150W Single Output Switching Power Supply — CLG-150 series

Features :

- Universal AC input / Full range (up to 295VAC)
- High efficiency 92%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in active PFC function
- Cooling by free air convection
- OCP point adjustable through output cable or internal potential meter
- Suitable for LED lighting and moving sign applications
- IP65 / IP67 design for indoor or outdoor installations
- Compliance to worldwide safety regulations for lighting
- 3 years warranty

SELV IP65 IP67 (for 12~15V only)

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 potential meter.
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 potential meter.

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 potential meter or through output cable						
		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	PF≧0.95/230VAC PF≧0.98/115VAC at full load and rated output voltage PF≧0.9 at 75 ~ 100% load						
	EFFICIENCY (Typ.)	88%	88%	90%	90%	91%	91%	91%
	AC CURRENT	2A / 115VAC 1A / 230VAC						
	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 ~ 36V	42 ~ 48V	57 ~ 65V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover						
	OVER TEMPERATURE	100℃ ±10℃ (RTH2)						
		Protection type : Shut down o/p voltage, re-power on to recover						
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to output load derating curve)						
	WORKING HUMIDITY	20 ~ 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.7	UL1012 ; EN61347-1, EN61347-2-13 independent (except for CLG-150 C type) ; UL60950-1, TUV EN60950-1 ; J61347-1, J61347-2-13(12~15V only), IP65 or IP67 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, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMI CONDUCTION & RADIATION	Compliance to EN55015, EN55022 (CISPR22) Class B						
	HARMONIC CURRENT	Compliance to EN61000-3-2 Class C (≧75% load) ; EN61000-3-3						
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN61547, EN55024, light industry level (surge 4KV), criteria A						
OTHERS	MTBF	303.7Khrs min. MIL-HDBK-217F (25℃)						
	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/0.49CUFT(CLG-150-Blank/A/B) 1Kg; 12pcs/13Kg/0.96CUFT(CLG-150-C)						

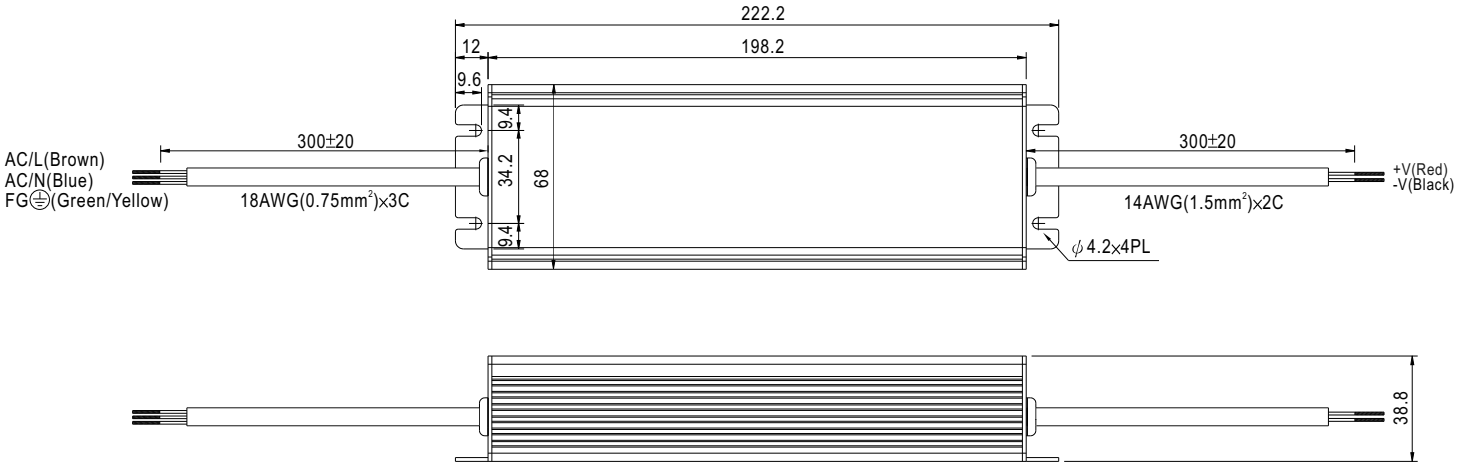
NOTE

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 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

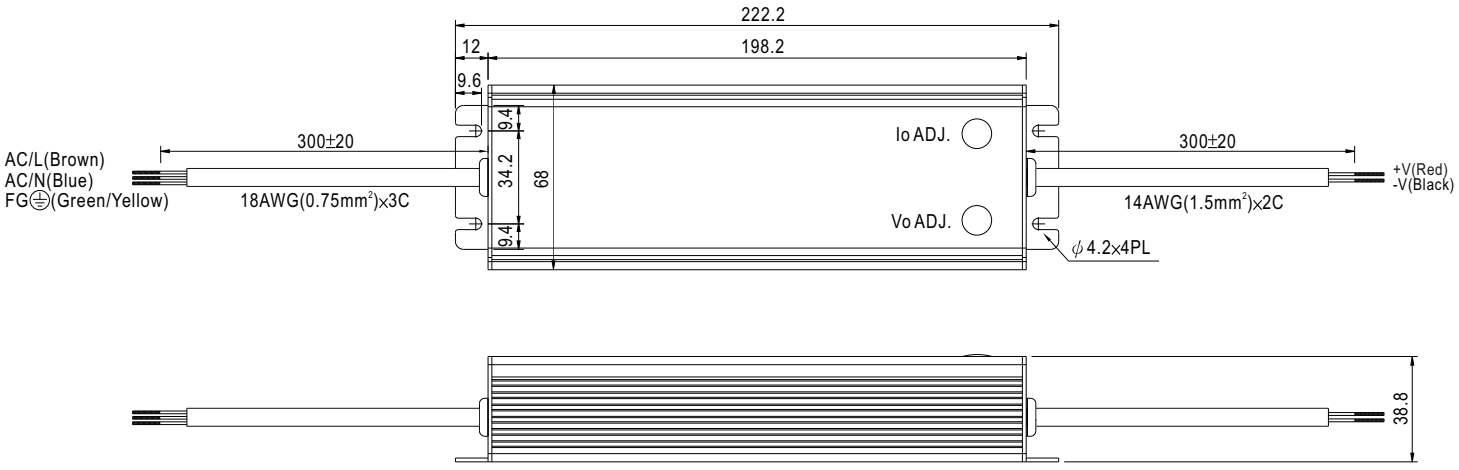
Case No. 954A Unit:mm

Blank:(CLG-150)



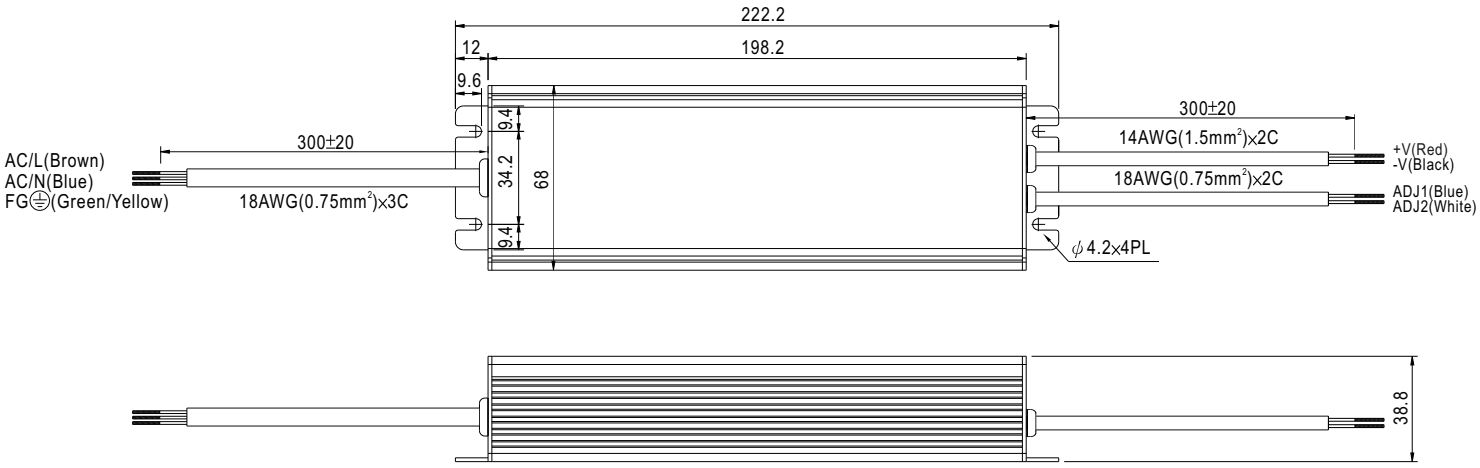
※IP67 rated. Cable for I/O connection.

A Type:(CLG-150-_A)



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

B Type:(CLG-150-_B)

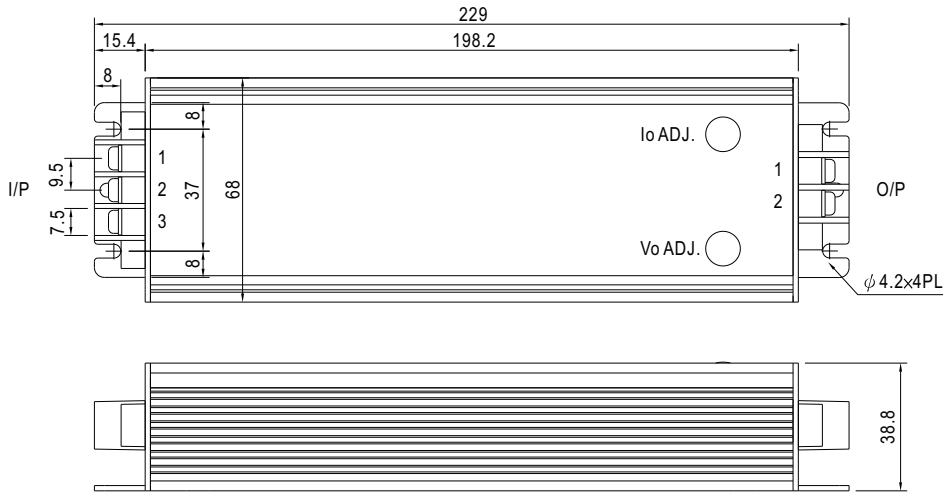


※ IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistor between ADJ1 and ADJ2.

※ 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)



AC Input Terminal Pin No. Assignment

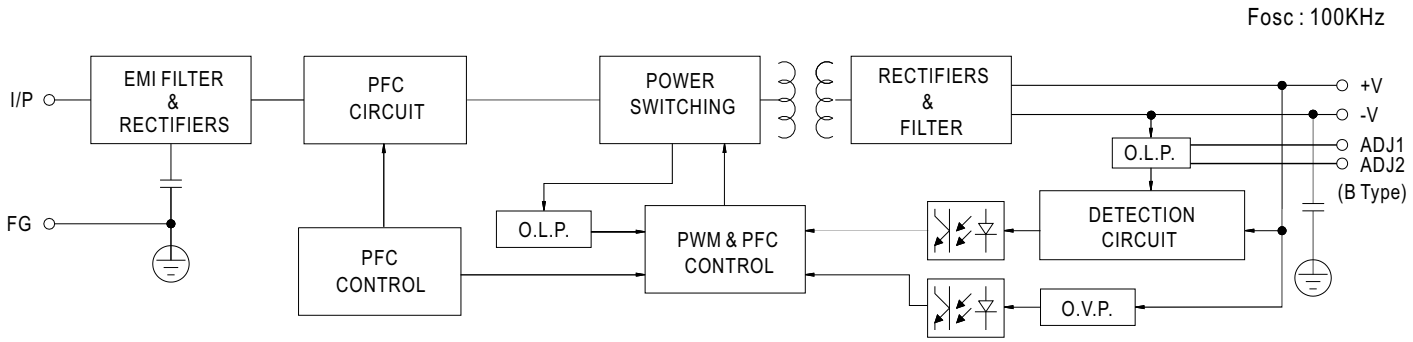
Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

DC Output Terminal Pin No. Assignment

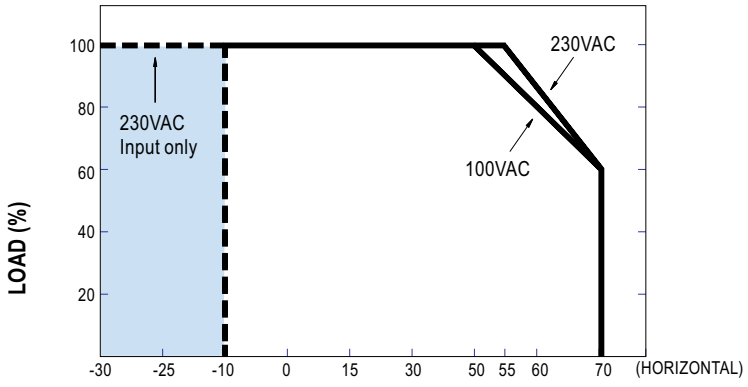
Pin No.	Assignment
1	+V
2	-V

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

■ Block Diagram



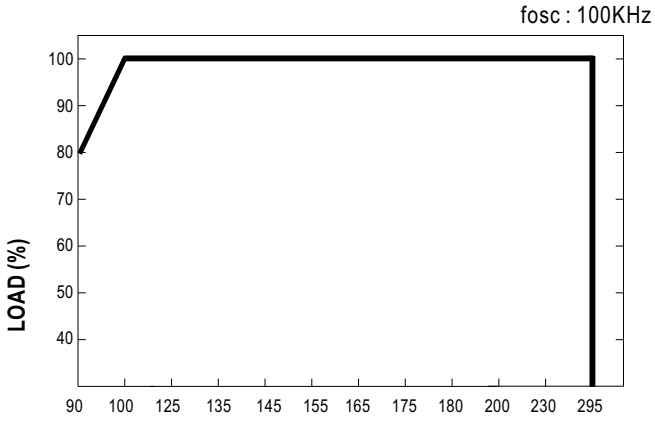
■ Derating Curve



AMBIENT TEMPERATURE (℃)

※-30℃ start up possible for 230VAC input

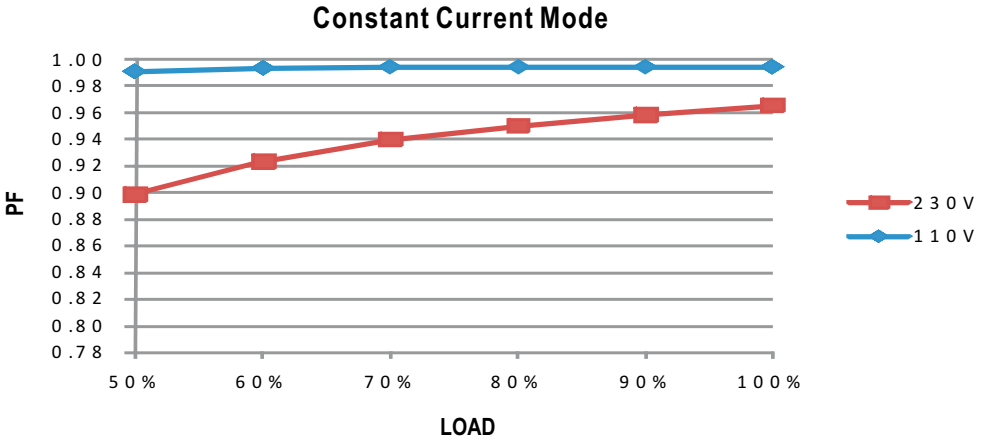
■ Static Characteristics



INPUT VOLTAGE (V) 60Hz

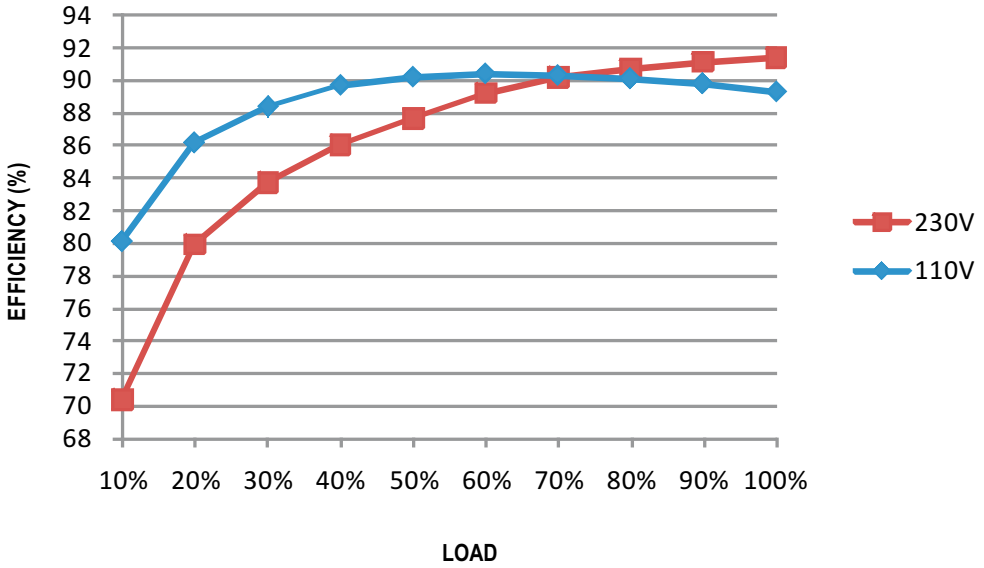
■ Power Factor Characteristic

Power factor will be higher than 0.9 when output loading is 75% or higher.



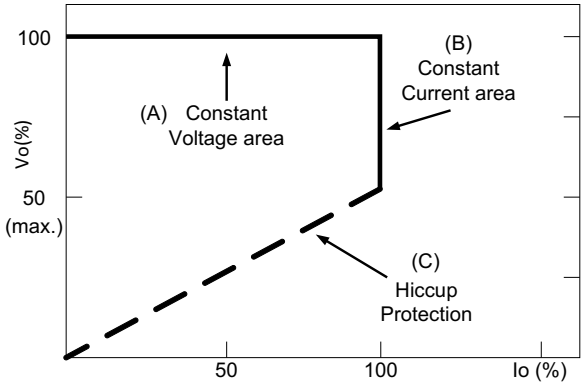
■ EFFICIENCY vs LOAD (48V Model)

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)].



Typical LED power supply I-V curve

MODEL：CLG-150-48A

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1： 200 mVp-p (Max)	I/P： 230VAC O/P：FULL LOAD Ta：25℃	V1： 160 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1：40 V~ 56 V	I/P： 230 VAC I/P： 115 VAC O/P：MIN LOAD Ta：25℃	31.54 V~ 57.25 V/ 230 VAC 31.99 V~ 57.25 V/ 115 VAC	P
3	CURRENT ADJ. RANGE	1.6A ~ 3.2A	I/P： 230 VAC O/P：FULL LOAD	1.225 A ~ 4.392 A	P
4	OUTPUT VOLTAGE TOLERANCE	V1：1 %~ -1 % (Max)	I/P： 100 VAC / 295 VAC O/P：FULL/ MIN LOAD Ta：25℃	V1： 0.1 %~ -0.1 %	P
5	LINE REGULATION	V1： 0.5 %~ 0.5 % (Max)	I/P： 100 VAC ~ 295 VAC O/P：FULL LOAD Ta：25℃	V1： 0.03 %~ -0.03 %	P
6	LOAD REGULATION	V1：0.5 %~ -0.5 % (Max)	I/P： 230 VAC O/P：FULL ~MIN LOAD Ta：25℃	V1： 0.09 %~ -0.09 %	P
7	SET UP TIME	230VAC： 3000 ms (Max) 115 VAC： 3000 ms (Max)	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 1839 ms 115VAC/ 1839 ms	P
8	RISE TIME	230VAC： 80 ms (Max) 115VAC： 80 ms (Max)	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 22 ms 115VAC/ 17 ms	P
9	HOLD UP TIME	230VAC： 50 ms (TYP) 115VAC： 16 ms (TYP)	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 71 ms 115VAC/ 19 ms	P
10	OVER/UNDERSHOOT TEST	< ±5%	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	TEST： <5 %	P
11	DYNAMIC LOAD	V1： 4800 mVp-p	I/P： 230 VAC O/P：FULL /Min LOAD 90%DUTY/1KHZ Ta：25℃	808 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90 VAC~ 295 VAC	I/P：TESTING O/P：FULL LOAD Ta：25℃	66V~295V	P
			I/P： LOW-LINE-3V= 97V HIGH-LINE=300 V 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： 90 VAC ~ 295 VAC O/P：FULL~MIN LOAD Ta：25℃	TEST： OK	P
3	POWER FACTOR	0.95 / 230 VAC(TYP) 0.98 / 115 VAC(TYP) PF 0.9 at 75 ~ 100% load	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	PF= 0.9598 / 230 VAC PF= 0.9975 / 115 VAC PF 0.9 at 75 ~ 100% load	P
4	EFFICIENCY	90 % (TYP)	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	90.4%	P
5	INPUT CURRENT	230V/ 1 A (TYP) 115V/ 2 A (TYP)	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	I = 0.76 A/ 230 VAC I = 1.50 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 65 A (TYP)	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	I = 47 A/ 230 VAC	P
7	LEAKAGE CURRENT	< 1 mA / 240 VAC	I/P： 240 VAC O/P：Min LOAD Ta：25℃	L-FG： 0.83 mA N-FG： 0.41 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	95 %~ 108 %	I/P： 230 VAC I/P： 115 VAC O/P：TESTING Ta：25℃	102%/ 230 VAC 102%/ 115 VAC Constant Current Limiting，recover Automatically after fault condition Is removed。	P
2	OVER VOLTAGE PROTECTION	CH1：57 V~65 V	I/P： 230 VAC I/P： 115 VAC O/P：MIN LOAD Ta：25℃	62.1V/ 230 VAC 62.1V/ 115 VAC Shut down and latch off o/p voltage Re- power on to recover。	P
3	OVER TEMPERATURE PROTECTION	SPEC： RTH2： 100 ± 10℃ O.T.P. NO DAMAGE	I/P： 230 VAC O/P：FULL LOAD	O.T.P. Active Shut down Re-power ON	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P： 295 VAC O/P：FULL LOAD Ta：25℃	NO DAMAGE Hiccup Mode	P

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： CLG-150-24
1. ROOM AMBIENT BURN-IN：12 HRS
I/P： 230VAC O/P： FULL LOAD Ta=29.1 ℃
2. HIGH AMBIENT BURN-IN：4 HRS
I/P： 230VAC O/P： FULL LOAD Ta=54.6 ℃

<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta=29.1 ℃</th><th>HIGH AMBIENT Ta= 54.6 ℃</th></tr>
<tr><td>1</td><td>LF3</td><td>TR689</td><td>61.7℃</td><td>80.3℃</td></tr>
<tr><td>2</td><td>BD1</td><td>4A/800V US4KB80R-7000</td><td>63.7℃</td><td>82.4℃</td></tr>
<tr><td>3</td><td>L2 COIL</td><td>TF1356</td><td>65.7℃</td><td>83.7℃</td></tr>
<tr><td>4</td><td>C11</td><td>105/450V 5% P=10 MMX</td><td>64.5℃</td><td>83.0℃</td></tr>
<tr><td>5</td><td>L1 COIL</td><td>TR623</td><td>65.1℃</td><td>83.0℃</td></tr>
<tr><td>6</td><td>D1</td><td>MUR460 4A/600V</td><td>70.5℃</td><td>88.6℃</td></tr>
<tr><td>7</td><td>Q2</td><td>2SK3683-01MR 19A/500V</td><td>68.6℃</td><td>86.9℃</td></tr>
<tr><td>8</td><td>C5</td><td>150u/420V 105℃ KMG</td><td>67.6℃</td><td>85.2℃</td></tr>
<tr><td>9</td><td>D11</td><td>21DQ10 2A/100V</td><td>75.2℃</td><td>92.2℃</td></tr>
<tr><td>10</td><td>Q1</td><td>SPA11N65C3 11A/650V</td><td>76.4℃</td><td>95.5℃</td></tr>
<tr><td>11</td><td>D2</td><td>3A/600V 1N5406</td><td>83.0℃</td><td>101.5℃</td></tr>
<tr><td>12</td><td>T1 COIL</td><td>TF1381</td><td>80.2℃</td><td>97.0℃</td></tr>
<tr><td>13</td><td>C105</td><td>1000u/35V UL10Kh ZLH</td><td>70.9℃</td><td>89.1℃</td></tr>
<tr><td>14</td><td>Q101</td><td>IRF3415 43A/150V</td><td>71.0℃</td><td>89.7℃</td></tr>
<tr><td>15</td><td>C42</td><td>22u/50V UL10Kh 5*11 YXM</td><td>65.4℃</td><td>83.0℃</td></tr>
<tr><td>16</td><td>U1</td><td>TDA4863G</td><td>66.3℃</td><td>84.6℃</td></tr>
<tr><td>17</td><td>U2</td><td>TEA1552</td><td>71.3℃</td><td>87.1℃</td></tr>
<tr><td>18</td><td>RTH2</td><td>220KΩ 3Φ 1%</td><td>63.1℃</td><td>81.3℃</td></tr>
<tr><td>19</td><td>TA</td><td></td><td>29.1℃</td><td>54.6℃</td></tr>
<tr><td>20</td><td>CASE</td><td>UP CASE</td><td>46.9℃</td><td>71.6℃</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： 105 % 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： 230 VAC
O/P：100 % LOAD
Ta= -30 ℃</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 55 ℃
NO DAMAGE</td><td>I/P： 295 VAC
O/P：FULL LOAD
Ta 55 ℃
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>± 0.005 %(0~50℃)</td><td>P</td></tr>
<tr><td>6</td><td>VIBRATION TEST</td><td colspan="2">1 Carton & 1 Set
(1) Waveform： Sine Wave
(2) Frequency：10~500Hz
(3) Time：72min
(4) Acceleration：5G
(5) Test Time：1 hour in each axis (X.Y.Z)
(6) Ta：25℃</td><td>TEST：OK</td><td>P</td></tr>
</table>

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： 4.2 KVAC/min I/P-FG： 2.25 KVAC/min O/P-FG： 0.6 KVAC/min Ta：25℃	I/P-O/P： 2.394 mA I/P-FG： 3.95 mA O/P-FG： 0.550 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	21 mΩ	P
4	APPROVAL	TUV： Certificate NO ：R50129714 UL： File NO ：E183223			P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS C	I/P： 230 VAC/50HZ O/P：100%/75%/50% LOAD Ta：25℃	PASS	P
2	CONDUCTION	EN55022、EN55015 CLASS B	I/P： 230 VAC (50HZ) O/P：FULL/50% LOAD Ta：25℃	PASS Test by certified Lab	P
3	RADIATION	EN55022 、EN55015 CLASS B	I/P： 230 VAC (50HZ) O/P：FULL LOAD Ta：25℃	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY	I/P： 230 VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A	P
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT： 1KV	I/P： 230 VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N ：2KV L,N-PE：4KV	I/P： 230 VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A	P
7	Test by certified Lab & Test Report Prepare				

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	CLG-150-24：SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P： 230VAC O/P：FULL LOAD Ta=25 ℃ LIFE TIME= 147554 HRS I/P： 230VAC O/P：FULL LOAD Ta=55 ℃ LIFE TIME= 30618 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE： 303.7KHRS min			P
3	ORT (Ongoing Reliability test)	CLG-150-48A:I/P：230VAC O/P：FULL LOAD TA=50℃ Sample=10pcs TEST TIME=1344HRS			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated SP11N65C3 ：650V /11A	I/P：High-Line +3V = 298 V O/P： (1)Full Load Turn on (2) Output Short Ta：25℃	(1) 584 V (2) 480 V	P
2	Diode Peak Voltage	D106 Rated SSCD110 ： 100V / 1A Q101 Rated SF20LC30 20A/300V	I/P：High-Line +3V = 298 V O/P： (1)Full Load Turn on (2)Output Short Ta：25℃	(1) 45.2 V (2) 32.8 V (1) 260 V (2) 193 V	P
3	Clamp Diode Peak Voltage	D2 Rated 1N5406 ： 600 V/ 3A	I/P：High-Line +3V = 298 V O/P： (1) Dynamic Load 90%Duty/1KHz Ta：25℃	(1) 518 V	P
4	Input Capacitor Voltage	C 5 Rated NCC： 150 u / 420 V/ 105 ℃/ KMG	I/P：High-Line +3V = 298 V O/P： (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta：25℃	(1) 412 V (2) 402 V (3) 412 V	P
5	Control IC Voltage Test	U2 Rated Tea1552 ： 20 V	I/P：High-Line +3V = 298 V O/P： (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta：25℃	(1) 16.4 V (2) 13.9 V (3) 16.4 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/4/7	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2008/6/20	W0804C33	PASS	SANFORD SU	VINCENT TSENG
2008/6/30	W0805D41	PASS	SANFORD SU	VINCENT TSENG

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