UE Electronic

75W Single Output LED Driver

UEL075 series

■ Features：

. Universal AC input / Full range (up to 305VAC)
. Protections：Short circuit / Overload / Over voltage / Over temperature
. Built-in active PFC function
. Cooling by free air convection
. Suitable for LED lighting and moving sign applications
. IP67 / IP65 design for indoor or outdoor installations
. Compliance to worldwide safety regulations for lighting
. 3 years warranty

IP67 CE

UEL075-SXXXV/CYYY-Z1 Serie

Z Type: IP67 rated.（Z : A / M 型）

SPECIFICATION

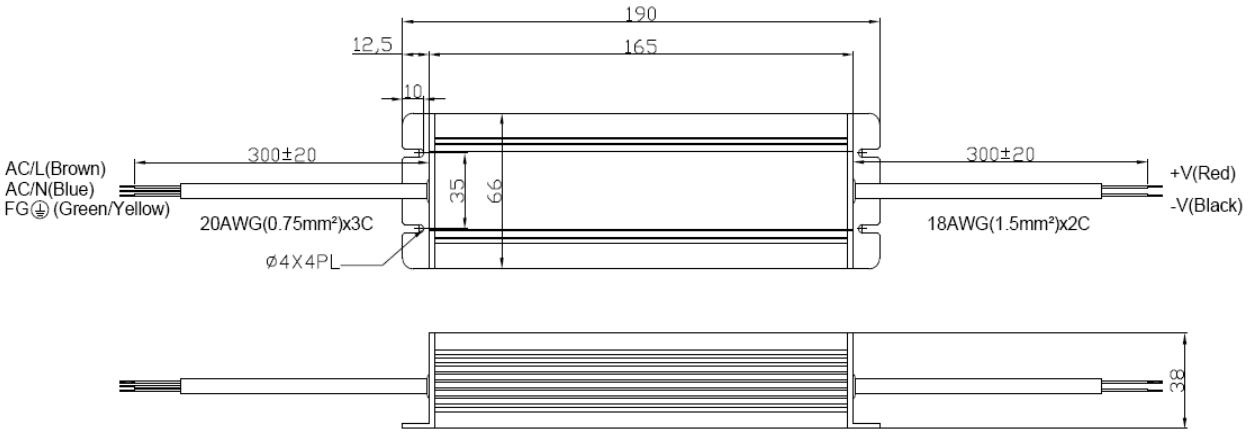
MODEL		S012V/C600	S043V/C180	S057V/C130				
OUTPUT	DC VOLTAGE	**12V**	**43V**	**57V**				
	CANSTANT CURRENT REGION Note.4	**6～12V**	**28～43V**	**30～57V**				
	RATED CURRENT	**6.0A**	**1.8A**	**1.3A**				
	RATED POWER	**72W**	**77.4W**	**74.1W**				
	RIPPLE & NOISE (max.) Note.2	**500mVp-p**	**500mVp-p**	**600mVp-p**				
	VOLTAGE TOLERANCE Note.3	**±5%**	**±5%**	**±5%**				
	LINE REGULATION	**±2%**	**±2%**	**±2%**				
	LOAD REGULATION	**±2%**	**±2%**	**±2%**				
	SETUP. RISE TIME Note.9	**3000ms, 100ms at full load 230VAC / 115VAC**						
	HOLD UP TIME(Typ.)	**10ms at full load 230VAC / 115VAC**						
INPUT	VOLTAGE RANGE Note.5	**90～305VAC**						
	FREQUENCY RANGE	**47～63Hz**						
	POWER FACTOR	**PF≥0.95/230VAC PF≥0.98/115VAC at full load rated output voltage PF≥0.9 at 80～100% load**						
	EFFICIENCY (Typ.)	**83%**	**87%**	**87%**				
	AC CURRENT	**1.0A / 115VAC 0.8A / 230VAC**						
	INRUSH CURRENT(Typ.)	**COLD STARD 70A / 230VAC**						
	LEAKAGE CURRENT	**<0.75mA / 277VAC**						
PROTECTION	OVER CURRENT Note.4	**90～108%**						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	SHORT CIRCUIT	**Hiccup mode, recovers automatically after fault condition is removed.**						
	OVER VOLTAGE	**16～21V**	**48～55V**	**65～75V**				
		Protection type : Shut down and latch off o/p voltage, re-power on to recover						
VIRONMENT	WORKING TEMP.	**-20～+60℃@ full load ; +70℃@ 60% load (Refer to derating curve)**						
	WORKING HUMIDITY	**20～90% RH non-condensing**						
	STORAGE TEMP.,HUMIDITY	**40～+80℃, 10～95% RH**						
	TEMP.COEFFICIENT	**±0.03%/℃(0～50℃)**						
	VIBRATION	**10～500Hz 5G 12min ./1 cycle,period for 72 min. each along X,Y,Z axes**						
SAFETY & EMC	SAFETY STANDARDS Note.8	**UL1012; EN61347-1, EN61347-2-13 independent ; UL60950-1,TUV EN60950-1**						
	WITHSTAND VOLTAGE	**I/P-O/P:1.8KVAC I/P-FG:1.88KVAC**						
	ISOLATION RESISTANCE	**I/P-O/P,I/P-FG:10M Ohms/500VDC/25℃/70%RH**						
	EMI CONDUCTION & RADIATION	**Compliance to EN55015,EN55022(CISPR22) Class B**						
	HARMONIC CURRENT	**Compliance to EN61000-3-2 Class C(≥80% load);EN61000-3-3**						
	EMS IMMUNITY	**Compliance to EN61000-4-2,3,4,5,6,8,11;ENV50204,EN61547,EN55024,heavy industry lever(surge 4KV),criteria A**						
OTHERS	MTBF	**207.9Khrs min. MIL-HDBK-217F(25℃)**						
	DIMENSION	**190*66*38mm (L*W*H)(UEL075-SXXXV/CYYY-Z1)**						
	PACKING	**0.86Kg; 12pcs/10.32Kg (UEL075-SXXXV/CYYY-Z1)**						

NOTE

1.All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2.Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3.Tolerance : includes set up tolerance, line regulation and load regulation.
4.Constant current operation region is within 50%～100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
5.Derating may be needed under low input voltages. Please check the derating curve for more details.
6.Type A only.
7.Please refer to OLP characteristics.
8.Safety and EMC design refer to EN60598-1, subject 8750(UL),CNS15233,GB7000.1 FCC part18.
9.Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
10.The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC directive on the complete installation again.

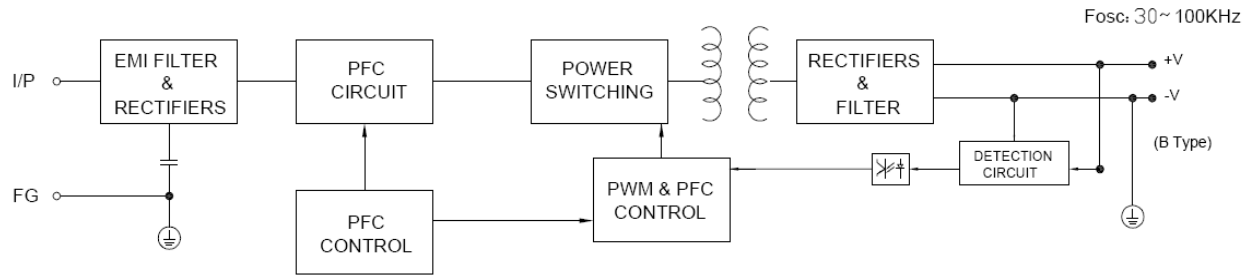
■Mechanical Specification

Z-Type: (UEL075-SXXXV/CYYY-Z1)

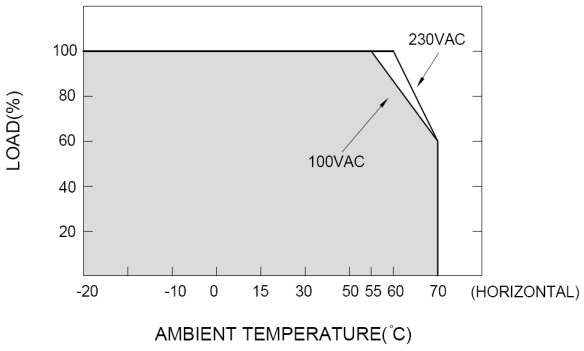


※ IP67 rated. Cable for I/O connection.

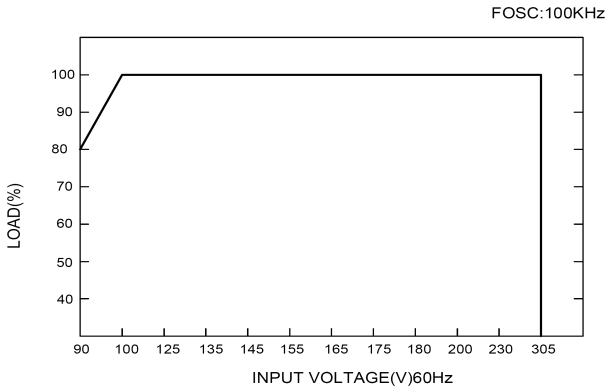
■Block Diagram



■Derating Curve

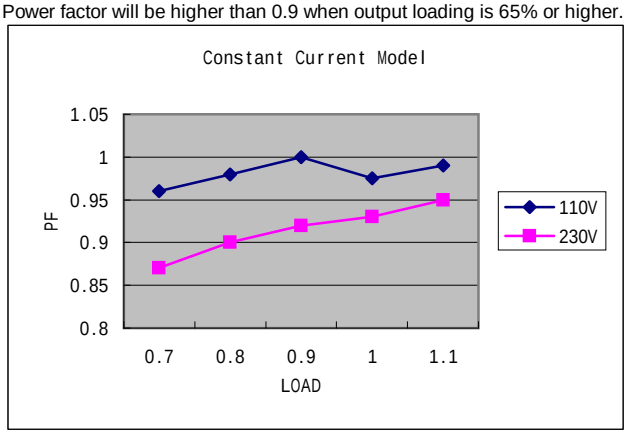


■Static Characteristics



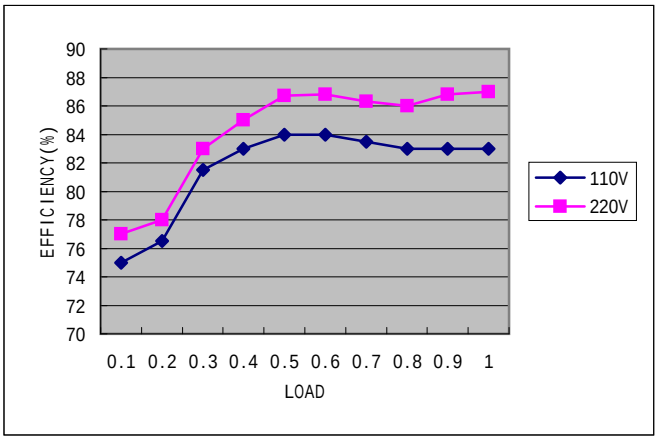
■Power Factor Characteristic

Power factor will be higher than 0.9 when output loading is 65% or higher.



■Efficiency vs Load(48v Model)

UEL075 series possess superior working efficiency that up to 93% can be reached in field applications.

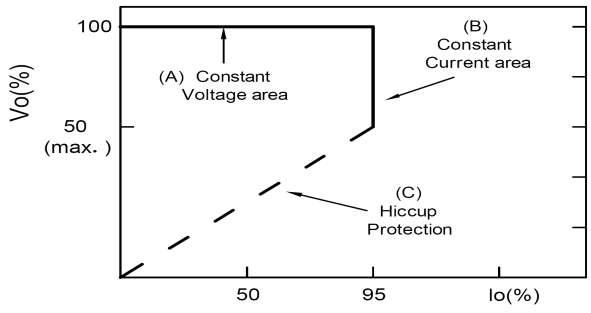


■Driving Methods of Led Module

There are tow major kinds of LED drive method "direct drive" and "with LED driver".

A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

LED power supply with CV+CC characteristic can be operated at both CV mode (with LED driver,at area (A) and CC mode (driver, at area (B).



Typical LED power supply I-V curve

◎**Direct driving :**

Under direct driving, the power supply will work in "constant current mode (CC)" and output voltage of the power supply will be clamped by sum of forward voltage (Vf) of the LED strip.

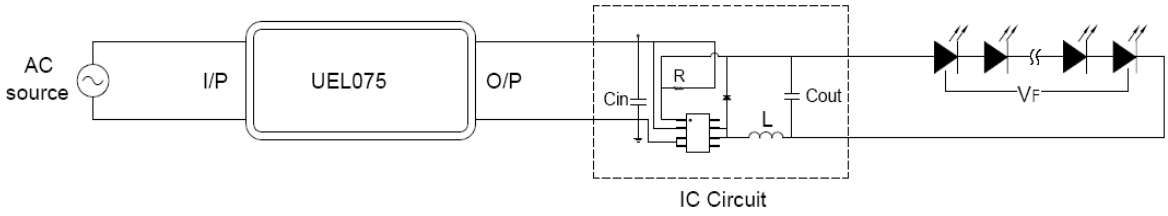
The total forward voltage of series connecting LEDs is suggested for 75%～95% of power supply rated output voltage due to concern of the best PF value and efficiency.

◎**With LED driver :**

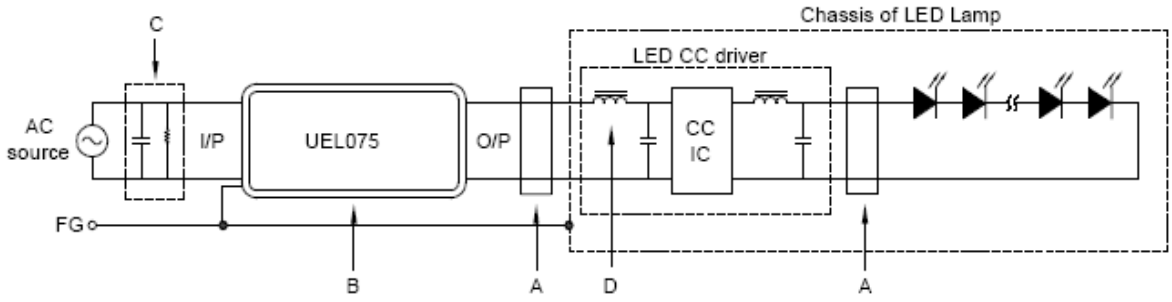
Using additional driver, the power supply will work in "constant voltage mode (CV)" and output voltage of the power supply will be kept in rated value.In this driver mode, several design issues need to be considered:

1.Output voltage of PSU must be higher than total forward voltage of series connecting LEDs by 3V minimum.

2.Input capacitor (Cin) of LED driver circuit should use 2.2uF ～22uF(typ.) of rating depends on the operating frequency of the LED driver. The higher the operating frequency is used, the smaller value of Cin should be chosen, and vice versa.



■EMI Debug Suggestion



A. Add a common moed ferrite choke on output wires to reduce the common emission between 10M～ 300MHz per lighting EMI regulation.

B.Chassis of LED lamp and chassis of UEL075 of the FG wire shouled be connected to the safety ground to reduce the EMI noise. Including the conduction and radiation emission.

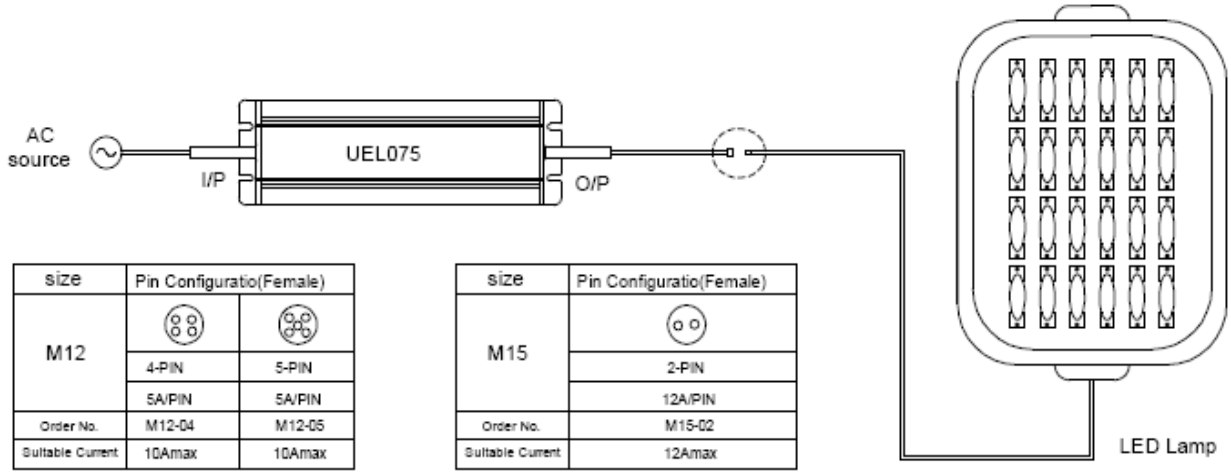
C.The additional X-Cap and discharge resistor can reduce the low frequency conduction noise between 9K-1MHz per lighting EMI regulation.

D.L-C filter should be added at the DC input of LED constant current driver to avoid the differential emission and high frequency noise generated by the CC driver.

■Waterproof Connection

◎ **Waterproof connector**

Waterproof connector can be assembled on the output cable of UEL075 to operate in wet/damp or outdoor environment.



size	Pin Configuratio(Female)	
M12		
	4-PIN	5-PIN
	5A/PIN	5A/PIN
Order No.	M12-04	M12-05
Suitable Current	10Amax	10Amax

size	Pin Configuratio(Female)
M15	
	2-PIN
	12A/PIN
Order No.	M15-02
Suitable Current	12Amax

◎ **Cable joiner**