

Report of Test LL23709

Interglo Lighting Recessed LED Downlight. Product ID: XE12.

White metal fascia and grey finned heatsink body, extents ~ 102 mm diameter x 74 mm deep.

Central cavity forms luminous opening of 68 mm diameter. Recessed translucent diffuser.

Semi-specular reflector about LEDs. One 2835-12C2B PCB centred ~ 63 mm above L/O.

One remote Lifud LF-GDE014YG 220-240V~ 50/60Hz electronic driver, set to '300 mA' output.

Tested at 230 V 50 Hz.



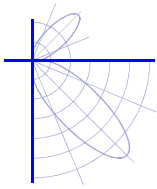
Performance Summary

Luminous Flux	813.1 lm
Total Luminaire Power	12.7 W
Luminous Efficacy	64.2 lm / W
SHR Nominal	1.00
SHR Maximum	1.04

Prepared for: Interglo Lighting, 11E Plane Tree Ave., Dingley Village, VIC 3172.

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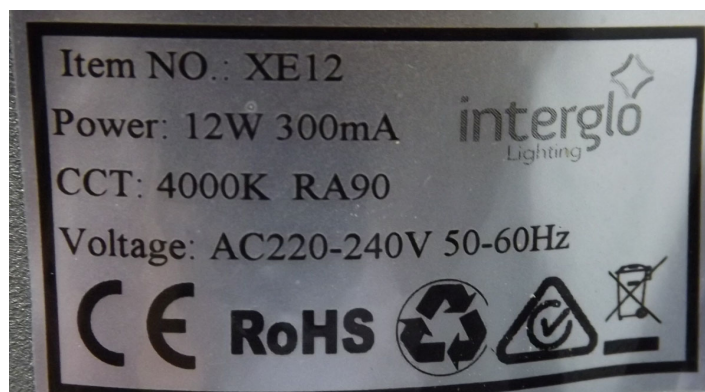
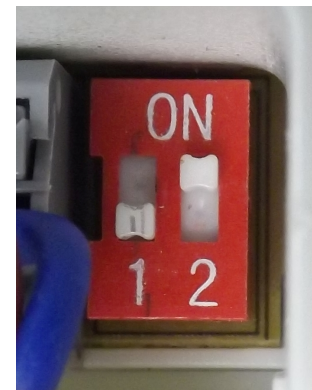
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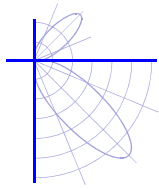
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LM-79 Performance Data

Spectral	CIE 1931 (x, y) ⁽¹⁾	(0.371, 0.365)
	CIE 1976 (u', v') ⁽¹⁾	(0.224, 0.495)
	Correlated Colour Temperature (CCT) ⁽¹⁾	4170 K
	Spatial Δ (u', v') Uniformity ⁽²⁾	1.51E-03
	Colour Rendering Index (Ra) ⁽¹⁾	82.4
	Special CRI 9 (R ₉) ^{(1),(3)}	9.3
	Distance from Planckian Locus (Duv) ^{(1),(3)}	-3.11E-03
	Scotopic/Photopic Ratio ^{(1),(3)}	1.72

Electrical	Voltage	230.0 V
	Frequency	50.0 Hz
	Current	0.059 A
	Power	12.7 W
	Power Factor	0.93
	Current THD	18.1 %

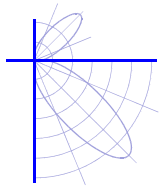
Performance data in accordance with IESNA LM-79-08. Spectral calculations are for a CIE 2° observer

(1) Value is computed from the weighted average of the spatial measurements

(2) Value is the maximum deviation of the spatial u' and v' measurements from the weighted average

(3) Quantity is in addition to the scope of IESNA LM-79-08





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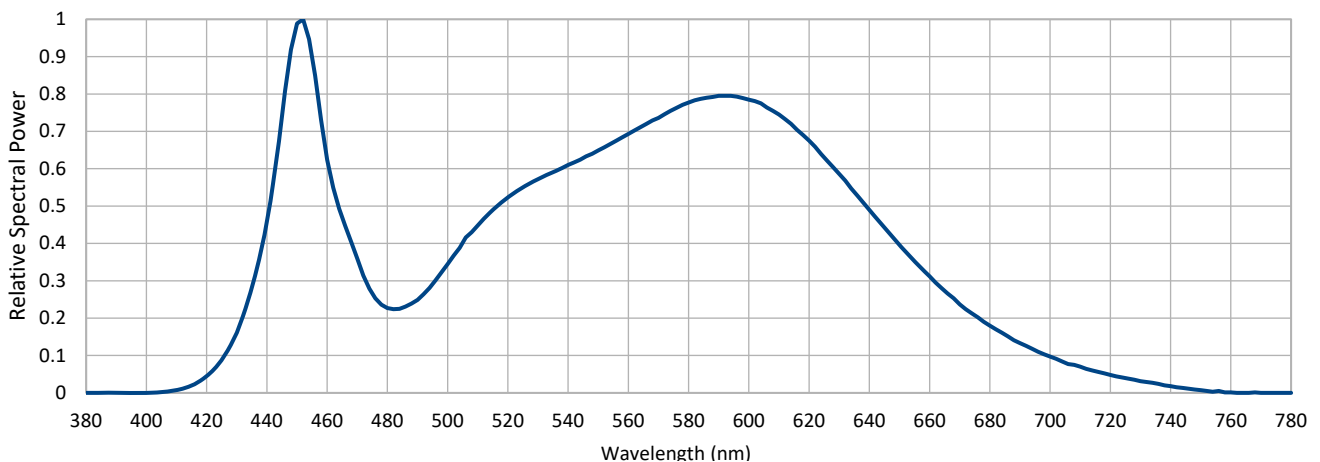
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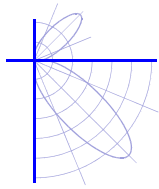
LM-79 Performance Data

Relative spectral power distribution

(Relative to peak = 1, weighted average of spatial measurements)

λ (nm)	Relative Power	λ (nm)	Relative Power	λ (nm)	Relative Power	λ (nm)	Relative Power	λ (nm)	Relative Power
380	0.000	460	0.624	540	0.610	620	0.675	700	0.097
385	0.000	465	0.470	545	0.628	625	0.630	705	0.080
390	0.000	470	0.360	550	0.649	630	0.586	710	0.070
395	0.000	475	0.266	555	0.670	635	0.537	715	0.058
400	0.000	480	0.227	560	0.693	640	0.490	720	0.048
405	0.002	485	0.228	565	0.715	645	0.442	725	0.040
410	0.007	490	0.249	570	0.736	650	0.397	730	0.031
415	0.020	495	0.291	575	0.759	655	0.352	735	0.026
420	0.045	500	0.345	580	0.777	660	0.312	740	0.018
425	0.089	505	0.402	585	0.789	665	0.273	745	0.012
430	0.161	510	0.448	590	0.795	670	0.237	750	0.007
435	0.282	515	0.489	595	0.794	675	0.208	755	0.004
440	0.458	520	0.523	600	0.785	680	0.180	760	0.001
445	0.741	525	0.550	605	0.769	685	0.156	765	0.000
450	0.989	530	0.572	610	0.745	690	0.133	770	0.000
455	0.898	535	0.590	615	0.712	695	0.114	775	0.000
								780	0.000





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Tested at 230 V 50 Hz.

LM-79 Performance Data

Spatial measurements

Gamma angle (°)	CIE 1976 (u',v') coordinates	
	C 0.0° plane	C 90.0° plane
0.0	(0.225, 0.495)	(0.225, 0.496)
10.0	(0.225, 0.495)	(0.225, 0.496)
20.0	(0.224, 0.495)	(0.225, 0.495)
30.0	(0.223, 0.494)	(0.225, 0.495)
40.0	(0.223, 0.494)	(0.224, 0.495)
50.0	(0.223, 0.494)	(0.223, 0.494)
-	-	-
-	-	-
-	-	-
-	-	-

Spatial measurements

Gamma angle (°)	CIE 1976 (u',v') coordinates	
	C 0.0° plane	C 90.0° plane
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Test procedure

All measurements were performed in an environmentally controlled laboratory employing suitable baffling to minimise stray light. The sample was mounted in its normal operating orientation on a rotating mirror goniophotometer and operated from a stabilised supply. The photometric output was monitored and measurements were performed once stability was achieved.

The goniophotometer was used to measure the spatial distribution of both luminous intensity and, in conjunction with a spectroradiometer and spectrally flat reflectance tile, spectral irradiance. The distribution locus comprises points in two or more C planes at no more than 10° gamma intervals. The CIE (x,y) coordinates and other derived metrics (CIE (u', v'), CCT and CRI) are calculated from the weighted sum (weighted for intensity and represented solid angle) of the measured spectral irradiances.

Sample Orientation Ceiling mount Stabilisation & total operation time 18.25 / 19.25 hours

Equipment and uncertainties

C-gamma rotating mirror goniophotometer with a test distance of 8 m.

Luminous Intensity	± 4 %	Temperature	± 1 °C
Luminous Flux	± 4 %	Luminous Efficacy	± 4.5 %
C, Gamma Angles	± 0.5°		

PhotoResearch PR-670 spectroradiometer (grating with 380 - 780 nm range, 2 nm / pixel, 5 nm bandwidth, incandescent/halogen calibration source). Measurements off a spectrally flat reflectance tile attached to goniophotometer arm at a distance from sample deemed >5 times the maximum observed luminous opening dimension.

CIE (x, y) coordinates	± 0.004	CCT	± 150 K
CIE (u', v') coordinates	± 0.0025	CRI (Ra)	± 2
Spatial Δ (u', v') uniformity	± 0.001	Scotopic / Photopic Ratio *	± 0.02
Rel. Spectral Irradiance *	± 2 %	R9 *	± 2
Duv *	± 5E-04		

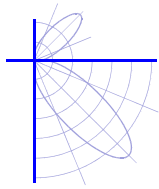
Yokogawa WT210 power meter connected in circuit to the sample electrical supply

Voltage	± 0.5 %	Frequency *	± 0.1 Hz
Current	± 0.5 %	Power	± 0.5 %
Current THD *	± 3 %	Power Factor	± 0.02

Quantities marked with * : NATA accreditation does not cover the performance of this service.

Calculator / report version 1.0.10 / 5.9 (14th Dec 2017)





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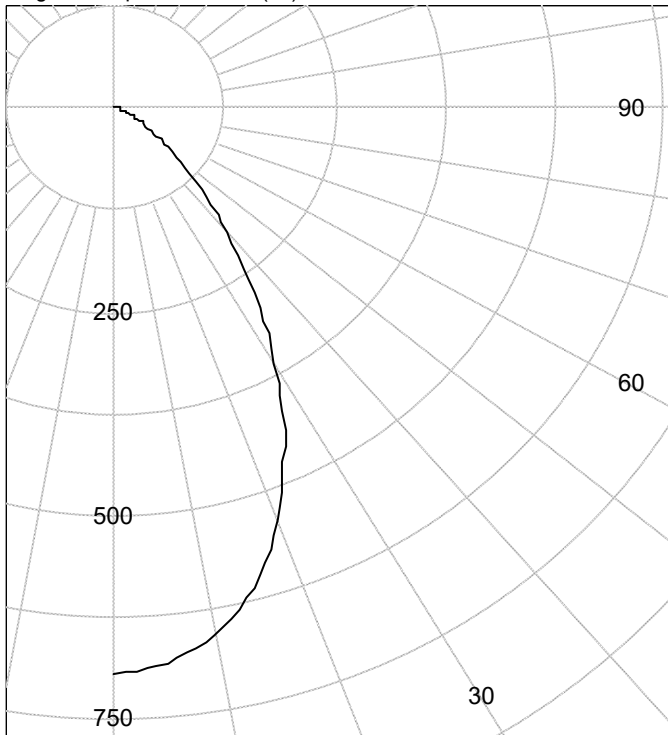
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Tested at 230 V 50 Hz.

Legend: All planes - Solid (cd)



(Rotational symmetry)

C0 aligned by LightLab

Average luminance (cd / sq.m)

Gamma	C0
45.0	53690
55.0	28400
65.0	14950
75.0	9193
85.0	9362

Luminous intensity summary (cd)

Gamma (°)	All C Planes	Flux (lm)	Gamma (°)	C0	Flux (lm)
0	693.0		90	0.0	
5	684.2	64.4	95	0.0	0.0
10	656.2		100	0.0	
15	609.6	169.9	105	0.0	0.0
20	539.7		110	0.0	
25	455.7	207.9	115	0.0	0.0
30	364.7		120	0.0	
35	275.8	172.9	125	0.0	0.0
40	199.7		130	0.0	
45	137.9	107.6	135	0.0	0.0
50	92.3		140	0.0	
55	59.2	54.3	145	0.0	0.0
60	37.3		150	0.0	
65	23.0	23.6	155	0.0	0.0
70	14.2		160	0.0	
75	8.6	9.4	165	0.0	0.0
80	5.1		170	0.0	
85	3.0	3.1	175	0.0	0.0
90	0.0		180	0.0	

Zonal flux

Zone (°)	Flux (lm)	% Lamp	% Luminaire
0-30	442.1	N / A	54.4
0-40	615.0	N / A	75.6
0-60	776.9	N / A	95.6
0-90	813.1	N / A	100.0
40-90	198.0	N / A	24.4
60-90	36.1	N / A	4.4
90-180	0.0	N / A	0.0
0-180	813.1	N / A	100.0

Total luminous flux = 813.1 lm

SHR-NOM = 1.00
SHR-MAX = 1.04

Calculated using the TM5
fine grid method.

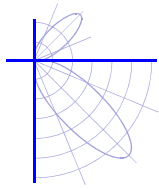
Signatory

Toby Southgate
Authorised Signatory

Date of test 19-Oct-2021
Date of report 8-Dec-2021

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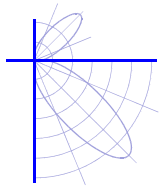
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Tested at 230 V 50 Hz.

Luminous intensity (cd) and luminous flux (lm) data

Gamma (°)	Intensity	Flux	Gamma (°)	Intensity	Flux
0.0	693.0		90.0	0.0	
2.5	690.9		92.5	0.0	
5.0	684.2	64.4	95.0	0.0	
7.5	672.2		97.5	0.0	0.0
10.0	656.2		100.0	0.0	
12.5	635.9		102.5	0.0	
15.0	609.6	170	105.0	0.0	
17.5	577.1		107.5	0.0	0.0
20.0	539.7		110.0	0.0	
22.5	499.7		112.5	0.0	
25.0	455.7	208	115.0	0.0	
27.5	411.0		117.5	0.0	0.0
30.0	364.7		120.0	0.0	
32.5	320.3		122.5	0.0	
35.0	275.8	173	125.0	0.0	
37.5	236.7		127.5	0.0	0.0
40.0	199.7		130.0	0.0	
42.5	167.0		132.5	0.0	
45.0	137.9	108	135.0	0.0	
47.5	112.8		137.5	0.0	0.0
50.0	92.3		140.0	0.0	
52.5	74.1		142.5	0.0	
55.0	59.2	54.3	145.0	0.0	
57.5	47.2		147.5	0.0	0.0
60.0	37.3		150.0	0.0	
62.5	29.2		152.5	0.0	
65.0	23.0	23.6	155.0	0.0	
67.5	18.1		157.5	0.0	0.0
70.0	14.2		160.0	0.0	
72.5	11.0		162.5	0.0	
75.0	8.6	9.4	165.0	0.0	
77.5	6.6		167.5	0.0	0.0
80.0	5.1		170.0	0.0	
82.5	3.9		172.5	0.0	
85.0	3.0	3.1	175.0	0.0	
87.5	2.1		177.5	0.0	0.0
90.0	0.0		180.0	0.0	





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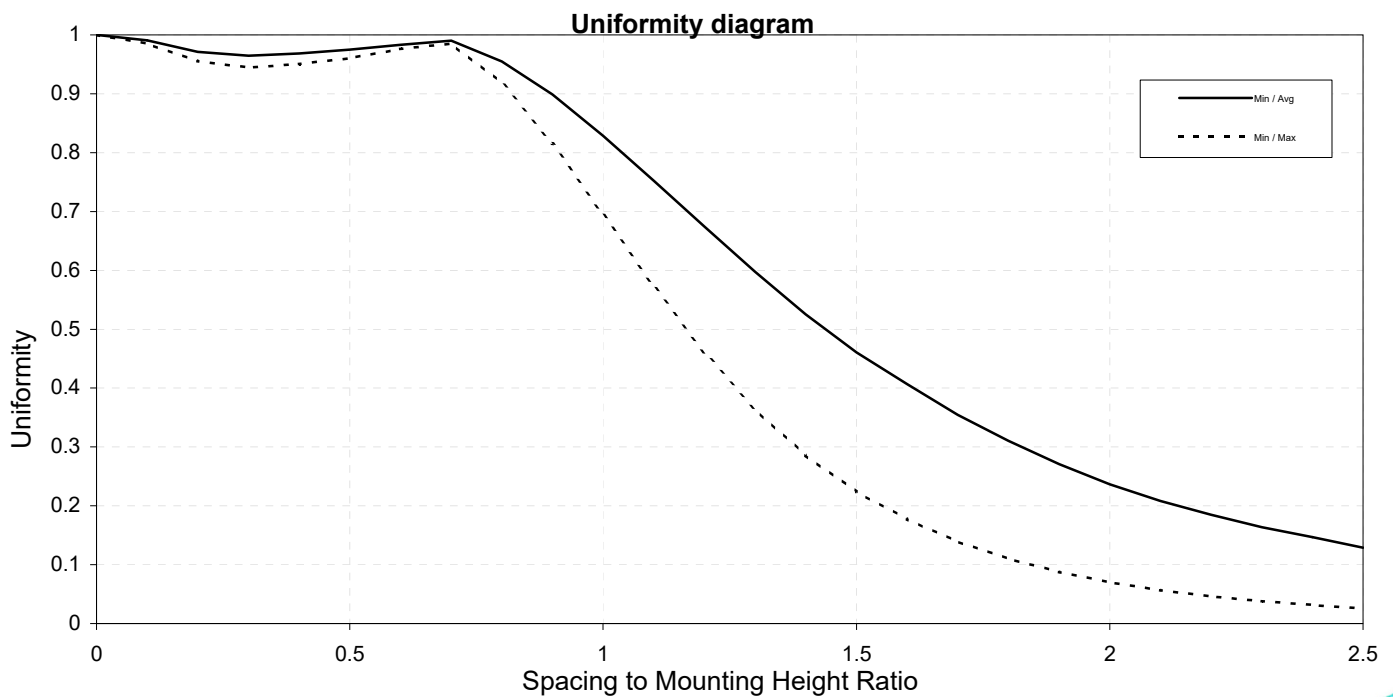
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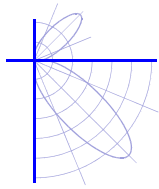
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Environment	Photometric distance	8.0 m
	Ambient temperature	25.1 °C

Notes Sampling was not performed. This report is applicable only to the sample that was tested.

The significance of the report is limited to the extent that the sample is representative of the population.

Testing was performed in a laboratory with suitable control of environmental conditions, stray light, electrical supply and stabilisation. The sample was maintained in a fixed orientation for the duration of testing.

The photometric values contained in this report are absolute, they have not been scaled by the luminous flux emitted by the light source .

Prorating values for the use of other light source/driver combinations, or for use in different environmental conditions, may yield inaccurate results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Cgamma coordinate system as described in CIE Publication number 121.

The term "Total luminaire power" may appear in this report, it represents the total electrical power consumption of the device tested.

Procedure LightLab Procedure Test-B3131. Tested in accordance with the applicable sections of IESNA LM-79.

Measurement uncertainties Measurement uncertainties are available on request.

