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Test Report: 200104LCP

Testing of LED Pole-mounted Luminaire Power for AEMO's NEM Load Table and other tests on optical systems

for Twilight Joburg Model No. E026

Type of product: LED Pole-top Luminaire

Prepared for: illuminotecnica, Suite 100, Jones Bay Wharf, 26-32 Pirrama Road, Pyrmont, NSW 2009

Model number: E026

Description: Twilight Joburg - 20.4W Pole-mounted LED luminaire. Features aluminium alloy body, elliptical optic consisting of an anodized aluminium upper reflector, a polycarbonate lower reflector, a polycarbonate diffuser, an LED COB powered from a Philips Xitanium LED driver (model number 9290 015 324).

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: illuminotecnica, Suite 100, Jones Bay Wharf, 26-32 Pirrama Road, Pyrmont, NSW 2009 contact Robert Woodward

Conclusion

The Average Load (W) is 20.18W at 0.94 Power Factor.

Tested by: David Orwin On 06/01/2020 Authorised Signatory Date: 13/01/2020

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Results

Time till stabilisation: 2h

Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.057	0.086	20.286	0.940
Min	249.590	0.086	20.281	0.940
Max	250.340	0.086	20.290	0.941
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	250.03	0.0860	20.22	0.940

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.277	0.086	20.177	0.937
Min	249.910	0.086	20.174	0.937
Max	250.560	0.086	20.184	0.938
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	0.0858	20.12	0.937

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.091	0.086	20.185	0.941
Min	249.810	0.086	20.181	0.941
Max	250.470	0.086	20.190	0.942
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	250.06	0.0855	20.12	0.941

Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.270	0.086	20.256	0.942
Min	249.880	0.086	20.250	0.941
Max	250.930	0.086	20.261	0.942
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	250.24	0.0857	20.20	0.942

Sample 5	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.275	0.087	20.412	0.941
Min	249.860	0.087	20.407	0.941
Max	250.640	0.087	20.416	0.942
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	250.24	0.0864	20.35	0.941

Sample 6	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.250	0.086	20.389	0.943
Min	249.950	0.086	20.386	0.943
Max	250.490	0.086	20.393	0.943
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	0.0861	20.33	0.943

Sample 7	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.296	0.086	20.196	0.934
Min	249.800	0.086	20.192	0.934
Max	250.840	0.086	20.204	0.935
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	0.0861	20.13	0.934

Sample 8	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.938	0.085	20.058	0.941
Min	249.340	0.085	20.053	0.940
Max	250.460	0.085	20.065	0.942
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	249.91	0.0850	20.00	0.941

Sample 9	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.005	0.086	20.325	0.941
Min	249.500	0.086	20.320	0.940
Max	250.410	0.087	20.331	0.941
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	249.97	0.0862	20.26	0.941

Sample 10	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.464	0.086	20.164	0.940
Min	249.920	0.086	20.159	0.939
Max	251.110	0.086	20.169	0.940
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	250.43	0.0854	20.10	0.940

Electrical operating parameters of 20.4W Twilight Joburg

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.057	0.086	20.225	0.940
Sample 2	250.246	0.086	20.116	0.937
Sample 3	250.059	0.085	20.124	0.941
Sample 4	250.239	0.086	20.195	0.942
Sample 5	250.244	0.086	20.351	0.941
Sample 6	250.219	0.086	20.328	0.943
Sample 7	250.264	0.086	20.135	0.934
Sample 8	249.906	0.085	19.997	0.941
Sample 9	249.973	0.086	20.264	0.941
Sample 10	250.433	0.085	20.102	0.940
Average	**250.16**	**0.09**	**20.18**	**0.94**

Illustration 1: Electrical operating parameters of Twilight Joburg

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

General Photographs

Illustration 2: LED driver

Illustration 3: Luminaire

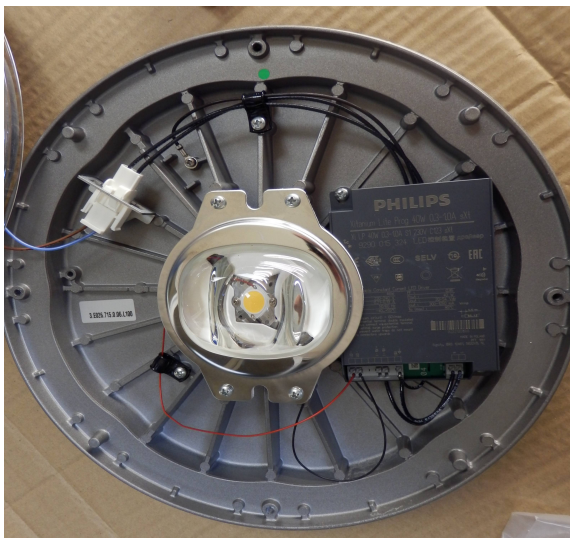

Illustration 4: Geartray

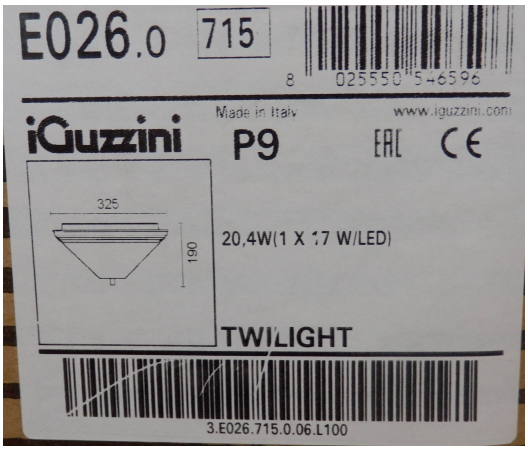

Illustration 5: Label