

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SGx4LEDFX-40L35KDX-AR4223FX-SG-SO

Nom 4" diam recessed downlight

Test Number

SP-00744_1_M-40L

Test Date

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

Summary of Results

Power

Input Watts	34.6 W
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Lumen Output

Output Lumens	2501
Efficacy	72.28 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

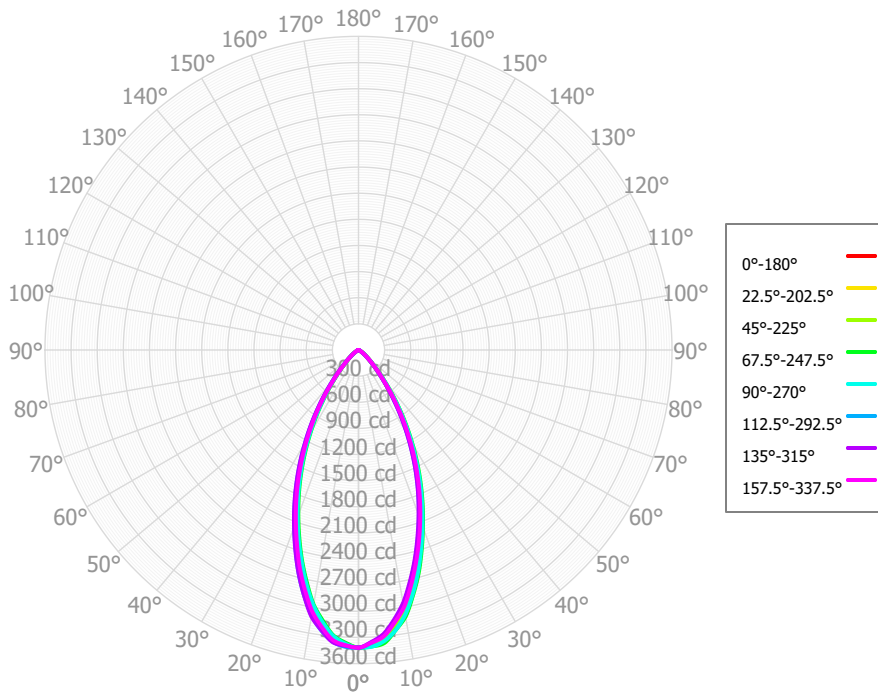
Full Beam Angle

0° - 180°	48°
90° - 270°	48°

IES File Header Contents

Keyword	Value
TEST	SP-00744_1_M-40L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	1/7/2019
UPDATE	2/26/2021
LUMCAT	SGx4LEDFX-40L35KDX-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
_CRI	80+
_CCTMULT	27K x 0.95, 30K x 1.0, 40K x 1.08
LAMPMULT	10L x 0.25, 15L x 0.38, 20L x 0.50, 30L x 0.74

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	311.30	12.45%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	711.73	28.46%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	737.12	29.47%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	476.97	19.07%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	189.27	7.57%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	60.55	2.42%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	11.00	0.44%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.62	0.06%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.46	0.06%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	2501.02	100.00%	0.00° - 180.00°	2501.02	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°	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48	3417.48
2.50°	3379.63	3391.58	3392.76	3407.64	3410.88	3411.91	3400.50	3394.14	3388.18	3380.29	3376.57	3366.19	3378.48	3365.12	3356.77	3366.12	3379.63
5.00°	3300.27	3339.53	3340.99	3379.00	3357.15	3363.58	3369.46	3346.21	3327.58	3307.20	3315.32	3292.05	3299.56	3283.08	3275.65	3302.76	3300.27
7.50°	3172.43	3210.72	3212.74	3246.79	3247.63	3251.68	3248.12	3212.13	3204.41	3170.98	3167.58	3135.97	3155.61	3137.52	3124.53	3159.34	3172.43
10.00°	2991.82	3051.83	3056.43	3109.87	3087.25	3095.38	3109.50	3051.41	3036.57	2999.09	3005.85	2968.75	2979.44	2963.90	2950.11	3001.39	2991.82
12.50°	2770.99	2831.62	2831.57	2887.17	2872.27	2886.41	2888.09	2829.86	2829.78	2780.39	2781.70	2737.54	2758.82	2742.49	2724.23	2775.19	2770.99
15.00°	2537.09	2593.21	2599.72	2661.61	2639.21	2655.04	2656.67	2598.11	2600.73	2549.94	2551.36	2503.95	2521.03	2504.54	2493.00	2541.33	2537.09
17.50°	2295.06	2354.06	2354.50	2410.65	2390.44	2401.85	2410.05	2347.42	2365.47	2307.03	2311.92	2260.88	2282.51	2266.97	2252.16	2306.34	2295.06
20.00°	2058.01	2114.74	2112.93	2161.80	2146.08	2155.63	2162.55	2102.53	2127.35	2066.49	2072.14	2020.45	2043.77	2029.50	2016.70	2071.30	2058.01
22.50°	1823.46	1881.36	1877.09	1924.64	1904.90	1914.92	1923.82	1866.22	1885.03	1828.04	1836.37	1787.93	1810.35	1798.35	1788.97	1840.47	1823.46
25.00°	1593.71	1648.86	1642.65	1688.61	1668.48	1677.89	1685.46	1631.64	1641.19	1594.01	1601.21	1556.85	1578.09	1568.40	1561.64	1609.95	1593.71
27.50°	1365.85	1422.29	1409.94	1457.17	1434.81	1443.23	1453.53	1399.14	1412.75	1363.13	1375.62	1329.10	1354.40	1345.01	1334.78	1385.18	1365.85
30.00°	1148.52	1196.22	1186.83	1229.87	1211.18	1218.37	1223.56	1177.56	1188.48	1146.28	1152.28	1109.58	1131.97	1122.41	1116.99	1162.20	1148.52
32.50°	934.45	984.79	973.53	1014.86	992.22	998.62	1012.25	966.84	979.32	937.60	947.06	905.21	929.04	921.09	908.00	955.50	934.45
35.00°	741.94	774.60	775.08	809.24	794.55	800.30	805.46	769.27	773.11	745.00	747.65	716.68	727.84	720.98	720.35	754.39	741.94
37.50°	554.26	599.83	589.29	625.04	604.70	610.75	626.15	582.31	599.38	559.91	578.14	551.82	571.54	564.55	549.39	585.40	554.26
40.00°	423.39	430.38	440.82	462.69	456.69	462.89	458.96	434.35	429.86	422.32	422.57	413.18	417.95	411.13	414.84	429.38	423.39
42.50°	301.05	328.42	318.02	340.84	320.19	328.52	342.15	312.08	326.48	301.90	318.90	306.55	321.08	314.50	303.56	324.91	301.05
45.00°	228.36	231.98	233.18	242.33	238.68	243.24	239.08	228.40	227.46	225.39	227.22	223.65	227.15	222.18	224.65	232.35	228.36
47.50°	160.28	176.60	169.22	178.37	168.16	169.58	177.94	165.31	173.57	161.01	169.51	164.19	173.03	169.60	162.49	175.49	160.28
50.00°	120.98	125.19	124.54	127.96	125.47	126.98	125.24	122.71	121.28	120.00	120.57	119.49	121.82	120.30	119.40	125.31	120.98
52.50°	83.01	92.92	88.51	93.71	86.48	89.38	92.97	88.70	91.61	83.69	90.81	86.95	91.61	90.66	84.02	90.73	83.01
55.00°	63.11	63.79	63.94	66.31	64.59	66.64	65.67	65.12	63.17	62.12	64.82	61.68	63.55	63.10	62.00	62.70	63.11
57.50°	43.65	45.75	43.34	45.71	43.89	45.42	47.83	44.95	47.24	42.45	45.45	41.23	45.90	44.10	44.18	46.73	43.65
60.00°	30.25	29.27	28.00	29.61	29.24	31.03	32.30	31.41	31.77	29.28	29.33	26.90	29.65	27.15	29.84	31.64	30.25
62.50°	17.49	17.02	14.05	17.12	14.96	17.02	20.31	19.50	19.22	16.56	17.86	15.80	18.33	16.39	16.32	17.83	17.49
65.00°	9.40	7.57	7.68	9.05	8.52	9.56	10.73	10.86	8.44	8.90	9.49	8.37	8.88	7.64	8.55	8.17	9.40
67.50°	2.89	3.74	2.72	3.78	2.92	2.87	4.09	2.76	4.74	2.06	4.60	2.49	4.16	3.53	1.68	3.42	2.89
70.00°	1.90	1.75	1.97	1.92	2.32	2.12	1.34	2.01	2.20	2.07	2.21	1.56	1.56	1.33	1.74	1.57	1.90
72.50°	1.42	1.73	1.52	1.29	1.83	1.45	1.22	1.63	1.67	1.89	1.44	1.63	1.67	1.38	1.83	1.64	1.42
75.00°	1.53	1.60	1.49	1.42	1.51	0.93	1.31	1.74	1.43	1.35	1.69	1.72	1.72	1.18	1.53	1.64	1.53
77.50°	1.35	1.54	1.21	1.47	1.32	1.29	1.41	1.76	1.32	1.43	1.67	1.74	1.68	1.02	1.44	1.55	1.35
80.00°	1.29	1.64	1.08	1.51	1.44	1.53	1.50	1.57	1.28	1.59	1.23	1.64	1.45	1.09	1.50	1.38	1.29
82.50°	1.30	1.56	1.38	1.82	1.65	1.42	1.65	1.26	1.41	1.61	1.24	1.27	1.28	1.36	1.52	1.44	1.30
85.00°	1.16	1.02	1.53	1.34	1.27	1.39	1.41	1.55	1.80	1.43	1.53	1.21	1.10	1.60	1.15	1.52	1.16
87.50°	1.36	1.26	1.52	1.40	1.21	1.07	1.27	1.25	1.16	1.34	1.43	1.34	1.33	1.55	1.23	1.47	1.36
90.00°	1.25	0.70	1.42	0.56	1.59	1.54	0.53	1.13	0.52	1.24	0.47	1.41	1.05	0.46	1.21	0.45	1.25

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	2977	2977	2977	2977	2908	2908	2908	2908	2779	2779	2779	2661	2661	2661	2552	2552	2501
	1	2838	2769	2707	2651	2777	2715	2659	2609	2614	2569	2528	2521	2486	2453	2435	2408	2360
	2	2698	2575	2475	2390	2642	2532	2441	2363	2452	2376	2311	2377	2315	2262	2308	2258	2214
	3	2561	2400	2276	2177	2511	2366	2251	2159	2300	2204	2125	2239	2159	2091	2183	2116	2075
	4	2432	2243	2104	1999	2386	2214	2086	1987	2160	2050	1963	2110	2016	1940	2064	1984	1947
	5	2309	2101	1955	1847	2269	2077	1941	1839	2032	1913	1822	1991	1887	1806	1952	1862	1828
	6	2195	1972	1823	1716	2158	1953	1812	1710	1915	1791	1698	1880	1771	1687	1847	1751	1720
	7	2088	1857	1707	1601	2055	1840	1698	1597	1808	1681	1589	1778	1665	1580	1750	1649	1621
	8	1988	1752	1603	1500	1958	1737	1596	1497	1710	1582	1491	1685	1569	1484	1661	1556	1531
	9	1896	1656	1510	1410	1869	1644	1504	1408	1621	1493	1403	1599	1482	1398	1578	1472	1449
	10	1810	1570	1426	1330	1785	1559	1421	1328	1539	1412	1324	1520	1403	1321	1501	1394	1374

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	113.0 fc	4.9 ft
6.5 ft	80.9 fc	5.8 ft
7.5 ft	60.8 fc	6.7 ft
8.0 ft	53.4 fc	7.2 ft
10.0 ft	34.2 fc	9.0 ft
12.0 ft	23.7 fc	10.8 ft
14.0 ft	17.4 fc	12.6 ft
16.0 ft	13.3 fc	14.4 ft
20.0 ft	8.5 fc	17.9 ft
24.0 ft	5.9 fc	21.5 ft
28.0 ft	4.4 fc	25.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	430088	430088	430088
45.00°	40644	41500	42480
55.00°	13848	14029	14172
65.00°	2798	2288	2537
75.00°	742	725	735
85.00°	1671	2205	1831

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	12.6	13.6	12.9	13.9	14.2	12.2	13.3	12.6	13.6	13.9
	3H	12.4	13.3	12.8	13.6	14.0	12.1	13.0	12.5	13.3	13.7
	4H	12.3	13.1	12.7	13.5	13.9	12.0	12.8	12.4	13.2	13.6
	6H	12.2	13.0	12.6	13.4	13.8	11.9	12.7	12.3	13.0	13.4
	8H	12.2	12.9	12.6	13.3	13.7	11.9	12.6	12.3	13.0	13.4
	12H	12.1	12.8	12.6	13.2	13.6	11.8	12.5	12.3	12.9	13.3
4H	2H	12.3	13.2	12.8	13.5	13.9	12.1	12.9	12.5	13.2	13.6
	3H	12.2	12.8	12.6	13.3	13.7	11.9	12.6	12.3	13.0	13.4
	4H	12.1	12.7	12.5	13.1	13.5	11.8	12.4	12.2	12.8	13.3
	6H	12.0	12.5	12.5	12.9	13.4	11.7	12.2	12.2	12.7	13.1
	8H	11.9	12.4	12.4	12.9	13.3	11.7	12.1	12.1	12.6	13.1
	12H	11.9	12.3	12.4	12.8	13.3	11.6	12.1	12.1	12.5	13.0
8H	4H	11.9	12.4	12.4	12.8	13.3	11.6	12.1	12.1	12.5	13.0
	6H	11.8	12.2	12.3	12.7	13.2	11.5	11.9	12.1	12.4	12.9
	8H	11.8	12.1	12.3	12.6	13.1	11.5	11.9	12.0	12.4	12.9
	12H	11.8	12.1	12.3	12.6	13.2	11.5	11.8	12.0	12.3	12.9
12H	4H	11.8	12.2	12.3	12.7	13.2	11.6	12.0	12.0	12.5	12.9
	6H	11.8	12.1	12.3	12.6	13.1	11.5	11.8	12.0	12.3	12.8
	8H	11.7	12.0	12.3	12.5	13.1	11.5	11.8	12.0	12.3	12.8

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0