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Test Report: 170504LCP

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

for Sylvania Modular LED 17W Luminaire Model No. LC99BDXXL17

Project No: PRT 5202C

Type of product: LED Streetlight

Prepared for: Gerard Lighting Pty Ltd

Model number: LC99BDXXL17

Description: 17W 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 262mA.

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 02/05/2017 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 17.13W at 0.87 Power Factor.

Results

Time till stabilisation: 3h

Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.857	0.080	17.146	0.863
Min	249.520	0.080	17.143	0.862
Max	250.200	0.080	17.148	0.863
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	249.81	0.0793	17.09	0.863

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.908	0.079	17.139	0.869
Min	249.490	0.079	17.131	0.868
Max	250.410	0.080	17.148	0.870
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	249.86	0.0788	17.08	0.869

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.847	0.079	17.205	0.868
Min	249.460	0.079	17.197	0.867
Max	250.230	0.079	17.212	0.868
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	249.80	0.0791	17.15	0.868

Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.905	0.080	17.262	0.867
Min	249.380	0.080	17.256	0.866
Max	250.460	0.080	17.266	0.867
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	249.86	0.0795	17.20	0.867

Sample 5	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.108	0.079	17.227	0.870
Min	249.630	0.079	17.223	0.870
Max	250.600	0.079	17.231	0.871
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	250.06	0.0789	17.17	0.871

Sample 6	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.158	0.079	17.149	0.866
Min	249.900	0.079	17.145	0.865
Max	250.600	0.079	17.152	0.866
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	250.11	0.0789	17.09	0.866

Sample 7	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.729	0.079	17.144	0.867
Min	249.210	0.079	17.131	0.866
Max	250.240	0.079	17.152	0.870
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	249.68	0.0789	17.08	0.867

Sample 8	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.379	0.079	17.197	0.871
Min	249.020	0.079	17.194	0.870
Max	249.930	0.079	17.206	0.872
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	249.33	0.0789	17.14	0.871

Sample 9	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.290	0.079	17.200	0.871
Min	249.000	0.079	17.200	0.870
Max	250.000	0.079	17.200	0.872
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	249.24	0.0789	17.14	0.871

Sample 10	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.966	0.079	17.216	0.868
Min	249.630	0.079	17.200	0.866
Max	250.050	0.080	17.265	0.871
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	0.0792	17.16	0.869

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Electrical operating parameters of Modular LED 17W

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	249.857	0.079	17.087	0.863
Sample 2	249.858	0.079	17.080	0.869
Sample 3	249.797	0.079	17.146	0.868
Sample 4	249.855	0.079	17.203	0.867
Sample 5	250.057	0.079	17.168	0.870
Sample 6	250.107	0.079	17.090	0.866
Sample 7	249.679	0.079	17.084	0.867
Sample 8	249.329	0.079	17.138	0.871
Sample 9	249.240	0.079	17.141	0.871
Sample 10	249.916	0.079	17.157	0.868
Average	**249.77**	**0.08**	**17.13**	**0.87**

Illustration 1: Electrical operating parameters of Modular LED 17W

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