

Report Number	TRN-13449
Customer	LED Roadway Lighting
Contact	Huw Convery
Product Type	Street Light
Test Purpose	UMS Energy Performance Test
Sales Order Ref	Q-LUX2014-1849
Works Order Number	WO-3603
Test Item Reference	TI-2997
LAB Test Method Reference	TES-2012
Test Standards	LM-79-08 and UMS charge code process v4.0
Lab Location Reference	LUX-EPC
Tested by	Steve Hunt
Date of Test	09/04/2014
Analysed by	Steve Hunt
Number of products tested	5

Address: LUX-TSI Ltd.,
Pencoed Technology Park,
Pencoed, Bridgend,
CF35 5HZ, UK
Telephone: +44 (0) 1656 864618
Authorised by: David Chan
Email: dchan@lux-tsi.com
Signed:




NXT - 48 - 68W

Date: 09/04/2014

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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

VBV - 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)

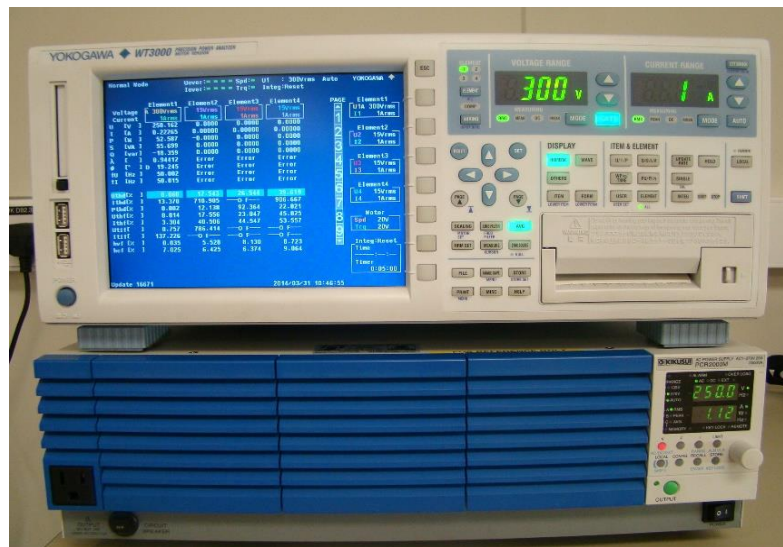
U - Universal Burn (burn can be operated in any position)

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 Precision Power Analyzer. Kikusui PCR2000M Stable AC Power Supply



Product Name	NXT - 48 - 68W
Part/Serial Number	N72M2R3HB700GY1GCEXXHPRH3
Type of Product	Street Light
Base Type	N/A
Driver Type	Mains
Driver Model	LRL-66014-SUB-NXTS-450-LF
Operating Orientation	Base Up
Test Orientation	Base Up
Ambient Temperature	25.0°C
Manufacturer	LED Roadway Lighting
Date of Manufacturer	2014
Thermal Management	Passive
Dimmable	Yes
Humidity	<65% RH

Dimension	Sample	Luminous Opening
Diameter/Width	300 mm	198 mm
Length	750 mm	372 mm
Height/Depth	135 mm	0 mm

Test Item	Identifier
TI-2997A	A141001038
TI-2997B	A141001037
TI-2997C	A141001036
TI-2997D	A141001040
TI-2997E	A141001039

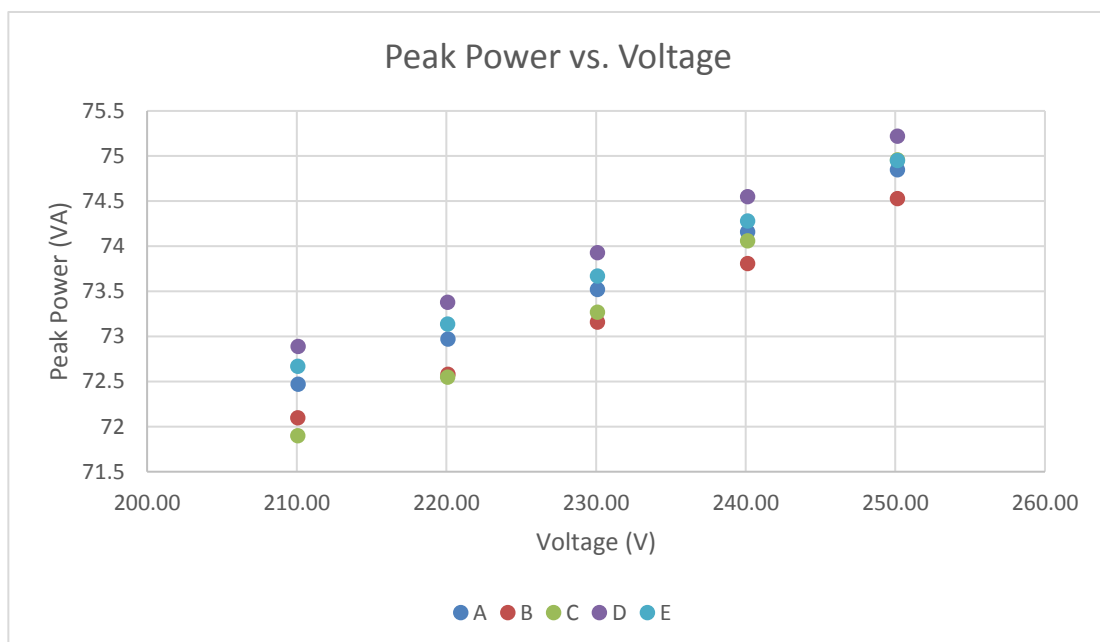
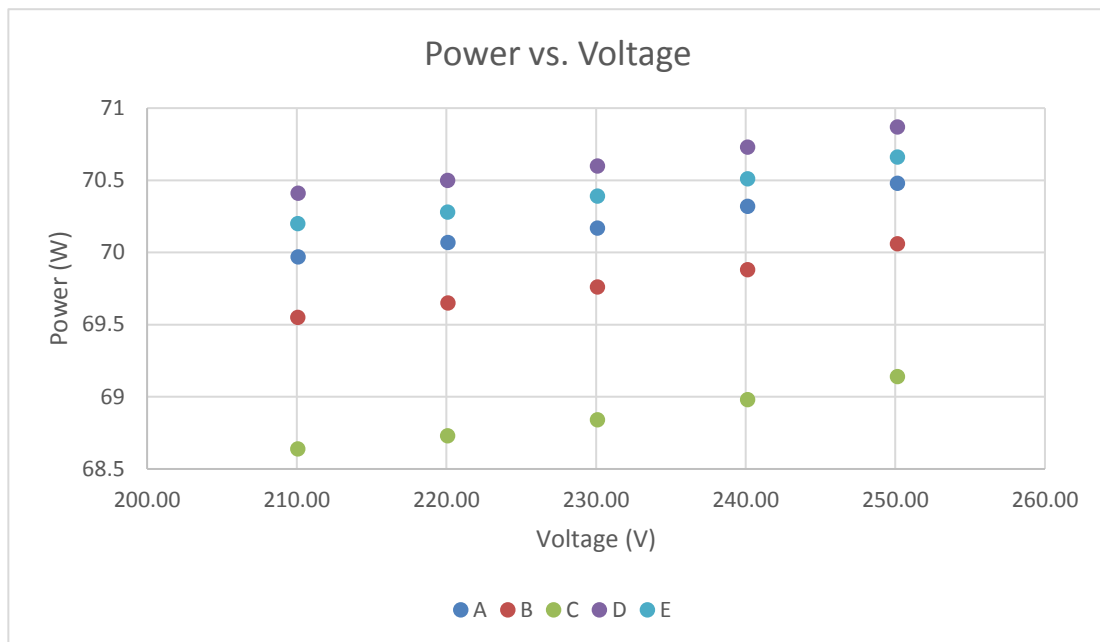
Test Conditions

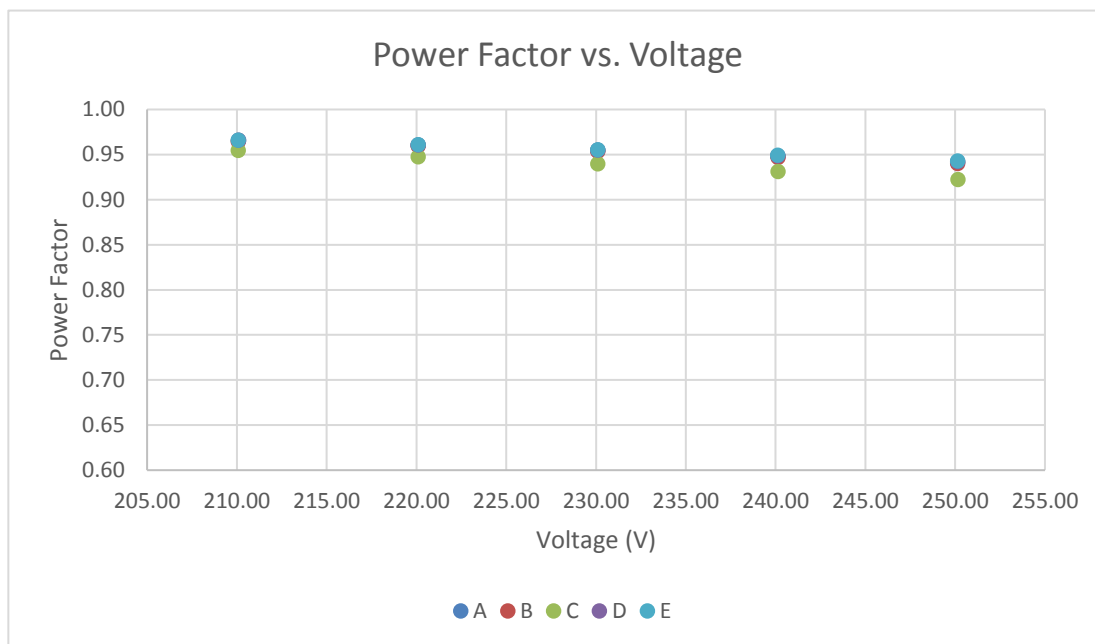
	Before Test	After Test
AC Supply Voltage (V)	250.14V	250.13V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.06%	0.06%

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

There 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 and therefore the driver has capacitive properties.

Measurement Uncertainty

Parameter	Uncertainty
Voltage (300 V, 50/60 Hz)	$\pm 0.061 \text{ V}_{\text{rms}}$
Current (200 mA, 50/60Hz)	$\pm 0.07 \text{ mA}_{\text{rms}}$
Current (0.5 A, 50/60Hz)	$\pm 0.16 \text{ mA}_{\text{rms}}$
Current (5 A, 50/60Hz)	$\pm 0.0016 \text{ A}_{\text{rms}}$
Power (300 V, 200 mA, 50/60 Hz)	$\pm 0.032 \text{ W}_{\text{rms}}$
Power (300 V, 0.5 A, 50/60 Hz)	$\pm 0.09 \text{ W}_{\text{rms}}$
Power (300 V, 5 A, 50/60 Hz)	$\pm 0.0009 \text{ kW}_{\text{rms}}$
Frequency (50/60 Hz)	$\pm 0.001 \text{ Hz}$
Power Factor	$\pm 0.0006 \text{ PF}$

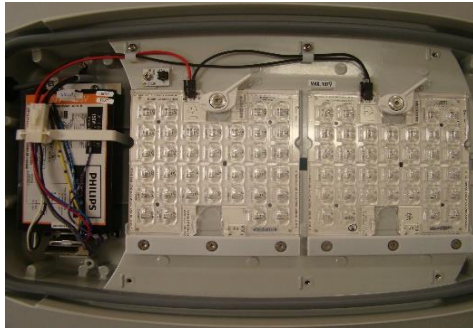
Measurements of power of 0.50W or greater are made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power less than 0.50W are made with an uncertainty of less than or equal to 0.01W at the 95% confidence level.

Full Test Results

Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.14	299.00	70.48	25	74.85	0.942	Leading
B	250.14	297.00	70.06	25	74.53	0.940	Leading
C	250.15	299.00	69.14	25	74.96	0.922	Leading
D	250.14	300.00	70.87	25	75.22	0.942	Leading
E	250.14	299.00	70.66	25	74.95	0.943	Leading
A	240.13	308.00	70.32	25	74.16	0.948	Leading
B	240.13	307.00	69.88	25	73.81	0.947	Leading
C	240.13	308.00	68.98	25	74.06	0.931	Leading
D	240.12	310.00	70.73	25	74.55	0.949	Leading
E	240.12	309.00	70.51	25	74.28	0.949	Leading
A	230.10	319.00	70.17	25	73.52	0.954	Leading
B	230.10	317.00	69.76	25	73.16	0.953	Leading
C	230.10	318.00	68.84	25	73.27	0.940	Leading
D	230.10	321.00	70.60	25	73.93	0.955	Leading
E	230.10	320.00	70.39	25	73.67	0.955	Leading
A	220.10	331.00	70.07	25.2	72.97	0.960	Leading
B	220.10	329.00	69.65	25.2	72.58	0.960	Leading
C	220.09	329.00	68.73	25.2	72.55	0.947	Leading
D	220.09	334.00	70.50	25.2	73.38	0.961	Leading
E	220.09	332.00	70.28	25.2	73.14	0.961	Leading
A	210.09	344.00	69.97	25	72.47	0.965	Leading
B	210.08	343.00	69.55	25	72.10	0.965	Leading
C	210.08	342.00	68.64	25	71.90	0.955	Leading
D	210.09	346.00	70.41	25	72.89	0.966	Leading
E	210.08	345.00	70.20	25	72.67	0.966	Leading

Test Item Photographs

Product Details



(Driver and LED Module)



(Label fixture)

TI-2997A



TI-2997B



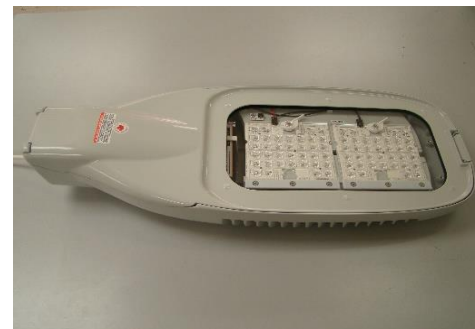
TI-2997C



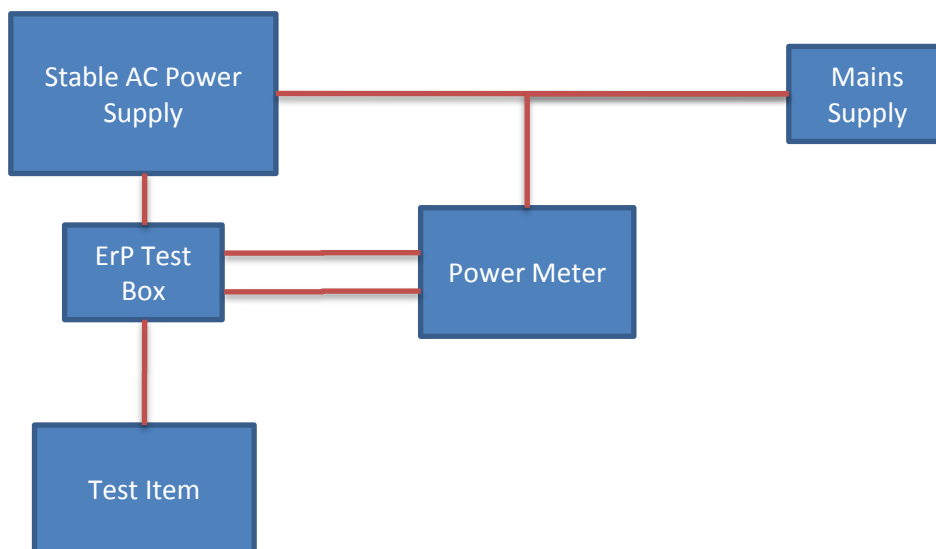
TI-2997D



TI-2997E



Appendix 1: Test item set-up



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