

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

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### Spectrum Lighting Photometric Lab

**Luminaire**

EV04IND8GL 15L 35K xx DW xx FS xx

4" Wide x 96" linear pendant or surface mount for semi-direct illumination

**Test Number**

SP-01622\_2

**Test Date**

11/15/2023

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

### Summary of Results

#### Power

<b>Input Watts</b>	91.4 W
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#### Lumen Output

<b>Output Lumens</b>	10344
<b>Efficacy</b>	113.17 lm/W

#### Luminous Dimensions

<b>0° - 180° Size</b>	0.33
<b>90° - 270° Size</b>	8
<b>Height</b>	0.19

#### Spacing Criterion

<b>Two luminaires, plane 0°</b>	1.39
<b>Two luminaires, plane 90°</b>	1.23
<b>Four luminaires</b>	1.46

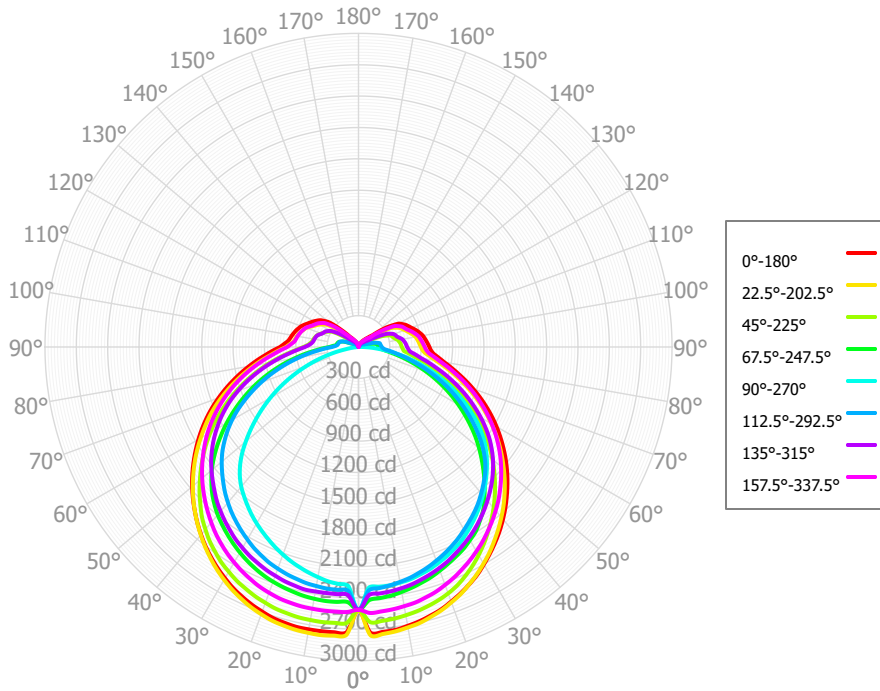
#### Full Beam Angle

<b>0° - 180°</b>	135°
<b>90° - 270°</b>	107°

### IES File Header Contents

Keyword	Value
TEST	SP-01622_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/15/2023
ISSUEDATE	11/16/2023
LUMCAT	EV04IND8GL 15L 35K xx DW xx FS xx
LUMINAIRE	4" Wide x 96" linear pendant or surface mount for semi-direct illumination
OTHER	Diffuse White Acrylic Lens
OTHER	Matte White interior finish
OTHER	Beam Angle 135 deg x 107 deg
OTHER	2000 Source Lms/Ft
OTHER	80+ CRI
OTHER	CCT Output Multipliers: 30K x 0.98, 40K x 1.0
OTHER	Total Luminaire Watts is approximate
OTHER	This report prepared by Spectrum Lighting, Scaled from the EV04IND4GL 20L 35K

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	243.02	2.35%	90.00° - 100.00°	436.49	4.22%
10.00° - 20.00°	696.56	6.73%	100.00° - 110.00°	369.35	3.57%
20.00° - 30.00°	1083.06	10.47%	100.00° - 120.00°	643.22	6.22%
30.00° - 40.00°	1355.00	13.10%	120.00° - 130.00°	159.07	1.54%
40.00° - 50.00°	1480.00	14.31%	130.00° - 140.00°	64.94	0.63%
50.00° - 60.00°	1435.47	13.88%	140.00° - 150.00°	26.76	0.26%
60.00° - 70.00°	1225.95	11.85%	150.00° - 160.00°	10.38	0.10%
70.00° - 80.00°	899.10	8.69%	160.00° - 170.00°	2.75	0.03%
80.00° - 90.00°	581.91	5.63%	170.00° - 180.00°	0.46	0.00%
0.00° - 90.00°	9000.06	87.01%	0.00° - 180.00°	10344.13	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°	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11	2515.11
2.50°	2740.20	2766.12	2636.96	2423.25	2303.74	2332.86	2373.96	2538.46	2736.69	2761.98	2644.65	2442.58	2287.08	2328.92	2373.53	2547.78	2740.20
5.00°	2735.49	2755.30	2630.29	2411.35	2302.55	2332.15	2374.09	2541.57	2739.83	2772.22	2649.51	2448.27	2274.85	2315.39	2366.85	2539.74	2735.49
7.50°	2730.22	2743.60	2621.39	2398.96	2300.44	2331.33	2374.32	2544.24	2742.78	2780.51	2654.71	2450.77	2260.48	2301.25	2358.52	2531.21	2730.22
10.00°	2709.71	2724.60	2606.78	2379.77	2289.41	2322.74	2375.66	2543.42	2743.78	2777.13	2652.83	2446.14	2235.82	2283.04	2345.12	2518.45	2709.71
12.50°	2688.66	2705.22	2589.58	2359.05	2277.95	2313.80	2377.15	2541.40	2743.26	2772.23	2649.56	2438.18	2210.17	2263.44	2328.96	2505.08	2688.66
15.00°	2661.22	2673.51	2566.99	2334.53	2256.80	2297.03	2364.14	2532.56	2732.37	2760.76	2638.74	2424.16	2180.92	2236.84	2305.75	2481.52	2661.22
17.50°	2632.29	2641.21	2540.95	2309.36	2235.36	2279.81	2349.95	2521.68	2719.11	2746.29	2626.90	2408.47	2149.92	2208.96	2281.11	2456.98	2632.29
20.00°	2592.56	2600.19	2509.01	2277.20	2206.48	2257.24	2329.32	2502.40	2694.48	2721.39	2605.11	2390.20	2113.72	2176.21	2253.50	2423.01	2592.56
22.50°	2551.93	2557.93	2469.25	2244.23	2177.20	2233.48	2308.40	2480.42	2668.11	2693.51	2582.53	2367.42	2075.99	2142.22	2222.65	2387.99	2551.93
25.00°	2506.58	2505.50	2418.06	2210.41	2143.17	2201.18	2281.52	2449.81	2635.21	2657.43	2552.66	2338.78	2034.68	2104.58	2186.09	2346.46	2506.58
27.50°	2458.67	2452.07	2361.76	2176.55	2107.66	2167.53	2254.28	2417.32	2599.36	2618.31	2522.44	2306.48	1992.57	2064.88	2148.55	2303.94	2458.67
30.00°	2400.68	2392.80	2299.24	2133.62	2060.96	2126.75	2220.20	2379.87	2554.89	2572.24	2483.00	2270.19	1948.89	2020.17	2109.59	2257.02	2400.68
32.50°	2342.00	2332.04	2232.36	2090.03	2013.51	2085.23	2185.37	2339.96	2508.50	2523.07	2443.06	2230.69	1902.53	1975.40	2067.32	2208.59	2342.00
35.00°	2281.14	2264.94	2161.01	2026.44	1962.10	2040.80	2142.59	2294.82	2457.60	2468.11	2392.07	2188.20	1851.76	1930.55	2020.99	2154.76	2281.14
37.50°	2218.35	2197.13	2087.10	1961.47	1909.42	1994.69	2099.31	2246.35	2403.76	2410.28	2340.16	2143.10	1799.54	1881.85	1971.70	2099.99	2218.35
40.00°	2150.70	2127.00	2010.92	1874.50	1851.78	1943.53	2052.71	2191.91	2344.08	2348.04	2278.72	2095.96	1745.34	1826.85	1919.29	2042.62	2150.70
42.50°	2081.09	2054.87	1930.55	1786.88	1793.10	1890.00	2004.51	2135.73	2282.02	2283.37	2215.36	2040.79	1680.35	1770.72	1864.44	1982.81	2081.09
45.00°	2007.45	1977.33	1847.10	1693.56	1731.13	1830.54	1948.40	2076.96	2216.08	2215.47	2139.49	1980.22	1602.68	1713.00	1807.42	1917.28	2007.45
47.50°	1932.64	1898.13	1760.94	1600.11	1667.25	1770.32	1892.29	2016.12	2148.25	2144.18	2062.66	1909.37	1511.81	1645.11	1745.50	1850.45	1932.64
50.00°	1855.81	1815.33	1673.08	1505.97	1598.58	1708.53	1836.20	1952.68	2077.79	2069.12	1981.17	1832.79	1407.92	1565.31	1679.98	1781.17	1855.81
52.50°	1776.65	1731.84	1582.14	1410.34	1524.66	1641.38	1777.36	1886.28	2004.30	1991.87	1898.88	1744.82	1301.78	1475.76	1607.06	1709.26	1776.65
55.00°	1694.12	1647.06	1489.59	1308.18	1439.74	1564.92	1710.58	1816.71	1927.25	1912.52	1813.68	1651.64	1193.71	1376.35	1529.50	1633.23	1694.12
57.50°	1610.42	1559.64	1395.18	1205.92	1347.39	1484.11	1641.50	1745.19	1848.75	1829.67	1727.12	1554.85	1084.67	1275.02	1442.87	1554.74	1610.42
60.00°	1525.24	1468.19	1299.99	1103.30	1242.26	1397.03	1566.91	1671.91	1768.82	1744.01	1636.52	1456.67	974.94	1172.06	1351.52	1472.92	1525.24
62.50°	1437.85	1376.46	1203.48	1000.28	1136.46	1302.80	1489.72	1594.53	1686.48	1658.67	1543.96	1354.56	863.21	1068.13	1256.22	1388.76	1437.85
65.00°	1348.14	1284.37	1106.49	896.17	1029.71	1199.98	1407.46	1513.97	1602.10	1573.54	1446.68	1251.25	750.31	963.51	1159.17	1301.92	1348.14
67.50°	1257.65	1191.73	1006.32	792.13	919.88	1096.70	1320.50	1430.25	1514.62	1482.45	1348.78	1147.49	638.45	857.38	1060.74	1214.02	1257.65
70.00°	1166.47	1098.48	905.26	688.25	806.28	992.95	1225.84	1344.49	1424.96	1387.97	1249.63	1043.61	527.11	750.33	961.82	1125.07	1166.47
72.50°	1077.02	1007.36	810.12	586.82	695.22	887.75	1129.68	1256.70	1334.26	1293.00	1150.44	936.93	419.29	646.91	865.88	1037.06	1077.02
75.00°	988.85	918.19	716.28	489.83	586.80	781.30	1031.46	1167.82	1242.94	1197.80	1051.16	829.75	312.90	545.30	770.76	949.83	988.85
77.50°	907.96	834.13	631.74	399.59	479.14	677.54	933.60	1078.97	1153.38	1104.67	952.78	724.64	217.62	456.08	687.15	868.85	907.96
80.00°	831.62	754.12	548.67	319.86	372.16	575.80	836.15	990.13	1064.70	1012.36	855.66	619.78	126.09	372.08	606.07	792.11	831.62
82.50°	771.22	690.50	491.66	256.91	273.15	481.05	743.32	904.59	979.65	924.06	761.55	522.53	67.57	308.99	548.57	729.84	771.22
85.00°	719.30	637.69	437.30	215.72	180.06	390.65	655.07	820.26	896.07	837.02	671.01	425.86	17.75	252.94	494.77	675.99	719.30
87.50°	693.34	610.55	424.78	192.42	105.53	317.89	578.90	749.30	821.95	764.04	592.59	350.97	7.26	233.37	478.04	648.68	693.34
90.00°	678.64	597.42	414.71	188.82	42.49	254.16	512.79	682.34	751.01	694.42	526.19	277.11	4.51	223.34	465.38	634.09	678.64
92.50°	664.93	586.53	408.55	186.75	14.34	222.52	471.67	645.21	709.30	655.68	483.03	243.44	3.52	217.75	457.25	621.16	664.93
95.00°	651.57	576.67	402.30	186.12	4.59	204.75	447.96	614.87	675.23	622.67	459.20	211.46	2.77	213.08	449.38	608.91	651.57
97.50°	638.28	566.11	392.43	179.92	1.78	198.17	435.29	601.86	658.51	609.05	444.30	208.73	2.90	209.57	437.88	596.63	638.28
100.00°	625.02	555.29	381.96	169.36	1.95	195.46	429.21	591.71	645.35	597.87	435.81	205.68	3.10	206.22	426.07	584.33	625.02
102.50°	605.72	535.64	363.52	143.89	2.05	191.21	421.51	579.85	631.18	583.35	426.21	199.69	3.22	182.84	404.03	563.81	605.72
105.00°	585.13	513.28	346.17	108.38	2.13	186.54	413.00	567.78	616.87	568.58	415.94	191.98	3.35	157.49	382.80	541.25	585.13

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	<b>pfc</b>	20%	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%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	<b>0</b>	11994	11994	11994	11994	11559	11559	11559	11559	10747	10747	10747	10003	10003	10003	9321	9321	9321	9000
	<b>1</b>	10723	10141	9620	9151	10293	9771	9300	8874	9077	8696	8346	8440	8134	7850	7852	7611	7385	7328
	<b>2</b>	9659	8713	7931	7274	9250	8398	7686	7082	7806	7218	6710	7259	6778	6356	6754	6365	6018	6119
	<b>3</b>	8753	7577	6668	5943	8371	7308	6473	5801	6801	6101	5525	6332	5749	5259	5896	5415	5002	5203
	<b>4</b>	7978	6664	5701	4966	7627	6433	5545	4858	5998	5242	4644	5594	4955	4437	5217	4680	4236	4498
	<b>5</b>	7311	5918	4945	4227	6990	5720	4816	4141	5344	4567	3971	4995	4328	3805	4669	4100	3643	3942
	<b>6</b>	6732	5301	4341	3652	6440	5130	4234	3582	4804	4025	3444	4501	3825	3308	4216	3632	3175	3496
	<b>7</b>	6227	4785	3851	3195	5962	4636	3760	3137	4353	3583	3023	4087	3413	2910	3838	3249	2799	3130
	<b>8</b>	5784	4349	3447	2826	5543	4219	3369	2778	3970	3218	2681	3737	3072	2586	3518	2931	2492	2827
	<b>9</b>	5393	3977	3110	2524	5175	3863	3043	2482	3644	2912	2400	3437	2786	2318	3243	2663	2238	2572
	<b>10</b>	5048	3658	2826	2272	4848	3556	2768	2236	3362	2654	2165	3179	2543	2095	3005	2436	2025	2356

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	83.1 fc	27.1 ft
6.5 ft	59.5 fc	32.1 ft
7.5 ft	44.7 fc	37.0 ft
8.0 ft	39.3 fc	39.5 ft
10.0 ft	25.2 fc	49.3 ft
12.0 ft	17.5 fc	59.2 ft
14.0 ft	12.8 fc	69.0 ft
16.0 ft	9.8 fc	78.9 ft
20.0 ft	6.3 fc	98.6 ft
24.0 ft	4.4 fc	118.4 ft
28.0 ft	3.2 fc	138.1 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	10255	10255	10255
<b>45.00°</b>	7346	7480	9750
<b>55.00°</b>	6609	6596	9899
<b>65.00°</b>	5820	5592	9453
<b>75.00°</b>	4947	4370	8491
<b>85.00°</b>	4439	3500	6625

### 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	19.0	20.4	19.5	21.0	21.6	17.3	18.7	17.8	19.3	19.9
	3H	21.4	22.7	22.0	23.3	23.9	18.7	20.0	19.3	20.6	21.3
	4H	22.6	23.8	23.1	24.4	25.1	19.1	20.4	19.7	21.0	21.6
	6H	23.7	24.9	24.3	25.5	26.2	19.4	20.6	20.0	21.2	21.8
	8H	24.4	25.5	25.0	26.1	26.8	19.4	20.6	20.1	21.2	21.9
	12H	25.1	26.2	25.7	26.8	27.5	19.5	20.5	20.1	21.1	21.9
4H	2H	19.3	20.6	19.9	21.1	21.8	18.4	19.6	18.9	20.2	20.9
	3H	21.9	23.0	22.5	23.6	24.3	20.1	21.2	20.7	21.8	22.5
	4H	23.3	24.2	23.9	24.9	25.6	20.7	21.7	21.3	22.3	23.0
	6H	24.6	25.5	25.3	26.1	26.9	21.1	22.0	21.8	22.6	23.4
	8H	25.3	26.2	26.0	26.8	27.6	21.2	22.0	21.9	22.7	23.4
	12H	26.2	26.9	26.8	27.6	28.3	21.3	22.0	21.9	22.7	23.4
8H	4H	23.4	24.2	24.0	24.9	25.6	21.5	22.3	22.2	23.0	23.7
	6H	24.9	25.6	25.6	26.3	27.0	22.1	22.8	22.8	23.5	24.3
	8H	25.8	26.4	26.4	27.1	27.8	22.4	23.0	23.0	23.7	24.4
	12H	26.8	27.3	27.4	28.0	28.8	22.5	23.0	23.2	23.7	24.6
12H	4H	23.4	24.1	24.0	24.8	25.5	21.7	22.5	22.4	23.1	23.9
	6H	24.9	25.5	25.6	26.2	27.0	22.5	23.1	23.2	23.8	24.6
	8H	25.8	26.4	26.5	27.1	27.9	22.8	23.3	23.5	24.0	24.8

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0