

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGx9LEDFX-15L35KDX-AR9223FX-SG-SO

Nom 9" diam recessed downlight

Test Number

SP-00747_1_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	1298
Efficacy	99.11 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	1.17

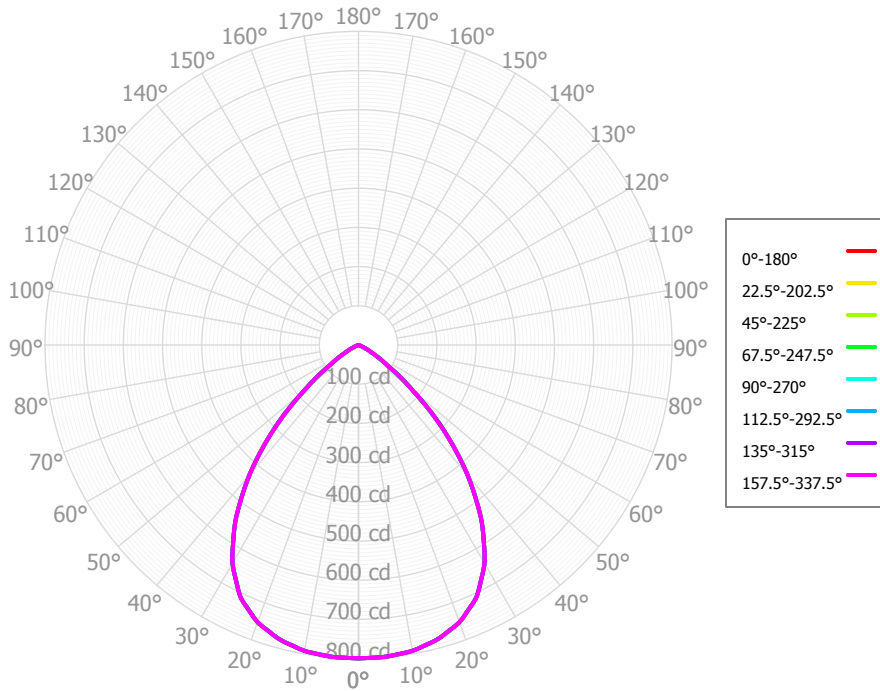
Full Beam Angle

0° - 180°	83°
90° - 270°	83°

IES File Header Contents

Keyword	Value
TEST	SP-00747_1_M-15L
TESTLAB	Spectrum Lighting Photometric Lab
MANUFAC	Spectrum Lighting
ISSUEDATE	1/10/2019
UPDATE	3/5/2019
LUMCAT	SGx9LEDFX-15L35KDX-AR9223FX-SG-SO
LUMINAIRE	Nom 9" diam recessed downlight
OTHER	Trim: AR9223FX, Soft Glow
OTHER	Regressed Integral Solite lens
OTHER	Data for New Construction: SGE9LEDFX-series w/AR9223FX-SG-SO
OTHER	Data for Retrofit: SGRTE9LEDFX-series w/AR9223FX-SG-SO
OTHER	Beam Angle: 83 deg
LAMPCAT	N/A
LAMP	N/A, Philips LED, Min CRI: 80+, 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, scaled from 30L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	77.15	5.94%	90.00° - 100.00°	0.06	0.00%
10.00° - 20.00°	218.99	16.87%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	324.20	24.97%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	337.68	26.01%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	234.75	18.08%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	87.03	6.70%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	17.00	1.31%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.01	0.08%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.60	0.05%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,298.40	100.00%	0.00° - 180.00°	1,298.40	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°	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39	799.39
2.50°	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91	798.91
5.00°	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43	798.43
7.50°	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43	795.43
10.00°	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42	792.42
12.50°	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06	785.06
15.00°	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70	777.70
17.50°	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23	765.23
20.00°	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76	752.76
22.50°	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89	731.89
25.00°	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02	711.02
27.50°	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99	676.99
30.00°	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95	642.95
32.50°	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11	595.11
35.00°	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28	547.28
37.50°	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04	490.04
40.00°	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79	432.79
42.50°	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20	370.20
45.00°	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61	307.61
47.50°	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42	244.42
50.00°	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22	181.22
52.50°	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11	134.11
55.00°	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01	87.01
57.50°	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21	63.21
60.00°	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41	39.41
62.50°	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72	26.72
65.00°	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02
67.50°	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12
70.00°	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22
72.50°	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
75.00°	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
77.50°	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
80.00°	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
82.50°	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
85.00°	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
87.50°	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
90.00°	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41

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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	1,546	1,546	1,546	1,546	1,510	1,510	1,510	1,510	1,443	1,443	1,443	1,381	1,381	1,381	1,325	1,325	1,298
	1	1,460	1,418	1,380	1,346	1,427	1,389	1,356	1,325	1,336	1,309	1,284	1,287	1,266	1,245	1,242	1,225	1,209
	2	1,369	1,294	1,232	1,179	1,339	1,271	1,214	1,166	1,228	1,181	1,140	1,188	1,149	1,115	1,151	1,120	1,097
	3	1,281	1,181	1,104	1,042	1,253	1,162	1,091	1,033	1,127	1,066	1,016	1,094	1,043	1,000	1,063	1,021	984
	4	1,198	1,080	994	928	1,172	1,064	984	922	1,035	966	911	1,007	948	900	982	931	889
	5	1,120	990	899	832	1,097	977	892	828	952	878	820	929	864	813	908	851	805
	6	1,049	911	818	751	1,028	900	812	748	878	801	743	859	790	737	840	779	732
	7	984	840	747	682	964	831	742	680	813	733	676	796	725	672	780	716	668
	8	924	777	685	622	906	769	681	620	754	674	617	739	667	614	725	660	611
	9	869	722	631	570	853	715	628	569	701	622	567	689	616	564	677	611	562
	10	820	672	584	525	805	666	581	524	654	576	522	643	571	521	633	567	519

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	26.4 fc	9.7 ft
6.5 ft	18.9 fc	11.4 ft
7.5 ft	14.2 fc	13.2 ft
8.0 ft	12.5 fc	14.1 ft
10.0 ft	8.0 fc	17.6 ft
12.0 ft	5.6 fc	21.1 ft
14.0 ft	4.1 fc	24.6 ft
16.0 ft	3.1 fc	28.1 ft
20.0 ft	2.0 fc	35.2 ft
24.0 ft	1.4 fc	42.2 ft
28.0 ft	1.0 fc	49.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	21,733	21,733	21,733
45.00°	11,827	11,827	11,827
55.00°	4,124	4,124	4,124
65.00°	902	902	902
75.00°	56	56	56
85.00°	192	192	192

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	11.5	12.7	11.9	13.0	13.3	11.5	12.7	11.9	13.0	13.3
	3H	11.4	12.5	11.8	12.8	13.2	11.4	12.5	11.8	12.8	13.2
	4H	11.3	12.3	11.7	12.7	13.0	11.3	12.3	11.7	12.7	13.0
	6H	11.2	12.1	11.6	12.5	12.9	11.2	12.1	11.6	12.5	12.9
	8H	11.2	12.0	11.6	12.4	12.8	11.2	12.0	11.6	12.4	12.8
	12H	11.1	12.0	11.6	12.3	12.8	11.1	12.0	11.6	12.3	12.8
4H	2H	11.4	12.4	11.8	12.7	13.1	11.4	12.4	11.8	12.7	13.1
	3H	11.3	12.1	11.7	12.5	12.9	11.3	12.1	11.7	12.5	12.9
	4H	11.2	11.9	11.6	12.3	12.7	11.2	11.9	11.6	12.3	12.7
	6H	11.1	11.7	11.5	12.1	12.6	11.1	11.7	11.5	12.1	12.6
	8H	11.0	11.6	11.5	12.0	12.5	11.0	11.6	11.5	12.0	12.5
	12H	11.0	11.5	11.4	11.9	12.4	11.0	11.5	11.4	11.9	12.4
8H	4H	11.0	11.6	11.5	12.0	12.5	11.0	11.6	11.5	12.0	12.5
	6H	10.9	11.4	11.4	11.9	12.3	10.9	11.4	11.4	11.9	12.3
	8H	10.8	11.2	11.4	11.8	12.3	10.8	11.2	11.4	11.8	12.3
	12H	10.8	11.2	11.3	11.6	12.2	10.8	11.2	11.3	11.6	12.2
12H	4H	10.9	11.4	11.4	11.9	12.4	10.9	11.4	11.4	11.9	12.4
	6H	10.8	11.2	11.4	11.7	12.3	10.8	11.2	11.4	11.7	12.3
	8H	10.8	11.1	11.3	11.6	12.2	10.8	11.1	11.3	11.6	12.2

Corrected UGR values based on total output lumens

SHR = 1.0