SSL **LUMI 30 P**
Goniophotometer

- ✓ Superfast turning goniometer
- ✓ For small lamps and LED components
- ✓ Portable – compatible PELI 1660 case

Max DUT size:
Length 0.3m
Depth 13cm
Weight 3kg

SSL **LUMI 30 P**
Dimensions

Overall dimensions

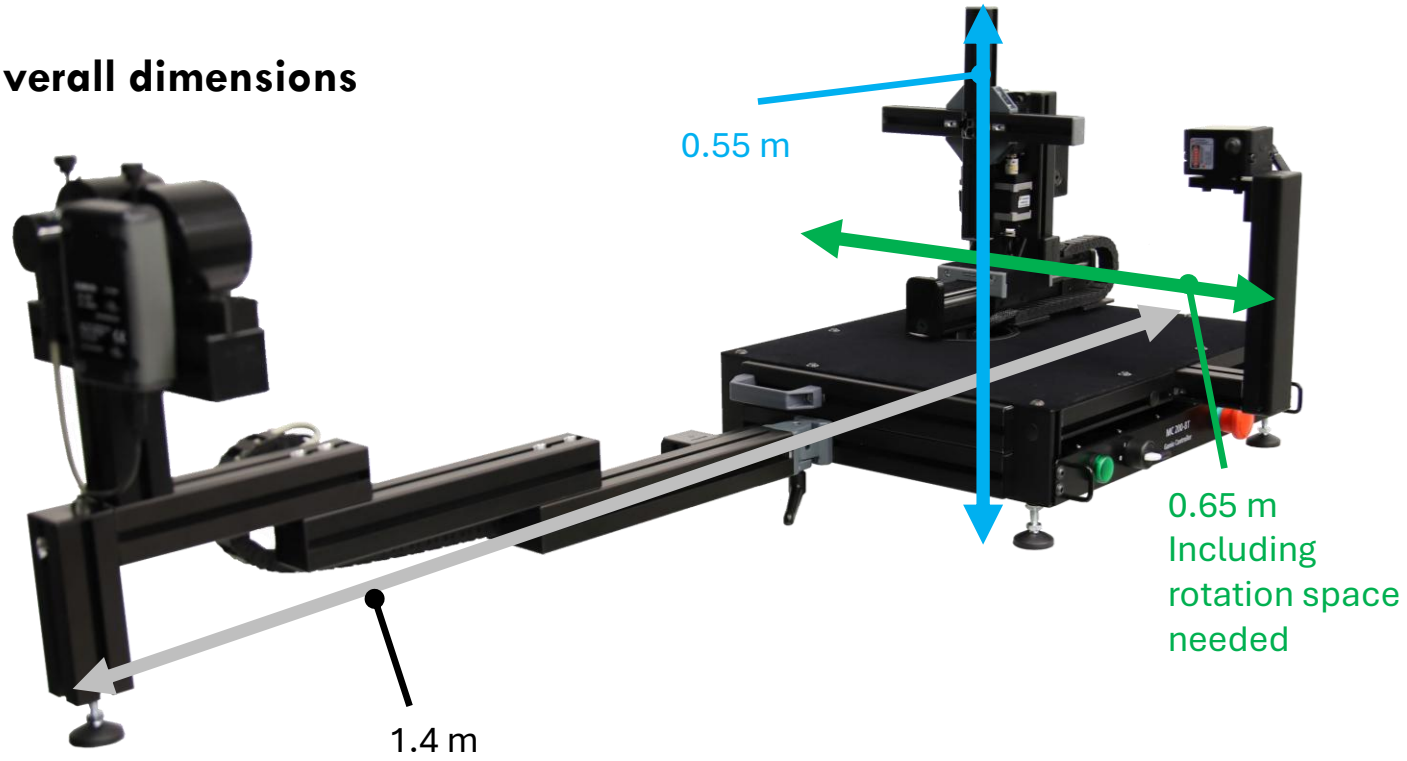
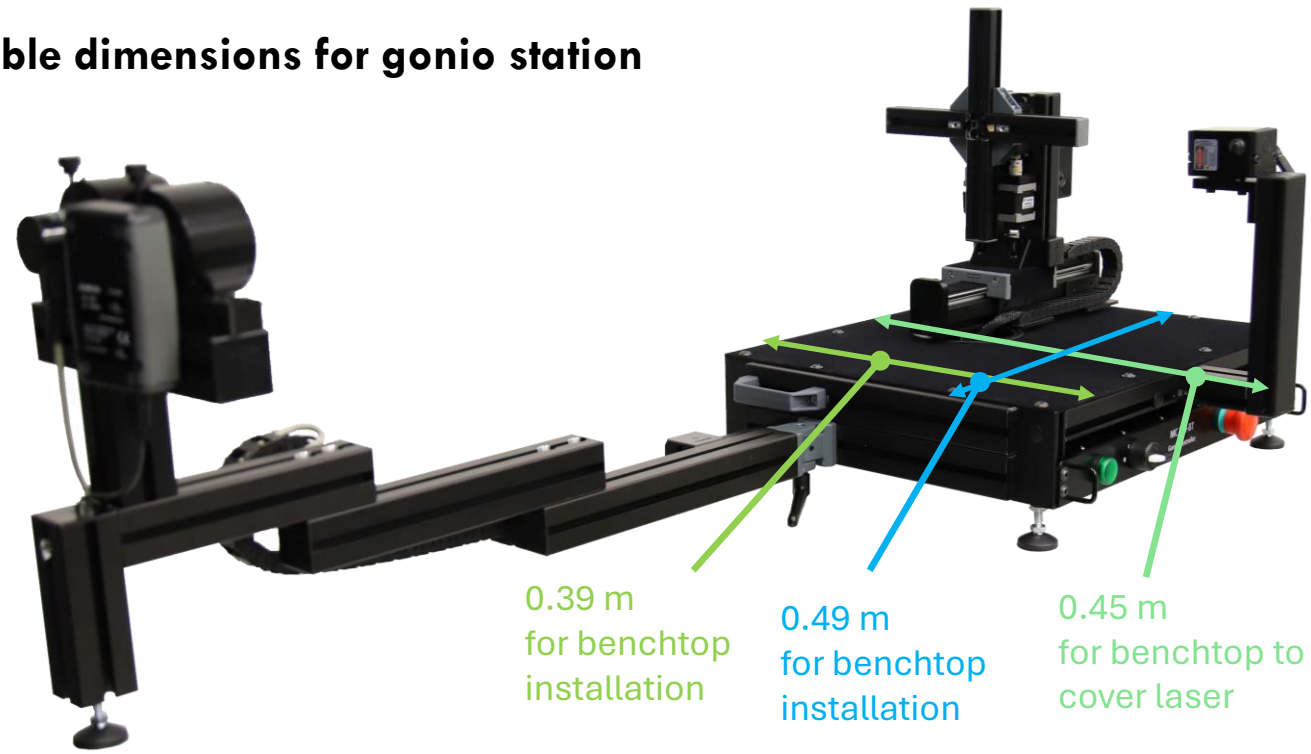
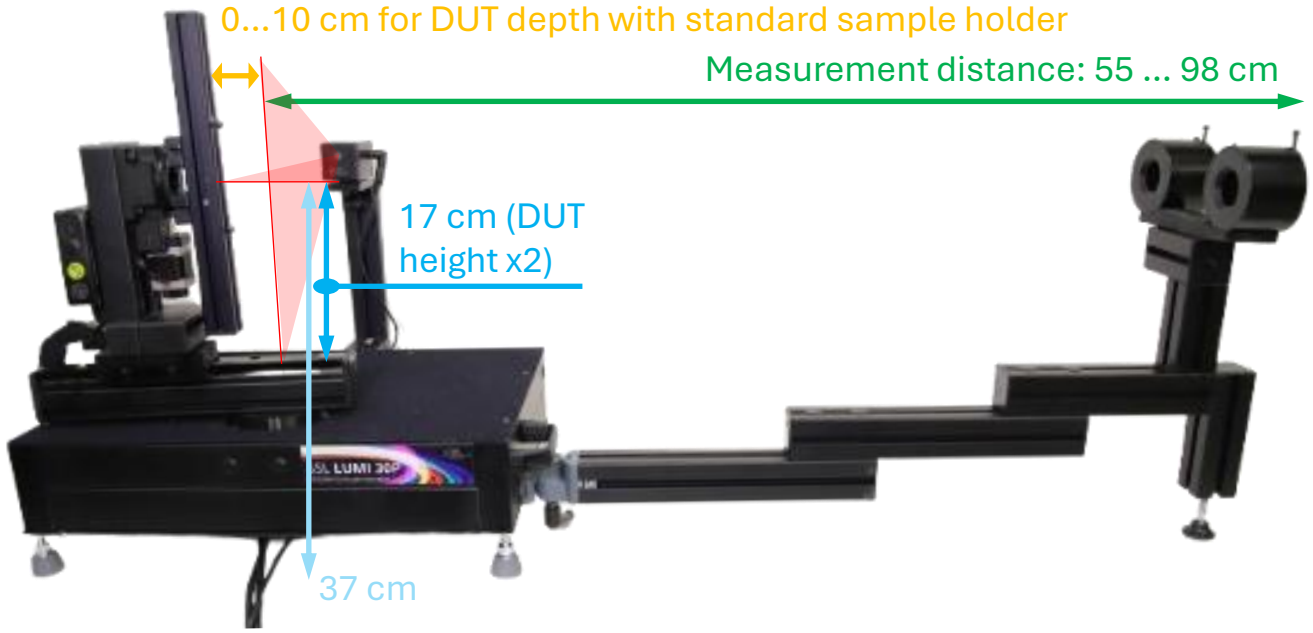


Table dimensions for gonio station



SSL **LUMI 30 P** - Datasheet

PRODUCT	SSL **LUMI 30 P**
Product code	C-1R.3-30-13
Application area	Small downlights, LED lamps, Torch lamps, LED PCBs
Goniometer type	C type with horizontal optical axis one column arrangement
Gonio controller	2 axis Stepper controller (19" 1U, USB) integrated
Alignment laser	Red cross-line laser (5mW)
Arrangement	Goniometer station with electrical device 19" rack integration
Gonio dimensions	45cm x 55cm, h 42cm, 15kg, Rotating diameter Ø56cm.
Height of optical axis	0.37 m
Measurement distance	55 cm – 100 cm
C-DUT[1]: D x T, m	0.3m x 0.13m, 3kg
Min. space (WxH, L)	65 cm x 55 cm, 1.4 m
Min. table size	36 cm x 49 cm
Angular range	±180° (γ axis), 0-360° (C plane axis)
Resolution / Accuracy	<0.006° / <0.1° (γ and C axes)
Measurement time, LID	Even 10 s / C plane => 5 min for LID measurement with C_{step} = 5°
Measurement time, SRM	depends on DUT intensity, typ. 90 s (angle steps acc. IES LM 79)



Measurement Ranges - Goniophotometer

Photometer		**SSL LC-800.1**		
Measuring head		SSL LH1010-f3, Silicon photodiode with V(λ) filter. The spectral match to CIE photopic sensitivity curve f_1'<3% (class A)		
Min. luminous intensity accuracy		>± 2.5% (k=2), depends on the angular beam shape of DUT		
Luminous flux accuracy		± 3% (k=2)		
Luminous intensity range (measurement distance)		0.001 – 600 000 cd (1 m) 0.009 – 5 500 000 cd (3 m) 0.03 – 15 000 000 cd (5 m) 0.07 – 39 000 000 cd (8 m) 0.10 – 61 000 000 cd (10 m) 0.23 – 130 000 000 cd (15 m) 0.41 – 240 000 000 cd (20 m) 2.6 – 1 500 000 000 cd (50 m)		
Luminous flux range	Test distance	Isotropic radiation (uniform over the γ range ±180°)	Lambertian radiation, γ range ±90°	Narrow beam radiation with 40° beam angle [$\cos^n(\theta)$ type beam], γ range ±90°
	1 m	0.01 lm – 7.2 E+6 lm	0.03 – 1.8E+6 lm	0.006 – 3.0E+5 lm
	3 m	0.1 lm – 6.6E+7 lm	0.3 – 1.6E+7 lm	0.055 – 2.8E+6 lm
	5 m	0.3 lm – 1.8E+8 lm	0.9 – 4.5E+7 lm	0.15 – 7.6E+6 lm
	8 m	0.8 lm – 4.6E+8 lm	2.0 – 1.1E+8 lm	0.39 – 1.9E+7 lm
	10 m	1.2 lm – 7.3E+8 lm	3.2 – 1.8E+8 lm	0.61 – 3.0E+7 lm
	15 m	2.8 lm – 1.5E+9 lm	7.1 – 3.9E+8 lm	1.4 – 6.6E+7 lm
	20 m	4.9 lm – 2.8E+9 lm	13 – 7.2E+8 lm	2.4 – 1.2E+8 lm
	50 m	31 lm – 1.8E+10 lm	79 – 4.5E+9 lm	15 – 7.6E+8 lm

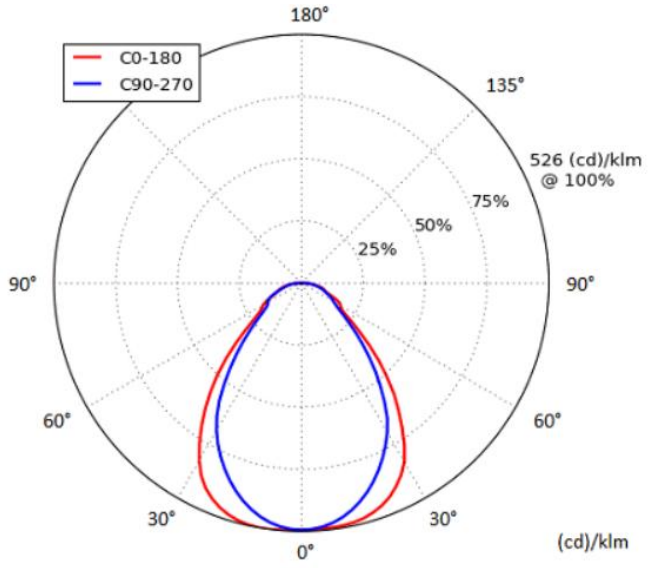
Measurement Ranges - Goniophotometer

Photometer		**SSL L-51**		
Measuring head		SSL LH66-f3, Silicon photodiode with V(λ) filter. The spectral match to CIE photopic sensitivity curve f_1'<3% (class A)		
Min. luminous intensity accuracy		>± 2.5% (k=2), depends on the angular beam shape of DUT		
Luminous flux accuracy		± 3% (k=2)		
Luminous intensity range (measurement distance)		0.003 – 3 000 cd (1 m) 0.027 – 27 000 cd (3 m) 0.08 – 75 000 cd (5 m) 0.19 – 190 000 cd (8 m) 0.30 – 300 000 cd (10 m) 0.68 – 670 000 cd (15 m) 1.20 – 1 200 000 cd (20 m) 7.5 – 7 500 000 cd (50 m)		
Luminous flux range (lm)	Test distance	Isotropic radiation (uniform over the γ range ±180°)	Lambertian radiation, γ range ±90°	Narrow beam radiation with 40° beam angle [$\cos^n(\theta)$ type beam], γ range ±90°
	1 m 3 m 5 m 8 m 10 m 15 m 20 m 50 m	0.04 – 3.6E+4 0.3 – 3.2E+5 0.9 – 9.0E+5 2.3 – 2.3E+6 3.6 – 3.6E+6 8.1 – 8.0E+6 14 – 1.4E+7 90 – 9.0E+7	0.1 – 9.0E+3 0.8 – 8.1E+4 2.3 – 2.3E+5 6.0 – 5.7E+5 9.3 – 9.0E+5 21 – 2.0E+6 37 – 3.6E+6 240 – 2.3E+7	0.02 – 1.5E+3 0.2 – 1.4E+4 0.5 – 3.8E+4 1.2 – 9.7E+4 1.8 – 1.5E+5 4.1 – 3.4E+5 7.2 – 6.1E+5 45 – 3.8E+6

C Type Goniophotometer
- Luminous intensity Parameters

- ✓ File converter (e.g.IES>LDT)
- ✓ IES, LDT, TM-33 XML file output
- ✓ LDT editor
- ✓ Up & Down combination tool
- ✓ Beam symmetrization tool

Wide range of spatial illumination related analysis parameters, some examples below:



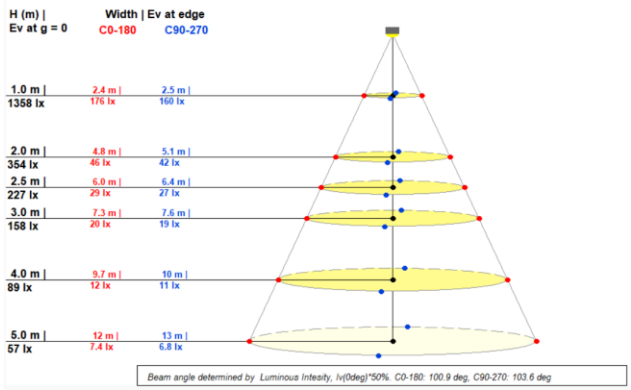


Fig. **Dynamic cone diagram.**

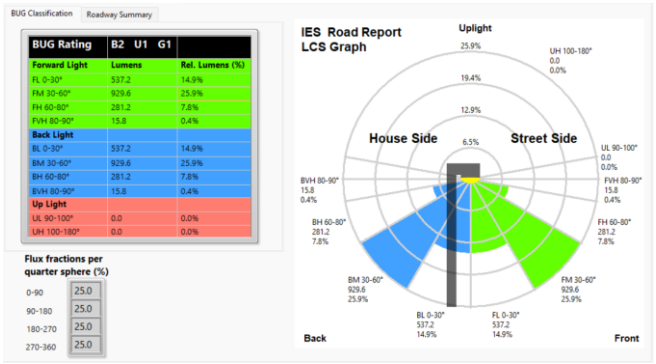


Fig. **BUG (back,up, glare) diagram.**

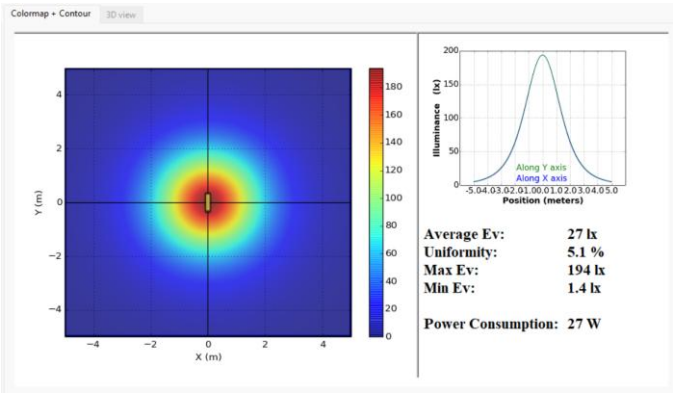


Fig. **Spatial Illumination tool. Units: umol/s/m2, mW/m2 and lx. Distances, nr of lamps etc. can be changed.**

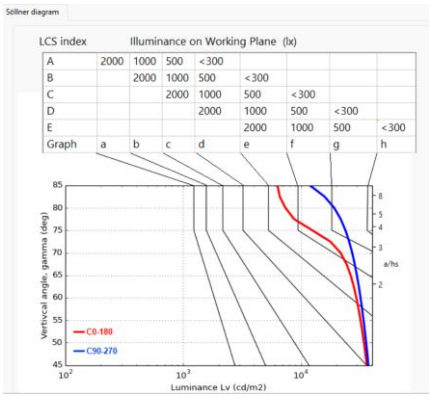
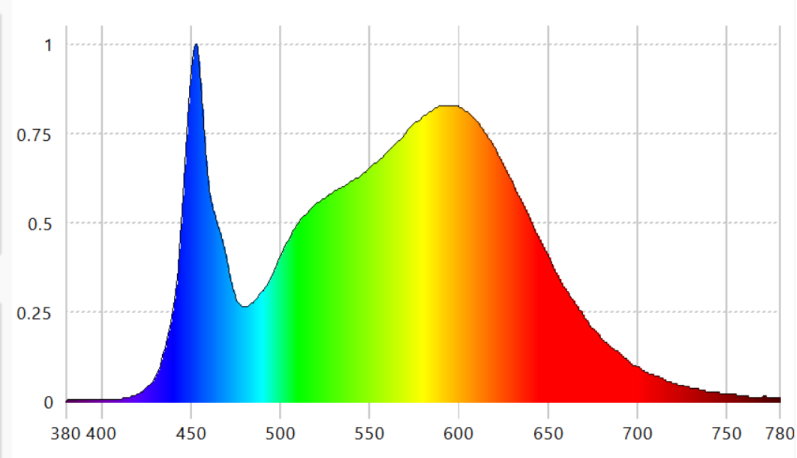


Fig. **Söllner diagram for luminance.**

C Type Goniophotometer
- Color Measurement Features

- ❑ Total integrated values:
  - ✓ CCT, CRI, TM30-18
  - ✓ CIE1976,CIE1931
  - ✓ WL Bandwidth analysator
  - ✓ Optical power
- ❑ Angular dependent values:
  - ✓ CIE 1976, CCT, CRI-Ra
  - ✓ Peak WL, Bandwidth
  - ✓ Relative/absolute spectrum
  - ✓ Radiant intensity distribution (LDT/IES files in units of mW/sr or µmol/s/sr)

Wide range of analysis parameters available, some examples are shown here:



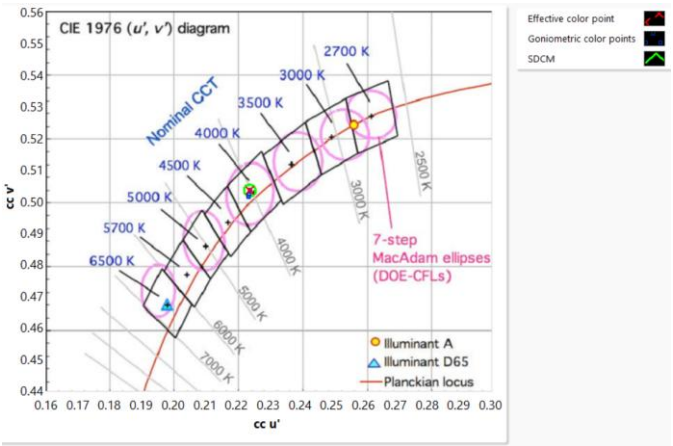


Fig. **Spatial color unuformity (SDCM).**

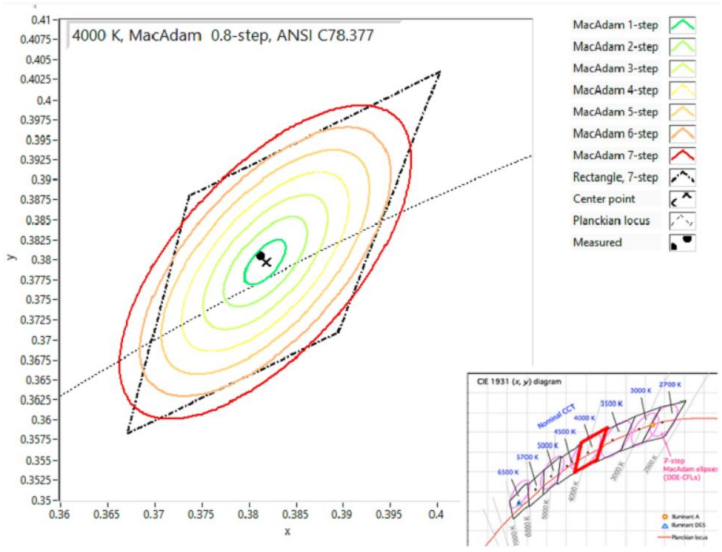


Fig. **Color class SDCM value of target color point.**

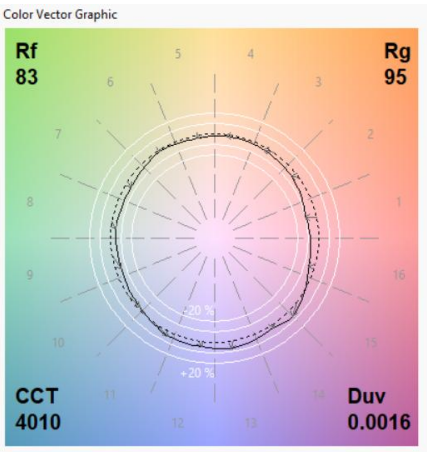


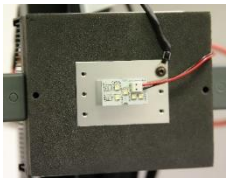
Fig. **Color vector figure of TM-30-18 color rendering metrics,**

SSL Goniophotometer - Accessories

T-3K.BT 3-channel K-type Thermometer

- ✓ Ambient temperature
- ✓ LED board temperature
- ✓ Tc point temperature
- ✓ Standards require ambient temperature to be 25.0°C at tolerance of ±1.2°C (CIE S025) or of 1.0°C (LM-79)

TEC-40W, Thermo-electric cooler



Temperature control of LED light source in Goniophotometer and integrating sphere tests

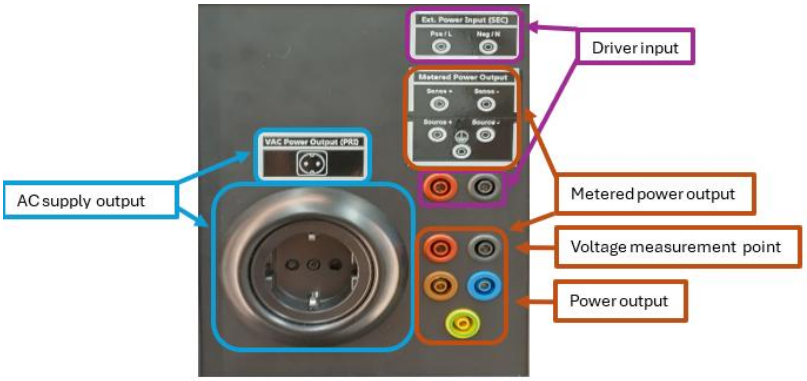
- Case 1: Reference light source with thermally stabilized output
- Case 2: Characterization of light source as a function of temperature

DC-xxx, Programmable DC power supply integration

- ✓ DC-sw sweep for automatic measurement of luminous output as a function of drive current/voltage
- ✓ Banana connector panel with 4-wire electrical connection for reliable and accurate electrical power measurements
- ✓ Compatible e.g. with TDK and GW Instek brand power supplies.

SSL ACP-DCM, Programmable AC suppling and DC metering system

NEW



- ✓ Stable AC power supply & Automatic switching
- ✓ Multiple operation modes e.g. solar battery lamps / DC lamps / AC driver lamps
- ✓ Measurements parameters
  - AC input power, V, I, PF
  - DC output power, V, I
  - LED Driver efficiency

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Photometric Testing Efficiency