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# Test Report: 201029LCP

Testing of Road Light Power for AEMO's NEM Load Table for Unmetered Loads on Road lighting luminaires

for Roadflair Streetlight 74W

*Type of product:* LED Streetlight

*Prepared for:* Philips lighting Australia / Signify

*Model number:* BRP391 LED104/NW 74W DWV PSD P7 LM6 ANZ

*Description:* 74W LED Streetlight. Features IP66 cast aluminium housing, one large LED module populated with 85 LEDs powered from a Philips Xitanium driver Xi FP 75W 0.2-0.7A SNLDAE 230V S240 sXt model number 9290 016 440

## 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 Wattmeter for their twenty readings.

## Client: Philips lighting Australia / Signify 65 Epping Road, North Ryde, NSW, 2113 contact Jacek Lipiec

## Conclusion

**The Average Load (W) is 76.72 W at .99 Power Factor**.

Tested by: David Orwin On 13/10/2020 Authorised Signatory Date: 4/11/2020

Alain Yetendje

The data specified in this report relates to the sample measured as received from the client 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).

# Results

Time till stabilisation: 3h

# Electrical Measurements

| Sample 1 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.203 | 0.309 | 76.594 | 0.992 |
| Min | 249.770 | 0.308 | 76.588 | 0.992 |
| Max | 250.540 | 0.309 | 76.600 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.26 | 0.3083 | 76.54 | 0.992 |

| Sample 2 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.267 | 0.309 | 76.825 | 0.992 |
| Min | 249.850 | 0.309 | 76.813 | 0.992 |
| Max | 250.720 | 0.310 | 76.843 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.33 | 0.3090 | 76.77 | 0.992 |

| Sample 3 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.180 | 0.310 | 76.904 | 0.992 |
| Min | 249.720 | 0.309 | 76.896 | 0.992 |
| Max | 250.730 | 0.310 | 76.912 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.24 | 0.3095 | 76.85 | 0.992 |

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| Sample 4 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.259 | 0.311 | 77.169 | 0.992 |
| Min | 249.800 | 0.310 | 77.157 | 0.992 |
| Max | 250.680 | 0.311 | 77.182 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.32 | 0.3105 | 77.12 | 0.992 |

| Sample 5 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.172 | 0.307 | 76.148 | 0.992 |
| Min | 249.860 | 0.306 | 76.132 | 0.992 |
| Max | 250.510 | 0.307 | 76.159 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.23 | 0.3065 | 76.10 | 0.992 |

| Sample 6 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.239 | 0.309 | 76.675 | 0.992 |
| Min | 249.980 | 0.309 | 76.659 | 0.992 |
| Max | 250.510 | 0.309 | 76.681 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.30 | 0.3085 | 76.62 | 0.992 |

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| Sample 7 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.196 | 0.310 | 76.976 | 0.992 |
| Min | 249.940 | 0.310 | 76.955 | 0.992 |
| Max | 250.560 | 0.310 | 76.988 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.26 | 0.3096 | 76.93 | 0.992 |

| Sample 8 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.279 | 0.310 | 76.846 | 0.992 |
| Min | 250.120 | 0.309 | 76.836 | 0.992 |
| Max | 250.480 | 0.310 | 76.853 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.34 | 0.3092 | 76.80 | 0.992 |

| Sample 9 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.270 | 0.309 | 76.669 | 0.992 |
| Min | 250.090 | 0.309 | 76.650 | 0.992 |
| Max | 250.490 | 0.309 | 76.686 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.33 | 0.3085 | 76.62 | 0.992 |

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| Sample 10 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Average | 250.376 | 0.310 | 76.865 | 0.992 |
| Min | 249.910 | 0.309 | 76.856 | 0.992 |
| Max | 250.590 | 0.310 | 76.876 | 0.992 |
| Calibration correction (see Newton 4th calibration report 2020002794) | 1.00025 | 0.99958 | 1.00010 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.44 | 0.3092 | 76.82 | 0.992 |

Electrical operating parameters of Philips Roadflair 74W

| Sample No. | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|---|---|---|---|
| Sample 1 | 250.203 | 0.308 | 76.544 | 0.992 |
| Sample 2 | 250.267 | 0.309 | 76.775 | 0.992 |
| Sample 3 | 250.180 | 0.309 | 76.854 | 0.992 |
| Sample 4 | 250.259 | 0.311 | 77.119 | 0.992 |
| Sample 5 | 250.172 | 0.307 | 76.098 | 0.992 |
| Sample 6 | 250.239 | 0.309 | 76.625 | 0.992 |
| Sample 7 | 250.196 | 0.310 | 76.926 | 0.992 |
| Sample 8 | 250.279 | 0.309 | 76.796 | 0.992 |
| Sample 9 | 250.270 | 0.309 | 76.619 | 0.992 |
| Sample 10 | 250.376 | 0.309 | 76.815 | 0.992 |
| **Average** | 250.24 | **0.31** | **76.72** | **0.99** |

## 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:* PlusEs report no. 2020002794

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

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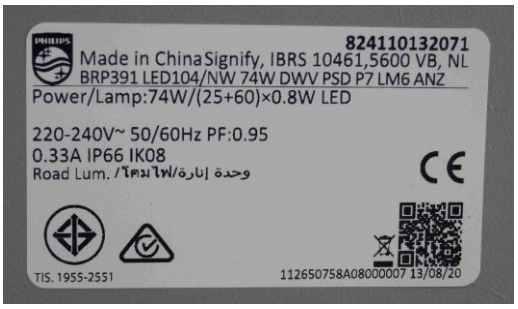
*Illustration 2: Luminaire*

label

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