MEAN WELL

70W Single Output LED Power Supply HLG-60H-C series

■ Features :

- Constant current design
- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 91%
- Protections: Short circuit / Over voltage / Over temperature
- Cooling by free air convection
- Output current adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Three in one dimming function (1~10Vdc or 10V PWM signal or resistance)
- Suitable for dry / damp / wet locations
- 5 years warranty (Note.5)

(HLG-60H-C700 only) F 110 M M SELV (HLG-60H-C700 only) IP65 IP67 CBCE

HLG-60H-C350[A] A : IP65 rated. 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.
D (option) : IP67 rated. Timer dimming function, contact MEAN WELL for details.

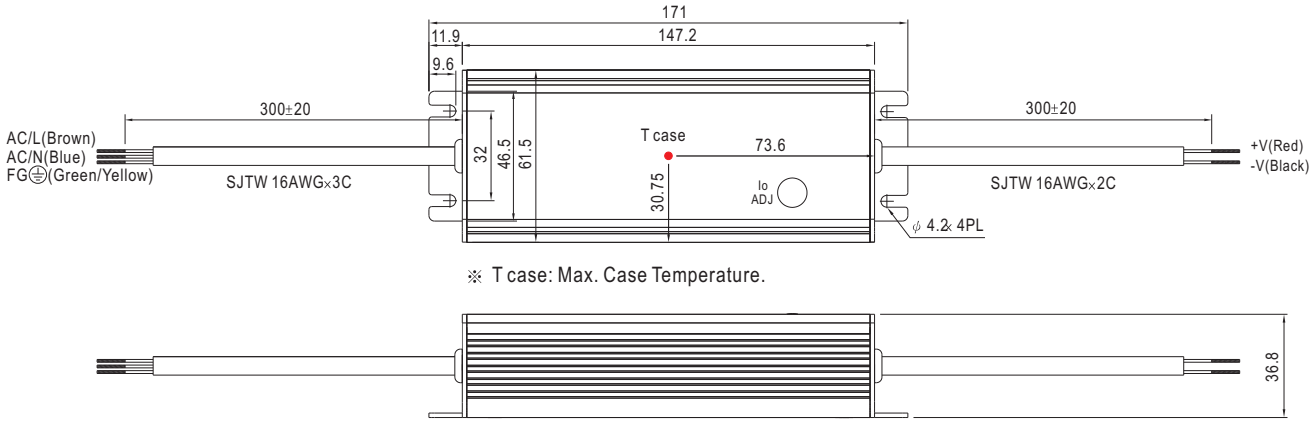
SPECIFICATION

MODEL		HLG-60H-C350□	HLG-60H-C700□
OUTPUT	RATED CURRENT	350mA	700mA
	CURRENT ACCURACY	±5.0%	
	CONSTANT CURRENT REGION Note.6	100 ~ 200V	50 ~ 100V
	RATED POWER	70W	70W
	RIPPLE CURRENT	±5%	
	RIPPLE & NOISE Note.7	1Vp-p	0.5Vp-p
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer A type only	
		210 ~ 350mA	420 ~ 700mA
	LINE REGULATION	±1%	±1%
	SETUP, RISE TIME	1500ms, 80ms / 115VAC at full load 1000ms, 80ms / 230VAC at full load	
	HOLD UP TIME (Typ.)	16ms at full load 230VAC / 115VAC	
INPUT	VOLTAGE RANGE Note.2	90 ~ 305VAC 127VDC ~ 431VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.96/230VAC, PF>0.94/277VAC at full load (Please refer to "Power Factor Characteristic" curve)	
	TOTAL HARMONIC DISTORTION	Total harmonic distortion will be lower than 20% when output loading is 75% or higher	
	EFFICIENCY (Typ.)	91%	90.5%
	AC CURRENT (Typ.)	0.69A / 115VAC 0.35A / 230VAC 0.29A / 277VAC	
	INRUSH CURRENT (Typ.)	COLD START 70A / 230VAC	
	LEAKAGE CURRENT	<0.75mA / 277VAC	
PROTECTION	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed	
	OVER VOLTAGE	230 ~ 250V	120 ~ 140V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery	
	OVER TEMPERATURE	85℃ ± 10℃ (RTH2)	
		Protection type : Shut down o/p voltage, re-power on to recover	
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")	
	WORKING HUMIDITY	10 ~ 95% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃ , 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)	
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes	
SAFETY & EMC	SAFETY STANDARDS Note.3	UL8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13 independent, IP65 or IP67 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℃ / 70% RH	
	EMC EMISSION	Compliance to EN55015, EN61000-3-2 Class C (≧ 60% load) ; EN61000-3-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, heavy industry level (surge L,N-FG: 4KV), criteria A	
OTHERS	MTBF	338K hrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	171*61.5*36.8 mm (L*W*H)	
	PACKING	0.73Kg; 20pcs/15.6Kg/0.9CUFT	
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Derating may be needed under low input voltages. Please check the static characteristics for more details. 3. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1. 4. 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. 5. Refer to warranty statement. 6. 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. 7. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 2.2uf parallel capacitor.	

■ Mechanical Specification

Case No.957 Unit:mm

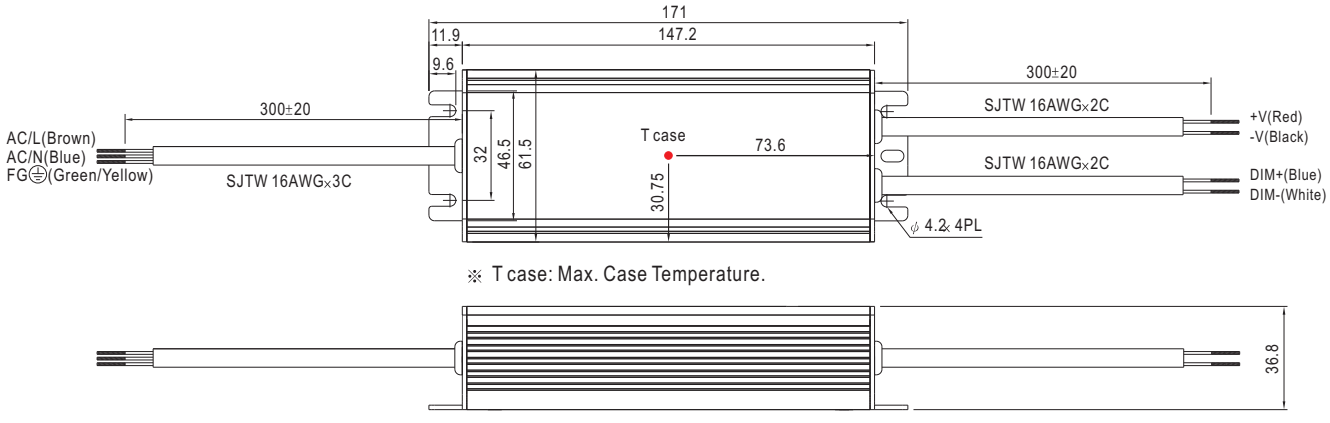
A Type:(HLG-60H-C_A)



※ T case: Max. Case Temperature.

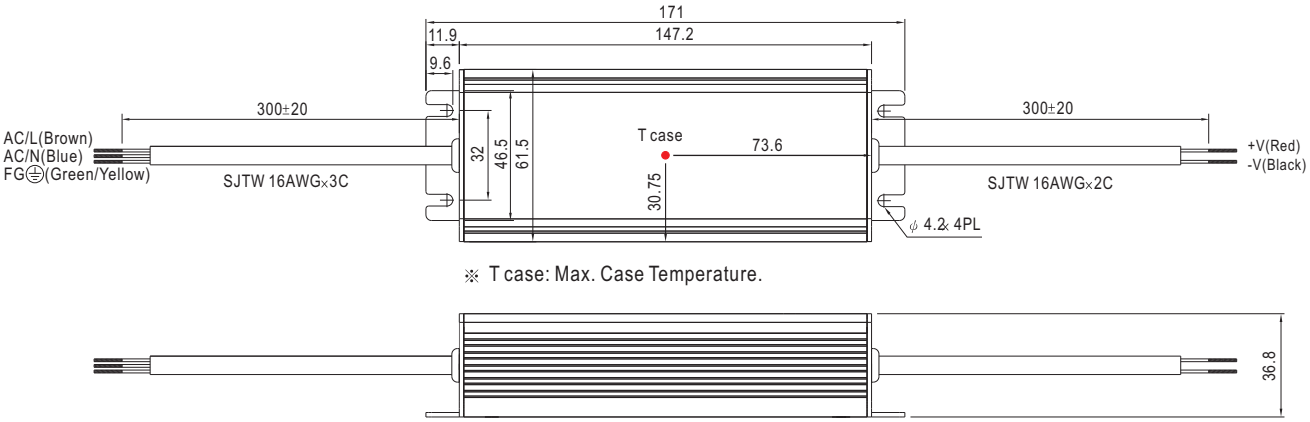
※ IP65 rated. Constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(HLG-60H-C_B)



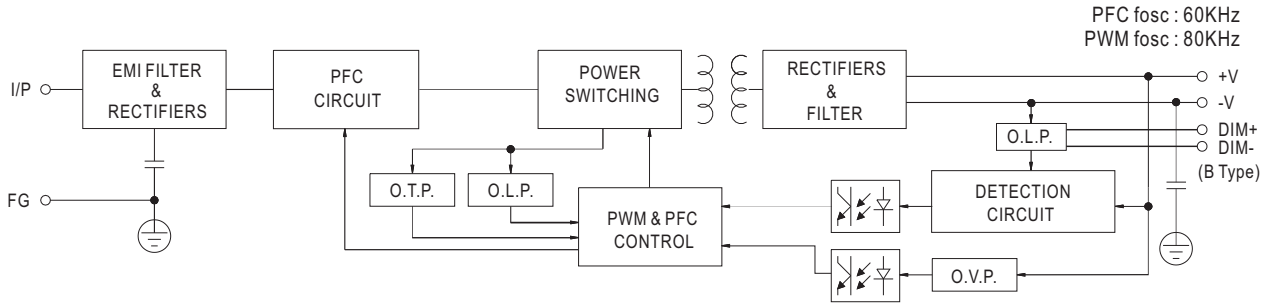
※ T case: Max. Case Temperature.

D Type:(HLG-60H-C_D)

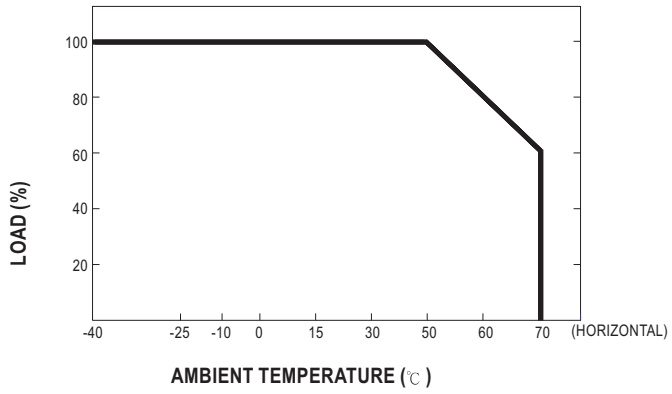


※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

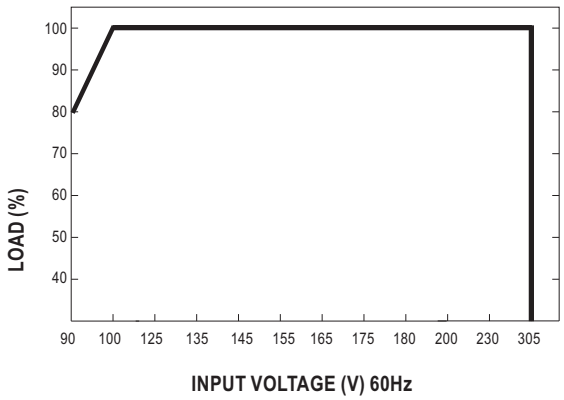
■ Block Diagram



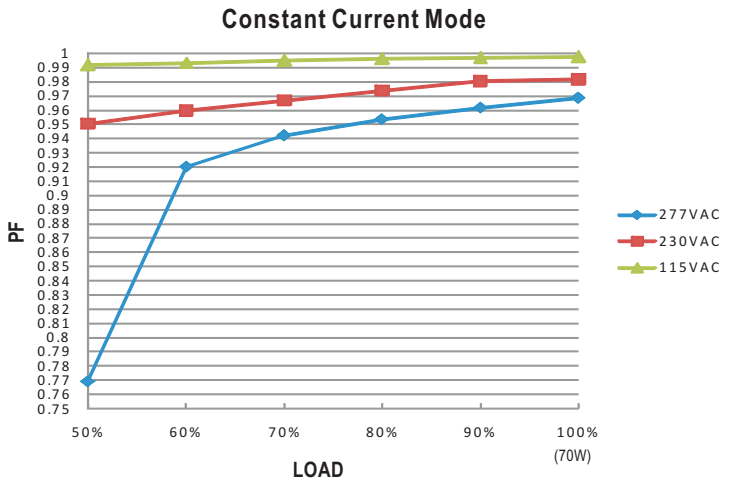
■ Derating Curve



■ Static Characteristics

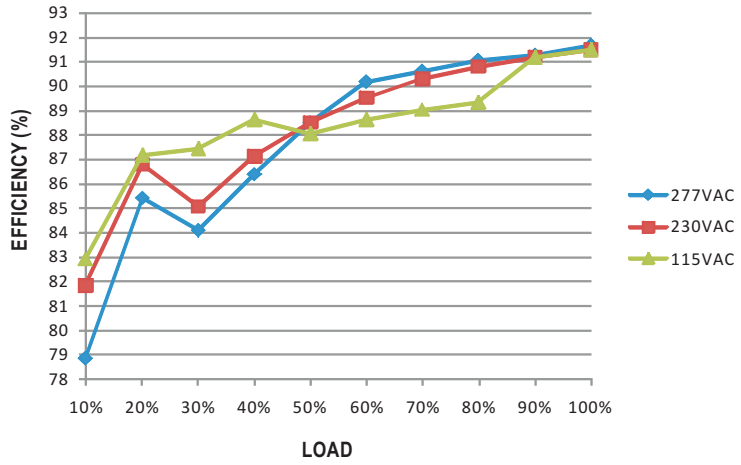


■ Power Factor Characteristic



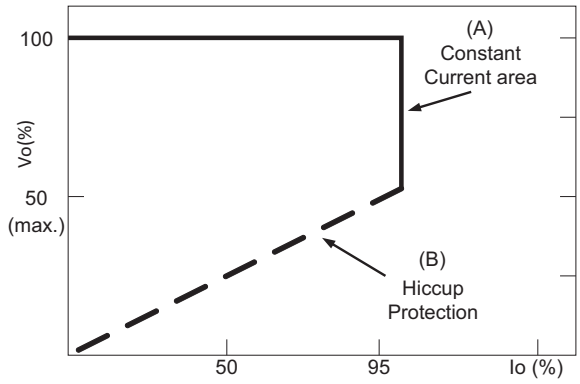
■ EFFICIENCY vs LOAD (HLG-60H-C700A Model)

HLG-60H-C series possess superior working efficiency that up to 91% can be reached in field applications.



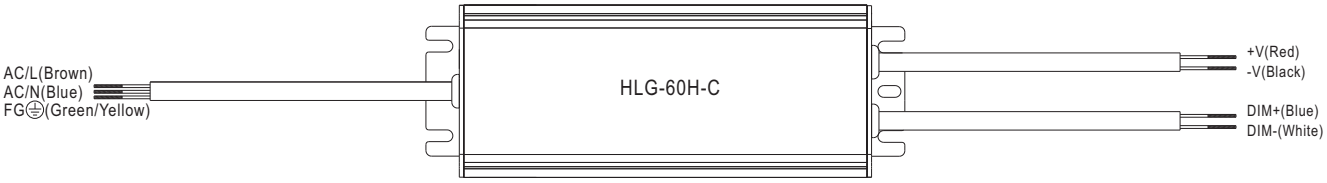
■ DRIVING METHODS OF LED MODULE

A typical LED power supply may work in "constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CC characteristic can be operated at CC mode (direct drive, at area (A)).



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%

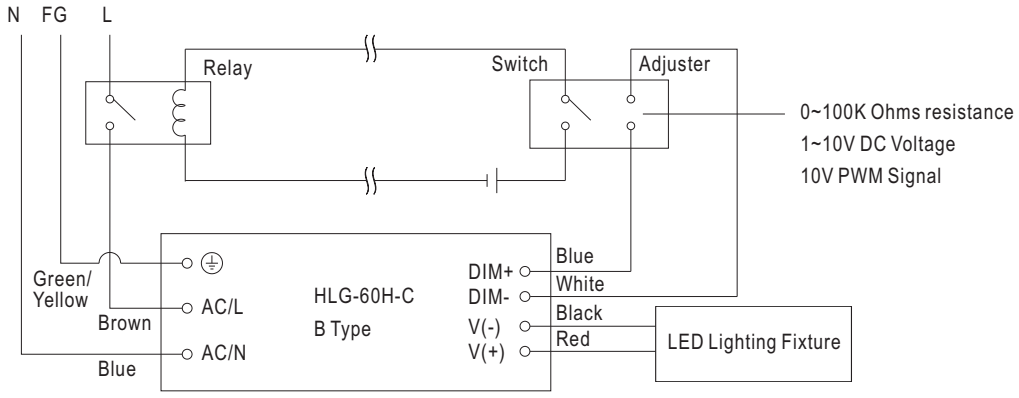
※ 10V PWM signal for output current adjustment (Typical): Frequency range :100Hz ~ 3KHz

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.

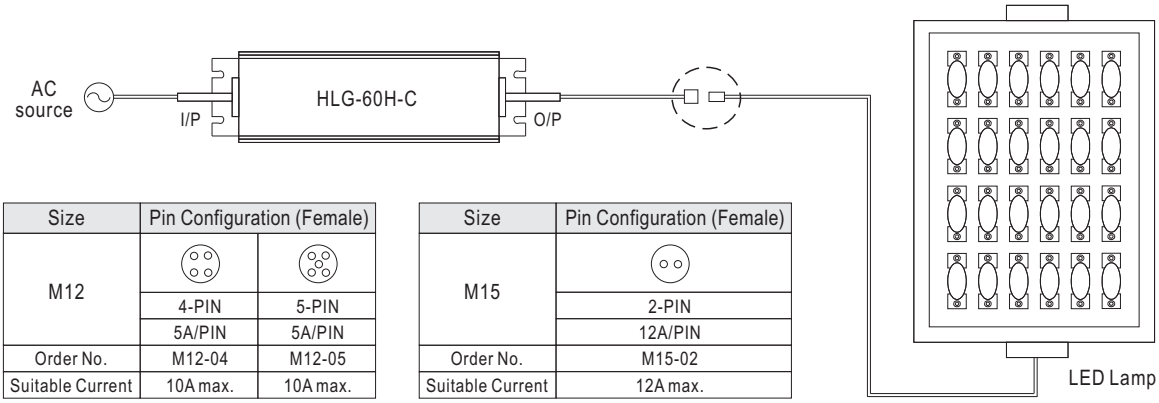
1.Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.

2.The LED lighting fixture can be turned ON/OFF by the switch.

■ WATERPROOF CONNECTION

◎ Waterproof connector

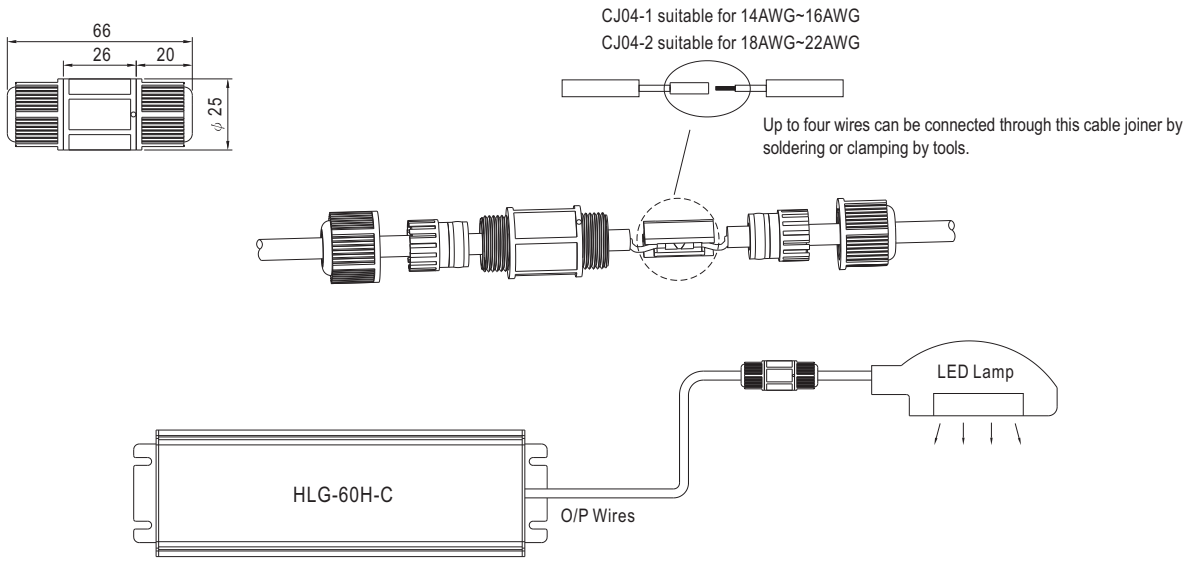
Waterproof connector can be assembled on the output cable of HLG-60H-C to operate in dry/wet/damp or outdoor environment.



Size	Pin Configuration (Female)	
M12		
	4-PIN	5-PIN
	5A/PIN	5A/PIN
Order No.	M12-04	M12-05
Suitable Current	10A max.	10A max.

Size	Pin Configuration (Female)
M15	
	2-PIN
	12A/PIN
Order No.	M15-02
Suitable Current	12A max.

◎ **Cable Joiner**



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

Test Report: HLG-60H-C350

70W Single Output LED Power Supply

■ DESIGN VERIFY TEST

Output Function Test
Input Function Test
Protection Function Test
Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test
E.M.C. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

■ ESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1：1 Vp-p (Max)	I/P： 230VAC O/P：FULL LOAD Ta：25℃	V1： 113 mVp-p (Max)	P
2	CURRENT ACCURACY	±5%	I/P： 230VAC O/P：CV MODE : 100V~200V Ta：25℃	0.14 %	P
3	RIPPLE CURRENT	±5%	I/P： 230VAC O/P：LED LOAD : 198V Ta：25℃	± 1.6 %	P
4	OUTPUT CURRENT ADJUST RANGE	CH1 ：210mA~ 350m A	I/P： 230VAC I/P： 115 VAC O/P：CV MODE : 284V Ta：25℃	0.196 A~ 0.394 A/ 230VAC 0.196 A~ 0.394 A/ 115 VAC	P
5	LINE REGULATION	V1: - 1% ~ 1 % (Max)	I/P:100 VAC ~305 VAC O/P:FULL LOAD Ta:25℃	V1:0.07%~-0.07%	P
6	SET UP TIME	115 VAC： 1500 ms (Max) 230VAC： 1000 ms(Max)	I/P： 115 VAC I/P： 230 VAC O/P：FULL LOAD Ta：25℃	115 VAC/ 773 ms 230VAC/ 480 ms	P
7	RISE TIME	115 VAC： 80 ms (Max) 230VAC： 80 ms (Max)	I/P： 115 VAC I/P： 230 VAC O/P：FULL LOAD Ta：25℃	115 VAC/ 24.8 ms 230VAC/ 22.4 ms	P
8	HOLD UP TIME	115 VAC： 16 ms (TYP) 230VAC： 16 ms (TYP)	I/P： 115 VAC I/P： 230 VAC O/P：FULL LOAD Ta：25℃	115 VAC/ 61.6 ms 230VAC/ 75.2 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	TEST： <5 %	P
10	DYNAMIC LOAD	V1： 20 Vp-p	I/P： 230 VAC (1).O/P：FULL /Min LOAD 90%DUTY/ 1KHZ (2).O/P：FULL /Min LOAD 90%DUTY/ 3KHZ (3).O/P：FULL /Min LOAD 90%DUTY/ 5KHZ (4).O/P：FULL /Min LOAD 50%DUTY/ 120HZ Ta：25℃	(1)428 mVp-p (2)212 mVp-p (3)196 mVp-p (4)1860 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~305 VAC	I/P：TESTING O/P：FULL LOAD Ta：25℃	67.7 V~305V	P
			I/P： LOW-LINE-3V=87V HIGH-LINE+10V=315V O/P：FULL/MIN LOAD ON： 30 Sec . OFF： 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST： OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P：90VAC ~ 305VAC O/P：FULL~MIN LOAD Ta：25℃	TEST： OK	P
3	POWER FACTOR	0.98 / 115VAC(TYP) 0.96 /230 VAC(TYP) 0.94 /277 VAC(TYP)	I/P： 115VAC I/P： 230VAC I/P： 277VAC O/P：FULL LOAD Ta：25℃	PF= 0.998 / 115VAC PF= 0.981 / 230VAC PF= 0.963 / 277VAC	P
4	EFFICIENCY	91 % (TYP)	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	92.09 %	P
5	INPUT CURRENT	277V/ 0.29 A (TYP) 230V/ 0.35 A (TYP) 115V/ 0.69 A (TYP)	I/P： 277 VAC I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	I = 0.285 A/ 277 VAC I = 0.338 A/ 230 VAC I = 0.68 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 70 A (TYP) COLD START	I/P： 115VAC O/P：FULL LOAD Ta：25℃	I = 48 A/ 230VAC	P
7	LEAKAGE CURRENT	< 0.75 mA / 277 VAC	I/P： 277 VAC O/P：Min LOAD Ta：25℃	L-FG： 0.38 mA N-FG： 0.30 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER VOLTAGE PROTECTION	CH1：220 V ~ 240 V	I/P： 115 VAC I/P： 230 VAC O/P：MIN LOAD Ta：25℃	242.38 V/ 115VAC 242.58 V/ 230 VAC Shut down o/p voltage with auto-recovery or re-power on to recovery	P
2	OVER TEMPERATURE PROTECTION	SPEC： RTH2： 85 ±10℃ O.T.P. NO DAMAGE	I/P： 230 VAC O/P：FULL LOAD	O.T.P. Active Shut down o/p voltage, re-power on to recovery	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P： 305 VAC O/P：FULL LOAD Ta：25℃	NO DAMAGE Hiccup mode, recovers automatically after fault condition is removed	P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q3 Rated： 2SK3799 8A/900V	I/P：High-Line +3V = 308V O/P： (1)Full Load Turn on (2) Output Short (3)Full load continue Ta：25℃	(1) 812 V (2) 552 V (3) 800 V	P
2	Diode Peak Voltage	D100 Rated： 3A/600V 30PFB60	I/P：High-Line +3V = 308 V O/P： (1)Full Load Turn on (2)Output Short (3)Full load continue Ta：25℃	(1) 576 V (2) 464 V (3) 552 V	P
4	Input Capacitor Voltage	C5 Rated： 47u/450V 10Kh 16*25 CST	I/P：High-Line +3V = 308V O/P： (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta：25℃	(1) 450 V (2) 428 V (3) 440 V	P
5	Control IC Voltage Test	U1 Rated： PFC FAN6921MR 11V~30V	I/P：High-Line +3V = 308 V O/P： (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta：25℃	(1) 26 V (2) 27.6 V (3) 24.4 V	P
6	Power Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated： TK10A60D 10A/600V	I/P：High-Line +3V = 308V O/P： (1)Full Load Turn on (2) Output Short (3)Full load continue Ta：25℃	(1) 460 V (2) 454 V (3) 450 V	P

■ SAFETY & E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P： 3.75 KVAC/min I/P-FG： 1.88 KVAC/min O/P-FG： 0.5 KVAC/min	I/P-O/P： 4 KVAC/min I/P-FG： 2.256 KVAC/min O/P-FG： 0.6 KVAC/min Ta：25℃	I/P-O/P： 3.23 mA I/P-FG： 2.454 mA O/P-FG： 2.124 mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P：500VDC>100MΩ I/P-FG： 500VDC>100MΩ O/P-FG：500VDC>100MΩ	I/P-O/P： 500 VDC I/P-FG： 500 VDC O/P-FG： 500 VDC Ta：25℃/70%RH	I/P-O/P： 30 GΩ I/P-FG： 30 GΩ O/P-FG： 30 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta：25℃ / 70%RH	14 mΩ	P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS C	I/P: 230VAC/60HZ O/P:100/60%ELECTRONIC LOAD O/P:100%/60% LED LOAD Ta:25℃	PASS	P
2	CONDUCTION	EN55015 CLASS B	I/P: 230VAC (50HZ) O/P:FULL/50% LOAD Ta:25℃	PASS Test by certified Lab	P
3	RADIATION	EN55015 CLASS B	I/P: 230/230 VAC (50HZ) O/P:FULL LOAD Ta:25℃	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 INDUSTRY AIR:8KV / Contact:4KV	I/P:230/230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	P
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230/230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	P
6	SURGE	IEC61000-4-5 INDUSTRY L-N :2KV L,N-PE:4KV	I/P: 230/230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	P
7	Test by certified Lab & Test Report Prepare				

■ RELIABILITY TEST

ENVIRONMENT TEST

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECIFICATION</th><th>TEST CONDITION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">MODEL：HLG-60H-C700
1. ROOM AMBIENT　BURN-IN：18 HRS
I/P： 230VAC　O/P： FULL LOAD　Ta= 28.4 ℃
2. HIGH AMBIENT　BURN-IN：0.5 HRS
I/P： 230VAC　O/P： FULL LOAD　Ta= 53.7　℃

<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta=28.4 ℃</th><th>HIGH AMBIENT Ta=53.7 ℃</th></tr>
<tr><td>1</td><td>LF1</td><td>TR732-R5</td><td>48.2℃</td><td>67.2℃</td></tr>
<tr><td>2</td><td>LF2</td><td>LF855</td><td>51.0℃</td><td>69.9℃</td></tr>
<tr><td>3</td><td>BD1</td><td>4A/800V　SILICON UD4KB80</td><td>52.3℃</td><td>71.4℃</td></tr>
<tr><td>4</td><td>L1</td><td>TR991-R1</td><td>52.8℃</td><td>71.6℃</td></tr>
<tr><td>5</td><td>L3</td><td>TF2442</td><td>53.4℃</td><td>72.3℃</td></tr>
<tr><td>6</td><td>C11</td><td>474/450V 10% P=10 MEX</td><td>52.8℃</td><td>71.8℃</td></tr>
<tr><td>7</td><td>D3</td><td>2A/800V GP20K T-52mm</td><td>54.2℃</td><td>73.0℃</td></tr>
<tr><td>8</td><td>D1</td><td>MUR460 4A/600V</td><td>54.6℃</td><td>73.6℃</td></tr>
<tr><td>9</td><td>C5</td><td>47u/450V 10Kh -40~105℃ 16*25 CST</td><td>53.2℃</td><td>72.0℃</td></tr>
<tr><td>10</td><td>D2</td><td>2A/800V GP20K T-52mm</td><td>61.6℃</td><td>81.2℃</td></tr>
<tr><td>11</td><td>Q3</td><td>2SK3799 8A/900V TO220F</td><td>54.0℃</td><td>73.1℃</td></tr>
<tr><td>12</td><td>Q1</td><td>TK10A60D 10A/600V TO220F</td><td>52.5℃</td><td>71.6℃</td></tr>
<tr><td>13</td><td>U1</td><td>FAN6921MR SOP</td><td>57.0℃</td><td>76.2℃</td></tr>
<tr><td>14</td><td>C18</td><td>47u/50V UL10Kh 6.3*11 YXM</td><td>56.7℃</td><td>75.3℃</td></tr>
<tr><td>15</td><td>C16</td><td>22u/50V UL10Kh 5*11 YXM</td><td>53.7℃</td><td>72.4℃</td></tr>
<tr><td>16</td><td>RTH2</td><td>100KΩ 3Φ TTC3A104F4193EY 1%</td><td>52.4℃</td><td>71.3℃</td></tr>
<tr><td>17</td><td>T1</td><td>TF2443-R1</td><td>64.0℃</td><td>82.6℃</td></tr>
<tr><td>18</td><td>D100</td><td>31DF4 3A/400V DO-201AB</td><td>56.8℃</td><td>75.6℃</td></tr>
<tr><td>19</td><td>C201</td><td>47u/50V UL10Kh 6.3*11 YXM</td><td>56.3℃</td><td>74.8℃</td></tr>
<tr><td>20</td><td>C203</td><td>22u/50V UL10Kh 5*11 YXM</td><td>54.1℃</td><td>72.8℃</td></tr>
<tr><td>21</td><td>C105</td><td>56u/160V 105℃ 10*20 KXJ</td><td>57.1℃</td><td>75.7℃</td></tr>
<tr><td>22</td><td>LF100</td><td>TR1020-R1</td><td>52.0℃</td><td>71.7℃</td></tr>
<tr><td>23</td><td>C111</td><td>56u/160V 105℃ 10*20 KXJ</td><td>54.0℃</td><td>72.9℃</td></tr>
</table></td><td>P</td></tr>
<tr><td>2</td><td>OVER LOAD BURN-IN TEST</td><td>NO DAMAGE
1 HOUR (MIN)</td><td>I/P： 230 VAC
O/P：99% LOAD
Ta：25℃</td><td>TEST：OK</td><td>P</td></tr>
<tr><td>3</td><td>LOW TEMPERATURE
TURN ON TEST</td><td>TURN ON AFTER　2　HOUR</td><td>I/P： 480VAC/180VAC
O/P： 100 % LOAD
Ta= -40 ℃</td><td>TEST：OK</td><td>P</td></tr>
<tr><td>4</td><td>HIGH HUMIDITY
HIGH TEMPERATURE
HIGH VOLTAGE
TURN ON TEST</td><td>AFTER 12　HOURS
IN CHAMBER ON
CONTROL　50℃
NO DAMAGE</td><td>I/P： 483 VAC
O/P：FULL LOAD
Ta= 50 ℃
HUMIDITY=　95 %R.H</td><td>TEST：OK</td><td>P</td></tr>
<tr><td>5</td><td>TEMPERATURE
COEFFICIENT</td><td>± 0.03%(0~50℃)</td><td>I/P： 230 VAC
O/P：FULL LOAD</td><td>± 0.004 %(0~50℃)</td><td>P</td></tr>
</table>

6	STORAGE TEMPERATURE TEST	1. Thermal shock Temperature： -45℃~ +90℃ 2. Temperature change rate ：25℃ / MIN 3. Dwell time low and high temperature ： 30 MIN/EACH 4. Total test cycle：5 CYCLE 5. Input/Output condition： STATIC	OK	P
7.	THERMAL SHOCK TEST	1. Thermal shock Temperature： -45℃~ +55℃ 2. Temperature change rate ：25℃ / MIN 3. Dwell time low and high temperature ： 30 MIN/EACH 4. Total test cycle：10 CYCLE 5. Input/Output condition： 230VAC/Full Load AC ON/OFF TEST turn on 58sec；turn off 2sec	OK	P
8	VIBRATION TEST	1 Carton & 1 Set (1) Waveform： Sine Wave (2) Frequency：10~500Hz (3) Sweep Time：12min/sweep cycle (4) Acceleration：5G (5) Test Time：72min in each axis (X.Y.Z) (6) Ta：25℃	TEST：OK	P
9	CAPACITOR LIFE CYCLE	HLG-60H-C700:SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P： 230VAC O/P：FULL LOAD Ta= 25 ℃ LIFE TIME (2) I/P： 230VAC O/P：FULL LOAD Ta= 60 ℃ LIFE TIME (3) I/P： 230VAC O/P：75% LOAD Ta= 60 ℃ LIFE TIME (4) I/P： 230VAC O/P：50% LOAD Ta= 60 ℃ LIFE TIME	(1) 407633 HRS (2) 114654 HRS (3) 145151 HRS (4) 173785 HRS	P
10	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE：KHRS		
11	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure (Expected Life): Above 50,000 hours @ Tcase 70℃		P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
	PRODUCT SAMPLE	PASS	SANFORD SU	VINCENT TSENG

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