Test Report： XLG-75-12

75W 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

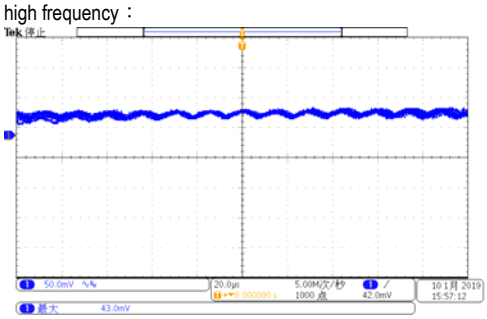
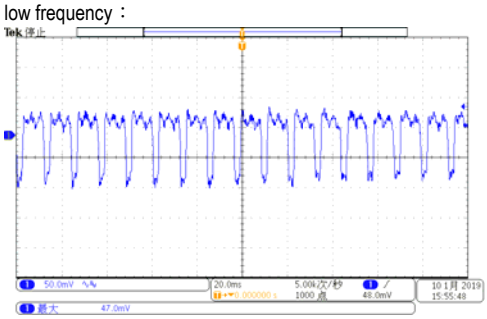
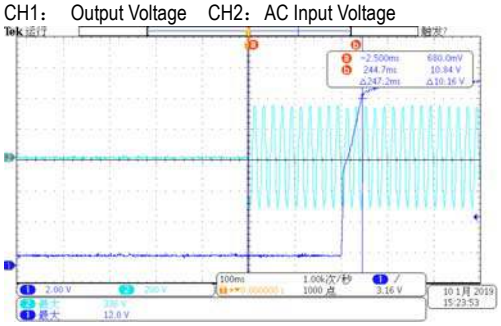
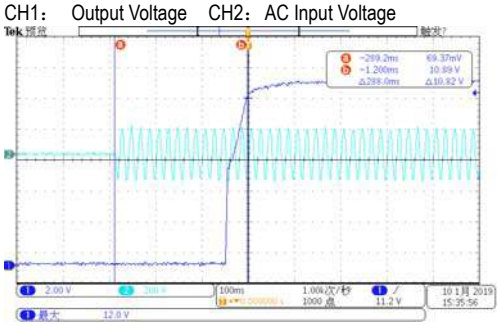
Safety Test
E.M.C. Test

■ RELIABILITY TEST

Environment Test

■ DESIGN VERIFY TEST

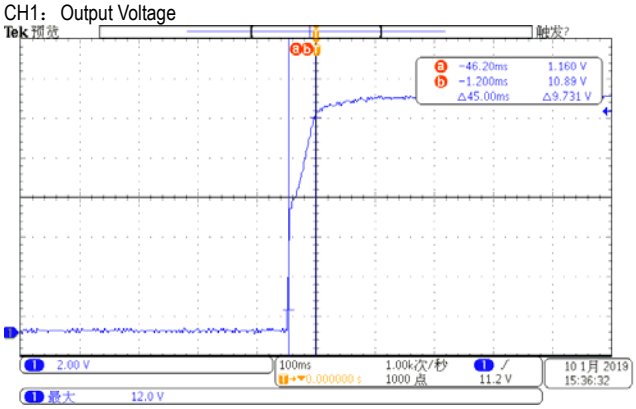
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	CONSTANT CURRENT REGION	8.4V~12V	I/P： 230VAC O/P：LED MODE Ta：25℃	7.2 V~ 12 V
2	CURRENT ADJ. RANGE	2.5A~5A	I/P： 230VAC O/P：SETTING Ta：25℃	2.04A~5.74A
3	VOLTAGE TOLERANCE	-3%~+3%	I/P： 90VAC / 305VAC O/P：FULL/ NO LOAD Ta：25℃	-0.58%~ 0.33%
4	LINE REGULATION	-0.5%~+0.5%	I/P： 90VAC ~ 305VAC O/P：FULL LOAD Ta：25℃	-0.08%~0.17%
5	LOAD REGULATION	-2%~+2%	I/P： 230VAC O/P：FULL ~NO LOAD Ta：25℃	-0.42%~ 0.42%
6	OVER/UNDERSHOOT TEST	<±5 %	I/P： 230VAC O/P：FULL LOAD Ta：25℃	±1.016%
7	CONSTANT POWER	O/P：60W	I/P：230 VAC O/P：Vo×Io	TEST：OK
8	RIPPLE & NOISE (Max)	150mVp-p	I/P： 230VAC O/P：FULL LOAD Ta：25℃	47mVp-p
	high frequency： 		low frequency： 	
9	SET UP TIME(Max)	115VAC/1200ms 230VAC/ 500ms	I/P： 115 VAC I/P： 230 VAC O/P：FULL LOAD Ta：25℃	115VAC/ 288 ms 230VAC/ 247 ms
	INPUT=115VAC/50HZ @ FULL LOAD CH1： Output Voltage CH2：AC Input Voltage 		INPUT=230VAC/50HZ @ FULL LOAD CH1： Output Voltage CH2：AC Input Voltage 	

10	RISE TIME (Max)	115VAC/ 100ms 230VAC/ 100ms	I/P：115 VAC I/P：230 VAC O/P：FULL LOAD Ta：25℃	115VAC/ 45 ms 230VAC/ 43 ms

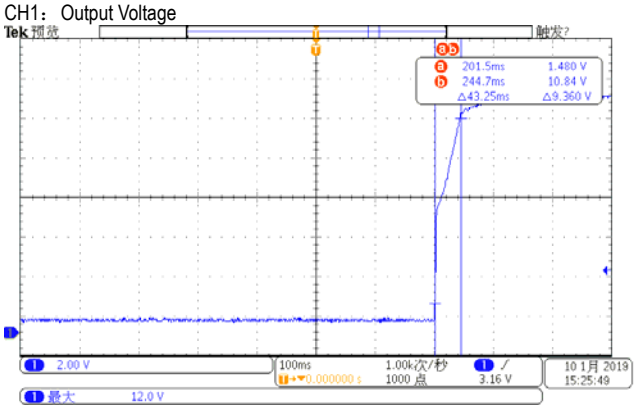
INPUT=115VAC/50HZ @ FULL LOAD

CH1：Output Voltage



INPUT=230VAC/50HZ @ FULL LOAD

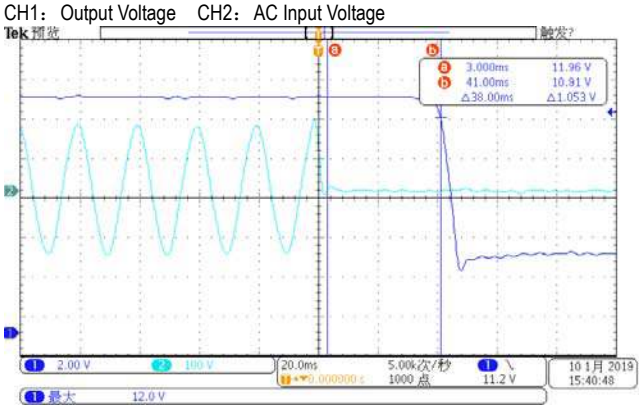
CH1：Output Voltage



11	HOLD UP TIME(Typ)	115VAC/ 10ms 230VAC/ 10ms	I/P： 115 VAC I/P： 230 VAC O/P：FULL LOAD Ta：25℃	120VAC/ 38 ms 230VAC/ 38 ms

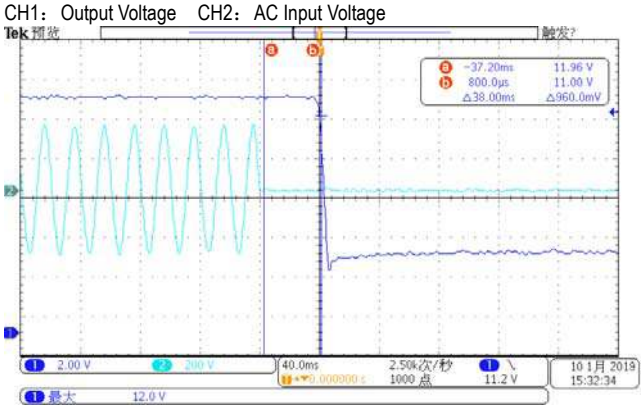
INPUT=115VAC/50HZ @ FULL LOAD

CH1：Output Voltage CH2：AC Input Voltage



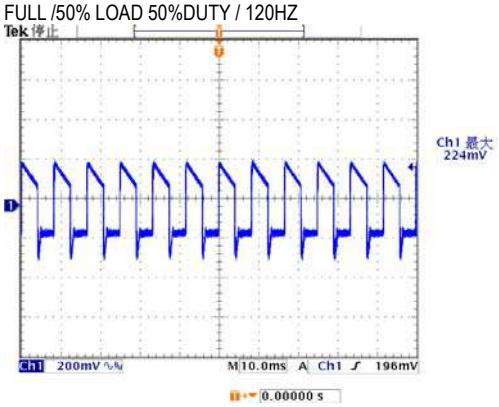
INPUT=230VAC/50HZ @ FULL LOAD

CH1：Output Voltage CH2：AC Input Voltage

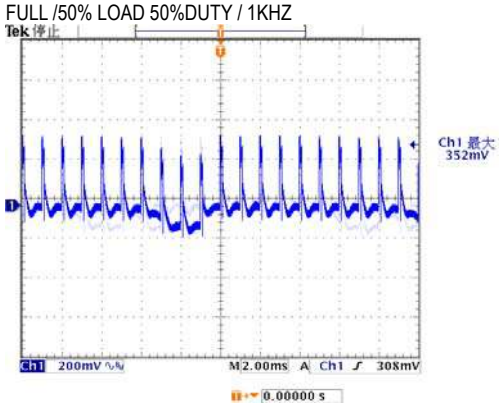


12	DYNAMIC LOAD	V1： 1200 mVp-p	I/P： 230VAC O/P： (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta：25℃	 (1) 224mVp-p (2) 352mVp-p

FULL /50% LOAD 50%DUTY / 120HZ



FULL /50% LOAD 50%DUTY / 1KHZ

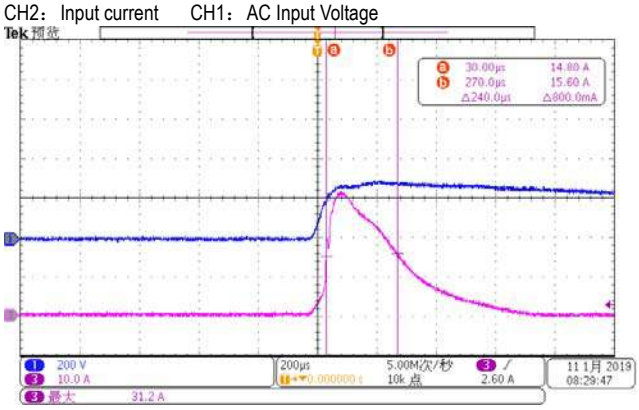


INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	100VAC~305VAC	I/P：TESTING O/P：FULL LOAD Ta：25℃	95 V~ 315 V
			I/P： (1)LOW-LINE-3V=97 V HIGH-LINE+10V=315 V O/P：FULL/MIN LOAD ON：30 Sec OFF：30 Sec 10MIN (2)230VAC ON：0.5 Sec OFF：0.5 Sec 20MIN (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	0.38A/277VAC 0.45A/230VAC 1.0A/115VAC	I/P： 277 VAC I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	I =0.24 A/ 277VAC I =0.28 A/ 230VAC I =0.55 A/ 115VAC
4	LEAKAGE CURRENT	< 0.75mA / 277VAC	I/P： 277 VAC O/P：NO LOAD Ta：25℃	L-FG： 0.419 mA N-FG： 0.419 mA
5	NO LOAD CONSUMPTION	<0.5W	I/P：230VAC O/P：NO LOAD Ta：25℃	0.2282W
6	INRUSH CURRENT(Typ)	230VAC/ 50A COLD START (twidth=300us measured at 50% Ipeak) COLD START at 230V	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	I = 31.2A/ 277VAC Twidth =240 us/50% Ipeak

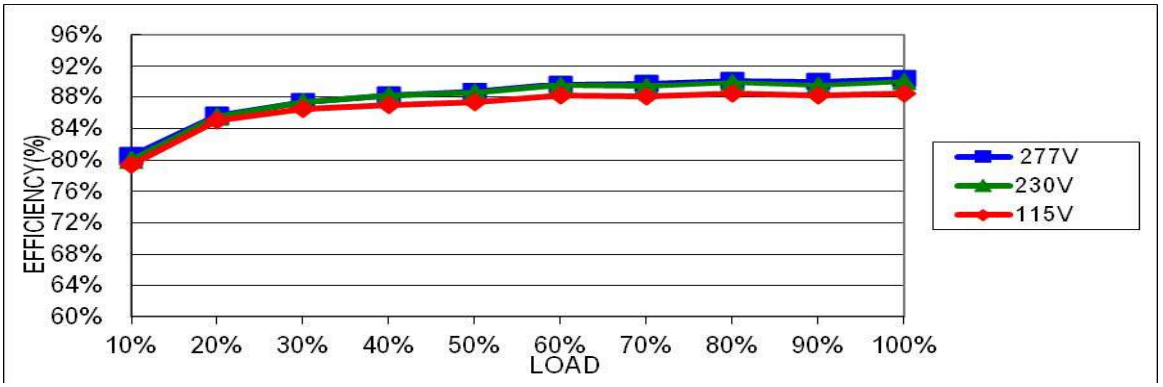
INPUT=230VAC/50HZ @ FULL LOAD

CH2：Input current CH1：AC Input Voltage



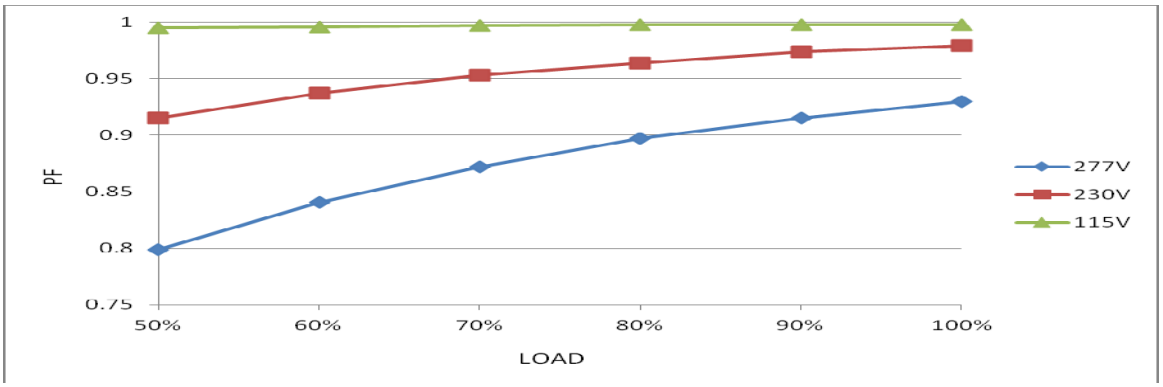
7	EFFICIENCY(Typ)	89%	I/P： 230VAC O/P： FULL LOAD Ta： 25℃	90.4%

EFFICIENCY vs LOAD



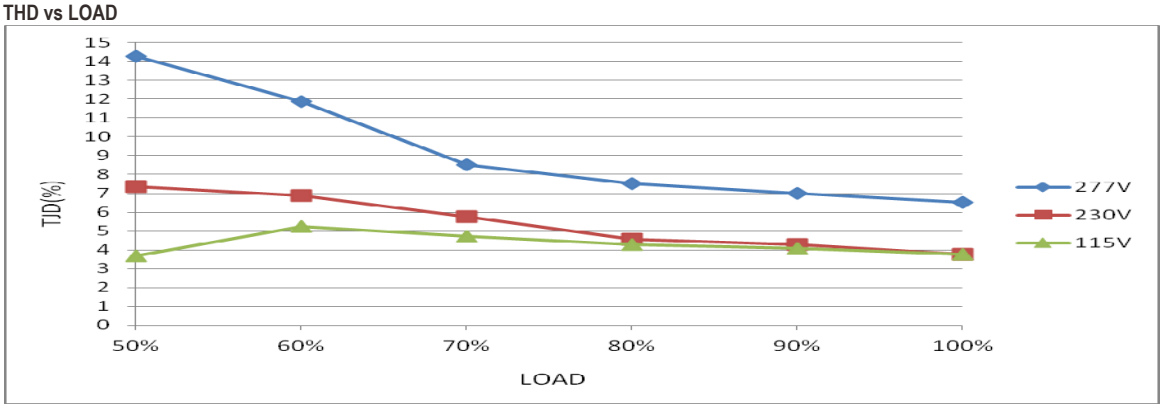
8	POWER FACTOR	0.92/ 277VAC 0.95/ 230VAC 0.97/ 115VAC	I/P： 277 VAC I/P： 230 VAC I/P： 115 VAC O/P： FULL LOAD Ta： 25℃	PF= 0.930 / 277VAC PF= 0.979 / 230VAC PF= 0.998 / 115VAC

P.F vs LOAD



9	TOTAL HARMONIC DISTORTION	THD＜10% （@load≥50%/115VAC， @load≥50%/230VAC， @load≥75%/277VAC）	I/P： 115 VAC/50% LOAD I/P： 230 VAC/50% LOAD I/P： 277 VAC/75% LOAD Ta： 25℃	THD=3.68% @50% load /115VAC THD=7.38% @50% load /230VAC THD=7.99% @75% load /277VAC

THD vs LOAD



PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	95%~108%	I/P： 100VAC I/P： 230VAC I/P： 305VAC O/P： TESTING Ta：25℃	101.4 %/ 100VAC 101.4 %/ 230VAC 101.4 %/ 305VAC Hiccup mode or Constant current Limiting，recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	13V~19V	I/P： 100VAC I/P： 230VAC I/P： 305VAC O/P： NO LOAD Ta：25℃	16.1V/ 100VAC 16.1V/ 230VAC 16.3V/ 305VAC Shut down output voltage，re-power on to recovery
3	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
4	SHORT CIRCUIT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P： 100VAC 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 ~ 370VAC (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 Power Transistor	Q 2 Rated 800V/6A	I/P：High-Line +3V =308V O/P： (1) Full Load Turn on (2) Output Short (3) Full load continue Ta：25℃	(1) 638 V (2) 574 V (3) 646 V
2	Diode Peak Voltage	Q101 Rated 110A/80V	I/P：High-Line +3V =308V O/P： (1) Full Load Turn on (2) Output Short (3) Full load continue Ta：25℃	(1) 57.6 V (2) 50.2 V (3) 57.6 V
3	PFC Transistor	Q1 Rated 650V/10.5A	I/P：High-Line +3V =308V O/P： (1) Full Load Turn on (2) Output Short (3) Full load continue Ta：25℃	(1) 482 V (2) 478 V (3) 454 V
4	P.F.C DIODE	D5 Rated 3 A/ 600V	I/P：High-Line +3V =308V O/P： (1) Full Load Turn on (2) Output Short (3) Full load continue Ta：25℃	(1)442V (2)450V (3)422V

5	Control IC	U1 Rated 27V (MAX.)	I/P：High-Line +3V =308 V O/P：((1) FULL LOAD (2) Output Short (3) O.L.P (4) O.V.P (5) Low Line No Load Vo(min) Ta：25℃	 (1) 16.0 V (2) 15.8 V (3) 15.8 V (4) 12.6 V (5) 15.4 V
6	Input Capacitor Voltage	C5 Rated： 33 μ / 450 V	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)449V (2)446V (3)446V (4)446V

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P：4.2KVAC/min I/P-FG： 2.1KVAC/min O/P-FG：1.5KVAC/min	I/P-O/P：4.6 KVAC/min I/P-FG： 2.52 KVAC/min O/P-FG：1.8 KVAC/min Ta：25℃	I/P-O/P：3.343 mA I/P-FG： 3.243 mA O/P-FG：2.676 mA 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：>9999 MΩ I/P-FG： >9999 MΩ O/P-FG：8883 MΩ
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25℃	16 mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS C	I/P：230 VAC/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,N-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-75-12A 1. ROOM AMBIENT BURN-IN：2 HRS I/P： 230VAC O/P： FULL LOAD Ta=26.6 ℃ 2. HIGH AMBIENT BURN-IN： 2 HRS I/P： 230VAC O/P： FULL LOAD Ta=62.4 ℃		

NO	Position	ROOM AMBIENT Ta=26.6 ℃	HIGH AMBIENT Ta=62.4 ℃
1	ZNR1	48.6℃	83.7℃
2	RTH1	50.9℃	84.9℃
3	C1	50.6℃	85.8℃
4	LF2	49.6℃	85.0℃
5	BD1	53.5℃	89.0℃
6	C7	50.3℃	85.7℃
7	Q1	55.4℃	91.3℃
8	Q2	55.8℃	92.5℃
9	U1	51.7℃	87.3℃
10	U2	53.1℃	88.6℃
11	C5	53.0℃	88.4℃
12	D6	54.8℃	90.8℃
13	C50	53.5℃	89.1℃
14	L2	54.1℃	90.0℃
15	T1	58.5℃	94.9℃
16	Q101	57.5℃	94.0℃
17	C102	54.2℃	90.2℃
18	C104	55.6℃	91.7℃
19	RTH2	52.5℃	87.6℃
20	TC	48.8℃	83.3℃

2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P： 305VAC/100VAC O/P：100% 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	±0.019 %/℃(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：12min/sweep cycle (4) Acceleration：6G (5) Test Time：72min in each axis (X.Y.Z) (6) Ta：25℃ TEST：OK	
8	CAPACITOR LIFE CYCLE	XLG-75-12：SUPPOSE C104 IS THE MOST CRITICAL COMPONENT (1) I/P： 230VAC O/P：FULL LOAD Tc= 70 ℃ LIFE TIME (2) I/P： 230VAC O/P：75% LOAD Tc= 70 ℃ LIFE TIME (3) I/P： 230VAC O/P：50% LOAD Tc= 70 ℃ LIFE TIME		(1) 37983 HRS (2) 69115 HRS (3) 104819 HRS
9	MTBF	Conducted by Parts Stress Analysis Prediction 1232.28K hrs min. Telcordia SR-332 (Bellcore) 376.3K 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