



## Light Emission Distribution Laboratory

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

# Test Report: 200115LCP

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

for: Sylvania Orbital Small 18W OR199Z15L18

Project number: 504442

**Type of product:** LED Streetlight

**Prepared for:** GLG, 96-112 Gow St, Padstow NSW 2211 Australia

**Model number:** OR199Z15L18

**Description:** Sylvania Orbital Small LED Streetlight. Features die-cast aluminium body with powder coated finish, polycarbonate diffuser, 1x Luxeon LED module, made of individual Lumileds-LUXEON 3535L HE LED chips, driven from 1x Philips LED driver (model number Xi FP 40W 0.2-0.7A SNLDAE 230V S175 sXt set at 440mA).

## Test objective and Method

Determination of the luminaire supply operating parameters Voltage, Current, Power and Power Factor when tested at nominal test voltage 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:** GLG, 96-112 Gow St, Padstow NSW 2211 Australia contact Swati Dhembre

## Conclusion

**The Average Load (W) is 18.20W at 0.93 Power Factor.**

Tested by: Adrian Gagla On 16/01/2020 Authorised Signatory

Date: 22/01/2020

Alain Yetendje

The data specified in this report relates to the sample measured under standard conditions specified in the Test Specification, and may not necessarily relate to other similar luminaires or other operating conditions. The tests and measurements covered by this document are traceable to Australian national standards of measurement. This report shall only be reproduced in full unless approved in writing by Light Emission Distribution Laboratory (LEDLab).

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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	250.049	0.078	18.116	0.927
Min	249.820	0.078	18.113	0.927
Max	250.460	0.078	18.119	0.927
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.02	0.0779	18.06	0.927

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.174	0.079	18.313	0.930
Min	249.780	0.079	18.310	0.930
Max	250.410	0.079	18.314	0.930
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.14	0.0785	18.25	0.930

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.413	0.078	18.221	0.928
Min	250.230	0.078	18.219	0.927
Max	250.770	0.078	18.225	0.928
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.38	0.0782	18.16	0.928

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Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.326	0.078	18.202	0.929
Min	250.130	0.078	18.200	0.928
Max	250.540	0.078	18.205	0.929
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.29	0.0780	18.14	0.929
Sample 5	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.295	0.079	18.303	0.926
Min	250.090	0.079	18.300	0.926
Max	250.630	0.079	18.306	0.926
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.26	0.0787	18.24	0.926
Sample 6	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.026	0.079	18.260	0.928
Min	249.900	0.079	18.257	0.928
Max	250.180	0.079	18.263	0.928
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.99	0.0784	18.20	0.928
Sample 7	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.016	0.079	18.305	0.930
Min	249.700	0.079	18.302	0.930
Max	250.230	0.079	18.307	0.930
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.98	0.0785	18.24	0.930

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Sample 8	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.258	0.079	18.220	0.925
Min	249.860	0.079	18.217	0.925
Max	250.530	0.079	18.223	0.926
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.23	0.0784	18.16	0.925

Sample 9	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.290	0.079	18.454	0.932
Min	250.030	0.079	18.452	0.931
Max	250.680	0.079	18.455	0.932
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.26	0.0789	18.39	0.932

Sample 10	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.070	0.078	18.168	0.926
Min	249.950	0.078	18.165	0.926
Max	250.290	0.078	18.171	0.926
Calibration correction (see Newton 4 <sup>th</sup> calibration report NC17.36115)	0.9999	0.9999	0.9998	1.0000
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.04	0.0782	18.11	0.926

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## Electrical operating parameters of Sylvania Orbital Small 18W model OR199Z15L18

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.049	0.078	18.055	0.927
Sample 2	250.142	0.078	18.252	0.930
Sample 3	250.382	0.078	18.160	0.928
Sample 4	250.295	0.078	18.141	0.929
Sample 5	250.263	0.079	18.242	0.926
Sample 6	249.995	0.078	18.199	0.928
Sample 7	249.985	0.078	18.244	0.930
Sample 8	250.227	0.078	18.159	0.925
Sample 9	250.259	0.079	18.393	0.932
Sample 10	250.039	0.078	18.107	0.926
<b>Average</b>	<b>250.16</b>	<b>0.08</b>	<b>18.20</b>	<b>0.93</b>

Table 1: Electrical operating parameters of Sylvania Orbital Small 18W model OR199Z15L18.

## Uncertainties

At a Confidence Level of 95% with a Coverage Factor of 2

**Supply Voltage:**  $\pm 0.07\%$

**Supply Current:**  $\pm 0.14\%$

**Supply Power:**  $\pm 0.19\%$

**Power Factor:**  $\pm 0.005$

**Ambient Temperature:**  $\pm 1^{\circ}\text{C}$

## Test Equipment Used

*Power meter:* Newton 4<sup>th</sup> Power Analyser KinetiQ Model PPA2520 SN 133-00467

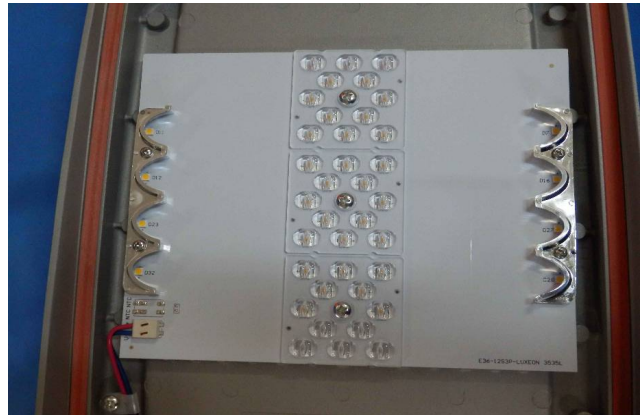
*Power meter integration time (s):* 5

*Calibration Report:* TRCalibration NC17.36115

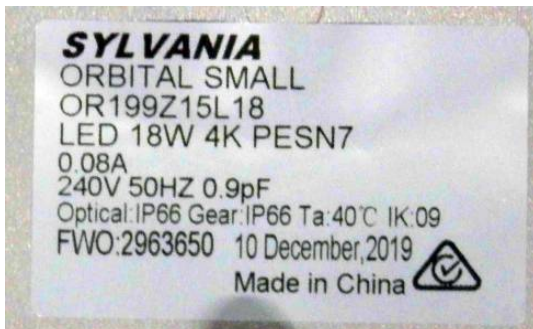
*Luminaire thermometer:* AMA S No. 1086110-0.1deg



*Photo 1: Luminaire front*



*Photo 2: LED module close-up*



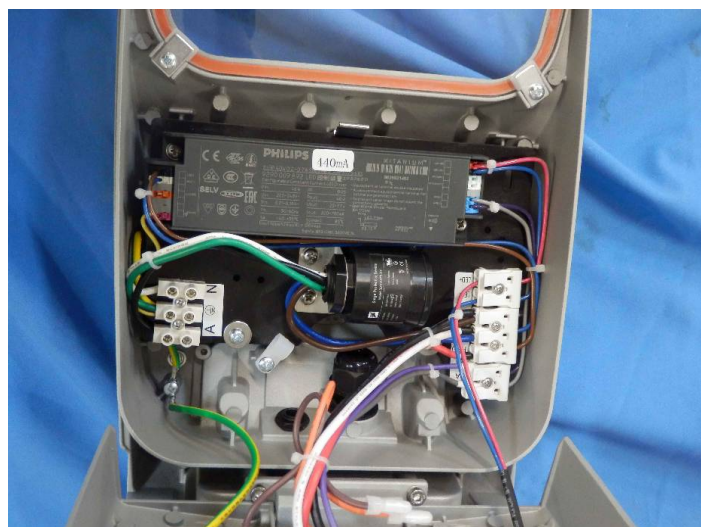
*Photo 3: Luminaire label*



*Photo 4: LED driver*



*Photo 5: Surge protector*



*Photo 6: Luminaire geartray*

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