

# Test Report

Prepared for: Electrical Express UK Ltd  
Product Name: Night Star  
Model Number: 1090  
Test: BSCP520 v23.0 - Elexon Charge Code  
Tested at: Kiwa Blackwood Compliance Laboratories  
Unit 8 Woodfieldside Business Park  
Pontllanfraith  
Blackwood  
NP12 2DG  
United Kingdom  
Tel: +44 (0) 1495 229219  
Web: www.kiwa.co.uk

Test Report Issue Date: 23 July 2015

Tested by:   
Test Engineer

Approved by:   
Technical Management

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## **Section 1: Overview**

### **Section 1.1: General**

This test report contains details of testing carried out on samples submitted to Kiwa Blackwood Compliance Laboratories for an assessment to establish the appropriate Elexon Charge Codes for inclusion in BSCP520.

This test report relates only to the specific items detailed in Section 1.3 and Section 2 as Equipment Under Test (EUT). The results given in this report relate only to the tests, configurations, operation modes and arrangements of the EUT as defined within this report.

The results contained in this test report do not relate to any Auxiliary Equipment (AE) which has been used to exercise, monitor and/or provide suitable loading for the EUT. AE, where applicable, is also detailed in Section 2.

### **Section 1.2: Customer Details**

This test report was prepared for:

Electrical Express UK Ltd  
Unit 1 West Side  
Warne Road  
Weston Super Mare  
BS23 3TS

### **Section 1.3: Equipment Under Test (EUT)**

The equipment under test was a variable power LED street lantern.

## Section 2: Details relating to the Equipment Under Test

Test Start Date: 22 July 2015  
Test Completed Date: 22 July 2015

### Section 2.1: Equipment Under Test (EUT)

Product Name:	Night Star
Manufacturer:	Electrical Express UK Ltd
Description:	LED Street Lantern
Model No:	1090
Part No:	Not Stated
Serial No:	Various - see test results
Build State:	Production samples
Condition:	Good / working
Software Version:	Not Stated

### Section 2.2: Auxiliary Equipment (AE)

No auxiliary equipment was used when performing the tests.

### Section 2.3: Configuration Diagram/Photograph of EUT



## Section 3: Test Results Summary

### Section 3.1: Test Results Summary Table

Test:	Operation Mode:	Mod.:
BSCP520 v23.0 - Elexon Charge Code	Normal Operation - 10W	0
BSCP520 v23.0 - Elexon Charge Code	Normal Operation - 20W	0
BSCP520 v23.0 - Elexon Charge Code	Normal Operation - 60W	0
BSCP520 v23.0 - Elexon Charge Code	Off / Standby	0

**Mod.** (modification status):

0 The EUT was tested as received, i.e. without any modifications.

### Section 3.2: Measurement Uncertainty

ISO/IEC 17025:2005 "General requirements for the competence of testing and calibration laboratories" requires measurement uncertainty to be estimated for all testing done.

Measurement Uncertainty has been calculated for all tests in accordance with UKAS document LAB 34 Edition 1:2002.

## Section 4: Formal Test Results

### Section 4.1: Normal Operation at 10W

Test Standard: BSCP520 v23.0 - Elexon Charge Code  
 Operation Mode: Normal Operation at 10W.  
 The EUT was operated as supplied and was allowed to stabilise for 15 minutes before measurements were taken.

Test Equipment Used:

- 8281 Pacific 360-AMX Power Source
- 8562 Voltech IEC555 Reference Impedance Network (closed-circuited)
- 8117 Voltech PM3000 Power Analyser
- 8648 Oregon Scientific BAA898HG Environmental Monitor

Test Results:

Below are the recorded power ratings under normal operation at 10W setting:

Supply Voltage (Vrms):	Output (Watts)				
	Serial Number:				
	KA08177	KA08175	KA08188	KA08173	KA08150
210	12.369	11.031	9.947	9.673	9.025
220	11.833	10.715	10.461	10.042	9.441
230	11.258	10.472	10.950	10.398	9.917
240	11.080	10.469	11.436	10.672	10.413
250	11.131	10.694	11.960	11.090	10.990

Supply Voltage (Vrms):	VA				
	Serial Number:				
	KA08177	KA08175	KA08188	KA08173	KA08150
210	13.515	12.171	10.373	10.316	9.473
220	13.007	11.878	10.880	10.740	9.931
230	12.353	11.684	11.442	11.122	10.455
240	12.149	11.587	11.961	11.371	10.990
250	12.213	11.897	12.517	11.728	11.637

Supply Voltage (Vrms):	Power Factor				
	Serial Number:				
	KA08177	KA08175	KA08188	KA08173	KA08150
210	0.914	0.904	0.960	0.933	0.950
220	0.909	0.899	0.959	0.935	0.950
230	0.911	0.898	0.958	0.931	0.948
240	0.911	0.902	0.957	0.939	0.947
250	0.910	0.904	0.956	0.946	0.946

Additional Comments:

None

## Section 4.2: Normal Operation at 20W

Test Standard: BSCP520 v23.0 - Elexon Charge Code  
 Operation Mode: Normal Operation at 20W.  
 The EUT was operated as supplied and was allowed to stabilise for 15 minutes before measurements were taken.

### Test Equipment Used:

- 8281 Pacific 360-AMX Power Source
- 8562 Voltech IEC555 Reference Impedance Network (closed-circuited)
- 8117 Voltech PM3000 Power Analyser
- 8648 Oregon Scientific BAA898HG Environmental Monitor

### Test Results:

Below are the recorded power ratings under normal operation at 20W setting:

Supply Voltage (Vrms):	Output (Watts)				
	Serial Number:				
	KA08166	KA08171	KA08163	KA08161	KA08176
210	19.662	19.720	19.198	19.886	20.000
220	20.570	20.280	19.888	20.420	20.520
230	21.480	20.730	20.590	20.790	20.950
240	22.430	21.000	21.070	21.050	21.320
250	23.370	21.100	21.610	21.080	21.710

Supply Voltage (Vrms):	VA				
	Serial Number:				
	KA08166	KA08171	KA08163	KA08161	KA08176
210	20.730	20.520	20.090	20.800	20.880
220	21.770	21.200	20.910	21.430	21.570
230	22.850	21.780	21.720	21.950	22.150
240	23.980	22.210	22.370	22.370	22.660
250	25.120	22.510	23.080	22.590	23.150

Supply Voltage (Vrms):	Power Factor				
	Serial Number:				
	KA08166	KA08171	KA08163	KA08161	KA08176
210	0.948	0.960	0.955	0.956	0.957
220	0.944	0.956	0.951	0.953	0.951
230	0.940	0.951	0.947	0.947	0.945
240	0.934	0.945	0.941	0.940	0.941
250	0.930	0.937	0.936	0.932	0.937

### Additional Comments:

None

### Section 4.3: Normal Operation at 60W

Test Standard: BSCP520 v23.0 - Elexon Charge Code  
 Operation Mode: Normal Operation at 60W.  
 The EUT was operated as supplied and was allowed to stabilise for 15 minutes before measurements were taken.

Test Equipment Used:

- 8281 Pacific 360-AMX Power Source
- 8562 Voltech IEC555 Reference Impedance Network (closed-circuited)
- 8117 Voltech PM3000 Power Analyser
- 8648 Oregon Scientific BAA898HG Environmental Monitor

Test Results:

Below are the recorded power ratings under normal operation at 60W setting:

Supply Voltage (Vrms):	Output (Watts)				
	Serial Number:				
	KA08164	KA08167	KA08165	KA08172	KA08174
210	60.18	60.81	59.79	59.97	60.09
220	60.48	61.25	59.71	59.81	60.52
230	61.00	61.86	59.82	59.95	61.90
240	61.62	62.60	60.12	60.32	61.79
250	62.43	63.47	60.62	60.83	62.72

Supply Voltage (Vrms):	VA				
	Serial Number:				
	KA08164	KA08167	KA08165	KA08172	KA08174
210	60.75	61.35	60.41	60.6	60.68
220	61.1	61.89	60.4	60.51	61.17
230	61.7	62.56	60.61	60.73	61.81
240	62.39	63.4	61	61.17	62.64
250	63.31	64.33	61.57	61.79	63.61

Supply Voltage (Vrms):	Power Factor				
	Serial Number:				
	KA08164	KA08167	KA08165	KA08172	KA08174
210	0.99	0.991	0.989	0.989	0.99
220	0.989	0.99	0.988	0.988	0.989
230	0.988	0.988	0.987	0.987	0.988
240	0.987	0.987	0.985	0.986	0.986
250	0.986	0.986	0.984	0.984	0.985

Additional Comments:

None

### Section 4.4: Off / Standby

Test Standard: BSCP520 v23.0 - Elexon Charge Code  
 Operation Mode: Off / Standby.  
 The EUT was operated as supplied; with the GPS system switching the EUT off.

Test Equipment Used:

- 8675 Schaffner NSG1007-5 InterHarmonics Power Source
- 8562 Voltech IEC555 Reference Impedance Network (closed-circuited)
- 8117 Voltech PM3000 Power Analyser
- 8648 Oregon Scientific BAA898HG Environmental Monitor

Test Results:

Below are the recorded power ratings under Off / Standby:

Supply Voltage (Vrms):	Output (Watts) Serial Number:				
	KA08177	KA08175	KA08188	KA08173	KA08150
210	0.000	0.000	0.000	0.000	0.000
220	0.000	0.000	0.000	0.000	0.000
230	0.000	0.000	0.000	0.000	0.000
240	0.000	0.000	0.000	0.000	0.000
250	0.000	0.000	0.000	0.000	0.000

Supply Voltage (Vrms):	VA Serial Number:				
	KA08177	KA08175	KA08188	KA08173	KA08150
210	0.000	0.000	0.000	0.000	0.000
220	0.000	0.000	0.000	0.000	0.000
230	0.000	0.000	0.000	0.000	0.000
240	0.000	0.000	0.000	0.000	0.000
250	0.000	0.000	0.000	0.000	0.000

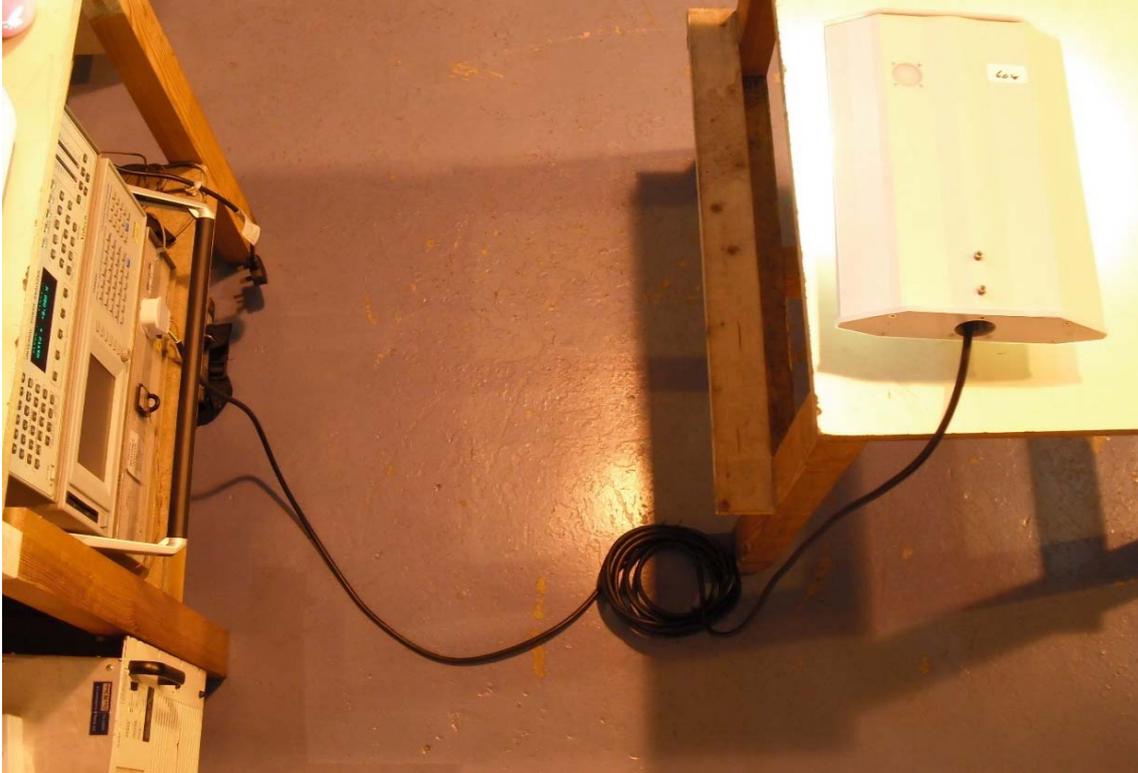
Supply Voltage (Vrms):	Power Factor Serial Number:				
	KA08177	KA08175	KA08188	KA08173	KA08150
210	1.000	1.000	1.000	1.000	1.000
220	1.000	1.000	1.000	1.000	1.000
230	1.000	1.000	1.000	1.000	1.000
240	1.000	1.000	1.000	1.000	1.000
250	1.000	1.000	1.000	1.000	1.000

Additional Comments:

None

## Annex A: Photographs

### Photograph 1: Test Configuration



End of Report