



- Universal AC input / Full range
- Fully isolated plastic case with IP64 level
- Built-in constant current limiting circuit with adjustable OCP level
- Protections: Short circuit / Overload / Over voltage
- UL1310 Class 2 power unit
- Cooling by free air convection
- Suitable for LED lighting and moving sign applications
- IP64 design for indoor or outdoor installations
- Optional Dimmer Functions: 1.1~10VDC or PWM Controlled

IP64  (for 48V only)  US (except for 48V) 

Model Number	Output Volts	Output Amps	Efficiency	OVP	Ripple & Noise	O/P Adjust	LED Oper Voltage
SINGLE OUTPUT							
*ELN60-9 (D or P)	9 Volts(DC)	5 Amps	82%	11~13.5 Volts(DC)	120 mV pk-pk	8.7~10.5 Volts(DC)	3~9Volts
*ELN60-12 (D or P)	12 Volts(DC)	5 Amps	85%	13.8~16 Volts(DC)	120 mV pk-pk	10.8~13.2 Volts(DC)	3~12Volts
*ELN60-15 (D or P)	15 Volts(DC)	4 Amps	86%	17.5~21 Volts(DC)	150 mV pk-pk	13.5~16.5 Volts(DC)	3~15Volts
*ELN60-24 (D or P)	24 Volts(DC)	2.5 Amps	87%	28~32 Volts(DC)	150 mV pk-pk	21.6~26.4 Volts(DC)	3~24Volts
*ELN60-27 (D or P)	27 Volts(DC)	2.3 Amps	87%	31~35 Volts(DC)	200 mV pk-pk	24.3~29.7 Volts(DC)	3~27Volts
*ELN60-48 (D or P)	48 Volts(DC)	1.3 Amps	88%	54~60 Volts(DC)	250 mV pk-pk	43.2~52.8 Volts(DC)	3~48Volts

* Note:

The Asterisk * denotes a choice of receiving this product WITH a Dimmer Control Feature. There are 2 types of dimmer Control:

1. 1.1~10VDC Control ("D" Type)

2. PWM Control ("P" Type)

See page 5 of this specification

To receive this product with the 1.1~10VDC Dimmer Control feature, simply add the letter "D" to the end of the model number (i.e. "ELN60-9D").

To receive this product with the PWM Dimmer Control feature, simply add the letter "P" to the end of the model number (i.e. "ELN60-9P").

If not specified, you will receive the NON Dimmer Control product ((i.e. "ELN60-9").

60W Single Output Class 2 Switching Power Supply

ELN60 series

INPUT SPECIFICATIONS

Input Voltage Range (Note 3)	90-264VAC
Frequency Range	47-63 Hz
Input Current (115 / 230VAC)	1.2 Amps / 0.7 Amps max
Inrush Current, max, Cold Start	60Amps/230VAC
Leakage Current	0.25mAmps/240VAC

OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart
Line Regulation	±1.0%
Load Regulation	±2.0%
Ripple/Noise (Note 1)	See Selection Chart
Over Voltage Protection	See Selection Chart
	Shut down o/p voltage, re-power
Over Current Protection	
9~12Volts(DC)	95~110%
15~48Volts(DC)	130% max
	Constant current limiting, auto recov after fault condition is removed
Voltage Tolerance (Note 2)	±5.0%
Setup, Rise Time @ FL	500ms, 30ms/230VAC
	1500ms, 30ms/115VAC
Hold Up Time, typ @ FL	50ms/230VAC ; 16ms/115VAC
DC Voltage Adjust (Note 4)	See Selection Chart
	Can be adjusted by internal potential meter SVR1
Current Adjust Range	-25%~3%. Can be adjusted by internal potential meter SVR2
LED Operation Voltage (Note 5)	See Selection Chart

GENERAL SPECIFICATIONS

Safety	UL1310 Class 2, CAN/CSA C22.2 No. 223-M91 (except for 48Volts); IP64 approved, design refer to TUV EN60950-1, EN61347-2-13
EMI	Compliance to EN55022(CISPR22) Class B
Isolation	3 KVAC Input/Output
Resistance	I/P-O/P >100MΩ / 500VDC / 25°C70%RH

All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

Efficiency	See Selection Chart
Harmonic Current	EN61000-3-2,-3
EMS	EN61000-4-2,3,4,6,8,11; ENV50204; EN55024 light industry level, criteria A
Dimming Control (option)	1~10Volts(DC) or PWM signal: 100Hz~3KHz

ENVIRONMENTAL SPECIFICATIONS

Oper. Temperature	-20°C to +60°C (See Derate Curve)
Relative Humidity	20~90% RH non cond
Storage Temperature	-40°C to +85°C, 10~95% RH
MTBF (25°C)	603Khrs min, MIL-HDBK-217F
Temp. Coefficient	±0.03%/°C (0~50°C)
Vibration	10~500Hz, 2G 10min./1cycle, period for 60min.each along X,Y, Z axes

PHYSICAL SPECIFICATIONS

Size	
	Millimeters / Inches 181 x61.5 x 35 / 7.13" x 2.42" x 1.38"
Weight	14.11 oz (400g)

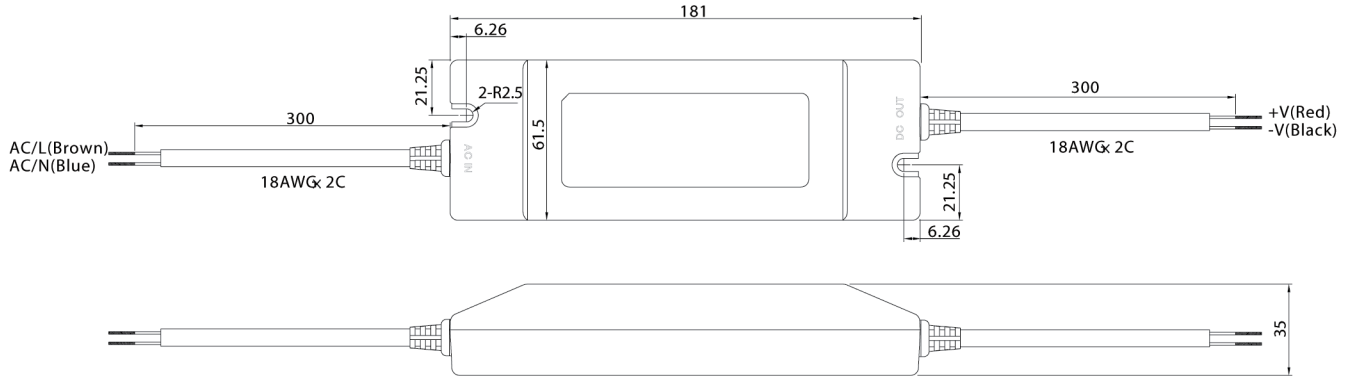
NOTES

1. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
2. Tolerance : includes set up tolerance, line regulation and load regulation.
3. Derating may be needed under low input voltage. Please check the derating curve for more details.
4. Output voltage can be adjusted through the SVR1 on the PCB ; limit of output constant current level can be adjusted through the SVR2 on the PCB.
5. Constant current operation region is within the specified output voltage range. This is the suitable operation region for LED related applications.

MECHANICAL DIMENSION

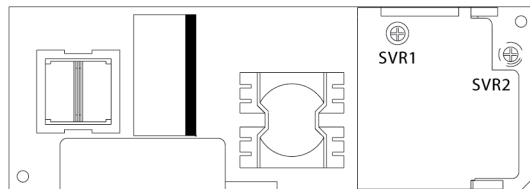
■ Mechanical Specification

Case No.960A Unit:mm



Output voltage and current adjustment : remove the upper case and adjust through SVR1 & SVR2 shown in the diagram.

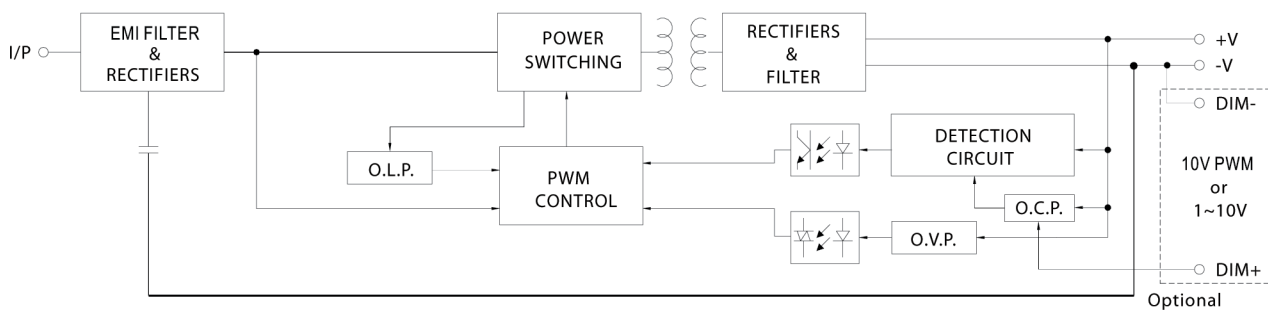
OUTPUT(with optional dimming function)



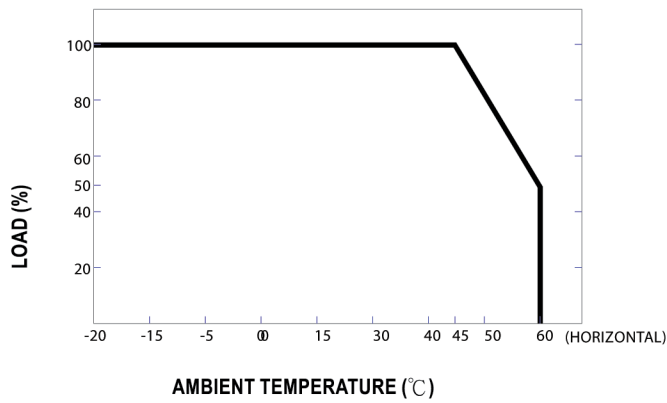
SVR1	Output voltage adjustment
SVR2	Output current adjustment

■ Block Diagram

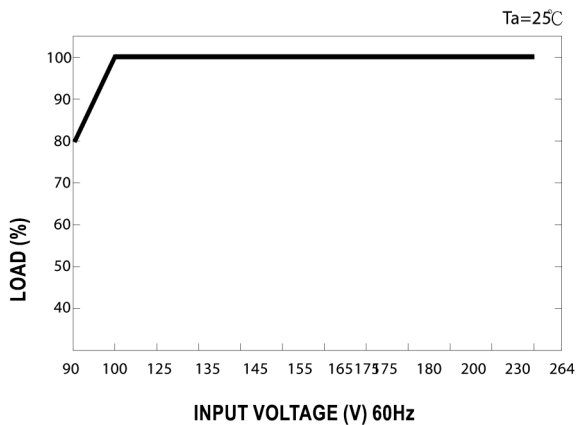
fosc : 60KHz



■ Derating Curve



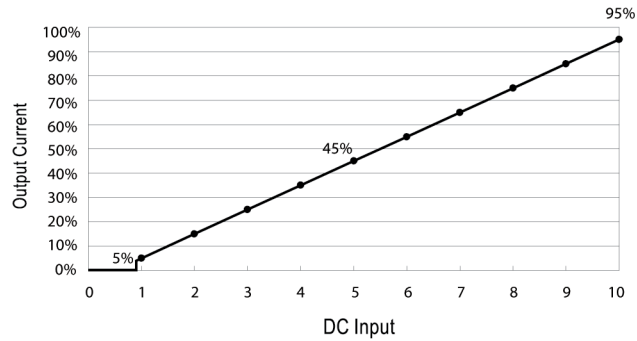
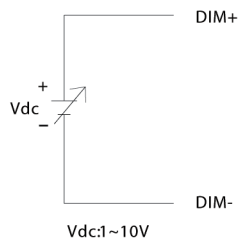
■ Static Characteristics



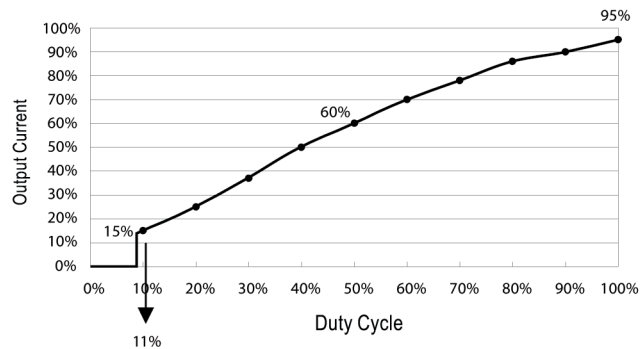
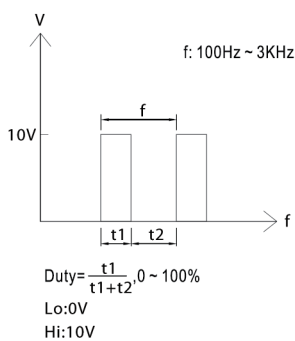
■ Dimming Control (Optional)

Level of output current can be adjusted through the dimming control function.

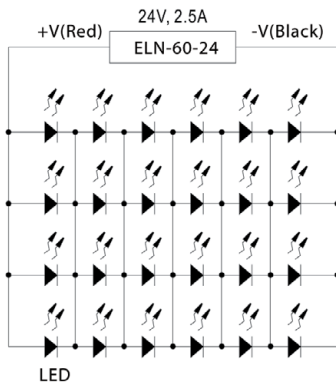
(1) 1~10V



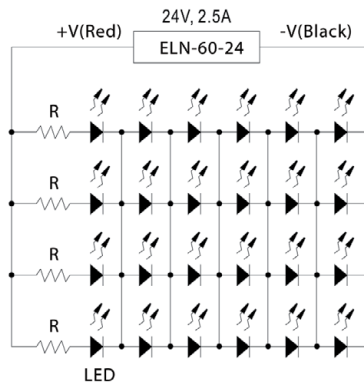
(2) PWM



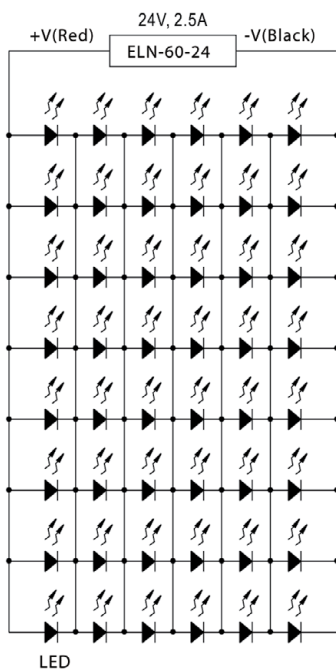
■ Recommend Application Deployment (24V)



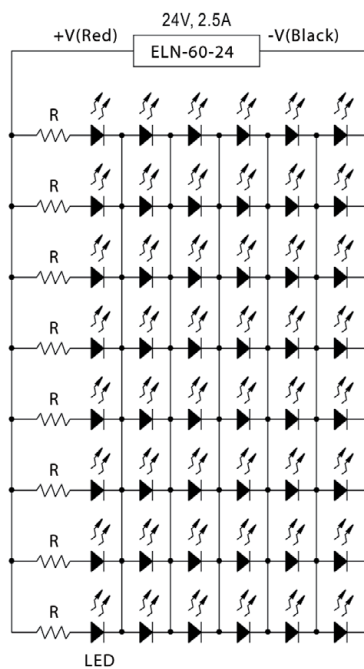
1 to 6 LEDs // 4 strips
This configuration is based on LED with the following parameters :
 $V_f = 3.0\text{--}3.5\text{V}$ $I_f = 600\text{--}700\text{mA}$



6 LEDs // 1 to 4 strips
This configuration is based on LED with the following parameters :
 $V_f = 3.0\text{--}3.5\text{V}$ $I_f = 600\text{--}700\text{mA}$
 $R = 10\text{ ohm, } 10\text{W}$



1 to 6 LEDs // 8 strips
This configuration is based on LED with the following parameters :
 $V_f = 3.0\text{--}3.5\text{V}$ $I_f = 300\text{--}350\text{mA}$



6 LEDs // 1 to 8 strips
This configuration is based on LED with the following parameters :
 $V_f = 3.0\text{--}3.5\text{V}$ $I_f = 300\text{--}350\text{mA}$
 $R = 20\text{ ohm, } 3\text{W}$