



Electrical compatibility – Constant Current MR16 SM16C-CC2 lamps

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BASIC GUIDELINES

Summary

This document provides the basic guidelines regards electrical compatibility / integration of Constant Current MR16 with part number starting with SM16C-CC2. 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 MR16 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 15 to 20VDC. 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 15 to 20VDC, 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 MR16 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 MR16 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 CC2 Lamp Driver COMPATIBILITY LIST

The following drivers meet the on-paper specifications required to be compatible with Soraa CC2 MR16 lamp; not all have been tested by Soraa
The driving current must be determined by the user to ensure the lamp runs below the maximum Tc temperature allowed on its spec sheet.

Mfg	Model	Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
Arditi	800578	25W	5-36V	230	350, 500, 700mA	Casambi (BlueTooth)	EU	1
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

SORAA Constant Current CC2 Lamp Driver COMPATIBILITY LIST

The following drivers meet the on-paper specifications required to be compatible with Soraa CC2 MR16 lamp; not all have been tested by Soraa
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Mfg	Model	Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
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
Harvard	CoolLED CL270A-240-C	15W	58V	220-240	270	0-10V/PWM	EU/Asia	1
Harvard	CoolLED CL270D-240-C	13W	48V	220-240	270	DALI	EU/Asia	1
Hatch	I-LOC XRC16-0350Z-UNV-I	16W	46V	120-277	175-350mA (settable with resistors)	0-10V	USA	1
Hatch	I-LOC XRC32-0700Z-UNV-I	32W	46V	120-277	350-700mA (settable with resistors)	0-10V	USA	1
Hatch	I-LOC XRC16-0350P-UNV-I	16W	46V	120-277	175-350mA (settable with resistors)	Mains	USA	1
Hatch	I-LOC XRC32-0700P-UNV-I	32W	46V	120-277	350-700mA (settable with resistors)	Mains	USA	1
Helvar	LL35/2-E-DA-iC	35W per channel	100V	198-264	350-700mA (settable with resistor)	DALI	World	2, independent
Helvar	LL2x35-E-DA	35W per channel	50V	198-264	350-700mA (settable with resistor)	DALI	World	2, independent
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
Hytronik	HED2020	20W	68V	220-240	350,500,700,900mA (DIP switches)	DALI, pulse switch	EU/Asia	1
Hytronik	HE2030-A	30W	68V	220-240	250,350,400,450,500,550,600,700mA (DIP switches)	1-10V, pulse switch	EU/Asia	1
Hytronik	HE2050-A2	2x50W	36V	220-240	250,350,400,450,500,550,600,700mA (DIP switches)	1-10V, pulse switch	EU/Asia	2
Hytronik	HE2015-A	15W	60V	220-240	350/500/550mA (DIP switches)	1-10V, pulse switch	EU/Asia	1
Hytronik	HE5020-A	20W	52V	220-240	250/350/400/450/500/550/600/700mA	1-10V, pulse switch	EU/Asia	1
Hytronik	HE1025-1	25W	68V	220-240	250/350/400/450/500/550/600/700mA	Phase Cut	EU/Asia	1

SORAA Constant Current CC2 Lamp Driver COMPATIBILITY LIST

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Mfg	Model	Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
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
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

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Mfg	Model	Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
Meanwell	LCM-25DA	25W	6-36V	180-277	350,500,600,700mA (DIP switches)	DALI	World	1
Meanwell	LCM-25	25W	7-36V	180-277	350,500,600,700mA (DIP switches)	0-10V	World	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
Meanwell	LCM-60	60W	1-57V	180-295	350,500,600,700,900, 1050mA (DIP switches)	0-10V	World	1
Meanwell	LCM-60DA	60W	2-57V	180-295	350,500,600,700,900, 1050mA (DIP switches)	DALI	World	1
MODE	LD-0300-48-MT-230-RD		48V	230	300	Phase Cut	EU/Asia	1
Multiload	LEDrose LDR100	37W	3-50V	15V DC	100mA to 750mA	0-10V (DALI interface available)	World	1
Osram	OTi DALI 15/220-240/1A0 LT2	18W	7.5-54V	220-240	150 – 1050 mA, via LEDset or software	DALI	World	1
Osram	OTi DALI 25/220-240/700 LT2	27W	12-54V	220-240	180 – 700 mA, via LEDset or software	DALI	World	1
Osram	OT FIT 15/220-240/500 LT2 S	17.5W	15-50V	220-240	150 -500mA (with LEDset)	NO	EMEA	1
Osram	OT FIT 25/220-240/700 LT2 S	26.5W	15-50V	220-240	300 -700mA (with LEDset)	NO	EMEA	1
RAL (Ricardo Architectural)	ES010-C030-0E	10.2W	5-36V	100-242	300	PWM	JAPAN	1
TCI	UNIVERSALE 20 LC	20W	55V	198-264	100,140,180,220,260, 300,340,380mA (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.123424)	14W	55V	110-127 220-240	250 to 700mA in 50mA steps (DIP switches)	DALI	World	1
TCI	TCI DC JOLLY MD LC (cod. 122262)	7.2-24W	59V	220-240	150 to 500mA in 50mA steps (DIP switches)	Mains	EU & Asia	1
TCI	MP 32 HV K2	32W	46V	220-240	350-700mA in 50mA steps (DIP switch)	NO	World	1

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Mfg	Model	Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
TCI	Smart 50	48V, 50W	48V	220-240	350-1050mA in 50mA steps (DIP switch)	NO	World	1
TCI	DC Wolf MP	46V, 32W	46V	220-240	350,500,550,700mA (DIP switch)	NO	World	1
TCI	MP 15 (122360)	15W	41.5V	90-264	60,80,100,120,140,160,180,200,220,240,260,280,300,320,340,360 mA (DIP switch)	NO	World	1
TCI	DC Minijolly LC (122401 & 123401)	20W	55V	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	Jolly 25	25W	36V	110-127V / 220-240V	350,500,700mA (DIP switch)	1-10V, pulse switch	World	1
TCI	Jolly US 32	32W	46V	110-127V / 220-240V	350,500,550,700mA (DIP switch)	1-10V, pulse switch	World	1
TCI	Jolly DALI 32	32W	46V	110-127V / 220-240V	350,500,550,700mA (DIP switch)	DALI	World	1
TCI	Jolly MD 32	32W	43V	220-240	350,500,550,700,750mA (DIP switch)	Mains	World	1
TCI	Jolly DIN 32	32W	40V	220-240	200-800mA in 50mA steps (DIP switch)	1-10V, pulse switch	World	1
TCI	DC Maxi Jolly US	50W	55V	110-127V / 220-240V	350,500,550,650,700,750,850,900mA (DIP switch)	1-10V, pulse switch	World	1

SORAA Constant Current CC2 Lamp Driver COMPATIBILITY LIST

The following drivers meet the on-paper specifications required to be compatible with Soraa CC2 MR16 lamp; not all have been tested by Soraa
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Mfg	Model	Wattage	Output Voltage	Input Voltage	Output Current (mA)	Dimming Method	Country	no. of channels
TCI	Maxi Jolly US DALI 50	50W	55V	110-127V / 220-240V	350,500,550,650,700,750,850,900mA (DIP switch)	DALI	World	1
TCI	Maxi Jolly US TCM 50	50W	55V	110-127V / 220-240V	350,500,550,650,700,750,850,900mA (DIP switch)	DALI	World	1
TCI	Multijolly 4ch	70W	50V	220-240	230,270,310,350mA (DIP switch)	DALI	World	4
Tridonic	TALEXXdriver LCCI 016/0350 B020 (28000738)	16W	3-48V	220-240	70 – 350 mA (set with resistor/pot)	potentiometer 100K	World	1
Tridonic	TALEXXdriver LCI 35W 350mA–900mA TOP C	35W	39V	220-240	350 – 900 mA (set with resistor/pot)	NO	Europe	1
Truelux	AN30V30CC	20W	60V	100-230	300 mA	0-10V	EU/Asia	1
Truelux	DA30V30CC	20W	60V	100-230	300 mA	DALI	EU/Asia	1
Truelux	PH30V30CC	20W	60V	100-230	300 mA	Phase Cut	EU/Asia	1

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