Light Emission Distribution Laboratory
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Accredited for compliance with ISO/IEC 17025 – Testing. Accreditation No. 19541

Test Report: 230625LCP

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

For Q-RAY 125W LED Streetlight

Type of product: CAT V LED Streetlight

Model Number: IPT-QR-125W v3-27-IP66

Prepared for: Illuminating Power Technologies Pty Ltd

Description: 125W LED Streetlight. Features die-cast aluminium body, glass diffuser, polycarbonate lens assemblies, an LED board (marked S280WL120-1P6 REV A) powered from an Inventroncs LED driver (model number EUM-150S105DG).

Test objective

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_v2_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

Contact Raj Bhat, 5A/251, Queen Street, Campbelltown NSW 2560

Conclusions

The Average Load (W) is 123.92W at 0.937 Power Factor.

Tested by: 29/06/2023
David Orwin

Authorised Signatory Date: 30/06/2023
David Ford

Results

Time till stabilisation: 3h

Electrical Measurements

Sample 1	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	248.792	0.530	123.736	0.938
Min	248.792	0.530	123.736	0.938
Max	248.792	0.530	123.736	0.938
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**249.62**	**0.530**	**124.10**	**0.938**

Sample 2	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.475	0.530	124.064	0.938
Min	249.391	0.530	123.875	0.938
Max	249.590	0.530	124.202	0.939
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**250.31**	**0.530**	**124.43**	**0.938**

Sample 3	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.590	0.528	123.318	0.936
Min	249.590	0.527	123.251	0.936
Max	249.590	0.528	123.384	0.937
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**250.42**	**0.528**	**123.68**	**0.936**

Sample 4	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.585	0.529	123.774	0.937
Min	249.490	0.528	123.520	0.937
Max	249.590	0.530	124.025	0.938
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**250.42**	**0.529**	**124.14**	**0.937**

Sample 5	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.590	0.528	123.317	0.936
Min	249.590	0.527	123.251	0.936
Max	249.590	0.528	123.373	0.937
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**250.42**	**0.528**	**123.68**	**0.936**

Sample 6	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.102	0.529	123.463	0.938
Min	248.992	0.528	123.366	0.938
Max	249.800	0.529	123.526	0.939
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**249.94**	**0.529**	**123.83**	**0.938**

Sample 7	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.616	0.529	123.513	0.936
Min	249.490	0.528	123.467	0.936
Max	250.300	0.529	123.561	0.937
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**250.45**	**0.529**	**123.88**	**0.936**

Sample 8	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.570	0.528	123.368	0.935
Min	249.490	0.528	123.328	0.935
Max	249.690	0.529	123.436	0.936
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**250.40**	**0.528**	**123.73**	**0.935**

Sample 9	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.645	0.528	123.360	0.936
Min	249.590	0.527	123.290	0.934
Max	249.690	0.529	123.401	0.938
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**250.48**	**0.528**	**123.73**	**0.936**

Sample 10	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Average	249.610	0.528	123.666	0.939
Min	249.590	0.528	123.628	0.939
Max	249.690	0.528	123.690	0.939
Calibration correction	1.00334	1.00000	1.00297	1.0000
Instrument impedance correction	0.000	0.00024	0.0576	
Final value	**250.44**	**0.528**	**124.03**	**0.939**

Table 1. Electrical operating parameters of Q-RAY 125W LED Streetlight

Sample No.	Supply Voltage (Vrms)	Input Current (Arms)	Input Power (W)	Power Factor
Sample 1	249.62	0.530	124.10	0.938
Sample 2	250.31	0.530	124.43	0.938
Sample 3	250.42	0.528	123.68	0.936
Sample 4	250.42	0.529	124.14	0.937
Sample 5	250.42	0.528	123.68	0.936
Sample 6	249.94	0.529	123.83	0.938
Sample 7	250.45	0.529	123.88	0.936
Sample 8	250.40	0.528	123.73	0.935
Sample 9	250.48	0.528	123.73	0.936
Sample 10	250.44	0.528	124.03	0.939
Average	**250.29**	**0.529**	**123.92**	**0.937**

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: Clarke Hess Model 2335
Power meter integration time (s): 5
Calibration Report: PlusEs report no. 52164
Luminaire thermometer: AMA S No. 1086110-0.1deg

General Photographs

Photo 1. Luminaire.

Photo 2. Luminaire.

Photo 3. LED optical opening.

Photo 4. LED driver.

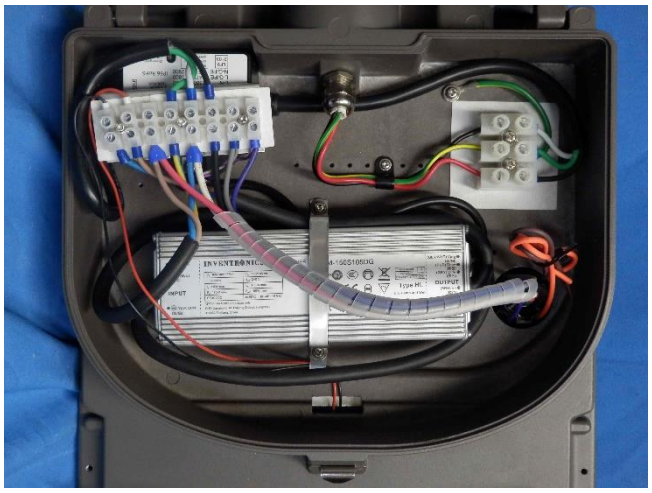

Photo 5. Luminaire geartray.

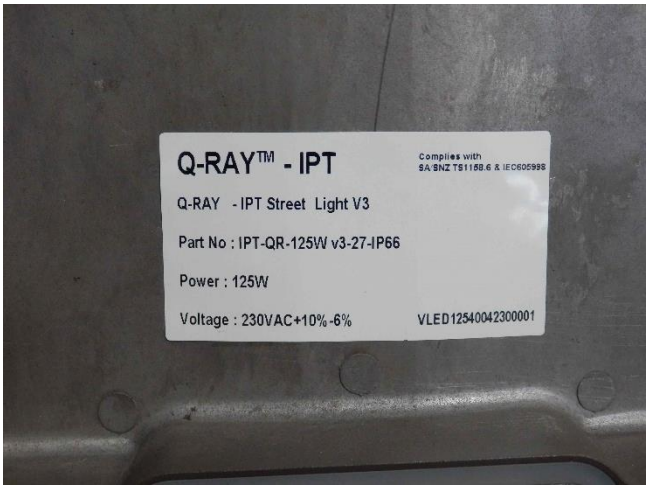

Photo 6. Luminaire label.