



Test Report: XLG-100-L-DA2

100W Constant Power Mode with DALI-2 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

■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	CURRENT TOLERANCE	±5%	I/P: 230VAC O/P: LEDmax CP: 0.7A & 1.05A Ta: 25°C	CP 0.7A: 0.702A/230VAC@CV MAX-1V 0.703A/230VAC@CV MIN 0.43% CP 1.05A: 1.053A/230VAC@CV MAX-1V 1.054A/230VAC@CV MIN 0.38%
2	FULL POWER CURRENT RANGE	700~1050mA	I/P: 230VAC O/P: LEDmax CP: 0.7A & 1.05A Ta: 25°C	142V/0.7A/230VAC 71V/1.05A/230VAC
3	OPEN CIRCUIT VOLTAGE (max)	158V	I/P: 230VAC O/P: NO LOAD CP: OPEN Ta: 25°C	147.91V
4	CONSTANT CURRENT REGION	CP 0.7A: CH1: 71V~142V CP 1.05A: CH1: 71V~95V	I/P: 230VAC O/P: LEDmax CP: 0.7A & 1.05A Ta: 25°C	CP 0.7A: 56.7V~147.94V/230VAC CP 1.05A: 56.7V~102.1V/230VAC
5	CURRENT ADJ. RANGE	CH1: 350mA~1050mA	I/P: 230VAC O/P: CVmin & CVmax-1V CP: 0.7A & 1.05A Ta: 25°C	278mA~825mA/230VAC@CV MAX-1V 278mA~1132mA/230VAC@CV MIN
6	CURRENT RIPPLE	4.0% max.	I/P: 230VAC O/P: LEDmax CP: 0.7A & 1.05A Ta: 25°C	CP 0.7A: 1.43% CP 1.05A: 1.19%

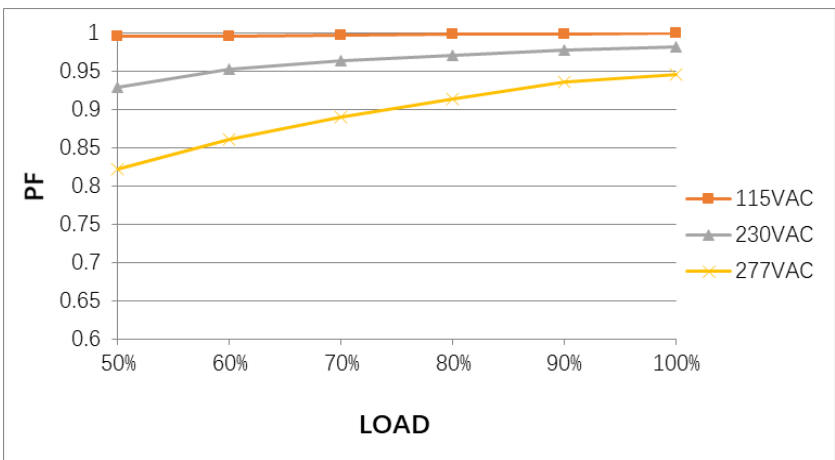
7	SET UP TIME	230VAC/ 500 ms (Max) 115VAC/ 1200 ms (Max)	I/P: 230VAC I/P: 115VAC O/P:LEDmax CP 0.7A Ta:25°C	230VAC/302ms 115VAC/450ms
INPUT=230VAC/50HZ @ LEDMAX@ CP 0.7A CH1 : Output Voltage CH2 : AC Input Voltage		INPUT=230VAC/60HZ @ LEDMAX@ CP 0.7A CH1 : Output Voltage CH2 : AC Input Voltage		

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	100VAC~305VAC 142VDC ~ 431VDC	(1) I/P:TESTING O/P:LEDmax	(1) 100 Vac~305Vac
			(2) I/P:DC TESTING(L:+ N:-) O/P:LEDmax	(2) 142 Vdc~431Vdc
			(3) I/P:DC TESTING(L:- N:+) O/P:LEDmax	(3) 142 Vdc~431Vdc
			(4) I/P: LOW-LINE=142VDC HIGH-LINE=431VDC O/P: Dimming on/off 【 for Dimming type,】 Ta:25°C	(4) OK
			I/P: LOW-LINE-3V=97V HIGH-LINE+10V=308 V O/P: LEDmax / LEDmin CP 0.7A (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	(1).TEST: OK (2).TEST :OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 100VAC ~305VAC O/P: LEDmax ~ LEDmin CP 0.7A Ta:25°C	TEST:OK

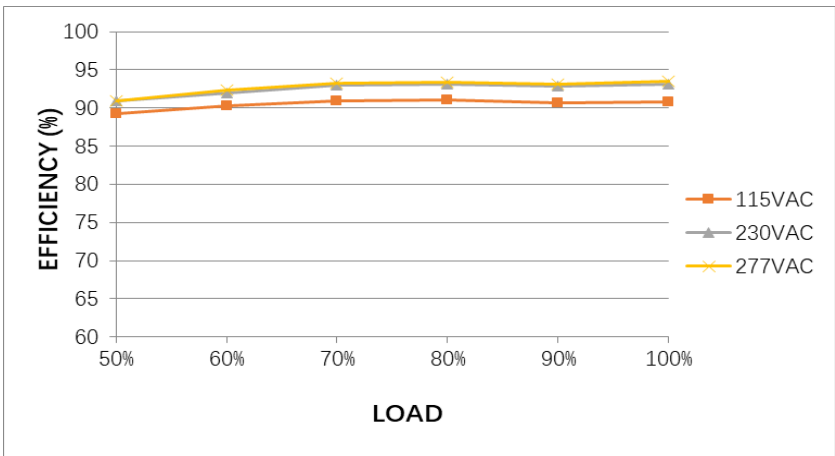
3	INPUT CURRENT (TYP)	230VAC/ 0.5A 115VAC/ 1.1A 277VAC/0.42A	I/P: 230VAC/115VAC/277VAC O/P:LEDmax CP 0.7A Ta:25°C	I =0.472A/ 230VAC I =0.940A/115VAC I =0.404A/277VAC
4	POWER FACTOR(TYP)	0.92/277VAC LEDMAX 0.95/230VAC LEDMAX 0.97/115VAC LEDMAX	I/P: 277VAC/230VAC/115VAC O/P:LEDmax CP 0.7A Ta:25°C	PF=0.946 /277V/100%LOAD PF=0.981/230V/100%LOAD PF=0.999/115V/100%LOAD

P.F vs LOAD

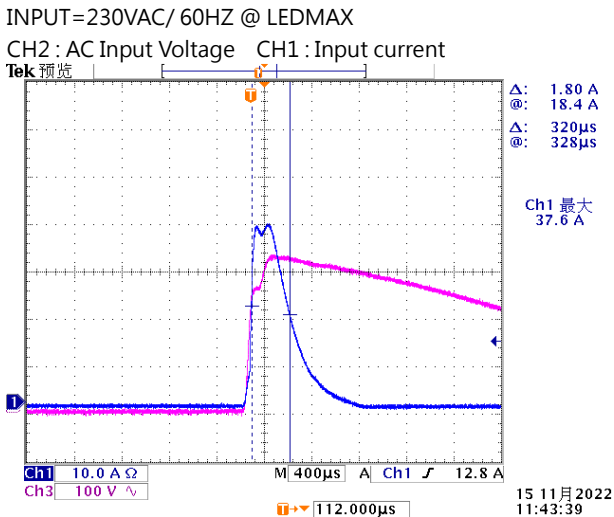


5	EFFICIENCY (TYP)	92.5%	I/P: 230VAC O/P:LEDmax CP 0.7A Ta:25°C	93.09%
---	------------------	-------	---	--------

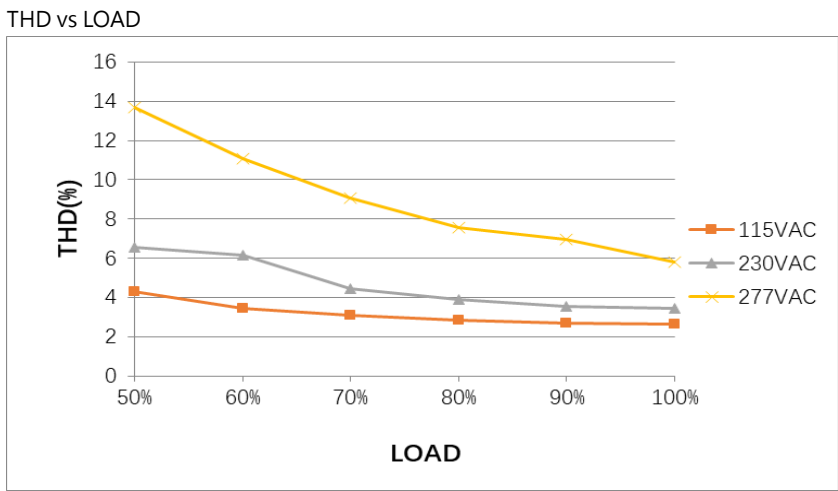
EFFICIENCY vs LOAD



6	INRUSH CURRENT (TYP)	230V/ 45A COLD START (twidth=330 usmeasured at 50% Ipeak) COLD START	I/P: 230VAC O/P:LEDmax CP 0.7A Ta:25°C	I =37.6A /230VAC T50= 320us
---	----------------------	---	---	--------------------------------



7	TOTAL HARMONIC DISTORTION	THD < 10% (@ load ≥ 50% at 115VAC/230VAC, @load ≥ 75% at 277VAC	I/P : 230VAC/115VAC/277VAC O/P : 50% LOAD 75%LOAD CP 0.7A Ta : 25°C	THD : 6.54%230V /50% THD : 4.30%115V /50% THD : 8.36%277V /75%
---	---------------------------	---	---	--



8	STANDBY POWER CONSUMPTION	Standby power consumption <0.5W (Dimming OFF) (For standard version)	I/P : 230VAC O/P : NO LOAD Ta : 25°C	0..446W
---	---------------------------	--	--	---------

9	LEAKAGE CURRENT	EN61347-1 < 0.75mA / 277VAC	I/P: 277 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.231mA N-FG: 0.173mA
---	-----------------	--------------------------------	---	--------------------------------

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P:305VAC I/P: 90 VAC O/P:LEDmax CP 0.7A Ta:25°C	O.T.P. Active PROTECTION TYPE : 1: Derating to 75% loading; stage 2: Derating to 50% loading. recovers automatically after fault condition is removed
2	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 305VAC I/P: 100 VAC O/P: LEDMAX CP: 0.7A&1.05A Ta:25°C	CP: 0.7A NO DAMAGE PROTECTION TYPE : Hiccup mode or constant current limiting, recovers automatically after fault condition is removed CP: 1.05A NO DAMAGE PROTECTION TYPE : Hiccup mode or constant current limiting, recovers automatically after fault condition is removed
3	INPUT OVER VOLTAGE (for XLG-100l only)	320 ~ 390VAC (Shut down output voltage when the input voltage exceeds protection voltage,recovers automatically after fault condition is removed) Can survive input voltage stress of 440Vac for 48 hours	I/P: TESTING O/P: LEDMAX	pass

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q6 Rated: 7.5A /600V	I/P:High-Line +3V =308V AC ON/OFF CP: 0.7A&1.05A VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short I/P:Low-Line -3V = 97V VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short Ta:25°C	308V CP: 0.7A Q6 VDS: (1) 461V (2) 449V (3) 445V (4) 441V (5) 513V CP: 1.05A VDS: (1) 461V (2) 449V (3) 461V (4) 445V (5) 521V 97V CP: 0.7A Q6 VDS: (1) 465V (2) 453V (3) 469V (4) 441V (5) 509V 97V CP: 1.05A Q6 VDS: (1) 469V (2) 449V (3) 469V (4) 449V (5) 521V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated: 12.5A /700V	I/P:High-Line +3V =308v AC ON/OFF CP: 0.7A&1.05A VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short	308V CP: 0.7A Q1 VDS: (1) 489V (2) 461V (3) 481V (4) 453V (5) 457V 97V CP: 1.05A

			<p>I/P:Low-Line -3V = 97V VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short</p> <p>Ta:25°C</p>	<p>Q1 VDS: (1) 541V (2) 505V (3) 541V (4) 493V (5) 537V</p>
3	P.F.C DIODE	<p>D5 Rated: 9A/600V</p>	<p>I/P:High-Line +3V =308v AC ON/OFF CP: 0.7A VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short</p> <p>I/P:Low-Line -3V = 97V O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short</p> <p>Ta:25°C</p>	<p>308V (1) 465V (2) 453V (3) 453V (4)445V (5)453V</p> <p>97V (1) 465V (2) 449V (3) 465V (4) 445V (5) 465V -</p>
4	Diode Peak Voltage	<p>D100 Rated: 10A/400V</p>	<p>I/P:High-Line +3V =308v AC ON/OFF CP: 0.7A&1.05A VDS: O/P: (1)LEDmax (2) LEDmax continue (3) Output Short</p> <p>Ta:25°C</p>	<p>CP: 0.7A Q100 VDS: (1) 303V (2) 301V (3) 22.4V CP: 1.05A Q100 VDS: (1) 208V (2) 204V (3) 25.2V</p>
5	Input Capacitor Voltage	<p>C5 Rated: 47μ /450 V Surge voltage: 580V</p>	<p>I/P:High-Line +3V =308v AC ON/OFF CP: 0.7A VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue</p> <p>Ta:25°C</p>	<p>(1)469V (2)445V (3)485V (4)441V</p>

6	Control IC Voltage Test	<p>PFC IC U1 Rated 10.5V~27V(MIN.)</p> <p>PWM IC U2 Rated 16.3V~ 20V(MIN.)</p> <p>O/P IC U107 Rated 3V~32V</p>	<p>I/P:High-Line +3V =308v AC ON/OFF CP: 0.7A VDS: O/P: (1)LEDmax (2) LEDmin (3) Output Short (4) NO LOAD VRmin.LOW LINE (5)DIM OFF</p> <p>Ta:25°C</p>	<p>U1/ U2 (1) 17.5V (2) 17.5V (3) 17.5V (4) 17.5V (5) 1.5V</p> <p>U107 (1) 17.3V (2) 17.5V (3) 17.5V (4) 17.3V (5) 17.1V</p>
7	TOP SWITCHING STAND BY POWER	<p>U300 Rated 1.5A/ 750 V</p>	<p>AC ON/OFF CP: 0.7A I/P:High-Line +3V =308V O/P: (1)LEDmax (2) LEDmin</p> <p>I/P:Low-Line -3V =97 V O/P: (1)LEDmax (2) LEDmin</p> <p>Ta:25°C</p>	<p>308VAC CP: 0.7A (1) 693V (2) 685V</p> <p>97VAC (1) 572 V (2) 572V</p>
8	VCC Diode Peak Voltage	<p>D304 Rated: 2A/400V Surge CURRENT: 50A D450 Rated: 2A/400V Surge CURRENT: 50A</p>	<p>I/P:High-Line +3V =308v AC ON/OFF CP: 0.7A VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue</p>	<p>D304 D450 (1)2.53A (1)1.73A (2)0.45A (2)0.67A (3)2.53A (3)1.73A (4)0.82A (4)0.72A</p>

SAFETY & EMC TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	EN61347-1 I/P-O/P: 3.75KVAC/min I/P-FG: 2 KVAC/min O/P-FG:1.5KVAC/min	I/P-O/P: 4.125 KVAC/min I/P-FG: 2.4KVAC/min O/P-FG: 1.8 KVAC/min Ta:25°C	I/P-O/P: 2.12mA I/P-FG: 1.72mA O/P-FG: 2.46mA 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°C	I/P-O/P: >9999 MΩ I/P-FG: >9999MΩ O/P-FG:>9999 M Ω NO DAMAGE
3	GROUNDING CONTINUITY	EN61347-1 FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	12mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS C	I/P: 230VAC/50HZ O/P: LEDmax Ta:25°C	PASS
2	CONDUCTION	EN55015	I/P:230VAC (50HZ) O/P: LEDmax /50% LOAD Ta:25°C	PASS Test by certified Lab
3	RADIATION	EN55015	I/P: 230VAC (50HZ) O/P:LEDmax Ta:25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR : 8KV / Contact : 4KV	I/P: 230VAC (50HZ) O/P:LEDmax Ta:25°C	CRITERIA A
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 2KV	I/P: 230VAC (50HZ) O/P:LEDmax Ta:25°C	CRITERIA A
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :4KV L,N-PE:6KV	I/P: 230VAC (50HZ) O/P:LEDmax Ta:25°C	CRITERIA B
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-L-DA2 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 27.5℃ 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=62℃																																																										
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 27.5 ℃</th> <th>HIGH AMBIENT Ta=62 ℃</th> </tr> </thead> <tbody> <tr><td>1</td><td>Q1</td><td>56.1℃</td><td>89.6℃</td></tr> <tr><td>2</td><td>R7</td><td>54.1℃</td><td>89.0℃</td></tr> <tr><td>3</td><td>Q5</td><td>56.3℃</td><td>92.9℃</td></tr> <tr><td>4</td><td>Q6</td><td>57.2℃</td><td>93.5℃</td></tr> <tr><td>5</td><td>C5</td><td>56.0℃</td><td>88.8℃</td></tr> <tr><td>6</td><td>T1</td><td>64.8℃</td><td>97.3℃</td></tr> <tr><td>7</td><td>D100</td><td>55.3℃</td><td>89.3℃</td></tr> <tr><td>8</td><td>D101</td><td>56.0℃</td><td>92.6℃</td></tr> <tr><td>9</td><td>C105</td><td>54.0℃</td><td>87.9℃</td></tr> <tr><td>10</td><td>RT22</td><td>51.5℃</td><td>85.3℃</td></tr> <tr><td>11</td><td>U300</td><td>49.6℃</td><td>83.4℃</td></tr> <tr><td>12</td><td>T2</td><td>51.9℃</td><td>85.0℃</td></tr> <tr><td>13</td><td>TC</td><td>49.2℃</td><td>81.6℃</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 27.5 ℃	HIGH AMBIENT Ta=62 ℃	1	Q1	56.1℃	89.6℃	2	R7	54.1℃	89.0℃	3	Q5	56.3℃	92.9℃	4	Q6	57.2℃	93.5℃	5	C5	56.0℃	88.8℃	6	T1	64.8℃	97.3℃	7	D100	55.3℃	89.3℃	8	D101	56.0℃	92.6℃	9	C105	54.0℃	87.9℃	10	RT22	51.5℃	85.3℃	11	U300	49.6℃	83.4℃	12	T2	51.9℃	85.0℃	13	TC	49.2℃	81.6℃		
NO	Position	ROOM AMBIENT Ta= 27.5 ℃	HIGH AMBIENT Ta=62 ℃																																																									
1	Q1	56.1℃	89.6℃																																																									
2	R7	54.1℃	89.0℃																																																									
3	Q5	56.3℃	92.9℃																																																									
4	Q6	57.2℃	93.5℃																																																									
5	C5	56.0℃	88.8℃																																																									
6	T1	64.8℃	97.3℃																																																									
7	D100	55.3℃	89.3℃																																																									
8	D101	56.0℃	92.6℃																																																									
9	C105	54.0℃	87.9℃																																																									
10	RT22	51.5℃	85.3℃																																																									
11	U300	49.6℃	83.4℃																																																									
12	T2	51.9℃	85.0℃																																																									
13	TC	49.2℃	81.6℃																																																									
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 : 315VAC O/P : FULL LOAD Ta=60 ℃ HUMIDITY= 95% R.H	TEST : OK																																																								
4	TEMPERATURE COEFFICIENT	±0.06%/℃(0~60℃)	I/P : 230 VAC O/P : FULL LOAD	±0.0064%/℃(0~60℃)																																																								
5	STORAGE TEMPERATURE TEST	-40~+80℃	1. Thermal shock Temperature : -45℃~ +85℃ 2. Temperature change rate : 25℃ / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10CYCLE 5. Input/Output condition : AC OFF 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 : 12min/sweep cycle (4) Acceleration : 6G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C TEST : OK
8	CAPACITOR LIFE CYCLE	XLG-100-L-DA2 : SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Tc= 75 °C LIFE TIME (2) I/P : 230VAC O/P : 75% LOAD Tc= 75 °C LIFE TIME (3) I/P : 230VAC O/P : 50% LOAD Tc= 75 °C LIFE TIME	(1) 62370 HRS (2) 81669 HRS (3) 110208 HRS
9	MTBF	Conducted by Parts Stress Analysis Prediction 2137.1K hrs min. Telcordia SR-332 (Bellcore) ; 186.7K hrs min. MIL-HDBK-217F (25°C)	
10	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	WUWQ/HUANGMK	WENF	LINKX