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Test Report: 200731LCP

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

for Sylvania RoadLED Midi 165W

Type of product: LED Streetlight

Prepared for: Sylvania Schréder, 96-112 Gow St, Padstow NSW 2211 Australia

Model numbers: PM99Z005L165, PM99Z015L165

Description: Sylvania RoadLED Midi 165W. Features die-cast powder aluminium body with powder coated finish, polycarbonate diffuser, 2x Samsung LED modules (model number Z19023), made of individual 38XLH351C-B Samsung Electronics LED chips (model number SPHWHTL3D50CE4W***) driven from 1x Inventronics LED driver (model number EUD-200S105DVA).

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: Sylvania Schréder, 96-112 Gow St, Padstow NSW 2211 Australia contact Swati Dhembre

Conclusion

The Average Load (W) is 161.73W at .97 Power Factor.

Tested by: David Orwin On 27/07/2020 Authorised Signatory Date: 12/08/2020

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Results

Time till stabilisation: 3h

Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.071	0.665	161.917	0.974
Min	249.010	0.663	161.900	0.974
Max	250.760	0.668	161.950	0.974
Calibration correction (see Newton 4th calibration	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.13	0.6644	161.87	0.974

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.291	0.665	162.125	0.974
Min	249.370	0.663	162.110	0.974
Max	251.170	0.667	162.140	0.974
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.35	0.6646	162.08	0.974

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.218	0.664	161.869	0.974
Min	249.530	0.663	161.840	0.973
Max	250.730	0.666	161.910	0.974
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.28	0.6639	161.83	0.974

Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.152	0.667	162.452	0.974
Min	249.410	0.665	162.430	0.973
Max	250.940	0.669	162.470	0.974
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.21	0.6664	162.41	0.974

Sample 5	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.202	0.666	162.172	0.973
Min	248.520	0.664	162.150	0.973
Max	250.990	0.670	162.200	0.973
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.26	0.6657	162.13	0.973

Sample 6	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.226	0.660	160.770	0.974
Min	249.670	0.659	160.760	0.974
Max	250.600	0.661	160.780	0.974
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.29	0.6594	160.73	0.974

Sample 7	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.146	0.667	162.380	0.973
Min	249.650	0.666	162.330	0.973
Max	250.480	0.668	162.430	0.974
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.21	0.6664	162.34	0.973

Sample 8	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.085	0.663	160.536	0.969
Min	249.640	0.662	160.510	0.968
Max	250.440	0.664	160.550	0.969
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.15	0.6623	160.49	0.969

Sample 9	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.140	0.662	160.833	0.972
Min	249.450	0.661	160.820	0.971
Max	250.490	0.664	160.850	0.972
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.20	0.6613	160.79	0.972

Sample 10	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.078	0.668	162.695	0.974
Min	249.640	0.667	162.670	0.974
Max	250.480	0.669	162.730	0.974
Calibration correction (see Newton 4th calibra	1.00025	0.99958	1.00010	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.14	0.6672	162.65	0.974

Electrical operating parameters of Sylvania RoadLED Midi 165W

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.071	0.664	161.875	0.974
Sample 2	250.291	0.665	162.083	0.974
Sample 3	250.218	0.664	161.827	0.974
Sample 4	250.152	0.666	162.410	0.974
Sample 5	250.202	0.666	162.130	0.973
Sample 6	250.226	0.659	160.728	0.974
Sample 7	250.146	0.666	162.338	0.973
Sample 8	250.085	0.662	160.493	0.969
Sample 9	250.140	0.661	160.791	0.972
Sample 10	250.078	0.667	162.653	0.974
Average	250.16	**0.66**	**161.73**	**0.97**

Illustration 1: Electrical operating parameters of Sylvania RoadLED Midi 165W

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: PlusEs report no. 2020002794
Luminaire thermometer: AMA S No. 1086110-0.1°

Illustration 2: Luminaire

Illustration 3: Surge protector

Illustration 4: Setup

Illustration 5: LED driver

Illustration 6: LED module (1x off)

Illustration 7: Luminaire labels

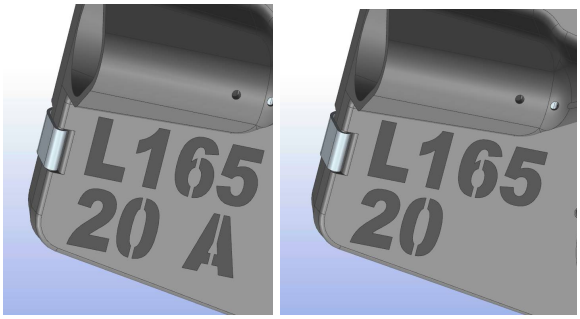

Illustration 8: Luminaire stencils