

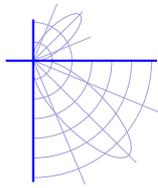
Temperature Measurement Test

LL2313001A-I

This test report was issued by LightLab International without alterations or amendments

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Test Report Number LL2313001A-I

Client	Western Power 363 Wellington Street, Perth, WA 6000.
Contact	Thomas Marchant
Sample Description	A 42 W LED replacement lamp mounted in a weathered Sylvania Urban HSL-BW-80 240 V 50 Hz streetlantern. The streetlantern comprises: cast aluminium housing with black plastic backshell, clear lens with prismatic section & two specular peened side reflectors. The original Tridonic OMB80-03 iron-core ballast, PF correction capacitor and photocell remained in circuit for testing. The spigot was horizontal. The Philips 9290020065 220-240Vac 50/60Hz 42W 3000K 5700lm integrated replacement lamp was mounted with one face of the aluminium fascia directed towards the nadir.
Reference Document Summary	No reference document is defined for this test
Nature of Tests	To determine the maximum value of Tc for an LED replacement lamp in a customer supplied streetlight fitting, Measurement methods and conditions in accordance with the standards noted in the Observations and Determinations table: - the sample supply voltage and frequency were set to the input values noted in the Observations and Determinations table. - lamp Tc was measured - other points of interest were measured for temperature
Sample Selection	This laboratory has not exercised control over the selection of samples to be tested. The significance of the report is limited to the extent that the sample is representative of the population.
Applicability	The results apply only to the sample that was tested.
Uncertainties	Uncertainties available on request.
Procedure Details	LightLab procedure Test-B3038. Testing was performed in a draught free, controlled environment. The sample was energised and operated until it reached thermal and electrical stability prior to measurements being performed. Observations and determinations relevant to the test are listed in the Observations and Determinations Table. Measurements are recorded in the Measurements Table.
Results of Tests	Compliance not relevant to the tests. Refer to the tables for test conditions, determinations and measurements.

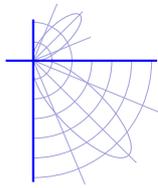
Authorised Signatory 
P. Lawrance

Date of Test 12th May, 2023
Date of Report 5th Jun, 2023

B3007 ISTM Report & 60598-1 12.4 report, V5.1, 15th Mar 21

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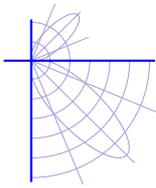
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Observation	Determination
Standard(s) tested	(a) ASNZS60598.1:2017 section 12.4.1 excepting: clause 12.4.1 (d) & applicable 60598-2-X document with the following variations: Temperature measurement points limited to those listed in the results section. Ambient temperature not set to the T _a rating of the luminaire Supply voltage set to 240 V 50 Hz.
Sample (manufacturer, model)	Sylvania – Urban HSL-BW-80
Integrated LED lamp (manufacturer, model)	Philips - 9290020065
Manufacturer's installation instructions	Not supplied
Luminaire type specific observations	Spigot mount luminaire
Sample mounting	Horizontal
Sample T _a rating	40°C , tested at 25°C per customer instructions
Sample electrical input rating	240 V 50 Hz
Supply setpoint	240 V 50 Hz
Luminaire configuration	As supplied
Lamp T _c location	

Observations & Determinations Table

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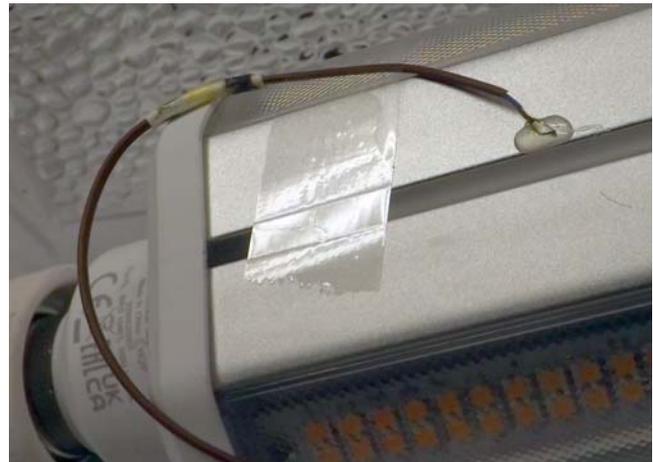
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Electrical & environment		Temperatures ⁽¹⁾	
Supply Voltage (ac)	240 V	Ballast surface (TC #11)	36.2 °C
Supply Power	38.6 W	Ballast surface (TC #12)	36.1 °C
Supply Current (ac)	281 mA	Lamp Tc (TC #13)	87.6 °C
Supply Frequency	50 Hz	Prismatic bowl (TC #14)	49.7 °C
Power Factor	0.57		
Measured Ambient Temperature	25.8 °C		
Stabilisation time *	19.75 hours		
Test duration *	0.5 hours		

Measurements Table

* NATA accreditation does not cover the performance of this service.

⁽¹⁾ All temperature measurements, apart from Measured Ambient, have been normalised to 25°C.



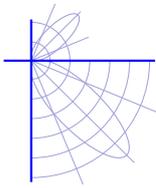
Thermocouple attachment points



Replacement lamp

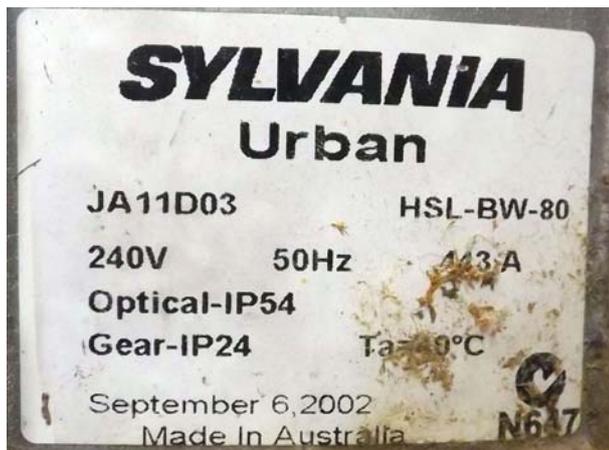
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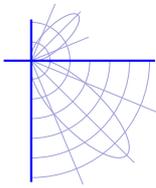
Photographs:



AMP	C _{UF}	IB A
20W MV	-	0.80
10W MV	7	0.81
		0.90

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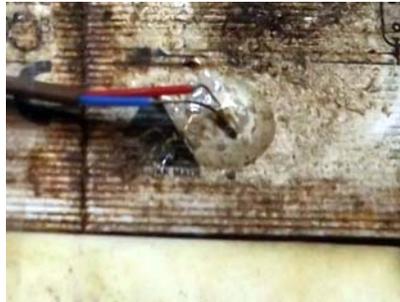




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Thermocouple placement:

TC# 11



TC# 12



TC# 13

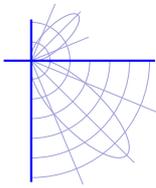


TC# 14



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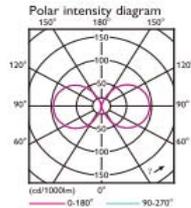
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Annex 1 – External documents

Extract from “Technical application guide – Philips TrueForce LED Urban” dated 01/2019, Published by Philips Lighting. Extract shows data for lamp, including expected lifetime of the lamp vs case temperature.

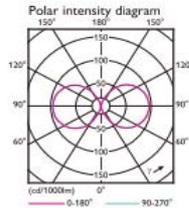
TForce LED HPL ND 57-42W E40 830 1 x 5700 lm

Light output ratio 1.00 CIE flux code 11 36 67 51 100
Service upward 0.49
Service downward 0.51



TForce LED HPL ND 60-42W E40 840 1 x 6000 lm

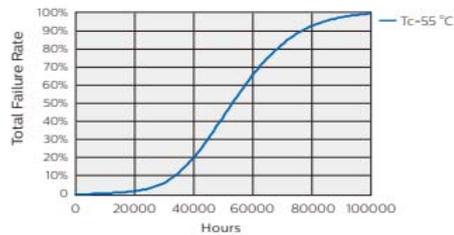
Light output ratio 1.00 CIE flux code 11 36 67 51 100
Service upward 0.49
Service downward 0.51



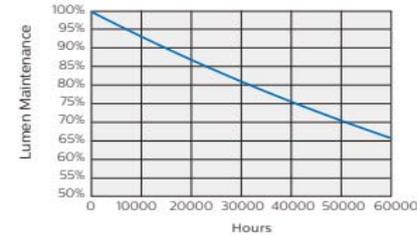
Lifetime + Sustainability

21W 3000ml

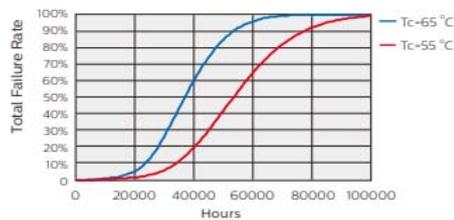
Lifetime vs. Failure Rate @ Ta 25 °C



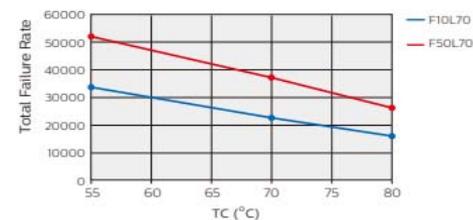
Lifetime and Lumen Maintenance



Failure Rate vs. Lifetime vs. Tcase



Lifetime vs. Tcase



- Philips TrueForce LED Public lamp has a lifetime of 50,000 hours, defined as the number of hours when 50% of a large group of identical lamps below 70% of its initial lumens.

- Lifetime estimation based on the application environment condition: please refer to the Tc for lifetime forecast.

