

SYSTEMS & SOLUTIONS

LGS Goniometer System Solutions



**For SSL/LED
Light Sources**

01 \ Turnkey solution for high-end analysis of LED & SSL products

LGS goniometer series

- ▲ Precise determination of luminous intensity distribution and luminous flux
- ▲ Angle-dependent analysis of spectral and colorimetric quantities
- ▲ In conformity with the C, γ coordinate system and international measurement standards (CIE S025/ EN13032-4)
- ▲ Unique combination of a fast photometer and the world-wide recognized reference spectroradiometer CAS 140D

Easy-to-use and versatile Software

- ▲ Intuitive control of the measurement, including power supply and electric measurement of the sample
- ▲ Configurable switch-on and stabilization routines for the sample for recurring measurement tasks
- ▲ Extensive and adaptable measurement logs, reporting functions and data export (Excel, EULUMDAT- and IES-file formats)
- ▲ IES TM-30, Unified Glare Rating, Average Illuminance diagram, Iso-Lux-diagram, energy efficiency classification, Zhaga evaluation etc.

Technical overview



LGS Series	LGS 1000	LGS 650	LGS 350
Features	For large SSL products	For medium to large SSL products	For medium SSL products and large LED modules
Travel range C-axis and γ -axis	50°/s; 30°/s	36°/s; 34°/s	36°/s; 34°/s
Resolution of the angle encoder	0.01°	0.01°	0.01°
Reproducibility of C- and γ -axis (max. load)	$\leq 0.2^\circ$; $\leq 0.1^\circ$	$\leq 0.1^\circ$; $\leq 0.05^\circ$	$\leq 0.1^\circ$; $\leq 0.05^\circ$
Dimensions (H x W x D)	1852.5 x 1492 x 1798 mm ³	1732 x 502 x 727 mm ³	1432 x 500 x 650 mm ³
Weight	660 kg	101 kg	95 kg
Max. sample size	2000 mm diameter	1340 mm diameter	740 mm diameter
Max. sample weight	50 kg	10 kg	8 kg
Safety	Safety laser scanner and emergency stop switches	Safety edge on swivel arm and emergency stop switches	Safety edge on swivel arm and emergency stop switches
Alignment Laser	C- and γ -axis	C-axis	C-axis
Accessories / Options	- Flux integrator option - Position correction option - AC and DC power supplies - Powermeter - Sample holders	- AC and DC power supplies - Powermeter - Sample holders	- AC and DC power supplies - Powermeter - Sample holders

02 \\ Components and accessories

Key components

Applications



DSP photometer – for ultra-fast “on-the-fly” measurements

- ▲ Highest accuracy (class L) photometer conforming to DIN 5032-7, CIE 69/121 and EN 13032-1
- ▲ Wide measuring range of 0.1 mlx to 200 klx
- ▲ Excellent stability and lowest noise level due to detector cooling
- ▲ Integrated color display with touchscreen



CAS spectroradiometer – for spectral and color measurements

- ▲ Used world-wide as a reference instrument
- ▲ High-end CCD detector, cooled and back-illuminated
- ▲ Test certificate according to ISO 17025 (incl. color quantities)
- ▲ Exchangeable USB, PCIe or Ethernet interface
- ▲ “Plug & play” accessory identification and integrated density filter wheel

Accessories

Applications



Luminous flux integrator (only for LGS 1000)

- ▲ Ultra compact setup that makes luminous flux measurements faster and easier
- ▲ Suitable for position sensitive samples (detector moves around the test specimen on a spherical envelope surface)
- ▲ Precise determination of photometric, spectroradiometric, and colorimetric quantities



Power supplies / Sample holders / Alignment

- ▲ Easy-to-use interface to the sample terminal of the goniometer
- ▲ System integrated AC/DC power supply units and power meters
- ▲ Connection of customer-owned power supplies and power meters
- ▲ Comprehensive range of mounting accessories: universal sample holder, lamp holder for standardized sockets (e.g. E27), etc.
- ▲ Alignment laser for correct positioning of the test specimen

3 \\ Order information

Order number	Description
Goniometer	
LGS1000-100	LGS 1000 Goniometer; separate 19" rack with control and monitor modules; without photometer or spectroradiometer
LGS650-100	LGS 650 Goniometer with stable base; integrated 19" rack for LGS Controller (includes stepper-motor control and space for another 2 modules); without photometer or spectroradiometer
LGS350-100	LGS 350 Goniometer with stable base; integrated 19" rack for LGS Controller (includes stepper-motor control and space for another 2 modules); without photometer or spectroradiometer
LGS350-110	LGS 350 Goniometer in benchtop version; separate 19" rack for LGS Controller (includes stepper-motor control and space for one further module); without photometer or spectroradiometer
Mandatory goniometer accessories	
LGS-410	Stand with mount for a stray light tube; for LGS 350
LGS-415	Stand with mount for a stray light tube; for LGS 650 / LGS 1000
LGS-440	Stray light tube with $\pm 4.5^\circ$ field of view; for measuring luminous intensity distribution in the far field; for optical probe EOP-120 or photometer head
AC current sources and power meters	
W-310	AC current source 250 VA
W-310-1	AC current source 250 VA and expanded voltage range 0-500 V AC
W-320	AC current source 500 VA
W-320-1	AC current source 500 VA and expanded voltage range 0-500 V AC
W-330	AC current source 1000 VA
W-330-1	AC current source 1000 VA and expanded voltage range 0-500 V AC
W-410	Measurement unit for determining electrical quantities
Photometer	
LGS-610	Photometer comprising class L photometer head and DSP measuring amplifier with digital signal processor for connecting to the LGS Controller
LGS-620	Cosine corrected photometer comprising class L photometer head and DSP measuring amplifier with digital signal processor for connecting to the LGS Controller
LGS-630	DSP 200 photometer (class L) with integrated photometer head
CAL-630	Factory illuminance calibration of photometer with final test and test certificate according to DIN EN ISO 17025
CAL-630-1	Factory illuminance calibration of photometer including factory test report
Spectroradiometer with optical probe	
CAS140D151U1A	CAS 140D Compact Array Spectrometer; Model VIS; 360 – 830 nm; 1024 x 128 pixel back-illuminated CCD detector; 2.2 nm spectral resolution (100 μ m slit); 0.5 nm/pixel data point interval
EOP-120	Optical probe for irradiance; medium light throughput and cosine correction from 190 – 1700 nm
OFG-414	Fiber bundle with ferrule; 1.5 mm diam., 2 m long; 380 – 1600 nm
PLG-411	Fiber bundle adapter; 300 – 2200 nm, optimized for VIS
CAL-100	Factory irradiance calibration of spectrometer; with final test and test certificate according to DIN EN ISO 17025
Software	
SW-130	SpecWin Pro spectral software
SW-135	SpecWin Pro language pack for Chinese (traditional and simplified) and Japanese
SW-150	SpecWin Pro Plug-In for AC-sources W-3XX and powermeter W-410