

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGx9LEDFX-10L35KDX-AR9223FX-SG-SO

Nom 9" diam recessed downlight

Test Number

SP-00747_1_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	838
Efficacy	91.08 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.19
Two luminaires, plane 90°	1.19
Four luminaires	1.17

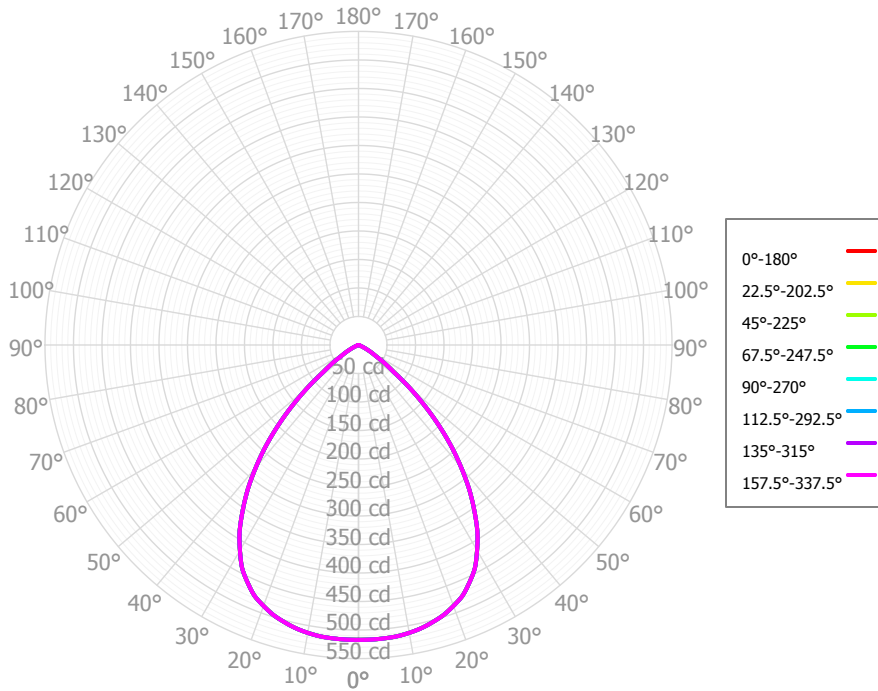
Full Beam Angle

0° - 180°	83°
90° - 270°	83°

IES File Header Contents

Keyword	Value
TEST	SP-00747_1_M-10L
TESTLAB	Spectrum Lighting Photometric Lab
MANUFAC	Spectrum Lighting
ISSUEDATE	1/10/2019
UPDATE	3/5/2019
LUMCAT	SGx9LEDFX-10L35KDX-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

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	49.95	5.96%	90.00° - 100.00°	0.04	0.00%
10.00° - 20.00°	141.87	16.93%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	210.56	25.13%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	219.27	26.17%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	151.93	18.13%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	53.20	6.35%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	10.23	1.22%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.54	0.06%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.40	0.05%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	837.95	100.00%	0.00° - 180.00°	837.95	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°	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25
2.50°	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25	517.25
5.00°	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63	516.63
7.50°	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51	515.51
10.00°	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74	512.74
12.50°	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89	508.89
15.00°	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22	503.22
17.50°	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57	496.57
20.00°	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08	487.08
22.50°	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37	476.37
25.00°	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07	460.07
27.50°	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91	441.91
30.00°	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02	416.02
32.50°	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18	388.18
35.00°	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12	354.12
37.50°	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96	318.96
40.00°	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04	280.04
42.50°	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70	240.70
45.00°	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04	199.04
47.50°	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25	157.25
50.00°	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26	117.26
52.50°	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14	78.14
55.00°	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30	56.30
57.50°	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58
60.00°	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50
62.50°	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
65.00°	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07
67.50°	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54
70.00°	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
72.50°	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
75.00°	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
77.50°	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
80.00°	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
82.50°	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
85.00°	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
87.50°	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
90.00°	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27

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	998	998	998	998	974	974	974	974	931	931	931	891	891	891	855	855	838
	1	942	915	891	869	921	897	875	856	863	845	829	831	817	804	802	791	775
	2	884	836	796	762	865	821	784	753	793	763	737	767	742	721	744	723	709
	3	827	763	713	674	809	751	705	668	728	689	657	707	674	647	687	660	647
	4	774	698	643	600	757	688	637	597	669	625	589	651	613	582	635	602	590
	5	724	640	582	539	709	632	577	536	616	568	531	601	559	526	587	550	540
	6	678	589	529	486	664	582	526	485	568	518	481	556	511	477	544	505	495
	7	636	543	484	442	623	537	481	440	526	475	438	515	469	435	505	464	455
	8	597	503	444	403	586	498	441	402	488	437	400	478	432	398	470	428	420
	9	562	467	409	370	552	463	407	369	454	403	367	446	399	366	438	396	389
	10	530	435	378	340	520	431	376	340	424	373	339	416	370	337	410	367	361

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	17.1 fc	9.7 ft
6.5 ft	12.2 fc	11.4 ft
7.5 ft	9.2 fc	13.2 ft
8.0 ft	8.1 fc	14.1 ft
10.0 ft	5.2 fc	17.6 ft
12.0 ft	3.6 fc	21.1 ft
14.0 ft	2.6 fc	24.7 ft
16.0 ft	2.0 fc	28.2 ft
20.0 ft	1.3 fc	35.2 ft
24.0 ft	0.9 fc	42.3 ft
28.0 ft	0.7 fc	49.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	14,063	14,063	14,063
45.00°	7,653	7,653	7,653
55.00°	2,668	2,668	2,668
65.00°	583	583	583
75.00°	36	36	36
85.00°	124	124	124

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	9.1	10.3	9.4	10.6	10.9	9.1	10.3	9.4	10.6	10.9
	3H	9.0	10.0	9.3	10.4	10.7	9.0	10.0	9.3	10.4	10.7
	4H	8.9	9.9	9.3	10.2	10.6	8.9	9.9	9.3	10.2	10.6
	6H	8.8	9.7	9.2	10.1	10.5	8.8	9.7	9.2	10.1	10.5
	8H	8.7	9.6	9.2	10.0	10.4	8.7	9.6	9.2	10.0	10.4
	12H	8.7	9.5	9.1	9.9	10.3	8.7	9.5	9.1	9.9	10.3
4H	2H	9.0	10.0	9.4	10.3	10.7	9.0	10.0	9.4	10.3	10.7
	3H	8.8	9.6	9.3	10.1	10.5	8.8	9.6	9.3	10.1	10.5
	4H	8.7	9.5	9.2	9.9	10.3	8.7	9.5	9.2	9.9	10.3
	6H	8.7	9.3	9.1	9.7	10.2	8.7	9.3	9.1	9.7	10.2
	8H	8.6	9.2	9.1	9.6	10.1	8.6	9.2	9.1	9.6	10.1
	12H	8.6	9.0	9.0	9.5	10.0	8.6	9.0	9.0	9.5	10.0
8H	4H	8.6	9.2	9.1	9.6	10.1	8.6	9.2	9.1	9.6	10.1
	6H	8.5	8.9	9.0	9.4	9.9	8.5	8.9	9.0	9.4	9.9
	8H	8.4	8.8	8.9	9.4	9.8	8.4	8.8	8.9	9.4	9.8
	12H	8.4	8.7	8.9	9.2	9.8	8.4	8.7	8.9	9.2	9.8
12H	4H	8.5	9.0	9.0	9.5	10.0	8.5	9.0	9.0	9.5	10.0
	6H	8.4	8.8	9.0	9.3	9.9	8.4	8.8	9.0	9.3	9.9
	8H	8.4	8.7	8.9	9.2	9.8	8.4	8.7	8.9	9.2	9.8

Corrected UGR values based on total output lumens

SHR = 1.0