

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGx4LEDFX-10L35KDX-AR4223FX-SG-SO

Nom 4" diam recessed downlight

Test Number

SP-00744_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	611
Efficacy	66.45 lm/W

Luminous Dimensions

0° - 180° Size	-0.33
90° - 270° Size	-0.33
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.72
Two luminaires, plane 90°	0.75
Four luminaires	0.78

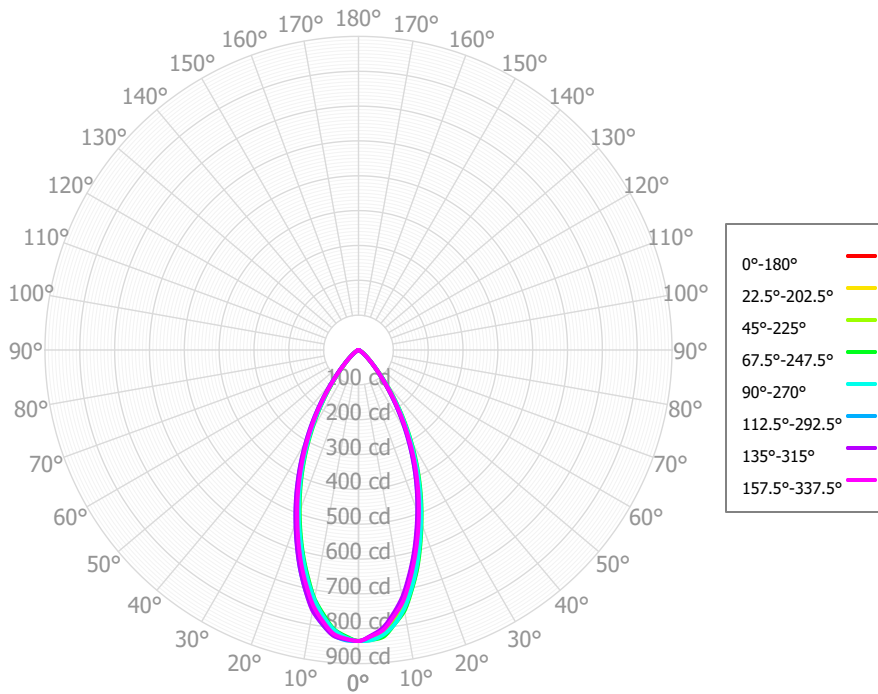
Full Beam Angle

0° - 180°	48°
90° - 270°	48°

IES File Header Contents

Keyword	Value
TEST	SP-00744_1_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	1/7/2019
UPDATE	3/4/2019
LUMCAT	SGx4LEDFX-10L35KDX-AR4223FX-SG-SO
LUMINAIRE	Nom 4" diam recessed downlight
OTHER	Trim: AR4223FX, Soft Glow
OTHER	Regressed Integral Solite lens
OTHER	Data for New Construction: SGE4LEDFX-series w/AR4223FX-SG-SO
OTHER	Data for Retrofit: SGRTE4LEDFX-series w/AR4223FX-SG-SO
OTHER	Beam Angle: 48 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	Total Luminaire Watts is approximate
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°	76.10	12.45%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	173.98	28.46%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	180.18	29.47%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	116.59	19.07%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	46.27	7.57%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	14.80	2.42%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.69	0.44%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.40	0.06%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.36	0.06%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	611.36	100.00%	0.00° - 180.00°	611.36	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°	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38	835.38
2.50°	826.13	829.05	829.34	832.98	833.77	834.02	831.23	829.68	828.22	826.29	825.38	822.85	825.85	822.58	820.54	822.83	826.13
5.00°	806.73	816.33	816.69	825.98	820.64	822.21	823.65	817.96	813.41	808.43	810.41	804.72	806.56	802.53	800.71	807.34	806.73
7.50°	775.48	784.84	785.34	793.66	793.86	794.86	793.99	785.19	783.30	775.13	774.30	766.57	771.37	766.95	763.77	772.28	775.48
10.00°	731.33	746.00	747.13	760.19	754.66	756.65	760.10	745.90	742.27	733.11	734.76	725.70	728.31	724.51	721.14	733.67	731.33
12.50°	677.35	692.17	692.16	705.75	702.11	705.57	705.98	691.74	691.73	679.65	679.97	669.18	674.38	670.39	665.92	678.38	677.35
15.00°	620.18	633.90	635.49	650.62	645.14	649.01	649.41	635.09	635.73	623.32	623.66	612.08	616.25	612.22	609.40	621.21	620.18
17.50°	561.02	575.44	575.54	589.27	584.33	587.12	589.12	573.81	578.23	563.94	565.14	552.66	557.95	554.15	550.53	563.77	561.02
20.00°	503.07	516.94	516.49	528.44	524.60	526.93	528.62	513.95	520.02	505.14	506.52	493.89	499.59	496.10	492.97	506.32	503.07
22.50°	445.74	459.89	458.85	470.47	465.64	468.09	470.27	456.19	460.79	446.86	448.89	437.05	442.53	439.60	437.30	449.89	445.74
25.00°	389.58	403.05	401.54	412.77	407.85	410.15	412.00	398.85	401.18	389.65	391.41	380.56	385.75	383.39	381.73	393.54	389.58
27.50°	333.87	347.67	344.65	356.20	350.73	352.79	355.31	342.01	345.34	333.21	336.26	324.89	331.08	328.78	326.28	338.60	333.87
30.00°	280.75	292.41	290.11	300.64	296.07	297.82	299.09	287.85	290.52	280.20	281.67	271.23	276.70	274.37	273.04	284.09	280.75
32.50°	228.42	240.73	237.98	248.08	242.54	244.11	247.44	236.34	239.39	229.19	231.50	221.27	227.10	225.16	221.96	233.57	228.42
35.00°	181.36	189.35	189.46	197.81	194.22	195.63	196.89	188.05	188.98	182.11	182.76	175.19	177.92	176.24	176.09	184.41	181.36
37.50°	135.49	146.62	144.05	152.79	147.82	149.29	153.06	142.34	146.51	136.87	141.32	134.89	139.71	138.00	134.30	143.10	135.49
40.00°	103.50	105.21	107.76	113.10	111.64	113.15	112.19	106.18	105.08	103.23	103.29	101.00	102.17	100.50	101.41	104.96	103.50
42.50°	73.59	80.28	77.74	83.32	78.27	80.30	83.64	76.28	79.81	73.80	77.95	74.94	78.49	76.88	74.20	79.42	73.59
45.00°	55.82	56.71	57.00	59.24	58.34	59.46	58.44	55.83	55.60	55.10	55.54	54.67	55.53	54.31	54.92	56.80	55.82
47.50°	39.18	43.17	41.36	43.60	41.11	41.45	43.50	40.41	42.43	39.36	41.44	40.13	42.30	41.46	39.72	42.90	39.18
50.00°	29.57	30.60	30.44	31.28	30.67	31.04	30.62	30.00	29.65	29.33	29.47	29.21	29.78	29.41	29.19	30.63	29.57
52.50°	20.29	22.71	21.63	22.91	21.14	21.85	22.73	21.68	22.39	20.46	22.20	21.25	22.39	22.16	20.54	22.18	20.29
55.00°	15.43	15.59	15.63	16.21	15.79	16.29	16.05	15.92	15.44	15.18	15.85	15.08	15.53	15.42	15.16	15.33	15.43
57.50°	10.67	11.18	10.59	11.17	10.73	11.10	11.69	10.99	11.55	10.38	11.11	10.08	11.22	10.78	10.80	11.42	10.67
60.00°	7.39	7.15	6.85	7.24	7.15	7.59	7.90	7.68	7.77	7.16	7.17	6.58	7.25	6.64	7.29	7.73	7.39
62.50°	4.28	4.16	3.44	4.18	3.66	4.16	4.97	4.77	4.70	4.05	4.37	3.86	4.48	4.01	3.99	4.36	4.28
65.00°	2.30	1.85	1.88	2.21	2.08	2.34	2.62	2.66	2.06	2.18	2.32	2.05	2.17	1.87	2.09	2.00	2.30
67.50°	0.71	0.91	0.66	0.92	0.71	0.70	1.00	0.68	1.16	0.50	1.12	0.61	1.02	0.86	0.41	0.84	0.71
70.00°	0.46	0.43	0.48	0.47	0.57	0.52	0.33	0.49	0.54	0.51	0.54	0.38	0.38	0.33	0.43	0.39	0.46
72.50°	0.35	0.42	0.37	0.31	0.45	0.36	0.30	0.40	0.41	0.46	0.35	0.40	0.41	0.34	0.45	0.40	0.35
75.00°	0.37	0.39	0.36	0.35	0.37	0.23	0.32	0.43	0.35	0.33	0.41	0.42	0.42	0.29	0.37	0.40	0.37
77.50°	0.33	0.38	0.30	0.36	0.32	0.32	0.35	0.43	0.32	0.35	0.41	0.43	0.41	0.25	0.35	0.38	0.33
80.00°	0.32	0.40	0.26	0.37	0.35	0.37	0.37	0.38	0.31	0.39	0.30	0.40	0.36	0.27	0.37	0.34	0.32
82.50°	0.32	0.38	0.34	0.44	0.40	0.35	0.40	0.31	0.34	0.39	0.30	0.31	0.31	0.33	0.37	0.35	0.32
85.00°	0.28	0.25	0.37	0.33	0.31	0.34	0.34	0.38	0.44	0.35	0.37	0.30	0.27	0.39	0.28	0.37	0.28
87.50°	0.33	0.31	0.37	0.34	0.30	0.26	0.31	0.31	0.28	0.33	0.35	0.33	0.33	0.38	0.30	0.36	0.33
90.00°	0.31	0.17	0.35	0.14	0.39	0.38	0.13	0.28	0.13	0.30	0.12	0.35	0.26	0.11	0.30	0.11	0.31

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	728	728	728	728	711	711	711	711	679	679	679	650	650	650	624	624	611
	1	694	677	662	648	679	664	650	638	639	628	618	616	608	600	595	589	577
	2	659	630	605	584	646	619	597	578	599	581	565	581	566	553	564	552	541
	3	626	587	556	532	614	578	550	528	562	539	519	547	528	511	534	517	507
	4	594	548	514	489	583	541	510	486	528	501	480	516	493	474	504	485	476
	5	564	513	478	452	555	508	474	449	497	468	445	487	461	442	477	455	447
	6	536	482	446	420	527	477	443	418	468	438	415	460	433	412	452	428	421
	7	510	454	417	391	502	450	415	390	442	411	388	435	407	386	428	403	396
	8	486	428	392	367	479	425	390	366	418	387	364	412	384	363	406	380	374
	9	463	405	369	345	457	402	368	344	396	365	343	391	362	342	386	360	354
	10	443	384	349	325	436	381	347	325	376	345	324	371	343	323	367	341	336

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	27.6 fc	4.9 ft
6.5 ft	19.8 fc	5.8 ft
7.5 ft	14.9 fc	6.7 ft
8.0 ft	13.1 fc	7.2 ft
10.0 ft	8.4 fc	9.0 ft
12.0 ft	5.8 fc	10.8 ft
14.0 ft	4.3 fc	12.6 ft
16.0 ft	3.3 fc	14.4 ft
20.0 ft	2.1 fc	17.9 ft
24.0 ft	1.5 fc	21.5 ft
28.0 ft	1.1 fc	25.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	105133	105133	105133
45.00°	9935	10145	10384
55.00°	3385	3429	3465
65.00°	684	559	620
75.00°	181	177	179
85.00°	409	539	448

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	7.7	8.7	8.0	9.0	9.3	7.3	8.4	7.7	8.7	9.0
	3H	7.5	8.4	7.9	8.7	9.1	7.2	8.1	7.6	8.4	8.8
	4H	7.4	8.2	7.8	8.6	9.0	7.1	7.9	7.5	8.3	8.7
	6H	7.3	8.1	7.7	8.5	8.9	7.0	7.8	7.4	8.1	8.5
	8H	7.3	8.0	7.7	8.4	8.8	7.0	7.7	7.4	8.1	8.5
	12H	7.2	7.9	7.7	8.3	8.7	6.9	7.6	7.4	8.0	8.4
4H	2H	7.5	8.3	7.9	8.6	9.0	7.2	8.0	7.6	8.3	8.7
	3H	7.3	7.9	7.7	8.4	8.8	7.0	7.7	7.4	8.1	8.5
	4H	7.2	7.8	7.6	8.2	8.6	6.9	7.5	7.3	7.9	8.4
	6H	7.1	7.6	7.6	8.1	8.5	6.8	7.3	7.3	7.8	8.3
	8H	7.0	7.5	7.5	8.0	8.4	6.8	7.2	7.2	7.7	8.2
	12H	7.0	7.4	7.5	7.9	8.4	6.7	7.2	7.2	7.6	8.1
8H	4H	7.0	7.5	7.5	7.9	8.4	6.7	7.2	7.2	7.6	8.1
	6H	6.9	7.3	7.4	7.8	8.3	6.6	7.0	7.2	7.5	8.0
	8H	6.9	7.2	7.4	7.7	8.2	6.6	7.0	7.2	7.5	8.0
	12H	6.9	7.2	7.4	7.7	8.3	6.6	6.9	7.2	7.4	8.0
12H	4H	6.9	7.4	7.4	7.8	8.3	6.7	7.1	7.2	7.6	8.0
	6H	6.9	7.2	7.4	7.7	8.2	6.6	6.9	7.1	7.4	7.9
	8H	6.9	7.1	7.4	7.6	8.2	6.6	6.9	7.1	7.4	8.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0