

Report Number	TRN-13450
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-3604
Test Item Reference	TI-2998
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	08/04/2014
Analysed by	Steve Hunt
Number of products tested	5

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NXT - 48 - 80W

Date: 08/04/2014

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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)

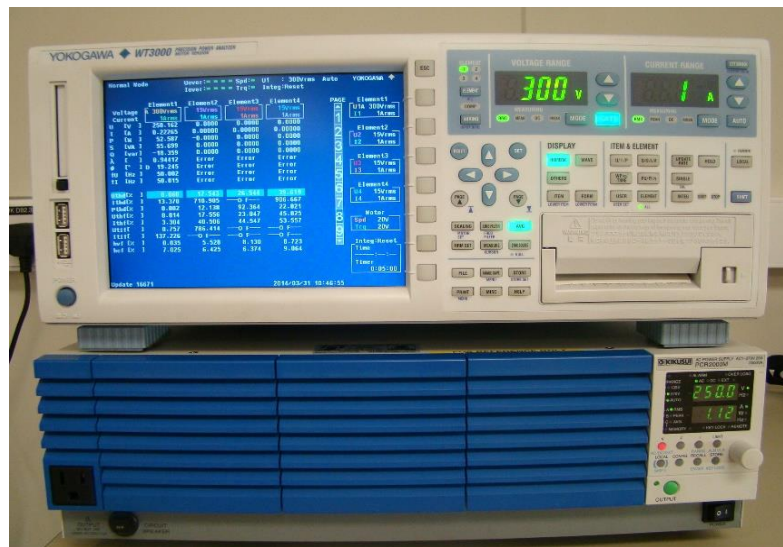
U - Universal Burn (burn can be operated in any position)

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 - 80W
Part/Serial Number	N72M2R3HB700GY1GCEXXHPRH3
Type of Product	Street Light
Base Type	N/A
Driver Type	Mains
Driver Model	LRL-66014-SUB-NXTS-525-LF
Operating Orientation	Base Up
Test Orientation	Base Up
Ambient Temperature	25.4°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-2998A	A141001038
TI-2998B	A141001037
TI-2998C	A141001036
TI-2998D	A141001040
TI-2998E	A141001039

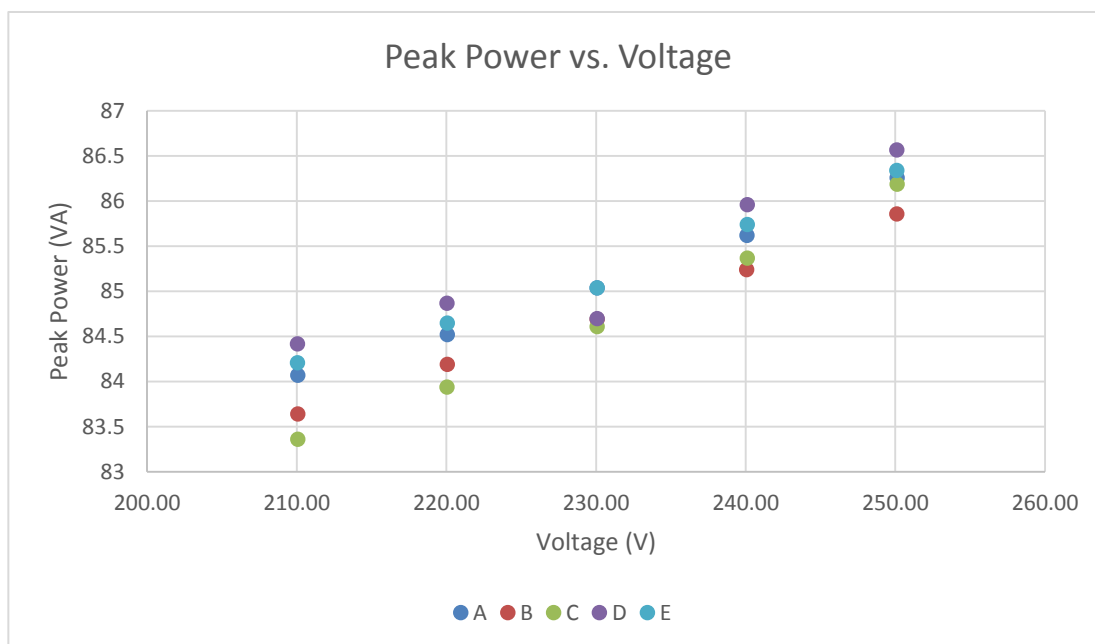
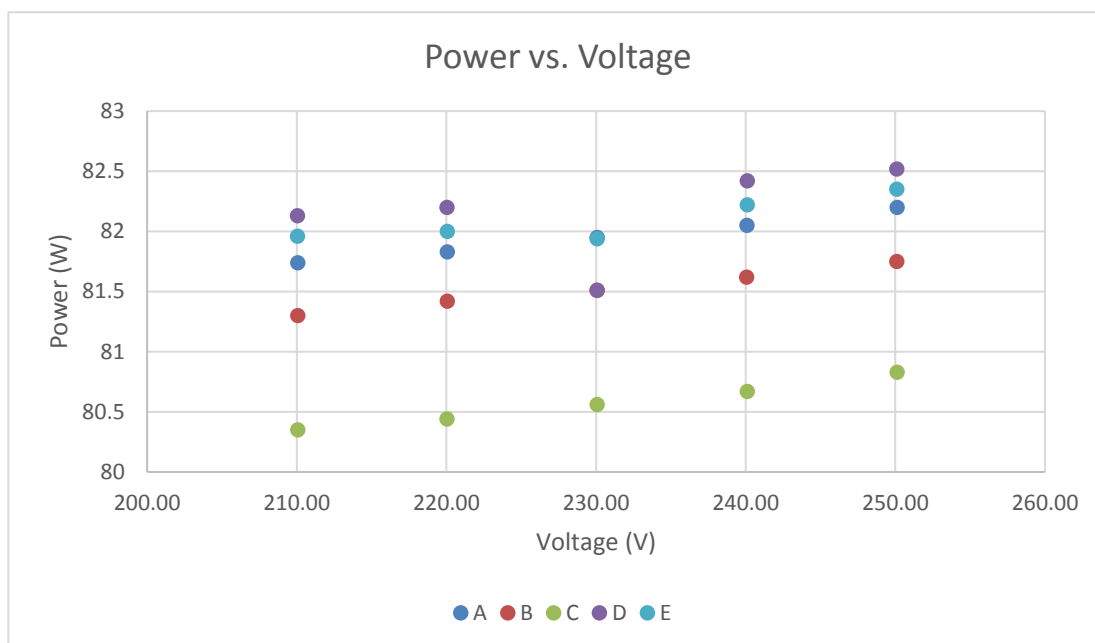
Test Conditions

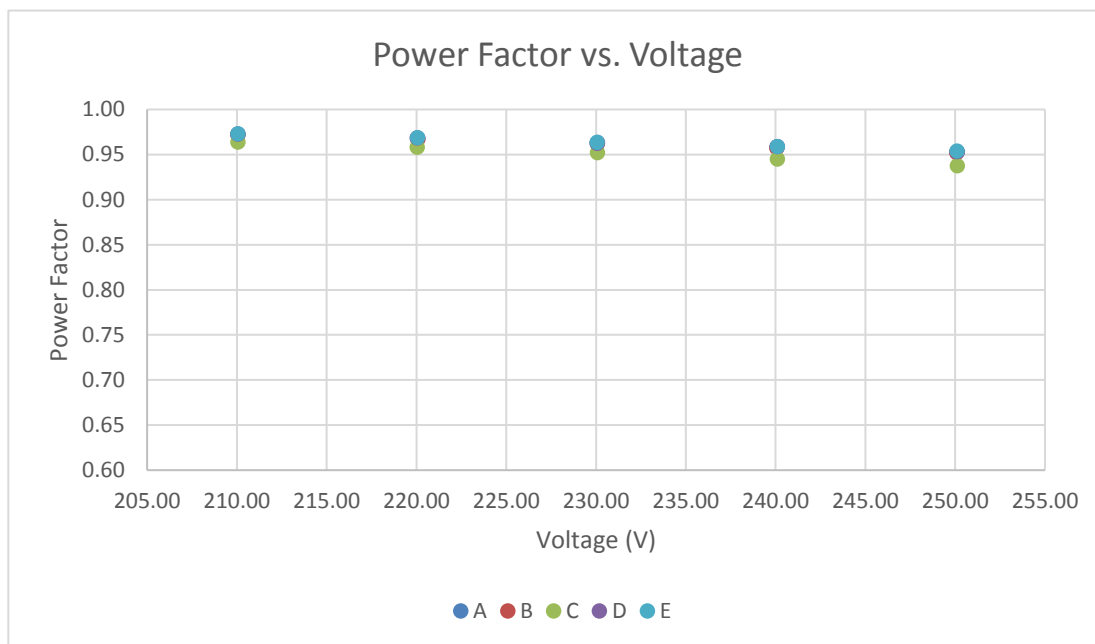
	Before Test	After Test
AC Supply Voltage (V)	250.04V	250.03V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.06%	0.06%

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	$\pm 0.0006 \text{ PF}$

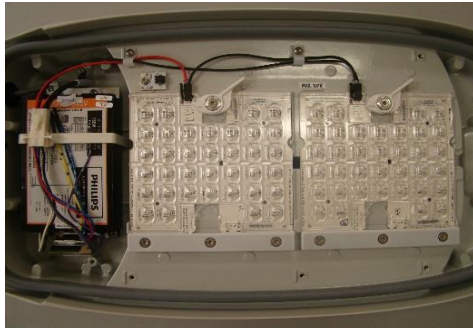
Measurements of power of 0.50W or greater are made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power less than 0.50W are made with an uncertainty of less than or equal to 0.01W at the 95% confidence level.

Full Test Results

Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.12	344.00	82.20	25	86.26	0.953	Leading
B	250.09	343.00	81.75	25	85.86	0.952	Leading
C	250.12	344.00	80.83	25	86.19	0.938	Leading
D	250.11	346.00	82.52	25	86.57	0.953	Leading
E	250.11	345.00	82.35	25	86.34	0.954	Leading
A	240.09	356.00	82.05	25	85.62	0.958	Leading
B	240.07	355.00	81.62	25	85.24	0.958	Leading
C	240.10	355.00	80.67	25	85.37	0.945	Leading
D	240.10	358.00	82.42	25	85.96	0.959	Leading
E	240.10	357.00	82.22	25	85.74	0.959	Leading
A	230.08	369.00	81.95	25	85.04	0.964	Leading
B	230.08	368.00	81.51	25	84.69	0.962	Leading
C	230.08	367.00	80.56	25	84.61	0.952	Leading
D	230.07	368.00	81.51	25	84.70	0.962	Leading
E	230.07	369.00	81.94	25	85.04	0.964	Leading
A	220.07	384.00	81.83	25	84.52	0.968	Leading
B	220.07	382.00	81.42	25	84.19	0.967	Leading
C	220.04	381.00	80.44	25	83.94	0.958	Leading
D	220.05	385.00	82.20	25	84.87	0.969	Leading
E	220.06	384.00	82.00	25	84.65	0.969	Leading
A	210.06	400.00	81.74	25	84.07	0.972	Leading
B	210.06	398.00	81.30	25	83.64	0.972	Leading
C	210.06	396.00	80.35	25	83.36	0.964	Leading
D	210.05	401.00	82.13	25	84.42	0.973	Leading
E	210.05	400.00	81.96	25	84.21	0.973	Leading

Test Item Photographs

Product Details



(Driver and LED Module)



(Label fixture)

TI-2998A



TI-2998B



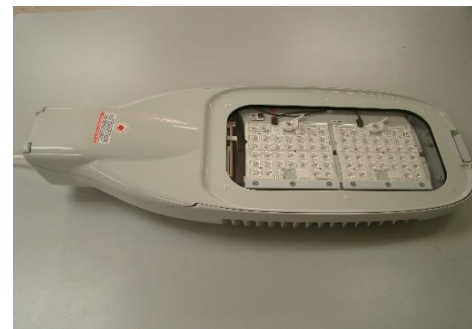
TI-2998C



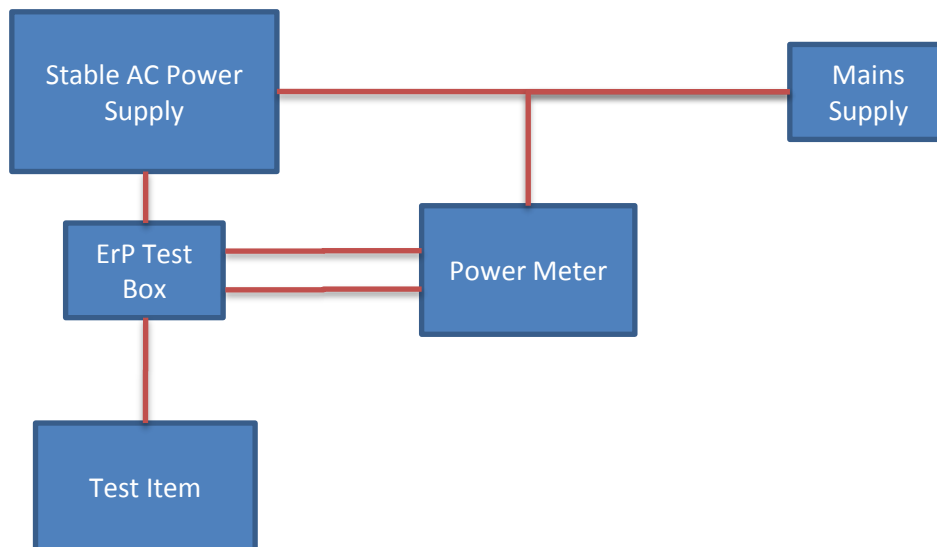
TI-2998D



TI-2998E



Appendix 1: Test item set-up



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