150W

L05065 LED Driver 150W, 24-60Vdc, 700-4000mA L1M1MLT400S-150E

Engineered for Best Fixture performance

Fulham LumoSeries drivers are all built on core engineering design principles for exceptional standards of performance and reliability in LED systems. Highest grade critical components together with design features for thermal management ensure excellent reliability. Our low ripple designs create flicker-free lighting and perfectly smooth dimming. Simplicity of specification and installation is a key characteristic of all Fulham LumoSeries drivers. Hence the wide voltage and current ranges andindustry leading low inrush current.

Powerful and feature-rich LED driver with leading efficiency and low inrush current.

Engineered for Performance

- Industry leading efficiency
- Excellent EMC behavior
- Very high power factor

Engineered for Reliability

- Low inrush current
- Thermal protection (automatic current limiter)
- Short and open circuit protection, overload and overvoltage protection

Engineered for Simplicity.

- Future-proof flexibility – industry leading voltage and current range enabling seamless support of LED generations and minimizing supply chain complexity

5 year warranty

Fulham LumoSeries takes pride in the quality of its products. We not only develop all products in house, they are also produced to ensure guaranteed reliability and performance. Fulham LumoSeries drivers come with the assurance of a 5 year warranty. After all, with typical LED lifetimes of 50,000 hours, it is critical to have a power supply with equal reliability.

5 YEAR WARRANTY

Productfeatures

- Wide output voltage range 24 - 60Vdc
- Wide range of current settings 700 – 4000mA
- 0-10V-, 1-10 V- and potentiometer dimming
- Dim to off function selectable
- NTC temperature sensor input
- Approved for central battery backup systems (EN50172)
- 12Vdc fan output controlled by NTC temperature sensor
- Max. inrush current <1.2 A
- Low 100Hz output current ripple (<17 % at 2.5A)
- Thermal protection: dimming instead of switch off
- Active output overvoltage protection
- Up to 90 % efficiency across a wide range of loads
- SELV
- Power factor 0.95
- ENEC certified
- Engineered and Manufactured in Europe

Certificates and standards

- ENEC05, CE
- EN55015 / EN61000-3-2 / EN61347-2-13 / EN61347-1 / EN61547 / EN62384 /EN50172 / SELV

Classifications

1-10V

* Class II, reinforced insulation, when built in without strain relieve.

Specific technical data

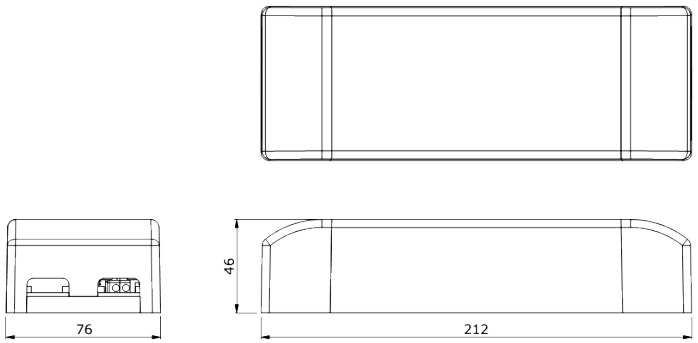
Type	Efficiency At full load	Output current	Output voltage range	Open circuit output voltage	Max. output power	Dimming
L05065	>90 %	700 – 4000 mA	24 – 60Vdc	65Vdc	150W @ 240Vac 100W @ 110Vac	1 – 10V, potentiometer 100K log b (SELV)

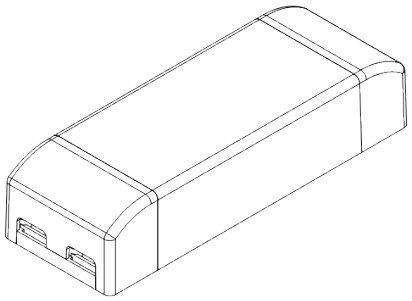
Technical data

Rated supply voltage	220-240 Vac
Input voltage	90-240 Vac / 125-375 Vdc*
Mains frequency	50/60 Hz
Output current tolerance	5%
100 HZ ripple current	<17% (measured at 2.5A)
Power factor at full load	> 0.95
Standby power	< 500mW
Nominal line current at 240 Vac	700 mA
Dimming method	linear
Minimum dim level	300 mA
Startup time	<500ms
Warm up time to 95% of light output	<2s
Output isolation	SELV
Surge protection (diff. / comm.)	4 kV / 6 kV
IP classification	IP 20
Circuit lifetime	50,000 hrs at Tc max.
Case dimensions	212 x 76 x 46 mm
Case material	Polyamide 6 (PA6)
Fan output	12Vdc / 2.4W (200mA max)

* External DC fuse is required

Dimensions





Inrush current

Mains max. peak inrush at full load	1.160A per driver on phase 60º (average starting angle)* 1.185A per driver on phase 90º (worst case starting angle)*

* Tested at 240 Vac 1 driver connected, with TTI HA1600A analyzer.

Maximum number of drivers on automatic circuit breakers

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20
L05065	12	15	19	24	12	15	19	24

Thermal specifications

Ambient temperature range (Ta)	-25 to 45°C
Maximum case temperature (Tc)	< 80 °C
Storage temperature range	-25 to 45°C

Overload protection

If the maximum output power is exceeded, the LED driver reduces the LED output current. After elimination of the overload the nominal operation is restored automatically.

Over temperature protection

The LED driver is protected against thermal overload. When the temperature limit is exceeded, the output current is reduced.

Active overcurrent protection

Active overcurrent protection to allow hot swapping of LEDs higher than 40 Watt.

It will take 15 seconds before the output is restored after reconnecting the LED(s), this to protect the LED(s) from damaging.

Short-circuit protection

In case of a short circuit the LED driver switches to protection mode. After the removal of the short-circuit the LED driver will recover automatically.

DC Detection

When a DC voltage of 125V or higher is detected on the mains connection of the driver, the drivers will always switch on and will dim to 10% of the selected output current with a minimum of 300mA.

The driver will detect within 50ms if a DC voltage is presented on the mains, when the driver is switched off by the 0/1-10V or potentiometer, the driver will switch on within 500ms.

No-load operation

In no-load operation the output voltage will not exceed the specified open circuit output voltage.

Fan output

The fan output can be controlled with an external NTC sensor of 47K with a Beta (25/85) Constant of 4.050K ± 1%.

When the measured NTC temperature is higher than 65°C, the fan output voltage will be switched ON.

When the measured NTC temperature is lower than 60°C, the fan output will be switched OFF.

When the measured NTC temperature is higher than 80°C, the led output current will be dimmed

(See NTC temperature chart on page 8).

As special feature the fan can also be enabled by placing a 0Ω resistor or a piece of wire in the NTC input. The LED output will not dim in this case.

Mounting/ Cooling

At full load the driver must be mounted with full bottom surface contact on a heat conductive surface. For instance:

@ 4A at least 750cm²,

@ 3A at least 450cm²,

@ 2.5A at least 300cm².

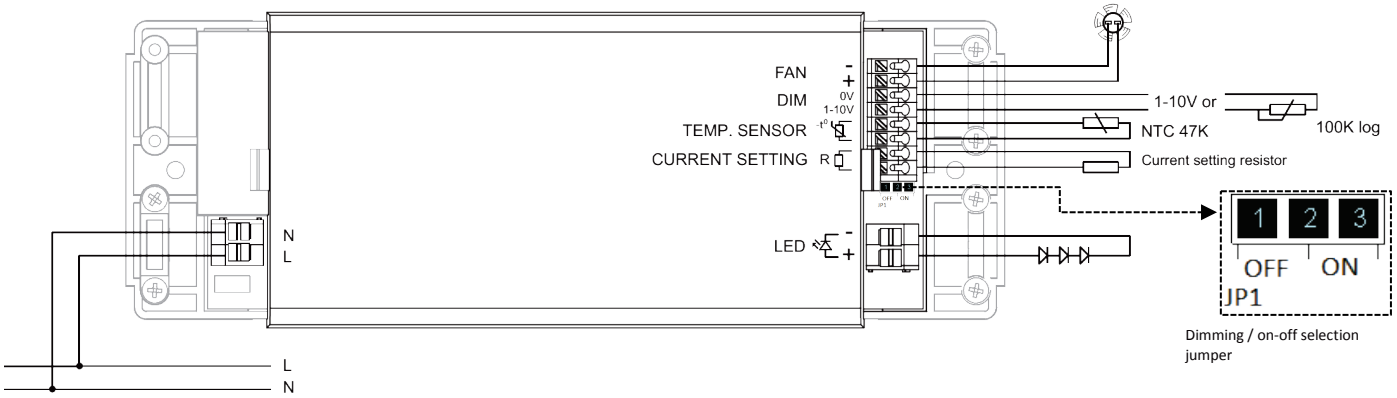
Always test if the surface is sufficient enough before installing the driver..

LED load

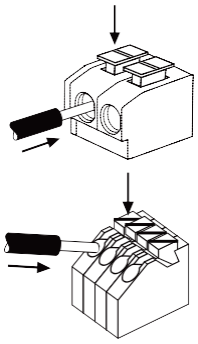
Fulham LumoSeries LED drivers are designed to drive passive LEDs, COBs and LED assemblies.

Proper function is not guaranteed when (LED)loads with active components are used.

Wiring diagram

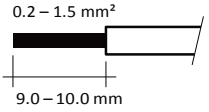


Wiring of device

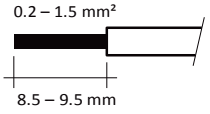


Solid

wire preparation:
0.2 – 1.5 mm²

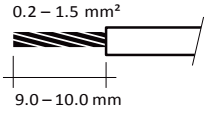


wire preparation:
0.2 – 1.5 mm²

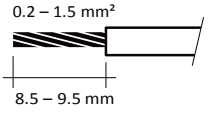


Stranded (2 A max)

wire preparation:
0.2 – 1.5 mm²

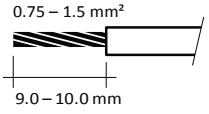


wire preparation:
0.2 – 1.5 mm²



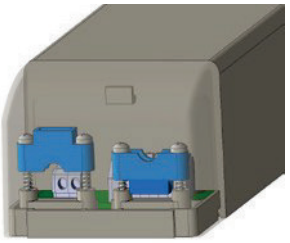
Stranded (4 A max)

wire preparation:
0.75 – 1.5 mm²



Strain relief

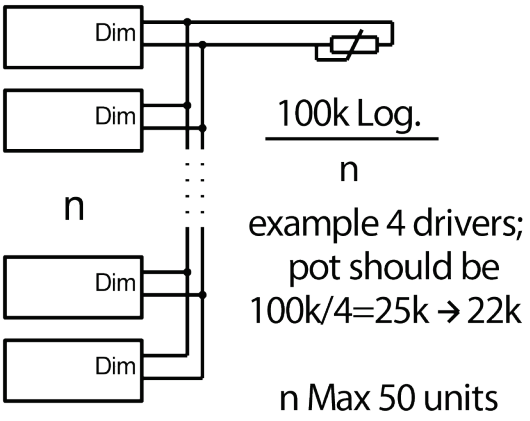
The strain relief inserts can be reversed to accommodate various types of wiring.



Dimming

0-10V / 1-10V dimming

The L05065 can be dimmed by using a potentiometer (100K Log B)
Or with a 0/1-10V system.
In case of multiple drivers on one dimmer,
make sure that the wires are connected according to polarity.
When a potentiometer is used, the value of the potentiometer can be calculated with the following formula: 100KΩ divided by the amount of drivers used.
Each driver supplies the 0/1-10V dimming bus With 1mA max.
(50mA sink capable dimmer can dim 50 drivers).



Dimming / on-off selection jumper

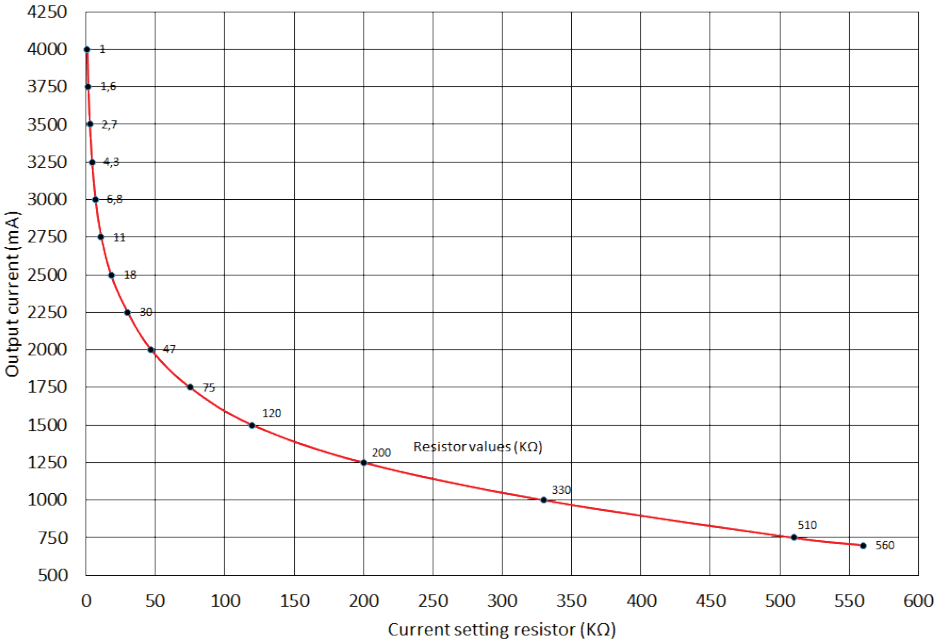
On the secondary side of the driver a jumper is mounted.
(see connection diagram)
With this jumper the on-off function can be enabled;
This means that it is selectable whether the driver can be switched on-off with the dim input or not.
When the jumper is in the “off” position, the driver will switch off when the voltage on the dim input is lower than 1V.
When the jumper is in the “on” position, the driver will stay on at the minimum dim level.
Always use a system / dimmer which complies with EN60929 Annex E.

Output current resistor setting

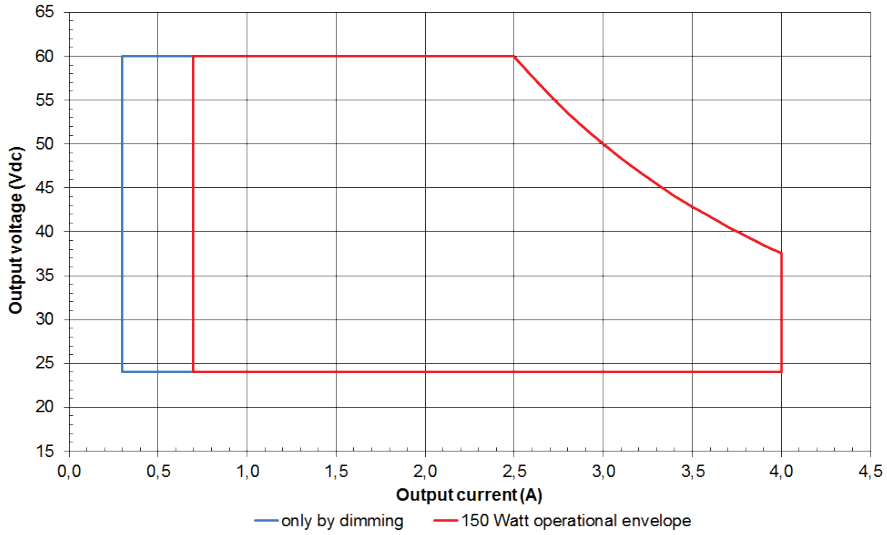
Resistor value	Output current (+/- 5%)
0 (short)	4000 mA
1 KΩ	4000 mA
1.1 KΩ	3950 mA
1.2 KΩ	3900 mA
1.3 KΩ	3850 mA
1.5 KΩ	3800 mA
1.6 KΩ	3750 mA
1.8 KΩ	3700 mA
2 KΩ	3650 mA
2.2 KΩ	3600 mA
2.4 KΩ	3550 mA
2.7 KΩ	3500 mA
3 KΩ	3450 mA
3.3 KΩ	3400 mA
3.6 KΩ	3350 mA
3.9 KΩ	3300 mA
4.3 KΩ	3250 mA
4.7 KΩ	3200 mA
5.1 KΩ	3150 mA
5.6 KΩ	3100 mA
6.2 KΩ	3050 mA
6.8 KΩ	3000 mA
7.5 KΩ	2950 mA
8.2 KΩ	2900 mA
9.1 KΩ	2850 mA
10 KΩ	2800 mA
11 KΩ	2750 mA
12 KΩ	2700 mA
13 KΩ	2650 mA
15 KΩ	2600 mA
16 KΩ	2550 mA
18 KΩ	2500 mA
20 KΩ	2450 mA
22 KΩ	2400 mA
24 KΩ	2350 mA

Resistor value	Output current (+/- 5%)
27 KΩ	2300 mA
30 KΩ	2250 mA
33 KΩ	2200 mA
36 KΩ	2150 mA
39 KΩ	2100 mA
43 KΩ	2050 mA
47 KΩ	2000 mA
51 KΩ	1950 mA
56 KΩ	1900 mA
62 KΩ	1850 mA
68 KΩ	1800 mA
75 KΩ	1750 mA
82 KΩ	1700 mA
91 KΩ	1650 mA
100 KΩ	1600 mA
110 KΩ	1550 mA
120 KΩ	1500 mA
130 KΩ	1450 mA
150 KΩ	1400 mA
160 KΩ	1350 mA
180 KΩ	1300 mA
200 KΩ	1250 mA
220 KΩ	1200 mA
240 KΩ	1150 mA
270 KΩ	1100 mA
300 KΩ	1050 mA
330 KΩ	1000 mA
360 KΩ	950 mA
390 KΩ	900 mA
430 KΩ	850 mA
470 KΩ	800 mA
510 KΩ	750 mA
560 KΩ	700 mA
∞ (no resistor)	700 mA

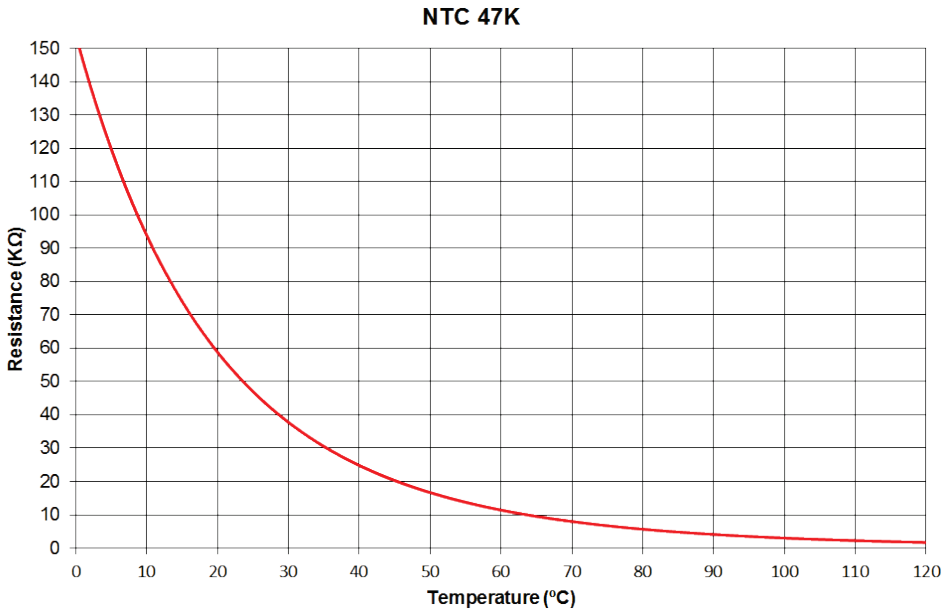
Output current vs resistance



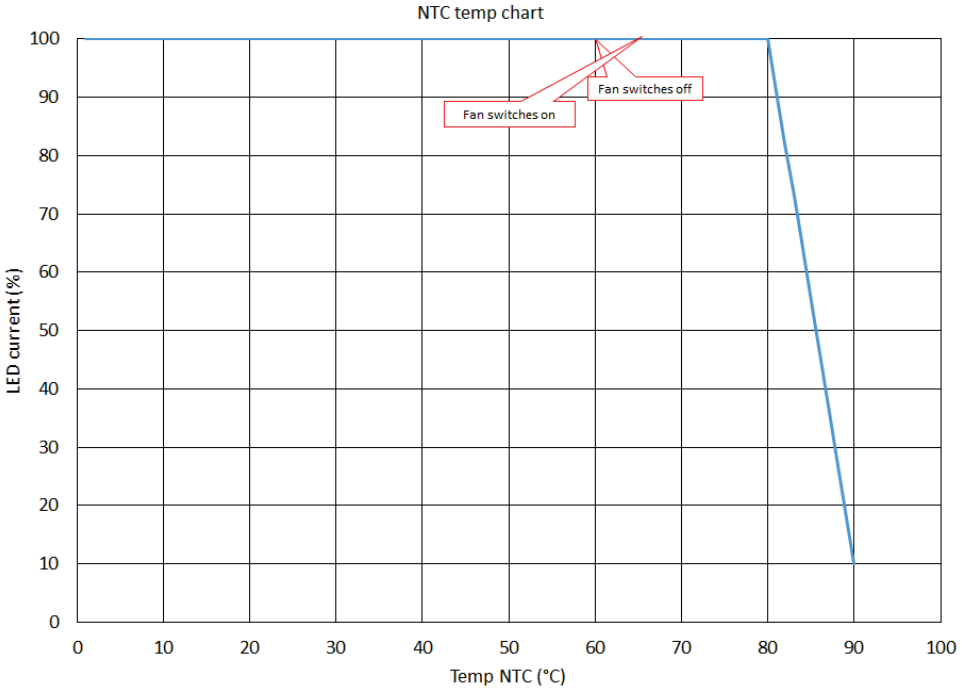
Power chart



NTC 47K chart



NTC temperature chart



Ordering data

Part	Part number	Alternate part number	EAN code	Packaging	Multibox carton	Weight per piece
L05065 LED Driver 150W, 24-60Vdc, 700-4000mA	L05065	L1M1MLT400S-150E	8718801703830	10 pieces	X	625 g

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