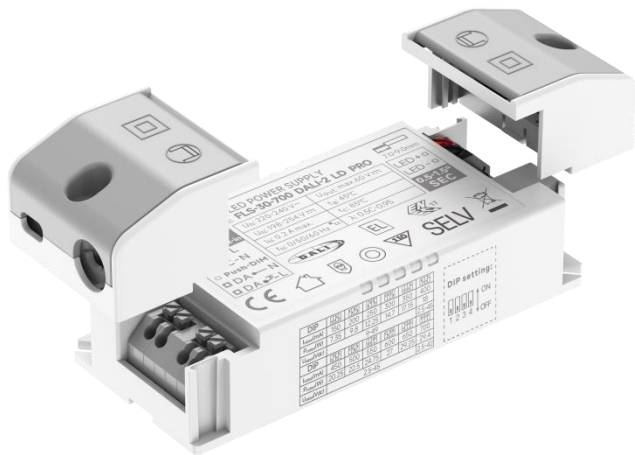


## 30W DALI + PUSH Dimming power supply



### Features

- For luminaries of protection Class I, II, SELV, Built-in/Independent (With side caps)
- Input Voltage: 220-240VAC, 176-280VDC
- Protections: SCP/OLP/OVP/OTP
- Power Factor: > 0.95
- Efficiency: 90%@650mA, Full Load, 230Vac
- Support DALI-2, Push Dimming
- Suitable for emergency lighting acc. to EN 50172
- EOfi=100%
- 22mm height
- DALI maintainace(Part 251,252,253)
- 5 years warranty

### Applications

- LED panel, LED down light
- LED spot light

### Approve

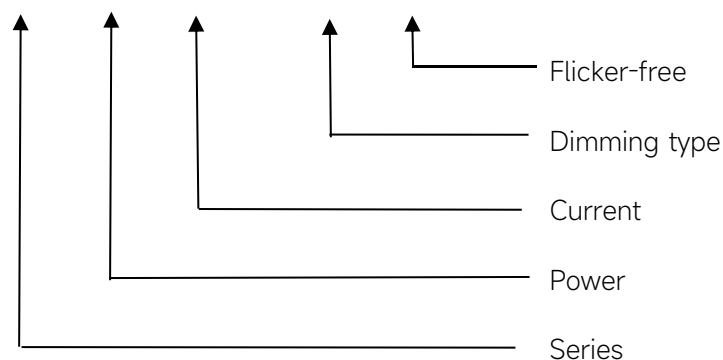


### Description

FLS-30-700 DALI-2 LD PRO is a 30W constant current LED driver with 150 to 700mA output current and a forward voltage range from 2.5 to 49Vdc. The output current is adjustable by DIP Switch. With it's dimensions from 98 x 43 x 22mm. 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-30-700 DALI-2 LD PRO



## ◆ Specification

Output	Constant Current (mA)	150-350mA	400-650mA	700mA
	Voltage Range(VDC)	9-49VDC	2.5-45VDC	2.5-42VDC
	Unload voltage Max.(VDC)	60VDC		
	Current Accuracy	±5%		
	<sup>2</sup> Output current ripple(≤120Hz)	±3%		
	SVM	≤0.4@Full Load		
	P <sub>st</sub>	≤1@Full Load		
	Efficiency(Typ.)	90%@650mA, Full Load, 230Vac		
	EOFI	100%		
Input	Rated input voltage(VAC)	220-240VAC		
	Range of input voltage(VAC)	198-264VAC		
	Maximum voltage	300VAC@1 h maximum, unit might not operate in this abnormal condition		
	Range of 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 max	0.20A max		
	Start-up time(AC mode)	< 0.8S		
	Start-up time(DC mode)	< 0.6S		
	Switch over time(AC/DC mode)	< 0.6S		
	No Load Power	≤0.3W, @220Vac		
	Standby Power	≤0.3W, @220Vac		
	Network Standby Power	≤0.3W, @220Vac		
	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	3mA@150-300mA, 1%@350-700mA		
	Dimming current range	1-100%		
	Dimming method	1%-12.5% @PWM dimming, 12.5%-100% @AM dimming		
Protection	Over Load Protection	103-120%		
		YES/Latch off		
	Over Voltage Protection	60VDC		
		YES/Latch off		
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~+45°C
	Humidity	20%-90%RH
	Tc	85°C
	Storage Temperature	-40°C~+80°C
	Life time	> 50000h,@Tc=80°C
	Ripple&Noise	≤25dB(A)@20cm
Surface	Dimension	98 x 43 x 22 mm (With side caps) : 132 X43X22mm
	material	PC
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
	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,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 &amp; Noise are measured at 20MHz of bandwidth by using a 300mm twisted pair-wire terminated with a 0.1uF &amp; 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> <p>5.The DC input for this product is only used for emergency lighting and applies to functional and safety requirements, EMC is not considered.</p>	

## ◆ Parameter INFINITY 07W = 200 mA INFINITY 12 W = 300 mA

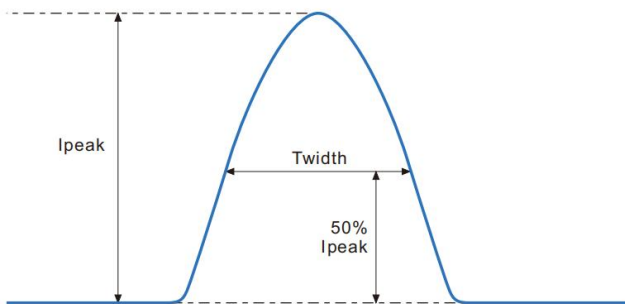
Number	Output				Switch position			
	Current (mA)	Voltage (VDC)	Voltage No load (VDC)	Power (W)	1	2	3	4
1	150mA			7.35W	--	--	ON	--
2	200mA			9.8W	ON	--	ON	--
3	250mA	9-49 VDC		12.25W	--	ON	ON	--
4	300mA		60VDC	14.7W	ON	ON	ON	--
5	350mA			17.15W	--	--	--	ON
6	400mA	2.5-45VDC		18W	ON	--	--	ON
7	450mA			20.25W	--	ON	--	ON

8	500mA			22.5W	ON	ON	--	ON
9	550mA			24.75W	--	--	ON	ON
10	600mA			27W	ON	--	ON	ON
11	650mA			29.25W	--	ON	ON	ON
*12	700mA	2.5-42VDC		29.4W	ON	ON	ON	ON

\* Factory default

## ◆ Inrush Current

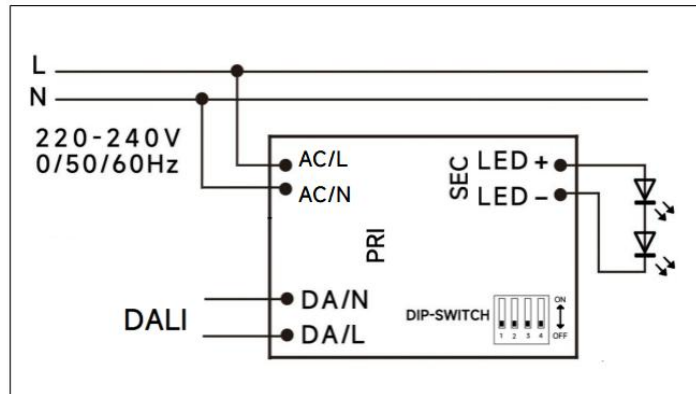
I <sub>peak</sub>	T <sub>width</sub>	B10	B16	B20	C10	C16	C20
6A	36μs	40pcs	64pcs	80pcs	40pcs	64pcs	80pcs



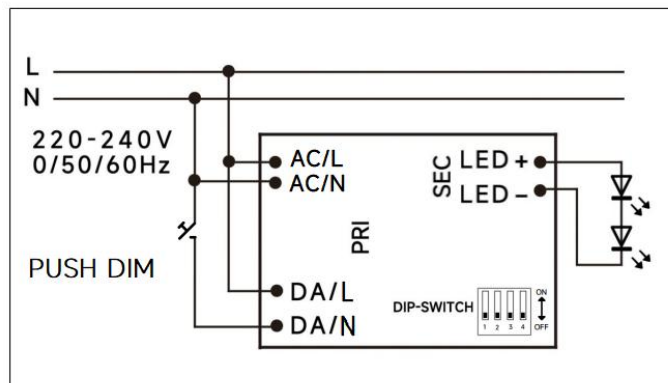
Remarks:

- 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.

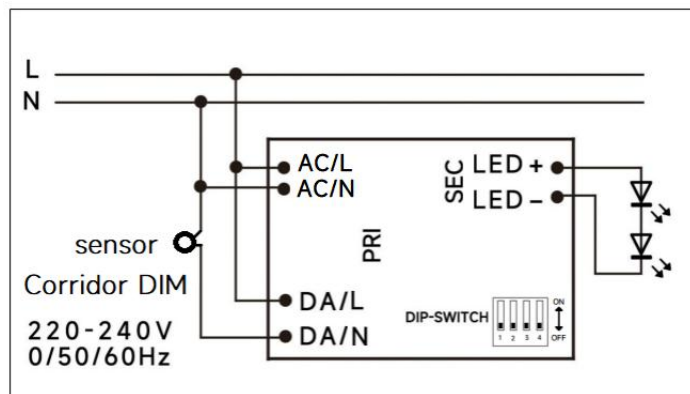
## ◆ Wiring diagram



DALI dimming application

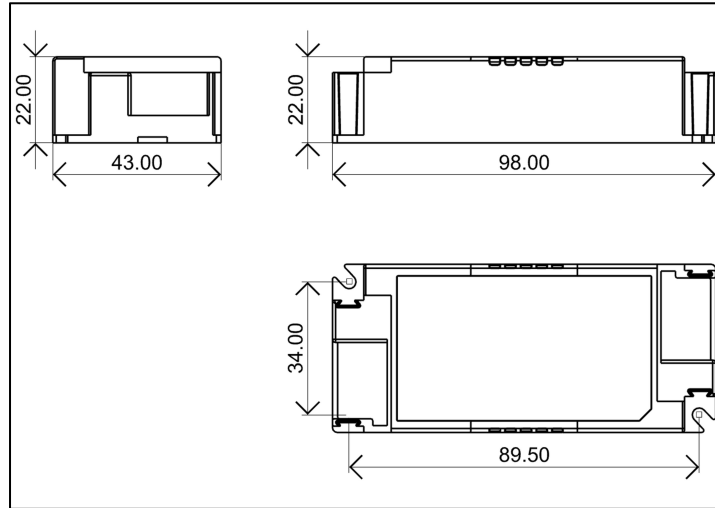


PushDIM dimming application

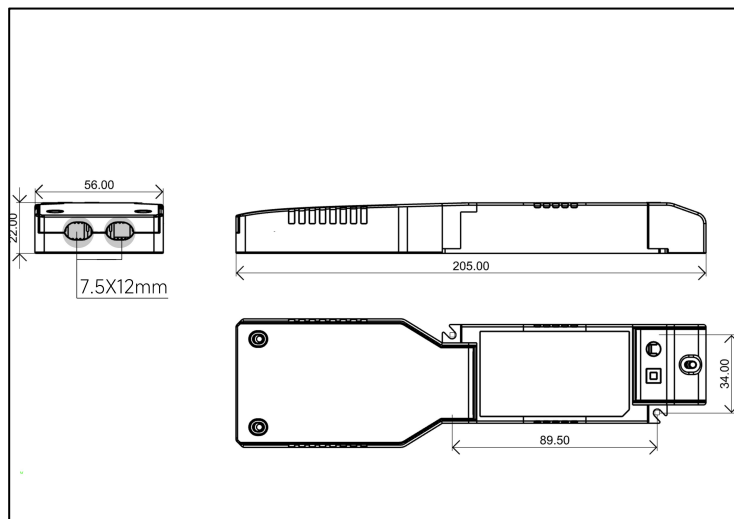
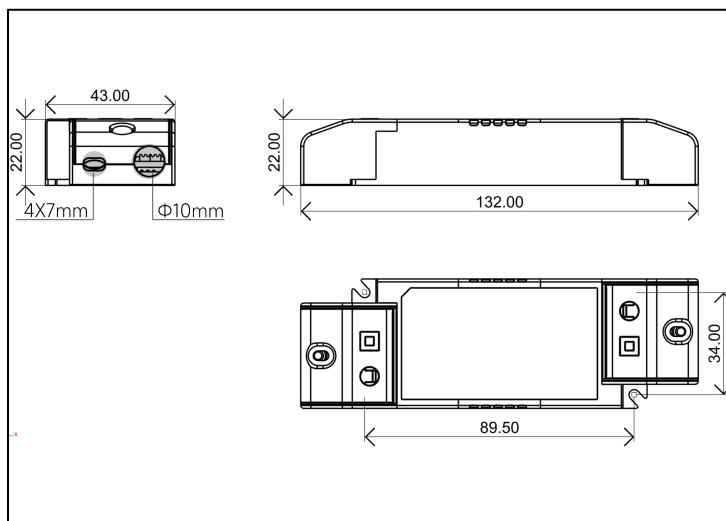


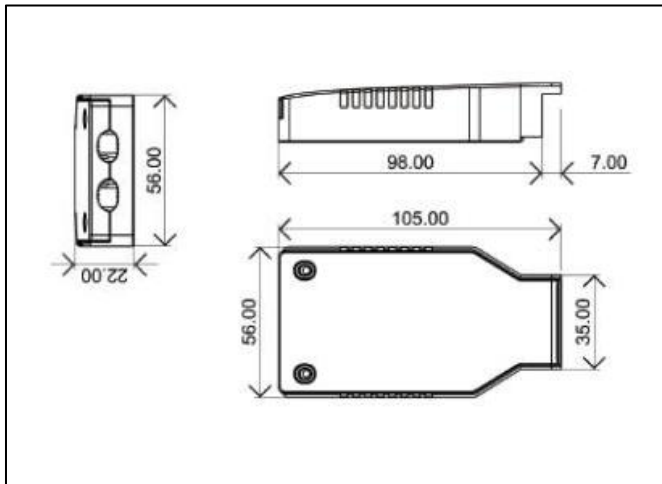
Corridor DIM dimming application

## ◆ 2D diagram

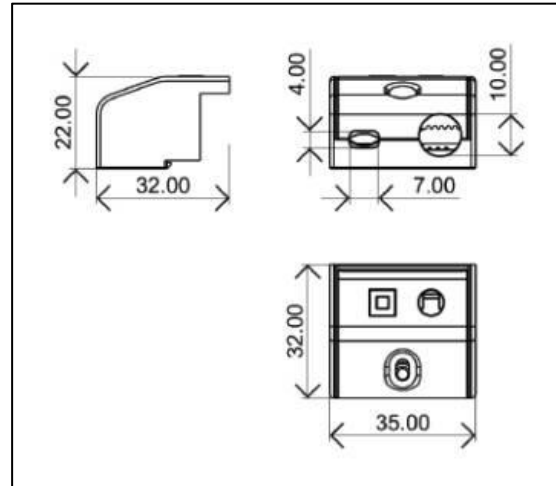


### With side caps





A caps

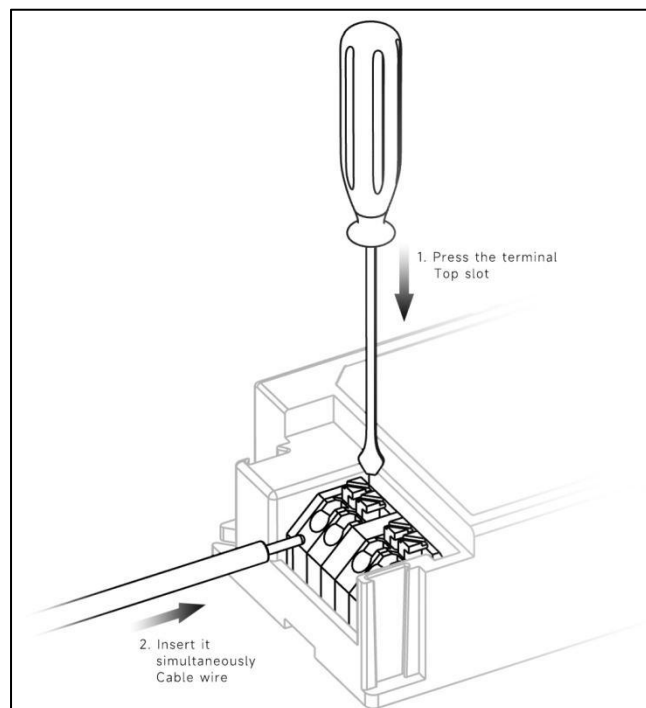


B caps

132021T0209	Top,Grey Side Cap and Bottom
132021T0209-2	Top,White Side Cap and Bottom
1270100280	Screws for Big Side Cap
126016T0009	5P Terminal for Big Side Cap

132021T0198	Top,Grey,without" Don't Cover" mark+Bottom,White
132021T0198-1	Top,Grey,with" Don't Cover" mark+Bottom ,Big,White
132021T0198-3	Top,White,with" Don't Cover" mark+ Side Cap Bottom ,White
1270100280	Screws

## Terminal



## ◆ Wiring & Connections

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

## ◆ Recommended wire

Small side cap of small hole	Wire type
0.5mm <sup>2</sup>	H03VVH2-F 2 core&3 core
	H03VV-F 2 core&3 core
0.75mm <sup>2</sup>	H03VVH2-F 2 core&3 core
	H03VV-F 2 core&3 core
	H05VV-F 2 core
1.0mm <sup>2</sup>	H05VVH2-F 2 core
1.5mm <sup>2</sup>	CCC 08(RV-90)

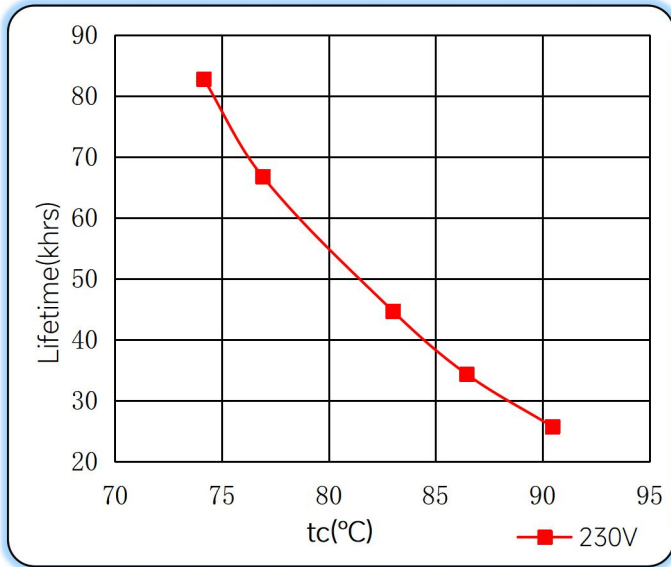
Small side cap of big hole	Wire type
0.75mm <sup>2</sup>	H05VV-F 2 core&3 core&4 core
1.0mm <sup>2</sup>	H05VV-F 2 core&3core
1.5mm <sup>2</sup>	H05VV-F 2 core&3core

Big side cap	Wire type
0.5mm <sup>2</sup>	H03VVH2-F 2 core&3 core
	H03VV-F 2 core&3 core
0.75mm <sup>2</sup>	H03VVH2-F 2 core&3 core
	H03VV-F 2 core&3 core
	H05VV-F 2 core&3 core&4 core
1.0mm <sup>2</sup>	H05VVH2-F 2 core&3 core
1.5mm <sup>2</sup>	CCC 08(RV-90)
	H05VV-F 2 core&3core

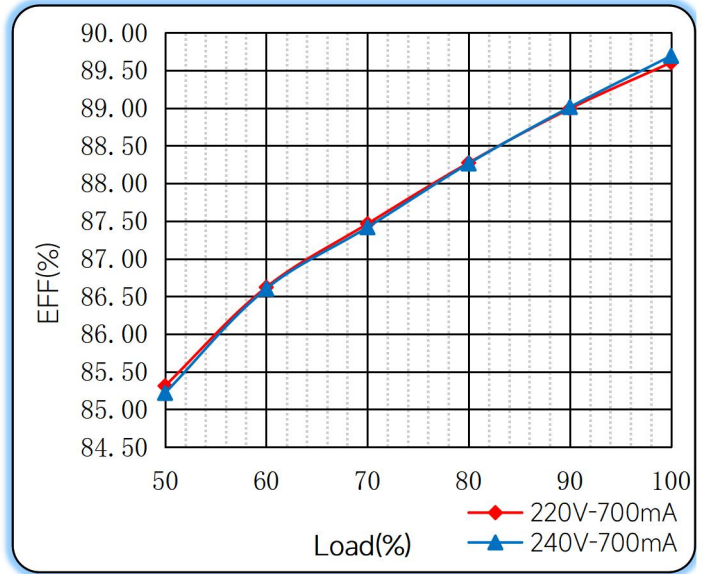
Note: Solid wire is risky to use on an angled terminal. Stranded wire is recommended for this kind of use.

## ◆ Curve for FLS-30-700 DALI-2 LD PRO, $I_o=700mA$

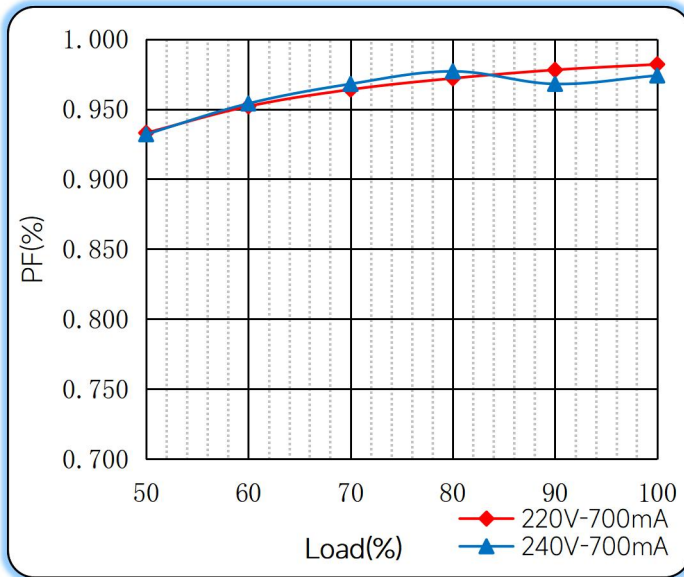
### Lifetime vs. Temperature Curve



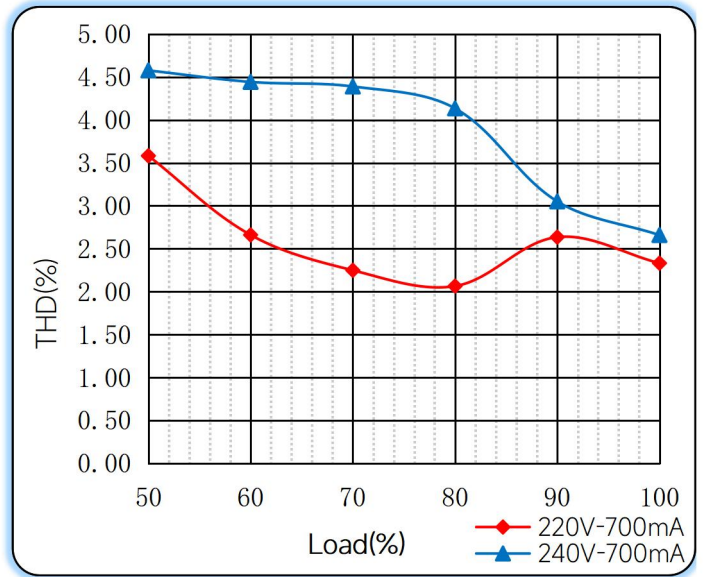
### Efficiency vs. Load



### Power Factor Characteristics



### THD vs. Load



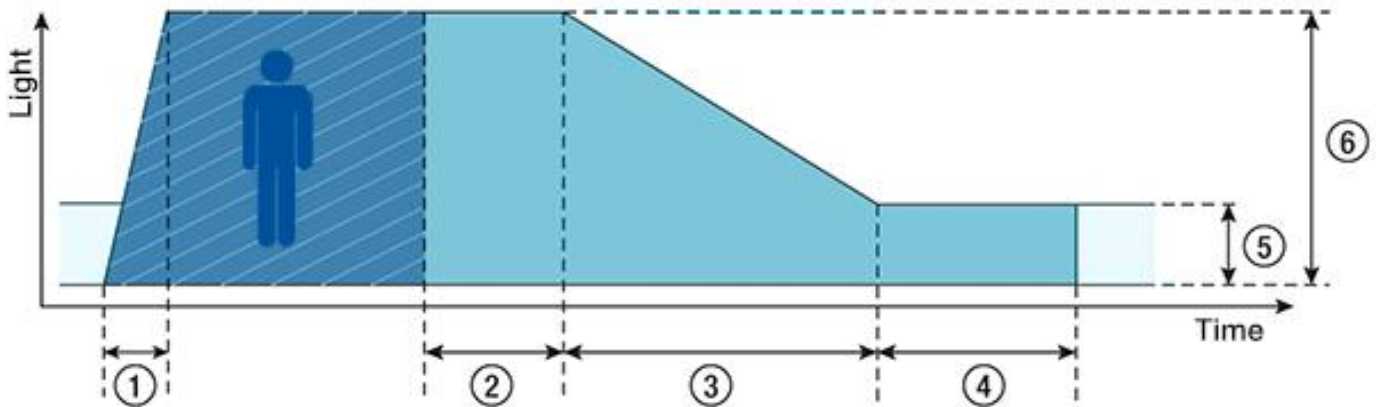
## ◆ Push dimming operation

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:

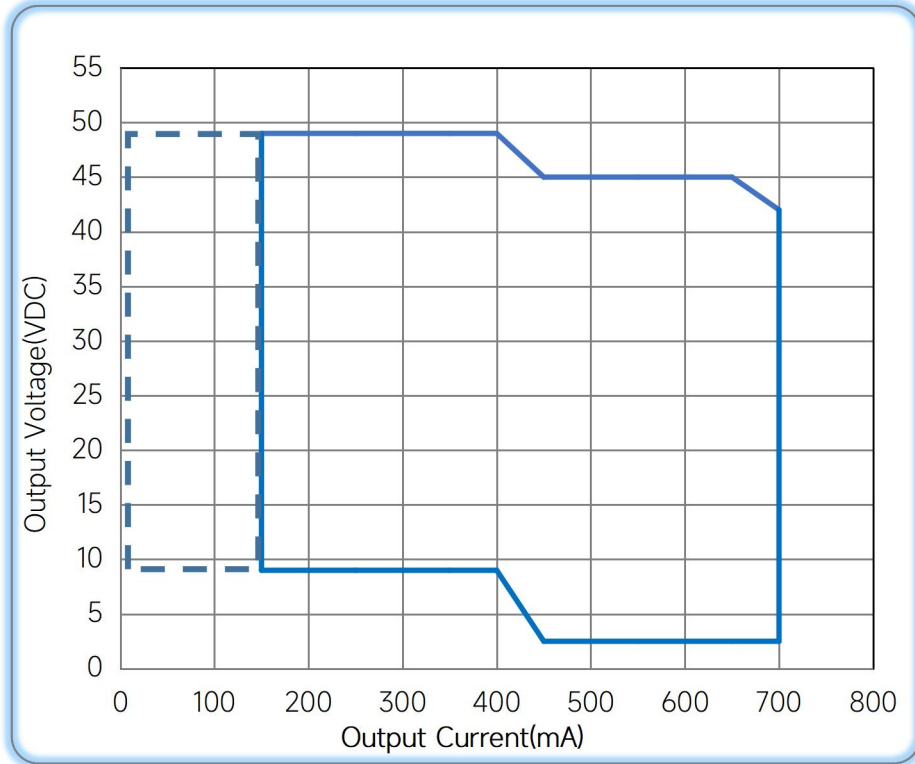
- 1.The factory default brightness is at 100%.
- 2.Up to 30 drivers can perform the PUSH dimming at the same time when utilizing one common push button
- 3.The maximum length of the cable from the push button to the last driver is 200 meters.

## ◆ 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%

Minimum dimming current

## ◆ Revision Updates

ITEM	BEFORE	AFTER	VERSION	DATE
Initial			A	2023/04/24
Specification		Updated	B	2023/06/27
Life time	> 50000h,@Tc=85°C	> 50000h,@Tc=80°C	C	2023/09/06

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

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E-mail: sales@eaglerise.com

Website : <https://lighting.eaglerise.com>



EAGLERISE



Manual

## 12W DALI + PUSH Dimming power supply



■ Approve

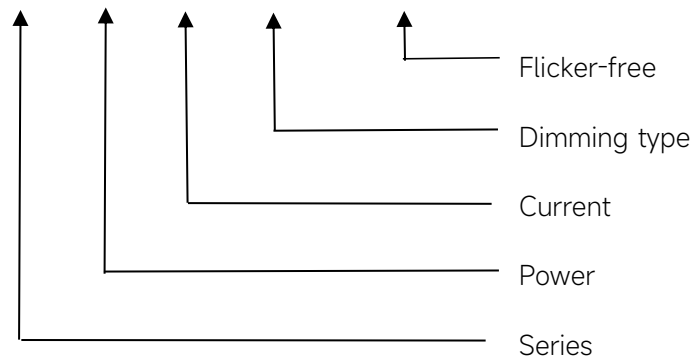


### ◆ Description

FLS-12-350 DALI2 LD is a 12W constant current LED driver with 120 to 350mA output current and a forward voltage range from 9 to 42Vdc. The output current is adjustable by DIP Switch. With it's dimensions from 119 x 40 x 21.5 mm. It is easy to integrate in LED strips, LED panel, spot and down light products. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

### ◆ Model code

#### FLS-12-350 DALI-2 LD



#### Features

- Class II, SELV, Built-in/Independent (With side caps)
- Input Voltage 220-240VAC
- Protections: SCP/OLP/OVP/OTP
- Power Factor : 0.9C
- Efficiency : 82%
- Support DALI-2, Push Dimming
- 5 years warranty

#### Applications

- LED panel, Spot light, Down light

## ◆ Specification

	Constant Current (mA)	120	150	180	200	250	280	300	350	
Output	Voltage Range (VDC)	9-42								
	Unload voltage Max.	57VDC								
	Current Accuracy	±7%				±5%				
	Output LF current ripple(≤120Hz)	±5%								
	SVM	≤0.4								
	P <sub>st</sub>	≤1								
	Efficiency(Typ.)	82%@Full Load,230VAC								
	Input	Rated input voltage	220-240VAC							
Range of input voltage		198-264VAC								
Rated input voltage(DC)		198-280VDC								
Frequency(Hz)		0/50/60 Hz								
Displacement factor		≥0.7								
Power Factor		>0.9@Full Load,230VAC								
Input Current		0.12A								
Start-up time		< 0.7S								
No Load Power		≤0.5W								
Standby Power		≤0.5W								
Network standby power		≤0.5W								
THD (Typ.)		<10%@Full Load,230VAC								
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	> 57VDC YES/Latch off								
	Short circuit Protection	YES/Latch off								
	Over Temperature Protection	YES/Auto Resume								
Environment	Operating Temperature	-20°C~+45°C								
	Humidity	20%-90%RH								
	T <sub>c</sub>	80°C								
	Storage Temperature	-25°C~+60°C								
	Lifetime	>50000h,@T <sub>c</sub> =65°C								
Surface	Dimension	85X40X21.5mm(With side caps :119X40X21.5mm)								
standards	EN 61347-1; EN61347-2-13; EN62384; EN55015; EN61000-3-2 ; EN61000-3-3; EN 61547;									

Others	ErP	EU 2019/2020
	RoHS	RoHS (2011/65/EU) (EU)2015/863
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 by using a 300mm twisted pair-wire terminated with a 0.1uF &amp; 47 uF parallel capacitor.</p> <p>3.Data are typical values obtained from test samples.</p> <p>4.Switch and dimmer are not recommended to connect between this product output and luminaries.</p>	

## ◆ Parameter

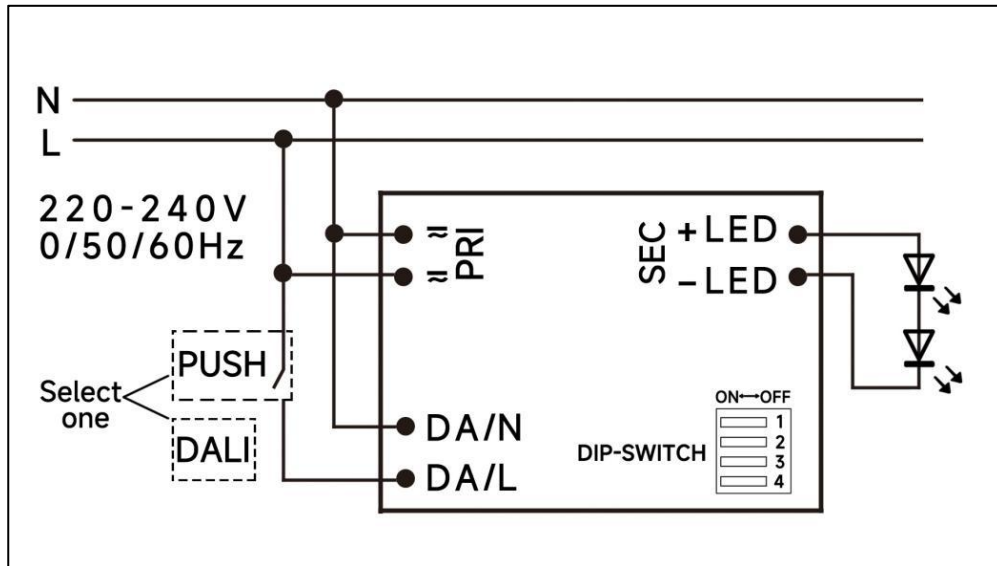
Number	Output	Switch position		
	Current(mA)	1	2	3
1	120	--	--	--
2	150	ON	--	--
3	180	--	ON	--
4	200	ON	ON	--
5	250	--	--	ON
6	280	ON	--	ON
7	300	--	ON	ON
*8	350	ON	ON	ON

\* Factory default

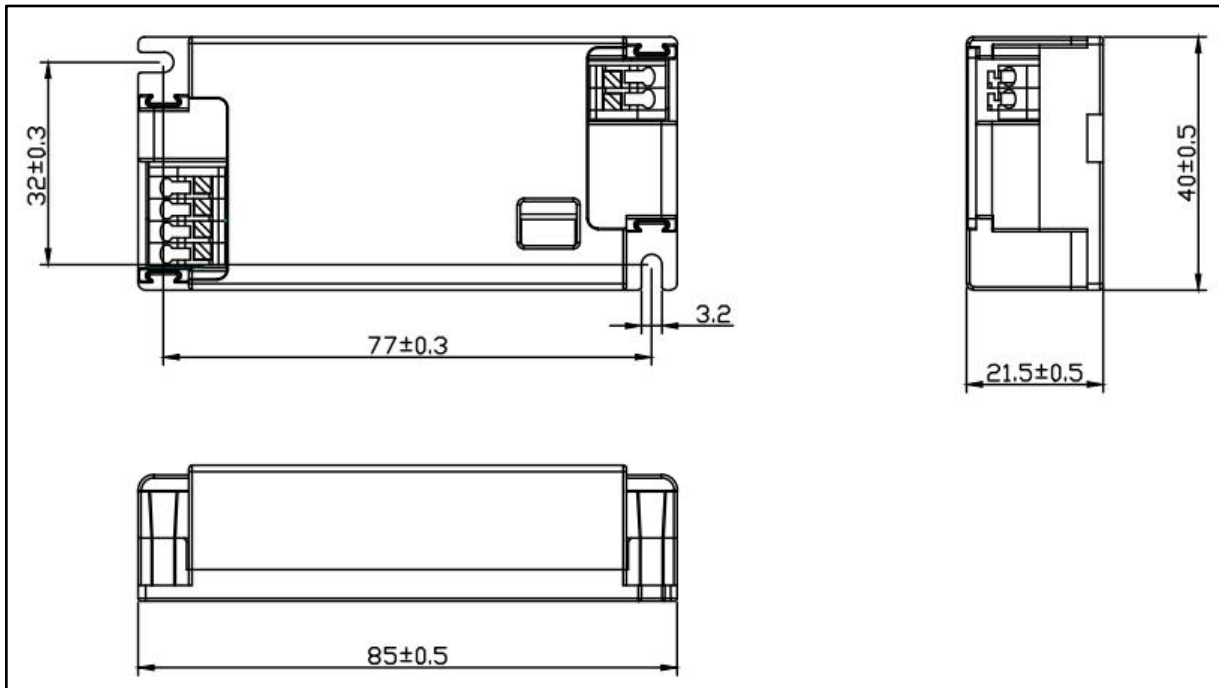
## ◆ Circuit Breaker

I <sub>peak</sub>	T <sub>width</sub>	B10	B16	B20	C10	C16	C20
3.3A	41.2μs	66pcs	106pcs	133pcs	66pcs	106pcs	133pcs

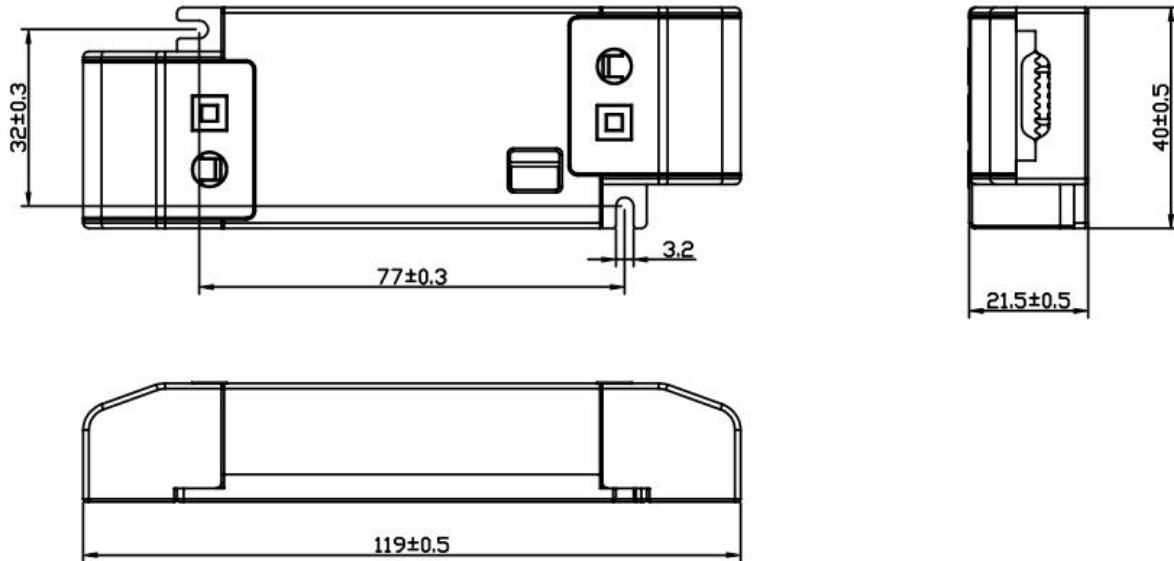
◆ **Wiring diagram**



◆ **2D diagram**



With side caps



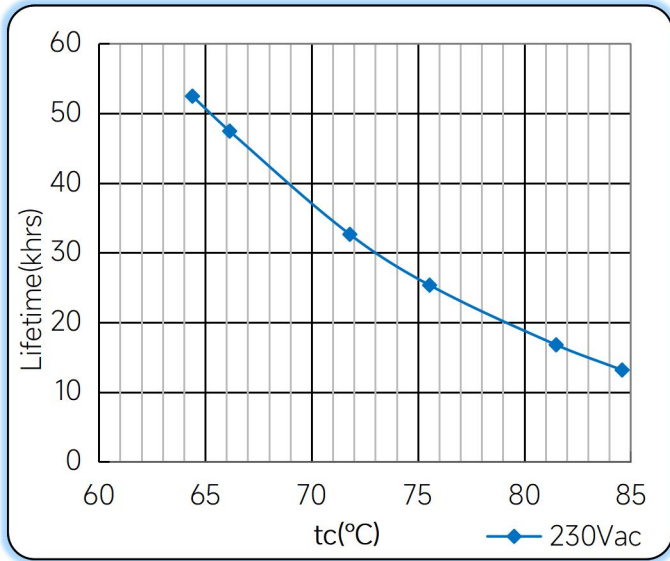
coding:1320212042

## ◆ Wiring & Connections

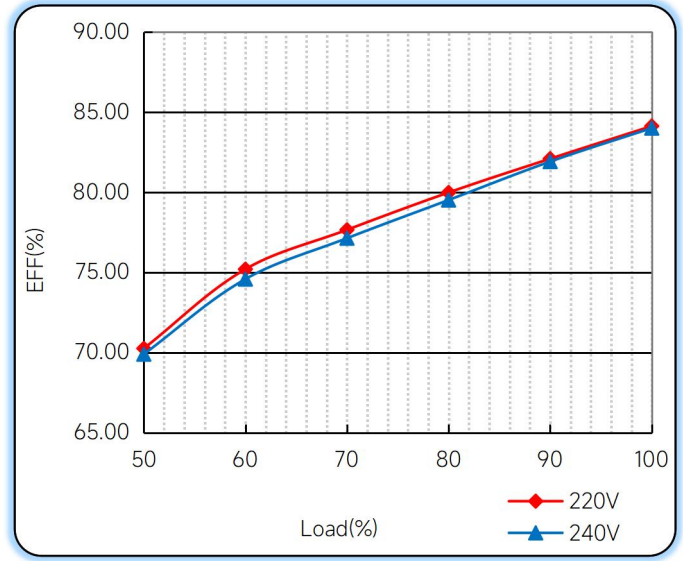
Specification item		Value (Unit )
Input	Input wire cross-section	0.5...1.5 mm <sup>2</sup>
	Input wire gauge.	16...20 AWG
	Input wire strip length	8...9mm
Output	Output wire cross-section	0.5...1.5 mm <sup>2</sup>
	Output wire gauge.	16...20 AWG
	Output wire strip length	8...9mm

## ◆ Curve for FLS-12-350 DALI-2 LD, I<sub>o</sub>=350mA

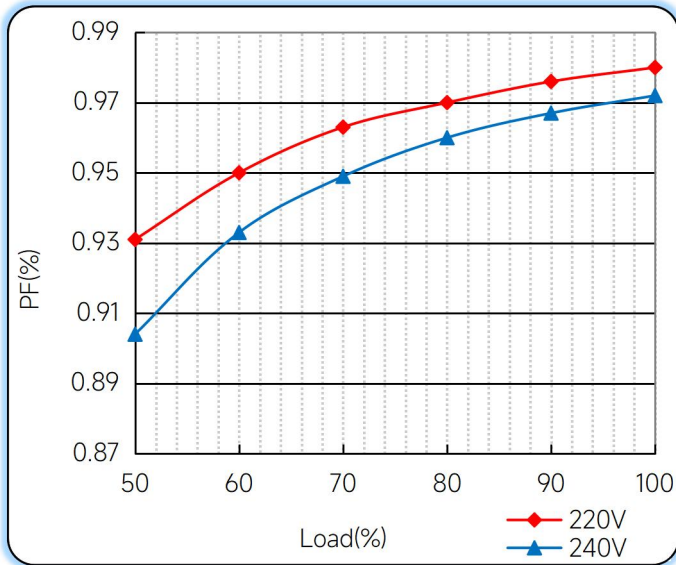
### Lifetime vs. Temperature Curve



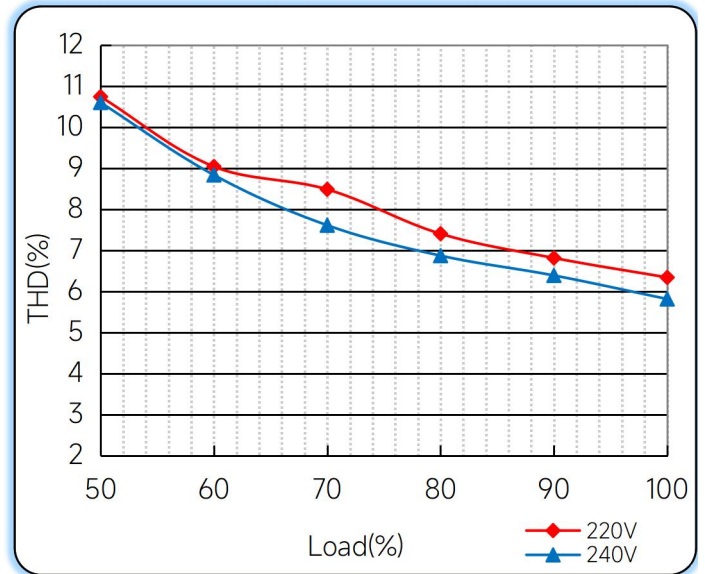
### Efficiency vs. Load



### Power Factor Characteristics



### THD vs. Load



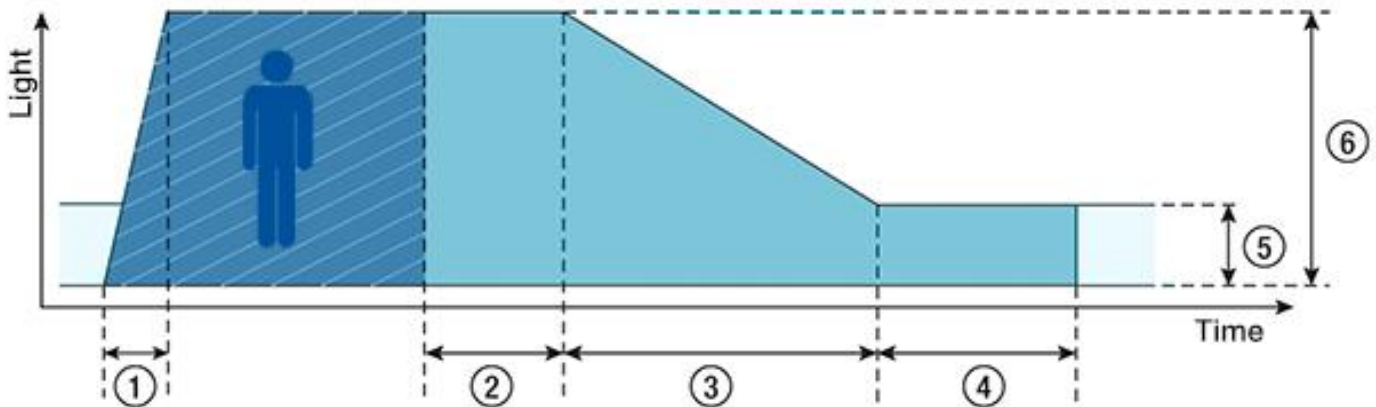
## ◆ Push dimming operation

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:

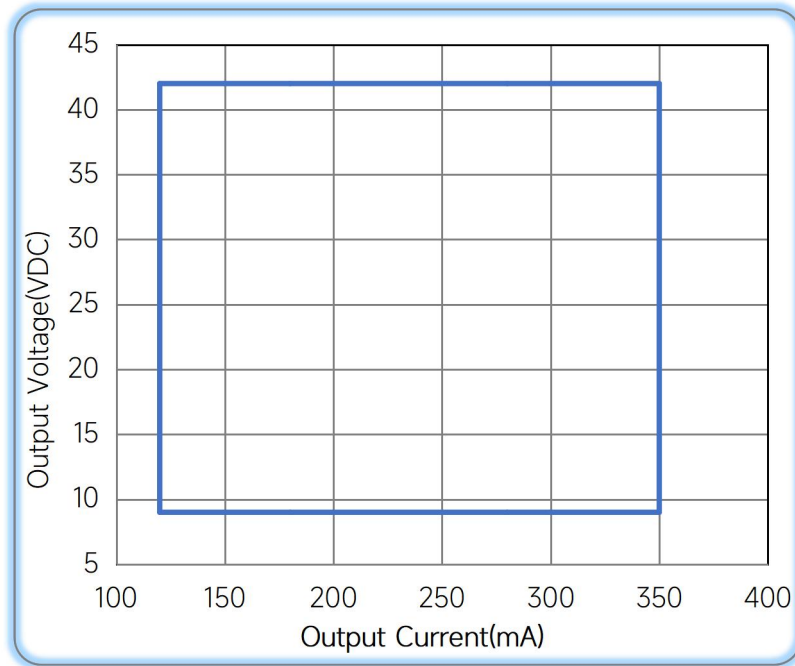
- 1.The factory default brightness is at 100%.
- 2.Up to 30 drivers can perform the PUSH dimming at the same time when utilizing one common push button
- 3.The maximum length of the cable from the push button to the last driver is 200 meters.

## ◆ 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	2022/02/15
Start-up time	0.5S	0.7S	B	2022/08/12
2D diagram		Added	C	2023/06/02

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