

Constant current fixtures are to be wired in SERIES and require a MINIMUM and MAXIMUM number of fixtures connected to a driver as indicated on the following page.

NOTE:

Powering or testing less than the minimum number of fixtures per driver

or

connecting fixtures with the driver powered (live wired)

or

wiring them in parallel will

IMMEDIATELY and PERMANENTLY DESTROY the fixtures and void the warranty.

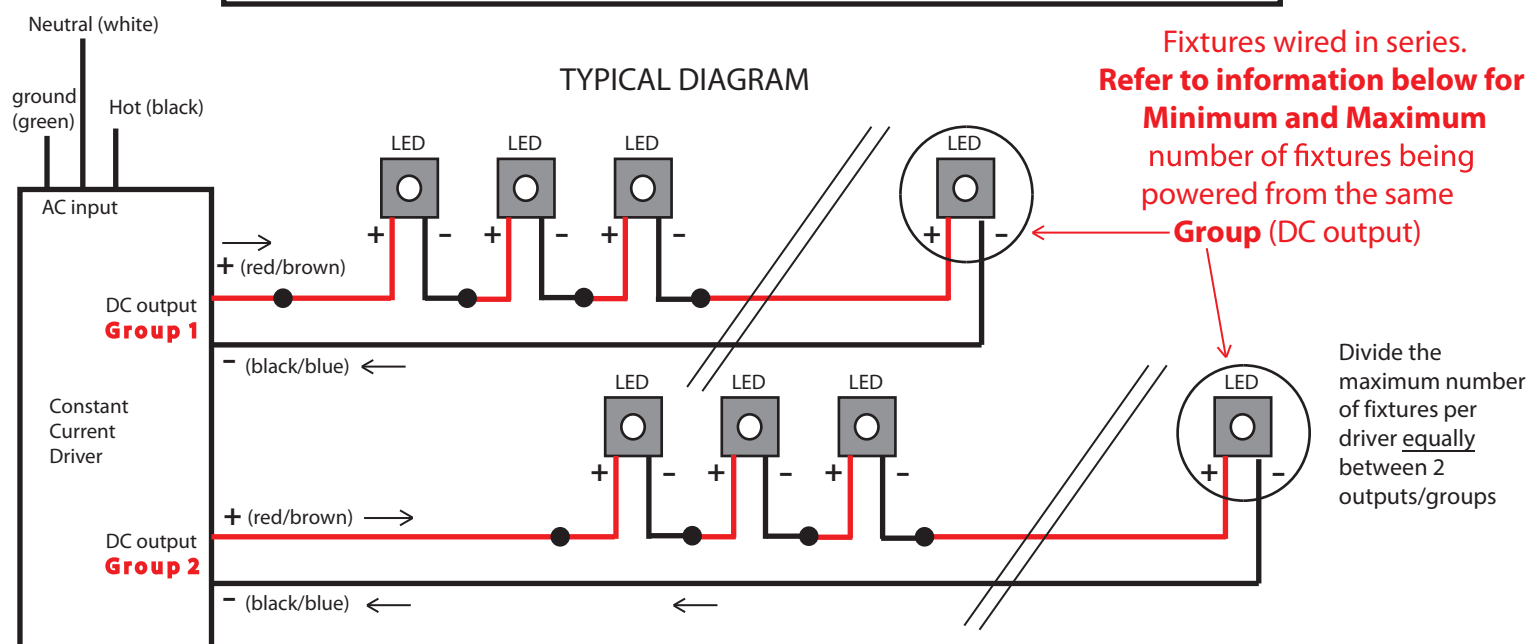
Carefully read instructions prior to installation and testing.

Constant Current drivers

Wiring Key Points

1. This product shall be installed by a qualified electrician.
2. Make sure the main power supply to the driver is turned off when wiring either the LEDs or driver.
3. LEDs shall be wired in series as shown in wiring diagram. CAUTION: parallel wiring will damage LEDs.
4. Wire shall be 18 awg stranded minimum. Large gauge wire shall be used to limit voltage drop in order to maintain the proper operating voltage. Take every precaution to avoid interference from other electrical circuits and equipment.
5. Dimming circuits are more sensitive to voltage drop and electrical interference from other electrical sources.
6. Isolating LED wiring by dedicated circuit for each control zone is recommended.
7. Contractor shall verify the fixture quantities connected to the driver are compatible with the driver's specifications prior to energizing the circuit.
8. All Class II power cable remote wiring and driver enclosures by others.

LED's can be permanently damaged if these points are not followed



Driver

AC Input

Dimming

Minimum number
of fixtures

Maximum number
of fixtures

Group 1:

Group 2:

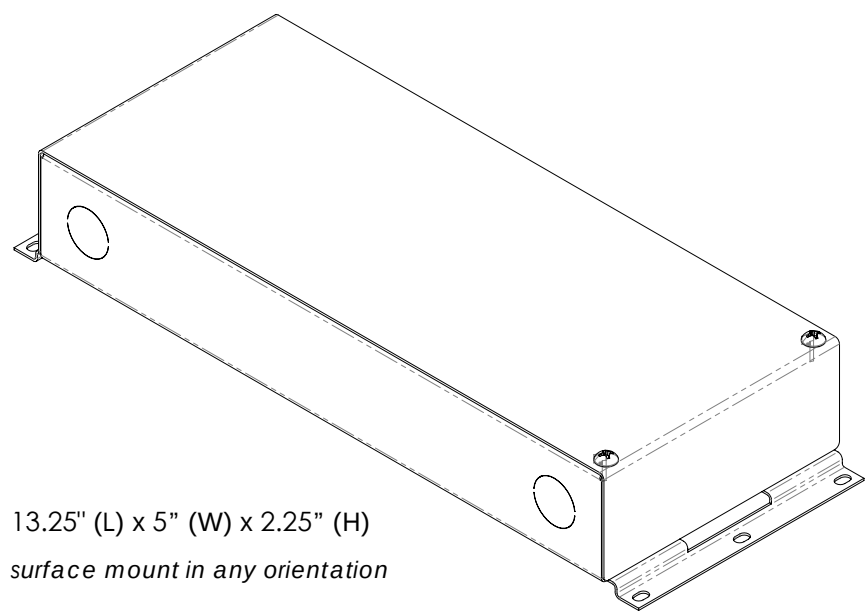
Please note: Dimming/control wiring not shown in the diagram above.

A relay or Powerpack may be required. Running separate line side (line voltage) and controls (low voltage) leads may be required. Refer to the NEC, your local jurisdiction and the 0-10V dimmer or dimming system manufacturer you are planning on using for additional considerations on how to wire the 0-10V control leads.

inter•lux

Project:	Type:	Date:
Manufacturer:	Fixture:	

Dry Location Enclosure



Maximum Wiring Distance Guide*

Wire Gauge	Maximum Lead Length
18	72 ft (22 m)
16	118 ft (36 m)
14	150 ft (46 m)
12	200 ft (61 m)

*Actual distance must be calculated by installer.
Must comply with NEC code.

Our drivers are programmed to Linear dimming curve by default.
Compatible/Recommended dimmers and interfaces*:

- Lutron Diva DVSTV (Wallbox dimmer)
- Lutron Nova T NTSTV (Wallbox dimmer)
- Lutron Maestro MS-Z101/MS-Z101-V (Wallbox dimmer/sensor)
- Lutron PowPak 0-10V RMJ-5T-DV-B (Energi Tripak)
- Lutron GRX-TVI (0-10V interface for Grafik QS and some commercial dimming panels)
- Lutron TVI-LMF-2A (EcoSystem to 0-10V interface)
- Lutron QSN-4T16-S (Energi Savr Node 0-10V)
- Lutron TVM2 module (HomeWorks and commercial dimming panels)

**Consult factory for any dimmer not listed above or if programming to a logarithmic dimming curve is required before ordering the drivers.*



50W 0-10V 'Dim to Dark' LED Driver

SOLOdrive

SOLOdrive offers industry-best Natural Dimming to dark - LED dimming made beautiful! With any dimmer, in any application. Symbiosis on SOLOdrive stands for unity, for the SOLOdrive working seamlessly together with LED modules, controls and intelligent luminaire elements.

Product offering



SOLOdrive 561/S

Part number (P/N)	SL0561S5
Product description	SOLOdrive AC, 50W, 0-10V, 1 control channel, constant current, 2x 55V output, side feed, square metal

Features & benefits

Natural dimming	Dim to dark, smooth brightness changes, excellent flicker performance, adaptable dimming curves, configurable minimum dimming level
LightShape	Dim to Warm: decrease colour temperature when dimming
Symbiosis	Seamless interoperability with LED modules, controls and in-luminaire intelligent devices
LEDcode	Configurable design to work with most constant current LED modules and arrays, while providing a connection point to integrated peripheral controls
Programmable	Fine-tune your driver for any application
Performance	Universal input voltage range, low inrush current and total harmonic distortion (THD), high power factor and efficiency
Camera compatibility	Hybrid HydraDrive technology is proven to work in TV studios and security camera environments

Programming tools

Programming interface	TOOLbox pro (TLU20504)
Programming cable set	TOOLbox pro to LED driver, programming cable, 5pcs (TLC03051)
Programming Hand-held, Touch-and-Go	PJ0035HH1
Programming jig	PJ0500S1
Programming software	FluxTool

Warranty

Warranty period	General Terms and Conditions
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Order number configurator

Standard

P/N

LED output current

Dimming curve

Minimum dimming level

Start-up performance

LightShape

P/N

LED output current

LightShape control type

Dimming curve

LED output 1 current

LED output 2 current

Gamut CCT

Gamut lumen output

Path CCT

P/N	LED driver part number.
LED output current, Standard	Enter value in 1mA increments, e.g. "811" for 811mA
LED output current, LightShape	Output current identical for all outputs? Enter value in 1mA increments, e.g. "811" for 811mA and leave the fields "LED output 1" and "LED output 2" blank. Output current different per output? Enter "MCUR" in LED output current and specify the differing currents in LED output 1/2.
LightShape control type	"DTW" stands for Dim to Warm
Dimming curve	"LOG" for logarithmic (default) "LIN" for linear "SLN" for soft-linear "SQU" for square
Minimum dimming level	Leave blank for default minimum dimming level of 0.1%. Specify in 0.1% increments, e.g. "10.5" for 10.5%.
Start-up performance	Enter "CA24" for improved start-up performance to comply with ENERGY STAR Luminaires v2.0 and the latest CA Title 24 standard, effective January 2017.
Gamut CCT	LightShape-specific option. Enter the LEDs' CCT as "XX-YY" where XX is LED output 1 and YY is LED output 2. Available options per output: 18, 20, 22, 25, 27, 30, 35, 40, 50, 57 and 65. E.g. "18-50" for 1800K on LED output 1 and 5000K on LED output 2.

Gamut lumen output	Enter the lumen output range for LED output 1 and 2 as "XX-YY" where XX is LED output 1 and YY is LED output 2. Available range per output: from "01" for 100lm to "99" for 9900lm. E.g. "10-12" for 1000lm on LED output 1 and 1200lm on LED output 2.
Path CCT	Leave blank if Path CCT requires the same values as Gamut CCT. Or specify the Path CCT values as "XXYY" where XX is LED output 1 and YY is LED output 2. Available options per output: 18, 20, 22, 25, 27, 30, 35, 40, 50, 57, 65. E.g. "18-50" for 1800K on LED output 1 and 5000K on LED output 2.

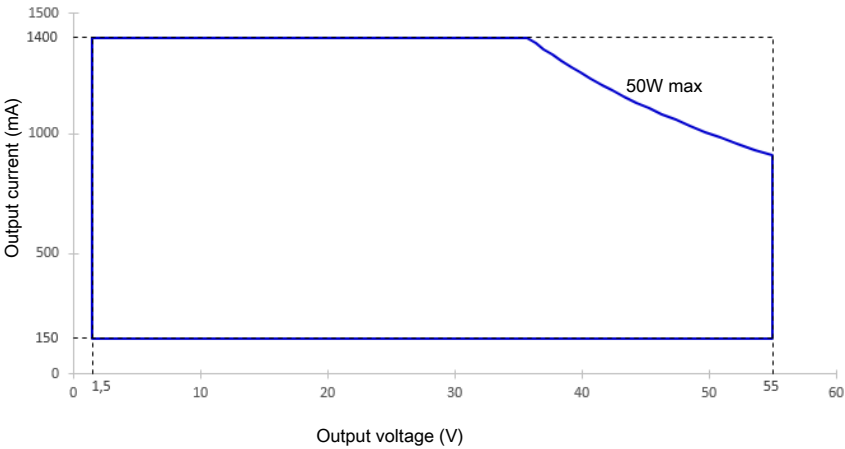
Input characteristics

Nominal input voltage range AC	120 - 250V (ENEC), 120 - 277V (UL)
Nominal input voltage range DC	120 - 250V
Maximum input current	0.7A @ 120V / 60Hz
Input frequency range	50 - 60Hz
Efficiency at full load	86%
Power factor at full load	>0.9
THD at full load	<20%
Maximum inrush current	< 200mA²s @ 120V / 60Hz
Surge protection	2kV differential mode (DM) 2kV common mode (CM)
Maximum standby power	<0.5W

Output characteristics

Maximum LED output power	50W
Number of LED outputs	2 (UL Class 2)
Programmable LED output current range	150 - 1400mA
LED output type	Programmable in 1mA increments within specified current range
LED output current tolerance	+/- 5% at programmed LED output current
LED output voltage range	1.5 - 55V

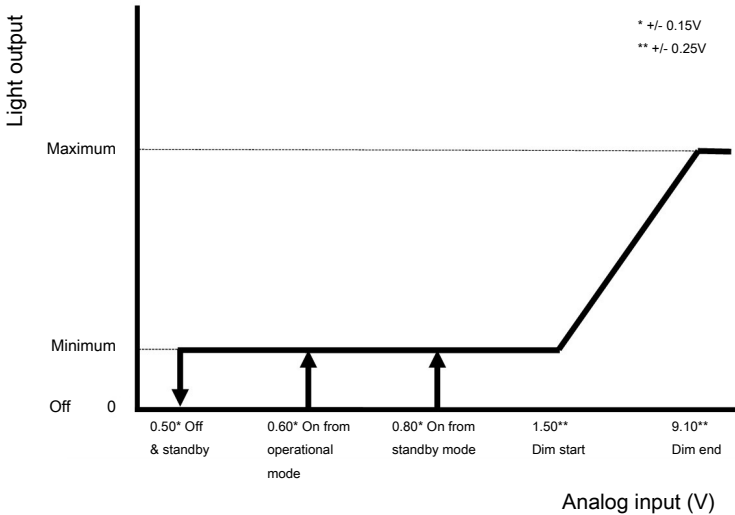
Operating window



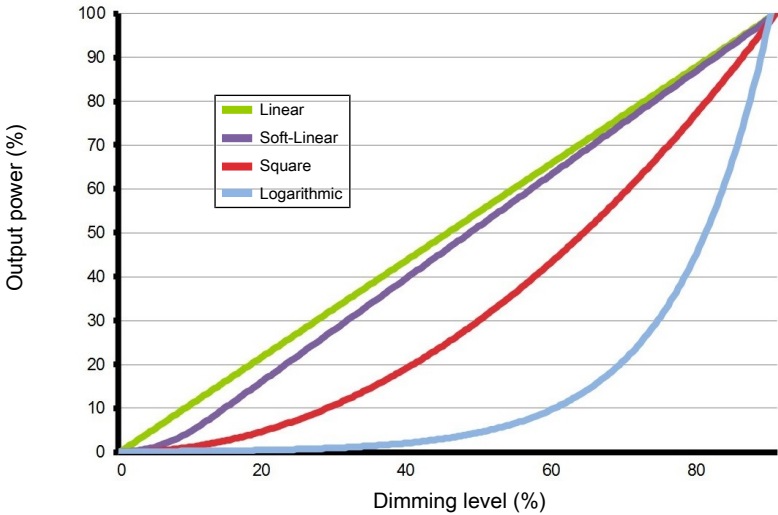
Control characteristics

Control channels	1
Control protocol	0-10V
	LEDcode
Dimming range	100% - 0.1%
Dimming curve options	Logarithmic (default) Linear Soft-Linear Square
LightShape	Dim to Warm, 2x pc-white
Dimming method	Hybrid HydraDrive
0-10V current draw	<2mA

0-10V dimming chart



Dimming curves



Environmental conditions

Operating ambient temperature (Ta) range	-20 °C to +50 °C
Maximum operating case temperature (Tc max)	83 °C
Lifetime	50000 hours at a maximum case temperature (Tc) of 75 °C
UL Type TL	Measured Tref: 63 °C Maximum allowed Tref: 80 °C Measured at 1400mA

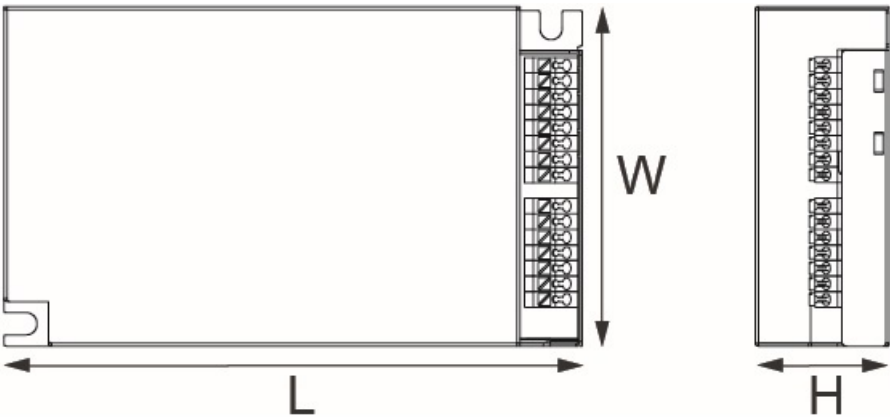
LED driver protection

Thermal	The LED output current is decreased whenever the internal LED driver temperature exceeds factory preset temperature. The LED output current is increased again once the internal LED driver temperature drops below this internal temperature threshold. If the internal LED driver temperature continues to increase, despite a decrease in output current, the LED driver will shut down.
LED output short circuit	The LED output current is cut off whenever the LED driver detects a short-circuit. The LED driver will attempt a restart every 400ms after a short-circuit is detected.
LED output overload	The LED driver decreases the LED output current sequentially, until it reaches its maximum rated power, whenever a load that exceeds the LED driver's maximum rated power is connected to the LED output.
Reverse polarity	The LED driver will not yield any current if the polarity of the load on the LED output is reversed. This situation will not damage the LED driver but may damage the LED load.

LED protection

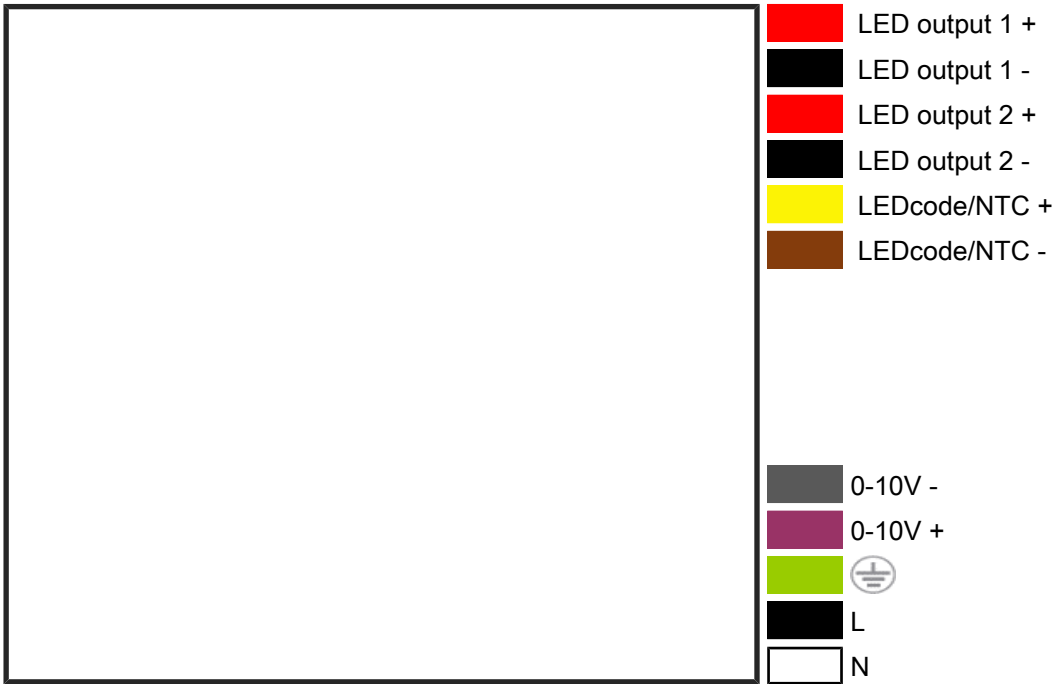
Thermal protection LED	An external NTC thermistor, which is placed on a PCB near the LEDs, can be connected to the driver via the LEDcode/NTC terminals. The output current to the LEDs is then decreased by 75% whenever the NTC exceeds a maximum allowable temperature, which is specified by the user in the FluxTool software. The default NTC temperature limit is set to 70 °C.
Thermistor value	47kΩ
Suitable thermistors	leaded: Vishay, P/N 238164063473 screw: Vishay, P/N NTCASCWE3473J

LED driver mechanical details



Length (L)	typical: 130 mm / 5.1 in
Width (W)	typical: 76 mm / 2.99 in
Height (H)	typical: 30 mm / 1.18 in
3D files available on product web page	IGS
Weight	350 g
Mounting torque	Not to exceed 0.5Nm

Connector layout



Input wiring specifications

Connector type	push-in terminals
Connector supplier and series	Wago 250 series
Wire type	solid or stranded copper
Wire core cross section	0.5 - 1.5 mm² AWG 20 – 16
Wire strip length	9.0 mm

Output wiring specifications

Connector type	push-in terminals
Connector supplier and series	Wago 250 series
Wire type	solid or stranded copper
Wire core cross section	0.5 - 1.5 mm² AWG 20 – 16
Wire strip length	9.0 mm
Maximum remote mounting distance of LED load	AWG 20 (0.52 mm²) - 14 m / 46 ft AWG 19 (0.65 mm²) - 18 m / 59 ft AWG 18 (0.82 mm²) - 22 m / 72 ft AWG 17 (1.04 mm²) - 28 m / 92 ft AWG 16 (1.31 mm²) - 36 m / 118 ft

Automatic circuit breakers (MCB)

Maximum loading	MCB type	B10	B13	B16	C10	C13	C16
	Number of LED drivers	14	18	22	14	18	22

Standards and compliance

UL, recognized component	UL 1310 UL 8750 (Class 2 output). Type TL LED driver.
ENEC safety	EN 61347-1 EN 61347-2-13 (Emergency lighting)
ENEC performance	EN 62384
Conducted emissions	EN 55015
Radiated emissions	EN 55015
Radio disturbance characteristics	EN 55022
Harmonic current emissions	EN 61000-3-2
Electromagnetic immunity	EN 61547
0-10V	IEC/EN 60929 annex E NOTE: From 0.6V to 10V eldoLED LED drivers comply with IEC/EN 60929 annex E. Below 0.6V eldoLED LED drivers comply with ABL 0-10V Design Spec v1.2 enabling standby mode. For detailed dimming characteristics see 0-10V response chart in Control Characteristics.
FCC	47 CFR Part 15 class B
RCM	AS/NZS 61347.1, AS/NZS 61347.2.13
Restriction of hazardous substances	RoHS3 (Directives 2011/65/EU-2015/863/EU)

Certifications



Safety



FELV control terminals marked “Risk of electric shock” are not safe to touch.
Dimming connected to FELV control terminal shall be insulated for Low Voltage supply of the control gear.



Risk of electrical shock. May result in serious injury or death. Disconnect power before servicing or installing.



The LED driver may only be connected and installed by a qualified electrician. All applicable regulations, legislation, and building codes must be observed. Incorrect installation of the LED driver can cause irreparable damage to the LED driver and the connected LEDs.

Pay attention when connecting the LEDs: polarity reversal results in no light output and often damages the LEDs.



LED drivers are designed and intended to operate LED loads only. Powering non-LED loads may push the LED driver outside its specified design limits and is, therefore, not covered by any warranty.



eldoLED products are designed to meet the performance specifications as outlined at certain operating conditions in the data sheet. It is the responsibility of the fixture manufacturer to test and validate the design and operation of the system under expected and potential use cases, including faults.



Please observe voltage drop over long cable lengths. Longer cable lengths increase EMI susceptibility.



Product renderings and dimensional drawings are generic for the housing type. Product label, connector type and quantity may vary.

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Eldoled ECO30W, SOLO50W, SOLO100W

Fixture mA	Fixture Wattage	Max. number of fixtures per output (MULTI-OUTPUT DRIVER)	Max. total fixtures per ECO30W driver (1x output/driver)	Max. total fixtures per SOLO50W driver (2x outputs/driver)	Max. total fixtures per SOLO100W driver (4x outputs/driver)
180mA	7.0W	1	1	2	4
200mA	7.5W	1	1	2	4
220mA	0.6W	10	10	20	40
220mA	0.7W	10	10	20	40
220mA	1.9W	5	5	10	20
220mA	8.0W	1	1	2	4
220mA	9.0W	1	1	2	4
250mA	3.0W	3	3	6	12
300mA	12.0W	1	1	2	4
350mA	1.0W	10	10	20	40
350mA	1.5W	10	10	20	40
350mA	3.0W	5	5	10	20
350mA	4.0W	3	3	6	12
350mA	4.2W	3	3	6	12
350mA	12.0W	1	1	2	4
350mA	13.0W	1	1	2	4
400mA	15.0W	1	1	2	4
450mA	16.0W	1	1	2	4
500mA	1.5W	10	10	20	40
500mA	4.5W	4	4	8	16
500mA	6.0W	3	3	6	12
500mA	6.5W	3	3	4	8
500mA	9.0W	2	2	4	8
500mA	13.0W	1	1	2	4
500mA	14.0W	1	1	2	4
500mA	18.0W	1	1	2	4
500mA	20.0W	1	1	2	4
570mA	63.0W	1*	N/A	N/A	1
580mA	20.0W	1	1	2	4
630mA	2.0W	10	10	16	32
630mA	2.0W	10	10	16	32
630mA	4.0W	6	6	10	20
630mA	6.0W	3	3	6	12
630mA	7.0W	3	3	4	8
630mA	7.2W	3	3	4	8
630mA	7.5W	3	3	4	8
630mA	8.0W	3	3	4	8
630mA	9.0W	2	2	4	8
630mA	12.0W	2	2	2	4
630mA	18.0W	1	1	2	4
630mA	23.0W	1	1	1	3
630mA	24.0W	1	1	1	3
660mA	45.0W	1*	N/A	N/A	1
700mA	2.0W	10	10	16	32
700mA	6.3W	3	3	6	12
700mA	6.5W	3	3	4	8
700mA	8.0W	3	3	4	8
700mA	13.0W	1	1	2	4
700mA	21.0W	1	1	1	3
700mA	24.0W	1	1	1	3
700mA	25.0W	1*	N/A	1	3
800mA	10.0W	2	2	2	4
840mA	30.0W	1*	N/A	1	2
850mA	60.0W	1*	N/A	N/A	1
900mA	33.0W	1*	N/A	1	2
900mA	40.0W	1*	N/A	1	2
900mA	42.0W	1*	N/A	1	2
950mA	34.0W	1*	N/A	1	2
950mA	35.0W	1*	N/A	1	2
1050mA	48.0W	1*	N/A	N/A	1
1250mA	45.0W	1*	N/A	N/A	1
1250mA	46.0W	1*	N/A	N/A	1
1300mA	46.0W	1*	N/A	N/A	1
1850mA	54.0W	1*	N/A	N/A	1

All Fixtures **WIRED IN SERIES**

Consult factory for any combination not listed above.

*Not all of the driver's outputs used. Where applicable, please check the maximum number of fixtures for the entire driver.