Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STT3PC 40L 30HK ND xx xx MW NL

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

Test Number

SP-01456_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	2775
Efficacy	79.27 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.39
Two luminaires, plane 90°	0.39
Four luminaires	0.43

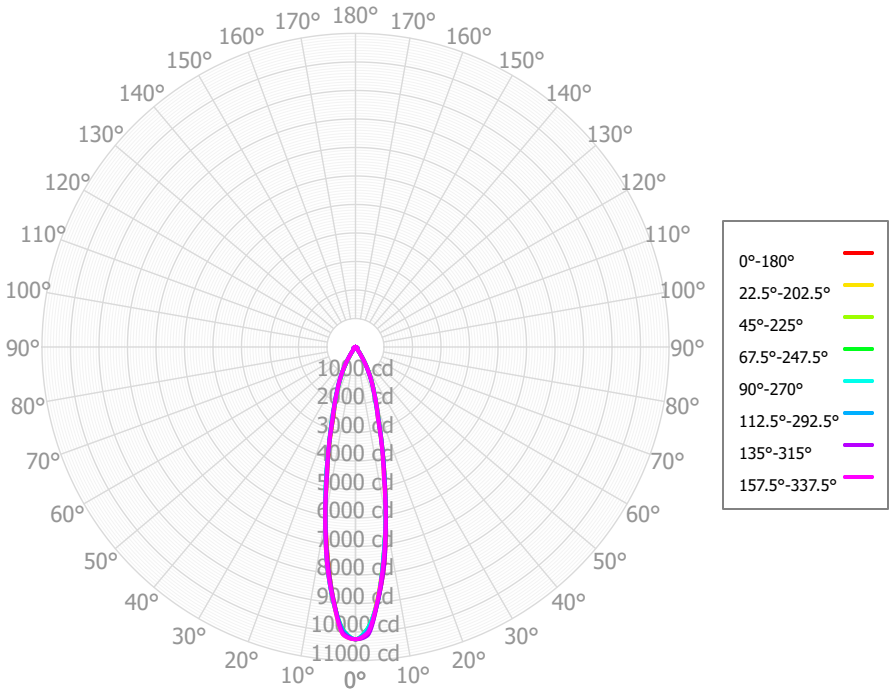
Full Beam Angle

0° - 180°	23°
90° - 270°	24°

IES File Header Contents

Keyword	Value
TEST	SP-01456_2
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	12/1/2022
ISSUEDATE	12/2/2022
LUMCAT	STT3PC 40L 30HK ND xx xx MW NL
LUMINAIRE	Nom 3 inch dia Euro style tracklight with 90 CRI emitter and no lens
OTHER	Beam Angle: 23 deg
OTHER	Narrow 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	Zone	Lumens	% Fixture
0.00° - 10.00°	764.61	27.56%	90.00° - 100.00°	2.05	0.07%
10.00° - 20.00°	999.25	36.01%	100.00° - 110.00°	1.91	0.07%
20.00° - 30.00°	607.33	21.89%	100.00° - 120.00°	3.70	0.13%
30.00° - 40.00°	175.87	6.34%	120.00° - 130.00°	1.59	0.06%
40.00° - 50.00°	40.37	1.45%	130.00° - 140.00°	1.58	0.06%
50.00° - 60.00°	48.33	1.74%	140.00° - 150.00°	1.41	0.05%
60.00° - 70.00°	68.85	2.48%	150.00° - 160.00°	1.07	0.04%
70.00° - 80.00°	41.33	1.49%	160.00° - 170.00°	0.67	0.02%
80.00° - 90.00°	16.38	0.59%	170.00° - 180.00°	0.21	0.01%
0.00° - 90.00°	2762.32	99.56%	0.00° - 180.00°	2774.60	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
0.00°	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	10253.04	1025
2.50°	10047.82	9968.30	10085.36	9878.66	9889.91	9964.29	10040.74	10098.42	10022.23	10092.92	10059.79	9934.81	9963.34	9947.92	10112.86	10022.43	100
5.00°	8969.19	8868.02	8920.40	8958.72	8938.31	8960.93	8881.30	8950.90	8901.91	8956.78	8873.06	8961.60	8968.20	8979.81	8967.53	8914.48	896
7.50°	7714.15	7482.57	7666.35	7476.55	7473.72	7661.49	7518.90	7673.93	7453.39	7675.06	7491.11	7628.60	7656.47	7496.14	7715.55	7544.69	7714
10.00°	6125.93	6042.82	6128.26	6051.79	6061.82	6096.38	6071.74	6108.02	6026.76	6107.12	6062.92	6069.57	6096.85	6065.66	6141.44	6069.79	612
12.50°	4719.01	4587.87	4713.87	4684.33	4692.36	4775.41	4611.47	4708.72	4606.59	4715.50	4628.40	4766.55	4774.23	4672.50	4704.71	4570.06	471
15.00°	3603.88	3544.78	3624.37	3576.55	3610.93	3640.35	3606.41	3623.69	3550.32	3618.79	3609.57	3598.48	3608.65	3565.10	3605.37	3545.29	360
17.50°	2721.46	2591.00	2706.42	2688.96	2725.95	2818.85	2648.24	2733.01	2577.88	2733.78	2626.79	2783.81	2764.96	2626.77	2685.98	2604.64	2721
20.00°	2160.08	2093.95	2165.36	2090.45	2136.88	2202.29	2155.77	2154.79	2070.37	2151.90	2131.38	2126.54	2103.51	2046.24	2137.99	2111.64	216
22.50°	1702.07	1669.74	1701.23	1699.74	1717.79	1752.97	1689.22	1681.97	1642.72	1675.31	1655.83	1675.88	1650.93	1642.82	1666.68	1673.87	1702
25.00°	1364.96	1340.87	1377.81	1356.40	1364.28	1395.53	1357.79	1352.26	1308.03	1326.45	1300.13	1300.66	1297.02	1291.42	1327.62	1328.02	1364
27.50°	1040.73	1022.66	1062.59	1042.23	1042.76	1065.62	1029.12	1033.50	984.79	996.90	946.90	970.03	976.33	961.70	1001.39	989.40	104
30.00°	729.31	721.49	759.99	745.24	743.06	748.30	727.91	727.37	689.45	687.26	655.12	652.48	668.57	669.48	693.78	693.56	729.
32.50°	465.00	421.47	490.64	457.26	452.15	482.41	434.66	466.92	396.30	432.68	374.26	412.97	427.63	390.00	433.96	399.97	465
35.00°	241.04	257.36	265.19	269.56	265.94	236.21	262.00	251.83	245.31	227.03	227.16	191.74	208.17	233.31	233.81	242.65	241.
37.50°	119.54	98.83	124.36	125.56	114.65	132.44	103.75	127.32	100.07	117.33	95.12	120.64	126.05	110.53	113.94	91.58	119.
40.00°	72.47	72.63	78.29	72.41	67.82	72.73	71.51	79.21	76.49	79.95	77.58	75.86	79.61	76.11	79.21	71.71	72.4
42.50°	51.81	47.69	53.08	51.65	48.68	53.71	43.45	55.73	53.75	60.96	61.70	62.50	65.14	60.53	58.69	53.26	51.8
45.00°	47.61	44.58	48.02	44.64	44.14	44.80	41.16	50.12	48.65	53.85	54.94	53.10	57.00	54.15	51.15	50.52	47.6
47.50°	43.94	42.02	45.21	41.65	42.64	43.13	39.65	46.85	43.97	49.38	49.13	50.08	52.02	49.26	46.77	47.95	43.9
50.00°	40.55	44.73	44.25	43.00	43.60	42.82	41.65	45.01	43.74	46.36	47.31	47.55	47.48	48.19	44.84	46.63	40.5
52.50°	43.40	47.93	47.08	45.34	44.95	45.96	44.75	46.61	44.31	47.87	47.08	49.27	48.75	47.53	45.20	46.34	43.4
55.00°	49.00	54.31	52.59	53.83	52.23	49.58	51.71	50.01	50.31	51.48	52.05	51.18	50.58	51.24	47.09	51.34	49.0
57.50°	58.02	61.65	61.58	63.35	60.10	61.88	59.87	58.99	57.42	59.59	58.37	59.50	59.54	55.23	55.54	57.85	58.0
60.00°	68.29	73.54	72.66	72.41	70.83	74.94	71.51	70.39	70.19	69.41	68.29	67.65	68.85	66.61	67.66	70.33	68.2
62.50°	73.36	81.83	76.77	81.42	81.73	78.41	78.72	75.92	79.27	73.46	73.01	72.44	70.83	77.85	73.27	78.90	73.3
65.00°	76.92	76.58	77.42	73.66	74.65	81.47	75.35	79.36	73.68	75.74	66.07	75.49	72.33	70.88	75.83	74.91	76.9
67.50°	66.90	69.36	68.37	64.63	67.21	68.49	69.22	67.67	65.42	63.50	56.93	59.50	60.32	63.53	65.60	67.97	66.9
70.00°	53.74	56.29	55.27	55.54	57.69	55.72	57.66	51.59	48.80	47.70	43.72	44.55	48.60	50.00	50.37	53.38	53.7
72.50°	45.70	45.95	49.49	46.51	48.39	50.40	48.38	43.49	35.85	40.13	34.54	36.91	40.81	37.39	41.48	42.10	45.7
75.00°	38.54	42.24	46.22	43.97	42.32	45.17	42.88	37.19	32.27	34.09	31.64	30.06	33.53	33.11	34.59	37.88	38.5
77.50°	36.13	38.63	41.89	41.22	36.55	41.27	37.73	34.02	29.38	31.14	28.87	27.34	30.49	29.04	31.85	34.03	36.1
80.00°	34.31	35.20	37.27	34.40	33.35	36.60	33.08	31.40	27.99	28.62	26.27	23.76	26.83	26.30	30.16	30.86	34.3
82.50°	25.31	27.88	27.75	27.20	28.86	26.08	25.15	22.79	23.36	20.57	20.32	16.76	19.57	22.14	21.48	24.18	25.3
85.00°	15.77	13.92	17.17	15.93	16.53	16.00	13.27	13.47	12.99	12.05	10.59	10.31	12.56	11.32	11.44	12.18	15.7
87.50°	8.55	4.82	9.63	5.82	5.98	8.37	5.96	7.63	5.83	7.01	4.62	5.62	6.60	2.75	6.68	4.51	8.55
90.00°	1.47	2.72	2.59	3.54	3.47	2.14	3.29	2.06	3.47	2.12	2.32	2.14	1.93	2.33	2.68	2.42	1.47
92.50°	1.70	1.49	1.75	1.69	1.48	1.79	1.95	2.11	2.05	1.70	1.64	1.75	1.65	1.99	2.31	1.59	1.70
95.00°	1.93	1.31	1.60	1.96	1.30	1.50	1.78	2.31	1.81	1.32	2.32	1.52	1.47	1.86	2.28	2.16	1.93
97.50°	1.99	1.54	1.56	2.19	1.27	1.45	1.66	2.05	1.78	1.79	2.28	1.66	1.53	1.74	2.02	2.17	1.99
100.00°	2.04	2.18	1.53	2.22	1.67	1.39	1.58	1.79	1.96	2.21	1.72	1.79	1.68	1.62	1.75	1.65	2.04

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	3300	3300	3300	3300	3222	3222	3222	3222	3076	3076	3076	2943	2943	2943	2820	2820	2820	2762
	1	3154	3080	3014	2954	3085	3019	2960	2906	2905	2858	2815	2800	2763	2729	2703	2675	2648	2621
	2	3018	2894	2791	2704	2957	2845	2752	2673	2755	2678	2613	2671	2609	2555	2594	2544	2500	2494
	3	2895	2735	2612	2513	2840	2696	2583	2492	2624	2529	2452	2556	2478	2412	2494	2429	2374	2382
	4	2781	2598	2464	2362	2733	2567	2443	2347	2508	2402	2319	2453	2364	2291	2402	2327	2264	2283
RCR	5	2677	2479	2340	2237	2635	2453	2324	2227	2404	2292	2207	2359	2263	2187	2317	2234	2167	2194
	6	2581	2372	2232	2131	2543	2351	2219	2124	2311	2195	2109	2273	2172	2094	2238	2149	2080	2113
	7	2491	2276	2137	2039	2458	2259	2127	2034	2225	2108	2023	2193	2089	2012	2164	2071	2001	2038
	8	2408	2190	2052	1958	2378	2175	2044	1954	2146	2029	1945	2119	2014	1937	2094	2000	1929	1968
	9	2330	2110	1976	1885	2303	2098	1969	1882	2073	1957	1875	2050	1945	1869	2028	1933	1863	1904
	10	2257	2038	1906	1819	2233	2027	1901	1816	2006	1891	1811	1986	1881	1806	1967	1871	1801	1844

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	338.9 fc	2.3 ft
6.5 ft	242.7 fc	2.7 ft
7.5 ft	182.3 fc	3.1 ft
8.0 ft	160.2 fc	3.3 ft
10.0 ft	102.5 fc	4.1 ft
12.0 ft	71.2 fc	5.0 ft
14.0 ft	52.3 fc	5.8 ft
16.0 ft	40.1 fc	6.6 ft
20.0 ft	25.6 fc	8.3 ft
24.0 ft	17.8 fc	9.9 ft
28.0 ft	13.1 fc	11.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2248291	2248291	2248291
45.00°	14763	14892	13687
55.00°	18732	20104	19966
65.00°	39909	40169	38734
75.00°	32654	39155	35858
85.00°	39672	43202	41579

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	16.2	17.2	16.6	17.6	17.9	16.4	17.4	16.7	17.7	18.0
	3H	19.9	20.8	20.3	21.1	21.5	19.7	20.6	20.1	20.9	21.3
	4H	20.8	21.6	21.2	22.0	22.4	20.6	21.4	21.0	21.8	22.2
	6H	21.8	22.6	22.2	23.0	23.4	21.5	22.3	22.0	22.7	23.1
	8H	22.2	23.0	22.7	23.4	23.8	21.9	22.6	22.4	23.0	23.5
	12H	22.5	23.2	23.0	23.6	24.0	22.2	22.9	22.6	23.3	23.7
4H	2H	17.9	18.7	18.3	19.1	19.5	17.8	18.6	18.2	18.9	19.3
	3H	21.0	21.7	21.4	22.1	22.5	20.7	21.4	21.2	21.8	22.2
	4H	22.0	22.6	22.5	23.1	23.5	21.8	22.4	22.2	22.8	23.3
	6H	23.2	23.7	23.6	24.1	24.6	22.8	23.3	23.3	23.8	24.3
	8H	23.6	24.1	24.1	24.6	25.1	23.3	23.8	23.8	24.2	24.7
	12H	24.0	24.4	24.5	24.9	25.4	23.6	24.0	24.1	24.5	25.0
8H	4H	22.4	22.9	22.9	23.4	23.8	22.1	22.6	22.6	23.1	23.5
	6H	23.8	24.2	24.3	24.7	25.2	23.4	23.8	23.9	24.3	24.8
	8H	24.4	24.7	24.9	25.3	25.8	24.0	24.3	24.5	24.8	25.3
	12H	24.8	25.1	25.3	25.6	26.2	24.4	24.7	24.9	25.2	25.8
12H	4H	22.5	22.9	23.0	23.4	23.9	22.2	22.6	22.7	23.1	23.6
	6H	23.9	24.3	24.5	24.7	25.3	23.5	23.8	24.0	24.3	24.9
	8H	24.6	24.9	25.1	25.4	26.0	24.1	24.4	24.7	24.9	25.5

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0