Test Report： XLG-100-H

100W Constant Power MODE LED Driver

■ 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

Digitally signed by Ciobanu Mircea
Date: 2022.04.26 02:28:40 EEST
Reason: MoldSign Signature
Location: Moldova

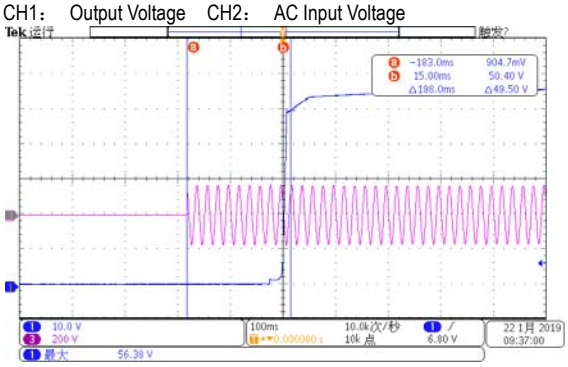
■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	CURRENT TOLERANCE	±5%	I/P：100 VAC / 305 VAC O/P：FULL/ MIN LOAD Ta：25℃	<±5%
2	CONSTANT CURRENT REGION	27V-56V	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	24 V~ 56.2 V
3	OPEN CIRCUIT VOLTAGE (max.)	60 V	I/P： 230 VAC O/P：NO LOAD	56.35V
4	CURRENT RIPPLE	3.0% max. @rated current	I/P： 230 VAC O/P： FULL LOAD Ta：25℃	0.2%
5	CURRENT ADJ. RANGE	875 mA ~2780mA	I/P: 230 VAC O/P：TESTING Ta：25℃	808mA~ 3098mA
6	CONSTANT POWER	O/P：100W	I/P：230 VAC O/P：Vo×Io	TEST：OK
7	SET UP TIME(Max)	1200ms/115VAC 500ms/230VAC	I/P： 115 VAC I/P： 230 VAC O/P：FULL LOAD Ta：25℃	198/115 VAC 166/230 VAC

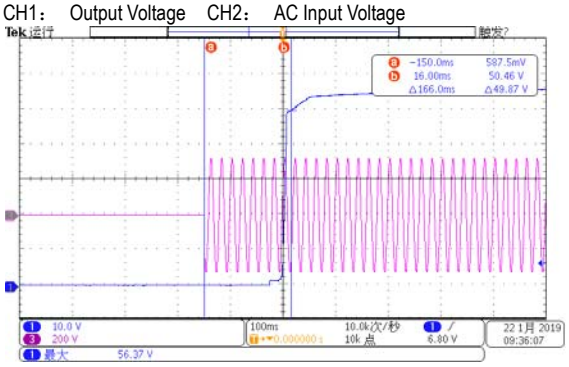
INPUT=115VAC/50HZ @ FULL LOAD

CH1： Output Voltage CH2： AC Input Voltage



INPUT=230 VAC/50HZ @ FULL LOAD

CH1： Output Voltage CH2： AC Input Voltage

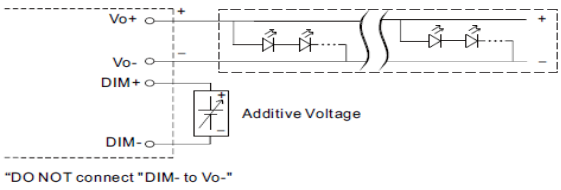


8 DIMMING OPERATION (for AB-Type)

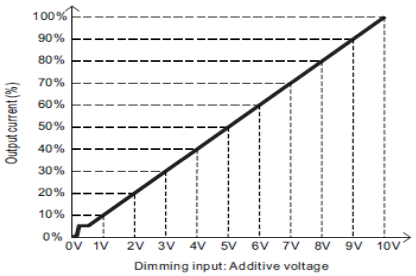
※ 3 in 1 dimming function (for AB-Type)

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100 μA (typ.)

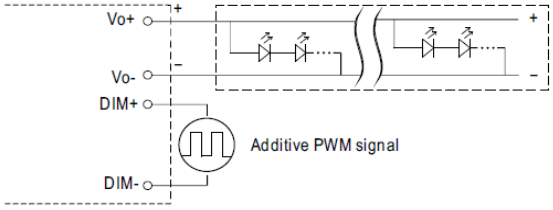
◎ Applying additive 0 ~ 10VDC



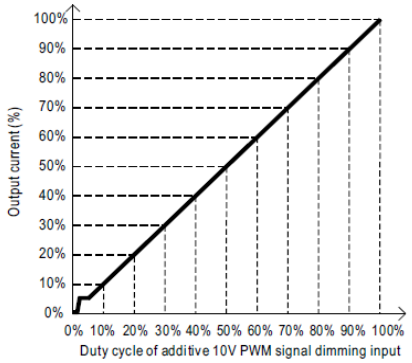
"DO NOT connect "DIM- to Vo-"



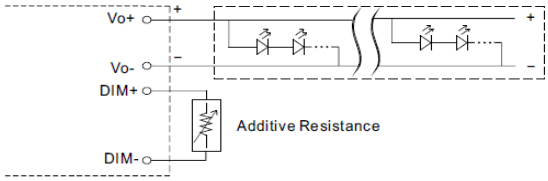
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



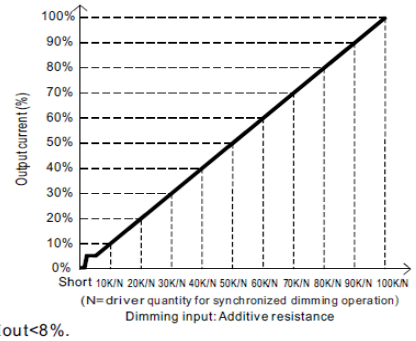
"DO NOT connect "DIM- to Vo-"



◎ Applying additive resistance:



"DO NOT connect "DIM- to Vo-"



Note : 1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

I/P： 230 VAC

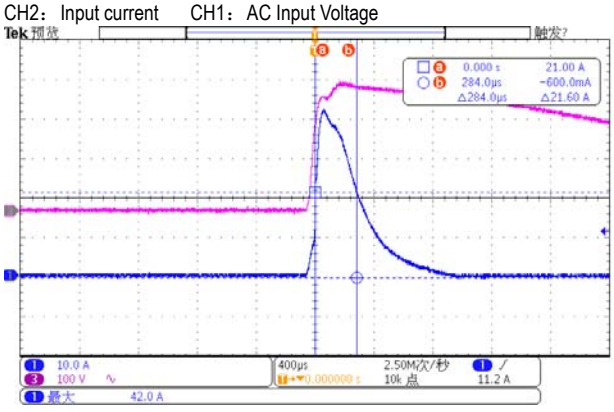
O/P：DIMMING TEST

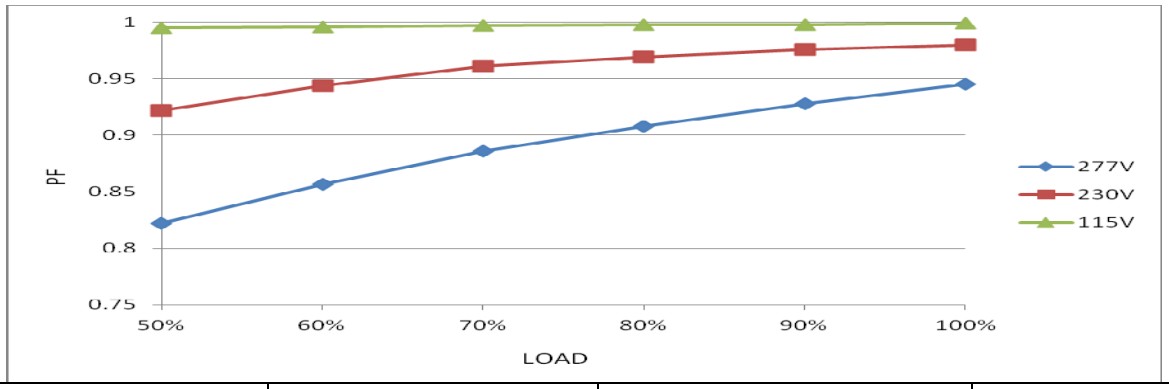
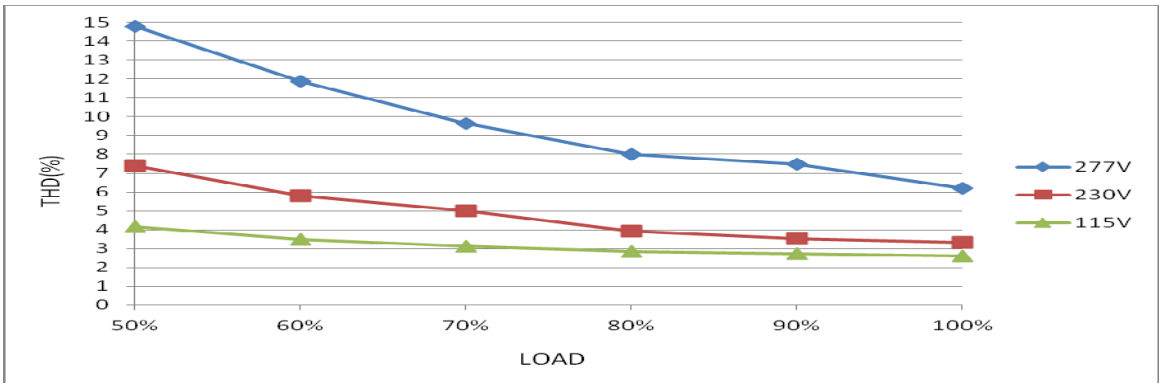
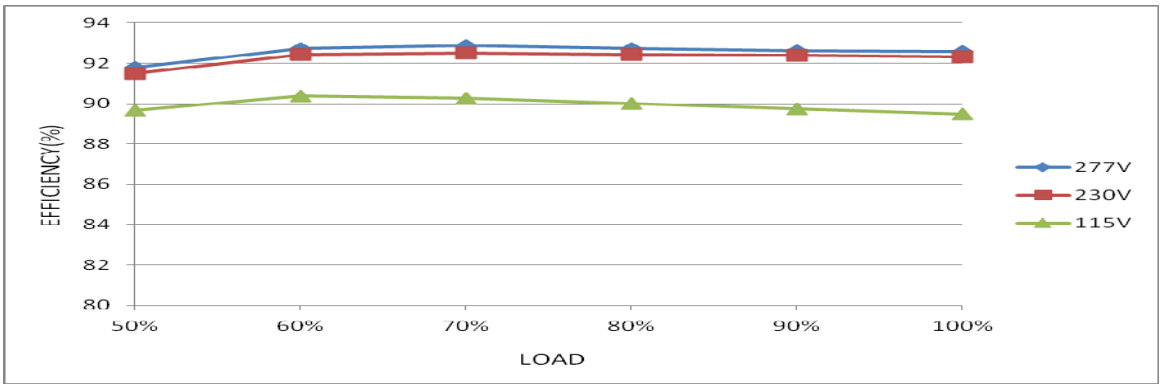
Ta：25℃

	DIMMING	Short	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
1	Output Current	0	0.199A	0.364A	0.530A	0.725A	0.893A	1.090A	1.259A	1.429A	1.614A	1.776A	1.777A
	%	0%	11.36%	20.80%	30.31%	41.44%	51.02%	62.26%	71.93%	81.67%	92.23%	101.51%	101.53%
2	PWM	0V	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
	Output Current	0	0.187A	0.363A	0.538A	0.713A	0.886A	1.068A	1.246A	1.430A	1.610A	1.774A	1.774A
	%	0%	10.70%	20.75%	30.74%	40.73%	50.61%	61.01%	71.18%	81.71%	92.00%	101.37%	101.39%
3	R	0%	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K	OPEN
	Output Current	0	0.198A	0.363A	0.516A	0.724A	0.865A	1.061A	1.216A	1.415A	1.585A	1.758A	1.776A
	%	0%	11.29%	20.73%	29.46%	41.39%	49.42%	60.62%	69.49%	80.85%	90.58%	100.48%	101.51%

TEST RESULT：OK

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	100VAC~305VAC	I/P：TESTING O/P：FULL LOAD (PLEASE CHECK DERATING CURVE) Ta：25℃	97V~315 V
			I/P： LOW-LINE-3V=97 V HIGH-LINE+10V=315 V O/P：FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON：30 Sec OFF：30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST：OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P： 100 VAC ~305 VAC O/P：FULL~NO LOAD Ta：25℃	TEST：OK
3	AC CURRENT	1.1A/115VAC 0.5A/230VAC 0.42A/277VAC	I/P： 115 VAC I/P： 230 VAC I/P： 277 VAC O/P：FULL LOAD Ta：25℃	I =0.951A/ 115VAC I = 0.467A/ 230VAC I = 0.389A/277VAC
4	LEAKAGE CURRENT	< 0.75mA / 277VAC	I/P： 277 VAC O/P：NO LOAD Ta：25℃	L-FG： 0.448mA N-FG： 0.448mA
5	STANDBY POWER CONSUMPTION	<0.5W for AB -Type	I/P：230VAC O/P：STANDBY Ta：25℃	0.437W
6	INRUSH CURRENT(Typ)	230 V/ 50A COLD START (twidth=300us measured at 50% Ipeak) COLD START at 230V	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	I=42.0A/ 230VAC Twidth = 284us
	INPUT=230VAC/50HZ @ FULL LOAD CH2：Input current CH1：AC Input Voltage 			

7	POWER FACTOR	0.97/ 115VAC@ FULL LOAD 0.95/ 230VAC@ FULL LOAD 0.92/ 277VAC@ FULL LOAD	I/P： 115 VAC I/P： 230 VAC I/P： 277 VAC O/P：FULL LOAD Ta：25℃	PF=0.999 @ FULL LOAD /115VAC PF=0.980 @ FULL LOAD /230VAC PF=0.945 @ FULL LOAD /277VAC
	PF vs LOAD 			
8	TOTAL HARMONIC DISTORTION	THD＜10% （@load≥50%/115VAC； @load≥50%/230VAC； @load≥75%/277VAC）	I/P： 115 VAC I/P： 230 VAC I/P： 277 VAC O/P：50% /75% LOAD Ta：25℃	THD=4.15% @50% load /115VAC THD=7.41% @50% load /230VAC THD=8.84% @75% load /277VAC
	THD vs LOAD 			
9	EFFICIENCY(Typ)	91%	I/P： 230VAC O/P：FULL LOAD Ta：25℃	92.32%
	EFFICIENCY vs LOAD 			

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER POWER PROTECTION	105-150%	I/P： 100VAC I/P： 230VAC I/P： 305VAC O/P：TESTING Ta：25℃	131.6%/ 100VAC 126 %/ 230VAC 115.8%/ 305VAC Hiccup mode，recovers automatically after fault condition is removed
2	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P： 100VAC I/P： 230VAC I/P： 305VAC O/P：FULL LOAD	O.T.P. Active Shut down output voltage，re-power on to recovery
3	OVER VOLTAGE PROTECTION	V1: 66V~ 90V	I/P: 305VAC I/P: 230VAC I/P: 100VAC O/P:MIN LOAD Ta:25℃	70.4V/ 305VAC 70.4V/ 230VAC 70.0V/ 100VAC Shut down output voltage, re-power on to recover
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P： 100VAC I/P： 230VAC I/P： 305VAC O/P： FULL LOAD Ta：25℃	NO DAMAGE Hiccup mode or Constant Current Limiting，recovers automatically after fault condition is removed
5	INPUT OVER VOLTAGE (for XLG-75I only)	320 ~ 390VAC (Shut down output voltage when the input voltage exceeds protection voltage Can survive input voltage stress of 440Vac for 48 hours	I/P：TESTING O/P: FULL LOAD Ta:25℃	PASS

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q2 Rated 6A/600V	I/P：High-Line +3V =308V O/P： (1) Full Load Turn on (2) Output Short (3) Full load continue Ta：25℃	 (1) 444V (2) 445V (3) 445V
2	PFC Transistor	Q1 Rated 12.5A/700V	I/P：High-Line +3V =308V O/P: (1)Full Load (2)Output Short (3) Full Load continue	 (1) 451V (2) 434V (3) 452V
3	P.F.C DIODE	D5 Rated 9A/600V	I/P：High-Line +3V =308V O/P： (1) Full Load Turn on (2) Output Short (3) Full load continue Ta：25℃	 (1) 469V (2) 450V (3) 471V

4	Diode Peak Voltage	D100 Rated 15A/150 V	I/P：High-Line +3V =308V O/P: (1)Full Load (2)Output Short (3) Full Load continue (4) No Load Ta：25℃	 (1) 106V (2) 3V (3)105V (4) 59V
5	Input Capacitor Voltage	C5 Rated： 47 μ F/ 450V	I/P：High-Line +3V =308 V O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change (4)Full load continue Ta：25℃	 (1) 448V (2) 444V (3) 445V (4) 444V
6	Control IC Voltage Test	U2 Rated 28 V	I/P：High-Line +3V =308V O/P(1)FULL LOAD (2) Output Short (3)O.V.P (4)NO LOAD VR.LOW LINE Ta：25℃	 (1) 12.0V (2) 12.0V (3) 12.0V (4) 12.0V

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P：3.75KVAC/min I/P-FG： 2KVAC/min O/P-FG：1.5KVAC/min	I/P-O/P：4.125 KVAC/min I/P-FG： 2.4 KVAC/min O/P-FG：1.8 KVAC/min Ta：25℃	I/P-O/P： 3.332mA I/P-FG： 3.533mA O/P-FG： 2.888mA NO DAMAGE
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℃	I/P-O/P： >9999GΩ I/P-FG： >9999 G Ω O/P-FG： >9999 G Ω NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25℃	17mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS C	I/P：230VAC/50HZ O/P：FULL/50% LOAD Ta：25℃	PASS
2	CONDUCTION	EN55015	I/P：230 VAC/50HZ O/P：FULL LOAD Ta：25℃	PASS Test by certified Lab
3	RADIATION	EN55015	I/P：230 VAC/50HZ O/P：FULL LOAD Ta：25℃	PASS Test by certified Lab

4	E.S.D	EN61000-4-2 LIGHT INDUSTRY Air：8KV Contact：4KV	I/P：230 VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT：2KV	I/P： 230VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A
6	SURGE	EN61000-4-5 LIGHT INDUSTRY L-N ：4KV L -PE：6KV	I/P： 230VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A
7	Test by certified Lab ＆ Test Report Prepare. Any contradictions of the test results please refer to the latest EMC test report.			

■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	TEMPERATURE RISE TEST	MODEL： XLG-100-H 1. ROOM AMBIENT BURN-IN：2 HRS I/P： 230VAC O/P： FULL LOAD Ta= 29.1℃ 2. HIGH AMBIENT BURN-IN： 2 HRS I/P： 230VAC O/P： FULL LOAD Ta=60.3℃		

NO	Position	ROOM AMBIENT Ta= 29.1 ℃	HIGH AMBIENT Ta=60.3 ℃
1	ZNR3	52.5℃	84.4℃
2	C1	55.1℃	86.7℃
3	RT1	62.8℃	92.8℃
4	LF2	57.6℃	89.6℃
5	ZNR4	56.4℃	88.4℃
6	BD1	56.9℃	88.7℃
7	C10	56.0℃	88.2℃
8	L2	61.1℃	93.0℃
9	Q1	62.0℃	94.2℃
10	C5	61.7℃	93.9℃
11	D4	58.0℃	90.1℃
12	D5	59.4℃	92.2℃
13	Q2	63.1℃	96.8℃
14	Q3	65.3℃	97.8℃
15	R7	59.3℃	91.8℃
16	U1	59.8℃	92.0℃
17	U2	65.9℃	98.3℃
18	C15	62.3℃	94.3℃
19	T1	69.7℃	103.2℃
20	D100	66.5℃	97.7℃
21	D101	68.5℃	100.3℃
22	U100	57.6℃	89.5℃
23	C105	62.0℃	94.5℃
24	C106	60.8℃	93.2℃
25	TC	53.7℃	84.7℃

2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P： 305VAC/100VAC O/P：FULL LOAD Ta= -45℃/-35℃	TEST：OK
3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 ℃ NO DAMAGE	I/P： 305VAC O/P：FULL LOAD Ta=60 ℃ HUMIDITY= 95% R.H	TEST：OK
4	TEMPERATURE COEFFICIENT	±0.03%/℃(0~60℃)	I/P： 230 VAC O/P：FULL LOAD	±0.0026%/℃(0~60℃)
5	STORAGE TEMPERATURE TEST	-40~+80℃	1. Thermal shock Temperature： -50℃~ +125℃ 2. Temperature change rate ： 25℃ / MIN 3. Dwell time low and high temperature ： 30 MIN/EACH 4. Total test cycle：200CYCLE 5. Input/Output condition： STATIC TEST：OK	
6	THERMAL SHOCK TEST	-40~+60℃	1. Thermal shock Temperature： -45℃~ +65℃ 2. Temperature change rate ： 25℃ / MIN 3. Dwell time low and high temperature ： 30 MIN/EACH 4. Total test cycle：16CYCLE 5. Input/Output condition： 15cycle:230VAC/ FULL LOAD AC on 3 sec/AC off 1 sec TEST 1cycle:230VAC/ FULL LOAD Burn In Test TEST：OK	
7	VIBRATION TEST	10~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform： Sine Wave (2) Frequency：10~500Hz (3) Sweep Time：10min/sweep cycle (4) Acceleration：6G (5) Test Time：180min in each axis (X.Y.Z) (6) Ta：25℃ TEST：OK	
8	CAPACITOR LIFE CYCLE	XLG-100-H：SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P： 230VAC O/P：FULL LOAD Tc= 80 ℃ LIFE TIME (2) I/P： 230VAC O/P：75% LOAD Tc= 80 ℃ LIFE TIME (3) I/P： 230VAC O/P：50% LOAD Tc= 80 ℃ LIFE TIME	(1) 39835 HRS (2) 55627 HRS (3) 63991 HRS	
9	MTBF	Conducted by Parts Stress Analysis Prediction 1006.16 K hrs min. Telcordia SR-332 (Bellcore) 276.37K hrs min. MIL-HDBK-217F (25℃)		
10	Ongoing Reliability Test	I/P：230VAC O/P：FULL LOAD TA=50℃ Demonstration Mean Time Between Failure : 50,000 hours		

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	WUWQ/ZHOUB	WENF	LIUWY