

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

## **Spectrum Lighting Photometric Lab**

### **Luminaire**

CF06XXPC 20L 35K XW XX NL XX  
Nom 6" diam Gamma Cylinder (damp location), no lens

### **Test Number**

SP-01045\_M-20L

### **Test Date**

2/3/2020

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

## Summary of Results

### Power

<b>Input Watts</b>	12.9 W
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### Lumen Output

<b>Output Lumens</b>	1516
<b>Efficacy</b>	117.55 lm/W

### Luminous Dimensions

<b>0° - 180° Size</b>	-0.5
<b>90° - 270° Size</b>	-0.5
<b>Height</b>	0

### Spacing Criterion

<b>Two luminaires, plane 0°</b>	1.21
<b>Two luminaires, plane 90°</b>	1.23
<b>Four luminaires</b>	1.12

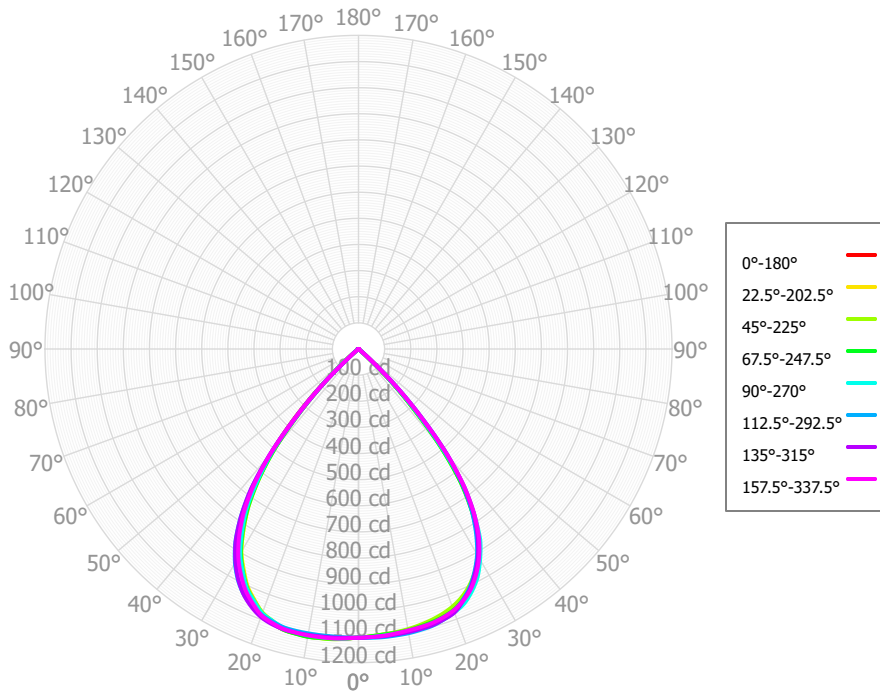
### Full Beam Angle

<b>0° - 180°</b>	78°
<b>90° - 270°</b>	78°

## IES File Header Contents

Keyword	Value
TEST	SP-01045_M-20L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/3/2020
ISSUEDATE	05/16/2022
LUMCAT	CFO6XXPC 20L 35K XW XX NL XX
LUMINAIRE	Nom 6" diam Gamma Cylinder (damp location), no lens
OTHER	Beam angle: 76.4 deg
OTHER	XTRA Wide optic
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: 27K x 0.97, 30K x 0.98, 40K x 1.04, 27HK x 0.78, 30HK x 0.82
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 40L

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	107.15	7.07%	90.00° - 100.00°	0.05	0.00%
10.00° - 20.00°	309.41	20.40%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	463.28	30.55%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	460.89	30.39%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	165.28	10.90%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	5.08	0.33%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.32	0.15%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.99	0.13%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.93	0.06%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1516.31	100.00%	0.00° - 180.00°	1516.36	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°	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23	1105.23
2.50°	1102.36	1100.72	1100.80	1100.87	1103.85	1105.35	1106.53	1108.60	1108.97	1109.07	1110.21	1108.63	1108.98	1106.31	1103.79	1103.76	1102.36
5.00°	1099.36	1097.71	1096.51	1097.38	1101.69	1105.04	1108.66	1111.90	1112.01	1113.83	1115.10	1112.58	1111.34	1106.88	1103.61	1101.92	1099.36
7.50°	1095.64	1096.24	1093.32	1095.77	1100.51	1105.38	1109.98	1112.56	1112.87	1116.08	1116.46	1115.65	1111.95	1105.78	1101.94	1097.99	1095.64
10.00°	1091.87	1092.68	1089.20	1093.46	1098.76	1105.61	1111.13	1113.08	1113.76	1117.59	1117.58	1118.45	1112.07	1104.52	1100.18	1094.17	1091.87
12.50°	1087.84	1086.20	1082.43	1088.49	1096.19	1105.44	1111.79	1111.77	1114.75	1114.74	1113.22	1115.97	1109.02	1100.93	1097.42	1090.89	1087.84
15.00°	1083.42	1079.32	1074.47	1082.89	1091.75	1103.15	1110.30	1109.22	1111.52	1111.05	1108.15	1112.14	1105.36	1096.41	1094.21	1086.28	1083.42
17.50°	1073.55	1072.00	1064.04	1075.59	1085.25	1094.90	1103.98	1099.36	1099.22	1093.82	1092.03	1097.69	1091.75	1085.11	1085.19	1077.35	1073.55
20.00°	1062.04	1057.80	1049.82	1063.31	1072.80	1083.31	1091.60	1085.29	1079.79	1075.19	1073.99	1080.12	1077.14	1070.40	1073.37	1064.81	1062.04
22.50°	1039.68	1037.79	1029.69	1041.17	1055.31	1064.68	1069.11	1055.48	1048.52	1040.12	1042.30	1047.46	1044.93	1040.93	1044.28	1043.98	1039.68
25.00°	1013.69	1008.13	1001.52	1010.71	1024.92	1037.91	1038.13	1021.01	1010.48	1003.94	1007.14	1010.59	1011.57	1007.36	1011.88	1015.77	1013.69
27.50°	972.99	972.25	963.52	967.86	985.93	998.20	996.04	974.37	963.89	951.88	956.39	960.24	960.48	961.69	966.22	974.59	972.99
30.00°	924.81	918.97	912.16	914.46	930.66	945.55	941.81	919.96	905.83	897.30	898.74	902.09	906.84	908.17	914.89	923.28	924.81
32.50°	854.98	856.99	848.27	848.75	867.23	877.25	875.39	850.19	836.65	819.54	820.20	826.07	830.08	837.89	847.87	858.48	854.98
35.00°	769.61	761.02	756.08	757.36	771.79	785.92	784.90	766.19	749.51	736.92	732.56	738.02	747.61	755.93	767.56	773.17	769.61
37.50°	651.66	652.67	643.61	642.93	664.61	672.60	675.88	661.02	648.65	628.13	625.08	628.85	636.24	654.76	660.41	666.93	651.66
40.00°	511.18	498.77	492.79	492.50	508.86	524.65	529.36	527.36	518.98	507.93	499.58	501.35	514.52	526.49	529.55	527.27	511.18
42.50°	335.32	333.41	320.55	317.39	340.26	351.38	360.26	361.31	372.61	347.94	343.83	349.45	358.31	364.32	361.67	360.69	335.32
45.00°	186.83	185.87	177.68	175.57	189.70	201.78	208.86	211.50	225.23	202.66	206.34	212.73	213.24	215.42	210.87	210.58	186.83
47.50°	72.10	41.27	46.94	51.49	42.15	65.26	65.39	76.28	77.43	93.62	92.12	91.52	95.41	79.25	80.37	70.56	72.10
50.00°	12.31	16.48	10.92	10.95	16.89	16.63	19.55	15.77	27.16	19.44	28.00	28.92	17.19	15.80	13.86	17.92	12.31
52.50°	4.47	1.52	2.63	3.16	1.83	5.17	5.14	6.52	8.02	10.59	12.85	13.53	10.59	7.35	5.80	5.26	4.47
55.00°	1.17	1.11	0.95	1.31	1.41	2.39	2.52	3.24	4.74	5.50	5.43	7.46	6.71	4.28	2.31	1.72	1.17
57.50°	1.16	0.86	0.60	1.08	1.28	2.22	2.52	3.06	4.84	5.71	3.96	7.10	6.56	4.29	2.10	1.31	1.16
60.00°	1.11	0.89	0.78	1.07	1.44	1.91	2.28	2.84	4.67	5.43	3.18	6.50	5.70	3.83	1.91	1.15	1.11
62.50°	1.03	0.92	1.01	1.09	1.56	1.59	2.00	2.61	4.47	4.63	2.79	5.78	4.08	3.17	1.74	1.03	1.03
65.00°	1.03	0.96	0.84	1.07	1.39	1.45	1.80	2.73	4.44	4.37	2.70	5.24	3.06	2.56	1.67	1.00	1.03
67.50°	1.07	0.98	0.68	1.04	1.23	1.34	1.61	2.94	4.46	4.58	2.73	4.76	2.52	1.97	1.66	0.98	1.07
70.00°	0.95	0.93	0.69	1.08	1.08	1.19	1.68	3.21	4.96	5.18	2.31	4.40	2.27	1.85	1.32	0.98	0.95
72.50°	0.82	0.79	0.69	1.03	1.02	1.08	1.83	3.30	5.40	5.99	1.81	4.17	2.15	1.78	0.99	0.96	0.82
75.00°	0.78	0.55	0.69	0.81	1.05	1.07	2.13	2.67	5.72	5.38	1.49	4.70	2.41	1.65	1.29	0.89	0.78
77.50°	0.85	0.47	0.71	0.58	1.07	1.05	1.69	1.89	3.43	3.95	1.42	4.11	2.10	1.37	1.36	0.87	0.85
80.00°	0.93	0.55	0.65	0.55	0.94	0.95	1.19	1.23	1.66	1.73	1.45	2.70	1.23	1.11	1.21	0.95	0.93
82.50°	0.83	0.62	0.56	0.62	0.69	0.70	0.87	0.99	1.51	1.41	1.19	1.66	1.36	1.11	0.88	1.06	0.83
85.00°	0.61	0.61	0.54	0.56	0.60	0.48	0.78	0.82	1.05	1.29	1.36	1.37	0.83	0.95	0.78	0.77	0.61
87.50°	0.61	0.67	0.51	0.79	0.78	0.60	0.79	0.60	0.80	0.94	0.89	1.33	0.97	0.80	0.73	0.72	0.61
90.00°	0.41	0.00	0.00	0.00	0.00	0.62	0.00	0.41	0.68	0.54	0.58	0.59	0.62	0.46	0.53	0.59	0.41
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	<b>0</b>	1805	1805	1805	1805	1763	1763	1763	1763	1685	1685	1685	1613	1613	1613	1547	1547	1547	1516
	<b>1</b>	1715	1670	1630	1594	1677	1637	1601	1568	1575	1546	1520	1519	1496	1475	1467	1449	1432	1420
	<b>2</b>	1622	1542	1477	1422	1587	1516	1456	1406	1466	1417	1375	1421	1380	1345	1378	1346	1317	1319
	<b>3</b>	1531	1426	1344	1280	1499	1404	1329	1269	1364	1301	1249	1326	1273	1229	1292	1247	1210	1223
	<b>4</b>	1443	1320	1229	1160	1415	1302	1218	1153	1268	1196	1139	1237	1175	1125	1209	1156	1112	1134
	<b>5</b>	1361	1223	1127	1056	1335	1209	1119	1052	1181	1102	1042	1155	1086	1032	1130	1071	1023	1051
	<b>6</b>	1283	1136	1038	967	1259	1124	1031	963	1100	1018	956	1078	1005	950	1057	993	943	975
	<b>7</b>	1210	1057	958	888	1189	1047	953	886	1027	942	881	1008	932	876	990	923	871	907
	<b>8</b>	1143	986	887	819	1123	977	883	817	959	874	813	943	866	810	928	858	806	844
	<b>9</b>	1080	921	824	758	1062	913	820	756	898	813	753	884	806	751	871	800	748	787
	<b>10</b>	1022	863	767	703	1006	856	764	702	843	758	700	830	753	698	819	747	696	736

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	36.5 fc	9.0 ft
6.5 ft	26.2 fc	10.6 ft
7.5 ft	19.6 fc	12.2 ft
8.0 ft	17.3 fc	13.0 ft
10.0 ft	11.1 fc	16.3 ft
12.0 ft	7.7 fc	19.6 ft
14.0 ft	5.6 fc	22.8 ft
16.0 ft	4.3 fc	26.1 ft
20.0 ft	2.8 fc	32.6 ft
24.0 ft	1.9 fc	39.1 ft
28.0 ft	1.4 fc	45.6 ft

### Average Luminaire Luminance [cd/m<sup>2</sup>]

	0.00°	45.00°	90.00°
<b>0.00°</b>	60589	60589	60589
<b>45.00°</b>	14485	13775	14707
<b>55.00°</b>	112	91	135
<b>65.00°</b>	134	109	180
<b>75.00°</b>	166	145	221
<b>85.00°</b>	385	341	375

### 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	-14.3	-13.2	-13.9	-12.9	-12.6	-3.6	-2.6	-3.3	-2.3	-2.0
	3H	-11.2	-10.3	-10.8	-10.0	-9.6	-2.4	-1.5	-2.0	-1.2	-0.8
	4H	-10.0	-9.2	-9.6	-8.8	-8.4	-1.6	-0.7	-1.1	-0.4	0.0
	6H	-8.2	-7.5	-7.8	-7.1	-6.7	-0.8	-0.1	-0.4	0.3	0.7
	8H	-7.2	-6.5	-6.8	-6.1	-5.7	-0.6	0.1	-0.2	0.5	0.9
	12H	-6.4	-5.7	-5.9	-5.3	-4.9	-0.4	0.2	0.0	0.6	1.1
4H	2H	-12.7	-11.9	-12.3	-11.5	-11.2	-3.6	-2.8	-3.2	-2.4	-2.0
	3H	-9.9	-9.2	-9.5	-8.8	-8.4	-1.9	-1.2	-1.4	-0.8	-0.4
	4H	-8.7	-8.1	-8.2	-7.6	-7.2	-0.3	0.3	0.1	0.7	1.1
	6H	-6.8	-6.3	-6.4	-5.9	-5.4	0.7	1.2	1.2	1.7	2.1
	8H	-5.7	-5.2	-5.2	-4.7	-4.3	0.9	1.4	1.4	1.9	2.4
	12H	-4.7	-4.3	-4.2	-3.8	-3.3	1.2	1.6	1.7	2.1	2.6
8H	4H	-7.7	-7.2	-7.2	-6.8	-6.3	0.0	0.5	0.5	1.0	1.4
	6H	-5.7	-5.3	-5.2	-4.8	-4.3	1.3	1.6	1.8	2.1	2.6
	8H	-4.4	-4.1	-3.9	-3.6	-3.1	1.6	2.0	2.2	2.5	3.0
	12H	-3.3	-3.0	-2.7	-2.5	-1.9	2.0	2.3	2.5	2.8	3.4
12H	4H	-7.5	-7.1	-7.0	-6.6	-6.1	0.1	0.5	0.6	1.0	1.4
	6H	-5.4	-5.1	-4.9	-4.6	-4.0	1.3	1.7	1.8	2.1	2.7
	8H	-4.0	-3.7	-3.5	-3.2	-2.7	1.8	2.1	2.3	2.6	3.1

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0