

42W FDS-DALI-2 Dimming power supply



■ Approve



Features

- For luminaries of protection Class II, SELV, Built-in
- Input Voltage 220-240VAC、176-280VDC
- Protections: SCP/OLP/OVP/OTP
- Power Factor: 0.95
- Efficiency: 89%
- Adjustable Output Current with dip-switch
- Support DALI-2 (Part 251,252,253)
- Suitable for emergency lighting acc. to EN 50172
- EOfi=100%
- 5 years warranty

Applications

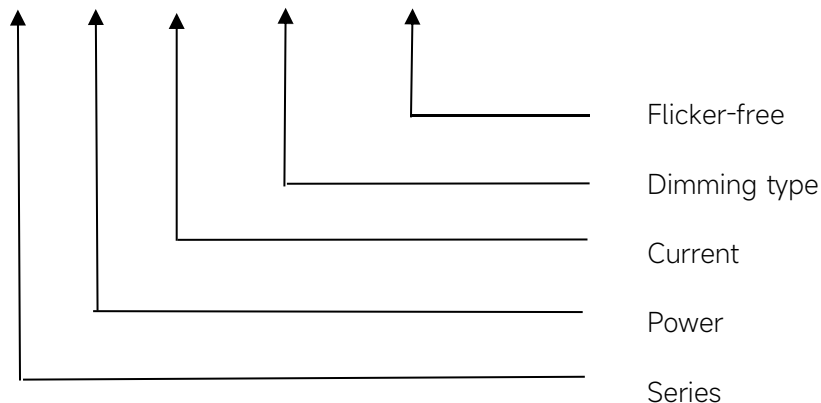
- Track light

◆ Description

FDS-42-1050 DALI-2 LD PRO is a 42W constant current LED driver with 300 to 1050mA output current and a forward voltage range from 2.5 to 42Vdc. The output current is adjustable by DIP Switch. With it's compact dimensions from 202 x 31.1 x 42.2 mm. It is easy to integrate in track light products. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

◆ Model code

FDS-42-1050 DALI-2 LD PRO



◆ Specification

Output	Constant Current (mA)	300-1000mA	1050mA
	Voltage Range (VDC)	2.5-42VDC	2.5-40VDC
	Unload voltage Max.	59VDC	
	Current Accuracy	±5%	
	Output LF current ripple(≤120Hz)	±3%	
	SVM	≤0.4@Full Load	
	P _{st}	≤1@Full Load	
	Efficiency(Typ.)	89%	
Input	Rated input voltage	220-240V	
	Range of input voltage(VAC)	198-264VAC	
	Maximum voltage	300VAC@1 h maximum,unit might not operate in this abnormal condition	
	Range input voltage(VDC)	176-280VDC	
	Frequency(Hz)	0/50/60 Hz	
	Displacement factor	≥0.9@full load, 230Vac	
	Power Factor	0.95@full load, 230Vac	
	Input Current	0.27A max	
	Start-up time	< 0.8S	
	Switch over time(AC/DC mode)	< 0.4S	
	No Load Power	≤0.3W	
	Standby Power	≤0.3W, @230Vac	
	Network standby power	≤0.3W,@230Vac	
	THD (Typ.)	<10%@full load,230Vac	
Dimming	Dimming	YES	
	Dimming mode	DALI-2 (IEC 62386-101,102,207,251,252,253) &Push Dimming (Corridor Function)	
	Dimming depth	5mA@300-500mA, 1%@550-1050mA	
	Dimming current range	1~100%	
Protection	Over Load Protection	103-120%	
		YES/Latch off	
	Over Voltage Protection	59VDC	
		YES/Latch off	
capability	Short circuit Protection	YES/Latch off	
	Over Temperature Protection	YES/Auto Resume	
capability	Surge capability (L-N)	1KV	
	Surge capability (L/N-Ground)	2KV	
Environment	Operating Temperature	-20°C~+35°C	
	Humidity	20%-90%RH	
	Tc	80°C	

	Storage Temperature	-20°C~+60°C
	Lifetime	>50000h,@Tc=70°C; >100000h,@Tc=55°C
	Noise	≤25dB(A)@20cm
Surface	Dimension	202X31.1X42.2(LXWXH)mm
	material	PC
Standards	Safety	IEC61347- 1, IEC61347-2- 13;EN61347- 1, EN61347-2- 13;EN61347- 1, EN61347-2- 13, EN62384
	EMC	EN55015, EN61000-3-2, EN61000-3-3, EN61547;EN61000-4-2,3,4,5,6,8,11, EN61547
	Energy Efficiency	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,including part251,252,253)	
Note	<p>1.All parameters not specially mentioned are measured at 230VAC input , full load and 25°C of ambient temperature.</p> <p>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.</p> <p>3.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.</p> <p>4.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.</p>	

◆ Parameter

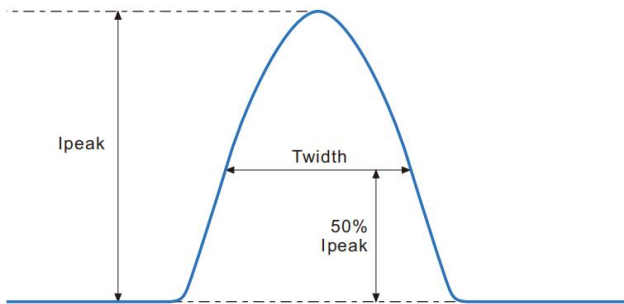
Number	Output				Switch position			
	Current (mA)	Voltage (VDC)	Voltage No load (VDC)	Power (W)	1	2	3	4
1	300mA	2.5-42V	59VDC	12.6W	--	--	--	--
2	350mA			14.7W	ON	--	--	--
3	400mA			16.8W	--	ON	--	--
4	450mA			18.9W	ON	ON	--	--
5	500mA			21W	--	--	ON	--
6	550mA			23.1W	ON	--	ON	--
7	600mA			25.2W	--	ON	ON	--
8	650mA			27.3W	ON	ON	ON	--
9	700mA			29.4W	--	--	--	ON
10	750mA			31.5W	ON	--	--	ON
11	800mA			33.6W	--	ON	--	ON

12	850mA			35.7W	ON	ON	--	ON
13	900mA			37.8W	--	--	ON	ON
14	950mA			39.9W	ON	--	ON	ON
15	1000mA			42W	--	ON	ON	ON
*16	1050mA	2.5-40V		42W	ON	ON	ON	ON

* Factory default

◆ Inrush Current

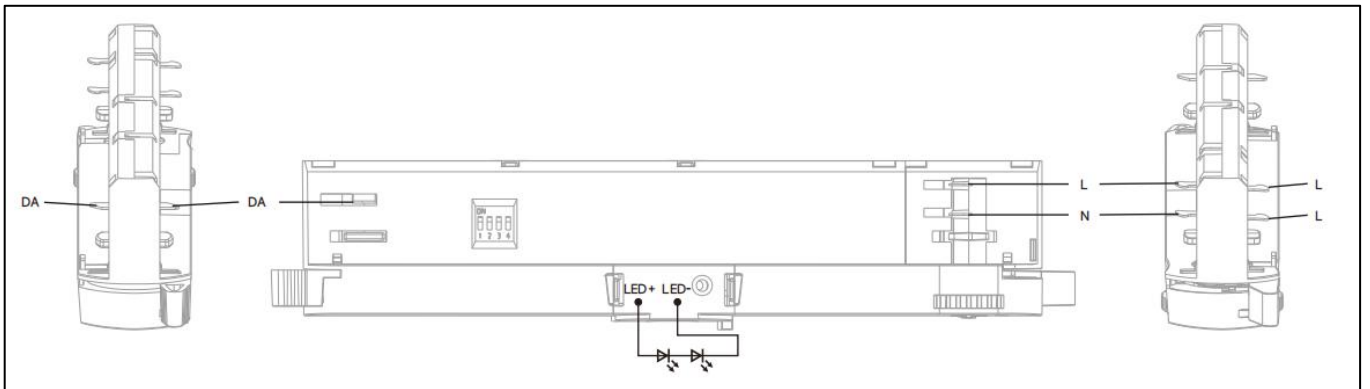
I _{peak}	T _{width}	B10	B16	B20	C10	C16	C20
7.46A	34μs	29pcs	47pcs	59pcs	29pcs	47pcs	59pcs



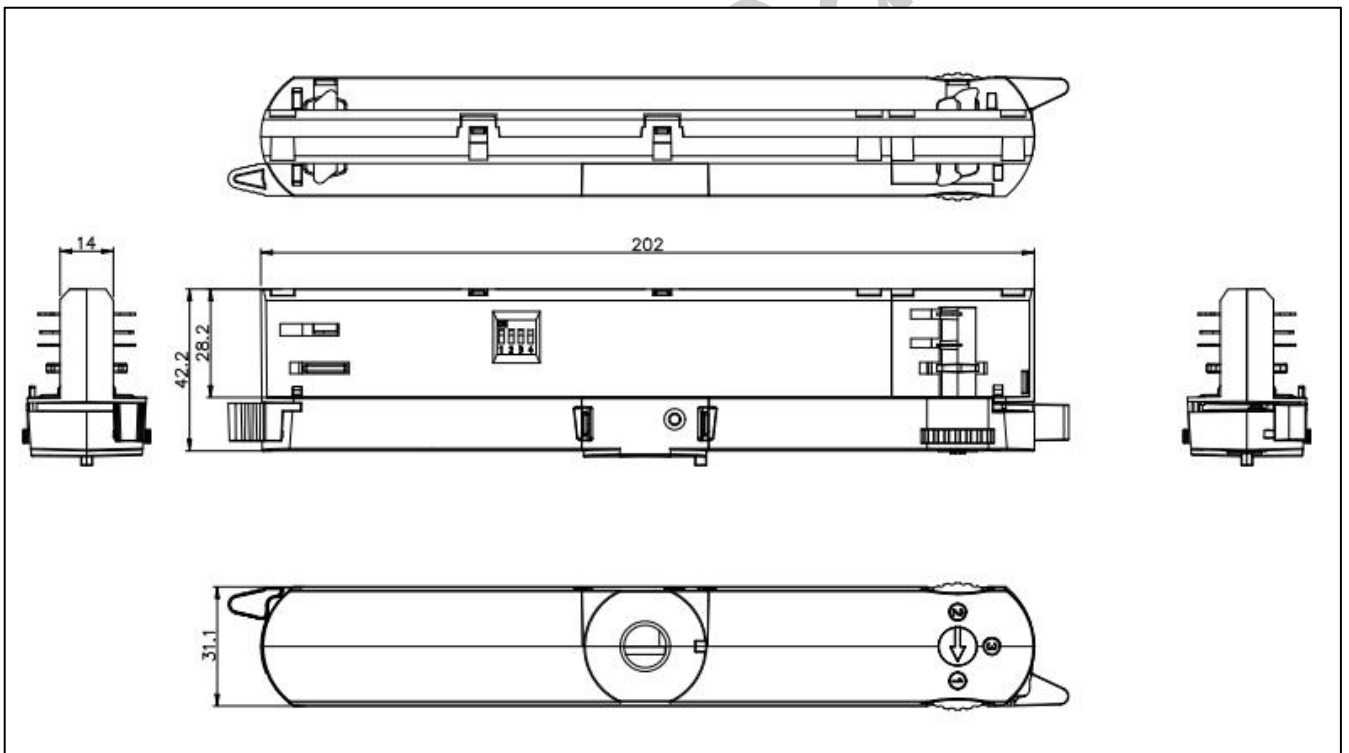
Remarks:

- 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**



◆ **2D diagram**



◆ **Wiring & Connections**

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

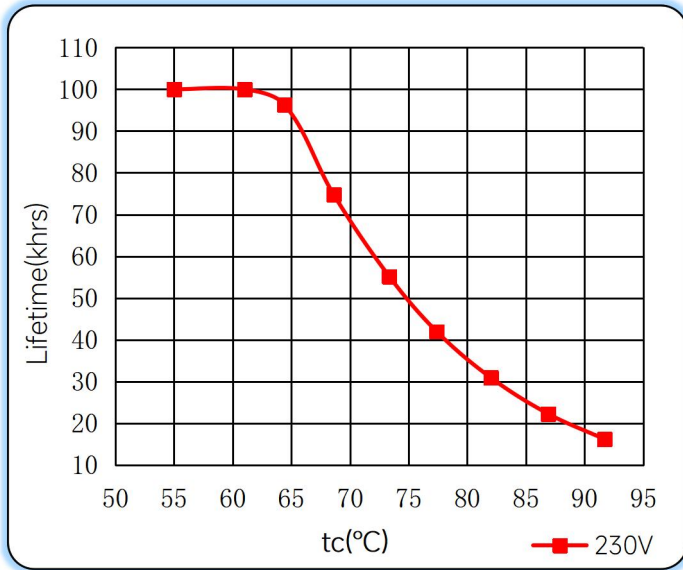
◆ **Matching brand**

Brand	AAG
	ERCO
	Unipro
	Powergear
	GLOBAL

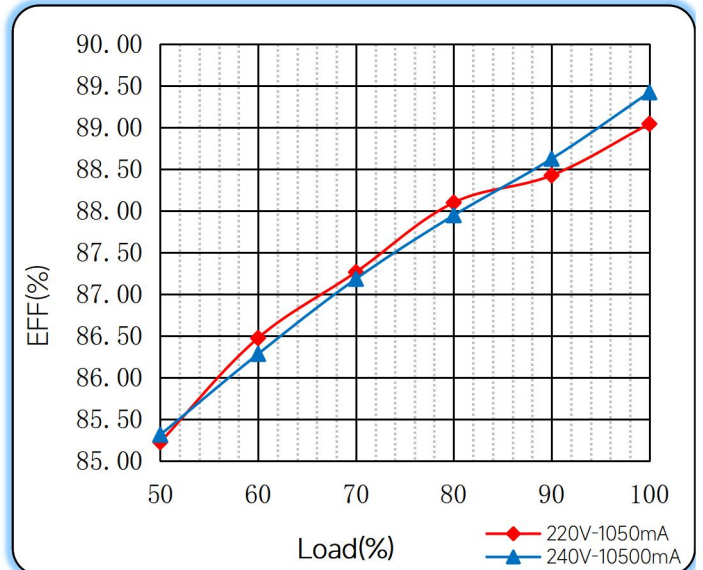
Preliminary

◆ Curve for FDS-42-1050 DALI-2 LD PRO, $I_o=1050\text{mA}$

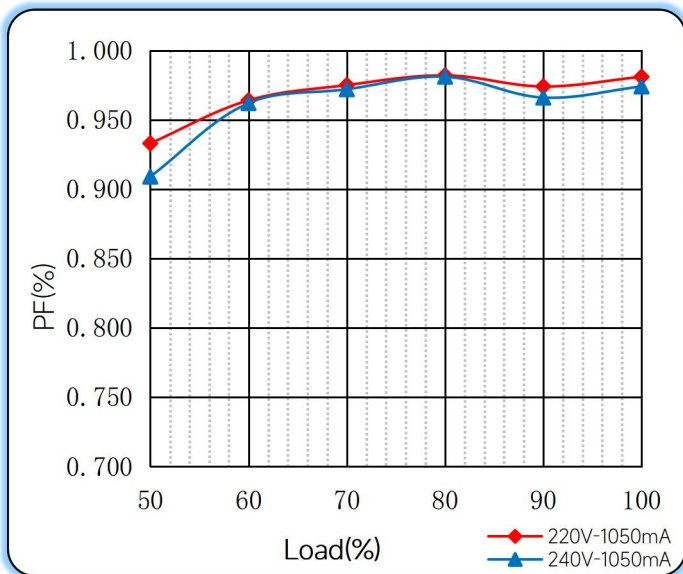
Lifetime vs. Temperature Curve



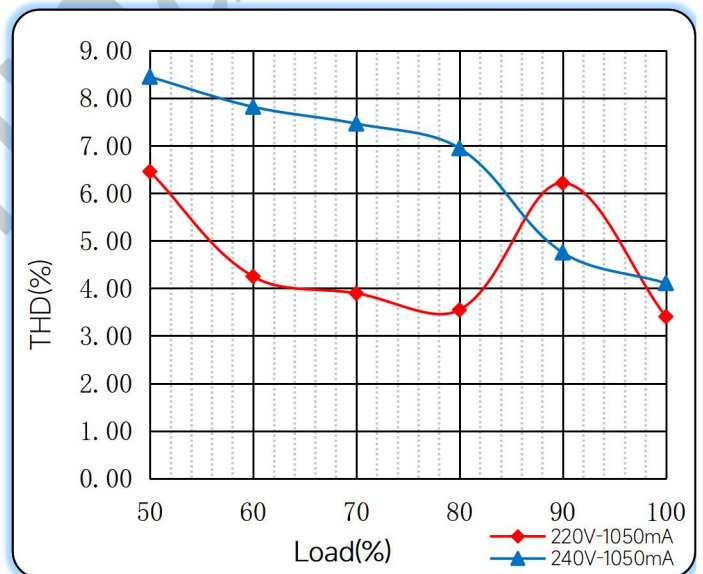
Efficiency vs. Load



Power Factor Characteristics



THD vs. Load



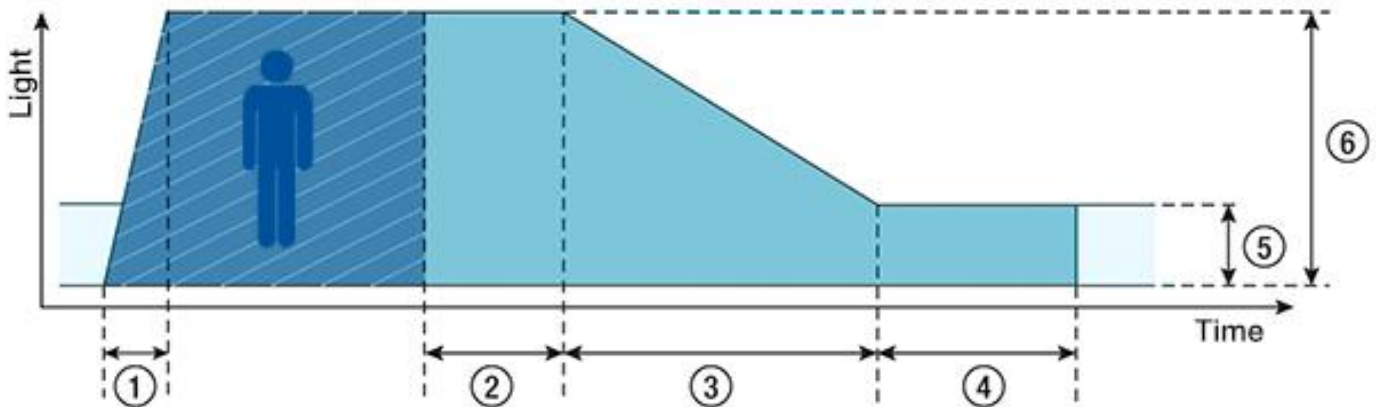
◆ Push dimming operation

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:

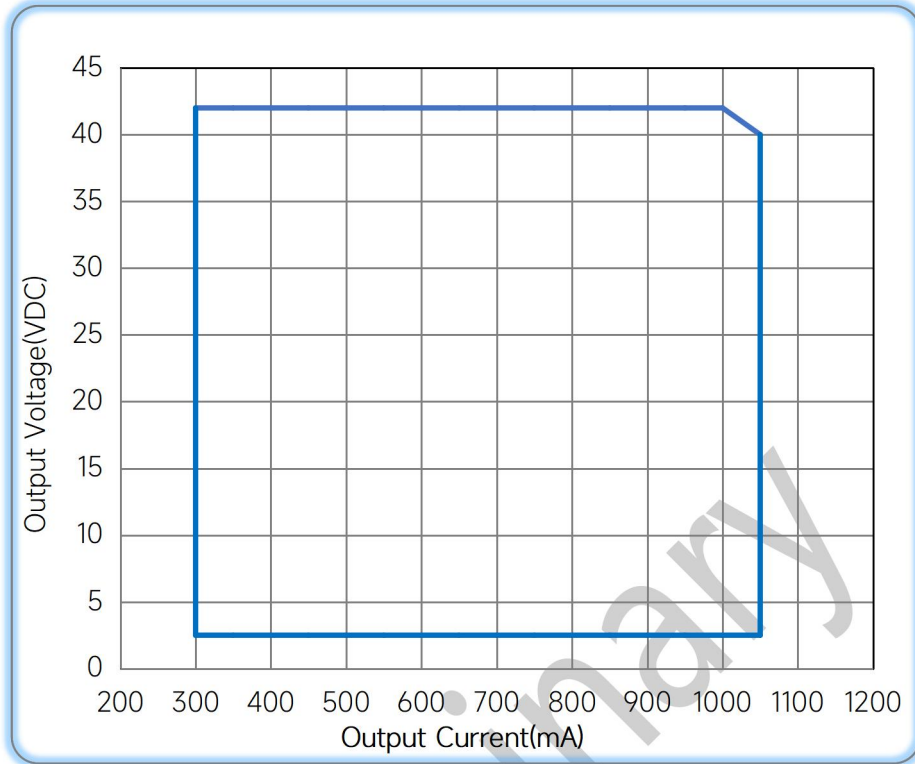
- 1.The factory default brightness is at 100%.
- 2.Up to 30 drivers can perform the PUSH dimming at the same time when utilizing one common push button
- 3.The maximum length of the cable from the push button to the last driver is 200 meters.

◆ 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	2023/05/10
Add EL			B	2024/01/08

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

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EAGLERISE



Manual