LED Waterproof Power Supply

- **60~240W CLG series** - PFC Function / Metal Case
  HLG series - High Efficiency with PFC Function / Metal Case
- **20 ~ 96W PLN series** - PFC Function / Plastic Case
- **30 ~ 96W PLC series** - PFC Function / Plastic Case
- **30 ~ 60W ELN series** - Plastic Case
- **18 ~ 60W LP series** - Plastic Case
- **20 ~ 60W PLP series** - PFC Function / PCB Type

MEAN WELL

Your Reliable Power Partner

Taiwan
MEAN WELL ENTERPRISES CO., LTD.
No. 28, Wu-Chuan 3rd Road, Wu Ku Ind. Park, Taipei Hsien, Taiwan, 248
Tel +886-2-2299-6100(rep.) **Fax** +886-2-2299-6200(rep.)
+886-2-2298-0818(sales)
E-mail info@meanwell.com **Web** www.meanwell.com

China
GUANGZHOU MEAN WELL ELECTRONICS CO., LTD.
2nd Floor, No. A Building, Yuean Ind. Park, Dongpu Town,
Tianhe District, Guangzhou, China
Tel +86-20-2887-1200 **Fax** +86-20-8201-0507
E-mail info@meanwell.com.cn **Web** www.meanwell.com.cn

U.S.A.
MEAN WELL USA, INC.
44030 Fremont Blvd., Fremont, CA 94538, U.S.A.
Tel +1-510-683-8886 **Fax** +1-510-683-8899
E-mail info@meanwellusa.com **Web** www.meanwellusa.com

Europe
MEAN WELL EUROPE B.V.
Spinnerij 73-75, 1185 ZS Amstelveen, the Netherlands
Tel +31-20-345-3795 **Fax** +31-20-640-3547
E-mail info@meanwell.eu **Web** www.meanwell.eu

Please contact your local distributor:

For more information, please visit:

www.meanwell.com

July 2009

About Mean Well

Established in 1982 and located in Taipei, Taiwan, MEAN WELL is a leading branded standard switching power supply manufacturer with broad product lines covering AC/DC power supply, DC/DC converter, DC/AC inverter, and battery charger. Millions of quality switching power supplies are sold under the brand name “MEAN WELL” to over 70 countries every year. Right now we have advanced manufacturing facilities in Taipei Taiwan, Guangzhou China, and Suzhou China and sales offices in China, USA, and Europe.

Many of MEAN WELL industrial power supplies have been widely spreading in the LED moving sign industry all over the world and earned good reputation for their high reliability. To comply with the global trend of energy saving, MEAN WELL invest huge amount of resources to develop new generation of switching power supplies imbued with green concept. The LED power supply family is one of them which are looking for higher in efficiency, lower in power dissipation, and in compliance with the latest lighting regulations all over the world.

MEAN WELL LED power supplies have been widely used for street lighting, architectural lighting, decorative lighting, indoor lighting, stage and theater lighting, embedded lighting, and LED sign board. The robust design with high protection level against dust and moisture makes them suitable for all kind of indoor or outdoor installation of LED related applications.

Index

1-2 LP series

3 ELN series

4 PLN & PLC series

5 CLG & HLG series

6 PLP series

7-8 How to choose a suitable LED power supply?

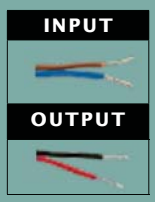
9 Products under development

LP series

18~60W Single Output Class 2 Power Unit

Features

- Universal AC input / Full range (LPV)
- 180~264VAC input only (LPH-18)
- 90~132VAC input only (LPL-18)
- Fully encapsulated with IP67 level
- Protections: Short circuit / Overload / Over voltage
  Over temp. (LPH-18 / LPL-18 only)
- Constant voltage design (C.V. mode)
- Withstand 300VAC surge input for 5 seconds (except for LPL/LPH-18)
- UL1310 Class 2 power unit
- Isolation class II, no F.G.
- Cooling by free air convection
- Pass LPS
- 100% full load burn-in test
- Low cost, high reliability
- Suitable for LED-based decorative/architectural lighting, LED stage and theater lighting, and LED electronic displays
- 2 years warranty



		LPL-18	LPH-18	LPV-20	LPV-35	LPV-60
AC input voltage range		90~132VAC	180~264VAC	90~264VAC		
AC inrush current (max.)		Cold start, 40A at 115VAC	Cold start, 50A at 230VAC	Cold start, 70A at 230VAC	Cold start, 60A at 230VAC	
Overload Protection	Range	>105%		110%~150%		
	Type	Hiccup mode, auto-recovery				
Over voltage protection		115~135% rated output voltage				
Withstand voltage		I/P-O/P: 3kVAC				
Working temperature		-30~+70°C		-30~+70°C	-30~+75°C	-30~+70°C
Vibration		10~500Hz, 2G 10 minutes /1 cycle, period for 60 minutes each along X, Y, Z axes				
Safety standards		Design refer to UL1310, TUV EN60950-1		UL1310 (except for LPV-60-5), CAN/CSA-C22.2 No. 223-M91 (except for LPV-60-5, LPV-60-48) approved, design refer to EN61347-2-13		
EMC standards		FCC part 15 class B	EN55022 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11, ENV50204			
Connection	Input	UL rated, 18AWGx2C (30cm)		UL rated, 18AWGx2C (60cm)	UL rated, 18AWGx2C (60cm)	
	Output				UL rated, 16AWGx2C (60cm)	
Dimension (LxWxH)(mm)		140x 30x 20		118x 35x 26	148x 40x 30	162.5x 42.5x 32
Packing		0.175kg ; 70pcs / 13.3kg		0.22kg ; 60pcs / 14.2kg	0.34kg ; 40pcs / 14.6kg	0.4kg ; 32pcs / 13.8kg

·LPL-18 Series (C.V. mode)

Model No.	Output	Tol.	R&N	Effi.
LPL-18-12	12V, 0~1.5A	±3%	120mV	80%
LPL-18-24	24V, 0~0.75A	±3%	150mV	83%
LPL-18-36	36V, 0~0.5A	±3%	200mV	84%

·LPH-18 Series (C.V. mode)

Model No.	Output	Tol.	R&N	Effi.
LPH-18-12	12V, 0~1.5A	±3%	120mV	78%
LPH-18-24	24V, 0~0.75A	±3%	150mV	82%
LPH-18-36	36V, 0~0.5A	±3%	200mV	83%

·LPV-20 Series (C.V. mode)

Model No.	Output	Tol.	R&N	Effi.
LPV-20-5	5V, 0~3.0A	±5%	80mV	77%
LPV-20-12	12V, 0~1.67A	±5%	120mV	81%
LPV-20-15	15V, 0~1.33A	±5%	120mV	83%
LPV-20-24	24V, 0~0.84A	±5%	150mV	83%

·LPV-35 Series (C.V. mode)

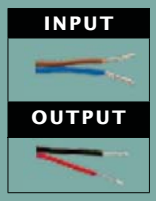
Model No.	Output	Tol.	R&N	Effi.
LPV-35-5	5V, 0~5.0A (peak 6A)	±6%	80mV	77%
LPV-35-12	12V, 0~3.0A	±5%	120mV	84%
LPV-35-15	15V, 0~2.4A	±5%	120mV	84%
LPV-35-24	24V, 0~1.5A	±5%	150mV	85%
LPV-35-36	36V, 0~1.0A	±5%	150mV	85%

·LPV-60 Series (C.V. mode)

Model No.	Output	Tol.	R&N	Effi.
LPV-60-5	5V, 0~8.00A	±8%	80mV	76%
LPV-60-12	12V, 0~5.00A	±5%	120mV	83%
LPV-60-15	15V, 0~4.00A	±5%	120mV	83%
LPV-60-24	24V, 0~2.50A	±5%	150mV	86%
LPV-60-36	36V, 0~1.67A	±5%	150mV	86%
LPV-60-48	48V, 0~1.25A	±5%	150mV	86%

Features

- Universal AC input / Full range (LPC)
- 180~264VAC input only (LPHC-18)
- 90~132VAC input only (LPLC-18)
- Fully encapsulated with IP67 level
- Protections: Short circuit / Overload / Over voltage / Over temp. (LPLC / LPHC-18 only)
- Constant current design (C.C.+C.V. mode)
- Withstand 300VAC surge input for 5 seconds (except for LPLC/LPHC-18)
- Isolation class II, no F.G.
- Cooling by free air convection
- UL1310 Class 2 Power Unit (except for LPLC/LPHC-18)
- Pass LPS
- 100% full load burn-in test
- Low cost, high reliability
- Suitable for LED-based decorative/architectural lighting, LED stage and theater lighting, and LED electronic displays
- 2 years warranty



	LPLC-18	LPHC-18	LPC-20	LPC-35	LPC-60
					
AC input voltage range	90~132VAC	180~264VAC	90~264VAC		
AC inrush current (max.)	Cold start, 40A at 115VAC	Cold start, 50A at 230VAC	Cold start, 70A at 230VAC	Cold start, 60A at 230VAC	
Overload Protection – Range	±5%				
Overload Protection – Type	Constant current limiting, auto-recovery				
Over voltage protection	105~135%		115~135% rated output voltage		
Withstand voltage	I/P-O/P: 3kVAC				
Working temperature	-30~+70°C		-30~+70°C	-30~+75°C	-30~+70°C
Vibration	10~500Hz, 2G 10 minutes /1 cycle, period for 60 minutes each along X, Y, Z axes				
Safety standards	UL1310 (except for LPLC/LPHC-18), CAN/CSA-C 22.2 NO. 223-M91(except for LPLC/LPHC-18, LPC-20-350, LPC-35-700, LPC-60-1050/1400) approved; design refer to TUV EN60950-1, EN61347-2-13				
EMC standards	FCC part 15 class A	EN55022 class A	EN55022 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11, ENV50204		
Connection – Input	UL rated, 18AWGx2C (30cm)		UL rated, 18AWGx2C (60cm)	UL rated, 18AWGx2C (60cm)	
Connection – Output				UL rated, 16AWGx2C (60cm)	
Dimension (LxWxH)(mm)	140x 30x 20		118x 35x 26	148x 40x 30	162.5x 42.5x 32
Packing	0.175kg; 70pcs / 13.3kg		0.22kg ; 60pcs / 14.2kg	0.34kg ; 40pcs / 14.6kg	0.4kg ; 32pcs / 13.8kg

·LPLC-18 Series (C.C. mode)

Model No.	Output	Tol.	R&N	Effi.
LPLC-18-350	6~48V, 350mA	±5%	300mV	82%
LPLC-18-700	6~25V, 700mA	±5%	250mV	80%

·LPHC-18 Series (C.C. mode)

Model No.	Output	Tol.	R&N	Effi.
LPHC-18-350	6~48V, 350mA	±5%	300mV	80%
LPHC-18-700	6~25V, 700mA	±5%	250mV	80%

·LPC-20 Series (C.C. mode)

Model No.	Output	Tol.	R&N	Effi.
LPC-20-350	3~48V, 350mA	±5%	200mV	83%
LPC-20-700	3~30V, 700mA	±5%	200mV	83%

·LPC-35 Series (C.C. mode)

Model No.	Output	Tol.	R&N	Effi.
LPC-35-700	9~48V, 700mA	±5%	200mV	85%
LPC-35-1050	9~30V, 1050mA	±5%	200mV	85%
LPC-35-1400	9~24V, 1400mA	±5%	200mV	85%

·LPC-60 Series (C.C. mode)

Model No.	Output	Tol.	R&N	Effi.
LPC-60-1050	9~48V, 1050mA	±5%	200mV	87%
LPC-60-1400	9~42V, 1400mA	±5%	200mV	85%
LPC-60-1750	9~34V, 1750mA	±5%	200mV	87%

Special Symbols for EN61347-2-13

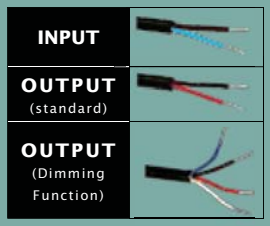
110	Protection against overheating to prevent the lamp controlgear case temperature under any conditions of use from exceeding the indicated value (110°C)
F	Suitable for direct mounting on normally flammable surfaces, such as wood (>2mm)
M M	Based on VDE0710-14, can be installed inside a wooden material like wooden cabinet. The minimum distance between the product enclosure to wooden material in each side is defined.
LPS	Limited Power Source
tc: 80°C ta: 40°C	Full load operation up to 40°C with surface temperature of case < 80°C
SELV	Vo< 50VDC can have this mark on the unit

ELN series

30~60W Single Output Class 2 Power Unit

Features

- Universal AC input / Full range
- Fully isolated plastic case with IP64 level
- Built-in constant current limiting circuit with adjustable OCP level (C.C.+C.V. mode)
- Protections: Short circuit / Overload / Over voltage
- Optional dimming function: 1.1~10VDC(D type) or PWM (P type) controlled
- UL1310 Class 2 power unit
- Cooling by free air convection
- Suitable for economical LED indoor lighting and LED electronic displays
- 2 years warranty



	ELN-30	ELN-60
		

AC input voltage range		90~264VAC ; 127~370VDC	
AC inrush current (max.)		Cold start, 60A at 230VAC	
DC adjustment range		±10% rated output voltage	
Overload protection		95%~110% constant current limiting, auto-recovery	95%~130% constant current limiting, auto-recovery
Over voltage protection	Range	110%~150% rated output voltage	
	Type	Shut down o/p voltage, re-power on to recover	
Withstand voltage		I/P-O/P: 3kVAC	
Working temperature		-20~+60°C (refer to output derating curve)	
Vibration		10~500Hz, 2G 10min/1 cycle, period for 60 min each along X, Y, Z axes	
Safety standards		UL1310, CAN/CSA-C22.2 No. 22.2 No. 223-M91(except for 48V) approved; design refer to TUV EN60950-1, EN61347-2-13	
EMC standards		EN55022 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11, ENV50204	
Connection		Input/Output: UL rated, 18AWGx2C (30cm); Output(with optional dimming function): 18AWGx4C (30cm)	
Dimension (LxWxH)(mm)		145x 47x 30	181x 61.5x 35
Packing		0.26kg ; 60pcs / 16.6kg	0.4kg ; 24pcs / 11.0kg

ELN-30 Series

Model No.	Output	Tol.	R&N	Effi.
ELN-30-5	5V, 0~5.0A	±5%	80mV	75%
ELN-30-9	9V, 0~3.4A	±5%	100mV	80%
ELN-30-12	12V, 0~2.5A	±5%	120mV	82%
ELN-30-15	15V, 0~2.0A	±5%	120mV	82%
ELN-30-24	24V, 0~1.25A	±5%	150mV	85%
ELN-30-27	27V, 0~1.12A	±5%	150mV	85%
ELN-30-48	48V, 0~0.63A	±5%	250mV	87%

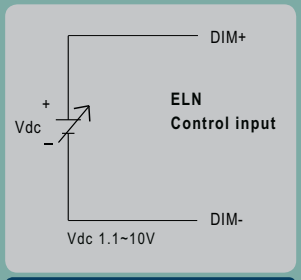
ELN-60 Series

Model No.	Output	Tol.	R&N	Effi.
ELN-60-9	9V, 0~5.0A	±5%	120mV	82%
ELN-60-12	12V, 0~5.0A	±5%	120mV	85%
ELN-60-15	15V, 0~4.0A	±5%	150mV	86%
ELN-60-24	24V, 0~2.5A	±5%	150mV	87%
ELN-60-27	27V, 0~2.3A	±5%	200mV	87%
ELN-60-48	48V, 0~1.3A	±5%	250mV	88%

Dimming Control (optional)

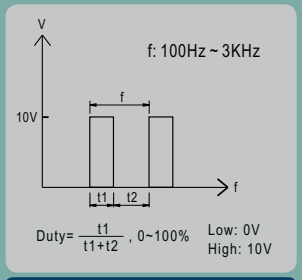
Through the dimming function, output current of ELN series can be adjusted to reduce the energy consumption or adjust the brightness of LEDs connecting to it. Two kinds of control signal are accepted: 1.1~10VDC (D-type option) or PWM signal (P-type option).

D Type :
1.1~10Vdc external control signal



Order No.: ELN- 30 - 5 D

P Type :
PWM control signal



Order No.: ELN- 30 - 5 P

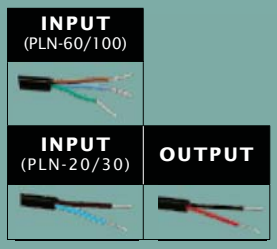
PLN & PLC series

20~96W Single Output Class 2 with PFC

Features

- Universal AC input / Full range
- Fully isolated plastic case with IP64 level (PLN series only)
- Built-in active PFC function, PF>0.9 for 75% of load or higher
- Protections: Short circuit / Overload / Over voltage / Over temp.
- Built-in constant current limiting circuit (C.C.+C.V. mode)
- UL1310 Class 2 power unit
- User adjustable output voltage (except for PLN-20) and current protection level
- Cooling by free air convection
- 100% full load burn-in test
- Suitable for LED lighting and moving sign applications
- PLC series with screw terminal type I/O connection (non IP)
- 2 years warranty

	PLN-20	PLN-30 PLC-30	PLN-60 PLC-60	PLN-100 PLC-100
				



AC input voltage range	90~264VAC ; 127~370VDC			
AC inrush current (max.)	Cold start, 40A at 230VAC			
DC adjustment range	None	±10% rated output voltage adjustable by internal potential meter		0%~ -15% rated output voltage
Current adjustment range	0%~ -25%	3%~ -25% rated output current adjustable by internal potential meter		0%~ -25% rated output current
Overload protection	95%~110% constant current limiting, auto-recovery	100~110% constant current limiting, auto-recovery	95%~110% constant current limiting, auto-recovery	95%~102% constant current limiting, auto-recovery
Over voltage protection	105%~142% rated output voltage	110%~155% rated output voltage	115%~140% rated output voltage	107%~135% rated output voltage
Setup, rise, hold up time	1500ms, 150ms at full load and 230VAC, no hold up time		1500ms, 100ms at full load and 230VAC, no hold up time	1200ms, 80ms, 60ms at full load and 230VAC
Withstand voltage	I/P-O/P: 3.75kVAC			
Working temperature	-30~+60°C	-30~+50°C (refer to output derating curve)		
Safety standards	UL1310 Class 2, CAN/CSA-C22.2 No.223-M91 (except for 48V), EN61347-1, EN61347-2-13 approved (PLN-20 pending)			
	TUV EN60950-1, UL879 (listed in Sign Components Manual – SAM) approved for PLN-100 & PLC-100			
EMC standards	EN55015, EN61000-3-2 class C, EN61000-4-2,3,4,5,6,8,11, EN61547		EN55015, EN55022 class B, EN61000-3-2 Class C, EN61000-4-2,3,4,5,6,8,11, ENV50204, EN61547	
Connection Input	UL rated, 18AWGx2C (30cm)		UL rated, 18AWGx3C (30cm) (PLN-60/100)	
Connection Output			UL rated, 18AWGx2C (30cm) (PLN-60/100)	
Dimension (LxWxH) (mm)	147x 37x 28	145x 47x 30 (PLN-30) 160x 46x 30 (PLC-30)	181x 61.5x 35	200x 70.5x 35
Packing	-----	0.22kg ; 60pcs / 14.2kg (PLN-30) 0.2kg ; 70pcs / 15kg (PLC-30)	0.5kg ; 24pcs / 13kg (PLN-60) 0.41kg ; 30pcs / 13.3kg (PLC-60)	0.52kg ; 20pcs / 12.5kg (PLN-100) 0.52kg ; 25pcs / 14kg (PLC-100)

▪ PLN-20 Series

UL/CUL/TUV/CE pending

Model No.	Output	Tol.	R&N	Effi.
PLN-20-5	5V, 0~3.0A	±10%	2.5V	74%
PLN-20-12	12V, 0~1.6A	±10%	2.5V	80%
PLN-20-18	18V, 0~1.1A	±10%	3.0V	81%
PLN-20-24	24V, 0~0.8A	±10%	3.0V	82%
PLN-20-36	36V, 0~0.55A	±10%	3.0V	83%
PLN-20-48	48V, 0~0.42A	±10%	3.8V	84%

▪ PLN-30 Series

SELV 110 F M M LPS

Model No.	Output	Tol.	R&N	Effi.
PLN-30-9	9V, 0~3.3A	±10%	2.6V	80%
PLN-30-12	12V, 0~2.5A	±10%	2.0V	83%
PLN-30-15	15V, 0~2.0A	±10%	2.6V	84%
PLN-30-20	20V, 0~1.5A	±10%	2.6V	84%
PLN-30-24	24V, 0~1.25A	±10%	2.6V	85%
PLN-30-27	27V, 0~1.12A	±10%	2.3V	85%
PLN-30-36	36V, 0~0.84A	±10%	4.5V	86%
PLN-30-48	48V, 0~0.63A	±10%	3.7V	86%

▪ PLN-60 Series

SELV 110 F M M LPS

Model No.	Output	Tol.	R&N	Effi.
PLN-60-12	12V, 0~5.0A	±10%	2.0V	81.5%
PLN-60-15	15V, 0~4.0A	±10%	2.4V	84.5%
PLN-60-20	20V, 0~3.0A	±10%	1.8V	86.0%
PLN-60-24	24V, 0~2.5A	±10%	2.7V	86.0%
PLN-60-27	27V, 0~2.3A	±10%	2.7V	86.5%
PLN-60-36	36V, 0~1.7A	±10%	3.6V	87.0%
PLN-60-48	48V, 0~1.3A	±10%	4.6V	87.0%

▪ PLN-100 Series

SELV 110 F M M LPS

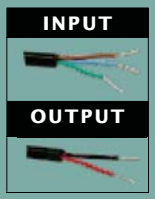
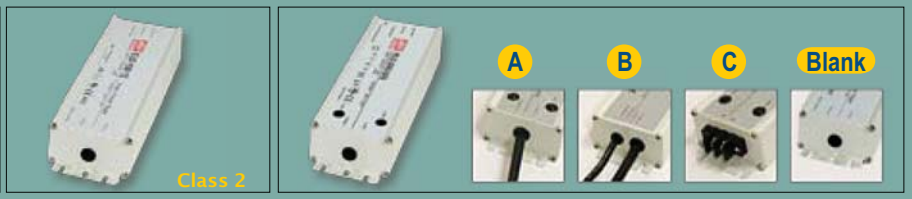
Model No.	Output	Tol.	R&N	Effi.
PLN-100-12	12V, 0~5.00A	±3%	150mV	83%
PLN-100-15	15V, 0~5.00A	±3%	150mV	85%
PLN-100-20	20V, 0~4.80A	±3%	150mV	87%
PLN-100-24	24V, 0~4.00A	±3%	150mV	87%
PLN-100-27	27V, 0~3.55A	±3%	150mV	87%
PLN-100-36	36V, 0~2.65A	±2%	150mV	87%
PLN-100-48	48V, 0~2.00A	±2%	200mV	87%

CLG & HLG series

60~240W Single Output with PFC

Features

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage / Over temp.
- Built-in active PFC function, PF>0.9 for 75% of load or higher
- IP67 / IP65 design for indoor or outdoor installations (except for C type)
- OCP point adjustable through output cable or internal potential meter (CLG-150 / HLG-240)
- UL1310 class2 power unit (CLG-60&100)
- Cooling by free air convection
- Suitable for all kinds of LED lighting, street lighting, and moving sign applications
- Built-in constant current limiting circuit (C.C.+C.V. mode)
- Meet 4KV surge immunity level (IEC 61000-4-5)
- Optional model for CLG-150 / HLG-240-12□:
  - □=A: IP65 rated. Output voltage and constant current level can be adjusted through internal potential meter
  - □=B: IP67 rated and constant current level adjustable through output cable (optional)
  - □=C: Non IP. Terminal block for I/O connection. Output voltage and constant current level can be adjusted through internal potential meter (optional)
  - □=Blank: IP67 rated. Cable for I/O connection (optional)
- 3 years warranty

	CLG-60	CLG-100	CLG-150 & HLG-240
			
AC input voltage range	90~264VAC; 127~370VDC		90~280VAC; 127~396VDC
AC inrush current (max.)	Cold start, 40A at 230VAC		Cold start, 65A at 230VAC
DC adjustment range	Fixed. Can be modified between ±10% (CLG-60) or 0~-15% (CLG-100) rated output voltage		A and C type can be adjusted by internal potential meter
Current adjustment range	Fixed. Can be modified between +3%~-25% rated output current		Can be adjusted by internal potential meter (A and C type) or through output cable (B type)
Overload protection	95%~110% constant current, auto-recovery	95%~102% constant current, auto-recovery	95%~108% constant current limiting, auto-recovery
Over voltage protection	110%~140%	107%~135%	110%~142% rated output voltage
Setup, rise, and hold up time	3000ms(setup time), no hold up time	1200ms, 80ms, 60ms at full load and 230VAC	3000ms, 80ms, 50ms at full load and 230VAC
Withstand voltage	I/P-O/P: 3.75kVAC, I/P-FG: 1.88kVAC, O/P-FG: 0.5kVAC		
Working temperature	-30~+70°C (refer to output derating curve)		
Safety standards	UL1310 Class 2, EN61347-1, EN61347-2-13, CAN/CSA-C22.2 No.223-M91 (except for 48V) approved TUV EN60950-1 & UL879 (SAM list) for CLG-100		UL60950-1, UL1012, TUV EN60950-1, EN61347-1, EN61347-2-13 approved (HLG-240 pending)
EMC standards	EN55015, EN55022 class B, EN61000-3-2 class C, EN61000-4-2,3,4,5,6,8,11, ENV50204, EN61547		
Connection: Input	UL rated, 18AWGx3C (30cm)		UL rated, 18AWGx3C (30cm); Terminal block for C type option
Connection: Output	UL rated, 18AWGx2C (30cm)		□= A / Blank : 14AWGx2C (30cm) □= B : 14AWGx2C (30cm)+18AWGx2C (30cm) □= C : Terminal block
Dimension (LxWxH)(mm)	195.6x 61.5x 38.8	222.2x 68x 38.8	222.2x 68x 38.8 / 244.2x 68x 38.8
Packing	0.86kg ; 16pcs / 14.8kg	1.0kg ; 12pcs / 13kg	1.0kg ; 12pcs / 13kg / 1.22kg ; 12pcs / 15.6kg

·CLG-60 Series

Model No.	Output	Tol.	R&N	Effi.
CLG-60-12	12V, 0~5.0A	±10%	2.0V	81.5%
CLG-60-15	15V, 0~4.0A	±10%	2.4V	84.5%
CLG-60-20	20V, 0~3.0A	±10%	1.8V	86.0%
CLG-60-24	24V, 0~2.5A	±10%	2.7V	86.0%
CLG-60-27	27V, 0~2.3A	±10%	2.7V	86.5%
CLG-60-36	36V, 0~1.7A	±10%	3.6V	87.0%
CLG-60-48	48V, 0~1.3A	±10%	4.6V	87.0%

·CLG-100 Series

Model No.	Output	Tol.	R&N	Effi.
CLG-100-12	12V, 0~5.00A	±3%	150mV	83%
CLG-100-15	15V, 0~5.00A	±3%	150mV	85%
CLG-100-20	20V, 0~4.80A	±3%	150mV	87%
CLG-100-24	24V, 0~4.00A	±3%	150mV	87%
CLG-100-27	27V, 0~3.55A	±3%	150mV	87%
CLG-100-36	36V, 0~2.65A	±2%	150mV	87%
CLG-100-48	48V, 0~2.00A	±2%	200mV	87%

·CLG-150 Series

Model No.	Output	Tol.	R&N	Effi.
CLG-150-12□	12V, 0~11.0A	±2%	150mV	88%
CLG-150-15□	15V, 0~9.50A	±2%	150mV	88%
CLG-150-20□	20V, 0~7.50A	±2%	150mV	90%
CLG-150-24□	24V, 0~6.30A	±1%	150mV	90%
CLG-150-30□	30V, 0~5.00A	±1%	150mV	90%
CLG-150-36□	36V, 0~4.20A	±1%	150mV	89%
CLG-150-48□	48V, 0~3.20A	±1%	200mV	90%

□= A(standard model) or B, C, blank (optional models)

·HLG-240 Series

UL/CUL/TUV/CE pending

Model No.	Output	Tol.	R&N	Effi.
HLG-240-12□	12V, 0~18.0A	±2%	150mV	90.0%
HLG-240-15□	15V, 0~15.0A	±2%	150mV	90.0%
HLG-240-20□	20V, 0~12.0A	±1%	150mV	92.0%
HLG-240-24□	24V, 0~10.0A	±1%	150mV	93.0%
HLG-240-30□	30V, 0~8.00A	±1%	150mV	93.0%
HLG-240-36□	36V, 0~6.70A	±1%	150mV	93.0%
HLG-240-48□	48V, 0~5.00A	±1%	200mV	93.5%

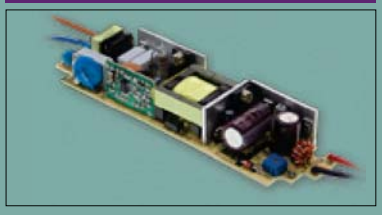
□= A (standard model) or B, C, blank (optional models)

PLP series

20~60W Single Output with PFC

Features

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage / Over temp. (PLP-20 only)
- Built-in active PFC function, PF>0.9 for 75% of load or higher
- Cooling by free air convection
- Built-in constant current limiting circuit (C.C.+C.V. mode)
- 100% full load burn-in test
- Suitable for building in LED lighting systems
- 2 years warranty

		PLP-20	PLP-30	PLP-60
				
AC input voltage range		90~264VAC; 127~370VDC		
AC inrush current (max.)		Cold start, 40A at 230VAC		
Output current adj. range		75%~100% rated current		
Overload Protection	Range	95~110%	100 ~ 110%	
	Type	Constant current limiting, auto-recovery		
Over voltage protection		115~135% shut off, re-power on to recover		
Set up, rise, hold up time		1500ms, 150ms at full load and 230VAC, no hold up time	1000ms(setup time) at full load and 230VAC, no hold up time	
Withstand voltage		I/P-O/P: 3.75kVAC	I/P-O/P: 3.75kVAC, I/P-FG: 1.88kVAC, O/P-FG: 0.5kVAC	
Working temperature		-30~+60°C (refer to output derating curve)	-30~+70°C (refer to output derating curve)	
Safety standards		Design refer to UL60950-1, TUV EN61347-1, EN61347-2-13		
EMC standards		EN55015, EN61000-3-2 Class C, EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, ENV50204, EN61547		
Connection		UL rated, 18AWGx2C (30cm)	3+2P / 3.96mm pitch, JST P/N: B3P / B2P-VH	
Dimension (LxWxH)(mm)		140x 32x 22	101.6x 50.8x 25	101.6x 50.8x 28

• PLP-20 Series

UL/CUL/TUV/CE pending

Model No.	Output	Tol.	R&N	Effi.
PLP-20-5	5V, 0~3.0A	±10%	2.5V	74%
PLP-20-12	12V, 0~1.6A	±10%	2.5V	80%
PLP-20-18	18V, 0~1.1A	±10%	3.0V	81%
PLP-20-24	24V, 0~0.8A	±10%	3.0V	82%
PLP-20-36	36V, 0~0.55A	±10%	3.0V	83%
PLP-20-48	48V, 0~0.42A	±10%	3.8V	84%

• PLP-30 Series

UL/CUL/TUV pending

Model No.	Output	Tol.	R&N	Effi.
PLP-30-12	12V, 0~2.5A	±10%	2.0V	83.0%
PLP-30-24	24V, 0~1.3A	±10%	2.4V	85.5%
PLP-30-48	48V, 0~0.63A	±10%	4.8V	86.5%

• PLP-60 Series

UL/CUL/TUV pending

Model No.	Output	Tol.	R&N	Effi.
PLP-60-12	12V, 0~5.0A	±10%	4.5V	84%
PLP-60-24	24V, 0~2.5A	±10%	4.5V	88%
PLP-60-48	48V, 0~1.3A	±10%	4.8V	89%

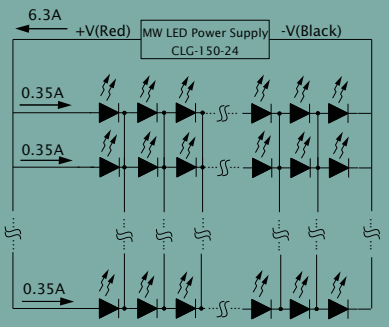
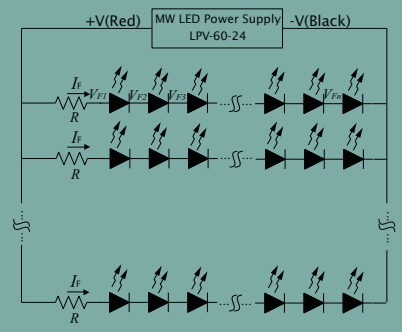
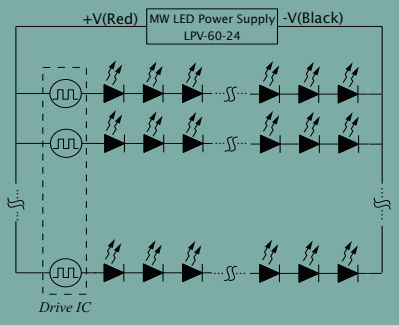
Comparison Chart

Model Name	Case: Metal	Case: Plastic	Potted	PFC	V / I Adj.	IP	Hold-up Time	Ripple & Noise	Optional Dimming	Application
CLG-150 / HLG-240 (Non class 2)	•		•	•	•	65/67	Normal	Normal		General
CLG-100	•		•	•		67	Normal	Normal		General
CLG-60	•		•	•		67	Non	High		LED
PLN-100		•		•	•	64	Normal	Normal		General
PLN-30/60		•		•	•	64	Non	High		LED
PLN-20		•		•	I only	64	Non	High		LED
PLC-100		•		•	•	Non	Normal	Normal		General
PLC-30 / 60		•		•	•	Non	Non	High		LED
ELN-30 / 60		•			•	64	Normal	Normal	•	General
LPH / LPL-18 LPLC / LPHC-18 LPV /LPC-20 / 35 / 60		•	•			67	Normal	Normal		General
PLP-20/30/60	PCB type			•	I only	Non	Non	High		LED

How to choose a suitable LED power supply?

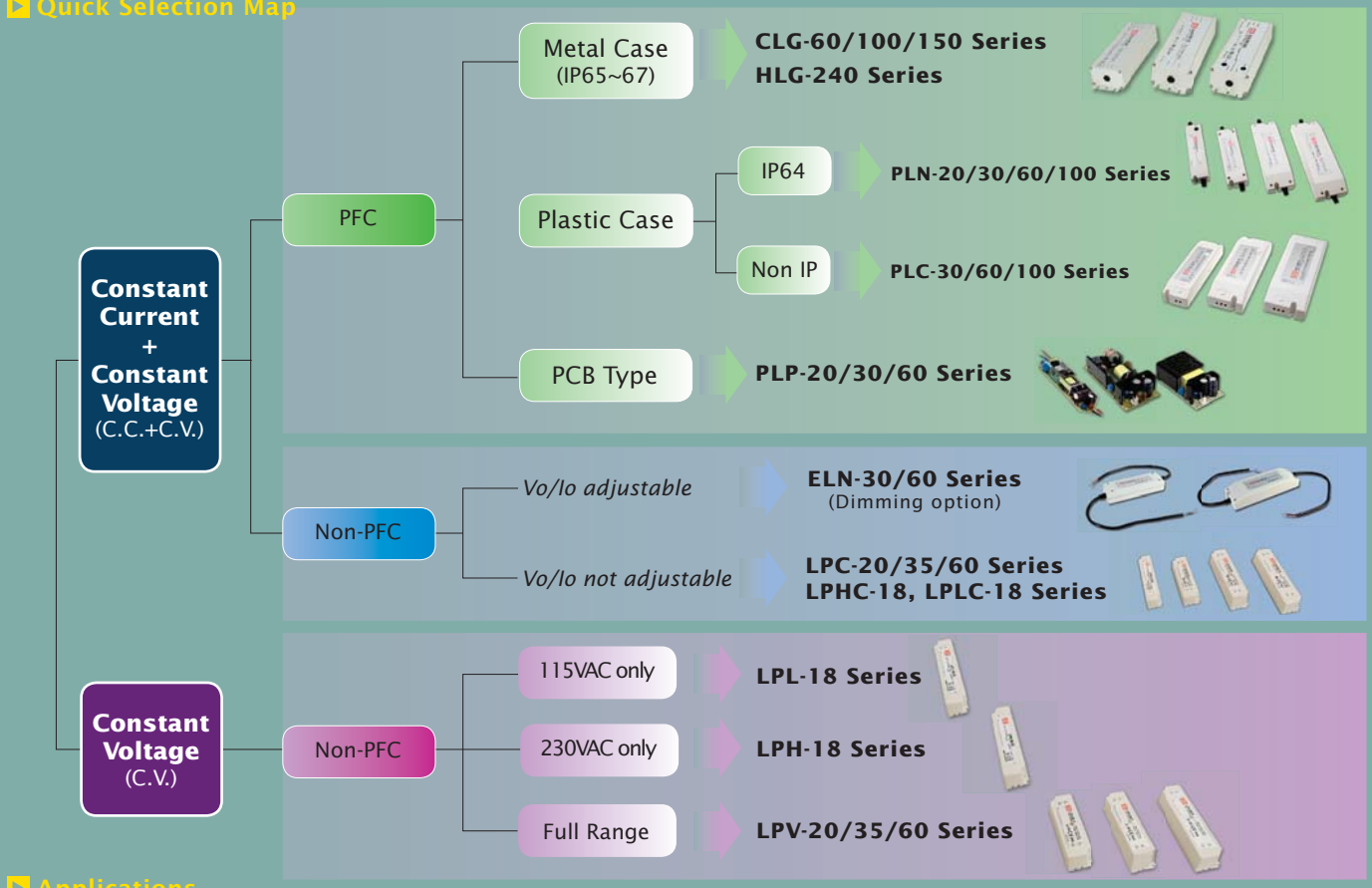
- Decide a suitable wattage level, including safety margin.
- Verify your design of LED driving circuit: direct drive by PSU [choose a constant current (C.C.) mode LED power supply] or add additional driving IC to get a more precise constant current level [choose a constant voltage (C.V.) or constant current (C.C.) mode LED power supply].
- Verify whether the application need PFC function.
- Verify location of assembly and the required level against dust and humidity for the LED power supply (enclosure style and IP level).
- Verify the required safety certificates.
- Need to adjust the output voltage and/or output current or need the dimming function ?

Suggested System Design

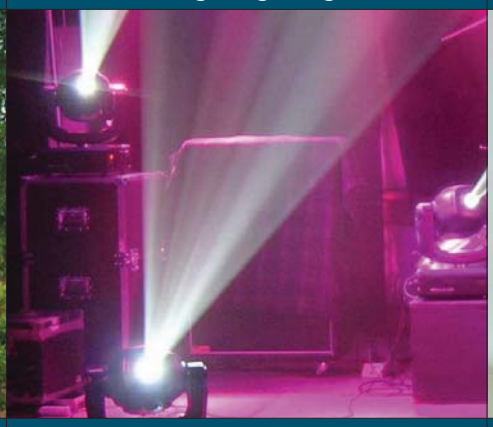
Setting	Circuit diagram	Description	Advantage & Disadvantage
Use C.C. mode power supply No need ballast resistor and LED driver IC	 For 1W LED, V_F=3.2V, I_F=0.35A Parallel connection: 6.3A / 0.35A=18 18 branches need to connect in parallel	Using Mean Well power supply as the constant current source and feed the LED arrays directly.	Advantage: The cost and complexity are the lowest to LED manufacturers. Just need to consider about characteristics of the LED. Disadvantage: Driving current for each branch may be unbalance
	Constant current region of CLG-150-24: 12~24V, so the LED series connection should be 4 to 7.	Since PF>0.9 only for 75% of rated load or higher, the recommnaded series connection is 6 or 7.	
Use C.V. or C.C. mode power supply Add ballast resistor to balance every branch		$R=[V-(V_{F1}+V_{F2}+...+V_{Fn})]/I_F$ Note: V: Rated output voltage of LED power supply V_F: LED's forward voltage I_F : LED's forward current Example: Using LPV-60-24(24V/2.5A) to drive a LED array which 6 LEDs connected in series in each branch and 4 branches connected in parallel R= [24-(6x3)]/(2.5/4)=10Ω	Advantage: • Low cost • Simple Disadvantage: • Brightness of LED is uneven • Poor efficiency
Use C.V. or C.C. mode power supply Driver IC is used as a constant current source (without ballast resistor)		PWM constant current source will regulate forward current to achieve even current at each branch	Advantage: • High efficiency • Perfect current balance to each branch • Longer lifetime for LEDs Disadvantage: • Highest cost • High complexity • EMC problem at lighting equipment side

How to choose a suitable LED power supply?

Quick Selection Map



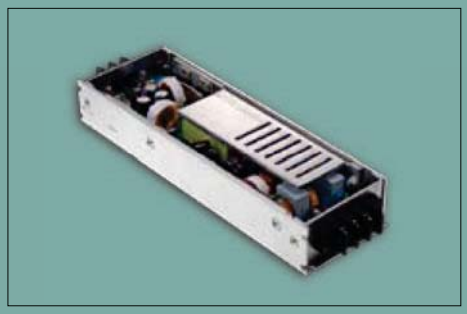
Applications

Street Lighting	Stage Lighting	Embedded Lighting
		
Architectural Lighting	**Indoor Lighting**	**Decorative Lighting**
		

Products under development

ULP-150 Series

150W U-Bracket Type with PFC Function



- U-bracket without cover, no IP level
- Suitable for constant voltage (C.V. mode) applications
- Universal AC input 90~280VAC
- Withstand 300VAC surge input for 30 seconds
- Can provide 300% peak load for 30 ms
- Built-in active PFC, PF>0.9 for 75% of load or higher
- Comply with EN61000-3-2 Class C (≥75% load)
- Protection: short circuit, overload, over voltage, over temperature
- TTL signal for over temperature alarm
- Design refer to UL1012, EN61347-2-13, UL60950-1
- EMC standards: EN55015, EN55022 Class B, EN61547, EN61000-4-2,3,4,5,6,8,11
- 3 years warranty
- Application: LED street lighting (built-in type), LED indoor lighting

PLN-45 Series

45W with Plastic Casing and PFC Function

- Plastic casing with IP64 level, suitable for indoor installation with high dust & moisture
- Built-in active PFC, PF>0.9 for 75% of load or higher
- Comply with EN61000-3-2 Class C (≥75% load)
- Built-in constant current limiting with adjustable OCP level
- Suitable operating range for direct connecting of LEDs: 75~100% rated output voltage
- Universal AC input 90~264VAC
- Protection: short circuit, overload, over voltage, over temperature
- Design refer to UL1310, EN61347-2-13
- EMC standards: EN55015, EN61547
- 2 years warranty
- Application: all kinds of LED lighting and LED electronic display

PLP-45 Series

45W PCB type with PFC function

- PCB type, suitable to assemble into the casing of lighting system
- Built-in active PFC, PF>0.9 for 75% of load or higher
- Comply with EN61000-3-2 class C (≥75% load)
- Built-in constant current limiting with adjustable OCP level
- Universal AC input 90~264VAC
- Cooling by free air convection
- Protection: short circuit, overload, over voltage
- Design refer to UL1310, EN61347-2-13
- EMC standards: EN55015, EN61547
- 2 years warranty

CEN-60/75/100 Series

60~96W Economical Class 2 with PFC Function

- Metal casing with IP66 level, suitable for outdoor installations
- Built-in active PFC, PF>0.9 for 60% of load or higher
- Comply with EN61000-3-2 Class C (>60% load)
- Built-in constant current limiting with adjustable OCP level
- User adjustable output voltage
- Suitable operating range for direct connecting of LEDs: 60~100% rated output voltage
- Universal AC input 85~300VAC
- Protection: short circuit, overload, over voltage, over temperature
- Design refer to UL1310, EN61347-2-13
- EMC standards: EN55015, EN61547
- Low cost & high reliability
- Dimension(LxWxH): 150x 61.5x 39mm (CEN-60/75); 172x 61.5x 39mm (CEN-100)
- 3 years warranty
- Application: all kinds of LED lighting, street lighting, and LED moving sign

Note: Features above for product under development may be changed without further notice!