Light Emission Distribution Laboratory
Division of Photometry & Electrical Testing Pty. Ltd ABN 11 166 255 134
Unit 23, 9 Hoyle Avenue, Castle Hill NSW 2154 Australia
P: +61 2 86264639 E: sales@ledlab.com.au

Accredited for compliance with ISO/IEC 17025 – For Testing. Accreditation No. 19541

Test Report: 216302

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

for BEGA 26W 4000K Pole Top Luminaire Model No. 77 929S

Type of product: LED Pole Top Luminaire

Prepared for: Zumtobel Group (Australia)

Model number: 77 929S

Description: 26W IP66 4000K LED Pole Top Luminaire with asymmetrical flat beam light distribution. Features body made of aluminium alloy, aluminium and stainless steel, pure anodised aluminium reflector, safety glass with optical structure; 2x LED-0316/840 modules powered from a VS Lighting Solutions Electronic power supply Type ECXd 700.024.

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 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:

Zumtobel Group (Australia) contact Michael Santos, 43 Newton Road Wetherhill Park, NSW, 2164

Tested by: Alain Yetendje On 22/12/2016 Authorised Signatory Date: 30/12/2016

Alain Yetendje

Conclusions

Test results are given in following Tables.
The Average Load (Watts) is 26.24W at 0.944 Power Factor.

Results

Time till stabilisation: 4h

Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.497	0.110	26.080	0.945
Min	249.350	0.110	26.066	0.944
Max	252.300	0.111	26.100	0.946
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.45	0.1099	26.02	0.945

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.923	0.113	26.528	0.943
Min	248.950	0.112	26.514	0.943
Max	250.910	0.113	26.542	0.944
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.87	0.1123	26.47	0.943

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.226	0.112	26.465	0.944
Min	249.410	0.112	26.454	0.943
Max	250.900	0.112	26.475	0.944
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.18	0.1118	26.41	0.944

Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.107	0.112	26.255	0.941
Min	247.950	0.112	26.240	0.940
Max	250.150	0.112	26.269	0.942
Calibration correction (see Newton 4th calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.06	0.1117	26.19	0.941

Sample 5		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		249.312	0.111	26.281	0.947
Min		246.660	0.111	26.246	0.946
Max		250.270	0.112	26.295	0.949
Calibration correction (see Newton 4th calibration report 221983)		0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)			0.00024	0.0576	
Final value		249.26	0.1111	26.22	0.947

Sample 6		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.250	0.111	26.229	0.946
Min		249.700	0.111	26.218	0.946
Max		251.020	0.111	26.240	0.946
Calibration correction (see Newton 4th calibration report 221983)		0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)			0.00024	0.0576	
Final value		250.20	0.1105	26.17	0.946

Sample 7		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.285	0.110	26.095	0.946
Min		249.750	0.110	26.089	0.946
Max		250.850	0.110	26.101	0.947
Calibration correction (see Newton 4th calibration report 221983)		0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)			0.00024	0.0576	
Final value		250.24	0.1099	26.04	0.946

Sample 8		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		249.810	0.112	26.384	0.942
Min		249.420	0.112	26.379	0.942
Max		250.240	0.112	26.391	0.943
Calibration correction (see Newton 4th calibration report 221983)		0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)			0.00024	0.0576	
Final value		249.76	0.1118	26.32	0.942

Sample 9		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.523	0.111	26.412	0.946
Min		249.800	0.111	26.402	0.945
Max		251.300	0.112	26.423	0.946
Calibration correction (see Newton 4th calibration report 221983)		0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)			0.00024	0.0576	
Final value		250.47	0.1112	26.35	0.946

Sample 10		Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average		250.604	0.111	26.252	0.942
Min		249.700	0.111	26.236	0.942
Max		251.210	0.111	26.261	0.943
Calibration correction (see Newton 4th calibration report 221983)		0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)			0.00024	0.0576	
Final value		250.55	0.1109	26.19	0.942

Electrical operating parameters of BEGA 26W 4K LED Pole Top Luminaire				
Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.45	0.110	26.020	0.945
Sample 2	249.87	0.112	26.468	0.943
Sample 3	250.18	0.112	26.405	0.944
Sample 4	249.06	0.112	26.195	0.941
Sample 5	249.26	0.111	26.222	0.947
Sample 6	250.20	0.111	26.169	0.946
Sample 7	250.24	0.110	26.036	0.946
Sample 8	249.76	0.112	26.324	0.942
Sample 9	250.47	0.111	26.352	0.946
Sample 10	250.55	0.111	26.192	0.942
Average	**250.00**	**0.111**	**26.238**	**0.944**

Illustration 1: Electrical operating parameters of BEGA 26W 4K LED Pole Top Luminaire

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: ± 0.05
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 221983
Luminaire thermometer: AMA S No. 1086110-0.1deg

General Photographs

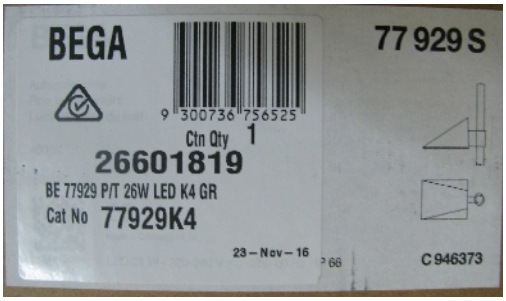

Illustration 3: Luminaire marking

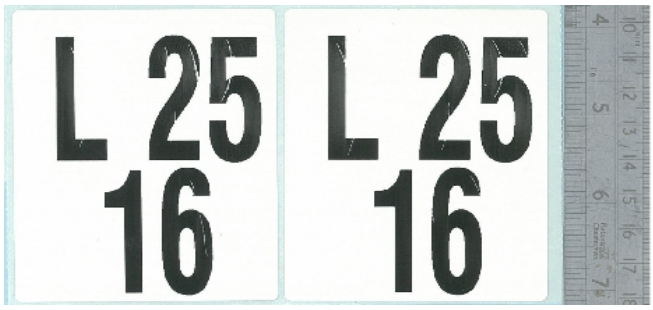

Illustration 2: Exterior labelling by manufacturer

Illustration 4: Optical opening (with safety glass)

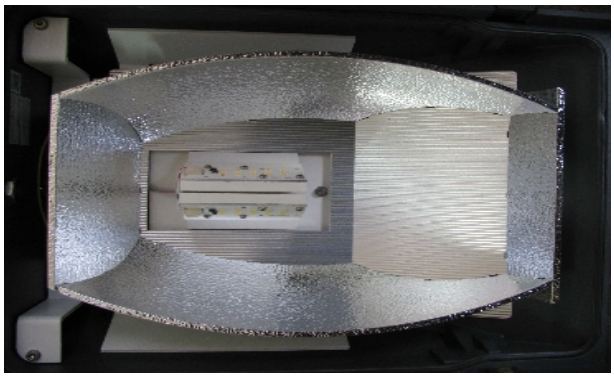

Illustration 5: Optical opening (with safety glass removed)

Illustration 7: LED modules

Illustration 6: LED driver

Illustration 8: Luminaire setup