

SORAA

Electrical compatibility – ARC Track Fixtures 120V - North America

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General compatibility guidelines

Scope

This document provides the basic guidelines regards electrical compatibility of SORAA 120V ARC track fixtures and the dimming compatibility tables.

Dimmer Compatibility

SORAA 120V ARC track fixtures 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 **3-11**.

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 fixtures 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 and 2 fixtures unless stated otherwise.
2. There is a repetitive, very brief current spike the LED will see twice per cycle. This current spike has to be provided by the dimmer, and will affect the recommended fixture 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 fixtures.

For example for a 500W dimmer it would mean $500/5 = 100W$ of LED, so an estimated maximum of 5 fixtures at 18.5W.

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 dimmer manufacturers.

For more information on the dimmers please find specs on the manufacturer's website.

SORAA ARC Track fixtures 120V - DIMMER COMPATIBILITY LIST - North America

Dimmer Manufacturer	Model	MD #	Phase-cut	Quantity of fixtures tested	50mm (11W) Dim (%)	50mm (18W) Dim (%)	100mm (20W) Dim (%)	Comments
Crestron		CLS-C6 CLS-C6M CLS-C6EX CLS-C6MEX CLS-C6MRF CLS-C6RF		1	2%	1%	2%	Tested by dimmer manufacturer (*)
Crestron		CLS-EXP-DIM		1	2%	1%	3%	Tested by dimmer manufacturer (*)
Crestron		CLS-EXP-DIMU		1	1%	1%	5%	Tested by dimmer manufacturer (*)
Crestron		CLX-1DIM4 CLX-1DIM8 CLX-2DIM2 CLX-2DIM8		1	3%	1%	4%	Tested by dimmer manufacturer (*)
Crestron		DIN-1DIM4		1	1%	1%	4%	Tested by dimmer manufacturer (*)
Crestron		DIN-1DIMU4	Reverse Phase	1	1%	1%	6%	Tested by dimmer manufacturer (*)
Crestron		CLW-DIMEX-E CLW-DIMEX-P CLW-DIMSWEX-E CLW-DIMSWEX-P P-DIMEX		1	2%	2%	5%	Must connect neutral Tested by dimmer manufacturer (*)
Crestron		GLX-DIM6		1	1%	1%	4%	Tested by dimmer manufacturer (*)
Crestron		GLXX-2DIM8		1	1%	1%	4%	Tested by dimmer manufacturer (*)
Crestron		CLW-DELVEX-E CLW-DELVEX-P		1	1%	1%	6%	Tested by dimmer manufacturer (*)
Crestron		CLX-1DIMU4 CLX-2DIMU8		1	1%	1%	4%	Tested by dimmer manufacturer (*)
Crestron		GL-EXP-DIMU-DALI GL-EXP-DIMU-CN		1	2%	7%	10%	Tested by dimmer manufacturer (*)
Crestron	ZUMMESH	ZUMMESH-DIM		1	2%	2%	9%	Tested by dimmer manufacturer (*)
Crestron	ZUMMESH	ZUMMESH-DELV		1	1%	1%	6%	Tested by dimmer manufacturer (*)

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Dimmer Manufacturer	Model	MD #	Phase-cut	Quantity of fixtures tested	50mm (11W) Dim (%)	50mm (18W) Dim (%)	100mm (20W) Dim (%)	Comments
ETC	Sensor 3	D20	Forward Phase	5 (11W) 4 (18W, 20W)	0.12%	0.04%	0.28%	Tested by dimmer manufacturer
ETC	Sensor 3	ELV10-S	Reverse Phase	5 (11W) 4 (18W, 20W)	0.06%	0.01%	11%	Tested by dimmer manufacturer
ETC	DRd	D20	Forward Phase	5 (11W) 4 (18W, 20W)	0.07%	14%	23%	Tested by dimmer manufacturer
ETC	DRd	ELV10	Reverse Phase	5 (11W) 4 (18W, 20W)	0.08%	0.02%	10%	Tested by dimmer manufacturer
ETC	Legacy Unison	D20	Forward Phase	5 (11W) 4 (18W, 20W)	21%	25%	56%	Tested by dimmer manufacturer
ETC	Legacy Unison	ELV10	Forward Phase	5 (11W) 4 (18W, 20W)	21%	32%	52%	Tested by dimmer manufacturer
ETC		ERP 300W Dimmer	Reverse Phase	5 (11W) 4 (18W, 20W)	0.07%	0.03%	0.06%	Tested by dimmer manufacturer
ETC		Echo ELVD	Reverse Phase	5 (11W) 4 (18W, 20W)	0.23%	0.11%	29%	Tested by dimmer manufacturer
Legrand		ADTP703TU	Forward Phase	1	11%	18%	27%	
				2		5%	NC	
Leviton		6404	Forward Phase	1, 2	8%	8%	19%	
Leviton		6633-P	Forward Phase	1	7%	16%	21%	
				2		6%	14%	
Leviton		6613-P	Forward Phase	1, 2	7%	7%	17%	
Leviton		6615-P	Reverse Phase	1, 2	6%	5%	12%	
Leviton		A2000	Forward Phase	3	0.02%	0.80%	1.40%	Min load 40W. Tested by dimmer manufacturer
Leviton		D4206	Forward Phase	3	0.03%	0.80%	1.40%	Min load 15W. Tested by dimmer manufacturer
Leviton	Homekit Wall dimmer	DH6HD-1BZ	Forward Phase	3	1.70%	1.80%	4.40%	Tested by dimmer manufacturer
Leviton	Lumina Wall Dimmer	DL6HD-1BZ	Forward Phase	3	0.20%	0.30%	0.05%	Tested by dimmer manufacturer
Leviton	WiFi Wall Dimmer	DW6HD-1BZ	Forward Phase	3	0.20%	0.30%	0.40%	Tested by dimmer manufacturer

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Dimmer Manufacturer	Model	MD #	Phase-cut	Quantity of fixtures tested	50mm (11W) Dim (%)	50mm (18W) Dim (%)	100mm (20W) Dim (%)	Comments
Leviton	Zwave Wall Dimmer	DZ6HD-1BZ	Forward Phase	3	0.30%	0.30%	0.50%	Tested by dimmer manufacturer
Leviton	iSERIES	i48E	Forward Phase	3	1.30%	1.40%	4.00%	Min load 100W. Tested by dimmer manufacturer
Leviton	OMNI	110A00-2	Forward Phase	3	0.20%	0.10%	0.80%	Tested by dimmer manufacturer
Leviton	OMNI	110A00-2	Reverse Phase	3	9.70%	9.90%	18.80%	Tested by dimmer manufacturer
Leviton	Power Extender	PE100-10W	Forward Phase	3	0.40%	0.80%	1.50%	Min load 15W. Tested by dimmer manufacturer
Leviton	Power Extender	PE400-10W	Reverse Phase	3	0.90%	0.80%	8.10%	Min load 15W. Tested by dimmer manufacturer
Leviton	RENOIR II	AWSMT-EBW	Reverse Phase	3	0.10%	0.30%	0.50%	Min load 64W. Tested by dimmer manufacturer
Leviton	RENOIR II	AWSMT-MBW	Forward Phase	3	0.50%	0.60%	1.70%	Min load 64W. Tested by dimmer manufacturer
Leviton		IPL06	Forward Phase	1	7%	4%	NC	
				2			11%	
Lutron	Caseta Wireless Phase Selectable	PD-5NE	Reverse Phase	max load: 11W: 22 18W: 13	17%	15%	NC	Tested by dimmer manufacturer
Lutron	Caseta Wireless	PD-6WCL (SD11)	Forward Phase		NC	NC	NC	Tested by dimmer manufacturer
Lutron	Caseta Wireless	PD-10NXD (SD11) without neutral	Forward Phase		NC	NC	NC	Tested by dimmer manufacturer
Lutron	Contour	CT-600P	Forward Phase	1, 2	7%	7%	16%	
Lutron	Diva/Skylark/Skylark Contour/Ariadni/Toggler/Lumea	CL wall-mount dimmers (T8,T9)	Forward Phase	max load: 11W: 13 20W: 7	20%	NC	16%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	Diva/Ariadni C250W	250W CL Dimmers (T5, T8)	Forward Phase	max load: 11W: 22 20W: 12	20%	NC	16%	ART100: startup time 1.7s Tested by dimmer manufacturer

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Dimmer Manufacturer	Model	MD #	Phase-cut	Quantity of fixtures tested	50mm (11W) Dim (%)	50mm (18W) Dim (%)	100mm (20W) Dim (%)	Comments
Lutron	Diva/Skylark Contour Reverse Phase LED Preset Dimmers	DVRP-253P / CTRP-253P	Reverse Phase	max load: 20W: 12	NC	NC	14%	Tested by dimmer manufacturer
Lutron	Diva	DVELV-300P	Reverse Phase	1 2	1%	7% 1%	10%	
Lutron	Diva	DVLV-600P	Forward Phase	1, 2	11%	10%	25%	
Lutron	Diva	DV-600P	Forward Phase	1, 2	12%	15%	18%	
Lutron	Grafik Eye 3000/HomeWorks	Grafik Eye 3000 Family/HWI-WPM-6D-120	Forward Phase	max load: 11W: 53 18W: 18	16%	12%	NC	Tested by dimmer manufacturer
Lutron	Grafik T	GT-150 (T6) without Neutral	Forward Phase	max load: 11W: 13	15%	NC	NC	Tested by dimmer manufacturer
Lutron	Grafik T	GTJ-150 (M6) without Neutral	Forward Phase	max load: 11W: 13	15%	NC	NC	Tested by dimmer manufacturer
Lutron	Grafik T	GTJ-250M (M6)/GT-250M (T7) without neutral	Forward Phase		NC	NC	NC	Tested by dimmer manufacturer
Lutron	Grafik T	Phase Selectable GT-5NEM/ GTJ-5NEM	Reverse Phase	max load: 11W: 22 18W: 13 20W: 12	13%	14%	15%	ART100: startup time 1.2s Tested by dimmer manufacturer
Lutron	Grafix QS/Wallbox Power Module	Grafik Eye QS Main Unit Fmily/LQRJ-WPM-6P	Forward Phase	max load: 11W: 53 18W: 18	16%	12%	NC	Tested by dimmer manufacturer
Lutron	HomeWorks	HxD-6ND	Forward Phase	max load: 11W: 11 18W: 4 20W: 8	17%	12%	14%	Tested by dimmer manufacturer
Lutron	HomeWorks QS	HQRD-6CL (H2)/HQRA-6CL (H2)	Forward Phase	max load: 18W: 8 20W: 7	NC	16%	14%	Tested by dimmer manufacturer

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Dimmer Manufacturer	Model	MD #	Phase-cut	Quantity of fixtures tested	50mm (11W) Dim (%)	50mm (18W) Dim (%)	100mm (20W) Dim (%)	Comments
Lutron	HomeWorks QS	HQRD-6NA	Reverse Phase	max load: 11W: 13 18W: 8 20W: 7	8%	14%	14%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	HomeWorks QS	HQRD-6ND	Forward Phase	max load: 11W: 13 20W: 7	15%	NC	14%	ART100: startup time 1.6s Tested by dimmer manufacturer
Lutron	HomeWorks QS	HQRD-10ND	Forward Phase	max load: 11W: 13 20W: 7	15%	NC	14%	ART100: startup time 1.6s Tested by dimmer manufacturer
Lutron	HomeWorks QS	HQRT-G25LW (H2) without neutral	Forward Phase		NC	NC	NC	Tested by dimmer manufacturer
Lutron	HomeWorks QS	Hybrid Keypad C.L Hqrd-HN6BRL	Forward Phase	max load: 11W: 9 18W: 5 20W: 5	16%	9%	15%	Tested by dimmer manufacturer
Lutron	Homeworks QS	LQSE-4A-120-D, RP	Reverse Phase	max load: 11W: 19 18W: 12 20W: 11	10%	15%	14%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	HomeWorks QS / myRoom	LQSE-4A1 - D/MQSE-4A 1 - D/MQSE - 3A1/MQSE- 2A1-D, 120V, RP	Reverse Phase	max load: 11W: 9 18W: 6 20W: 5	9%	10%	16%	ART100: startup time 1.4s Tested by dimmer manufacturer
Lutron	Maestro	MA-600	Forward Phase	1 2	NC 7%	26%	20% 9%	
Lutron	Maestro	MACL-153M (TX)	Forward Phase	max load: 11W: 13 20W: 7	NC	NC	16%	Tested by dimmer manufacturer
Lutron	Maestro	MACL-LFQ	Forward Phase	max load: 11W: 6 20W: 3	14%	NC	16%	Tested by dimmer manufacturer
Lutron	Maestro	MAELV-600	Reverse Phase	1 2	2%	16% 3%	10%	

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Dimmer Manufacturer	Model	MD #	Phase-cut	Quantity of fixtures tested	50mm (11W) Dim (%)	50mm (18W) Dim (%)	100mm (20W) Dim (%)	Comments
Lutron	Maestro	MALV-600	Forward Phase	1	NC	NC	8%	
				2		4%		
Lutron	Maestro	MAW-600	Forward Phase	1	NC	23%	16%	
				2	18%	14%		
Lutron	Maestro Sensor	MSCL-OP153M (T2)/MSCL-VP153M (T2)	Forward Phase	max load: 11W: 13	20%	NC	NC	Tested by dimmer manufacturer
Lutron	Maestro Wireless	MRF2-6CL (M6)	Forward Phase	max load: 18W: 8 20W: 7	NC	16%	14%	Tested by dimmer manufacturer
Lutron	Maestro Wireless	MRF2-6ELV	Reverse Phase	max load: 11W: 13 18W: 8 20W: 7	8%	14%	14%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	Maestro Wireless	MRF2-6ND	Forward Phase	max load: 11W: 13 20W: 7	15%	NC	14%	ART100: startup time 1.6s Tested by dimmer manufacturer
Lutron	Nova T* 250W	NTCL-250 (T8)	Forward Phase	max load: 11W: 22 20W: 12	20%	NC	16%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	Nova T	NTELV-300	Reverse Phase	1, 2	2%	5%	14%	
Lutron	Nova T	NTLV-600	Forward Phase	1, 2	5%	11%	16%	
Lutron	Nova T*Reverse Phase LEDSlide to-off Dimmer	NTRP-250	Reverse Phase	max load: 20W: 12	NC	NC	13%	Tested by dimmer manufacturer
Lutron	Panel Module	GP (Harrier) Card	Forward Phase	max load: 11W: 53 18W: 18 20W: 38	11%	10%	15%	Tested by dimmer manufacturer
Lutron	Panel Module	HW/LP-RPM-4A-120	Reverse Phase	max load: 11W: 109 18W: 66 20W: 58	10%	13%	15%	ART100: startup time 1.5s Tested by dimmer manufacturer

SORAA ARC Track fixtures 120V - DIMMER COMPATIBILITY LIST - North America

Dimmer Manufacturer	Model	MD #	Phase-cut	Quantity of fixtures tested	50mm (11W) Dim (%)	50mm (18W) Dim (%)	100mm (20W) Dim (%)	Comments
Lutron	Panel Module	HW/LP-RPM-4U-120	Forward Phase	max load: 11W: 53 18W: 18 20W: 38	14%	11%	14%	Tested by dimmer manufacturer
Lutron	Power Modules	PHPM-PA with Grafik Eye QS Main Unit	Reverse Phase	max load: 11W: 162 18W: 85 20W: 93	15%	13%	14%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	Power Modules	PHPM-WBX with 3-wire fluorescent control	Reverse Phase	max load: 11W: 162 18W: 85 20W: 93	15%	13%	14%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	RadioRA 2	Hybrid Keypad C.L RRD-HN6BRL	Forward Phase	max load: 11W: 9 18W: 5 20W: 5	16%	9%	15%	Tested by dimmer manufacturer
Lutron	RadioRA 2	RRD-6CL (R3)	Forward Phase	max load: 18W: 8 20W: 7	NC	16%	14%	Tested by dimmer manufacturer
Lutron	RadioRA 2	RRD-6D	Forward Phase		NC	NC	NC	Tested by dimmer manufacturer
Lutron	RadioRA 2	RRD-6NA	Reverse Phase	max load: 11W: 13 18W: 8 20W: 7	8%	14%	14%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	Radio RA2	RRD-10D	Forward Phase	1 2	NC 4%	5%	8%	
Lutron	RadioRA 2	RRD-10ND	Forward Phase	max load: 11W: 13 20W: 7	15%	NC	14%	ART100: startup time 1.6s Tested by dimmer manufacturer
Lutron	RadioRA 2	RRT-G25LW (R3) without neutral	Forward Phase		NC	NC	NC	Tested by dimmer manufacturer
Lutron	Skylark	S-603PG	Forward Phase	1, 2	6%	8%	16%	
Lutron	Skylark	S-600P	Forward Phase	1 2	15% 5%	9%	20% 11%	

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Dimmer Manufacturer	Model	MD #	Phase-cut	Quantity of fixtures tested	50mm (11W) Dim (%)	50mm (18W) Dim (%)	100mm (20W) Dim (%)	Comments
Lutron	Skylark	SELV-300P	Reverse Phase	1	1%	8%	9%	
				2		3%		
Lutron	Skylark	SLV-600P	Forward Phase	1	12%	12%	NC	
				2			23%	
Lutron	Skylark Contour Slide to -off	CTCL-150	Forward Phase	max load: 11W: 13 20W: 7	20%	NC	16%	Tested by dimmer manufacturer
Lutron	Spacer	SPSELV-600	Reverse Phase	1, 2	2%	5%	11%	
Lutron	Stanza	SZ-6ND	Forward Phase	max load: 11W: 11 18W: 4 20W: 8	17%	12%	14%	Tested by dimmer manufacturer
Lutron	Vive	MRF2S-6CL	Forward Phase	max load: 18W: 8 20W: 7	NC	16%	14%	Tested by dimmer manufacturer
Lutron	Vive	MRF2S-6ELV	Reverse Phase	max load: 11W: 13 18W: 8 20W: 7	8%	14%	14%	ART100: startup time 1.7s Tested by dimmer manufacturer
Lutron	Vive	MRF2S-6ND	Forward Phase	max load: 11W: 13 20W: 7	15%	NC	14%	ART100: startup time 1.6s Tested by dimmer manufacturer
Marlin	Stellar	RMS 4	Reverse Phase	1, 2	5%	NC	1%	

SORAA ARC Track fixtures 120V - DIMMER COMPATIBILITY LIST - North America

Notes:

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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 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