

# SORAA

## Electrical compatibility – MR16-GU10 9W 120V lamps - North America

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## General compatibility guidelines

### Scope

This document provides the basic guidelines regards electrical compatibility of SORAA 120V MR16 GU10 9W lamps and compatibility tables.

### Dimmer Compatibility

SORAA 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 on pages 3-5.

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 11 lamps 9W.**

### 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 GU10 120V 9W - DIMMER COMPATIBILITY LIST - North America**

Dimmer Manufacturer	Dimmer family	Dimmer Model	Dimming mode	Dim (%)	Comments
<b>North America</b>					
Cooper		D106P	L	12%	
Cooper		SLC03P	L	13%	
Crestron		DIN-1DIMU4	T	1%	(*)
Forbes & Lomax		FLR603P	L	NC	
Helvar	DigiDim	454	T	20%	
Insteon		2477D	L	3%	
Legrand		ADTP703TU	T	13%	
Leviton		6613-P	L	14%	
Leviton		6615-P	T	20%	
Leviton		6633-P	L	4%	
Leviton		IPL06	L	9%	
Leviton		A2000	L	1%	Tested by dimmer manufacturer
Leviton		PE400	T	4%	Tested by dimmer manufacturer
Leviton		D4206	L	1%	Tested by dimmer manufacturer
Leviton		I48E	L	1%	Tested by dimmer manufacturer
Leviton	Lumina	DL6HD	L	1%	Tested by dimmer manufacturer
Leviton	Illumatech Decora	IPI06-1LZ	L	NC	Not suitable for LED
Leviton	Renoir II	AWSMG-MBW	L	NC	Tested by dimmer manufacturer
Lightolier		ZP1000	L	1 lamp: N C 2,3 lamps: 18%	
Lightolier		ZP600	L	NC	
Lutron	Athena	T-1000	L	NC	
Lutron	Caseta	PD-5NE-XX	T	15%	(*)

**SORAA GU10 120V 9W - DIMMER COMPATIBILITY LIST - North America**

Dimmer Manufacturer	Dimmer family	Dimmer Model	Dimming mode	Dim (%)	Comments
<b>North America</b>					
Lutron	Contour	CNLV-600P	L	11%	
Lutron	Contour	CT-603PG	L	12%	
Lutron	Diva	DV-600P	L	6%	
Lutron	Diva	DVCL-153P	L	23%	(*)
Lutron	Diva	DVELV-300P	T	4%	
Lutron	Diva	DVLV-600P	L	15%	
Lutron	Glyder	GL 6B38	L	1,2 lamps: 15% 3 lamps: NC	
Lutron	Glyder	GL-600H-DK	L	15%	
Lutron	Grafik Eye	QSGRJ-3P	L	1,2 lamps: 18% 3 lamps: 22%	
Lutron	Grafik Eye	QSGRJ+PHPM-PA-DV-WH	T	1%	
Lutron	Lumea	LGCL-153P	L	NC	
Lutron	Maestro	MA-600	L	1 lamp: N C 2,3 lamps: 17%	
Lutron	Maestro	MACL-153M	L	14%	
Lutron	Maestro	MAELV-600	T	6%	
Lutron	Maestro	MALV-600	L	NC	
Lutron	Maestro	MAW-600	L	NC	
Lutron	Maestro	MRF2-6ND-120	L	17%	
Lutron	Nova	NTELV-300	T	6%	
Lutron	Nova	NTLV-600	L	4%	
Lutron	Radio RA2	RRD-10D	L	1,2 lamps: N C 3 lamps: 21%	
Lutron	Radio RA2	RRD-6NA	adaptive - T	17%	(*)
Lutron	Rotary	D-603PGH	L	18%	

**SORAA GU10 120V 9W - DIMMER COMPATIBILITY LIST - North America**

Dimmer Manufacturer	Dimmer family	Dimmer Model	Dimming mode	Dim (%)	Comments
<b>North America</b>					
Lutron	Skylark	CT-600P	L	10%	
Lutron	Skylark	CTCL-153P	L	NC	
Lutron	Skylark	S-600	L	18%	
Lutron	Skylark	S-603PG	L	11%	
Lutron	Skylark	SELV-300P	T	5%	
Lutron	Skylark	SLV-600P	L	10%	
Lutron	Spacer	SPELV-600	T	7%	
Lutron	Toggler	TG-600PR	L	1,2 lamps: 15% 3 lamps: NC	
Lutron	Verti	VTELV-600M	T	5%	

**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 the dimmer manufacturer or Soraa for more details and/or reports.

(\* ) Test results with this dimmer added to the compatibility list as of Revision 18Q3

--%	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