

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGx4LEDFX-15L35KDX-AR4223FX-MW-SO

Nom 4" diam recessed downlight

Test Number

SP-00744_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	931
Efficacy	71.11 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.88
Two luminaires, plane 90°	0.88
Four luminaires	0.88

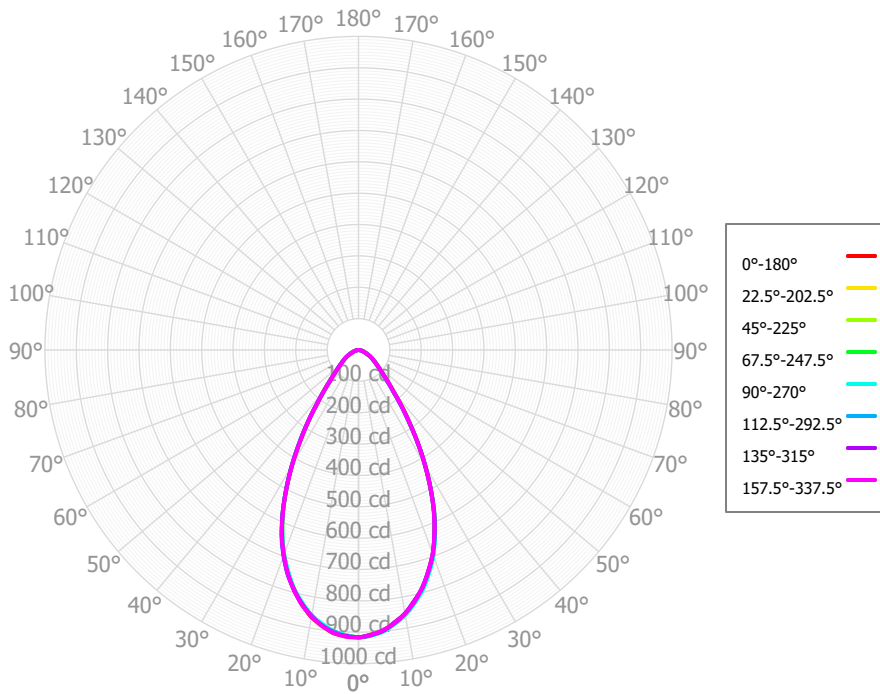
Full Beam Angle

0° - 180°	58°
90° - 270°	58°

IES File Header Contents

Keyword	Value
TEST	SP-00744_M-15L
TESTLAB	Spectrum Lighting Photometric Lab
MANUFAC	Spectrum Lighting
ISSUEDATE	1/7/2019
UPDATE	3/4/2019
LUMCAT	SGx4LEDFX-15L35KDX-AR4223FX-MW-SO
LUMINAIRE	Nom 4" diam recessed downlight
OTHER	Trim: AR4223FX Matte White
OTHER	Regressed Integral Solite lens
OTHER	Data for New Construction: SGE4LEDFX-series w/AR4223FX-MW-SO
OTHER	Data for Retrofit: SGRTE4LEDFX-series w/AR4223FX-MW-SO
OTHER	Beam Angle: 58 deg
LAMPCAT	N/A
LAMP	N/A, Philips LED, 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°	85.81	9.21%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	219.52	23.57%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	257.49	27.64%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	177.64	19.07%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	90.28	9.69%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	54.14	5.81%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	30.61	3.29%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	13.31	1.43%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.68	0.29%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	931.48	100.00%	0.00° - 180.00°	931.48	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°	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23	916.23
2.50°	908.62	910.91	909.07	910.26	911.12	913.74	913.04	915.31	912.95	915.50	911.24	910.73	910.37	911.68	909.35	909.79	908.62
5.00°	898.85	896.61	897.82	899.48	902.14	901.13	905.86	904.78	906.92	904.35	902.16	900.98	901.06	897.07	899.31	896.99	898.85
7.50°	877.19	878.83	879.07	879.97	881.42	887.10	886.60	888.59	887.19	889.74	883.39	883.20	881.09	880.05	876.87	878.87	877.19
10.00°	854.76	853.91	858.60	857.38	858.64	859.70	863.86	862.91	865.41	862.73	860.17	859.91	860.50	853.66	853.18	854.01	854.76
12.50°	820.64	823.90	824.21	825.30	826.89	831.50	830.16	833.26	831.00	833.01	828.10	828.65	825.81	823.93	819.93	822.81	820.64
15.00°	785.36	785.58	787.66	790.72	792.11	791.96	793.31	793.20	794.25	792.18	790.81	790.87	790.34	784.21	786.15	785.09	785.36
17.50°	740.31	742.18	742.34	745.00	747.50	751.69	748.82	749.72	747.44	749.68	744.98	745.48	743.13	741.55	739.72	741.06	740.31
20.00°	692.86	691.99	696.21	697.12	698.17	698.00	698.88	696.02	697.26	694.84	693.81	693.93	694.49	692.11	692.50	691.77	692.86
22.50°	632.67	634.14	634.84	634.47	636.91	642.64	638.41	639.86	636.27	638.90	635.62	636.35	634.32	636.12	632.30	633.28	632.67
25.00°	569.75	567.88	572.71	569.99	571.62	570.90	572.58	570.02	571.43	568.88	570.43	570.51	571.97	568.18	570.79	568.40	569.75
27.50°	496.52	497.59	498.51	498.00	498.32	498.74	498.34	497.85	497.09	498.34	497.79	498.14	498.45	498.06	497.72	497.59	496.52
30.00°	423.64	423.71	424.47	425.55	424.96	424.15	423.99	423.02	422.92	423.06	424.14	425.02	425.00	424.68	424.76	423.49	423.64
32.50°	351.74	352.65	352.80	352.30	351.49	350.79	349.50	347.91	349.06	348.36	349.59	351.40	351.83	352.69	352.37	352.49	351.74
35.00°	284.10	283.64	282.83	279.72	283.13	282.58	281.50	282.17	280.93	281.85	282.33	284.21	282.18	282.40	282.91	282.88	284.10
37.50°	226.07	226.72	226.27	224.51	221.47	219.83	220.24	216.95	221.93	218.20	220.33	220.39	222.53	222.84	224.70	226.16	226.07
40.00°	176.21	177.02	173.71	171.36	172.67	174.15	172.73	175.07	173.76	175.74	174.25	174.81	171.36	173.89	172.97	174.02	176.21
42.50°	140.92	142.50	141.48	140.08	137.52	135.24	136.98	134.22	139.51	136.43	137.41	136.79	138.89	137.97	140.56	141.17	140.92
45.00°	112.88	115.16	112.57	110.83	111.47	112.57	111.48	112.51	112.83	113.20	112.40	112.65	112.01	112.79	112.80	113.44	112.88
47.50°	95.53	96.37	95.96	94.68	93.50	93.01	93.08	91.76	94.14	92.23	93.03	93.01	95.20	94.45	95.72	96.10	95.53
50.00°	81.08	80.85	80.95	79.69	79.61	79.41	78.98	79.37	79.42	79.41	79.62	79.97	80.59	80.67	80.83	80.71	81.08
52.50°	70.10	69.64	70.51	69.77	68.65	67.90	67.30	67.64	68.16	67.89	68.42	68.53	69.18	69.67	69.90	70.08	70.10
55.00°	60.53	59.69	60.78	60.28	59.83	59.67	58.80	59.58	58.99	59.86	59.43	59.88	59.62	60.18	60.24	60.04	60.53
57.50°	52.35	52.20	52.63	52.17	52.23	51.80	51.74	51.57	51.29	51.91	51.08	51.70	52.23	52.20	52.47	52.41	52.35
60.00°	44.69	45.22	44.86	44.36	44.76	44.38	44.37	43.77	43.94	44.12	43.67	44.32	44.76	44.88	44.79	44.94	44.69
62.50°	37.46	37.93	37.76	37.30	37.36	37.33	36.88	36.23	36.79	36.63	36.46	37.02	37.22	37.63	37.22	37.61	37.46
65.00°	30.92	30.59	30.91	30.62	30.69	30.64	30.08	29.43	30.14	29.67	30.25	30.41	30.35	30.41	30.53	30.35	30.92
67.50°	24.82	25.95	24.38	24.68	24.30	25.39	23.47	23.72	23.72	23.82	24.20	24.05	23.99	24.85	24.69	24.65	24.82
70.00°	20.53	21.46	19.48	19.82	19.75	21.14	19.19	19.92	19.66	19.18	19.53	20.00	19.73	19.67	19.90	19.40	20.53
72.50°	17.00	16.69	15.99	16.13	15.63	16.70	15.33	15.94	15.97	15.63	15.31	16.09	16.25	15.96	15.78	16.04	17.00
75.00°	13.14	12.57	12.25	12.70	12.27	12.45	12.22	11.97	12.22	12.52	11.91	12.41	12.64	12.51	12.63	12.56	13.14
77.50°	9.55	9.39	8.82	9.43	8.99	8.77	8.93	8.86	8.46	9.71	8.94	8.57	8.93	9.55	9.75	8.99	9.55
80.00°	6.41	6.19	6.44	6.35	5.94	5.85	5.59	5.92	5.39	6.21	5.95	5.85	5.57	6.85	7.16	6.50	6.41
82.50°	4.22	3.72	3.63	4.04	3.72	3.73	3.29	3.25	3.47	3.28	3.23	4.06	3.36	4.25	4.19	3.65	4.22
85.00°	2.25	2.15	1.94	1.84	2.45	2.11	1.97	1.59	2.01	1.82	1.55	2.28	1.74	2.06	1.98	1.84	2.25
87.50°	1.29	1.08	0.91	1.05	0.92	1.24	0.79	0.87	0.81	0.70	0.76	1.08	1.12	0.82	1.05	0.90	1.29
90.00°	0.52	0.64	0.58	0.62	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.60	0.58	0.52

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	1109	1109	1109	1109	1083	1083	1083	1083	1035	1035	1035	991	991	991	950	950	931
	1	1047	1017	991	966	1024	997	973	951	959	939	921	924	908	894	892	879	868
	2	985	933	889	852	964	916	876	843	885	852	824	857	830	806	831	809	792
	3	927	858	805	762	907	844	795	756	819	778	743	796	761	731	774	745	730
	4	873	792	734	689	855	781	727	684	760	713	676	741	701	668	723	688	675
	5	823	735	673	628	806	725	668	625	708	658	619	692	648	613	677	638	626
	6	777	684	621	576	762	676	617	574	661	609	570	648	601	566	635	594	583
	7	735	638	576	532	721	632	573	531	619	566	528	608	560	525	597	554	545
	8	696	598	537	494	684	593	534	493	582	529	491	572	524	489	562	519	510
	9	660	562	502	461	649	557	499	460	548	495	458	539	491	457	531	487	479
	10	628	529	471	431	618	525	469	431	517	465	429	510	462	428	503	459	452

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	30.3 fc	6.1 ft
6.5 ft	21.7 fc	7.2 ft
7.5 ft	16.3 fc	8.3 ft
8.0 ft	14.3 fc	8.8 ft
10.0 ft	9.2 fc	11.0 ft
12.0 ft	6.4 fc	13.2 ft
14.0 ft	4.7 fc	15.4 ft
16.0 ft	3.6 fc	17.6 ft
20.0 ft	2.3 fc	22.0 ft
24.0 ft	1.6 fc	26.4 ft
28.0 ft	1.2 fc	30.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	115307	115307	115307
45.00°	20090	20035	19840
55.00°	13282	13336	13126
65.00°	9207	9203	9140
75.00°	6389	5955	5966
85.00°	3243	2804	3538

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	16.8	18.0	17.2	18.3	18.6	16.8	18.0	17.1	18.3	18.6
	3H	17.8	18.8	18.2	19.2	19.5	17.7	18.7	18.1	19.1	19.4
	4H	18.1	19.1	18.5	19.4	19.8	18.0	19.0	18.4	19.3	19.7
	6H	18.3	19.1	18.7	19.5	19.9	18.1	19.0	18.5	19.4	19.8
	8H	18.3	19.1	18.7	19.5	19.9	18.1	19.0	18.6	19.4	19.8
	12H	18.3	19.1	18.7	19.5	19.9	18.1	18.9	18.6	19.3	19.7
4H	2H	17.1	18.1	17.5	18.5	18.8	17.1	18.0	17.5	18.4	18.8
	3H	18.3	19.0	18.7	19.5	19.9	18.2	19.0	18.6	19.4	19.8
	4H	18.6	19.4	19.1	19.8	20.2	18.5	19.2	19.0	19.7	20.1
	6H	18.9	19.5	19.3	19.9	20.4	18.7	19.3	19.2	19.8	20.3
	8H	18.9	19.5	19.4	19.9	20.4	18.8	19.3	19.2	19.8	20.2
	12H	18.9	19.4	19.4	19.9	20.4	18.8	19.3	19.2	19.7	20.2
8H	4H	18.7	19.3	19.2	19.7	20.2	18.6	19.2	19.1	19.6	20.1
	6H	19.0	19.5	19.5	20.0	20.4	18.9	19.3	19.4	19.8	20.3
	8H	19.1	19.5	19.6	20.0	20.5	18.9	19.3	19.4	19.8	20.3
	12H	19.1	19.5	19.6	20.0	20.5	18.9	19.3	19.5	19.8	20.4
12H	4H	18.7	19.2	19.2	19.7	20.1	18.6	19.1	19.1	19.6	20.0
	6H	19.0	19.4	19.5	19.9	20.4	18.8	19.2	19.4	19.7	20.3
	8H	19.1	19.4	19.6	19.9	20.5	18.9	19.3	19.4	19.8	20.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0