



# Test Report:     XLG-200-H

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200W Constant Power MODE LED Driver

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

## ■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

## ■ RELIABILITY TEST

Environment Test

## DESIGN VERIFY TEST

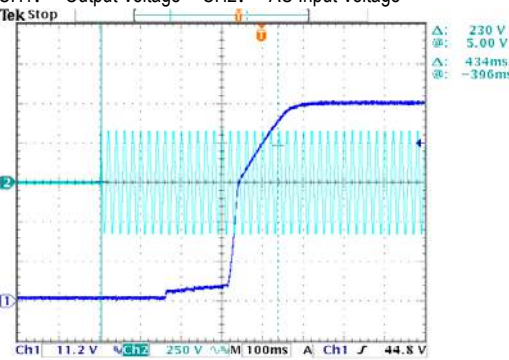
### OUTPUT FUNCTION TEST

| NO | TEST ITEM                   | SPECIFICATION                              | TEST CONDITION                                             | RESULT                     |
|----|-----------------------------|--------------------------------------------|------------------------------------------------------------|----------------------------|
| 1  | CURRENT TOLERANCE           | $\pm 5\%$                                  | I/P: 100 VAC / 305 VAC<br>O/P: FULL/ MIN LOAD<br>Ta: 25°C  | $< \pm 5\%$                |
| 2  | CONSTANT CURRENT REGION     | 27V-56V                                    | I/P: 230 VAC<br>O/P: FULL LOAD<br>Ta: 25°C                 | 24 V~ 56.9 V               |
| 3  | OPEN CIRCUIT VOLTAGE (max.) | 60V                                        | I/P: 230 VAC<br>O/P: NO LOAD                               | 58.34V                     |
| 4  | CURRENT RIPPLE              | 3.0% max. @ load $\geq 50\%$ rated voltage | I/P: 230 VAC<br>O/P: FULL LOAD<br>Ta: 25°C                 | 2.36%                      |
| 5  | CURRENT ADJ. RANGE          | 1750 mA ~5550mA                            | I/P: 230 VAC<br>O/P: TESTING<br>Ta: 25°C                   | 1600 mA ~5800mA            |
| 6  | CONSTANT POWER              | O/P: 200W                                  | I/P: 230 VAC<br>O/P: $V_o \times I_o$                      | TEST: OK                   |
| 7  | SET UP TIME(Max)            | 1200ms/115VAC<br>500ms/230VAC              | I/P: 115 VAC<br>I/P: 230 VAC<br>O/P: FULL LOAD<br>Ta: 25°C | 434/115 VAC<br>368/230 VAC |

INPUT=115VAC/50HZ @ FULL LOAD

CH1: Output Voltage CH2: AC Input Voltage

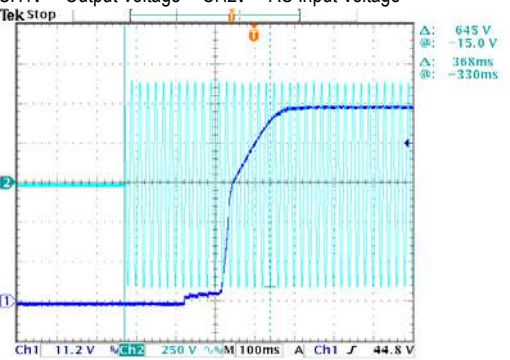


Ch1 11.2 V Ch2 250 V 100ms A Ch1 44.8 V

60.00 %

INPUT=230 VAC/50HZ @ FULL LOAD

CH1: Output Voltage CH2: AC Input Voltage



Ch1 11.2 V Ch2 250 V 100ms A Ch1 44.8 V

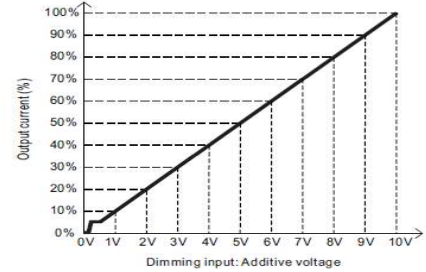
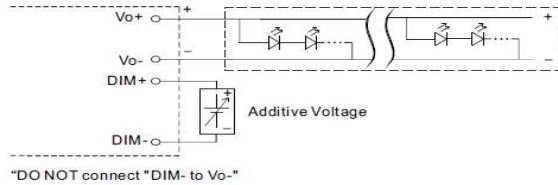
60.00 %

## 8 DIMMING OPERATION (for AB-Type)

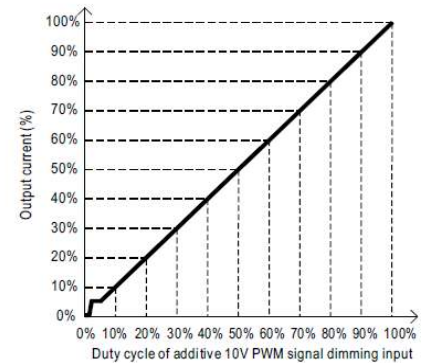
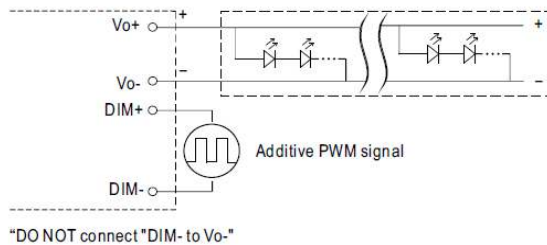
### ※ 3 in 1 dimming function (for AB-Type)

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

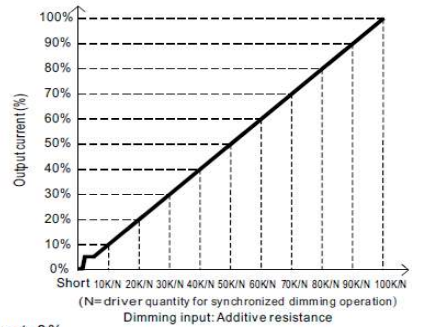
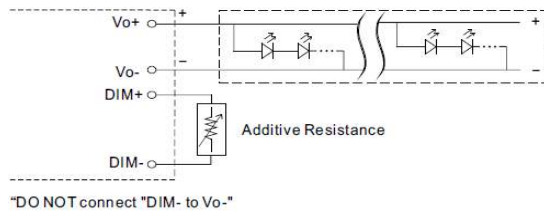
#### ◎ Applying additive 0 ~ 10VDC



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



#### ◎ Applying additive resistance:



- Note : 1. Min. dimming level is about 8% and the output current is not defined when  $0\% < I_{out} < 8\%$ .  
2. The output current could drop down to 0% when dimming input is about 0k  $\Omega$  or 0Vdc, or 10V PWM signal with 0% duty cycle.

I/P: 230 VAC

O/P: DIMMING TEST

Ta: 25°C

|   | DIMMING        | Short | 1V     | 2V     | 3V     | 4V     | 5V     | 6V     | 7V     | 8V     | 9V     | 10V     | OPEN    |
|---|----------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| 1 | Output Current | 0     | 0.622A | 0.778A | 1.093A | 1.464A | 1.882A | 2.194A | 2.559A | 2.901A | 3.221A | 3.514A  | 3.507A  |
|   | %              | 0%    | 17.76% | 22.23% | 31.23% | 41.83% | 53.77% | 62.69% | 73.11% | 82.89% | 92.02% | 100.39% | 100.19% |
|   | PWM            | 0V    | 10%    | 20%    | 30%    | 40%    | 50%    | 60%    | 70%    | 80%    | 90%    | 100%    | OPEN    |
| 2 | Output Current | 0     | 0.500A | 0.820A | 1.160A | 1.496A | 1.832A | 2.172A | 2.520A | 2.882A | 3.244A | 3.556A  | 3.557A  |
|   | %              | 0%    | 14.27% | 23.44% | 33.14% | 42.73% | 52.34% | 62.07% | 72.00% | 82.34% | 92.67% | 101.60% | 101.62% |
|   | R              | 0%    | 10K    | 20K    | 30K    | 40K    | 50K    | 60K    | 70K    | 80K    | 90K    | 100K    | OPEN    |
| 3 | Output Current | 0     | 0.621A | 0.784A | 1.094A | 1.412A | 1.734A | 2.086A | 2.528A | 2.874A | 3.196A | 3.550A  | 3.548A  |
|   | %              | 0%    | 17.74% | 22.41% | 31.26% | 40.35% | 49.55% | 59.59% | 72.23% | 82.11% | 91.33% | 101.43% | 101.37% |

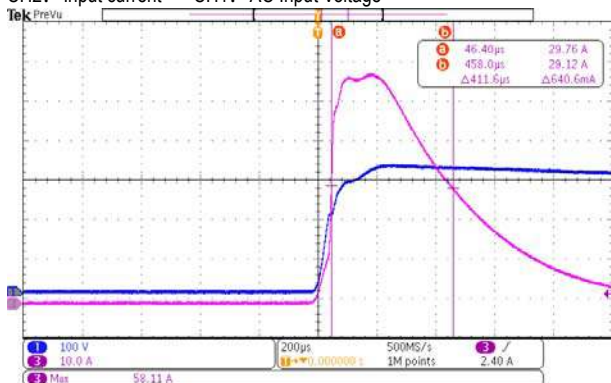
TEST RESULT: OK

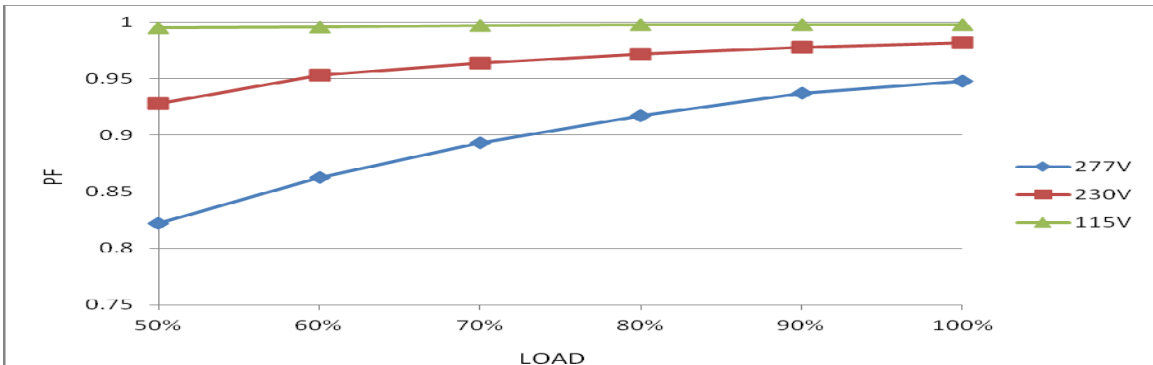
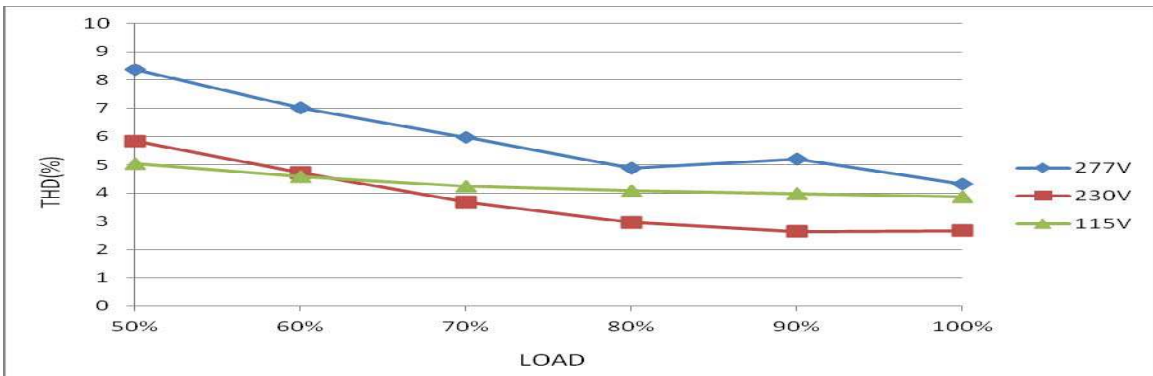
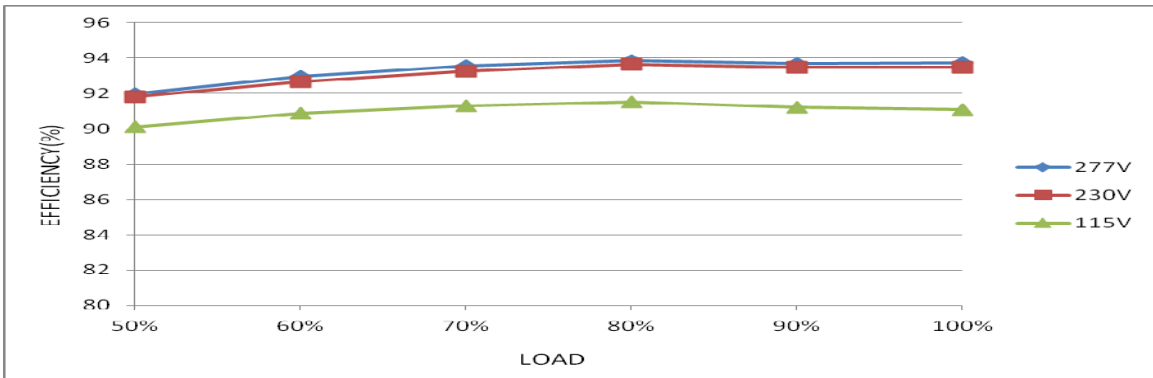
### INPUT FUNCTION TEST

| NO | TEST ITEM                    | SPECIFICATION                                                                          | TEST CONDITION                                                                                                                                                       | RESULT                                                    |
|----|------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| 1  | INPUT VOLTAGE RANGE          | 100VAC~305VAC                                                                          | I/P: TESTING<br>O/P: FULL LOAD<br>(PLEASE CHECK DERATING CURVE)<br>Ta: 25°C                                                                                          | 100V~315 V                                                |
|    |                              |                                                                                        | I/P:<br>LOW-LINE-3V=97 V<br>HIGH-LINE+10V=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: 100 VAC ~305 VAC<br>O/P: FULL~NO LOAD<br>Ta: 25°C                                                                                                               | TEST: OK                                                  |
| 3  | AC CURRENT                   | 2.2A/115VAC<br>1.1A/230VAC<br>0.9A/277VAC                                              | I/P: 115 VAC<br>I/P: 230 VAC<br>I/P: 277 VAC<br>O/P: FULL LOAD<br>Ta: 25°C                                                                                           | I=1.905A/ 115VAC<br>I= 0.938A/ 230VAC<br>I= 0.794A/277VAC |
| 4  | LEAKAGE CURRENT              | < 0.75mA / 277VAC                                                                      | I/P: 277 VAC<br>O/P: NO LOAD<br>Ta: 25°C                                                                                                                             | L-FG: 0.263mA<br>N-FG: 0.264mA                            |
| 5  | STANDBY<br>POWER CONSUMPTION | <0.5W for AB -Type                                                                     | I/P: 230VAC<br>O/P: STANDBY<br>Ta: 25°C                                                                                                                              | 0.3976W                                                   |
| 6  | INRUSH CURRENT(Typ)          | 230 V/ 65A<br>COLD START<br>(twidth=550us measured at 50%<br>Ipeak) COLD START at 230V | I/P: 230 VAC<br>O/P: FULL LOAD<br>Ta: 25°C                                                                                                                           | I=58.11A/ 230VAC<br>Twidth = 411.6us                      |

INPUT=230VAC/50HZ @ FULL LOAD

CH2: Input current CH1: AC Input Voltage



| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | POWER FACTOR              | 0.97/ 115VAC@ FULL LOAD<br>0.95/ 230VAC@ FULL LOAD<br>0.92/ 277VAC@ FULL LOAD | I/P: 115 VAC<br>I/P: 230 VAC<br>I/P: 277 VAC<br>O/P: FULL LOAD<br>Ta: 25°C     | PF=0.998 @ FULL LOAD /115VAC<br>PF=0.982 @ FULL LOAD /230VAC<br>PF=0.948@ FULL LOAD /277VAC |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------|------|------|------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|------|-------|-------|-------|
| <b>PF vs LOAD</b><br> <table><caption>PF vs LOAD Data</caption><thead><tr><th>LOAD</th><th>115V</th><th>230V</th><th>277V</th></tr></thead><tbody><tr><td>50%</td><td>0.998</td><td>0.930</td><td>0.825</td></tr><tr><td>60%</td><td>0.998</td><td>0.950</td><td>0.860</td></tr><tr><td>70%</td><td>0.998</td><td>0.960</td><td>0.890</td></tr><tr><td>80%</td><td>0.998</td><td>0.970</td><td>0.915</td></tr><tr><td>90%</td><td>0.998</td><td>0.980</td><td>0.935</td></tr><tr><td>100%</td><td>0.998</td><td>0.982</td><td>0.948</td></tr></tbody></table> |                           |                                                                               |                                                                                |                                                                                             | LOAD | 115V | 230V | 277V | 50% | 0.998 | 0.930 | 0.825 | 60% | 0.998 | 0.950 | 0.860 | 70% | 0.998 | 0.960 | 0.890 | 80% | 0.998 | 0.970 | 0.915 | 90% | 0.998 | 0.980 | 0.935 | 100% | 0.998 | 0.982 | 0.948 |
| LOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 115V                      | 230V                                                                          | 277V                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 50%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.998                     | 0.930                                                                         | 0.825                                                                          |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 60%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.998                     | 0.950                                                                         | 0.860                                                                          |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 70%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.998                     | 0.960                                                                         | 0.890                                                                          |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 80%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.998                     | 0.970                                                                         | 0.915                                                                          |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 90%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.998                     | 0.980                                                                         | 0.935                                                                          |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 100%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.998                     | 0.982                                                                         | 0.948                                                                          |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TOTAL HARMONIC DISTORTION | THD<10%<br>( @load≥50%/115VAC;<br>@load≥50%/230VAC;<br>@load≥75%/277VAC )     | I/P: 115 VAC<br>I/P: 230 VAC<br>I/P: 277 VAC<br>O/P: 50% /75% LOAD<br>Ta: 25°C | THD=5.04% @50% load /115VAC<br>THD=5.85% @50% load /230VAC<br>THD=5.32% @75% load /277VAC   |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| <b>THD vs LOAD</b><br> <table><caption>THD vs LOAD Data</caption><thead><tr><th>LOAD</th><th>115V</th><th>230V</th><th>277V</th></tr></thead><tbody><tr><td>50%</td><td>5.04</td><td>5.85</td><td>8.50</td></tr><tr><td>60%</td><td>4.80</td><td>4.80</td><td>7.00</td></tr><tr><td>70%</td><td>4.50</td><td>3.80</td><td>6.00</td></tr><tr><td>80%</td><td>4.20</td><td>3.00</td><td>5.00</td></tr><tr><td>90%</td><td>4.10</td><td>2.80</td><td>5.30</td></tr><tr><td>100%</td><td>4.00</td><td>2.80</td><td>4.50</td></tr></tbody></table>               |                           |                                                                               |                                                                                |                                                                                             | LOAD | 115V | 230V | 277V | 50% | 5.04  | 5.85  | 8.50  | 60% | 4.80  | 4.80  | 7.00  | 70% | 4.50  | 3.80  | 6.00  | 80% | 4.20  | 3.00  | 5.00  | 90% | 4.10  | 2.80  | 5.30  | 100% | 4.00  | 2.80  | 4.50  |
| LOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 115V                      | 230V                                                                          | 277V                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 50%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5.04                      | 5.85                                                                          | 8.50                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 60%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 4.80                      | 4.80                                                                          | 7.00                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 70%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 4.50                      | 3.80                                                                          | 6.00                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 80%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 4.20                      | 3.00                                                                          | 5.00                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 90%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 4.10                      | 2.80                                                                          | 5.30                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 100%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.00                      | 2.80                                                                          | 4.50                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EFFICIENCY(Typ)           | 93%                                                                           | I/P: 230VAC<br>O/P: FULL LOAD<br>Ta: 25°C                                      | 93.47%                                                                                      |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| <b>EFFICIENCY vs LOAD</b><br> <table><caption>EFFICIENCY vs LOAD Data</caption><thead><tr><th>LOAD</th><th>115V</th><th>230V</th><th>277V</th></tr></thead><tbody><tr><td>50%</td><td>90.0</td><td>91.8</td><td>92.0</td></tr><tr><td>60%</td><td>91.0</td><td>92.8</td><td>93.0</td></tr><tr><td>70%</td><td>91.5</td><td>93.2</td><td>93.5</td></tr><tr><td>80%</td><td>91.8</td><td>93.5</td><td>93.8</td></tr><tr><td>90%</td><td>91.5</td><td>93.2</td><td>93.5</td></tr><tr><td>100%</td><td>91.2</td><td>93.0</td><td>93.5</td></tr></tbody></table> |                           |                                                                               |                                                                                |                                                                                             | LOAD | 115V | 230V | 277V | 50% | 90.0  | 91.8  | 92.0  | 60% | 91.0  | 92.8  | 93.0  | 70% | 91.5  | 93.2  | 93.5  | 80% | 91.8  | 93.5  | 93.8  | 90% | 91.5  | 93.2  | 93.5  | 100% | 91.2  | 93.0  | 93.5  |
| LOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 115V                      | 230V                                                                          | 277V                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 50%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 90.0                      | 91.8                                                                          | 92.0                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 60%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 91.0                      | 92.8                                                                          | 93.0                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 70%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 91.5                      | 93.2                                                                          | 93.5                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 80%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 91.8                      | 93.5                                                                          | 93.8                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 90%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 91.5                      | 93.2                                                                          | 93.5                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |
| 100%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 91.2                      | 93.0                                                                          | 93.5                                                                           |                                                                                             |      |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |      |       |       |       |

### PROTECTION FUNCTION TEST

| NO | TEST ITEM                              | SPECIFICATION                                                                                                                                       | TEST CONDITION                                                          | RESULT                                                                                                         |
|----|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 1  | OVER TEMPERATURE PROTECTION            | NO DAMAGE                                                                                                                                           | I/P: 100VAC<br>I/P: 230VAC<br>I/P: 305VAC<br>O/P: FULL LOAD             | O.T.P. Active<br>Shut down output voltage, re-power on to recovery                                             |
| 2  | OVER VOLTAGE PROTECTION                | V1: 61V~ 85V                                                                                                                                        | I/P: 305VAC<br>I/P: 230VAC<br>I/P: 100VAC<br>O/P: MIN LOAD<br>Ta: 25°C  | 70.4V/ 305VAC<br>70.5V/ 230VAC<br>70.5V/ 100VAC<br>Shut down output voltage, re-power on to recover            |
| 3  | SHORT PROTECTION                       | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE                                                                                                              | I/P: 100VAC<br>I/P: 230VAC<br>I/P: 305VAC<br>O/P: FULL LOAD<br>Ta: 25°C | NO DAMAGE<br>Hiccup mode or Constant Current Limiting, recovers automatically after fault condition is removed |
| 4  | INPUT OVER VOLTAGE (for XLG-200I only) | 320 ~ 390VAC (Shut down output voltage when the input voltage exceeds protection voltage<br>Can survive input voltage stress of 440Vac for 48 hours | I/P: TESTING<br>O/P: FULL LOAD<br>Ta: 25°C                              | PASS                                                                                                           |

### COMPONENT STRESS TEST

| NO | TEST ITEM                                           | SPECIFICATION          | TEST CONDITION                                                                                                          | RESULT                                      |
|----|-----------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 1  | PWM Transistor<br>(D to S) or (C to E) Peak Voltage | Q2 Rated<br>9A/600V    | I/P: High-Line +3V =308V<br>O/P: (1) Full Load Turn on<br>(2) Output Short<br>(3) Full load continue<br>Ta: 25°C        | (1) 474V<br>(2) 494V<br>(3) 466V            |
| 2  | PFC Transistor                                      | Q1 Rated<br>20A/600V   | I/P: High-Line +3V =308V<br>O/P: (1) Full Load<br>(2) Output Short<br>(3) Full Load continue<br>Ta: 25°C                | (1) 480V<br>(2) 452V<br>(3) 476V            |
| 3  | P.F.C DIODE                                         | D1 Rated<br>600V/9A    | I/P: High-Line +3V =308V<br>O/P: (1) Full Load Turn on<br>(2) Output Short<br>(3) Full load continue<br>Ta: 25°C        | (1) 474V<br>(2) 434V<br>(3) 466V            |
| 4  | Diode Peak Voltage                                  | D100 Rated<br>15A/150V | I/P: High-Line +3V =308V<br>O/P: (1) Full Load<br>(2) Output Short<br>(3) Full Load continue<br>(4) No Load<br>Ta: 25°C | (1) 114V<br>(2) 26V<br>(3) 112V<br>(4) 118V |



## 200W Constant Power Mode LED Driver

## XLG-200 series

|   |                         |                                |                                                                                                                                                                 |                                                  |
|---|-------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 5 | Input Capacitor Voltage | C5 Rated:<br>100 $\mu$ F/ 450V | I/P: High-Line +3V =308 V<br>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<br>Ta: 25°C | (1) 457V<br>(2) 450V<br>(3) 458V<br>(4) 446V     |
| 6 | Control IC Voltage Test | U1 Rated<br>27 V               | I/P: High-Line +3V =308V<br>O/P:(1)FULL LOAD<br>(2) Output Short<br>(3) O.V.P<br>(4)NO LOAD VR.LOW LINE<br>Ta: 25°C                                             | (1) 12.0V<br>(2) 12.0V<br>(3) 12.0V<br>(4) 12.1V |

## SAFETY TEST

| NO | TEST ITEM            | SPECIFICATION                                                                                 | TEST CONDITION                                                                      | RESULT                                                                                       |
|----|----------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 1  | WITHSTAND VOLTAGE    | I/P-O/P: 3.75KVAC/min<br>I/P-FG: 2KVAC/min<br>O/P-FG: 1.5KVAC/min                             | I/P-O/P: 4.125 KVAC/min<br>I/P-FG: 2.4 KVAC/min<br>O/P-FG: 1.8 KVAC/min<br>Ta: 25°C | I/P-O/P: 2.364mA<br>I/P-FG: 2.034mA<br>O/P-FG: 2.34mA<br>NO DAMAGE                           |
| 2  | ISOLATION RESISTANCE | I/P-O/P: 500VDC>100M $\Omega$<br>I/P-FG: 500VDC>100M $\Omega$<br>O/P-FG: 500VDC>100M $\Omega$ | 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: >9999M $\Omega$<br>I/P-FG: >9999 M $\Omega$<br>O/P-FG: >9999M $\Omega$<br>NO DAMAGE |
| 3  | GROUNDING CONTINUITY | FG(PE) TO CHASSIS<br>OR TRACE < 100 m $\Omega$                                                | 40A / 2min<br>Ta:25°C                                                               | 16m $\Omega$                                                                                 |

## 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: FULL/50% LOAD<br>Ta: 25°C | PASS                          |
| 2  | CONDUCTION | EN55015                                                   | I/P: 230 VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C    | PASS<br>Test by certified Lab |
| 3  | RADIATION  | EN55015                                                   | I/P: 230 VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C    | PASS<br>Test by certified Lab |
| 4  | E.S.D      | EN61000-4-2<br>LIGHT INDUSTRY<br>Air: 8KV<br>Contact: 4KV | I/P: 230 VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C    | CRITERIA A                    |
| 5  | E.F.T      | EN61000-4-4<br>LIGHT INDUSTRY<br>INPUT: 2KV               | I/P: 230VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C     | CRITERIA A                    |

|   |                                                                                                                                 |                                                         |                                                |            |
|---|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------|------------|
| 6 | SURGE                                                                                                                           | EN61000-4-5<br>LIGHT INDUSTRY<br>L-N : 4KV<br>L-PE: 6KV | I/P: 230VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C | CRITERIA A |
| 7 | Test by certified Lab & Test Report Prepare. Any contradictions of the test results please refer to the latest EMC test report. |                                                         |                                                |            |

## RELIABILITY TEST

### ENVIRONMENT TEST

| NO | TEST ITEM                                                         | SPECIFICATION                                                          | TEST CONDITION                                                 | RESULT                   |                       |
|----|-------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------|-----------------------|
| 1  | TEMPERATURE RISE TEST                                             | MODEL: XLG-200-H                                                       |                                                                |                          |                       |
|    |                                                                   | 1. ROOM AMBIENT BURN-IN: 2 HRS<br>I/P: 230VAC O/P: FULL LOAD Ta= 28.4℃ |                                                                |                          |                       |
|    |                                                                   | 2. HIGH AMBIENT BURN-IN: 2 HRS<br>I/P: 230VAC O/P: FULL LOAD Ta=53℃    |                                                                |                          |                       |
|    |                                                                   | NO                                                                     | Position                                                       | ROOM AMBIENT Ta= 28.4 °C | HIGH AMBIENT Ta=53 °C |
|    |                                                                   | 1                                                                      | RTH1                                                           | 70.3℃                    | 90.7℃                 |
|    |                                                                   | 2                                                                      | ZNR3                                                           | 62.5℃                    | 87.6℃                 |
|    |                                                                   | 3                                                                      | LF2                                                            | 62.0℃                    | 87.2℃                 |
|    |                                                                   | 4                                                                      | C10                                                            | 63.8℃                    | 89.1℃                 |
|    |                                                                   | 5                                                                      | C5                                                             | 63.0℃                    | 88.1℃                 |
|    |                                                                   | 6                                                                      | BD1                                                            | 65.4℃                    | 90.3℃                 |
|    |                                                                   | 7                                                                      | Q1                                                             | 63.8℃                    | 89.0℃                 |
|    |                                                                   | 8                                                                      | D1                                                             | 66.6℃                    | 90.9℃                 |
|    |                                                                   | 9                                                                      | R7                                                             | 65.4℃                    | 90.4℃                 |
|    |                                                                   | 10                                                                     | Q2                                                             | 70.2℃                    | 95.6℃                 |
|    |                                                                   | 11                                                                     | Q3                                                             | 72.2℃                    | 97.8℃                 |
|    |                                                                   | 12                                                                     | U2                                                             | 62.7℃                    | 87.4℃                 |
|    |                                                                   | 13                                                                     | U1                                                             | 66.1℃                    | 91.4℃                 |
|    |                                                                   | 14                                                                     | L2                                                             | 67.4℃                    | 91.8℃                 |
|    |                                                                   | 15                                                                     | C51                                                            | 68.8℃                    | 95.4℃                 |
|    |                                                                   | 16                                                                     | C15                                                            | 67.3℃                    | 93.4℃                 |
|    |                                                                   | 17                                                                     | T1                                                             | 74.5℃                    | 103.0℃                |
|    |                                                                   | 18                                                                     | D102                                                           | 69.3℃                    | 94.8℃                 |
|    |                                                                   | 19                                                                     | D100                                                           | 68.9℃                    | 94.3℃                 |
|    |                                                                   | 20                                                                     | D103                                                           | 70.9℃                    | 96.6℃                 |
|    |                                                                   | 21                                                                     | D101                                                           | 69.9℃                    | 96.0℃                 |
|    |                                                                   | 22                                                                     | C200                                                           | 63.4℃                    | 89.5℃                 |
|    |                                                                   | 23                                                                     | C106                                                           | 65.0℃                    | 91.3℃                 |
|    |                                                                   | 24                                                                     | C108                                                           | 60.4℃                    | 86.1℃                 |
| 25 | LF100                                                             | 60.1℃                                                                  | 85.8℃                                                          |                          |                       |
| 26 | RTH3                                                              | 65.0℃                                                                  | 89.5℃                                                          |                          |                       |
| 27 | TC                                                                | 57.4℃                                                                  | 82.5℃                                                          |                          |                       |
| 2  | LOW TEMPERATURE<br>TURN ON TEST                                   | TURN ON AFTER 2 HOUR                                                   | I/P: 305VAC/110VAC<br>O/P: FULL LOAD<br>Ta= -45℃/-35℃          | TEST: OK                 |                       |
| 3  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE<br>TURN ON TEST | AFTER 12 HOURS<br>IN CHAMBER ON<br>CONTROL 50 °C<br>NO DAMAGE          | I/P: 305VAC<br>O/P: FULL LOAD<br>Ta=50 °C<br>HUMIDITY= 95% R.H | TEST: OK                 |                       |



## 200W Constant Power Mode LED Driver

## XLG-200 series

|    |                          |                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                              |                                                   |
|----|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 4  | TEMPERATURE COEFFICIENT  | $\pm 0.03\%/^{\circ}\text{C}$ (0~60°C)                                                                                                                                                                                 | I/P: 230 VAC<br>O/P: FULL LOAD                                                                                                                                                                                                                                                                                               | $\pm 0.004\%/^{\circ}\text{C}$ (0~60°C)           |
| 5  | STORAGE TEMPERATURE TEST | -40~+80°C                                                                                                                                                                                                              | 1. Thermal shock Temperature: -50°C ~ +125°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: 200CYCLE<br>5. Input/Output condition: STATIC<br>TEST: OK                                                                                            |                                                   |
| 6  | THERMAL SHOCK TEST       | -40~+50°C                                                                                                                                                                                                              | 1. Thermal shock Temperature: -45°C ~ +55°C<br>2. Temperature change rate : 25°C / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle: 16CYCLE<br>5. Input/Output condition:<br>15cycle:230VAC/ FULL LOAD AC on 3 sec/AC off 1 sec TEST<br>1cycle:230VAC/ FULL LOAD Burn In Test<br>TEST: OK |                                                   |
| 7  | VIBRATION TEST           | 10~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                                                                                                                 | 1 Carton & 1 Set<br>(1) Waveform: Sine Wave<br>(2) Frequency: 10~500Hz<br>(3) Sweep Time: 10min/sweep cycle<br>(4) Acceleration: 6G<br>(5) Test Time: 180min in each axis (X.Y.Z)<br>(6) Ta: 25°C<br>TEST: OK                                                                                                                |                                                   |
| 8  | CAPACITOR LIFE CYCLE     | XLG-200-H: SUPPOSE C106 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) 81648 HRS<br>(2) 102084 HRS<br>(3) 108663 HRS |
| 9  | MTBF                     | Conducted by Parts Stress Analysis Prediction<br>749.06 K hrs min. Telcordia SR-332 (Bellcore)<br>200.67K hrs min. MIL-HDBK-217F (25°C)                                                                                |                                                                                                                                                                                                                                                                                                                              |                                                   |
| 10 | Ongoing Reliability Test | I/P: 230VAC O/P: FULL LOAD TA=50°C<br>Demonstration Mean Time Between Failure : 50,000 hours                                                                                                                           |                                                                                                                                                                                                                                                                                                                              |                                                   |

| TEST RESULT | TESTER     | REVIEW | APPROVAL |
|-------------|------------|--------|----------|
| PASS        | WUWQ/ZHOUB | WENF   | LIUWY    |