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Test Report: 180326LCP

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

for Roadflair Streetlight 270W Model No. BRP394 270W

Type of product: LED Streetlight

Prepared for: Philips Lighting Australia

Model number: BRP394 270W

Description: 270W LED StreetLight. Features IP66 cast aluminium housing, 10xLED modules made of 295xLEDs powered from 2x Philips Xitanium driver Xi FP 150W 0.2-0.7A SNLDAE 230V S240 sXt model number 9290 009 622.

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:

Philips Lighting Australia contact Jacek Lipiec, 65 Epping Road, North Ryde, NSW, 2113

Tested by: David Orwin On 13/03/2018 Authorised Signatory Date: 21/03/2018

Alain Yetendje

Conclusions

Test results are given in following Tables.
The Average Load (W) is 266.38W at 0.98 Power Factor.

Results

Time till stabilisation: 3h

Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.434	1.087	266.585	0.980
Min	249.570	1.080	266.550	0.979
Max	251.920	1.090	266.620	0.980
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	1.0862	266.48	0.980

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.190	1.092	267.600	0.980
Min	249.140	1.086	267.550	0.979
Max	251.550	1.096	267.640	0.980
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	250.16	1.0915	267.50	0.980

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.364	1.079	264.594	0.979
Min	249.740	1.075	264.530	0.979
Max	251.360	1.082	264.640	0.980
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	250.33	1.0788	264.49	0.979

Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.133	1.088	266.668	0.980
Min	249.320	1.081	266.600	0.979
Max	251.860	1.092	266.730	0.980
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	1.0881	266.56	0.980

Sample 5	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.256	1.087	266.388	0.979
Min	249.100	1.083	266.350	0.979
Max	251.190	1.092	266.450	0.980
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	250.22	1.0865	266.28	0.979

Sample 6	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.350	1.087	266.613	0.980
Min	249.370	1.083	266.580	0.979
Max	251.440	1.091	266.640	0.980
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	1.0867	266.51	0.980

Sample 7	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.427	1.085	266.245	0.979
Min	249.390	1.081	266.200	0.979
Max	251.410	1.090	266.290	0.980
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	1.0851	266.14	0.979

Sample 8	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.236	1.091	267.356	0.979
Min	249.600	1.087	267.310	0.979
Max	251.170	1.094	267.410	0.980
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	1.0906	267.25	0.979

Sample 9	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.213	1.089	266.890	0.979
Min	248.720	1.084	266.860	0.979
Max	251.550	1.095	266.920	0.980
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	1.0888	266.79	0.979

Sample 10	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.570	1.083	265.854	0.979
Min	249.870	1.081	265.820	0.979
Max	251.200	1.086	265.880	0.980
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	250.54	1.0831	265.75	0.979

Electrical operating parameters of Roadflair Streetlight 270W

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.434	1.086	266.481	0.980
Sample 2	250.158	1.091	267.496	0.980
Sample 3	250.333	1.079	264.490	0.979
Sample 4	250.102	1.088	266.564	0.980
Sample 5	250.224	1.086	266.284	0.979
Sample 6	250.318	1.087	266.509	0.980
Sample 7	250.396	1.085	266.141	0.979
Sample 8	250.205	1.091	267.252	0.979
Sample 9	250.181	1.089	266.786	0.979
Sample 10	250.538	1.083	265.750	0.979
Average	**250.29**	**1.09**	**266.38**	**0.98**

Illustration 1: Electrical operating parameters of Roadflair Streetlight 270W

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: NC17.36115
Luminaire thermometer: AMA S No. 1086110-0.1deg

General Photographs

Illustration 2: Luminaire

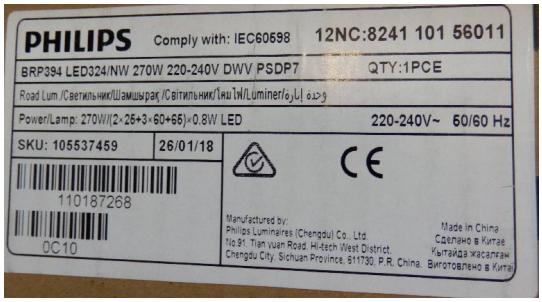

Illustration 3: Luminaire label

Illustration 4: Surge protector

Illustration 6: LED driver (2x off)

Illustration 5: Setup