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Test Report: 170501LCP

Testing of Road Light Power for AEMO's NEM Load Table and other tests on optical systems

for Sylvania Modular LED 30W Model No. LC99BDXXL30

Project No: PRT 5202

Type of product: LED Streetlight

Prepared for: Gerard Lighting Pty Ltd

Model number: LC99BDXXL30

Description: 30W Modular LED StreetLight. Features die-cast aluminium body with clear drop visor incorporating a 140mm x 165mm prismatic diffusing patch, 1x Samsung LED module powered from a Philips Xitanium driver 40W 0.7A Prog+ GL-J sXt model number 929000736203 set at 489mA.

Test objective and Method

Determination of the luminaire supply operating parameters Voltage, Current, Power and Power Factor when tested at nominal test voltages of 250V. By the method of LEDLab Electrical Parameter Determination and AEMO Unmetered_Load_Guideline_v1_0.

Test configuration

The ten luminaires were operated at 25°C ambient temperature in their normal operational orientation at 250VAC, 50Hz, until the monitored luminaire stabilised as defined in IES LM79. Twenty readings were taken ten seconds apart and the average found. The average value is multiplied by the Calibration Correction given in the latest NATA endorsed calibration report then has Voltmeter losses subtracted based on Watt-meter input impedance and test voltage. The other nine luminaires having operated for the same or more time are switched one by one to Watt-meter for their twenty readings.

Client:

Gerard Lighting Pty Ltd contact Scott Powell, 96 Gow St, Padstow, NSW 2211

Tested by: Alain Yetendje On 01/05/2017 Authorised Signatory Date: 03/05/2017

Alain Yetendje

The data specified in this report relates to the sample measured under standard conditions specified in the Test Specification, and may not necessarily relate to other similar luminaires or other operating conditions. The tests and measurements covered by this document are traceable to Australian national standards of measurement. This report shall only be reproduced in full unless approved in writing by Light Emission Distribution Laboratory (LEDLab).

Conclusions

Test results are given in following Tables.
The Average Load (W) is 29.83W at 0.94 Power Factor.

Results

Time till stabilisation: 3h

Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.056	0.128	30.047	0.938
Min	249.280	0.128	30.039	0.937
Max	250.900	0.128	30.054	0.939
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.01	0.1278	29.99	0.938

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.211	0.126	29.706	0.940
Min	249.840	0.126	29.702	0.940
Max	250.460	0.126	29.708	0.940
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.16	0.1261	29.65	0.940

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.919	0.128	30.000	0.939
Min	249.000	0.128	30.000	0.938
Max	250.000	0.128	30.000	0.939
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.87	0.1277	29.94	0.939

Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.196	0.126	29.709	0.940
Min	249.390	0.126	29.698	0.939
Max	250.710	0.127	29.720	0.941
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.15	0.1261	29.65	0.940

Sample 5	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.230	0.128	30.048	0.938
Min	249.490	0.126	29.614	0.937
Max	250.900	0.128	30.054	0.938
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.18	0.1278	29.99	0.938

Sample 6	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.066	0.126	29.682	0.939
Min	249.520	0.126	29.677	0.939
Max	250.340	0.127	29.689	0.940
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.02	0.1261	29.62	0.939

Sample 7	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.697	0.127	29.912	0.940
Min	249.300	0.127	29.908	0.939
Max	250.300	0.128	29.916	0.940
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.65	0.1272	29.85	0.940

Sample 8	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.974	0.127	29.803	0.938
Min	248.580	0.126	29.703	0.937
Max	250.870	0.128	30.049	0.939
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.92	0.1268	29.74	0.938

Sample 9	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.743	0.128	29.930	0.939
Min	249.000	0.127	29.650	0.936
Max	250.250	0.128	30.000	0.940
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.69	0.1275	29.87	0.939

Sample 10	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.375	0.128	30.047	0.937
Min	249.810	0.128	30.041	0.937
Max	250.940	0.128	30.061	0.938
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.33	0.1278	29.99	0.937

Electrical operating parameters of Modular LED 30W

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.056	0.128	29.986	0.938
Sample 2	250.160	0.126	29.646	0.940
Sample 3	249.869	0.128	29.940	0.939
Sample 4	250.146	0.126	29.649	0.940
Sample 5	250.180	0.128	29.988	0.938
Sample 6	250.016	0.126	29.622	0.939
Sample 7	249.647	0.127	29.852	0.940
Sample 8	249.924	0.127	29.743	0.938
Sample 9	249.693	0.127	29.870	0.939
Sample 10	250.325	0.128	29.987	0.937
Average	**250.00**	**0.13**	**29.83**	**0.94**

Illustration 1: Electrical operating parameters of Modular LED 30W

Uncertainties

At a Confidence Level of 95% with a Coverage Factor of 2

Supply Voltage: ± 0.07%
Supply Current: ± 0.14%
Supply Power: ± 0.19%
Power Factor: ± 0.005
Ambient Temperature: ± 1°C

Test Equipment Used

Power meter: Newton 4th Power Analyser KinetiQ Model PPA2520 SN 133-00467
Power meter integration time (s): 5
Calibration Report: Ausgrid 221983
Luminaire thermometer: AMA S No. 1086110-0.1deg

General Photographs

Illustration 2: Luminaire

Illustration 3: LED driver

Illustration 4: Setup