



Light Emission Distribution Laboratory

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

Test Report: 180320LCP

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

for 1787 Astro LED Model No. 330072-00

Project number: PTR 5627

Type of product: LED Streetlight

Manufacturer: DISANO

Prepared for: Gerard Lighting Pty Ltd

Name of product: 1787 Astro LED

Model number: 330072-00

Description: Disano Astro LED Streetlight 202W. Features powder coated die-cast aluminium with cooling fins integrated in the cover, tempered glass diffuser, 1x LED module (model number C036-15 REV1) powered from 2x LG Innotech LED drivers (model number LLP 150W 0.7A 125~280Vdc).

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: Gerard Lighting Pty Ltd, 96-112 Gow St, Padstow NSW 2211 Australia contact Jonas Olander

Conclusion

The Average Load (W) is 202.34W at 0.92 Power Factor.

Tested by: David Orwin On 08/03/2018 Authorised Signatory

Date: 19/03/2018



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Results

Time till stabilisation: 8h

Electrical Measurements

| Sample 1 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|-----------------------|----------------------|-----------------|--------------|
| Average | 250.351 | 0.868 | 199.750 | 0.919 |
| Min | 249.390 | 0.865 | 199.730 | 0.918 |
| Max | 251.490 | 0.871 | 199.770 | 0.920 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.32 | 0.8677 | 199.66 | 0.919 |

| Sample 2 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|-----------------------|----------------------|-----------------|--------------|
| Average | 250.318 | 0.878 | 203.017 | 0.924 |
| Min | 249.260 | 0.875 | 202.990 | 0.923 |
| Max | 251.430 | 0.881 | 203.050 | 0.924 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.29 | 0.8778 | 202.92 | 0.924 |

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| Sample 3 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|-----------------------|----------------------|-----------------|--------------|
| Average | 250.364 | 0.869 | 201.459 | 0.926 |
| Min | 249.100 | 0.866 | 201.420 | 0.925 |
| Max | 251.450 | 0.873 | 201.480 | 0.927 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.33 | 0.8690 | 201.37 | 0.926 |
| Sample 4 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
| Average | 250.392 | 0.874 | 201.694 | 0.922 |
| Min | 249.270 | 0.871 | 201.660 | 0.921 |
| Max | 251.240 | 0.876 | 201.710 | 0.923 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.36 | 0.8732 | 201.60 | 0.922 |
| Sample 5 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
| Average | 250.383 | 0.886 | 204.522 | 0.922 |
| Min | 249.590 | 0.883 | 204.500 | 0.920 |
| Max | 251.810 | 0.888 | 204.540 | 0.922 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.35 | 0.8860 | 204.43 | 0.922 |
| Sample 6 | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
| Average | 250.183 | 0.884 | 203.652 | 0.921 |
| Min | 249.580 | 0.881 | 203.630 | 0.920 |
| Max | 251.160 | 0.885 | 203.660 | 0.922 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.15 | 0.8834 | 203.56 | 0.921 |

The tests and measurements covered by this document are traceable to Australian national standards of measurement.

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| | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|---|-----------------------------|----------------------------|--------------------|--------------|
| Sample 7 | | | | |
| Average | 250.437 | 0.876 | 202.009 | 0.921 |
| Min | 249.980 | 0.875 | 201.960 | 0.920 |
| Max | 250.820 | 0.877 | 202.030 | 0.921 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.41 | 0.8757 | 201.92 | 0.921 |
| Sample 8 | | | | |
| Average | 250.558 | 0.877 | 201.982 | 0.920 |
| Min | 249.750 | 0.874 | 201.950 | 0.919 |
| Max | 251.680 | 0.879 | 202.010 | 0.920 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.53 | 0.8762 | 201.89 | 0.920 |
| Sample 9 | | | | |
| Average | 250.230 | 0.880 | 202.351 | 0.919 |
| Min | 249.290 | 0.876 | 202.320 | 0.918 |
| Max | 251.560 | 0.882 | 202.370 | 0.920 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.20 | 0.8795 | 202.26 | 0.919 |
| Sample 10 | | | | |
| Average | 250.501 | 0.882 | 203.892 | 0.923 |
| Min | 249.880 | 0.880 | 203.860 | 0.922 |
| Max | 251.130 | 0.884 | 203.930 | 0.923 |
| Calibration correction (see Newton 4 th calibration report NC17.36115) | 0.9999 | 0.9999 | 0.9998 | 1.0000 |
| Instrument impedance correction (N4) | | 0.00024 | 0.0576 | |
| Final value | 250.47 | 0.8818 | 203.80 | 0.923 |

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Electrical operating parameters of 1787 ASTRO LED 202W

| Sample No. | Supply Voltage (Vrms) | Input Current (Arms) | Input Power (W) | Power Factor |
|----------------|-----------------------|----------------------|-----------------|--------------|
| Sample 1 | 250.351 | 0.868 | 199.657 | 0.919 |
| Sample 2 | 250.287 | 0.878 | 202.924 | 0.924 |
| Sample 3 | 250.332 | 0.869 | 201.367 | 0.926 |
| Sample 4 | 250.361 | 0.873 | 201.602 | 0.922 |
| Sample 5 | 250.352 | 0.886 | 204.429 | 0.922 |
| Sample 6 | 250.152 | 0.883 | 203.559 | 0.921 |
| Sample 7 | 250.405 | 0.876 | 201.917 | 0.921 |
| Sample 8 | 250.527 | 0.876 | 201.890 | 0.920 |
| Sample 9 | 250.199 | 0.880 | 202.258 | 0.919 |
| Sample 10 | 250.470 | 0.882 | 203.799 | 0.923 |
| Average | 250.34 | 0.88 | 202.34 | 0.92 |

Illustration 1: Electrical operating parameters of 1787 Astro LED 202W

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: ± 0.005

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

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

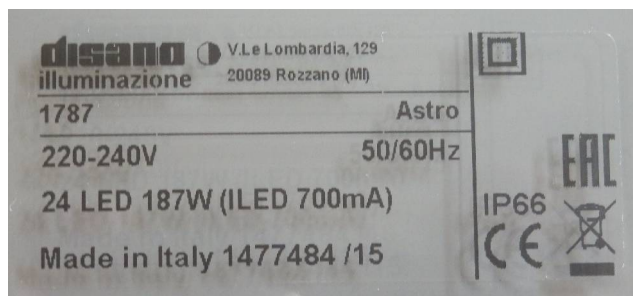
*Illustration 2: Module label*



Illustration 3: Luminaire



Illustration 4: LED Module



Illustration 5: LED driver

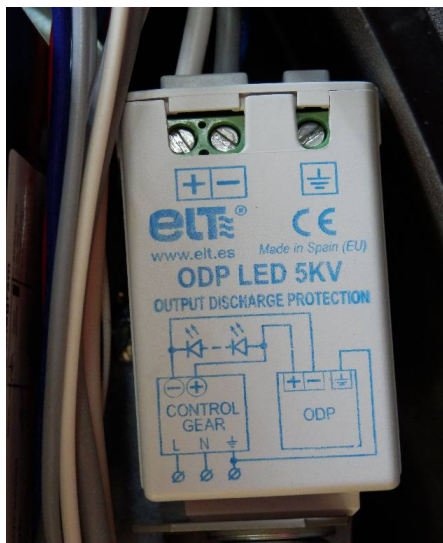


Illustration 6: Surge protector