



Electrical compatibility – Constant Current AR111 lamps

Table of contents

- General compatibility guidelines.....Page 2
- Driver compatibility.....Page 3-7

BASIC GUIDELINES

Summary

This document provides the basic guidelines regards electrical compatibility / integration of Constant Current AR111.

These Constant Current lamps are not retrofit products, it is the responsibility of the user/specifier/installer to make sure they work inside the design limits of the product. Please refer to the specification sheet of the product.

Drivers:

SORAA Constant Current AR111 lamps are made to work with constant current drivers. The driver shall be able to provide the specified maximum current over the entire voltage range of 34-38VDC. The lower end of the voltage range is related to operation at low current amplitude, for example under current amplitude dimming. Light output can be varied by either Pulse Width Modulation (PWM), or amplitude variation.

Soraa recommends using one LED driver (or one driver channel in the case of a multi-channel driver) per lamp. Parallel configuration can result in unpredictable light output and series configuration results in an increase of overall system voltage potentially beyond the design limits of the product.

Every CC driver with ability to give a forward voltage range of 34-38VDC, and the right driving current, is considered compatible. On the following pages we list all the CC drivers with adjustable current we were able to find that can potentially fulfill the needs of our CC AR111 lamps. Their suitability will depend on the specific needs of the project and the product used.

Important notes on drivers for Constant Current MR16 lamps

- CC AR111 are not sensitive to polarity thanks to a rectifier inside the lamp's body.
- The lamp does not have an internal driver, hence the dimming performance relies on the driver/dimmer used.
- They are rated maximum 450mA, but if the lamp's T_c exceeds the maximum temperature stated on the specs when installed in a certain fixture, the driving current should be set lower.

Distance between driver and lamp

Usually CC drivers can be installed remotely from the lamp. The maximum allowable distance between driver and lamp can depend on different factors, like driving current, wire gauge, PWM frequency (if used), and if the driver is able to provide the voltage drop on the wires in addition to the lamp's forward voltage. Usually the maximum length of the wires between driver and load is provided by the driver manufacturer on the product literature.

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 dimmer/driver manufacturer.. For more information on the dimmers/drivers, please find specs on the companies' website.

SORAA Constant Current AR111 Lamp Driver COMPATIBILITY LIST

The following drivers meet the on-paper specifications required to be compatible with Soraa CC AR111 lamps; not all have been tested by Soraa.
 Please note the optimal driving current needed by the CC AR111 lamp will ultimately depend on the thermal dissipation of the lamp in the specific fixture it is going to be used in.

Mfg	Model	Max. Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
eldoLED	DUALdrive 560/M/S/A	50W	2-55V	120-277	200-1050mA (settable with PC)	DALI	World	2, independent from each other
eldoLED	DUALdrive 1060/M/S/A	100W (60W per channel)	2-57V	120-277	200-1050mA (settable with PC)	DALI	World	4, divided in 2 independent groups
eldoLED	ECOdrive / SOLOdrive 160/B/S	10W	2-55V	120-277	150-1,400mA (PC settable)	DALI-2	World	1
eldoLED	ECOdrive / SOLOdrive 161/B/S	10W	2-55V	120-277	150-1,400mA (PC settable)	0/1-10V, potentiometer	World	1
eldoLED	ECOdrive / SOLOdrive 240/A	20W	2-40V	220-240	150-1,050mA (PC settable)	DALI-2	EU/Asia	1
eldoLED	ECOdrive / SOLOdrive 260/B/S	20W	2-55V	120-277	150-1,400mA (PC settable)	DALI	World	1
eldoLED	ECOdrive / SOLOdrive 261/B/S	20W	2-55V	120-277	150-1,400mA (PC settable)	0/1-10V, potentiometer	World	1
eldoLED	ECOdrive / SOLOdrive 360/A/B/S	30W	2-55V	120-277	A: 150-1,050mA (PC settable) /B, /S: 150-1,400mA (PC settable)	DALI	World	1
eldoLED	ECOdrive / SOLOdrive 361/B/S/A	30W	2-55V	120-277	A: 150-1,050mA (PC settable) /B, /S: 150-1,400mA (PC settable)	0/1-10V, potentiometer	World	1
eldoLED	ECOdrive / SOLOdrive 560/M/S/A	50W	2-55V	120-277	200-1,050mA (settable with PC)	DALI	World	2, controlled together
eldoLED	ECOdrive / SOLOdrive 561/M/S/A	50W	2-55V	120-277	200-1,050mA (settable with PC)	0/1-10V, potentiometer	World	2, controlled together
eldoLED	SOLOdrive 1060/M/S/A	100W (60W per channel)	2-57V	120-277	200-1,050mA (settable with PC)	DALI	World	4, controlled all together
eldoLED	SOLOdrive 1061/M/S/A	100W (60W per channel)	2-57V	120-277	200-1,050mA (settable with PC)	0/1-10V, potentiometer	World	4, controlled all together
eldoLED	POWERdrive 561/562/M/S/A	50W	2-55V	120-277	200-1,050mA (settable with PC)	DMX	World	3/4 independent from each other
Euchips	EUP15T-1HMC-0	15W	15-42V	40-240	280, 350	Phase Cut	EU/Asia	1
Fulham	T1A1UNV105P-60F	60W	10-57V	120V-277V	250-1,050mA (settable with PC or resistors)	DALI	World	1
Fulham	T1A1UNV105P-40E	40W	10-57V	120V-277V	250-1,050mA (settable with PC or resistors)	DALI	World	1
Hatch (*)	I-LOC XTC32-0700P-UNV-I I-LOC XAC32-0700P-UNV-I I-LOC XRC32-0700P-UNV-I	32W	24-46V	120-277	350-700mA (settable with resistors)	Phase Cut	USA	1
Hatch (*)	I-LOC XAC32-0700Z-UNV-I I-LOC XRC32-0700Z-UNV-I	32W	24-46V	120-277	350-700mA (settable with resistors)	0-10V	USA	1
Helvar	LL1x40-E-DA-350-700	40W	20-57V	198-264	350-700mA (settable with resistor)	DALI	World	1

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Mfg	Model	Max. Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
Helvar	LC1x30-E-DA	30W	10-43V	198-264	350,500,700mA selecteable	DALI	World	1
Helvar	LC1x30-E-AN	30W	10-43V	198-264	350,500,700mA selecteable	1-10V	World	1
Helvar	LC50-U-DX3	50W	10-55V	90-305	350-1050mA (programmable via PC)	DMX	World	3, independent
IDP Power Technology Ltd	MP-AD-028W-0A70-A-FD-20	28W	20-40V	220-240	350/400/500/600/700mA (DIP switches)	Phase Cut	EU/Asia	1
Inventronics	LUD-060S110BSF	60W	16 -78V	90-305	7.7-1100mA, programmable via software	DALI	World	1
Inventronics	LUD-060S110DSF	60W	17 -78V	90-305	7.7-1100mA, programmable via software	0-10V (can be PWM)	World	1
ISTL (iDrive)	IDD2014410350	14W	18-41V	220-240	programmable via DALI, max 350mA	DALI	World	1
ISTL (iDrive)	IDD2021410500	21W	18-41V	220-240	programmable via DALI, max 500mA	DALI	World	1
ISTL (iDrive)	IDD2029410700	29W	18-41V	220-240	programmable via DALI, max 700mA	DALI	World	1
ISTL (iDrive)	IDD2017400420	17W	18-40V	220-240	programmable via DALI, max 420mA	DALI	World	1
ISTL (iDrive)	IDD2032400800	32W	18-40V	220-240	programmable via DALI, max 800mA	DALI	World	1
ISTL (iDrive)	IDD2041411000	41W	18-41V	220-240	programmable via DALI, max 1A	DALI	World	1
ISTL (iDrive)	Quad 120	4x48W	1-48V	220-240	programmable via software, 0.1 - 1A	DMX	World	4, independent
ISTL (iDrive)	Force 12	12x48W	1-48V	220-240	programmable via software, 0.1 - 1A	DALI, DMX,DSI, RDM, Art-Net 3, KiNET & sACN	World	12, independent
ISTL (iDrive)	White Knight 36	36x48W	1-48V	100-240	programmable via software, 0 - 1A	DALI, DMX,DSI, RDM, Art-Net 3, KiNET & sACN	World	36, independent
Lumotech	L05021-40250	12W	40V	220-240	200mA or 250mA	Phase Cut	EU/Asia	1
Lumotech	L05021-40300	12W	40V	220-240	180mA or 300mA	Phase Cut	EU/Asia	1
Lumotech	L05011i2	20W	48V	180-240	150mA-1200mA, 14 options in total (DIP switches)	1-10V, potentiometer 100k log b, pulse switch	EU/Asia	1

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Mfg	Model	Max. Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
Lumotech	L05011i3	20W	48V	180-240	200mA-1200mA in 20mA steps (DIP switches)	1-10V, potentiometer 100k log b	EU/Asia	1
Lumotech	L05011i4	20W	48V	180-240	200mA-1200mA in 20mA steps (DIP switches)	pulse switch	EU/Asia	1
Lumotech	L05025	30W	43V	180-240	100mA-1000mA in 50mA steps (resistors)	DALI	EU/Asia	1
Lumotech	L05021-40300	12W	6-42V	220-240	300	Phase Cut	EU/Asia	1
Lutron	L DE A2E1C PA – HA()())	25W	10-40V	220-240	200mA - 620mA, in 10mA steps	EcoSystem	EU/Asia	1
Lutron	LTEA4U1UKx-HA024 LTEA4U1UKx-HA037 LTEA4U1UKx-HA058 LTEA4U1UKx-HA029 LTEA4U1UKx-HA044	40W	15-38V	120V	240mA 370mA 580mA 290mA 440mA	Hi-lume 1% 2 Wire Forward Phase Control (LTE)	USA	1
Lutron	L3DA4U1UKx-HA024 L3DA4U1UKx-HA037 L3DA4U1UKx-HA058 L3DA4U1UKx-HA029 L3DA4U1UKx-HA044	40W	15-38V	120V	240mA 370mA 580mA 290mA 440mA	Hi-lume 1% EcoSystem & 3 Wire Phase Control (L3D)	USA	1
Lutron	Hi-lume Premier PEQ series	20W	10-54V	120-277	150mA-1050mA	EcoSystem	USA	1
Meanwell	LCM-40	42W	2-40V	180-295	350,500,600,700,900, 1050mA (DIP switches)	0-10V	World	1
Meanwell	LCM-40DA	42W	3-40V	180-295	350,500,600,700,900, 1050mA (DIP switches)	DALI	World	1
Osram	OTi DALI 15/220-240/1A0 LT2	18W	7.5-54V	220-240V	150 – 1050 mA, via LEDset or software	DALI	World	1
Osram	OTi DALI 25/220-240/700 LT2	27W	12-54V	220-240V	180 – 700 mA, via LEDset or software	DALI	World	1
Osram	OT FIT 20/220...240/500 CS	21W	25-42V	220-240V	250 / 350 / 450 / 500 mA (DIP switches)	NO	EMEA	1
Osram	OT FIT 15/220-240/500 LT2 S	17.5W	15-50V	220-240V	150 -500mA (with LEDset)	NO	EMEA	1
Osram (*)	OT FIT 15/220-240/350 NFC	14W	18-40V	220-240V	150 -350mA (with NFC)	NO	EMEA	1
Osram	OT FIT 25/220-240/700 LT2 S	26.5W	15-50V	220-240V	300 -700mA (with LEDset)	NO	EMEA	1
QLT (*)	A40PDMCD000B	13W	5-45V	100-250	100 - 700mA in 50mA steps (DIP switch)	DALI & Push button	EMEA	1
QLT (*)	A40PDMC1000B	13W	5-45V	100-250	100 - 700mA in 50mA steps (DIP switch)	1-10V	EMEA	1

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Mfg	Model	Max. Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
TCI	UNIVERSALE 20 (cod. 122202)	20W	2-40V	220-240V	250-500mA in 50mA steps (DIP switches)	NO	World	1
TCI	DC MINIJOLLY DALI 20	20W	10-51V	100-240	250 to 550mA in 50mA steps (DIP switches)	DALI	World	1
TCI (*)	DC JOLLY DALI (cod.125424)	32W	10-48V	110-127 220-240	250 to 700mA in 50mA steps (DIP switches)	DALI	World	1
TCI	TCI DC JOLLY MD LC (cod. 122262)	24W	2-47V	220-240	150 to 500mA in 50mA steps (DIP switches)	Mains	EU & Asia	1
TCI	MP 32 HV K2 (cod. 122202)	32W	2-46V	220-240	350-700mA in 50mA steps (DIP switch)	NO	World	1
TCI	Smart 50 (cod. 122220)	50W	10-53V	220-240	350-1050mA in 50mA steps (DIP switch)	NO	World	1
TCI	DC Wolf MP (cod. 122252)	32W	2-46V	220-240	350,500,550,700mA (DIP switch)	NO	World	1
TCI	MP 15 (122360)	15W	2-41.5V	90-264	60,80,100,120,140,160,180,200,220,240,260,280,300,320,340,360mA (DIP switch)	NO	World	1
TCI	DC Minijolly LC (123401)	20W	2-53V	110-127V / 220-240V	100,140,180,220,260, 300,340,380mA (DIP switch)	1-10V, pulse switch	World	1
TCI	DC Minijolly LC PLV (122401PLV)	20W	2-54V	110-127V / 220-240V	100,140,180,220,260, 300,340,380mA (DIP switch)	push LV	World	1
TCI	DC Minijolly LC DALI (122395)	20W	10-51V	110-127V / 220-240V	100,140,180,220,260, 300,340,380mA (DIP switch)	DALI	World	1
TCI	DC Jolly US (cod. 125421)	32W	15-46V	110-127V / 220-240V	250,300,350,400,450,500,550mA (DIP switch)	1-10V, pulse switch	World	1
TCI	DC Mini Jolly DALI (cod. 123403)	20W	15-40V	110-127V / 220-240V	250 to 500mA in 50mA steps (DIP switch)	DALI	World	1
TCI	DC Jolly MD (cod. 122260)	32W	2-43V	220-240	350,500,550,700,750mA (DIP switch)	Mains	World	1
TCI	Jolly DIN (cod. 127100)	32W	2-53V	220-240	200-800mA in 50mA steps (DIP switch)	1-10V, pulse switch	World	1
Tridonic	TALEXDriver LCCI 016/0350 B020 (28000738)	16W	3-48V	220-240	70 – 350 mA (set with resistor/pot)	potentiometer 100K	World	1
Tridonic (*)	LCO 24/200-1050/39 o4a NF C EXC3 (cod.87500708)	24W	19-39V	220-240	200 – 1,050 mA via NFC, DALI or ready2mains Programmer	DALI-2 DT 6, DSI, switchDIM, corridor FUNCTION	Europe	1
Vossloh Schwabe	ECXe 500.164 (ref. no. 186463)	20W	17-40V	220-240	250, 350, 500 mA (DIP switch)	NO	EU/Asia	1

SORAA Constant Current Lamp COMPATIBILITY LIST

Notes:

- 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 dimmer or transformer manufacturer
- Unless otherwise noted, testing is done with a load of 1 lamp
- Unless the driver has independent multiple channels, only 1 CC lamp can be driven with 1 driver.
- (*) This driver added to the compatibility list as of this Revision