

Report Number	TRN-12871
Customer	LED Roadway Lighting
Contact	Huw Convery
Product Type	LED Streetlight
Test Purpose	UMS Energy Performance Test
Sales Order Ref	Q-LUX2013-1405
Works Order Number	WO-2987
Test Item Reference	TI-2444
LAB Test Method Reference	TES-2012
Test Standards	LM-79-08 and UMS charge code process v2.0
Lab Location Reference	LUX-EPC
Tested by	Ian Herridge
Date of Test	23/10/2013
Analysed by	Steve Hunt
Number of products tested	5

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Signed:




NXT-12S 350mA Lantern

Date: 28/10/2013

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Test Item: TI-2444

Nomenclature

Lamp Orientation described below relates to the position in which a lamp is designed to operate for maximum performance and safety, these include:

- BD - Base Down (bulb is vertically positioned with the metal base at the bottom, glass up)
 - BU - Base Up (bulb is vertically positioned with the metal base at the top, glass hanging down)
 - HBD - Horizontal +15° to Base Down
 - H45 - Horizontal to -45° only
 - VBU - Vertical Base Up ±15°
 - VBD - Vertical Base Down ±15°
 - HBU - Base Up +/- 90° (bulb can be operated in a base up or horizontal position)
 - HOR - Horizontal Burn (bulb is positioned with the metal base parallel to the ground)
 - H75 - Horizontal +/- 75° (bulb should not be operated within 15° of vertical)
 - U - Universal Burn (burn can be operated in any position)
-

Test Conditions

Measurements were made with an ambient temperature of 25°C +/- 1°C. Measurements were taken only after sufficient time for thermal stabilisation has been allowed.

Test Equipment

Yokogawa WT3000 Power Analyzer. Kikusui PCR2000M Stable AC Power Supply.



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Product Name	NXT-12S 350mA Lantern
Part/Serial Number	None
Type of Product	LED Streetlight
Base Type	N/A - Luminaire
Driver Type	Mains
Driver Model	Philips X1040C070V057MPJ1
Operating Orientation	Base Up
Test Orientation	Base Up
Ambient Temperature	25.5°C
Manufacturer	LED Roadway Lighting
Date of Manufacturer	2013
Thermal Management	Passive
Dimmable	No
Humidity	<65% RH

Dimension	Sample	Luminous Opening
Diameter/Width	285mm	197mm
Length	590mm	213mm
Height/Depth	145mm	0mm

Test Item	Identifier
TI-2210A	I
TI-2210B	II
TI-2210C	III
TI-2210D	IV
TI-2210E	V

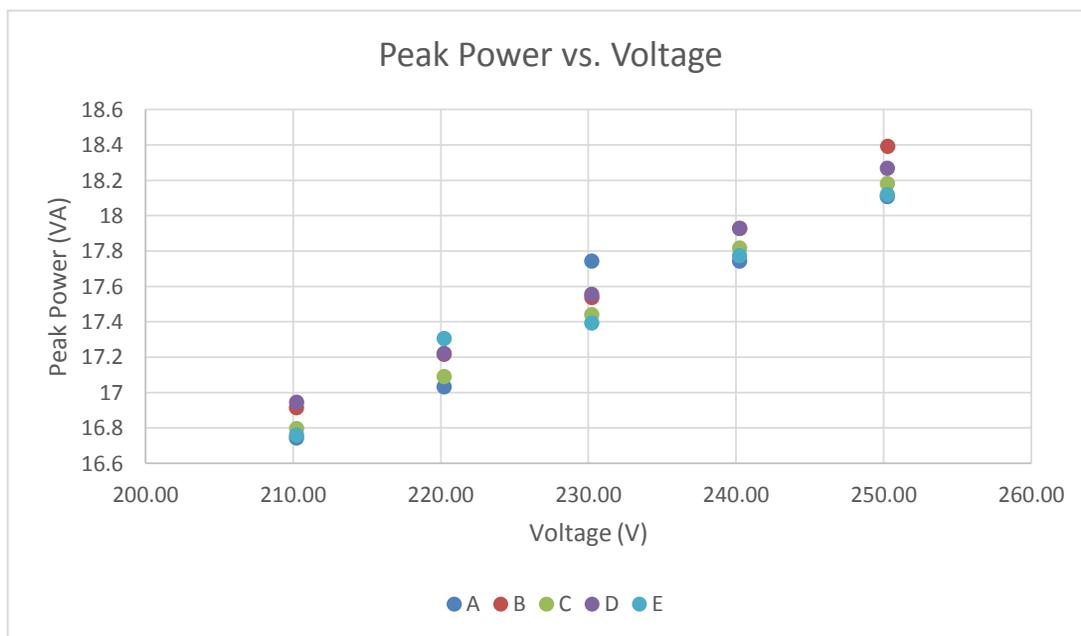
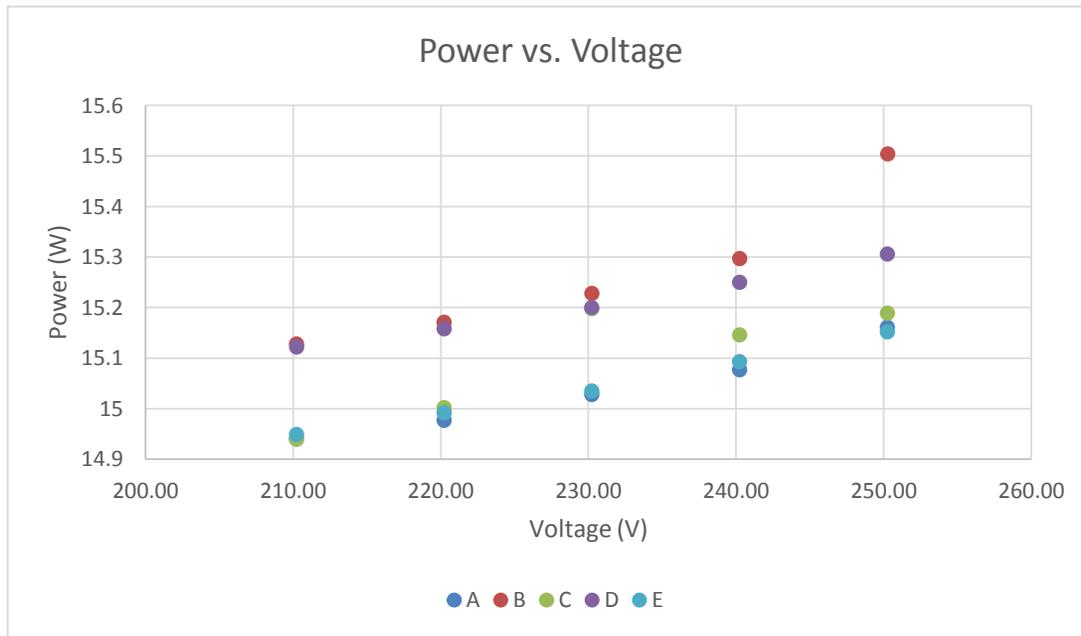
Test Conditions

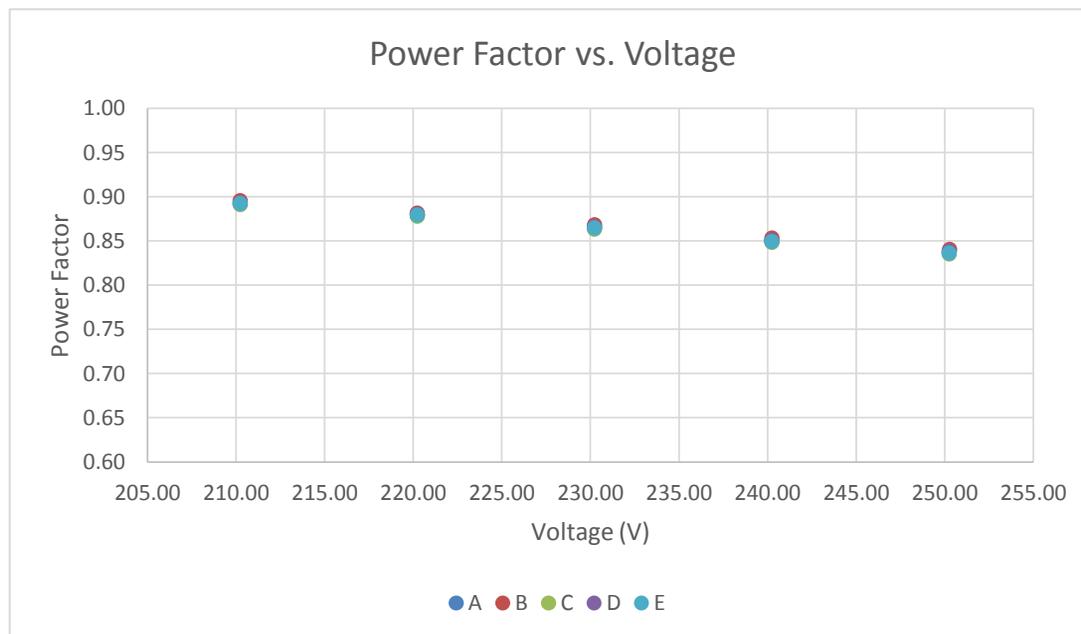
	Before Test	After Test
AC Supply Voltage (V)	230.25	230.25
AC Supply Frequency (Hz)	50	50
Voltage RMS Summation of the Harmonic Components (THD)	0.05	0.06

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.

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.





All power factors measured have a leading phase angle.

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 Hz)	$\pm 0.032 W_{rms}$
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

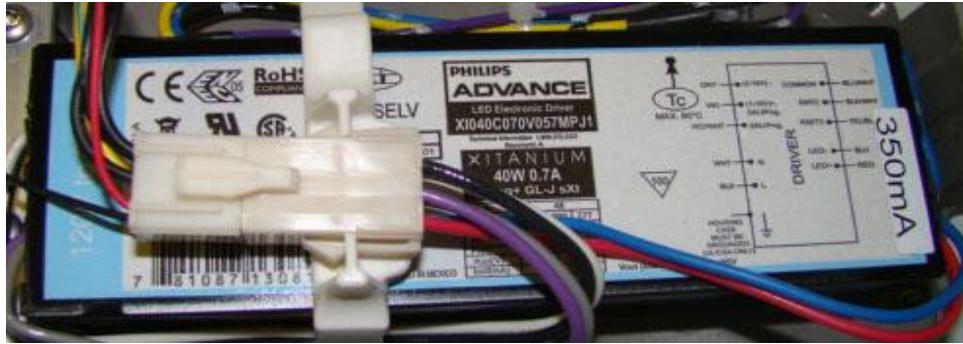
Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.25	72.37	15.16	25	18.11	0.837	Leading
B	250.28	73.71	15.50	25.5	18.39	0.840	Leading
C	250.26	72.63	15.19	25.5	18.18	0.835	Leading
D	250.25	73.00	15.31	25.7	18.27	0.838	Leading
E	250.25	72.39	15.15	25.9	18.12	0.836	Leading
A	240.24	73.85	15.08	25.8	17.74	0.850	Leading
B	240.25	74.62	15.30	25.8	17.93	0.853	Leading
C	240.24	74.20	15.15	25.8	17.82	0.848	Leading
D	240.24	74.61	15.25	26	17.93	0.851	Leading
E	240.24	73.97	15.09	25.7	17.77	0.849	Leading
A	230.23	75.46	15.03	24.9	17.74	0.865	Leading
B	230.23	76.16	15.23	25.5	17.54	0.868	Leading
C	230.23	75.78	15.20	25.8	17.44	0.863	Leading
D	230.22	76.26	15.20	25.9	17.56	0.866	Leading
E	230.23	75.55	15.04	25.4	17.39	0.865	Leading
A	220.22	77.33	14.98	25.1	17.03	0.879	Leading
B	220.22	78.17	15.17	25.7	17.22	0.881	Leading
C	220.23	77.62	15.00	25.2	17.09	0.878	Leading
D	220.23	78.24	15.16	25.2	17.22	0.880	Leading
E	220.23	77.42	14.99	25.7	17.31	0.879	Leading
A	210.22	79.64	14.94	24.2	16.74	0.892	Leading
B	210.22	80.46	15.13	24.9	16.91	0.895	Leading
C	210.23	79.88	14.94	25.8	16.80	0.891	Leading
D	210.23	80.53	15.12	25.6	16.95	0.893	Leading
E	210.23	79.71	14.95	25.9	16.76	0.892	Leading



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Test Item Photographs

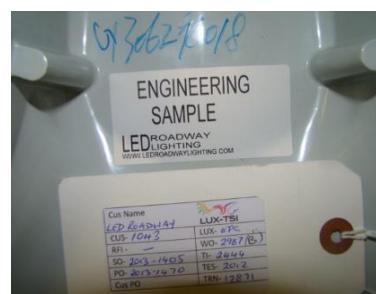
Product Driver



TI-2444A



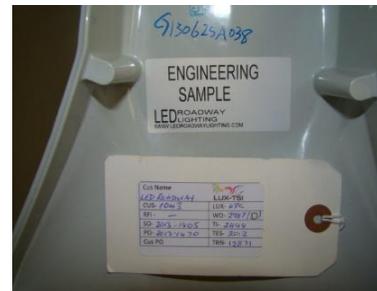
TI-2444B



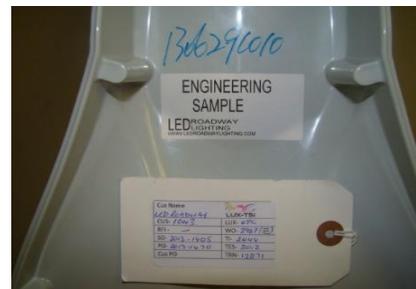
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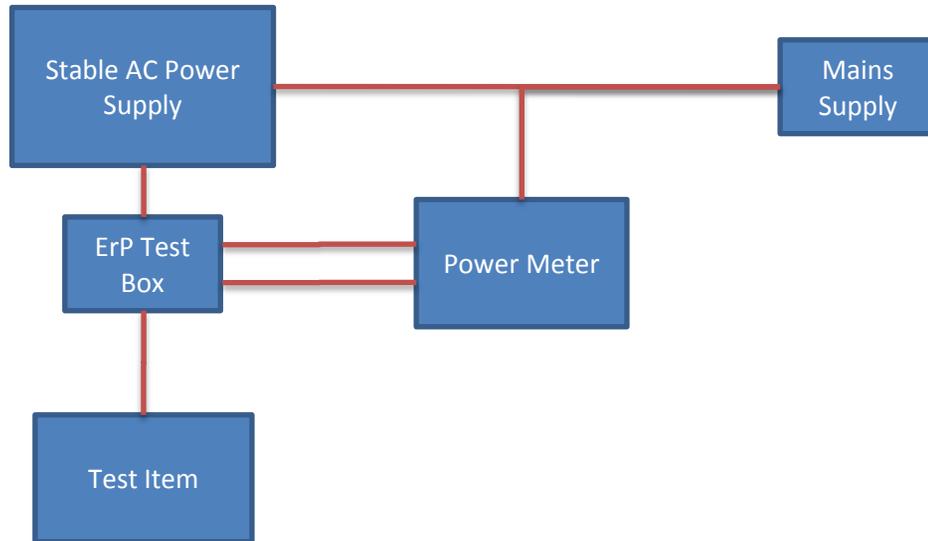
TI-2444D



TI-2444E



Appendix 1: Test item set-up



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