Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SL03IND4 20L 35HK DW xx xx MW

Specline Linear Pendant, 1.8" aperture x 4' Long, Matte White Refl

Test Number

SP-01369_2

Test Date

6/3/2022

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

Summary of Results

Power

Input Watts	60 W

Lumen Output

Output Lumens	4239
Efficacy	70.66 lm/W

Luminous Dimensions

0° - 180° Size	0.15
90° - 270° Size	4
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.25
Two luminaires, plane 90°	1.3
Four luminaires	1.37

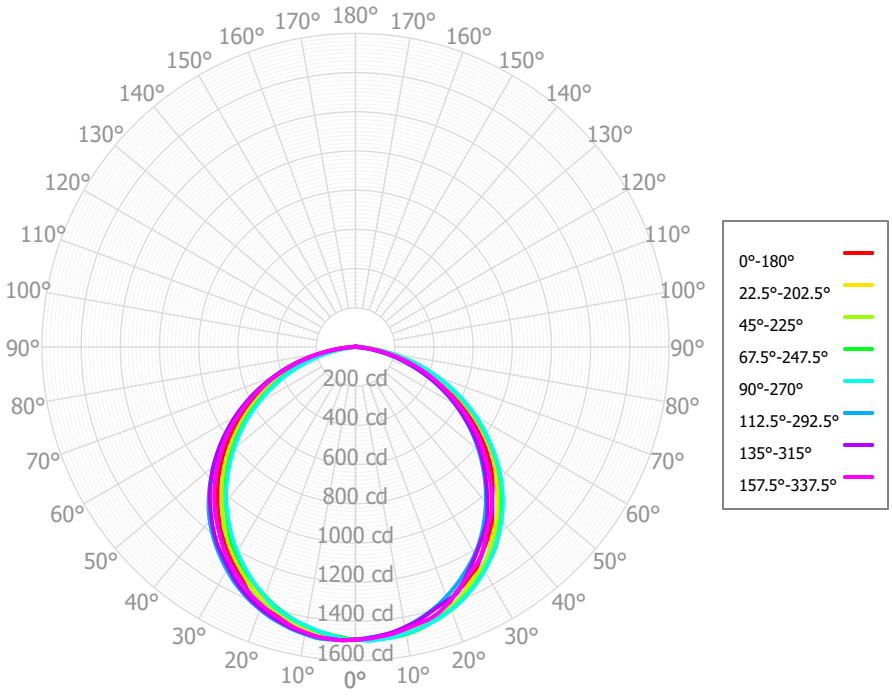
Full Beam Angle

0° - 180°	112°
90° - 270°	111°

IES File Header Contents

Keyword	Value
TEST	SP-01369_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/3/2022
ISSUEDATE	11/2/2022
LUMCAT	SL03IND4 20L 35HK DW xx xx MW
LUMINAIRE	Specline Linear Pendant, 1.8" aperture x 4' Long, Matte White Refl
OTHER	Diffuse White Extruded Acrylic Lens, Symmetric Distribution
OTHER	Data for 4' IND fixture, or 4' module for continuous ROW
OTHER	111 Degree Beam Angle
LAMP	N/A, Min. 90 CRI
LAMPCAT	N/A
OTHER	Reference project SL473
OTHER	20L designation for Spectrum linear product indicates 1060 Source Lm/Ft.
OTHER	CCT Output Multipliers: 40HK x 1.01, 30HK x 0.98, 27HK x 0.95
OTHER	Total Luminaire Watts is approximate
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	143.49	3.38%	90.00° - 100.00°	3.22	0.08%
10.00° - 20.00°	405.36	9.56%	100.00° - 110.00°	2.99	0.07%
20.00° - 30.00°	614.24	14.49%	100.00° - 120.00°	5.81	0.14%
30.00° - 40.00°	740.12	17.46%	120.00° - 130.00°	2.65	0.06%
40.00° - 50.00°	765.76	18.06%	130.00° - 140.00°	2.32	0.05%
50.00° - 60.00°	687.91	16.23%	140.00° - 150.00°	1.84	0.04%
60.00° - 70.00°	516.90	12.19%	150.00° - 160.00°	1.41	0.03%
70.00° - 80.00°	284.34	6.71%	160.00° - 170.00°	0.88	0.02%
80.00° - 90.00°	62.87	1.48%	170.00° - 180.00°	0.32	0.01%
0.00° - 90.00°	4220.98	99.56%	0.00° - 180.00°	4239.44	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°	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24	1493.24
2.50°	1490.10	1493.39	1495.87	1492.52	1501.30	1497.81	1498.09	1497.86	1495.39	1492.79	1490.61	1484.41	1490.34	1484.59	1487.94	1489.95	1490.10
5.00°	1483.41	1487.82	1493.31	1494.09	1497.27	1498.47	1495.60	1495.06	1491.03	1485.73	1478.48	1474.23	1476.23	1478.49	1478.33	1483.32	1483.41
7.50°	1475.76	1481.52	1490.45	1493.34	1492.76	1498.59	1491.30	1491.15	1483.00	1478.04	1465.74	1462.88	1461.95	1469.82	1467.95	1474.94	1475.76
10.00°	1465.32	1472.75	1481.74	1487.26	1483.75	1488.08	1482.96	1478.67	1469.13	1461.69	1450.43	1446.44	1446.10	1451.58	1452.08	1461.93	1465.32
12.50°	1454.22	1463.80	1472.23	1477.01	1474.12	1477.21	1471.97	1465.46	1453.84	1444.81	1434.68	1429.40	1429.57	1432.06	1435.50	1449.69	1454.22
15.00°	1443.90	1454.43	1452.60	1459.44	1461.13	1462.15	1456.62	1445.38	1436.85	1421.26	1417.64	1405.96	1409.62	1409.25	1413.66	1438.93	1443.90
17.50°	1433.68	1440.11	1432.85	1442.33	1446.33	1446.41	1439.38	1425.05	1416.46	1397.48	1401.40	1382.09	1386.95	1384.34	1391.59	1419.46	1433.68
20.00°	1393.22	1416.72	1412.28	1425.83	1425.36	1425.24	1419.79	1401.51	1392.87	1371.74	1386.88	1352.25	1355.30	1355.46	1375.57	1387.07	1393.22
22.50°	1350.74	1386.97	1389.67	1404.13	1402.79	1403.00	1396.14	1377.00	1364.93	1344.63	1359.70	1322.11	1322.09	1324.49	1357.24	1352.23	1350.74
25.00°	1329.15	1348.44	1358.93	1377.18	1376.39	1375.83	1368.51	1345.02	1333.87	1310.58	1312.33	1288.86	1285.08	1290.47	1312.37	1314.61	1329.15
27.50°	1305.99	1318.20	1327.86	1347.44	1347.59	1347.02	1336.04	1312.46	1298.54	1276.06	1267.76	1255.04	1247.28	1255.39	1267.91	1283.19	1305.99
30.00°	1262.06	1296.80	1295.91	1315.50	1314.39	1312.94	1299.95	1277.34	1260.89	1240.01	1226.66	1218.08	1208.03	1219.14	1225.94	1257.12	1262.06
32.50°	1219.03	1258.53	1261.41	1280.67	1278.85	1277.80	1264.58	1240.41	1221.07	1200.95	1190.38	1178.17	1166.09	1177.88	1184.75	1215.09	1219.03
35.00°	1182.00	1206.35	1221.87	1244.11	1240.09	1240.24	1229.61	1197.89	1180.36	1154.87	1158.67	1127.92	1120.53	1132.37	1146.55	1162.32	1182.00
37.50°	1141.28	1163.81	1180.67	1200.61	1199.90	1200.58	1187.96	1155.17	1136.51	1108.68	1111.76	1078.09	1074.43	1084.69	1103.46	1119.09	1141.28
40.00°	1085.66	1127.29	1136.94	1154.03	1158.21	1157.43	1143.44	1112.01	1091.78	1062.30	1053.88	1029.23	1027.75	1035.60	1047.56	1080.67	1085.66
42.50°	1033.22	1077.52	1090.84	1105.89	1111.80	1110.06	1097.46	1066.80	1043.32	1013.80	1000.57	979.81	977.04	983.70	992.46	1028.89	1033.22
45.00°	989.58	1021.50	1042.02	1057.23	1061.51	1057.18	1051.03	1018.22	994.18	962.45	949.82	929.35	923.07	930.42	938.96	972.23	989.58
47.50°	942.26	972.63	991.06	1004.03	1007.68	1002.32	999.56	967.54	941.07	909.50	896.55	876.47	868.35	875.86	885.06	915.96	942.26
50.00°	887.31	926.23	938.21	949.85	951.66	945.50	947.11	914.20	887.54	854.93	842.24	820.22	813.16	820.86	830.55	859.79	887.31
52.50°	829.61	871.48	880.46	890.02	892.42	886.77	889.13	860.52	831.67	798.27	783.90	763.32	755.80	764.56	773.14	802.85	829.61
55.00°	767.66	814.78	819.32	829.48	831.69	826.59	830.52	806.53	775.51	739.93	724.40	705.73	697.42	707.95	712.48	745.79	767.66
57.50°	706.85	751.86	756.33	768.12	770.47	765.09	769.27	748.20	713.85	680.47	665.46	645.74	636.86	648.76	652.53	683.60	706.85
60.00°	647.37	688.08	692.40	706.64	709.08	702.82	707.83	686.65	652.42	620.33	606.64	583.75	575.59	589.17	593.20	621.01	647.37
62.50°	586.24	626.47	627.73	640.36	643.28	638.38	643.35	624.47	593.02	558.07	545.52	522.26	514.32	527.72	531.99	557.84	586.24
65.00°	523.58	564.99	562.79	573.98	576.46	573.01	578.71	561.92	533.19	494.87	484.16	461.09	453.04	466.13	469.52	494.82	523.58
67.50°	460.53	500.00	496.95	506.56	509.10	503.67	512.39	497.81	471.18	431.08	423.96	402.14	391.08	402.88	406.86	434.39	460.53
70.00°	397.23	434.94	430.87	439.71	441.67	433.10	446.26	433.02	409.02	367.10	363.80	344.21	329.02	339.81	344.10	373.85	397.23
72.50°	333.31	368.99	364.19	376.32	372.52	365.21	381.15	368.14	346.33	307.35	303.98	282.91	270.93	279.71	285.64	312.56	333.31
75.00°	269.07	303.38	297.40	311.30	303.27	297.88	315.50	303.23	283.36	248.54	244.10	220.41	213.05	219.85	228.80	251.86	269.07
77.50°	208.72	239.97	232.57	240.25	236.48	230.92	247.99	239.50	219.73	192.28	183.59	161.46	153.41	161.62	171.50	193.70	208.72
80.00°	149.90	177.58	167.90	171.77	170.08	164.00	181.91	176.02	160.80	136.35	124.63	103.35	94.83	105.09	114.08	137.41	149.90
82.50°	98.89	119.23	108.88	109.90	108.61	105.01	119.39	119.44	110.08	87.73	73.48	58.44	49.74	55.61	66.48	86.70	98.89
85.00°	50.04	66.76	51.58	57.73	51.79	47.08	65.59	63.65	64.78	39.92	30.36	15.42	10.47	16.76	20.45	43.99	50.04
87.50°	25.27	30.29	26.06	24.47	24.84	24.32	27.74	32.85	26.63	20.51	14.72	7.91	6.82	9.06	10.34	18.42	25.27
90.00°	4.71	5.32	3.45	4.44	3.21	3.51	5.14	3.70	6.17	2.65	3.36	2.86	3.79	3.62	3.28	2.82	4.71
92.50°	2.84	3.80	3.00	3.74	2.63	2.97	3.53	2.94	4.04	2.29	2.33	3.02	3.13	2.95	3.08	3.11	2.84
95.00°	2.79	3.00	2.61	3.34	2.18	2.47	2.62	2.28	2.82	2.02	1.86	3.15	2.70	2.57	2.97	3.37	2.79
97.50°	2.88	3.31	2.51	3.27	2.12	2.21	2.45	2.67	2.32	2.30	2.37	2.80	2.91	2.66	3.20	3.58	2.88
100.00°	2.98	3.27	2.41	3.24	2.17	2.03	2.49	2.99	2.41	2.54	2.46	2.52	3.14	2.90	3.44	3.51	2.98

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	5043	5043	5043	5043	4923	4923	4923	4923	4700	4700	4700	4496	4496	4496	4309	4309	4309	4221
	1	4613	4412	4233	4072	4495	4314	4151	4003	4131	3996	3873	3962	3853	3752	3807	3719	3637	3638
	2	4194	3846	3558	3317	4080	3764	3500	3276	3610	3388	3196	3469	3283	3120	3338	3184	3048	3113
	3	3822	3376	3031	2756	3716	3308	2988	2730	3179	2904	2679	3059	2826	2630	2948	2751	2582	2688
	4	3499	2990	2618	2334	3400	2933	2585	2316	2824	2521	2282	2722	2461	2249	2628	2403	2216	2349
RCR	5	3217	2671	2290	2008	3126	2622	2264	1996	2530	2214	1972	2444	2166	1949	2364	2121	1926	2074
	6	2970	2404	2024	1752	2887	2363	2004	1743	2284	1964	1726	2211	1926	1709	2142	1890	1692	1849
	7	2754	2179	1807	1546	2679	2144	1791	1540	2077	1759	1527	2014	1728	1514	1955	1698	1502	1663
	8	2563	1988	1627	1379	2495	1958	1614	1374	1900	1587	1364	1846	1562	1354	1795	1538	1345	1507
	9	2395	1825	1476	1240	2333	1799	1465	1236	1749	1443	1228	1702	1422	1221	1657	1402	1214	1375
	10	2245	1683	1347	1124	2189	1661	1338	1121	1617	1320	1115	1576	1302	1109	1538	1285	1103	1262

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	49.4 fc	16.2 ft
6.5 ft	35.3 fc	19.2 ft
7.5 ft	26.5 fc	22.1 ft
8.0 ft	23.3 fc	23.6 ft
10.0 ft	14.9 fc	29.5 ft
12.0 ft	10.4 fc	35.4 ft
14.0 ft	7.6 fc	41.3 ft
16.0 ft	5.8 fc	47.2 ft
20.0 ft	3.7 fc	59.0 ft
24.0 ft	2.6 fc	70.8 ft
28.0 ft	1.9 fc	82.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	26789	26789	26789
45.00°	25107	26437	26931
55.00°	24010	25626	26013
65.00°	22225	23890	24470
75.00°	18650	20614	21021
85.00°	10299	10617	10660

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	23.3	24.9	23.6	25.2	25.5	23.2	24.8	23.6	25.1	25.5
	3H	25.0	26.5	25.4	26.8	27.2	24.9	26.4	25.3	26.7	27.1
	4H	25.7	27.0	26.1	27.4	27.8	25.5	26.9	25.9	27.3	27.6
	6H	26.1	27.4	26.5	27.7	28.1	25.9	27.2	26.3	27.6	28.0
	8H	26.2	27.4	26.6	27.8	28.2	26.0	27.2	26.4	27.6	28.0
	12H	26.2	27.4	26.7	27.8	28.2	26.0	27.2	26.4	27.6	28.0
4H	2H	23.9	25.2	24.3	25.6	26.0	23.8	25.2	24.2	25.6	26.0
	3H	25.9	27.0	26.3	27.4	27.8	25.8	26.9	26.2	27.3	27.8
	4H	26.6	27.7	27.1	28.1	28.5	26.5	27.5	26.9	28.0	28.4
	6H	27.2	28.1	27.6	28.5	29.0	27.0	27.9	27.4	28.3	28.8
	8H	27.3	28.2	27.8	28.6	29.1	27.1	27.9	27.6	28.4	28.9
	12H	27.4	28.2	27.9	28.7	29.1	27.1	27.9	27.6	28.4	28.9
8H	4H	26.9	27.7	27.4	28.2	28.7	26.8	27.7	27.3	28.1	28.6
	6H	27.5	28.2	28.0	28.7	29.2	27.4	28.1	27.9	28.6	29.1
	8H	27.8	28.4	28.3	28.9	29.4	27.5	28.2	28.0	28.7	29.2
	12H	27.9	28.5	28.4	29.0	29.5	27.6	28.2	28.1	28.7	29.2
12H	4H	26.9	27.7	27.4	28.2	28.6	26.8	27.6	27.3	28.1	28.6
	6H	27.6	28.2	28.1	28.7	29.2	27.4	28.1	28.0	28.5	29.1
	8H	27.8	28.4	28.3	28.9	29.5	27.6	28.2	28.1	28.7	29.2

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0