

60W DALI+PUSH Dimming power supply



Features

- Class II, SELV, Independent
- Input Voltage 220-240VAC
- Protections: SCP/OLP/OVP/OTP
- Power Factor: > 0.95
- Efficiency: 86%
- Support DALI-2, Push Dimming
- 5 years warranty

Applications

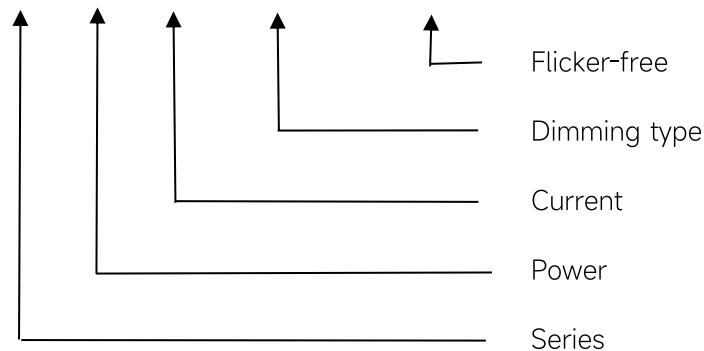
- LED panel, down light

◆ Description

FLS-60-1400 DALI2 LA1 is a 60W constant current LED driver with 650 to 1400mA output current and a forward voltage range from 9 to 48Vdc. The output current is adjustable by DIP Switch. With it's dimensions from 187 x 45 x 30.5mm. It is easy to integrate in LED Panel and down light products. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

◆ Model code

FLS-60-1400 DALI2 LA1



◆ Specification

	Constant Current (mA)	650	700	800	1150	1200	1250	1300	1350	1400	
Output	Voltage Range (VDC)	9-48							9-46	9-44	9-43	
	Unload voltage Max.	60VDC										
	Current Accuracy	±5%										
	Output HF current ripple(≥1KHz)	±10%										
	Output LF current ripple(≤120Hz)	±3%										
	SVM	≤0.4										
	P _{st}	≤1										
	Efficiency(Typ.)	86%@Full load										
	Input	Rated input voltage	220-240VAC									
Range of input voltage		198-264VAC										
Range input voltage(DC)		198-280VDC										
Frequency(Hz)		0/50/60 Hz										
Displacement factor		≥0.9										
Power Factor		>0.95@Full load										
Input Current		0.46A										
Start-up time		< 0.7S										
No Load Power		≤0.5W										
Standby Power		≤0.5W										
Network standby power		≤0.5W										
THD (Typ.)		<10%@Full load										
Dimming	Dimming	YES										
	Dimming mode	DALI-2 (IEC 62386-101,102,207) & Push Dimming (Corridor Function)										
	Dimming depth	1%										
	Dimming current range	1 ~100%										
Protection	Over Load Protection	103-120%										
		YES/Latch off										
	Over Voltage Protection	> 60VDC										
		YES/Latch off										
	Short circuit Protection	YES/Latch off										
Environment	Over Temperature Protection	YES/Auto Resume										
	Operating Temperature	-20°C~+45°C										
	Humidity	20%-90%RH										
	Tc	90°C										
	Storage Temperature	-25°C~+60°C										
Surface	Lifetime	>50000h,@Tc=90°C										
	Dimension	187X45X30.5(LXWXH)mm										

Standards	IEC61347- 1, IEC61347-2- 13;EN61347- 1, EN61347-2- 13;EN61347- 1, EN61347-2- 13, EN62384;GB/T17743;EN61547 GB 19510.1,GB 19510.14;GB/T 17743,GB 17625.1;EN IEC 55015,EN IEC 61000-3-2,EN 61000-3-3	
Others	ErP	EU 2019/2020
	RoHS	RoHS (2011/65/EU) (EU)2015/863
Note	1.All parameters not specially mentioned are measured at 230VAC input , full load and 25°C of ambient temperature. 2.Ripple & Noise are measured at 20MHz of bandwidth by using a 300mm twisted pair-wire terminated with a 0.1uF & 47 uF parallel capacitor.	

◆ Parameter

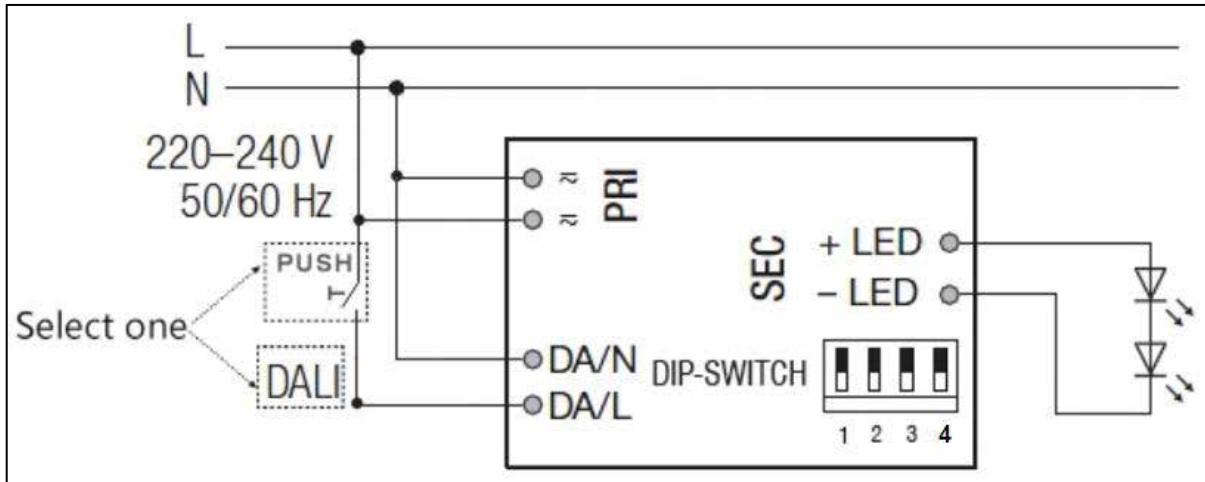
Number	Output	Switch position			
	Current(mA)	1	2	3	4
1	650	--	--	--	--
2	700	ON	--	--	--
3	750	--	ON	--	--
4	800	ON	ON	--	--
5	850	--	--	ON	--
6	900	ON	--	ON	--
7	950	--	ON	ON	--
8	1000	ON	ON	ON	--
9	1050	--	--	--	ON
10	1100	ON	--	--	ON
11	1150	--	ON	--	ON
12	1200	ON	ON	--	ON
13	1250	--	--	ON	ON
14	1300	ON	--	ON	ON
15	1350	--	ON	ON	ON
16*	1400	ON	ON	ON	ON

* Factory default

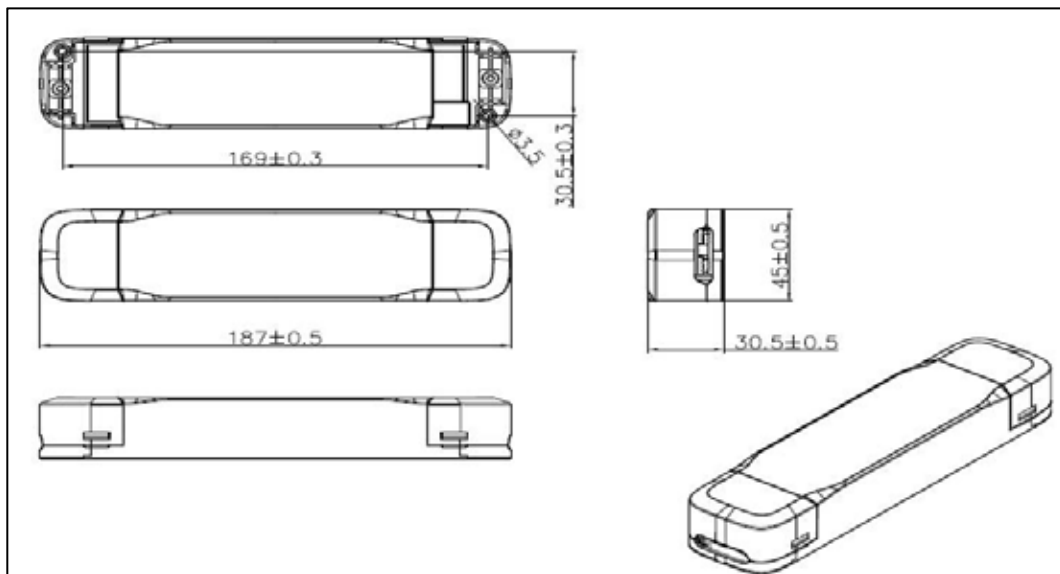
◆ Circuit Breaker

I ^{peak}	T _{width}	B10	B16	B20	C10	C16	C20
9.2A	31.8μs	17pcs	27pcs	34pcs	17pcs	27pcs	34pcs

◆ **Wiring diagram**



◆ **2D diagram**

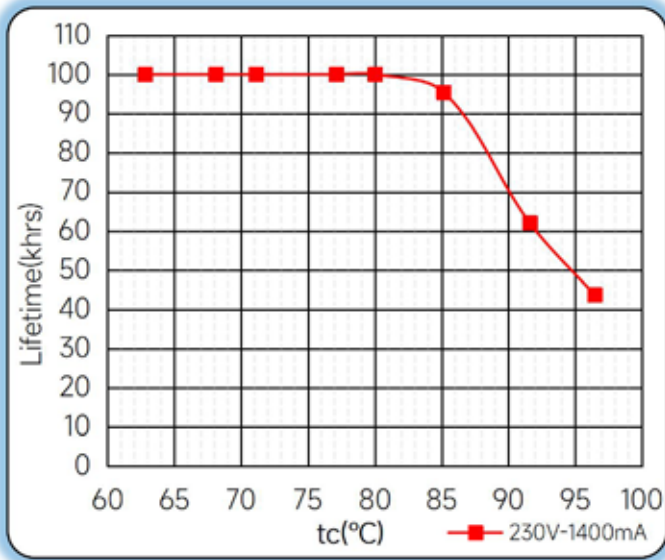


◆ **Wiring & Connections**

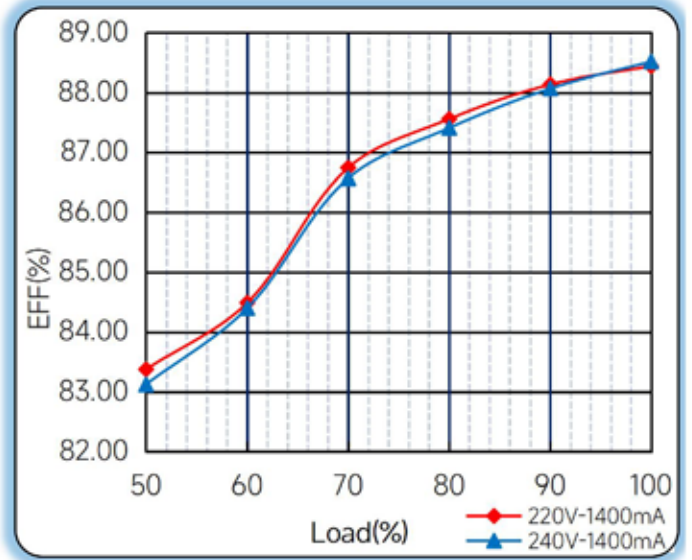
Specification item		Value (Unit)
Input	Input wire cross-section	0.5...1.5 mm ²
	Input wire gauge	16...20 AWG
	Input wire strip length	8...9mm
Output	Output wire cross-section	0.5...1.5 mm ²
	Output wire gauge	16...20 AWG
	Output wire strip length	8...9mm

◆ **Curve for FLS-60-1400 DALI-2 LA1, I_o=1400mA**

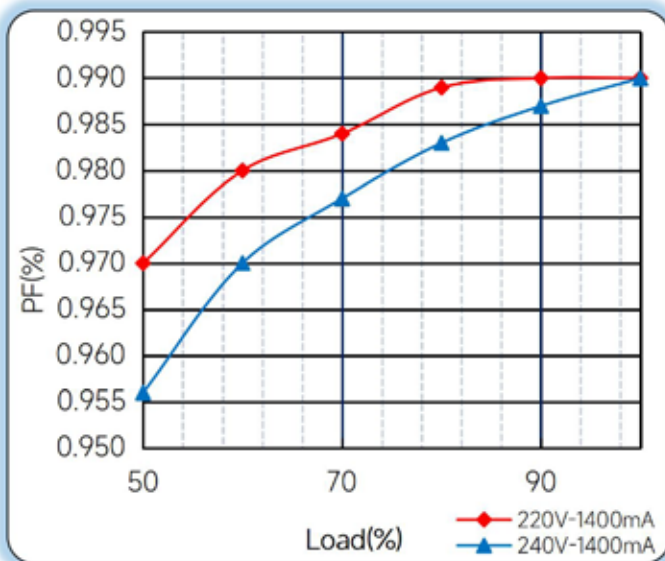
Lifetime vs. Temperature Curve



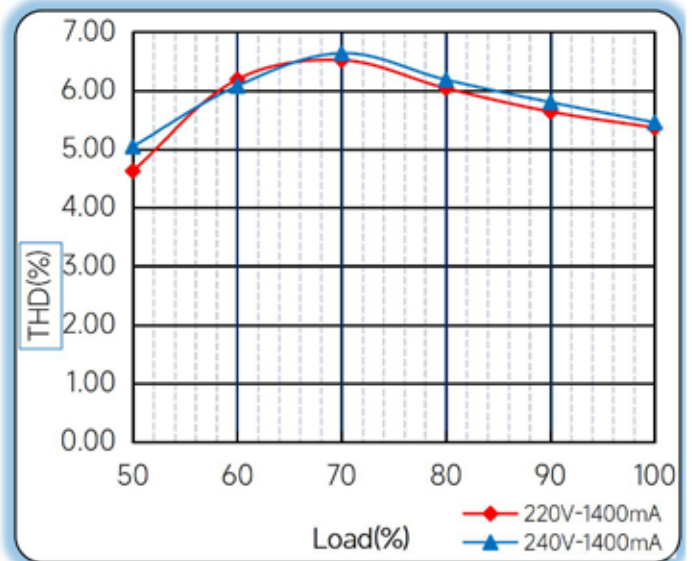
Efficiency vs. Load



Power Factor Characteristics



THD vs. Load



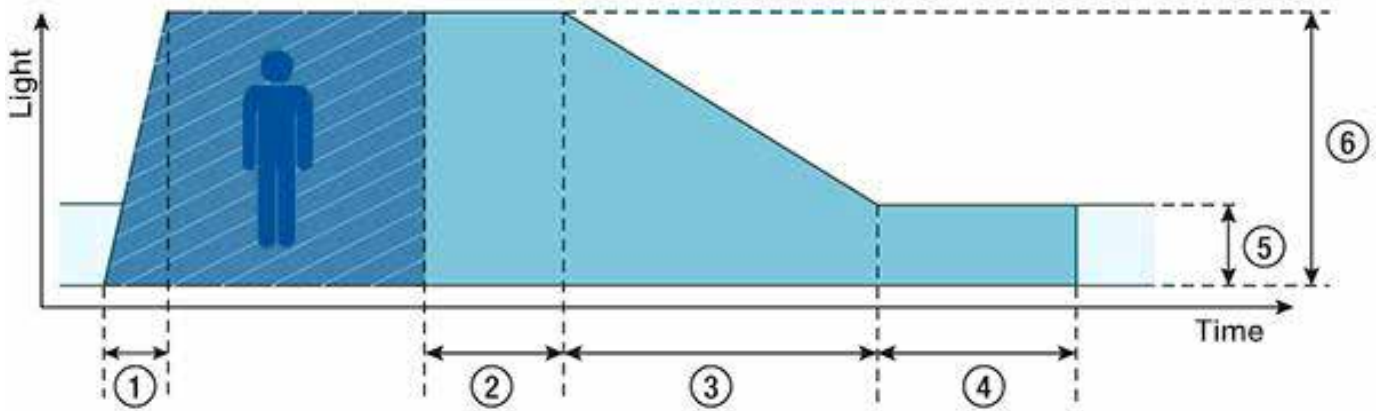
◆ Push dimming operation

Action	Action duration	Function
Short push	<0.5s	Turn on/off
Short push twice	<0.5s	LED on: Save current brightness level LED off: Delete saved level and turn on at 100% brightness
Short push five times	<3s	Quit Corridor mode
Long push	0.5-14s	Dimming up or down
Long push	15s-2mins	Sync all LEDs to be 100% brightness
Long push	>2mins	Enter Corridor mode - LED keep 100% brightness for 2mins. Then brightness will turn to be 10% within 32s if no action during 2mins 100% brightness.

Note:

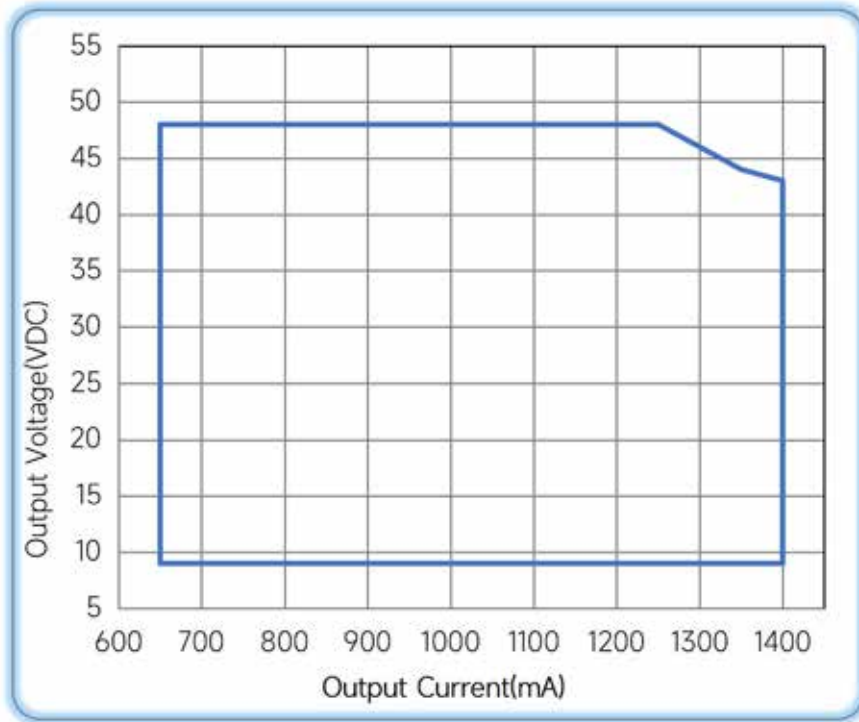
- 1.The factory default brightness is at 100%.
- 2.Up to 30 drivers can perform the PUSH dimming at the same time when utilizing one common push button
- 3.The maximum length of the cable from the push button to the last driver is 200 meters.

◆ Corridor mode



- ◆ ① **Fade-in time(0.5s)**: the time that starts as soon as the presence of a person is detected. During the fade-in time the luminous intensity is faded up to the presence value.
- ◆ ② **Run-on time(120s)**: the time that starts as soon as the presence of a person is no longer detected. If the presence of a person is detected again during the run-on time the run-on time is restarted from zero. If no presence is detected during the run-on time the fade time is started as soon as the run-on time expires.
- ◆ ③ **Fade time(32s)**: the time during which the luminous intensity is faded from the presence value to the absence value.
- ◆ ④ **Switch-off delay (Never Off)**: the time during which the absence value is held before the lighting is switched off. Depending on the profile selected the switch-off delay may have different values or may not be defined.
- ◆ ⑤ **Absence value(default: 10 %)**: the luminous intensity when there is no person present.
- ◆ ⑥ **Presence value (default: 100 %)**: the luminous intensity when persons are present.

◆ **Operating window**



— Operating window 100%

◆ **Revision Updates**

ITEM	BEFORE	AFTER	VERSION	DATE
Initial			A	2022/05/04
Start-up time	0.6S	0.7S	A	2022/08/12
Circuit Breaker		Added	B	2023/03/17