

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGx9LEDFX-15L35KDX-AR9223FX-MW-SO

Nom 9" diam recessed downlight

Test Number

SP-00747_M-15L

Test Date

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	13.1 W
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Lumen Output

Output Lumens	1285
Efficacy	98.05 lm/W

Luminous Dimensions

0° - 180° Size	-0.71
90° - 270° Size	-0.71
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.18
Two luminaires, plane 90°	1.18
Four luminaires	1.19

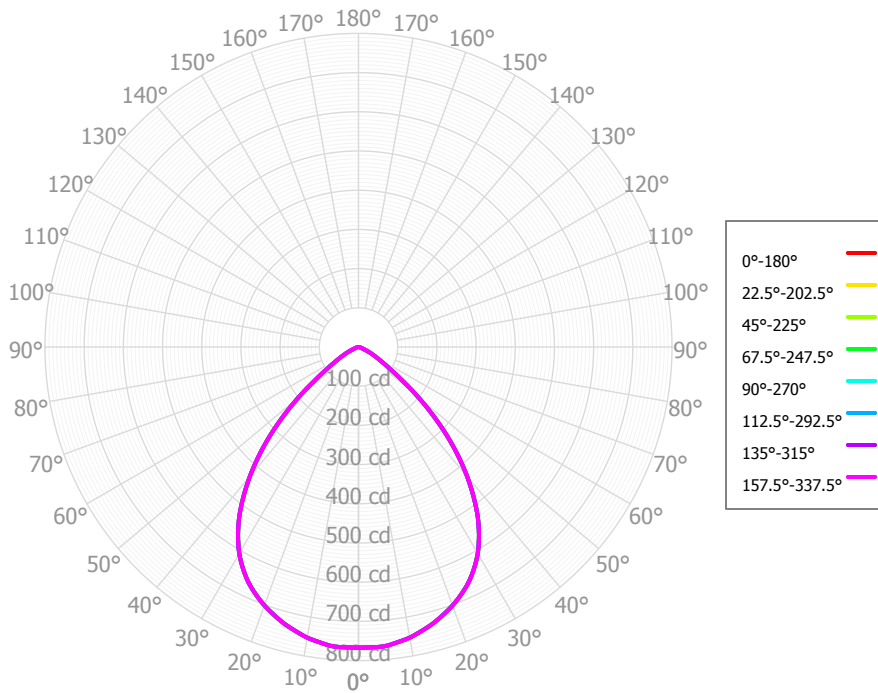
Full Beam Angle

0° - 180°	84°
90° - 270°	84°

IES File Header Contents

Keyword	Value
TEST	SP-00747_M-15L
TESTLAB	Spectrum Lighting Photometric Lab
MANUFAC	Spectrum Lighting
ISSUEDATE	1/10/2019
UPDATE	3/4/2019
LUMCAT	SGx9LEDFX-15L35KDX-AR9223FX-MW-SO
LUMINAIRE	Nom 9" diam recessed downlight
OTHER	Trim: AR9223FX, Matte White
OTHER	Regressed Integral Solite lens
OTHER	Data for New Construction: SGE9LEDFX-series w/AR9223FX-MW-SO
OTHER	Data for Retrofit: SGRTE9LEDFX-series w/AR9223FX-MW-SO
OTHER	Beam Angle: 84 deg
LAMPCAT	N/A
LAMP	N/A, Philips LED; Min 80 CRI; Gen: 80G1
OTHER	CCT Tested: 3500K
OTHER	CCT Multipliers: 27K x 0.95, 30K x 1.0, 40K x 1.08
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	73.75	5.74%	90.00° - 100.00°	0.06	0.00%
10.00° - 20.00°	205.85	16.03%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	303.99	23.67%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	328.00	25.53%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	242.18	18.85%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	97.01	7.55%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	27.17	2.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	5.20	0.40%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.36	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,284.51	100.00%	0.00° - 180.00°	1,284.51	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14
2.50°	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14	767.14
5.00°	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40	766.40
7.50°	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10	760.10
10.00°	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08	753.08
12.50°	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44	742.44
15.00°	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07	731.07
17.50°	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99	716.99
20.00°	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88	701.88
22.50°	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87	683.87
25.00°	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54	663.54
27.50°	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01	638.01
30.00°	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59	608.59
32.50°	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14	572.14
35.00°	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90	530.90
37.50°	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65	482.65
40.00°	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21	431.21
42.50°	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90	375.90
45.00°	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03	318.03
47.50°	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60	257.60
50.00°	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65	198.65
52.50°	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91	140.91
55.00°	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60	100.60
57.50°	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05	72.05
60.00°	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74	52.74
62.50°	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49	38.49
65.00°	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29	26.29
67.50°	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95	14.95
70.00°	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57
72.50°	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80
75.00°	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57
77.50°	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43
80.00°	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41
82.50°	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63
85.00°	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
87.50°	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
90.00°	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	1,529	1,529	1,529	1,529	1,494	1,494	1,494	1,494	1,427	1,427	1,427	1,367	1,367	1,367	1,311	1,311	1,311
	1	1,441	1,398	1,360	1,325	1,408	1,370	1,335	1,304	1,317	1,289	1,264	1,269	1,246	1,226	1,224	1,206	1,190
	2	1,348	1,271	1,208	1,155	1,318	1,249	1,191	1,142	1,206	1,158	1,116	1,166	1,126	1,092	1,130	1,097	1,068
	3	1,259	1,157	1,078	1,016	1,231	1,138	1,066	1,007	1,103	1,041	990	1,070	1,018	974	1,040	996	959
	4	1,175	1,055	968	901	1,149	1,040	958	895	1,010	940	884	983	922	873	957	905	862
	5	1,097	965	873	805	1,074	952	866	801	927	852	793	904	838	786	883	825	778
	6	1,026	886	792	724	1,004	875	786	722	854	775	716	834	764	711	816	754	706
	7	961	816	722	656	941	806	717	654	788	708	650	771	700	646	756	691	642
	8	901	754	661	597	883	746	657	596	730	650	593	716	643	590	702	636	587
	9	847	699	608	546	831	692	605	545	678	599	543	666	593	541	654	587	539
	10	798	650	561	502	784	644	559	501	632	554	500	621	549	498	611	544	496

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	25.4 fc	10.0 ft
6.5 ft	18.2 fc	11.8 ft
7.5 ft	13.6 fc	13.6 ft
8.0 ft	12.0 fc	14.5 ft
10.0 ft	7.7 fc	18.1 ft
12.0 ft	5.3 fc	21.7 ft
14.0 ft	3.9 fc	25.3 ft
16.0 ft	3.0 fc	29.0 ft
20.0 ft	1.9 fc	36.2 ft
24.0 ft	1.3 fc	43.5 ft
28.0 ft	1.0 fc	50.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	20,856	20,856	20,856
45.00°	12,228	12,228	12,228
55.00°	4,768	4,768	4,768
65.00°	1,691	1,691	1,691
75.00°	480	480	480
85.00°	374	374	374

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	12.4	13.7	12.8	14.0	14.3	12.4	13.7	12.8	14.0	14.3
	3H	12.5	13.6	12.9	14.0	14.3	12.5	13.6	12.9	14.0	14.3
	4H	12.5	13.5	12.9	13.8	14.2	12.5	13.5	12.9	13.8	14.2
	6H	12.4	13.3	12.8	13.7	14.1	12.4	13.3	12.8	13.7	14.1
	8H	12.4	13.3	12.8	13.7	14.1	12.4	13.3	12.8	13.7	14.1
	12H	12.3	13.2	12.8	13.6	14.0	12.3	13.2	12.8	13.6	14.0
4H	2H	12.5	13.5	12.9	13.8	14.2	12.5	13.5	12.9	13.8	14.2
	3H	12.5	13.4	13.0	13.8	14.2	12.5	13.4	13.0	13.8	14.2
	4H	12.5	13.2	12.9	13.7	14.1	12.5	13.2	12.9	13.7	14.1
	6H	12.5	13.1	12.9	13.5	14.0	12.5	13.1	12.9	13.5	14.0
	8H	12.4	13.0	12.9	13.5	13.9	12.4	13.0	12.9	13.5	13.9
	12H	12.4	12.9	12.9	13.4	13.9	12.4	12.9	12.9	13.4	13.9
8H	4H	12.4	13.0	12.9	13.4	13.9	12.4	13.0	12.9	13.4	13.9
	6H	12.3	12.8	12.8	13.3	13.8	12.3	12.8	12.8	13.3	13.8
	8H	12.3	12.7	12.8	13.2	13.7	12.3	12.7	12.8	13.2	13.7
	12H	12.3	12.6	12.8	13.1	13.7	12.3	12.6	12.8	13.1	13.7
12H	4H	12.3	12.9	12.8	13.3	13.8	12.3	12.9	12.8	13.3	13.8
	6H	12.3	12.7	12.8	13.2	13.7	12.3	12.7	12.8	13.2	13.7
	8H	12.2	12.6	12.8	13.1	13.7	12.2	12.6	12.8	13.1	13.7

Corrected UGR values based on total output lumens

SHR = 1.0