

Report Number	TRN-21841
Customer	Powerlite Lighting Solutions
Contact	Chris Thompson
Product Type	LED Street light
Test Purpose	UMS Energy Performance Test
Sales Order Ref	Q-LUX15-22692
Works Order Number	WO-12488
Test Item Reference	TI-15503
LAB Test Method Reference	TES-1012
Test Standards	LM-79-08 and AEMO Unmetered Load Guideline V1.0
Lab Location Reference	CF35 5AQ - Please note that 5 samples of each test item are required to carry out testing.
Tested By	Mike Sewell
Date of Test	07/08/2015
Analysed by	Gareth Jones
Number of products tested	4

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Date: 13/09/2018



VI2S-56-2-DD-4K-60 @ 600mA - Powerlite Lighting Solutions

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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 Equipment and Description

Yokogawa WT210 Power Analyzer. Kikusui PCR2000M Stable AC Power Supply with PC control and data recording



The products under test are connected to the UMS Test system which has full data control and recording using Labview software. This allows full integration of the Test equipment used - Kikusui AC Stable Power Supply, Yokogawa Power Analyser, Pico Temperature Logger and a LUX-TSI distribution control panel

Product Name	VI2S-56-2-DD-4K-60 @ 600mA - Powerlite Lighting Solutions
Part/Serial Number	See (Identifier) below
Type of Product	LED Street light
Manufacturer	Powerlite Lighting Solutions
Date of Manufacturer	N/A
Base Type	N/A
Driver Type	Mains
Driver Model	LCA 60W 350-1050mA one4all C PRE OTD
Light Engine Model	LSP-PCB-146x45-12-A
Operating Orientation	Base Up
Test Orientation	Base Up
Ambient Temperature	23.9°C
Humidity	<65% RH
Thermal Management	Passive
Dimmable	Yes
Product Summary	The product is of a street lantern design with a Metal enclosure. The driver is situated within the enclosure and the Light engine fitted on underside of the product

Dimension	Sample	Luminous Opening
Diameter/Width	245 mm	200 mm
Length	600 mm	280 mm
Height/Depth	100 mm	0 mm

Test Item	Identifier
15503A	
15503B	
15503C	
15503D	

Test Conditions

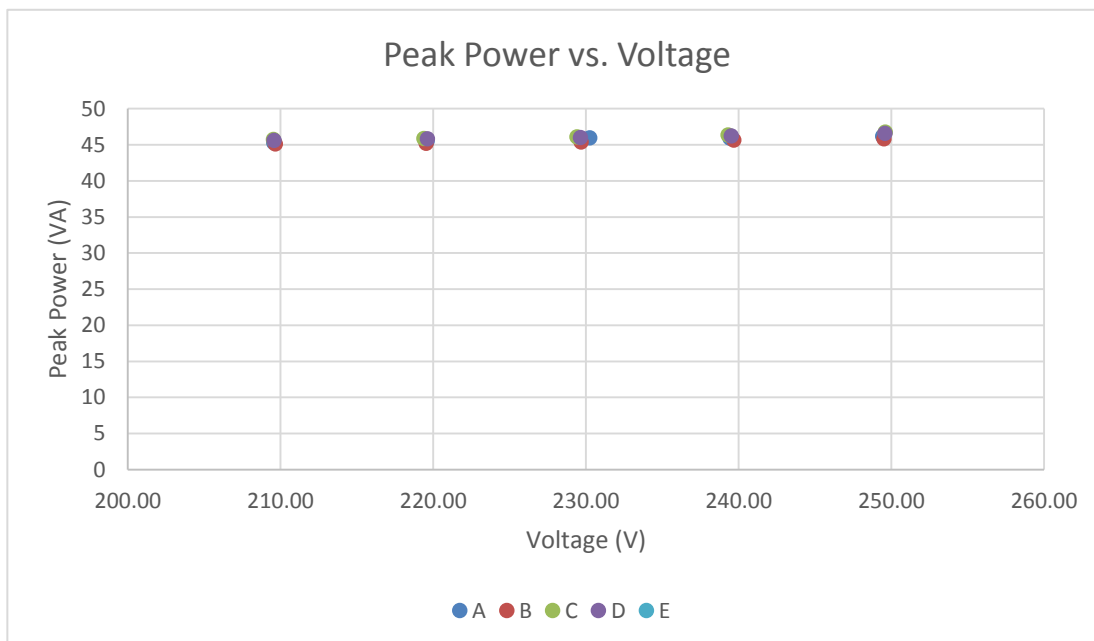
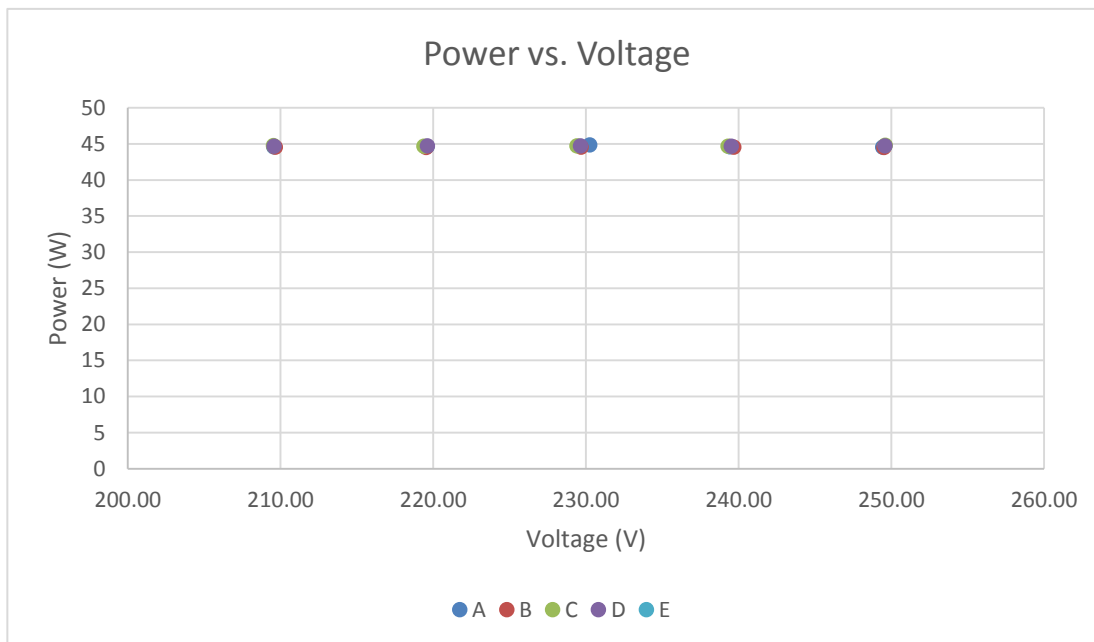
	Before Test	After Test
AC Supply Voltage (V)	249.49V	249.61V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.07%	0.079%

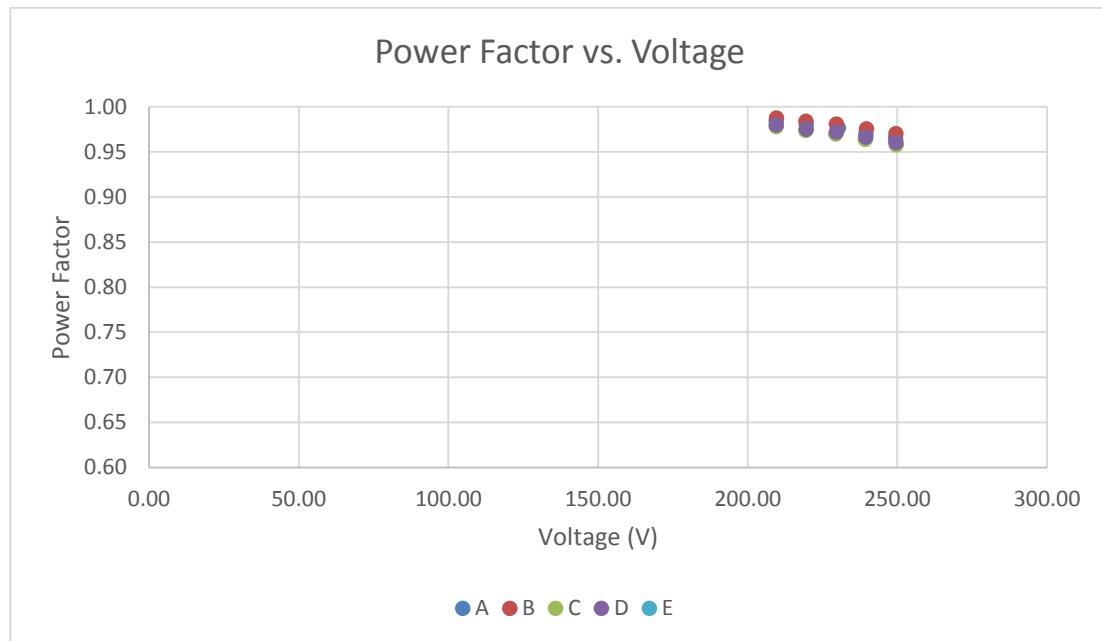
The test items were stabilised according to the electrical power stability of LM79-08. Stabilization is achieved when the difference in electrical power measurement is less than 0.5%. Each test item was stabilised at 250V.

Measurements were made with an ambient temperature of 23°C +/- 2°C. Measurements were taken only after sufficient time for thermal stabilisation has been allowed.

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 Lagging phase angle and therefore the driver has inductive 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.

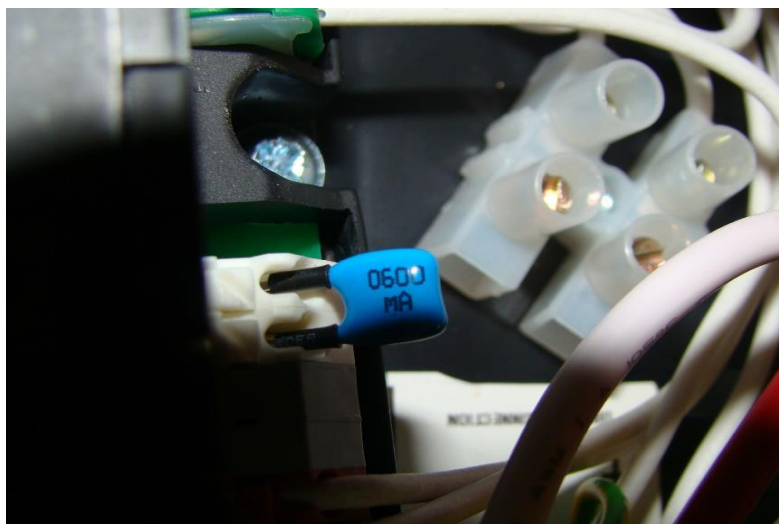
Full Test Results

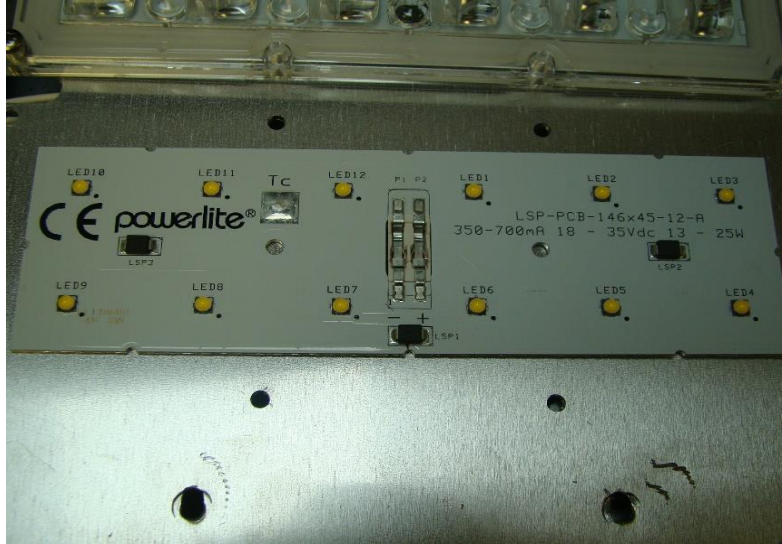
Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	249.43	185.19	44.56	23.92	46.19	0.965	Lagging
B	249.52	183.81	44.50	23.90	45.86	0.970	Leading
C	249.60	187.45	44.82	23.86	46.79	0.958	Leading
D	249.59	186.67	44.73	23.89	46.59	0.960	Leading
E	0.00	0.00	0.00	0.00	0.00	0.000	0
A	239.44	191.87	44.58	23.91	45.94	0.970	Lagging
B	239.69	190.54	44.55	24.06	45.67	0.975	Leading
C	239.31	193.75	44.69	24.19	46.37	0.964	Leading
D	239.52	193.07	44.68	23.91	46.24	0.966	Leading
E	0.00	0.00	0.00	0.00	0.00	0.000	0
A	230.24	199.61	44.88	24.10	45.96	0.977	Lagging
B	229.68	197.75	44.55	24.28	45.42	0.981	Leading
C	229.42	200.99	44.73	23.97	46.11	0.970	Leading
D	229.65	200.47	44.74	24.12	46.04	0.972	Leading
E	0.00	0.00	0.00	0.00	0.00	0.000	0
A	219.60	207.31	44.63	24.46	45.52	0.980	Leading
B	219.53	206.03	44.50	24.17	45.23	0.984	Leading
C	219.39	209.28	44.70	24.24	45.91	0.974	Leading
D	219.61	208.76	44.71	24.19	45.84	0.975	Leading
E	0.00	0.00	0.00	0.00	0.00	0.000	0
A	209.56	216.19	44.60	24.37	45.31	0.984	Lagging
B	209.66	215.25	44.56	24.40	45.13	0.987	Leading
C	209.53	218.41	44.76	24.42	45.76	0.978	Leading
D	209.57	217.68	44.70	24.48	45.62	0.980	Leading
E	0.00	0.00	0.00	0.00	0.00	0.000	0

Test Item Photographs

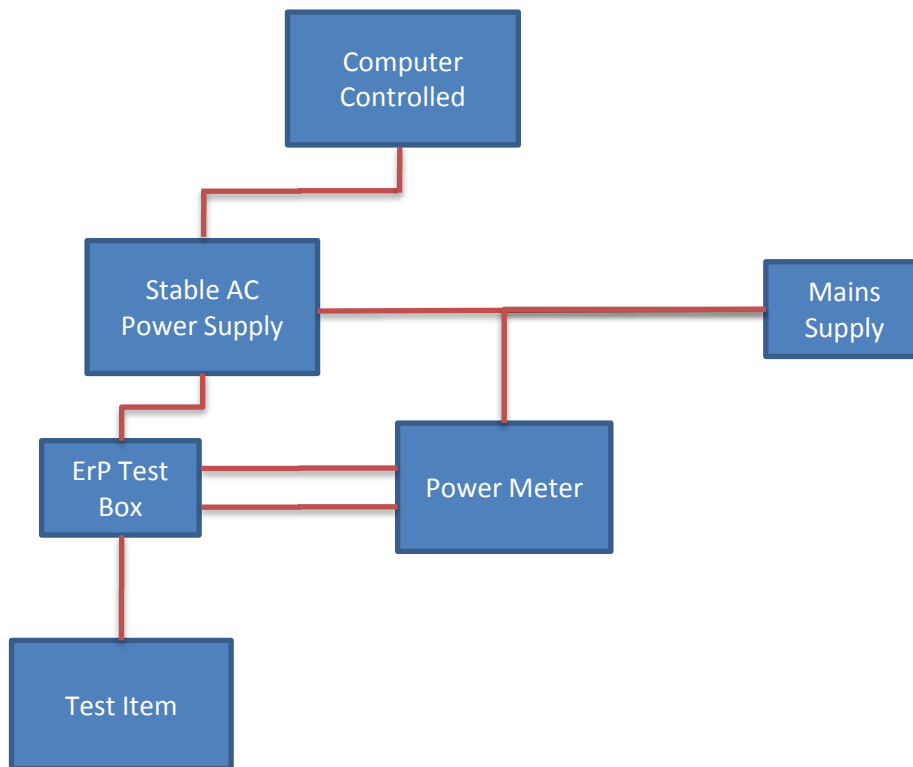
TI-15503

Images of Product(s) under test includes (where possible) labelling, Driver and Light engine details





Appendix 1: Test item set-up



----- END OF REPORT -----



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