

<b>Report Number</b>	TRN-13549
<b>Customer</b>	ASD lighting
<b>Contact</b>	John Ryder
<b>Product Type</b>	Street Light
<b>Test Purpose</b>	UMS Energy Performance Test
<b>Sales Order Ref</b>	Q-LUX2014-1891
<b>Works Order Number</b>	WO-3704
<b>Test Item Reference</b>	TI-3204
<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>	Andrew Boon
<b>Date of Test</b>	23/04/2014
<b>Analysed by</b>	Steve Hunt
<b>Number of products tested</b>	5

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Signed:




ASD - 12 LED Variant - Streetlight

Date: 25/04/2014

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Test Report Number: TRN-13549  
Test Item: TI-3204

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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

VBU - 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)

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### **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.

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### **Test Equipment**

Yokogawa WT3000 Power Analyzer. Kikusui PCR2000M Stable AC Power Supply

<b>Product Name</b>	ASD - 12 LED Variant - Streetlight
<b>Part/Serial Number</b>	Not Supplied
<b>Type of Product</b>	Street Light
<b>Base Type</b>	N/A
<b>Driver Type</b>	Mains
<b>Driver Model</b>	TCI DC Jolly HV BI Dimmable AC/DC P/S for LED cod:122452
<b>Operating Orientation</b>	Base Up
<b>Test Orientation</b>	Base Up
<b>Ambient Temperature</b>	25.2°C
<b>Manufacturer</b>	ASD 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	386 mm	298 mm
Length	730 mm	356 mm
Height/Depth	100 mm	18 mm

Test Item	Identifier
TI-3204A	1
TI-3204B	2
TI-3204C	3
TI-3204D	4
TI-3204E	5

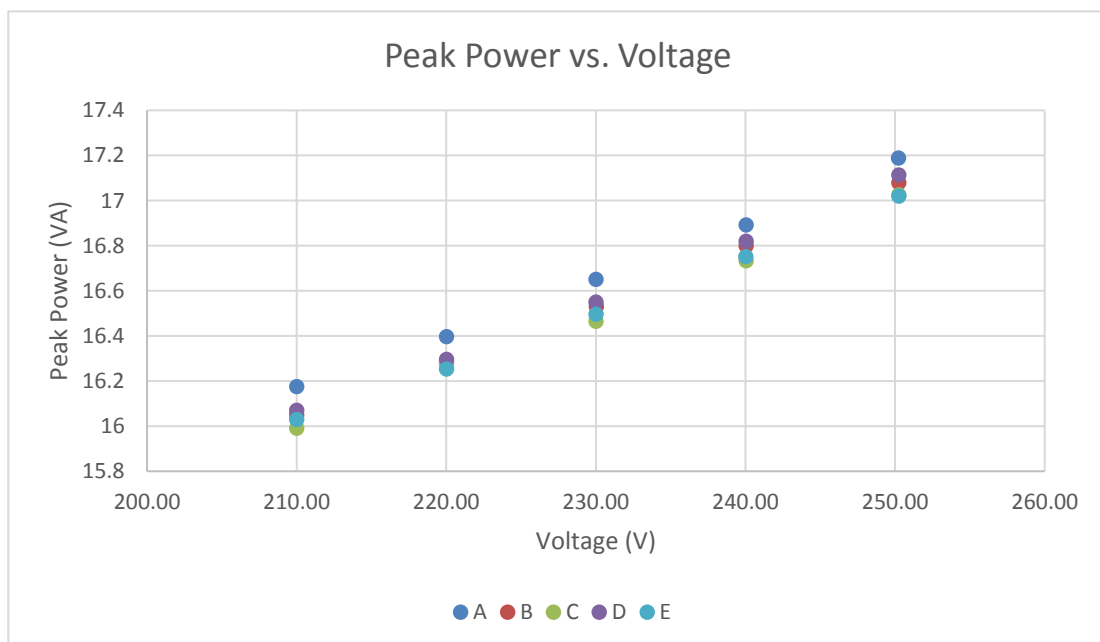
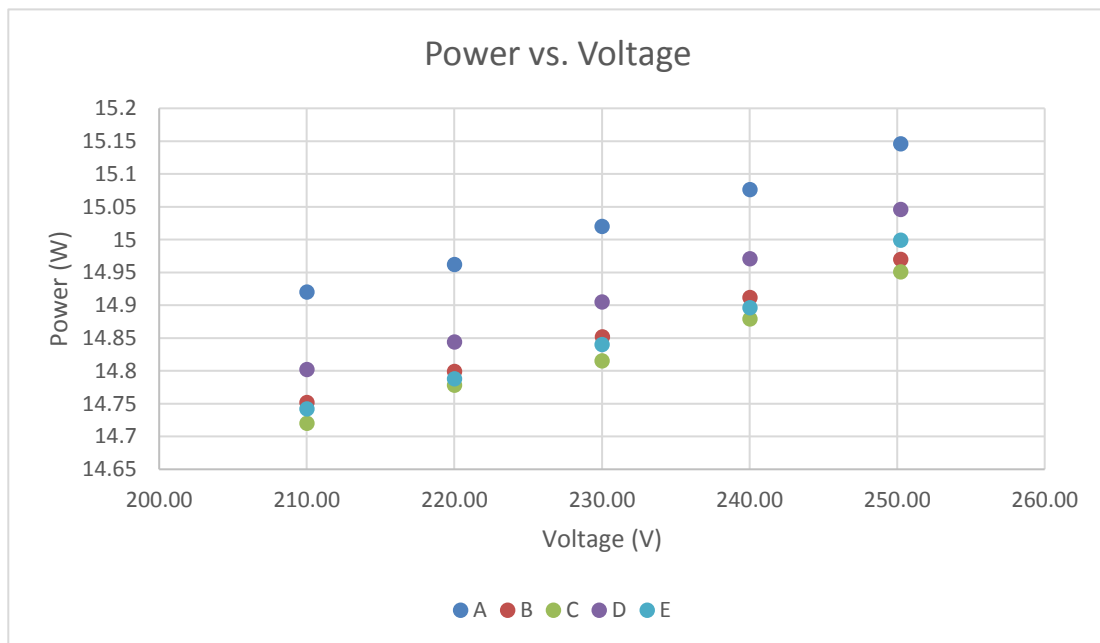
### Test Conditions

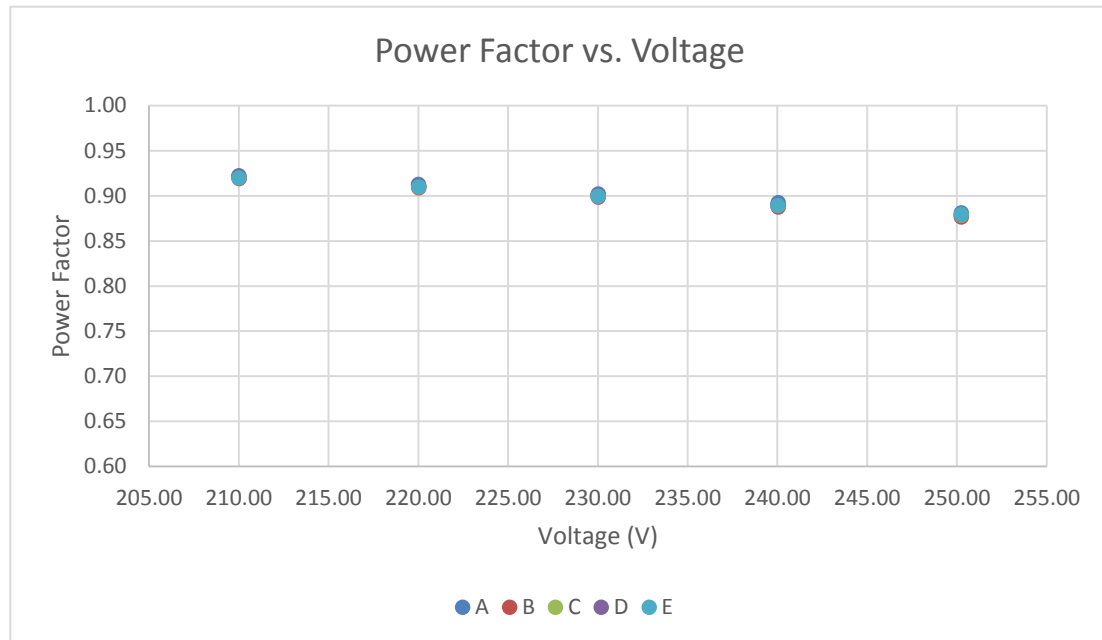
	Before Test	After Test
AC Supply Voltage (V)	250.24V	250.24V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.06%	0.06%

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.

#### 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	$\pm 0.0006 \text{ PF}$

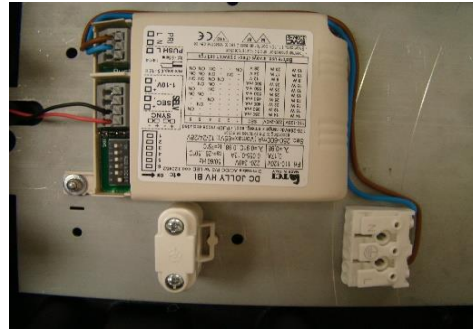
Measurements of power of 0.50W or greater are made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power less than 0.50W are made with an uncertainty of less than or equal to 0.01W at the 95% confidence level.

### Full Test Results

Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.24	68.69	15.15	24	17.19	0.881	Leading
B	250.25	68.25	14.97	24	17.08	0.876	Leading
C	250.25	68.04	14.95	24	17.03	0.878	Leading
D	250.25	68.39	15.05	24	17.11	0.879	Leading
E	250.25	68.10	15.00	24	17.02	0.879	Leading
A	240.04	70.38	15.08	24.2	16.89	0.892	Leading
B	240.04	69.99	14.91	24	16.80	0.888	Leading
C	240.04	69.71	14.88	24.3	16.73	0.889	Leading
D	240.04	70.07	14.97	24.3	16.82	0.890	Leading
E	240.03	69.79	14.90	24.5	16.75	0.889	Leading
A	230.02	72.39	15.02	24.5	16.65	0.902	Leading
B	230.02	71.86	14.85	24.5	16.53	0.898	Leading
C	230.02	71.58	14.82	24.6	16.47	0.900	Leading
D	230.02	71.95	14.91	24.6	16.55	0.901	Leading
E	230.01	71.72	14.84	24.7	16.50	0.900	Leading
A	220.01	74.53	14.96	24.3	16.40	0.913	Leading
B	220.02	74.01	14.80	24.2	16.28	0.909	Leading
C	220.02	73.76	14.78	24.3	16.28	0.910	Leading
D	220.02	74.07	14.84	24.4	16.30	0.911	Leading
E	220.02	73.88	14.79	24.2	16.25	0.910	Leading
A	210.01	77.02	14.92	24	16.18	0.922	Leading
B	210.01	76.42	14.75	24.5	16.05	0.919	Leading
C	210.01	76.15	14.72	24.5	15.99	0.920	Leading
D	210.01	76.52	14.80	24.5	16.07	0.921	Leading
E	210.01	76.33	14.74	24.5	16.03	0.920	Leading

## Test Item Photographs

### Product Details



(Driver and supply fixture)

### TI-3204A



### TI-3204B



**TI-3204C**



**TI-3204D**

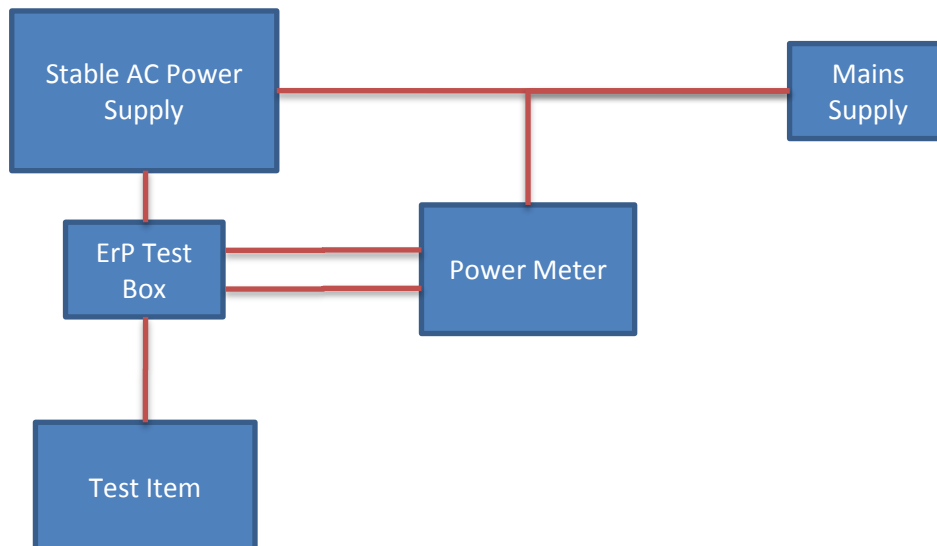


**TI-3204E**





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



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