

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
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Spectrum Lighting Photometric Lab

Luminaire

STT3PC 20L 35K WD XX NL
Nominal 3" Diameter STT tracklight

Test Number

SP-00596_16_M-20L

Test Date

4/30/2019

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

Summary of Results

Power

Input Watts	17.1 W
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Lumen Output

Output Lumens	1285
Efficacy	75.16 lm/W

Luminous Dimensions

0° - 180° Size	-0.23
90° - 270° Size	-0.23
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.6
Two luminaires, plane 90°	0.58
Four luminaires	0.61

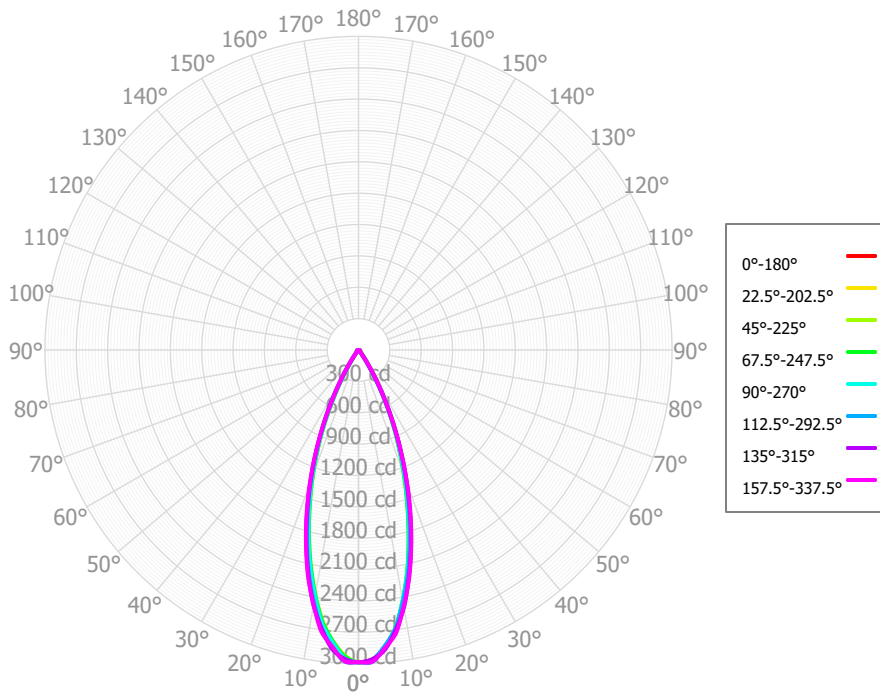
Full Beam Angle

0° - 180°	37°
90° - 270°	36°

IES File Header Contents

Keyword	Value
TEST	SP-00596_16_M-20L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	4/30/2019
ISSUEDATE	5/28/2020
LUMCAT	STT3PC 20L 35K WD XX NL
LUMINAIRE	Nominal 3" Diameter STT tracklight
OTHER	Wide Beam, Open aperture
OTHER	Beam Angle: 37 degrees
LAMPCAT	N/A; CRI: 80+
LAMP	N/A, Philips emitter
OTHER	Total luminaire watts is approximate
OTHER	CCT Output Multipliers:
OTHER	This report prepared by Spectrum Lighting, scaled from 30L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	262.20	20.40%	90.00° - 100.00°	0.05	0.00%
10.00° - 20.00°	515.20	40.09%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	355.79	27.68%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	80.85	6.29%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.16	1.49%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	17.03	1.32%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	16.85	1.31%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	14.01	1.09%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	4.08	0.32%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,285.17	100.00%	0.00° - 180.00°	1,285.22	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°	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76	2,987.76
2.50°	2,964.33	2,976.44	2,973.22	2,976.29	2,989.97	2,984.15	2,960.06	2,983.24	2,943.35	2,952.16	2,929.87	2,939.89	2,954.54	2,969.02	2,963.75	2,987.39	2,964.33
5.00°	2,872.77	2,853.46	2,859.85	2,854.76	2,852.13	2,854.50	2,874.84	2,852.89	2,844.63	2,819.18	2,797.97	2,802.14	2,813.91	2,847.18	2,880.61	2,866.51	2,872.77
7.50°	2,700.72	2,700.59	2,690.58	2,688.43	2,692.92	2,695.70	2,691.30	2,719.09	2,671.42	2,663.30	2,621.60	2,629.66	2,651.49	2,693.56	2,708.34	2,737.36	2,700.72
10.00°	2,482.03	2,454.35	2,443.28	2,433.43	2,434.66	2,452.84	2,479.91	2,473.88	2,451.16	2,416.34	2,378.67	2,382.59	2,397.38	2,447.23	2,502.98	2,489.60	2,482.03
12.50°	2,213.68	2,191.89	2,162.00	2,158.58	2,166.02	2,194.20	2,210.96	2,226.09	2,193.34	2,153.89	2,117.01	2,112.16	2,136.30	2,188.27	2,226.64	2,237.67	2,213.68
15.00°	1,929.26	1,886.91	1,862.62	1,849.30	1,869.09	1,904.17	1,928.75	1,939.20	1,914.65	1,870.37	1,830.92	1,832.51	1,850.74	1,897.71	1,942.26	1,947.53	1,929.26
17.50°	1,629.67	1,586.45	1,556.43	1,550.61	1,570.31	1,609.53	1,639.11	1,652.04	1,626.61	1,584.10	1,549.73	1,550.49	1,568.52	1,609.76	1,642.80	1,656.37	1,629.67
20.00°	1,338.88	1,296.28	1,278.95	1,267.84	1,293.03	1,330.17	1,348.08	1,362.16	1,334.09	1,303.04	1,274.13	1,280.59	1,296.01	1,327.39	1,351.59	1,358.46	1,338.88
22.50°	1,055.37	1,020.99	1,010.53	1,008.11	1,016.56	1,052.41	1,073.13	1,075.16	1,053.12	1,022.44	1,007.35	1,013.20	1,026.28	1,050.85	1,073.75	1,067.26	1,055.37
25.00°	800.45	774.63	776.00	778.58	794.78	810.46	800.45	808.34	776.86	770.13	749.47	756.27	763.49	785.03	811.60	810.69	800.45
27.50°	566.10	552.51	550.46	564.38	574.05	570.83	577.01	554.44	552.23	519.37	519.92	501.05	519.96	543.03	571.86	568.30	566.10
30.00°	379.87	371.07	371.65	367.98	381.35	381.44	358.44	368.81	345.73	342.46	315.34	318.17	317.51	339.50	368.55	384.08	379.87
32.50°	224.20	221.49	202.84	215.98	196.13	193.96	219.07	201.62	207.62	168.61	175.71	144.02	160.37	183.53	210.63	220.35	224.20
35.00°	127.78	119.05	119.37	109.02	116.96	118.65	84.76	113.43	89.52	101.93	86.10	85.77	86.35	94.32	105.25	125.37	127.78
37.50°	63.94	54.09	50.50	50.69	44.78	45.72	55.53	42.69	50.10	38.00	42.99	37.26	37.58	40.44	57.07	51.14	63.94
40.00°	37.65	37.45	36.40	36.10	35.90	35.91	29.32	32.85	29.49	31.46	31.53	30.74	29.51	29.79	30.62	36.08	37.65
42.50°	29.14	27.67	29.25	27.96	27.84	26.62	26.99	25.19	24.53	25.28	25.87	26.14	24.49	23.62	25.15	24.78	29.14
45.00°	25.03	25.59	25.88	24.90	25.26	24.71	24.68	23.87	22.62	23.35	23.62	24.89	23.76	22.31	21.81	22.55	25.03
47.50°	22.74	23.98	22.83	22.47	22.71	22.85	22.93	22.61	21.40	21.55	21.89	23.69	22.79	21.37	20.26	20.66	22.74
50.00°	21.31	22.84	21.43	20.50	20.28	21.53	21.19	21.52	20.30	20.73	20.43	22.34	21.55	20.80	19.57	19.49	21.31
52.50°	20.19	21.89	20.12	19.48	18.34	20.25	19.47	20.35	19.28	19.94	19.30	21.00	20.30	19.96	19.50	18.40	20.19
55.00°	19.43	21.09	19.87	19.04	18.48	19.26	17.89	19.01	18.27	19.23	18.32	19.81	19.02	18.88	18.52	17.47	19.43
57.50°	18.77	20.52	19.64	18.37	18.35	18.14	17.53	17.71	16.60	18.44	18.18	18.67	18.04	17.69	16.95	16.45	18.77
60.00°	18.75	20.10	18.97	17.58	17.25	16.40	17.09	16.45	14.88	17.21	18.38	18.16	17.33	16.40	16.25	15.30	18.75
62.50°	18.89	19.85	18.37	17.32	16.43	15.00	16.11	15.71	15.59	16.35	18.17	17.74	17.53	15.91	16.04	15.00	18.89
65.00°	19.46	19.70	18.95	17.29	16.41	15.03	15.24	15.78	16.35	16.85	17.83	18.11	18.50	15.95	15.93	15.86	19.46
67.50°	20.11	19.91	19.40	17.00	16.26	15.10	14.84	15.66	15.82	16.96	17.26	18.27	18.37	15.71	15.89	16.07	20.11
70.00°	18.98	20.29	19.05	16.64	15.88	15.28	14.58	15.31	15.35	16.15	16.62	17.61	17.55	15.34	15.52	15.59	18.98
72.50°	17.57	18.32	17.82	15.30	14.58	14.49	14.57	14.11	15.04	14.77	15.08	16.23	15.57	14.21	15.06	14.43	17.57
75.00°	15.48	15.72	15.06	13.56	12.58	12.84	13.03	12.47	12.74	12.90	13.29	13.87	13.54	12.90	13.24	12.92	15.48
77.50°	13.53	12.40	12.76	11.13	10.42	10.05	10.66	10.16	9.41	10.44	11.14	12.45	12.42	11.40	11.33	11.50	13.53
80.00°	11.41	10.45	10.11	8.49	7.67	7.78	7.66	8.37	7.82	8.25	8.74	10.40	10.49	8.70	9.26	9.33	11.41
82.50°	8.22	7.63	6.67	5.05	4.64	5.44	6.09	6.32	5.34	5.83	5.31	7.11	7.22	6.02	6.38	6.36	8.22
85.00°	3.63	3.71	3.36	2.01	2.27	2.73	2.24	3.09	2.62	2.81	3.18	3.21	3.32	3.25	3.22	3.25	3.63
87.50°	1.15	0.89	1.49	0.82	1.16	0.97	0.74	1.26	1.18	0.91	0.82	1.02	1.09	1.07	1.24	1.41	1.15
90.00°	0.50	0.92	0.44	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.67	1.03	0.70	0.64	0.81	0.50
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	1,530	1,530	1,530	1,530	1,494	1,494	1,494	1,494	1,428	1,428	1,428	1,367	1,367	1,367	1,311	1,311	1,311
	1	1,464	1,431	1,401	1,374	1,433	1,403	1,376	1,352	1,351	1,330	1,311	1,304	1,287	1,272	1,260	1,247	1,235
	2	1,402	1,345	1,298	1,258	1,374	1,323	1,280	1,244	1,282	1,247	1,217	1,244	1,216	1,191	1,209	1,187	1,167
	3	1,344	1,270	1,214	1,168	1,319	1,253	1,201	1,159	1,220	1,176	1,141	1,190	1,153	1,123	1,161	1,131	1,106
	4	1,290	1,205	1,143	1,095	1,268	1,191	1,133	1,089	1,164	1,115	1,076	1,139	1,097	1,064	1,116	1,081	1,052
	5	1,239	1,146	1,081	1,033	1,220	1,135	1,074	1,029	1,113	1,060	1,020	1,092	1,047	1,011	1,073	1,034	1,003
	6	1,191	1,093	1,028	980	1,174	1,084	1,022	977	1,066	1,011	971	1,049	1,001	964	1,033	991	958
	7	1,147	1,045	980	933	1,131	1,037	975	931	1,022	967	926	1,008	958	922	994	951	917
	8	1,105	1,001	936	891	1,091	995	933	890	982	926	886	970	919	883	958	913	879
	9	1,066	961	897	853	1,053	955	894	852	944	889	849	934	883	847	924	878	844
	10	1,029	924	861	819	1,018	919	858	818	909	854	816	900	850	814	892	845	812

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	98.8 fc	3.7 ft
6.5 ft	70.7 fc	4.4 ft
7.5 ft	53.1 fc	5.1 ft
8.0 ft	46.7 fc	5.4 ft
10.0 ft	29.9 fc	6.7 ft
12.0 ft	20.7 fc	8.1 ft
14.0 ft	15.2 fc	9.4 ft
16.0 ft	11.7 fc	10.8 ft
20.0 ft	7.5 fc	13.5 ft
24.0 ft	5.2 fc	16.2 ft
28.0 ft	3.8 fc	18.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	71,912	71,912	71,912
45.00°	852	881	860
55.00°	815	834	776
65.00°	1,108	1,079	934
75.00°	1,440	1,401	1,170
85.00°	1,003	927	626

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	3.1	4.1	3.5	4.4	4.7	3.0	4.0	3.4	4.3	4.6
	3H	6.7	7.6	7.1	7.9	8.3	6.2	7.0	6.6	7.4	7.7
	4H	8.1	8.9	8.5	9.2	9.6	7.4	8.2	7.9	8.6	9.0
	6H	9.2	10.0	9.6	10.3	10.7	8.5	9.2	8.9	9.6	9.9
	8H	9.6	10.3	10.1	10.7	11.1	8.7	9.4	9.2	9.8	10.2
	12H	9.8	10.4	10.2	10.8	11.3	8.9	9.5	9.3	9.9	10.3
4H	2H	4.0	4.8	4.4	5.2	5.5	3.8	4.6	4.2	5.0	5.4
	3H	7.7	8.4	8.2	8.8	9.2	7.2	7.8	7.6	8.3	8.7
	4H	9.2	9.8	9.7	10.2	10.7	8.6	9.2	9.0	9.6	10.1
	6H	10.4	10.9	10.9	11.4	11.9	9.7	10.2	10.2	10.7	11.2
	8H	10.9	11.3	11.3	11.8	12.3	10.1	10.5	10.5	11.0	11.5
	12H	11.1	11.5	11.6	12.0	12.4	10.2	10.6	10.7	11.1	11.6
8H	4H	9.6	10.1	10.1	10.6	11.0	9.0	9.5	9.5	9.9	10.4
	6H	11.0	11.4	11.5	11.9	12.4	10.3	10.7	10.8	11.2	11.7
	8H	11.5	11.8	12.0	12.4	12.9	10.7	11.1	11.3	11.6	12.1
	12H	11.8	12.1	12.3	12.6	13.2	11.0	11.2	11.5	11.7	12.3
12H	4H	9.7	10.1	10.2	10.6	11.0	9.1	9.5	9.6	9.9	10.4
	6H	11.1	11.4	11.6	11.9	12.4	10.4	10.7	10.9	11.2	11.7
	8H	11.6	11.9	12.2	12.4	13.0	10.9	11.1	11.4	11.6	12.2

Corrected UGR values based on total output lumens

SHR = 1.0