

Report Number	TRN-13451
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-3605
Test Item Reference	TI-2999
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	07/04/2014
Analysed by	Steve Hunt
Number of products tested	5

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NXT - 48 - 92W

Date: 07/04/2014

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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)

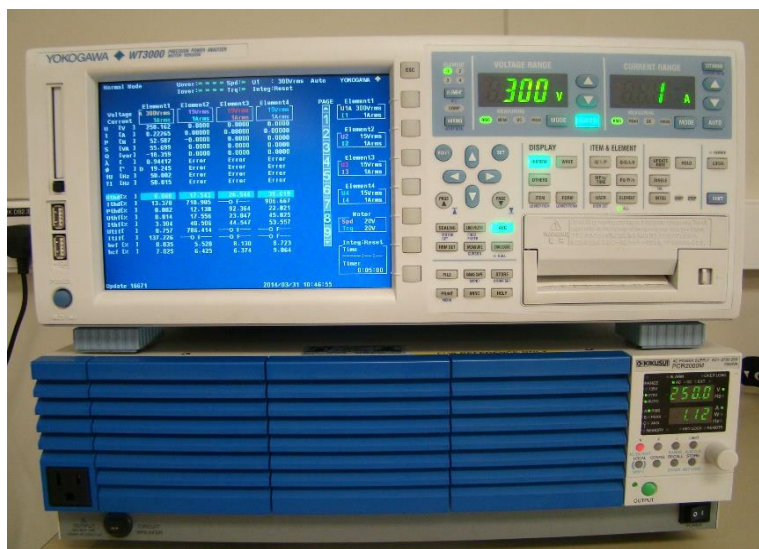
U - Universal Burn (burn can be operated in any position)

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 - 92W
Part/Serial Number	N72M2R3HB700GY1GCEXXHPRH3
Type of Product	Street Light
Base Type	N/A
Driver Type	Mains
Driver Model	LRL-66014-SUB-NXTS-600-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-2999A	A141001038
TI-2999B	A141001037
TI-2999C	A141001036
TI-2999D	A141001040
TI-2999E	A141001039

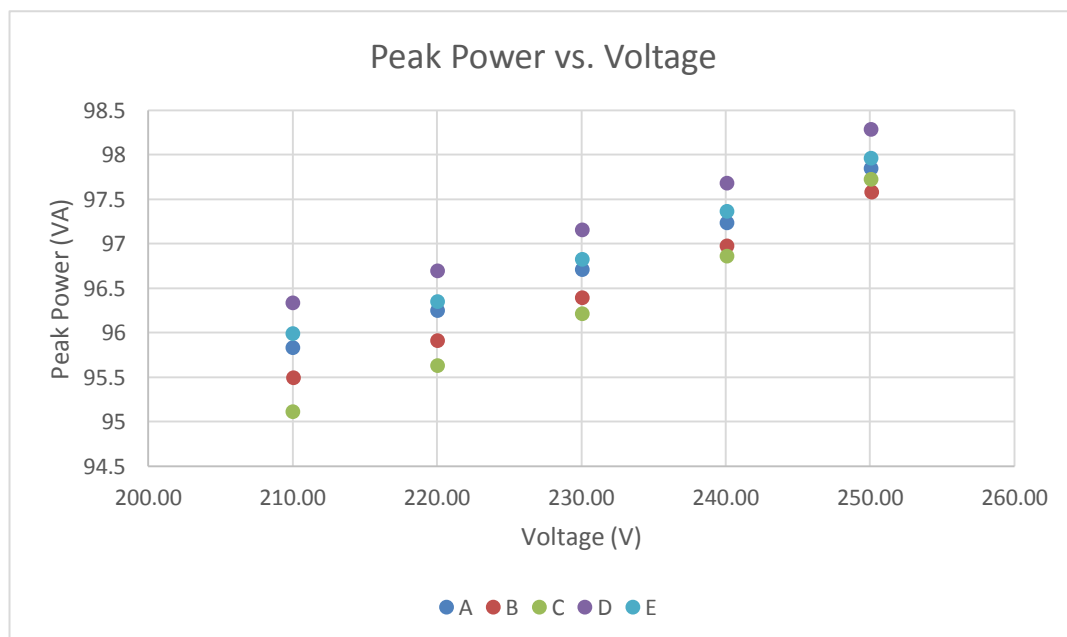
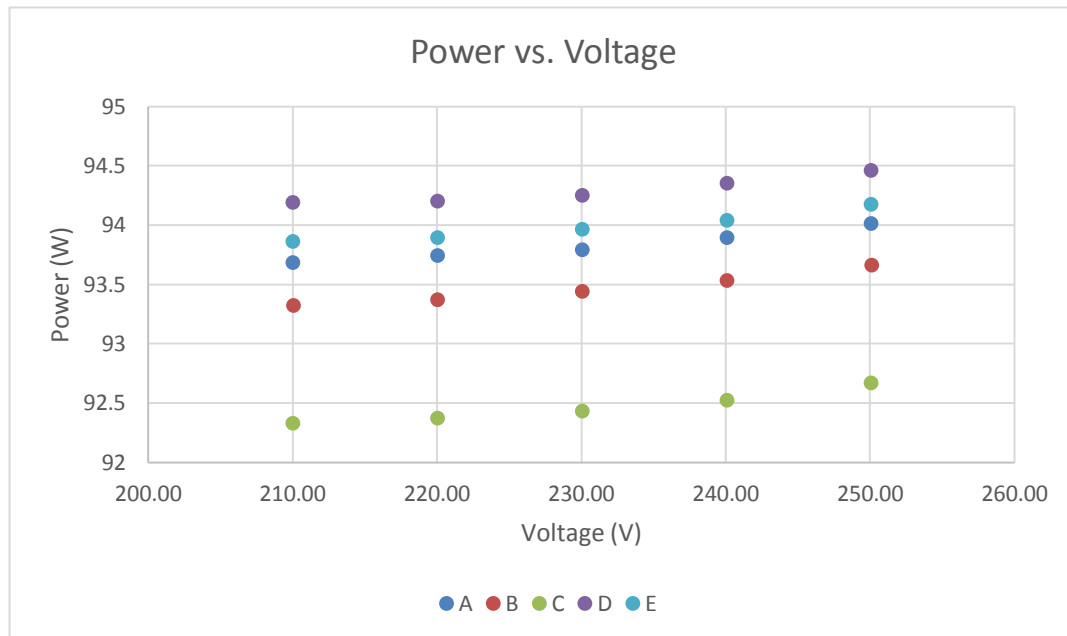
Test Conditions

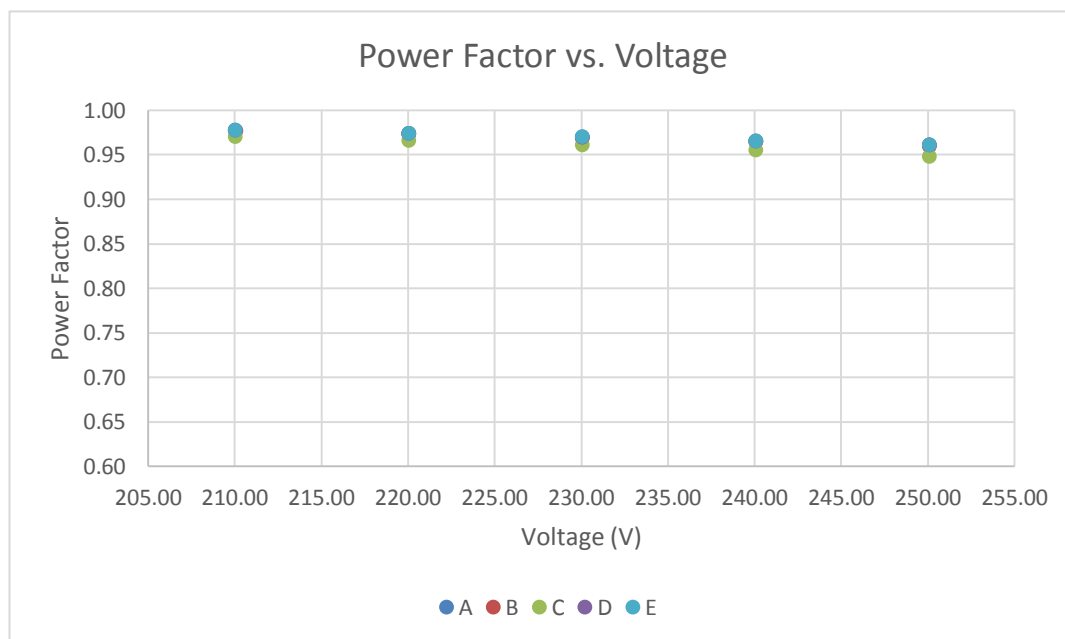
	Before Test	After Test
AC Supply Voltage (V)	250.04V	250.03V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.06%	0.06%

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	$\pm 0.0006 \text{ PF}$

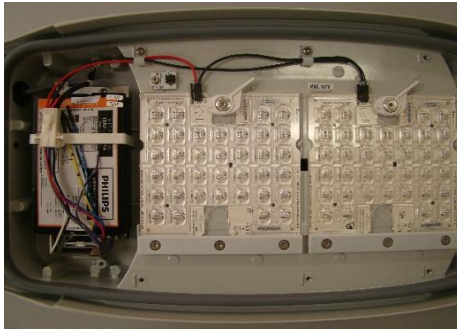
Measurements of power of 0.50W or greater are made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power less than 0.50W are made with an uncertainty of less than or equal to 0.01W at the 95% confidence level.

Full Test Results

Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.09	391.00	94.01	25	97.84	0.961	Leading
B	250.10	390.00	93.66	25	97.58	0.960	Leading
C	250.09	390.00	92.67	25	97.72	0.948	Leading
D	250.08	393.00	94.46	25	98.28	0.961	Leading
E	250.09	391.00	94.17	25	97.96	0.961	Leading
A	240.08	405.00	93.89	25.2	97.23	0.966	Leading
B	240.08	403.00	93.53	25.2	96.97	0.965	Leading
C	240.08	403.00	92.52	25.2	96.86	0.955	Leading
D	240.07	406.00	94.35	25.2	97.68	0.966	Leading
E	240.08	405.00	94.04	25.2	97.36	0.966	Leading
A	230.06	420.00	93.79	25.6	96.71	0.970	Leading
B	230.06	419.00	93.44	25.6	96.39	0.969	Leading
C	230.06	418.00	92.43	25.6	96.21	0.961	Leading
D	230.06	422.00	94.25	25.6	97.15	0.970	Leading
E	230.06	420.00	93.96	25.6	96.82	0.970	Leading
A	220.03	437.00	93.74	25.4	96.25	0.974	Leading
B	220.03	435.00	93.37	25.4	95.91	0.974	Leading
C	220.05	434.00	92.37	25.4	95.63	0.966	Leading
D	220.05	439.00	94.20	25.4	96.69	0.974	Leading
E	220.05	437.00	93.89	25.4	96.35	0.974	Leading
A	210.03	456.00	93.68	25.4	95.83	0.978	Leading
B	210.04	454.00	93.32	25.4	95.49	0.977	Leading
C	210.03	452.00	92.33	25.4	95.11	0.971	Leading
D	210.03	458.00	94.19	25.4	96.33	0.978	Leading
E	210.03	457.00	93.86	25.4	95.99	0.978	Leading

Test Item Photographs

Product Details



(Driver and LED Module)



(Label fixture)

TI-2999A



TI-2999B



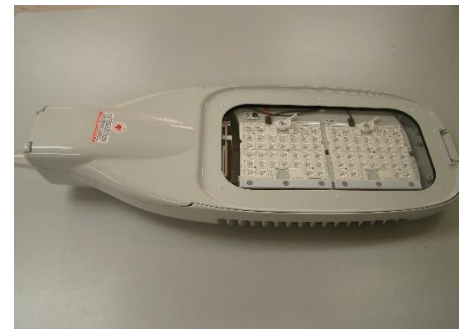
TI-2999C



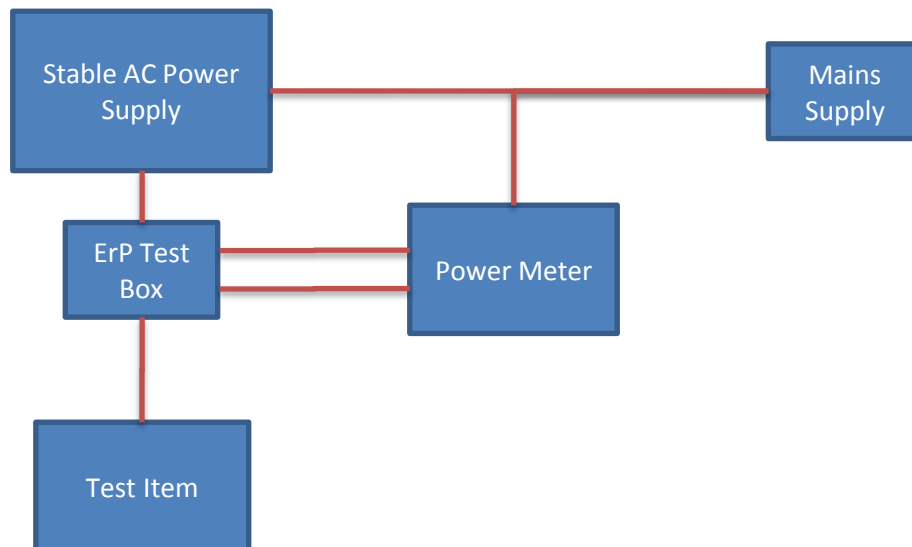
TI-2999D



TI-2999E



Appendix 1: Test item set-up



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