

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

TWY7 50L 35K xx BET MW

Nom 7 inch x 5 inch rectangular, high output track light, soft etch lens

Test Number

SP-01383

Test Date

6/24/2022

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

Summary of Results

Power

Input Watts	41 W
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Lumen Output

Output Lumens	5329
Efficacy	129.98 lm/W

Luminous Dimensions

0° - 180° Size	0.42
90° - 270° Size	0.58
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.27
Two luminaires, plane 90°	1.26
Four luminaires	1.37

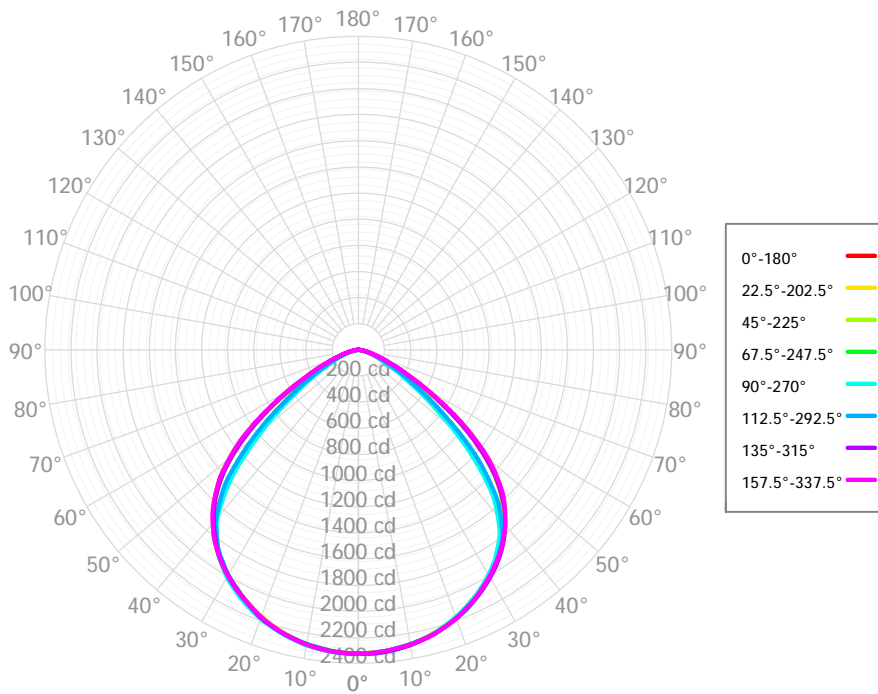
Full Beam Angle

0° - 180°	103°
90° - 270°	95°

IES File Header Contents

Keyword	Value
TEST	SP-01383
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/24/2022
ISSUEDATE	12/30/2022
LUMCAT	TWY7 50L 35K xx BET MW
LUMINAIRE	Nom 7 inch x 5 inch rectangular, high output track light, soft etch lens
OTHER	Beam Angle: 105 x 97 degrees
LAMPCAT	N/A, Cree emitter
LAMP	N/A, 19mm LES
OTHER	Total luminaire wattage is approximate
OTHER	This photometric report prepared by Spectrum Lighting
_CRI	80+
_CCTMULT	30K x 0.93, 40K x 1.0
_LAMPMULT	N/A, only 50L tested

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	223.60	4.20%	90.00° - 100.00°	2.66	0.05%
10.00° - 20.00°	633.24	11.88%	100.00° - 110.00°	2.47	0.05%
20.00° - 30.00°	966.69	18.14%	100.00° - 120.00°	4.99	0.09%
30.00° - 40.00°	1170.94	21.97%	120.00° - 130.00°	2.45	0.05%
40.00° - 50.00°	1133.37	21.27%	130.00° - 140.00°	2.16	0.04%
50.00° - 60.00°	742.69	13.94%	140.00° - 150.00°	1.83	0.03%
60.00° - 70.00°	316.40	5.94%	150.00° - 160.00°	1.39	0.03%
70.00° - 80.00°	105.62	1.98%	160.00° - 170.00°	0.87	0.02%
80.00° - 90.00°	19.91	0.37%	170.00° - 180.00°	0.30	0.01%
0.00° - 90.00°	5312.46	99.69%	0.00° - 180.00°	5329.11	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°	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44	2326.44
2.50°	2320.67	2319.88	2320.86	2322.65	2323.21	2324.25	2323.76	2322.65	2322.22	2323.70	2323.78	2321.55	2326.22	2328.45	2325.62	2321.66	2320.67
5.00°	2315.12	2314.18	2315.95	2314.94	2315.67	2315.93	2316.87	2316.79	2317.71	2319.22	2316.39	2312.16	2320.58	2321.81	2320.35	2314.63	2315.12
7.50°	2307.41	2303.00	2306.76	2301.11	2304.24	2304.19	2303.07	2306.04	2306.98	2306.32	2306.45	2298.28	2309.16	2310.05	2307.75	2302.89	2307.41
10.00°	2291.53	2290.21	2289.74	2286.28	2289.76	2289.58	2288.63	2290.25	2290.38	2289.33	2287.92	2284.08	2296.00	2293.05	2293.98	2289.51	2291.53
12.50°	2271.39	2268.62	2268.85	2268.29	2270.62	2269.65	2266.58	2267.75	2268.29	2266.11	2267.45	2263.36	2273.66	2272.95	2273.73	2270.26	2271.39
15.00°	2245.27	2245.26	2242.31	2246.22	2245.50	2246.11	2243.63	2241.44	2241.98	2238.67	2240.06	2242.14	2249.43	2248.51	2251.46	2249.49	2245.27
17.50°	2216.78	2214.73	2212.48	2214.56	2213.18	2214.15	2214.88	2211.12	2209.40	2206.02	2211.69	2212.36	2220.90	2222.10	2221.36	2219.61	2216.78
20.00°	2181.76	2183.27	2178.88	2179.19	2177.40	2177.72	2182.93	2175.82	2173.07	2171.45	2178.20	2181.21	2191.83	2189.75	2188.90	2188.19	2181.76
22.50°	2144.76	2144.89	2141.17	2137.18	2138.34	2135.25	2137.13	2136.39	2131.62	2135.00	2144.35	2138.18	2151.53	2155.31	2149.92	2147.10	2144.76
25.00°	2100.69	2106.06	2099.64	2093.01	2094.01	2090.34	2090.99	2093.67	2087.82	2091.00	2098.78	2094.71	2110.51	2110.84	2108.92	2105.01	2100.69
27.50°	2055.15	2055.93	2051.00	2045.73	2045.65	2041.06	2043.80	2048.75	2039.87	2041.23	2052.78	2048.82	2061.66	2063.86	2063.55	2055.25	2055.15
30.00°	2001.25	2005.42	1997.13	1993.97	1990.07	1990.43	1994.03	1997.41	1990.43	1987.94	2000.95	2000.12	2011.86	2009.21	2014.87	2005.06	2001.25
32.50°	1946.28	1948.63	1939.46	1937.11	1930.15	1929.30	1938.18	1942.75	1934.07	1932.49	1947.75	1941.10	1946.61	1953.30	1960.71	1949.04	1946.28
35.00°	1882.36	1890.38	1879.62	1868.88	1856.90	1865.93	1876.08	1880.22	1875.94	1868.19	1883.03	1875.37	1878.11	1884.07	1899.57	1892.00	1882.36
37.50°	1817.87	1821.00	1808.46	1790.17	1777.49	1782.68	1802.79	1814.48	1805.04	1799.71	1815.01	1791.20	1783.32	1813.54	1829.43	1822.75	1817.87
40.00°	1735.61	1748.10	1732.19	1687.80	1660.92	1696.82	1722.63	1733.64	1731.98	1722.92	1729.47	1693.47	1678.46	1699.99	1748.61	1750.85	1735.61
42.50°	1651.77	1658.58	1637.52	1568.27	1531.04	1566.66	1632.89	1648.28	1638.04	1643.19	1638.15	1567.72	1524.38	1583.97	1656.61	1662.12	1651.77
45.00°	1539.07	1561.27	1536.65	1411.82	1349.12	1433.47	1527.59	1541.81	1541.97	1540.48	1526.10	1419.47	1358.72	1417.54	1544.57	1566.12	1539.07
47.50°	1421.39	1437.48	1402.81	1234.53	1153.85	1243.47	1404.73	1430.99	1409.42	1431.68	1403.11	1235.34	1153.27	1248.23	1415.99	1440.25	1421.39
50.00°	1263.45	1300.50	1261.09	1040.49	953.85	1053.16	1259.31	1285.64	1274.54	1286.07	1250.53	1047.03	953.02	1046.53	1262.06	1303.10	1263.45
52.50°	1100.63	1130.68	1086.40	838.99	753.03	862.04	1093.81	1135.64	1099.30	1133.94	1090.74	853.34	766.09	849.78	1091.73	1131.70	1100.63
55.00°	913.94	956.42	906.30	672.21	603.66	676.86	923.75	957.66	923.97	956.50	916.28	682.98	600.17	683.29	917.42	956.63	913.94
57.50°	732.68	773.51	737.06	516.96	459.55	541.28	750.48	777.92	747.52	776.31	750.08	536.23	474.99	528.07	741.07	773.29	732.68
60.00°	570.49	606.78	568.77	408.92	369.08	414.30	599.53	619.90	577.35	617.35	596.90	419.36	368.15	419.95	592.47	604.25	570.49
62.50°	424.70	464.52	451.52	311.95	281.09	330.46	461.08	464.64	446.60	460.37	464.18	326.32	289.69	321.94	454.75	459.93	424.70
65.00°	320.84	345.95	336.60	246.70	226.21	253.20	355.84	359.66	326.07	357.11	357.43	253.99	224.63	253.90	351.99	339.43	320.84
67.50°	232.42	255.47	259.92	186.52	172.92	199.45	264.83	259.63	249.21	257.01	270.13	195.00	175.81	193.79	259.21	251.98	232.42
70.00°	173.93	186.14	186.15	147.79	138.58	151.02	201.49	199.15	180.66	197.19	202.28	150.97	135.61	151.22	198.42	183.59	173.93
72.50°	125.69	137.14	141.91	110.89	105.19	116.43	146.92	143.01	137.16	140.71	149.67	114.39	103.65	113.77	144.17	136.01	125.69
75.00°	93.33	99.75	99.99	83.72	77.78	85.46	109.49	108.06	99.20	106.23	109.05	85.77	77.24	85.28	108.42	97.83	93.33
77.50°	66.12	71.14	72.08	57.07	52.57	61.63	76.05	75.96	73.70	74.14	77.14	60.26	55.14	60.46	74.97	67.96	66.12
80.00°	45.15	47.99	46.16	39.26	36.72	41.00	52.44	53.80	50.59	52.16	50.76	41.29	37.07	40.66	51.40	44.65	45.15
82.50°	28.20	28.08	28.16	22.21	22.27	25.38	30.29	34.01	31.72	32.11	31.30	24.19	21.44	24.60	28.45	25.89	28.20
85.00°	15.08	15.56	13.12	12.72	12.02	13.48	17.43	20.23	17.24	18.07	15.24	13.65	12.06	12.53	16.51	14.34	15.08
87.50°	7.41	6.51	6.51	4.41	4.49	6.16	5.34	9.55	8.82	7.36	7.55	4.39	5.59	5.66	5.21	6.69	7.41
90.00°	3.96	3.55	2.05	3.04	3.09	2.44	3.63	5.04	3.92	4.35	3.06	2.54	3.27	3.33	3.97	3.66	3.96
92.50°	2.59	2.73	2.30	1.98	2.14	2.22	2.16	2.28	2.87	2.34	2.12	1.60	2.44	2.40	2.85	2.59	2.59
95.00°	2.49	2.55	2.50	2.10	2.00	2.19	2.10	2.25	2.34	2.09	2.18	1.63	2.24	2.44	2.70	2.41	2.49
97.50°	2.56	2.53	2.59	2.15	2.02	2.32	2.03	2.25	2.26	1.98	1.98	1.72	2.20	2.52	2.58	2.52	2.56
100.00°	2.72	2.28	2.61	2.01	2.26	2.38	2.04	2.28	2.31	2.07	1.75	1.85	2.28	2.64	2.57	2.54	2.72
102.50°	2.82	1.98	2.53	1.96	2.33	2.40	2.06	2.41	2.43	2.08	1.77	1.98	2.38	2.54	2.59	2.53	2.82
105.00°	2.92	2.31	2.44	2.10	2.21	2.33	2.10	2.62	2.30	2.02	1.83	2.12	2.25	2.35	2.66	2.65	2.92
107.50°	2.99	2.69	2.34	2.16	2.28	2.21	2.13	2.57	2.03	2.05	2.08	2.22	2.09	2.63	2.72	2.78	2.99

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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	6340	6340	6340	6340	6191	6191	6191	6191	5912	5912	5912	5657	5657	5657	5423	5423	5312
	1	5907	5701	5516	5350	5766	5581	5414	5262	5356	5220	5095	5149	5039	4938	4959	4872	4770
	2	5456	5087	4783	4527	5323	4989	4710	4473	4803	4570	4368	4632	4439	4269	4474	4315	4223
	3	5033	4548	4174	3875	4908	4466	4120	3840	4312	4016	3773	4168	3918	3707	4036	3825	3743
	4	4647	4083	3670	3355	4531	4014	3630	3332	3884	3551	3286	3764	3476	3242	3651	3404	3332
	5	4299	3683	3253	2936	4193	3625	3222	2920	3515	3160	2888	3413	3102	2857	3317	3045	2983
	6	3987	3340	2905	2593	3890	3290	2880	2582	3197	2832	2559	3109	2785	2537	3027	2740	2685
	7	3708	3043	2612	2310	3620	3001	2592	2302	2921	2553	2285	2846	2516	2269	2775	2479	2431
	8	3459	2787	2364	2074	3378	2751	2348	2068	2682	2316	2055	2617	2285	2043	2556	2255	2214
	9	3236	2564	2153	1875	3163	2533	2139	1870	2473	2113	1861	2417	2087	1851	2364	2063	2026
	10	3036	2370	1971	1706	2969	2343	1960	1702	2290	1938	1694	2241	1916	1687	2195	1896	1863

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	76.9 fc	13.9 ft
6.5 ft	55.1 fc	16.4 ft
7.5 ft	41.4 fc	18.9 ft
8.0 ft	36.4 fc	20.1 ft
10.0 ft	23.3 fc	25.2 ft
12.0 ft	16.2 fc	30.2 ft
14.0 ft	11.9 fc	35.3 ft
16.0 ft	9.1 fc	40.3 ft
20.0 ft	5.8 fc	50.4 ft
24.0 ft	4.0 fc	60.4 ft
28.0 ft	3.0 fc	70.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	102798	102798	102798
45.00°	96176	96025	84306
55.00°	70407	69819	46504
65.00°	33545	35193	23651
75.00°	15934	17070	13280
85.00°	7646	6652	6094

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		Viewing C0-180					Viewing C90-270				
2H	2H	26.2	27.7	26.6	28.0	28.3	23.6	25.1	24.0	25.4	25.7
	3H	26.6	27.9	27.0	28.2	28.6	24.1	25.4	24.5	25.7	26.1
	4H	26.7	27.9	27.1	28.2	28.6	24.2	25.4	24.6	25.8	26.2
	6H	26.7	27.8	27.1	28.2	28.6	24.3	25.4	24.7	25.8	26.2
	8H	26.7	27.7	27.1	28.1	28.5	24.3	25.3	24.7	25.7	26.1
	12H	26.6	27.6	27.1	28.0	28.5	24.2	25.3	24.7	25.6	26.1
4H	2H	26.4	27.6	26.8	27.9	28.3	24.1	25.4	24.6	25.7	26.1
	3H	26.9	27.9	27.3	28.3	28.7	24.8	25.8	25.2	26.2	26.6
	4H	27.0	27.9	27.4	28.3	28.7	25.0	25.8	25.4	26.3	26.7
	6H	27.0	27.8	27.5	28.2	28.7	25.0	25.8	25.5	26.2	26.7
	8H	27.0	27.7	27.5	28.2	28.6	25.0	25.7	25.5	26.2	26.7
	12H	27.0	27.6	27.5	28.1	28.6	25.0	25.6	25.5	26.1	26.6
8H	4H	27.0	27.7	27.4	28.1	28.6	25.0	25.7	25.5	26.2	26.7
	6H	27.0	27.6	27.5	28.1	28.6	25.1	25.7	25.6	26.2	26.7
	8H	27.0	27.5	27.5	28.0	28.5	25.1	25.7	25.7	26.2	26.7
	12H	27.0	27.5	27.5	28.0	28.5	25.1	25.6	25.7	26.1	26.7
12H	4H	26.9	27.6	27.4	28.0	28.5	25.0	25.6	25.5	26.1	26.6
	6H	27.0	27.5	27.5	28.0	28.5	25.1	25.7	25.7	26.1	26.7
	8H	27.0	27.5	27.5	28.0	28.5	25.2	25.6	25.7	26.1	26.7

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0