

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGx4LEDFX-15L35KDX-AR4223FX-SG-SO

Nom 4" diam recessed downlight

Test Number

SP-00744_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	945
Efficacy	72.12 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

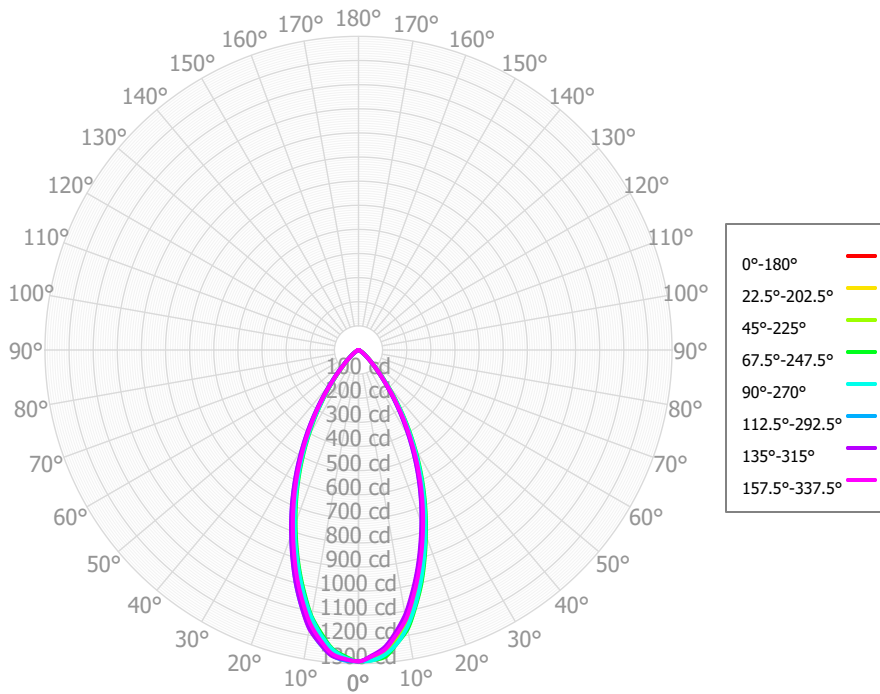
Full Beam Angle

0° - 180°	48°
90° - 270°	48°

IES File Header Contents

Keyword	Value
TEST	SP-00744_1_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	1/7/2019
UPDATE	3/4/2019
LUMCAT	SGx4LEDFX-15L35KDX-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°	117.60	12.45%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	268.88	28.46%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	278.47	29.47%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	180.19	19.07%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	71.50	7.57%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	22.87	2.42%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	4.15	0.44%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.61	0.06%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.55	0.06%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	944.83	100.00%	0.00° - 180.00°	944.83	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°	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05	1291.05
2.50°	1276.75	1281.26	1281.71	1287.33	1288.55	1288.94	1284.63	1282.23	1279.98	1277.00	1275.59	1271.67	1276.32	1271.27	1268.11	1271.65	1276.75
5.00°	1246.77	1261.60	1262.15	1276.51	1268.26	1270.68	1272.91	1264.12	1257.09	1249.39	1252.45	1243.66	1246.50	1240.28	1237.47	1247.71	1246.77
7.50°	1198.47	1212.94	1213.70	1226.56	1226.88	1228.41	1227.07	1213.47	1210.55	1197.93	1196.64	1184.70	1192.12	1185.29	1180.38	1193.53	1198.47
10.00°	1130.24	1152.92	1154.65	1174.84	1166.29	1169.37	1174.70	1152.76	1147.15	1132.99	1135.54	1121.53	1125.57	1119.69	1114.49	1133.86	1130.24
12.50°	1046.82	1069.72	1069.70	1090.71	1085.08	1090.42	1091.06	1069.06	1069.03	1050.37	1050.86	1034.18	1042.22	1036.05	1029.15	1048.40	1046.82
15.00°	958.46	979.66	982.12	1005.50	997.04	1003.02	1003.63	981.51	982.50	963.31	963.85	945.93	952.39	946.16	941.80	960.06	958.46
17.50°	867.02	889.31	889.48	910.69	903.06	907.37	910.46	886.80	893.62	871.54	873.39	854.11	862.28	856.41	850.82	871.29	867.02
20.00°	777.47	798.90	798.22	816.68	810.74	814.35	816.96	794.29	803.67	780.67	782.81	763.28	772.09	766.70	761.86	782.49	777.47
22.50°	688.86	710.73	709.12	727.09	719.63	723.41	726.78	705.02	712.12	690.59	693.74	675.44	683.91	679.38	675.83	695.29	688.86
25.00°	602.07	622.90	620.55	637.92	630.31	633.87	636.73	616.40	620.00	602.18	604.90	588.14	596.17	592.51	589.95	608.20	602.07
27.50°	515.99	537.31	532.65	550.49	542.04	545.22	549.11	528.57	533.71	514.96	519.68	502.11	511.66	508.12	504.25	523.29	515.99
30.00°	433.89	451.90	448.36	464.62	457.56	460.27	462.23	444.86	448.98	433.04	435.30	419.18	427.63	424.02	421.98	439.05	433.89
32.50°	353.02	372.03	367.78	383.39	374.84	377.26	382.41	365.25	369.96	354.20	357.78	341.97	350.97	347.97	343.02	360.97	353.02
35.00°	280.29	292.63	292.81	305.71	300.16	302.34	304.29	290.61	292.06	281.45	282.45	270.75	274.96	272.37	272.13	284.99	280.29
37.50°	209.39	226.60	222.62	236.13	228.44	230.73	236.55	219.98	226.43	211.52	218.41	208.47	215.91	213.27	207.55	221.15	209.39
40.00°	159.95	162.59	166.53	174.80	172.53	174.87	173.39	164.09	162.39	159.54	159.64	156.09	157.89	155.31	156.72	162.21	159.95
42.50°	113.73	124.07	120.14	128.76	120.96	124.11	129.26	117.90	123.34	114.05	120.47	115.81	121.30	118.81	114.68	122.74	113.73
45.00°	86.27	87.64	88.09	91.55	90.17	91.89	90.32	86.28	85.93	85.15	85.84	84.49	85.81	83.93	84.87	87.78	86.27
47.50°	60.55	66.72	63.93	67.39	63.53	64.06	67.22	62.45	65.57	60.82	64.04	62.03	65.37	64.07	61.39	66.30	60.55
50.00°	45.70	47.29	47.05	48.34	47.40	47.97	47.31	46.36	45.82	45.33	45.55	45.14	46.02	45.45	45.11	47.34	45.70
52.50°	31.36	35.10	33.44	35.40	32.67	33.77	35.12	33.51	34.61	31.61	34.31	32.85	34.61	34.25	31.74	34.28	31.36
55.00°	23.84	24.10	24.16	25.05	24.40	25.17	24.81	24.60	23.86	23.47	24.49	23.30	24.01	23.84	23.42	23.69	23.84
57.50°	16.49	17.28	16.37	17.27	16.58	17.16	18.07	16.98	17.85	16.04	17.17	15.58	17.34	16.66	16.69	17.66	16.49
60.00°	11.43	11.06	10.58	11.19	11.05	11.72	12.20	11.87	12.00	11.06	11.08	10.16	11.20	10.26	11.27	11.95	11.43
62.50°	6.61	6.43	5.31	6.47	5.65	6.43	7.67	7.37	7.26	6.26	6.75	5.97	6.92	6.19	6.16	6.74	6.61
65.00°	3.55	2.86	2.90	3.42	3.22	3.61	4.05	4.10	3.19	3.36	3.59	3.16	3.36	2.89	3.23	3.09	3.55
67.50°	1.09	1.41	1.03	1.43	1.10	1.09	1.55	1.04	1.79	0.78	1.74	0.94	1.57	1.33	0.64	1.29	1.09
70.00°	0.72	0.66	0.75	0.72	0.88	0.80	0.51	0.76	0.83	0.78	0.84	0.59	0.59	0.50	0.66	0.59	0.72
72.50°	0.54	0.65	0.57	0.49	0.69	0.55	0.46	0.61	0.63	0.71	0.54	0.62	0.63	0.52	0.69	0.62	0.54
75.00°	0.58	0.61	0.56	0.54	0.57	0.35	0.50	0.66	0.54	0.51	0.64	0.65	0.65	0.45	0.58	0.62	0.58
77.50°	0.51	0.58	0.46	0.55	0.50	0.49	0.53	0.67	0.50	0.54	0.63	0.66	0.64	0.39	0.55	0.58	0.51
80.00°	0.49	0.62	0.41	0.57	0.55	0.58	0.57	0.59	0.48	0.60	0.46	0.62	0.55	0.41	0.57	0.52	0.49
82.50°	0.49	0.59	0.52	0.69	0.63	0.54	0.63	0.47	0.53	0.61	0.47	0.48	0.48	0.52	0.57	0.55	0.49
85.00°	0.44	0.38	0.58	0.51	0.48	0.53	0.53	0.58	0.68	0.54	0.58	0.46	0.42	0.61	0.44	0.57	0.44
87.50°	0.51	0.48	0.57	0.53	0.46	0.40	0.48	0.47	0.44	0.51	0.54	0.51	0.50	0.59	0.47	0.56	0.51
90.00°	0.47	0.26	0.53	0.21	0.60	0.58	0.20	0.43	0.20	0.47	0.18	0.53	0.40	0.17	0.46	0.17	0.47

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	1125	1125	1125	1125	1099	1099	1099	1099	1050	1050	1050	1005	1005	1005	964	964	945
	1	1072	1046	1023	1001	1049	1026	1005	986	987	971	955	952	939	927	920	910	891
	2	1019	973	935	903	998	957	922	893	926	898	873	898	875	854	872	853	836
	3	968	907	860	822	949	894	850	816	869	833	803	846	816	790	825	799	778
	4	919	847	795	755	902	836	788	751	816	775	742	797	762	733	780	750	725
	5	872	794	738	698	857	785	733	695	768	723	688	752	713	682	737	704	676
	6	829	745	689	648	815	738	685	646	723	677	642	710	669	637	698	661	633
	7	789	701	645	605	776	695	641	603	683	635	600	672	629	597	661	623	594
	8	751	662	605	567	740	656	603	566	646	598	563	636	593	561	627	588	558
	9	716	626	570	533	706	621	568	532	612	564	530	604	560	528	596	556	526
	10	684	593	539	502	674	589	537	502	581	533	500	574	530	499	567	527	498

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	42.7 fc	4.9 ft
6.5 ft	30.6 fc	5.8 ft
7.5 ft	23.0 fc	6.7 ft
8.0 ft	20.2 fc	7.2 ft
10.0 ft	12.9 fc	9.0 ft
12.0 ft	9.0 fc	10.8 ft
14.0 ft	6.6 fc	12.6 ft
16.0 ft	5.0 fc	14.4 ft
20.0 ft	3.2 fc	17.9 ft
24.0 ft	2.2 fc	21.5 ft
28.0 ft	1.6 fc	25.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	162478	162478	162478
45.00°	15354	15678	16048
55.00°	5231	5300	5354
65.00°	1057	864	958
75.00°	281	274	278
85.00°	631	833	692

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	9.2	10.2	9.6	10.5	10.8	8.9	9.9	9.2	10.2	10.5
	3H	9.0	9.9	9.4	10.3	10.6	8.7	9.6	9.1	9.9	10.3
	4H	8.9	9.8	9.3	10.1	10.5	8.6	9.4	9.0	9.8	10.2
	6H	8.8	9.6	9.3	10.0	10.4	8.5	9.3	8.9	9.6	10.0
	8H	8.8	9.5	9.2	9.9	10.3	8.5	9.2	8.9	9.6	10.0
	12H	8.8	9.4	9.2	9.8	10.2	8.4	9.1	8.9	9.5	9.9
4H	2H	9.0	9.8	9.4	10.1	10.5	8.7	9.5	9.1	9.9	10.2
	3H	8.8	9.5	9.2	9.9	10.3	8.5	9.2	8.9	9.6	10.0
	4H	8.7	9.3	9.1	9.7	10.2	8.4	9.0	8.8	9.4	9.9
	6H	8.6	9.1	9.1	9.6	10.0	8.3	8.8	8.8	9.3	9.8
	8H	8.6	9.0	9.0	9.5	10.0	8.3	8.8	8.8	9.2	9.7
	12H	8.5	8.9	9.0	9.4	9.9	8.3	8.7	8.8	9.2	9.6
8H	4H	8.5	9.0	9.0	9.4	9.9	8.2	8.7	8.7	9.2	9.6
	6H	8.4	8.8	8.9	9.3	9.8	8.2	8.5	8.7	9.0	9.5
	8H	8.4	8.7	8.9	9.3	9.8	8.1	8.5	8.7	9.0	9.5
	12H	8.4	8.7	8.9	9.2	9.8	8.1	8.4	8.7	8.9	9.5
12H	4H	8.5	8.9	8.9	9.4	9.8	8.2	8.6	8.7	9.1	9.5
	6H	8.4	8.7	8.9	9.2	9.7	8.1	8.4	8.6	8.9	9.5
	8H	8.4	8.7	8.9	9.2	9.7	8.1	8.4	8.6	8.9	9.5

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0