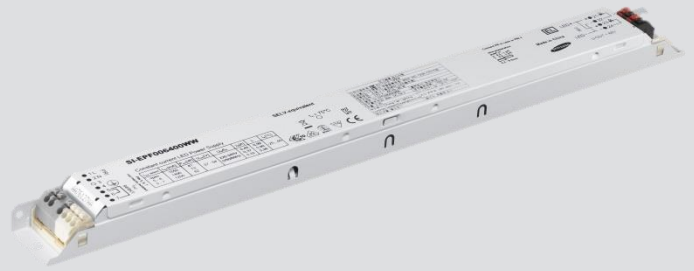


## LED Driver

# Indoor 75 W Non-Dimmable SI-EPF006400WW



## SELV Constant Current LED Driver Easy Current Selection – No Dimming

### Features & Benefits

- Output Currents: 1200 / 1400 / 1550 mA (fixed, selectable)
- Output Voltage Range: 27 ~ 54 Vdc (SELV equivalent)
- Output Power Range: 32 ~ 83 W
- Input Voltage: 220 ~ 240 V
- Protections: Overload, No Load, Short Circuit, Over Temperature, Over Voltage, Load Hot Plug
- $t_a$  Range: -25 ~ +50 °C
- Expected Lifetime: 100,000 hours at  $t_c = 65$  °C
- Wire bridge to select the current
- Long lasting & high reliability
- Slim metal housing
- Double output connectors (parallel connection)

### Applications

- Ambient Lighting (Linear and Area) and other Indoor Lighting Applications
- Office – Industry – Shop
- Suitable for emergency lighting units



## Table of Contents

1.	Characteristics	-----	3
2.	Typical Characteristics Graphs	-----	5
3.	Protection	-----	6
4.	Outline Drawing & Dimension	-----	7
5.	Label Structure	-----	8
6.	Packing Structure	-----	8
7.	Precautions in Handling & Use	-----	9

## 1. Characteristics

Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		
<b>INPUT SPECIFICATIONS</b>						
Nominal Voltage	V <sub>in</sub>	220 ~ 240			V <sub>ac</sub>	
Nominal Frequency	f <sub>in</sub>	0 / 50 / 60			Hz	Incl. DC or pulse DC
AC Voltage Range		198		264	V <sub>ac</sub>	
DC Voltage Range		176		276	V	DC or pulse DC
Maximum Voltage				320	V <sub>ac</sub>	2 hours max. (unit might not operate in this abnormal condition)
Nominal Current	I <sub>in</sub>	400			mA	
Total Harmonic Distortion	THD				10	% At full load, 220-240 V, 50 Hz (see graph)
Power Factor	PF	0.95				- At full load, 220-240 V, 50 Hz (see graph)
Efficiency	η	87				% At full load, 220-240 V, 50 Hz (see graph)
Power Losses					13.4	W Full load
No-load Power		n/a			W	Load switching on output side is safe but not permitted
Stand-by Power		n/a			W	Unit is not dimmable/controllable
Protection Class		I			-	PE can be connected to either terminal or housing
In-rush Current					53	A <sub>pk</sub> t <sub>width</sub> = 230 μs typ. (at 50% I <sub>pk</sub> )
Units per Circuit Breaker					B16: 28 B10: 17	- I <sub>max</sub> = 53 A, t <sub>width</sub> = 230 μs
Leakage Current					0.5	mA Through PE, output floating
<b>OUTPUT SPECIFICATIONS</b>						
Nominal Voltage	V <sub>o</sub>	27 ~ 54			V <sub>dc</sub>	With load
Max. Voltage					60	V <sub>dc</sub> Open circuit, No-load protection will put output down to approx. 1-2 V
Nominal Current	I <sub>o</sub>	1200 / 1400 / 1550			mA	±10 %, 1550 mA default (terminals 5, 6, 7 open)
Current Ripple					10	% Ripple / average at 100 Hz, full load
Nominal Power	P <sub>o</sub>	32 ~ 83			83	W
Galvanic Isolation		SELV-equivalent				Output to mains – Touch current < 0.5 mA
Touch Current					0.5	mA According to EN 60598-1 annex G and EN 61347-2-13 annex A

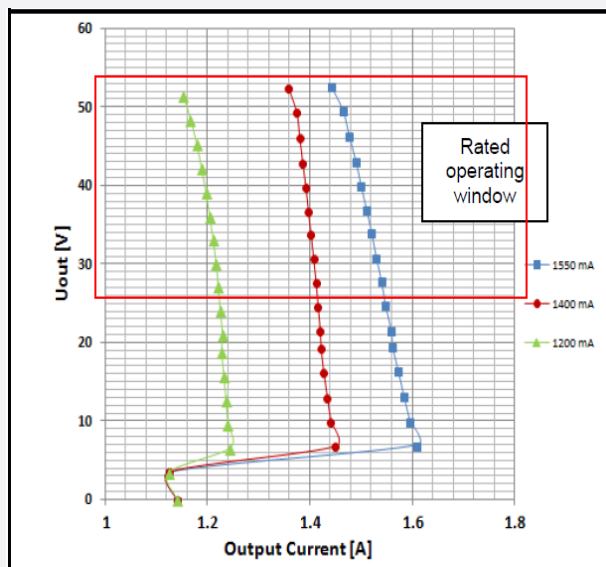
Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		
<b>DIMMING SPECIFICATIONS</b>						
Dimming Control			n/a			Unit is not dimmable
<b>ENVIRONMENTAL SPECIFICATIONS</b>						
Ambient Temperature	$t_a$	-25		50	°C	
Case Temperature	$t_c$			75	°C	Measured at $t_c$ point as indicated on the product label
Case Temperature in fault condition				110	°C	
Storage Temperature	$t_s$	-25		75	°C	Cool down before operating
Relative Humidity		5		85	%	Not condensing
Surge Transient Protection	L / N			±1	kV	According to EN 61547-5.7
	LN / PE			±2	kV	
IP Rating			IP20		-	Suitable for indoor environment
Mains Switching cycles		100,000			-	
Expected Lifetime		50,000			h	$t_c = 75\text{ °C}$ , 0.2 % / 1000 h failure rate (14 h on / 10 h standby per day)
		100,000			h	$t_c = 65\text{ °C}$ , 0.1 % / 1000 h failure rate (14 h on / 10 h standby per day)
Dimensions	L x W x H		360 x 30 x 21		mm	

**Notes:**

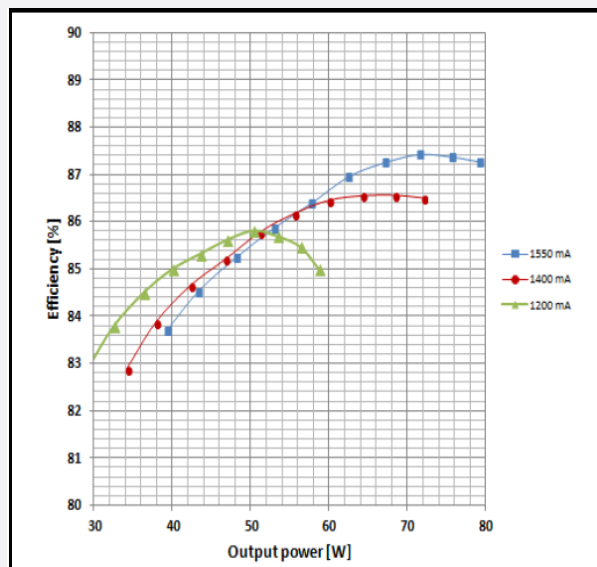
- Standards: EN 61347-1, EN 61347-2-13, EN 55015, EN 61547, EN 61000-3-2, EN 62384
- This LED Power Supply is suitable for emergency lighting fixtures according to EN 60598-2-22

## 2. Typical Characteristics Graphs

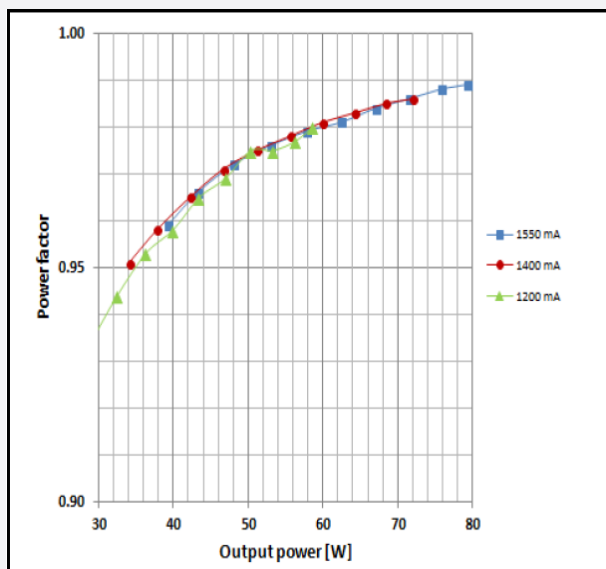
a) Operating Window



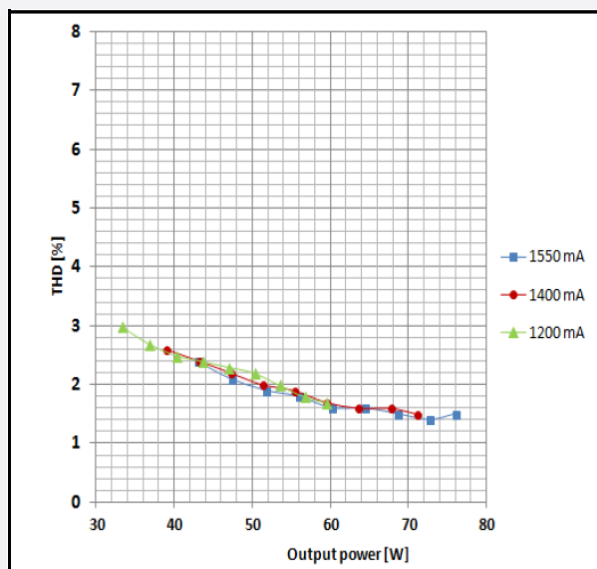
b) Efficiency vs. Load



c) Power Factor vs. Load



d) Total Harmonic Distortion vs. Load



### 3. Protection

- **Input over voltage protection**

Mains up to 320 Vac, for two hours maximum, will not destroy both the unit and the load; shut down of load might occur in this condition.

- **Output short circuit protection**

Short circuit current is limited to approx. 1 A without damage to the unit, for unlimited time.

See typical operating window graph for details. Be sure the load is designed to withstand the short circuit current as well.

- **Output overload protection**

The unit is intrinsically protected against overloading because the output voltage is limited.

- **Output over voltage protection**

Shut down of load happens if output voltage exceeds 54 V; mains switchover is needed to restart the unit.

To avoid unexpected power off, be sure the LED module operating voltage never exceeds 54 V, including cold start condition.

- **Output under voltage protection**

The unit is not damaged if the load voltage is lower than 27 V, but the load current increases up to the short circuit value, see typical operating window graph for details. Be sure the load is safely operated if this event might occur.

- **No load operation**

The unit is not damaged in this condition; the output voltage is lower than 2 V, which enables a safe LED load connection, but mains switchover is needed to power the load.

- **Over temperature protection**

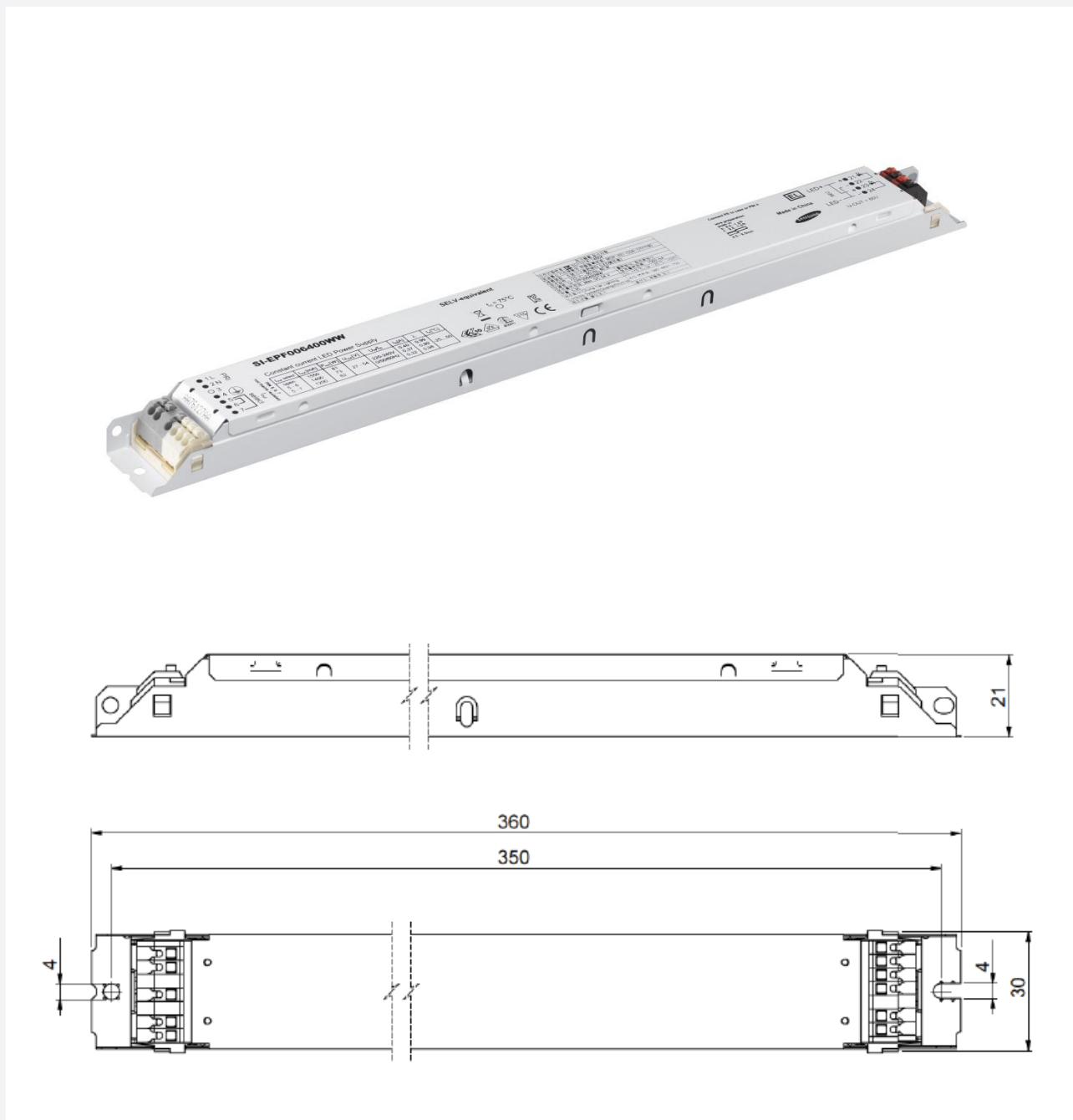
The unit is protected against temporary overheating by automatic reduction of the output power. If  $t_c$  exceeds approx. 85 °C the output current is reduced down to approx. 850 mA. If  $t_c$  exceeds approx. 105 °C the load is shut down. The protection is automatically reversible, without mains switchover.

- **Load hot plug protection**

Connection of LED load on secondary side is allowed without damage to the LED; LED will turn on automatically.

## 4. Outline Drawing & Dimension

### a) Dimension (mm)

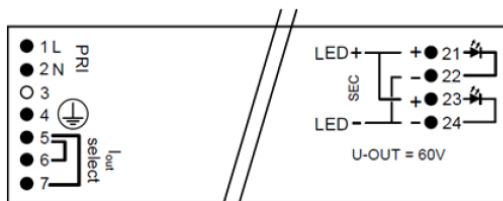


Housing material: metal, white painted

## b) Wiring Diagram

### Input:

- Gray 1 – Mains
- Gray 2 – Mains
- Gray 3 – n/a
- Gray 4 – PE
- White 5 – CS common
- White 6 – CS 1400 mA
- White 7 – CS 1200 mA



### Output:

- Red 21 – LED +
- Black 22 – LED -
- Red 23 – LED +
- Black 24 – LED -

**21 & 23 internally connected**  
**22 & 24 internally connected**

Load wires length: 2 m max  
 CS wires length: 0.3 m max

**5, 6, 7 – CS not isolated from mains**

**Caution for CS wire bridge:**

**mandatory use of basic insulated wire suitable for mains voltage.**

- Connectors type (input and output): Push-in terminals
- Wire cross-section: solid and flexible: 0.5 - 1.5 mm<sup>2</sup>
- Wire peeling length: 8.5 - 9.5 mm

Two or more units cannot be connected together on secondary side (terminals 21 .. 24)

## 5. Label Structure

Load	I <sub>load</sub> [mA]	P <sub>out</sub> [W]	U <sub>out</sub> [V]	U <sub>in</sub> [V]	I <sub>in</sub> [A]	η	T <sub>case</sub> [°C]
open	1550	81	220-240V	0.40	0.99		
5 - 6	1400	73	27 - 54	0.37	0.99		
5 - 7	1200	62	0/50/60Hz	0.32	0.98	25...50	

## 6. Packing Structure

Packing material	Max. quantity (pcs)
Outer Box	20



## 7. Precautions in Handling & Use

- 1) To prevent the LED Driver from any defect, please handle and store it with care
  - Do not drop or give shock
  - Do not store in very humid location or at extreme temperature
  - Do not open or disassemble the product
- 2) Static electricity or surge voltage may damage the components inside LED Driver, as such please observe proper anti-electrostatic working process
  - People handling the Driver should be well grounded (e.g. using ESD wrist band) and wear anti-static working clothes and gloves
  - All related devices and instruments in the production line should be well grounded (e.g. working table, measuring equipment, assembly jigs)
- 3) Observe the correct polarity of output terminal
- 4) Avoid input voltage exceeds the maximum rating, which will cause damage to the circuit and result in malfunction

# Legal and additional information.

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