



# TEST PROTOCOLS

of production testing according to customer requirements  
self-consumption tests.

FOR:

**Telematics-wireless Ltd.**

**EUT: T-Light system,**

**Model: LCU NEMA**

**S/Ns: LCU**

**(10502, 10498, 10488, 10483, 10457)**

**The test results relate only to the item tested.**

**This test report must not be reproduced in any form except in full with the approval of Hermon Laboratories Ltd.**



HERMON LABORATORIES

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## Summary and signatures

This test report contains the test results of self-consumption tests for the T-Light system model LCU NEMA.

The unit was found complying with these tests

### **Tested and the test report compiled by:**

Mr. Igor Korsunsky, Product Safety Test Engineer

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### **The test report reviewed and approved by:**

Mr. Michael Freilicher, Product Safety Group Manager

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# 1 General information

## Abbreviations and acronyms

A	Ampere	LED	Light emitting diode
AC	Alternating current	mm	Millimeter
ARC	Auto release control	N	Not applicable
AWG	American wire gauge	NC	Normal condition
cm	Centimeter	P	Pass
CE	European conformity mark	RMS	Root mean square
DC	Direct current	s	Second
EN	European norm (standard)	SFC	Single fault condition
EUT	Equipment under test	V	Volt
F	Fail	W	Watt
Hz	Hertz	UL	Underwriters laboratories
IEC	International electrotechnical commission	Ω	Ohm
Kg	Kilogram	SIP/SOP	Signal input/Signal Output

<b>Testing laboratory and location</b>	<p>Tests were performed at Hermon Laboratories, which is a fully independent, private safety, EMC, telecommunication and environmental testing facility. Hermon Laboratories is accredited by American Association for Laboratory Accreditation (A2LA, USA) according to ISO GUIDE 17025 (certificate No. 839.01) and accredited as CBTL under responsibility of SII.</p> <p>The safety laboratory has gained numerous certifications and accreditations from National Certification Bodies including UL, ETL, TUV, MET, SII, Telefication and others, and provides solution for global safety certification in various product categories.</p> <p>Address: P.O. Box 23, Binyamina 30500, Israel. Telephone: +972 4626 8401 Fax: +972 4626 8444 e-mail: <a href="mailto:mail@hermonlabs.com">mail@hermonlabs.com</a> website: <a href="http://www.hermonlabs.com">www.hermonlabs.com</a></p> <p>Person for contact: Mr. Michael Brun, Product Safety Group Manager</p>
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<b>Applicant</b>	
Name:	Telematics Wireless Ltd.
Responsible person:	Mr. Yuval Sondak
Address:	26 Hamelacha St.P.O.B 1911 Holon 58117
Telephone:	03-5575779
<b>Manufacturer</b>	As above
<b>Test specification</b>	
Standard:	Customer requirements, self-consumption tests
Standard test methods:	Customer requirements
Deviation from Standard methods:	N
Test item description:	T-Light system LCU NEMA is a wireless control unit, used as component for remote control for light poles.
Test configuration:	Part of system
Rating(s):	100-305VAC, 50-60 Hz, 3A
Hardware version	Not provided
Software version	Not provided
Mass of equipment (kg):	0.15
Dimensions (mm):	105x88
Protection against ingress of water	IPX0 (ordinary equipment)
<b>Test case verdicts</b>	
Test case does not apply to the test object	N(ot applicable)
Test item does meet the requirement	P(ass)
Test item does not meet the requirement	F(ail)
<b>Testing</b>	
Date of receipt of test item	14 July 2015
Date(s) of performance of test	14 July 2015



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Artwork of marking plate:





## 2 Test protocol:

### LCU NENA self-consumption :

#### Test purpose

The test was performed to measure EUT power consumption

#### Test procedure

The unit was connected to a variable voltage as indicated and then operated normally under the conditions noted below until well warmed. The apparent power, true power and  $\cos\phi$  were measured.

LCU S/N	Voltage, VAC (50 Hz):	210	220	230	240	250
10502	Apparent Power, VA	3.2	3.3	3.45	3.71	3.75
	True Power, W	1.21	1.22	1.24	1.26	1.26
	$\cos\phi$ (PF)	0.35	0.35	0.34	0.34	0.33
10498	Apparent Power, VA	3.6	3.6	3.6	3.5	3.6
	True Power, W	1.23	1.24	1.23	1.3	1.3
	$\cos\phi$ (PF)	0.35	0.35	0.34	0.34	0.34
10488	Apparent Power, VA	3.4	3.5	3.6	3.8	3.8
	True Power, W	1.22	1.22	1.23	1.23	1.3
	$\cos\phi$ (PF)	0.35	0.35	0.34	0.34	0.33
10483	Apparent Power, VA	3.5	3.5	3.6	3.72	3.77
	True Power, W	1.23	1.23	1.23	1.3	1.3
	$\cos\phi$ (PF)	0.35	0.34	0.34	0.34	0.34
10457	Apparent Power, VA	3.5	3.6	3.7	3.82	3.85
	True Power, W	1.25	1.3	1.3	1.3	1.28
	$\cos\phi$ (PF)	0.36	0.35	0.35	0.34	0.33



## Appendix A – Equipment used for testing

### Equipment calibration

Hermon Laboratories is accredited by A2LA for calibration according to present requirements of ISO/IEC 17025 and NCSL Z540-1. The accreditation is granted to perform calibration of parameters that are listed in the Scope of Hermon Laboratories Accreditation.

Hermon Laboratories calibrates its reference and transfer standards by calibration laboratories accredited to ISO/IEC 17025 by a mutually recognized Accreditation Body or by a recognized national metrology institute. All reference and transfer standards used in the calibration system are traceable to national or international standards.

In-house calibration of all test and measurement equipment is performed on a regular basis according to Hermon Laboratories calibration procedures, manufacturer calibration/verification procedures or procedures defined in the relevant standards. The Hermon Laboratories test and measurement equipment is calibrated within the tolerances specified by the manufacturers and/or by the relevant standards.

HL No	Equipment description	Manufacturer	Model	Ser. No.	Last Cal./Chk	Next Cal./Chk.
2306	Electrical Safety Compliance Analyzer	Associated Research INC	7564SA	100877	25-Dec-14	25-Dec-15
2774	HygroThermometer, Min/Max Memory	Delta TRAK	13301	NA	18-Jun-15	18-Jun-16
3155	Power Converter, 5 kVA, 1 phase	Adaptive Power Systems, Inc.	APS1005M X230	2260059	13-Apr-15	13-Apr-16
2416	Power supply AC 50 Hz variable, 0-270 V grounded, 7.5/16A	Hermon Laboratories	270/7.5	2416	12-Jul-15	12-Jul-16
3460	Precision Barometer, 870 - 1050 hPa	LUFFT Mess- und Regeltechnik GmbH	DKD-K-26701	100469	07-May-14	07-May-16



### Measurement uncertainty

#### Expanded uncertainty at 95% confidence in Hermon Labs safety measurements

Test description	Expanded uncertainty
1. Capacitance discharge (voltage limitation)	$\pm 1.69\%$
2. Transformer overload.	$\pm 1.04\%$
3. Bonding impedance (ground continuity)	Earthing test I uncertainty: $\pm 2.81\%$ Earthing test II uncertainty: $\pm 1.99\%$
4. Leakage current	Current Range 1: $0.0\mu\text{A} - 29.9\mu\text{A}$ : $\pm 7.54\%$ Current Range 2: $30.0\mu\text{A} - 999.9\mu\text{A}$ : $\pm 2.71\%$ Current Range 3: $1000\mu\text{A} - 6000\mu\text{A}$ : $\pm 2.53\%$
5. Heating test (TC method)	Option 1 $\pm 1.04\%$ Option 2 $\pm 1.87\%$
6. Dielectric strength	HYPOTPLUS II, AC/DC Withstand Voltage Tester expanded uncertainty: $\pm 3.55\%$ Electrical Safety Compliance Analyzer expanded uncertainty: $\pm 2.49\%$
7. Input test	AC Option 1 uncertainty: $\pm 2.01\%$ AC Option 2 uncertainty: $\pm 3.02\%$ DC Input test uncertainty: $\pm 1.99\%$
8. Voltage limitation	Option 1 $\pm 3.79\%$ Option 2 $\pm 1.69\%$



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## Appendix B – Photo documentation

**Photograph № 1**  
**The LCU general view**



**Photograph № 2**  
**The LCU connector view**

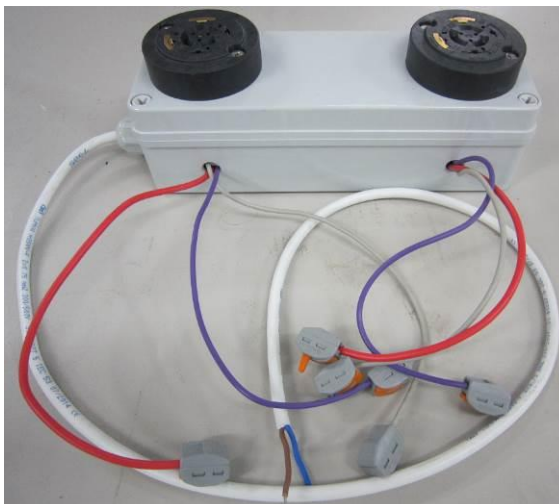




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**Photograph № 3**  
**The test setup**



**Photograph № 4**  
**The test setup**



**END OF THE TEST REPORT**