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| Report Number | SAF-19340 |
| Customer | Marshall's Street Furniture |
| Contact | Jon Scott |
| Product Type | Street Light (Gear Tray) |
| Test Purpose | UMS Energy Performance Test |
| Sales Order Ref | Q-LUX16-21573 |
| Works Order Number | WO-9987 |
| Test Item Reference | TI-13517 |
| LAB Test Method Reference | TES1012 |
| Test Standards (if applicable) | LM-79-08 and Elexon UMS Charge Code process V4.0 |
| Lab Location Reference | Safety |
| Tested by | Steve Hunt |
| Date of Test | 01/06/2017 |
| Reviewed by | Menno Schakel |
| Number of products tested | 5 |

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Signed:




Streetlight LED

Date: 1 June 2017

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| Product Information | | |
|---|--------------------------|----------------------------------|
| Product | Street Light (Gear Tray) | |
| Product Name / Model | Streetlight LED | |
| Part/Serial Number | See (Identifier) below | |
| Product Brand | Eclatec | |
| Manufacturer | Eclatec | |
| Category | LITE | |
| Rated Input Voltage | 220-240V | |
| Rated output: | 60 - 200V | |
| Protection Class | I | |
| Driver Make/Model | Philips | Xitanium Full Prog 110W 0.3-1.0A |
| Light Engine Make/Model | ECLATEC | unknown |
| Dimmable / Level Tested | Yes | 50% |
| Product Description | | |
| The Streetlight Gear tray are made from a sheet metal frame, of which on the outside fits the LED modules and on the inner side sits the driver and the electrical connections for termination. | | |

| Test Conditions | | |
|---|-------------|------------|
| Ambient Temperature | 23 | (°C) |
| Humidity | 39 | (%) |
| | | |
| | Before Test | After Test |
| Voltage | 250V | 249.98V |
| Frequency | 50Hz | 50Hz |
| Total Harmonic Distortion | 0.08% | 0.08% |
| The test items were stabilised according to the electrical power stability of LM79-08. Stabilization is achieved when the difference in electrical power measurement is less than 0.5%. Each test item was stabilised at 250V. Measurements were made with an ambient temperature of 23°C +/- 2°C. Measurements were taken only after sufficient time for thermal stabilisation has been allowed. | | |

| Product Specifications / TI Ref Numbers | | |
|---|------------|-------------------------------|
| Dimension | Sample | Luminous opening |
| Diameter / Width | 470 mm | 336 mm |
| Length | 0 mm | 0 mm |
| Height / Depth | 95 mm | 0 mm |
| Product Test Number | Identifier | Serial Number (if applicable) |
| Test Item #1 | 13517A | N/A |
| Test Item #2 | 13517B | N/A |
| Test Item #3 | 13517C | N/A |
| Test Item #4 | 13517D | N/A |
| Test Item #5 | 13517E | N/A |

Test Equipment and Description

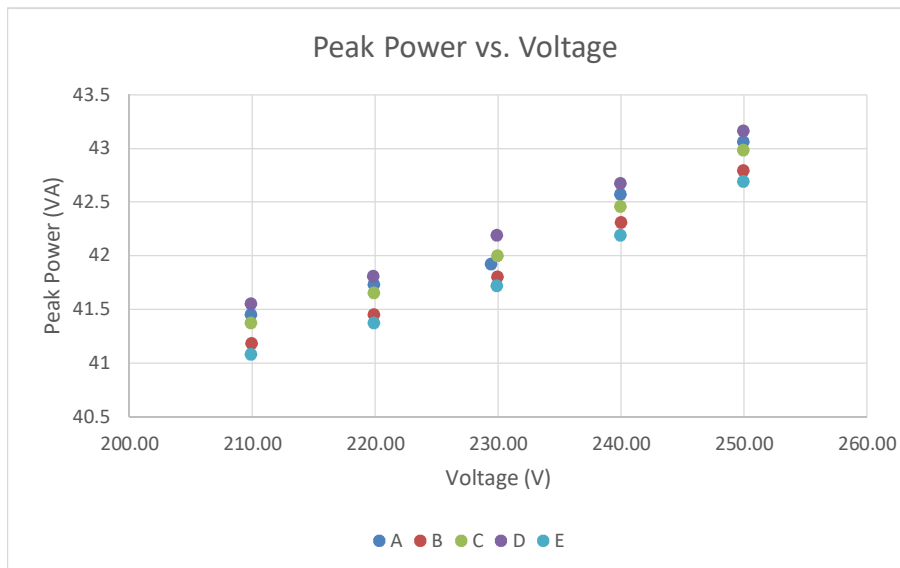
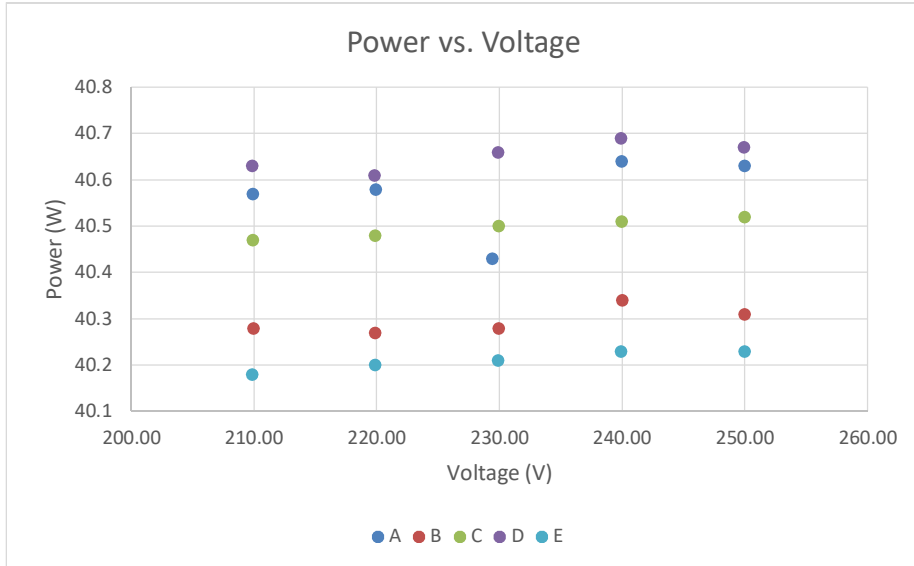
Yokogawa WT210 Power Analyser, Kikusui PCR2000M Stable AC Power Supply with PC control and data recording

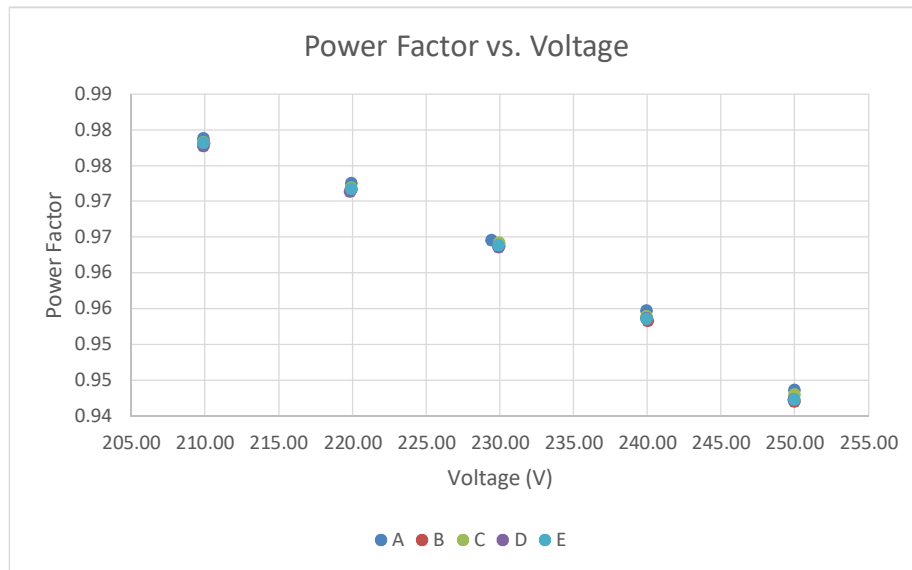


The products under test are connected to the UMS Test system which has full data control and recording using Labview software. This allows full integration of the test equipment used - Kikusui AC Stable Power Supply, Yokogawa Power Analyser, Pico Temperature Logger and a LUX-TSI distribution control panel

Test Results Summary

These are the summary graphs of the test results for all products tested. The raw results are on page 6 of this test report.





Power factors measured have a Leading phase angle and therefore the driver has capacitive properties.

Measurement Uncertainty

| Parameter | Uncertainty |
|--------------------------------|-----------------------|
| Voltage (300 V, 50/60 Hz) | $\pm 0.061 V_{rms}$ |
| Current (200 mA, 50/60Hz) | $\pm 0.07 mA_{rms}$ |
| Current (0.5 A, 50/60Hz) | $\pm 0.16 mA_{rms}$ |
| Current (5 A, 50/60Hz) | $\pm 0.0016 A_{rms}$ |
| Power (300 V, 200 mA, 50/60) | $\pm 0.032 W_{rms}$ |
| Power (300 V, 0.5 A, 50/60 Hz) | $\pm 0.09 W_{rms}$ |
| Power (300 V, 5 A, 50/60 Hz) | $\pm 0.0009 kW_{rms}$ |
| Frequency (50/60 Hz) | $\pm 0.001 Hz$ |
| Power Factor | $\pm 0.0006 PF$ |

Measurements of power of 0.50W or greater are made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power less than 0.50W are made with an uncertainty of less than or equal to 0.01W at the 95% confidence level.

Full Test Results

| Test Item | Voltage (V) | Current (mA) | Electrical Power (W) | Ambient Temp (°C) | Peak Power (VA) | Power Factor | Leading / Lagging |
|-----------|-------------|--------------|----------------------|-------------------|-----------------|--------------|-------------------|
| A | 250.00 | 172.23 | 40.63 | 25.23 | 43.06 | 0.944 | Leading |
| B | 250.00 | 171.18 | 40.31 | 25.35 | 42.79 | 0.942 | Leading |
| C | 250.00 | 171.91 | 40.52 | 25.33 | 42.98 | 0.943 | Leading |
| D | 249.97 | 172.67 | 40.67 | 25.35 | 43.16 | 0.942 | Leading |
| E | 250.00 | 170.78 | 40.23 | 25.47 | 42.69 | 0.942 | Leading |
| A | 239.98 | 177.38 | 40.64 | 25.18 | 42.57 | 0.955 | Lagging |
| B | 240.05 | 176.27 | 40.34 | 25.26 | 42.31 | 0.953 | Leading |
| C | 239.98 | 176.95 | 40.51 | 25.32 | 42.46 | 0.954 | Leading |
| D | 239.97 | 177.81 | 40.69 | 25.23 | 42.67 | 0.954 | Leading |
| E | 239.97 | 175.82 | 40.23 | 25.35 | 42.19 | 0.953 | Leading |
| A | 229.48 | 182.67 | 40.43 | 25.24 | 41.92 | 0.965 | Lagging |
| B | 229.96 | 181.78 | 40.28 | 25.22 | 41.80 | 0.964 | Leading |
| C | 229.96 | 182.65 | 40.50 | 25.17 | 42.00 | 0.964 | Leading |
| D | 229.93 | 183.51 | 40.66 | 25.35 | 42.19 | 0.964 | Leading |
| E | 229.94 | 181.44 | 40.21 | 25.19 | 41.72 | 0.964 | Leading |
| A | 219.94 | 189.74 | 40.58 | 25.15 | 41.73 | 0.973 | Lagging |
| B | 219.93 | 188.47 | 40.27 | 25.22 | 41.45 | 0.972 | Leading |
| C | 219.93 | 189.38 | 40.48 | 25.20 | 41.65 | 0.972 | Leading |
| D | 219.88 | 190.15 | 40.61 | 25.16 | 41.81 | 0.971 | Leading |
| E | 219.93 | 188.10 | 40.20 | 25.05 | 41.37 | 0.972 | Leading |
| A | 209.93 | 197.42 | 40.57 | 25.29 | 41.45 | 0.979 | Leading |
| B | 209.98 | 196.14 | 40.28 | 25.44 | 41.18 | 0.978 | Leading |
| C | 209.93 | 197.08 | 40.47 | 25.36 | 41.37 | 0.978 | Leading |
| D | 209.91 | 197.96 | 40.63 | 25.02 | 41.55 | 0.978 | Leading |
| E | 209.92 | 195.68 | 40.18 | 25.28 | 41.08 | 0.978 | Leading |

Test Item Photographs

TI-13517

Images of Product(s) under test includes (where possible) labelling, Driver and Light engine details



Led Module fitment



Driver and terminal fitment

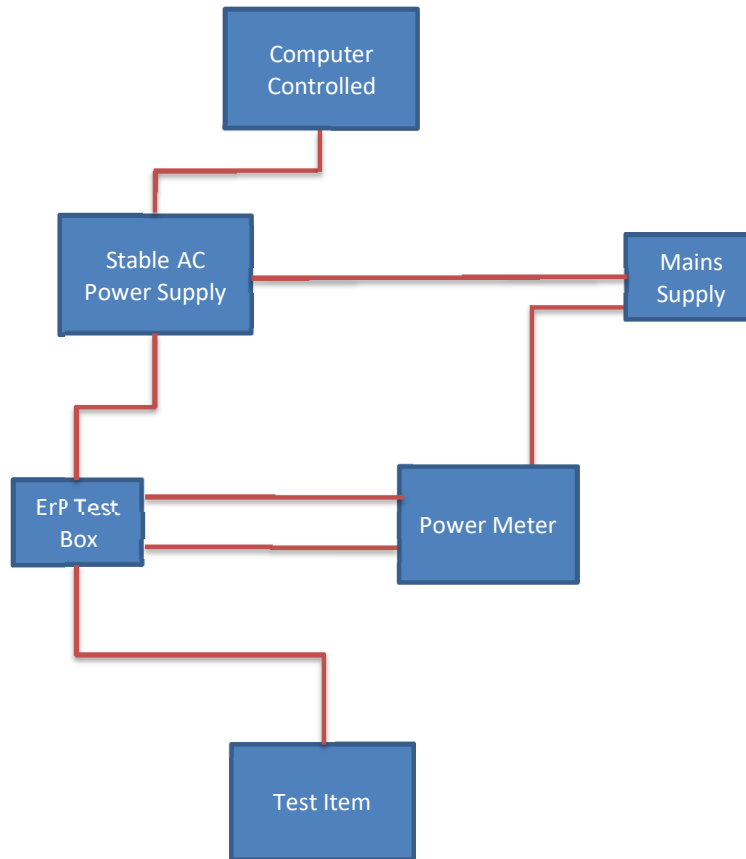


Driver fitted



LED Module(s) fitted

Appendix 1: Test item set-up



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