



# Test Report: XLG-320-V

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315W Constant Power Mode LED Driver

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

## ■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

## ■ RELIABILITY TEST

ENVIRONMENT TEST

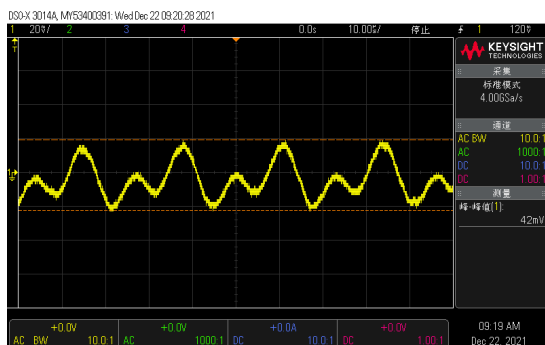
## DESIGN VERIFY TEST

### OUTPUT FUNCTION TEST

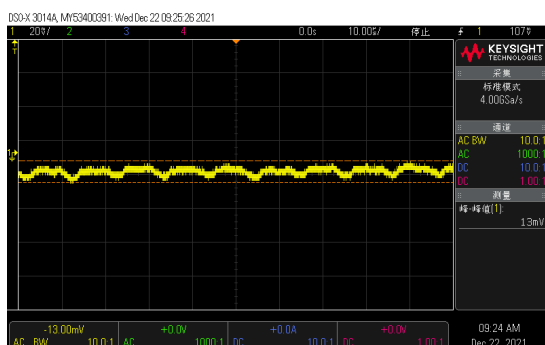
| NO | TEST ITEM                        | SPECIFICATION   | TEST CONDITION                                       | RESULT                                                      |
|----|----------------------------------|-----------------|------------------------------------------------------|-------------------------------------------------------------|
| 1  | OUTPUT VOLTAGE(Max)<br>TOLERANCE | V1: -3%~ 3%     | I/P: 90VAC /305VAC<br>O/P:FULL/ MIN. LOAD<br>Ta:25°C | V1: 0.17%~ 0.35%/12V<br>V2: 0.2%~ 1.175%/24V                |
| 2  | LINE REGULATION (Max)            | V1: -0.5%~ 0.5% | I/P: 90VAC~ 305VAC<br>O/P:FULL LOAD<br>Ta:25°C       | V1:0.092%~0.025%/12V<br>V2:0.025%~0.267%/24V                |
| 3  | LOAD REGULATION(Max)             | V1: -2%~ 2%     | I/P: 230VAC<br>O/P:FULL ~MIN LOAD<br>Ta:25°C         | V1: 0.271%~0.258%/12V<br>V2:0.63%~0.70%/24V                 |
| 4  | RIPPLE & NOISE(Max )             | V1: 240mVp-p    | I/P:230VAC<br>O/P:FULL LOAD<br>Ta:25°C               | V1(24V): 42mVp-p<br>100mVp-p<br>V2(12V): 13mVp-p<br>63mVp-p |

high frequency :

24V

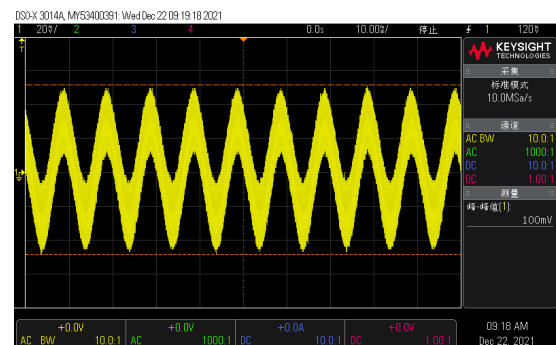


12V

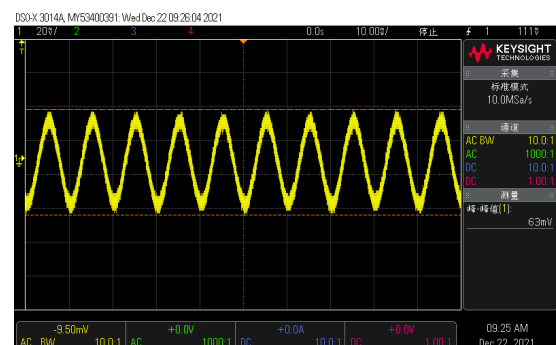


low frequency :

24V

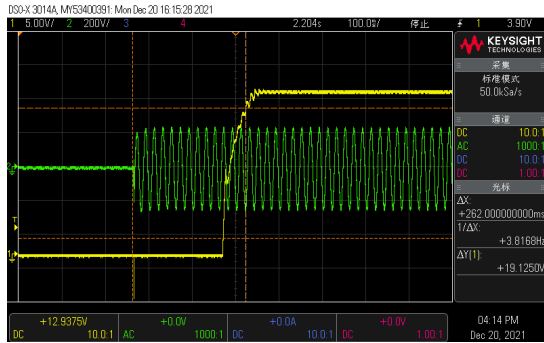


12V

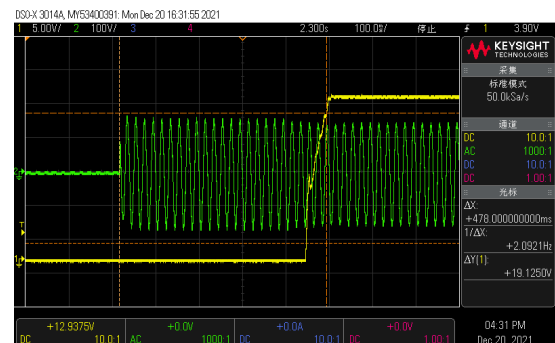


|   |                                                    |                                                                |                                                                                    |
|---|----------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------|
| 5 | SET UP TIME(Max)<br>230VAC/500ms<br>115VAC/ 1200ms | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C | V1(24V): 230VAC/ 262ms<br>115VAC/ 478ms<br>V2(12V): 230VAC/220 ms<br>115VAC/450 ms |
|---|----------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------|

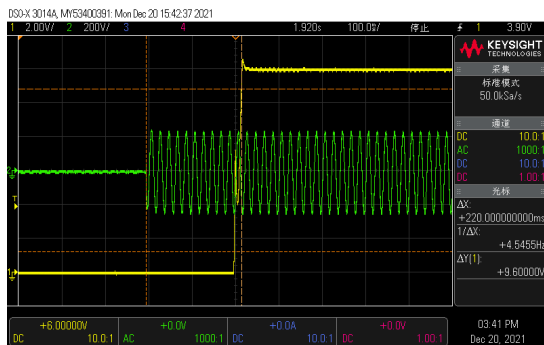
INPUT=230VAC/50HZ @ FULL LOAD  
CH1 : Output Voltage CH2 : AC Input Voltage  
**24V**



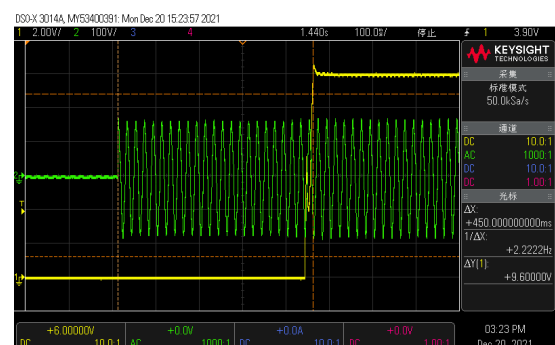
INPUT=115VAC/60HZ @ FULL LOAD  
CH1 : Output Voltage CH2 : AC Input Voltage  
**24V**



**12V**

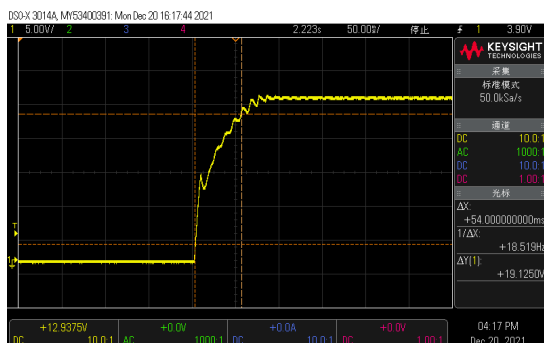


**12V**

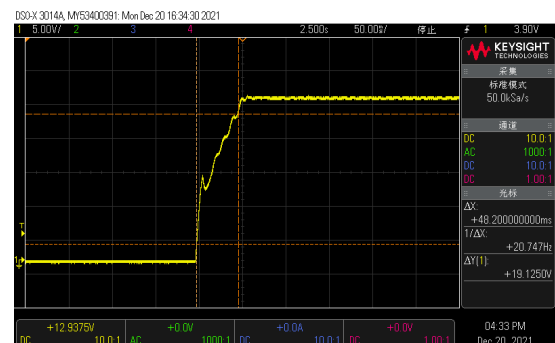


|   |                                                 |                                                                |                                                                                   |
|---|-------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 6 | RISE TIME (Max)<br>230VAC/160ms<br>115VAC/160ms | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C | V1(24V): 230VAC/54ms<br>115VAC/48.2ms<br>V2 (12V): 230VAC/17.2ms<br>115VAC/17.8ms |
|---|-------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------|

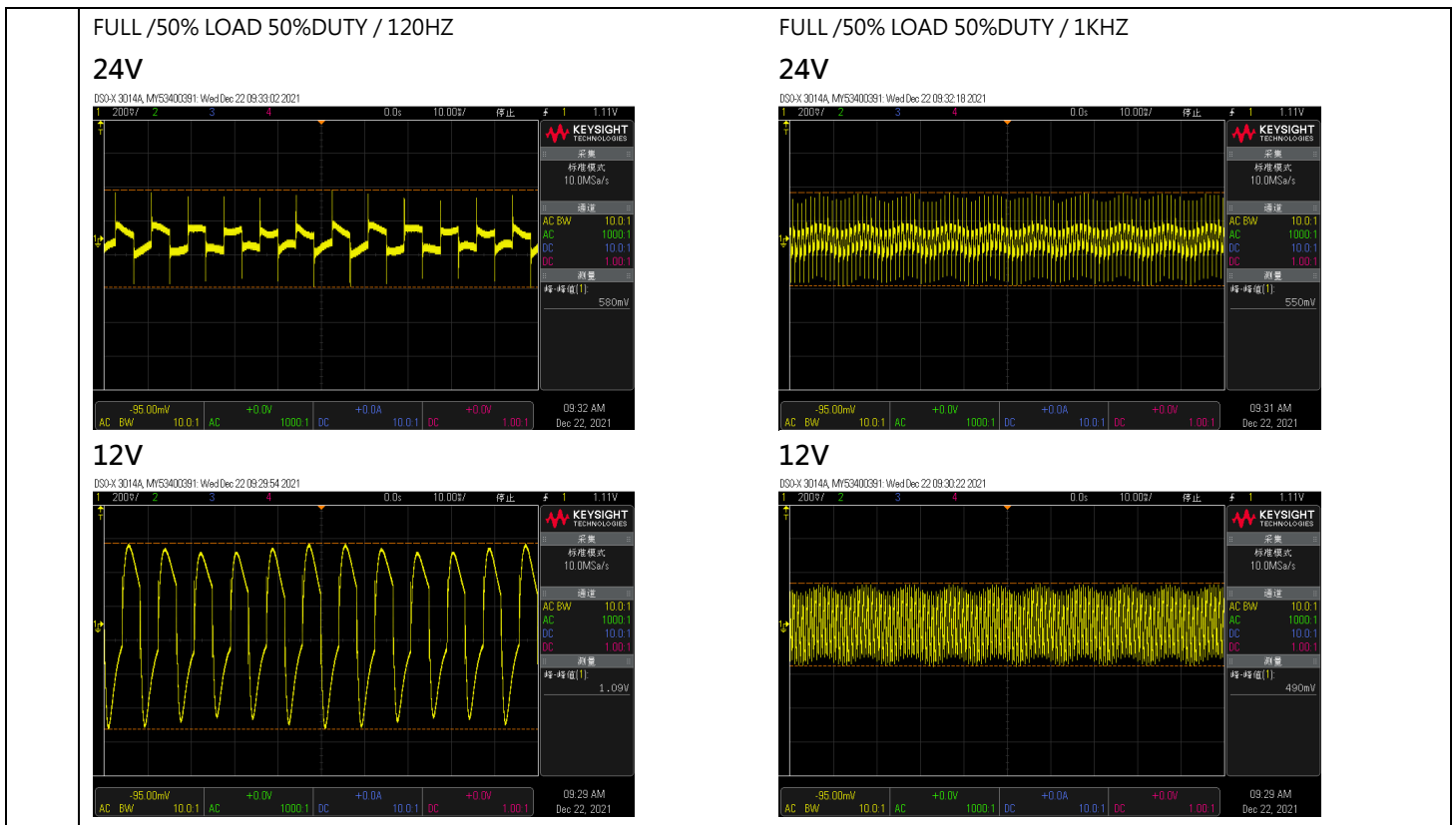
INPUT=230VAC/50HZ @ FULL LOAD  
CH1 : Output Voltage  
**24V**



INPUT=115VAC/60HZ @ FULL LOAD  
CH1 : Output Voltage  
**24V**



|                                                                                      |                            |                                                                                      |                                                                                                                    |                                                                                         |
|--------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|                                                                                      | <p><b>12V</b></p>          |                                                                                      | <p><b>12V</b></p>                                                                                                  |                                                                                         |
| 7                                                                                    | <p>HOLD UP TIME (Typ.)</p> | <p>230VAC/10ms<br/>115VAC/10ms</p>                                                   | <p>I/P : 230 VAC<br/>I/P : 115 VAC<br/>O/P : FULL LOAD<br/>Ta : 25°C</p>                                           | <p>V1 (24V): 230VAC/19ms<br/>115VAC/ 18ms<br/>V2(12V): 230VAC/40ms<br/>115VAC/40ms</p>  |
| <p>INPUT=230VAC/50HZ @ FULL LOAD<br/>CH1 : Output Voltage CH2 : AC Input Voltage</p> |                            | <p>INPUT=115VAC/60HZ @ FULL LOAD<br/>CH1 : Output Voltage CH2 : AC Input Voltage</p> |                                                                                                                    |                                                                                         |
| <p><b>24V</b></p>                                                                    |                            | <p><b>24V</b></p>                                                                    |                                                                                                                    |                                                                                         |
| <p><b>12V</b></p>                                                                    |                            | <p><b>12V</b></p>                                                                    |                                                                                                                    |                                                                                         |
| 8                                                                                    | <p>DYNAMIC LOAD</p>        | <p>V1:2400/1200mVp-p</p>                                                             | <p>I/P: 230VAC<br/>O/P:<br/>(1)FULL /50% LOAD 50%DUTY / 120HZ<br/>(2)FULL /50% LOAD 50%DUTY / 1KHZ<br/>Ta:25°C</p> | <p>V1(24V): (1) 580mVp-p<br/>(2)550mVp-p<br/>V2 (12V): (1)1090mVp-p<br/>(2)490mVp-p</p> |

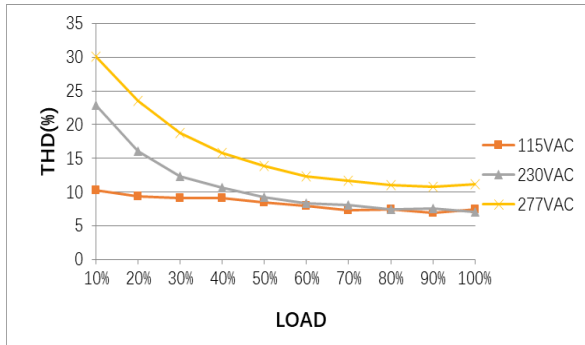


## INPUT FUNCTION TEST

| NO | TEST ITEM             | SPECIFICATION                        | TEST CONDITION                                                                                                                                                      | RESULT                                                                    |
|----|-----------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 1  | INPUT VOLTAGE RANGE   | 100VAC~305VAC<br>141VDC~ 431VDC      | (1) I/P:TESTING<br>O/P:FULL LOAD<br>(2) I/P:DC TESTING(L:+ N:-)<br>O/P: FULL / 50% LOAD<br>(3) I/P:DC TESTING(L:- N:+)<br>O/P: FULL / 50% LOAD<br>Ta:25°C           | (1) 97V~308V<br>(2)142Vdc~431Vdc/FULL LOAD<br>(3) 142Vdc~431Vdc/FULL LOAD |
|    |                       |                                      | I/P:<br>LOW-LINE-3V=97 V<br>HIGH-LINE+15%=315 V<br>O/P:FULL/MIN LOAD<br>(PLEASE CHECK DERATING CURVE)<br>ON: 30 Sec OFF: 30 Sec 10MIN<br>( POWER ON/OFF NO DAMAGE ) | TEST: OK                                                                  |
| 2  | INPUT FREQUENCY RANGE | 47HZ ~63 HZ<br>NO DAMAGE             | I/P:90 VAC ~305 VAC<br>O/P:FULL~MIN LOAD<br>Ta:25°C                                                                                                                 | TEST: OK                                                                  |
| 3  | INPUT CURRENT (Typ.)  | 230V/ 1.6A<br>115V/ 3A<br>277V/ 1.3A | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                      | I =1.47A/ 230VAC<br>I =2.84A/ 115VAC<br>I =1.26A/ 277VAC                  |

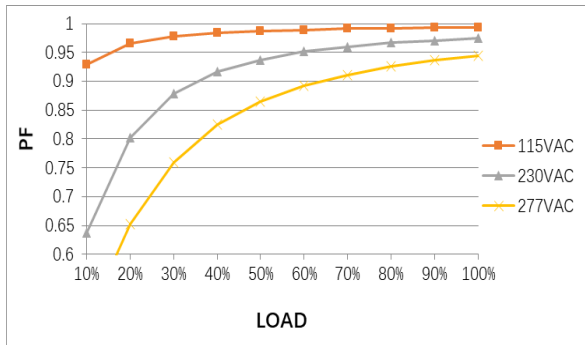
|   |                           |                                                                                                   |                                                         |                                                              |
|---|---------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| 4 | LEAKAGE CURRENT           | <0.75 mA /277 VAC                                                                                 | I/P : 240 VAC<br>O/P : Min LOAD<br>Ta : 25°C            | L-FG : 0.288mA<br>N-FG : 0.294 mA                            |
| 5 | TOTAL HARMONIC DISTORTION | THD< 10% @ 230VAC> 50% loading<br>THD< 10% @ 115VAC> 50% loading<br>THD< 15% @ 227VAC>75% loading | I/P : 277/230/115VAC<br>O/P : 75%/50% LOAD<br>Ta : 25°C | THD: 9.26 230V50%<br>THD: 8.43 115V50%<br>THD: 11.75 277V75% |

T.H.D vs LOAD



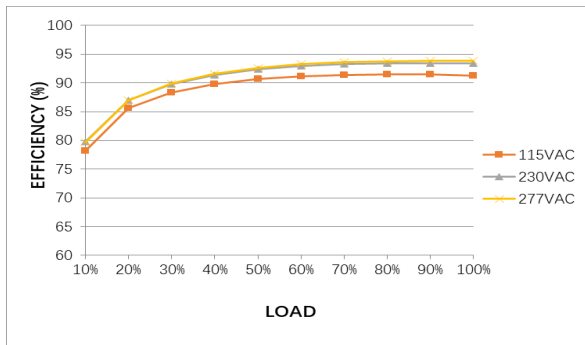
|   |                     |                                            |                                                                |                                                       |
|---|---------------------|--------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------|
| 6 | POWER FACTOR (Typ.) | 0.95/ 230VAC<br>0.98/115VAC<br>0.92/277VAC | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C | PF=0.975/230VAC<br>PF=0.993/115VAC<br>PF=0.944/277VAC |
|---|---------------------|--------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------|

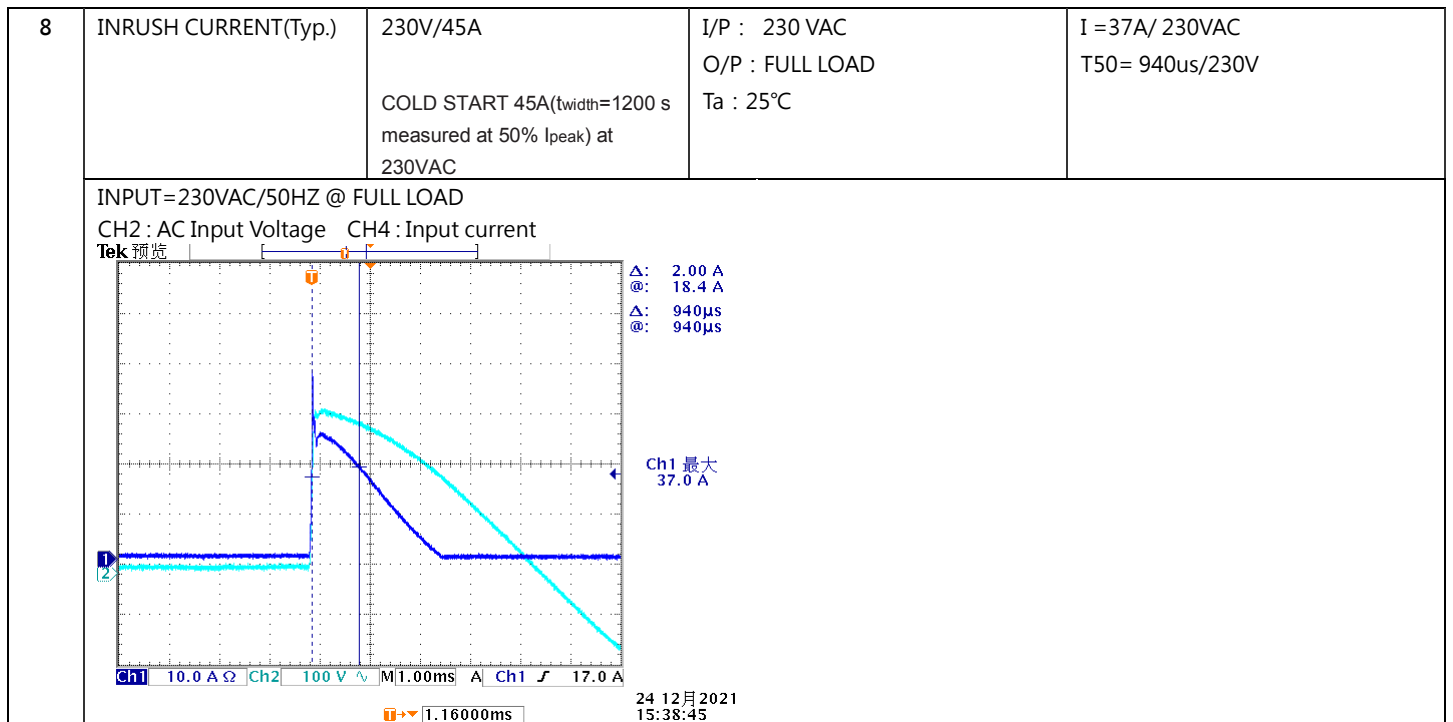
P.F vs LOAD



|   |                  |     |                                         |         |
|---|------------------|-----|-----------------------------------------|---------|
| 7 | EFFICIENCY(Typ.) | 93% | I/P:230 VAC<br>O/P:FULL LOAD<br>Ta:25°C | 93.37 % |
|---|------------------|-----|-----------------------------------------|---------|

EFFICIENCY vs LOAD





### PROTECTION FUNCTION TEST

| NO | TEST ITEM               | SPECIFICATION | TEST CONDITION                                                       | RESULT                                                                                                                                                                                                                                            |
|----|-------------------------|---------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | OVER LOAD PROTECTION    | 108%~ 135%    | I/P: 305VAC<br>I/P: 230VAC<br>I/P: 100VAC<br>O/P:TESTING<br>Ta:25°C  | 24V:<br>118.5%/ 305VAC<br>118.4%/ 230VAC<br>118.4%/100VAC<br>12V:<br>125.1%/ 305VAC<br>125.3 %/ 230VAC<br>125.5%/100VAC<br>PROTECTION TYPE :<br>Hiccup mode or Constant current limiting, recovers automatically after fault condition is removed |
| 2  | OVER VOLTAGE PROTECTION | 27V~34V       | I/P: 305VAC<br>I/P: 230VAC<br>I/P: 100VAC<br>O/P:MIN LOAD<br>Ta:25°C | 30.5V/ 305VAC<br>30.5V/ 230VAC<br>30.5V/ 100VAC<br>PROTECTION TYPE : Shut down output voltage, re-power on to recovery                                                                                                                            |

|   |                             |                                        |                                                         |                                                                                                                                     |
|---|-----------------------------|----------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 3 | OVER TEMPERATURE PROTECTION | NO DAMAGE                              | I/P: 305VAC<br>I/P: 100VAC<br>O/P:FULL LOAD             | O.T.P. Active OK<br>Protection type : Shut down output voltage, re-power on to recover                                              |
| 4 | SHORT PROTECTION            | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE | I/P: 305VAC<br>I/P: 100VAC<br>O/P: FULL LOAD<br>Ta:25°C | NO DAMAGE OK<br>PROTECTION TYPE : Hiccup mode or Constant current limiting, recovers automatically after fault condition is removed |

### COMPONENT STRESS TEST

| NO | TEST ITEM                                               | SPECIFICATION          | TEST CONDITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | RESULT                                                                                                                                                                                                           |
|----|---------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | PWM Transistor<br>( D to S) or (C to E)<br>Peak Voltage | Q8 Rated<br>13 A/ 600V | AC ON/OFF<br><br>I/P:High-Line +3V =308V<br>VDS:<br>O/P: (1)Full Load<br>(2)Output Short<br>(3)Dynamic Load Full Load/<br>Min. Load 90%Duty/1KHz<br>(4)Dynamic Load Full Load/<br>Min. Load 90%Duty/3KHz<br>(5)Dynamic Load Full Load/<br>Min. Load 90%Duty/5KHz<br>(6)Dynamic Load 100% Load/<br>Min. Load 50%Duty/120Hz<br>(7)0%→400% Load.<br><br>I/P:Low-Line -3V = 97V<br>O/P: (1)Full Load<br>(2)Output Short<br>(3)Dynamic Load Full Load/<br>Min. Load 90%Duty/1KHz<br>(4)Dynamic Load Full Load/<br>Min. Load 90%Duty/3KHz<br>(5)Dynamic Load Full Load/<br>Min. Load 90%Duty/5KHz<br>(6)Dynamic Load 100% Load/<br>Min. Load 50%Duty/120Hz<br>(7)0%→400% Load.<br>Ta:25°C | VDS:<br>(1) 492V<br>(2) 492V<br>(3) 480V<br><br>(4) 488V<br><br>(5) 480V<br><br>(6) 480V<br>(7) 464V<br><br>VDS:<br>(1) 448V<br>(2) 460V<br>(3) 444V<br><br>(4) 440V<br><br>(5) 440V<br><br>(6) 440V<br>(7) 460V |



|   |                                                                    |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                 |
|---|--------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | <p>P.F.C Transistor<br/>( D to S) or (C to E)<br/>Peak Voltage</p> | <p>Q1 Rated<br/>20A/ 600V</p> | <p>I/P:High-Line +3V =308 V<br/>AC ON/OFF<br/>O/P: (1)Full Load<br/>(2)Output Short<br/>(3)Dynamic Load Full Load/<br/>Min. Load 90%Duty/1KHz<br/>(4)Dynamic Load Full Load/<br/>Min. Load 90%Duty/3KHz<br/>(5)Dynamic Load Full Load/<br/>Min. Load 90%Duty/5KHz<br/>(6)Dynamic Load 100% Load/<br/>Min. Load 50%Duty/120Hz<br/>(7)0%→400% Load.<br/>Min. Load 90%Duty/5KHz<br/>I/P:Low-Line -3V = 97V<br/>AC ON/OFF<br/>O/P: (1)Full Load<br/>(2)Output Short<br/>(3)Dynamic Load Full Load/<br/>Min. Load 90%Duty/1KHz<br/>(4)Dynamic Load Full Load/<br/>Min. Load 90%Duty/3KHz<br/>(5)Dynamic Load Full Load/<br/>Min. Load 90%Duty/5KHz<br/>(6)Dynamic Load 100% Load/<br/>Min. Load 50%Duty/120Hz<br/>(7)0%→400% Load.<br/>Ta:25°C</p> | <p>VDS:<br/>(1) 509V<br/>(2) 513V<br/>(3) 517V<br/>(4) 501V<br/>(5) 497V<br/>(6) 501V<br/>(7) 457V<br/><br/>VDS:<br/>(1) 456V<br/>(2) 460V<br/>(3) 460V<br/>(4) 456V<br/>(5) 456V<br/>(6) 460V<br/>(7) 464V</p> |
| 3 | <p>P.F.C DIODE</p>                                                 | <p>D5 Rated<br/>9 A/600V</p>  | <p>I/P:High-Line +3V =308 V<br/>AC ON/OFF<br/>O/P: (1)Full Load<br/>(2)Output Short<br/>(3)Dynamic Load Full Load/<br/>Min. Load 90%Duty/5KHz<br/>(4)Dynamic Load 100% Load/<br/>Min. Load 50%Duty/120Hz<br/>I/P:Low-Line -3V = 97V<br/>AC ON/OFF<br/>O/P: (1)Full Load<br/>(2)Output Short<br/>(3)Dynamic Load Full Load/<br/>Min. Load 90%Duty/5KHz<br/>(4)Dynamic Load 100% Load/<br/>Min. Load 50%Duty/120Hz<br/>Ta:25°C</p>                                                                                                                                                                                                                                                                                                              | <p>(1) 445V<br/>(2) 445V<br/>(3) 445V<br/>(4) 441V<br/><br/>(1) 453V<br/>(2) 457V<br/>(3) 453V<br/>(4) 457V</p>                                                                                                 |

|   |                         |                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                   |
|---|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Diode Peak Voltage      | <p>Q100 Rated<br/>130 A/ 100 V</p> <p>Q101 Rated<br/>130 A/ 100 V</p>                                                                                    | <p>AC ON/OFF</p> <p>I/P:High-Line +3V =308 V</p> <p>O/P: (1)Full Load<br/>(2)Output Short<br/>(3)Dynamic Load Full Load/<br/>Min. Load 90%Duty/1KHz<br/>(4)Dynamic Load Full Load/<br/>Min. Load 90%Duty/3KHz<br/>(5)Dynamic Load Full Load/<br/>Min. Load 90%Duty/5KHz<br/>(6)Dynamic Load 100% Load/<br/>Min. Load 50%Duty/120Hz<br/>(7)0%→400% Load.<br/>(8).NO LOAD</p> <p>Ta:25°C</p> | <p>Q101: VDS:<br/>(1) 54.7V<br/>(2) 16.2V<br/>(3) 55.1V<br/>(4) 54.3V<br/>(5) 55.1V<br/>(6) 54.3V<br/>(7) 54.3V<br/>(8) 52.7V</p> <p>Q100: VDS:<br/>(1) 54V<br/>(2) 12.7V<br/>(3) 54.8V<br/>(4) 54.8V<br/>(5) 54.8V<br/>(6) 53.9V<br/>(7) 53.9V<br/>(8) 50.7V</p> |
| 5 | Input Capacitor Voltage | <p>C5 Rated:<br/>180 μ / 450V</p>                                                                                                                        | <p>I/P:High-Line +3V =308V</p> <p>O/P: (1)Full Load input on/off<br/>(2) Min load input on /Off<br/>(3)Full Load /Min load Change<br/>(4)Full load continue</p> <p>Ta:25°C</p>                                                                                                                                                                                                             | <p>(1)460V<br/>(2)436V<br/>(3)444V<br/>(4) 436V</p>                                                                                                                                                                                                               |
| 6 | Control IC Voltage Test | <p>PWM IC U2 Rated<br/>8.9 V~ 15.5V</p> <p>PFC IC U1 Rated<br/>10.5V~ 25V</p> <p>O/P IC U101 Rated<br/>8V~ 32V</p> <p>AUX IC U300 Rated<br/>4.2V~18V</p> | <p>AC ON/OFF</p> <p>I/P:High-Line +3V =308 V</p> <p>O/P(1)FULL LOAD<br/>(2) Output Short<br/>(3)O.L.P<br/>(4)O.V.P.<br/>(5)NO LOAD VRmin(Low LINE)</p> <p>Ta:25°C</p>                                                                                                                                                                                                                      | <p>U2/U1: U300:<br/>(1) 13.4V (1) 16.5V<br/>(2) 13.6V (2) 16.5V<br/>(3) 13.4V (3) 16.5V<br/>(4) 13.2V (4) 16.5V<br/>(5) 13.2V (5) 16.1V</p> <p>U101:<br/>(1) 10.6V<br/>(2) 10.4V<br/>(3) 10.4V<br/>(4) 10.4V<br/>(5) 10.4V</p>                                    |
| 7 | VCC Diode Peak Voltage  | <p>D304 Rated<br/>2A/400V</p>                                                                                                                            | <p>AC ON/OFF</p> <p>I/P : High-Line +3V = 308 V</p> <p>O/P : (1) Full load<br/>(2) Full load continue<br/>(3) Dynamic Load<br/>90%Duty/1KHz</p> <p>Ta : 25°C</p>                                                                                                                                                                                                                           | <p>(1) 147V<br/>(2) 141V<br/>(3) 145V</p>                                                                                                                                                                                                                         |

|   |                                 |                           |                                                                                                                          |                          |
|---|---------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 8 | TOP SWITCHING<br>STAND BY POWER | U300 Rated<br>1.5 A/ 700V | AC ON/OFF<br><br>I/P:High-Line +3V =308 V<br>O/P: (1)Full Load<br>I/P:Low-Line -3V =97 V<br>O/P: (1)Full Load<br>Ta:25°C | (1) 547 V<br><br>(1)523V |
|---|---------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------|

## ■ SAFETY& E.M.C. TEST

### SAFETY TEST

| NO | TEST ITEM               | SPECIFICATION                                                                  | TEST CONDITION                                                                    | RESULT                                                             |
|----|-------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1  | WITHSTAND VOLTAGE       | EN61230-1<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: 2.957mA<br>I/P-FG: 3.23mA<br>O/P-FG: 2.491mA<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: 9999MΩ<br>NO DAMAGE    |
| 3  | GROUNDING<br>CONTINUITY | FG(PE) TO CHASSIS<br>OR TRACE < 100 mΩ                                         | 40A / 2min<br>Ta:25°C                                                             | 9 mΩ                                                               |

### 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 | EN 55015                                 | I/P:230VAC (50HZ)<br>O/P: LEDmax<br>Ta:25°C | PASS<br>Test by certified Lab |
| 3  | RADIATION  | EN 55015                                 | 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>AIR : 8KV / Contact : 4KV | I/P: 230VAC (50HZ)<br>O/P:LEDmax<br>Ta:25°C | CRITERIA A                    |
| 5  | E.F.T      | EN61000-4-4<br>INPUT: 2KV                | I/P: 230VAC (50HZ)<br>O/P:LEDmax<br>Ta:25°C | CRITERIA A                    |



|   |                                                                                                                                   |                                        |                                             |            |
|---|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------|------------|
| 6 | SURGE                                                                                                                             | IEC61000-4-5<br>L-N :4KV<br>L,N-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-320-V<br>1. ROOM AMBIENT BURN-IN : 2 HRS<br>I/P : 230VAC O/P : FULL LOAD Ta=30.3 °C<br>2. HIGH AMBIENT BURN-IN : 2 HRS<br>I/P : 230VAC O/P : FULL LOAD Ta=47 °C |                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
|    |                                 |                                                                                                                                                                             |                                                           | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta=30.3 °C</th> <th>HIGH AMBIENT Ta=47 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>LF1</td><td>64.2°C</td><td>79.8°C</td></tr> <tr><td>2</td><td>BD1</td><td>71.3°C</td><td>86.5°C</td></tr> <tr><td>3</td><td>ZNR4</td><td>67.6°C</td><td>83.0°C</td></tr> <tr><td>4</td><td>Q1</td><td>70.9°C</td><td>86.3°C</td></tr> <tr><td>5</td><td>L2</td><td>77.1°C</td><td>93.0°C</td></tr> <tr><td>6</td><td>Q2</td><td>72.3°C</td><td>87.7°C</td></tr> <tr><td>7</td><td>D5</td><td>80.5°C</td><td>97.0°C</td></tr> <tr><td>8</td><td>C5</td><td>67.0°C</td><td>82.2°C</td></tr> <tr><td>9</td><td>R15</td><td>68.8°C</td><td>84.1°C</td></tr> <tr><td>10</td><td>RY1</td><td>71.0°C</td><td>86.8°C</td></tr> <tr><td>11</td><td>RTH1</td><td>75.3°C</td><td>91.4°C</td></tr> <tr><td>12</td><td>C16</td><td>76.1°C</td><td>92.3°C</td></tr> <tr><td>13</td><td>U1</td><td>66.8°C</td><td>82.6°C</td></tr> <tr><td>14</td><td>U2</td><td>68.9°C</td><td>84.9°C</td></tr> <tr><td>15</td><td>Q7</td><td>79.2°C</td><td>95.7°C</td></tr> <tr><td>16</td><td>Q8</td><td>78.0°C</td><td>94.4°C</td></tr> <tr><td>17</td><td>C88</td><td>74.0°C</td><td>89.8°C</td></tr> <tr><td>18</td><td>T1</td><td>82.8°C</td><td>98.2°C</td></tr> <tr><td>19</td><td>C142</td><td>70.2°C</td><td>86.3°C</td></tr> <tr><td>20</td><td>Q100</td><td>75.1°C</td><td>91.5°C</td></tr> <tr><td>21</td><td>Q101</td><td>72.8°C</td><td>89.2°C</td></tr> <tr><td>22</td><td>C104</td><td>74.2°C</td><td>90.5°C</td></tr> <tr><td>23</td><td>C105</td><td>71.6°C</td><td>87.9°C</td></tr> <tr><td>24</td><td>U101</td><td>80.8°C</td><td>97.0°C</td></tr> <tr><td>25</td><td>J102</td><td>73.1°C</td><td>89.4°C</td></tr> <tr><td>26</td><td>RTH2</td><td>66.5°C</td><td>81.9°C</td></tr> <tr><td>27</td><td>TC</td><td>64.0°C</td><td>79.3°C</td></tr> </tbody> </table> | NO | Position | ROOM AMBIENT Ta=30.3 °C | HIGH AMBIENT Ta=47 °C | 1 | LF1 | 64.2°C | 79.8°C | 2 | BD1 | 71.3°C | 86.5°C | 3 | ZNR4 | 67.6°C | 83.0°C | 4 | Q1 | 70.9°C | 86.3°C | 5 | L2 | 77.1°C | 93.0°C | 6 | Q2 | 72.3°C | 87.7°C | 7 | D5 | 80.5°C | 97.0°C | 8 | C5 | 67.0°C | 82.2°C | 9 | R15 | 68.8°C | 84.1°C | 10 | RY1 | 71.0°C | 86.8°C | 11 | RTH1 | 75.3°C | 91.4°C | 12 | C16 | 76.1°C | 92.3°C | 13 | U1 | 66.8°C | 82.6°C | 14 | U2 | 68.9°C | 84.9°C | 15 | Q7 | 79.2°C | 95.7°C | 16 | Q8 | 78.0°C | 94.4°C | 17 | C88 | 74.0°C | 89.8°C | 18 | T1 | 82.8°C | 98.2°C | 19 | C142 | 70.2°C | 86.3°C | 20 | Q100 | 75.1°C | 91.5°C | 21 | Q101 | 72.8°C | 89.2°C | 22 | C104 | 74.2°C | 90.5°C | 23 | C105 | 71.6°C | 87.9°C | 24 | U101 | 80.8°C | 97.0°C | 25 | J102 | 73.1°C | 89.4°C | 26 | RTH2 | 66.5°C | 81.9°C | 27 | TC | 64.0°C | 79.3°C |
| NO | Position                        | ROOM AMBIENT Ta=30.3 °C                                                                                                                                                     | HIGH AMBIENT Ta=47 °C                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 1  | LF1                             | 64.2°C                                                                                                                                                                      | 79.8°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 2  | BD1                             | 71.3°C                                                                                                                                                                      | 86.5°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 3  | ZNR4                            | 67.6°C                                                                                                                                                                      | 83.0°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 4  | Q1                              | 70.9°C                                                                                                                                                                      | 86.3°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 5  | L2                              | 77.1°C                                                                                                                                                                      | 93.0°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 6  | Q2                              | 72.3°C                                                                                                                                                                      | 87.7°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 7  | D5                              | 80.5°C                                                                                                                                                                      | 97.0°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 8  | C5                              | 67.0°C                                                                                                                                                                      | 82.2°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 9  | R15                             | 68.8°C                                                                                                                                                                      | 84.1°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 10 | RY1                             | 71.0°C                                                                                                                                                                      | 86.8°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 11 | RTH1                            | 75.3°C                                                                                                                                                                      | 91.4°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 12 | C16                             | 76.1°C                                                                                                                                                                      | 92.3°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 13 | U1                              | 66.8°C                                                                                                                                                                      | 82.6°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 14 | U2                              | 68.9°C                                                                                                                                                                      | 84.9°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 15 | Q7                              | 79.2°C                                                                                                                                                                      | 95.7°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 16 | Q8                              | 78.0°C                                                                                                                                                                      | 94.4°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 17 | C88                             | 74.0°C                                                                                                                                                                      | 89.8°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 18 | T1                              | 82.8°C                                                                                                                                                                      | 98.2°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 19 | C142                            | 70.2°C                                                                                                                                                                      | 86.3°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 20 | Q100                            | 75.1°C                                                                                                                                                                      | 91.5°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 21 | Q101                            | 72.8°C                                                                                                                                                                      | 89.2°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 22 | C104                            | 74.2°C                                                                                                                                                                      | 90.5°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 23 | C105                            | 71.6°C                                                                                                                                                                      | 87.9°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 24 | U101                            | 80.8°C                                                                                                                                                                      | 97.0°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 25 | J102                            | 73.1°C                                                                                                                                                                      | 89.4°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 26 | RTH2                            | 66.5°C                                                                                                                                                                      | 81.9°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 27 | TC                              | 64.0°C                                                                                                                                                                      | 79.3°C                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 2  | OVER LOAD BURN-IN TEST          | NO DAMAGE<br>1 HOUR ( MIN )                                                                                                                                                 | I/P : 230 VAC<br>O/P : 120 % LOAD<br>Ta : 25°C            | TEST : OK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |
| 3  | LOW TEMPERATURE<br>TURN ON TEST | TURN ON AFTER 2 HOUR                                                                                                                                                        | I/P : 305VAC/100VAC<br>O/P : 100 % LOAD<br>Ta= -45/-35 °C | TEST : OK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |    |          |                         |                       |   |     |        |        |   |     |        |        |   |      |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |    |     |        |        |    |      |        |        |    |     |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |    |        |        |    |     |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |



|    |                                                                   |                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                               |                         |
|----|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 4  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE<br>TURN ON TEST | AFTER 12 HOURS<br>IN CHAMBER ON<br>CONTROL 45 °C/95 %R.H<br>NO DAMAGE                                                                                                                                           | I/P : 315 VAC<br>O/P : FULL LOAD<br>Ta= 45 °C<br>HUMIDITY= 95 %R.H                                                                                                                                                                                                                                            | TEST : OK               |
| 5  | TEMPERATURE<br>COEFFICIENT                                        | $\pm 0.03$ %/°C(0~50°C)                                                                                                                                                                                         | I/P : 230 VAC<br>O/P : FULL LOAD                                                                                                                                                                                                                                                                              | $\pm 0.01$ %/°C(0~50°C) |
| 6  | STORAGE TEMPERATURE<br>TEST                                       | -40~85°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 : 10 CYCLE<br>5. Input/Output condition : STATIC                                                                                        |                         |
| 7  | THERMAL SHOCK TEST                                                | -40~45°C                                                                                                                                                                                                        | 1. Thermal shock Temperature : -45°C~ +50°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 : 16 CYCLE<br>5. Input/Output condition :<br>15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST<br>1cycle:230V/ FULL LOAD Burn In Test |                         |
| 8  | VIBRATION TEST                                                    | 10 ~ 500Hz, 5G 10min./1cycle,<br>60min. each along X, Y, Z axes                                                                                                                                                 | 1 Carton & 1 Set<br>(1) Waveform : Sine Wave<br>(2) Frequency : 10~500Hz<br>(3) Sweep Time : 12min/sweep cycle<br>(4) Acceleration : 6G<br>(5) Test Time : 180min in each axis (X.Y.Z)<br>(6) Ta : 25°C                                                                                                       |                         |
| 9  | CAPACITOR<br>LIFE CYCLE                                           | SUPPOSE C104 IS THE MOST CRITICAL COMPONENT<br>(1) I/P : 230VAC O/P : FULL LOAD Tc=70 °C LIFE TIME<br>(2) I/P : 230VAC O/P : 75% LOAD Tc=70 °C LIFE TIME<br>(3) I/P : 230VAC O/P : 50% LOAD Tc= 70 °C LIFE TIME | (1) 68412HRS<br>(2) 89599HRS<br>(3) 104703HRS                                                                                                                                                                                                                                                                 |                         |
| 10 | MTBF                                                              | Conducted by Parts Stress Analysis Prediction<br>1476.4K hrs min. Telcordia SR-332 (Bellcore); 168.1K hrs min. MIL-HDBK-217F (25°C)                                                                             |                                                                                                                                                                                                                                                                                                               |                         |
| 11 | 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    |