

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407PC 20L 35K WD xx SO xx MW
Nom. 4.5" Diam x 7"H Round Cylinder, Wide Beam

Test Number

SP-01444_M-20L

Test Date

10/26/2022

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

Summary of Results

Power

Input Watts	13.2 W
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Lumen Output

Output Lumens	1380
Efficacy	104.54 lm/W

Luminous Dimensions

0° - 180° Size	-0.38
90° - 270° Size	-0.38
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.61
Two luminaires, plane 90°	0.6
Four luminaires	0.64

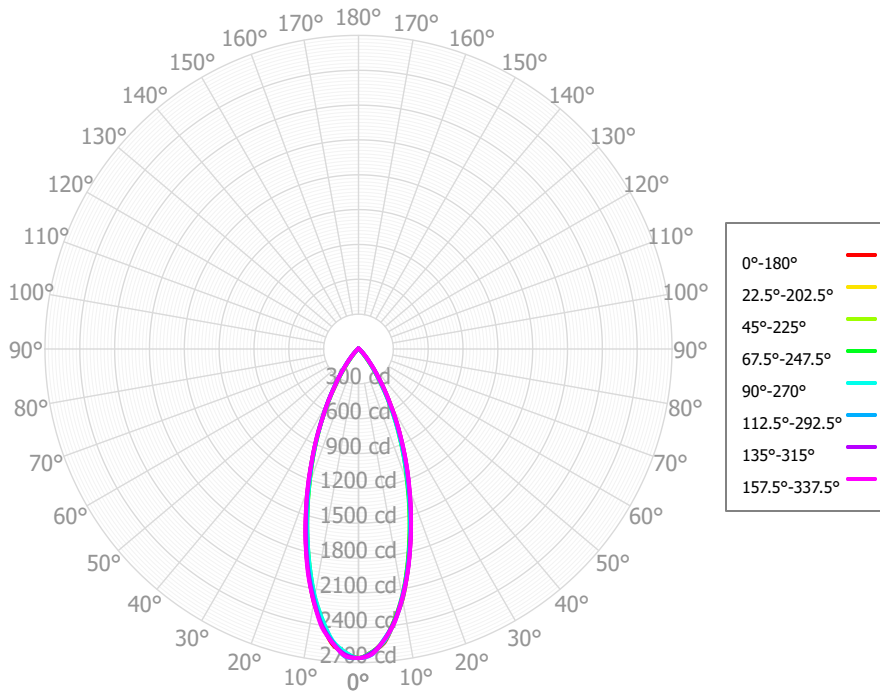
Full Beam Angle

0° - 180°	39°
90° - 270°	38°

IES File Header Contents

Keyword	Value
TEST	SP-01444_M-20L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/26/2022
ISSUEDATE	11/22/2022
LUMCAT	CK0407PC 20L 35K WD xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Round Cylinder, Wide Beam
OTHER	Solite lens, Matte White finish
OTHER	39 Degree Beam Angle
OTHER	Reference Project SL378
LAMP	N/A
LAMPCAT	N/A, Min. 80 CRI
OTHER	Total Luminaire Watts is approximate
OTHER	CCT Multipliers: 27K x 0.95, 30K x 0.97, 40K x 1.03
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	232.84	16.87%	90.00° - 100.00°	1.90	0.14%
10.00° - 20.00°	471.41	34.16%	100.00° - 110.00°	1.85	0.13%
20.00° - 30.00°	391.01	28.34%	100.00° - 120.00°	3.63	0.26%
30.00° - 40.00°	181.69	13.17%	120.00° - 130.00°	1.66	0.12%
40.00° - 50.00°	52.63	3.81%	130.00° - 140.00°	1.51	0.11%
50.00° - 60.00°	18.75	1.36%	140.00° - 150.00°	1.32	0.10%
60.00° - 70.00°	11.12	0.81%	150.00° - 160.00°	0.97	0.07%
70.00° - 80.00°	6.15	0.45%	160.00° - 170.00°	0.59	0.04%
80.00° - 90.00°	2.52	0.18%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	1368.12	99.15%	0.00° - 180.00°	1379.89	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°	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37	2661.37
2.50°	2614.03	2615.66	2616.13	2611.92	2617.02	2651.30	2633.79	264717	2624.89	2629.32	2622.20	2616.80	2613.63	2634.90	2618.56	2632.45	2614.03
5.00°	2540.04	2519.79	2520.74	2531.02	2530.49	2532.01	2544.99	2542.44	2555.23	2539.57	2536.49	2534.72	2525.24	2510.66	2519.34	2518.24	2540.04
7.50°	2367.20	2361.51	2358.31	2357.61	2371.24	2404.34	2403.53	241779	2393.48	2387.95	2373.49	2361.14	2356.39	2370.63	2366.24	2377.58	2367.20
10.00°	2188.41	2167.73	2163.13	2173.10	2181.71	2190.06	2211.64	2212.52	2214.74	2193.69	2178.85	2168.90	2164.56	2163.15	2175.76	2175.59	2188.41
12.50°	1956.61	1944.73	1934.27	1932.53	1949.91	1973.56	1987.77	1998.41	1983.92	1966.58	1946.84	1933.55	1933.10	1948.18	1958.75	1962.10	1956.61
15.00°	1725.17	1709.63	1700.44	1690.05	1713.28	1729.77	1750.34	1755.81	1749.33	1728.67	1703.80	1696.81	1694.53	1711.85	1727.64	1728.52	1725.17
17.50°	1497.41	1481.77	1462.75	1455.48	1471.58	1488.49	1506.60	1512.79	1506.26	1484.35	1467.36	1457.72	1466.74	1481.83	1501.87	1501.99	1497.41
20.00°	1273.76	1256.00	1245.98	1224.50	1246.12	1262.06	1278.31	1281.86	1272.56	1259.09	1232.15	1234.47	1239.91	1264.66	1278.15	1284.66	1273.76
22.50°	1071.96	1058.77	1041.37	1027.61	1033.60	1043.16	1055.23	1054.66	1054.23	1042.09	1034.23	1031.25	1042.42	1057.76	1077.05	1079.45	1071.96
25.00°	877.48	866.98	857.71	835.72	843.68	852.99	861.53	859.72	852.70	851.92	840.08	843.72	846.97	866.76	881.87	886.16	877.48
27.50°	707.70	699.70	683.23	669.07	667.65	673.96	674.51	672.37	671.82	670.21	672.83	671.58	679.09	690.31	709.47	710.69	707.70
30.00°	547.86	534.87	530.59	511.12	518.92	523.93	528.37	521.22	513.54	517.07	507.98	517.59	516.07	530.81	540.91	548.85	547.86
32.50°	412.20	403.76	384.65	381.46	382.50	390.50	387.57	382.43	376.89	369.78	379.44	377.05	388.62	397.85	416.33	416.09	412.20
35.00°	294.36	275.61	277.19	266.75	280.82	288.26	291.62	283.65	270.40	268.05	256.40	269.35	270.52	288.23	295.31	299.95	294.36
37.50°	208.07	195.75	177.75	187.30	190.17	203.06	198.87	197.43	185.68	171.38	179.23	179.79	194.22	205.71	220.70	218.70	208.07
40.00°	140.39	120.95	123.70	122.69	134.79	142.37	145.93	139.76	127.99	121.67	110.10	122.61	127.38	141.66	148.71	151.98	140.39
42.50°	97.28	86.28	74.83	83.58	87.05	97.41	95.41	93.27	84.79	74.71	78.40	78.85	88.52	100.23	110.28	108.92	97.28
45.00°	66.16	55.19	53.84	55.24	62.96	69.50	70.44	65.96	59.05	55.18	51.05	54.88	57.30	70.21	74.39	72.98	66.16
47.50°	47.33	41.06	34.19	40.73	41.72	49.01	47.53	45.41	40.33	36.82	36.98	36.59	42.68	50.69	55.84	54.22	47.33
50.00°	33.79	29.00	27.35	29.96	32.44	34.58	36.44	33.51	30.10	28.70	25.70	28.59	30.96	35.11	39.19	38.77	33.79
52.50°	24.35	23.35	20.91	22.92	23.77	26.21	26.67	24.96	22.21	21.44	20.64	22.56	23.86	27.24	30.66	30.43	24.35
55.00°	19.24	18.58	18.11	19.17	20.51	21.66	21.60	19.65	17.99	18.50	17.00	18.50	18.89	21.32	23.46	22.81	19.24
57.50°	16.73	15.73	15.51	17.89	17.44	17.85	17.22	15.97	14.43	15.82	15.69	14.64	16.44	17.99	20.03	18.79	16.73
60.00°	14.83	13.61	13.87	15.68	16.12	14.38	14.54	13.53	12.36	14.00	14.17	13.08	14.56	15.05	16.62	14.99	14.83
62.50°	13.21	12.74	12.46	12.92	14.66	12.72	12.32	11.82	10.42	12.00	12.38	11.58	13.21	13.43	13.22	13.91	13.21
65.00°	11.97	11.45	11.81	11.16	12.38	11.67	10.94	10.52	9.58	9.57	10.74	10.01	11.70	11.90	10.86	12.77	11.97
67.50°	10.86	9.65	10.79	9.82	10.20	10.49	9.57	9.13	8.70	7.71	9.24	8.56	10.10	9.94	10.07	11.13	10.86
70.00°	8.97	8.24	8.93	8.32	8.34	9.27	8.21	7.71	6.91	6.83	8.17	7.93	8.80	8.04	9.04	9.43	8.97
72.50°	6.92	7.21	7.30	6.77	6.78	7.51	6.82	6.41	5.26	6.06	7.40	7.19	7.66	7.13	7.71	7.52	6.92
75.00°	6.15	6.23	6.05	5.51	5.93	5.68	5.39	5.15	4.61	5.42	6.23	5.95	6.38	6.14	6.54	5.68	6.15
77.50°	5.52	5.30	4.80	4.30	5.03	4.60	4.02	3.92	3.92	4.43	4.83	4.71	5.06	4.60	5.52	4.10	5.52
80.00°	4.15	4.00	3.55	3.59	4.08	3.57	2.70	2.71	3.11	3.09	3.58	3.49	3.66	3.20	4.34	2.89	4.15
82.50°	2.78	2.49	2.68	2.94	3.23	2.75	2.09	2.16	2.43	2.44	2.39	2.49	2.24	2.43	3.06	2.51	2.78
85.00°	2.12	1.96	2.18	2.27	2.54	2.01	1.93	1.68	2.14	2.32	2.06	2.01	1.95	1.86	2.48	2.21	2.12
87.50°	1.55	1.82	1.82	1.62	2.12	1.92	1.73	1.93	1.88	2.12	1.97	1.86	1.86	1.87	2.25	2.02	1.55
90.00°	1.76	1.76	1.57	1.68	1.98	1.84	1.52	2.17	1.67	1.87	2.14	2.22	1.63	1.85	2.02	1.83	1.76
92.50°	1.90	1.73	1.55	1.71	1.89	1.72	1.70	1.86	1.59	1.69	2.36	2.30	1.39	1.76	1.78	1.63	1.90
95.00°	1.73	1.62	1.66	1.56	1.82	1.65	2.01	1.57	1.72	1.54	1.99	2.03	1.55	1.67	1.74	1.53	1.73
97.50°	1.61	1.49	1.76	1.45	1.68	1.70	1.95	1.52	1.74	1.78	1.58	2.00	1.73	1.59	1.76	1.52	1.61
100.00°	1.68	1.43	1.84	1.55	1.50	1.77	1.82	1.46	1.63	2.13	1.62	2.21	2.12	1.73	1.66	1.57	1.68

CK0407PC 20L 35K WD xx SO xx MW

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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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	1640	1640	1640	1640	1600	1600	1600	1600	1527	1527	1527	1459	1459	1459	1397	1397	1368
	1	1567	1530	1498	1468	1532	1500	1470	1444	1442	1419	1397	1389	1370	1354	1340	1326	1298
	2	1496	1432	1380	1336	1465	1408	1360	1320	1362	1323	1289	1319	1288	1260	1280	1255	1229
	3	1428	1345	1281	1230	1400	1325	1267	1219	1288	1239	1199	1254	1213	1179	1221	1188	1165
	4	1364	1267	1197	1143	1339	1251	1186	1135	1221	1165	1121	1192	1145	1107	1166	1126	1105
	5	1304	1198	1123	1069	1281	1184	1115	1063	1159	1099	1053	1135	1083	1043	1113	1069	1049
	6	1247	1134	1059	1004	1227	1123	1052	1001	1102	1040	993	1082	1027	985	1064	1016	998
	7	1194	1077	1001	948	1176	1068	996	945	1050	986	939	1033	976	934	1017	967	950
	8	1145	1025	949	898	1128	1017	945	896	1001	937	891	987	929	887	974	922	907
	9	1098	977	903	853	1083	970	899	851	957	893	848	945	886	844	933	880	866
	10	1055	933	861	812	1042	927	858	811	916	852	808	905	847	805	895	841	829

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	88.0 fc	3.9 ft
6.5 ft	63.0 fc	4.6 ft
7.5 ft	47.3 fc	5.3 ft
8.0 ft	41.6 fc	5.6 ft
10.0 ft	26.6 fc	7.0 ft
12.0 ft	18.5 fc	8.4 ft
14.0 ft	13.6 fc	9.8 ft
16.0 ft	10.4 fc	11.3 ft
20.0 ft	6.7 fc	14.1 ft
24.0 ft	4.6 fc	16.9 ft
28.0 ft	3.4 fc	19.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	252591	252591	252591
45.00°	8880	7226	8450
55.00°	3184	2997	3394
65.00°	2689	2651	2781
75.00°	2254	2218	2173
85.00°	2313	2375	2762

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	7.0	7.9	7.4	8.3	8.6	6.7	7.6	7.0	8.0	8.3
	3H	8.5	9.4	8.9	9.7	10.1	8.2	9.0	8.6	9.4	9.7
	4H	9.0	9.8	9.4	10.2	10.6	8.7	9.5	9.1	9.9	10.3
	6H	9.5	10.2	9.9	10.6	11.0	9.2	9.9	9.6	10.3	10.7
	8H	9.6	10.3	10.1	10.7	11.1	9.3	10.0	9.8	10.4	10.8
	12H	9.7	10.4	10.2	10.8	11.2	9.5	10.1	9.9	10.5	10.9
4H	2H	7.3	8.1	7.8	8.5	8.9	7.0	7.8	7.5	8.2	8.6
	3H	9.1	9.7	9.5	10.2	10.6	8.8	9.4	9.2	9.8	10.3
	4H	9.7	10.3	10.2	10.7	11.2	9.4	10.0	9.9	10.5	10.9
	6H	10.3	10.8	10.8	11.2	11.7	10.0	10.5	10.5	11.0	11.4
	8H	10.5	10.9	11.0	11.4	11.9	10.2	10.6	10.7	11.1	11.6
	12H	10.6	11.0	11.1	11.5	12.0	10.4	10.8	10.9	11.3	11.8
8H	4H	9.9	10.4	10.4	10.8	11.3	9.6	10.0	10.1	10.5	11.0
	6H	10.6	11.0	11.1	11.5	12.0	10.3	10.6	10.8	11.1	11.7
	8H	10.8	11.2	11.4	11.7	12.2	10.5	10.9	11.1	11.4	11.9
	12H	11.1	11.4	11.6	11.9	12.5	10.9	11.1	11.4	11.6	12.2
12H	4H	9.9	10.3	10.4	10.8	11.3	9.6	10.0	10.1	10.5	11.0
	6H	10.6	10.9	11.2	11.4	12.0	10.3	10.6	10.8	11.1	11.6
	8H	10.9	11.2	11.5	11.7	12.3	10.6	10.9	11.1	11.4	12.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0