

MLCA1220

MLCA2420



■ Features :

- Constant voltage design
- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Small and compact size
- Fully encapsulated with IP67 level (Note.7)
- Fully isolated plastic case
- Class II power unit, no FG
- Class 2 power unit
- Pass LPS
- Suitable for LED lighting and moving sign applications
- 100% full load burn-in test
- Low cost, high reliability
- 2 years warranty

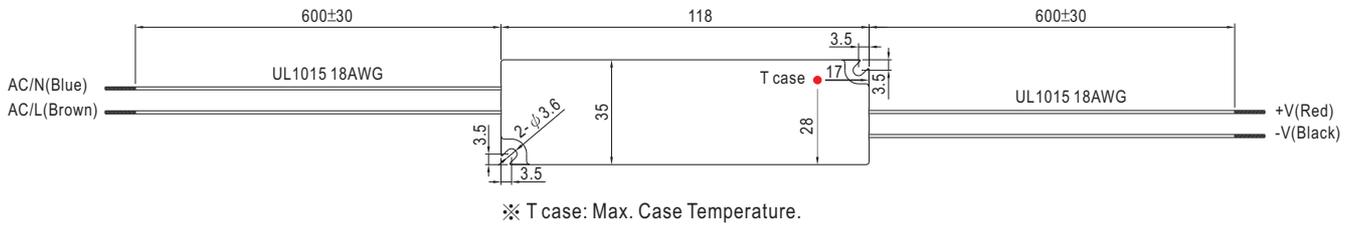
SPECIFICATION



MODEL		LPV-20-5	LPV-20-12	LPV-20-15	LPV-20-24	
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	
	RATED CURRENT	3A	1.67A	1.33A	0.84A	
	CURRENT RANGE	0 ~ 3A	0 ~ 1.67A	0 ~ 1.33A	0 ~ 0.84A	
	RATED POWER	15W	20W	20W	20.2W	
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	
	VOLTAGE TOLERANCE Note.3	±5.0%				
	LINE REGULATION	±1.0%				
	LOAD REGULATION	±2.0%				
	SETUP, RISE TIME Note.6	500ms, 20ms / 230VAC		500ms, 20ms / 115VAC at full load		
HOLD UP TIME (Typ.)	50ms/230VAC	16ms/115VAC at full load				
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC	127 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	77%	81%	83%	83%	
	AC CURRENT (Typ.)	0.55A/115VAC 0.35A/230VAC				
	INRUSH CURRENT(max.)	COLD START 35A/115VAC		70A/230VAC		
	LEAKAGE CURRENT	0.25mA / 240VAC				
PROTECTION	OVERLOAD	110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16V	17.5 ~ 21V	28 ~ 32V	
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC	SAFETY STANDARDS	UL879, UL1310, CSA C22.2 No. 207-M89, CAN/CSA C22.2 No. 223-M91, IP67 approved ; design refer to TUV EN60950-1				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC				
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25°C / 70% RH				
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3				
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A				
OTHERS	MTBF	786.5Khrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	118*35*26mm (L*W*H)				
	PACKING	0.22Kg; 60pcs/14.2Kg/0.62CUFT				
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Derating may be needed under low input voltage. Please check the static characteristics for more details.</p> <p>5. 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.</p> <p>6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.</p> <p>7. Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minute.</p>					

Mechanical Specification

Case No. 972A Unit:mm

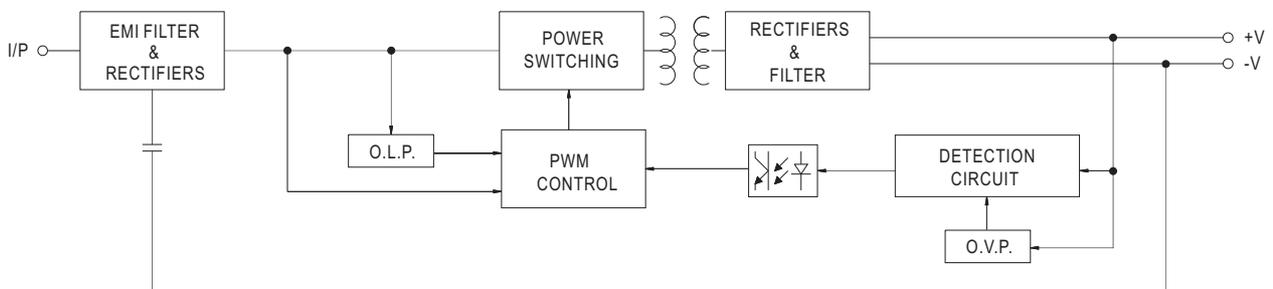


Recommend Mounting Direction

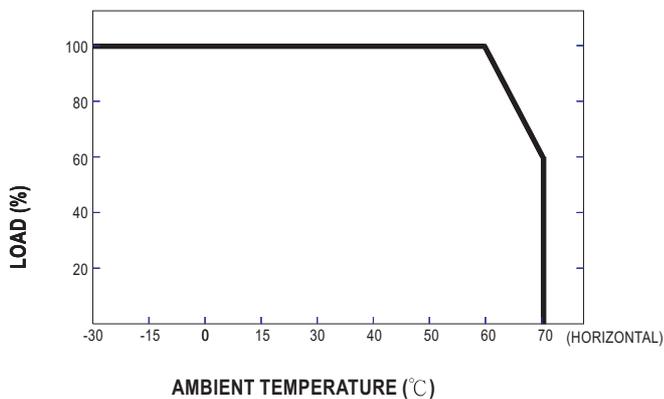


Block Diagram

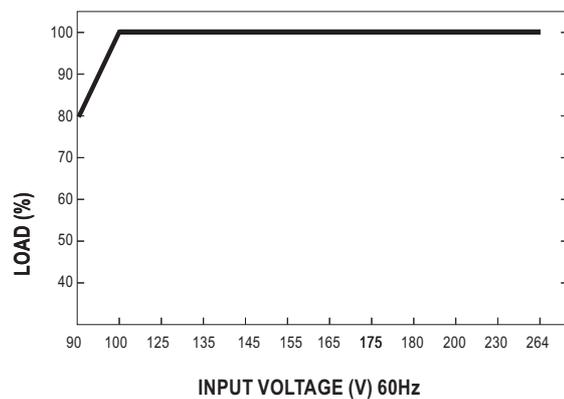
fosc : 65KHz



Derating Curve



Static Characteristics



MLCA1235

MLCA2435



■ Features :

- Constant voltage design
- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Fully encapsulated with IP67 level (Note.9)
- Fully isolated plastic case
- Class II power unit, no FG
- Class 2 power unit
- Pass LPS
- Suitable for LED lighting and moving sign applications (Note.8)
- 100% full load burn-in test
- Low cost, high reliability
- 2 years warranty

SPECIFICATION



MODEL	LPV-35-5	LPV-35-12	LPV-35-15	LPV-35-24	LPV-35-36	
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V
	RATED CURRENT	5A	3A	2.4A	1.5A	1A
	CURRENT RANGE	0 ~ 6A (Note.7)	0 ~ 3A	0 ~ 2.4A	0 ~ 1.5A	0 ~ 1A
	RATED POWER	30W	36W	36W	36W	36W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±6.0%	±5.0%			
	LINE REGULATION	±1.0%				
	LOAD REGULATION	±4.0%	±2.0%			
	SETUP, RISE TIME Note.6	500ms, 20ms / 230VAC	500ms, 20ms / 115VAC at full load			
HOLD UP TIME (Typ.)	50ms/230VAC	16ms/115VAC at full load				
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC	127 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	77%	84%	84%	85%	85%
	AC CURRENT (Typ.)	1.1A/115VAC	0.7A/230VAC			
	INRUSH CURRENT(max.)	COLD START 30A/115VAC	60A/230VAC			
	LEAKAGE CURRENT	0.25mA / 240VAC				
PROTECTION	OVERLOAD	110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	41.4 ~ 48.6V
		Protection type : Shut down o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-30 ~ +65°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC	SAFETY STANDARDS	UL1310, CAN/CSA C22.2 No. 223-M91, IP67 approved ; design refer to TUV EN60950-1				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC				
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25°C / 70% RH				
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3				
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A				
OTHERS	MTBF	743.5Khrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	148*40*30mm (L*W*H)				
	PACKING	0.34Kg; 40pcs/14.6Kg/0.63CUFT				
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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. Derating may be needed under low input voltage. Please check the static characteristics for more details. 5. 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. 6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 7. LPV-35-5 can provide 6A of output current continuously. Based on the requirement of UL1310 class 2, the output current is only certified up to 5A for the test report of LPV-35-5. 8. The unit might not be suitable for lighting applications in EU countries. Please check with your local authorities for the possible use of the unit. 9. Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minute. 					

MLCA1260

MLCA2460



■ Features :

- Constant voltage design
- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Fully encapsulated with IP67 level (Note.8)
- Fully isolated plastic case
- Class II power unit, no FG
- Class 2 power unit
- Pass LPS
- Suitable for LED lighting and moving sign applications (Note.7)
- 100% full load burn-in test
- Low cost, high reliability
- 2 years warranty



SPECIFICATION

MODEL	LPV-60-5	LPV-60-12	LPV-60-15	LPV-60-24	LPV-60-36	LPV-60-48	
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V	48V
	RATED CURRENT	8A	5A	4A	2.5A	1.67A	1.25A
	CURRENT RANGE	0 ~ 8A	0 ~ 5A	0 ~ 4A	0 ~ 2.5A	0 ~ 1.67A	0 ~ 1.25A
	RATED POWER	40W	60W	60W	60W	60W	60W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	150mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±8.0%	±5.0%				
	LINE REGULATION	±1.0%					
	LOAD REGULATION	±6.0%	±2.0%				
	SETUP, RISE TIME Note.6	500ms, 20ms / 230VAC	500ms, 20ms / 115VAC at full load(for 5~36V) ; 500ms, 30ms / 230VAC		500ms, 30ms / 115VAC at full load(for 48V)		
HOLD UP TIME (Typ.)	50ms/230VAC	16ms/115VAC at full load					
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC	127 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	76%	83%	83%	86%	86%	86%
	AC CURRENT (Typ.)	1.2A/115VAC	1A/230VAC				
	INRUSH CURRENT(max.)	COLD START 30A/115VAC	60A/230VAC				
LEAKAGE CURRENT	0.25mA / 240VAC						
PROTECTION	OVERLOAD	110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	41.4 ~ 48.6V	55.2 ~ 64.8V
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	UL879(except for LPV-60-5), UL1310(except for LPV-60-5), CSA C22.2 No. 207-M89(except for LPV-60-5, LPV-60-48), CAN/CSA C22.2 No. 223-M91(except for LPV-60-5, LPV-60-48), IP67 approved ; design refer to TUV EN60950-1					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC					
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25°C / 70% RH					
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3					
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A					
	MTBF	732Khrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	162.5*42.5*32mm (L*W*H)					
	PACKING	0.4Kg; 32pcs/13.8Kg/0.56CUFT					
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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. Derating may be needed under low input voltage. Please check the static characteristics for more details. 5. 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. 6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 7. The unit might not be suitable for lighting applications in EU countries. Please check with your local authorities for the possible use of the unit. 8. Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minute. 						

MLCA1210

MLCA2410



■ Features :

- Constant voltage design
- Universal AC input / Full range
- Fully encapsulated with IP67 level (Note.8)
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Over current / Over voltage
- Fully isolated plastic case
- Cooling by free air convection
- 100% full load burn-in test
- Low cost, high reliability
- Suitable for LED lighting and moving sign applications(Note 7.)
- 2 years warranty

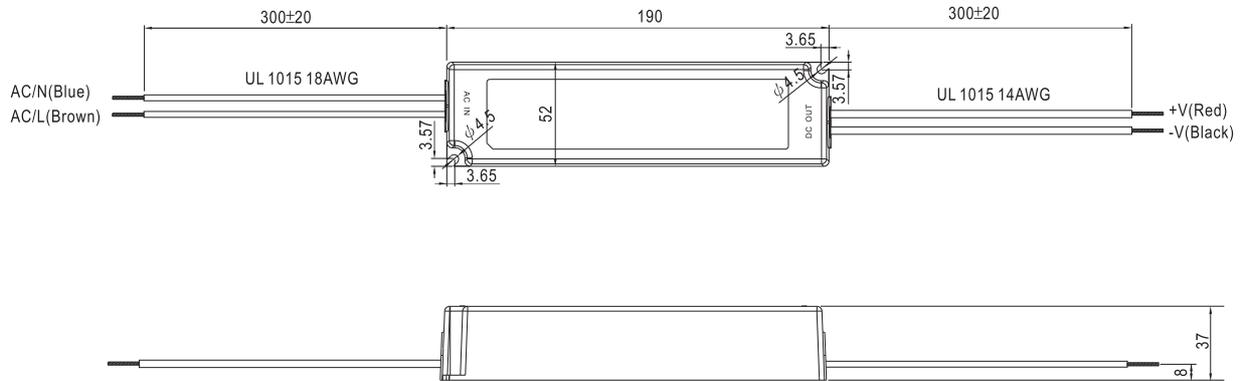


SPECIFICATION

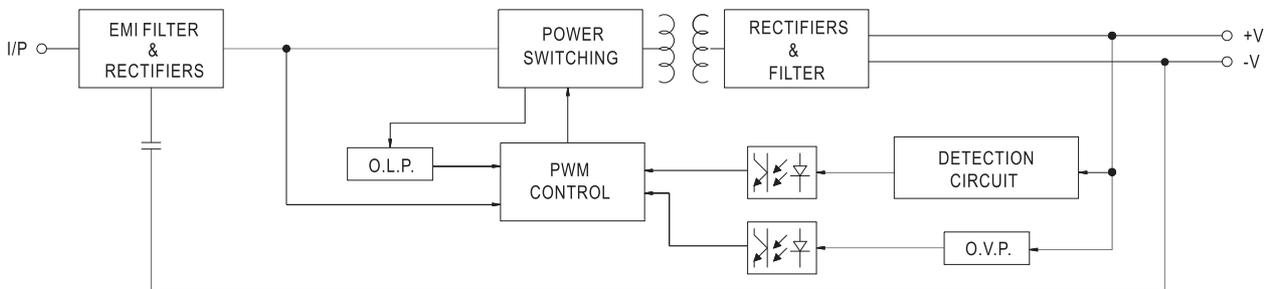
MODEL	LPV-100-5	LPV-100-12	LPV-100-15	LPV-100-24	LPV-100-36	LPV-100-48	
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V	48V
	RATED CURRENT	12A	8.5A	6.7A	4.2A	2.8A	2.1A
	CURRENT RANGE	0 ~ 12A	0 ~ 8.5A	0 ~ 6.7A	0 ~ 4.2A	0 ~ 2.8A	0 ~ 2.1A
	RATED POWER	60W	102W	100.5W	100.8W	100.8W	100.8W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	150mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±8.0%	±5.0%				
	LINE REGULATION	±1.0%					
	LOAD REGULATION	±6.0%	±2.0%				
	SETUP, RISE TIME Note.6	2000ms, 25ms / 230VAC		2000ms, 25ms / 115VAC			
HOLD UP TIME (Typ.)	50ms/230VAC	14ms/115VAC at full load					
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC	127 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	80%	85%	87%	88%	88%	89%
	AC CURRENT	2.2A/115VAC 1.2A/230VAC					
	INRUSH CURRENT(max.)	COLD START 30A/115VAC		75A/230VAC			
LEAKAGE CURRENT	0.25mA / 240VAC						
PROTECTION	OVER CURRENT	110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	41.4 ~ 48.6V	55.2 ~ 64.8V
ENVIRONMENT	WORKING TEMP.	-25 ~ +70°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	IP67 approved; Design refer to TUV EN60950-1					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC					
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25°C/ 70% RH					
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A(≤ 80% load), EN61000-3-3					
EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; EN55024, light industry level, criteria A						
OTHERS	MTBF	703Khrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	190*52*37mm (L*W*H)					
	PACKING	0.63Kg;20pcs/13.6Kg/0.51CUFT					
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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. Derating may be needed under low input voltage. Please check the static characteristics for more details. 5. 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. 6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 7. The unit might not be suitable for lighting applications in EU countries. Please check with your local authorities for the possible use of the unit. 8. Suitable for indoor use or outdoor use without direct sunlight exposure. 						

Mechanical Specification

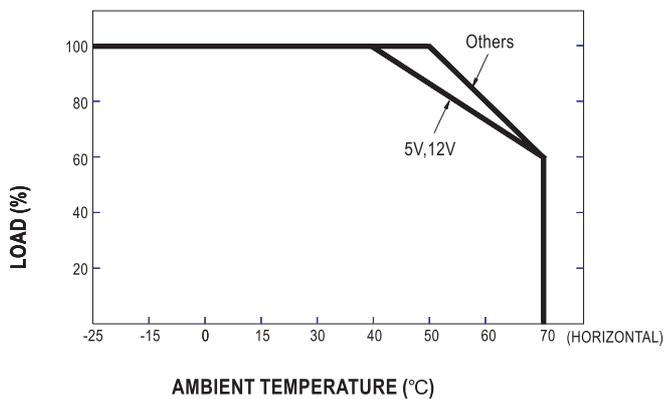
Case No. 999A Unit:mm



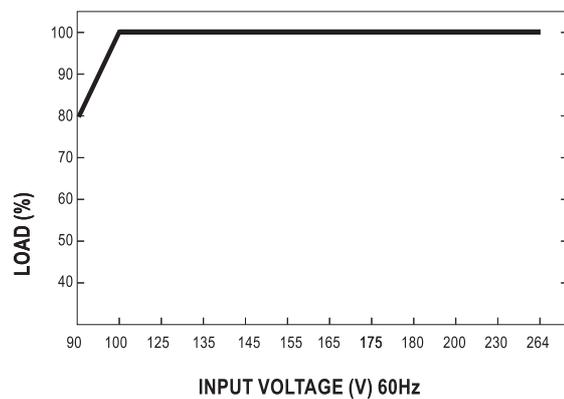
Block Diagram



Derating Curve



Static Characteristics



MLCE1260

MLCE2460



■ Features :

- Universal AC input / Full range (up to 295VAC)
- Built-in active PFC function
- High efficiency up to 89%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- IP67 design for indoor or outdoor installations
- Class 2 power unit
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications (Note.2)
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 3 years warranty

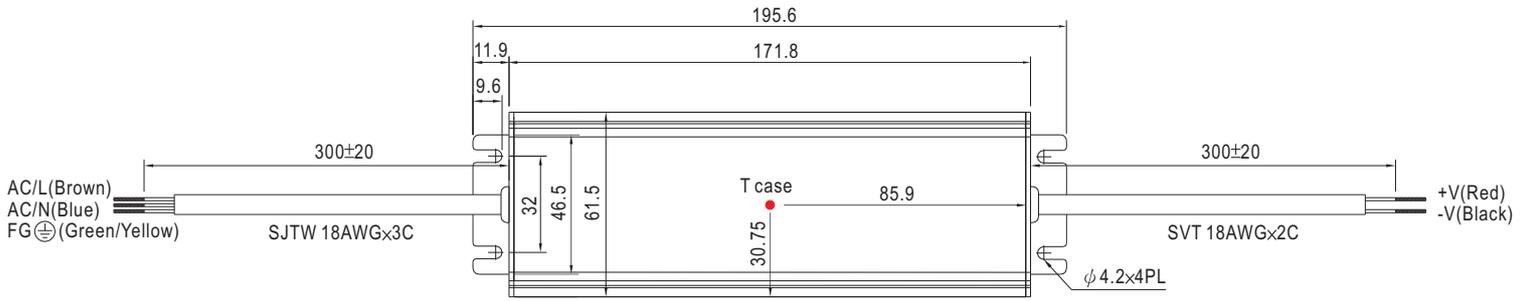


SPECIFICATION

MODEL	CLG-60-12	CLG-60-15	CLG-60-20	CLG-60-24	CLG-60-27	CLG-60-36	CLG-60-48	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.5	8.4 ~ 12V	10.5 ~ 15V	14 ~ 20V	16.8 ~ 24V	18.9 ~ 27V	25.2 ~ 36V	33.6 ~ 48V
	RATED CURRENT	5A	4A	3A	2.5A	2.3A	1.7A	1.3A
	CURRENT RANGE	0 ~ 5A	0 ~ 4A	0 ~ 3A	0 ~ 2.5A	0 ~ 2.3A	0 ~ 1.7A	0 ~ 1.3A
	RATED POWER	60W	60W	60W	60W	62.1W	61.2W	62.4W
	RIPPLE & NOISE (max.) Note.2	2Vp-p	2.4Vp-p	1.8Vp-p	2.7Vp-p	2.7Vp-p	3.6Vp-p	4.6Vp-p
	VOLTAGE ADJ. RANGE	11.5 ~ 13V	14.5 ~ 16.2V	19.5 ~ 22V	24 ~ 26V	25 ~ 30V	32.5 ~ 39V	43.6 ~ 51.8V
		Fixed can be modified between the range above						
	CURRENT ADJ. RANGE	Fixed. Can be modified between 3% ~ -25% rated output current						
	VOLTAGE TOLERANCE Note.3	±10%						
LINE REGULATION	±3.0%							
LOAD REGULATION	±5.0%							
SETUP TIME	3000ms / 230VAC 5000ms / 115VAC at full load							
INPUT	VOLTAGE RANGE Note.4	90 ~ 295VAC	127 ~ 417VDC					
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.94/115VAC, PF>0.9/230VAC, PF>0.9/277VAC at full load (Please refer to "Power Factor Characteristic" curve)						
	EFFICIENCY (Typ.)	85%	86%	87.5%	87%	88%	89%	89%
	AC CURRENT (Typ.)	0.8A/115VAC	0.4A/230VAC	0.3A/277VAC				
	INRUSH CURRENT(max.)	40A/230VAC						
	LEAKAGE CURRENT	<0.75mA / 240VAC						
PROTECTION	OVER CURRENT	95 ~ 110%						
		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	13.8 ~ 16V	17.5 ~ 21V	23 ~ 28V	28 ~ 32V	31 ~ 35V	41 ~ 46V	54 ~ 60V
	Protection type : Shut down o/p voltage, re-power on to recover							
OVER TEMPERATURE	12V: 90°C ±10°C (TSW1) detect on heatsink of power transistor							
	15V ~ 48V: 85°C ±10°C (TSW1) detect on heatsink of power transistor							
	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)						
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS	UL879, UL8750, UL1310, TUV EN61347-1, EN61347-2-13 independent, CAN/CSA C22.2 No. 223-M91(except for 48V), CSA C22.2 No. 250.0-08(except for 48V), CSA C22.2 No. 207-M89(except for 48V), IP67, J61347-1, J61347-2-13(option) approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH						
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥ 75% load) ; EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61547, light industry level (surge 4KV), criteria A						
OTHERS	MTBF	495.7K hrs min. MIL-HDBK-217F (25°C)						
	DIMENSION	195.6*61.5*38.8mm (L*W*H)						
	PACKING	0.86Kg; 16pcs/14.8Kg/0.54CUFT						
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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. Derating may be needed under low input voltage. Please check the static characteristics for more details. 5. Constant current operation region is within 70% ~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. 6. 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. 7. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers. 							

Mechanical Specification

Case No. 957A Unit:mm

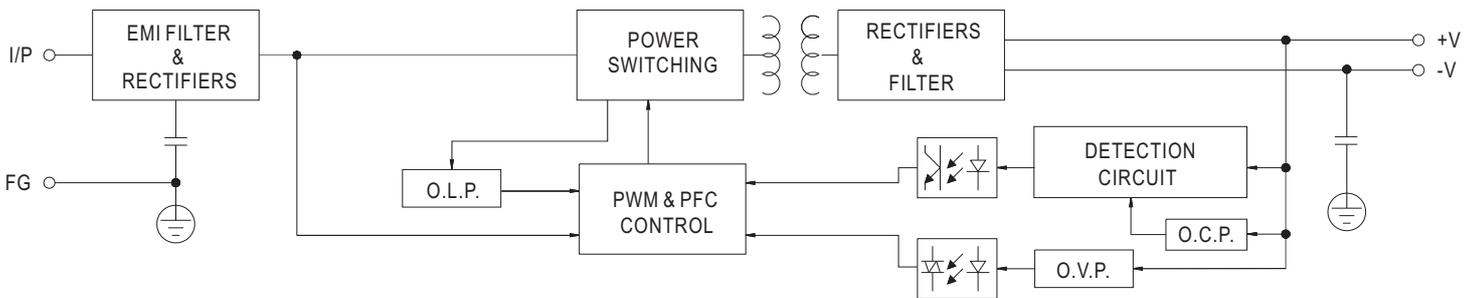


※ T case: Max. Case Temperature.

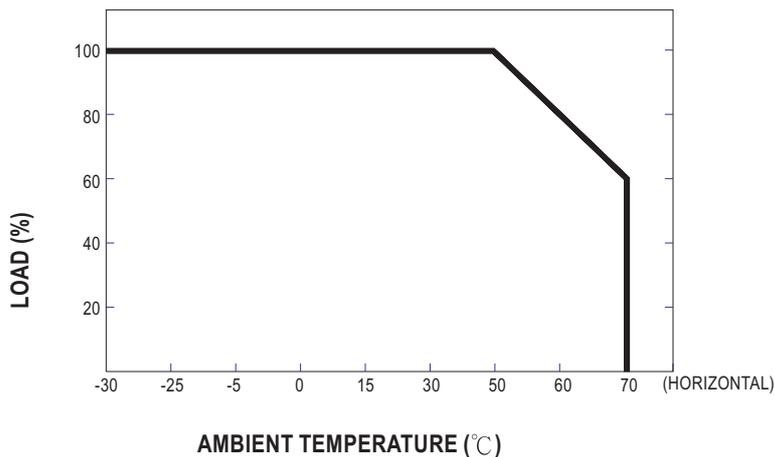


Block Diagram

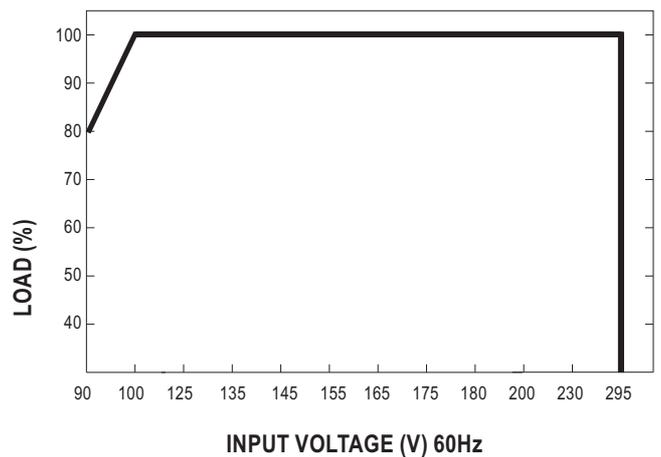
fosc : 90KHz(115VAC)
120KHz(230VAC)



Derating Curve

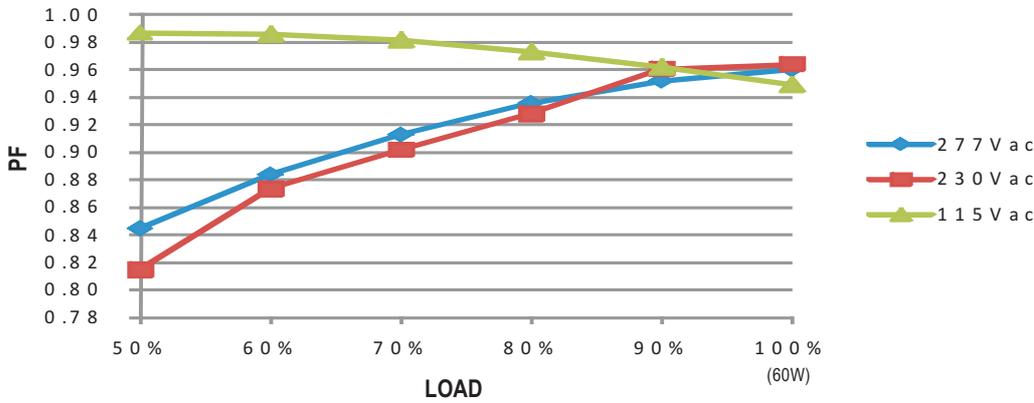


Static Characteristics



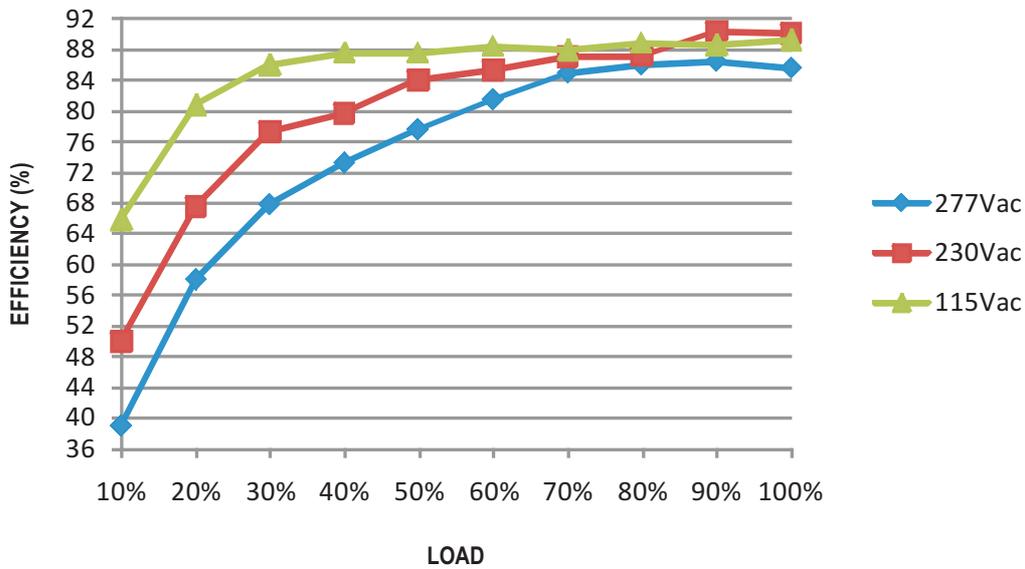
Power Factor Characteristic

Constant Current Mode



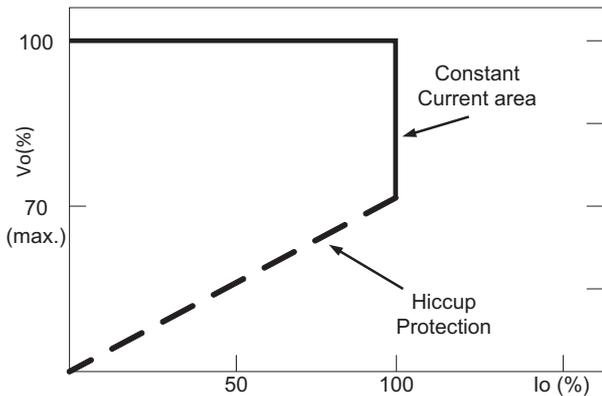
EFFICIENCY vs LOAD (48V Model)

CLG-60 series possess superior working efficiency that up to 89% can be reached in field applications.



DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.



Typical LED power supply I-V curve

MLCE1215

MLCE2415



■ Features :

- Universal AC input / Full range (up to 295VAC)
- Built-in active PFC function
- High efficiency up to 91%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP65 / IP67 design for indoor or outdoor installations
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- 3 years warranty



CLG-150-12 **A** Blank : IP67 rated. Cable for I/O connection.
 A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
 B : IP67 rated. Constant current level adjustable through output cable.
 C : Terminal block for I/O connection. Output voltage and constant current level can be adjusted through internal potentiometer.

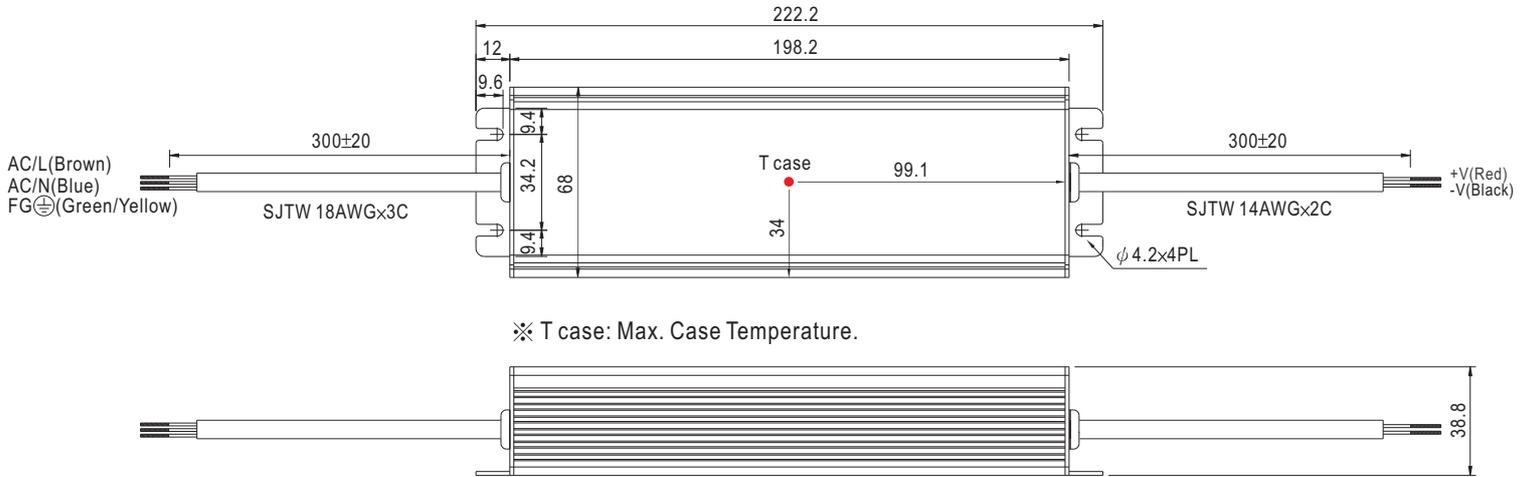
SPECIFICATION

MODEL	CLG-150-12	CLG-150-15	CLG-150-20	CLG-150-24	CLG-150-30	CLG-150-36	CLG-150-48		
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	48V	
	CONSTANT CURRENT REGION Note.4	9 ~ 12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	22.5 ~ 30V	27 ~ 36V	36 ~ 48V	
	RATED CURRENT	11A	9.5A	7.5A	6.3A	5A	4.2A	3.2A	
	RATED POWER	132W	142.5W	150W	151.2W	150W	151.2W	153.6W	
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	
	VOLTAGE ADJ. RANGE Note.6	9 ~ 13V	13 ~ 17V	17 ~ 22V	22 ~ 27V	26 ~ 32V	31 ~ 41V	40 ~ 56V	
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer A type only							
		5.5 ~ 11A	4.75 ~ 9.5A	3.75 ~ 7.5A	3.15 ~ 6.3A	2.5 ~ 5A	2.1 ~ 4.2A	1.6 ~ 3.2A	
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%		
SETUP, RISE TIME	3000ms, 80ms at full load 230VAC /115VAC								
HOLD UP TIME (Typ.)	50ms / 230VAC 16ms / 115VAC at full load								
INPUT	VOLTAGE RANGE Note.5	90 ~ 295VAC 127 ~ 417VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load (Please refer to "Power Factor Characteristic" curve)							
	EFFICIENCY (Typ.)	88%	88%	90%	90%	91%	91%	91%	
	AC CURRENT (Typ.)	2A / 115VAC	1A / 230VAC	0.68A / 277VAC					
	INRUSH CURRENT(max.)	COLD START 65A/230VAC							
LEAKAGE CURRENT	<1mA / 240VAC								
PROTECTION	OVER CURRENT (Typ.) Note.4	95 ~ 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	13.5 ~ 16V	18 ~ 20V	23 ~ 27V	28 ~ 34V	33 ~ 38V	42 ~ 48V	59 ~ 70V	
	Protection type : Shut down and latch off o/p voltage, re-power on to recover								
OVER TEMPERATURE	100°C ±10°C (RTH2)								
	Protection type : Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)							
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS Note.7	UL8750, CSA C22.2 No. 250.0-08, UL1012, CAN/CSA-C22.2 No. 107.1-01, EN61347-1, EN61347-2-13 independent (except for CLG-150 C type), UL60950-1, TUV EN60950-1, IP65 or IP67, J61347-1(option, except for CLG-150 C type), J61347-2-13 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH							
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥ 75% load) ; EN61000-3-3							
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria A							
OTHERS	MTBF	303.7K hrs min. MIL-HDBK-217F (25°C)							
	DIMENSION	222.2*68*38.8mm (L*W*H)(CLG-150-Blank/A/B)				229*68*38.8mm (L*W*H)(CLG-150-C)			
	PACKING	1.0Kg; 12pcs/13Kg/0.58CUFT(CLG-150-Blank/A/B)				1Kg; 12pcs/13Kg/0.96CUFT(CLG-150-C)			
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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 75% ~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 static characteristics for more details. 6. Type A and type C only. 7. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18. 8. 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

Case No. 954A Unit:mm

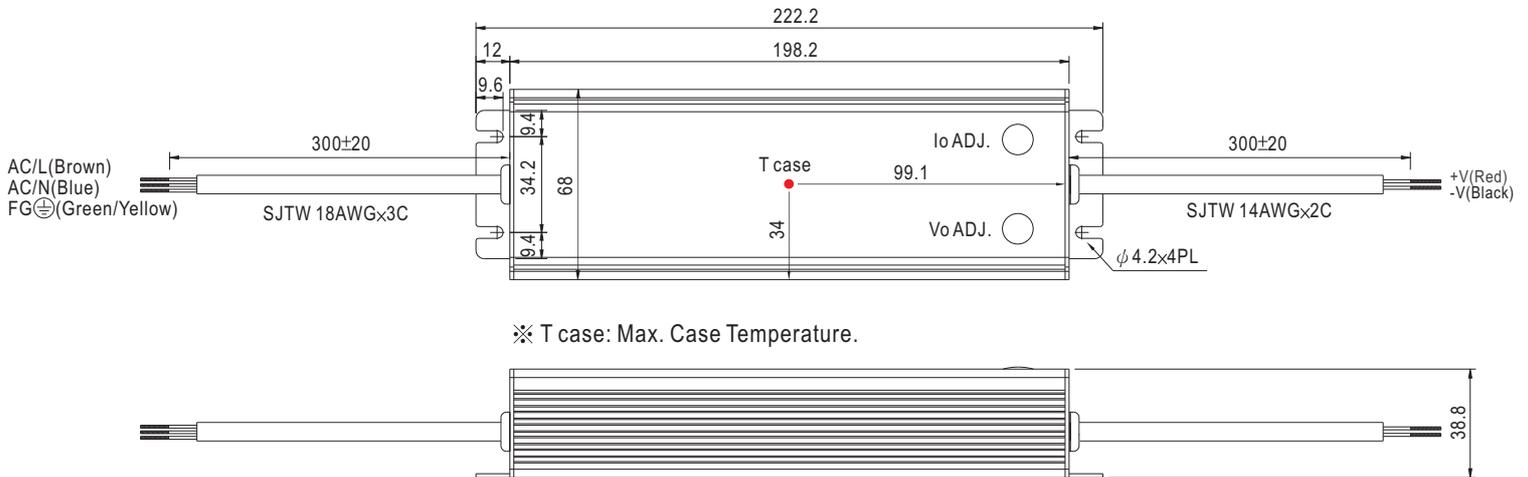
Blank:(CLG-150)



※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

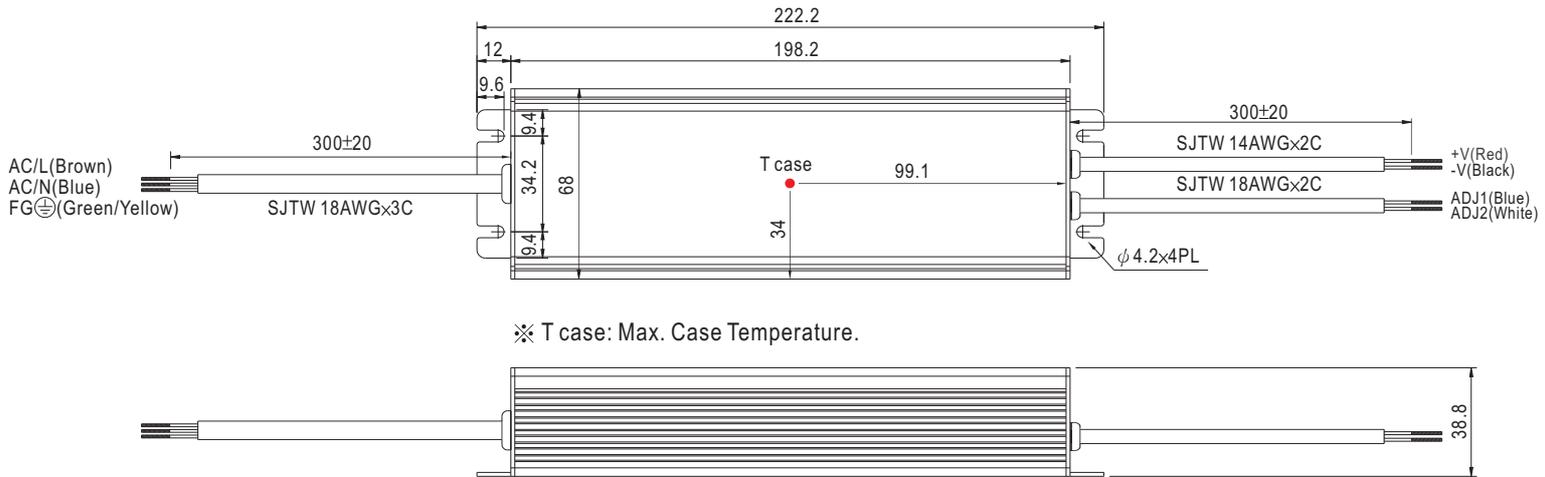
A Type:(CLG-150- A)



※ T case: Max. Case Temperature.

※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(CLG-150_ B)



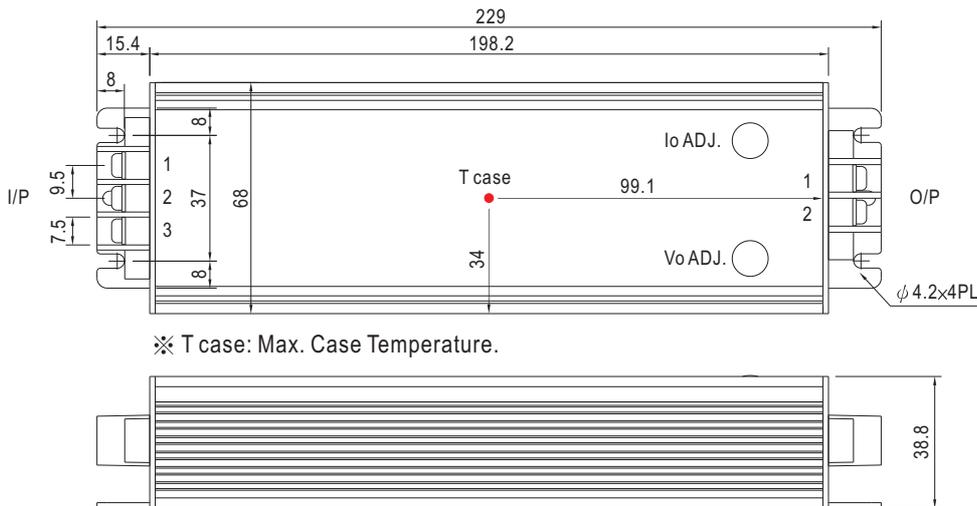
※ T case: Max. Case Temperature.

※ IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistor between ADJ1 and ADJ2.

※ Reference resistance value for output current adjustment (Typical)

Resistance	Percentage of rated current
Open	Slightly > 100%
4.7KΩ	100%
620Ω	75%
82Ω	50%
Short	Slightly < 50%

C Type:(CLG-150_ C)



※ T case: Max. Case Temperature.

AC Input Terminal Pin No. Assignment

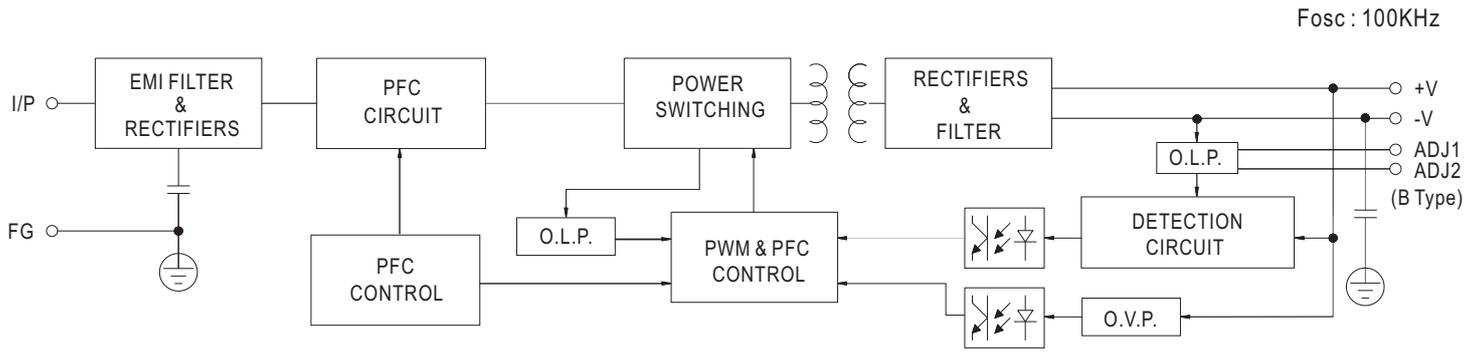
Pin No.	Assignment
1	FG ⊕
2	AC/N
3	AC/L

DC Output Terminal Pin No. Assignment

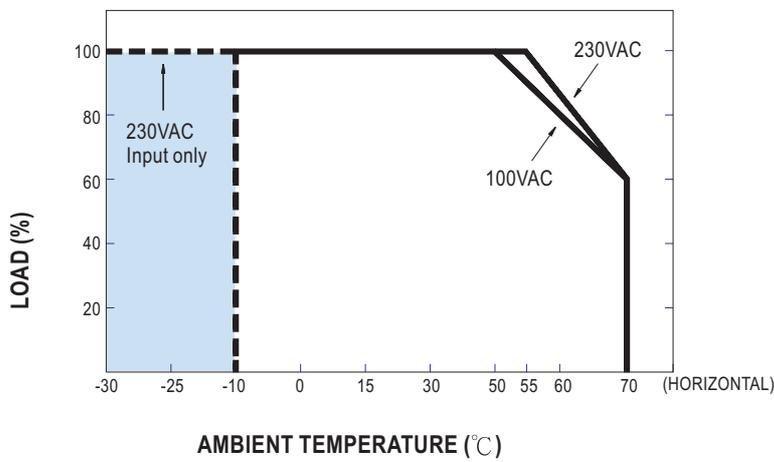
Pin No.	Assignment
1	+V
2	-V

※ Output voltage and constant current level can be adjusted through internal potentiometer. (Can access by removing the rubber stopper on the case.)

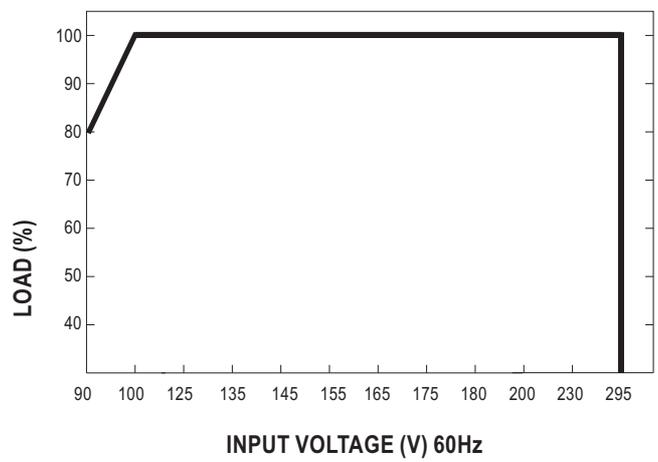
Block Diagram



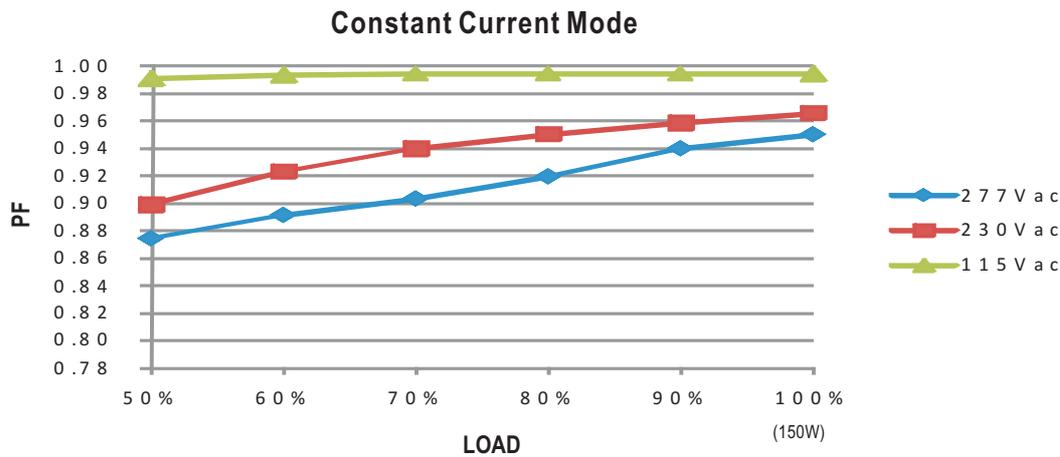
Derating Curve



Static Characteristics

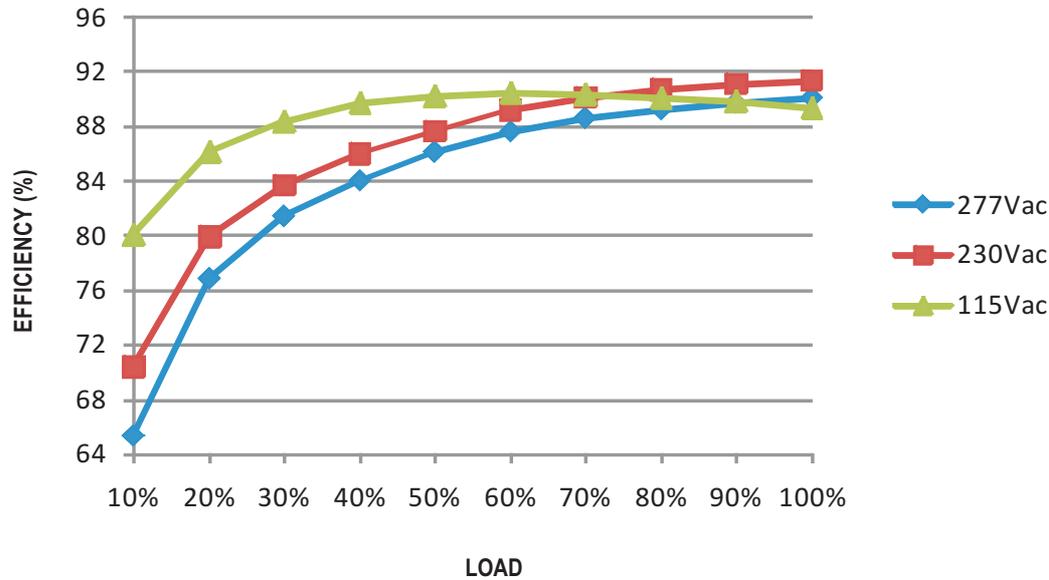


Power Factor Characteristic



EFFICIENCY vs LOAD (48V Model)

CLG-150 series possess superior working efficiency that up to 91% can be reached in field applications.

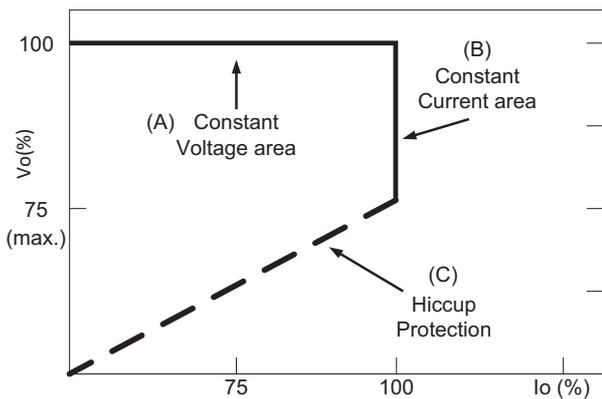


DRIVING METHODS OF LED MODULE

There are two 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.

Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode [with LED driver, at area (A)] and CC mode [direct drive, at area (B)].



MLCA1224

MLCA2424



■ Features :

- Universal AC input / Full range
- Built-in active PFC function
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 5 years warranty (Note.10)



HLG-240-12 [A]	Blank : IP67 rated. Cable for I/O connection. A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer. B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance. C : Terminal block for I/O connection. Output voltage and constant current level can be adjusted through internal potentiometer. D (option) : IP67 rated. Timer dimming function, contact MEAN WELL for details.
----------------	---

SPECIFICATION

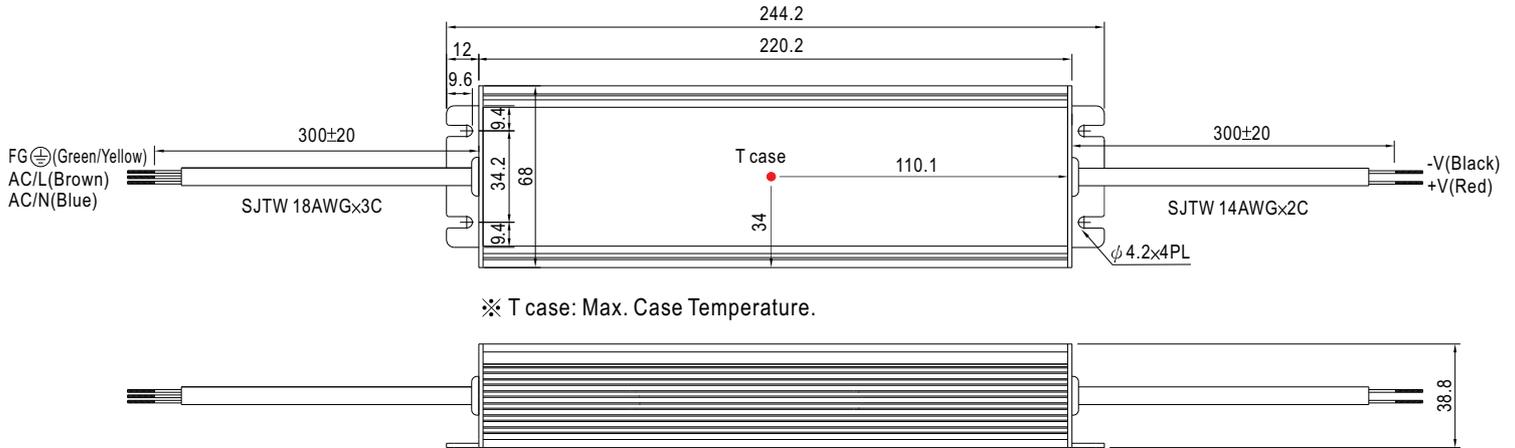
MODEL	HLG-240-12	HLG-240-15	HLG-240-20	HLG-240-24	HLG-240-30	HLG-240-36	HLG-240-42	HLG-240-48	HLG-240-54	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	CONSTANT CURRENT REGION Note.4	6~12V	7.5~15V	10~20V	12~24V	15~30V	18~36V	21~42V	24~48V	27~54V
	RATED CURRENT	16A	15A	12A	10A	8A	6.7A	5.72A	5A	4.45A
	RATED POWER	192W	225W	240W	240W	240W	241.2W	240.24W	240W	240.3W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE Note.6	11.2~12.8V	14~16V	18.6~21.4V	22.4~25.6V	28~32V	33.5~38.5V	39~45V	44.8~51.2V	50~57V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer or through output cable								
		8~16A	7.5~15A	6~12A	5~10A	4~8A	3.3~6.7A	2.86~5.72A	2.5~5A	2.23~4.45A
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
SETUP, RISE TIME Note.8	2500ms, 80ms at full load		230VAC /115VAC							
HOLD UP TIME (Typ.)	15ms at full load		230VAC /115VAC							
INPUT	VOLTAGE RANGE Note.5	90~264VAC		127~373VDC						
	FREQUENCY RANGE	47~63Hz								
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC at full load (Please refer to "Power Factor Characteristic" curve)								
	EFFICIENCY (Typ.)	90%	90%	92%	93%	93%	93.5%	94%	94%	94%
	AC CURRENT (Typ.)	4A / 115VAC		2A / 230VAC						
	INRUSH CURRENT (Typ.)	COLD START 75A/230VAC								
LEAKAGE CURRENT	<0.75mA / 240VAC									
PROTECTION	OVER CURRENT Note.4	95~108% 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	13.5~18V	17.5~21.5V	23.5~27.5V	27~34V	33~39V	43~49V	48~54V	55~63V	60~67V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover								
OVER TEMPERATURE	105°C ±5°C (TSW1)		95°C ±5°C (TSW1)							
	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down									
ENVIRONMENT	WORKING TEMP.	-40~+70°C (Refer to "Derating Curve")								
	WORKING HUMIDITY	20~95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40~+80°C, 10~95% RH								
	TEMP. COEFFICIENT	±0.03%/°C (0~50°C)								
	VIBRATION	10~500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS Note.7	UL1012, CAN/CSA-C22.2 No. 107.1-01, UL8750, CSA C22.2 No. 250.0-08, TUV EN61347-1, EN61347-2-13 independent (except for HLG-240 C type), UL60950-1, UL8750, TUV EN60950-1, IP65 or IP67 approved, J61347-1, J61347-2-13								
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC		I/P-FG:1.88KVAC		O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH								
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥50% load) ; EN61000-3-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria A								
OTHERS	MTBF	207.9Khrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	244.2*68*38.8mm (L*W*H)(HLG-240-Blank/A/B)			251*68*38.8mm (L*W*H)(HLG-240-C)					
	PACKING	1.3Kg; 12pcs/16.6Kg/0.84CUFT(HLG-240-Blank/A/B)		1.23Kg; 12pcs/15.8Kg/1.16CUFT(HLG-240-C)						
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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 static characteristics for more details. 6. Type A and type C only. 7. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18. 8. 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. 9. 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. 10. Refer to warranty statement. 									

Mechanical Specification

Case No.954C

Unit:mm

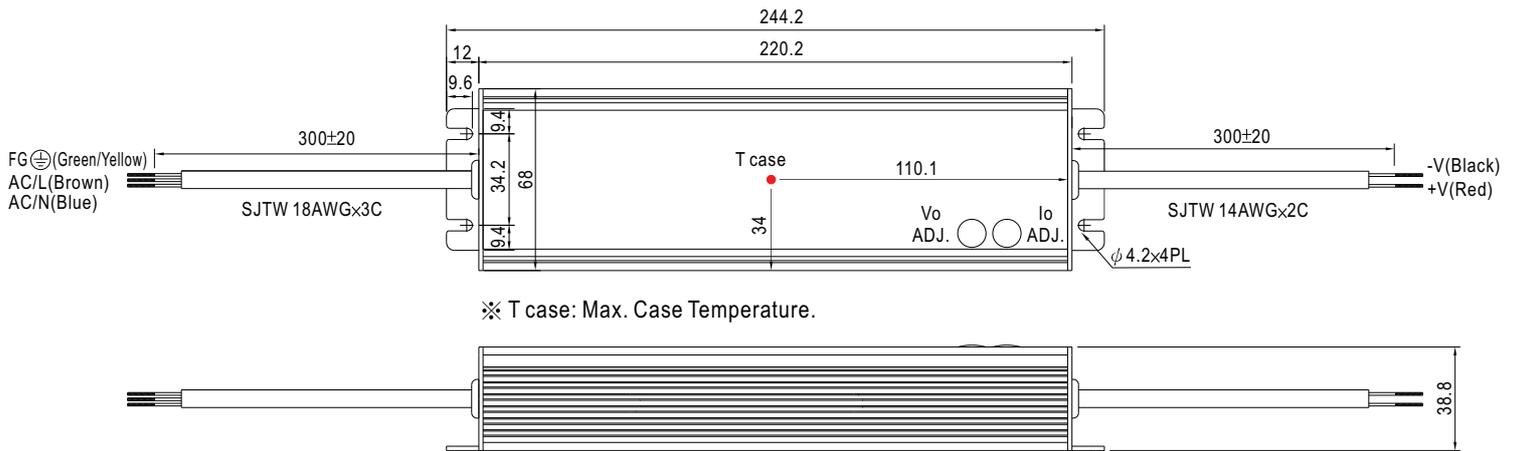
Blank:(HLG-240)



※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

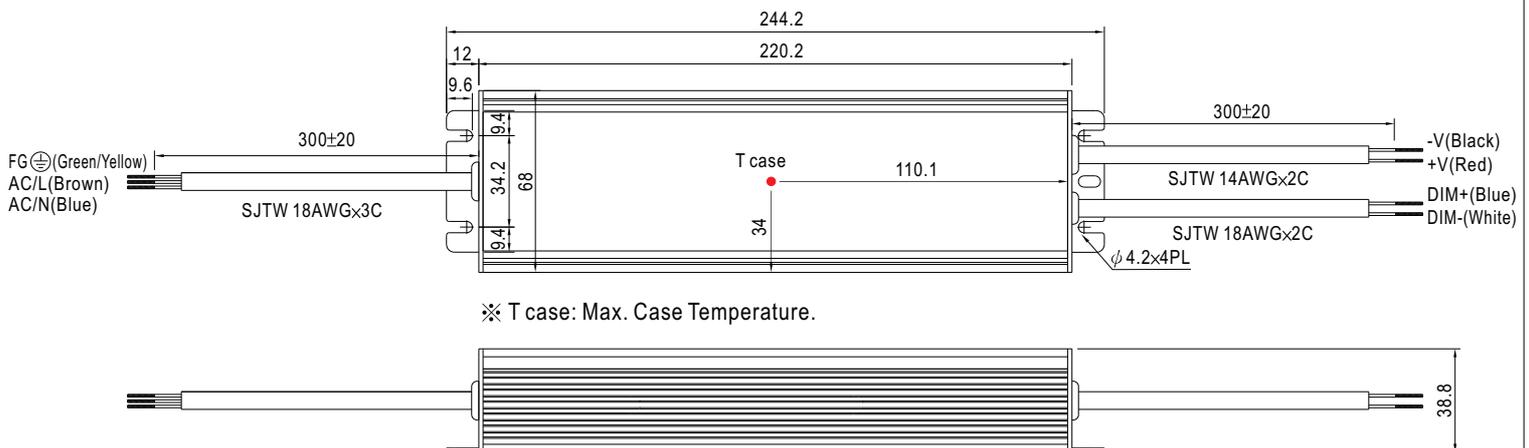
A Type:(HLG-240- _A)



※ T case: Max. Case Temperature.

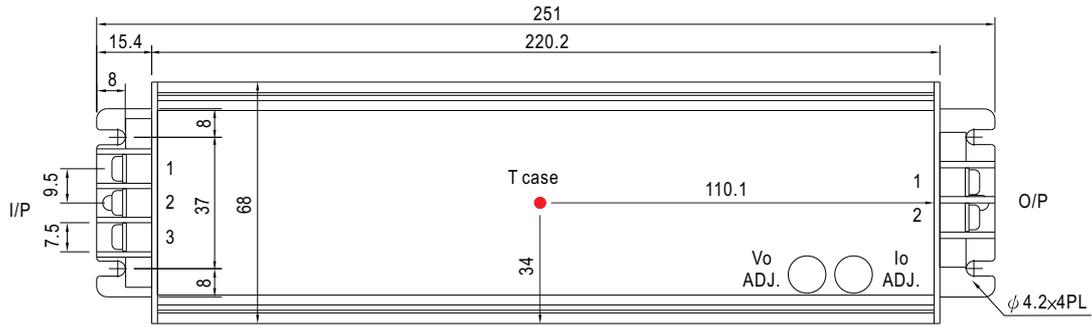
※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(HLG-240- _B)

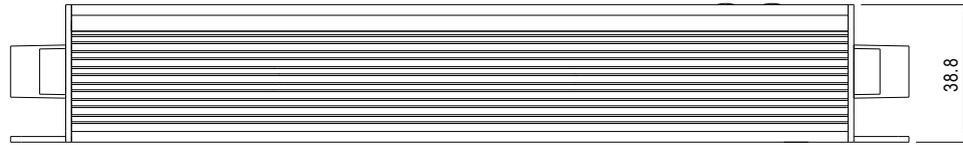


※ T case: Max. Case Temperature.

C Type:(HLG-240- C)



※ T case: Max. Case Temperature.



※ Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

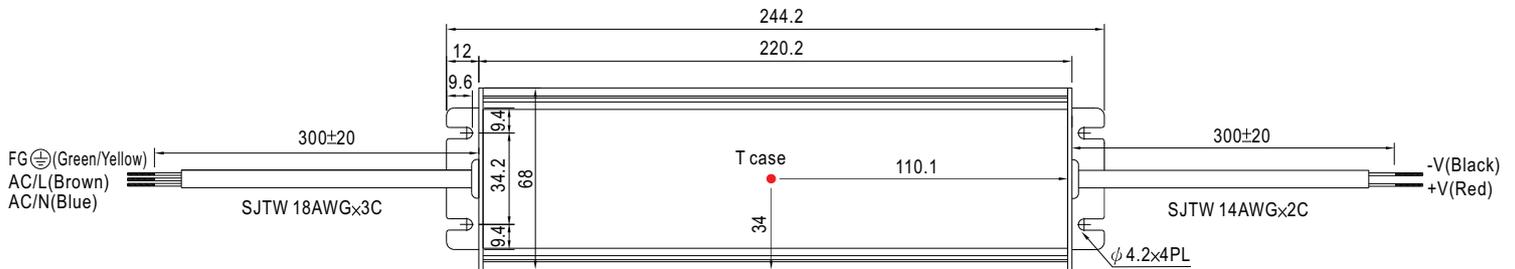
AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	FG \perp
2	AC/L
3	AC/N

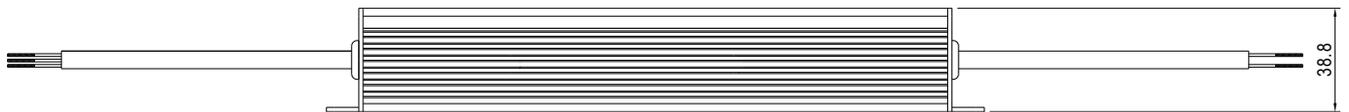
DC Output Terminal Pin No. Assignment

Pin No.	Assignment
1	-V
2	+V

D Type(option):(HLG-240- D)

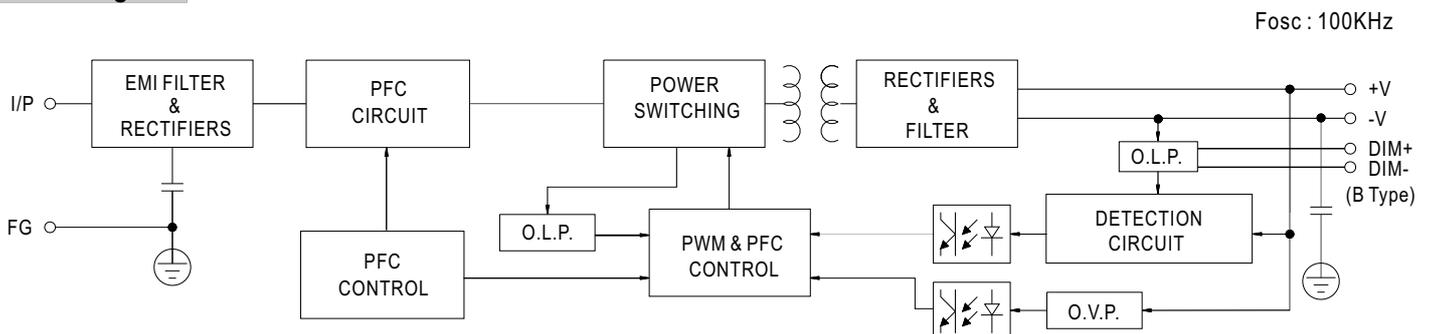


※ T case: Max. Case Temperature.

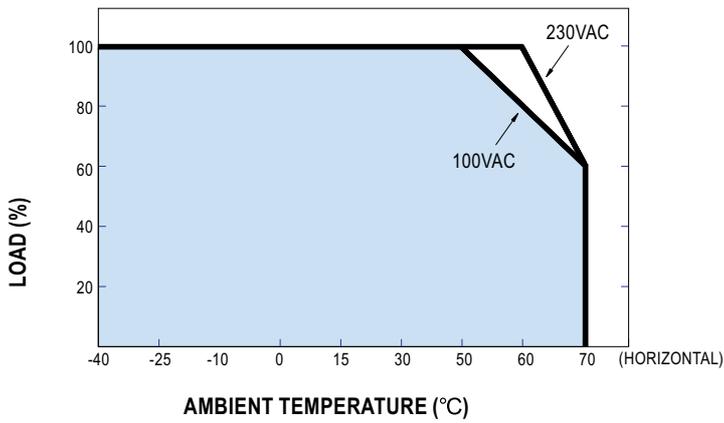


※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

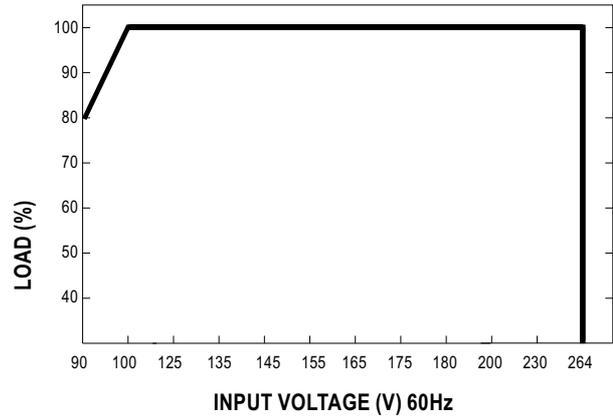
Block Diagram



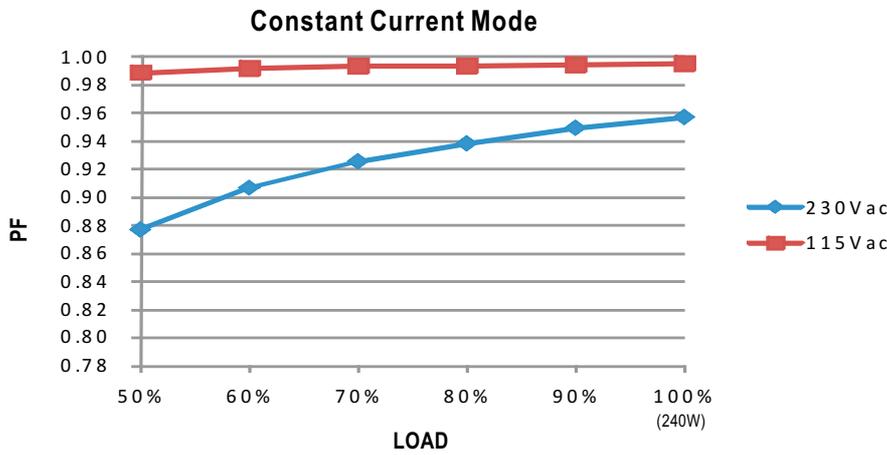
Derating Curve



Static Characteristics

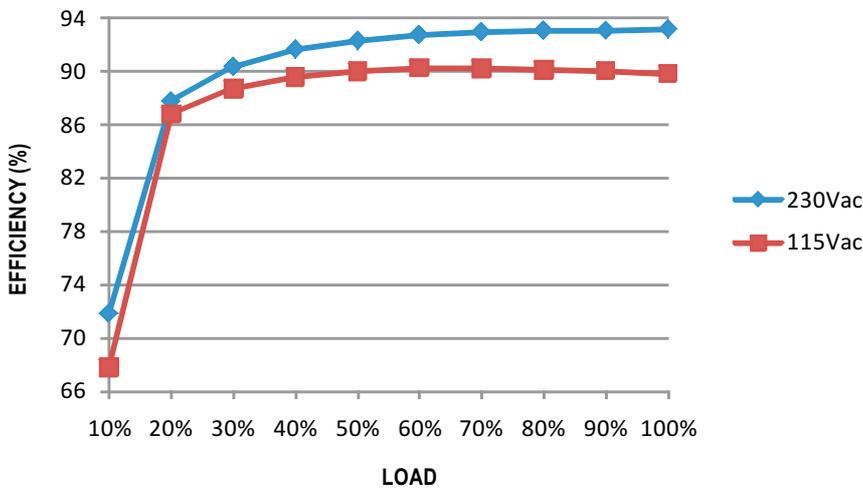


Power Factor Characteristic



EFFICIENCY vs LOAD (48V Model)

HLG-240 series possess superior working efficiency that up to 94% can be reached in field applications.

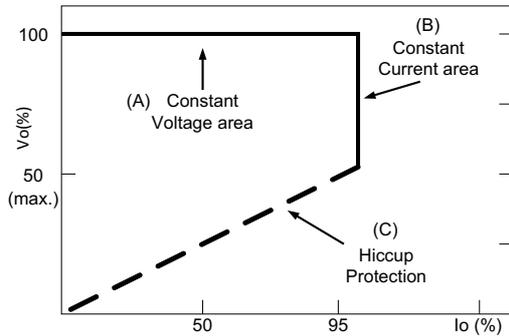


DRIVING METHODS OF LED MODULE

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

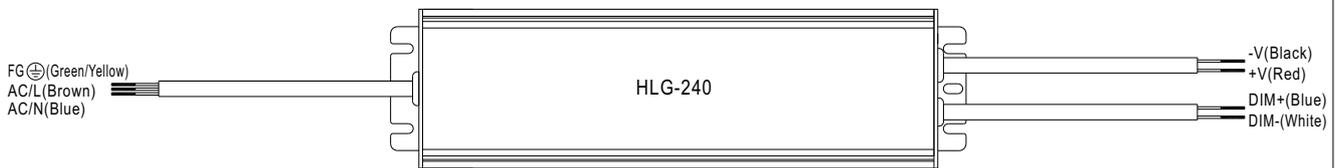
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B).



Typical LED power supply I-V curve

DIMMING OPERATION



※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	Multiple drivers (N=driver quantity for synchronized dimming operation)	10KΩ/N	20KΩ/N	30KΩ/N	40KΩ/N	50KΩ/N	60KΩ/N	70KΩ/N	80KΩ/N	90KΩ/N	100KΩ/N	-----
Percentage of rated current		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~105%

※ 1 ~ 10V dimming function for output current adjustment (Typical)

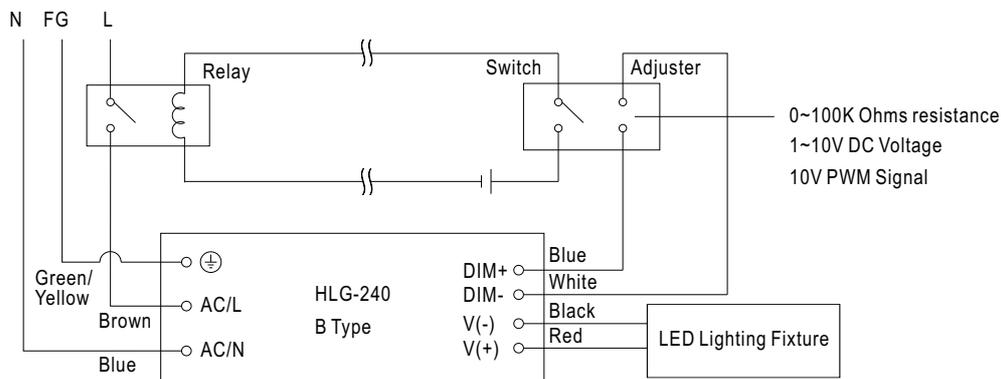
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~105%

※ 10V PWM signal for output current adjustment (Typical): Frequency range : 100Hz ~ 3KHz

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~105%

※ Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

Dimming connection diagram for turning the lighting fixture ON/OFF :



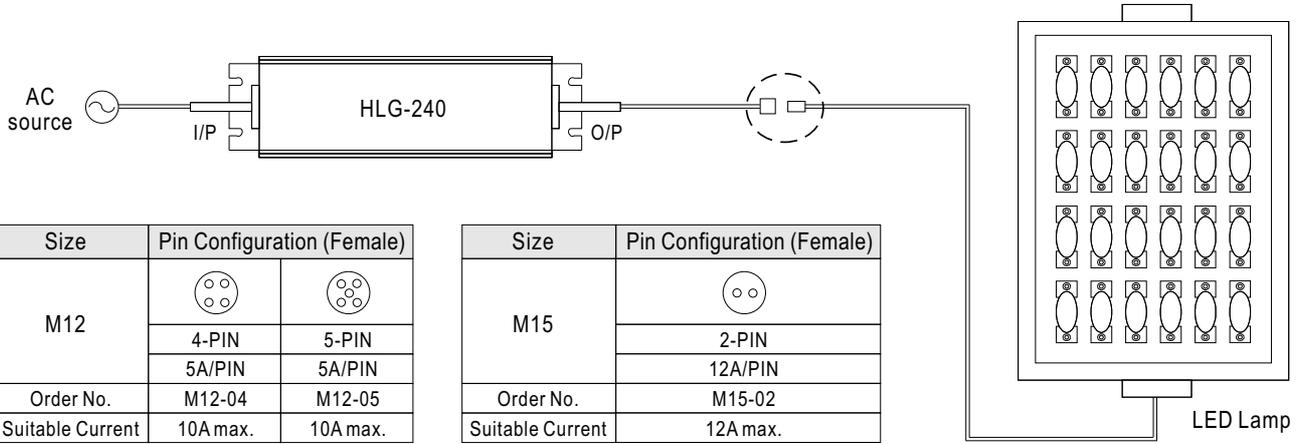
Using a switch and relay can turn ON/OFF the lighting fixture.

1. Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.
2. The LED lighting fixture can be turned ON/OFF by the switch.

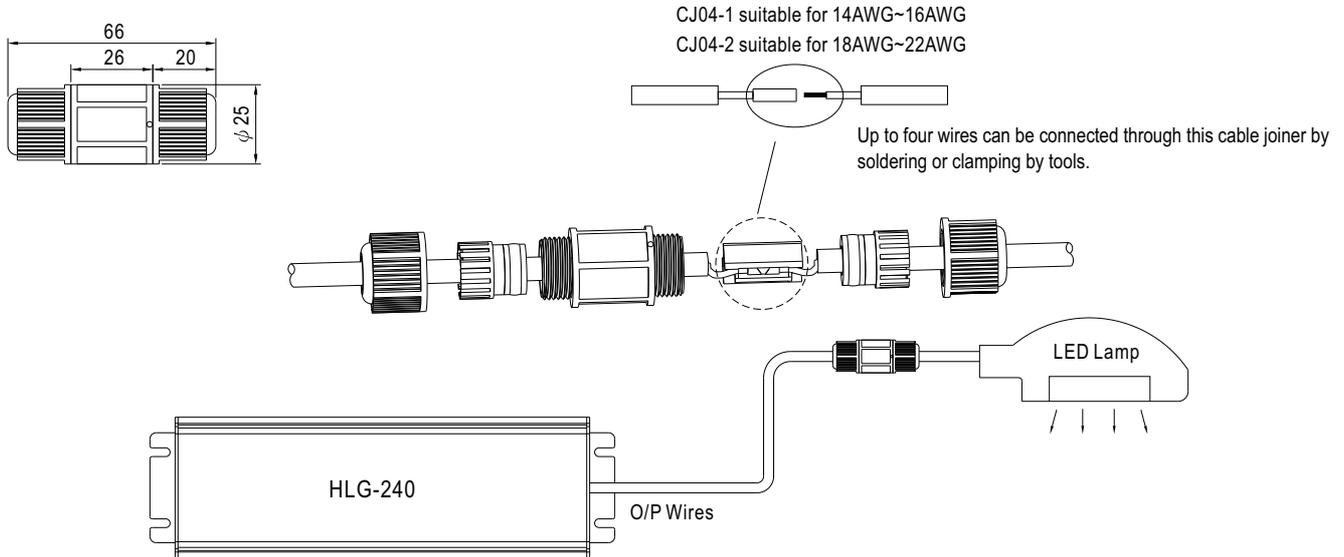
WATERPROOF CONNECTION

Waterproof connector

Waterproof connector can be assembled on the output cable of HLG-240 to operate in dry/wet/damp or outdoor environment.



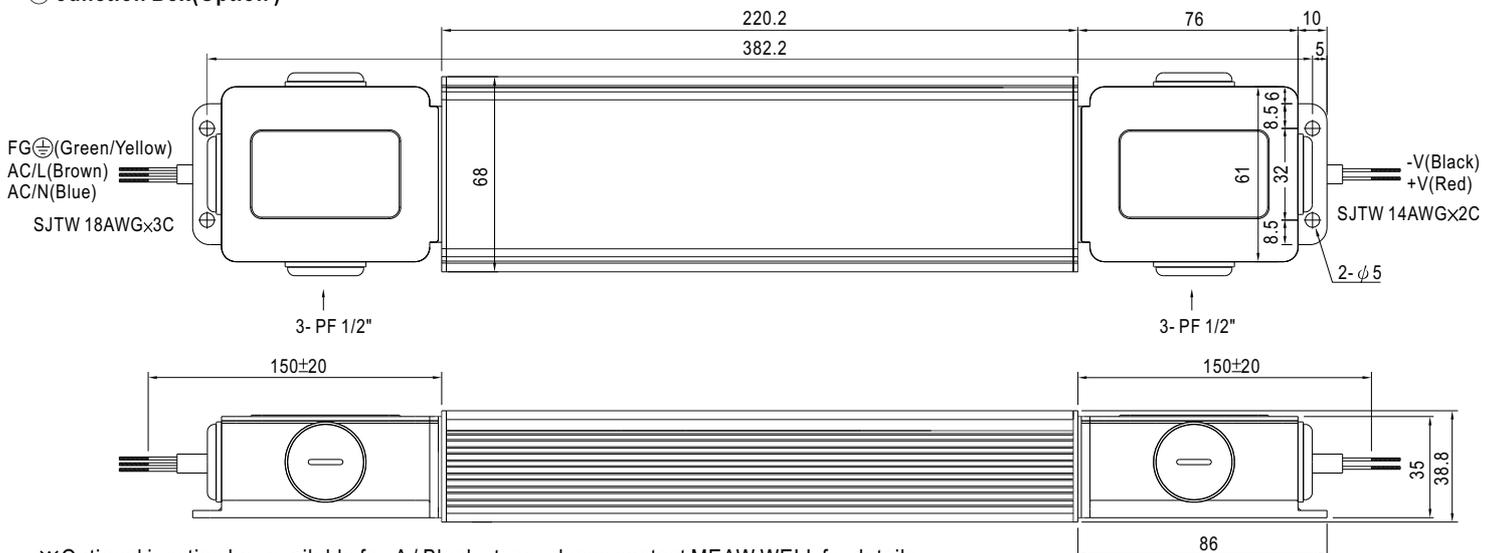
Cable Joiner



※CJ04 cable joiner can be purchased independently for user's own assembly.

MEAN WELL order No. : CJ04-1, CJ04-2.

Junction Box(Optional)



※Optional junction box available for A/ Blank - type, please contact MEAN WELL for details.

MLCA1232

MLCA2432



■ Features :

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 95%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet location
- 5 years warranty (Note.10)



HLG-320H-12 [A] Blank : IP67 rated. Cable for I/O connection.
 A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
 B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or PWM signal or resistance.
 C : Terminal block for I/O connection. Output voltage and constant current level can be adjusted through internal potentiometer.
 D (option) : IP67 rated. Timer dimming function, contact MEAN WELL for details.

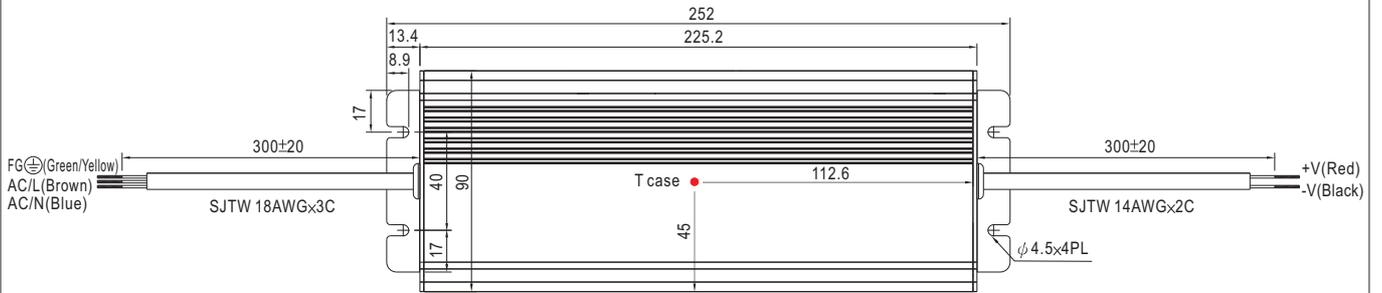
SPECIFICATION

MODEL	HLG-320H-12	HLG-320H-15	HLG-320H-20	HLG-320H-24	HLG-320H-30	HLG-320H-36	HLG-320H-42	HLG-320H-48	HLG-320H-54	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	CONSTANT CURRENT REGION Note.4	6~12V	7.5~15V	10~20V	12~24V	15~30V	18~36V	21~42V	24~48V	27~54V
	RATED CURRENT	22A	19A	15A	13.34A	10.7A	8.9A	7.65A	6.7A	5.95A
	RATED POWER	264W	285W	300W	320.16W	321W	321.4W	321.3W	321.6W	321.3W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE Note.6	10.8~13.5V	13.5~17V	17~22V	21~26V	26~32V	32~39V	38~45V	43~52V	49~58V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer A type only								
		11~22A	9.5~19A	7.5~15A	6.67~13.34A	5.35~10.7A	4.45~8.9A	3.8~7.65A	3.35~6.7A	2.97~5.95A
	VOLTAGE TOLERANCE Note.3	±3.0%	±2.0%	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
SETUP, RISE TIME Note.8	2500ms, 80ms at full load 230VAC /115VAC									
HOLD UP TIME (Typ.)	15ms at full load 230VAC /115VAC									
INPUT	VOLTAGE RANGE Note.5	90~305VAC		127~431VDC						
	FREQUENCY RANGE	47~63Hz								
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.94/277VAC at full load (Please refer to "Power Factor Characteristic" curve)								
	EFFICIENCY (Typ.) (230Vac)	91%	92.5%	93.5%	94%	94%	94.5%	95%	95%	95%
	EFFICIENCY (Typ.) (277Vac)	91.5%	93%	94%	94.5%	94.5%	95%	95%	95%	95%
	AC CURRENT (Typ.)	3.5A / 115VAC		1.65A / 230VAC		1.45A / 277VAC				
	INRUSH CURRENT(Typ.)	COLD START 75A/230VAC								
LEAKAGE CURRENT	<0.75mA / 277VAC									
PROTECTION	OVER CURRENT Note.4	95~108%								
		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	14~17V	17.5~21V	22.5~27V	27~33V	33~37V	40~46V	46.5~53V	53.5~60V	59~65V
	Protection type : Shut down and latch off o/p voltage, re-power on to recover									
OVER TEMPERATURE	100°C ±10°C (RTH2)									
	Protection type : Shut down and latch off o/p voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	-40~+70°C (Refer to "Derating Curve")								
	WORKING HUMIDITY	20~95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40~+80°C, 10~95% RH								
	TEMP. COEFFICIENT	±0.03%/°C (0~50°C)								
	VIBRATION	10~500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS Note.7	UL8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13 independent (except for HLG-320H C type), IP65 or IP67, J61347-1, J61347-2-13 approved ; design refer to UL60950-1, TUV EN60950-1								
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC		I/P-FG:2KVAC		O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH								
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥50% load) ; EN61000-3-3								
EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria B									
OTHERS	MTBF	157.1K hrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	252*90*43.8mm (L*W*H)								
	PACKING	1.88Kg; 8pcs/16Kg/0.92CUFT								
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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 static characteristics for more details. 6. Type A and type C only. 7. Safety and EMC design refer to EN60598-1, subject CNS15233, GB7000.1, FCC part18. 8. 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. 9. 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. 10. Refer to warranty statement. 									

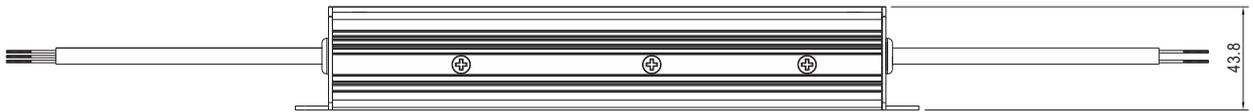
Mechanical Specification

Case No.202A Unit:mm

Blank:(HLG-320H)

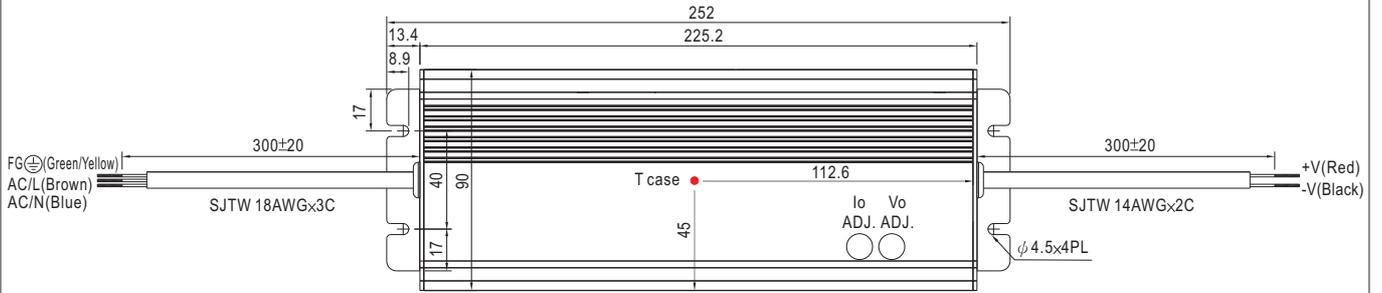


※ T case: Max. Case Temperature.

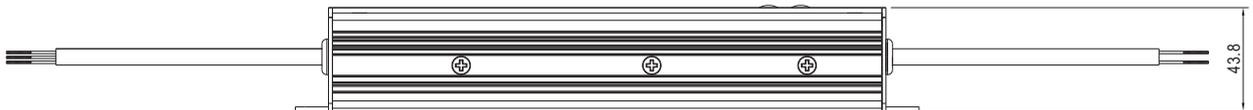


※IP67 rated. Cable for I/O connection.

A Type:(HLG-320H-A)

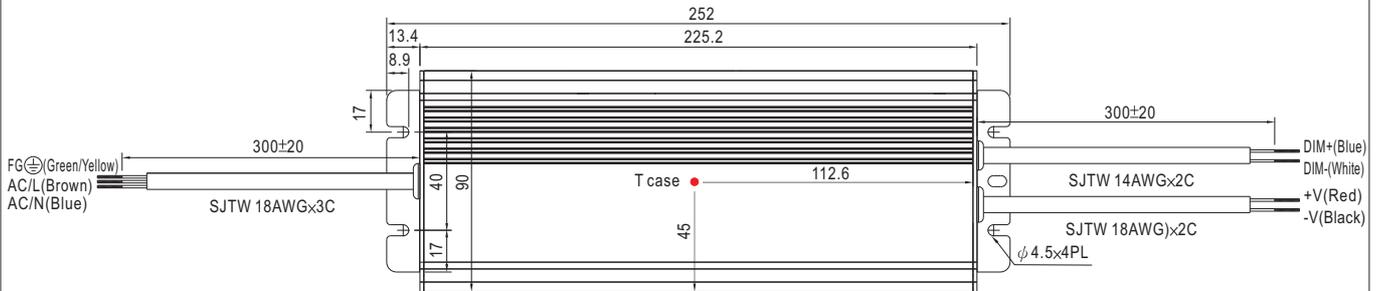


※ T case: Max. Case Temperature.



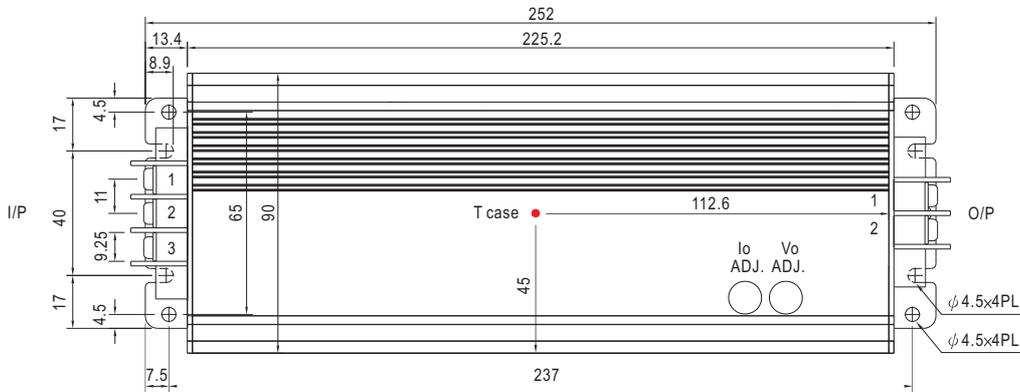
※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(HLG-320H-_B)



※ T case: Max. Case Temperature.

C Type:(HLG-320H-_C)



※ T case: Max. Case Temperature.

※ Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	FG \perp
2	AC/L
3	AC/N

DC Output Terminal Pin No. Assignment

Pin No.	Assignment
1	+V
2	-V

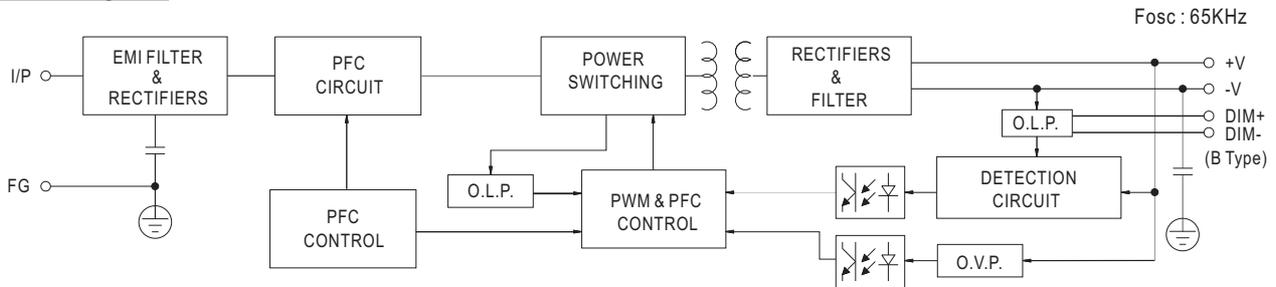
D Type(option):(HLG-320H_D)



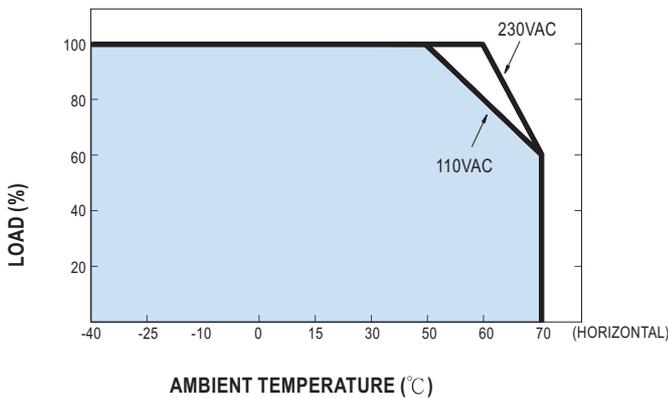
※ T case: Max. Case Temperature.

※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

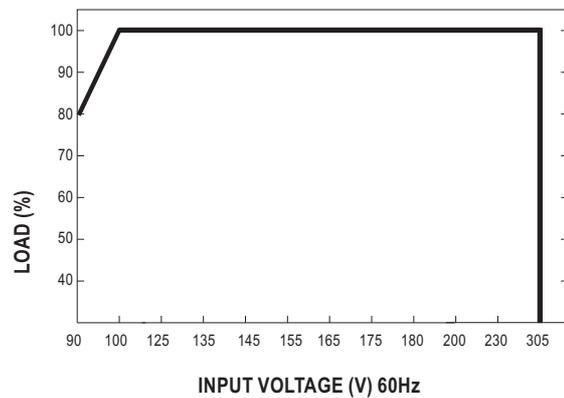
■ Block Diagram



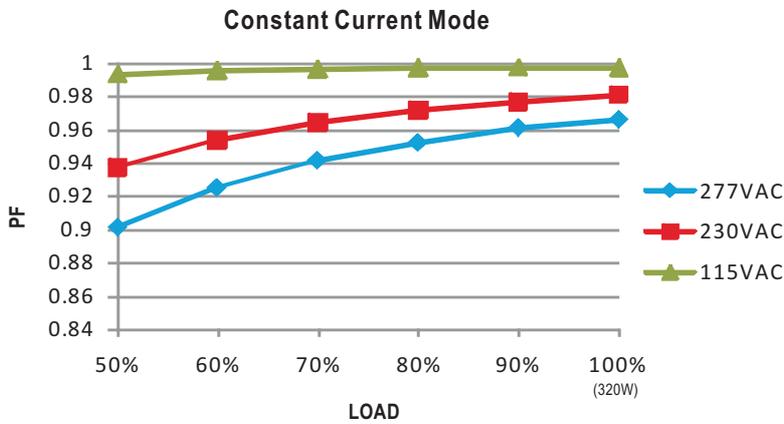
■ Derating Curve



■ Static Characteristics

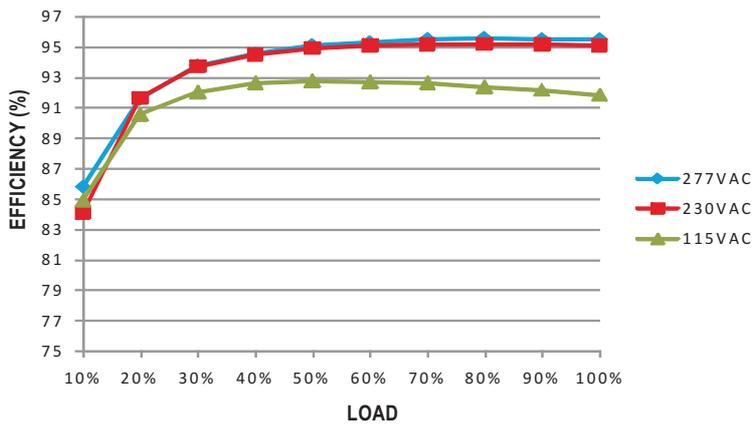


Power Factor Characteristic



EFFICIENCY vs LOAD (48V Model)

HLG-320H series possess superior working efficiency that up to 95% can be reached in field applications.

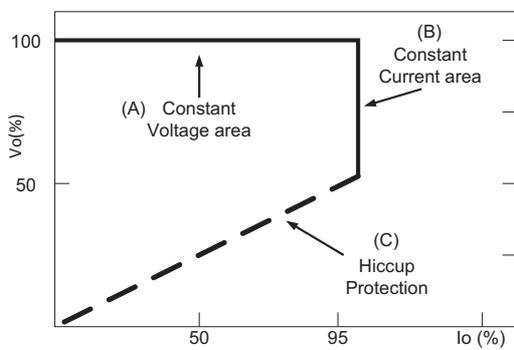


DRIVING METHODS OF LED MODULE

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

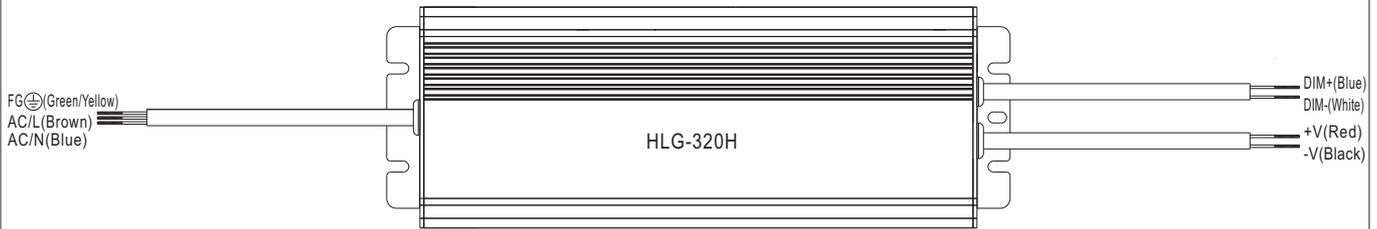
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B)).



Typical LED power supply I-V curve

■ DIMMING OPERATION (for B-type only)



- ※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.
- ※ Please DO NOT connect "DIM-" to "-V".
- ※ Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
		Multiple drivers (N=driver quantity for synchronized dimming operation)	10KΩ/N	20KΩ/N	30KΩ/N	40KΩ/N	50KΩ/N	60KΩ/N	70KΩ/N	80KΩ/N	90KΩ/N	100KΩ/N
Percentage of rated current		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

- ※ 1 ~ 10V dimming function for output current adjustment (Typical)

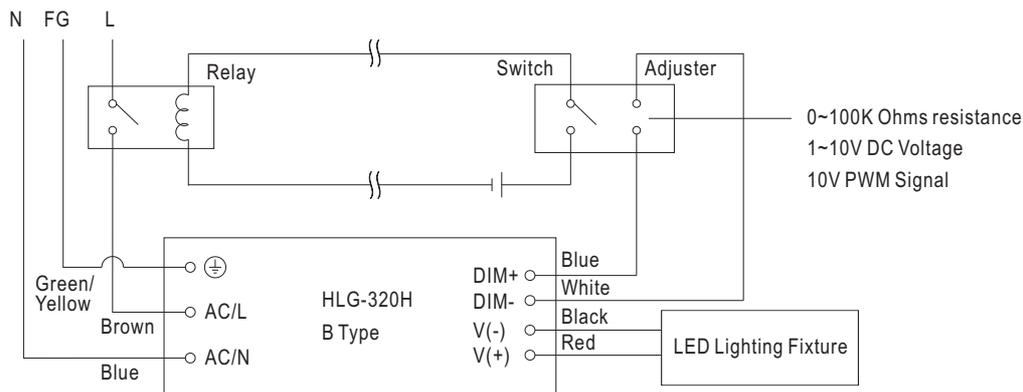
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

- ※ 10V PWM signal for output current adjustment (Typical): Frequency range : 100Hz ~ 3KHz

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

- ※ Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.
- ※ Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

Dimming connection diagram for turning the lighting fixture ON/OFF :



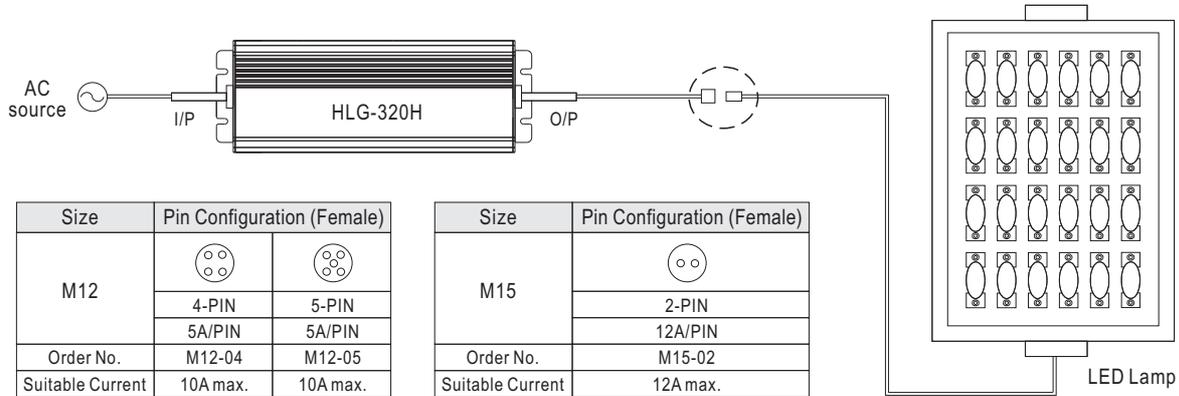
Using a switch and relay can turn ON/OFF the lighting fixture.

1. Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.
2. The LED lighting fixture can be turned ON/OFF by the switch.

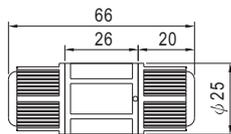
WATERPROOF CONNECTION

Waterproof connector

Waterproof connector can be assembled on the output cable of HLG-320H to operate in dry/wet/damp or outdoor environment.



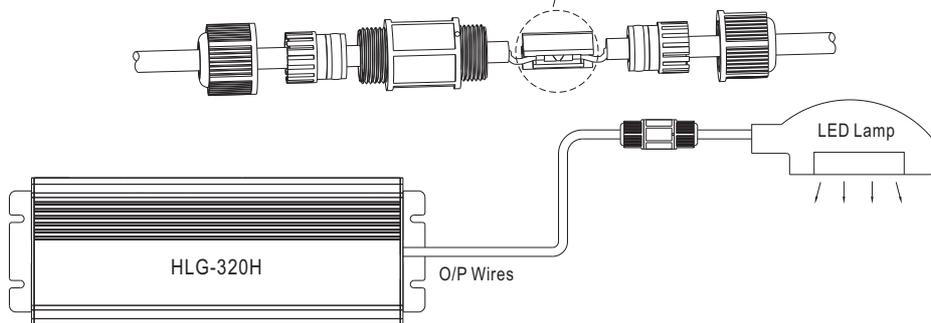
Cable Joiner



CJ04-1 suitable for 14AWG~16AWG
CJ04-2 suitable for 18AWG~22AWG

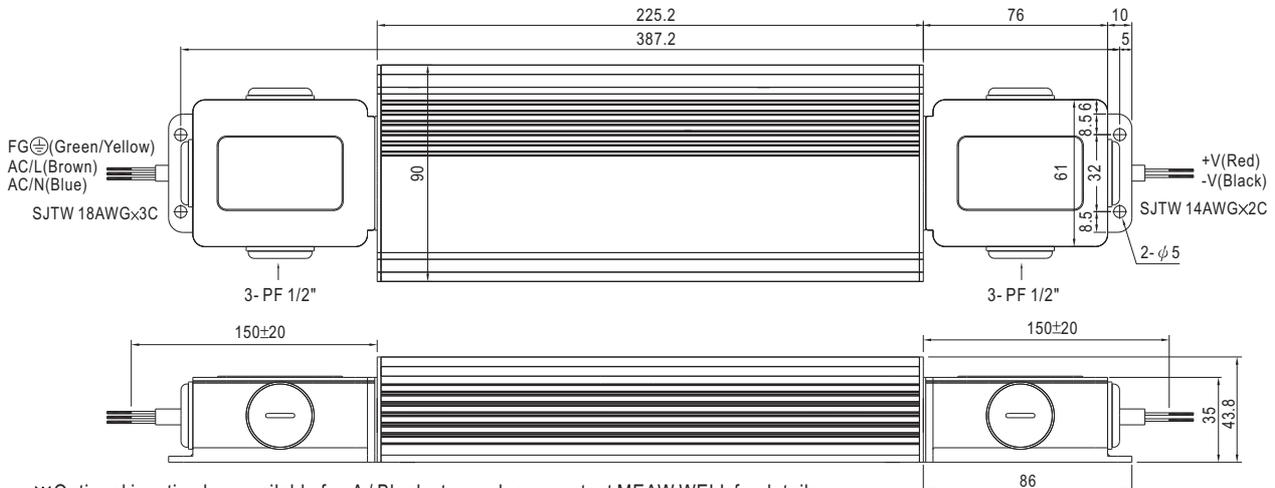


Up to four wires can be connected through this cable joiner by soldering or clamping by tools.



※CJ04 cable joiner can be purchased independently for user's own assembly.
MEAN WELL order No. : CJ04-1, CJ04-2.

Junction Box (Option)



※Optional junction box available for A / Blank - type, please contact MEAN WELL for details.