

L1V1230105S-25E (L05023-A) LED Driver 25W, Mains dimmable, 100 - 1050 mA

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.



A versatile driver with small formfactor and a wide voltage Output range ideally suited for COB arrays and LED strips.



Engineered for Performance

- Excellent EMC behavior
- Very high power factor
- Hot swapping of LEDs > 10W

Engineered for Reliability

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

Engineered for Simplicity

- High quality low cost product with low inrush current and high efficiency
- The L1V1230105S has “automatic dim mode detection”.
This implies that the driver automatically detects what kind of dimmer is connected.

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 - 43 Vdc
- Wide range of current settings 100 – 1050 mA
- Mains- (triac, trailing edge and leading edge) dimming
- Zero ripple current
- Automatic dim mode detection
- Suitable for warm dimming (natural toning/ dim-to-warm) LEDs
- Max inrush current 370 mA
- Dual stage topology
- Thermal protection: dimming instead of switching off
- Open circuit output voltage protection
- Up to 83 % efficiency across a wide range of loads
- Power factor >0.9C

- Engineered and Manufactured in Europe
- SELV

Certificates and standards

- ENEC-02, CE
- EN55015 / EN61000-3-2 / EN61347-2-13 / EN61347-1 / EN61547 / EN62384 / SELV

Classifications



Dimming



Specific technical data

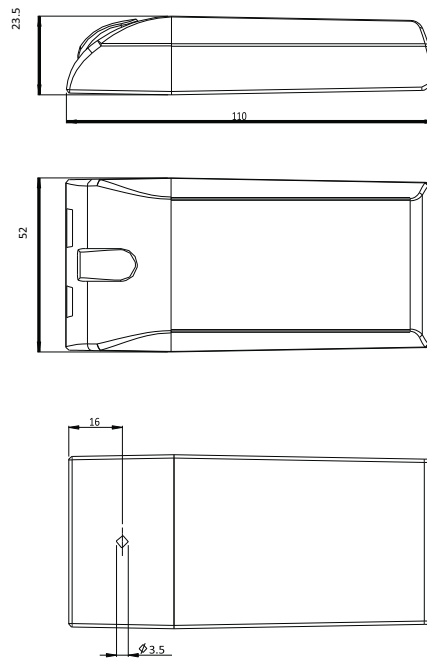
Type	Efficiency at full load	Programmable Output Current	Default Output Current	Output Voltage Range	Open Circuit Output Voltage	Max. Output Power	Nominal Line Current @240VAC
L1V1230105S-25E (L05023-A)	≤ 83 %	100 - 1050 mA	700mA	3 - 43 Vdc	49 Vdc	24.5 W	135 mA

Type	Mains Dimmable	Dipswitch	Programmable
L1V1230105S-25E (L05023-A)	Y	Y	Y

Technical data

Rated supply voltage	220-240 Vac
Input voltage range	220-240 Vac
Nominal line current at 240 Vac	135 mA
Mains frequency	50/60 Hz
Output current tolerance	5%
Output power	24.5 W max,
Output current range	100 – 1050 mA
Output voltage range	3 – 43 Vdc
Open circuit output voltage	49 Vdc
100 Hz ripple current	<1%
Power factor at full load	>0.9C
THD at full load	>10 %
Dimming method	linear
Minimum dim level	15 mA
Startup time	< 500 ms
Warm up time to 95% of light output	< 2 sec
Output isolation	SELV
Surge protection (diff. / comm.)	3 kV / 2 kV
IP classification	IP 20
Circuit lifetime	50,000 hrs at Tc max.
Case dimensions	110 x 52 x 23.5 mm
Weight	170 g
Case material	Polyamide 6 (PA6)

Dimensions



Inrush current

Mains max. peak inrush at fullload	0.200A per driver on phase 60° (average starting angle)*
	0.350A per driver on phase 90° (worst case starting angle)*
	0.200A per driver on phase 60° (average starting angle)**
	0.370A per driver on phase 90° (worst case starting angle)**

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

* Tested at 240 Vac 10 drivers parallel connected, with TTI HA1600A analyzer.

Maximum number of drivers on automatic circuit breakers at maximum load

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20
	67	87	107	134	67	87	107	134

Thermal specifications

Ambient temperature range (Ta)	-20 to 45 °C
Maximum case temperature (Tc)	83°C
Storage temperature range	-20 to 50°C

All above mentioned data is measured without dimmer

Mains dimmers and compatibility

The driver is designed to work with most common dimmers.

The driver can work with both leading (triac)- and trailing edge dimmers.

The driver is fully software controlled to analyze the behavior of as many dimmers as possible and to be able to dim down to 12mA.

Not all dimmers are tested.

When a triac dimmer is used, It may occur that the driver produces a humming sound. When this sound is undesirable, a different dimmer type can be used (trailing edge).

Refer to the website for the latest compatibility info.

Fulham is not responsible for any changes in dimmers or their behavior in combination with this driver.

A certain minimum- and maximum dim setting is chosen.

There are dimmers which operate outside of these minimum and maximum settings. This may result that some dimmers can't dim back to 12mA or that the maximum setting can't be reached.

External influences

A change in mains voltage can result in a different dim setting this is caused by the dimmer. The driver can't cause a change in the dim setting.

Switching on a high external electrical load can cause a voltage drop on the mains voltage, this may also result in a change in the dim setting.

The driver will react calmly to small changes. To a big change in dim setting the driver will react fast to meet the minimum load that the driver needs and as a feedback to the user.

Multiple drivers on 1 mains dimmer

When multiple drivers are connected parallel to one mains dimmer, the dim behavior will be a little bit different as when one driver is connected.

This behavior is not visible unless the 2nd driver is connected "life", then the dim setting may change something because the load connected to the dimmer has enlarged.

Always check the minimum load that needs to be connected to the dimmer.

Some dimmers may dim too deep, causing an instable light output.

Most dimmers have a small screw which can be used to set a stable minimum dim level.

We recommend testing the combination of driver(s) and dimmer before installing them.

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.

Active overload protection

If the maximum output power is exceeded, the LED driver reduces the LED output to a current level within the specifications of the driver. This prevents overload at all times.

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.

No-load operation

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

Secondary switching

The L1V1230105S series are designed to switch the LEDs on/off by switching the mains (with a switch or dimmer).

The L1V1230105S series are not designed to switch the LEDs directly on/off in the secondary power line.

100Hz ripple

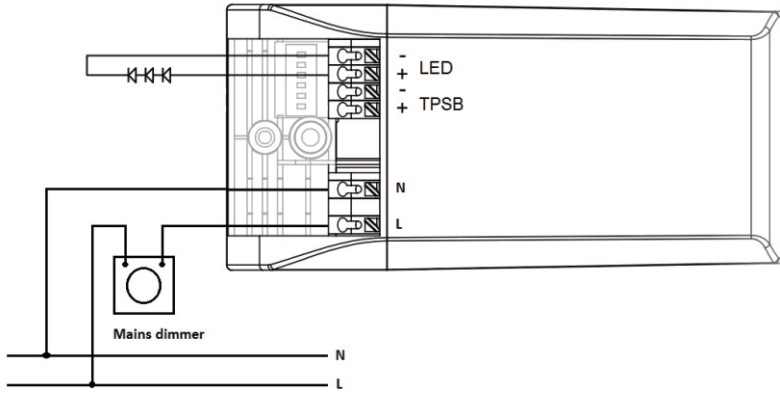
Usually a mains dimmable driver is controlled with 100Hz.

The Fulham topology ensures that there's no 100Hz ripple on the output.

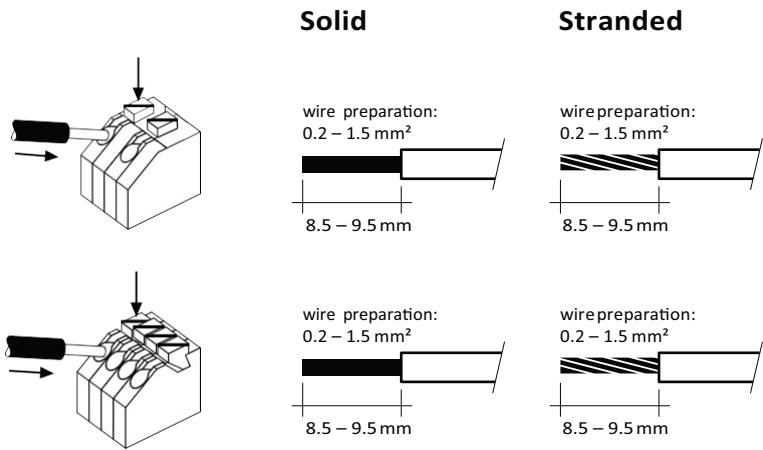
Latest compatible dimmer list can be found:

<https://www.fulham.com/PDFs/SpecSheets/Dimmerlist--L1V1230105S-25E--L05023-A.pdf>

Wiring diagram

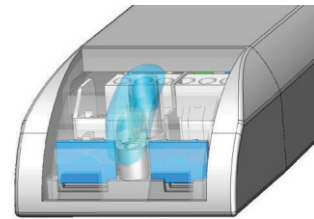


Wiring of device



Strain relief

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



Dipswitch settings

The current settings can be adjusted by using the dipswitches on the driver. The table lists the supported currents.

The switch in the up position (ON) is defined as '1'.

The switch in the down position (OFF) is defined as '0'.

When the dipswitches are changed after the power has been switched off the driver will start up with the old current setting, after a few seconds the drivers will switch off the light and will switch on again at the right current setting.

Dimming

The L1V1230105S series can be dimmed by using a mains dimmer (triac, trailing edge or leading edge).

Warm dimming

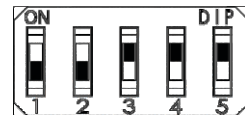
The L1V1230105S series use the linear dimming method instead of PWM.

Therefore the driver is suitable for warm dimming / dim-to-warm / Natural toning / sunset dimming / warm glow dimming etc.

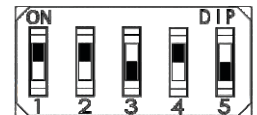
Dipswitch settings

Output current	Switch no					
	1	2	3	4	5	
Reserved for TPSB-100 programming	0	0	0	0	0	
100 mA	1	0	0	0	0	4.3 W
125 mA	0	1	0	0	0	5.4 W
150 mA	1	1	0	0	0	6.5 W
175 mA	0	0	1	0	0	7.5 W
200 mA	1	0	1	0	0	8.6 W
225 mA	0	1	1	0	0	9.7 W
250 mA	1	1	1	0	0	10.8 W
275 mA	0	0	0	1	0	11.8 W
300 mA	1	0	0	1	0	12.9 W
325 mA	0	1	0	1	0	14 W
350 mA	1	1	0	1	0	15.1 W
375 mA	0	0	1	1	0	16.1 W
400 mA	1	0	1	1	0	17.2 W
425 mA	0	1	1	1	0	18.3 W
450 mA	1	1	1	1	0	19.4 W
475 mA	0	0	0	0	1	20.4 W
500 mA	1	0	0	0	1	21.5 W
525 mA	0	1	0	0	1	22.6 W
550 mA	1	1	0	0	1	23.7 W
600 mA	0	0	1	0	1	25 W
650 mA	1	0	1	0	1	25 W
700 mA	0	1	1	0	1	25 W
750 mA	1	1	1	0	1	25 W
800 mA	0	0	0	1	1	25 W
850 mA	1	0	0	1	1	25 W
900 mA	0	1	0	1	1	22 W
950 mA	1	1	0	1	1	22 W
1000 mA	0	0	1	1	1	22 W
1050 mA	1	0	1	1	1	22 W
Reserved	0	1	1	1	1	X
Reserved	1	1	1	1	1	X

Example of dipswitch settings



1000 mA



350 mA



700 mA

Programming with the programmer

The TPSB-100 SmartSet controller gives the user the power to set the current without using the dipswitches .

Programming with the TPSB-100

With the TPSB-100 the output current can be programmed between 100 – 1050mA.

When using the SmartSet controller, the dipswitches must be set (and kept) to “0000”. Otherwise the output current will be set according to the dipswitch table as on page 5

Fulham’s TPSB-100 is powered via a USB cable that can be connect either to a PC or wall power adapter.

The driver does not need to be connected to the mains for programming.

The programming cable must be connected to the TPSB input of the driver to set the desired current (NOTE the POLARITY).

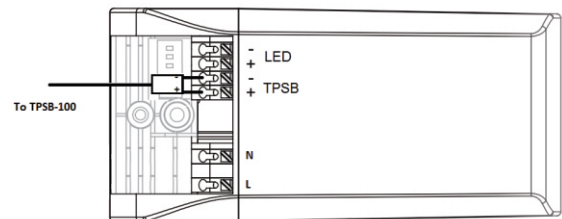
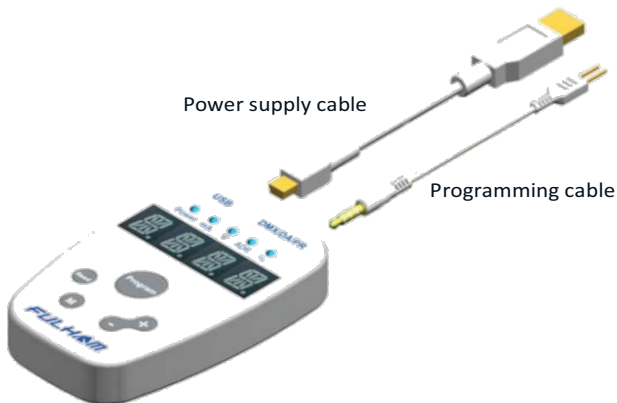
Press Read to see the current setting of the driver.

To set a current first press Program 1x, then + or – (keep the + or – pressed for a faster selection) until the desired current is shown in the display.

Press Program to save the setting.

If the process failed E-01, E-02, E-03 or E-04 is shown in the display.

Please note that other functions of the TPSB are not available yet.



Programming with TPSB-100

Ordering data

Part number	Alternate part number	EAN code	Mains dimmable	Dipswitch programmable	Packaging carton	Multibox carton	Weight per Piece
L1V1230105S-25E	L05023-A	8718801703946	Y	Y	20 pieces	240 pieces	170 g

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