

Report Number	TRN-14091
Customer	ASD lighting
Contact	John Ryder
Product Type	Street Light
Test Purpose	UMS Energy Performance Test
Sales Order Ref	Q-LUX2014-2116
Works Order Number	WO-4248
Test Item Reference	TI-3699
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	15/08/2014
Analysed by	Steve Hunt
Number of products tested	5

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Signed:




ASD Streetlight 16 LED

Date: 20/08/2014

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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

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)

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 WT210 Power Analyzer. Kikusui PCR2000M Stable AC Power Supply

with PC control and data recording



Full data control and recording
using Labview software and full
integration of the AC Stable Power
Supply and Power Analyser



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Test Item: TI-3699

Product Name	ASD Streetlight 16 LED
Part/Serial Number	See (Identifier) below
Type of Product	Street Light
Base Type	N/A
Driver Type	Mains
Driver Model	Meso RMLD-500A-P-AA
Light Engine Model	PO-02-14 Rev.1 PCB 049
Operating Orientation	Base Up
Test Orientation	Base Up
Ambient Temperature	24.1°C
Manufacturer	ASD lighting
Date of Manufacturer	2014
Thermal Management	Passive
Dimmable	Yes
Humidity	<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-3699A	1
TI-3699B	2
TI-3699C	3
TI-3699D	4
TI-3699E	5

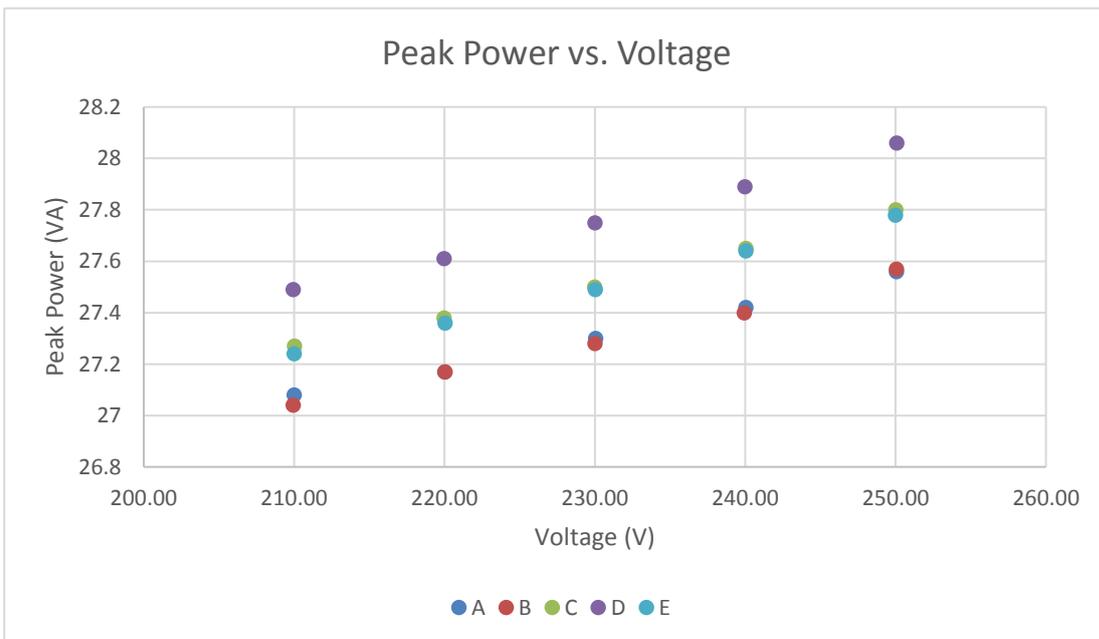
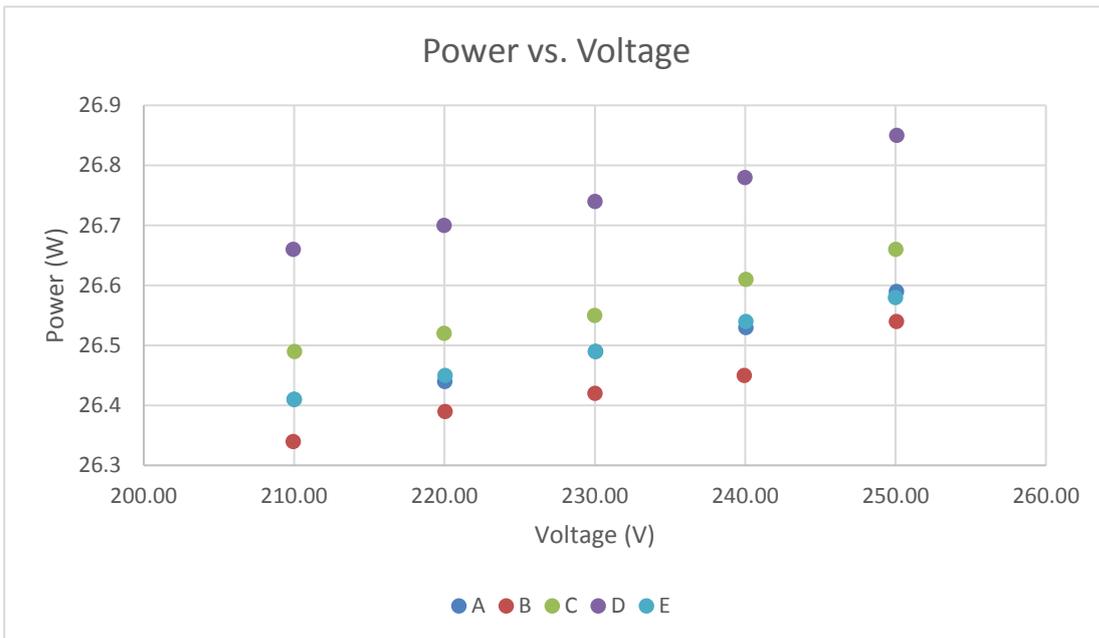
Test Conditions

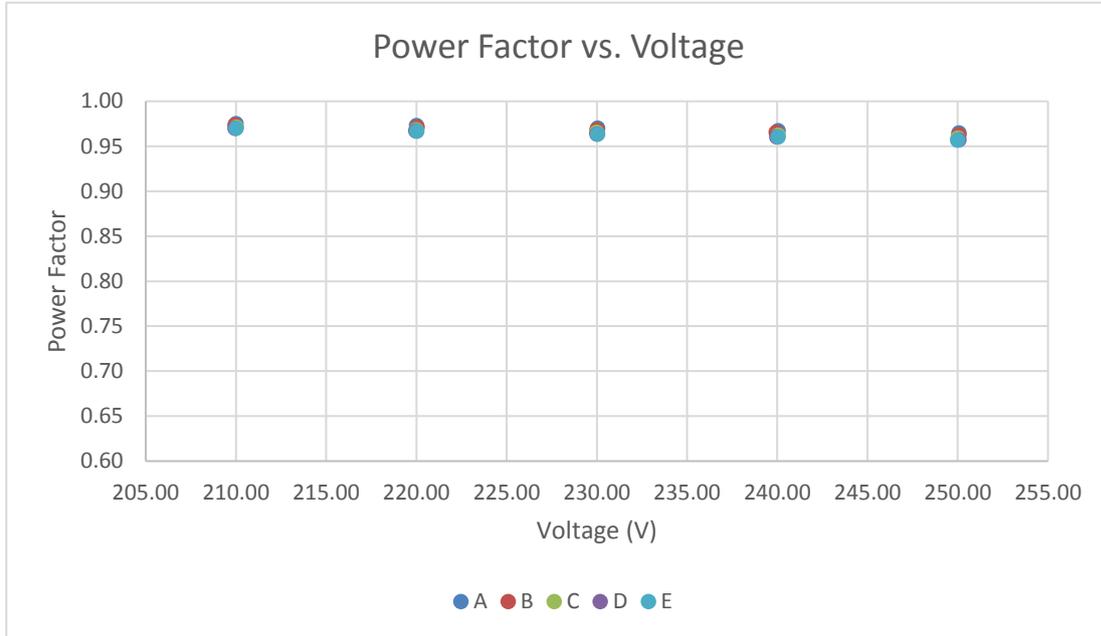
	Before Test	After Test
AC Supply Voltage (V)	250.05V	249.98V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.09%	0.08%

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.





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)	$\pm 0.061 V_{rms}$
Current (200 mA, 50/60Hz)	$\pm 0.07 mA_{rms}$
Current (0.5 A, 50/60Hz)	$\pm 0.16 mA_{rms}$
Current (5 A, 50/60Hz)	$\pm 0.0016 A_{rms}$
Power (300 V, 200 mA, 50/60 Hz)	$\pm 0.032 W_{rms}$
Power (300 V, 0.5 A, 50/60 Hz)	$\pm 0.09 W_{rms}$
Power (300 V, 5 A, 50/60 Hz)	$\pm 0.0009 kW_{rms}$
Frequency (50/60 Hz)	$\pm 0.001 Hz$
Power Factor	$\pm 0.0006 PF$

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.



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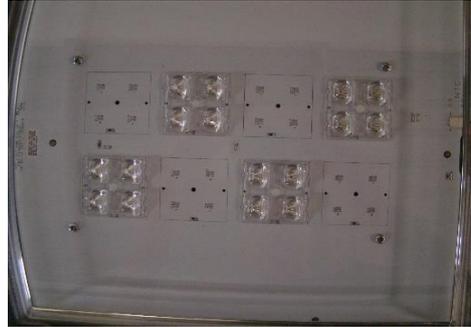
Test Report Number: TRN-14091
Test Item: TI-3699

Full Test Results

Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.06	110.23	26.59	24.10	27.56	0.965	Leading
B	250.06	110.25	26.54	24.08	27.57	0.963	Leading
C	250.02	111.19	26.66	25.00	27.80	0.959	Leading
D	250.07	112.21	26.85	24.06	28.06	0.957	Leading
E	249.99	111.13	26.58	24.08	27.78	0.957	Leading
A	240.04	114.22	26.53	24.12	27.42	0.967	Leading
B	239.94	114.18	26.45	24.09	27.40	0.966	Leading
C	240.05	115.20	26.61	24.03	27.65	0.962	Leading
D	239.98	116.20	26.78	24.11	27.89	0.960	Leading
E	240.05	115.14	26.54	24.23	27.64	0.960	Leading
A	230.05	118.66	26.49	24.22	27.30	0.970	Leading
B	230.01	118.62	26.42	24.13	27.28	0.969	Leading
C	229.99	119.58	26.55	24.11	27.50	0.965	Leading
D	230.01	120.65	26.74	24.14	27.75	0.964	Leading
E	230.04	119.50	26.49	24.02	27.49	0.964	Leading
A	220.01	123.50	26.44	24.20	27.17	0.973	Leading
B	220.04	123.49	26.39	24.12	27.17	0.971	Leading
C	219.98	124.46	26.52	24.05	27.38	0.969	Leading
D	219.97	125.53	26.70	24.16	27.61	0.967	Leading
E	220.03	124.34	26.45	24.18	27.36	0.967	Leading
A	210.01	128.93	26.41	24.15	27.08	0.975	Leading
B	209.95	128.81	26.34	24.16	27.04	0.974	Leading
C	210.02	129.84	26.49	24.18	27.27	0.971	Leading
D	209.95	130.94	26.66	24.10	27.49	0.970	Leading
E	210.01	129.69	26.41	24.28	27.24	0.970	Leading

Test Item Photographs

Product Details



(Driver fixture and LED module)

TI-3699A



TI-3699B



TI-3699C



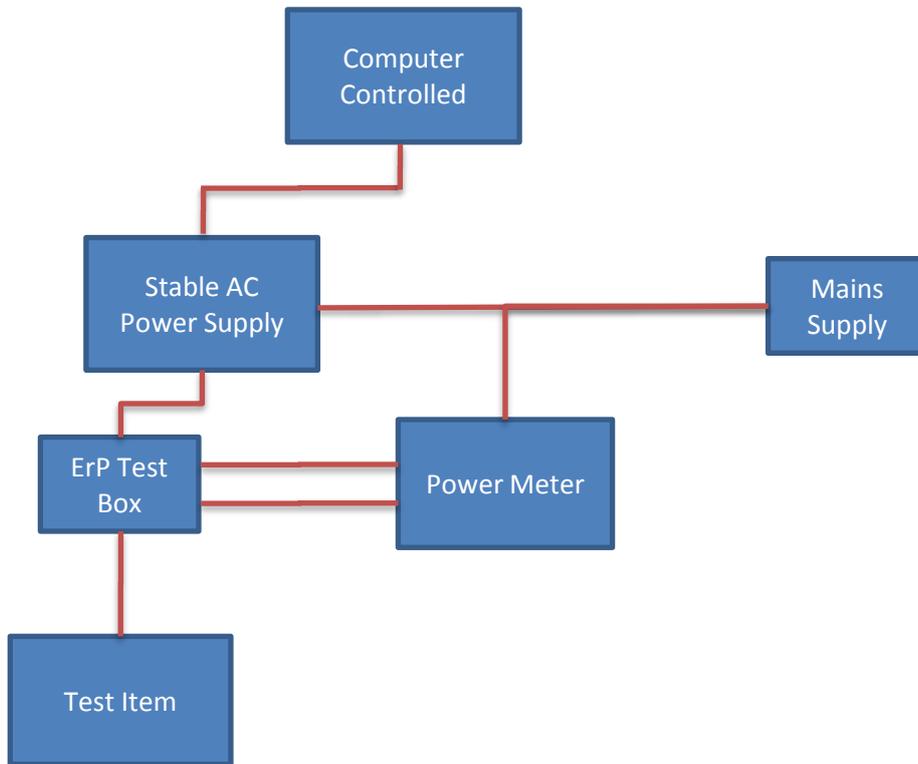
TI-3699D



TI-3699E



Appendix 1: Test item set-up



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