Light Emission Distribution Laboratory
Division of Photometry & Electrical Testing Pty. Ltd ABN 11 166 255 134
Unit 4, 140 George St. Hornsby NSW 2077 Australia
Ph: +61 2 9476 3097 E: sales@ledlab.com.au

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Test Report: 180306LCP

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

for RoadLED MIDI 80W with 1 by LED Module

Type of product: LED Streetlight

Prepared for: Gerard Lighting Pty Ltd, 96-112 Gow St, Padstow NSW 2211 Australia

Model number: RoadLED MIDI 80W

Description: Sylvania RoadLED MIDI 80W with Aero Screen Visor 4K. Die cast powder coated aluminium body. Two Samsung panels with 38 LH351B 4k chips. Inventronics driver EUD-100S210DD set at 1.323 Amp.

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, 96-112 Gow St, Padstow NSW 2211 Australia contact Elizabeth Fernandes

Conclusion

The Average Load (W) is 79.33 at 0.96 Power Factor.

Tested by: David Orwin On 5/03/2018 Authorised Signatory David Ford  Date: 15/03/2018

Results

Time till stabilisation: 7.5h

Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.308	0.333	79.854	0.957
Min	249.690	0.333	79.848	0.957
Max	250.900	0.334	79.863	0.958
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.28	0.3330	79.78	0.957

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.443	0.331	79.408	0.958
Min	249.040	0.329	79.395	0.958
Max	251.760	0.332	79.421	0.959
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.41	0.3306	79.34	0.958

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.897	0.332	79.459	0.958
Min	249.050	0.331	79.449	0.958
Max	250.550	0.333	79.475	0.959
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.87	0.3315	79.39	0.958

Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.960	0.330	78.862	0.957
Min	249.170	0.329	78.857	0.957
Max	250.710	0.331	78.871	0.957
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.93	0.3294	78.79	0.957

Sample 5	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.343	0.335	80.490	0.959
Min	249.480	0.334	80.484	0.959
Max	251.180	0.336	80.500	0.960
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.31	0.3349	80.42	0.959

Sample 6	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.330	0.329	78.913	0.958
Min	249.970	0.328	78.906	0.958
Max	251.000	0.329	78.918	0.958
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.30	0.3287	78.84	0.958

Sample 7	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.372	0.337	80.745	0.958
Min	249.530	0.335	80.733	0.958
Max	251.250	0.337	80.751	0.959
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.34	0.3362	80.67	0.958

Sample 8	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.099	0.330	78.994	0.957
Min	249.510	0.330	78.991	0.957
Max	250.390	0.331	78.998	0.957
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.07	0.3298	78.92	0.957

Sample 9	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.276	0.329	78.916	0.958
Min	249.860	0.329	78.904	0.958
Max	250.830	0.330	78.922	0.958
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.25	0.3289	78.84	0.958

Sample 10	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.354	0.328	78.395	0.956
Min	249.880	0.327	78.379	0.955
Max	251.050	0.328	78.411	0.956
Calibration correction (see Newton 4th calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.32	0.3273	78.32	0.956

Illustration 1:

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.308	0.333	79.782	0.957
Sample 2	250.412	0.331	79.337	0.958
Sample 3	249.866	0.332	79.388	0.958
Sample 4	249.928	0.329	78.791	0.957
Sample 5	250.311	0.335	80.418	0.959
Sample 6	250.298	0.329	78.841	0.958
Sample 7	250.341	0.336	80.674	0.958
Sample 8	250.068	0.330	78.922	0.957
Sample 9	250.245	0.329	78.844	0.958
Sample 10	250.323	0.327	78.323	0.956
Average	**250.21**	**0.33**	**79.33**	**0.96**

Electrical operating parameters of RoadLED MIDI 80W

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 NC17.36115

Luminaire thermometer: AMA S No. 1086110-0.1deg

Illustration 2: Luminaire

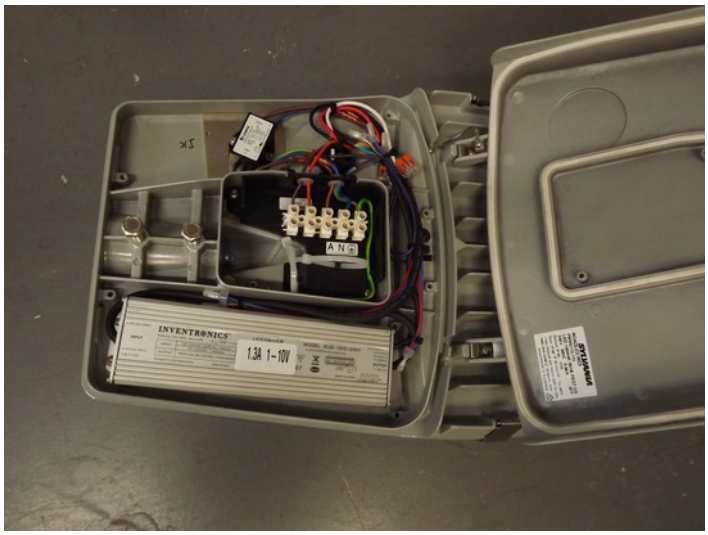

Illustration 3: Control gear

Illustration 5: Surge protector

Illustration 4: Luminaire label

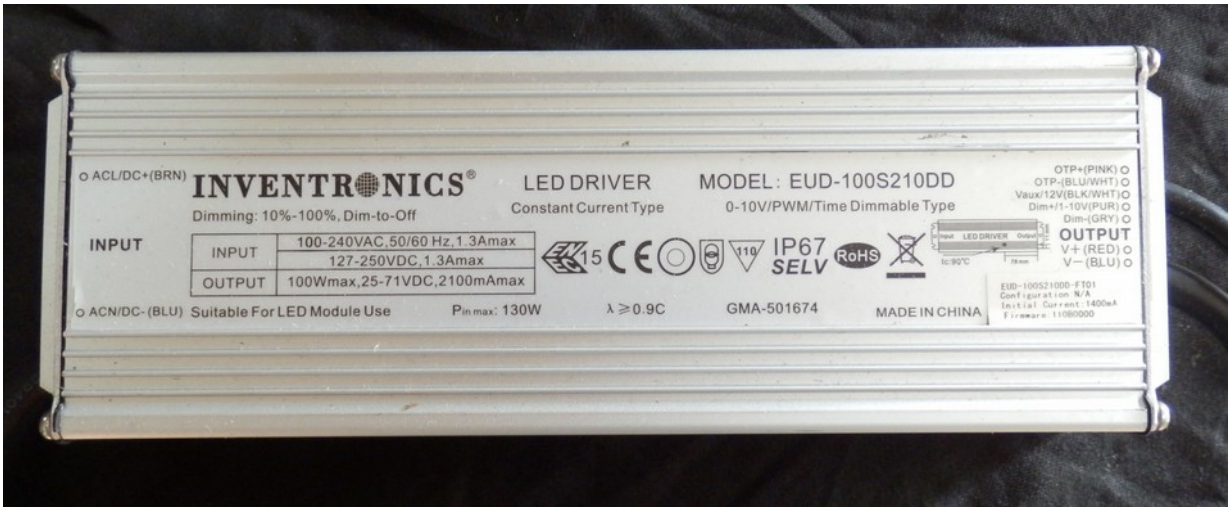

Illustration 6: LED driver


Illustration 7: Setup