Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STT4PC 50L 35K ND xx xx LN4AGL

Nom 4" diam Euro Series track light

Test Number

SP-01363

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	3325
Efficacy	94.99 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.33
Two luminaires, plane 90°	0.32
Four luminaires	0.35

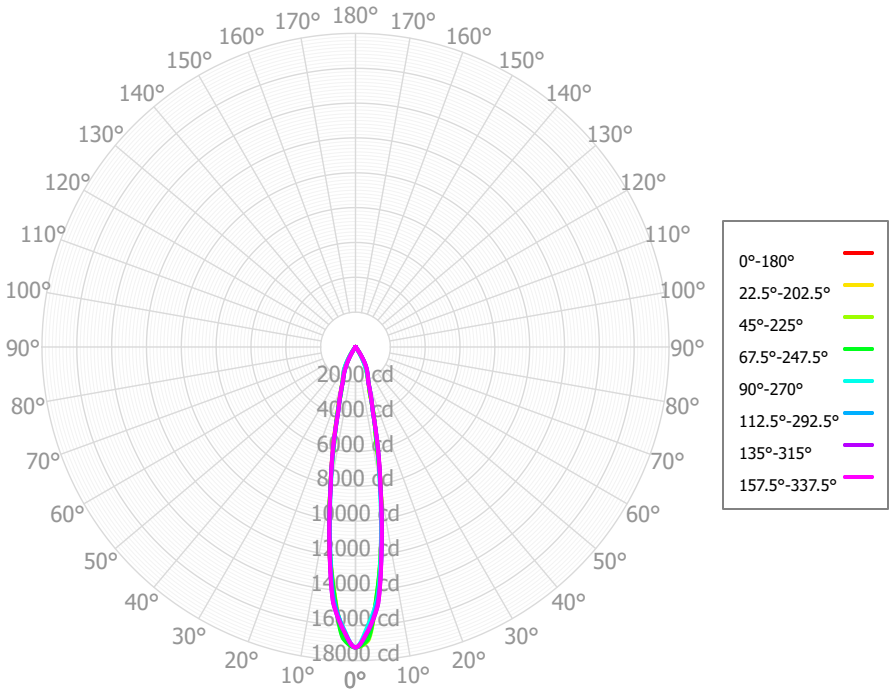
Full Beam Angle

0° - 180°	20°
90° - 270°	19°

IES File Header Contents

Keyword	Value
TEST	SP-01363
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	7/8/2022
ISSUEDATE	7/18/2022
LUMCAT	STT4PC 50L 35K ND xx xx LN4AGL
LUMINAIRE	Nom 4" diam Euro Series track light
OTHER	ND optic, Clear glass lens
OTHER	Beam Angle: 19 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°	1171.45	35.24%	90.00° - 100.00°	1.28	0.04%
10.00° - 20.00°	1153.88	34.71%	100.00° - 110.00°	1.17	0.04%
20.00° - 30.00°	682.08	20.52%	100.00° - 120.00°	2.32	0.07%
30.00° - 40.00°	204.37	6.15%	120.00° - 130.00°	1.06	0.03%
40.00° - 50.00°	30.19	0.91%	130.00° - 140.00°	1.10	0.03%
50.00° - 60.00°	27.10	0.82%	140.00° - 150.00°	1.16	0.03%
60.00° - 70.00°	29.39	0.88%	150.00° - 160.00°	0.93	0.03%
70.00° - 80.00°	13.38	0.40%	160.00° - 170.00°	0.53	0.02%
80.00° - 90.00°	4.22	0.13%	170.00° - 180.00°	0.15	0.00%
0.00° - 90.00°	3316.05	99.74%	0.00° - 180.00°	3324.58	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°	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61	17248.61
2.50°	16354.67	16498.65	16866.15	16781.17	16039.08	16214.66	16253.21	16236.37	16283.47	16392.79	16670.89	16731.94	16121.95	16330.20	16349.26	16302.47	16354.67
5.00°	14510.18	14276.03	14195.60	14157.35	14462.65	14426.38	14747.82	14710.46	14385.75	14129.56	14063.46	14149.67	14562.98	14596.29	14848.02	14820.22	14510.18
7.50°	11302.35	11235.42	11407.24	11324.12	11196.06	11238.84	11454.72	11433.68	11541.47	11472.79	11387.34	11460.88	11238.95	11546.94	11499.13	11482.33	11302.35
10.00°	8376.06	8355.31	8359.86	8359.72	8006.99	8321.78	8226.37	8260.99	8288.18	8324.13	8360.61	8350.53	8093.04	8152.15	8327.26	8277.41	8376.06
12.50°	5745.06	5530.02	5442.93	5462.04	5842.07	5820.16	5922.98	5916.25	5978.44	5866.74	5658.88	5634.07	5762.58	5872.20	5939.32	5928.42	5745.06
15.00°	3926.79	3941.53	3981.01	4043.81	3842.10	3958.46	3798.81	3824.85	3964.12	4088.99	4062.93	4010.07	3779.07	3786.21	3898.64	3859.36	3926.79
17.50°	2779.25	2652.31	2665.75	2724.71	2944.66	2855.21	2887.89	2928.11	2956.76	2932.52	2772.06	2743.47	2878.93	2903.49	2933.87	2926.01	2779.25
20.00°	2133.15	2162.61	2211.35	2226.97	2152.79	2132.87	2087.52	2161.13	2163.22	2249.47	2226.60	2208.11	2167.23	2132.43	2175.31	2161.23	2133.15
22.50°	1806.11	1794.01	1792.45	1759.65	1801.16	1760.87	1763.10	1809.04	1802.29	1825.21	1791.71	1801.97	1883.20	1888.27	1881.60	1873.69	1806.11
25.00°	1544.59	1536.97	1508.03	1439.79	1439.40	1387.22	1422.48	1446.67	1497.79	1552.40	1558.88	1599.59	1613.31	1653.97	1608.58	1598.73	1544.59
27.50°	1314.71	1288.10	1195.52	1106.21	1048.34	1012.36	1033.74	1060.07	1119.01	1204.64	1270.55	1331.42	1367.97	1374.53	1370.74	1350.40	1314.71
30.00°	970.78	898.30	807.89	726.92	682.65	663.42	669.95	696.18	737.08	823.30	903.52	983.25	1067.33	1086.22	1073.52	1050.39	970.78
32.50°	585.57	516.98	471.56	401.57	371.75	328.81	360.41	372.44	437.97	507.05	575.19	654.75	693.08	719.34	697.71	667.51	585.57
35.00°	339.64	294.21	238.53	205.71	153.27	167.61	144.75	157.82	156.05	212.05	289.34	344.78	399.69	384.43	400.05	369.18	339.64
37.50°	129.07	94.67	86.08	72.21	85.74	78.17	85.68	91.08	99.12	112.00	126.81	167.60	189.70	211.59	182.55	175.32	129.07
40.00°	74.29	68.67	56.97	50.89	44.67	49.84	47.41	50.94	48.70	55.57	69.31	88.80	81.09	74.27	74.44	70.57	74.29
42.50°	44.72	46.22	39.48	36.71	36.85	40.06	35.82	39.13	40.17	41.46	43.10	53.90	54.75	57.22	53.35	52.41	44.72
45.00°	37.30	39.81	35.70	32.51	29.98	31.63	28.32	31.47	32.67	33.28	37.75	43.96	40.79	43.45	42.09	41.19	37.30
47.50°	31.78	33.72	31.62	27.49	24.02	23.48	24.90	27.23	29.27	32.04	34.16	36.86	34.57	37.77	36.92	35.21	31.78
50.00°	33.29	28.65	27.26	21.57	21.03	22.34	22.25	24.78	26.58	31.23	31.44	30.99	33.11	33.61	34.78	33.30	33.29
52.50°	34.88	26.64	25.29	20.74	20.33	22.03	20.19	23.45	25.90	30.99	30.64	31.59	33.91	32.28	34.06	33.75	34.88
55.00°	35.66	31.63	25.06	24.19	20.94	24.70	21.10	23.82	26.59	30.97	30.56	34.24	36.51	33.08	35.34	35.89	35.66
57.50°	36.38	35.00	29.30	26.77	22.32	27.49	23.81	25.03	30.22	34.14	32.96	35.60	39.76	36.90	37.29	38.78	36.38
60.00°	36.60	35.57	35.99	28.79	25.45	28.71	26.27	27.23	32.46	37.00	36.03	36.69	40.28	38.82	38.06	40.14	36.60
62.50°	36.41	33.87	33.73	27.14	29.36	29.43	28.62	29.80	32.48	37.77	35.57	37.78	40.13	38.65	38.54	41.01	36.41
65.00°	34.24	29.12	27.72	23.66	24.45	24.36	26.20	25.23	29.68	36.78	34.48	38.86	36.11	37.35	35.62	37.58	34.24
67.50°	31.66	24.12	21.96	19.13	16.65	18.95	22.20	18.86	23.34	28.24	28.59	30.16	31.49	35.08	32.19	33.20	31.66
70.00°	27.70	18.86	16.26	14.21	12.13	11.44	14.92	14.88	16.55	20.52	22.24	21.02	28.06	29.54	29.17	27.98	27.70
72.50°	23.12	14.97	12.24	10.91	8.37	5.53	6.88	11.30	9.32	15.30	18.86	18.52	24.72	21.82	26.19	22.66	23.12
75.00°	17.05	12.18	8.56	8.03	6.38	5.85	5.42	8.47	5.99	10.66	15.53	16.02	18.10	17.70	19.52	18.54	17.05
77.50°	12.00	9.69	6.84	6.65	4.64	5.60	4.92	5.70	5.59	7.32	11.49	13.43	11.71	15.40	13.00	14.49	12.00
80.00°	8.77	7.39	5.36	5.52	3.82	3.76	4.19	4.43	4.64	5.05	7.60	10.72	10.27	12.40	9.90	10.68	8.77
82.50°	6.25	6.02	3.74	4.35	3.06	2.18	3.44	3.19	3.37	4.59	5.20	7.25	8.64	9.14	7.01	7.01	6.25
85.00°	4.69	5.09	2.12	3.17	2.06	1.16	2.42	2.33	2.46	3.55	3.10	4.14	5.56	5.80	5.59	5.27	4.69
87.50°	3.38	3.34	1.52	1.94	1.13	0.48	1.43	1.52	1.70	1.75	2.56	2.45	2.88	2.44	4.15	3.54	3.38
90.00°	2.34	1.29	0.96	0.77	1.21	0.33	0.86	1.15	1.45	0.97	2.07	1.15	2.12	1.79	2.61	1.95	2.34
92.50°	1.61	0.97	0.89	0.89	1.27	0.31	0.38	0.88	1.37	1.21	1.75	0.96	1.54	1.62	1.38	0.74	1.61
95.00°	1.14	1.09	0.85	1.02	1.27	0.45	0.56	1.13	1.27	1.22	1.42	0.88	1.51	1.54	1.12	1.16	1.14
97.50°	1.03	1.20	0.99	1.16	1.31	0.71	0.82	1.35	1.16	1.05	1.07	1.04	1.47	1.46	1.01	1.43	1.03
100.00°	1.15	1.31	1.13	1.26	1.49	1.07	1.46	1.50	0.76	0.91	0.85	1.21	1.39	1.32	1.26	1.26	1.15

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	3956	3956	3956	3956	3863	3863	3863	3863	3689	3689	3689	3530	3530	3530	3385	3385	3385	3316
	1	3809	3733	3664	3603	3728	3661	3600	3545	3527	3479	3435	3403	3366	3332	3289	3261	3235	3196
	2	3670	3540	3433	3343	3600	3484	3387	3305	3378	3300	3233	3281	3218	3163	3191	3141	3097	3080
	3	3541	3374	3244	3141	3479	3329	3211	3116	3245	3147	3066	3167	3086	3019	3094	3029	2972	2972
	4	3421	3228	3086	2978	3367	3192	3061	2961	3124	3013	2926	3061	2968	2893	3002	2924	2860	2871
RCR	5	3309	3098	2951	2842	3261	3069	2932	2830	3013	2895	2805	2962	2860	2781	2913	2827	2757	2778
	6	3204	2982	2832	2725	3162	2957	2818	2716	2912	2789	2698	2869	2762	2681	2829	2736	2663	2690
	7	3106	2876	2727	2623	3069	2856	2716	2616	2818	2693	2603	2782	2672	2590	2749	2651	2577	2609
	8	3014	2780	2633	2532	2981	2763	2624	2527	2731	2606	2517	2701	2589	2507	2673	2572	2497	2533
	9	2929	2692	2547	2450	2898	2678	2540	2446	2650	2526	2438	2625	2512	2431	2600	2498	2423	2462
	10	2848	2611	2469	2375	2821	2599	2463	2372	2575	2452	2366	2553	2440	2360	2532	2429	2354	2395

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	570.2 fc	1.9 ft
6.5 ft	408.3 fc	2.2 ft
7.5 ft	306.6 fc	2.6 ft
8.0 ft	269.5 fc	2.8 ft
10.0 ft	172.5 fc	3.4 ft
12.0 ft	119.8 fc	4.1 ft
14.0 ft	88.0 fc	4.8 ft
16.0 ft	67.4 fc	5.5 ft
20.0 ft	43.1 fc	6.9 ft
24.0 ft	29.9 fc	8.3 ft
28.0 ft	22.0 fc	9.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2170733	2170733	2170733
45.00°	6638	6354	5336
55.00°	7824	5499	4594
65.00°	10197	8255	7281
75.00°	8293	4160	3102
85.00°	6777	3064	2975

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	10.4	11.3	10.7	11.6	11.9	9.4	10.3	9.7	10.6	10.9
	3H	12.8	13.6	13.2	13.9	14.3	11.5	12.3	11.9	12.6	13.0
	4H	13.5	14.2	13.9	14.6	15.0	12.1	12.8	12.5	13.2	13.6
	6H	13.8	14.5	14.2	14.9	15.3	12.4	13.1	12.9	13.5	13.9
	8H	13.9	14.6	14.4	15.0	15.4	12.6	13.2	13.0	13.6	14.0
	12H	14.0	14.6	14.4	15.0	15.4	12.7	13.3	13.1	13.7	14.1
4H	2H	11.1	11.9	11.5	12.2	12.6	10.3	11.1	10.7	11.4	11.8
	3H	13.5	14.1	14.0	14.6	15.0	12.3	12.9	12.7	13.3	13.7
	4H	14.3	14.8	14.7	15.3	15.7	12.9	13.5	13.4	13.9	14.3
	6H	14.7	15.2	15.2	15.7	16.1	13.4	13.8	13.9	14.3	14.8
	8H	14.9	15.3	15.3	15.8	16.2	13.6	14.0	14.0	14.5	14.9
	12H	15.0	15.4	15.5	15.9	16.3	13.7	14.1	14.2	14.6	15.1
8H	4H	14.4	14.8	14.9	15.3	15.8	13.0	13.4	13.5	13.9	14.4
	6H	15.0	15.3	15.5	15.8	16.3	13.6	13.9	14.1	14.5	14.9
	8H	15.2	15.5	15.7	16.0	16.5	13.9	14.2	14.4	14.7	15.2
	12H	15.4	15.7	16.0	16.2	16.8	14.1	14.4	14.6	14.9	15.4
12H	4H	14.4	14.8	14.9	15.3	15.7	13.0	13.3	13.5	13.8	14.3
	6H	15.0	15.3	15.5	15.8	16.3	13.6	13.9	14.1	14.4	14.9
	8H	15.3	15.5	15.8	16.0	16.6	13.9	14.2	14.4	14.7	15.2

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0