

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGx9LEDFX-10L35KDX-AR9223FX-MW-SO

Nom 9" diam recessed downlight

Test Number

SP-00747_M-10L

Test Date

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

Summary of Results

Power

Input Watts	9.2 W
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Lumen Output

Output Lumens	831
Efficacy	90.34 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

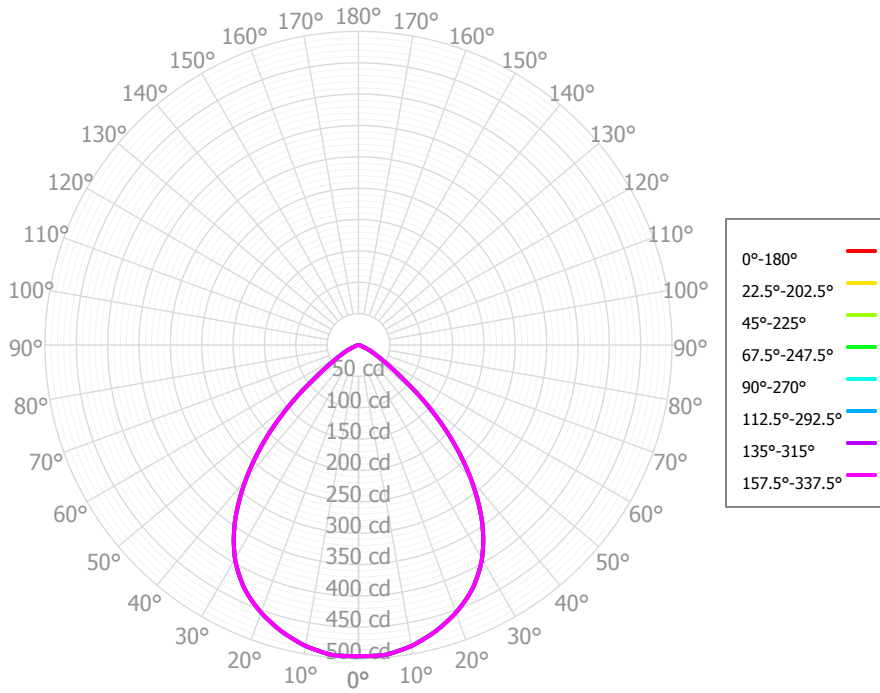
Full Beam Angle

0° - 180°	84°
90° - 270°	84°

IES File Header Contents

Keyword	Value
TEST	SP-00747_M-10L
TESTLAB	Spectrum Lighting Photometric Lab
MANUFAC	Spectrum Lighting
ISSUEDATE	1/10/2019
UPDATE	3/4/2019
LUMCAT	SGx9LEDFX-10L35KDX-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°	47.72	5.74%	90.00° - 100.00°	0.04	0.00%
10.00° - 20.00°	133.20	16.03%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	196.70	23.67%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	212.23	25.53%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	156.70	18.85%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	62.77	7.55%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	17.58	2.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.36	0.40%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.88	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	831.16	100.00%	0.00° - 180.00°	831.16	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°	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38
2.50°	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38	496.38
5.00°	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91	495.91
7.50°	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83	491.83
10.00°	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29	487.29
12.50°	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40	480.40
15.00°	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05	473.05
17.50°	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93	463.93
20.00°	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16	454.16
22.50°	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50	442.50
25.00°	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35	429.35
27.50°	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83	412.83
30.00°	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79	393.79
32.50°	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21	370.21
35.00°	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53	343.53
37.50°	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31	312.31
40.00°	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02	279.02
42.50°	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23	243.23
45.00°	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78	205.78
47.50°	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68	166.68
50.00°	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54	128.54
52.50°	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17	91.17
55.00°	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10	65.10
57.50°	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62	46.62
60.00°	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13
62.50°	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91	24.91
65.00°	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01	17.01
67.50°	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67
70.00°	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19
72.50°	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
75.00°	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96
77.50°	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
80.00°	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
82.50°	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
85.00°	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
87.50°	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
90.00°	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29

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	990	990	990	990	966	966	966	966	924	924	924	884	884	884	848	848	831
	1	932	905	880	858	911	886	864	844	852	834	818	821	806	793	792	781	765
	2	872	823	782	747	853	808	770	739	780	749	722	755	729	706	731	710	695
	3	815	749	698	657	796	737	690	652	714	674	641	692	659	630	673	645	632
	4	760	683	626	583	744	673	620	579	654	608	572	636	597	565	619	586	574
	5	710	625	565	521	695	616	560	518	600	551	513	585	542	509	571	534	523
	6	664	573	512	469	650	566	509	467	552	501	463	540	494	460	528	488	479
	7	622	528	467	424	609	522	464	423	510	458	421	499	453	418	489	447	439
	8	583	488	428	386	572	482	425	385	472	421	383	463	416	382	454	412	404
	9	548	452	393	354	538	448	391	353	439	387	351	431	384	350	423	380	374
	10	517	421	363	325	507	417	362	324	409	358	323	402	355	322	395	352	347

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	16.4 fc	10.0 ft
6.5 ft	11.7 fc	11.8 ft
7.5 ft	8.8 fc	13.6 ft
8.0 ft	7.8 fc	14.5 ft
10.0 ft	5.0 fc	18.1 ft
12.0 ft	3.4 fc	21.7 ft
14.0 ft	2.5 fc	25.3 ft
16.0 ft	1.9 fc	29.0 ft
20.0 ft	1.2 fc	36.2 ft
24.0 ft	0.9 fc	43.5 ft
28.0 ft	0.6 fc	50.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	13,495	13,495	13,495
45.00°	7,912	7,912	7,912
55.00°	3,085	3,085	3,085
65.00°	1,094	1,094	1,094
75.00°	311	311	311
85.00°	242	242	242

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	10.9	12.2	11.3	12.5	12.8	10.9	12.2	11.3	12.5	12.8
	3H	11.0	12.1	11.4	12.4	12.8	11.0	12.1	11.4	12.4	12.8
	4H	10.9	12.0	11.4	12.3	12.7	10.9	12.0	11.4	12.3	12.7
	6H	10.9	11.8	11.3	12.2	12.6	10.9	11.8	11.3	12.2	12.6
	8H	10.9	11.7	11.3	12.1	12.5	10.9	11.7	11.3	12.1	12.5
	12H	10.8	11.7	11.2	12.1	12.5	10.8	11.7	11.2	12.1	12.5
4H	2H	10.9	12.0	11.3	12.3	12.7	10.9	12.0	11.3	12.3	12.7
	3H	11.0	11.9	11.4	12.3	12.7	11.0	11.9	11.4	12.3	12.7
	4H	11.0	11.7	11.4	12.2	12.6	11.0	11.7	11.4	12.2	12.6
	6H	10.9	11.6	11.4	12.0	12.5	10.9	11.6	11.4	12.0	12.5
	8H	10.9	11.5	11.4	11.9	12.4	10.9	11.5	11.4	11.9	12.4
	12H	10.9	11.4	11.3	11.9	12.3	10.9	11.4	11.3	11.9	12.3
8H	4H	10.9	11.5	11.3	11.9	12.4	10.9	11.5	11.3	11.9	12.4
	6H	10.8	11.3	11.3	11.8	12.3	10.8	11.3	11.3	11.8	12.3
	8H	10.8	11.2	11.3	11.7	12.2	10.8	11.2	11.3	11.7	12.2
	12H	10.7	11.1	11.3	11.6	12.2	10.7	11.1	11.3	11.6	12.2
12H	4H	10.8	11.3	11.3	11.8	12.3	10.8	11.3	11.3	11.8	12.3
	6H	10.8	11.2	11.3	11.7	12.2	10.8	11.2	11.3	11.7	12.2
	8H	10.7	11.1	11.2	11.6	12.2	10.7	11.1	11.2	11.6	12.2

Corrected UGR values based on total output lumens

SHR = 1.0