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Test Report: 180301LCP

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

for RoadLED MIDI 150W

Type of product: LED Streetlight

Prepared for: Gerard Lighting Pty Ltd

Model number: RoadLED MIDI 150W

Description: Sylvania Roadled Midi 150W with Aeroscreen visor. Die cast powder coated aluminium body, two Samsung panels with 38x LH351B 4K chips powered from an Inventronics driver EUD-150S130DV set at 1.3Amp.

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 151.22W at 0.97 Power Factor.

Tested by: David Orwin On 5/03/2018 Authorised Signatory David Ford  Date: 13/03/2018

Results

Time till stabilisation: 8h

Electrical Measurements

Sample 1		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.046	0.621	150.725	0.971
Min		249.450	0.620	150.690	0.971
Max		250.470	0.622	150.740	0.971
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		250.02	0.6207	150.64	0.971

Sample 2		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.286	0.619	150.306	0.970
Min		249.990	0.618	150.290	0.970
Max		250.520	0.620	150.320	0.970
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	0.6186	150.22	0.970

Sample 3		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		249.908	0.621	150.499	0.970
Min		249.310	0.619	150.490	0.970
Max		250.620	0.622	150.520	0.970
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		249.88	0.6207	150.42	0.970

Sample 4		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.129	0.626	152.017	0.972
Min		248.610	0.623	152.000	0.971
Max		251.340	0.629	152.030	0.972
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		250.10	0.6253	151.93	0.972

Sample 5		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.086	0.628	152.533	0.971
Min		249.360	0.626	152.490	0.970
Max		251.110	0.630	152.560	0.971
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		250.05	0.6279	152.45	0.971

Sample 6		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.050	0.629	152.645	0.971
Min		249.470	0.627	152.630	0.971
Max		250.560	0.630	152.650	0.971
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		250.02	0.6283	152.56	0.971

Sample 7		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.177	0.617	149.840	0.971
Min		249.000	0.614	149.820	0.970
Max		251.360	0.620	149.870	0.971
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		250.15	0.6167	149.76	0.971

Sample 8		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.367	0.624	151.771	0.971
Min		249.500	0.623	151.760	0.971
Max		250.920	0.626	151.780	0.971
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	0.6241	151.69	0.971

Sample 9		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.384	0.627	152.192	0.969
Min		249.750	0.626	152.170	0.969
Max		251.040	0.629	152.210	0.969
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		250.35	0.6268	152.11	0.969

Sample 10		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.050	0.620	150.483	0.971
Min		248.620	0.619	150.470	0.970
Max		250.480	0.623	150.500	0.971
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		250.02	0.6198	150.40	0.971

	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.02	0.6207	150.64	0.971
Sample 2	250.25	0.6186	150.22	0.97
Sample 3	249.88	0.6207	150.42	0.97
Sample 4	250.1	0.6253	151.93	0.972
Sample 5	250.05	0.6279	152.45	0.971
Sample 6	250.02	0.6283	152.56	0.971
Sample 7	250.15	0.6167	149.76	0.971
Sample 8	250.34	0.6241	151.69	0.971
Sample 9	250.35	0.6268	152.11	0.969
Sample 10	250.02	0.6198	150.4	0.971
Average	250.12	0.62	151.22	0.97

Illustration 1: Electrical operating parameters of RoadLED MIDI 150W

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

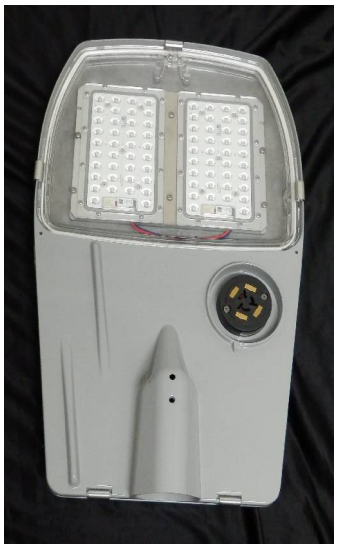

Illustration 2: Luminaire

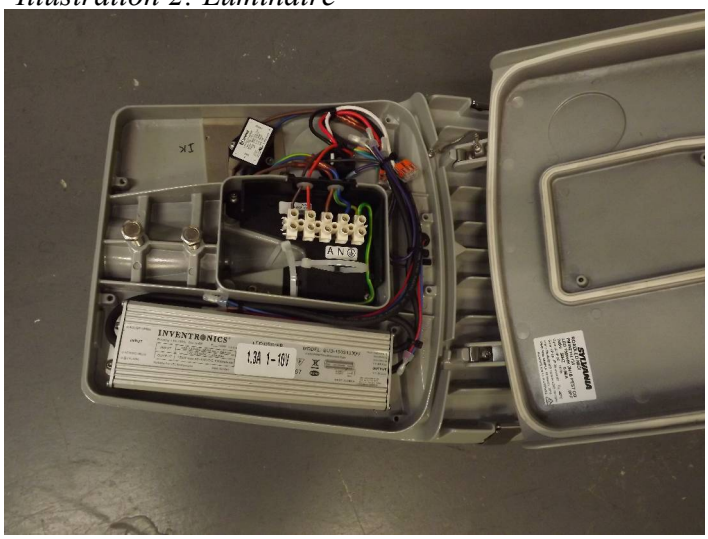

Illustration 3: Control gear

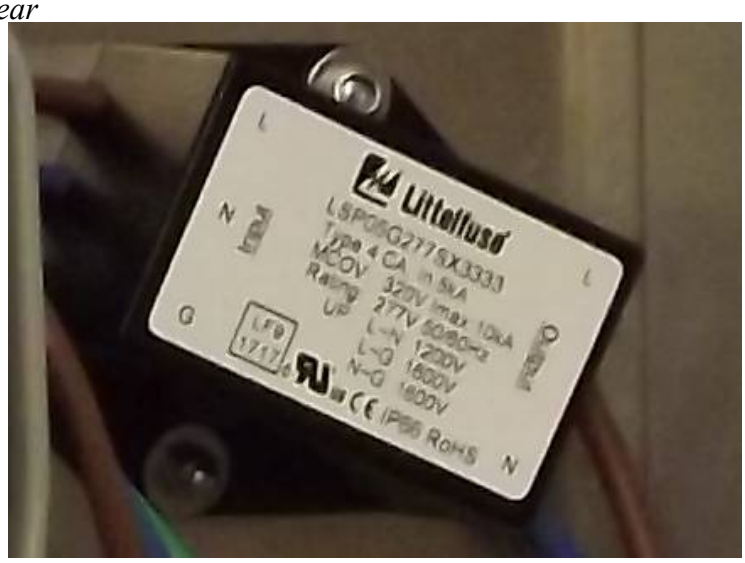

Illustration 4: Surge protector

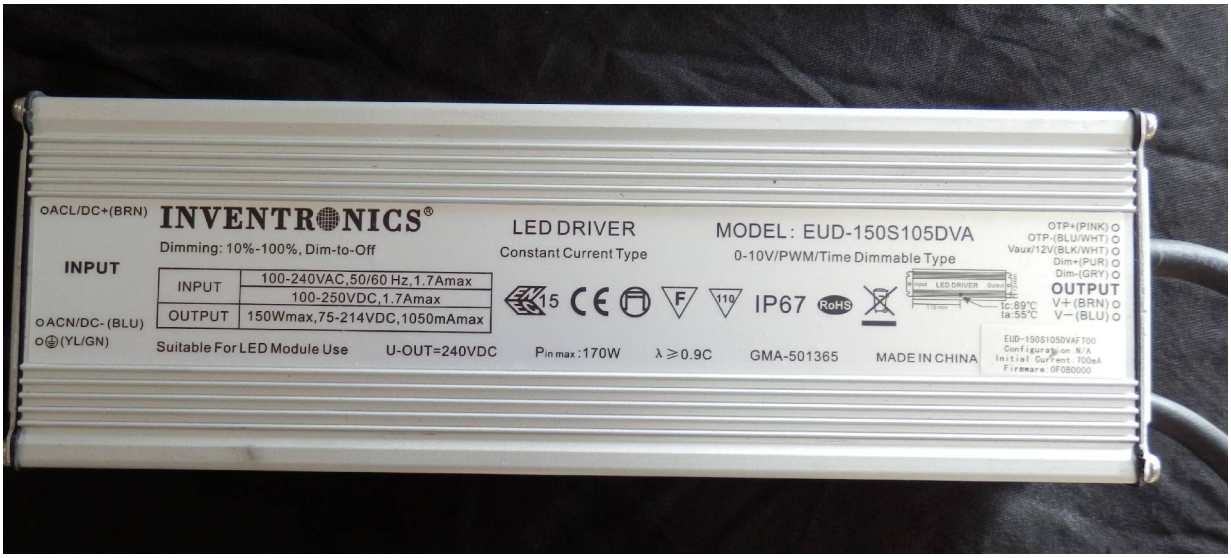

Illustration 5: LED driver

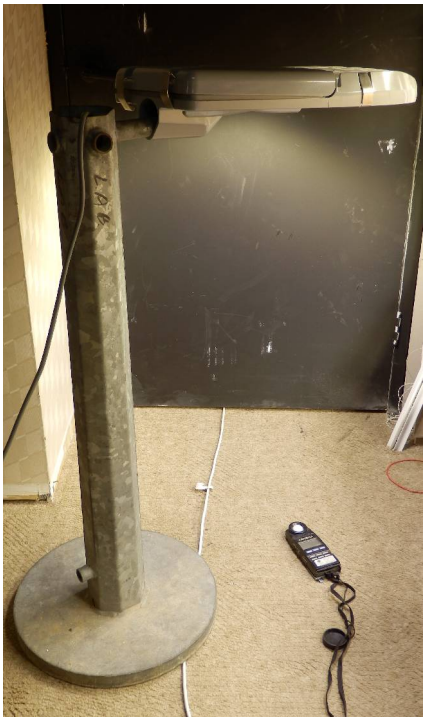
Illustration 6: Setup