

# 40W High Efficiency Driver

## 1. Product description

**Isolated LED driver for class II LED luminaire.**

**Category:** AC220-240V, plastic case, flicker free

**Properties:** flicker coefficient  $\leq 0.5\%$ , active PFC, high PF, high efficiency, low THD

**Application:** indoor office lighting, decorative lighting, commercial lighting and residential lighting

**Warranty:** 3 years (Please refer to the warranty condition)



## 2. Technical data (1)



	Full model number	FSP040IHCS033P(Z5)	FSP040IHCS033P(AA)	FSP040IHCS033P(95)
Output	Output voltage	25-33Vdc		
	Output current	1050mA	1000mA	950mA
	Ripple voltage	$\leq 2V$		
	Current tolerance	$\pm 5\%$		
	Time to light	230Vac $\leq 0.5S$		
	Temperature drift	$\pm 10\%$		
	Line regulation	$\pm 5\%$		
	Flicker coefficient	$\leq 0.5\%$		
Input	Line regulation	$\pm 5\%$		
	Rated input voltage	220-240 Vac		
	Frequency	47Hz-63Hz		
	Input current	0.35A Max		
	Power Factor	$\geq 0.95/230Vac$		
	THD	$\leq 20\%$		
	Efficiency	$\geq 90\%/230Vac$		
	In-rush current (peak /duration)	$I < 60A/350uS@230Vac$		
Protective features	Typ. power input on stand-by	$P_{in} \leq 0.3W$		
	No-load	Max. output voltage (no-load voltage) 55Vdc		
Environment condition	Short-circuit	Hiccup mode (auto-recovery)		
	Working temperature	$-30^{\circ}C \sim +50^{\circ}C$		
Safety and norms	Working humidity	20-90%RH (no condensation)		
	Storage temperature/humidity	$-40^{\circ}C \sim +80^{\circ}C$ (6 months under the class I environment); 10-90%RH (no condensation)		
Others	Atmospheric pressure	86-106KPa		
	Certifications	ENEC, TUV, CE, CB, RCM, SAA, CCC		
Safety and norms	Hi-pot test	I/P-O/P: 3.75KVdc, $< 5mA$ , 60S		
	Insulation resistance	I/P-O/P: 500VDC, $> 100M\Omega$		
	Surge level	Comply with IEC61000-4-5(L/N:1KV)		
	EMI	Comply with EN55015, EN61000-3-2.		
	EMS	Comply with EN61000-4-2,3,4,5,6,8,11; EN61547.		
Others	Packing (weight)	Net weight: 100g $\pm 5\%$ /pc; 84pcs/ctn; 8.72kg $\pm 5\%$ /ctn; Carton size: 39 x 29 x 21 cm(L*W*H).		
	IP level	IP20		
	Warranty condition	3 years (Max. case temperature must not exceed $75^{\circ}C$ ).		

<b>Test conditions</b>	The parameters above including the power factor, THD, efficiency are all tested under the ambient temperature 25°C and humidity 50%, AC input 230V and 90% DC load.
<b>Additional Remark</b>	<p>1. In the power supply circuit, it is recommended that the customer should install an over-under-voltage protection and surge protection device to ensure the safety of using electricity.</p> <p>2. The PC cover, shell, end caps used together with the LED driver inside the LED lamp must meet the UL94V-0 fire rating level or above.</p> <p>3. As a part of the LED lamp, the LED driver is not the only factor determining the EMC performance of the LED lamp. And the EMC performance is also related to the LED lamp's structure and the wire routing. Thus we strongly recommend the manufacturer of the finished LED lamp must re-confirm the EMC of the LED lamps.</p>

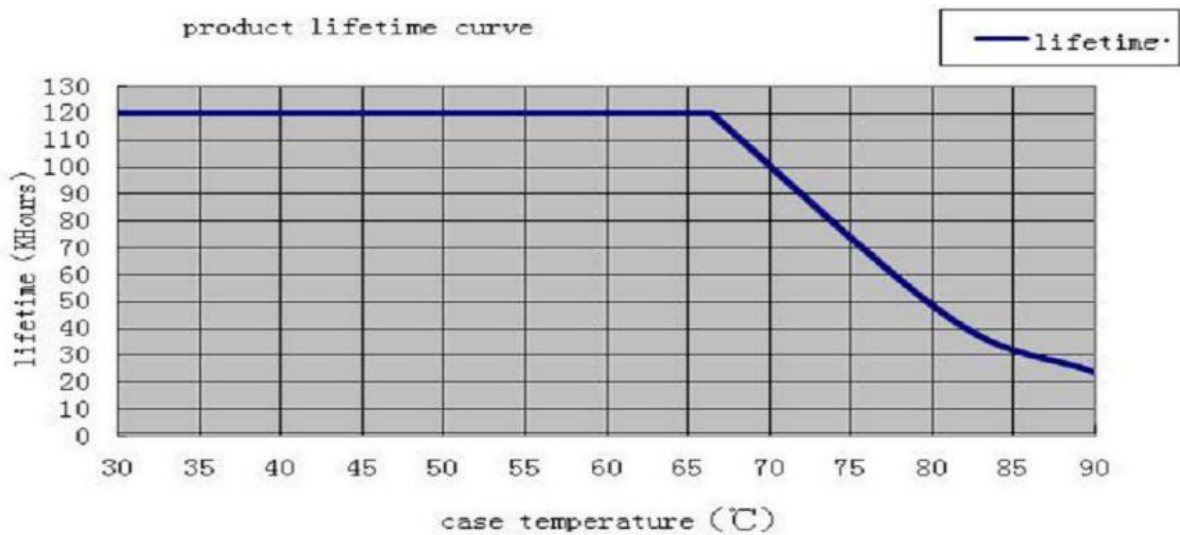
## Technical data (2)

	<b>Full model number</b>	FSP040IHCS033P(90)	FSP040IHCS033P(85)	FSP040IHCS033P(80)
<b>Output</b>	Output voltage	25-33Vdc		
	Output current	900mA	850mA	800mA
	Ripple voltage	< 2V		
	Current tolerance	±5%		
	Time to light	230Vac <0.5S		
	Temperature drift	±10%		
	Line regulation	±5%		
	Flicker coefficient	≤ 0.5%		
<b>Input</b>	Line regulation	±5%		
	Rated input voltage	220-240 Vac		
	Frequency	47Hz-63Hz		
	Input current	0.35A Max		
	Power Factor	≥0.94/230Vac	≥0.94/230Vac	≥0.93/230Vac
	THD	≤20%		
	Efficiency	≥90%/230Vac		
	In-rush current (peak /duration)	I<60A/350uS@230Vac		
<b>Protective features</b>	Typ. power input on stand-by	Pin≤0.3W		
	No-load	Max. output voltage (no-load voltage) 55Vdc		
<b>Environment condition</b>	Short-circuit	Hiccup mode (auto-recovery)		
	Working temperature	-30℃ ~ +50℃		
	Working humidity	20-90%RH (no condensation)		
	Storage temperature/humidity	-40℃ ~ +80℃ (6 months under the class I environment); 10-90%RH (no condensation)		
<b>Safety and norms</b>	Atmospheric pressure	86-106KPa		
	Certifications	ENEC, TUV, CE, CB, RCM, SAA, CCC		
	Hi-pot test	I/P-O/P: 3.75KVdc, <5mA, 60S		
	Insulation resistance	I/P-O/P: 500VDC, >100MΩ		
	Surge level	Comply with IEC61000-4-5(L/N:1KV)		
	EMI	Comply with EN55015, EN61000-3-2.		
<b>Others</b>	EMS	Comply with EN61000-4-2,3,4,5,6,8,11; EN61547.		
	Packing (weight)	Net weight: 100g ±5%/pc; 84pcs/ctn; 8.72kg±5%/ctn; Carton size: 39 x 29 x 21 cm(L*W*H).		
	IP level	IP20		
	Warranty condition	5 years (Max. case temperature must not exceed 75℃).		

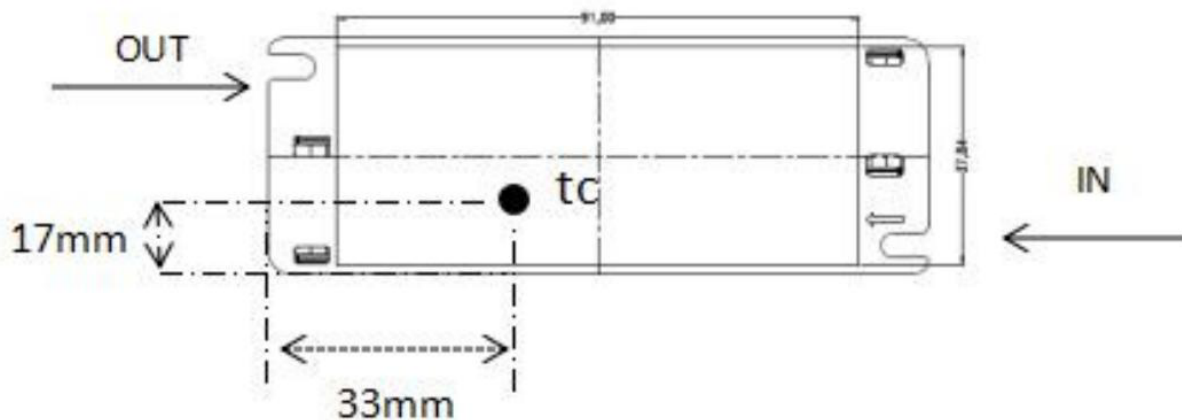
<b>Test conditions</b>	The parameters above including the power factor, THD, efficiency are all tested under the ambient temperature 25°C and humidity 50%, AC input 230V and 90% DC load.
<b>Additional Remark</b>	<p>3. In the power supply circuit, it is recommended that the customer should install an over-under-voltage protection and surge protection device to ensure the safety of using electricity.</p> <p>4. The PC cover, shell, end caps used together with the LED driver inside the LED lamp must meet the UL94V-0 fire rating level or above.</p> <p>3. As a part of the LED lamp, the LED driver is not the only factor determining the EMC performance of the LED lamp. And the EMC performance is also related to the LED lamp's structure and the wire routing. Thus we strongly recommend the manufacturer of the finished LED lamp must re-confirm the EMC of the LED lamps.</p>

### 3. Product Referenced Lifetime Curve

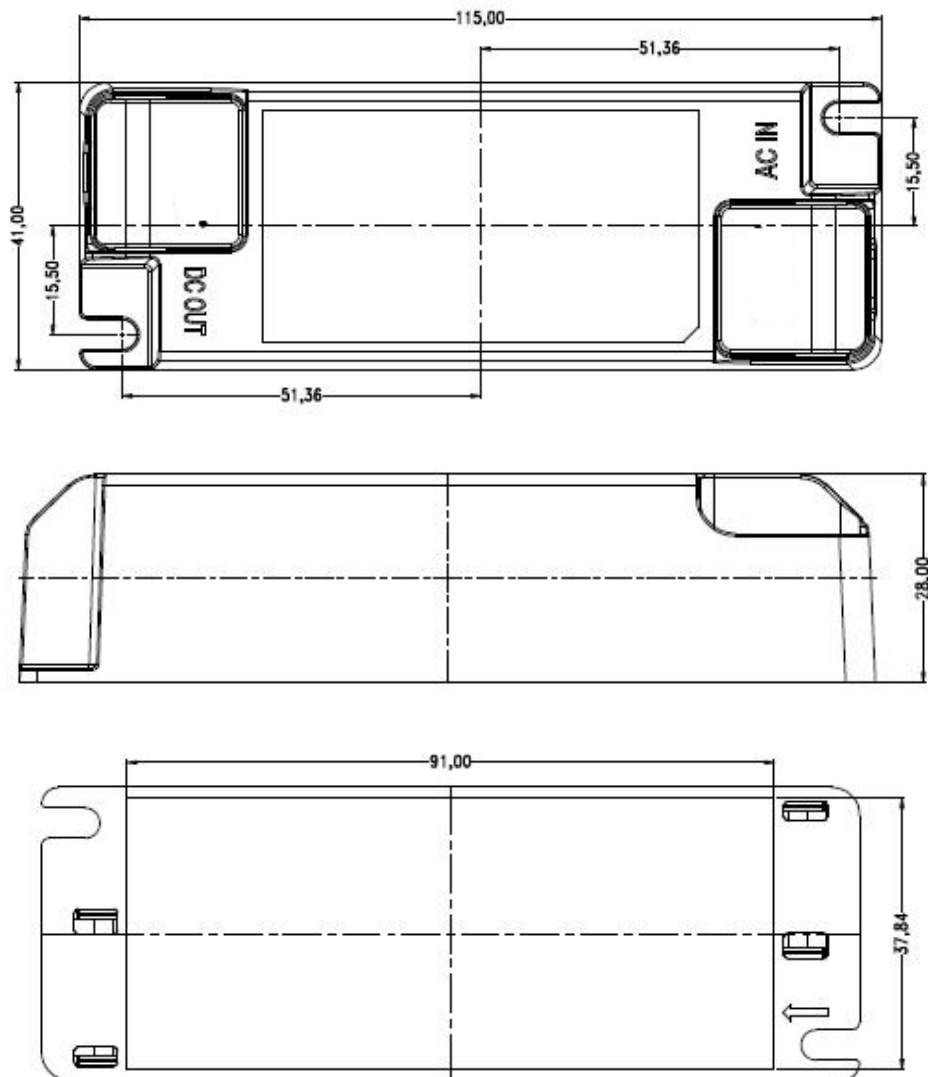
1)The curve below illustrates the driver's lifetime data when the LED driver's Max. case temperature reaches 40°C,50°C, 60°C, 70°C,80°C and 90°C.



2) Tc Testing point, on the bottom case



#### 4. Dimensional Drawing (unit: mm)



#### 5. Wire Connection Diagram:

