

# UMS SUMMARY TEST REPORT

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ISSUED BY:  
CRANAGE EMC TESTING LIMITED  
STABLE COURT  
OAKLEY  
MARKET DRAYTON  
SHROPSHIRE, TF9 4AG



Report No: **U0033R** Date of Issue: **24<sup>th</sup> February, 2014**

This document summarises the results of testing to ascertain the appropriate Elexon Charge Codes for inclusion in BSCP520.

Tested & Inspected for: **ASD Lighting PLC  
Mangham Rd  
Barbot Hall Ind. Est.  
Rotherham  
S61 4RJ**

Test Dates: **20<sup>th</sup> – 24<sup>th</sup> February, 2014**  
Receipt Date of Test Item: **20<sup>th</sup> February, 2014**

## **Sample 1**

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008781**

## **Sample 2**

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008767**

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## Sample 3

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008769**

## Sample 4

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008754**

## Sample 5

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008750**

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## **Sample 6**

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-Full**  
Serial Number: **346A013013T008725**

## **Sample 7**

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008636**

## **Sample 8**

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008910**

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## Sample 9

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008751**

## Sample 10

Test Item Description: **Street Lighting (12 LED Version)**  
Manufacturer: **ASD Lighting PLC.**  
Model Name: **Highway Crystal 12 LED**  
Serial Number: **Production Sample**  
PCB Reference: **PG 02-14 Rev. 1 PCB049**

Incorporates LED Driver

Manufacturer: **Roal Living Energy**  
Model Number: **RSOZ070-60-Full**  
Serial Number: **346A013013T008787**

Approved Signatories: K.G. Richens - Managing Director

*K.G. Richens*  
\_\_\_\_\_  
APPROVED SIGNATORY

*Mark Allen*

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Verification Signatories: M. Richens - Test Engineer

VERIFICATION SIGNATORY

Mode of Operation: The test item was powered 'On' and gave a constant 100% light output (Mode 1 – Samples 1 - 5) and the test item was powered 'On' and gave a constant 70% light output (Mode 2 – Samples 6 - 10). A photograph showing the test item can be found on page 4. Figures rounded to 1 D.P.

Test Condition: - 15 minutes stabilisation period given prior to measurements. Measurements were subsequently taken after 15 minutes at each voltage level. This was found to be an adequate time window for the purpose of the test measurements.

## Mode 1

Watts					
Voltage (Vrms)	Sample No.				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
210	15.7	15.9	15.8	15.8	15.9
220	15.7	15.9	15.8	15.8	15.9
230	15.5	15.9	15.7	15.7	15.8
240	15.4	15.7	15.6	15.6	15.8
250	15.3	15.8	15.6	15.4	15.7

VA					
Voltage (Vrms)	Sample No.				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
210	22.5	22.6	22.8	22.7	22.9
220	24.2	24.3	24.4	24.3	24.6
230	25.5	25.4	25.6	25.6	26.0
240	27.5	27.4	27.7	27.6	27.9
250	29.1	29.3	29.5	29.3	29.7

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## Mode 2

Watts					
Voltage (Vrms)	Sample No.				
	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
210	10.9	12.4	10.8	11.0	11.0
220	10.6	12.3	10.6	10.9	10.9
230	10.6	11.9	10.5	10.7	10.7
240	10.3	12.0	10.3	10.6	10.6
250	10.3	12.0	10.3	10.6	10.4

VA					
Voltage (Vrms)	Sample No.				
	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
210	20.3	20.8	20.1	19.9	19.9
220	21.3	22.5	21.4	21.4	21.5
230	23.3	23.7	23.1	22.9	22.9
240	24.0	25.7	24.1	24.1	24.0
250	23.4	27.2	25.5	25.3	24.9

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**Ambient temperature range recorded during test period:**  
19.0°C - 20.0°C

Asset Number	Description	Calibration Date	Calibration Due
AN874	Power Source	-	-
AN1162	Power Analyser	14/05/2013	13/05/2013
AN452	Timer	-	-

**N ROAL**  
living energy

**L**

Dimmable Constant Current  
LED Driver  
Ambient temperature  $t_a = -30^{\circ}\text{C} \sim +50^{\circ}\text{C}$   
Suitable for Damp Location

**INPUT RATINGS:**  
Ratings for UL  
120-230/240/277V ~ 750mA  
50/60Hz  $\lambda=0.91\text{min}$   
Ratings for ENEC  
220-240V ~ 350mA  
50/60Hz  $\lambda=0.97\text{min}$   
Ratings for CB  
100-240V ~ 850mA  
50/60Hz  $\lambda=0.96\text{min}$

• to Max temperature  $t_c=85^{\circ}\text{C}$

**HP GND:**

**OK**  
Designed in Italy - Made in Tunisia

**OZONE**

**digitalight**

**RSOZ070-60-Full**  
Single Channel  
Constant current LED Driver

**MAXIMUM OUTPUT POWER 70W**

**LED OUTPUT RATINGS:**  
Regulated LED Current 350-2100mA  
No load LED Voltage maximum 60V  
LED Voltage Range min 30V, max 56V

**AUXILIARY OUTPUT RATINGS:**  
Output Voltage +5V @ 0.75A max

**346A013013T008725**

**DALI PWM**  
DALI™ VM

+5V Aux  
RTN  
Ts  
RTN  
0-10V Dimm  
RTN  
- LED  
+ LED

**1937006909**

**RHPS346A-4 REV.01**  
FW 1.8

Above: Incorporated LED Driver

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Above: Unit under test

## Measurement Uncertainty

The 95 % confidence measurement uncertainty for AC Power (Analyser) is 0.17%.