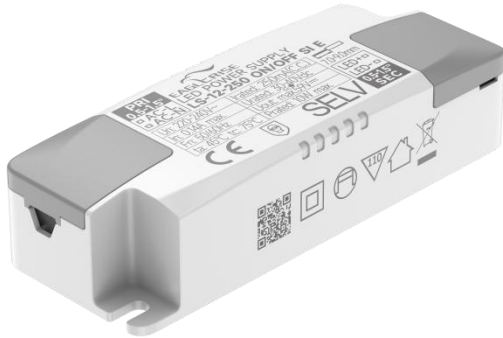


## 12W Constant Current power supply



■ Approve



### Features

- For luminaires of protection Class II, SELV, Independent
- Input Voltage 220-240VAC
- Protections: OLP/OVP/OCP/OTP
- Power Factor: 0.5
- Efficiency: >83%
- 5 years warranty

### Applications

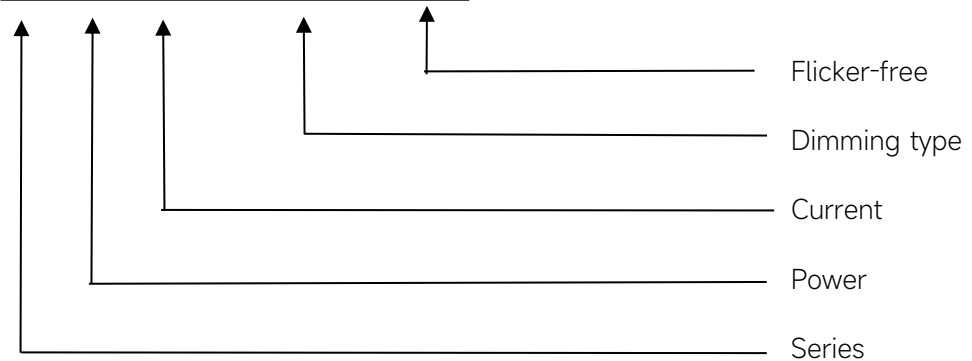
- LED Panel
- Ceiling Light

### ◆ Description

LS-12-XXX ON/OFF SI E is a 12W constant current LED driver with 250 to 350mA output current and a forward voltage range from 30 to 40Vdc. With its compact dimensions from 92 x 36 x 25 mm. It is easy to integrate in LED panel and Ceiling lights. To ensure trouble-free operation, protection is provided against output short circuit, over load, over voltage and open circuit.

### ◆ Model code

LS-12-XXX ON/OFF SI E



## ◆ Specification

	Constant Current	250	280	300	350
Output	Voltage Range	30-40V			
	Unload voltage Max.	59VDC			
	Current Accuracy	±5%			
	Output HF current ripple( ≥ )	±5%			
	Output LF current ripple( ≤ )	±5%			
	SVM	≤0.4@Full Load			
	Pst	≤1@Full Load			
	Efficiency(Typ.)	>83%@Full Load,230VAC			
Input	Rated input voltage	220-240VAC			
	Range of input voltage	198-264VAC			
	Frequency(Hz)	50/60 Hz			
	Power Factor	0.5@Full Load, 230VAC			
	Input Current max	0.14A MAX.@Full Load, 220-240VAC			
	Start-up time	< 0.5S			
	Unload Power Consumption	≤0.5W			
Protection	Over Load Protection	103-120%			
		YES/Auto Resume			
	Over Voltage Protection	59VDC			
		YES/Auto Resume			
	Short circuit Protection	YES/Auto Resume			
capability	Surge capability (L-N)	1KV			
	Surge capability	NA			
Environment	Operating Temperature	-20°C~+45°C			
	Humidity	20%-90%RH			
	Tc (Max)	75°C			
	Storage Temperature	-20°C...+60°C			
	Life time	> 30000h@Tc=75°C			
	Noise	≤25dB(A)@20cm			
Dimming	Three-level Dimming	100%-50%-12%( with memory function )			
Surface	Dimension	92x36x25(LXWXH)mm			
	material	PC			
Standards	Safety	GB19510. 1, GB19510. 14;IEC61347- 1, IEC61347-2- 13;AS/NZS 61347- 1			
	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			

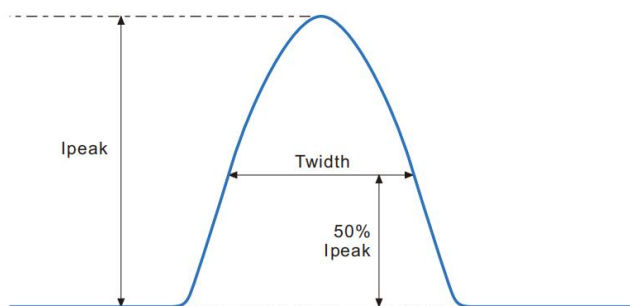
	RoHS	RoHS (2011/65/EU) (EU)2015/863
Note	<p>1.All parameters not specially mentioned are measured at 230VAC input , full load and 25°C of ambient temperature.</p> <p>2.Ripple &amp; Noise are measured at 20MHz of bandwidth by using a 300mm twisted pair-wire terminated with a 0.1uF &amp; 47 uF parallel capacitor.</p> <p>3.The over-temperature protection of the product is provided by the IC.</p> <p>4.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.</p>	

## ◆ Model list

Number	Model number	Output			
		Current (mA)	Voltage (VDC)	Voltage No load (VDC)	Power (W)
1	LS-12-250 ON/OFF SI E	250	30-40	59	10
2	LS-12-280 ON/OFF SI E	280			11.2
3	LS-12-300 ON/OFF SI E	300			12
4	LS-12-350 ON/OFF SI E	350			14

## ◆ Inrush Current

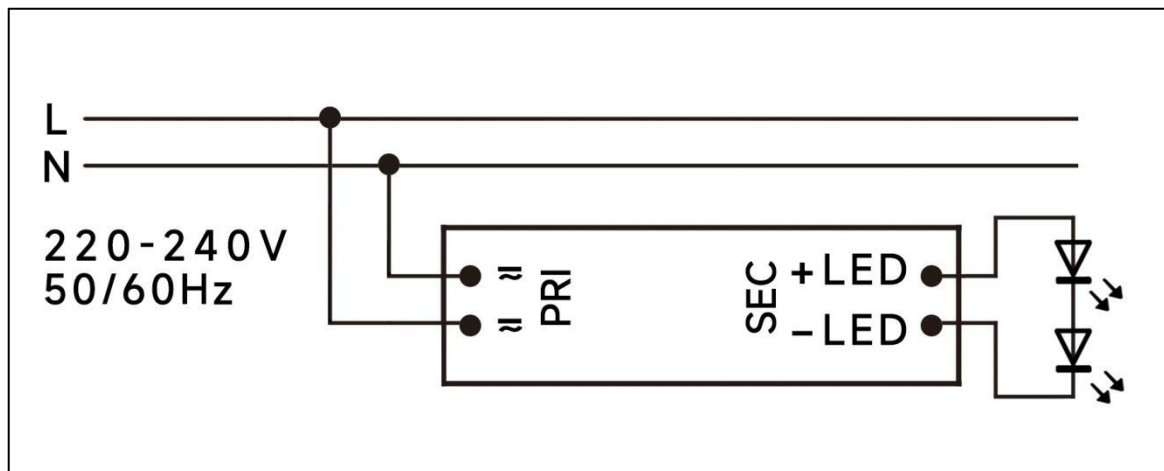
I <sub>peak</sub>	T <sub>width</sub>	B10	B16	B20	C10	C16	C20
8.12A	96μs	57pcs	91pcs	114pcs	57pcs	91pcs	114pcs



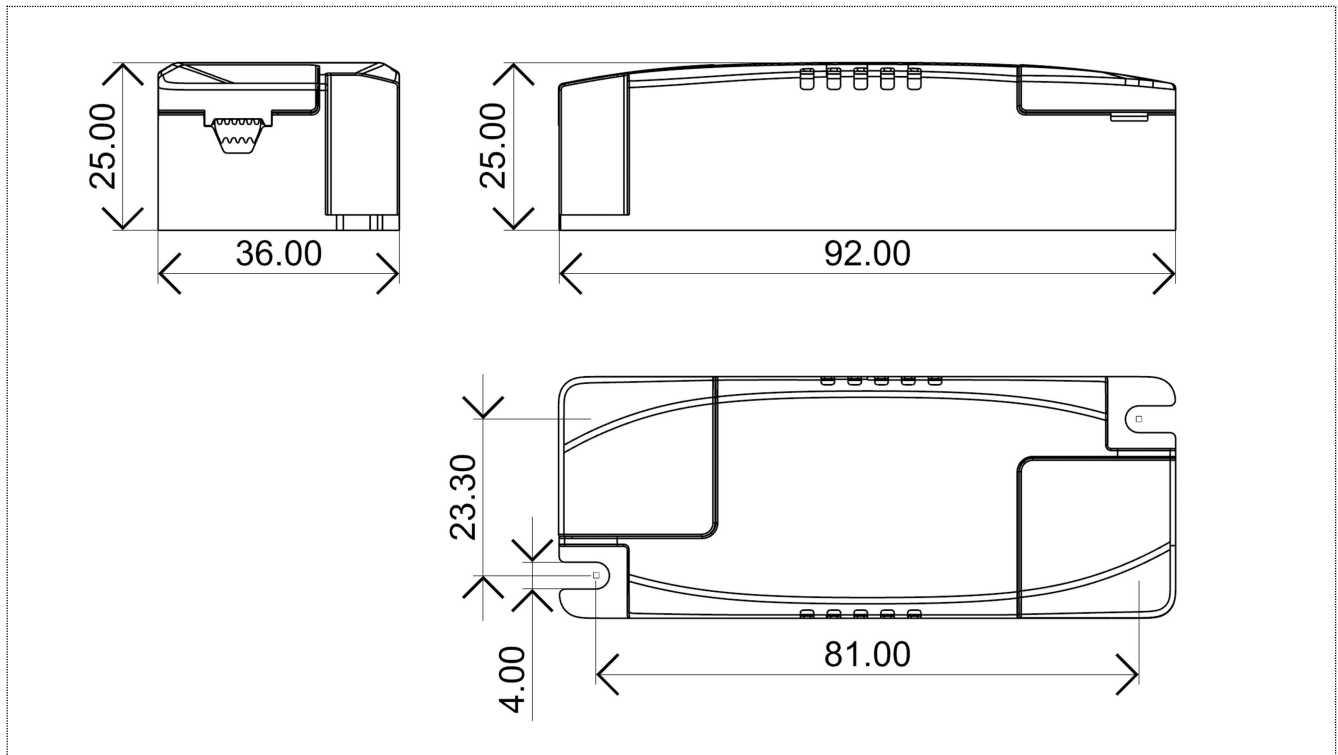
### Remarks:

- 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 )
Input	Input wire cross-section	0.5...1.5 mm <sup>2</sup>
	Input wire gauge.	16...20 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

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

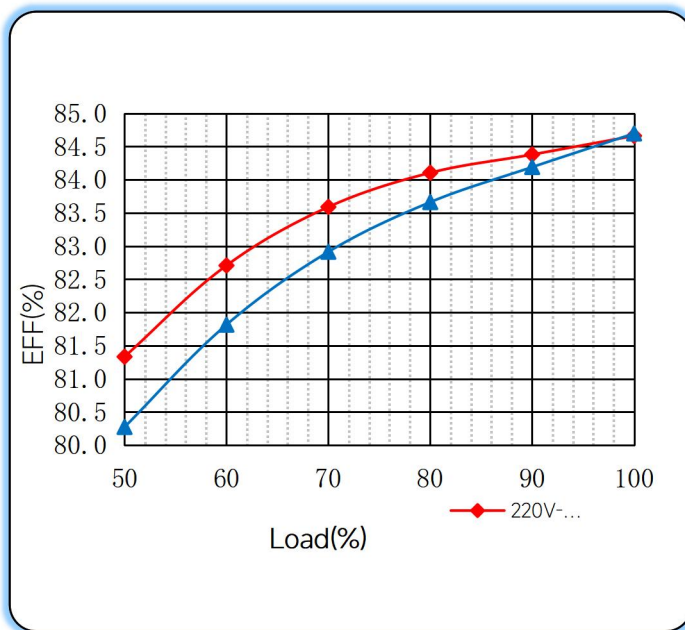
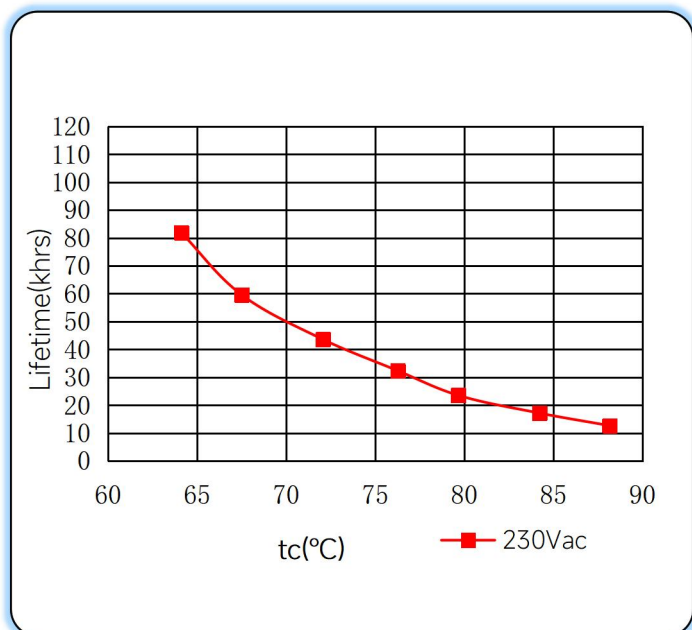
## ◆ Packaging

Model	Product Dimensions(mm)	weight/piece	Outer carton dimension(mm)	Quantity/carton	Net weight/carton(Kg)	Gross weight/carton(Kg)
LS-12-XXX ON/OFF SI E	92x36x25	0.04	370X275X215	180	7.2	7.87

# ◆ Curve for LS-12-XXX ON/OFF SI E, $I_o=350\text{mA}$

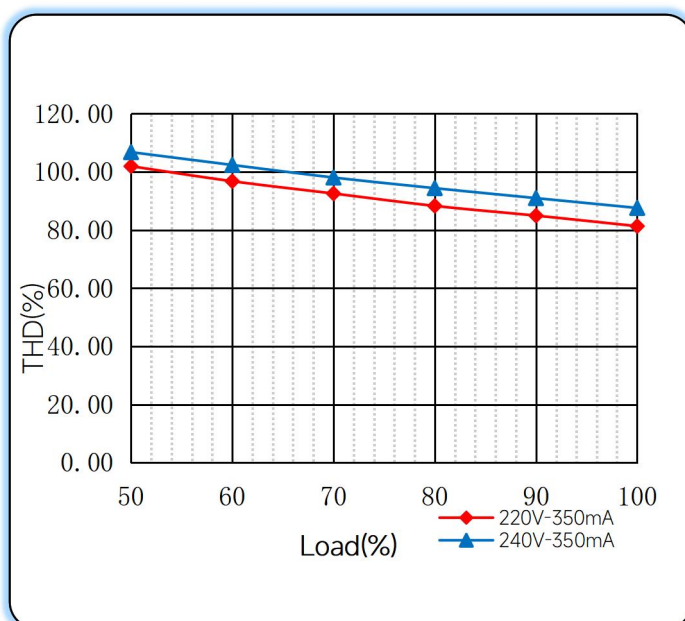
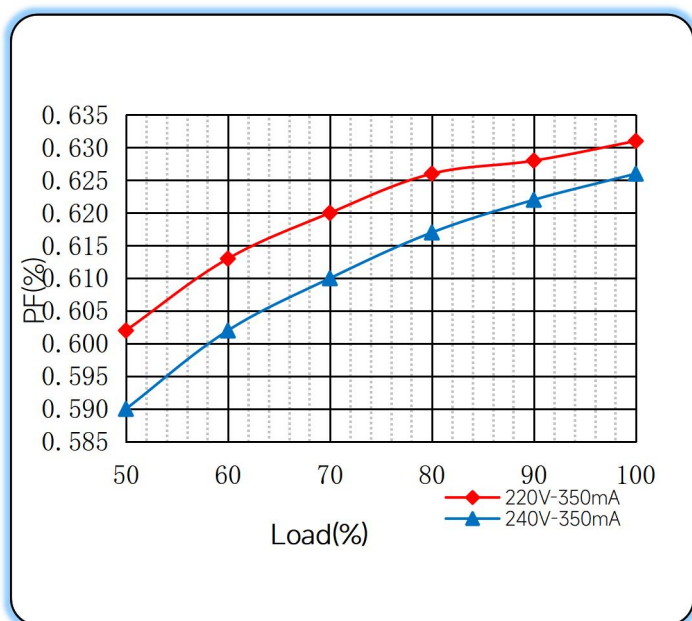
Lifetime vs. Ambient Temperature Curve

Efficiency vs. Load



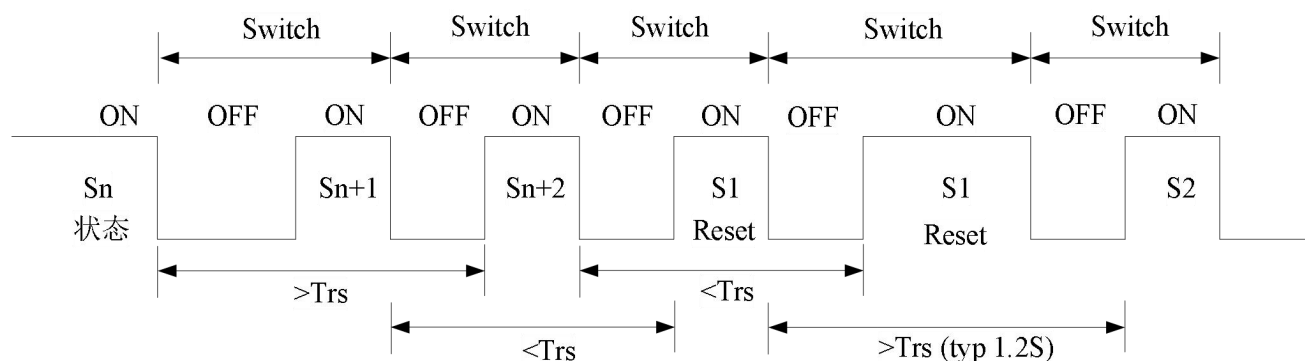
Power Factor Characteristics

THD vs. Load



## ◆ Operation

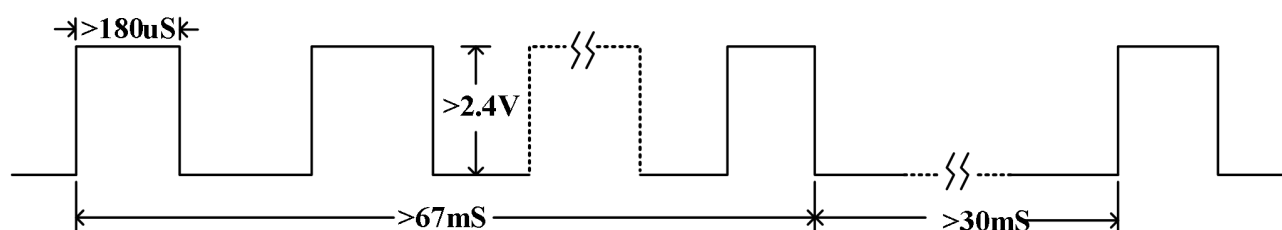
**Reset Mode**— Power off and on twice within 1 second to reset.



If shutdown takes  $\sim 6.4s$  or a reset ("OFF→ON→OFF") is executed in  $\sim 1.2s$ , a sync issue might arise.

However, given the  $\pm 5\%$  time tolerance, the risk window is minimal, and the occurrence probability is negligible.

### Signal Detection Requirements



The S4165M determines power ON/OFF states by detecting pulse signals or high/low levels through the CLK pin. The pulse signal must meet the following requirements:

- Pulse width:  $>180\mu s$
- Pulse amplitude:  $>2.4V$  (AC signals detectable; for design margin,  $>4V$  recommended).

To suppress noise interference, the IC incorporates:

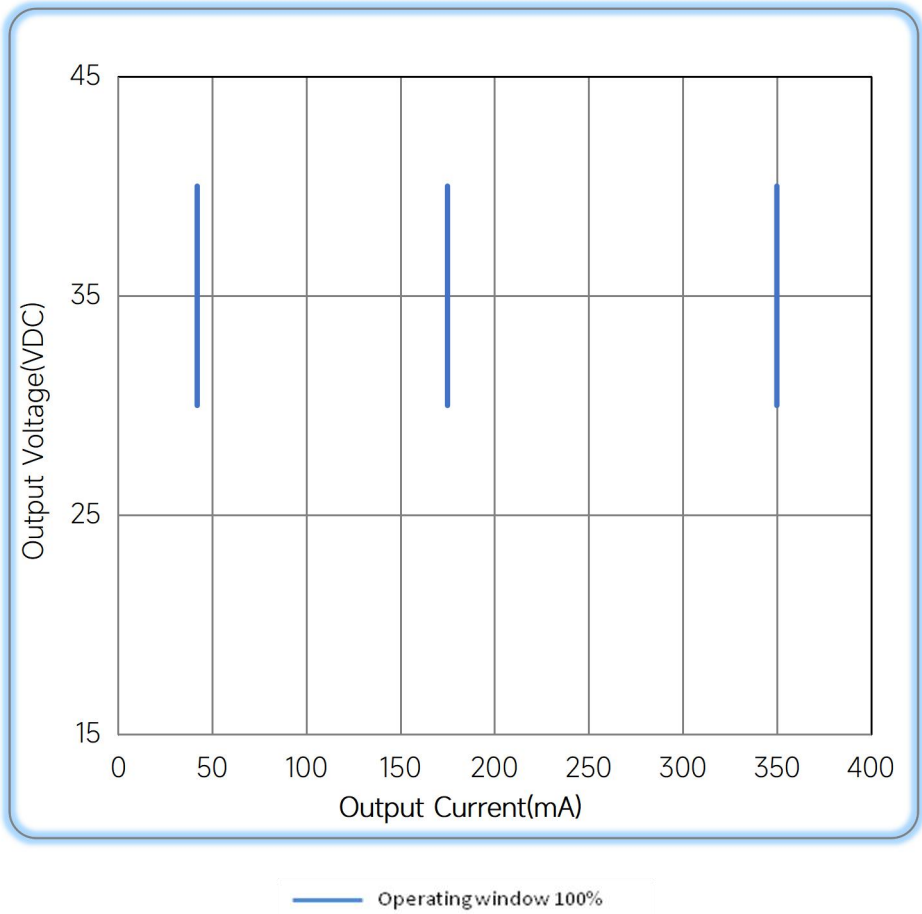
- Power-on delay  $T_{d(on)}$ : 67ms (typ. at room temp) to confirm ON state.
- Power-off delay  $T_{d(off)}$ : 30ms (typ. at room temp) to confirm OFF state.

State transition logic:

- Shutdown: Triggered only after detecting a valid CLK signal for >67ms.
- Power-on: Activated after >30ms of no valid CLK signal detection.



◆ Operating window



◆ Revision Updates

ITEM	BEFORE	AFTER	VERSION	DATE
Initial			A	2024/11/12
Noise	≤20dB(A)@10cm	≤25dB(A)@20cm	B	2025/05/16

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

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EAGLERISE



Manual