

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-MW-SO

Nom 4" diam recessed downlight

Test Number

SP-00744_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
-------------	--------

Lumen Output

Output Lumens	2466
Efficacy	71.26 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

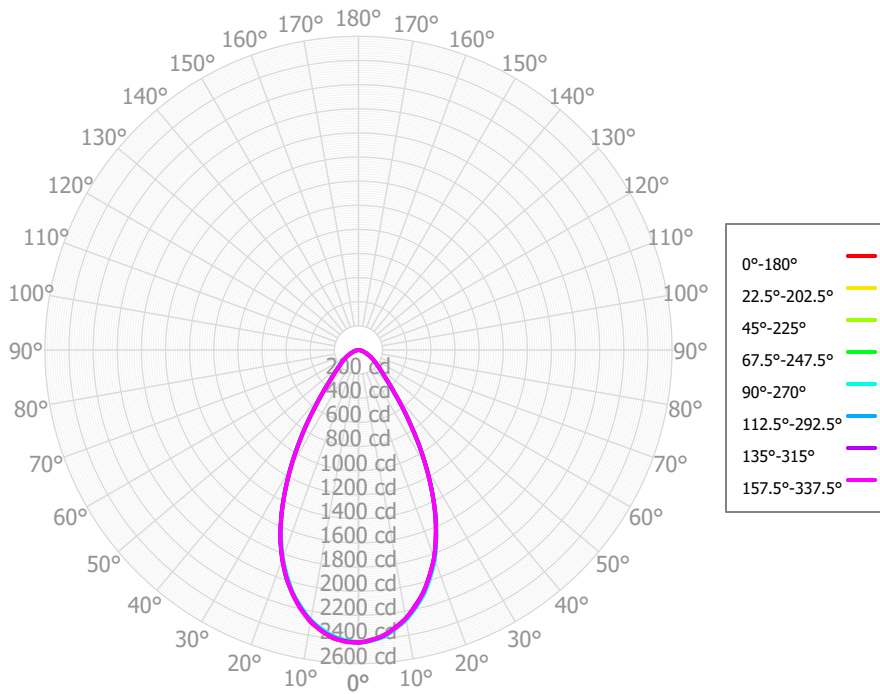
Full Beam Angle

0° - 180°	58°
90° - 270°	58°

IES File Header Contents

Keyword	Value
TEST	SP-00744_M-40L
TESTLAB	Spectrum Lighting Photometric Lab
MANUFAC	Spectrum Lighting
ISSUEDATE	1/7/2019
UPDATE	2/26/2021
LUMCAT	SGx4LEDFX-40L35KDX-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
_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°	227.14	9.21%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	581.08	23.57%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	681.59	27.64%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	470.23	19.07%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	238.97	9.69%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	143.32	5.81%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	81.04	3.29%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	35.23	1.43%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	7.09	0.29%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	2465.69	100.00%	0.00° - 180.00°	2465.69	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°	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31	2425.31
2.50°	2405.17	2411.23	2406.37	2409.52	2411.78	2418.73	2416.86	2422.88	2416.62	2423.39	2412.11	2410.75	2409.80	2413.27	2407.11	2408.27	2405.17
5.00°	2379.32	2373.39	2376.59	2380.99	2388.02	2385.33	2397.86	2395.00	2400.66	2393.87	2388.07	2384.94	2385.15	2374.60	2380.51	2374.37	2379.32
7.50°	2321.97	2326.31	2326.95	2329.32	2333.17	2348.21	2346.87	2352.15	2348.45	2355.20	2338.38	2337.89	2332.29	2329.54	2321.12	2326.42	2321.97
10.00°	2262.61	2260.36	2272.77	2269.53	2272.86	2275.67	2286.69	2284.18	2290.80	2283.70	2276.92	2276.24	2277.80	2259.68	2258.41	2260.62	2262.61
12.50°	2172.29	2180.91	2181.72	2184.61	2188.82	2201.02	2197.49	2205.70	2199.71	2205.03	2192.04	2193.48	2185.97	2180.99	2170.41	2178.04	2172.29
15.00°	2078.90	2079.48	2084.98	2093.08	2096.77	2096.35	2099.93	2099.64	2102.43	2096.95	2093.33	2093.48	2092.08	2075.84	2080.99	2078.17	2078.90
17.50°	1959.64	1964.58	1965.03	1972.07	1978.68	1989.77	1982.18	1984.54	1978.51	1984.44	1972.01	1973.34	1967.12	1962.92	1958.08	1961.63	1959.64
20.00°	1834.04	1831.74	1842.91	1845.31	1848.09	1847.65	1849.99	1842.41	1845.69	1839.29	1836.56	1836.87	1838.34	1832.06	1833.09	1831.16	1834.04
22.50°	1674.72	1678.59	1680.47	1679.49	1685.95	1701.09	1689.91	1693.75	1684.26	1691.22	1682.51	1684.45	1679.08	1683.85	1673.75	1676.34	1674.72
25.00°	1508.15	1503.20	1515.99	1508.79	1513.11	1511.19	1515.64	1508.89	1512.61	1505.86	1509.97	1510.18	1514.05	1504.00	1510.92	1504.58	1508.15
27.50°	1314.33	1317.14	1319.57	1318.24	1319.09	1320.20	1319.13	1317.83	1315.84	1319.14	1317.69	1318.62	1319.42	1318.40	1317.50	1317.16	1314.33
30.00°	1121.39	1121.58	1123.59	1126.45	1124.90	1122.74	1122.32	1119.77	1119.49	1119.86	1122.73	1125.04	1124.99	1124.16	1124.35	1120.99	1121.39
32.50°	931.07	933.47	933.89	932.55	930.41	928.55	925.14	920.95	923.98	922.14	925.38	930.17	931.32	933.60	932.74	933.07	931.07
35.00°	752.02	750.81	748.67	740.43	749.46	748.02	745.13	746.93	743.65	746.08	747.33	752.31	746.96	747.53	748.87	748.79	752.02
37.50°	598.43	600.15	598.95	594.28	586.26	581.90	583.00	574.27	587.46	577.58	583.22	583.40	589.05	589.87	594.78	598.66	598.43
40.00°	466.44	468.59	459.81	453.60	457.07	460.99	457.22	463.41	459.96	465.19	461.24	462.74	453.61	460.30	457.85	460.63	466.44
42.50°	373.03	377.19	374.50	370.79	364.03	357.98	362.59	355.29	369.28	361.13	363.73	362.08	367.65	365.21	372.06	373.69	373.03
45.00°	298.80	304.84	297.98	293.38	295.08	297.99	295.09	297.81	298.66	299.65	297.54	298.20	296.50	298.56	298.58	300.28	298.80
47.50°	252.88	255.10	254.00	250.62	247.51	246.20	246.40	242.89	249.20	244.13	246.25	246.21	251.99	250.02	253.37	254.39	252.88
50.00°	214.63	214.01	214.29	210.95	210.74	210.20	209.06	210.10	210.24	210.21	210.75	211.69	213.33	213.55	213.96	213.65	214.63
52.50°	185.56	184.35	186.64	184.68	181.73	179.75	178.14	179.05	180.42	179.69	181.10	181.41	183.12	184.43	185.04	185.49	185.56
55.00°	160.24	158.00	160.89	159.55	158.36	157.96	155.63	157.70	156.14	158.46	157.32	158.51	157.82	159.29	159.46	158.94	160.24
57.50°	138.56	138.17	139.31	138.10	138.25	137.12	136.96	136.49	135.78	137.42	135.21	136.85	138.25	138.16	138.88	138.74	138.56
60.00°	118.30	119.70	118.74	117.43	118.49	117.49	117.44	115.87	116.32	116.80	115.59	117.31	118.48	118.79	118.55	118.95	118.30
62.50°	99.17	100.40	99.96	98.73	98.89	98.80	97.61	95.91	97.38	96.98	96.50	98.01	98.52	99.61	98.53	99.55	99.17
65.00°	81.84	80.98	81.81	81.05	81.25	81.11	79.62	77.90	79.79	78.54	80.06	80.50	80.33	80.50	80.81	80.35	81.84
67.50°	65.69	68.69	64.55	65.34	64.33	67.21	62.12	62.80	62.78	63.05	64.07	63.65	63.49	65.78	65.37	65.26	65.69
70.00°	54.35	56.82	51.55	52.45	52.28	55.95	50.79	52.72	52.05	50.78	51.71	52.95	52.23	52.08	52.68	51.35	54.35
72.50°	45.01	44.17	42.34	42.69	41.38	44.21	40.57	42.18	42.28	41.37	40.51	42.60	43.00	42.24	41.77	42.46	45.01
75.00°	34.78	33.28	32.42	33.63	32.48	32.94	32.35	31.68	32.35	33.15	31.52	32.86	33.47	33.12	33.42	33.26	34.78
77.50°	25.28	24.85	23.34	24.96	23.80	23.20	23.64	23.45	22.39	25.70	23.68	22.69	23.64	25.28	25.80	23.79	25.28
80.00°	16.97	16.38	17.05	16.81	15.73	15.48	14.80	15.67	14.27	16.44	15.75	15.49	14.75	18.13	18.94	17.19	16.97
82.50°	11.17	9.85	9.62	10.69	9.85	9.86	8.70	8.61	9.20	8.68	8.56	10.76	8.90	11.24	11.09	9.67	11.17
85.00°	5.94	5.69	5.14	4.86	6.48	5.59	5.21	4.20	5.32	4.81	4.11	6.02	4.60	5.45	5.24	4.88	5.94
87.50°	3.40	2.85	2.42	2.79	2.44	3.27	2.10	2.31	2.14	1.84	2.01	2.87	2.97	2.17	2.78	2.38	3.40
90.00°	1.39	1.70	1.54	1.64	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	1.59	1.54	1.39

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	2935	2935	2935	2935	2867	2867	2867	2867	2740	2740	2740	2623	2623	2623	2516	2516	2466
	1	2773	2693	2622	2558	2710	2639	2575	2517	2538	2487	2439	2446	2404	2366	2360	2328	2297
	2	2608	2469	2353	2256	2551	2425	2320	2231	2344	2256	2181	2268	2197	2134	2199	2140	2088
	3	2454	2271	2130	2017	2401	2235	2105	2000	2169	2058	1967	2107	2014	1936	2049	1972	1905
	4	2310	2097	1942	1823	2263	2068	1923	1811	2013	1888	1789	1962	1854	1768	1914	1822	1747
	5	2178	1945	1782	1662	2135	1920	1768	1654	1874	1741	1638	1831	1715	1623	1791	1690	1609
	6	2056	1810	1644	1526	2017	1789	1633	1520	1750	1612	1509	1714	1592	1498	1680	1572	1488
	7	1945	1690	1525	1409	1909	1673	1516	1405	1640	1499	1397	1609	1483	1389	1580	1467	1382
	8	1842	1583	1420	1308	1810	1568	1413	1305	1540	1400	1299	1514	1386	1294	1489	1374	1288
	9	1748	1488	1328	1220	1719	1475	1322	1218	1450	1311	1213	1427	1300	1209	1406	1290	1204
	10	1662	1402	1246	1142	1635	1390	1241	1140	1369	1232	1137	1349	1223	1133	1330	1214	1130

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	80.2 fc	6.1 ft
6.5 ft	57.4 fc	7.2 ft
7.5 ft	43.1 fc	8.3 ft
8.0 ft	37.9 fc	8.8 ft
10.0 ft	24.3 fc	11.0 ft
12.0 ft	16.8 fc	13.2 ft
14.0 ft	12.4 fc	15.4 ft
16.0 ft	9.5 fc	17.6 ft
20.0 ft	6.1 fc	22.0 ft
24.0 ft	4.2 fc	26.4 ft
28.0 ft	3.1 fc	30.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	305224	305224	305224
45.00°	53180	53035	52517
55.00°	35158	35302	34746
65.00°	24371	24361	24195
75.00°	16912	15762	15793
85.00°	8583	7421	9363

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	20.2	21.4	20.6	21.7	22.0	20.2	21.3	20.5	21.7	22.0
	3H	21.2	22.2	21.6	22.6	22.9	21.1	22.1	21.5	22.5	22.8
	4H	21.5	22.5	21.9	22.8	23.2	21.4	22.3	21.8	22.7	23.1
	6H	21.6	22.5	22.1	22.9	23.3	21.5	22.4	21.9	22.8	23.2
	8H	21.7	22.5	22.1	22.9	23.3	21.5	22.4	21.9	22.7	23.2
	12H	21.7	22.5	22.1	22.8	23.3	21.5	22.3	21.9	22.7	23.1
4H	2H	20.5	21.5	20.9	21.8	22.2	20.4	21.4	20.9	21.8	22.2
	3H	21.6	22.4	22.1	22.8	23.2	21.6	22.3	22.0	22.7	23.2
	4H	22.0	22.7	22.5	23.2	23.6	21.9	22.6	22.4	23.1	23.5
	6H	22.3	22.9	22.7	23.3	23.8	22.1	22.7	22.6	23.2	23.6
	8H	22.3	22.9	22.8	23.3	23.8	22.1	22.7	22.6	23.2	23.6
	12H	22.3	22.8	22.8	23.3	23.8	22.1	22.6	22.6	23.1	23.6
8H	4H	22.1	22.7	22.6	23.1	23.6	22.0	22.6	22.5	23.0	23.5
	6H	22.4	22.8	22.9	23.3	23.8	22.2	22.7	22.7	23.2	23.7
	8H	22.5	22.9	23.0	23.4	23.9	22.3	22.7	22.8	23.2	23.7
	12H	22.5	22.8	23.0	23.3	23.9	22.3	22.7	22.8	23.2	23.8
12H	4H	22.1	22.6	22.6	23.1	23.5	22.0	22.4	22.4	22.9	23.4
	6H	22.4	22.8	22.9	23.3	23.8	22.2	22.6	22.7	23.1	23.6
	8H	22.5	22.8	23.0	23.3	23.9	22.3	22.6	22.8	23.1	23.7

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0