Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STT3PC 40L 30HK WD xx xx MW LN3AGL

Nom 3 inch dia Euro style tracklight with 90 CRI emitter and clear glass lens

Test Number

SP-01457

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	2585
Efficacy	73.87 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.63
Two luminaires, plane 90°	0.63
Four luminaires	0.64

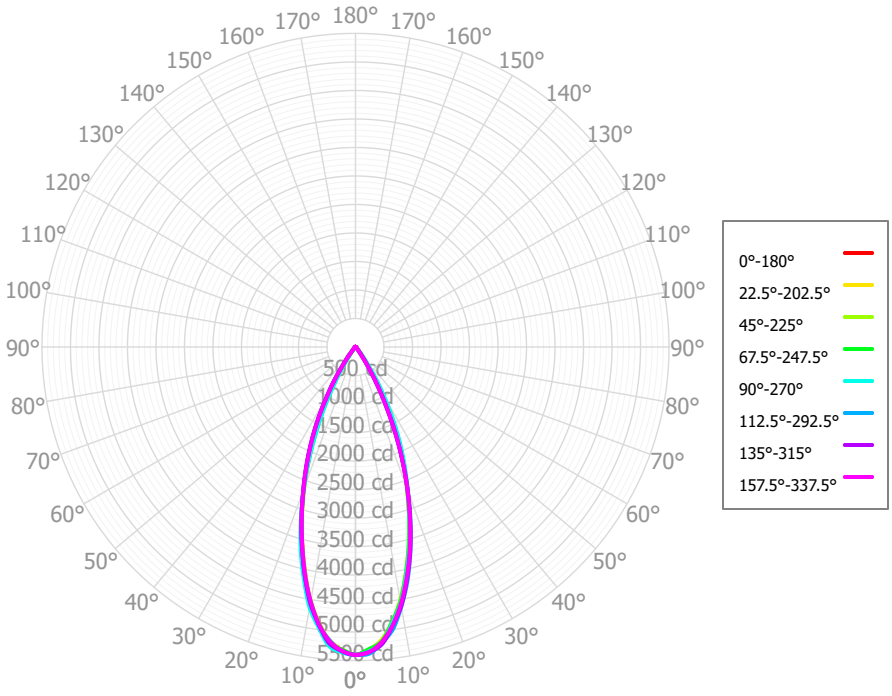
Full Beam Angle

0° - 180°	40°
90° - 270°	40°

IES File Header Contents

Keyword	Value
TEST	SP-01457
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	12/1/2022
ISSUEDATE	12/2/2022
LUMCAT	STT3PC 40L 30HK WD xx xx MW LN3AGL
LUMINAIRE	Nom 3 inch dia Euro style tracklight with 90 CRI emitter and clear glass lens
OTHER	Beam Angle: 40 deg
OTHER	Wide 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°	480.94	18.60%
10.00° - 20.00°	996.30	38.53%
20.00° - 30.00°	773.91	29.93%
30.00° - 40.00°	220.63	8.53%
40.00° - 50.00°	38.65	1.49%
50.00° - 60.00°	23.68	0.92%
60.00° - 70.00°	20.09	0.78%
70.00° - 80.00°	13.83	0.53%
80.00° - 90.00°	5.02	0.19%
0.00° - 90.00°	2573.05	99.52%

Zone	Lumens	% Fixture
90.00° - 100.00°	2.06	0.08%
100.00° - 110.00°	1.88	0.07%
100.00° - 120.00°	3.63	0.14%
120.00° - 130.00°	1.65	0.06%
130.00° - 140.00°	1.59	0.06%
140.00° - 150.00°	1.49	0.06%
150.00° - 160.00°	1.10	0.04%
160.00° - 170.00°	0.70	0.03%
170.00° - 180.00°	0.23	0.01%
0.00° - 180.00°	2585.49	100.00%

SPECTRUM LIGHTING INC.

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°	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24	5401.24
2.50°	5322.04	5334.56	5315.05	5307.18	5345.45	5352.50	5339.79	5337.72	5320.77	5326.13	5325.76	5318.16	5361.56	5387.88	5356.45	5360.93	5322.04
5.00°	5218.96	5164.43	5174.71	5198.89	5239.08	5171.13	5224.80	5184.01	5203.96	5168.58	5178.30	5229.80	5269.63	5220.40	5240.78	5204.06	5218.96
7.50°	4909.18	4909.16	4883.57	4877.42	4908.34	4927.14	4915.99	4911.70	4891.94	4907.39	4893.01	4913.73	4961.03	5002.29	4947.60	4940.48	4909.18
10.00°	4576.73	4531.98	4515.79	4540.75	4571.35	4535.81	4568.33	4532.49	4549.83	4519.82	4539.31	4591.94	4642.02	4626.05	4616.45	4582.10	4576.73
12.50°	4121.77	4085.58	4072.39	4079.78	4110.21	4112.10	4108.28	4094.88	4077.16	4088.44	4093.21	4125.21	4179.37	4207.83	4174.63	4148.92	4121.77
15.00°	3657.85	3616.38	3595.04	3615.16	3646.79	3622.37	3629.95	3610.76	3604.96	3609.16	3625.95	3656.95	3710.88	3716.56	3711.43	3676.63	3657.85
17.50°	3162.55	3135.88	3119.99	3127.99	3156.55	3143.64	3153.40	3136.99	3134.44	3130.75	3133.10	3149.11	3186.66	3208.97	3193.91	3177.13	3162.55
20.00°	2665.91	2652.60	2645.82	2650.54	2673.32	2684.83	2677.08	2670.61	2670.01	2653.22	2644.71	2641.01	2661.77	2682.40	2672.77	2666.61	2665.91
22.50°	2156.10	2168.10	2190.44	2221.58	2249.33	2242.55	2251.60	2231.41	2224.31	2183.39	2161.18	2129.25	2132.29	2152.43	2143.69	2149.24	2156.10
25.00°	1647.15	1698.64	1741.26	1793.71	1825.82	1826.88	1830.67	1809.28	1782.27	1720.23	1683.62	1623.46	1613.94	1638.10	1630.68	1643.17	1647.15
27.50°	1199.64	1234.85	1317.63	1370.32	1405.24	1417.74	1419.65	1398.14	1350.01	1288.10	1211.80	1174.44	1157.46	1126.00	1148.32	1143.26	1199.64
30.00°	759.92	852.90	901.26	968.36	1000.64	1017.83	1009.16	993.15	948.13	879.75	815.95	745.62	732.41	752.85	731.04	751.50	759.92
32.50°	476.92	497.73	590.19	640.40	675.60	672.55	689.27	663.77	616.16	557.47	484.59	462.10	447.65	394.15	424.12	411.10	476.92
35.00°	209.61	297.63	303.94	357.65	382.62	395.54	372.11	371.26	343.53	294.21	267.83	210.15	207.02	243.83	206.88	229.99	209.61
37.50°	137.56	140.22	182.49	206.88	222.62	206.93	231.02	210.82	191.37	153.64	138.26	133.29	132.26	108.51	125.21	115.49	137.56
40.00°	71.39	86.07	93.28	91.89	92.29	117.40	93.80	107.18	86.09	88.21	74.66	67.77	71.65	78.86	71.51	72.40	71.39
42.50°	57.21	55.95	64.76	67.92	66.34	64.55	68.87	66.79	63.88	57.91	55.95	54.00	55.61	53.21	55.07	55.42	57.21
45.00°	44.15	44.47	45.55	49.18	45.34	48.59	45.07	49.80	47.00	46.45	44.53	41.95	42.49	43.59	42.85	46.05	44.15
47.50°	38.48	36.49	39.43	42.14	39.02	38.37	37.75	41.02	38.53	39.16	37.47	36.35	37.32	34.27	35.61	39.05	38.48
50.00°	33.12	31.60	34.86	36.01	33.65	33.25	30.86	34.89	32.11	33.82	33.43	31.46	32.15	31.68	29.99	34.51	33.12
52.50°	29.35	27.17	30.51	31.68	30.65	30.00	28.16	30.14	28.57	30.52	30.98	28.85	27.00	29.00	26.09	30.62	29.35
55.00°	25.92	24.87	26.18	27.64	27.67	28.22	25.47	25.77	25.63	28.05	28.17	26.28	22.86	24.72	22.41	26.93	25.92
57.50°	23.88	22.82	24.58	24.09	24.74	25.75	22.87	24.63	23.43	25.83	25.19	23.82	20.77	20.65	18.94	23.30	23.88
60.00°	22.02	21.37	23.12	21.81	22.66	22.79	20.88	24.22	22.13	23.70	23.16	21.89	19.17	19.06	17.42	21.04	22.02
62.50°	20.83	19.98	22.69	21.44	22.28	21.57	22.37	23.65	21.81	22.71	21.50	21.24	18.46	17.54	17.55	19.04	20.83
65.00°	19.76	18.78	22.28	21.57	21.85	21.44	23.43	23.05	21.62	22.08	20.15	20.36	17.73	16.73	17.43	19.06	19.76
67.50°	19.03	17.58	21.08	22.38	21.34	21.51	22.52	21.93	21.55	19.91	18.91	19.04	16.98	15.77	17.13	19.36	19.03
70.00°	17.65	16.78	19.87	21.48	20.70	21.70	21.19	20.73	19.47	17.35	17.36	16.90	15.54	13.82	14.57	16.37	17.65
72.50°	14.57	15.95	18.16	18.54	19.87	19.45	18.22	18.63	15.65	14.63	15.72	13.30	13.13	11.77	10.52	13.06	14.57
75.00°	11.67	13.21	16.30	15.39	17.85	16.05	15.38	16.44	13.33	11.87	13.17	10.33	10.43	9.15	8.31	10.33	11.67
77.50°	9.17	10.48	12.41	12.03	14.23	13.26	12.92	13.78	12.19	9.72	10.41	8.35	7.36	6.74	7.17	7.65	9.17
80.00°	6.83	7.92	8.71	9.58	11.04	10.73	10.40	11.07	9.84	7.68	7.86	6.48	5.27	5.17	5.46	6.94	6.83
82.50°	4.79	5.46	6.71	7.99	8.38	7.93	7.72	8.30	6.66	5.93	5.36	4.78	4.27	3.74	3.47	6.30	4.79
85.00°	3.17	4.18	4.77	5.94	6.02	5.04	5.32	5.52	4.52	4.22	4.04	3.34	3.43	2.81	2.32	4.29	3.17
87.50°	2.25	3.00	3.21	3.52	3.96	3.41	3.56	3.75	3.03	2.94	2.91	2.21	2.75	2.00	1.55	2.31	2.25
90.00°	1.83	2.67	1.88	2.21	2.72	2.18	2.22	2.03	2.35	1.70	2.44	1.66	2.20	1.55	1.56	2.08	1.83
92.50°	2.17	2.38	1.83	1.74	2.26	1.82	1.74	2.14	2.10	1.54	2.05	1.77	1.79	1.30	1.87	1.87	2.17
95.00°	2.28	2.38	1.83	1.63	2.14	1.70	1.41	2.23	1.86	1.45	1.96	1.74	1.68	1.58	1.68	2.02	2.28
97.50°	2.08	2.34	2.07	1.76	2.32	1.55	1.38	2.07	1.64	1.62	1.90	1.56	1.80	1.82	1.32	2.13	2.08
100.00°	2.02	2.09	2.18	1.77	2.27	1.39	1.36	1.92	1.68	1.80	2.08	1.54	1.88	1.97	1.42	1.88	2.02

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	3075	3075	3075	3075	3002	3002	3002	3002	2866	2866	2866	2741	2741	2741	2627	2627	2627	2573
	1	2945	2879	2820	2767	2881	2823	2770	2722	2716	2675	2637	2619	2586	2556	2529	2504	2480	2453
	2	2820	2707	2614	2535	2764	2662	2578	2506	2578	2509	2450	2500	2445	2396	2428	2384	2344	2337
	3	2702	2556	2442	2352	2652	2520	2416	2332	2452	2365	2294	2389	2317	2257	2331	2272	2221	2228
	4	2591	2420	2295	2200	2546	2391	2276	2186	2336	2238	2160	2285	2201	2134	2237	2167	2109	2126
RCR	5	2486	2299	2168	2071	2446	2275	2153	2062	2229	2124	2043	2187	2096	2024	2147	2069	2006	2032
	6	2388	2189	2055	1959	2352	2169	2043	1952	2131	2021	1938	2095	1999	1925	2062	1978	1912	1944
	7	2295	2088	1954	1860	2262	2071	1945	1855	2039	1927	1845	2009	1909	1835	1981	1892	1825	1861
	8	2207	1996	1863	1771	2178	1981	1855	1767	1954	1841	1760	1929	1827	1752	1905	1813	1745	1785
	9	2125	1911	1780	1691	2099	1899	1773	1688	1875	1762	1682	1853	1750	1676	1832	1739	1670	1713
	10	2048	1832	1703	1618	2024	1822	1698	1615	1802	1689	1611	1782	1679	1606	1764	1670	1602	1646

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	178.6 fc	4.0 ft
6.5 ft	127.8 fc	4.7 ft
7.5 ft	96.0 fc	5.4 ft
8.0 ft	84.4 fc	5.8 ft
10.0 ft	54.0 fc	7.2 ft
12.0 ft	37.5 fc	8.7 ft
14.0 ft	27.6 fc	10.1 ft
16.0 ft	21.1 fc	11.5 ft
20.0 ft	13.5 fc	14.4 ft
24.0 ft	9.4 fc	17.3 ft
28.0 ft	6.9 fc	20.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1184387	1184387	1184387
45.00°	13691	14124	14060
55.00°	9909	10010	10579
65.00°	10251	11558	11337
75.00°	9888	13806	15126
85.00°	7964	12009	15139

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	9.9	10.8	10.3	11.1	11.5	10.2	11.2	10.6	11.5	11.8
	3H	12.4	13.2	12.8	13.5	13.9	12.8	13.6	13.2	14.0	14.4
	4H	13.2	14.0	13.6	14.3	14.7	13.8	14.6	14.3	15.0	15.4
	6H	13.7	14.4	14.2	14.8	15.2	14.5	15.2	15.0	15.6	16.0
	8H	13.9	14.5	14.3	15.0	15.4	14.8	15.4	15.2	15.8	16.2
	12H	14.0	14.6	14.5	15.0	15.5	15.0	15.6	15.4	16.0	16.4
4H	2H	10.6	11.4	11.0	11.7	12.1	11.0	11.8	11.5	12.2	12.6
	3H	13.3	13.9	13.7	14.3	14.7	13.8	14.4	14.2	14.9	15.3
	4H	14.2	14.7	14.6	15.2	15.6	14.9	15.5	15.3	15.9	16.3
	6H	14.8	15.3	15.3	15.8	16.3	15.7	16.2	16.2	16.6	17.1
	8H	15.0	15.5	15.5	16.0	16.4	16.0	16.4	16.5	16.9	17.4
	12H	15.2	15.6	15.7	16.1	16.6	16.2	16.6	16.7	17.1	17.6
8H	4H	14.5	15.0	15.0	15.4	15.9	15.3	15.7	15.7	16.2	16.6
	6H	15.3	15.7	15.8	16.2	16.7	16.2	16.6	16.7	17.1	17.6
	8H	15.6	15.9	16.2	16.5	17.0	16.6	16.9	17.1	17.4	17.9
	12H	15.9	16.2	16.5	16.7	17.3	16.9	17.2	17.5	17.7	18.3
12H	4H	14.5	14.9	15.0	15.4	15.9	15.3	15.7	15.8	16.2	16.7
	6H	15.4	15.7	15.9	16.2	16.7	16.3	16.6	16.8	17.1	17.6
	8H	15.8	16.0	16.3	16.5	17.1	16.7	17.0	17.3	17.5	18.1

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0