

Report Number	TRN-13789
Customer	Brilliant Way
Contact	Jarek Dabrowski
Product Type	Street Light
Test Purpose	UMS Energy Performance Test
Sales Order Ref	Q-LUX2014-1998
Works Order Number	WO-3944
Test Item Reference	TI-3393
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	19/06/2014
Analysed by	Steve Hunt
Number of products tested	5

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Brilliant Way - LED Streetlight - Medium

Date: 19/06/2014

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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 $+15^\circ$ to Base Down

H45 - Horizontal to -45° only

VBU - Vertical Base Up $\pm 15^\circ$

VBD - Vertical Base Down $\pm 15^\circ$

HBU - Base Up $\pm 90^\circ$ (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 $\pm 75^\circ$ (bulb should not be operated within 15° of vertical)

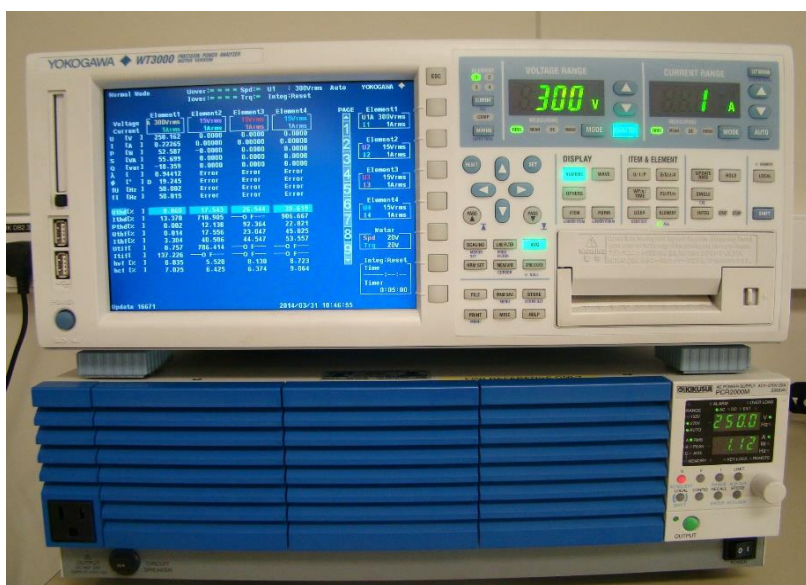
U - Universal Burn (burn can be operated in any position)

Test Conditions

Measurements were made with an ambient temperature of $25^\circ\text{C} \pm 1^\circ\text{C}$. 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



Product Name	Brilliant Way - LED Streetlight - Medium
Part/Serial Number	See (Identifier) below
Type of Product	Street Light
Base Type	N/A
Driver Type	Mains
Driver Model	Not supplied
Light Engine Model	Not supplied
Operating Orientation	Base Up
Test Orientation	Base Up
Ambient Temperature	25.0°C
Manufacturer	Brilliant Way
Date of Manufacturer	2014
Thermal Management	Passive
Dimmable	Yes
Humidity	<65% RH

Dimension	Sample	Luminous Opening
Diameter/Width	80 mm	50 mm
Length	620 mm	165 mm
Height/Depth	80 mm	0 mm

Test Item	Identifier
TI-3393A	4005
TI-3393B	4001
TI-3393C	4002
TI-3393D	4003
TI-3393E	4004

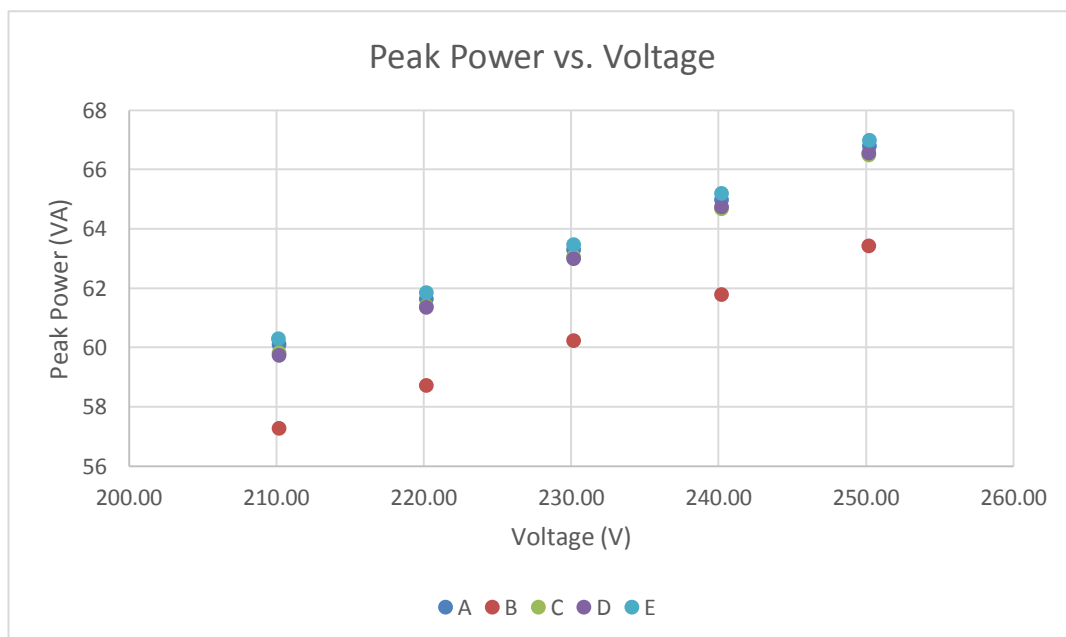
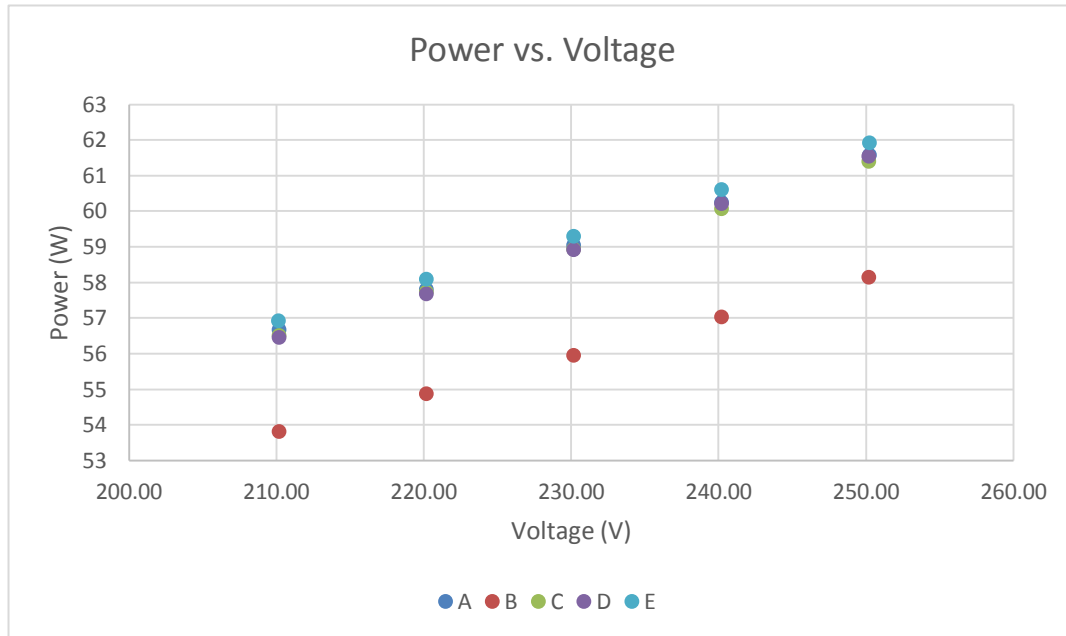
Test Conditions

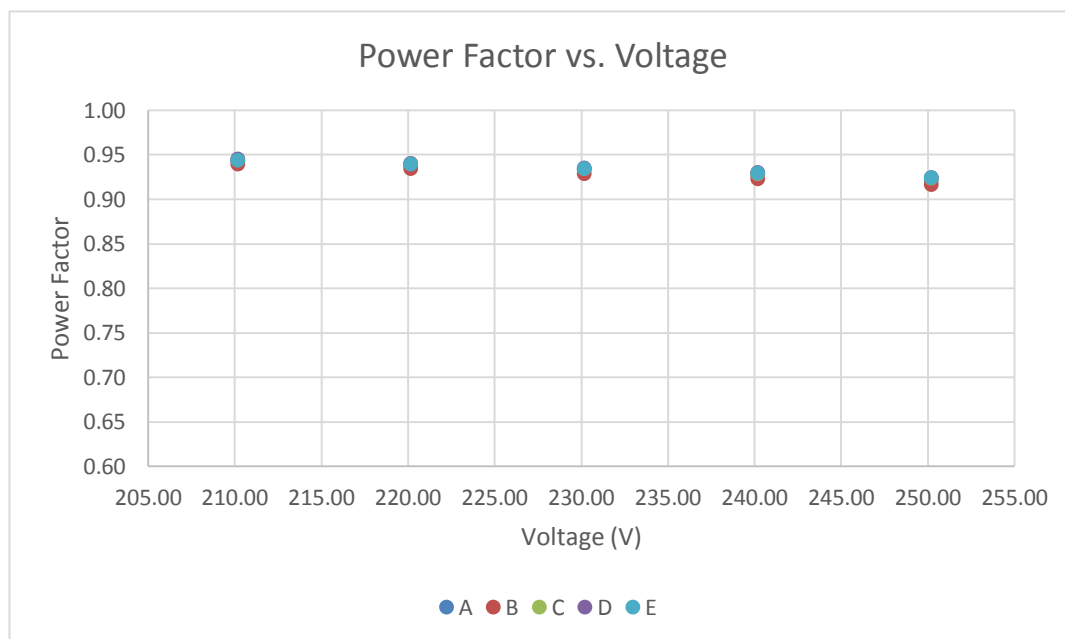
	Before Test	After Test
AC Supply Voltage (V)	250.14	250.14V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.05%	0.05%

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.





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	$\pm 0.0006 \text{ PF}$

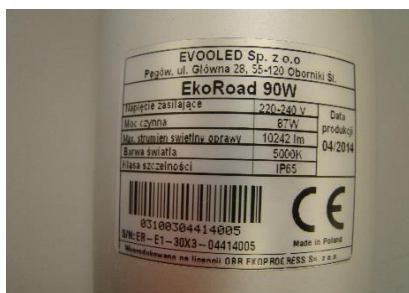
Measurements of power of 0.50W or greater are made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power less than 0.50W are made with an uncertainty of less than or equal to 0.01W at the 95% confidence level.

Full Test Results

Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.21	266.95	61.57	25	66.79	0.922	Leading
B	250.20	253.50	58.14	25	63.42	0.917	Leading
C	250.19	265.78	61.40	25	66.49	0.923	Leading
D	250.20	266.00	61.53	25	66.55	0.925	Leading
E	250.21	267.72	61.92	25	66.98	0.924	Leading
A	240.19	270.49	60.24	25	64.97	0.927	Leading
B	240.19	257.24	57.03	25	61.79	0.923	Leading
C	240.19	269.27	60.07	25	64.67	0.929	Leading
D	240.19	269.52	60.20	25	64.73	0.930	Leading
E	240.19	271.39	60.60	25	65.18	0.930	Leading
A	230.16	274.96	59.03	25	63.28	0.933	Leading
B	230.17	261.66	55.95	25	60.22	0.929	Leading
C	230.16	273.96	58.93	25	63.05	0.935	Leading
D	230.16	273.71	58.91	25	62.99	0.935	Leading
E	230.16	275.71	59.29	25	63.46	0.934	Leading
A	220.16	279.97	57.80	25	61.63	0.938	Leading
B	220.16	266.95	54.86	25	58.71	0.934	Leading
C	220.16	278.92	57.72	25	61.40	0.940	Leading
D	220.16	278.62	57.67	25	61.34	0.940	Leading
E	220.16	280.91	58.09	25	61.84	0.939	Leading
A	210.16	285.95	56.67	25	60.09	0.943	Leading
B	210.16	272.45	53.80	25	57.26	0.940	Leading
C	210.16	284.63	56.51	25	59.82	0.945	Leading
D	210.16	284.24	56.45	25	59.73	0.945	Leading
E	210.15	286.93	56.92	25	60.30	0.944	Leading

Test Item Photographs

Product Details



(Rating Label)



(Light Engine)

TI-3393A



TI-3393B



TI-3393C



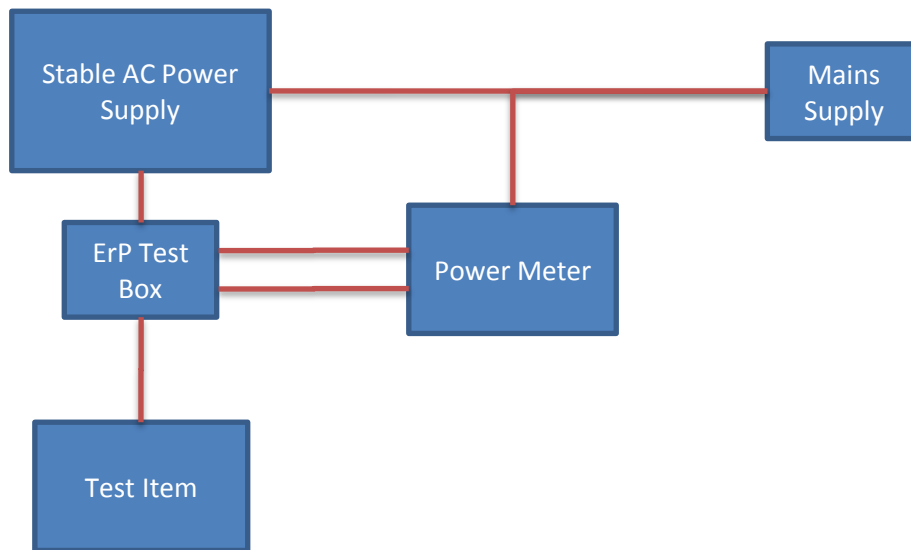
TI-3393D



TI-3393E



Appendix 1: Test item set-up



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