

50W DALI + PUSH Dimming power supply



■ Approve



Features

- For luminaries of protection Class I or II, SELV, Built-in/Independent (With side caps)
- Input Voltage 220-240VAC
- Protections: SCP/OLP/OVP/OTP
- Power Factor: >0.95
- Efficiency : 90%
- Adjustable Output Current with dip-switch
- Support DALI-2, Push Dimming
- Suitable for emergency lighting acc. to EN 50172
- EoFi=100%
- DALI maintainace (Part 251,252,253)
- 5 years warranty

Applications

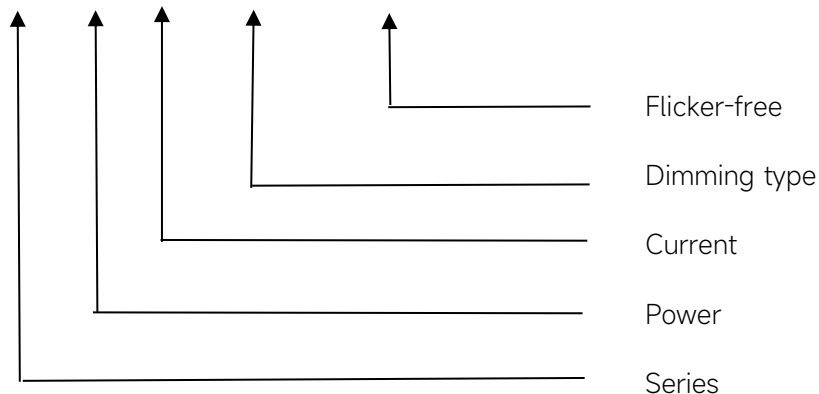
- Linear light

◆ Description

FMS-50-1050 DALI-2 LD is a 50W constant current LED driver that operates from 198-264Vac input with 350 to 1050mA output current and a forward voltage range from 15 to 51Vdc. The output current is adjustable. by dip-switch. With it's compact dimensions from 280 x 30 x 21 mm. It is easy to integrate in linear light products. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

◆ Model code

FMS-50-1050 DALI-2 LD



◆ Specification

Output	Constant Current	350mA	400mA	...mA	1050mA
	Voltage Range	15-51VDC		...VDC	15-47VDC
	Unload voltage Max.	59VDC			
	Current Accuracy	±5%			
	Output LF current ripple(≤120Hz)	±5%			
	SVM	≤0.4			
	Pst	≤1			
	Efficiency(Typ.)	90%			
	EOFI	100%			
Input	Rated input voltage	220-240V			
	Range of input voltage	198-264VAC			
	Maximum voltage	300VAC@1 h maximum,unit might not operate in this abnormal condition			
	Range input voltage(DC)	176-280VDC			
	Frequency(Hz)	0/50/60 Hz			
	Displacement factor	>0.95			
	Power Factor(Typ.)	>0.95			
	Input Current	0.32A max.			
	Start-up time	< 0.8S			
	Switch over time(AC/DC mode)	< 0.4S			
	No Load Power	≤0.3W			
	Standby Power	≤0.3W			
	Network standby power	≤0.3W			
	THD (Typ.)	<10%			
Dimming	Dimming	YES			
	Dimming mode	DALI-2 (IEC 62386-101,102,207,251,252,253) & Push Dimming (Corridor Function)			
	Dimming depth	5mA@350-500mA, 1%@550-1050mA			
	Dimming current range	1 ~100%			
	Dimming method	1%-13% @PWM dimming, 13%-100% @AM dimming			
Protection	Over Load Protection	103-120%			
		YES/Latch off			
	Over Voltage Protection	59VDC			
		YES/Latch off			
	Short circuit Protection	YES/Latch off			
Capability	Over Temperature Protection	YES/Auto Resume			
	Surge capability (L-N)	1KV			
	Surge capability (L/N-Ground)	2KV			
Environment	Operating Temperature	-25°C~+60°C			

	Humidity	10%-90%RH
	Tc	80°C
	Storage Temperature	-25°C~+85°C
	Lifetime	>50000h,@Tc=80°C
	Ripple&Noise	25dB(A)@20CM
Surface	Dimension	280 x 30 x 21(LXWXH)mm
	material	metal case
Standards	Safety	GB19510. 1, GB19510. 14;IEC61347- 1, IEC61347-2- 13;EN61347- 1, EN61347-2- 13;EN61347- 1, EN61347-2- 13, EN62384
	EMC	GB/T17743, GB17625. 1;EN55015, EN61000-3-2, EN61000-3-3, EN61547;EN61000-4-2,3,4,5,6,8,11, EN61547
	ErP	Erp2.0 EU 2019/2020
	RoHS	RoHS (2011/65/EU) (EU)2015/863
DALI performance	EN 62386-101 (DALI-2) EN 62386-102 (DALI-2) EN 62386-207 (DALI-2,inclusing part251,252,253)	
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. 3.The DC input for this product is only used for emergency lighting and applies to functional and safety requirements , EMC is not considered. 4.DALI protocol comprises 16 groups and 64 addresses.Up to 32 drivers can perform the PUSH dimming at the same time when utilizing one push button. 5.Unload voltage Max. is measured 5 seconds after power-on. 6.EL compatible with IEC 61347-2-13 Annex J, compatible with EN 60598-2-22 emergency lighting fixtures, compatible with EN 50172 central battery system applications. 7.All Eaglerise power supply are complied with EMI regulations. Since they are belong to component and will be installed inside system enclosure. When they are integrated into a system, the EMI characteristics of the system must be re-verified again.	

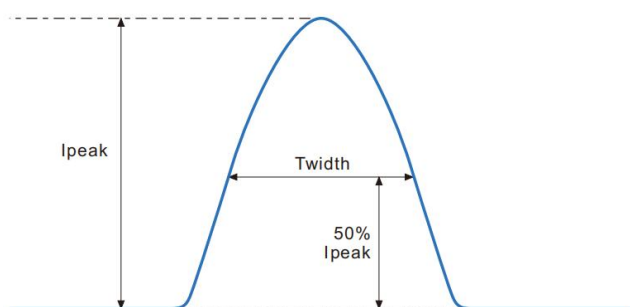
◆ Parameter

Number	Output				Switch position			
	Current (mA)	Voltage (VDC)	Voltage No load (VDC)	Power (W)	1	2	3	4
1	350mA	15-51VDC	59VDC	17.9W	ON	--	--	--
2	400mA	15-51VDC		20.4W	--	ON	--	--
3	450mA	15-51VDC		22.9W	ON	ON	--	--
4	500mA	15-51VDC		25.5W	--	--	ON	--
5	550mA	15-51VDC		28.1W	ON	--	ON	--
6	600mA	15-51VDC		30.6W	--	ON	ON	--
7	650mA	15-51VDC		33.2W	ON	ON	ON	--
8	700mA	15-51VDC		35.7W	--	--	--	ON
9	750mA	15-51VDC		38.3W	ON	--	--	ON
10	800mA	15-51VDC		40.8W	--	ON	--	ON
11	850mA	15-51VDC		43.4W	ON	ON	--	ON
12	900mA	15-51VDC		45.9W	--	--	ON	ON
13	950mA	15-51VDC		48.5W	ON	--	ON	ON
14	1000mA	15-50VDC		50W	--	ON	ON	ON
*15	1050mA	15-47VDC		49.4W	ON	ON	ON	ON

* Factory default

◆ Inrush Current

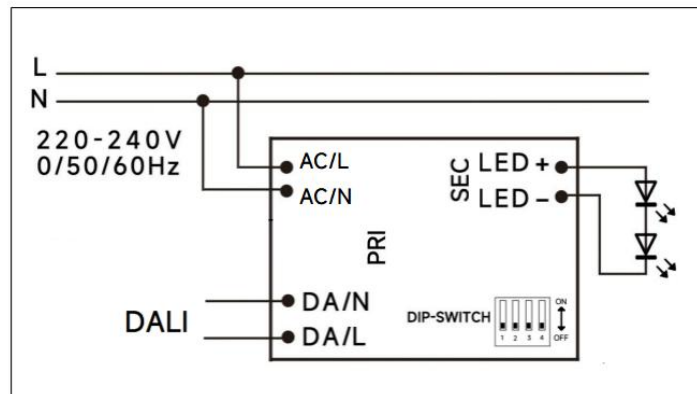
I_{peak}	Twidth	B10	B16	B20	C10	C16	C20
12A	40 μ s	25pcs	40pcs	50pcs	25pcs	40pcs	50pcs



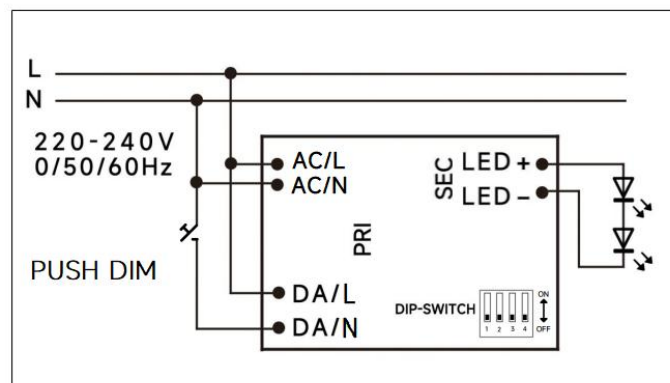
Remarks:

- 1.The number of drives mounted under different MCBs in the table is the maximum value. Please do not exceed this number during installation.
- 2.Different brands and models of miniature circuit breakers, the number of drives mounted will be slightly different.

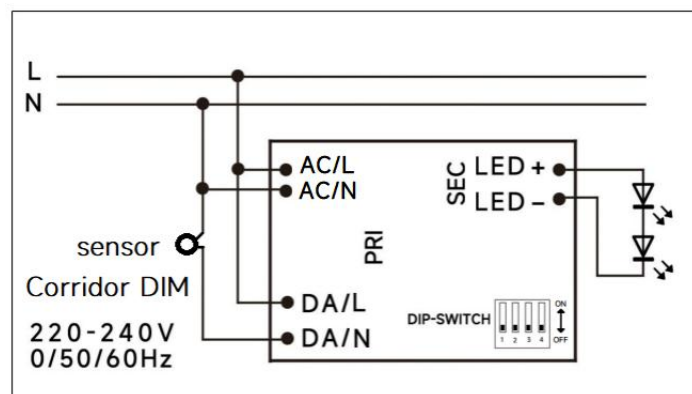
◆ Wiring diagram



DALI dimming application

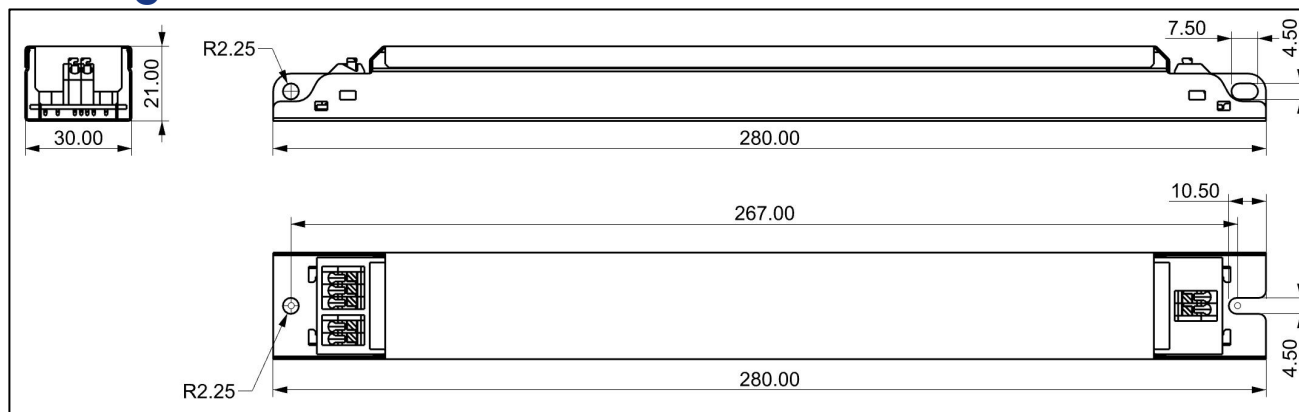


PushDIM dimming application



Corridor DIM dimming application

◆ 2D diagram



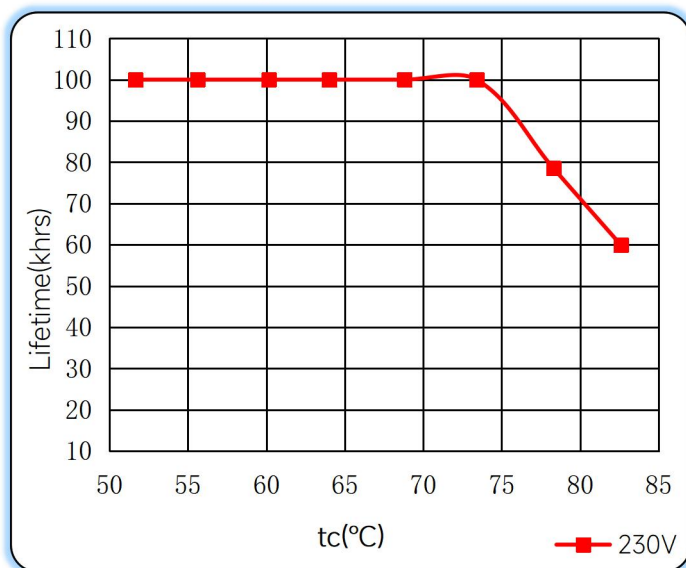
◆ Wiring & Connections

Specification item		Value (Unit)
Input	Input wire cross-section	0.5...1.5 mm ² (With A side caps: 0.75...1.5 mm ²)
	Input wire gauge.	16...20 AWG (With A side caps: 16...22 AWG)
	Input wire strip length	7...9mm
Output	Output wire cross-section	0.5...1.5 mm ²
	Output wire gauge.	16...20 AWG
	Output wire strip length	7...9mm

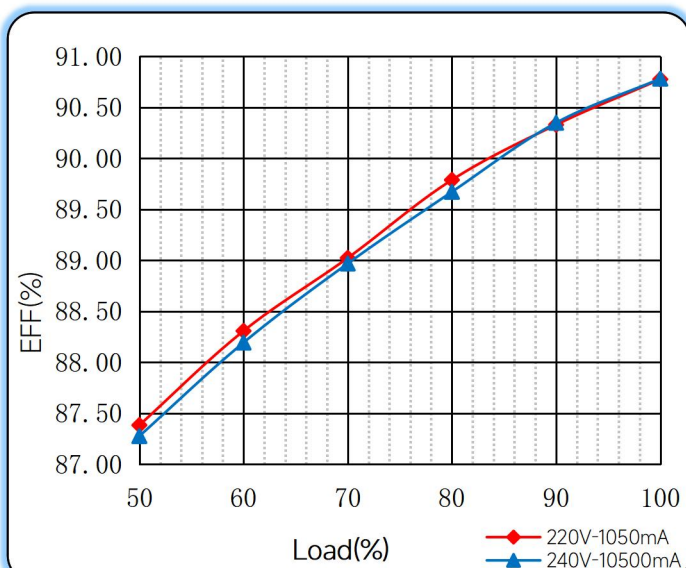
Note: Solid wire is risky to use on an angled terminal. Stranded wire is recommended for this kind of use.

◆ Curve for FMS-50-1050 DALI-2 LD, $I_o=1050\text{mA}$

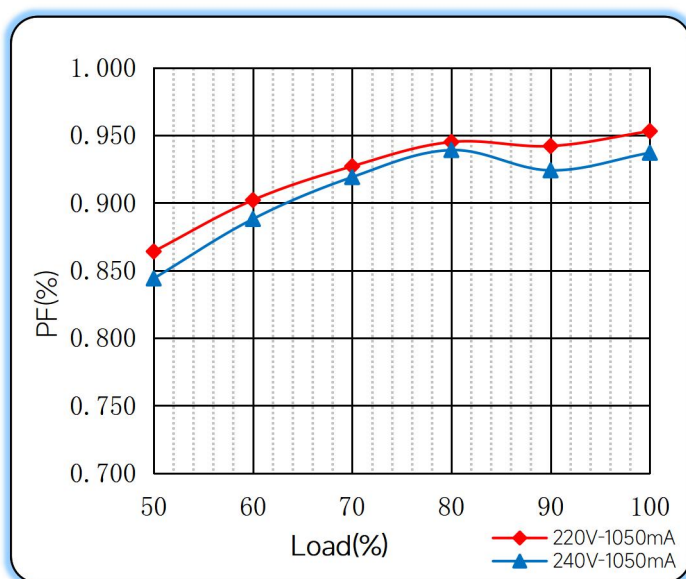
Lifetime vs. Temperature Curve



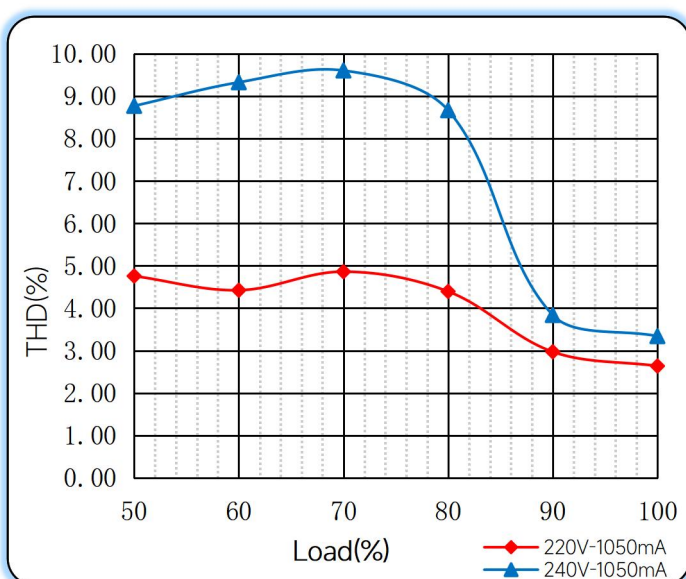
Efficiency vs. Load



Power Factor Characteristics



THD vs. Load



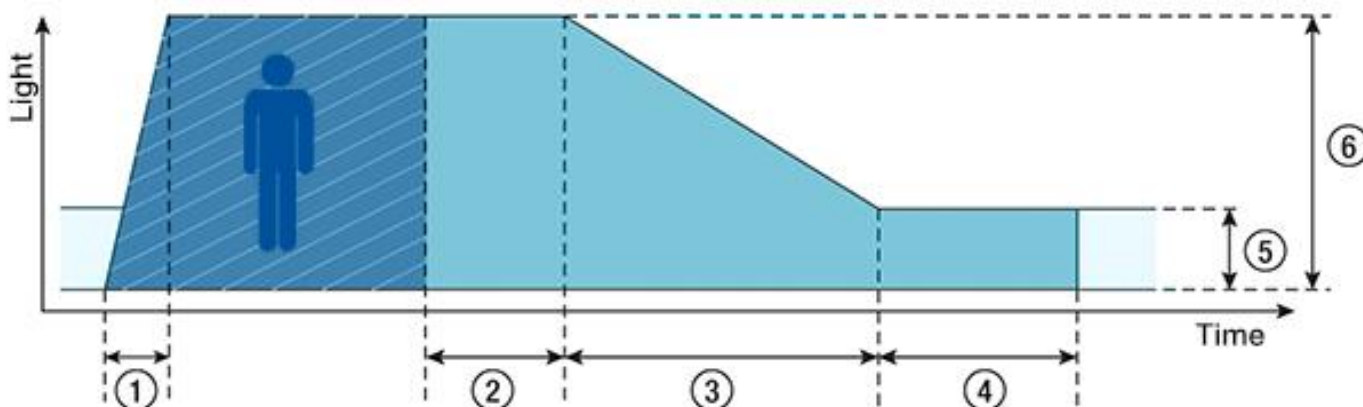
◆ Push dimming operation

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:

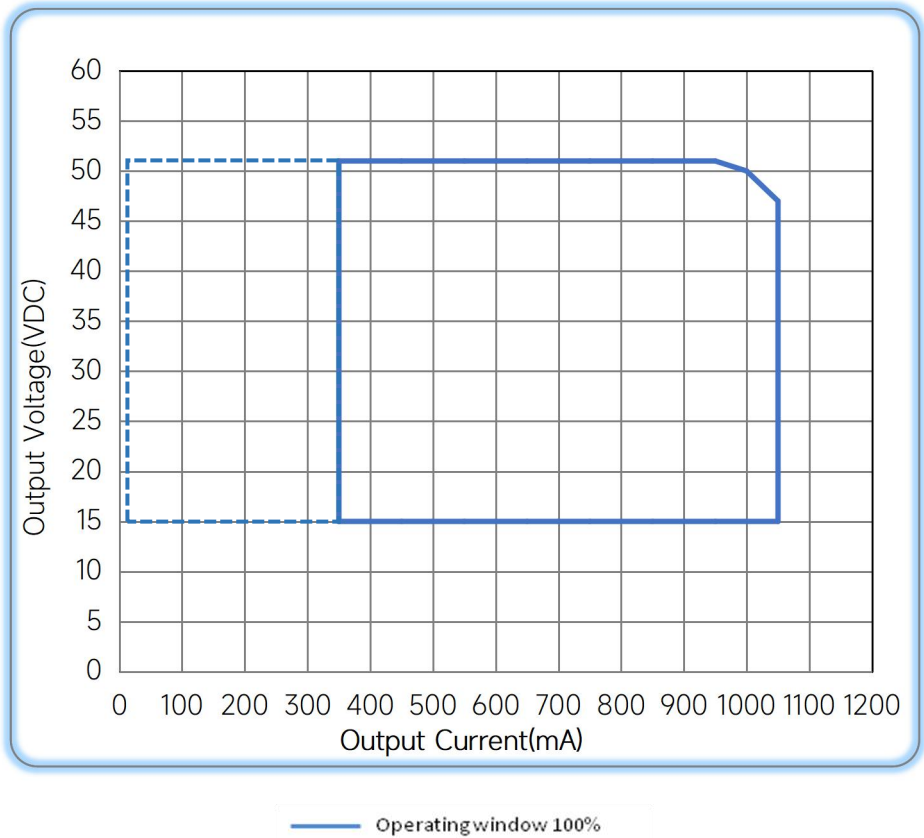
- 1.The factory default brightness is at 100%.
- 2.Up to 30 drivers can perform the PUSH dimming at the same time when utilizing one common push button
- 3.The maximum length of the cable from the push button to the last driver is 200 meters.

◆ 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



◆ Revision Updates

ITEM	BEFORE	AFTER	VERSION	DATE
Initial			A	2023/05/05
Dimming depth	1%	5mA@350-500mA, 1%@550-1050mA	B	2024/03/02

Remark:The final interpretation of the contents of the specification belongs to Eaglerise Electric & Electronic (China) Co., Ltd.

Tel: +86-0757-86256822, +86-0757-86256831
E-mail: sales@eaglerise.com
Website : <https://lighting.eaglerise.com>



EAGLERISE



Manual