

Report Number	SAF-21351
Customer	Messagemaker Displays Ltd
Contact	Nigel Parke
Product Type	LED Warning Sign (SLS-20W/40W-600 x 600)
Test Purpose	UMS Energy Performance Test
Sales Order Ref	Q-LUX15-22591
Works Order Number	WO-11998
Test Item Reference	TI-15223
LAB Test Method Reference	TES-201012
Test Standards	LM-79-08 and AEMO Unmetered Load Guideline V1.0
Lab Location Reference	Safety Lab
Tested By	Steve Hunt
Date of Test	31/07/2018
Analysed by	Martin Langdown
Number of products tested	5

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Signed:




Speed Sign with Wig Wags - 100%

Date: 31/07/2018

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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 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	Speed Sign with Wig Wags - 100%
Part/Serial Number	18018040234
Type of Product	LED Warning Sign (SLS-20W/40W-600 x 600)
Manufacturer	Messagemaker Displays Ltd
Date of Manufacturer	2018
Base Type	N/A
Driver Type	Mains
Driver Model	RSP-75-12 Meanwell
Light Engine Model	PCB CZ8520 / CZ8522-*/ CZ8524
Operating Orientation	Horizontal
Test Orientation	Base Up
Ambient Temperature	24.1°C
Humidity	<65% RH
Thermal Management	Passive
Dimmable	Yes
Product Summary	The product is an LED warning sign specified for highways, the circuitry is enclosed within a waterproof (cabinet type) metal enclosure. Access to the circuitry is through a lockable door on the front of the product.

Dimension	Sample	Luminous Opening
Diameter/Width	600 mm	480 mm
Length	600 mm	480 mm
Height/Depth	152 mm	0 mm

Test Item	Identifier
15223A	18015070154

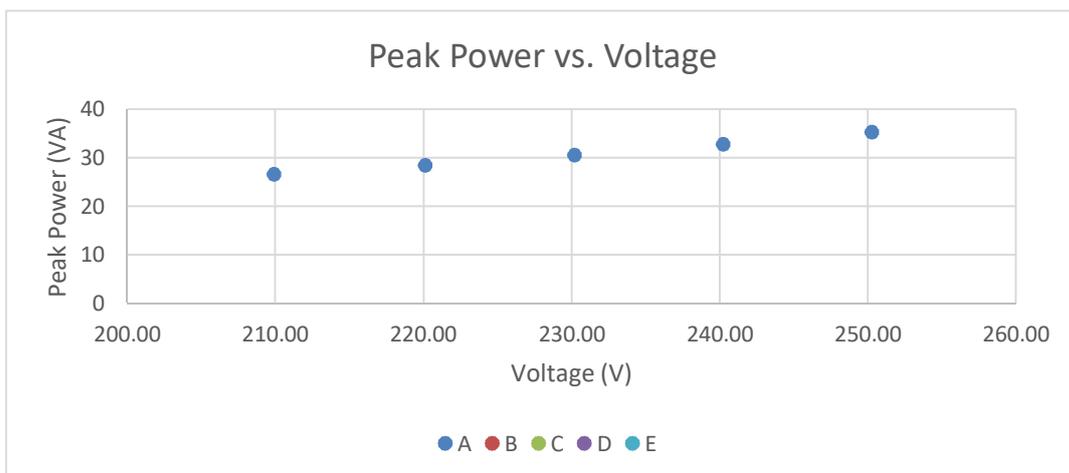
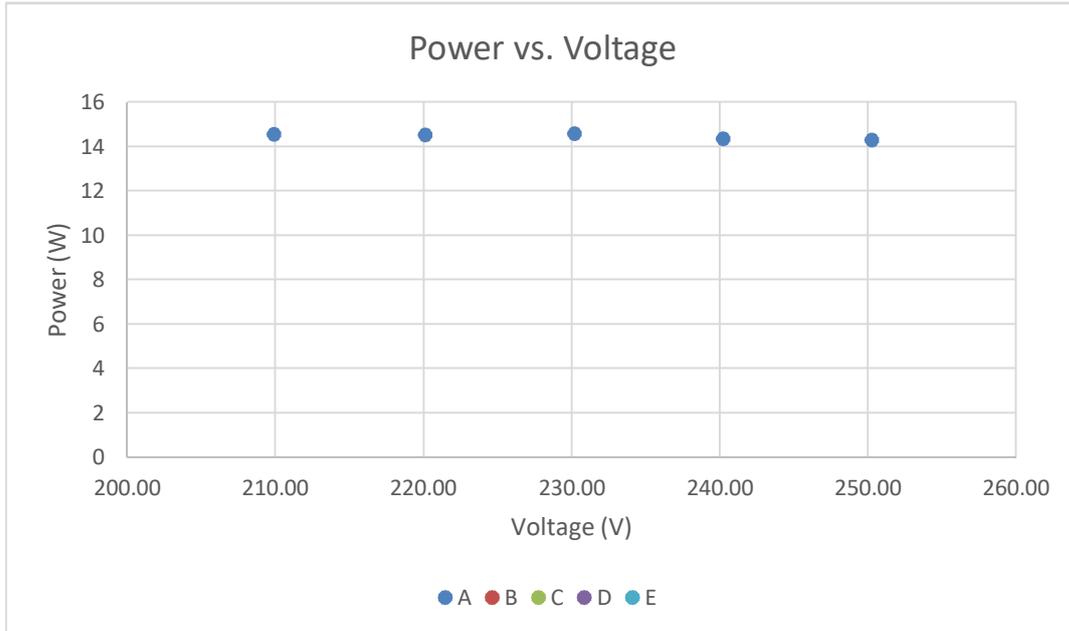
Test Conditions

	Before Test	After Test
AC Supply Voltage (V)	250.08V	250.13V
AC Supply Frequency (Hz)	50Hz	50Hz
Voltage RMS Summation of the Harmonic Components (THD)	0.07%	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.

Test Results Summary

These are the summary graphs of the test results for all products tested. The raw results are on page 5 of this test report.





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Test Report Number: SAF-21351
Test Item: TI-15223

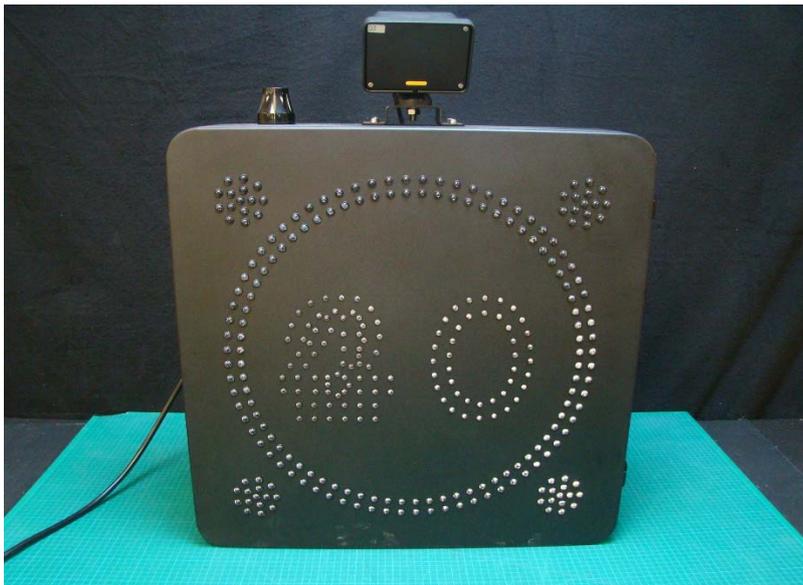
Full Test Results

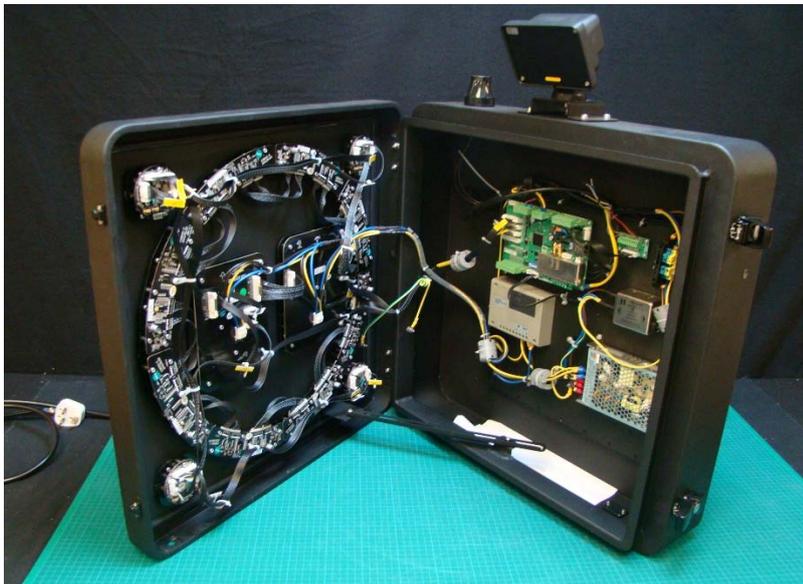
Test Item	Voltage (V)	Current (mA)	Electrical Power (W)	Ambient Temp (°C)	Peak Power (VA)	Power Factor	Leading / Lagging
A	250.26	140.60	14.25	24.09	35.19	0.405	Leading
A	240.23	135.92	14.32	24.00	32.65	0.438	Leading
A	230.20	132.19	14.55	23.67	30.43	0.478	Leading
A	220.12	128.85	14.49	23.72	28.36	0.511	Leading
A	209.93	126.17	14.52	24.15	26.49	0.548	Leading

Test Item Photographs

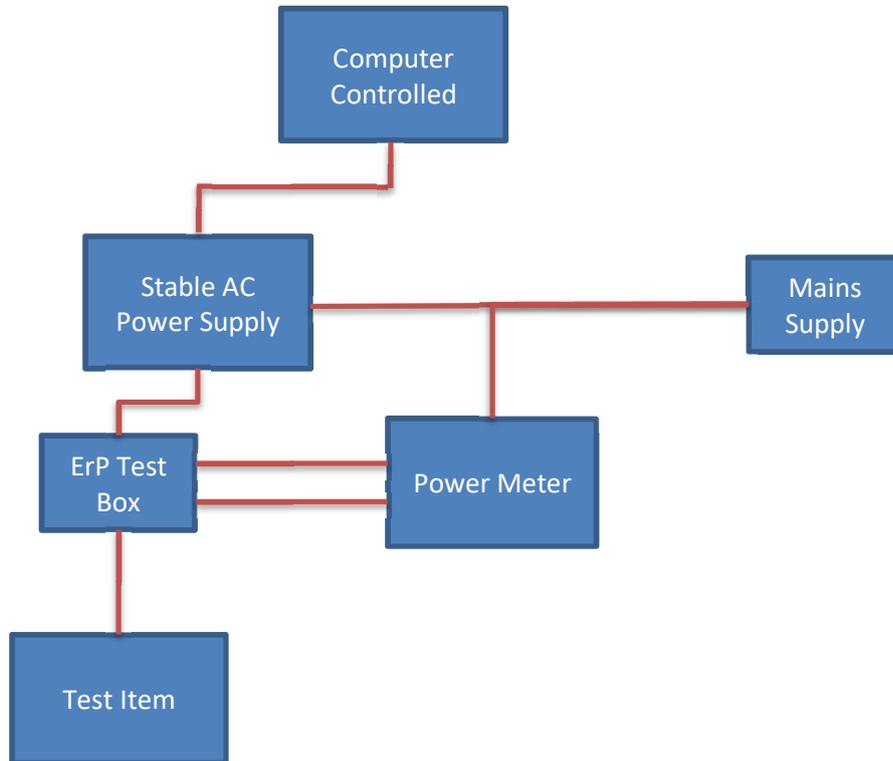
TI-15223

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





Appendix 1: Test item set-up



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