

<b>Report Number</b>	TRN-17570
<b>Customer</b>	Coughtrie International Ltd
<b>Contact</b>	Sam White
<b>Product Type</b>	Bulkhead
<b>Test Purpose</b>	UMS Energy Performance Test
<b>Sales Order Ref</b>	Q-LUX16-20957
<b>Works Order Number</b>	WO-8217
<b>Test Item Reference</b>	TI-12240
<b>LAB Test Method Reference</b>	TES-20012
<b>Test Standards</b>	LM-79-08 and Elexon UMS Charge Code process V4.0
<b>Lab Location Reference</b>	LUX-TSI - Safety
<b>Tested By</b>	Steve Hunt
<b>Date of Test</b>	8 March 2016
<b>Analysed by</b>	Steve Hunt
<b>Number of products tested</b>	5

Address: LUX-TSI Ltd.,  
Pencoed Technology Park,  
Pencoed, Bridgend,  
CF35 5AQ, UK  
Telephone: +44 (0) 1656 864618  
Authorised by: Gareth Jones  
Email: [gjones@lux-tsi.com](mailto:gjones@lux-tsi.com)  
Signed:




LED bulkhead, 394mm x 113mm x 83mm

Date: 6 September 2016

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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 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

<b>Product Name</b>	LED bulkhead, 394mm x 113mm x 83mm
<b>Part/Serial Number</b>	See (Identifier) below
<b>Type of Product</b>	Bulkhead
<b>Manufacturer</b>	Coughtrie
<b>Date of Manufacturer</b>	2016
<b>Base Type</b>	N/A
<b>Driver Type</b>	Mains
<b>Driver Model</b>	Tridonic LC 17W 250-700mA flexC SC EXC
<b>Light Engine Model</b>	28001487 LLE G4 24x280mm
<b>Operating Orientation</b>	Base Up
<b>Test Orientation</b>	Base Up
<b>Ambient Temperature</b>	24.2°C
<b>Humidity</b>	<65% RH
<b>Thermal Management</b>	Passive
<b>Dimmable</b>	Yes
<b>Product Summary</b>	The product is of a bulkhead design with a metal enclosure. The driver is situated within the enclosure underneath the central panel, whilst the LEDs are fitted on top side of the central panel

Dimension	Sample	Luminous Opening
Diameter/Width	105 mm	105 mm
Length	390 mm	390 mm
Height/Depth	75 mm	30 mm

Test Item	Identifier
12240A	1
12240B	2
12240C	3
12240D	4
12240E	5

### Test Conditions

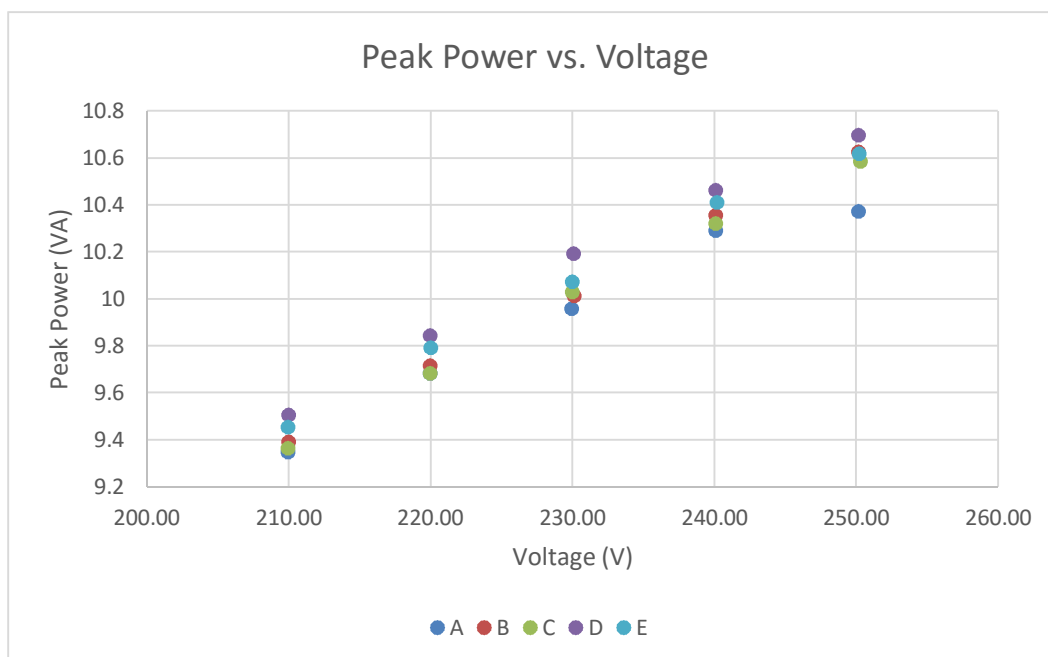
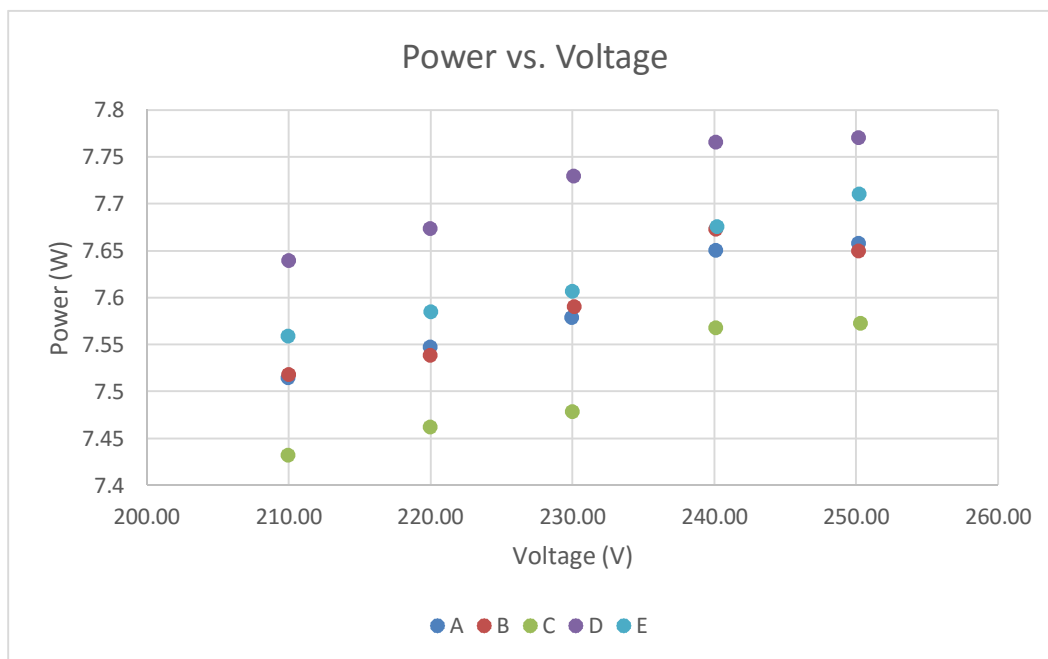
	Before Test	After Test
AC Supply Voltage (V)	250.21V	250.19V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.07%	0.07%

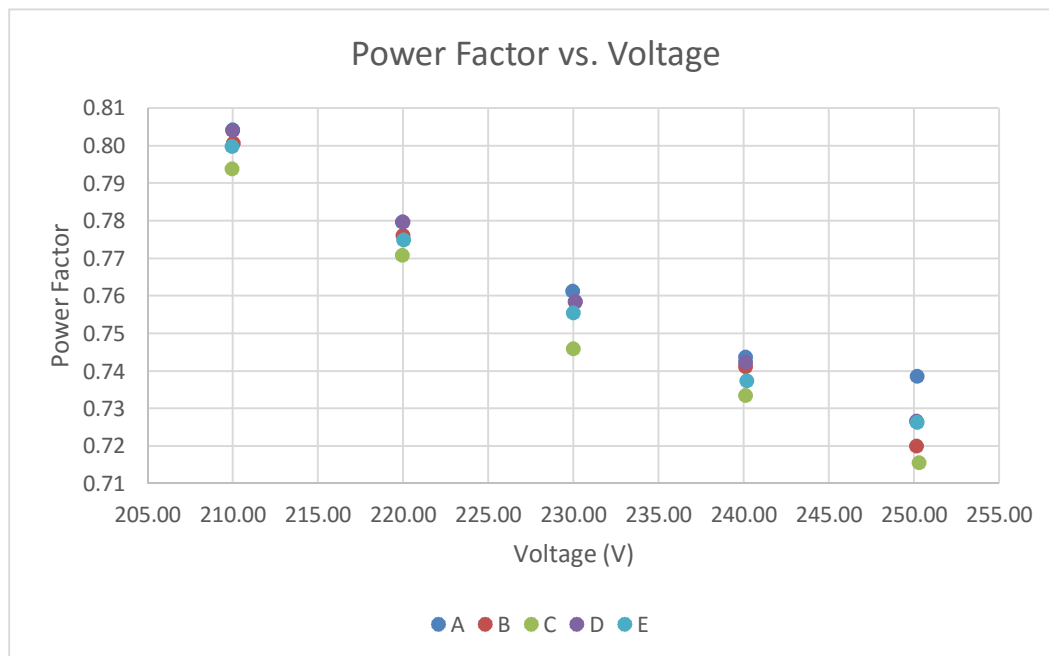
The test items were stabilised according to the electrical power stability of LM79-08. Stabilization is achieved when the difference in electrical power measurement is less than 0.5%. Each test item was stabilised at 250V.

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 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	250.19	41.45	7.66	24.15	10.37	0.738	Leading
B	250.17	42.48	7.65	24.25	10.63	0.720	Leading
C	250.31	42.28	7.57	24.15	10.58	0.715	Leading
D	250.18	42.75	7.77	24.20	10.70	0.727	Leading
E	250.22	42.44	7.71	23.84	10.62	0.726	Leading
A	240.12	42.85	7.65	24.30	10.29	0.744	Leading
B	240.12	43.12	7.67	24.33	10.35	0.741	Leading
C	240.13	42.98	7.57	24.46	10.32	0.733	Leading
D	240.14	43.57	7.77	24.22	10.46	0.742	Leading
E	240.20	43.35	7.68	24.20	10.41	0.737	Leading
A	229.98	43.29	7.58	24.53	9.96	0.761	Leading
B	230.14	43.50	7.59	24.29	10.01	0.758	Leading
C	230.02	43.60	7.48	24.31	10.03	0.746	Leading
D	230.11	44.29	7.73	24.33	10.19	0.758	Leading
E	230.02	43.78	7.61	24.39	10.07	0.755	Leading
A	219.99	44.01	7.55	24.28	9.68	0.780	Leading
B	220.00	44.16	7.54	24.17	9.71	0.776	Leading
C	219.99	44.01	7.46	24.29	9.68	0.771	Leading
D	220.02	44.74	7.67	24.38	9.84	0.780	Leading
E	220.05	44.49	7.59	24.26	9.79	0.775	Leading
A	210.00	44.50	7.51	24.36	9.35	0.804	Leading
B	210.04	44.71	7.52	24.33	9.39	0.801	Leading
C	209.98	44.59	7.43	24.17	9.36	0.794	Leading
D	210.01	45.25	7.64	24.38	9.50	0.804	Leading
E	209.96	45.02	7.56	24.32	9.45	0.800	Leading

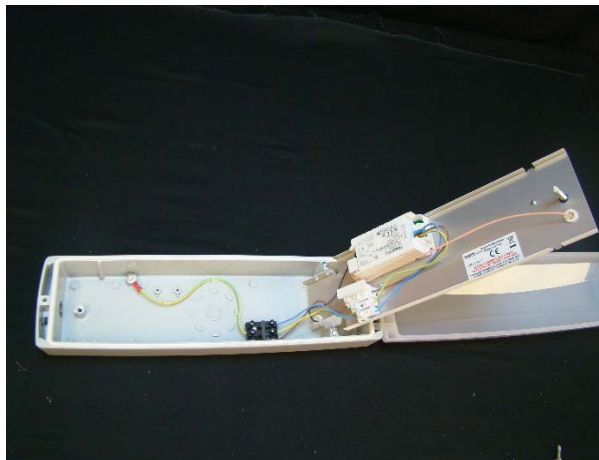
### Test Item Photographs

#### TI-12240

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







Inside Driver Compartment including driver



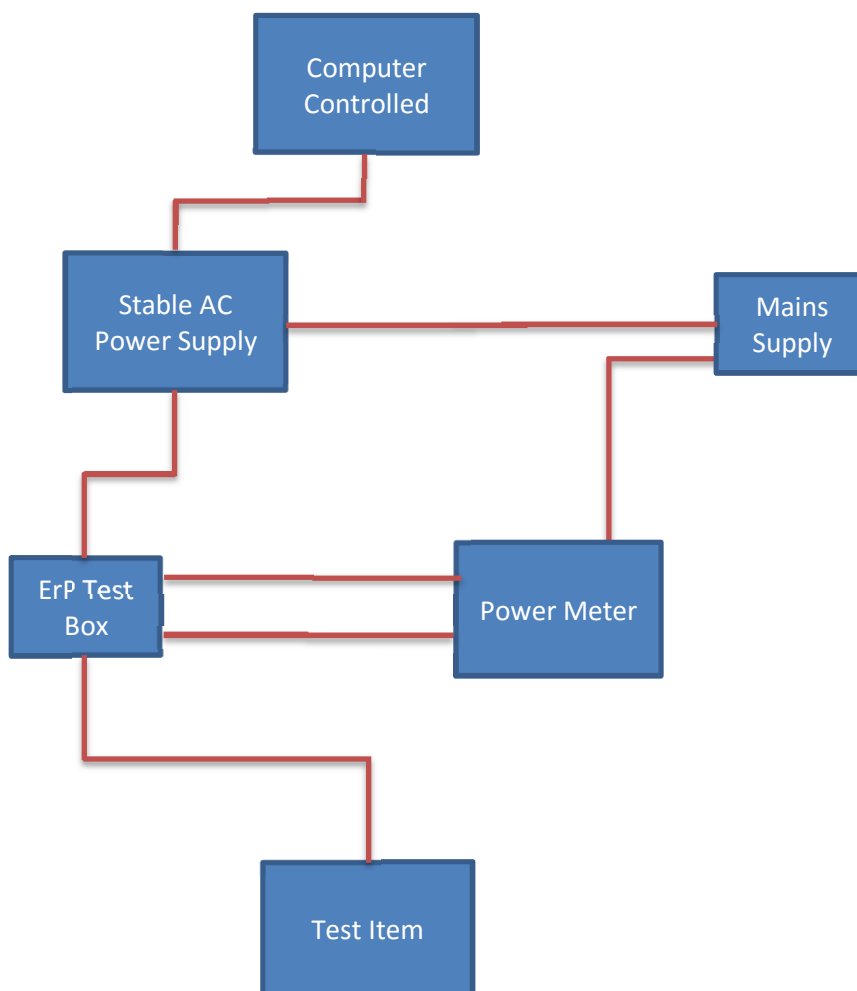
Driver in Situ



Light Engine



### Appendix 1: Test item set-up



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