

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

GL04IND8GL 20L 35K xx DW xx FS xx

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

Test Number

SP-01619_3

Test Date

11/15/2023

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

Summary of Results

Power

Input Watts	114.4 W
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Lumen Output

Output Lumens	11907
Efficacy	104.08 lm/W

Luminous Dimensions

0° - 180° Size	0.33
90° - 270° Size	8
Height	0.19

Spacing Criterion

Two luminaires, plane 0°	1.41
Two luminaires, plane 90°	1.18
Four luminaires	1.45

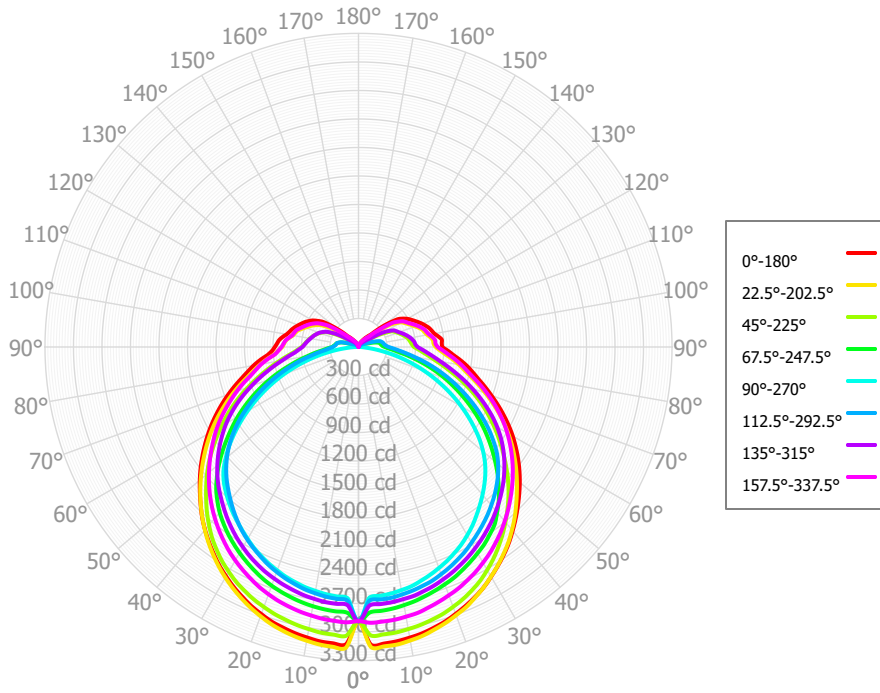
Full Beam Angle

0° - 180°	134°
90° - 270°	108°

IES File Header Contents

Keyword	Value
TEST	SP-01619_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/15/2023
ISSUEDATE	11/16/2023
LUMCAT	GL04IND8GL 20L 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 and Wire Guard
OTHER	Matte White interior finish
OTHER	Beam Angle 134 deg x 108 deg
OTHER	2000 Source Lms/Ft
OTHER	Total Luminaire Watts is approximate
OTHER	This report prepared by Spectrum Lighting, Scaled from the GL04IND4GL 20L 35K
_CRI	80+
_CCTMULT	30K x 0.98, 40K x 1.0
_LAMPMULT	5L x 0.52, 11L x 1.14, 15L x 1.56

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	278.29	2.34%	90.00° - 100.00°	551.23	4.63%
10.00° - 20.00°	793.65	6.67%	100.00° - 110.00°	458.63	3.85%
20.00° - 30.00°	1229.21	10.32%	100.00° - 120.00°	792.92	6.66%
30.00° - 40.00°	1533.92	12.88%	120.00° - 130.00°	188.58	1.58%
40.00° - 50.00°	1673.46	14.05%	130.00° - 140.00°	69.82	0.59%
50.00° - 60.00°	1622.72	13.63%	140.00° - 150.00°	28.59	0.24%
60.00° - 70.00°	1389.62	11.67%	150.00° - 160.00°	10.85	0.09%
70.00° - 80.00°	1036.34	8.70%	160.00° - 170.00°	2.75	0.02%
80.00° - 90.00°	704.75	5.92%	170.00° - 180.00°	0.48	0.00%
0.00° - 90.00°	10261.96	86.18%	0.00° - 180.00°	11907.18	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°	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35	2886.35
2.50°	3141.30	3167.27	3040.16	2795.82	2640.32	2671.41	2718.19	2901.01	3136.11	3173.43	3043.85	2798.25	2646.10	2671.63	2722.43	2905.84	3141.30
5.00°	3132.94	3162.46	3036.20	2787.31	2629.10	2661.05	2713.36	2894.30	3130.55	3167.19	3038.65	2792.93	2635.31	2667.16	2715.98	2901.27	3132.94
7.50°	3123.29	3157.51	3030.84	2776.47	2617.41	2649.64	2707.03	2885.96	3124.81	3158.12	3033.11	2784.39	2624.16	2662.41	2708.96	2895.99	3123.29
10.00°	3106.60	3136.81	3015.14	2759.19	2598.85	2632.18	2691.68	2869.98	3105.71	3139.46	3015.28	2770.28	2607.44	2644.78	2696.28	2882.09	3106.60
12.50°	3087.80	3114.13	2998.04	2739.85	2578.90	2612.70	2674.60	2852.32	3086.10	3118.32	2997.13	2752.58	2589.78	2626.77	2683.30	2867.70	3087.80
15.00°	3060.10	3080.25	2973.77	2714.47	2546.40	2584.72	2649.96	2828.73	3059.41	3090.48	2971.72	2729.55	2563.90	2603.54	2659.41	2839.98	3060.10
17.50°	3029.58	3045.56	2947.16	2687.60	2513.15	2555.01	2624.11	2802.68	3032.05	3058.00	2945.61	2703.32	2536.82	2579.65	2635.05	2811.95	3029.58
20.00°	2989.83	3004.38	2911.10	2658.25	2475.38	2519.47	2594.06	2769.50	2991.48	3015.39	2911.96	2673.12	2502.28	2544.71	2603.27	2781.12	2989.83
22.50°	2948.47	2962.88	2872.40	2628.42	2436.23	2481.30	2561.62	2733.02	2949.95	2969.58	2877.01	2637.12	2466.61	2509.22	2570.83	2749.72	2948.47
25.00°	2902.95	2907.79	2825.43	2589.44	2391.08	2436.07	2522.62	2688.85	2898.90	2917.86	2833.26	2594.90	2425.91	2468.83	2532.70	2709.82	2902.95
27.50°	2852.68	2852.31	2773.77	2549.24	2343.68	2389.56	2480.87	2642.95	2846.78	2862.71	2787.50	2549.92	2383.04	2427.32	2493.73	2669.07	2852.68
30.00°	2792.09	2790.35	2709.94	2506.32	2288.39	2340.26	2432.99	2593.76	2787.37	2802.30	2731.54	2502.45	2332.47	2378.74	2449.61	2621.27	2792.09
32.50°	2730.61	2727.87	2642.60	2463.18	2230.30	2287.01	2382.62	2540.49	2726.25	2737.66	2672.92	2451.11	2282.26	2329.98	2404.62	2572.18	2730.61
35.00°	2667.54	2660.24	2567.87	2408.65	2164.47	2226.43	2327.56	2480.57	2656.94	2667.58	2604.15	2396.83	2233.11	2280.41	2355.75	2515.79	2667.54
37.50°	2599.65	2591.20	2489.76	2353.53	2098.16	2163.65	2269.74	2418.05	2586.61	2593.64	2531.66	2336.93	2181.85	2229.66	2305.61	2458.00	2599.65
40.00°	2524.37	2513.11	2405.77	2270.10	2030.74	2097.50	2207.60	2351.97	2512.58	2515.42	2447.73	2273.37	2125.85	2174.61	2250.96	2394.10	2524.37
42.50°	2448.38	2433.52	2320.31	2186.02	1961.16	2030.77	2145.20	2282.85	2435.58	2433.23	2361.04	2198.63	2067.58	2117.92	2194.83	2329.13	2448.38
45.00°	2371.47	2347.02	2232.66	2086.57	1887.52	1963.27	2082.41	2210.14	2349.74	2347.34	2267.55	2117.85	2004.99	2056.54	2134.55	2260.58	2371.47
47.50°	2294.04	2260.85	2139.51	1986.46	1806.22	1889.12	2014.08	2134.09	2264.45	2258.53	2174.16	2020.70	1927.60	1991.60	2071.94	2191.11	2294.04
50.00°	2216.03	2175.80	2039.54	1879.19	1712.95	1807.57	1939.47	2054.72	2180.47	2167.37	2080.97	1916.03	1826.79	1918.45	2004.05	2119.12	2216.03
52.50°	2134.63	2090.15	1939.22	1771.60	1609.65	1718.05	1861.09	1973.31	2094.84	2074.79	1982.79	1804.95	1717.73	1836.31	1933.36	2045.47	2134.63
55.00°	2050.05	2002.74	1838.56	1661.82	1492.83	1621.10	1779.14	1890.21	2005.90	1981.25	1876.05	1691.48	1597.77	1736.66	1857.32	1968.16	2050.05
57.50°	1963.10	1913.45	1738.81	1550.90	1372.70	1515.30	1694.12	1807.26	1916.75	1887.18	1770.35	1579.06	1474.74	1631.37	1775.82	1889.33	1963.10
60.00°	1874.28	1819.64	1639.87	1434.09	1248.83	1402.39	1606.58	1724.42	1827.24	1792.82	1666.15	1466.96	1348.20	1516.98	1685.66	1807.72	1874.28
62.50°	1780.21	1723.76	1538.70	1317.10	1122.82	1285.47	1511.02	1635.74	1736.29	1694.58	1560.95	1349.27	1220.55	1400.40	1589.25	1722.74	1780.21
65.00°	1682.69	1623.87	1435.84	1199.47	994.73	1165.87	1409.94	1543.59	1643.32	1594.50	1454.52	1230.27	1091.83	1280.78	1484.32	1632.49	1682.69
67.50°	1585.09	1523.52	1329.27	1082.99	866.51	1047.01	1305.18	1452.60	1550.32	1495.72	1346.59	1110.62	962.38	1162.15	1378.68	1540.01	1585.09
70.00°	1487.43	1422.44	1220.27	969.93	738.17	928.59	1198.25	1362.18	1457.29	1397.44	1237.11	990.85	832.32	1044.66	1272.22	1444.62	1487.43
72.50°	1396.11	1324.01	1113.27	856.34	611.90	813.34	1096.05	1270.45	1364.96	1300.60	1132.11	870.52	702.99	928.91	1166.81	1349.91	1396.11
75.00°	1307.70	1229.23	1007.34	741.44	487.05	699.62	996.14	1178.18	1273.33	1204.22	1030.98	750.12	574.16	814.86	1062.39	1255.97	1307.70
77.50°	1232.23	1145.39	913.10	630.93	367.71	595.51	904.05	1105.10	1192.35	1123.88	935.82	643.87	451.54	703.80	965.84	1173.97	1232.23
80.00°	1161.78	1074.28	824.06	529.25	251.62	495.13	815.06	1038.41	1120.34	1047.51	845.13	538.65	332.51	595.25	875.82	1103.31	1161.78
82.50°	1085.39	999.92	752.03	438.87	157.47	416.67	741.58	961.66	1042.22	969.29	765.19	456.61	228.00	504.83	799.37	1030.73	1085.39
85.00°	1007.18	922.38	686.35	367.94	73.96	345.21	673.19	882.18	959.65	890.73	691.98	375.52	130.63	427.25	732.34	956.62	1007.18
87.50°	943.97	861.02	633.77	311.77	33.21	304.26	628.67	842.23	910.11	844.67	640.03	324.92	67.59	367.13	674.92	892.21	943.97
90.00°	884.31	813.33	585.06	276.74	9.34	270.89	590.25	810.36	880.61	803.00	599.27	276.37	18.30	317.46	623.13	834.43	884.31
92.50°	877.16	791.12	565.31	252.86	3.28	254.57	568.87	790.20	857.62	784.75	573.57	262.37	5.42	291.27	599.98	812.01	877.16
95.00°	879.67	786.94	552.42	242.34	3.06	241.56	550.82	771.73	838.01	768.41	554.48	248.96	4.67	276.88	590.92	809.77	879.67
97.50°	847.51	766.05	539.92	234.55	3.13	235.50	531.96	740.72	805.72	735.19	536.33	240.93	4.46	267.83	574.50	787.44	847.51
100.00°	810.99	735.01	527.50	229.58	3.29	230.37	513.00	708.48	768.06	701.35	518.52	231.26	4.38	260.96	555.13	755.67	810.99
102.50°	789.95	713.71	506.00	212.00	3.92	212.30	495.71	693.24	743.44	682.61	499.45	211.13	4.40	249.00	531.50	734.14	789.95
105.00°	770.17	697.30	483.45	183.42	4.66	193.18	478.57	678.82	723.27	663.16	480.02	186.19	4.43	235.32	506.46	716.65	770.17

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%	10%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	13783	13783	13783	13783	13272	13272	13272	13272	12316	12316	12316	11442	11442	11442	10639	10639	10639
	1	12308	11633	11029	10484	11802	11197	10651	10157	10380	9938	9533	9630	9275	8948	8938	8658	8397
	2	11085	9992	9089	8330	10605	9621	8799	8102	8923	8245	7660	8279	7725	7239	7684	7236	6837
	3	10045	8690	7641	6806	9597	8372	7411	6636	7775	6970	6307	7222	6552	5990	6708	6156	5683
	4	9156	7643	6534	5688	8745	7371	6348	5557	6857	5989	5302	6381	5648	5054	5937	5322	4813
	5	8391	6788	5668	4842	8015	6554	5515	4738	6111	5218	4534	5699	4935	4335	5313	4663	4140
	6	7727	6081	4977	4184	7385	5879	4848	4099	5495	4600	3933	5136	4361	3769	4800	4132	3609
	7	7148	5490	4415	3661	6837	5313	4306	3591	4978	4096	3453	4665	3893	3316	4370	3697	3182
	8	6640	4990	3952	3238	6357	4835	3859	3179	4542	3679	3063	4266	3504	2947	4006	3336	2834
	9	6192	4563	3566	2892	5935	4428	3486	2841	4168	3330	2742	3924	3178	2643	3694	3032	2546
	10	5795	4197	3240	2603	5561	4077	3171	2560	3847	3034	2474	3629	2902	2389	3424	2774	2304

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	95.4 fc	25.9 ft
6.5 ft	68.3 fc	30.6 ft
7.5 ft	51.3 fc	35.3 ft
8.0 ft	45.1 fc	37.7 ft
10.0 ft	28.9 fc	47.1 ft
12.0 ft	20.0 fc	56.5 ft
14.0 ft	14.7 fc	66.0 ft
16.0 ft	11.3 fc	75.4 ft
20.0 ft	7.2 fc	94.2 ft
24.0 ft	5.0 fc	113.1 ft
28.0 ft	3.7 fc	131.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	11768	11768	11768
45.00°	8678	9041	10631
55.00°	7997	8141	10264
65.00°	7264	7256	9132
75.00°	6542	6146	7048
85.00°	6215	5493	2721

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	19.9	21.3	20.4	21.9	22.5	17.1	18.5	17.6	19.1	19.7
	3H	22.4	23.7	23.0	24.3	25.0	18.5	19.8	19.0	20.4	21.0
	4H	23.7	24.9	24.3	25.5	26.2	18.9	20.1	19.5	20.7	21.4
	6H	25.1	26.2	25.7	26.8	27.5	19.1	20.3	19.8	20.9	21.6
	8H	25.8	26.9	26.4	27.5	28.2	19.2	20.3	19.8	20.9	21.6
	12H	26.6	27.7	27.2	28.3	29.0	19.2	20.3	19.8	20.9	21.6
4H	2H	20.2	21.5	20.8	22.1	22.8	18.0	19.3	18.6	19.9	20.6
	3H	23.0	24.1	23.6	24.7	25.4	19.7	20.8	20.3	21.4	22.1
	4H	24.5	25.4	25.1	26.1	26.8	20.3	21.2	20.9	21.9	22.6
	6H	26.0	26.9	26.6	27.5	28.3	20.6	21.5	21.3	22.1	22.9
	8H	26.8	27.6	27.5	28.3	29.1	20.7	21.5	21.3	22.2	22.9
	12H	27.7	28.5	28.4	29.2	29.9	20.7	21.5	21.4	22.2	22.9
8H	4H	24.6	25.4	25.3	26.1	26.9	21.0	21.8	21.7	22.5	23.2
	6H	26.3	27.0	27.0	27.7	28.5	21.6	22.2	22.2	22.9	23.7
	8H	27.3	27.9	28.0	28.6	29.4	21.7	22.4	22.4	23.1	23.8
	12H	28.4	28.9	29.1	29.6	30.5	21.8	22.4	22.5	23.1	23.9
12H	4H	24.6	25.4	25.3	26.1	26.8	21.2	22.0	21.9	22.7	23.4
	6H	26.4	27.0	27.1	27.7	28.5	21.9	22.5	22.6	23.2	24.0
	8H	27.4	27.9	28.1	28.6	29.5	22.2	22.7	22.9	23.4	24.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0