



Report of Test LLI-17113-3

Vantage Lighting - 4" downlight luminaire. Product ID: A4VOFLEDU-0835K-L4060SCL

Unpainted formed steel housing with specular reflector and no lens.

36 LEDs in circular array mounted in plastic housing with flat white plastic lens.

Philips Advance Xitanium LED driver. Model: XI025C070V054DSM1 set to 200mA.

Operating at 120 VAC and 60 Hz



Performance Summary

Total Light Output	685 lm	Min Power Factor	0.87 @ 277 V
Luminaire Power	8.88 W	Max THD(i)*	15.0 % @ 277 V
Luminous Efficacy	77.1 lm/W		
CCT	3440 K		
CIE(x,y) 1931	(0.409, 0.393)		
CRI	86		

PREPARED FOR : Lexington Lighting Group, East Providence, RI



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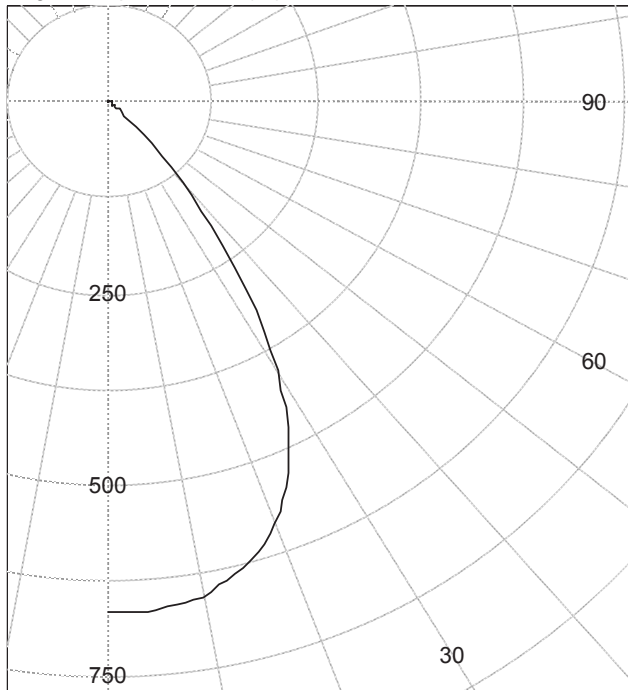
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Legend: All planes - Solid (cd)



(Rotational symmetry)

INTENSITY SUMMARY (cd)

Gamma	All Planes	Flux (lm)	Gamma	C0	Flux (lm)
0	667		90	0	
5	666	63	95	0	0
10	655		100	0	
15	629	176	105	0	0
20	586		110	0	
25	513	232	115	0	0
30	405		120	0	
35	263	163	125	0	0
40	136		130	0	
45	45	41	135	0	0
50	12		140	0	
55	5	5	145	0	0
60	3		150	0	
65	2	2	155	0	0
70	2		160	0	
75	1	1	165	0	0
80	1		170	0	
85	0	0	175	0	0
90	0		180	0	

ZONAL FLUX AND PERCENTAGES

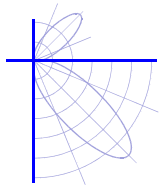
Zone	Flux (lm)	%Lamp	%Luminaire
0-30	472	N / A	68.8
0-40	635	N / A	92.7
0-60	682	N / A	99.5
0-90	685	N / A	100.0
40-90	50	N / A	7.3
60-90	4	N / A	0.5
90-180	0	N / A	0.0
0-180	685	N / A	100.0

Total Light Output = 685 lm

Signed:

Ryder Tunney
Authorized Signatory

Date of test 4-May-2017
Date of report 18-May-2017



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Intensity (cd) and Flux (lm) data

Gamma	Intensity	Flux	Gamma	Intensity	Flux
0.0	667		90.0	0	
2.5	667		92.5	0	
5.0	666	63	95.0	0	
7.5	662		97.5	0	0
10.0	655		100.0	0	
12.5	644		102.5	0	
15.0	629	176	105.0	0	
17.5	610		107.5	0	0
20.0	586		110.0	0	
22.5	554		112.5	0	
25.0	513	232	115.0	0	
27.5	463		117.5	0	0
30.0	405		120.0	0	
32.5	339		122.5	0	
35.0	263	163	125.0	0	
37.5	192		127.5	0	0
40.0	136		130.0	0	
42.5	83		132.5	0	
45.0	45	41	135.0	0	
47.5	22		137.5	0	0
50.0	12		140.0	0	
52.5	7		142.5	0	
55.0	5	5	145.0	0	
57.5	4		147.5	0	0
60.0	3		150.0	0	
62.5	3		152.5	0	
65.0	2	2	155.0	0	
67.5	2		157.5	0	0
70.0	2		160.0	0	
72.5	1		162.5	0	
75.0	1	1	165.0	0	
77.5	1		167.5	0	0
80.0	1		170.0	0	
82.5	0		172.5	0	
85.0	0	0	175.0	0	
87.5	0		177.5	0	0
90.0	0		180.0	0	



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LM-79 Performance Data

Spectral	CIE 1931 (x, y) ⁽¹⁾	(0.409, 0.393)
	CIE 1976 (u', v') ⁽¹⁾	(0.237, 0.513)
	Correlated Color Temperature (CCT) ⁽¹⁾	3440 K
	Spatial Δ (u', v') Uniformity ⁽²⁾	0.0009
	Color Rendering Index (Ra) ⁽¹⁾	85.5
	Special CRI 9 (R ₉) ^{(1),(3)}	21.1
	Distance from Planckian Locus (Duv) ^{(1),(3)}	0.0003
	Scotopic/Photopic Ratio ^{(1),(3)}	1.56

Electrical	Voltage	120.0 V	(Setpoint 1)
	Frequency	60.0 Hz	
	Current	0.077 A	
	Power	8.88 W	
	Power Factor	0.966	
	Current THD	14 %	
	Voltage	277.1 V	(Setpoint 2)
	Frequency	60.0 Hz	
	Current	0.039 A	
	Power	9.46 W	
	Power Factor	0.872	
	Current THD	15 %	

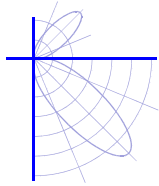
Performance data in accordance with IESNA LM-79-08. Spectral calculations are for a CIE 2° observer

Photometric and spectral values were measured at Setpoint 1

(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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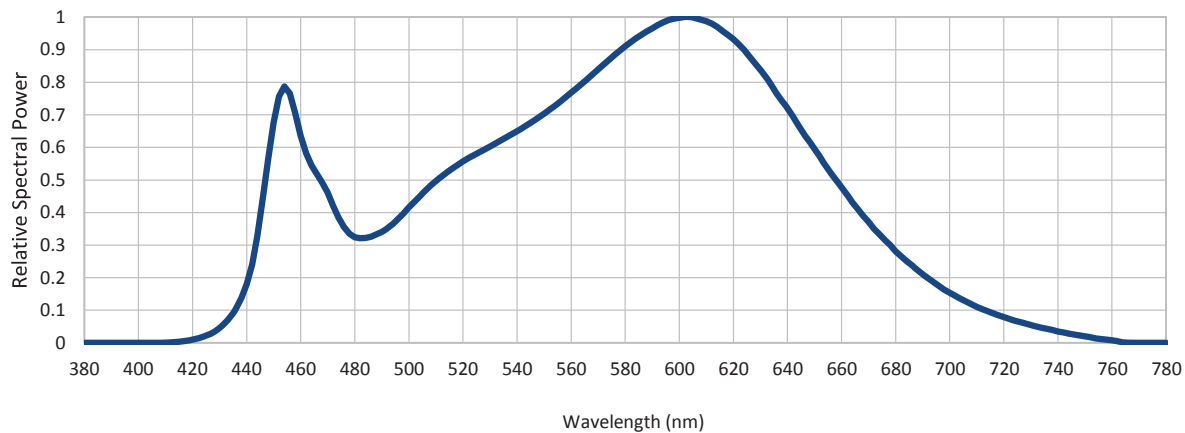
Philips Advance Xitanium LED driver. Model: XI025C070V054DSM1 set to 200mA.

Operating at 120 VAC and 60 Hz

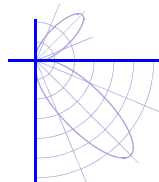
LM-79 Performance Data

Summary relative spectral irradiance distribution (wavelength – nm, irradiance – relative to peak = 1)

380	0.000	480	0.324	580	0.910	680	0.281
385	0.000	485	0.324	585	0.941	685	0.244
390	0.000	490	0.341	590	0.965	690	0.210
395	0.000	495	0.373	595	0.988	695	0.181
400	0.000	500	0.416	600	0.998	700	0.154
405	0.000	505	0.458	605	0.998	705	0.131
410	0.001	510	0.497	610	0.987	710	0.111
415	0.004	515	0.529	615	0.964	715	0.094
420	0.010	520	0.557	620	0.932	720	0.079
425	0.022	525	0.581	625	0.888	725	0.066
430	0.046	530	0.603	630	0.838	730	0.055
435	0.093	535	0.626	635	0.779	735	0.045
440	0.181	540	0.649	640	0.720	740	0.035
445	0.385	545	0.676	645	0.656	745	0.027
450	0.675	550	0.704	650	0.596	750	0.020
455	0.776	555	0.735	655	0.533	755	0.013
460	0.635	560	0.768	660	0.478	760	0.008
465	0.531	565	0.804	665	0.421	765	0.002
470	0.461	570	0.839	670	0.371	770	0.000
475	0.369	575	0.876	675	0.325	775	0.000
						780	0.000



The relative spectral power distribution combines the weighted spectral power distributions of all spatial measurements.



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LM-79 Performance Data

Spatial measurements

Vert. angle (°)	CIE 1976 (u',v') coordinates	
	Horiz. 0° plane	Horiz. 90° plane
0.0	(0.238, 0.513)	(0.238, 0.513)
5.0	(0.238, 0.513)	(0.238, 0.513)
10.0	(0.238, 0.513)	(0.238, 0.513)
15.0	(0.237, 0.513)	(0.237, 0.513)
20.0	(0.237, 0.513)	(0.237, 0.513)
25.0	(0.237, 0.513)	(0.237, 0.513)
30.0	(0.237, 0.513)	(0.237, 0.513)
35.0	(0.236, 0.513)	(0.236, 0.513)
40.0	(0.236, 0.513)	(0.236, 0.513)
45.0	I <= 10% peak	I <= 10% peak

Spatial measurements

Vert. angle (°)	CIE 1976 (u',v') coordinates	
	Horiz. 0° plane	Horiz. 90° plane
45.0	I <= 10% peak	I <= 10% peak
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Test procedure

All measurements were performed in an environmentally controlled laboratory employing suitable baffling to minimize stray light. The sample was mounted in its normal operating orientation on a rotating mirror goniophotometer and operated from a stabilized 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, spectral irradiance. The distribution locus comprises points in two or more planes (as indicated in the table above) at no more than 10° vertical 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

Horizontal

Stabilization & total operation time 27.0 / 43.5 hours

Equipment and uncertainties

LightLab International R80A 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 %

Horiz., Vert. Angles ± 0.25°

PhotoResearch PR-670 spectroradiometer (grating with 380 - 780 nm range, 2 nm / pixel, 5 nm bandwidth, incandescent/halogen calibration source). Measured at a distance from the sample deemed >5 times the maximum observed luminous opening dimension.

CIE (x, y) coordinates ± 0.003

CCT ± 100 K

CIE (u', v') coordinates ± 0.002

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 %

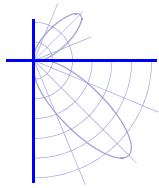
Power Factor ± 0.02

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Calculator / report version 1.0.7 / 5.7 (30th Jan 2017)

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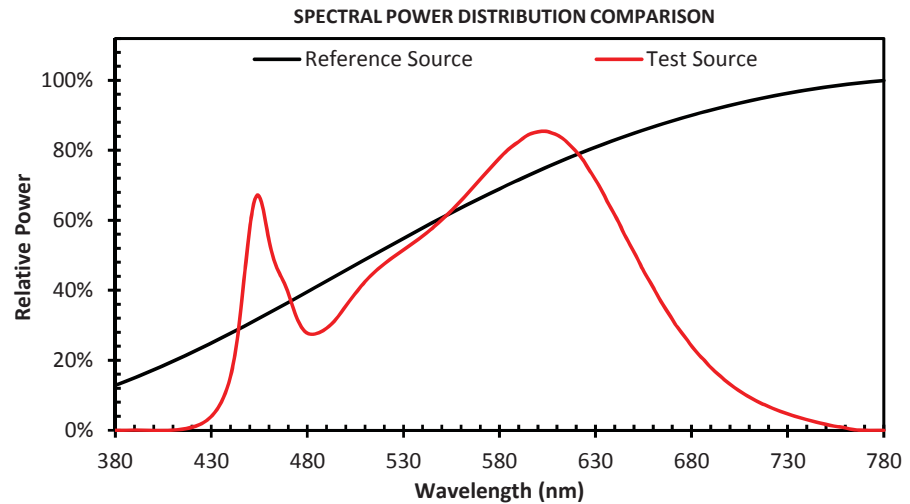
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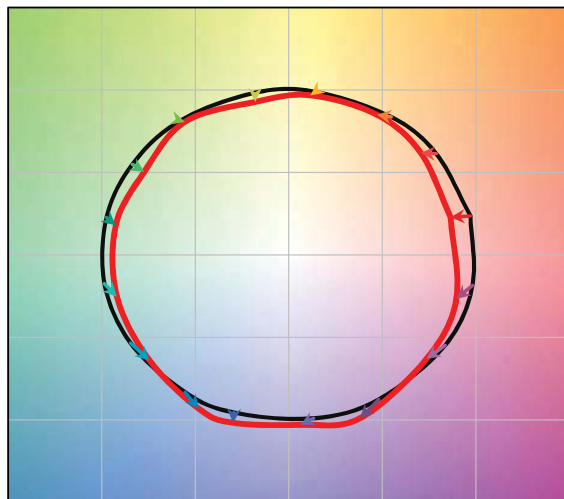
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R_f	83
R_g	94



COLOR VECTOR GRAPHIC



— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC



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Test Distance 8.0 m
Test Temperature 24.8 °C

Notes The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Tested in accordance with the applicable sections of publications: IES LM-79-08 (Sec. 12), IES LM-16-93, IES LM-58-13, CIE 13.3:1995, CIE 15:2004, ANSI C78.377:2011, ANSI C82.77:2002.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Gamma coordinate system as defined in CIE publication number 121.

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