

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

GL04IND48LX 05L 35K EX DW XX MW

Milltown Light 5.1" Wide x 48" linear pendant or surface mount luminaire

Test Number

SP-00618_1_M-5L

Test Date

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

Summary of Results

Power

Input Watts	16 W
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Lumen Output

Output Lumens	1909
Efficacy	119.31 lm/W

Luminous Dimensions

0° - 180° Size	0.43
90° - 270° Size	4.02
Height	0.17

Spacing Criterion

Two luminaires, plane 0°	1.36
Two luminaires, plane 90°	1.23
Four luminaires	1.45

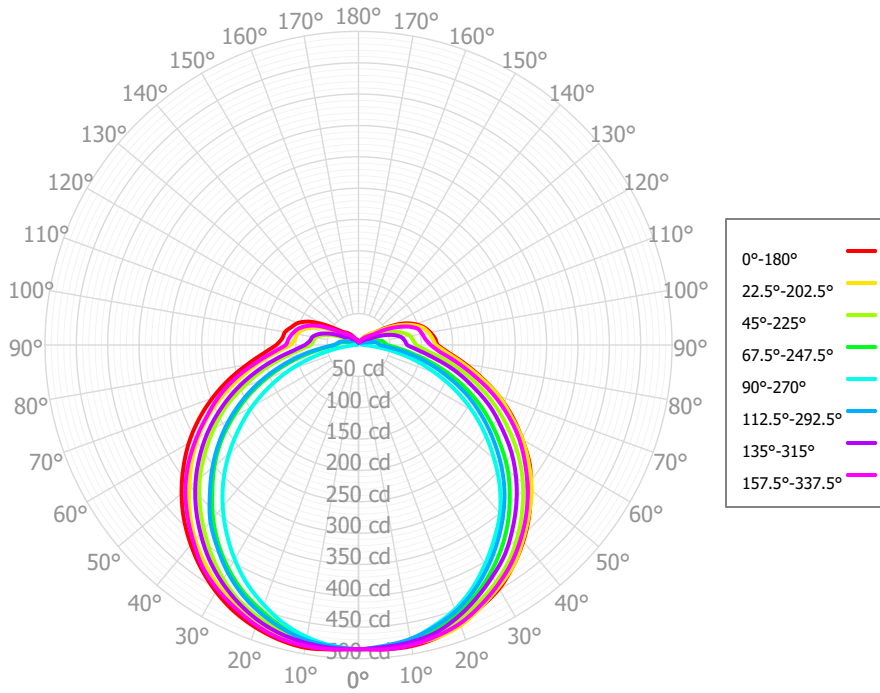
Full Beam Angle

0° - 180°	139°
90° - 270°	108°

IES File Header Contents

Keyword	Value
TEST	SP-00618_1_M-5L
TESTLAB	VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	10/16/2017
UPDATE	3/9/2020
LUMCAT	GL04IND48LX 05L 35K EX DW XX MW
LUMINAIRE	Milltown Light 5.1" Wide x 48" linear pendant or surface mount luminaire
OTHER	48" Linear LED, Diffuse White Acrylic Lens
OTHER	Matte White interior finish
OTHER	112 Degree Beam Angle
LAMPCAT	N/A
LAMP	N/A, 550 Source Lm/Ft
OTHER	Total Luminaire Watts is approximate
OTHER	CCT Output Multipliers: 30K x 0.98, 35K x 1.0, 40K x 1.03, 50K x 1.06
OTHER	This report prepared by Spectrum Lighting, scaled from 20L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	48.98	2.57%	90.00° - 100.00°	78.16	4.09%
10.00° - 20.00°	133.70	7.00%	100.00° - 110.00°	63.35	3.32%
20.00° - 30.00°	206.19	10.80%	100.00° - 120.00°	103.63	5.43%
30.00° - 40.00°	255.11	13.36%	120.00° - 130.00°	19.80	1.04%
40.00° - 50.00°	275.09	14.41%	130.00° - 140.00°	11.01	0.58%
50.00° - 60.00°	265.29	13.90%	140.00° - 150.00°	6.13	0.32%
60.00° - 70.00°	227.45	11.91%	150.00° - 160.00°	3.23	0.17%
70.00° - 80.00°	167.40	8.77%	160.00° - 170.00°	1.58	0.08%
80.00° - 90.00°	105.74	5.54%	170.00° - 180.00°	0.45	0.02%
0.00° - 90.00°	1,684.94	88.27%	0.00° - 180.00°	1,908.94	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°	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18	485.18
5.00°	487.27	485.74	483.97	484.16	483.23	482.29	485.21	487.11	487.40	485.71	484.13	483.30	481.46	481.42	483.41	487.26	487.27
10.00°	487.58	484.84	482.62	479.33	476.57	477.91	482.46	487.53	490.18	485.40	480.90	475.74	473.14	476.10	480.96	486.01	487.58
15.00°	483.26	483.02	477.00	468.97	463.89	468.43	477.09	484.26	486.74	480.41	472.95	466.27	459.71	465.70	474.95	480.69	483.26
20.00°	473.48	475.97	466.13	456.64	448.93	455.39	467.52	475.84	479.39	474.20	462.99	451.08	441.10	452.21	462.00	472.75	473.48
25.00°	461.31	461.38	452.69	440.67	428.59	438.89	453.50	463.50	469.00	459.32	449.86	434.64	420.26	433.48	445.37	458.85	461.31
30.00°	448.72	446.34	437.60	420.25	403.63	417.89	436.27	449.89	454.35	444.54	431.07	413.47	394.73	410.67	426.76	442.97	448.72
35.00°	430.12	430.17	419.01	396.86	377.50	393.03	415.92	432.90	436.41	426.07	408.55	388.86	366.71	385.33	407.31	424.82	430.12
40.00°	408.82	407.52	395.60	370.48	350.85	367.42	391.94	409.52	415.87	404.88	383.64	360.81	336.77	358.21	382.33	402.90	408.82
45.00°	384.90	384.05	369.71	341.10	318.62	335.13	366.71	385.75	393.50	380.12	357.91	329.66	304.50	329.22	356.13	378.82	384.90
50.00°	358.16	360.51	342.32	310.81	282.29	304.01	339.08	360.48	368.32	352.12	330.26	299.90	269.40	296.61	327.94	351.77	358.16
55.00°	333.60	331.71	312.11	276.23	246.07	271.55	308.99	331.30	340.87	324.45	298.36	267.67	232.37	262.12	297.46	323.68	333.60
60.00°	301.76	302.15	279.07	241.94	209.08	237.38	277.23	298.87	312.37	294.99	266.19	231.63	195.23	227.71	263.46	295.02	301.76
65.00°	270.86	268.68	245.73	206.89	170.46	201.30	243.04	265.90	281.09	262.55	233.39	195.57	155.76	192.61	231.16	262.32	270.86
70.00°	238.18	238.25	211.01	169.22	129.93	163.94	207.82	235.69	247.89	227.34	195.63	157.19	117.10	154.57	194.16	227.87	238.18
75.00°	203.73	201.59	175.87	130.47	92.17	126.15	171.32	202.25	214.11	191.93	160.15	119.44	75.87	117.83	159.82	191.54	203.73
80.00°	172.07	168.84	141.03	92.94	54.10	90.99	135.82	166.99	180.30	160.73	124.66	83.81	40.81	83.34	123.67	159.14	172.07
85.00°	144.38	141.35	109.70	64.62	22.76	59.55	104.63	137.09	151.66	130.16	95.59	53.96	14.35	52.10	95.37	130.56	144.38
90.00°	126.51	123.54	92.26	45.66	8.20	39.02	85.29	116.20	131.08	108.49	76.48	36.24	2.80	34.84	77.71	115.09	126.51
95.00°	122.38	118.50	87.46	41.74	5.83	33.54	77.60	111.82	122.12	102.16	72.42	31.34	2.76	31.11	74.36	107.12	122.38
100.00°	116.01	113.30	83.70	37.79	6.41	29.96	74.56	106.64	118.93	99.21	69.76	26.44	1.89	26.42	69.96	102.94	116.01
105.00°	108.39	106.19	73.62	27.13	4.90	22.45	66.46	99.73	110.60	92.95	60.50	14.40	1.75	16.23	60.34	98.56	108.39
110.00°	96.73	92.57	62.25	17.66	6.54	16.07	53.66	88.50	102.71	80.26	46.36	9.06	1.99	11.19	46.64	85.65	96.73
115.00°	81.38	75.56	44.07	15.34	6.24	14.32	38.44	72.52	88.21	65.80	29.40	8.46	2.28	9.88	31.13	67.07	81.38
120.00°	60.29	56.10	27.21	13.78	6.63	12.83	24.30	51.84	66.28	44.38	17.87	7.05	2.61	7.64	19.91	48.48	60.29
125.00°	39.31	38.01	23.54	12.39	5.43	11.55	21.67	35.33	44.85	26.91	14.91	5.69	2.81	6.13	16.67	29.64	39.31
130.00°	25.61	28.72	20.33	10.19	5.10	10.68	18.56	28.62	32.50	22.65	13.52	5.70	2.46	4.46	12.80	23.15	25.61
135.00°	21.93	25.61	16.60	9.02	5.61	9.61	13.24	24.06	27.85	19.31	10.77	5.74	2.21	4.59	10.19	19.01	21.93
140.00°	19.04	20.44	14.90	8.51	4.98	8.24	12.09	19.21	23.60	14.56	8.16	4.27	3.09	4.35	7.59	15.19	19.04
145.00°	14.58	14.64	10.26	6.40	5.17	7.36	10.56	15.89	18.92	10.42	6.36	4.57	3.01	4.24	6.60	12.21	14.58
150.00°	10.67	11.29	9.33	6.00	4.77	6.69	9.90	13.02	13.76	9.15	5.82	4.05	2.45	3.72	6.48	9.51	10.67
155.00°	8.39	10.16	7.75	6.29	4.31	5.67	7.94	10.40	10.98	7.46	5.54	3.98	2.67	3.08	5.91	7.41	8.39
160.00°	7.06	8.98	7.47	4.95	4.53	5.57	7.46	8.70	10.05	7.35	4.71	3.68	3.05	3.78	5.41	6.51	7.06
165.00°	7.07	6.15	6.11	5.37	4.31	4.24	6.02	7.12	8.78	5.52	5.05	3.60	2.74	3.94	4.97	5.63	7.07
170.00°	5.31	5.39	4.80	4.61	3.77	4.45	5.14	5.93	8.39	5.31	3.91	4.35	3.91	3.36	4.45	4.65	5.31
175.00°	4.58	4.29	4.21	3.77	3.56	4.02	4.16	4.72	4.95	4.33	4.38	3.69	3.76	3.14	3.91	5.04	4.58
180.00°	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20

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%	30%
	0	2,219	2,219	2,219	2,219	2,142	2,142	2,142	2,142	1,997	1,997	1,997	1,864	1,864	1,864	1,742	1,742	1,742
	1	1,986	1,879	1,783	1,697	1,909	1,813	1,726	1,648	1,689	1,619	1,554	1,575	1,519	1,467	1,471	1,426	1,384
	2	1,790	1,615	1,472	1,351	1,716	1,559	1,428	1,317	1,454	1,345	1,252	1,357	1,268	1,190	1,267	1,195	1,130
	3	1,623	1,406	1,239	1,105	1,554	1,358	1,204	1,080	1,268	1,139	1,032	1,185	1,077	986	1,107	1,018	941
	4	1,480	1,238	1,060	925	1,417	1,197	1,033	906	1,119	980	869	1,048	929	833	981	881	799
	5	1,357	1,100	921	789	1,299	1,065	898	774	998	855	745	937	813	716	879	773	688
	6	1,250	986	810	683	1,198	956	791	671	898	754	647	845	719	624	794	686	601
	7	1,157	891	719	598	1,109	865	703	588	815	672	569	768	643	549	724	614	530
	8	1,075	811	644	530	1,032	788	631	522	744	605	505	703	579	489	664	555	473
	9	1,003	742	582	474	964	722	571	467	683	548	453	647	526	439	613	505	425
	10	939	683	530	428	904	665	520	421	631	500	409	599	481	397	568	462	386

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	16.0 fc	22.2 ft
6.5 ft	11.5 fc	26.2 ft
7.5 ft	8.6 fc	30.2 ft
8.0 ft	7.6 fc	32.3 ft
10.0 ft	4.9 fc	40.3 ft
12.0 ft	3.4 fc	48.4 ft
14.0 ft	2.5 fc	56.5 ft
16.0 ft	1.9 fc	64.5 ft
20.0 ft	1.2 fc	80.7 ft
24.0 ft	0.8 fc	96.8 ft
28.0 ft	0.6 fc	112.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	3,021	3,021	3,021
45.00°	2,429	2,486	2,692
55.00°	2,315	2,350	2,519
65.00°	2,160	2,176	2,303
75.00°	1,980	1,964	1,915
85.00°	1,869	1,728	1,096

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	15.4	16.8	15.9	17.4	18.0	12.8	14.3	13.3	14.8	15.4
	3H	17.9	19.2	18.4	19.7	20.4	14.3	15.6	14.9	16.2	16.8
	4H	19.0	20.3	19.6	20.9	21.5	14.8	16.0	15.3	16.6	17.2
	6H	20.2	21.4	20.8	22.0	22.6	15.1	16.2	15.6	16.8	17.5
	8H	20.8	22.0	21.4	22.6	23.2	15.1	16.2	15.7	16.8	17.5
	12H	21.5	22.6	22.1	23.1	23.8	15.1	16.2	15.7	16.8	17.5
4H	2H	15.8	17.1	16.4	17.6	18.3	13.9	15.1	14.4	15.7	16.3
	3H	18.5	19.6	19.1	20.2	20.9	15.6	16.7	16.2	17.3	17.9
	4H	19.9	20.9	20.5	21.5	22.2	16.2	17.2	16.8	17.8	18.5
	6H	21.2	22.1	21.9	22.7	23.4	16.6	17.5	17.2	18.1	18.8
	8H	21.9	22.8	22.6	23.4	24.1	16.7	17.5	17.3	18.2	18.9
	12H	22.7	23.5	23.4	24.1	24.8	16.8	17.5	17.4	18.2	18.9
8H	4H	20.1	20.9	20.7	21.5	22.3	17.0	17.8	17.6	18.4	19.1
	6H	21.6	22.3	22.3	23.0	23.7	17.6	18.3	18.2	18.9	19.7
	8H	22.5	23.1	23.1	23.8	24.5	17.8	18.4	18.4	19.1	19.8
	12H	23.4	24.0	24.1	24.6	25.4	17.9	18.4	18.6	19.1	19.9
12H	4H	20.1	20.8	20.7	21.5	22.2	17.2	17.9	17.8	18.6	19.3
	6H	21.7	22.3	22.3	22.9	23.7	17.9	18.5	18.5	19.2	19.9
	8H	22.6	23.1	23.2	23.8	24.6	18.2	18.7	18.8	19.4	20.2

Corrected UGR values based on total output lumens

SHR = 1.0