

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-00596_15_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	1251
Efficacy	73.18 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.46
Two luminaires, plane 90°	0.46
Four luminaires	0.47

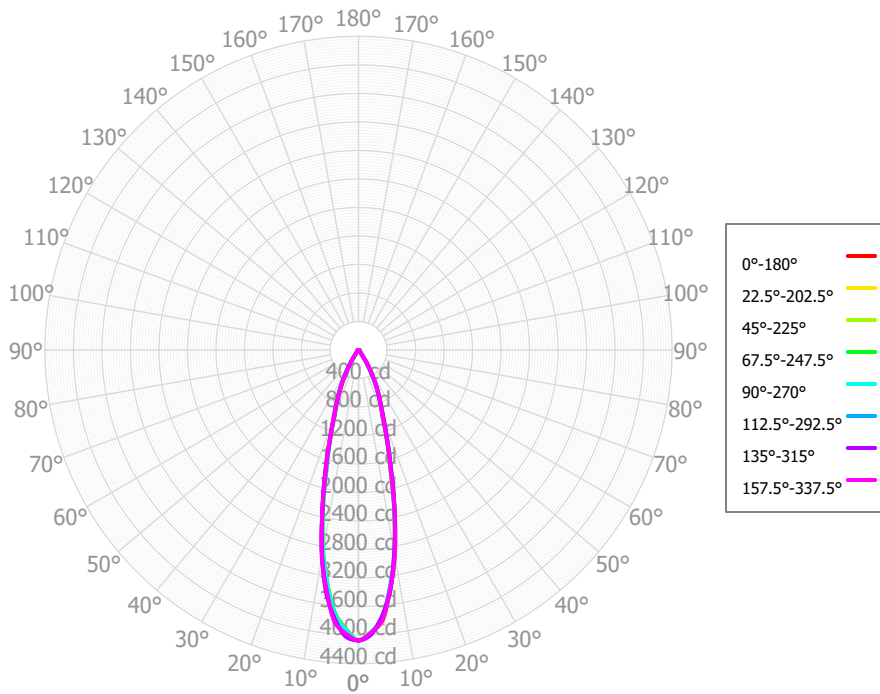
Full Beam Angle

0° - 180°	28°
90° - 270°	28°

IES File Header Contents

Keyword	Value
TEST	SP-00596_15_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 MD XX NL
LUMINAIRE	Nominal 3" Diameter STT Euro tracklight
OTHER	Medium Beam, Open aperture
OTHER	Beam Angle: 28 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°	334.54	26.73%	90.00° - 100.00°	0.04	0.00%
10.00° - 20.00°	490.67	39.21%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	282.49	22.57%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	73.34	5.86%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	17.20	1.37%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	14.48	1.16%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	19.28	1.54%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	15.19	1.21%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	4.16	0.33%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,251.35	100.00%	0.00° - 180.00°	1,251.39	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°	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08	4,076.08
2.50°	3,981.60	3,968.39	3,964.42	3,974.06	3,978.80	4,003.91	4,029.42	3,986.73	3,981.08	3,933.20	3,925.70	3,931.74	3,940.09	3,972.77	4,002.10	3,972.59	3,981.60
5.00°	3,787.55	3,838.50	3,806.24	3,793.90	3,814.53	3,826.32	3,792.30	3,837.92	3,774.78	3,774.95	3,731.31	3,722.19	3,745.17	3,774.32	3,756.82	3,820.56	3,787.55
7.50°	3,403.44	3,392.57	3,383.19	3,387.10	3,391.35	3,415.82	3,455.90	3,412.12	3,403.71	3,342.84	3,330.32	3,324.99	3,332.81	3,368.29	3,412.81	3,391.97	3,403.44
10.00°	2,890.76	2,936.94	2,900.32	2,920.65	2,932.09	2,951.77	2,941.83	2,960.85	2,932.23	2,906.54	2,888.69	2,859.72	2,880.28	2,899.89	2,892.97	2,934.61	2,890.76
12.50°	2,333.48	2,331.26	2,321.08	2,322.85	2,330.24	2,348.02	2,346.64	2,353.46	2,337.80	2,321.46	2,311.24	2,312.16	2,319.43	2,339.47	2,356.30	2,348.43	2,333.48
15.00°	1,747.89	1,741.82	1,722.25	1,778.27	1,768.19	1,793.48	1,824.15	1,776.95	1,807.82	1,739.52	1,770.52	1,737.04	1,740.86	1,753.73	1,791.54	1,751.23	1,747.89
17.50°	1,327.85	1,349.54	1,333.60	1,342.95	1,349.41	1,357.96	1,332.54	1,368.01	1,352.01	1,350.30	1,342.55	1,335.41	1,349.76	1,354.20	1,331.71	1,359.91	1,327.85
20.00°	1,006.23	977.68	983.07	994.09	986.23	997.29	1,030.07	995.13	1,012.73	967.50	977.92	987.22	985.50	1,001.33	1,035.79	982.57	1,006.23
22.50°	790.02	808.62	793.83	810.89	806.35	804.96	802.19	797.04	799.56	783.38	792.62	784.14	797.14	801.16	795.88	805.04	790.02
25.00°	632.45	641.23	630.46	634.85	629.70	621.67	618.22	605.61	608.98	600.27	611.77	622.02	630.50	635.65	638.01	637.62	632.45
27.50°	483.54	487.76	473.91	471.66	462.87	457.33	450.29	443.22	441.39	437.88	442.59	452.35	461.54	471.02	482.03	487.14	483.54
30.00°	339.13	337.74	318.31	317.66	305.62	304.74	304.65	290.41	295.63	278.88	287.68	280.73	292.34	306.58	328.61	337.24	339.13
32.50°	220.86	212.42	198.23	179.07	175.16	175.11	166.52	175.48	170.76	171.01	167.43	170.76	179.96	189.56	201.22	219.24	220.86
35.00°	115.28	99.53	82.43	81.59	73.80	80.78	96.33	79.39	90.24	69.79	75.74	75.20	72.46	81.19	107.44	101.81	115.28
37.50°	64.56	64.55	51.37	48.70	47.70	50.91	47.21	51.23	49.63	47.84	48.53	45.23	47.20	48.58	48.63	65.95	64.56
40.00°	38.65	33.91	28.91	27.40	28.20	30.19	31.52	28.83	29.00	27.59	28.97	29.08	27.56	28.19	32.25	30.66	38.65
42.50°	27.85	27.35	24.40	23.19	24.56	25.10	25.34	25.48	25.27	24.03	25.51	24.37	23.11	23.31	22.15	25.69	27.85
45.00°	23.40	21.82	21.38	20.23	21.33	21.46	22.97	22.40	22.05	20.71	22.10	21.81	19.44	20.62	19.20	20.82	23.40
47.50°	20.61	21.41	20.29	18.97	19.04	20.12	21.59	20.11	19.23	19.40	18.79	20.03	18.00	18.56	17.18	19.18	20.61
50.00°	18.46	20.72	19.33	17.49	16.75	18.45	19.21	18.25	17.42	18.05	16.34	18.38	16.63	16.57	16.18	17.54	18.46
52.50°	17.56	18.84	17.80	15.72	14.49	16.29	16.58	17.55	16.36	16.53	15.45	17.61	16.30	15.12	15.25	16.06	17.56
55.00°	17.11	17.39	16.25	14.65	13.04	14.83	16.06	16.96	15.73	15.25	14.78	16.98	15.98	13.73	14.39	14.72	17.11
57.50°	17.99	17.71	16.90	14.43	13.14	14.37	15.97	16.63	15.41	15.56	14.47	16.87	15.92	14.44	14.44	15.57	17.99
60.00°	19.31	18.46	17.62	15.15	13.84	14.80	17.33	16.90	16.23	16.04	15.26	16.82	15.90	15.33	15.37	16.53	19.31
62.50°	21.95	20.80	19.19	16.96	15.63	16.41	18.96	18.60	17.81	17.50	17.82	18.61	18.46	17.21	17.04	18.81	21.95
65.00°	25.00	22.76	20.77	18.45	17.37	17.84	20.47	20.06	18.99	18.87	19.68	20.60	20.97	19.15	19.38	20.92	25.00
67.50°	24.18	23.45	21.06	19.61	19.03	19.05	21.96	20.97	19.93	19.74	20.50	21.13	21.71	20.36	20.25	21.33	24.18
70.00°	22.28	22.99	21.29	18.66	18.79	18.31	19.37	20.13	18.34	19.92	19.71	21.54	22.26	21.52	19.87	21.34	22.28
72.50°	19.62	18.96	17.71	15.58	15.53	15.28	16.16	15.65	15.30	17.01	16.67	18.39	18.76	18.20	17.73	17.98	19.62
75.00°	16.77	15.61	14.19	12.68	12.43	12.33	13.54	12.23	12.67	14.07	13.72	14.98	15.32	14.74	14.21	14.75	16.77
77.50°	14.73	14.12	12.15	9.96	9.54	9.47	10.97	10.71	10.26	11.01	10.89	13.10	12.91	12.50	11.67	12.34	14.73
80.00°	12.86	11.73	9.68	7.33	6.81	7.23	8.06	8.45	7.33	8.26	8.67	11.05	10.36	10.14	9.82	9.90	12.86
82.50°	8.15	8.08	5.75	4.75	4.23	5.20	5.16	5.58	4.68	5.97	6.82	7.38	7.34	7.11	6.93	7.37	8.15
85.00°	4.02	3.94	2.89	2.23	2.24	2.36	2.38	2.53	2.97	2.72	2.73	3.93	3.87	4.00	3.88	4.08	4.02
87.50°	1.24	1.23	1.10	0.95	0.86	0.53	0.66	0.84	0.67	0.87	1.20	1.40	1.38	1.44	1.40	1.37	1.24
90.00°	0.68	0.62	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.73	0.70	0.64	0.60	0.68
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.

	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%
RCR	0	1,490	1,490	1,490	1,490	1,455	1,455	1,455	1,455	1,390	1,390	1,390	1,331	1,331	1,331	1,277	1,277	1,251
	1	1,428	1,396	1,368	1,342	1,397	1,369	1,344	1,321	1,319	1,299	1,280	1,273	1,257	1,242	1,230	1,218	1,207
	2	1,369	1,316	1,272	1,234	1,343	1,295	1,255	1,220	1,255	1,222	1,194	1,218	1,192	1,169	1,184	1,163	1,144
	3	1,316	1,247	1,194	1,151	1,292	1,230	1,181	1,142	1,198	1,158	1,124	1,169	1,135	1,107	1,142	1,114	1,093
	4	1,266	1,187	1,129	1,084	1,245	1,173	1,120	1,078	1,148	1,102	1,066	1,124	1,085	1,054	1,101	1,069	1,042
	5	1,220	1,134	1,073	1,029	1,202	1,123	1,066	1,024	1,102	1,053	1,016	1,082	1,040	1,007	1,064	1,028	999
	6	1,177	1,086	1,025	981	1,161	1,077	1,020	978	1,060	1,009	972	1,043	999	965	1,028	989	959
	7	1,137	1,043	982	939	1,123	1,035	978	937	1,021	970	932	1,007	962	928	994	954	923
	8	1,100	1,004	943	902	1,087	997	940	900	985	934	897	973	927	893	963	921	890
	9	1,064	968	908	868	1,053	962	906	867	952	900	864	942	895	862	932	890	859
	10	1,031	934	876	838	1,021	930	874	837	921	870	835	912	866	833	904	861	831

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	134.7 fc	2.7 ft
6.5 ft	96.5 fc	3.2 ft
7.5 ft	72.5 fc	3.7 ft
8.0 ft	63.7 fc	3.9 ft
10.0 ft	40.8 fc	4.9 ft
12.0 ft	28.3 fc	5.9 ft
14.0 ft	20.8 fc	6.9 ft
16.0 ft	15.9 fc	7.9 ft
20.0 ft	10.2 fc	9.9 ft
24.0 ft	7.1 fc	11.8 ft
28.0 ft	5.2 fc	13.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	98,106	98,106	98,106
45.00°	797	728	726
55.00°	718	682	547
65.00°	1,424	1,183	989
75.00°	1,559	1,320	1,156
85.00°	1,109	799	617

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	2.6	3.6	3.0	3.9	4.2	1.9	2.9	2.3	3.2	3.5
	3H	7.6	8.4	8.0	8.8	9.1	6.8	7.7	7.2	8.0	8.4
	4H	8.9	9.7	9.3	10.1	10.5	8.1	8.9	8.5	9.2	9.6
	6H	10.0	10.8	10.5	11.1	11.5	8.9	9.6	9.3	10.0	10.4
	8H	10.4	11.1	10.8	11.5	11.9	9.2	9.8	9.6	10.2	10.7
	12H	10.5	11.2	11.0	11.6	12.0	9.3	9.9	9.7	10.3	10.8
4H	2H	4.0	4.8	4.4	5.2	5.5	3.6	4.4	4.0	4.8	5.2
	3H	8.7	9.3	9.1	9.8	10.2	8.0	8.7	8.5	9.1	9.5
	4H	10.0	10.6	10.5	11.1	11.5	9.3	9.9	9.8	10.3	10.8
	6H	11.3	11.8	11.7	12.2	12.7	10.3	10.8	10.7	11.2	11.7
	8H	11.6	12.1	12.1	12.6	13.0	10.5	11.0	11.0	11.5	11.9
	12H	11.8	12.2	12.3	12.7	13.2	10.7	11.1	11.2	11.6	12.1
8H	4H	10.4	10.9	10.9	11.3	11.8	9.7	10.2	10.2	10.6	11.1
	6H	11.7	12.1	12.3	12.6	13.1	10.8	11.2	11.3	11.7	12.2
	8H	12.2	12.6	12.8	13.1	13.6	11.2	11.5	11.7	12.0	12.5
	12H	12.5	12.8	13.0	13.3	13.9	11.4	11.7	11.9	12.2	12.8
12H	4H	10.4	10.8	10.9	11.3	11.8	9.7	10.1	10.2	10.6	11.1
	6H	11.8	12.1	12.3	12.6	13.1	10.9	11.2	11.4	11.7	12.2
	8H	12.3	12.6	12.9	13.1	13.7	11.3	11.6	11.8	12.1	12.7

Corrected UGR values based on total output lumens

SHR = 1.0