Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STT3PC 40L 30HK MD xx xx MW NL

Nom 3 inch dia Euro style tracklight with 90 CRI emitter and no lens

Test Number

SP-01455_2

Test Date

12/1/2022

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

Summary of Results

Power

Input Watts	35 W

Lumen Output

Output Lumens	2813
Efficacy	80.39 lm/W

Luminous Dimensions

0° - 180° Size	-0.25
90° - 270° Size	-0.25
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.49
Two luminaires, plane 90°	0.49
Four luminaires	0.49

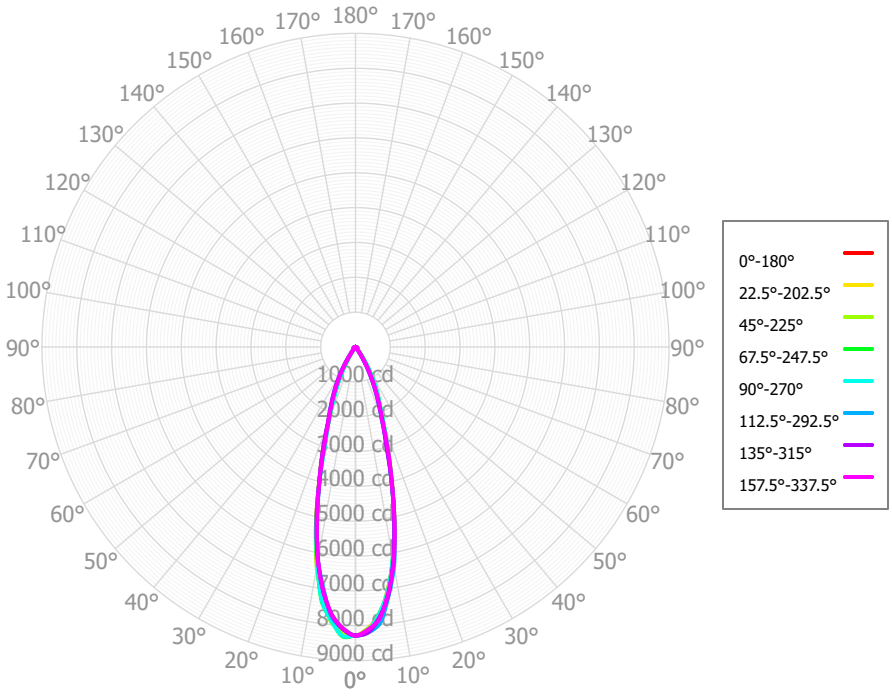
Full Beam Angle

0° - 180°	29°
90° - 270°	29°

IES File Header Contents

Keyword	Value
TEST	SP-01455_2
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	12/1/2022
ISSUEDATE	12/2/2022
LUMCAT	STT3PC 40L 30HK MD xx xx MW NL
LUMINAIRE	Nom 3 inch dia Euro style tracklight with 90 CRI emitter and no lens
OTHER	Beam Angle: 29 deg
OTHER	Medium Beam
OTHER	Reference project SL474.1
LAMPCAT	N/A
LAMP	N/A
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	90
_CCTMULT	27HK x 0.96, 35HK x 1.05, 40HK x 1.08
_LAMPMULT	10L x 0.24, 20L x 0.49, 30L x 0.73

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture
0.00° - 10.00°	701.84	24.95%
10.00° - 20.00°	1094.63	38.91%
20.00° - 30.00°	633.38	22.51%
30.00° - 40.00°	179.78	6.39%
40.00° - 50.00°	44.19	1.57%
50.00° - 60.00°	38.75	1.38%
60.00° - 70.00°	50.25	1.79%
70.00° - 80.00°	43.45	1.54%
80.00° - 90.00°	14.33	0.51%
0.00° - 90.00°	2800.60	99.54%

Zone	Lumens	% Fixture
90.00° - 100.00°	2.12	0.08%
100.00° - 110.00°	1.88	0.07%
100.00° - 120.00°	3.66	0.13%
120.00° - 130.00°	1.77	0.06%
130.00° - 140.00°	1.72	0.06%
140.00° - 150.00°	1.55	0.06%
150.00° - 160.00°	1.17	0.04%
160.00° - 170.00°	0.69	0.02%
170.00° - 180.00°	0.21	0.01%
0.00° - 180.00°	2813.50	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°	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60	8284.60
2.50°	8109.33	8118.98	8087.68	8183.00	8156.34	8092.94	8116.12	8091.03	8116.04	8182.82	8169.74	8321.52	8304.51	8207.83	8205.22	8125.52	8109.33
5.00°	7736.52	7744.13	7814.65	7696.73	7715.30	7797.82	7727.10	7735.71	7820.75	7800.64	7939.67	7876.53	7904.13	7975.30	7802.95	7847.25	7736.52
7.50°	7079.23	7108.69	7039.42	7136.43	7085.33	7015.33	7088.03	7075.10	7170.56	7233.89	7228.28	7389.13	7364.47	7227.90	7195.18	7139.61	7079.23
10.00°	6195.90	6221.03	6236.10	6159.90	6164.68	6209.85	6209.91	6215.47	6354.84	6278.75	6415.51	6302.29	6319.80	6380.01	6237.15	6302.69	6195.90
12.50°	5108.81	5182.96	5113.10	5148.57	5144.04	5084.48	5169.70	5101.80	5240.84	5156.92	5181.45	5202.05	5159.70	5150.13	5126.57	5181.82	5108.81
15.00°	4044.84	4033.74	4016.76	4014.92	4006.42	3987.87	4011.23	4023.78	4028.67	4036.48	4010.49	4007.00	4004.20	3985.96	4016.83	4006.48	4044.84
17.50°	2996.53	3107.99	3074.28	3021.43	3082.84	3072.43	3100.63	2980.55	3105.70	2916.45	3015.04	2915.24	2849.30	2994.86	2907.36	3098.89	2996.53
20.00°	2305.17	2306.86	2249.11	2367.88	2348.10	2264.54	2324.32	2270.51	2246.52	2279.96	2194.39	2261.80	2237.11	2182.71	2263.26	2217.92	2305.17
22.50°	1794.99	1813.32	1844.28	1831.40	1847.78	1867.57	1846.88	1808.68	1798.49	1735.14	1720.89	1672.09	1656.86	1709.33	1711.79	1776.85	1794.99
25.00°	1390.48	1443.91	1462.36	1504.10	1504.93	1488.03	1486.19	1419.20	1403.26	1335.42	1289.50	1262.71	1264.02	1282.16	1313.47	1349.80	1390.48
27.50°	1025.01	1104.33	1136.90	1177.75	1173.03	1154.61	1147.97	1069.78	1053.59	950.49	920.79	886.76	880.08	919.82	931.34	997.92	1025.01
30.00°	712.79	773.01	824.42	852.67	846.56	834.97	815.88	759.16	708.39	646.41	604.43	578.19	587.61	606.70	629.70	657.49	712.79
32.50°	413.82	502.18	535.49	564.41	565.06	541.49	536.04	464.07	449.41	351.84	346.55	333.53	321.91	346.25	337.59	406.26	413.82
35.00°	249.61	242.04	308.95	313.02	299.42	310.03	265.21	278.44	207.92	214.25	185.64	185.32	197.61	187.41	209.53	189.25	249.61
37.50°	105.33	151.46	167.71	163.43	174.64	165.89	164.48	123.51	134.88	90.78	106.41	94.77	96.39	111.71	93.91	123.69	105.33
40.00°	77.84	75.55	85.52	91.69	83.77	82.44	77.86	81.64	72.51	75.54	70.24	70.44	74.15	75.55	76.67	72.08	77.84
42.50°	58.20	62.98	64.08	60.32	62.43	64.16	66.75	59.50	64.27	61.97	61.64	57.45	57.46	63.58	61.74	62.04	58.20
45.00°	55.04	51.53	52.33	52.30	51.22	54.05	56.61	55.30	56.77	55.84	55.67	54.29	53.96	57.18	57.44	54.63	55.04
47.50°	51.86	48.80	48.11	47.54	49.35	50.64	54.35	52.63	51.64	50.32	50.95	50.73	50.58	53.26	53.12	52.78	51.86
50.00°	48.62	45.90	44.81	44.15	48.04	46.89	51.91	47.20	47.31	46.64	46.44	46.92	47.41	49.55	48.78	50.14	48.62
52.50°	45.72	41.83	42.05	41.65	46.64	42.92	48.21	42.15	44.81	43.01	41.99	43.19	44.44	45.89	45.00	46.24	45.72
55.00°	44.90	38.75	41.11	39.41	45.27	40.63	45.36	44.29	42.58	39.51	38.64	39.49	41.74	43.72	42.40	44.34	44.90
57.50°	44.09	39.76	40.93	41.70	44.20	39.10	45.86	46.47	40.80	37.39	35.52	40.02	41.08	41.85	41.30	44.79	44.09
60.00°	43.29	41.66	43.94	44.85	44.22	43.88	47.69	48.88	41.52	37.44	36.74	42.01	42.42	43.26	42.54	46.44	43.29
62.50°	44.05	46.05	47.89	49.13	50.34	50.68	53.13	51.49	45.41	40.59	38.53	44.98	44.39	45.04	45.54	49.16	44.05
65.00°	48.76	51.12	53.10	53.52	56.14	55.53	57.48	54.89	50.15	47.41	46.17	48.18	46.85	49.40	50.63	52.16	48.76
67.50°	52.64	57.57	58.55	57.84	60.84	59.98	59.68	56.92	55.68	50.17	53.74	49.23	47.99	53.59	53.22	55.35	52.64
70.00°	55.02	58.68	55.82	61.60	62.38	59.82	58.51	55.13	54.42	49.29	48.49	49.99	48.40	50.05	53.52	54.37	55.02
72.50°	52.04	51.89	52.24	54.45	56.10	59.11	52.43	51.33	48.18	43.42	42.94	40.15	41.35	45.76	46.97	51.30	52.04
75.00°	41.70	45.21	45.49	47.39	49.13	50.59	46.07	43.53	40.76	34.20	34.60	29.84	31.24	34.91	35.69	44.12	41.70
77.50°	33.89	38.65	38.70	40.99	40.91	41.84	39.40	36.77	32.69	27.54	26.65	25.66	24.08	25.10	28.13	35.45	33.89
80.00°	28.71	31.24	32.76	34.17	33.02	35.01	33.00	31.55	26.78	22.18	20.80	21.10	17.76	20.22	22.47	27.44	28.71
82.50°	20.70	23.09	26.31	25.56	25.58	27.70	26.84	23.52	21.72	16.20	14.72	12.77	11.65	14.93	15.21	19.59	20.70
85.00°	10.51	14.70	15.85	17.03	17.25	16.23	17.83	12.34	13.32	10.00	7.83	5.42	5.58	8.31	7.34	11.76	10.51
87.50°	5.24	6.15	6.74	8.74	8.01	6.30	7.03	5.76	4.01	5.99	2.81	3.38	3.53	3.42	4.25	3.92	5.24
90.00°	2.88	2.91	3.60	2.87	3.28	3.81	2.89	3.13	2.40	2.51	2.12	1.87	1.84	2.32	2.34	2.68	2.88
92.50°	2.11	2.19	1.29	2.04	2.04	2.01	1.87	1.82	2.13	1.87	1.73	2.16	1.81	1.67	2.08	1.87	2.11
95.00°	2.02	1.92	1.45	1.47	1.52	2.42	1.84	1.37	2.01	1.64	1.87	2.32	1.80	1.75	2.07	1.77	2.02
97.50°	1.72	1.80	1.64	1.30	1.43	2.49	2.14	1.51	1.91	1.54	2.03	2.16	1.70	1.88	1.97	1.65	1.72
100.00°	1.37	1.68	1.87	1.33	1.63	1.82	1.97	1.95	1.95	1.46	2.21	2.01	1.62	2.05	1.86	1.35	1.37

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	3346	3346	3346	3346	3267	3267	3267	3267	3119	3119	3119	2983	2983	2983	2859	2859	2859	2801
	1	3199	3125	3059	2999	3129	3063	3004	2950	2948	2901	2857	2841	2804	2770	2743	2715	2688	2660
	2	3063	2938	2834	2747	3001	2889	2795	2715	2797	2720	2654	2712	2650	2596	2634	2584	2540	2533
	3	2938	2778	2653	2554	2883	2738	2625	2533	2665	2570	2491	2596	2517	2451	2533	2468	2413	2421
	4	2823	2638	2503	2400	2775	2607	2482	2385	2547	2440	2356	2491	2401	2328	2439	2363	2301	2320
RCR	5	2717	2516	2375	2272	2674	2490	2359	2261	2440	2327	2241	2395	2297	2220	2352	2268	2201	2227
	6	2618	2406	2264	2162	2579	2384	2251	2154	2344	2227	2139	2305	2203	2125	2270	2180	2110	2143
	7	2525	2307	2165	2066	2491	2289	2155	2060	2255	2136	2049	2222	2117	2038	2192	2099	2027	2065
	8	2439	2217	2077	1981	2408	2201	2069	1977	2172	2053	1968	2145	2038	1960	2119	2023	1952	1992
	9	2358	2134	1997	1904	2330	2121	1990	1901	2096	1977	1894	2073	1965	1888	2051	1953	1882	1924
	10	2282	2058	1924	1834	2257	2047	1918	1832	2025	1908	1827	2005	1897	1822	1986	1888	1817	1861

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	273.9 fc	2.9 ft
6.5 ft	196.1 fc	3.4 ft
7.5 ft	147.3 fc	3.9 ft
8.0 ft	129.4 fc	4.2 ft
10.0 ft	82.8 fc	5.3 ft
12.0 ft	57.5 fc	6.3 ft
14.0 ft	42.3 fc	7.4 ft
16.0 ft	32.4 fc	8.4 ft
20.0 ft	20.7 fc	10.5 ft
24.0 ft	14.4 fc	12.6 ft
28.0 ft	10.6 fc	14.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1816652	1816652	1816652
45.00°	17067	16229	15883
55.00°	17167	15715	17305
65.00°	25298	27550	29131
75.00°	35331	38541	41629
85.00°	26433	39885	43401

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	13.8	14.8	14.2	15.1	15.4	13.4	14.4	13.8	14.7	15.0
	3H	18.6	19.5	19.0	19.8	20.2	18.5	19.4	18.9	19.7	20.1
	4H	20.1	21.0	20.6	21.3	21.7	20.0	20.8	20.4	21.2	21.6
	6H	21.2	21.9	21.6	22.3	22.7	21.0	21.7	21.4	22.1	22.5
	8H	21.5	22.2	22.0	22.6	23.0	21.3	22.0	21.7	22.4	22.8
	12H	21.7	22.4	22.1	22.7	23.2	21.5	22.2	22.0	22.6	23.0
4H	2H	15.3	16.1	15.7	16.5	16.9	15.1	15.9	15.5	16.3	16.7
	3H	19.9	20.6	20.3	21.0	21.4	19.8	20.5	20.2	20.9	21.3
	4H	21.5	22.1	22.0	22.5	23.0	21.3	21.9	21.8	22.3	22.8
	6H	22.6	23.1	23.1	23.6	24.1	22.4	22.9	22.9	23.4	23.8
	8H	23.0	23.5	23.5	23.9	24.4	22.8	23.3	23.3	23.7	24.2
	12H	23.2	23.6	23.7	24.1	24.6	23.0	23.4	23.5	23.9	24.4
8H	4H	22.0	22.4	22.4	22.9	23.4	21.8	22.2	22.3	22.7	23.2
	6H	23.2	23.6	23.8	24.1	24.6	23.0	23.4	23.6	23.9	24.4
	8H	23.7	24.1	24.3	24.6	25.1	23.5	23.9	24.1	24.4	24.9
	12H	24.1	24.3	24.6	24.9	25.4	23.9	24.2	24.4	24.7	25.3
12H	4H	22.0	22.4	22.5	22.9	23.4	21.8	22.2	22.3	22.7	23.2
	6H	23.3	23.7	23.9	24.2	24.7	23.1	23.5	23.7	24.0	24.5
	8H	23.9	24.2	24.4	24.7	25.3	23.7	24.0	24.2	24.5	25.1

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0