	4 axis Stepper motor controller (19" 1U) with RS-232 / USB interface, Worm gear drive system with deep groove ball bearings		
Goniometer arrangement	Goniometer station with electrical device 19" rack integration		
19" Rack space	6U in one column	4U in one column	8U in two columns
Dimensions of the goniometer	1.23m, 0.59m, 0.51m, 50kg	1.3 m, 0.6 m, 0.8 m, 120kg	1.6 m, 1.23 m, 0.85 m, 160kg
Approx. Height of optical axis	1.1 m	1.3 m	1.5 m
Max dimension of the luminaire	B: 60cm x 50cm x 10cm, 10 kg C: 90cm x 25cm (depth), 6kg	B: 120cm x 80cm x 30cm, 30kg C: 120 cm x 80cm (depth), 20kg	B: 100cm x 100cm x 30cm, 40kg C: 160 cm x 60cm (depth), 25kg
Minimum space for lab room (WxH and Length) <sup>1</sup>	1.1 m x 1.1 m, L: 5.5 m (C type), 10 m (B type)	3.5 m x 3.5 m, L: 8 m (C type), 20 m (B type)	2.7 m x 2.7 m L: 10 m (C type), 17 m (B type)
Angular range	$\pm 175^\circ$ ( $\gamma$ and C axes)		
Resolution / Accuracy	<0.006° / <0.1° ( $\gamma$ and C axes)		

<sup>1</sup>On the basis of the photometric distances: 15 x "luminous area length" for automotive lamps (B type), 5 x "luminous area length" for C type measurements

## Easy and fast sample mounting



Mounting of a luminaire in 5 seconds using a motorized sample holder and Android-based remote control.



## NEW SOFTWARE FEATURES

- Manual and automatic beam symmetrization
- Simulations of isolux figures from headlamps at different orientations, and tilt angles.
- Custom measurement angles (non-equidistant steps)
- Automatic custom test report (pdf / html)

# C-1R – ORDERING Information

## Goniometers

SSL C-1R.900	
SSL C-1R.1200	2-axis Goniometer station (C, $\gamma$ ), Photometer SSL L-200, GPM-sw-full, Stray light tube and stand, Alignment laser,
SSL C-1R.1600	laser distance meter
SSL C-1R.2000	
SSL C-1R.900.4A	
SSL C-1R.1200.4A	4-axis Goniometer station (C, $\gamma$ ), motorized sample holder and vertical arm, Photometer SSL L-200, GPM-sw-full,
SSL C-1R.1600.4A	Stray light tube and stand, Alignment laser, laser distance meter
SSL C-1R.2000.4A	

## Sample holders

SSL-SH-xxx	Sample holder of linear LUT (xxx specified by the gonio model): two alternatives attaching mechanisms: (1) by squeezing the LUT with four angle brackets (2) by screwing the LUT using square nuts (M4/M6/M8) in the grooves (angle brackets are removed)
SSL-SH-park	Sample holder of park lights : Mounting by squeezing a park light from its edges, max. Ø70 cm, a top of the park light can be located into center hole diameter 12 cm
SSL-SH-panel	Sample holder of panel lights and down lights : Mounting by squeezing a LED panel from its edges, compatible for different sizes LED panels with thicknesses of >7.5 mm
SSL-SH-street	Sample holder of street luminaires with pole mounting system : 60mm tube, fixation by two screws in radial orientation, max. distance between mounting hole and the roof of the LUT 13cm

## Options

SSL-B-xxxx	B type goniometer option to be connected onto a goniometer station. xxxx specified by the base gonio model.
SSL-black	Special low reflectance black material for a back wall and floor of gonio laboratory room
SSL-computer	Measurement computer with needed communication cards and installation work (drivers and software)
SSL-GSM	Goniospectrometer measurement system: Spectrometer (6nm bandwidth, in 380-760nm) with Tripod and mechanics adapters, GSM sw measures all the total and angular dependent spectral and colorimetric quantities
SSL C-400	Tristimulus Colorimeter with USB interface

## Power meter and power sources

SSL-pow-2	Automatic input power measurement in GPM software, Chroma 66201, AC plug adapter, 19" 2U
SSL-AC-2	APS-7050, 500W: a stable programmable AC power & automatic powering through the GPM software, 19" 2U
SSL-DC sw	DC power control software: Automatic control and measurement of input power together with the light output
SSL-DC-750	TDK GEN 750W, programmable DC power supply, 19" 1U

## Others

SSL-SMCF	Includes the spectral calibration of the photometer
SSL-BPC	Setup for burning position corrector including a related software tool
SSL-service	Goniometer system first installation and basic training including example measurements on customer site (2-3 days)