

## 35W DALI + PUSH Dimming power supply



■ Approve



### Features

- Class I, Non-Isolated design, Built-in
- Input Voltage 220-240VAC
- Protections: SCP/OLP/OVP/OTP
- Power Factor 0.95
- Efficiency : 92%
- Adjustable Output Current with dip-switch
- Support DALI-2, Push Dimming
- 5 years warranty

### Applications

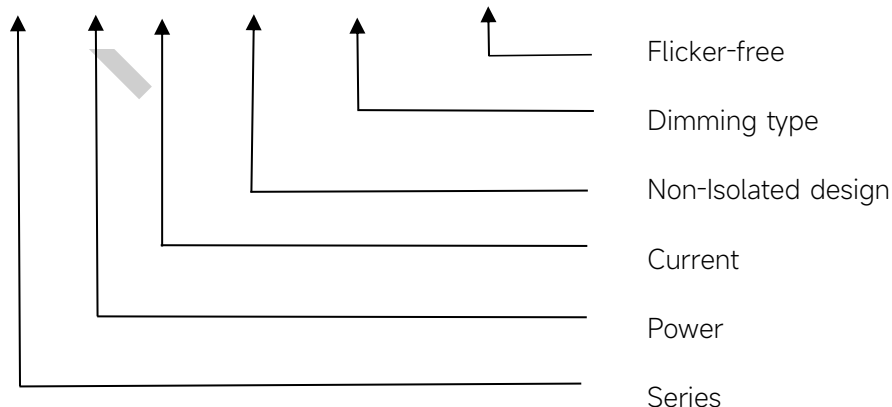
- Linear light

### ◆ Description

FMS-35-350 N-S DALI-2 LD is a 35W constant current LED driver that operates from 198-264Vac input with 80 to 350mA output current and a forward voltage range from 50 to 220Vdc. 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-35-350 N-S DALI-2 LD



## ◆ Specification

Output	Constant Current	80mA	100mA	120mA	...	300mA	350mA
	Voltage Range	50-220			...	50-116.7	50-100
	Unload voltage Max.	<250V RMS					
	Current Accuracy	±5%					
	Output LF current ripple(≤120Hz)	±3%					
	SVM	≤0.4@Full Load					
	P <sub>st</sub>	≤1@Full Load					
	Efficiency(Typ.)	92%@Full Load,230V					
	EOFI	15%					
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					
	Rated input voltage(DC)	176-280VDC					
	Frequency(Hz)	0/50/60 Hz					
	Displacement factor	≥0.9					
	Power Factor	>0.95@Full Load,230V					
	Input Current	0.23A 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%@Full Load,230V					
Dimming	Dimming	YES					
	Dimming mode	DALI-2 (IEC 62386-101,102,207,251,252,253) & Push Dimming (Corridor Function)					
	Dimming depth	2.5mA@80-250mA, 1%@300-350mA					
	Dimming current range	1 ~100%					
Protection	Over Load Protection	103-120%					
		YES/Latch off					
	Over Voltage Protection	<250V RMS					
		YES/Latch off					
Capability	Short circuit Protection	YES/Latch off					
	Over Temperature Protection	YES/Auto Resume					
Surge capability	Surge capability (L-N)	1KV					
	Surge capability (L/N-Ground)	2KV					
Environment	Operating Temperature	-25°C~+60°C					
	Humidity	20%-90%RH					
	Tc	85°C					

	Storage Temperature	-25°C~+60°C
	Lifetime	>50000h,@Tc=75°C
	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;AS/NZS 61347- 1, AS/NZS 61347-2- 13;AS 61347.2.13;EN62384;
	EMC	GB/T17743, GB17625. 1;EN55015, EN61000-3-2, EN61000-3-3, EN61547;EN55015, EN61000-3-2, EN61000-3-3, EN61547,EN 62493;EN61000-4-5;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	EN 62386-101 (DALI-2) EN 62386-102 (DALI-2) EN 62386-207 (DALI-2,inclusing 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 &amp; Noise are measured at 20MHz of bandwidth.</p> <p>3.The DC input for this product is only used for emergency lighting and applies to functional and safety requirements, EMC is not considered.</p> <p>4.Switch and dimmer are not recommended to connect between this product output and luminaries.</p>	

Preliminary

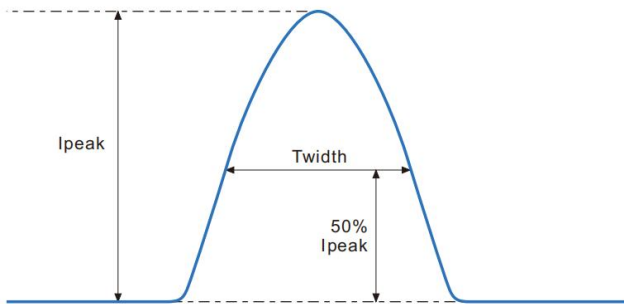
## ◆ Parameter

Number	Output				Switch position		
	Current (mA)	Voltage (VDC)	Voltage No load (VDC)	Power (W)	1	2	3
*1	80mA	50-220VDC	250	17.6	--	--	--
2	100mA			22	ON	--	--
3	120mA			26.4	--	ON	--
4	150mA			33	ON	ON	--
5	200mA	50-175VDC		35	--	--	ON
6	250mA	50-140VDC		35	ON	--	ON
7	300mA	50-116.7VDC		35	--	ON	ON
8	350mA	50-100VDC		35	ON	ON	ON

\* Factory default

## ◆ Inrush Current

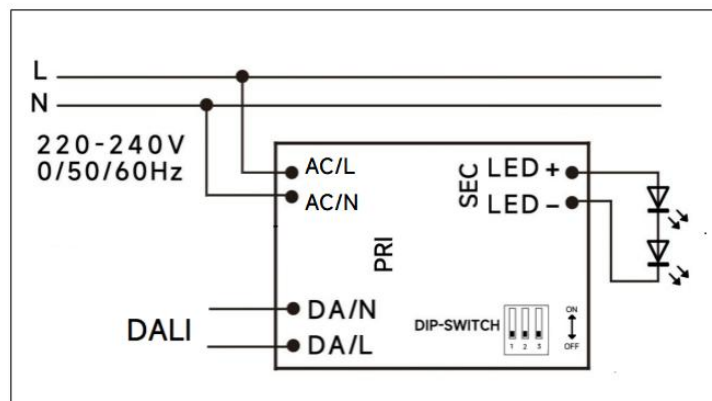
$I_{peak}$	$T_{width}$	B10	B16	B20	C10	C16	C20
A	$\mu s$	pcs	pcs	pcs	pcs	pcs	pcs



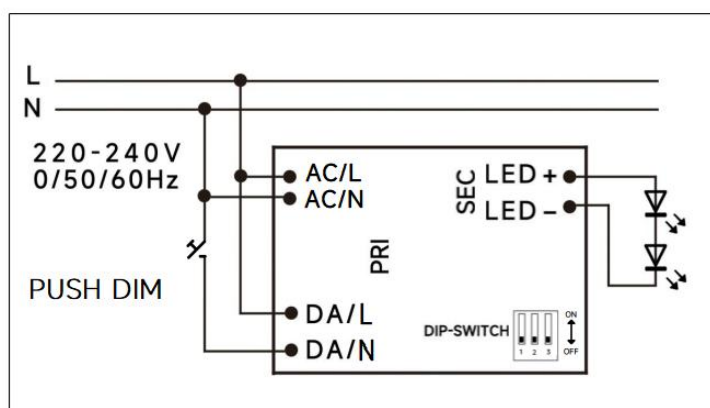
### Remarks:

- 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.

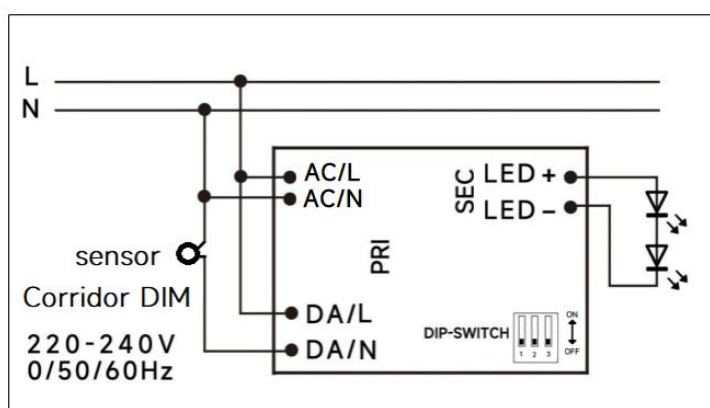
## ◆ Wiring diagram



DALI dimming application

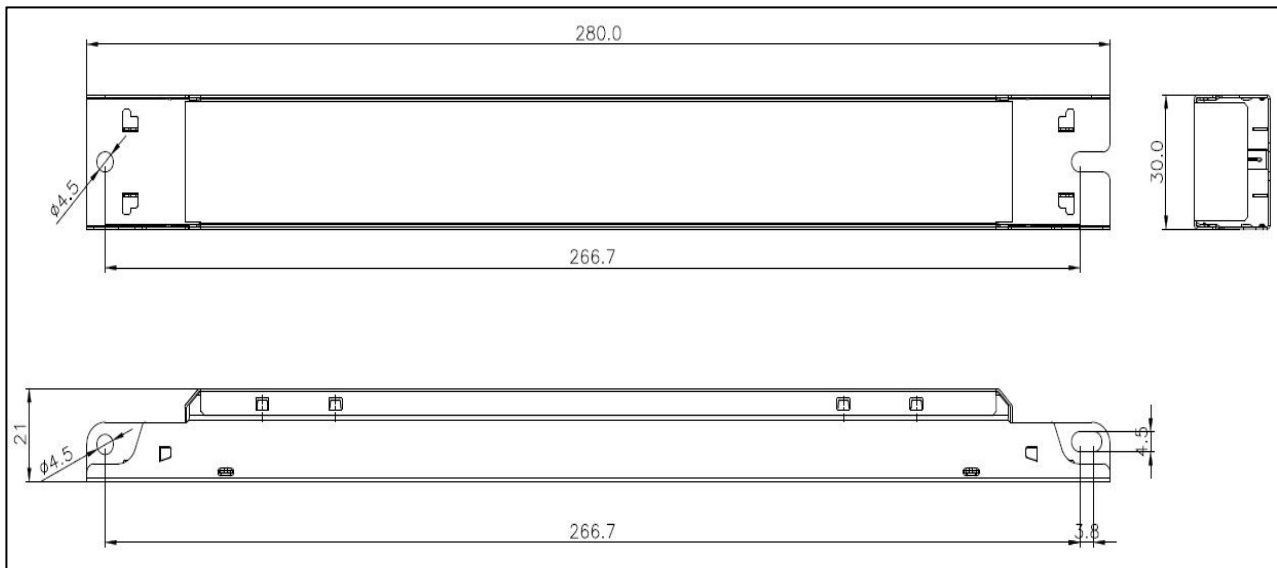


PushDIM dimming application



Corridor DIM dimming application

## ◆ 2D diagram



## ◆ Wiring & Connections

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

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

# ◆ Curve for FMS-35-350 N-S DALI-2 LD, $I_o=350\text{mA}$

Lifetime vs. Temperature Curve

Efficiency vs. Load

Power Factor Characteristics

THD vs. Load

Preliminary

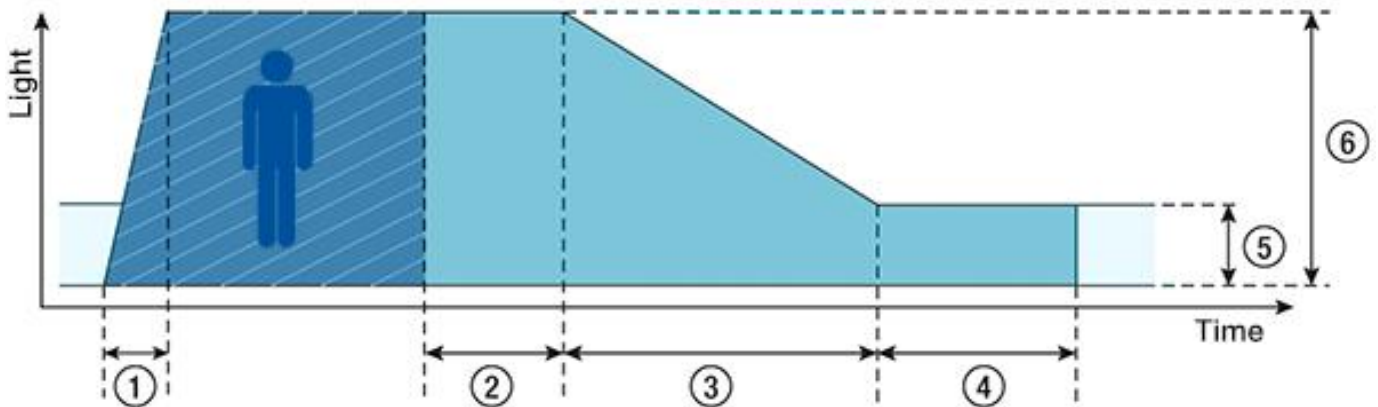
## ◆ Push dimming operation

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:**

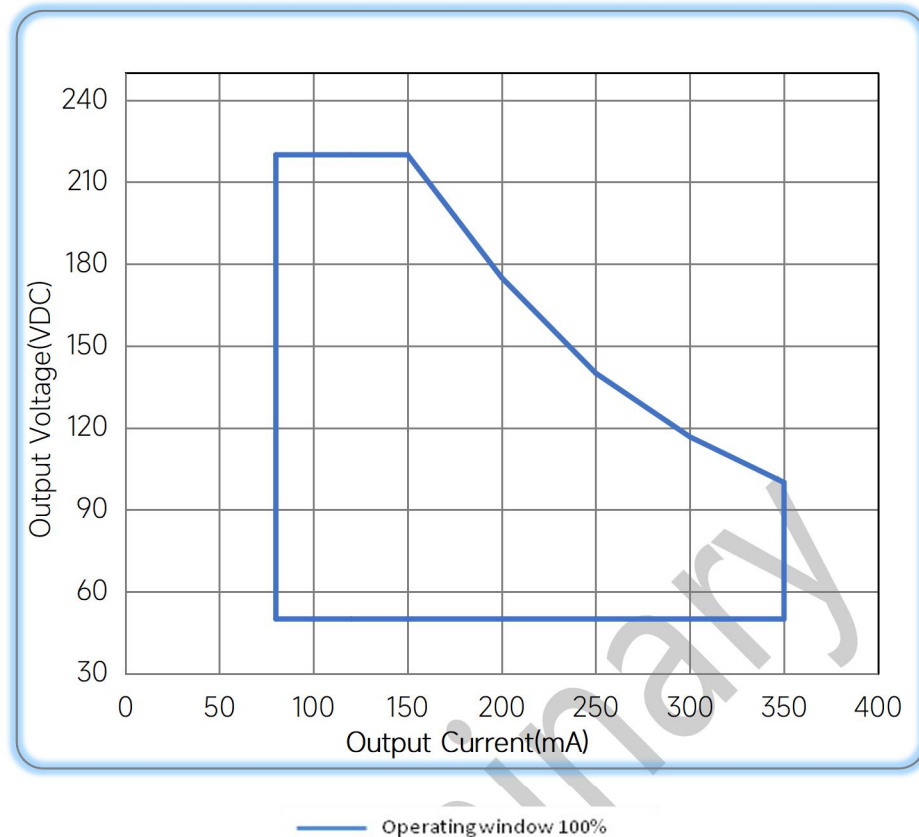
- 1.The factory default brightness is at 100%.
- 2.Up to 30 drivers can perform the PUSH dimming at the same time when utilizing one common push button
- 3.The maximum length of the cable from the push button to the last driver is 200 meters.

## ◆ 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	2023/10/20

Remark: The final interpretation of the contents of the specification belongs to Astralux.

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