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Test Report: 180302LCP

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

for RoadLED MIDI 140W

Type of product: LED Streetlight

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

Model number: RoadLED MIDI 140W

Description: Sylvania RoadLED MIDI 140W with Aero Screen Visor 4K. Die cast powder coated aluminium body. Two Samsung panels with 38 LH351B 4k chips. Inventronics driver EUD-150S130DV set at 1.196 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 138.2W at 0.97 Power Factor.

Tested by: David Orwin On 5/03/2018 Authorised Signatory David Ford  Date: 14/03/2018

Results

Time till stabilisation: 7.5h

Electrical Measurements

Sample 1		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.038	0.570	137.828	0.967
Min		249.300	0.569	137.800	0.967
Max		250.580	0.571	137.840	0.967
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		250.01	0.5696	137.75	0.967

Sample 2		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.164	0.568	137.338	0.967
Min		249.810	0.567	137.330	0.967
Max		250.710	0.569	137.350	0.967
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		250.13	0.5675	137.26	0.967

Sample 3		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.356	0.568	137.413	0.966
Min		249.350	0.567	137.390	0.966
Max		250.880	0.570	137.430	0.966
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	0.5680	137.33	0.966

Sample 4		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.402	0.575	139.281	0.968
Min		249.640	0.573	139.260	0.968
Max		251.120	0.576	139.300	0.968
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		250.37	0.5743	139.20	0.968

Sample 5		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.212	0.576	139.357	0.967
Min		249.110	0.575	139.350	0.967
Max		250.680	0.578	139.360	0.968
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		250.18	0.5755	139.28	0.967

Sample 6		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.237	0.576	139.403	0.967
Min		249.220	0.574	139.380	0.967
Max		251.090	0.578	139.430	0.968
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		250.21	0.5755	139.32	0.967

Sample 7		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.289	0.566	136.978	0.967
Min		249.530	0.565	136.950	0.967
Max		250.780	0.568	137.000	0.967
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		250.26	0.5656	136.90	0.967

Sample 8		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.709	0.572	138.669	0.967
Min		250.000	0.571	138.640	0.967
Max		251.290	0.573	138.690	0.967
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		250.68	0.5717	138.59	0.967

Sample 9		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		249.816	0.577	139.109	0.966
Min		248.800	0.575	139.080	0.966
Max		250.480	0.579	139.130	0.966
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		249.78	0.5762	139.03	0.966

Sample 10		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.431	0.568	137.448	0.967
Min		249.880	0.566	137.430	0.966
Max		251.270	0.569	137.470	0.967
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		250.40	0.5675	137.37	0.967

	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.01	0.5696	137.75	0.967
Sample 2	250.13	0.5675	137.26	0.967
Sample 3	250.32	0.568	137.33	0.966
Sample 4	250.37	0.5743	139.2	0.968
Sample 5	250.18	0.5755	139.28	0.967
Sample 6	250.21	0.5755	139.32	0.967
Sample 7	250.26	0.5656	136.9	0.967
Sample 8	250.68	0.5717	138.59	0.967
Sample 9	249.78	0.5762	139.03	0.966
Sample 10	250.4	0.5675	137.37	0.967
Average	250.23	0.57	138.20	0.97

Illustration 1: Electrical operating parameters of RoadLED MIDI 140W

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

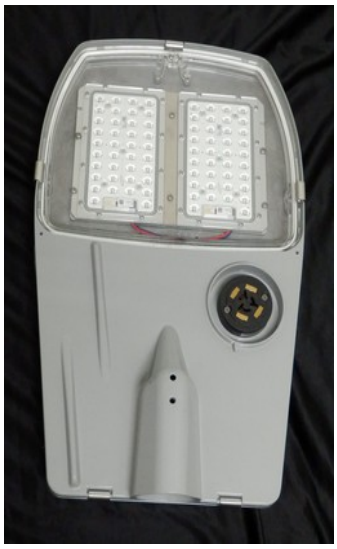

Illustration 2: Luminaire

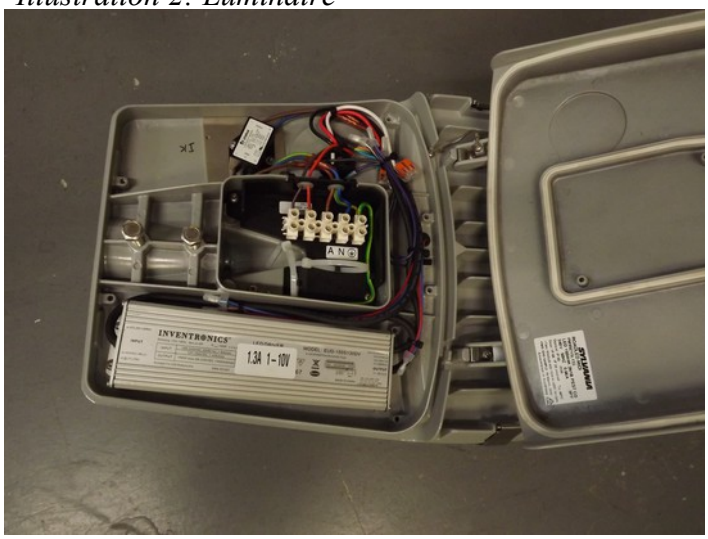

Illustration 3: Control gear

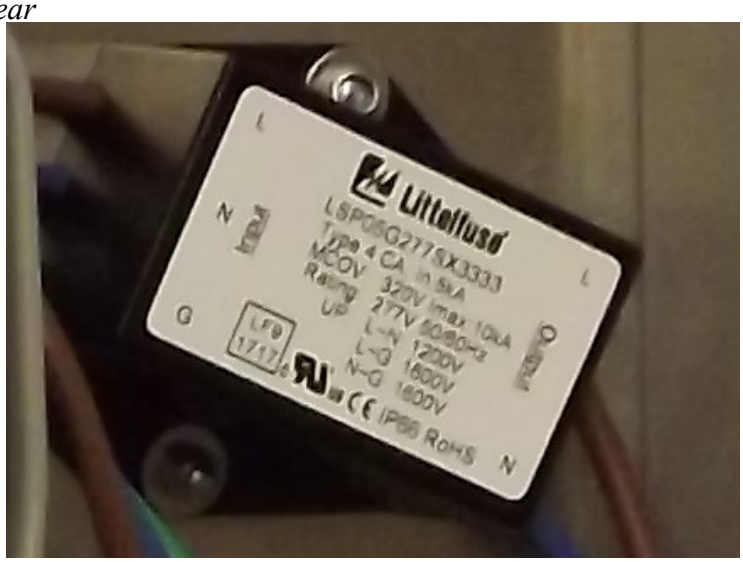

Illustration 4: Surge protector

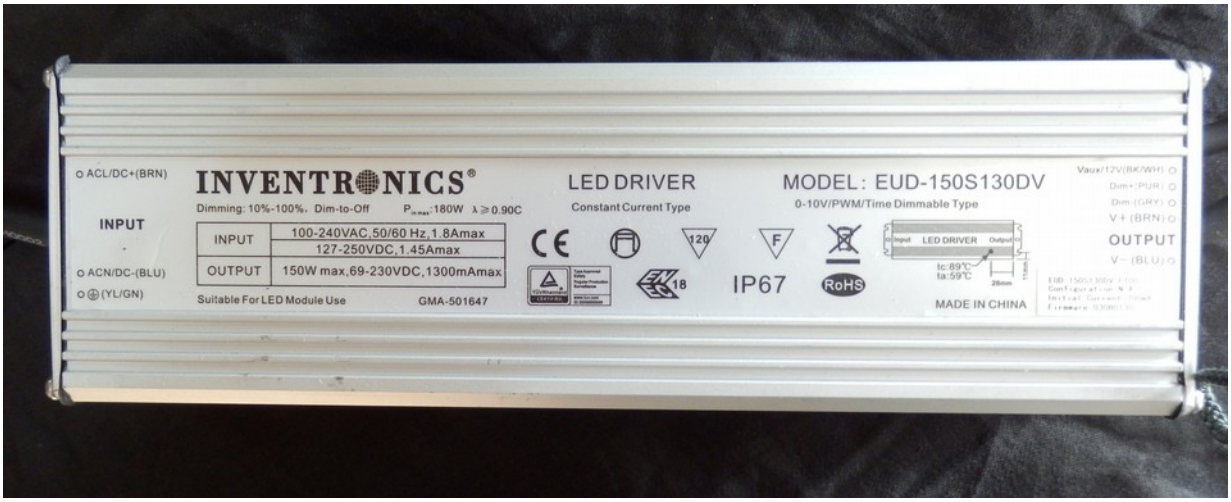

Illustration 5: LED driver

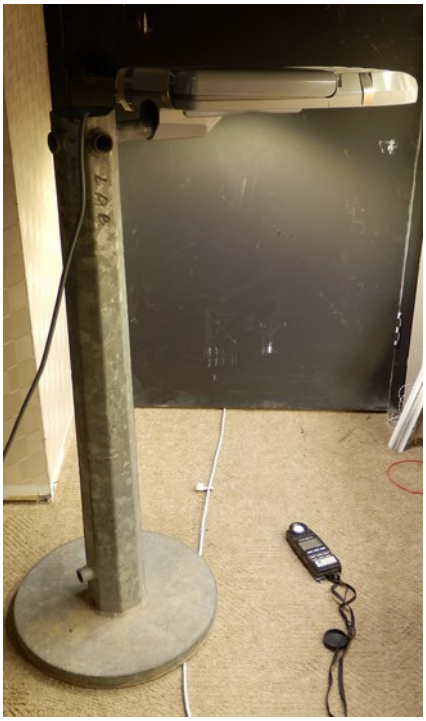

Illustration 6: Setup