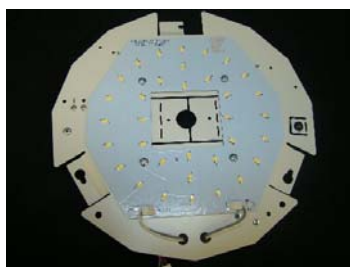


<b>Report Number</b>	UMS-19052A
<b>Customer</b>	ASD Lighting plc
<b>Contact</b>	Paul Gledhill
<b>Product Type</b>	Street Light
<b>Test Purpose</b>	UMS Energy Performance Test
<b>Sales Order Ref</b>	Q-LUX16-21460
<b>Works Order Number</b>	WO-9699
<b>Test Item Reference</b>	TI-13347
<b>LAB Test Method Reference</b>	TES1012
<b>Test Standards (if applicable)</b>	LM-79-08 and Elexon UMS Charge Code process V4.0
<b>Lab Location Reference</b>	Safety
<b>Tested by</b>	Steve Hunt
<b>Date of Test</b>	20/03/2017
<b>Reviewed by</b>	Menno Schakel
<b>Number of products tested</b>	5

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Signed:



Date: 23 March 2017



1800LED Light Engine with Photocell

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Product Information		
Product	Street Light	
Product Name / Model	1800LED Light Engine with Photocell	
Part/Serial Number	See (Identifier) below	
Product Brand	ASD Lighting plc	
Manufacturer	ASD Lighting plc	
Category	LITE	
Rated Input Voltage	220 - 240V	
Rated output:	33V	
Protection Class	I	
Driver Make/Model	Tridonic	EMpowerLED 15W Basic CLE NiCd
Light Engine Make/Model	ASD	OSRAM LM561B+ 30V
Dimmable	No	
Product Description		
The product is of a circular design with the light engine fitted to the top surface of the meatl bracket whilst the driver and emergency battery is situated underneath the bracket.		

Test Conditions			
Ambient Temperature	25		(°C)
Humidity	34		(%)
	Before Test		After Test
Voltage	250.07V		250.08V
Frequency	50Hz		50Hz
Total Harmonic Distortion	0.08%		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. 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.			

Product Specifications / TI Ref Numbers			
Dimension	Sample		Luminous opening
Diameter / Width	352 mm		260 mm
Length	0 mm		0 mm
Height / Depth	120 mm		25 mm
Product Test Number	Identifier		Serial Number (if applicable)
Test Item #1	13347A		N/A
Test Item #2	13347B		N/A
Test Item #3	13347C		N/A
Test Item #4	13347D		N/A
Test Item #5	13347E		N/A

### Test Equipment and Description

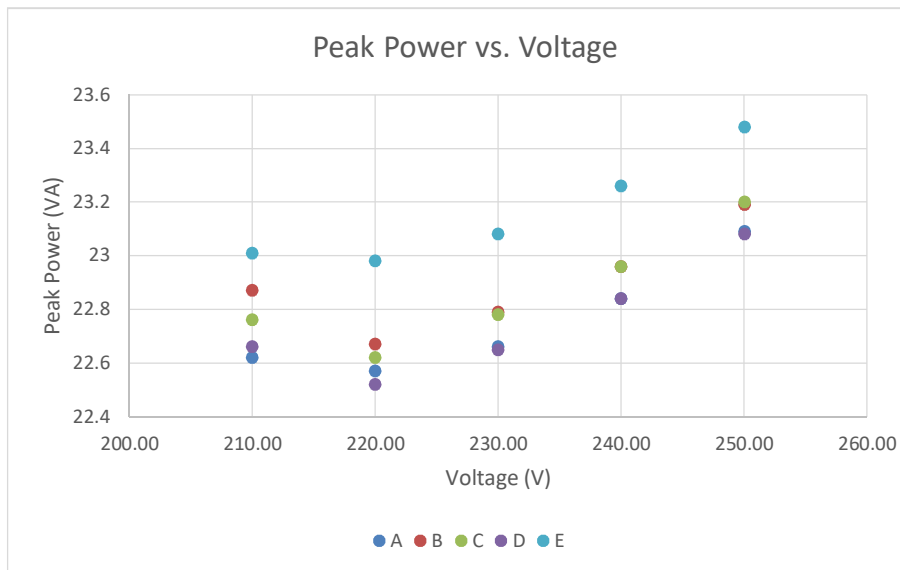
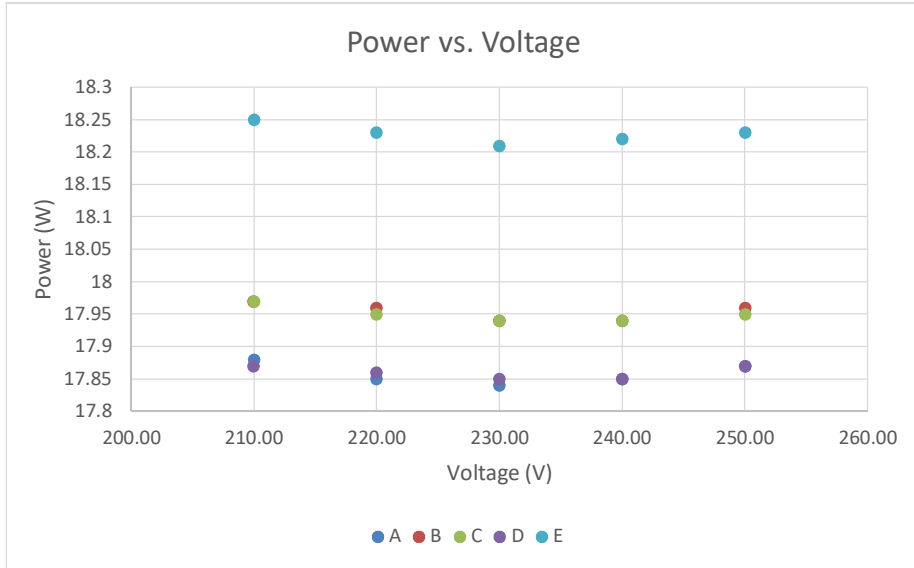
Yokogawa WT210 Power Analyser, Kikusui PCR2000M Stable AC Power Supply with PC control and data recording

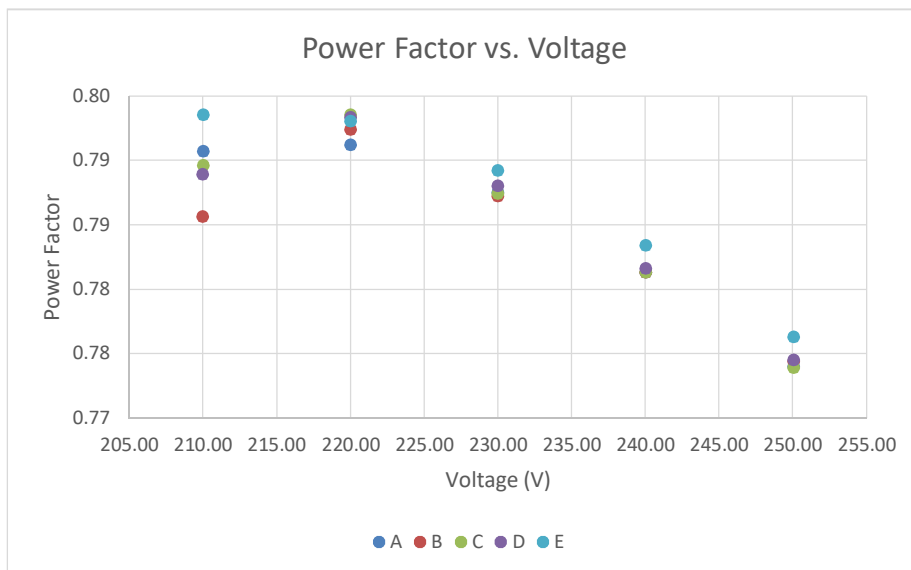


The products under test are connected to the UMS Test system which has full data control and recording using Labview software. This allows full integration of the test equipment used - Kikusui AC Stable Power Supply, Yokogawa Power Analyser, Pico Temperature Logger and a LUX-TSI distribution control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

### 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)	$\pm 0.061 V_{rms}$
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)	$\pm 0.032 W_{rms}$
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.

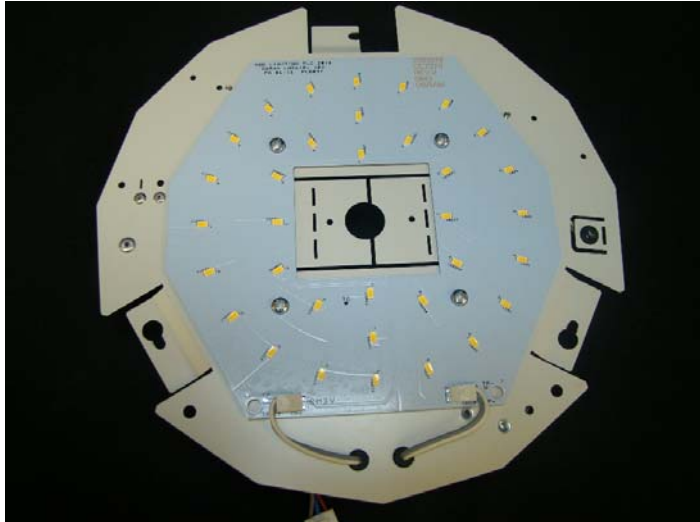
### Full Test Results

Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.07	92.33	17.87	22.52	23.09	0.774	Leading
B	250.07	92.72	17.96	22.58	23.19	0.774	Leading
C	250.08	92.78	17.95	22.61	23.20	0.774	Leading
D	250.08	92.27	17.87	22.57	23.08	0.775	Leading
E	250.07	93.91	18.23	22.22	23.48	0.776	Leading
A	240.05	95.16	17.85	22.58	22.84	0.781	Leading
B	240.06	95.64	17.94	22.71	22.96	0.781	Leading
C	240.05	95.64	17.94	22.67	22.96	0.781	Leading
D	240.06	95.14	17.85	22.65	22.84	0.782	Leading
E	240.06	96.89	18.22	22.66	23.26	0.783	Leading
A	230.04	98.50	17.84	22.74	22.66	0.788	Leading
B	230.04	99.07	17.94	22.72	22.79	0.787	Leading
C	230.04	99.03	17.94	22.69	22.78	0.787	Leading
D	230.04	98.46	17.85	22.86	22.65	0.788	Leading
E	230.03	100.31	18.21	22.68	23.08	0.789	Leading
A	220.03	102.57	17.85	22.68	22.57	0.791	Leading
B	220.02	103.03	17.96	22.60	22.67	0.792	Leading
C	220.02	102.82	17.95	22.71	22.62	0.794	Leading
D	220.02	102.35	17.86	22.49	22.52	0.793	Leading
E	220.02	104.46	18.23	22.80	22.98	0.793	Leading
A	210.03	107.69	17.88	22.92	22.62	0.791	Leading
B	210.02	108.88	17.97	22.54	22.87	0.786	Leading
C	210.03	108.36	17.97	22.88	22.76	0.790	Leading
D	210.02	107.87	17.87	22.72	22.66	0.789	Leading
E	210.03	109.54	18.25	22.75	23.01	0.794	Leading

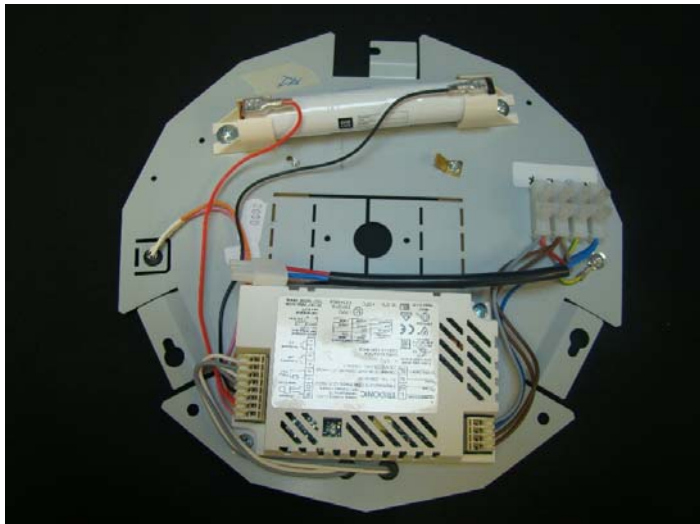
### Test Item Photographs

#### TI-13347

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

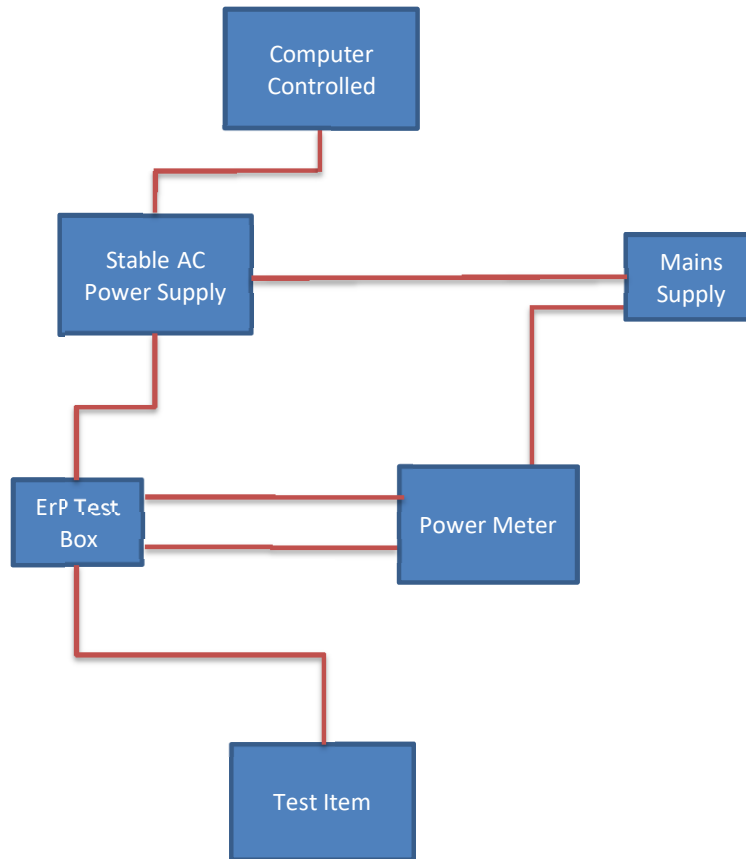


Light engine with Photocell



Driver and Emergency Battery

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



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