



## Light Emission Distribution Laboratory

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Accreditation No. 19541

# Test Report: 171003LCP

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

for Roadflair Streetlight 140W Model No. BRP392 LED168/NW 140W

*Type of product:* LED Streetlight

*Prepared for:* Philips Lighting Australia

*Model number:* BRP392 LED168/NW 140W

*Description:* 140W LED StreetLight. Features IP66 cast aluminium housing, 2xLED modules made of 155 LEDs powered from a 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 05/10/2017 Authorised Signatory

Date: 09/10/2017

Alain Yetendje

## Conclusions

Test results are given in following Tables.

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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).

**The Average Load (W) is 140.57W at 0.98 Power Factor.**

## Results

Time till stabilisation: 4h

## Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.444	0.575	141.300	0.981
Min	249.920	0.574	141.280	0.981
Max	250.740	0.576	141.310	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.39	0.5746	141.23	0.981
Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.064	0.574	140.889	0.981
Min	249.070	0.572	140.860	0.981
Max	250.860	0.576	140.920	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.01	0.5739	140.82	0.981
Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.105	0.574	140.773	0.981
Min	249.770	0.573	140.760	0.981
Max	250.470	0.574	140.790	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.06	0.5734	140.70	0.981
Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	250.346	0.573	140.627	0.981
Min	249.430	0.570	140.600	0.980
Max	251.750	0.575	140.650	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.30	0.5725	140.56	0.981

## LEDLab Test Report: 171003LCP

<b>Sample 5</b>	<b>Supply Voltage (Vrms)</b>	<b>Input Current (Arms)</b>	<b>Input Power (W)</b>	<b>Power Factor</b>
Average	249.921	0.575	140.827	0.981
Min	249.220	0.573	140.800	0.981
Max	250.820	0.576	140.850	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.87	0.5742	140.76	0.981
<b>Sample 6</b>	<b>Supply Voltage (Vrms)</b>	<b>Input Current (Arms)</b>	<b>Input Power (W)</b>	<b>Power Factor</b>
Average	250.091	0.572	140.394	0.981
Min	249.680	0.572	140.380	0.981
Max	250.470	0.573	140.410	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.04	0.5721	140.32	0.981
<b>Sample 7</b>	<b>Supply Voltage (Vrms)</b>	<b>Input Current (Arms)</b>	<b>Input Power (W)</b>	<b>Power Factor</b>
Average	250.780	0.568	139.782	0.981
Min	249.910	0.567	139.780	0.981
Max	251.190	0.570	139.810	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.73	0.5678	139.71	0.981
<b>Sample 8</b>	<b>Supply Voltage (Vrms)</b>	<b>Input Current (Arms)</b>	<b>Input Power (W)</b>	<b>Power Factor</b>
Average	249.739	0.574	140.619	0.981
Min	249.050	0.573	140.590	0.981
Max	250.310	0.575	140.640	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	249.69	0.5737	140.55	0.981
<b>Sample 9</b>	<b>Supply Voltage (Vrms)</b>	<b>Input Current (Arms)</b>	<b>Input Power (W)</b>	<b>Power Factor</b>
Average	250.394	0.570	140.061	0.981
Min	249.940	0.569	140.050	0.981
Max	250.970	0.571	140.070	0.981
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.34	0.5701	139.99	0.981
<b>Sample 10</b>	<b>Supply Voltage (Vrms)</b>	<b>Input Current (Arms)</b>	<b>Input Power (W)</b>	<b>Power Factor</b>
Average	250.082	0.575	141.127	0.982
Min	249.820	0.574	141.100	0.981
Max	250.480	0.576	141.150	0.982
Calibration correction (see Newton 4 <sup>th</sup> calibration report 221983)	0.9998	0.9998	0.9999	1.0001
Instrument impedance correction (N4)		0.00024	0.0576	
Final value	250.03	0.5746	141.06	0.982

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## Electrical operating parameters of Roadflair Streetlight 140W

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	250.444	0.575	141.231	0.981
Sample 2	250.014	0.574	140.820	0.981
Sample 3	250.055	0.573	140.703	0.981
Sample 4	250.296	0.572	140.558	0.981
Sample 5	249.871	0.574	140.757	0.981
Sample 6	250.041	0.572	140.325	0.981
Sample 7	250.730	0.568	139.713	0.981
Sample 8	249.689	0.574	140.549	0.981
Sample 9	250.344	0.570	139.992	0.981
Sample 10	250.032	0.575	141.057	0.982
<b>Average</b>	<b>250.15</b>	<b>0.57</b>	<b>140.57</b>	<b>0.98</b>

*Illustration 1: Electrical operating parameters of Roadflair Streetlight 140W*

## 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:* Ausgrid 221983

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

## General Photographs



Illustration 2: Luminaire

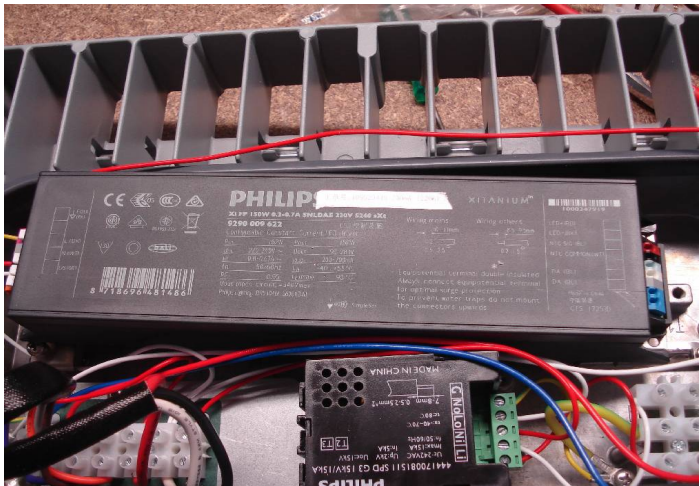


Illustration 3: Control gear



Illustration 4: Luminaire label



Illustration 5: Surge protector



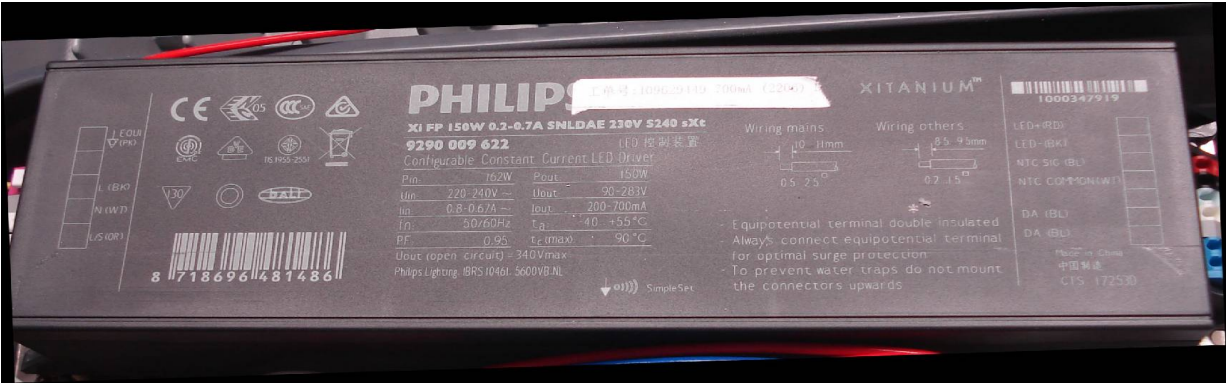


Illustration 6: LED driver



Illustration 7: Setup