

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

GL04IND4GL 20L 35K xx DW xx FS xx

4" Wide x 48" linear pendant or surface mount for semi-direct illumination

Test Number

SP-01618_3

Test Date

11/15/2023

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

Summary of Results

Power

Input Watts	57.2 W
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Lumen Output

Output Lumens	5954
Efficacy	104.08 lm/W

Luminous Dimensions

0° - 180° Size	0.33
90° - 270° Size	4
Height	0.19

Spacing Criterion

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

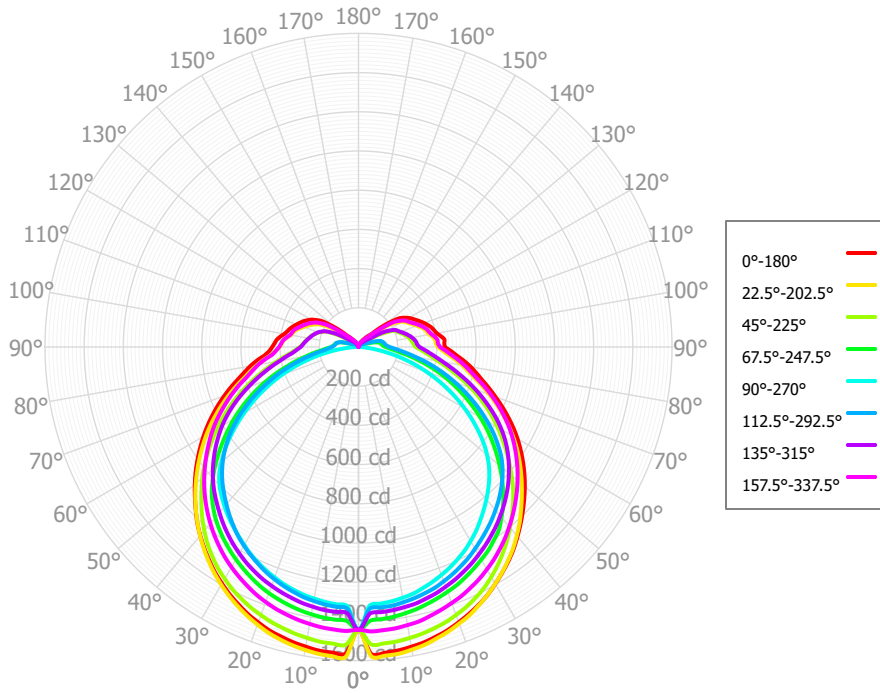
Full Beam Angle

0° - 180°	134°
90° - 270°	108°

IES File Header Contents

Keyword	Value
TEST	SP-01618_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/15/2023
ISSUEDATE	11/16/2023
LUMCAT	GL04IND4GL 20L 35K xx DW xx FS xx
LUMINAIRE	4" Wide x 48" 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
_CRI	80+
_CCTMULT	30K x 0.98, 40K x 1.0
_LAMPMULT	5L x 0.26, 11L x 0.57, 15L x 0.78

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	139.15	2.34%	90.00° - 100.00°	275.61	4.63%
10.00° - 20.00°	396.82	6.67%	100.00° - 110.00°	229.32	3.85%
20.00° - 30.00°	614.61	10.32%	100.00° - 120.00°	396.46	6.66%
30.00° - 40.00°	766.96	12.88%	120.00° - 130.00°	94.29	1.58%
40.00° - 50.00°	836.73	14.05%	130.00° - 140.00°	34.91	0.59%
50.00° - 60.00°	811.36	13.63%	140.00° - 150.00°	14.29	0.24%
60.00° - 70.00°	694.81	11.67%	150.00° - 160.00°	5.43	0.09%
70.00° - 80.00°	518.17	8.70%	160.00° - 170.00°	1.37	0.02%
80.00° - 90.00°	352.38	5.92%	170.00° - 180.00°	0.24	0.00%
0.00° - 90.00°	5130.98	86.18%	0.00° - 180.00°	5953.59	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°	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17	1443.17
2.50°	1570.65	1583.64	1520.08	1397.91	1320.16	1335.71	1359.10	1450.50	1568.06	1586.72	1521.93	1399.13	1323.05	1335.81	1361.21	1452.92	1570.65
5.00°	1566.47	1581.23	1518.10	1393.66	1314.55	1330.53	1356.68	1447.15	1565.28	1583.59	1519.33	1396.46	1317.65	1333.58	1357.99	1450.64	1566.47
7.50°	1561.65	1578.75	1515.42	1388.24	1308.71	1324.82	1353.52	1442.98	1562.40	1579.06	1516.56	1392.19	1312.08	1331.21	1354.48	1448.00	1561.65
10.00°	1553.30	1568.40	1507.57	1379.60	1299.42	1316.09	1345.84	1434.99	1552.86	1569.73	1507.64	1385.14	1303.72	1322.39	1348.14	1441.04	1553.30
12.50°	1543.90	1557.07	1499.02	1369.93	1289.45	1306.35	1337.30	1426.16	1543.05	1559.16	1498.56	1376.29	1294.89	1313.38	1341.65	1433.85	1543.90
15.00°	1530.05	1540.13	1486.88	1357.24	1273.20	1292.36	1324.98	1414.37	1529.71	1545.24	1485.86	1364.78	1281.95	1301.77	1329.71	1419.99	1530.05
17.50°	1514.79	1522.78	1473.58	1343.80	1256.57	1277.51	1312.06	1401.34	1516.03	1529.00	1472.81	1351.66	1268.41	1289.83	1317.53	1405.97	1514.79
20.00°	1494.91	1502.19	1455.55	1329.13	1237.69	1259.73	1297.03	1384.75	1495.74	1507.69	1455.98	1336.56	1251.14	1272.35	1301.63	1390.56	1494.91
22.50°	1474.24	1481.44	1436.20	1314.21	1218.11	1240.65	1280.81	1366.51	1474.97	1484.79	1438.51	1318.56	1233.30	1254.61	1285.41	1374.86	1474.24
25.00°	1451.47	1453.89	1412.72	1294.72	1195.54	1218.03	1261.31	1344.43	1449.45	1458.93	1416.63	1297.45	1212.96	1234.41	1266.35	1354.91	1451.47
27.50°	1426.34	1426.16	1386.89	1274.62	1171.84	1194.78	1240.43	1321.48	1423.39	1431.35	1393.75	1274.96	1191.52	1213.66	1246.86	1334.54	1426.34
30.00°	1396.05	1395.18	1354.97	1253.16	1144.20	1170.13	1216.49	1296.88	1393.68	1401.15	1365.77	1251.22	1166.23	1189.37	1224.80	1310.63	1396.05
32.50°	1365.31	1363.93	1321.30	1231.59	1115.15	1143.51	1191.31	1270.24	1363.13	1368.83	1336.46	1225.55	1141.13	1164.99	1202.31	1286.09	1365.31
35.00°	1333.77	1330.12	1283.94	1204.33	1082.24	1113.22	1163.78	1240.29	1328.47	1333.79	1302.07	1198.42	1116.55	1140.21	1177.87	1257.89	1333.77
37.50°	1299.82	1295.60	1244.88	1176.77	1049.08	1081.83	1134.87	1209.02	1293.31	1296.82	1265.83	1168.47	1090.92	1114.83	1152.80	1229.00	1299.82
40.00°	1262.19	1256.56	1202.89	1135.05	1015.37	1048.75	1103.80	1175.98	1256.29	1257.71	1223.86	1136.68	1062.92	1087.30	1125.48	1197.05	1262.19
42.50°	1224.19	1216.76	1160.15	1093.01	980.58	1015.38	1072.60	1141.42	1217.79	1216.62	1180.52	1099.32	1033.79	1058.96	1097.41	1164.57	1224.19
45.00°	1185.74	1173.51	1116.33	1043.28	943.76	981.64	1041.21	1105.07	1174.87	1173.67	1133.78	1058.93	1002.50	1028.27	1067.28	1130.29	1185.74
47.50°	1147.02	1130.42	1069.76	993.23	903.11	944.56	1007.04	1067.04	1132.22	1129.27	1087.08	1010.35	963.80	995.80	1035.97	1095.56	1147.02
50.00°	1108.02	1087.90	1019.77	939.59	856.48	903.78	969.73	1027.36	1090.23	1083.69	1040.49	958.02	913.39	959.22	1002.02	1059.56	1108.02
52.50°	1067.31	1045.07	969.61	885.80	804.82	859.02	930.54	986.65	1047.42	1037.40	991.40	902.48	858.86	918.16	966.68	1022.74	1067.31
55.00°	1025.03	1001.37	919.28	830.91	746.42	810.55	889.57	945.11	1002.95	990.63	938.02	845.74	798.88	868.33	928.66	984.08	1025.03
57.50°	981.55	956.72	869.40	775.45	686.35	757.65	847.06	903.63	958.38	943.59	885.18	789.53	737.37	815.68	887.91	944.67	981.55
60.00°	937.14	909.82	819.93	717.04	624.42	701.19	803.29	862.21	913.62	896.41	833.08	733.48	674.10	758.49	842.83	903.86	937.14
62.50°	890.10	861.88	769.35	658.55	561.41	642.74	755.51	817.87	868.14	847.29	780.48	674.64	610.27	700.20	794.63	861.37	890.10
65.00°	841.34	811.93	717.92	599.74	497.37	582.93	704.97	771.80	821.66	797.25	727.26	615.13	545.92	640.39	742.16	816.24	841.34
67.50°	792.54	761.76	664.63	541.50	433.26	523.50	652.59	726.30	775.16	747.86	673.30	555.31	481.19	581.07	689.34	770.00	792.54
70.00°	743.72	711.22	610.14	484.96	369.09	464.29	599.13	681.09	728.65	698.72	618.56	495.43	416.16	522.33	636.11	722.31	743.72
72.50°	698.05	662.00	556.63	428.17	305.95	406.67	548.02	635.22	682.48	650.30	566.05	435.26	351.49	464.46	583.40	674.96	698.05
75.00°	653.85	614.61	503.67	370.72	243.53	349.81	498.07	589.09	636.67	602.11	515.49	375.06	287.08	407.43	531.19	627.99	653.85
77.50°	616.12	572.70	456.55	315.46	183.86	297.76	452.03	552.55	596.17	561.94	467.91	321.94	225.77	351.90	482.92	586.99	616.12
80.00°	580.89	537.14	412.03	264.62	125.81	247.57	407.53	519.21	560.17	523.75	422.57	269.32	166.25	297.62	437.91	551.65	580.89
82.50°	542.70	499.96	376.01	219.44	78.73	208.33	370.79	480.83	521.11	484.64	382.60	228.31	114.00	252.42	399.68	515.36	542.70
85.00°	503.59	461.19	343.17	183.97	36.98	172.60	336.59	441.09	479.83	445.36	345.99	187.76	65.32	213.62	366.17	478.31	503.59
87.50°	471.98	430.51	316.88	155.89	16.60	152.13	314.34	421.12	455.05	422.34	320.01	162.46	33.79	183.56	337.46	446.10	471.98
90.00°	442.15	406.66	292.53	138.37	4.67	135.45	295.13	405.18	440.31	401.50	299.63	138.18	9.15	158.73	311.57	417.21	442.15
92.50°	438.58	395.56	282.65	126.43	1.64	127.29	284.44	395.10	428.81	392.38	286.78	131.18	2.71	145.64	299.99	406.00	438.58
95.00°	439.84	393.47	276.21	121.17	1.53	120.78	275.41	385.86	419.00	384.20	277.24	124.48	2.34	138.44	295.46	404.88	439.84
97.50°	423.76	383.02	269.96	117.27	1.57	117.75	265.98	370.36	402.86	367.59	268.17	120.47	2.23	133.91	287.25	393.72	423.76
100.00°	405.50	367.50	263.75	114.79	1.64	115.19	256.50	354.24	384.03	350.67	259.26	115.63	2.19	130.48	277.56	377.84	405.50
102.50°	394.98	356.86	253.00	106.00	1.96	106.15	247.86	346.62	371.72	341.30	249.73	105.56	2.20	124.50	265.75	367.07	394.98
105.00°	385.09	348.65	241.72	91.71	2.33	96.59	239.29	339.41	361.63	331.58	240.01	93.10	2.22	117.66	253.23	358.33	385.09

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	ptc	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	6892	6892	6892	6892	6636	6636	6636	6636	6158	6158	6158	5721	5721	5721	5320	5320	5131
	1	6154	5817	5514	5242	5901	5598	5326	5078	5190	4969	4766	4815	4638	4474	4469	4329	4163
	2	5543	4996	4545	4165	5302	4810	4399	4051	4461	4123	3830	4140	3863	3620	3842	3618	3419
	3	5023	4345	3820	3403	4799	4186	3705	3318	3887	3485	3154	3611	3276	2995	3354	3078	2954
	4	4578	3821	3267	2844	4372	3685	3174	2779	3429	2995	2651	3190	2824	2527	2968	2661	2554
	5	4196	3394	2834	2421	4008	3277	2758	2369	3056	2609	2267	2849	2467	2167	2657	2331	2239
	6	3864	3041	2488	2092	3693	2939	2424	2050	2747	2300	1966	2568	2181	1885	2400	2066	1986
	7	3574	2745	2207	1831	3419	2657	2153	1795	2489	2048	1726	2332	1946	1658	2185	1848	1779
	8	3320	2495	1976	1619	3179	2418	1930	1590	2271	1839	1531	2133	1752	1474	2003	1668	1607
	9	3096	2282	1783	1446	2968	2214	1743	1421	2084	1665	1371	1962	1589	1321	1847	1516	1462
	10	2898	2098	1620	1302	2781	2038	1585	1280	1923	1517	1237	1815	1451	1194	1712	1387	1340

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	47.7 fc	25.9 ft
6.5 ft	34.2 fc	30.6 ft
7.5 ft	25.7 fc	35.3 ft
8.0 ft	22.5 fc	37.7 ft
10.0 ft	14.4 fc	47.1 ft
12.0 ft	10.0 fc	56.5 ft
14.0 ft	7.4 fc	66.0 ft
16.0 ft	5.6 fc	75.4 ft
20.0 ft	3.6 fc	94.2 ft
24.0 ft	2.5 fc	113.1 ft
28.0 ft	1.8 fc	131.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	11768	11768	11768
45.00°	8678	8936	10390
55.00°	7997	8021	9938
65.00°	7264	7122	8710
75.00°	6542	6000	6517
85.00°	6215	5318	2243

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	19.8	21.2	20.3	21.8	22.4	17.0	18.5	17.6	19.0	19.7
	3H	22.3	23.6	22.9	24.2	24.9	18.5	19.8	19.0	20.3	21.0
	4H	23.5	24.8	24.1	25.4	26.1	18.9	20.1	19.5	20.7	21.4
	6H	24.9	26.0	25.5	26.6	27.3	19.1	20.3	19.7	20.9	21.6
	8H	25.6	26.7	26.2	27.3	28.0	19.2	20.3	19.8	20.9	21.6
	12H	26.3	27.4	26.9	28.0	28.7	19.2	20.2	19.8	20.9	21.6
4H	2H	20.2	21.4	20.8	22.0	22.7	18.0	19.3	18.6	19.8	20.5
	3H	22.9	24.0	23.5	24.6	25.3	19.7	20.7	20.3	21.4	22.1
	4H	24.3	25.3	24.9	25.9	26.7	20.2	21.2	20.9	21.8	22.6
	6H	25.8	26.7	26.5	27.3	28.1	20.6	21.4	21.2	22.1	22.9
	8H	26.6	27.4	27.3	28.1	28.8	20.7	21.5	21.3	22.1	22.9
	12H	27.5	28.2	28.1	28.9	29.7	20.7	21.4	21.4	22.1	22.9
8H	4H	24.5	25.3	25.1	26.0	26.7	21.0	21.8	21.6	22.4	23.2
	6H	26.2	26.8	26.8	27.6	28.3	21.5	22.2	22.2	22.9	23.7
	8H	27.1	27.7	27.8	28.4	29.2	21.7	22.3	22.4	23.0	23.8
	12H	28.1	28.7	28.8	29.4	30.2	21.8	22.4	22.5	23.1	23.9
12H	4H	24.5	25.2	25.2	25.9	26.7	21.2	21.9	21.8	22.6	23.4
	6H	26.2	26.8	26.9	27.5	28.3	21.8	22.5	22.5	23.1	24.0
	8H	27.2	27.7	27.9	28.4	29.3	22.1	22.7	22.8	23.4	24.2

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0