Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STT4PC 50L 35K MD xx xx LN4AGL

Nom 4" diam Euro Series track light

Test Number

SP-01361

Test Date

7/8/2022

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

Summary of Results

Power

Input Watts	35 W

Lumen Output

Output Lumens	3301
Efficacy	94.32 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.4
Two luminaires, plane 90°	0.4
Four luminaires	0.43

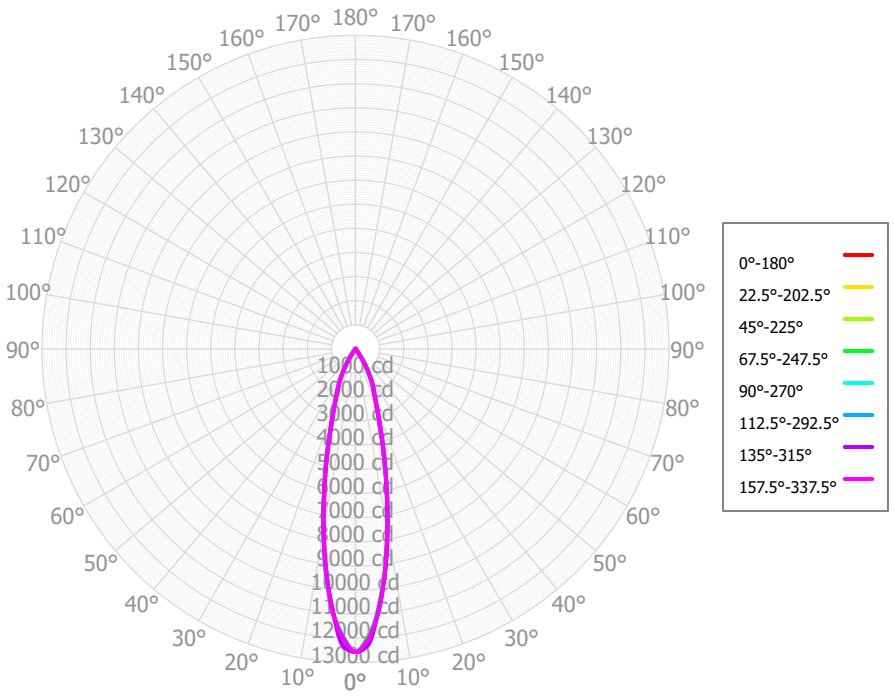
Full Beam Angle

0° - 180°	24°
90° - 270°	24°

IES File Header Contents

Keyword	Value
TEST	SP-01361
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	7/8/2022
ISSUEDATE	7/18/2022
LUMCAT	STT4PC 50L 35K MD xx xx LN4AGL
LUMINAIRE	Nom 4" diam Euro Series track light
OTHER	MD optic, Clear glass lens
OTHER	Beam Angle: 24 deg
LAMPCAT	N/A
LAMP	N/A, 19mm LES, PC
OTHER	Reference project SL484.13
OTHER	CCT Output Multiplers: 27K x 0.95, 30K x 0.98, 40K x 1.03
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80
_CCTMULT	27K x 0.95, 30K x 0.98, 40K x 1.03

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	939.04	28.45%	90.00° - 100.00°	1.70	0.05%
10.00° - 20.00°	1260.01	38.17%	100.00° - 110.00°	1.62	0.05%
20.00° - 30.00°	757.43	22.95%	100.00° - 120.00°	3.19	0.10%
30.00° - 40.00°	215.31	6.52%	120.00° - 130.00°	1.57	0.05%
40.00° - 50.00°	38.49	1.17%	130.00° - 140.00°	1.49	0.05%
50.00° - 60.00°	31.58	0.96%	140.00° - 150.00°	1.50	0.05%
60.00° - 70.00°	27.95	0.85%	150.00° - 160.00°	1.17	0.04%
70.00° - 80.00°	14.57	0.44%	160.00° - 170.00°	0.69	0.02%
80.00° - 90.00°	5.16	0.16%	170.00° - 180.00°	0.21	0.01%
0.00° - 90.00°	3289.54	99.65%	0.00° - 180.00°	3301.04	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°	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19	12564.19
2.50°	12232.79	11975.56	12137.82	11954.69	12246.21	11931.15	12311.84	11984.66	12156.20	11985.27	12046.06	12097.51	12255.13	12040.54	12280.33	12063.99	12232.79
5.00°	10842.66	10984.89	10836.75	10881.79	10799.74	10928.16	10854.11	10961.89	10895.80	10987.62	10930.22	10891.59	10894.38	10978.03	10878.19	10910.55	10842.66
7.50°	9329.11	9290.72	9308.44	9279.29	9313.82	9286.34	9350.62	9294.97	9299.05	9280.16	9302.69	9359.36	9446.49	9350.75	9375.09	9318.55	9329.11
10.00°	7588.60	7606.19	7593.29	7647.01	7615.96	7647.69	7622.70	7627.36	7611.82	7580.02	7642.32	7615.01	7686.97	7615.33	7639.37	7569.80	7588.60
12.50°	5967.85	5985.57	6007.32	5988.91	5983.44	6016.34	5967.67	5958.71	5899.95	5996.69	5959.41	6024.72	5937.70	6034.58	5906.05	6000.57	5967.85
15.00°	4526.23	4465.86	4509.74	4594.59	4603.64	4560.55	4579.94	4530.63	4570.50	4472.55	4592.10	4515.77	4626.66	4473.38	4595.81	4480.47	4526.23
17.50°	3375.87	3407.13	3415.10	3390.81	3385.44	3434.60	3361.70	3392.42	3316.92	3458.61	3401.22	3449.20	3364.59	3475.03	3329.62	3453.99	3375.87
20.00°	2582.79	2489.97	2545.02	2606.78	2651.21	2559.87	2619.15	2573.90	2640.47	2534.86	2643.20	2569.61	2680.36	2517.33	2655.27	2528.59	2582.79
22.50°	2016.04	2061.81	2022.57	2070.27	2020.95	2068.63	1993.98	2077.10	2040.60	2112.77	2079.79	2078.41	2043.05	2109.28	2022.29	2080.27	2016.04
25.00°	1681.08	1647.11	1655.87	1621.38	1634.76	1616.11	1628.69	1644.49	1664.94	1698.13	1684.55	1718.20	1729.46	1712.87	1710.19	1697.95	1681.08
27.50°	1311.19	1268.29	1254.97	1214.19	1239.08	1212.03	1248.35	1265.08	1306.74	1313.14	1350.03	1351.18	1401.69	1350.29	1383.74	1318.14	1311.19
30.00°	911.83	892.86	841.76	829.08	825.55	830.16	840.80	880.24	895.45	932.40	966.42	982.41	1007.05	988.05	983.34	938.52	911.83
32.50°	572.88	524.58	517.84	452.46	482.94	471.47	501.70	491.72	488.05	564.69	569.22	636.37	637.82	629.97	610.14	590.52	572.88
35.00°	275.73	250.28	218.53	254.08	250.32	243.48	263.39	263.35	285.70	270.44	332.59	294.61	358.75	300.84	338.58	248.58	275.73
37.50°	132.53	138.55	121.31	108.70	105.47	127.92	115.53	124.98	95.87	152.46	128.46	173.38	141.56	178.49	126.14	156.35	132.53
40.00°	77.52	67.38	64.79	69.64	72.09	71.04	76.93	71.74	73.62	70.34	81.75	79.52	93.10	74.94	85.55	69.63	77.52
42.50°	54.88	53.45	52.21	54.03	51.24	56.24	54.10	56.99	53.24	57.06	57.22	60.35	57.39	62.31	55.35	57.57	54.88
45.00°	47.19	44.06	45.77	45.99	43.50	45.67	47.16	47.96	46.79	47.43	49.10	46.41	49.23	51.28	48.88	46.41	47.19
47.50°	41.06	39.95	41.08	39.13	38.90	37.58	41.44	40.97	40.77	43.57	42.31	43.32	43.22	46.06	44.16	42.19	41.06
50.00°	35.51	36.76	36.53	35.58	37.05	34.28	36.73	38.14	36.87	40.56	38.94	40.45	41.02	41.49	42.71	38.66	35.51
52.50°	34.70	34.47	34.80	32.36	36.11	33.24	33.86	36.47	33.93	38.65	35.72	38.42	38.67	38.72	40.82	38.71	34.70
55.00°	35.25	32.73	33.16	31.72	35.83	32.75	32.23	33.99	34.54	36.43	35.60	36.46	36.10	37.06	38.26	38.40	35.25
57.50°	34.43	31.43	32.86	31.19	33.65	32.47	31.45	31.35	34.86	33.90	35.49	35.46	35.03	37.81	37.06	36.79	34.43
60.00°	33.32	30.44	32.36	30.97	30.36	30.88	31.14	28.98	34.37	32.07	35.57	34.51	35.76	37.96	37.56	35.37	33.32
62.50°	31.84	29.65	29.27	30.48	28.08	28.90	28.74	26.64	32.52	30.89	35.21	33.92	35.53	37.02	36.22	34.54	31.84
65.00°	30.32	27.34	26.22	25.26	26.28	24.69	25.39	25.05	27.54	28.82	31.42	32.66	34.35	34.80	32.99	32.02	30.32
67.50°	25.94	24.22	23.57	20.29	21.96	19.99	21.18	23.52	22.88	26.10	27.45	28.26	31.21	30.70	29.45	25.65	25.94
70.00°	21.31	21.33	20.39	17.44	16.68	15.43	16.67	17.26	18.79	21.66	22.46	23.88	26.47	26.13	25.66	20.86	21.31
72.50°	18.22	18.54	14.46	14.45	12.96	10.89	12.27	10.95	15.09	16.19	18.07	19.54	22.06	21.00	22.31	18.99	18.22
75.00°	15.18	15.19	9.45	10.60	9.71	9.27	7.89	8.17	11.98	12.45	15.96	15.91	17.89	17.00	19.28	16.73	15.18
77.50°	11.44	11.64	7.90	7.21	7.71	7.92	6.21	5.60	9.99	9.57	13.54	14.25	15.04	14.14	15.38	13.89	11.44
80.00°	7.83	8.79	6.61	5.71	5.99	6.09	5.10	6.06	9.41	7.78	10.26	11.81	12.92	11.41	10.98	11.08	7.83
82.50°	6.31	6.12	6.07	4.43	4.27	4.24	4.49	6.28	7.40	6.41	7.25	7.65	9.40	8.79	7.63	8.33	6.31
85.00°	4.74	4.47	5.02	3.83	2.56	3.12	3.95	4.65	3.93	4.23	4.89	4.43	5.26	6.07	4.78	5.53	4.74
87.50°	2.71	3.02	2.82	3.12	2.35	2.04	2.50	3.16	2.14	1.80	2.90	2.88	3.43	3.28	3.00	2.68	2.71
90.00°	1.09	2.18	1.45	2.12	2.28	1.80	0.97	2.39	1.76	1.29	1.58	1.97	2.42	1.97	1.62	1.39	1.09
92.50°	1.60	1.41	1.63	1.39	1.81	1.60	1.17	1.74	1.63	1.22	0.99	1.99	2.18	1.48	1.42	1.42	1.60
95.00°	1.98	1.41	1.61	1.17	1.33	1.82	1.41	1.52	1.67	1.18	1.47	1.86	2.13	1.30	1.55	1.42	1.98
97.50°	1.80	1.46	1.31	1.07	1.26	1.98	1.32	1.36	1.72	1.15	1.74	1.54	1.87	1.27	1.76	1.39	1.80
100.00°	1.68	1.55	1.16	1.18	1.20	1.72	1.25	1.37	1.75	1.21	1.73	1.54	1.57	1.29	1.99	1.47	1.68

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	3927	3927	3927	3927	3834	3834	3834	3834	3661	3661	3661	3503	3503	3503	3358	3358	3358	3290
	1	3774	3695	3625	3561	3693	3624	3561	3504	3489	3440	3395	3366	3328	3292	3252	3223	3195	3158
	2	3629	3494	3383	3290	3558	3438	3338	3253	3332	3250	3180	3234	3169	3111	3144	3092	3046	3031
	3	3493	3319	3185	3078	3430	3274	3151	3052	3189	3087	3003	3111	3027	2956	3038	2969	2910	2913
	4	3365	3164	3017	2905	3310	3128	2992	2887	3059	2944	2853	2996	2898	2820	2936	2855	2787	2803
RCR	5	3246	3026	2873	2759	3197	2996	2854	2747	2940	2817	2722	2888	2782	2699	2839	2748	2675	2700
	6	3134	2902	2746	2634	3091	2877	2731	2625	2831	2703	2607	2787	2675	2590	2747	2649	2572	2604
	7	3029	2789	2633	2523	2991	2768	2621	2517	2729	2599	2503	2693	2577	2491	2659	2556	2478	2515
	8	2931	2685	2531	2425	2897	2668	2522	2420	2635	2504	2410	2604	2486	2400	2575	2469	2390	2431
	9	2839	2591	2438	2336	2808	2576	2431	2332	2548	2416	2324	2521	2402	2317	2496	2388	2309	2353
	10	2752	2503	2354	2254	2724	2490	2348	2252	2466	2336	2246	2443	2324	2240	2421	2313	2234	2280

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	415.3 fc	2.3 ft
6.5 ft	297.4 fc	2.8 ft
7.5 ft	223.4 fc	3.2 ft
8.0 ft	196.3 fc	3.4 ft
10.0 ft	125.6 fc	4.2 ft
12.0 ft	87.3 fc	5.1 ft
14.0 ft	64.1 fc	5.9 ft
16.0 ft	49.1 fc	6.8 ft
20.0 ft	31.4 fc	8.5 ft
24.0 ft	21.8 fc	10.2 ft
28.0 ft	16.0 fc	11.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1581200	1581200	1581200
45.00°	8398	8146	7742
55.00°	7734	7276	7861
65.00°	9029	7808	7825
75.00°	7381	4593	4720
85.00°	6849	7249	3690

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	9.8	10.8	10.2	11.1	11.4	9.8	10.7	10.2	11.1	11.4
	3H	11.9	12.7	12.3	13.1	13.4	11.9	12.7	12.3	13.1	13.4
	4H	12.6	13.4	13.0	13.7	14.1	12.5	13.2	12.9	13.6	14.0
	6H	13.1	13.7	13.5	14.1	14.5	13.0	13.7	13.4	14.1	14.5
	8H	13.2	13.8	13.6	14.2	14.7	13.2	13.9	13.7	14.3	14.7
	12H	13.3	13.9	13.8	14.3	14.8	13.3	13.9	13.8	14.3	14.8
4H	2H	10.6	11.4	11.0	11.7	12.1	10.5	11.3	10.9	11.6	12.0
	3H	12.8	13.4	13.2	13.8	14.2	12.6	13.2	13.0	13.6	14.1
	4H	13.6	14.2	14.0	14.6	15.0	13.3	13.8	13.7	14.3	14.7
	6H	14.2	14.6	14.6	15.1	15.6	13.9	14.4	14.4	14.9	15.3
	8H	14.3	14.8	14.8	15.2	15.7	14.2	14.6	14.7	15.1	15.5
	12H	14.5	14.9	15.0	15.4	15.9	14.3	14.7	14.8	15.2	15.7
8H	4H	13.8	14.3	14.3	14.7	15.2	13.4	13.9	13.9	14.3	14.8
	6H	14.6	14.9	15.1	15.4	15.9	14.2	14.6	14.7	15.1	15.6
	8H	14.8	15.1	15.4	15.7	16.2	14.5	14.8	15.1	15.4	15.9
	12H	15.1	15.4	15.7	15.9	16.5	14.8	15.0	15.3	15.5	16.1
12H	4H	13.8	14.2	14.3	14.7	15.2	13.4	13.8	13.9	14.3	14.8
	6H	14.6	14.9	15.1	15.4	15.9	14.2	14.5	14.8	15.0	15.6
	8H	14.9	15.2	15.5	15.7	16.3	14.6	14.9	15.1	15.4	16.0

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0