SORAA brilliant™ HL

MR16 GU10 7.5W

Output Range	575 - 630 lumen
Beam Angle Range	10°, 25°, 36°, 60°
Color Metrics	CCT: 2700K, 3000K Color Rendering CIE Metrics: CRI 90, R9 50
Application	**This lamp is suitable for use in fully enclosed fixtures, subject to the maximum heatsink temperature limits stated in this data sheet.** Halogen replacement for indoor applications.

TITLE 20 pending · flicker free · dimmable · IR · UV · 120V AC · GU10 · snap compatible

SORAA BRILLIANT HL™

The Soraa Brilliant HL single-source COB lamp combines Soraa's world-class optics design and driver technology with a photopically efficacious LED

SORAA POINT SOURCE OPTICS™

With a point source and sophisticated folded optics, Soraa creates very controlled beam angles from 10 to 60 degrees, in form factors as challenging as the compact GU10 resulting in smooth uniform beams and crisp shadows

FLICKER

Soraa lamps demonstrate low levels of flicker in both dimmed and undimmed states

ENERGY EFFICIENCY AND LONG LIFE

85% more energy efficient than standard halogen lamps

Typical payback of one year or less

Rated lifetime to L70: 35,000hrs

Warranty: 3yrs or 25,000hrs whichever comes first

Warranty information: soraa.com/resources/legal

CERTIFICATIONS

Title 20 certification **pending**, UL/CUL, FCC Title 47 Part 15B, RoHS

c UL us · RoHS · TITLE 20 pending

HIGHLY COMPATIBLE

Geometrically compatible with standard fixtures and suitable for damp locations

This lamp is suitable for use in fully enclosed fixtures, subject to the maximum heatsink temperature limits stated in this data sheet. A list of qualified enclosed fixtures can be found at www.soraa.com/resources

Works with trailing edge and leading edge phase cut dimmers (see www.soraa.com/resources)

INTENDED USE AND APPLICATIONS

Intended for use in GU10 compatible recessed downlights, track lighting and other indoor and outdoor applications

Soraa lamps are designed to safely turn down in any thermal environment not conducive to minimum airflow or proper ventilation

ACCESSORIES

Narrow spot compatible with the Soraa SNAP System™

GENERAL SPECIFICATIONS

Form Factor

Width: 49.9mm (1.96")

Height: 53.5mm (2.10")

Weight: 61g

Operating Temperature

Minimum: -40°C (ambient)

Typical: 85°C - 95°C (base)

Maximum: 100°C (base)

Electrical

Wattage: 7.5W

Power factor: 0.93

Voltage: 120V +/- 12V

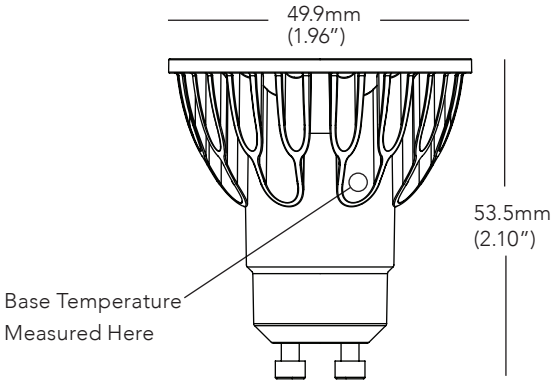
Frequency: 50/60Hz

Dimming

Dimmable to <20%

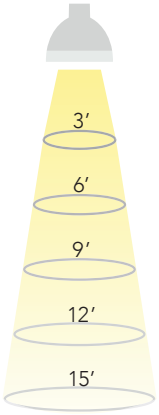
SORAA® SIMPLY PERFECT LIGHT

DIMENSIONS



10 DEGREE BEAM

Beam Dia at 50% CBCP (ft)	Field Dia at 10% CBCP (ft)	Foot-candles (% of CBCP)
0.5	1.1	11.1%
1.0	2.1	2.8%
1.6	3.2	1.2%
2.1	4.2	0.7%
2.6	5.3	0.4%

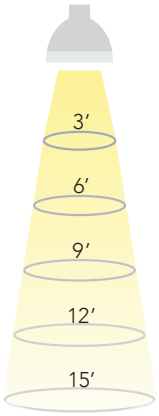


25 DEGREE BEAM

Beam Dia at 50% CBCP (ft)	Field Dia at 10% CBCP (ft)	Foot-candles (% of CBCP)
1.3	2.1	11.1%
2.7	4.1	2.8%
4.0	6.2	1.2%
5.3	8.3	0.7%
6.7	10.3	0.4%

36 DEGREE BEAM

Beam Dia at 50% CBCP (ft)	Field Dia at 10% CBCP (ft)	Foot-candles (% of CBCP)
1.9	3.1	11.1%
3.9	6.1	2.8%
5.8	9.2	1.2%
7.8	12.2	0.7%
9.7	15.3	0.4%



60 DEGREE BEAM

Beam Dia at 50% CBCP (ft)	Field Dia at 10% CBCP (ft)	Foot-candles (% of CBCP)
3.5	5.4	11.1%
6.9	10.8	2.8%
10.4	16.2	1.2%
13.9	21.6	0.7%
17.3	27.0	0.4%

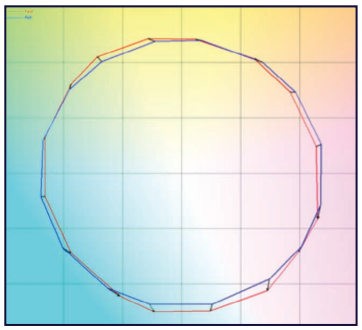
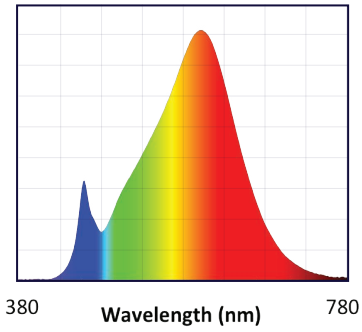
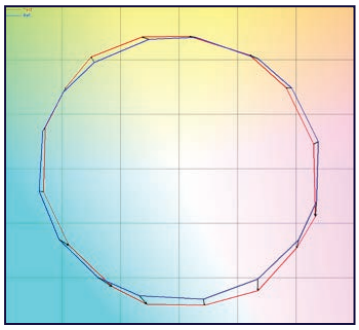
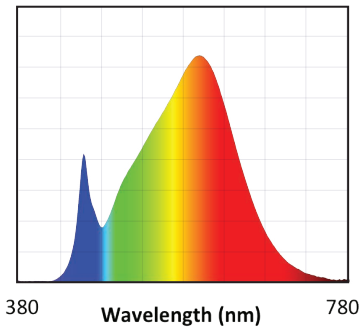
Note: Footcandles may be calculated by multiplying the CBCP of the desired model number by the percentage in the tables above

SPECIFICATIONS BY MODEL NUMBER* SORAA LED MR16-GU10 7.5W

Model #	Product Code	CCT (K)	Beam Angle	Field Angle	CBCP (Cd)	Halogen Equiv	Total Flux (Lm)	Efficacy (Lm/W)	CRI	McA	SNAP	Title 20
BRILLIANT HL SERIES												
SM16GA-07-10D-827-H1	08742	2700	10	20	8000	75	575	77	90	3	Yes	pending
SM16GA-07-25D-827-H1	08744	2700	25	40	3170	75	600	80	90	3	–	pending
SM16GA-07-36D-827-H1	08746	2700	36	57	1550	75	600	80	90	3	–	pending
SM16GA-07-60D-827-H1	08748	2700	60	84	610	75	600	80	90	3	–	pending
SM16GA-07-10D-830-H1	08750	3000	10	20	8400	75	600	80	90	3	Yes	pending
SM16GA-07-25D-830-H1	08752	3000	25	40	3300	75	630	84	90	3	–	pending
SM16GA-07-36D-830-H1	08754	3000	36	57	1650	75	630	84	90	3	–	pending
SM16GA-07-60D-830-H1	08756	3000	60	84	650	75	630	84	90	3	–	pending

CCT: Correlated Color Temperature **McA**: White Point Accuracy in McA step

***Specifications are at stable warm operating conditions (25°C ambient)**

SERIES/CCT	COLOR ACCURACY	SPECTRAL POWER DISTRIBUTION
BRILLIANT HL 2700K	 Rf: 90, Rg: 98, Rfh1: 85	 CRI: 90, R9: 50
BRILLIANT HL 3000K	 Rf: 90, Rg: 98, Rfh1: 85	 CRI: 90, R9: 50

Rf: TM-30 metric measuring color fidelity (whether colors are similar to those under natural light). Rf is a more accurate version of the CRI Ra. Rf is 100 for natural light.
Rg: TM-30 metric measuring color gamut (whether colors are more saturated than under natural light). Rg is 100 for natural light.
Rfh1: TM-30 metric measuring color fidelity for red tones. Rfh1 is a more accurate version of the CRI R9. Rfh1 is 100 for natural light.

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SORAA

Electrical compatibility – BRILLIANT HL MR16-GU10 7.5W 120V lamps - North America

Table of contents

General compatibility guidelines

Scope

This document provides the basic guidelines regards electrical compatibility of SORAA Brilliant HL 120V MR16 GU10 7.5W lamps and compatibility tables.

Dimmer Compatibility

SORAA Brilliant HL 120V MR16 GU10 lamps are made to work with trailing edge (reverse phase) and leading edge (forward phase) phase cut dimmers.
However, the use of trailing edge dimmers is preferred and will show in general better behavior .
Dimmer compatibility tables are available on this document.
The percentages for each dimmer combination are the percentage of light output that we were able to dim down to without seeing any problems like flicker/shimmer. Anything 30% or above is considered not compatible and you will see a "NC" in a grey cell.
There might be a minimum wattage load on the dimmer. If this minimum load is not met, there might be compatibility issues.

Maximum number of lamps on a dimmer

The following need to be considered when determining the amount of lamps on a dimmer.

1. SORAA tests have been carried out with 1 lamp unless stated otherwise.
2. There is a repetitive, very brief current spike the LED lamp will see twice per cycle. This current spike has to be provided by the dimmer, and will affect the recommended lamp load on each dimmer.
3. Ultimately the dimmer manufacturer is the only one with authority to rate their product, but SORAA can give an Engineering estimate.
4. We recommend to use a 5.0 de-rating factor for incandescent/halogen dimmers loaded with our 120V lamps.
   For example for a 500W dimmer it would mean 500/5 = 100W of LED, so an estimated maximum of 13 lamps 7.5W.

Disclaimer

Compatibility tests are conducted by Soraa only as guidance for the user.
All tests are conducted under bench conditions; results may differ from test results depending on conditions at the application site.
Results may vary due to variability in component choices and manufacturing processes by the transformer and dimmer manufacturers.
For more information on the dimmers/transformers, please find specs on the manufacturer's website.

SORAA BRILLIANT HL GU10 120V 7.5W - DIMMER COMPATIBILITY LIST - North America

Dimmer Manufacturer	Dimmer family	Dimmer Model	Dimming phase	Number of lamps per dimmer tested	Dim (%)	Comments
Cooper	SKYE	SLC03P	Forward	3	NC	
Creston		DIN-1DIMU4	Reverse	6	5%	
Legrand	Radiant	RH703PTU	Reverse	3	8%	
Leviton	Decora	DSL06-1LZ	Forward	3	6%	
Leviton	Illumatech 150	R50-IPL06-10M	Forward	3	4%	
Leviton	Decora Sureslide	R12-06672-1LW	Reverse	3	12%	
Leviton	SureSlide	nr. 6674	Forward	3	5%	
Lutron	Caseta	PD-3PCL	Forward	3	4%	
Lutron	Caseta	PD-5NE	Reverse	6	8%	
Lutron	Caseta	PD-6WCL	Forward	3	4%	
Lutron	Caseta	PD-10NXD	Leading	3	4%	
Lutron	Diva	DVCL-153P	Forward	6	5%	
Lutron	Diva	DVELV-300P	Reverse	6	5%	
Lutron	Diva	DVLV-600P	Forward	6	NC	
Lutron	Grafik Eye QS	QSGRJ-3P	Forward	6	4%	
Lutron	Interface	PHPM with Grafik Eye QS	Reverse	6	0%	
Lutron	Maestro	MA-600-WH	Forward	3	NC	
Lutron	Maestro	MACL-153M	Forward	6	10%	
Lutron	Maestro	MAELV-600	Reverse	3	2%	
Lutron	Maestro	MALV-600-WH	Forward	3	NC	

SORAA BRILLIANT HL GU10 120V 7.5W - DIMMER COMPATIBILITY LIST - North America

Dimmer Manufacturer	Dimmer family	Dimmer Model	Dimming phase	Number of lamps per dimmer tested	Dim (%)	Comments
Lutron	Maestro Wireless	MRF2-6ND-120	Forward	3	2%	
Lutron	Maestro Wireless	MRF2-6ELV-120	Reverse	3	2%	
Lutron	Maestro Wireless	MRF2S-6CL	Forward	3	5%	
Lutron	Nova T	NTELV-600	Reverse	3	7%	
Lutron	Radio Ra2	RRD-10D	Forward	3	20%	
Lutron	Radio Ra2	RRD-6NA	Reverse	6	2%	
Lutron	Remote Power Modules / Homeworks	HW / LP-RPM-4A-120	Reverse	6	6%	
Lutron	Remote Power Modules / Homeworks	HW / LP-RPM-4U-120	Forward	3	0%	
Lutron	Skylark	SLV-600P	Forward	6	NC	
Lutron	Skylark	SELV-300P	Reverse	6	6%	
Lutron	Skylark Contour	CTCL-153P	Forward	3	8%	
Lutron	Toggler	TGCL-153PH-WH	Forward	3	4%	
Marlin	Stellar RMS 4	Stellar RMS 4	Reverse	6	4%	

Notes:

Compatibility tests are conducted by Soraa (unless stated otherwise) only as guidance for the user

All tests are conducted under bench conditions; results may differ from test results depending on conditions at the application site

Results may vary due to variability in component choices and manufacturing processes by the dimmer manufacturer

Regards compatibility tests conducted by dimmer manufacturer, please contact Soraa or the manufacturer for more details and/or reports.

(*) Test results with this dimmer added to the compatibility list as of this Revision

--%	Dims to < 20% (of the measured light output)
--%	Dims to 20-30% (of the measured light output)
NC	Not compatible (or dims to >30%)
Blank cell	Not tested