

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CF04XXPC 20L 35K MD XX CL XX

Nom 4" diam Gamma Cylinder (damp location), MD optic, clear glass lens

Test Number

SP-01068

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	1471
Efficacy	114.03 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.43
Two luminaires, plane 90°	0.43
Four luminaires	0.46

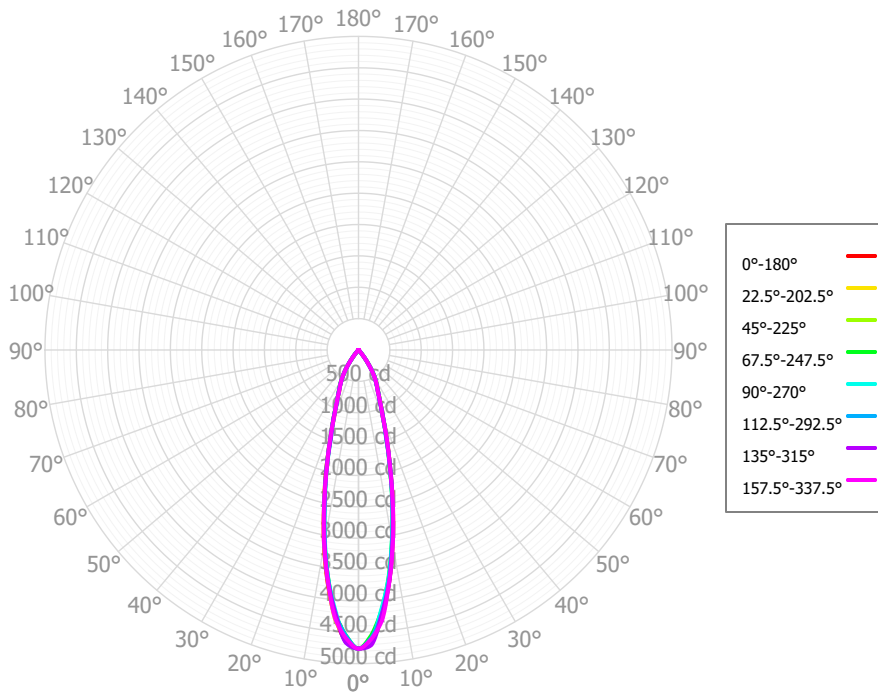
Full Beam Angle

0° - 180°	26°
90° - 270°	26°

IES File Header Contents

Keyword	Value
TEST	SP-01068
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/31/2020
ISSUEDATE	12/8/2020
LUMCAT	CF04XXPC 20L 35K MD XX CL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder (damp location), MD optic, clear glass lens
OTHER	Beam Angle: 26.4 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°	370.86	25.21%	90.00° - 100.00°	0.10	0.01%
10.00° - 20.00°	538.53	36.61%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	350.68	23.84%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	178.28	12.12%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.47	1.32%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	5.66	0.39%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	3.46	0.24%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.36	0.16%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.65	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1470.95	99.99%	0.00° - 180.00°	1471.05	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°	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23	4763.23
2.50°	4668.41	4606.96	4616.74	4562.74	4635.55	4565.00	4670.90	4599.13	4651.06	4603.96	4612.35	4559.70	4663.39	4601.11	4708.89	4617.34	4668.41
5.00°	4246.61	4296.08	4198.63	4180.88	4159.49	4234.31	4215.36	4294.26	4277.27	4303.31	4244.35	4229.98	4185.63	4236.96	4237.90	4325.14	4246.61
7.50°	3741.28	3724.09	3695.80	3666.66	3675.81	3692.97	3728.01	3725.67	3755.81	3730.44	3718.19	3685.62	3702.86	3705.57	3745.95	3739.95	3741.28
10.00°	3123.23	3135.60	3087.03	3074.44	3071.35	3123.15	3118.23	3152.00	3163.92	3150.72	3130.42	3110.04	3084.65	3096.91	3118.89	3149.82	3123.23
12.50°	2526.25	2531.74	2499.25	2492.33	2474.31	2512.53	2503.45	2537.47	2536.70	2533.58	2509.58	2498.16	2473.17	2508.00	2506.30	2537.20	2526.25
15.00°	1954.14	1928.02	1934.46	1915.36	1950.08	1968.28	1977.81	1949.21	1996.73	1950.37	1979.22	1962.15	1953.14	1927.02	1965.68	1933.90	1954.14
17.50°	1492.73	1521.35	1484.93	1489.17	1453.50	1508.31	1458.49	1522.61	1494.34	1517.68	1491.40	1503.46	1455.11	1499.33	1469.84	1519.62	1492.73
20.00°	1147.52	1122.04	1146.04	1130.25	1156.54	1152.39	1169.64	1132.55	1165.43	1130.91	1163.46	1158.48	1159.72	1123.76	1152.94	1121.86	1147.52
22.50°	902.43	921.53	905.20	906.56	884.50	912.18	888.91	917.57	900.09	910.00	899.86	915.09	886.05	904.30	878.26	914.34	902.43
25.00°	749.45	728.08	748.05	734.32	748.81	741.16	754.89	727.06	749.92	721.27	750.25	750.05	756.56	729.10	745.34	720.14	749.45
27.50°	631.72	636.03	630.73	628.26	620.98	637.58	623.66	633.17	635.89	629.19	639.48	647.20	630.90	625.93	620.08	630.72	631.72
30.00°	542.39	540.45	543.17	543.41	528.03	529.70	522.31	533.20	527.26	529.21	528.47	533.63	525.24	539.82	516.34	535.97	542.39
32.50°	424.46	412.30	425.89	422.17	426.37	418.10	417.69	413.39	420.04	408.80	417.40	412.63	414.23	411.86	405.75	409.06	424.46
35.00°	286.08	285.97	288.95	291.07	293.21	298.88	287.88	292.79	294.42	288.74	290.03	287.17	280.88	276.01	278.80	284.14	286.08
37.50°	173.15	171.67	177.33	179.79	173.15	173.88	166.10	170.03	164.95	169.42	158.80	159.00	159.89	166.30	166.46	168.56	173.15
40.00°	76.08	70.65	80.30	72.89	93.17	92.90	90.71	73.33	91.05	78.12	87.83	81.93	82.09	60.35	84.49	70.29	76.08
42.50°	31.19	39.17	35.11	39.34	32.17	41.09	27.38	38.26	26.48	40.03	28.55	32.04	22.16	32.27	27.98	39.42	31.19
45.00°	14.54	13.22	16.16	18.49	20.19	18.81	18.76	14.05	15.73	14.88	15.96	13.80	14.37	12.50	17.22	15.03	14.54
47.50°	8.51	10.38	9.71	13.21	11.23	13.81	11.58	11.87	11.69	11.39	10.33	10.06	8.70	10.69	9.98	11.44	8.51
50.00°	7.51	7.98	8.71	10.02	8.92	10.63	9.84	9.89	9.71	8.77	8.44	8.12	8.23	10.09	8.31	8.45	7.51
52.50°	6.53	7.07	7.31	7.75	6.98	8.37	8.46	8.22	7.91	7.42	6.97	6.89	7.58	8.23	6.82	7.16	6.53
55.00°	5.57	6.06	5.77	5.57	5.72	7.37	8.22	7.00	5.86	5.99	5.28	5.97	6.51	6.32	5.56	5.94	5.57
57.50°	4.62	4.79	5.00	4.77	4.61	6.92	7.85	6.46	3.79	4.45	3.58	5.16	5.38	5.40	4.59	4.92	4.62
60.00°	3.68	3.76	4.48	4.06	3.73	5.95	7.11	6.22	3.42	3.46	3.44	4.26	4.11	4.47	3.94	4.18	3.68
62.50°	3.13	3.31	3.50	3.71	3.34	4.78	6.29	6.42	3.07	3.09	3.36	3.34	3.20	3.60	3.63	3.99	3.13
65.00°	2.69	2.82	2.41	3.35	3.67	4.49	5.27	6.15	2.95	2.67	3.03	2.92	2.87	2.78	3.69	3.66	2.69
67.50°	2.32	2.26	2.56	2.71	3.58	4.49	4.58	5.33	2.82	2.19	2.70	2.63	2.53	2.52	3.29	3.11	2.32
70.00°	1.97	1.95	2.79	2.19	3.04	3.55	4.46	5.27	2.50	1.88	2.29	2.02	2.17	2.27	2.56	2.92	1.97
72.50°	1.72	1.85	2.09	2.03	2.93	2.55	4.11	5.83	2.32	1.69	2.00	1.44	1.63	2.06	2.46	2.99	1.72
75.00°	1.31	1.84	2.00	2.00	2.96	2.52	3.57	4.84	2.51	1.71	2.04	1.43	1.03	1.87	2.36	1.85	1.31
77.50°	0.94	1.72	2.36	2.00	2.74	2.46	2.34	3.36	1.92	1.69	2.36	1.23	1.31	1.72	1.78	1.54	0.94
80.00°	1.59	1.55	1.49	1.77	2.68	2.38	1.75	1.71	1.19	1.37	2.61	0.92	1.42	1.66	1.89	1.88	1.59
82.50°	1.33	1.47	1.48	1.69	2.21	2.35	1.80	1.53	1.58	1.71	2.13	1.15	1.28	1.52	1.87	1.78	1.33
85.00°	1.44	1.77	1.28	1.49	1.65	1.86	1.62	1.57	1.52	1.80	1.63	1.72	1.12	1.19	1.78	1.79	1.44
87.50°	1.15	1.66	1.20	2.22	1.52	1.55	1.45	1.78	1.25	1.82	1.67	1.39	1.65	1.41	1.41	1.76	1.15
90.00°	0.00	0.00	0.00	0.00	0.00	1.59	1.51	1.34	1.36	1.49	1.36	1.35	1.43	0.00	0.00	0.00	0.00
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
102.50°	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
105.00°	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
107.50°	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
110.00°	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
112.50°	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

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	1751	1751	1751	1751	1710	1710	1710	1710	1634	1634	1634	1565	1565	1565	1501	1501	1471
	1	1683	1647	1616	1587	1647	1616	1588	1562	1557	1535	1514	1503	1485	1469	1453	1439	1427
	2	1616	1556	1505	1463	1585	1531	1486	1447	1484	1447	1416	1441	1412	1386	1402	1378	1357
	3	1553	1474	1413	1365	1526	1455	1399	1354	1417	1371	1333	1383	1344	1312	1351	1319	1292
	4	1493	1402	1334	1283	1469	1386	1324	1276	1356	1303	1261	1328	1283	1247	1302	1264	1233
	5	1437	1336	1266	1214	1415	1323	1257	1208	1298	1242	1198	1275	1226	1188	1254	1212	1178
	6	1384	1277	1205	1153	1365	1266	1198	1149	1245	1186	1142	1226	1174	1135	1208	1163	1127
	7	1334	1222	1150	1100	1317	1213	1145	1097	1196	1136	1091	1180	1126	1086	1165	1117	1081
	8	1287	1173	1101	1052	1271	1165	1097	1050	1151	1089	1046	1137	1082	1042	1124	1075	1038
	9	1243	1127	1056	1009	1228	1121	1053	1007	1108	1047	1004	1096	1041	1001	1085	1035	998
	10	1201	1085	1016	969	1188	1079	1013	968	1069	1008	966	1059	1003	963	1049	998	961

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	157.5 fc	2.5 ft
6.5 ft	112.7 fc	3.0 ft
7.5 ft	84.7 fc	3.5 ft
8.0 ft	74.4 fc	3.7 ft
10.0 ft	47.6 fc	4.6 ft
12.0 ft	33.1 fc	5.6 ft
14.0 ft	24.3 fc	6.5 ft
16.0 ft	18.6 fc	7.4 ft
20.0 ft	11.9 fc	9.3 ft
24.0 ft	8.3 fc	11.1 ft
28.0 ft	6.1 fc	13.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	599451	599451	599451
45.00°	2588	2876	3593
55.00°	1221	1265	1255
65.00°	802	718	1093
75.00°	638	974	1440
85.00°	2078	1845	2383

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	-1.0	-0.1	-0.6	0.2	0.5	0.4	1.3	0.8	1.6	1.9
	3H	0.2	0.9	0.5	1.3	1.7	1.7	2.5	2.1	2.8	3.2
	4H	0.6	1.4	1.0	1.7	2.1	2.3	3.0	2.7	3.3	3.7
	6H	1.2	1.9	1.6	2.2	2.6	3.1	3.7	3.5	4.1	4.5
	8H	1.7	2.3	2.1	2.7	3.1	3.6	4.2	4.0	4.6	5.0
	12H	2.4	3.0	2.8	3.4	3.8	4.0	4.6	4.5	5.0	5.5
4H	2H	-0.7	0.1	-0.3	0.4	0.8	0.9	1.6	1.3	2.0	2.4
	3H	0.9	1.5	1.3	1.9	2.3	2.4	3.0	2.9	3.4	3.9
	4H	1.5	2.1	2.0	2.5	3.0	3.1	3.6	3.5	4.0	4.5
	6H	2.4	2.8	2.9	3.3	3.8	4.1	4.5	4.5	5.0	5.5
	8H	3.0	3.4	3.5	3.9	4.4	4.7	5.1	5.2	5.6	6.0
	12H	3.9	4.2	4.4	4.7	5.2	5.3	5.7	5.8	6.2	6.6
8H	4H	2.0	2.4	2.4	2.8	3.3	3.6	4.0	4.1	4.4	4.9
	6H	3.1	3.5	3.6	4.0	4.5	4.7	5.1	5.3	5.6	6.1
	8H	4.0	4.3	4.5	4.8	5.3	5.5	5.8	6.1	6.3	6.8
	12H	5.2	5.4	5.7	5.9	6.5	6.4	6.7	6.9	7.2	7.7
12H	4H	2.0	2.4	2.5	2.9	3.4	3.6	4.0	4.1	4.5	5.0
	6H	3.3	3.6	3.9	4.1	4.7	4.9	5.2	5.5	5.7	6.2
	8H	4.4	4.6	4.9	5.1	5.7	5.8	6.1	6.3	6.6	7.1

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0