

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

## Spectrum Lighting Photometric Lab

### Luminaire

SGW4LEDFX 50L 35K XX AR4923FX SG WF SK  
Nom 4 inch dia downlight with semi-diffuse finish and Skytex lens

### Test Number

SP-01233\_1

### Test Date

4/28/2021

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

### Summary of Results

#### Power

Input Watts	38.3 W
-------------	--------

#### Lumen Output

Output Lumens	3077
Efficacy	80.34 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.94
Two luminaires, plane 90°	0.86
Four luminaires	0.87

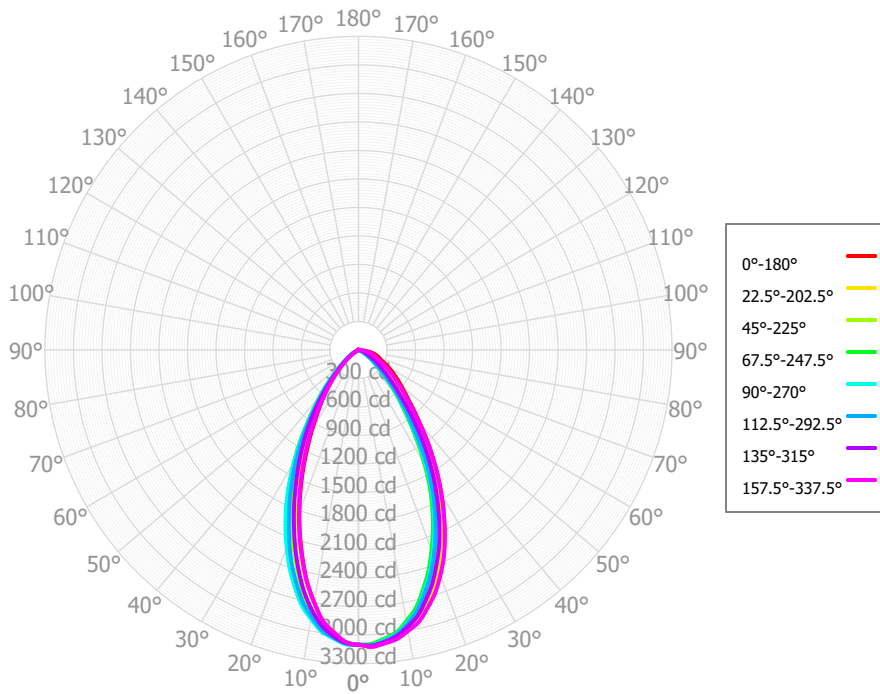
#### Full Beam Angle

0° - 180°	55°
90° - 270°	56°

### IES File Header Contents

Keyword	Value
TEST	SP-01233_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	4/28/2021
ISSUEDATE	6/10/2021
LUMCAT	SGW4LEDFX 50L 35K XX AR4923FX SG WF SK
LUMINAIRE	Nom 4 inch dia downlight with semi-diffuse 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°	289.46	9.41%	90.00° - 100.00°	1.57	0.05%
10.00° - 20.00°	713.40	23.18%	100.00° - 110.00°	1.54	0.05%
20.00° - 30.00°	813.91	26.45%	100.00° - 120.00°	3.01	0.10%
30.00° - 40.00°	620.14	20.15%	120.00° - 130.00°	1.43	0.05%
40.00° - 50.00°	345.72	11.24%	130.00° - 140.00°	1.42	0.05%
50.00° - 60.00°	170.18	5.53%	140.00° - 150.00°	1.22	0.04%
60.00° - 70.00°	71.06	2.31%	150.00° - 160.00°	0.95	0.03%
70.00° - 80.00°	33.32	1.08%	160.00° - 170.00°	0.61	0.02%
80.00° - 90.00°	9.57	0.31%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	3066.76	99.66%	0.00° - 180.00°	3077.17	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°	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85	3102.85
2.50°	3125.58	3116.39	3104.96	3095.19	3109.78	3091.60	3085.81	3075.82	3077.85	3072.98	3079.07	3082.25	3100.42	3112.27	3116.34	3127.99	3125.58
5.00°	3097.76	3087.88	3067.63	3051.58	3066.96	3036.79	3024.47	2983.20	2981.65	2980.06	3012.43	3031.29	3047.13	3079.54	3086.00	3100.71	3097.76
7.50°	3062.50	3056.37	3025.75	3004.89	3019.88	2971.52	2930.65	2875.51	2880.36	2876.38	2930.46	2969.97	2987.17	3026.64	3041.60	3070.27	3062.50
10.00°	2997.70	2982.73	2927.12	2896.49	2920.04	2847.91	2790.76	2695.71	2692.35	2701.11	2795.02	2861.40	2876.53	2935.06	2961.04	3003.22	2997.70
12.50°	2919.30	2902.31	2824.81	2783.52	2811.46	2713.88	2621.19	2505.82	2501.32	2517.24	2642.00	2736.94	2755.63	2819.34	2870.14	2931.89	2919.30
15.00°	2802.29	2775.27	2671.37	2615.84	2649.58	2532.17	2419.41	2283.81	2274.28	2298.21	2444.21	2561.92	2586.50	2668.69	2729.91	2809.55	2802.29
17.50°	2671.64	2640.30	2514.77	2443.77	2480.65	2345.99	2206.68	2060.30	2047.17	2078.35	2240.95	2379.82	2410.01	2501.38	2580.56	2681.54	2671.64
20.00°	2512.86	2470.61	2329.85	2245.51	2284.71	2129.94	1984.57	1833.40	1819.55	1856.09	2027.46	2181.61	2210.43	2315.11	2401.41	2519.60	2512.86
22.50°	2339.47	2292.49	2141.35	2045.41	2086.04	1913.41	1769.38	1612.12	1593.70	1639.07	1817.26	1978.20	2007.92	2116.91	2219.31	2349.20	2339.47
25.00°	2143.47	2089.30	1934.02	1838.24	1879.86	1705.10	1558.71	1400.65	1375.79	1433.13	1611.71	1765.99	1798.83	1908.30	2012.26	2146.82	2143.47
27.50°	1944.48	1884.71	1726.65	1624.35	1666.12	1496.96	1365.07	1199.42	1166.50	1236.25	1417.01	1557.24	1580.70	1694.97	1804.44	1943.55	1944.48
30.00°	1741.84	1677.14	1519.19	1392.20	1437.17	1290.25	1179.78	1011.75	983.41	1053.69	1234.38	1353.06	1346.94	1478.49	1597.20	1737.82	1741.84
32.50°	1544.25	1474.39	1308.49	1167.58	1213.36	1085.79	1006.73	845.55	818.48	884.44	1057.64	1148.06	1127.12	1255.09	1390.52	1536.04	1544.25
35.00°	1351.36	1279.63	1089.90	957.94	997.29	892.73	838.22	701.16	693.35	731.67	885.93	942.23	925.59	1028.11	1188.72	1342.10	1351.36
37.50°	1171.44	1097.69	889.96	776.82	813.29	714.45	679.01	575.98	577.09	599.26	722.09	770.76	752.06	849.93	991.00	1155.90	1171.44
40.00°	1000.79	931.90	724.53	638.39	667.37	585.48	522.20	465.76	475.76	486.16	563.38	626.02	606.67	690.25	814.62	981.27	1000.79
42.50°	864.31	784.09	582.95	506.77	528.70	462.02	413.25	372.90	382.07	388.58	442.36	495.45	478.12	555.38	652.84	833.15	864.31
45.00°	746.85	653.63	474.74	383.15	396.66	351.63	311.97	290.62	298.17	302.26	340.10	373.53	362.92	427.06	541.01	716.19	746.85
47.50°	659.83	551.13	379.26	291.64	304.06	259.82	246.24	226.24	228.25	234.85	264.81	289.00	282.08	341.76	439.64	618.53	659.83
50.00°	585.33	469.58	297.40	229.11	238.98	201.63	183.56	169.99	172.07	178.15	199.48	221.48	221.96	263.62	363.62	538.28	585.33
52.50°	523.26	404.76	235.42	179.07	187.21	153.06	144.12	126.04	124.08	135.23	155.43	173.93	176.23	212.14	296.33	469.73	523.26
55.00°	464.80	349.60	190.25	137.64	142.66	117.65	105.56	86.12	82.44	98.10	116.81	132.91	136.97	163.10	245.17	409.25	464.80
57.50°	413.41	300.40	150.99	102.62	108.56	87.71	77.22	56.41	51.21	67.01	88.98	103.46	103.54	128.04	198.52	355.64	413.41
60.00°	363.37	253.74	115.54	71.04	78.62	63.53	49.99	29.07	26.11	37.73	62.87	76.68	72.06	93.54	158.20	305.71	363.37
62.50°	318.97	213.74	85.58	46.21	53.38	42.50	31.62	17.31	14.09	21.87	41.70	53.12	46.90	65.16	123.24	262.26	318.97
65.00°	275.19	175.78	58.27	24.06	29.46	24.09	15.45	7.70	7.78	8.77	20.95	30.01	23.17	38.27	94.03	221.38	275.19
67.50°	250.39	152.60	43.05	14.10	17.41	12.92	9.41	5.10	5.45	5.60	13.04	17.62	14.19	23.84	73.26	194.95	250.39
70.00°	226.37	132.54	32.24	7.53	7.52	6.31	4.47	2.92	4.39	3.59	5.63	5.89	7.20	11.51	59.64	172.53	226.37
72.50°	205.53	116.34	24.49	5.41	4.76	3.58	2.97	2.38	3.24	2.76	3.95	4.19	5.30	9.20	48.26	153.92	205.53
75.00°	183.91	100.61	17.51	4.13	2.75	2.69	1.87	1.87	2.08	2.00	2.43	2.56	3.68	6.99	38.34	136.01	183.91
77.50°	154.55	80.79	11.74	3.04	2.11	2.08	1.71	1.69	1.99	1.88	2.21	2.00	2.80	5.06	27.73	112.24	154.55
80.00°	123.55	60.75	6.16	1.98	1.54	1.57	1.53	1.54	2.03	1.75	2.02	1.50	1.97	3.41	16.78	87.87	123.55
82.50°	83.82	37.93	3.92	1.63	1.49	1.35	1.32	1.59	1.94	1.67	1.96	1.48	1.74	2.40	9.44	58.69	83.82
85.00°	47.03	16.34	1.96	1.32	1.45	1.20	1.26	1.64	1.84	1.63	1.90	1.52	1.55	1.62	3.41	29.97	47.03
87.50°	20.48	8.39	1.66	1.41	1.41	1.10	1.38	1.73	1.67	1.85	1.84	1.85	1.56	1.26	2.08	15.04	20.48
90.00°	1.48	1.61	1.39	1.48	1.36	1.01	1.48	1.72	1.50	1.91	1.72	2.04	1.58	1.19	1.93	1.60	1.48
92.50°	1.68	1.49	1.25	1.34	1.23	1.34	1.57	1.46	1.28	1.43	1.48	1.81	1.63	1.52	1.70	1.55	1.68
95.00°	1.68	1.41	1.16	1.22	1.13	1.70	1.67	1.33	1.08	1.09	1.35	1.58	1.60	1.67	1.46	1.52	1.68
97.50°	1.32	1.47	1.31	1.13	1.16	1.59	1.78	1.45	1.10	1.15	1.40	1.38	1.39	1.63	1.27	1.58	1.32
100.00°	1.13	1.58	1.46	1.17	1.23	1.48	1.62	1.46	1.18	1.22	1.43	1.30	1.30	1.49	1.09	1.65	1.13
102.50°	1.20	1.78	1.54	1.67	1.40	1.35	1.31	1.28	1.48	1.28	1.46	1.43	1.49	1.28	1.44	1.77	1.20
105.00°	1.32	1.89	1.58	1.93	1.49	1.22	1.24	1.19	1.69	1.38	1.42	1.45	1.55	1.23	1.78	1.84	1.32
107.50°	1.50	1.78	1.52	1.60	1.42	1.13	1.28	1.21	1.68	1.51	1.33	1.34	1.43	1.26	1.82	1.76	1.50
110.00°	1.56	1.75	1.49	1.48	1.39	1.07	1.23	1.23	1.61	1.56	1.23	1.26	1.43	1.37	1.82	1.73	1.56
112.50°	1.52	1.85	1.53	1.76	1.40	1.20	1.16	1.25	1.43	1.51	1.14	1.20	1.59	1.50	1.52	1.77	1.52

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	3661	3661	3661	3661	3574	3574	3574	3574	3413	3413	3413	3266	3266	3266	3130	3130	3067
	<b>1</b>	3461	3363	3275	3197	3382	3295	3216	3145	3167	3104	3045	3050	2999	2952	2942	2902	2865
	<b>2</b>	3259	3087	2944	2825	3187	3032	2902	2792	2928	2821	2728	2833	2745	2668	2745	2673	2610
	<b>3</b>	3067	2841	2666	2527	3001	2796	2635	2506	2711	2575	2463	2633	2519	2423	2560	2465	2383
	<b>4</b>	2887	2624	2431	2284	2828	2587	2408	2269	2517	2363	2240	2452	2319	2212	2391	2278	2185
	<b>5</b>	2722	2432	2230	2081	2667	2401	2212	2071	2343	2177	2051	2288	2144	2031	2237	2112	2011
	<b>6</b>	2569	2262	2057	1909	2519	2236	2043	1902	2187	2015	1887	2141	1989	1873	2097	1964	1859
	<b>7</b>	2428	2111	1906	1762	2383	2089	1895	1756	2047	1873	1746	2007	1852	1735	1970	1831	1725
	<b>8</b>	2299	1976	1773	1634	2258	1957	1764	1630	1921	1746	1622	1887	1729	1614	1855	1713	1606
	<b>9</b>	2181	1856	1657	1522	2144	1839	1649	1519	1808	1634	1513	1779	1620	1507	1751	1607	1501
	<b>10</b>	2072	1747	1553	1423	2038	1733	1547	1421	1706	1534	1416	1680	1523	1411	1656	1511	1407

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	102.6 fc	6.5 ft
6.5 ft	73.4 fc	7.6 ft
7.5 ft	55.2 fc	8.8 ft
8.0 ft	48.5 fc	9.4 ft
10.0 ft	31.0 fc	11.8 ft
12.0 ft	21.5 fc	14.1 ft
14.0 ft	15.8 fc	16.5 ft
16.0 ft	12.1 fc	18.8 ft
20.0 ft	7.8 fc	23.5 ft
24.0 ft	5.4 fc	28.2 ft
28.0 ft	4.0 fc	32.9 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	390492	390492	390492
<b>45.00°</b>	132923	84494	70596
<b>55.00°</b>	101982	41743	31302
<b>65.00°</b>	81947	17352	8772
<b>75.00°</b>	89426	8516	1336
<b>85.00°</b>	67910	2830	2089

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	25.8	26.9	26.1	27.3	27.6	17.0	18.1	17.3	18.4	18.8
	<b>3H</b>	27.4	28.4	27.8	28.8	29.1	16.9	17.9	17.3	18.2	18.6
	<b>4H</b>	28.3	29.2	28.7	29.6	30.0	16.8	17.8	17.2	18.1	18.5
	<b>6H</b>	29.1	29.9	29.5	30.3	30.7	16.7	17.6	17.1	18.0	18.4
	<b>8H</b>	29.3	30.1	29.8	30.5	31.0	16.7	17.5	17.1	17.9	18.3
	<b>12H</b>	29.5	30.3	29.9	30.6	31.1	16.6	17.4	17.1	17.8	18.2
<b>4H</b>	<b>2H</b>	25.6	26.6	26.0	26.9	27.3	16.8	17.7	17.2	18.1	18.5
	<b>3H</b>	27.4	28.2	27.8	28.6	29.0	16.7	17.5	17.1	17.9	18.3
	<b>4H</b>	28.5	29.2	28.9	29.6	30.1	16.6	17.3	17.0	17.7	18.2
	<b>6H</b>	29.5	30.1	29.9	30.5	31.0	16.5	17.1	17.0	17.6	18.0
	<b>8H</b>	29.8	30.4	30.3	30.8	31.3	16.5	17.0	16.9	17.5	18.0
	<b>12H</b>	30.0	30.5	30.5	31.0	31.5	16.4	16.9	16.9	17.4	17.9
<b>8H</b>	<b>4H</b>	28.4	28.9	28.9	29.4	29.9	16.4	17.0	16.9	17.5	17.9
	<b>6H</b>	29.4	29.9	30.0	30.4	30.9	16.3	16.8	16.9	17.3	17.8
	<b>8H</b>	29.8	30.2	30.4	30.8	31.3	16.3	16.7	16.8	17.2	17.7
	<b>12H</b>	30.1	30.5	30.7	31.0	31.6	16.3	16.6	16.8	17.1	17.7
<b>12H</b>	<b>4H</b>	28.3	28.8	28.8	29.3	29.8	16.4	16.9	16.9	17.4	17.9
	<b>6H</b>	29.4	29.8	29.9	30.3	30.8	16.3	16.7	16.8	17.2	17.7
	<b>8H</b>	29.8	30.2	30.3	30.7	31.2	16.2	16.6	16.8	17.1	17.7

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0