



# Test Report: XLG-150-L- DA2

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150W 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

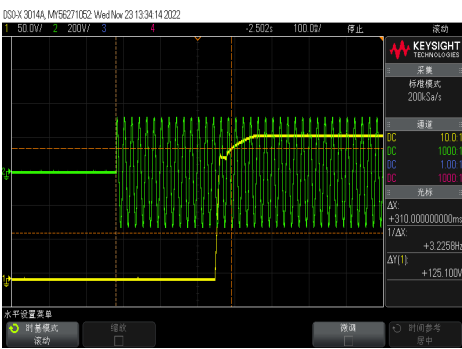
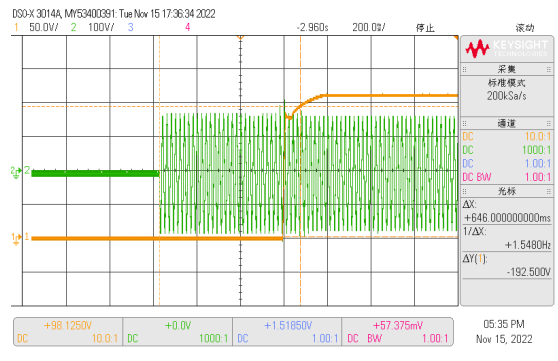
## ■ RELIABILITY TEST

ENVIRONMENT TEST

## ■ DESIGN VERIFY TEST

### OUTPUT FUNCTION TEST

| NO | TEST ITEM                  | SPECIFICATION  | TEST CONDITION  | RESULT   |
|----|----------------------------|--|---|--|
| 1  | CURRENT TOLERANCE          | ±5%  | I/P:230VAC<br>O/P:LEDmax<br>CP: 0.7A & 1.05A<br>Ta:25°C           | CP0.7A:<br>0.7076A/230VAC@CV MAX-1V<br>0.7072A/230VAC@CV MIN<br><br>-1.03%~1.09%<br>CP 1.05A:<br>1.047A/230VAC@CV MAX-1V<br>1.046A/230VAC@CV MIN<br>0.14~0.27% |
| 2  | FULL POWER CURRENT RANGE   | 700~1050mA   | I/P: 230VAC<br>O/P:LEDmax<br>CP: 0.7A & 1.05A<br>Ta:25°C          | 214V/0.7A/230VAC<br>142V/1.05A/230VAC  |
| 3  | OPEN CIRCUIT VOLTAGE (max) | 240V   | I/P: 230VAC<br>O/P:NO LOAD<br>CP: OPEN<br>Ta:25°C                 | 221V   |
| 4  | CONSTANT CURRENT REGION    | CP 0.7A:<br>CH1:120V~ 214V<br><br>CP 1.05A:<br>CH1:120V~ 142V          | I/P: 230VAC<br>O/P:LEDmax<br>CP: 0.7A & 1.05A<br>Ta:25°C          | CP 0.7A:<br>60V~214 V/230VAC<br><br>CP 1.05A:<br>60V~ 142V/230VAC  |
| 5  | CURRENT ADJ. RANGE         | CH1: 350mA~1050mA  | I/P: 230VAC<br>O/P:CVmin& CVmax-1V<br>CP: 0.7A & 1.05A<br>Ta:25°C | 0.266mA~0.824mA/230VAC@CV<br>MAX-1V<br>0.266mA~1.09mA/230VAC@CV<br>MIN   |
| 6  | CURRENT RIPPLE             | 4.0% (@full load)  | I/P: 230VAC<br>O/P:LEDmax<br>CP: 0.7A & 1.05A<br>Ta:25°C          | CP 0.7A:<br>1.15%<br><br>CP 1.05A:<br>1.13%  |
| 7  | AUXILIARY DC OUTPUT        | 12V@250mA tolerance ±<br>10%, ripple 200mVp-p<br>(only for DA2-A-type) | I/P: 230VAC<br>O/P:LEDmax<br>CP: 0.7A & 1.05A<br>Ta:25°C          | PASS   |

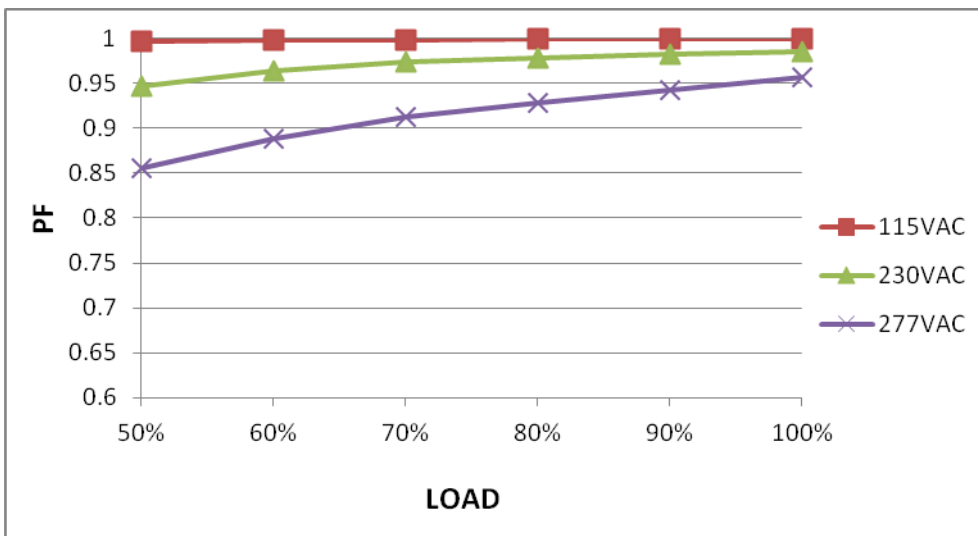
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|--|-------------|--|--|-------------------------------|
| 8  | SET UP TIME | 230VAC/ 500 ms (Max)<br>115VAC/ 1200 ms (Max)                                      | I/P: 230VAC<br>I/P: 115VAC<br>O/P:LEDmax<br>CP 0.7A<br>Ta:25°C | 230VAC/310ms<br>115VAC/ 646ms |
| INPUT=230VAC/50HZ @ LEDMAX@ CP 0.7A<br>CH1 : Output Voltage CH2 : AC Input Voltage |             | INPUT=115VAC/60HZ @ LEDMAX@ CP 0.7A<br>CH1 : Output Voltage CH2 : AC Input Voltage |  |                               |
|   |             |  |  |                               |

### INPUT FUNCTION TEST

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

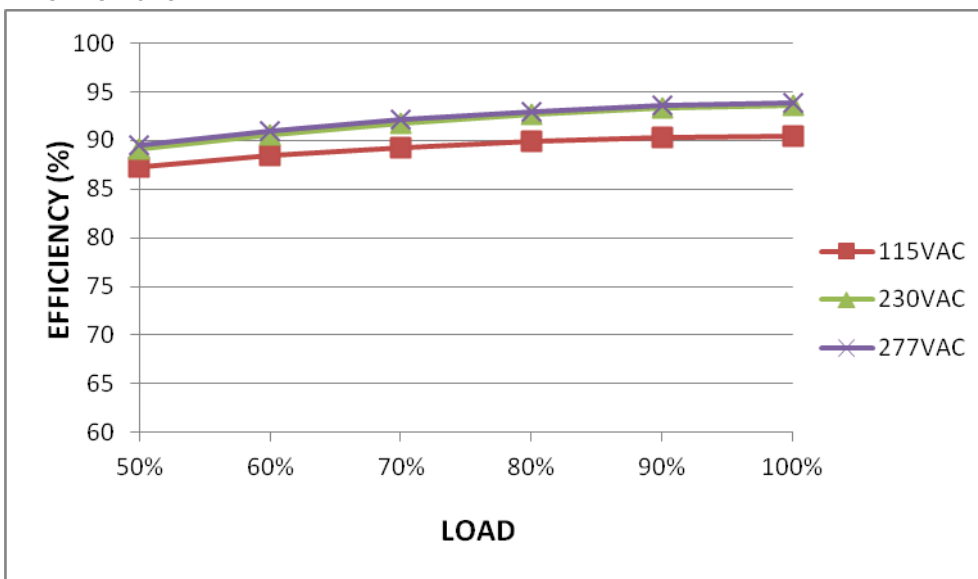
|   |                       |  |   |   |
|---|-----------------------|--|---|---|
| 2 | INPUT FREQUENCY RANGE | 47HZ ~63 HZ<br>NO DAMAGE                                       | I/P: 100VAC ~305VAC<br>O/P: LEDmax ~ LEDmin<br>CP 0.7A<br>Ta:25°C | TEST: OK  |
| 3 | INPUT CURRENT (TYP)   | 230VAC/ 1.0A<br>115VAC/ 1.8A<br>277VAC/0.8A                    | I/P: 230VAC/115VAC/277VAC<br>O/P:LEDmax<br>CP 0.7A<br>Ta:25°C     | I =0.690A/ 230VAC<br>I =1.400A/115VAC<br>I =0.586A/277VAC                   |
| 4 | POWER FACTOR(TYP)     | 0.92/277VAC LEDMAX<br>0.95/230VAC LEDMAX<br>0.97/115VAC LEDMAX | I/P: 277VAC/230VAC/115VAC<br>O/P:LEDmax<br>CP 0.7A<br>Ta:25°C     | PF=0.964 /277V/100%LOAD<br>PF=0.987/230V/100%LOAD<br>PF=0.999/115V/100%LOAD |

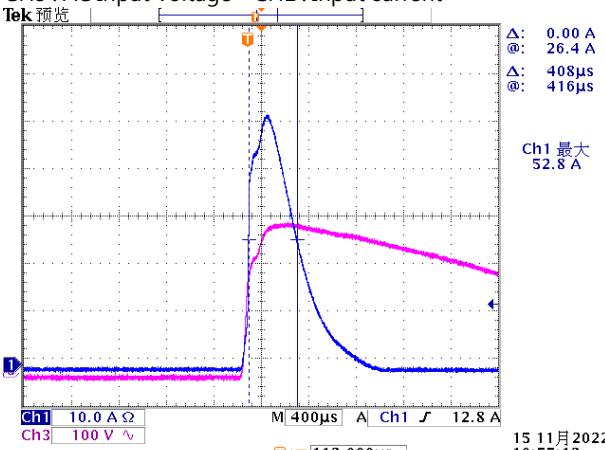
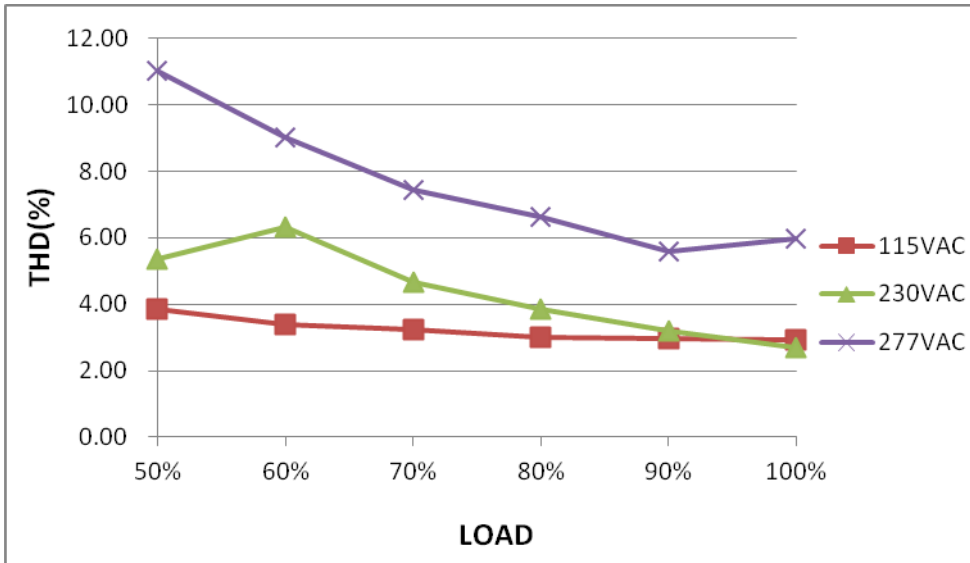
P.F vs LOAD



|   |                  |     |   |        |
|---|------------------|-----|---|--------|
| 5 | EFFICIENCY (TYP) | 93% | I/P: 230VAC<br>O/P:LEDmax<br>CP 0.7A<br>Ta:25°C | 94.06% |
|---|------------------|-----|---|--------|

EFFICIENCY vs LOAD



| 6  | INRUSH CURRENT (TYP)      | 230V/ 60A<br>COLD START<br><br>(twidth=500 usmeasured<br>at 50% Ipeak) COLD START | I/P: 230VAC<br>O/P:LEDmax<br>CP 0.7A<br>Ta:25°C                                 | I =52.8A /230VAC<br>T50=408 uS                                       |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
|--|---------------------------|---|---|--|----------|----------------|----------------|----------------|-----|------|------|-------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|------|------|------|------|
| <p>INPUT=230VAC/ 60HZ @ LEDMAX<br/>CH3 : AC Input Voltage CH1 : Input current</p>  <p>Ch1 最大 52.8 A<br/>Δ: 0.00 A @: 26.4 A<br/>Δ: 408μs @: 416μs</p> <p>15 11月2022 10:55:13</p>  |                           |   |   |  |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| 7  | TOTAL HARMONIC DISTORTION | THD < 10% (@ load ≥ 50% at 115VAC/230VAC, @load ≥ 75% at 277VAC                   | I/P : 230VAC/115VAC/277VAC<br>O/P : 50% LOAD<br>75%LOAD<br>CP 0.7A<br>Ta : 25°C | THD : 5.35%230V /50%<br>THD : 3.84%115V /50%<br>THD : 7.02%277V /75% |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| <p>THD vs LOAD</p>  <table border="1"> <caption>THD vs LOAD Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>115VAC THD (%)</th> <th>230VAC THD (%)</th> <th>277VAC THD (%)</th> </tr> </thead> <tbody> <tr> <td>50%</td> <td>~3.8</td> <td>~5.3</td> <td>~11.0</td> </tr> <tr> <td>60%</td> <td>~3.5</td> <td>~6.5</td> <td>~9.0</td> </tr> <tr> <td>70%</td> <td>~3.2</td> <td>~4.8</td> <td>~7.5</td> </tr> <tr> <td>80%</td> <td>~3.0</td> <td>~4.0</td> <td>~6.8</td> </tr> <tr> <td>90%</td> <td>~2.8</td> <td>~3.2</td> <td>~5.8</td> </tr> <tr> <td>100%</td> <td>~2.8</td> <td>~2.8</td> <td>~6.0</td> </tr> </tbody> </table> |                           |   |   |  | LOAD (%) | 115VAC THD (%) | 230VAC THD (%) | 277VAC THD (%) | 50% | ~3.8 | ~5.3 | ~11.0 | 60% | ~3.5 | ~6.5 | ~9.0 | 70% | ~3.2 | ~4.8 | ~7.5 | 80% | ~3.0 | ~4.0 | ~6.8 | 90% | ~2.8 | ~3.2 | ~5.8 | 100% | ~2.8 | ~2.8 | ~6.0 |
| LOAD (%)   | 115VAC THD (%)            | 230VAC THD (%)  | 277VAC THD (%)  |  |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| 50%  | ~3.8                      | ~5.3  | ~11.0   |  |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| 60%  | ~3.5                      | ~6.5  | ~9.0  |  |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| 70%  | ~3.2                      | ~4.8  | ~7.5  |  |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| 80%  | ~3.0                      | ~4.0  | ~6.8  |  |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| 90%  | ~2.8                      | ~3.2  | ~5.8  |  |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| 100%   | ~2.8                      | ~2.8  | ~6.0  |  |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |
| 8  | STANDBY POWER CONSUMPTION | Standby power consumption <0.5W (Dimming OFF, Only for standard version DA2-type) | I/P : 230VAC<br>O/P : NO LOAD<br>Ta : 25°C                                      | <0.43W   |          |                |                |                |     |      |      |       |     |      |      |      |     |      |      |      |     |      |      |      |     |      |      |      |      |      |      |      |

|   |                 |                                |   |                                |
|---|-----------------|--------------------------------|---|--------------------------------|
| 9 | LEAKAGE CURRENT | EN61347-1<br>< 0.75mA / 277VAC | I/P: 277 VAC<br>O/P:Min LOAD<br>Ta:25°C | L-FG: 0.445mA<br>N-FG:0.085 mA |
|---|-----------------|--------------------------------|---|--------------------------------|

### ROTECTION FUNCTION TEST

| NO | TEST ITEM                              | SPECIFICATION  | TEST CONDITION   | RESULT  |
|----|--|--|--|---|
| 1  | OVER TEMPERATURE PROTECTION            | NO DAMAGE  | I/P:305VAC<br>I/P: 90 VAC<br>O/P:LEDmax<br>CP 0.7A<br>Ta:25°C            | O.T.P. Active<br>PROTECTION TYPE : OK<br>1: Derating to 75% loading; stage<br>2:Derating to 50% loading.<br>recovers automatically after fault condition is removed   |
| 2  | SHORT PROTECTION                       | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE   | I/P: 305VAC<br>I/P: 100 VAC<br>O/P: LEDMAX<br>CP: 0.7A &1.05A<br>Ta:25°C | CP: 0.7A<br>NO DAMAGE<br>PROTECTION TYPE : OK<br>Hiccup mode or constant current limiting, recovers automatically after fault condition is removed<br>CP: 1.05A<br>NO DAMAGE<br>PROTECTION TYPE : OK<br>Hiccup mode or constant current limiting, recovers automatically after fault condition is removed |
| 3  | INPUT OVER VOLTAGE (for XLG-150l only) | 320 ~ 390VAC (Shut down output voltage when the input voltage exceeds protection voltage,recovers automatically after fault condition is removed)<br>Can survive input voltage stress of 440Vac for 48 hours | I/P: TESTING<br>O/P: LEDMAX  | pass  |

### COMPONENT STRESS TEST

| NO | TEST ITEM   | SPECIFICATION           | TEST CONDITION  | RESULT  |
|----|---|-------------------------|---|---|
| 1  | PWM Transistor<br>( D to S) or (C to E) <b>Peak Voltage</b>   | Q5 Rated:<br>11A /600V  | <p>I/P:High-Line +3V =308V<br/>AC ON/OFF<br/><b>CP: 0.7A&amp;1.05A</b><br/>VDS:<br/>O/P: (1)LEDmax<br/>(2) LEDmax continue<br/>(3) LEDmin<br/>(4) LEDmin continue<br/>(5) Output Short</p> <p>I/P:Low-Line -3V = 97V<br/>VDS:<br/>O/P: (1)LEDmax<br/>(2) LEDmax continue<br/>(3) LEDmin<br/>(4) LEDmin continue<br/>(5) Output Short</p> <p>VGS:<br/>(1) LEDmax continue<br/>(2) LEDmin continue</p> <p>Ta:25°C</p> | <p>308V<br/><b>CP: 0.7A</b><br/>Q6<br/>VDS:<br/>(1) 447V<br/>(2) 439V<br/>(3) 453V<br/>(4) 429V<br/>(5) 485 V<br/><b>CP: 1.05A</b><br/>VDS:<br/>(1) 443V<br/>(2) 439V<br/>(3) 447V<br/>(4) 439V<br/>(5) 491 V</p> <p>97V<br/><b>CP: 0.7A</b><br/>Q6<br/>VDS:<br/>(1) 453V<br/>(2) 431V<br/>(3) 461V<br/>(4) 433V<br/>(5) 485V</p> |
| 2  | P.F.C Transistor<br>( D to S) or (C to E) <b>Peak Voltage</b> | Q1 Rated:<br>10.6A/650V | <p>I/P:High-Line +3V =308v<br/>AC ON/OFF<br/><b>CP: 0.7A</b><br/>VDS:<br/>O/P: (1)LEDmax<br/>(2) LEDmax continue<br/>(3) LEDmin<br/>(4) LEDmin continue<br/>(5) Output Short</p> <p>I/P:Low-Line -3V = 97V<br/>VDS:<br/>O/P: (1)LEDmax<br/>(2) LEDmax continue<br/>(3) LEDmin<br/>(4) LEDmin continue<br/>(5) Output Short</p> <p>Ta:25°C</p>   | <p>308V<br/><b>CP: 0.7A</b><br/>Q1<br/>VDS:<br/>(1) 508V<br/>(2) 464V<br/>(3) 476V<br/>(4) 464V<br/>(5) 472V</p> <p>97V<br/><b>CP:1.05A</b><br/>Q1<br/>VDS:<br/>(1) 523V<br/>(2) 499V<br/>(3) 527V<br/>(4) 495V<br/>(5) 523V</p>  |

|   |                         |  |  |  |
|---|-------------------------|--|--|--|
| 3 | P.F.C DIODE             | <p>D5 Rated:<br/>9A/600V</p>   | <p>I/P:High-Line +3V =308v<br/>AC ON/OFF<br/><b>CP: 0.7A</b><br/>VDS:<br/>O/P: (1)LEDmax<br/>(2) LEDmax continue<br/>(3) LEDmin<br/>(4) LEDmin continue<br/>(5) Output Short</p> <p>I/P:Low-Line -3V = 97V<br/>O/P: (1)LEDmax<br/>(2) LEDmax continue<br/>(3) LEDmin<br/>(4) LEDmin continue<br/>(5) Output Short</p> <p>Ta:25°C</p> | <p>(1) 457V<br/>(2) 445V<br/>(3) 441V<br/>(4) 441V<br/>(5) 437V</p> <p>(1) 453V<br/>(2) 445V<br/>(3) 453V<br/>(4) 441V<br/>(5) 441V</p>                        |
| 4 | Diode Peak Voltage      | <p>D100 Rated:<br/>10A/600V</p>  | <p>I/P:High-Line +3V =308v<br/>AC ON/OFF<br/><b>CP: 0.7A&amp;1.05A</b><br/>VDS:<br/>O/P: (1)LEDmax<br/>(2) LEDmax continue<br/>(3) Output Short</p> <p>Ta:25°C</p>   | <p><b>CP: 0.7A</b><br/>Q100<br/>VDS:<br/>(1) 509V<br/>(2) 509V<br/>(3) 86V</p> <p><b>CP: 1.05A</b><br/>Q100<br/>VDS:<br/>(1) 358V<br/>(2) 358V<br/>(3) 88V</p> |
| 5 | Input Capacitor Voltage | <p>C5 Rated:<br/>82μ /450 V<br/>Surge voltage: 540V</p>  | <p>I/P:High-Line +3V =308v<br/>AC ON/OFF<br/><b>CP: 0.7A</b><br/>VDS:<br/>O/P: (1)LEDmax<br/>(2) LEDmax continue<br/>(3) LEDmin<br/>(4) LEDmin continue</p> <p>Ta:25°C</p>   | <p>(1) 462V<br/>(2) 442V<br/>(3) 454V<br/>(4) 438V</p>   |
| 6 | Control IC Voltage Test | <p>PFC IC U1 Rated<br/>9.75V~27V(MIN.)</p> <p>PWM IC U2 Rated<br/>13V~26 V(MIN.)</p> <p>O/P IC U107 Rated<br/>3V~30V</p> | <p>I/P:High-Line +3V =308v<br/>AC ON/OFF<br/><b>CP: 0.7A</b><br/>VDS:<br/>O/P: (1)LEDmax<br/>(2) LEDmin<br/>(3) Output Short<br/>(4) NO LOAD VRmin.LOW<br/>LINE<br/>(5)DIM OFF</p> <p>Ta:25°C</p>  | <p><b>U1&amp;U2</b><br/>(1) 14.5V<br/>(2) 14.5V<br/>(3) 14.7V<br/>(4) 14.7V<br/>(5) 1.2V</p>   |



|   |                                 |   |  |   |
|---|---------------------------------|---|--|---|
|   |                                 |   |  | U107<br>(1) 10.1V<br>(2) 10.1V<br>(3) 10.1V<br>(4) 10.2V<br>(5) 10.2V   |
| 7 | TOP SWITCHING<br>STAND BY POWER | U300 Rated<br>1.5A/ 750V  | AC ON/OFF<br><b>CP: 0.7A</b><br>I/P:High-Line +3V =308V<br>O/P: (1)LEDmax<br>(2) LEDmin<br>I/P:Low-Line -3V =97 V<br>O/P: (1)LEDmax<br>(1) LEDmin<br>Ta:25°C | <b>CP: 0.7A</b><br>(1) 562V<br>(2) 546V<br><br>(1) 526V<br>(2) 530V   |
| 8 | VCC Diode Peak Voltage          | D304 Rated:<br>2 A/400V<br><br>D450 Rated:<br>2A/400V<br><br>D470 Rated:<br>2A/400V | I/P:High-Line +3V =308v<br>AC ON/OFF<br><b>CP: 0.7A</b><br>VDS:<br>O/P: (1)LEDmax<br>(2) LEDmax continue<br>(3) LEDmin<br>(4) LEDmin continue                | <br>D304                      D470<br>(1) 1.26A                  (1) 0.90A<br>(2) 0.34A                  (2) 0.119A<br>(3) 1.22A                  (3) 0.92A<br>(4) 0.36A                  (4) 0.118A<br><br>D450<br>(1) 0.99A<br>(2) 0.319A<br>(3) 0.86A<br>(4) 0.31A |

## SAFETY & EMC TEST

### SAFETY TEST

| NO | TEST ITEM            | SPECIFICATION  | TEST CONDITION  | RESULT  |
|----|----------------------|--|---|---|
| 1  | WITHSTAND VOLTAGE    | EN61347-1<br>I/P-O/P: 3.75KVAC/min<br>I/P-FG: 2 KVAC/min<br>O/P-FG:1.5KVAC/min | I/P-O/P: 4.125 KVAC/min<br>I/P-FG: 2.4KVAC/min<br>O/P-FG: 1.8 KVAC/min<br>Ta:25°C | I/P-O/P: 2.421mA<br>I/P-FG: 2.202mA<br>O/P-FG: 2.669mA<br>NO DAMAGE |
| 2  | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ<br>I/P-FG: 500VDC>100MΩ<br>O/P-FG:500VDC>100MΩ            | I/P-O/P: 500 VDC<br>I/P-FG: 500 VDC<br>O/P-FG: 500 VDC<br>Ta:25°C                 | I/P-O/P: 9999MΩ<br>I/P-FG: 9999MΩ<br>O/P-FG: 9999M Ω<br>NO DAMAGE   |
| 3  | GROUNDING CONTINUITY | EN61347-1<br>FG(PE) TO CHASSIS<br>OR TRACE < 100 mΩ                            | 40A / 2min<br>Ta:25°C   | 12mΩ  |

### E.M.C TEST

| NO | TEST ITEM   | SPECIFICATION   | TEST CONDITION  | RESULT                        |
|----|---|---|---|-------------------------------|
| 1  | HARMONIC  | EN61000-3-2<br>CLASS C                                      | I/P: 230VAC/50HZ<br>O/P: LEDmax<br>Ta:25°C            | PASS                          |
| 2  | CONDUCTION  | FCC PART 15   | I/P:230VAC (50HZ)<br>O/P: LEDmax /50% LOAD<br>Ta:25°C | PASS<br>Test by certified Lab |
| 3  | RADIATION   | FCC PART 15   | I/P: 230VAC (50HZ)<br>O/P:LEDmax<br>Ta:25°C           | PASS<br>Test by certified Lab |
| 4  | E.S.D   | EN61000-4-2<br>LIGHT INDUSTRY<br>Air : 8KV<br>Contact : 4KV | I/P: 230VAC (50HZ)<br>O/P:LEDmax<br>Ta:25°C           | CRITERIA A                    |
| 5  | E.F.T   | EN61000-4-4<br>LIGHT INDUSTRY<br>INPUT : 2KV                | I/P: 230VAC (50HZ)<br>O/P:LEDmax<br>Ta:25°C           | CRITERIA A                    |
| 6  | SURGE   | EN61000-4-5<br>LIGHT INDUSTRY<br>L-N : 4KV<br>L -PE : 6KV   | I/P: 230VAC (50HZ)<br>O/P:LEDmax<br>Ta:25°C           | CRITERIA B                    |
| 7  | Test by certified Lab & Test Report Prepare<br>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-150-L-DA2-A<br>1. ROOM AMBIENT BURN-IN : 2 HRS<br>I/P : 230VAC O/P : FULL LOAD Ta= 29.3°C<br>2. HIGH AMBIENT BURN-IN : 2 HRS<br>I/P : 230VAC O/P : FULL LOAD Ta=57.8°C |  |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
|    |   |  |  | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 29.3 °C</th> <th>HIGH AMBIENT Ta=57.8 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>RTH1</td><td>69.5°C</td><td>92.2°C</td></tr> <tr><td>2</td><td>BD1</td><td>65.4°C</td><td>91.4°C</td></tr> <tr><td>3</td><td>Q1</td><td>65.8°C</td><td>90.2°C</td></tr> <tr><td>4</td><td>R7</td><td>67.4°C</td><td>92.6°C</td></tr> <tr><td>5</td><td>C51</td><td>69.8°C</td><td>92.2°C</td></tr> <tr><td>6</td><td>C5</td><td>69.8°C</td><td>95.8°C</td></tr> <tr><td>7</td><td>U2</td><td>71.7°C</td><td>96.8°C</td></tr> <tr><td>8</td><td>T1</td><td>88.6°C</td><td>105.9°C</td></tr> <tr><td>9</td><td>U1</td><td>63.8°C</td><td>88.7°C</td></tr> <tr><td>10</td><td>D5</td><td>69.0°C</td><td>94.6°C</td></tr> <tr><td>11</td><td>Q6</td><td>76.9°C</td><td>102.5°C</td></tr> <tr><td>12</td><td>D101</td><td>74.2°C</td><td>95.4°C</td></tr> <tr><td>13</td><td>U300</td><td>77.3°C</td><td>102.2°C</td></tr> <tr><td>14</td><td>C105</td><td>71.5°C</td><td>95.2°C</td></tr> <tr><td>15</td><td>U107</td><td>67.6°C</td><td>91.7°C</td></tr> <tr><td>16</td><td>RT22</td><td>64.8°C</td><td>90.5°C</td></tr> <tr><td>17</td><td>C312</td><td>68.6°C</td><td>93.7°C</td></tr> <tr><td>18</td><td>T2</td><td>75.8°C</td><td>101.3°C</td></tr> <tr><td>19</td><td>RG47</td><td>70.4°C</td><td>94.5°C</td></tr> <tr><td>20</td><td>TC</td><td>62.1°C</td><td>85.7°C</td></tr> </tbody> </table> | NO | Position | ROOM AMBIENT Ta= 29.3 °C | HIGH AMBIENT Ta=57.8 °C | 1 | RTH1 | 69.5°C | 92.2°C | 2 | BD1 | 65.4°C | 91.4°C | 3 | Q1 | 65.8°C | 90.2°C | 4 | R7 | 67.4°C | 92.6°C | 5 | C51 | 69.8°C | 92.2°C | 6 | C5 | 69.8°C | 95.8°C | 7 | U2 | 71.7°C | 96.8°C | 8 | T1 | 88.6°C | 105.9°C | 9 | U1 | 63.8°C | 88.7°C | 10 | D5 | 69.0°C | 94.6°C | 11 | Q6 | 76.9°C | 102.5°C | 12 | D101 | 74.2°C | 95.4°C | 13 | U300 | 77.3°C | 102.2°C | 14 | C105 | 71.5°C | 95.2°C | 15 | U107 | 67.6°C | 91.7°C | 16 | RT22 | 64.8°C | 90.5°C | 17 | C312 | 68.6°C | 93.7°C | 18 | T2 | 75.8°C | 101.3°C | 19 | RG47 | 70.4°C | 94.5°C | 20 | TC | 62.1°C | 85.7°C |
| NO | Position  | ROOM AMBIENT Ta= 29.3 °C   | HIGH AMBIENT Ta=57.8 °C  |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 1  | RTH1  | 69.5°C   | 92.2°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 2  | BD1   | 65.4°C   | 91.4°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 3  | Q1  | 65.8°C   | 90.2°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 4  | R7  | 67.4°C   | 92.6°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 5  | C51   | 69.8°C   | 92.2°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 6  | C5  | 69.8°C   | 95.8°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 7  | U2  | 71.7°C   | 96.8°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 8  | T1  | 88.6°C   | 105.9°C  |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 9  | U1  | 63.8°C   | 88.7°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 10 | D5  | 69.0°C   | 94.6°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 11 | Q6  | 76.9°C   | 102.5°C  |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 12 | D101  | 74.2°C   | 95.4°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 13 | U300  | 77.3°C   | 102.2°C  |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 14 | C105  | 71.5°C   | 95.2°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 15 | U107  | 67.6°C   | 91.7°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 16 | RT22  | 64.8°C   | 90.5°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 17 | C312  | 68.6°C   | 93.7°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 18 | T2  | 75.8°C   | 101.3°C  |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 19 | RG47  | 70.4°C   | 94.5°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 20 | TC  | 62.1°C   | 85.7°C   |  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 2  | LOW TEMPERATURE<br>TURN ON TEST                                   | TURN ON AFTER 2 HOUR   | I/P : 305VAC/100VAC<br>O/P : FULL LOAD<br>Ta= -45°C/-35°C        | TEST : OK  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 3  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE<br>TURN ON TEST | AFTER 12 HOURS<br>IN CHAMBER ON<br>CONTROL 55 °C<br>NO DAMAGE  | I/P : 315VAC<br>O/P : FULL LOAD<br>Ta=55 °C<br>HUMIDITY= 95% R.H | TEST : OK  |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |
| 4  | TEMPERATURE<br>COEFFICIENT  | ±0.03%/°C (0~60°C)   | I/P : 230 VAC<br>O/P : FULL LOAD                                 | ±0.0037%/°C (0~60°C)   |    |          |                          |                         |   |      |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |         |   |    |        |        |    |    |        |        |    |    |        |         |    |      |        |        |    |      |        |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |         |    |      |        |        |    |    |        |        |

|    |                          |   |   |
|----|--------------------------|---|---|
| 5  | STORAGE TEMPERATURE TEST | -40~+80°C   | 1. Thermal shock Temperature : -45°C~ +90°C<br>2. Temperature change rate : 25°C / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle : 10CYCLE<br>5. Input/Output condition : AC OFF STATIC<br>TEST : OK   |
| 6  | THERMAL SHOCK TEST       | -40~+55°C   | 1. Thermal shock Temperature : -45°C~ +60°C<br>2. Temperature change rate : 25°C / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle : 16CYCLE<br>5. Input/Output condition :<br>15cycle:230VAC/ FULL LOAD AC on 3 sec/AC off 1 sec TEST<br>1cycle:230VAC/ FULL LOAD Burn In Test<br>TEST : OK |
| 7  | VIBRATION TEST           | 10~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes  | 1 Carton & 1 Set<br>(1) Waveform : Sine Wave<br>(2) Frequency : 10~500Hz<br>(3) Sweep Time : 10min/sweep cycle<br>(4) Acceleration : 6G<br>(5) Test Time : 180min in each axis (X.Y.Z)<br>(6) Ta : 25°C<br>TEST : OK  |
| 8  | CAPACITOR LIFE CYCLE     | XLG-150-L-DA2-A : SUPPOSE C105 IS THE MOST CRITICAL COMPONENT<br>(1) I/P : 230VAC O/P : FULL LOAD Tc= 75 °C LIFE TIME<br>(2) I/P : 230VAC O/P : 75% LOAD Tc= 75 °C LIFE TIME<br>(3) I/P : 230VAC O/P : 50% LOAD Tc= 75 °C LIFE TIME | (1) 60295 HRS<br>(2) 73858 HRS<br>(3) 77478 HRS   |
| 9  | MTBF                     | Conducted by Parts Stress Analysis Prediction<br>2316.2K hrs min. Telcordia SR-332 (Bellcore) ; 213.3K hrs min. MIL-HDBK-217F (25°C)  |   |
| 10 | Ongoing Reliability Test | I/P : 230VAC O/P : FULL LOAD TA=50°C<br>Demonstration Mean Time Between Failure : 50,000 hours  |   |

| TEST RESULT | TESTER       | REVIEW | APPROVAL |
|-------------|--------------|--------|----------|
| PASS        | WUWQ/HUANGMK | WENF   | LINKX    |