

# PRODUCT SPECIFICATION

Product Model:     PPL-40    

Version Number:     V3.0    

Created	Validated	Approved
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Version	Description of change	Date
V3.0	Final version	2023-05-15

## PPL-40 Series V3.0 Mini. Size, High efficiency, No flicker, Constant current LED driver

PPL-40 series driver is a high performance LED driver power supply, using constant current output control, Safe isolation, small output ripple.

### Key Features

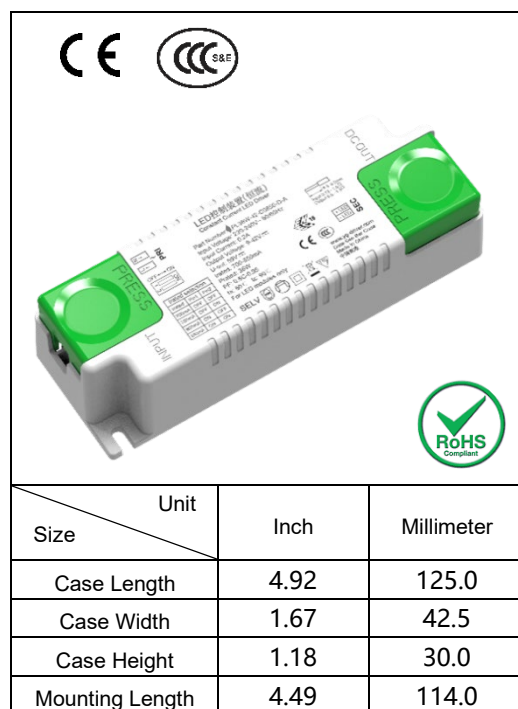
- Drive Mode: No Flicker Constant Current.
- Technology: Boost + Flyback Technology.
- Input Voltage: 220 to 240Vac (Max. Range: 198~264Vac).
- Output Frequency: 47-63Hz.
- Output Power: 40Watt Max.
- Output Voltage: 24V-40Vdc, 24V-42Vdc, 57V-95Vdc, 46V-76Vdc, 33-55Vdc
- Output Voltage: 300mA to 1000mA.
- Efficiency: 86%-90%.
- Warranty: 3years.

### Special Features

- No flicker constant current.
- A rated lifetime of 30,000 hours @ Tc = 80 °C.
- Primary side and secondary side are isolated safely, AC input DC output.
- Surge: AC Power Line: line to line 1KV/2Ω 8/20uS.
- Accord to RoHS Standard.
- IP40, Suitable for use in dry environment.
- Suitable for Class II luminaries.
- Programmed aging at 45 °C.

### Electrical Parameter

Model	Max. output Power (W)	Output Voltage Range (Vdc)	Maximum constant current output (mA)	Current Accuracy	Max.Eff. (%)
PPL-40-C0650-IP	26	24-40	650	±5%	87
PPL-40-C0700-IP	28	24-40	700	±5%	87
PPL-40-C0750-IP	30	24-40	750	±5%	88
PPL-40-C0800-IP	32	24-40	800	±5%	88
PPL-40-C0850-IP	34	24-40	850	±5%	89
PPL-40-C0900-IP	36	24-40	900	±5%	89
PPL-40-C0950-IP	38	24-40	950	±5%	90
PPL-40-C1000-IP	40	24-40	1000	±5%	90
PPL-42-C0950-IP	40	24-42	950	±5%	90
PPL-42-C0900-IP	38	24-42	900	±5%	89
PPL-42-C0850-IP	36	24-42	850	±5%	89
PPL-42-C0800-IP	34	24-42	800	±5%	88



PPL-42-C0750-IP	32	24-42	750	±5%	88
PPL-42-C0700-IP	29	24-42	700	±5%	86
PPL-42-C0650-IP	27	24-42	650	±5%	86
PPL-95-C0300-IP	29	57-95	300	±5%	86
PPL-95-C0350-IP	33	57-95	350	±5%	87
PPL-95-C0400-IP	38	57-95	400	±5%	87
PPL-76-C0350-IP	27	46-76	350	±5%	86
PPL-76-C0400-IP	30	46-76	400	±5%	87
PPL-76-C0450-IP	34	46-76	450	±5%	87
PPL-76-C0500-IP	38	46-76	500	±5%	87
PPL-55-C0500-IP	28	33-55	500	±5%	86
PPL-55-C0550-IP	30	33-55	550	±5%	87
PPL-55-C0600-IP	33	33-55	600	±5%	87.5
PPL-55-C0650-IP	36	33-55	650	±5%	88
PPL-55-C0700-IP	39	33-55	700	±5%	89.5
PPL-55-C0750-IP	40	33-55	730	±5%	89.5

## Input Specifications

Parameter		Min.	Typ.	Max.	Notes /Conditions
Input Voltage		198Vac	---	264Vac	
Input Frequency		47Hz	50/60Hz	63Hz	
No-load power		---	---	0.5W	No-load.
Input Current	PPL-40-C0650-IP	---	0.15A	---	Measured at full load output and 230Vac / 50Hz input.
	PPL-40-C0700-IP	---	0.16A	---	
	PPL-40-C0750-IP	---	0.17A	---	
	PPL-40-C0800-IP	---	0.18A	---	
	PPL-40-C0850-IP	---	0.20A	---	
	PPL-40-C0900-IP	---	0.21A	---	
	PPL-40-C0950-IP	---	0.23A	---	
	PPL-40-C1000-IP	---	0.25A	---	
	PPL-42-C0950-IP	---	0.25A	---	
	PPL-42-C0900-IP	---	0.23A	---	
	PPL-42-C0850-IP	---	0.21A	---	
	PPL-42-C0800-IP	---	0.20A	---	
	PPL-42-C0750-IP	---	0.18A	---	
	PPL-42-C0700-IP	---	0.17A	---	
	PPL-42-C0650-IP	---	0.16A	---	
	PPL-95-C0300-IP	---	0.17A	---	
	PPL-95-C0350-IP	---	0.19A	---	
	PPL-95-C0400-IP	---	0.23A	---	
	PPL-76-C0350-IP	---	0.16A	---	
	PPL-76-C0400-IP	---	0.17A	---	
PPL-76-C0450-IP	---	0.20A	---		
PPL-76-C0500-IP	---	0.23A	---		
PPL-55-C0500-IP	---	0.15A	---		

	PPL-55-C0550-IP	---	0.17A	---	
	PPL-55-C0600-IP	---	0.19A	---	
	PPL-55-C0650-IP	---	0.21A	---	
	PPL-55-C0700-IP	---	0.24A	---	
	PPL-55-C0750-IP	---	0.25A	---	
Inrush Current ( Peak )	PPL-40-C0650-IP	---	25A / 350uS	---	Measured at 50% Ipeak & 240Vac / 50Hz Input, Output Full Load.
	PPL-40-C0700-IP	---	26A / 350uS	---	
	PPL-40-C0750-IP	---	28A / 350uS	---	
	PPL-40-C0800-IP	---	30A / 350uS	---	
	PPL-40-C0850-IP	---	32A / 350uS	---	
	PPL-40-C0900-IP	---	35A / 350uS	---	
	PPL-40-C0950-IP	---	38A / 350uS	---	
	PPL-40-C1000-IP	---	40A / 350uS	---	
	PPL-42-C0950-IP	---	40A / 350uS	---	
	PPL-42-C0900-IP	---	40A / 350uS	---	
	PPL-42-C0850-IP	---	35A / 350uS	---	
	PPL-42-C0800-IP	---	32A / 350uS	---	
	PPL-42-C0750-IP	---	30A / 350uS	---	
	PPL-42-C0700-IP	---	28A / 350uS	---	
	PPL-42-C0650-IP	---	26A / 350uS	---	
	PPL-95-C0300-IP	---	26A / 350uS	---	
	PPL-95-C0350-IP	---	32A / 350uS	---	
	PPL-95-C0400-IP	---	38A / 350uS	---	
	PPL-76-C0350-IP	---	25A / 350uS	---	
	PPL-76-C0400-IP	---	28A / 350uS	---	
	PPL-76-C0450-IP	---	32A / 350uS	---	
	PPL-76-C0500-IP	---	38A / 350uS	---	
	PPL-55-C0500-IP	---	26A / 350uS	---	
	PPL-55-C0550-IP	---	28A / 350uS	---	
PPL-55-C0600-IP	---	31A / 350uS	---		
PPL-55-C0650-IP	---	35A / 350uS	---		
PPL-55-C0700-IP	---	38A / 350uS	---		
PPL-55-C0750-IP	---	40A / 350uS	---		
Leakage Current	---	---	2mA	Measured at full load output and 230Vac / 50Hz input.	
THD	---	---	20%	Measured at 230Vac Input, Output Full Load.	
Power Factor ( PF )	0.9	---	---	Measured at 230Vac Input, Output Full Load.	

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes /Conditions
Output constant Current	-5%	Per Table	+5%	Per Tables on Page 1.
Ripple wave (<120Hz)	---	5%	10%	20MHz BW, 0.1uF & 10uF capacitor in parallel at test end The ripple is defined as $[(Y_{max}-Y_{min})/Y_{avg}] * 100\%$ . Y or V or I.
Flickering Index	PstLM<1, SVM<0.4			
Line Regulation	-3%	---	+3%	Measured at 220, 230, 240Vac / 50Hz Input, Output Full Load.

Load Regulation	-4%	---	+4%	Measured at 220, 230, 240Vac / 50Hz Input, Output Full Load.
Start-up Time	---	420ms	500ms	Measured at 220, 230, 240Vac / 50Hz Input, Output Full Load.
Output Overshoot	-2%	---	+10%	Measured at 220, 230, 240 Vac Input, When power on or off.

### Protection Specifications

Parameter	Min.	Typ.	Max.	Notes /Conditions
Output Short Circuit (SCP)	---	---	---	No Damage. Auto recovery after short is removed.
Output Over Current (OCP)	---	---	+10% Io	Constant Current Limiting circuit.
Output Over Voltage (OVP)	---	---	120% Vo	No Damage. Auto recovery after the abnormal disappearance.

### General Specifications

Parameter	Typ.	Notes /Conditions
Cooling	Convection	
MTBF	410,000 hours	Measured at 220Vac input, 100% Load and Ta=25°C(MIL-HDBK-217F)
Life Time	30,000 hours	Measured at 220Vac input, 100% Load and TC=80°C
Noise	< 24dBA	Class A, no more than one meter away.

### Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes /Conditions
Operating Temperature ( Ta )	-20°C	---	+45°C	@230Vac. This is a reference range. Tc controls temperature range.
Case Temperature ( Tc )	-20°C	---	+80°C	Case temperature.
Storage Temperature ( Ts )	-25°C	---	+85°C	Non operating temperature range.
Operating Humidity	5% RH	---	95% RH	Relative Humidity. Non-condensing.
Vibration	5Hz	---	55Hz	2G, 10 minutes / 1 cycle, period 30 minutes, each along X, Y, Z axis.

### Safety Compliance

Safety Category	Standards / Notes
Withstand Voltage	Input to Output 3750Vac.
Case – Output	1.5KVac
Case - Input	1.5KVac
Isolation Resistance	Input to Output >10MΩ, 500Vdc @25°C, 70% RH.

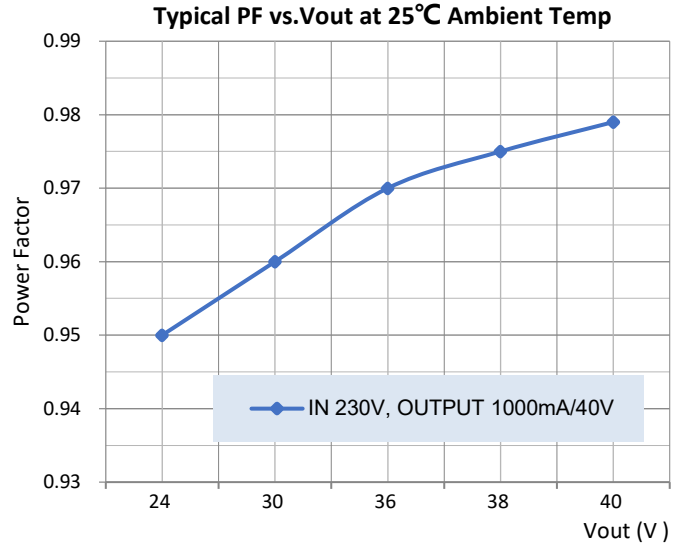
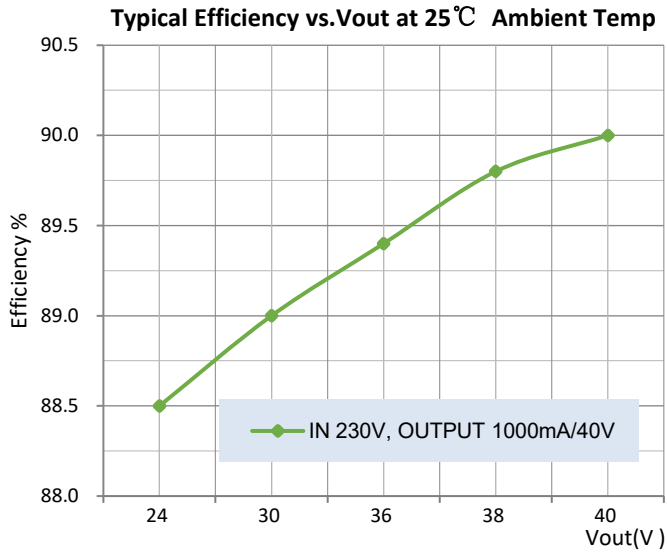
### EMC Compliance

EMI Category	Standards
CCC	GB19510.14-2009, GB19510.1-2009
CE	EN55015:2013+A1:2015, EN 61000-3-2:2014, EN 61000-3-3:2013. RED 2014/53/EU
EMS Category	Notes
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT

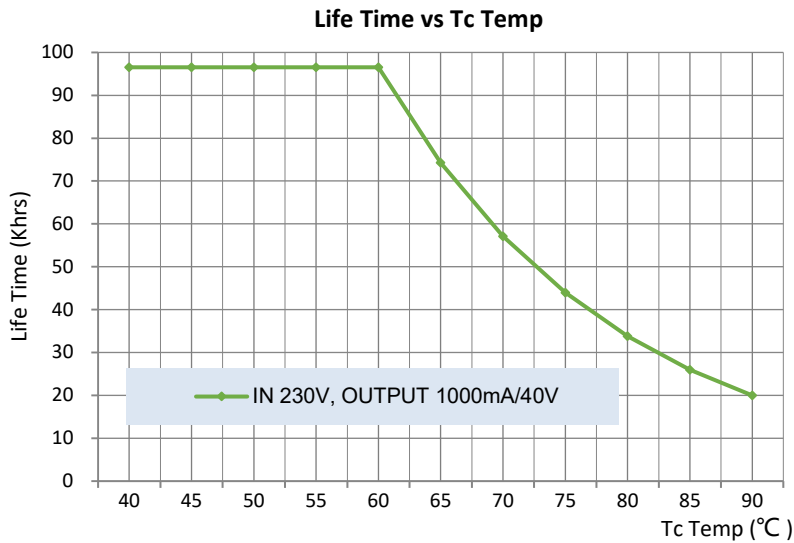
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 1.0 KV/2Ω
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61547	Electromagnetic Immunity Requirements Applies to Lighting Equipment

Note: The above test data were carried out under the  $T_a=25^{\circ}\text{C}$  except the labeled temperature.

### Characteristic Curve



### Lifetime Curve



### Installation

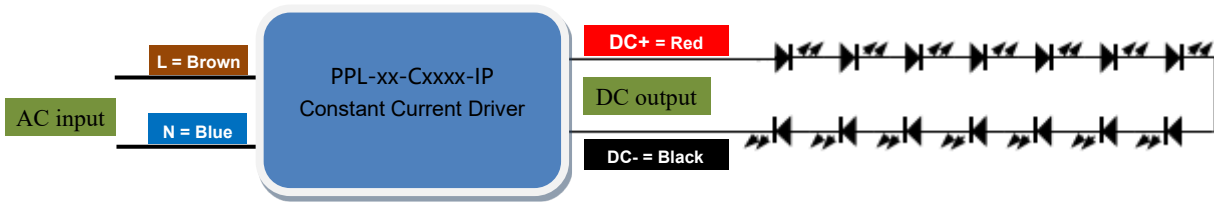
Ac input 2PIN connector is connected: 0.75-1.5<sup>2</sup>

Dc output 2PIN connector connection: 0.50-1.5<sup>2</sup>

This product for indoor use only, it can be installed and fixed in the luminaires, connected with the wire. The max length of output line should be less than 2m.

Note: Since the DC output line is permanently connected and shorter than 3 m, therefore the disturbance voltage of local wired port shall not be required.

## Typical Applications Connection diagram

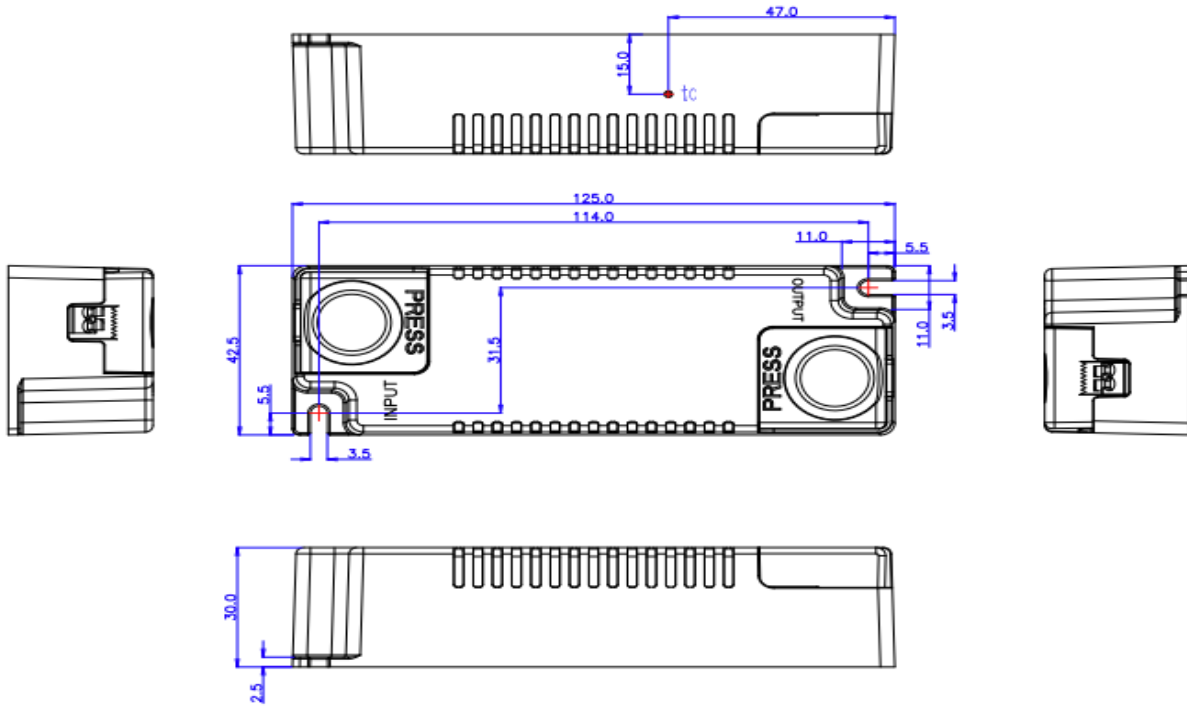


## Order ID

P/N: PPL-xx-Cxxxx-IP

Description: Maximum 95Vdc, xxxx for constant current value in 300mA -1000mA, constant current mode.

## Product Size



Note:

- The independent LED drive conforms to the EMC standard. But it is not guaranteed to be qualified, when the drive is mounted in the LED fixture.
- Please forgive us for any discrepancy due to the update of the specifications or the upgrade of the product. If you need the latest information, please contact our marketing department.