

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGW4LEDFX 50L 35K XX AR4923FX MW WF SK
Nom 4 inch dia downlight with matte white finish and Skytex lens

Test Number

SP-01233

Test Date

5/26/2021

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

Summary of Results

Power

Input Watts	38.3 W
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Lumen Output

Output Lumens	3045
Efficacy	79.5 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°	0.74
Four luminaires	0.91

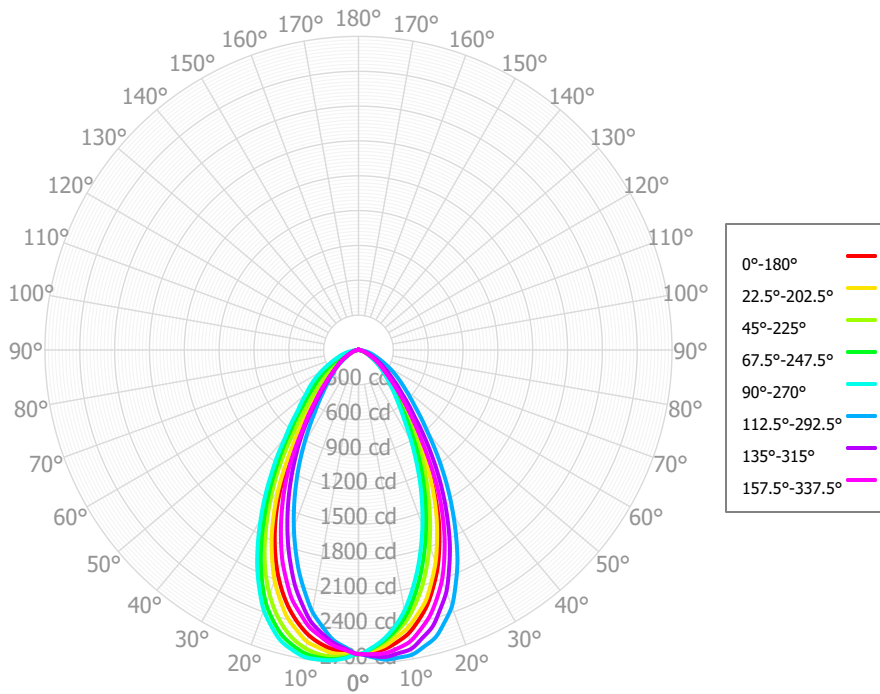
Full Beam Angle

0° - 180°	58°
90° - 270°	58°

IES File Header Contents

Keyword	Value
TEST	SP-01233
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	5/26/2021
ISSUEDATE	6/10/2021
LUMCAT	SGW4LEDFX 50L 35K XX AR4923FX MW WF SK
LUMINAIRE	Nom 4 inch dia downlight with matte white finish and Skytex lens
OTHER	Beam Angle:
LAMPCAT	N/A
LAMP	FX Gen2
OTHER	CCT Output Multipliers: 27HK x 0.764, 30K x 0.96, 40K x 1.03, 50K x 1.04
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+
_CCTMULT	27HK x 0.77, 30K x 0.96, 40K x 1.03, 50K x 1.04
_LAMPMULT	10L x 0.18, 15L x 0.29, 20L x 0.39, 30L x 0.58, 40L x 0.78

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	247.19	8.12%	90.00° - 100.00°	1.93	0.06%
10.00° - 20.00°	635.14	20.86%	100.00° - 110.00°	1.69	0.06%
20.00° - 30.00°	755.20	24.80%	100.00° - 120.00°	3.21	0.11%
30.00° - 40.00°	591.05	19.41%	120.00° - 130.00°	1.46	0.05%
40.00° - 50.00°	372.22	12.22%	130.00° - 140.00°	1.40	0.05%
50.00° - 60.00°	230.80	7.58%	140.00° - 150.00°	1.19	0.04%
60.00° - 70.00°	126.49	4.15%	150.00° - 160.00°	0.94	0.03%
70.00° - 80.00°	61.24	2.01%	160.00° - 170.00°	0.58	0.02%
80.00° - 90.00°	14.67	0.48%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	3034.00	99.64%	0.00° - 180.00°	3044.90	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°	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92	2618.92
2.50°	2605.34	2591.54	2576.76	2574.90	2568.98	2563.05	2576.54	2586.39	2606.21	2621.34	2640.78	2653.51	2657.03	2647.58	2637.57	2621.98	2605.34
5.00°	2584.97	2560.09	2527.79	2513.22	2498.90	2505.74	2529.15	2551.81	2585.89	2619.12	2650.60	2672.57	2682.56	2676.22	2652.63	2621.14	2584.97
7.50°	2538.25	2496.69	2455.13	2435.28	2401.30	2399.55	2455.64	2490.06	2547.89	2587.25	2640.96	2669.85	2687.85	2671.16	2634.25	2591.39	2538.25
10.00°	2479.42	2431.67	2368.85	2326.95	2279.51	2289.07	2372.37	2425.30	2490.65	2550.86	2610.45	2652.56	2683.85	2663.57	2613.57	2550.34	2479.42
12.50°	2385.78	2336.66	2248.95	2189.38	2124.83	2134.60	2242.49	2323.25	2407.23	2468.16	2556.76	2606.37	2644.21	2615.31	2540.67	2466.54	2385.78
15.00°	2278.86	2237.11	2112.76	2035.06	1960.94	1977.57	2105.28	2218.76	2305.34	2379.44	2476.22	2543.78	2590.97	2562.26	2465.70	2372.02	2278.86
17.50°	2140.71	2091.65	1954.06	1866.94	1786.34	1803.03	1940.81	2070.40	2181.33	2249.59	2370.14	2444.33	2494.88	2460.78	2341.25	2244.95	2140.71
20.00°	1992.82	1942.45	1785.96	1693.76	1609.68	1627.76	1773.98	1920.46	2038.79	2113.12	2239.67	2326.95	2384.91	2351.16	2214.53	2104.97	1992.82
22.50°	1819.29	1767.86	1611.16	1516.92	1430.93	1448.64	1600.09	1745.25	1877.25	1943.47	2089.03	2167.50	2229.96	2186.40	2039.13	1931.64	1819.29
25.00°	1639.11	1591.19	1434.06	1345.07	1252.47	1271.26	1427.90	1569.97	1702.88	1768.84	1914.40	1990.70	2063.33	2016.72	1862.20	1751.17	1639.11
27.50°	1434.32	1403.60	1266.78	1176.29	1074.28	1100.92	1260.04	1393.11	1517.25	1574.04	1722.59	1801.78	1876.42	1822.56	1666.65	1555.40	1434.32
30.00°	1224.58	1214.34	1102.23	1013.47	910.80	936.32	1098.40	1215.20	1316.00	1374.83	1531.34	1608.74	1685.43	1629.92	1471.53	1352.42	1224.58
32.50°	1032.11	1018.39	947.55	853.76	758.37	790.29	949.99	1024.92	1102.68	1161.40	1340.42	1422.33	1498.52	1443.40	1279.68	1136.41	1032.11
35.00°	842.18	838.45	795.14	717.39	641.03	656.95	804.82	841.62	928.05	965.13	1147.57	1237.72	1312.25	1260.27	1090.55	944.19	842.18
37.50°	716.49	709.87	662.93	591.58	546.82	558.31	665.44	710.76	778.92	814.13	953.73	1074.53	1144.40	1088.01	916.50	789.48	716.49
40.00°	597.72	588.96	534.21	503.62	470.51	470.62	544.10	586.02	647.57	673.83	798.04	916.13	978.54	928.43	753.08	653.77	597.72
42.50°	490.66	488.89	452.04	429.86	404.21	407.74	450.88	494.47	526.16	557.76	659.37	793.38	858.21	802.09	636.60	543.59	490.66
45.00°	384.32	400.01	375.55	369.95	349.35	350.92	375.89	407.34	436.13	455.35	560.32	676.66	740.71	688.41	529.02	448.38	384.32
47.50°	332.62	336.30	320.64	314.26	299.88	305.61	325.12	339.36	361.35	378.88	475.91	593.60	664.79	603.23	452.35	370.38	332.62
50.00°	282.14	280.26	267.54	271.88	257.69	262.30	278.97	278.03	305.28	313.68	404.03	514.53	590.25	526.23	381.15	308.66	282.14
52.50°	241.61	238.67	231.22	232.89	218.45	222.31	238.07	239.47	256.80	266.58	335.92	456.56	535.38	464.69	325.37	263.44	241.61
55.00°	201.57	201.92	195.57	197.89	183.16	185.13	202.21	203.50	220.03	225.04	287.40	400.28	480.53	406.93	274.15	224.03	201.57
57.50°	171.00	173.00	167.46	163.68	149.18	151.93	171.34	174.73	187.15	191.32	243.77	348.72	426.09	355.22	233.91	189.69	171.00
60.00°	140.70	144.73	139.52	135.57	124.46	124.25	142.44	146.72	154.75	157.55	203.30	297.34	371.83	305.11	195.26	156.52	140.70
62.50°	113.15	117.36	116.62	108.33	102.23	103.21	115.26	120.52	122.48	123.70	163.44	252.24	319.61	257.22	159.81	124.24	113.15
65.00°	87.26	94.54	94.31	92.03	89.42	87.01	95.12	97.07	99.22	96.42	131.80	207.65	269.05	215.18	128.91	98.89	87.26
67.50°	73.47	77.18	79.73	76.86	78.62	75.92	80.16	79.09	77.93	75.90	101.32	177.29	230.58	180.16	105.75	78.01	73.47
70.00°	60.22	63.55	65.60	65.51	67.48	65.81	67.60	64.11	64.53	60.24	83.60	147.35	193.89	150.70	85.15	62.77	60.22
72.50°	49.87	53.74	55.02	54.39	56.28	56.58	56.54	54.16	52.43	48.98	67.16	122.80	166.61	126.93	68.34	50.66	49.87
75.00°	39.46	43.51	44.55	45.77	45.74	46.31	46.51	43.97	42.29	38.65	52.46	98.47	139.73	103.89	52.86	39.66	39.46
77.50°	28.79	32.90	34.70	37.18	35.27	35.24	37.04	33.46	32.39	29.04	37.86	75.93	114.50	81.48	39.05	29.19	28.79
80.00°	19.20	23.69	25.14	27.98	26.63	25.69	28.09	24.26	23.63	20.65	25.79	53.52	87.32	58.35	26.23	20.25	19.20
82.50°	13.21	15.56	16.85	18.90	18.12	17.19	19.38	16.71	14.96	13.07	13.86	31.88	53.61	34.65	14.46	11.91	13.21
85.00°	7.89	9.40	9.46	12.01	10.93	10.69	12.37	10.26	9.77	7.86	8.27	12.97	25.29	18.01	6.96	7.23	7.89
87.50°	4.39	4.52	5.30	5.55	3.81	5.36	6.01	4.98	4.72	4.03	2.95	6.37	11.68	6.01	3.54	3.74	4.39
90.00°	1.92	2.36	2.10	3.37	2.59	2.86	3.38	2.28	3.22	2.32	2.16	1.24	2.06	1.61	1.95	2.60	1.92
92.50°	1.78	1.78	1.84	1.49	1.44	1.74	1.95	1.98	1.77	1.66	1.45	1.31	1.82	1.48	1.85	2.06	1.78
95.00°	1.73	1.73	1.68	1.78	1.64	1.56	1.59	1.80	1.88	1.48	1.51	1.32	1.61	1.43	1.93	1.80	1.73
97.50°	1.85	1.94	1.79	1.98	1.82	1.79	1.50	1.72	1.97	1.50	1.54	1.16	1.46	1.42	2.14	1.58	1.85
100.00°	1.80	1.70	1.96	1.74	1.82	1.80	1.78	1.61	1.77	1.49	1.30	1.10	1.45	1.43	2.09	1.57	1.80
102.50°	1.47	1.27	2.24	1.61	1.77	1.73	2.13	1.49	1.58	1.46	1.09	1.29	1.65	1.45	1.87	1.60	1.47
105.00°	1.37	1.22	2.24	1.90	1.43	1.79	1.95	1.43	1.49	1.36	1.03	1.37	1.73	1.72	1.96	1.71	1.37
107.50°	1.60	1.30	1.73	2.05	1.16	1.90	1.69	1.41	1.43	1.23	1.01	1.23	1.64	2.07	2.21	1.84	1.60
110.00°	1.79	1.37	1.50	1.75	1.31	1.66	1.45	1.41	1.55	1.18	1.16	1.16	1.58	1.78	2.07	1.75	1.79
112.50°	1.92	1.43	1.72	1.52	1.43	1.34	1.22	1.41	1.66	1.16	1.30	1.23	1.58	1.32	1.76	1.64	1.92

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	3622	3622	3622	3622	3537	3537	3537	3537	3377	3377	3377	3231	3231	3231	3097	3097	3034
	1	3405	3300	3206	3122	3326	3232	3147	3071	3105	3036	2973	2988	2933	2882	2880	2837	2778
	2	3187	3003	2851	2723	3114	2948	2809	2691	2844	2728	2629	2748	2653	2570	2660	2582	2529
	3	2983	2743	2557	2409	2916	2698	2526	2388	2612	2467	2347	2533	2410	2307	2460	2357	2309
	4	2796	2517	2313	2156	2735	2479	2289	2142	2408	2244	2114	2342	2201	2087	2281	2161	2117
	5	2625	2320	2107	1950	2569	2288	2089	1940	2229	2054	1920	2174	2021	1901	2122	1989	1950
	6	2469	2147	1932	1777	2418	2121	1918	1770	2071	1890	1756	2024	1864	1742	1980	1839	1804
	7	2327	1996	1781	1630	2281	1973	1770	1625	1930	1748	1615	1890	1727	1605	1852	1706	1676
	8	2197	1861	1650	1505	2156	1842	1641	1501	1805	1623	1493	1771	1606	1485	1738	1589	1562
	9	2079	1742	1535	1396	2041	1725	1528	1393	1694	1513	1387	1664	1499	1381	1635	1485	1461
	10	1972	1636	1435	1301	1937	1621	1428	1298	1594	1416	1294	1567	1404	1289	1543	1393	1371

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	86.6 fc	5.4 ft
6.5 ft	62.0 fc	6.4 ft
7.5 ft	46.6 fc	7.4 ft
8.0 ft	40.9 fc	7.9 ft
10.0 ft	26.2 fc	9.8 ft
12.0 ft	18.2 fc	11.8 ft
14.0 ft	13.4 fc	13.8 ft
16.0 ft	10.2 fc	15.7 ft
20.0 ft	6.5 fc	19.7 ft
24.0 ft	4.5 fc	23.6 ft
28.0 ft	3.3 fc	27.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	329591	329591	329591
45.00°	68401	66839	62178
55.00°	44227	42909	40187
65.00°	25984	28084	26627
75.00°	19187	21660	22239
85.00°	11390	13657	15776

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	21.2	22.4	21.5	22.7	23.1	24.2	25.5	24.6	25.8	26.1
	3H	21.9	23.0	22.3	23.4	23.7	25.5	26.6	25.9	27.0	27.3
	4H	22.2	23.2	22.6	23.6	24.0	26.1	27.1	26.5	27.4	27.8
	6H	22.3	23.2	22.7	23.6	24.0	26.5	27.4	26.9	27.8	28.2
	8H	22.3	23.2	22.8	23.6	24.0	26.6	27.5	27.0	27.9	28.3
	12H	22.3	23.2	22.8	23.6	24.0	26.6	27.5	27.1	27.9	28.3
4H	2H	21.6	22.6	22.0	22.9	23.3	24.3	25.3	24.7	25.6	26.0
	3H	22.5	23.3	22.9	23.7	24.2	25.7	26.6	26.1	27.0	27.4
	4H	22.8	23.6	23.3	24.0	24.5	26.4	27.1	26.8	27.6	28.0
	6H	23.0	23.7	23.5	24.1	24.6	26.9	27.6	27.4	28.0	28.5
	8H	23.1	23.7	23.5	24.1	24.6	27.1	27.7	27.6	28.2	28.6
	12H	23.1	23.6	23.6	24.1	24.6	27.2	27.7	27.7	28.2	28.7
8H	4H	23.1	23.7	23.5	24.1	24.6	26.4	27.0	26.8	27.4	27.9
	6H	23.3	23.8	23.8	24.3	24.8	27.0	27.5	27.5	28.0	28.5
	8H	23.4	23.8	23.9	24.4	24.9	27.2	27.6	27.7	28.1	28.6
	12H	23.5	23.8	24.0	24.3	24.9	27.3	27.7	27.8	28.2	28.8
12H	4H	23.1	23.6	23.6	24.1	24.6	26.3	26.9	26.8	27.4	27.8
	6H	23.4	23.8	23.9	24.3	24.9	26.9	27.4	27.5	27.9	28.4
	8H	23.5	23.9	24.0	24.4	24.9	27.2	27.5	27.7	28.0	28.6

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0