Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STT4PC 50L 35K WD xx xx NL

Nom 4" diam Euro Series track light

Test Number

SP-01366

Test Date

7/11/2022

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

Summary of Results

Power

Input Watts	35 W

Lumen Output

Output Lumens	3620
Efficacy	103.44 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.78
Two luminaires, plane 90°	0.79
Four luminaires	0.74

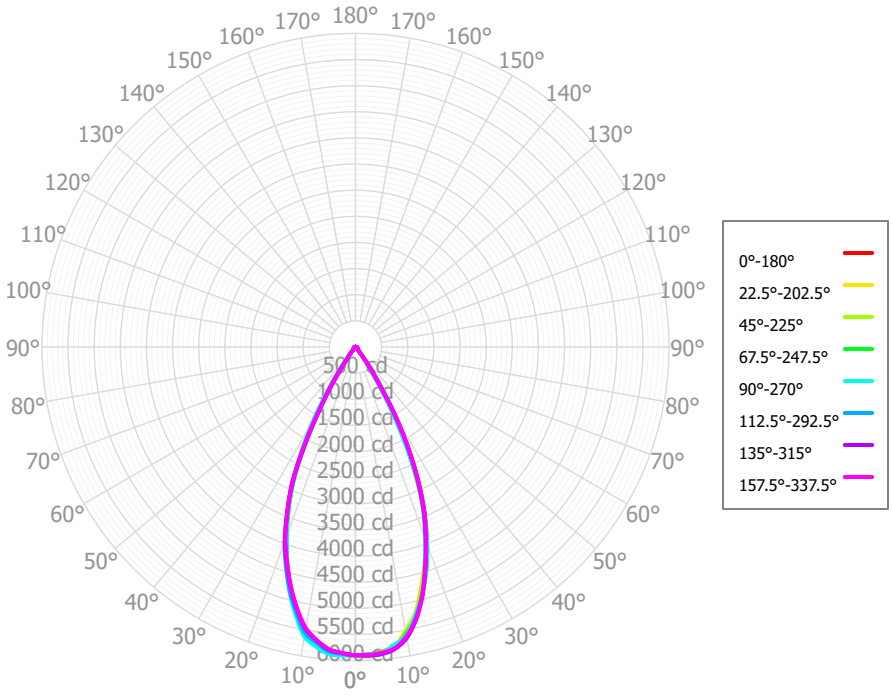
Full Beam Angle

0° - 180°	49°
90° - 270°	49°

IES File Header Contents

Keyword	Value
TEST	SP-01366
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	7/11/2022
ISSUEDATE	7/18/2022
LUMCAT	STT4PC 50L 35K WD xx xx NL
LUMINAIRE	Nom 4" diam Euro Series track light
OTHER	WD optic, No lens
OTHER	Beam Angle: 49 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
0.00° - 10.00°	557.22	15.39%
10.00° - 20.00°	1335.07	36.88%
20.00° - 30.00°	1235.92	34.14%
30.00° - 40.00°	316.60	8.74%
40.00° - 50.00°	42.24	1.17%
50.00° - 60.00°	39.23	1.08%
60.00° - 70.00°	38.61	1.07%
70.00° - 80.00°	31.78	0.88%
80.00° - 90.00°	13.00	0.36%
0.00° - 90.00°	3609.67	99.70%

Zone	Lumens	% Fixture
90.00° - 100.00°	1.60	0.04%
100.00° - 110.00°	1.41	0.04%
100.00° - 120.00°	2.80	0.08%
120.00° - 130.00°	1.42	0.04%
130.00° - 140.00°	1.42	0.04%
140.00° - 150.00°	1.42	0.04%
150.00° - 160.00°	1.17	0.03%
160.00° - 170.00°	0.74	0.02%
170.00° - 180.00°	0.23	0.01%
0.00° - 180.00°	3620.46	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°	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44	5899.44
2.50°	5886.65	5910.71	5898.18	5900.11	5888.26	5875.66	5863.44	5865.24	5865.41	5881.56	5886.72	5897.85	5906.99	5907.80	5912.59	5900.95	5886.65
5.00°	5851.40	5843.66	5851.99	5862.20	5868.69	5849.26	5816.98	5805.76	5812.34	5810.71	5824.04	5847.18	5896.55	5896.63	5894.00	5871.40	5851.40
7.50°	5776.66	5765.95	5786.35	5813.73	5745.31	5709.34	5669.57	5660.23	5671.81	5717.22	5743.94	5769.13	5785.36	5811.70	5826.75	5811.10	5776.66
10.00°	5596.11	5515.14	5540.16	5571.91	5603.58	5559.79	5485.29	5463.92	5503.97	5492.53	5509.26	5535.96	5630.11	5656.85	5651.25	5622.81	5596.11
12.50°	5278.91	5243.24	5266.19	5312.83	5272.48	5208.06	5152.49	5139.91	5159.43	5224.65	5239.73	5254.27	5265.76	5319.26	5351.69	5336.40	5278.91
15.00°	4891.95	4814.69	4851.19	4917.32	4924.17	4849.42	4781.72	4760.20	4778.55	4798.59	4793.99	4797.81	4867.67	4922.57	4945.58	4927.52	4891.95
17.50°	4435.32	4378.59	4420.58	4503.95	4479.96	4419.72	4368.18	4344.90	4356.38	4362.28	4341.15	4332.81	4363.47	4411.45	4446.22	4447.77	4435.32
20.00°	3956.64	3908.62	3937.20	4009.02	4007.39	3973.93	3947.89	3918.59	3929.28	3899.41	3864.91	3845.94	3863.40	3903.37	3940.86	3954.33	3956.64
22.50°	3461.17	3405.81	3408.58	3458.78	3434.01	3410.44	3404.42	3400.37	3404.15	3394.08	3360.62	3337.87	3372.55	3399.71	3431.45	3454.96	3461.17
25.00°	2854.64	2804.45	2772.24	2739.90	2799.05	2807.58	2851.34	2862.99	2869.35	2808.38	2790.81	2790.20	2830.58	2832.49	2833.74	2845.70	2854.64
27.50°	2184.26	2158.50	2097.34	2019.14	2011.03	2030.24	2084.66	2119.42	2109.66	2161.00	2171.63	2187.47	2202.51	2195.10	2191.44	2202.61	2184.26
30.00°	1503.89	1415.00	1353.76	1294.18	1295.22	1306.54	1331.01	1351.62	1368.34	1424.66	1466.03	1506.28	1573.75	1558.75	1533.46	1514.23	1503.89
32.50°	819.22	801.30	759.53	707.61	713.09	742.51	790.13	810.65	808.84	833.02	874.99	928.14	944.10	923.29	869.74	816.69	819.22
35.00°	444.73	398.41	365.75	348.57	310.21	311.75	301.39	289.46	317.26	400.15	435.25	461.78	497.35	497.95	482.84	457.15	444.73
37.50°	164.95	147.41	138.75	126.83	156.85	165.77	174.03	175.54	184.62	163.38	175.64	199.90	228.31	208.99	167.03	136.96	164.95
40.00°	89.77	85.93	82.39	78.41	70.30	69.83	68.79	71.00	77.75	93.20	99.98	107.34	97.40	94.95	93.41	89.26	89.77
42.50°	56.51	52.47	53.01	52.16	54.60	54.66	55.76	57.64	60.65	61.34	62.57	66.42	70.28	65.62	58.25	53.04	56.51
45.00°	48.91	45.69	44.98	47.25	44.89	44.96	45.53	46.20	47.83	54.17	54.96	58.38	58.41	55.04	52.57	49.85	48.91
47.50°	44.25	42.39	41.43	43.13	40.10	41.96	43.21	44.98	45.47	50.77	51.69	54.31	55.17	51.14	49.22	47.00	44.25
50.00°	42.98	41.62	40.56	39.59	38.16	39.48	41.45	43.69	44.05	49.19	51.03	52.13	54.03	50.52	49.72	47.35	42.98
52.50°	41.89	40.15	39.74	38.34	38.00	37.52	40.84	42.12	44.31	48.15	50.48	51.85	53.79	50.69	50.15	47.50	41.89
55.00°	42.43	38.29	38.95	38.39	36.64	35.73	39.32	40.37	44.08	47.30	49.98	52.21	53.32	50.35	48.99	46.61	42.43
57.50°	42.81	37.84	37.43	36.03	34.71	34.08	36.39	38.19	43.19	46.91	49.40	51.65	52.79	49.94	48.06	45.89	42.81
60.00°	41.81	37.96	35.68	32.67	33.44	33.20	34.58	36.44	41.90	46.63	48.79	50.88	52.32	49.43	48.72	45.77	41.81
62.50°	40.95	36.52	33.32	31.20	32.40	32.74	34.11	35.48	40.20	44.63	47.93	50.22	51.88	48.91	49.01	44.68	40.95
65.00°	40.81	34.65	30.84	30.29	29.23	30.47	31.85	33.82	38.75	42.38	47.02	49.58	50.74	47.43	47.77	41.26	40.81
67.50°	40.08	33.34	30.00	28.18	25.58	27.46	27.94	31.24	37.52	41.14	44.58	47.46	49.53	46.03	45.92	39.13	40.08
70.00°	37.37	32.15	29.37	25.83	23.75	24.77	25.67	29.15	34.73	39.95	41.96	45.26	46.95	45.60	42.31	39.28	37.37
72.50°	34.70	29.64	25.77	22.72	22.18	22.17	24.56	27.59	30.98	37.66	39.46	44.05	44.31	44.76	39.45	37.68	34.70
75.00°	32.10	27.00	22.06	19.53	20.22	19.15	22.52	25.70	29.31	35.24	36.94	42.64	41.29	41.35	38.15	33.72	32.10
77.50°	28.45	23.47	19.57	17.47	18.23	16.05	19.99	23.55	28.60	31.21	33.49	38.58	38.10	37.65	35.55	29.87	28.45
80.00°	22.90	19.89	16.89	15.35	15.09	13.48	17.28	20.10	24.76	26.96	29.64	33.98	33.42	32.78	30.92	26.16	22.90
82.50°	16.43	15.43	12.11	10.64	11.76	10.97	14.50	15.87	19.88	21.25	21.72	26.04	27.75	26.31	23.84	19.41	16.43
85.00°	8.72	10.91	7.55	6.15	6.28	6.27	8.91	10.14	12.33	15.22	13.95	17.83	17.16	15.42	13.82	10.25	8.72
87.50°	3.95	5.82	4.29	3.62	1.57	1.72	2.54	3.73	4.19	7.94	7.03	8.53	8.12	7.06	7.02	5.23	3.95
90.00°	2.25	1.60	1.70	1.48	1.34	1.52	1.44	1.89	2.54	2.43	1.59	1.68	4.26	3.74	3.15	2.74	2.25
92.50°	1.35	1.48	1.49	1.28	1.23	1.34	1.25	1.54	1.75	1.77	1.36	1.43	1.50	1.69	1.49	1.81	1.35
95.00°	1.09	1.35	1.37	1.17	1.59	1.26	1.21	1.45	1.30	1.31	1.22	1.32	1.38	1.58	1.39	1.59	1.09
97.50°	1.13	1.16	1.49	1.35	1.71	1.18	1.19	1.41	0.88	1.25	1.35	1.46	1.19	1.46	1.15	1.36	1.13
100.00°	1.34	1.09	1.54	1.48	1.16	1.08	1.30	1.55	1.21	1.28	1.43	1.53	0.88	1.34	0.85	1.14	1.34

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	4308	4308	4308	4308	4206	4206	4206	4206	4017	4017	4017	3844	3844	3844	3684	3684	3684	3610
	1	4116	4019	3932	3854	4026	3940	3862	3792	3792	3730	3674	3656	3607	3563	3530	3493	3458	3423
	2	3932	3767	3630	3515	3852	3704	3580	3475	3586	3485	3397	3478	3395	3323	3377	3311	3253	3246
	3	3760	3545	3379	3247	3689	3495	3343	3220	3400	3273	3168	3312	3206	3117	3231	3143	3069	3083
	4	3597	3348	3166	3026	3534	3307	3138	3008	3230	3086	2972	3158	3036	2936	3091	2988	2902	2932
RCR	5	3444	3171	2980	2839	3388	3137	2959	2826	3073	2919	2800	3014	2880	2775	2958	2843	2751	2792
	6	3300	3010	2816	2676	3249	2982	2800	2667	2929	2768	2648	2879	2738	2630	2833	2709	2612	2662
	7	3165	2864	2669	2532	3119	2840	2656	2525	2795	2631	2511	2753	2607	2498	2714	2584	2485	2541
	8	3037	2729	2536	2402	2996	2709	2525	2397	2671	2505	2387	2635	2486	2377	2601	2467	2367	2428
	9	2917	2606	2414	2285	2880	2588	2406	2281	2555	2390	2274	2525	2374	2266	2495	2359	2258	2323
	10	2805	2491	2304	2179	2771	2476	2297	2176	2448	2283	2169	2421	2270	2163	2396	2257	2157	2225

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	195.0 fc	5.0 ft
6.5 ft	139.6 fc	5.9 ft
7.5 ft	104.9 fc	6.9 ft
8.0 ft	92.2 fc	7.3 ft
10.0 ft	59.0 fc	9.2 ft
12.0 ft	41.0 fc	11.0 ft
14.0 ft	30.1 fc	12.8 ft
16.0 ft	23.0 fc	14.6 ft
20.0 ft	14.7 fc	18.3 ft
24.0 ft	10.2 fc	22.0 ft
28.0 ft	7.5 fc	25.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	742444	742444	742444
45.00°	8706	8005	7990
55.00°	9309	8545	8038
65.00°	12152	9184	8705
75.00°	15609	10726	9833
85.00°	12589	10908	9074

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	11.0	11.9	11.3	12.2	12.6	11.2	12.2	11.6	12.5	12.8
	3H	14.0	14.8	14.4	15.1	15.5	14.1	15.0	14.5	15.3	15.7
	4H	15.3	16.1	15.7	16.5	16.9	15.5	16.3	15.9	16.7	17.1
	6H	16.5	17.2	16.9	17.6	18.0	16.8	17.5	17.2	17.9	18.3
	8H	16.9	17.5	17.3	17.9	18.4	17.3	18.0	17.8	18.4	18.8
	12H	17.1	17.7	17.5	18.1	18.6	17.7	18.3	18.1	18.7	19.2
4H	2H	11.9	12.7	12.3	13.0	13.4	12.1	12.9	12.5	13.2	13.6
	3H	15.0	15.7	15.5	16.1	16.5	15.2	15.8	15.6	16.2	16.6
	4H	16.5	17.1	16.9	17.5	18.0	16.7	17.3	17.1	17.7	18.2
	6H	17.8	18.3	18.3	18.7	19.2	18.1	18.6	18.6	19.1	19.6
	8H	18.2	18.7	18.7	19.1	19.6	18.7	19.2	19.2	19.6	20.1
	12H	18.5	18.9	19.0	19.4	19.9	19.2	19.5	19.6	20.0	20.5
8H	4H	17.0	17.5	17.5	17.9	18.4	17.2	17.6	17.7	18.1	18.6
	6H	18.5	18.9	19.0	19.4	19.9	18.8	19.2	19.3	19.7	20.2
	8H	19.1	19.4	19.6	19.9	20.4	19.5	19.8	20.1	20.4	20.9
	12H	19.4	19.7	20.0	20.2	20.8	20.1	20.4	20.6	20.9	21.4
12H	4H	17.1	17.5	17.6	18.0	18.5	17.2	17.6	17.7	18.1	18.6
	6H	18.7	19.0	19.2	19.5	20.0	18.9	19.3	19.5	19.7	20.3
	8H	19.3	19.6	19.8	20.1	20.7	19.7	20.0	20.3	20.5	21.1

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0