

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CF04XXPC 20L 35K XW XX NL XX
Nom 4" diam Gamma Cylinder, XW optic, no lens

Test Number

SP-01071_1

Test Date

1/31/2020

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

Summary of Results

Power

Input Watts	12.9 W
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Lumen Output

Output Lumens	1628
Efficacy	126.21 lm/W

Luminous Dimensions

0° - 180° Size	-0.33
90° - 270° Size	-0.33
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.99
Two luminaires, plane 90°	0.99
Four luminaires	0.9

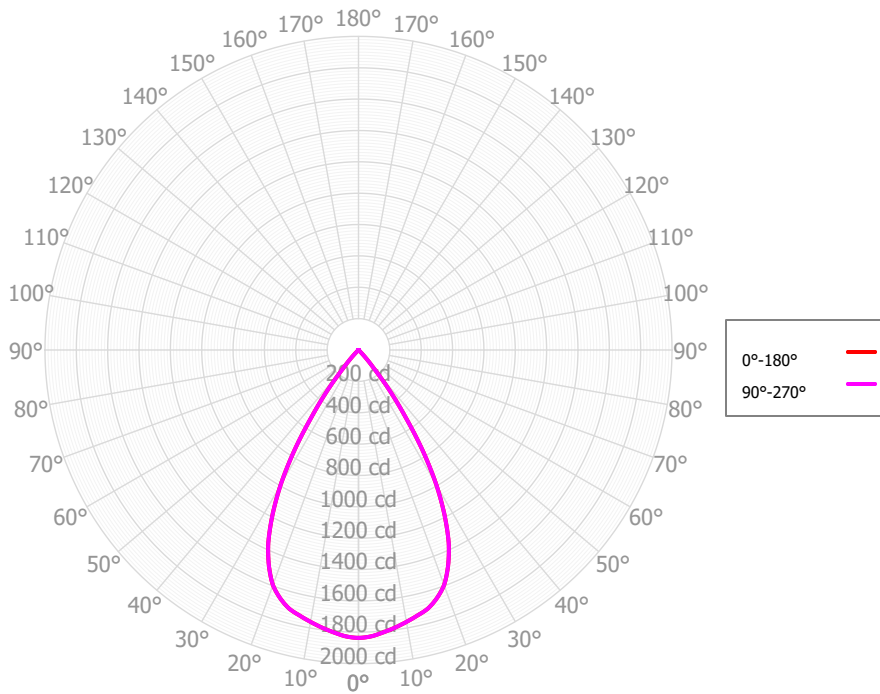
Full Beam Angle

0° - 180°	62°
90° - 270°	62°

IES File Header Contents

Keyword	Value
TEST	SP-01071_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/31/2020
ISSUEDATE	12/7/2020
LUMCAT	CF04XXPC 20L 35K XW XX NL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder, XW optic, no lens
OTHER	Beam Angle: 61.9 deg
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: 27K x 0.972, 30K x 0.981, 40K x 1.04, 27HK x 0.89, 30HK x 0.83
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80
_CCTMULT	27K x 0.972, 30K x 0.981, 40K x 1.04
_CCTMULTA	27HK x 0.89, 30HK x 0.83
_LAMPMULT	10L x 0.5, 15L x 0.74

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	174.57	10.72%	90.00° - 100.00°	0.12	0.01%
10.00° - 20.00°	477.79	29.35%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	608.01	37.34%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	331.26	20.35%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	31.17	1.91%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.51	0.09%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.58	0.10%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.59	0.10%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.41	0.09%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1628.90	100.05%	0.00° - 180.00°	1629.02	100.06%

Candela Distribution

	0.00°	90.00°	180.00°
0.00°	1836.51	1836.51	1836.51
2.50°	1828.74	1828.74	1828.74
5.00°	1808.51	1808.51	1808.51
7.50°	1786.24	1786.24	1786.24
10.00°	1761.30	1761.30	1761.30
12.50°	1735.27	1735.27	1735.27
15.00°	1708.08	1708.08	1708.08
17.50°	1660.76	1660.76	1660.76
20.00°	1595.94	1595.94	1595.94
22.50°	1492.83	1492.83	1492.83
25.00°	1362.43	1362.43	1362.43
27.50°	1190.10	1190.10	1190.10
30.00°	993.65	993.65	993.65
32.50°	765.80	765.80	765.80
35.00°	523.55	523.55	523.55
37.50°	328.40	328.40	328.40
40.00°	150.24	150.24	150.24
42.50°	70.56	70.56	70.56
45.00°	17.69	17.69	17.69
47.50°	5.96	5.96	5.96
50.00°	2.25	2.25	2.25
52.50°	1.70	1.70	1.70
55.00°	1.55	1.55	1.55
57.50°	1.59	1.59	1.59
60.00°	1.63	1.63	1.63
62.50°	1.65	1.65	1.65
65.00°	1.65	1.65	1.65
67.50°	1.54	1.54	1.54
70.00°	1.47	1.47	1.47
72.50°	1.57	1.57	1.57
75.00°	1.55	1.55	1.55
77.50°	1.42	1.42	1.42
80.00°	1.48	1.48	1.48
82.50°	1.42	1.42	1.42
85.00°	1.31	1.31	1.31
87.50°	1.28	1.28	1.28
90.00°	0.86	0.86	0.86
92.50°	0.00	0.00	0.00
95.00°	0.00	0.00	0.00
97.50°	0.00	0.00	0.00
100.00°	0.00	0.00	0.00
102.50°	0.00	0.00	0.00
105.00°	0.00	0.00	0.00
107.50°	0.00	0.00	0.00
110.00°	0.00	0.00	0.00
112.50°	0.00	0.00	0.00

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	1939	1939	1939	1939	1894	1894	1894	1894	1810	1810	1810	1733	1733	1733	1662	1662	1629
	1	1853	1809	1770	1735	1813	1774	1739	1707	1708	1680	1655	1648	1626	1606	1592	1575	1559
	2	1766	1690	1627	1575	1731	1662	1605	1557	1610	1563	1523	1562	1524	1490	1517	1486	1459
	3	1682	1582	1505	1443	1650	1560	1489	1432	1518	1458	1409	1479	1429	1387	1442	1401	1366
	4	1602	1485	1399	1333	1573	1466	1386	1325	1432	1363	1309	1399	1341	1294	1369	1320	1279
	5	1525	1395	1304	1237	1499	1380	1295	1232	1351	1277	1221	1325	1260	1210	1300	1244	1200
	6	1453	1314	1220	1153	1429	1301	1213	1149	1277	1199	1142	1254	1186	1134	1233	1173	1126
	7	1384	1239	1145	1079	1363	1228	1139	1076	1208	1128	1070	1188	1117	1065	1171	1107	1059
	8	1319	1170	1076	1012	1300	1161	1072	1010	1143	1063	1005	1127	1054	1001	1112	1046	997
	9	1258	1107	1014	951	1241	1099	1010	950	1084	1003	947	1070	996	943	1057	990	940
	10	1201	1049	958	897	1185	1042	955	896	1029	949	893	1017	943	891	1005	937	888

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	60.7 fc	6.6 ft
6.5 ft	43.5 fc	7.8 ft
7.5 ft	32.6 fc	9.0 ft
8.0 ft	28.7 fc	9.5 ft
10.0 ft	18.4 fc	11.9 ft
12.0 ft	12.8 fc	14.3 ft
14.0 ft	9.4 fc	16.7 ft
16.0 ft	7.2 fc	19.1 ft
20.0 ft	4.6 fc	23.9 ft
24.0 ft	3.2 fc	28.6 ft
28.0 ft	2.3 fc	33.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	231124	231124	231124
45.00°	3149	3149	3149
55.00°	340	340	340
65.00°	492	492	492
75.00°	753	753	753
85.00°	1891	1891	1891

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	-9.0	-8.1	-8.6	-7.7	-7.4	-9.0	-8.1	-8.6	-7.7	-7.4
	3H	-5.7	-4.9	-5.3	-4.6	-4.2	-5.7	-4.9	-5.3	-4.6	-4.2
	4H	-3.8	-3.0	-3.4	-2.7	-2.3	-3.8	-3.0	-3.4	-2.7	-2.3
	6H	-1.9	-1.2	-1.5	-0.9	-0.5	-1.9	-1.2	-1.5	-0.9	-0.5
	8H	-0.8	-0.2	-0.4	0.2	0.6	-0.8	-0.2	-0.4	0.2	0.6
	12H	0.2	0.8	0.7	1.2	1.7	0.2	0.8	0.7	1.2	1.7
4H	2H	-7.9	-7.1	-7.4	-6.8	-6.4	-7.9	-7.1	-7.4	-6.8	-6.4
	3H	-4.4	-3.8	-4.0	-3.4	-3.0	-4.4	-3.8	-4.0	-3.4	-3.0
	4H	-2.4	-1.9	-2.0	-1.4	-1.0	-2.4	-1.9	-2.0	-1.4	-1.0
	6H	-0.4	0.1	0.1	0.5	1.0	-0.4	0.1	0.1	0.5	1.0
	8H	0.8	1.2	1.2	1.6	2.1	0.8	1.2	1.2	1.6	2.1
	12H	1.9	2.3	2.4	2.8	3.3	1.9	2.3	2.4	2.8	3.3
8H	4H	-1.7	-1.3	-1.2	-0.8	-0.4	-1.7	-1.3	-1.2	-0.8	-0.4
	6H	0.6	0.9	1.1	1.4	1.9	0.6	0.9	1.1	1.4	1.9
	8H	1.9	2.2	2.4	2.7	3.2	1.9	2.2	2.4	2.7	3.2
	12H	3.3	3.6	3.8	4.1	4.7	3.3	3.6	3.8	4.1	4.7
12H	4H	-1.5	-1.2	-1.0	-0.7	-0.2	-1.5	-1.2	-1.0	-0.7	-0.2
	6H	0.9	1.2	1.4	1.7	2.2	0.9	1.2	1.4	1.7	2.2
	8H	2.3	2.6	2.9	3.1	3.7	2.3	2.6	2.9	3.1	3.7

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0