

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

CK0407SQPC 20L 35K WD xx SO xx MW
Nom. 4.5" Diam x 7"H Square Cylinder, Wide Beam

Test Number

SP-01452_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	965
Efficacy	73.08 lm/W

Luminous Dimensions

0° - 180° Size	0.2
90° - 270° Size	0.2
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.65
Two luminaires, plane 90°	0.65
Four luminaires	0.69

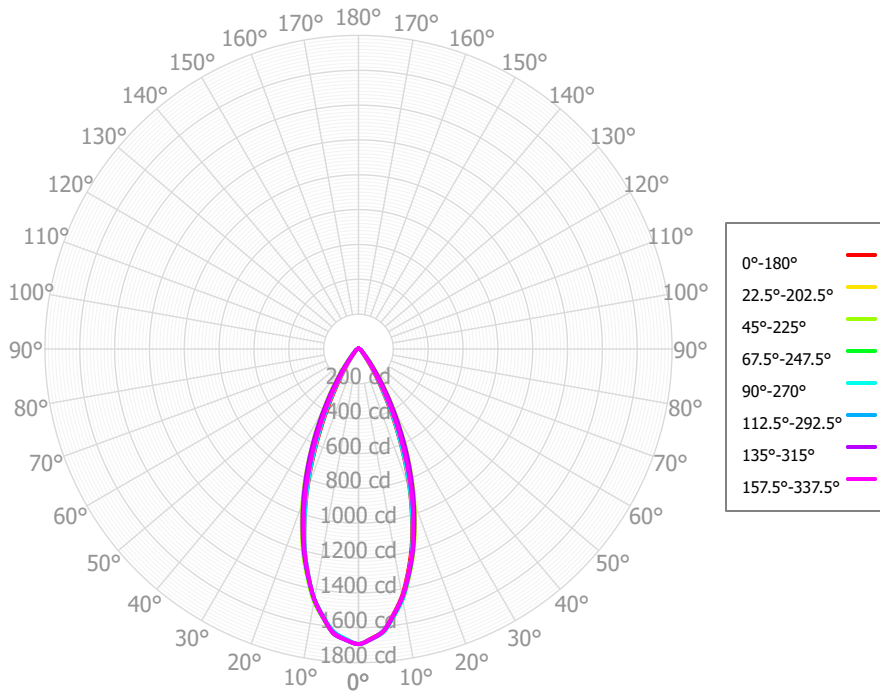
Full Beam Angle

0° - 180°	40°
90° - 270°	41°

IES File Header Contents

Keyword	Value
TEST	SP-01452_M-20L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/28/2022
ISSUEDATE	11/28/2022
LUMCAT	CK0407SQPC 20L 35K WD xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Wide Beam
OTHER	Solite lens, Matte White finish
OTHER	40 Degree Beam Angle
OTHER	Reference Project SL378
LAMP	N/A
LAMPCAT	N/A, Min. 80 CRI
OTHER	Total Luminaire Watts is approximate
OTHER	CCT Output 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°	151.58	15.71%	90.00° - 100.00°	2.14	0.22%
10.00° - 20.00°	327.41	33.94%	100.00° - 110.00°	2.05	0.21%
20.00° - 30.00°	268.65	27.85%	100.00° - 120.00°	4.05	0.42%
30.00° - 40.00°	114.28	11.85%	120.00° - 130.00°	1.83	0.19%
40.00° - 50.00°	40.47	4.19%	130.00° - 140.00°	1.58	0.16%
50.00° - 60.00°	22.53	2.34%	140.00° - 150.00°	1.35	0.14%
60.00° - 70.00°	15.57	1.61%	150.00° - 160.00°	1.03	0.11%
70.00° - 80.00°	8.53	0.88%	160.00° - 170.00°	0.61	0.06%
80.00° - 90.00°	2.88	0.30%	170.00° - 180.00°	0.21	0.02%
0.00° - 90.00°	951.90	98.67%	0.00° - 180.00°	964.70	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°	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02	1694.02
2.50°	1664.04	1664.56	1666.66	1666.83	1664.71	1671.95	1671.74	1671.89	1670.36	1670.24	1669.63	1670.84	1665.21	1667.75	1667.64	1664.82	1664.04
5.00°	1626.35	1629.91	1626.80	1632.11	1632.15	1630.79	1641.22	1637.34	1640.56	1638.02	1636.81	1637.95	1630.00	1625.15	1629.18	1627.36	1626.35
7.50°	1536.57	1541.23	1547.78	1548.11	1546.70	1555.67	1551.68	1555.34	1554.27	1555.65	1558.85	1555.51	1549.26	1543.97	1542.39	1538.64	1536.57
10.00°	1440.19	1449.76	1454.71	1459.64	1458.06	1458.84	1459.86	1461.16	1463.32	1464.50	1471.68	1465.32	1457.35	1449.06	1448.75	1446.70	1440.19
12.50°	1312.58	1323.67	1338.86	1333.80	1326.10	1337.99	1336.62	1332.68	1331.87	1338.97	1349.11	1338.63	1329.35	1325.45	1330.00	1322.24	1312.58
15.00°	1177.92	1194.03	1213.89	1203.74	1190.72	1199.04	1210.84	1197.74	1194.49	1205.75	1222.78	1206.04	1191.01	1195.14	1205.29	1195.62	1177.92
17.50°	1021.81	1043.85	1077.63	1054.44	1028.89	1044.71	1069.04	1049.97	1029.42	1052.44	1081.70	1055.22	1029.64	1041.67	1065.85	1046.82	1021.81
20.00°	861.98	892.34	937.61	903.60	866.49	886.41	926.88	897.57	862.38	894.96	939.92	903.22	866.60	885.15	925.72	896.80	861.98
22.50°	694.02	736.13	794.10	748.00	701.60	725.60	783.34	738.48	689.39	729.48	792.74	748.70	700.78	729.84	784.35	740.22	694.02
25.00°	537.07	585.38	656.15	599.67	545.15	578.33	642.40	587.88	526.95	574.09	647.80	601.89	548.47	575.26	645.78	588.41	537.07
27.50°	397.55	448.22	522.02	466.84	413.52	437.44	508.30	446.69	387.39	432.88	519.91	467.45	412.75	448.81	510.98	452.73	397.55
30.00°	281.97	327.19	406.88	350.19	298.19	329.18	386.12	328.63	270.00	314.92	397.89	352.11	301.61	326.25	391.90	330.09	281.97
32.50°	194.50	234.80	301.54	258.64	216.40	231.63	286.16	229.69	187.46	221.26	302.20	259.46	212.97	241.89	288.56	237.68	194.50
35.00°	131.66	161.58	224.98	186.74	151.17	170.57	202.60	160.17	126.29	154.22	216.21	187.76	149.71	164.33	208.00	161.70	131.66
37.50°	91.01	113.44	158.91	138.13	110.75	117.20	142.17	108.63	90.00	108.54	158.52	134.61	104.26	121.91	144.92	113.99	91.01
40.00°	65.52	79.12	118.07	101.34	79.54	88.90	98.06	78.33	64.98	78.71	110.51	97.15	75.01	84.36	103.65	78.35	65.52
42.50°	50.18	58.66	83.30	75.01	58.90	63.63	71.08	57.73	50.05	58.25	82.64	70.31	54.07	62.67	74.70	58.02	50.18
45.00°	40.24	45.58	63.84	56.73	44.97	50.04	52.85	46.00	40.01	45.60	60.20	53.86	42.29	45.18	56.61	44.09	40.24
47.50°	33.03	38.01	46.64	43.89	36.78	37.18	41.47	37.07	33.21	36.27	46.12	42.53	33.83	37.43	42.91	36.22	33.03
50.00°	29.34	32.02	39.29	35.95	31.06	32.38	33.89	31.11	29.36	30.09	36.19	34.99	28.91	31.02	35.57	30.56	29.34
52.50°	26.91	26.94	32.55	30.42	26.91	27.75	28.57	25.77	26.93	24.87	31.01	28.75	24.88	26.84	30.06	26.50	26.91
55.00°	24.32	24.05	27.87	26.93	24.03	24.57	25.25	23.51	24.20	22.87	26.68	25.54	22.65	23.46	26.09	23.98	24.32
57.50°	21.69	22.05	23.38	24.14	21.75	21.74	22.80	21.59	21.37	21.49	23.08	23.05	20.69	21.04	22.40	22.28	21.69
60.00°	18.96	20.18	20.96	21.39	19.18	20.50	20.47	19.52	18.59	19.78	20.19	20.83	18.51	18.84	20.84	20.23	18.96
62.50°	16.21	18.34	18.66	18.65	16.53	18.80	18.19	17.44	15.84	18.04	17.76	18.64	16.32	16.83	19.46	18.04	16.21
65.00°	14.94	16.44	16.96	16.19	14.51	15.68	15.33	15.47	14.37	15.29	15.70	16.22	15.22	15.09	17.38	16.21	14.94
67.50°	13.72	14.51	15.04	13.77	12.63	13.01	12.36	13.49	13.08	12.60	13.83	13.82	14.01	13.55	15.31	14.47	13.72
70.00°	11.88	12.08	12.33	12.45	10.51	11.29	11.48	11.42	10.24	11.32	12.24	12.56	11.65	11.85	13.30	12.65	11.88
72.50°	10.04	9.61	9.97	11.16	8.36	9.35	10.81	9.43	7.38	9.94	10.75	11.24	9.39	10.05	11.32	10.81	10.04
75.00°	8.23	7.60	8.40	8.67	6.59	7.07	8.40	7.81	6.51	7.80	8.98	9.27	7.68	8.22	9.42	8.68	8.23
77.50°	6.43	5.63	6.68	6.29	4.85	5.18	5.99	6.14	5.61	5.74	7.13	7.26	6.00	6.36	7.39	6.54	6.43
80.00°	4.68	4.06	4.68	4.87	3.64	3.77	4.13	4.30	4.46	4.03	5.11	5.00	4.42	4.64	4.82	4.89	4.68
82.50°	3.16	2.67	3.22	3.58	2.52	2.65	2.50	2.91	3.38	2.61	3.06	3.18	3.04	2.95	2.84	3.30	3.16
85.00°	2.41	2.30	2.46	2.90	2.19	1.79	2.44	2.44	2.67	1.99	2.56	2.80	2.15	2.43	2.43	2.42	2.41
87.50°	1.83	1.99	2.02	2.34	1.91	1.55	2.39	2.15	2.08	1.63	2.13	2.38	1.78	2.10	2.10	1.68	1.83
90.00°	1.67	1.89	1.89	2.18	1.84	1.72	2.36	2.14	1.87	1.83	2.13	1.87	2.30	2.16	1.92	1.71	1.67
92.50°	1.64	1.84	1.81	2.04	1.77	1.79	2.29	2.10	1.77	1.89	2.12	1.76	2.47	2.25	1.93	1.77	1.64
95.00°	1.80	1.97	1.76	1.96	1.69	1.83	2.14	2.03	1.93	1.73	2.03	2.32	2.21	2.14	2.19	2.00	1.80
97.50°	1.93	1.95	1.85	1.92	1.65	2.02	2.01	1.92	1.94	1.62	1.94	2.46	2.05	2.03	2.20	2.19	1.93
100.00°	2.02	1.67	2.01	1.92	1.71	2.26	1.92	1.79	1.71	1.55	1.90	2.07	1.99	1.98	1.93	2.31	2.02

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	1145	1145	1145	1145	1117	1117	1117	1117	1065	1065	1065	1017	1017	1017	973	973	952
	1	1092	1065	1041	1019	1066	1043	1021	1001	1001	984	968	963	950	937	928	918	898
	2	1039	993	954	922	1017	975	940	911	942	913	889	911	888	868	883	864	846
	3	990	929	883	845	970	915	872	838	888	852	823	863	833	808	840	815	799
	4	944	873	822	783	925	862	814	777	839	799	767	819	784	757	800	771	756
	5	900	824	770	730	884	814	764	726	795	752	719	778	741	711	762	730	716
	6	860	779	724	685	846	771	719	682	755	710	676	741	701	671	727	693	680
	7	823	739	684	645	810	732	680	643	719	673	639	706	665	635	695	659	647
	8	788	702	648	611	776	696	645	609	685	639	606	674	633	602	664	627	617
	9	756	669	615	579	745	664	613	578	654	608	576	645	603	573	636	598	589
	10	725	638	586	551	716	634	584	550	625	580	548	617	576	546	610	572	563

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	56.0 fc	4.1 ft
6.5 ft	40.1 fc	4.8 ft
7.5 ft	30.1 fc	5.5 ft
8.0 ft	26.5 fc	5.9 ft
10.0 ft	16.9 fc	7.4 ft
12.0 ft	11.8 fc	8.8 ft
14.0 ft	8.6 fc	10.3 ft
16.0 ft	6.6 fc	11.8 ft
20.0 ft	4.2 fc	14.7 ft
24.0 ft	2.9 fc	17.7 ft
28.0 ft	2.2 fc	20.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	455856	455856	455856
45.00°	15314	24296	17114
55.00°	11408	13075	11274
65.00°	9510	10801	9237
75.00°	8554	8735	6854
85.00°	7429	7606	6760

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	14.4	15.4	14.8	15.7	16.1	14.4	15.4	14.8	15.7	16.1
	3H	16.0	16.9	16.4	17.3	17.7	15.9	16.8	16.3	17.1	17.5
	4H	16.6	17.4	17.0	17.8	18.2	16.4	17.2	16.8	17.6	18.0
	6H	16.9	17.7	17.4	18.1	18.5	16.7	17.4	17.1	17.8	18.3
	8H	17.0	17.7	17.5	18.2	18.6	16.8	17.5	17.2	17.9	18.3
	12H	17.1	17.8	17.6	18.2	18.7	16.8	17.5	17.3	17.9	18.4
4H	2H	15.0	15.8	15.4	16.2	16.6	14.8	15.7	15.3	16.1	16.5
	3H	16.8	17.5	17.2	17.9	18.3	16.6	17.3	17.0	17.7	18.1
	4H	17.4	18.0	17.9	18.5	19.0	17.2	17.8	17.7	18.3	18.8
	6H	17.9	18.4	18.4	18.9	19.4	17.6	18.1	18.1	18.6	19.1
	8H	18.0	18.5	18.5	19.0	19.5	17.7	18.2	18.2	18.7	19.2
	12H	18.1	18.5	18.6	19.1	19.6	17.8	18.2	18.3	18.8	19.3
8H	4H	17.7	18.1	18.2	18.6	19.1	17.4	17.9	17.9	18.4	18.9
	6H	18.2	18.6	18.7	19.1	19.6	18.0	18.3	18.5	18.9	19.4
	8H	18.4	18.7	18.9	19.3	19.8	18.1	18.5	18.7	19.0	19.5
	12H	18.6	18.9	19.1	19.4	20.0	18.3	18.6	18.9	19.1	19.7
12H	4H	17.7	18.1	18.2	18.6	19.1	17.4	17.8	17.9	18.4	18.9
	6H	18.2	18.6	18.8	19.1	19.6	18.0	18.3	18.5	18.8	19.4
	8H	18.5	18.7	19.0	19.3	19.9	18.2	18.5	18.7	19.0	19.6

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0