

L05011i LED Driver 20W, 3 – 33Vdc, 350 – 1050mA **L1M1MLT105S-20E**

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 and industry leading low inrush current.



Wide voltage and current range with zero ripple current

Engineered for Performance

- Industry leading efficiency
- Excellent EMC behavior
- Very high power factor
- Hot swapping of LEDs > 3W

Engineered for Reliability

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

Engineered 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.



Product features

- Wide output voltage range 3 - 33Vdc
- Three current settings 350, 700 or 1050mA
- Three fixed voltage settings 10, 12 or 24Vdc
- 0-10V, 1-10V-, potentiometer and pulse dimming
- Low inrush current
- Zero ripple current
- Dual stage topology
- Active overcurrent protection
- Up to 85% efficiency across a wide range of loads
- Power factor 0.9C
- SELV
- ENEC certified
- Engineered and Manufactured in Europe

Certificates and standards

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

Classifications



Dimming



- * Class II, enhanced insulation, when used with strain relieve.
- ** Class II, reinforced insulation, when built in without strain relieve.

Specific technical data

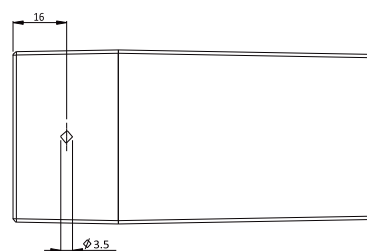
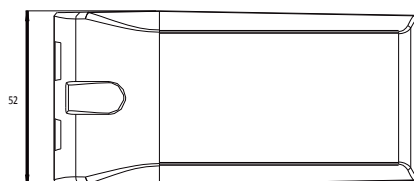
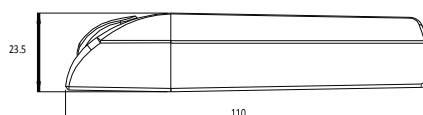
Type	Efficiency at full load	Constant current output	Constant voltage output	Output voltage range	Open circuit output voltage	Max. output power	Dimming
L05011i	85%	350mA / 11.55W 700mA / 20W 1050mA / 20W	10Vdc / 10W 12Vdc / 12W 24Vdc / 20W	3-33Vdc	33Vdc	20W @ 240Vac 15W @ 110Vac	0-10V, 1-10V, potentiometer (100K log b) or pulse (SELV)

Technical data

Rated supply voltage	220-240Vac
Input voltage	110-240Vac 150-275Vdc*
Mains frequency	50/60Hz
Output current tolerance	5%
100 Hz ripple current at full load	<1%
Power factor at full load	0.9C
Standby power	250mW
Nominal line current at 240 Vac	110mA
Dimming method	PWM 230Hz
Minimum dim level	10mA
Non-volatile memory	No
Startup time	< 10ms
Warm up time to 95% of light output	< 1s
Output isolation	SELV
Surge protection (diff. / comm.)	2KV / 6KV
IP classification	IP20
Circuit lifetime	50,000 hrs at Tc max.
Case dimensions	110 x 52 x 23.5 mm
Case material	Polyamide 6 (PA6)

* External DC fuse is required

Dimensions



Inrush current

Mains max. peak inrush at full load	3.051A per driver on phase 60° (average starting angle)* 1.190A per driver on phase 90° (worst case starting angle)* 1.373A per driver on phase 60° (average starting angle)** 3.836A per driver on phase 90° (worst case starting angle)**
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** Tested at 240Vac 1 driver connected, with TTI HA1600A analyzer.

* Tested at 240Vac 10 drivers parallel 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
L05011i	90	117	144	180	90	117	144	180

Thermal specifications

Ambient temperature range (Ta)	-20 to 50 °C *
Maximum case temperature (Tc)	<85 °C *
Storage temperature range	-20 to 50 °C

* When used with a load over 15W, the driver needs to be mounted on a heat conductive surface of at least 200cm²

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. If the temperature limit is exceeded, the output current is reduced.

Active overcurrent protection

Active overcurrent protection to allow hot swapping of LEDs higher than 3 Watt.

Secondary switching

The L05011i is designed to switch the LEDs on/off by using the dim input or by switching the mains.

The L05011i is not designed to switch the LEDs directly on/off in the secondary power line.

Mounting/ Cooling

Above an output power of 15W, the driver needs to be mounted on a heat conductive surface of at least 200cm² at 700mA. And 350cm² at 1050mA. Always test if the surface is sufficient enough before installing the driver.

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.

No-load operation

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

LED load

Fulham LumoSeries LED drivers are designed to drive passive LEDs, - COB's and -LED assemblies

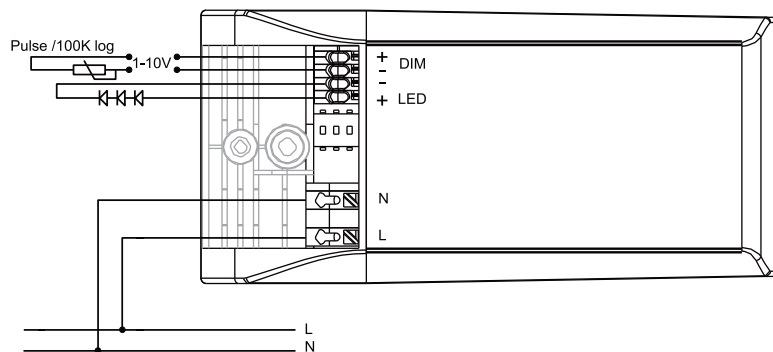
Proper function is not guaranteed when (LED)loads with active components are used.

Unexpected behavior when using 0-10V/ 1-10V

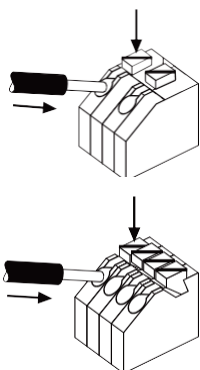
When controlling the driver with a 0-10V/ 1-10V system it can occur that the 0/1-10V controller delivers (or allows) a voltage that is higher than 12V. The voltage triggers the driver in to 'pulse switch mode'. This will result in unexpected and unintended behavior of the LED's. In case of symptoms like these, it is sufficient to clamp the output of the control system with a 10 or 12V zener diode. (cathode to the positive).

To prevent this from happening always use a system / dimmer which complies with EN60929 Annex E.

Wiring diagram

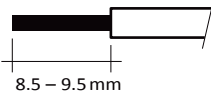


Wiring of device



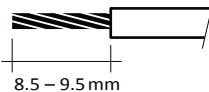
Solid

wire preparation:
0.2 – 1.5 mm²

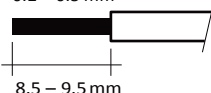


Stranded

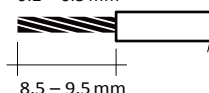
wire preparation:
0.2 – 1.5 mm²



wire preparation:
0.2 – 0.5 mm²

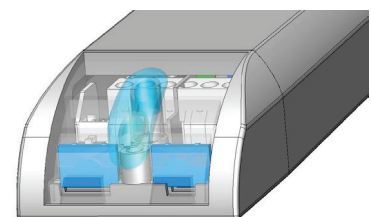


wire preparation:
0.2 – 0.5 mm²



Strain relief

The strain relief inserts can be removed to accommodate wiring of larger diameters.



Dimming

The L05011i can be switched on/off and dimmed by using the dim input.

The driver automatically detects whether a 0-10V, potentiometer or puls switch is connected.

Pulse dimming

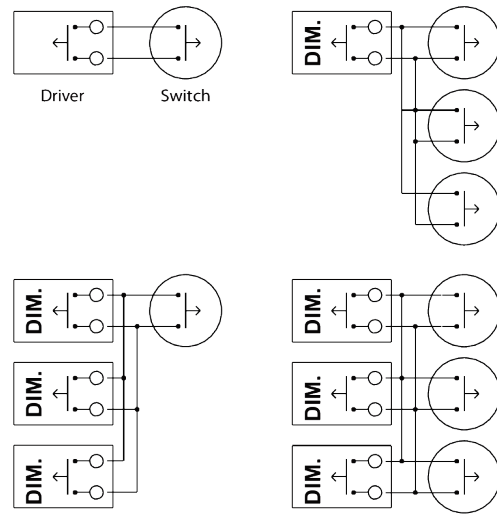
In case of multiple drivers on one dimmer make sure that the wires are connected according to polarity.

Disorganized system when using pulse function

When parallel connecting a pulse switch on several drivers it can occur that the pulse length is just on the detection border. On this critical border it can be that the drivers are not working in unison. They can be reset with the following procedure.

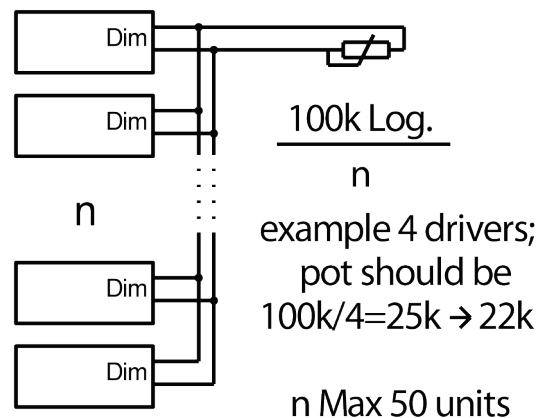
Reset procedure:

By long pressing the pulse switch the drivers always turn on, independent of the initial state.
Give a short pulse and all the drivers are now off.
By long pressing again all drivers turn on and ramp up in unison.



0-1-V, 1-10 V or potentiometer dimming

In case of multiple drivers on one dimmer make sure that the wires are connected according to polarity.



Dipswitch settings

The constant current or constant voltage setting can be adjusted by using the dipswitch terminal on the driver. In this table all the supported currents and voltages are listed down.

When the switch lever is in the right position (ON), it is seen as a '1'.
When the switch lever is in the left position (Off), it is seen as a '0'.

Output	Dipswitch				
	1	2	3	4	5
300mA	0	0	0	0	0
700mA	1	0	0	0	0
1050mA	0	1	0	0	0
10Vdc	0	1	0	0	1
12Vdc	0	1	0	1	0
24Vdc	0	1	1	0	0

Ordering data

Part	Part number	Alternate Part	EAN code	Packaging carton	Multibox carton	Weight per piece
L05011i LED Driver 20W, 3 - 33Vdc, 350/700/1050mA	L05011i	L1M1MLT105S-20E	8718801703120	20 pieces	240 pieces	105 g

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