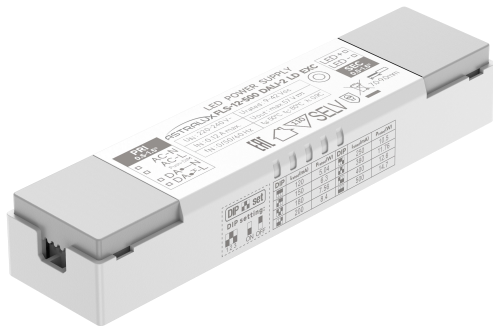


## 12W DALI + PUSH Dimming power supply



■ Approve



### Features

- For luminaires of protection Class II, SELV, Independent
- Input Voltage 220-240VAC
- Protections: SCP/OLP/OVP/OTP
- Power Factor : 0.95
- Efficiency : 85%
- Support DALI-2, Push Dimming
- 5 years warranty

### Applications

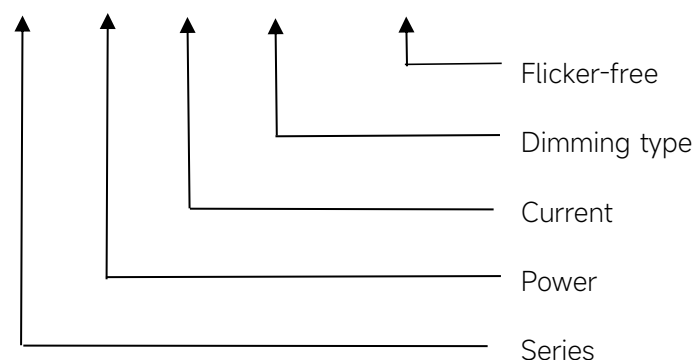
- LED panel, Spot light, Down light

### ◆ Description

FLS-12-500 DALI-2 LD EXC is a 12W constant current LED driver with 150 to 500mA output current and a forward voltage range from 9 to 42Vdc. The output current is adjustable by DIP Switch. With it's dimensions from 126 x 30 x 20.5 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-12-500 DALI-2 LD EXC



## ◆ Specification

Output	Constant Current (mA)	150	200	250	300	350	400	450	500
	Voltage Range (VDC)	9-42			9-40	9-34.3	9-30	9-26.7	9-24
	Unload voltage Max.	59VDC							
	Current Accuracy	±7%	±5%						
	Output LF current ripple(≤120Hz)	±5%							
	SVM	≤0.4							
	P <sub>st</sub>	≤1							
	Efficiency(Typ.)	85%@300mA,Full Load,230VAC							
	EOFI	85%							
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	≥0.7@Full Load,230VAC							
	Power Factor	≥0.95@Full Load,230VAC							
	Input Current	0.085A							
	Start-up time	< 0.8S							
	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	5mA@≤450mA; 1%@500mA							
	Dimming current range	1~100%							
Protection	Over Load Protection	103-120%							
		YES/Auto Resume							
	Over Voltage Protection	> 59VDC							
		YES/Auto Resume							
	Short circuit Protection	YES/Auto Resume							
Over Temperature Protection	YES/Auto Resume								
capability	Surge capability (L-N)	1KV							
	Surge capability (L/N-Ground)	NA							
Environment	Operating Temperature	-20℃~+45℃							
	Humidity	20%-90%RH							
	T <sub>c</sub>	75℃							
	Storage Temperature	-25℃~+60℃							

	Lifetime	>50000h,@Tc=75°C
	Noise	≤25dB(A)@20cm
Surface	Dimension	126X30X20.5mm
	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
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.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>5.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>6.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>7.All 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.</p>	

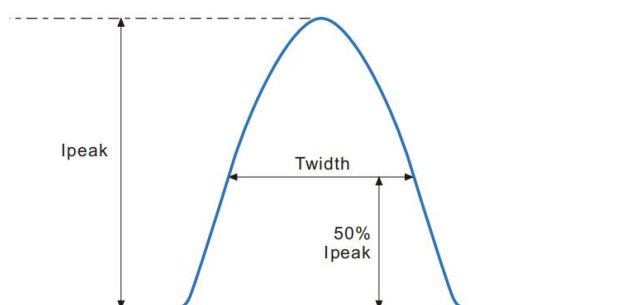
## ◆ Parameter

Number	Output				Switch position		
	Current (mA)	Voltage (VDC)	Voltage No load (VDC)	Power (W)	1	2	3
1	150mA	9-42	59VDC	6.3	--	--	--
2	200mA			8.4	ON	--	--
3	250mA			10.5	--	ON	--
4	300mA	9-40		12	ON	ON	--
5	350mA	9-34.3		12	--	--	ON
6	400mA	9-30		12	ON	--	ON
7	450mA	9-26.7		12	--	ON	ON
*8	500mA	9-24		12	ON	ON	ON

\* Factory default

## ◆ Inrush Current

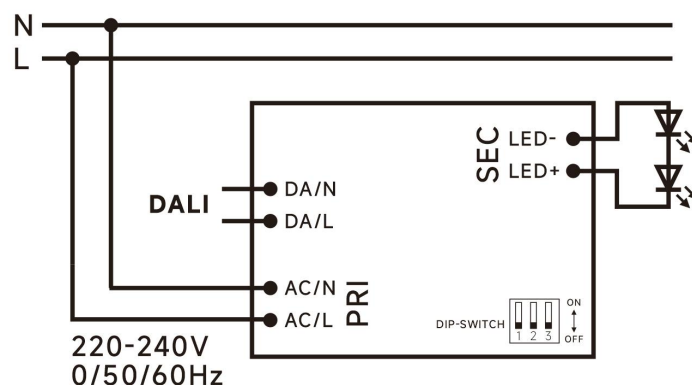
$I_{peak}$	$T_{width}$	B10	B16	B20	C10	C16	C20
2.39A	28 $\mu$ s	94pcs	150pcs	188pcs	94pcs	150pcs	188pcs



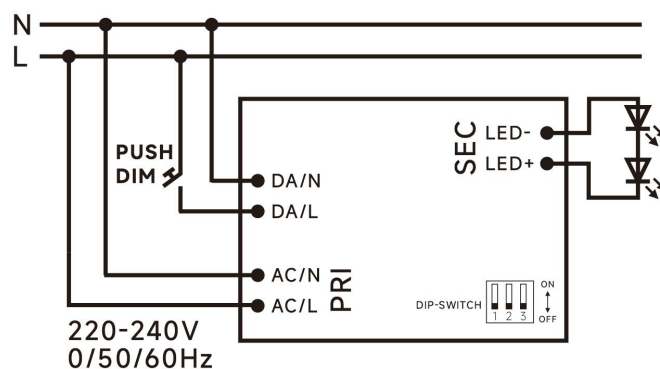
### Remarks:

- 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.

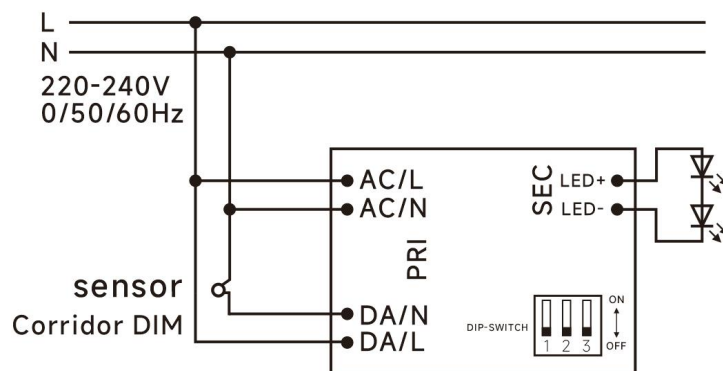
## ◆ Wiring diagram



DALI dimming application

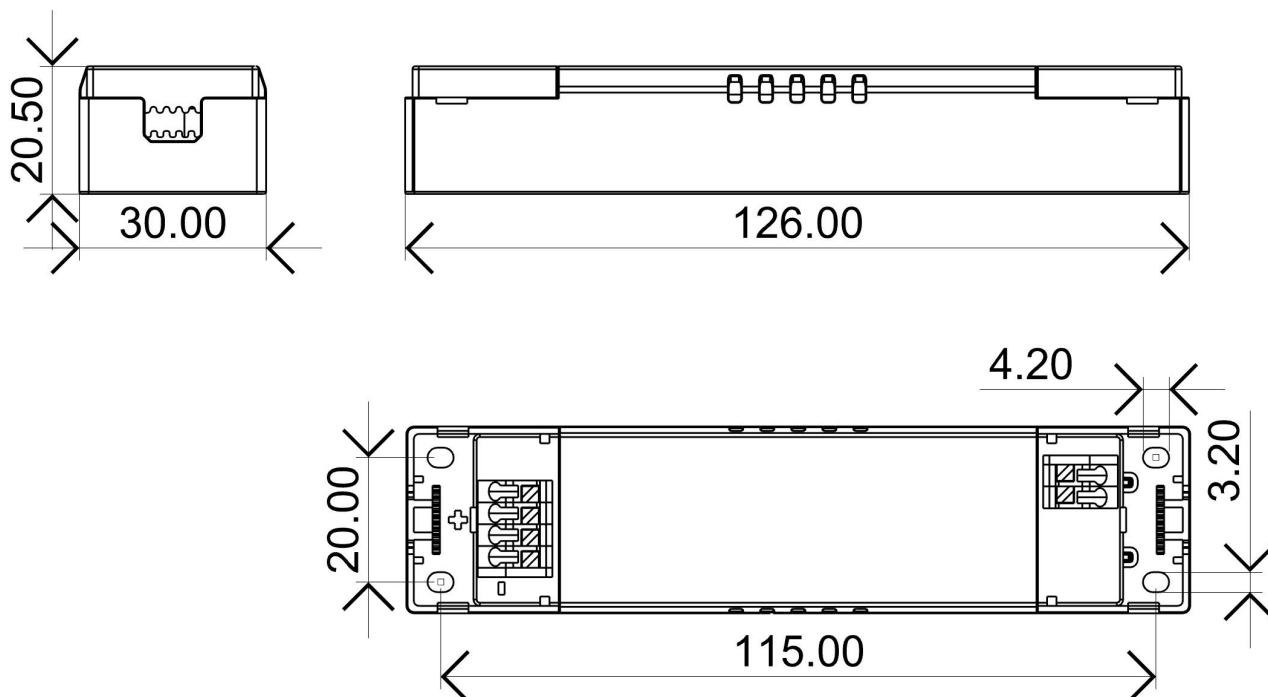


PushDIM dimming application

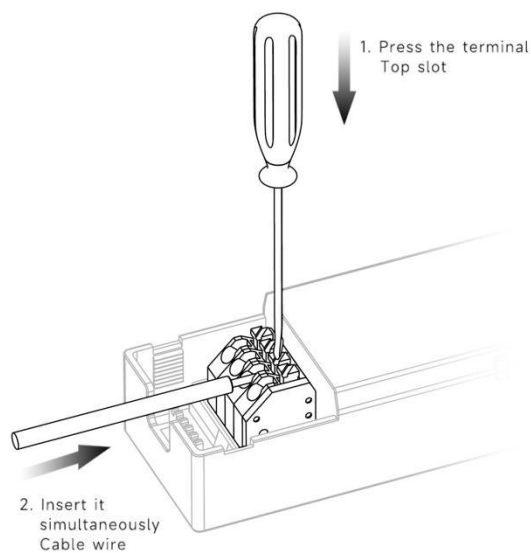


Corridor DIM dimming application

## ◆ 2D diagram



## Terminal



## ◆ 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

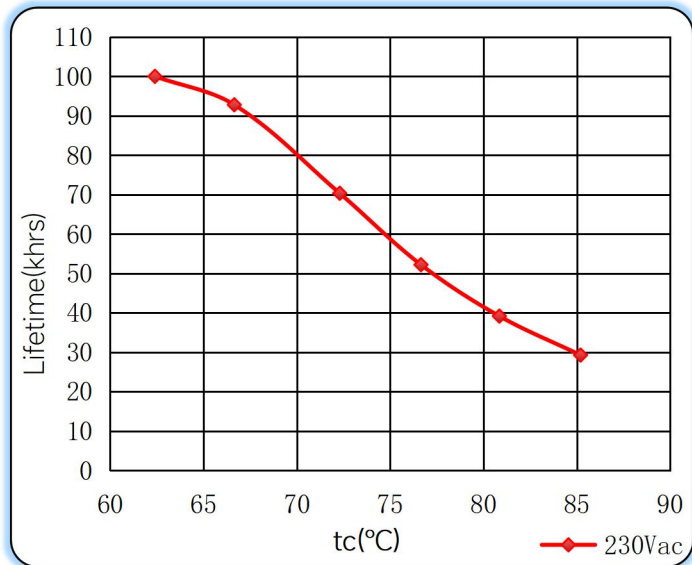
Note: Solid wire is risky to use on an angled terminal. Stranded wire is recommended for this kind of use.

## ◆ Packaging

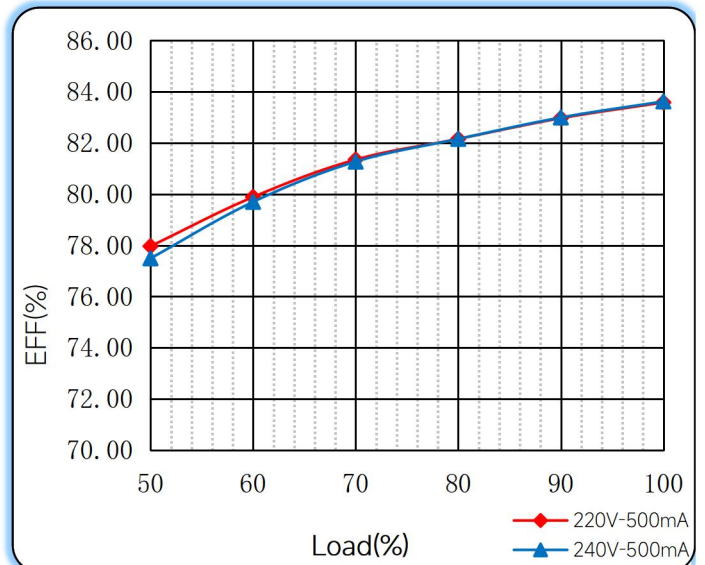
Model	Product Dimensions(mm)	weight/piece	Outer carton dimension(mm)	Quantity/carton	Net weight/carton(Kg)	Gross weight/carton(Kg)
FLS-12-500 DALI-2 LD EXC	126X30X20.5	0.0575	370X275X215mm	150	8.625	9.246

# ◆ Curve for FLS-12-500 DALI-2 LD EXC, $I_o=500\text{mA}$

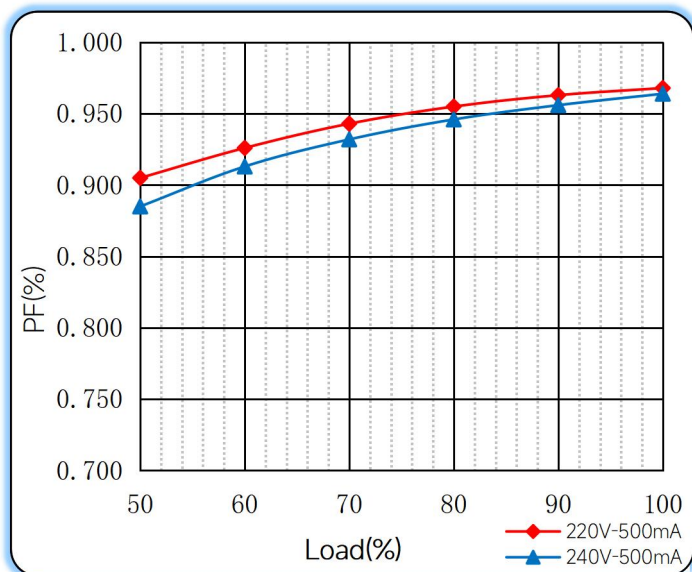
Lifetime vs. Temperature Curve



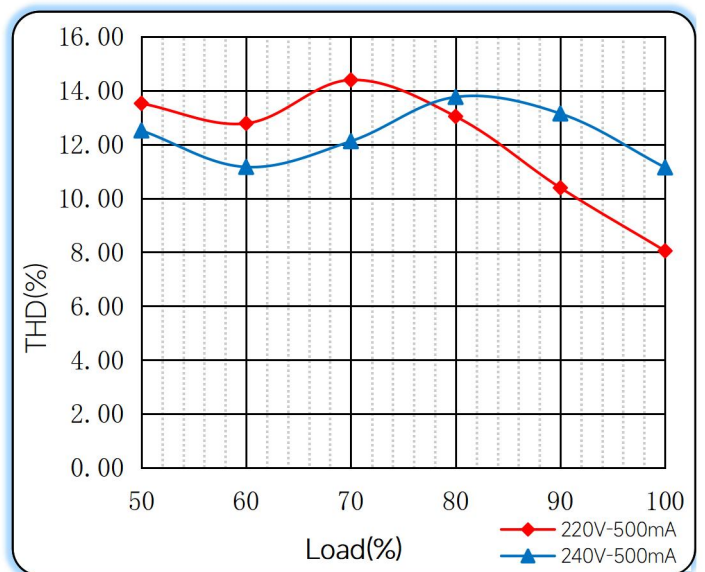
Efficiency vs. Load



Power Factor Characteristics



THD vs. Load





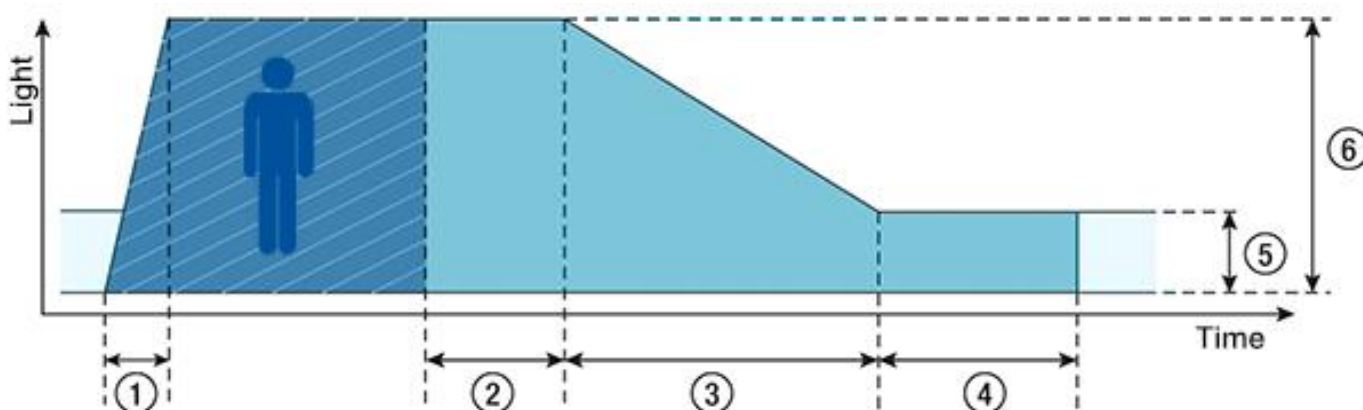
## ◆ Push dimming operation

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:

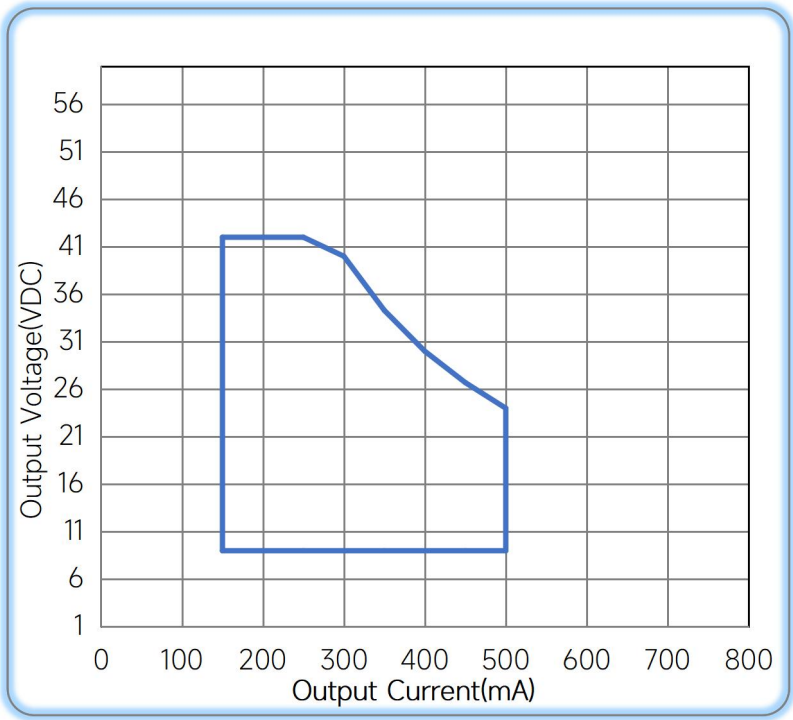
- 1.The factory default brightness is at 100%.
- 2.Up to 30 drivers can perform the PUSH dimming at the same time when utilizing one common push button
- 3.The maximum length of the cable from the push button to the last driver is 200 meters.

## ◆ 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	2024/02/23

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

E-mail: [sales@astralux-driver.com](mailto:sales@astralux-driver.com)  
Website : [www.astralux-driver.com](http://www.astralux-driver.com)