

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01445_M-20L

Test Date

11/28/2022

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

Summary of Results

Power

Input Watts	13.2 W
-------------	--------

Lumen Output

Output Lumens	1359
Efficacy	102.93 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.99
Two luminaires, plane 90°	0.99
Four luminaires	0.93

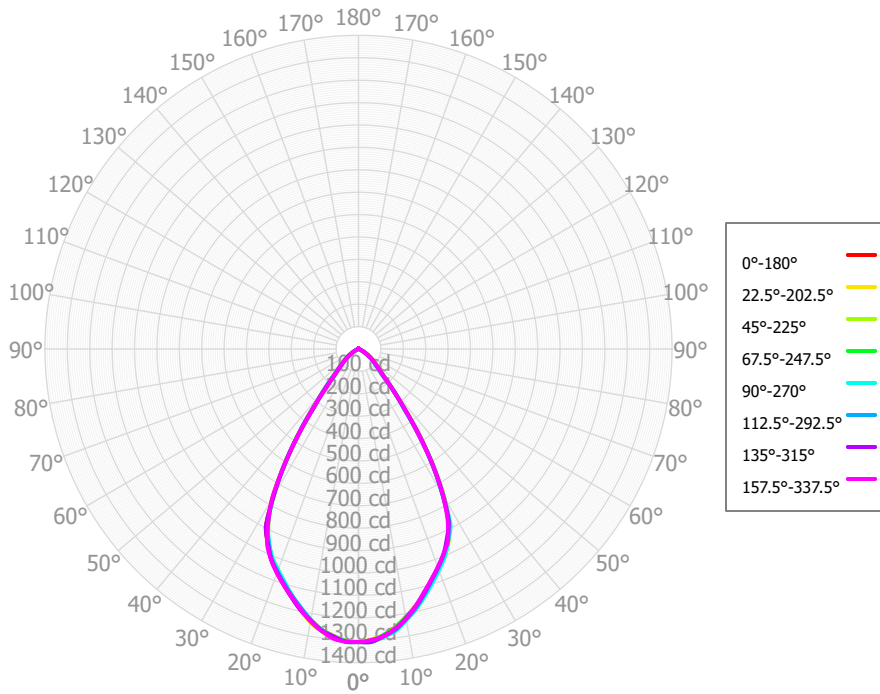
Full Beam Angle

0° - 180°	64°
90° - 270°	64°

IES File Header Contents

Keyword	Value
TEST	SP-01445_M-20L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/28/2022
ISSUEDATE	12/1/2022
LUMCAT	CK0407PC 20L 35K XW xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Round Cylinder, Xtra Wide Beam
OTHER	No lens, Matte White finish
OTHER	64 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°	122.72	9.03%	90.00° - 100.00°	1.69	0.12%
10.00° - 20.00°	319.76	23.53%	100.00° - 110.00°	1.71	0.13%
20.00° - 30.00°	428.05	31.50%	100.00° - 120.00°	3.36	0.25%
30.00° - 40.00°	295.16	21.72%	120.00° - 130.00°	1.45	0.11%
40.00° - 50.00°	107.96	7.95%	130.00° - 140.00°	1.26	0.09%
50.00° - 60.00°	51.78	3.81%	140.00° - 150.00°	1.15	0.08%
60.00° - 70.00°	16.34	1.20%	150.00° - 160.00°	0.82	0.06%
70.00° - 80.00°	4.43	0.33%	160.00° - 170.00°	0.52	0.04%
80.00° - 90.00°	2.06	0.15%	170.00° - 180.00°	0.18	0.01%
0.00° - 90.00°	1348.25	99.23%	0.00° - 180.00°	1358.67	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°	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58	1308.58
2.50°	1306.68	1297.70	1306.05	1302.28	1309.10	1307.17	1308.33	1307.74	1305.37	1304.85	1305.70	1304.36	1309.06	1306.57	1309.09	1300.68	1306.68
5.00°	1283.20	1282.85	1283.04	1282.31	1289.75	1289.54	1288.99	1297.92	1285.95	1295.35	1286.98	1288.92	1289.93	1288.59	1286.28	1287.26	1283.20
7.50°	1253.74	1254.65	1255.10	1255.49	1269.39	1265.43	1268.35	1268.35	1264.03	1271.02	1265.79	1264.44	1268.74	1265.30	1260.25	1258.77	1253.74
10.00°	1215.98	1217.60	1219.10	1217.92	1229.45	1227.97	1231.62	1234.91	1229.05	1239.36	1228.57	1230.24	1230.89	1226.25	1220.31	1222.38	1215.98
12.50°	1175.64	1176.46	1180.95	1177.96	1189.34	1183.97	1194.49	1190.80	1192.89	1192.52	1190.39	1187.67	1190.73	1184.67	1177.97	1176.87	1175.64
15.00°	1129.96	1132.30	1136.26	1133.79	1142.68	1141.76	1149.82	1147.57	1149.48	1146.23	1144.30	1142.85	1142.77	1134.52	1130.53	1125.96	1129.96
17.50°	1082.35	1088.94	1089.52	1090.05	1096.01	1100.52	1105.18	1107.01	1106.04	1101.23	1098.32	1095.88	1093.43	1085.47	1082.01	1079.76	1082.35
20.00°	1040.18	1046.25	1046.92	1047.20	1050.50	1057.75	1061.76	1065.30	1062.33	1056.33	1053.51	1050.92	1049.82	1040.73	1036.52	1036.60	1040.18
22.50°	1000.18	1000.49	1005.76	1001.05	1004.99	1014.06	1018.31	1019.46	1017.33	1011.69	1007.99	1008.10	1007.42	994.50	991.78	991.41	1000.18
25.00°	942.62	951.97	946.24	947.67	947.42	951.58	957.22	964.77	958.90	956.93	951.12	949.19	946.86	941.24	934.04	944.75	942.62
27.50°	877.06	870.28	879.33	874.01	889.56	876.30	896.13	873.38	895.64	872.28	891.41	871.74	881.81	876.42	872.56	862.68	877.06
30.00°	763.49	755.08	762.30	749.65	756.62	761.09	758.69	771.79	760.90	773.02	757.70	764.78	758.80	748.51	755.71	752.29	763.49
32.50°	625.47	623.40	622.64	619.09	619.61	615.83	619.21	620.42	625.61	623.44	623.87	619.75	618.84	618.40	620.25	620.64	625.47
35.00°	484.87	473.60	480.88	471.36	474.00	472.20	470.57	471.66	475.35	477.35	476.79	477.63	476.29	473.16	479.55	470.25	484.87
37.50°	342.82	344.41	338.05	335.91	327.69	329.93	321.43	338.69	326.08	345.13	329.71	339.65	332.86	333.73	336.90	342.04	342.82
40.00°	245.42	240.54	242.84	240.00	239.70	228.98	236.10	216.13	242.76	227.32	244.51	232.76	242.61	245.00	243.75	235.68	245.42
42.50°	176.53	167.83	174.77	158.50	158.20	165.84	155.91	168.91	159.44	176.74	160.26	174.90	172.52	161.03	171.85	165.94	176.53
45.00°	135.06	137.40	134.46	130.32	125.99	122.77	125.14	124.20	130.58	130.41	131.85	130.25	133.39	132.77	131.79	135.42	135.06
47.50°	112.69	112.77	111.44	104.25	101.00	99.94	100.01	103.72	102.43	108.44	105.74	109.03	107.47	105.13	107.02	110.85	112.69
50.00°	94.14	96.84	92.08	87.27	83.68	80.59	82.56	83.68	85.90	87.28	88.50	89.62	89.68	88.95	88.91	93.42	94.14
52.50°	78.57	80.78	75.26	70.68	67.69	65.17	66.18	69.60	69.82	71.83	71.90	73.72	75.77	72.85	74.36	76.28	78.57
55.00°	63.56	64.52	59.66	56.13	53.98	50.95	51.74	55.51	55.45	56.60	57.06	58.18	60.37	59.22	60.11	59.53	63.56
57.50°	49.02	49.23	45.01	41.93	40.75	38.25	37.63	41.49	41.21	43.29	42.39	43.42	44.17	45.58	46.05	45.06	49.02
60.00°	36.80	35.73	33.00	29.87	30.09	27.50	27.47	27.59	31.20	30.37	31.62	30.50	32.18	33.98	33.94	33.93	36.80
62.50°	26.77	24.35	23.24	18.65	20.08	19.45	18.15	20.40	21.60	22.41	21.36	22.14	22.74	22.38	23.13	24.45	26.77
65.00°	18.63	17.42	15.89	14.12	13.97	12.93	12.61	13.21	15.19	14.65	14.85	14.88	15.79	15.82	15.58	17.66	18.63
67.50°	12.47	11.44	10.84	9.77	9.01	8.78	8.02	9.94	9.16	10.63	8.96	10.70	10.51	9.37	10.44	12.01	12.47
70.00°	8.08	7.67	7.30	7.37	6.77	5.82	5.97	6.71	6.70	6.67	6.55	7.07	7.11	6.93	7.03	8.40	8.08
72.50°	5.74	4.71	5.33	5.08	5.46	4.85	4.67	5.17	4.81	5.05	4.82	5.21	5.12	4.67	5.05	5.60	5.74
75.00°	4.05	3.87	3.96	4.48	4.19	3.92	3.72	3.68	3.79	3.43	3.58	3.63	3.78	3.70	3.58	4.47	4.05
77.50°	3.20	3.19	3.26	3.87	2.93	3.09	2.90	3.44	2.94	3.15	2.46	3.08	2.96	2.83	2.59	3.43	3.20
80.00°	2.52	2.98	2.66	3.16	2.24	2.36	2.26	3.28	2.46	2.87	2.04	2.59	2.36	2.51	2.08	2.64	2.52
82.50°	2.07	2.68	2.18	2.46	1.78	1.82	1.68	2.82	2.06	2.17	1.81	2.39	1.96	2.25	2.06	1.94	2.07
85.00°	1.79	2.09	1.87	2.14	1.55	1.47	1.47	2.34	1.85	1.45	1.64	2.16	1.61	1.74	1.92	1.47	1.79
87.50°	1.76	1.60	1.82	1.82	1.44	1.58	1.42	2.16	1.69	1.48	1.48	1.82	1.33	1.19	1.64	1.12	1.76
90.00°	1.74	1.51	1.74	1.69	1.47	1.68	1.41	2.02	1.62	1.55	1.56	1.51	1.25	1.09	1.56	1.10	1.74
92.50°	1.72	1.45	1.63	1.56	1.58	1.75	1.42	1.80	1.58	1.41	1.74	1.46	1.38	1.07	1.71	1.16	1.72
95.00°	1.62	1.58	1.56	1.56	1.62	1.81	1.38	1.57	1.60	1.26	1.61	1.44	1.46	1.24	1.73	1.50	1.62
97.50°	1.40	1.67	1.53	1.56	1.62	1.81	1.31	1.84	1.63	1.37	1.35	1.76	1.48	1.46	1.60	1.73	1.40
100.00°	1.26	1.54	1.54	1.42	1.72	1.83	1.50	2.21	1.70	1.51	1.27	2.04	1.48	1.43	1.51	1.61	1.26

CK0407PC 20L 35K XW xx NL xx MW

© Spectrum Lighting

Page 4 of 6

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	1615	1615	1615	1615	1576	1576	1576	1576	1504	1504	1504	1438	1438	1438	1377	1377	1348
	1	1533	1492	1456	1424	1498	1462	1429	1400	1405	1379	1355	1352	1332	1312	1304	1288	1261
	2	1449	1378	1319	1270	1418	1354	1300	1254	1307	1263	1225	1265	1229	1197	1226	1196	1172
	3	1369	1275	1202	1144	1340	1255	1188	1134	1217	1161	1115	1182	1135	1096	1150	1111	1089
	4	1293	1183	1102	1040	1267	1166	1091	1033	1135	1071	1020	1106	1051	1007	1079	1032	1012
	5	1222	1100	1015	952	1198	1086	1007	947	1060	991	938	1036	976	928	1013	961	943
	6	1155	1026	939	877	1134	1014	933	873	992	920	866	972	908	859	952	896	880
	7	1094	959	872	811	1074	949	867	808	931	857	803	913	847	798	896	838	823
	8	1037	899	813	753	1019	891	809	751	875	800	747	859	792	743	845	785	772
	9	984	845	760	702	968	838	756	701	824	750	698	811	743	695	798	737	725
	10	935	796	713	657	920	790	710	656	777	704	653	766	699	651	755	693	683

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	43.3 fc	6.9 ft
6.5 ft	31.0 fc	8.1 ft
7.5 ft	23.3 fc	9.4 ft
8.0 ft	20.4 fc	10.0 ft
10.0 ft	13.1 fc	12.5 ft
12.0 ft	9.1 fc	15.0 ft
14.0 ft	6.7 fc	17.5 ft
16.0 ft	5.1 fc	20.0 ft
20.0 ft	3.3 fc	25.0 ft
24.0 ft	2.3 fc	30.0 ft
28.0 ft	1.7 fc	35.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	124198	124198	124198
45.00°	18129	18048	16910
55.00°	10517	9872	8932
65.00°	4183	3569	3138
75.00°	1484	1450	1537
85.00°	1950	2040	1693

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	13.9	15.0	14.3	15.3	15.6	12.9	14.0	13.3	14.3	14.6
	3H	14.0	15.0	14.4	15.3	15.7	13.0	13.9	13.4	14.3	14.7
	4H	14.0	14.9	14.4	15.2	15.7	13.0	13.9	13.4	14.2	14.6
	6H	14.0	14.8	14.4	15.1	15.6	13.0	13.7	13.4	14.1	14.5
	8H	13.9	14.7	14.4	15.1	15.5	12.9	13.7	13.4	14.1	14.5
	12H	13.9	14.6	14.4	15.0	15.5	12.9	13.6	13.4	14.0	14.5
4H	2H	13.8	14.7	14.3	15.1	15.5	12.8	13.7	13.3	14.1	14.5
	3H	14.0	14.7	14.4	15.1	15.6	13.0	13.7	13.4	14.1	14.5
	4H	14.0	14.6	14.4	15.1	15.5	13.0	13.6	13.4	14.0	14.5
	6H	14.0	14.5	14.5	15.0	15.5	13.0	13.5	13.5	14.0	14.5
	8H	14.0	14.5	14.5	14.9	15.4	13.0	13.5	13.5	13.9	14.4
	12H	14.0	14.4	14.5	14.9	15.4	13.0	13.4	13.5	13.9	14.4
8H	4H	13.9	14.4	14.4	14.8	15.3	12.9	13.4	13.4	13.8	14.3
	6H	13.9	14.3	14.4	14.8	15.3	12.9	13.3	13.4	13.8	14.3
	8H	13.9	14.2	14.4	14.8	15.3	12.9	13.3	13.4	13.8	14.3
	12H	13.9	14.2	14.5	14.8	15.4	13.0	13.3	13.5	13.8	14.4
12H	4H	13.8	14.2	14.3	14.7	15.2	12.8	13.2	13.3	13.7	14.2
	6H	13.8	14.2	14.4	14.7	15.2	12.8	13.2	13.4	13.7	14.2
	8H	13.9	14.2	14.4	14.7	15.3	12.9	13.2	13.4	13.7	14.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0