

<b>Report Number</b>	TRN-13452
<b>Customer</b>	LED Roadway Lighting
<b>Contact</b>	Huw Convery
<b>Product Type</b>	Street Light
<b>Test Purpose</b>	UMS Energy Performance Test
<b>Sales Order Ref</b>	Q-LUX2014-1849
<b>Works Order Number</b>	WO-3606
<b>Test Item Reference</b>	TI-3000
<b>LAB Test Method Reference</b>	TES-2012
<b>Test Standards</b>	LM-79-08 and UMS charge code process v4.0
<b>Lab Location Reference</b>	LUX-EPC
<b>Tested by</b>	Steve Hunt
<b>Date of Test</b>	07/04/2014
<b>Analysed by</b>	Steve Hunt
<b>Number of products tested</b>	5

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NXT - 48 - 108W

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)

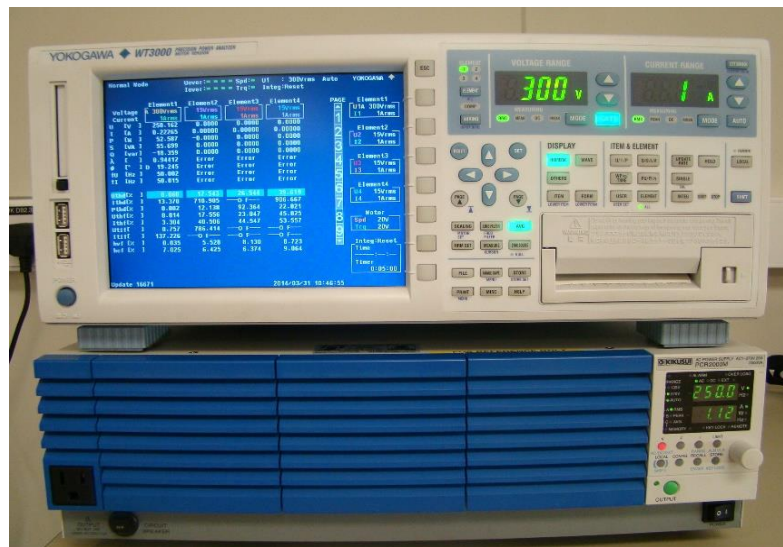
U - Universal Burn (burn can be operated in any position)

## 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



<b>Product Name</b>	NXT - 48 - 108W
<b>Part/Serial Number</b>	N72M2R3HB700GY1GCEXXHPRH3
<b>Type of Product</b>	Street Light
<b>Base Type</b>	N/A
<b>Driver Type</b>	Mains
<b>Driver Model</b>	LRL-66014-SUB-NXTS-700-LF
<b>Operating Orientation</b>	Base Up
<b>Test Orientation</b>	Base Up
<b>Ambient Temperature</b>	24.7°C
<b>Manufacturer</b>	LED Roadway Lighting
<b>Date of Manufacturer</b>	2014
<b>Thermal Management</b>	Passive
<b>Dimmable</b>	Yes
<b>Humidity</b>	<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-3000A	A141001038
TI-3000B	A141001037
TI-3000C	A141001036
TI-3000D	A141001040
TI-3000E	A141001039

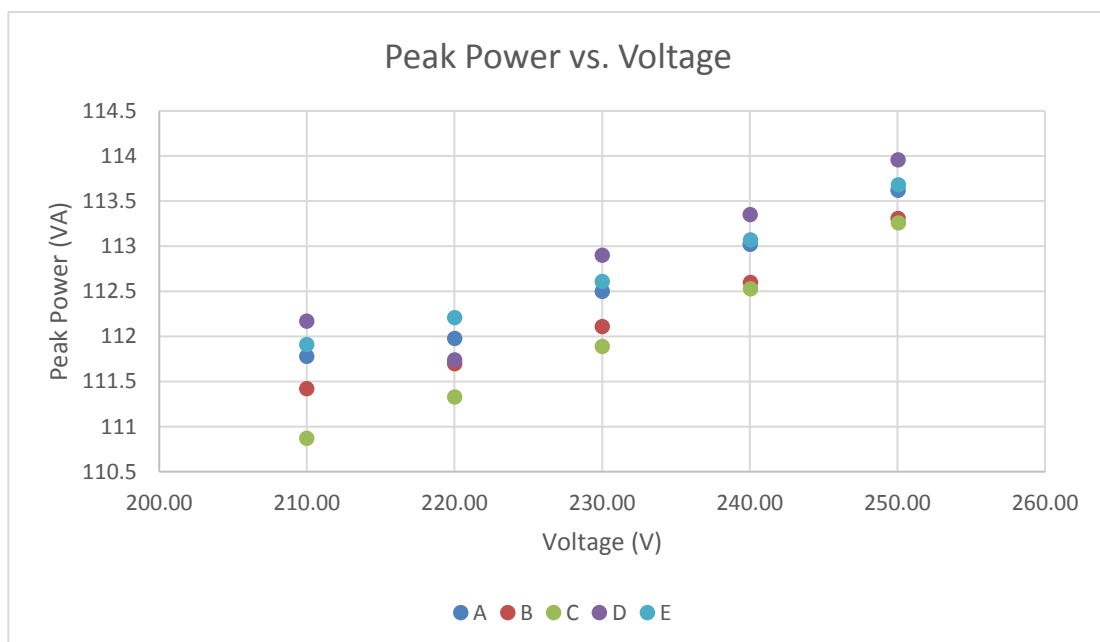
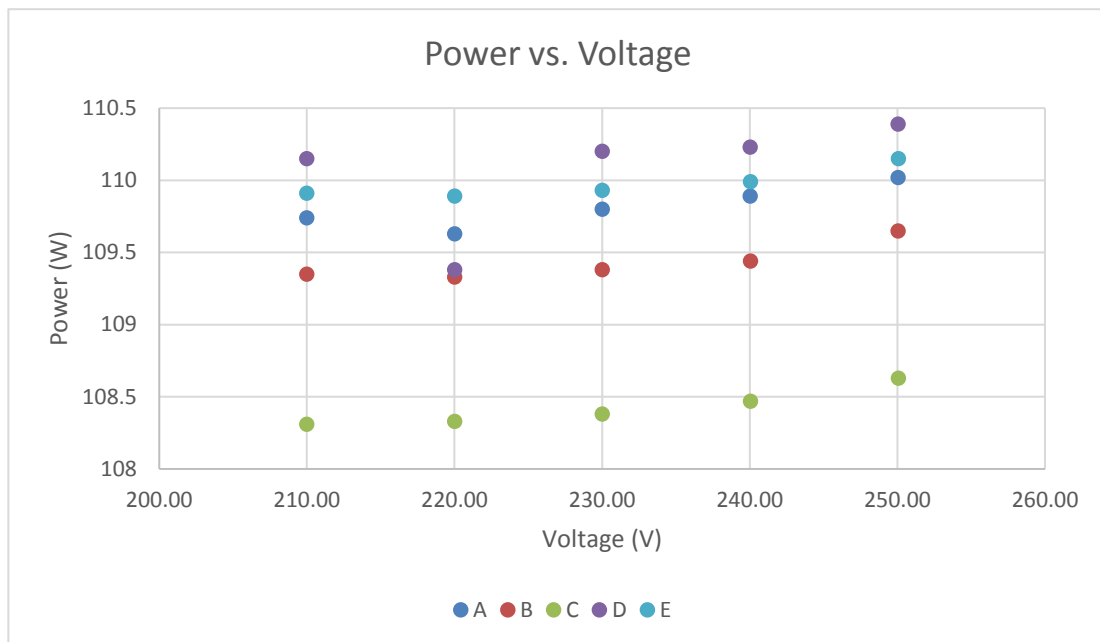
### Test Conditions

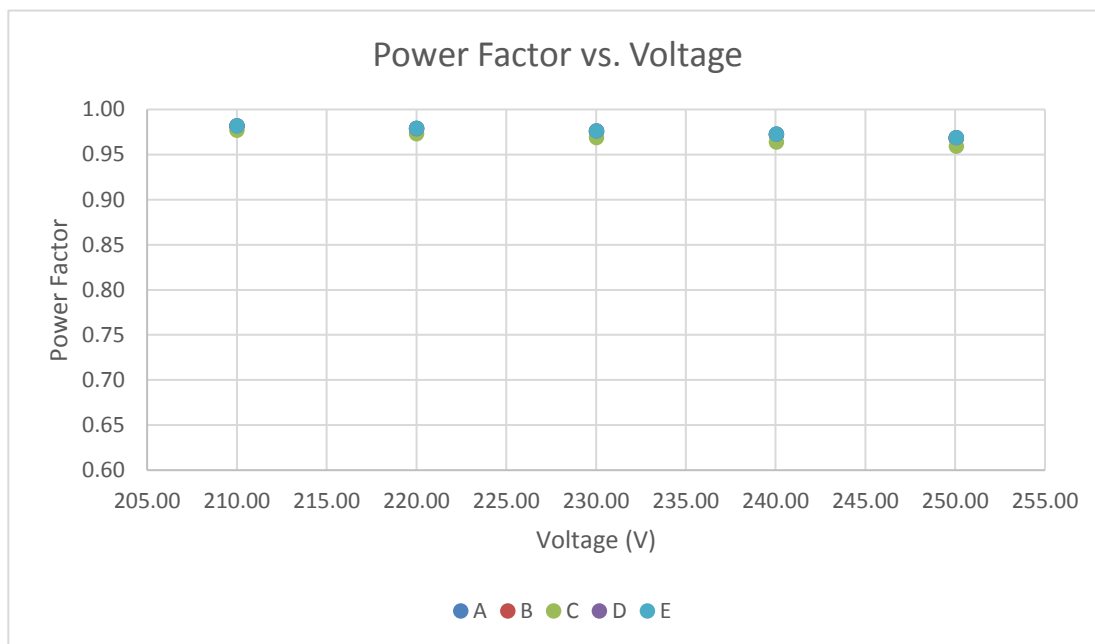
	Before Test	After Test
AC Supply Voltage (V)	250.05V	250.07V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.07%	0.06%

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	$\pm 0.0006 \text{ PF}$

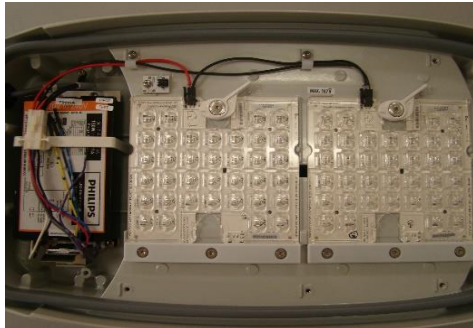
Measurements of power of 0.50W or greater are made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power less than 0.50W are made with an uncertainty of less than or equal to 0.01W at the 95% confidence level.

### Full Test Results

Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.05	454.00	110.02	25.1	113.62	0.968	Leading
B	250.06	453.00	109.65	25.1	113.31	0.968	Leading
C	250.07	452.00	108.63	25.1	113.26	0.959	Leading
D	250.06	455.00	110.39	25.1	113.96	0.969	Leading
E	250.07	454.00	110.15	25.1	113.68	0.969	Leading
A	240.04	470.00	109.89	25.4	113.02	0.972	Leading
B	240.05	469.00	109.44	25.4	112.60	0.972	Leading
C	240.05	468.00	108.47	25.4	112.53	0.964	Leading
D	240.04	472.00	110.23	25.5	113.35	0.973	Leading
E	240.05	471.00	109.99	25.4	113.07	0.973	Leading
A	230.02	489.00	109.80	25.4	112.50	0.976	Leading
B	230.02	487.00	109.38	25.4	112.11	0.976	Leading
C	230.02	486.00	108.38	25.4	111.89	0.969	Leading
D	230.02	490.00	110.20	25.4	112.90	0.976	Leading
E	230.02	489.00	109.93	25.4	112.61	0.976	Leading
A	220.01	507.00	109.63	25.3	111.98	0.979	Leading
B	220.01	507.00	109.33	25.3	111.70	0.979	Leading
C	220.01	506.00	108.33	25.3	111.33	0.973	Leading
D	220.01	507.00	109.38	25.3	111.74	0.979	Leading
E	220.01	510.00	109.89	25.3	112.21	0.979	Leading
A	210.00	532.00	109.74	25.3	111.78	0.982	Leading
B	210.00	530.00	109.35	25.3	111.42	0.981	Leading
C	210.00	528.00	108.31	25.3	110.87	0.977	Leading
D	210.00	534.00	110.15	25.3	112.17	0.982	Leading
E	210.00	532.00	109.91	25.3	111.91	0.982	Leading

## Test Item Photographs

### Product Details



(Driver and LED Module)



(Label fixture)

### TI-3000A



### TI-3000B





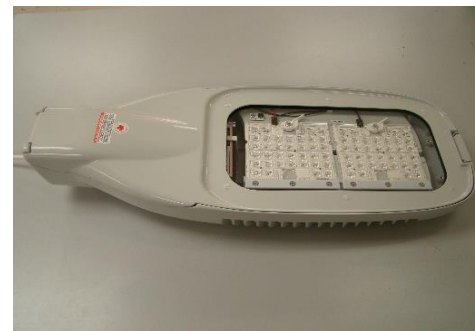
**TI-3000C**



**TI-3000D**

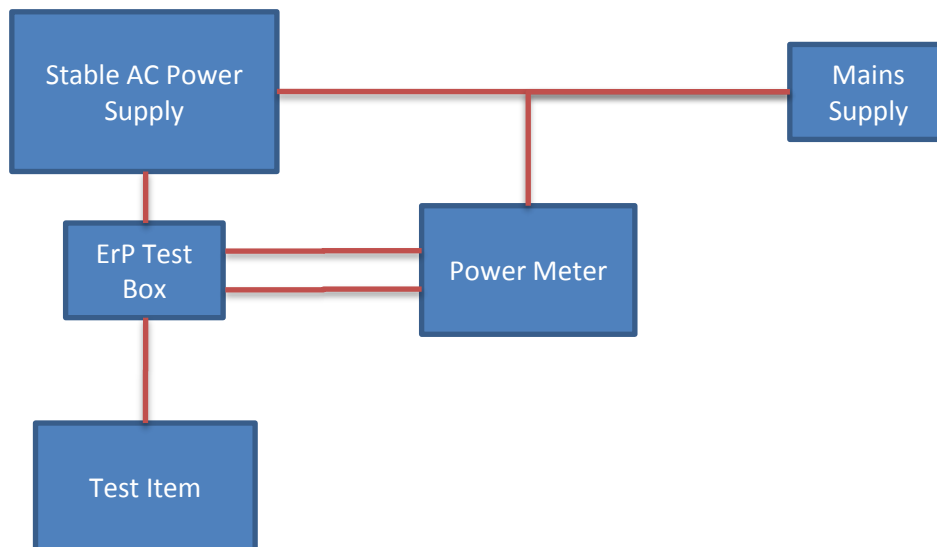


**TI-3000E**





#### Appendix 1: Test item set-up



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