

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

CF04XXUDPC 20LMDCL 20LMDNL 35KXX XXMW (IND/DIR Damp location)  
Nom. 4" Diam. Gamma Indirect/Direct Cylinder

### Test Number

SP-01090

### Test Date

1/20/2020

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

### Summary of Results

#### Power

Input Watts	25.8 W
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#### Lumen Output

Output Lumens	3118
Efficacy	120.85 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

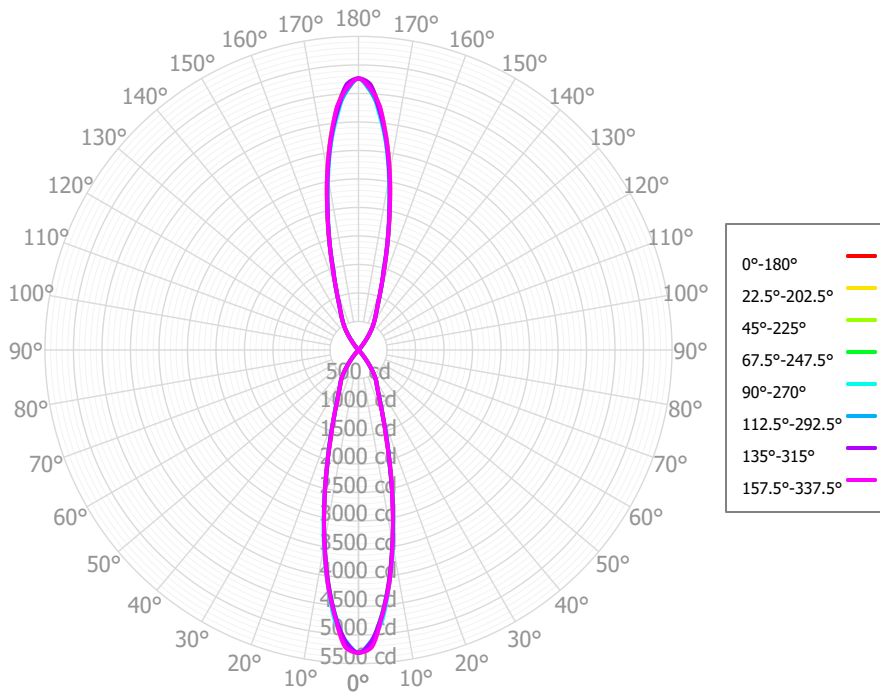
0° - 180°	336°
90° - 270°	337°

### IES File Header Contents

Keyword	Value
TEST	SP-01090
TESTLAB	VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/20/2020
ISSUEDATE	12/16/2020
LUMCAT	CF04XXUDPC 20LMDCL 20LMDNL 35KXX XXMW (IND/DIR Damp location)
LUMINAIRE	Nom. 4" Diam. Gamma Indirect/Direct Cylinder
OTHER	Uplight: Medium Optic, Flush Clear Glass lens
OTHER	Uplight: 26.4 Degree Beam Angle
OTHER	Downlight: Medium Optic, No lens
OTHER	Downlight: 26 Degree Beam Angle
OTHER	Trim: Matte White
LAMP	N/A
LAMPCAT	N/A, 19mm LES Uplight
OTHER	N/A, 19mm LES Downlight
OTHER	Total Luminaire Watts is approximate
OTHER	CCT Output Multipliers: 27K x 0.97, 30K x 0.98, 40K x 1.04, 27HK x 0.89, 30HK x 0.83
OTHER	See Catalog cut sheet for different source lumen multipliers
OTHER	This report prepared by Spectrum Lighting
_CRI	80
CCTMULT	27K x 0.97, 30K x 0.98, 40K x 1.04

CF04XXUDPC 20LMDCL 20LMDNL 35KXX  
 XXMW (IND/DIR Damp location)

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	428.73	13.75%	90.00° - 100.00°	1.84	0.06%
10.00° - 20.00°	592.74	19.01%	100.00° - 110.00°	3.37	0.11%
20.00° - 30.00°	388.00	12.44%	100.00° - 120.00°	8.13	0.26%
30.00° - 40.00°	221.31	7.10%	120.00° - 130.00°	6.55	0.21%
40.00° - 50.00°	19.77	0.63%	130.00° - 140.00°	20.86	0.67%
50.00° - 60.00°	1.31	0.04%	140.00° - 150.00°	179.93	5.77%
60.00° - 70.00°	1.43	0.05%	150.00° - 160.00°	350.93	11.26%
70.00° - 80.00°	1.25	0.04%	160.00° - 170.00°	540.22	17.33%
80.00° - 90.00°	1.28	0.04%	170.00° - 180.00°	386.74	12.40%
0.00° - 90.00°	1655.84	53.11%	0.00° - 180.00°	3151.03	101.06%

### Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°
0.00°	5310.51	5310.51	5310.51	5310.51	5310.51
2.50°	5195.59	5225.02	5121.04	5140.75	5105.45
5.00°	4708.72	4706.51	4686.03	4673.07	4767.35
7.50°	4127.26	4136.11	4093.25	4109.47	4137.99
10.00°	3436.87	3450.42	3425.82	3433.75	3494.33
12.50°	2774.06	2756.39	2771.43	2776.96	2800.18
15.00°	2139.01	2173.96	2122.30	2139.49	2158.84
17.50°	1640.47	1595.86	1651.71	1639.55	1672.45
20.00°	1263.77	1277.49	1243.06	1264.18	1254.93
22.50°	996.86	965.41	998.95	999.01	1010.88
25.00°	815.52	826.10	802.32	821.03	811.93
27.50°	694.76	689.97	699.90	699.37	709.80
30.00°	615.77	603.88	619.64	617.13	603.70
32.50°	498.94	512.51	498.14	500.19	490.16
35.00°	359.48	369.90	368.76	362.15	365.60
37.50°	228.19	231.57	233.43	231.26	223.16
40.00°	101.13	123.54	97.23	104.19	111.52
42.50°	40.83	30.01	48.09	42.81	43.93
45.00°	10.64	14.35	8.29	11.56	5.15
47.50°	1.89	1.65	3.83	2.35	2.30
50.00°	1.37	1.80	1.76	1.75	1.10
52.50°	1.07	1.83	1.69	1.46	1.72
55.00°	0.85	1.45	1.68	1.27	1.84
57.50°	1.17	1.19	1.42	1.35	1.50
60.00°	1.63	1.27	1.18	1.51	1.53
62.50°	1.45	1.36	1.38	1.50	1.86
65.00°	1.12	1.43	1.57	1.44	1.74
67.50°	1.04	1.46	1.76	1.39	1.30
70.00°	1.01	1.38	1.91	1.33	1.00
72.50°	0.99	1.31	1.68	1.14	0.79
75.00°	0.96	1.25	1.46	0.93	0.77
77.50°	1.07	1.15	1.30	1.02	0.87
80.00°	1.19	0.98	1.17	1.13	1.10
82.50°	1.21	0.91	1.25	1.06	1.40
85.00°	1.22	0.97	1.32	0.97	1.28
87.50°	1.20	1.17	1.38	1.16	0.97
90.00°	1.18	1.56	1.51	1.36	0.91
92.50°	1.25	1.78	1.45	1.55	1.53
95.00°	1.52	1.57	1.62	1.86	1.65
97.50°	1.58	1.53	1.80	2.35	2.21
100.00°	1.19	1.72	1.75	2.38	2.68
102.50°	1.93	3.36	2.34	2.46	2.74
105.00°	2.51	4.84	3.57	2.52	2.96
107.50°	2.32	5.83	4.11	2.55	2.93
110.00°	2.50	5.27	4.46	3.56	3.04
112.50°	2.82	5.33	4.58	4.49	3.58

CF04XXUDPC 20LMDCL 20LMDNL 35KXX  
 XXMW (IND/DIR Damp location)

### 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%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	3395	3395	3395	3395	3142	3142	3142	3142	2670	2670	2670	2239	2239	2239	1842	1842	1656
	<b>1</b>	3190	3091	3002	2922	2959	2877	2803	2736	2477	2427	2381	2109	2077	2048	1770	1752	1590
	<b>2</b>	2999	2831	2692	2575	2789	2649	2531	2432	2306	2225	2154	1990	1937	1890	1698	1666	1524
	<b>3</b>	2823	2607	2440	2307	2632	2450	2307	2192	2155	2053	1970	1881	1813	1756	1627	1585	1461
	<b>4</b>	2662	2413	2231	2091	2488	2277	2120	1998	2020	1907	1817	1782	1704	1640	1560	1510	1401
	<b>5</b>	2514	2244	2054	1915	2356	2125	1961	1838	1901	1780	1687	1692	1607	1540	1497	1441	1344
	<b>6</b>	2380	2095	1904	1767	2235	1991	1824	1703	1794	1669	1576	1609	1520	1452	1437	1377	1291
	<b>7</b>	2257	1965	1775	1642	2125	1873	1706	1587	1698	1572	1480	1534	1442	1374	1380	1318	1241
	<b>8</b>	2146	1849	1663	1535	2024	1768	1603	1488	1612	1486	1396	1466	1373	1304	1328	1263	1195
	<b>9</b>	2044	1747	1565	1442	1933	1674	1512	1402	1534	1409	1322	1403	1310	1243	1279	1213	1152
	<b>10</b>	1951	1656	1479	1361	1849	1590	1432	1326	1464	1341	1256	1345	1253	1187	1233	1167	1111

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	175.6 fc	0.0 ft
6.5 ft	125.7 fc	0.0 ft
7.5 ft	94.4 fc	0.0 ft
8.0 ft	83.0 fc	0.0 ft
10.0 ft	53.1 fc	0.0 ft
12.0 ft	36.9 fc	0.0 ft
14.0 ft	27.1 fc	0.0 ft
16.0 ft	20.7 fc	0.0 ft
20.0 ft	13.3 fc	0.0 ft
24.0 ft	9.2 fc	0.0 ft
28.0 ft	6.8 fc	0.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	668326	668326	668326
<b>45.00°</b>	1894	1475	917
<b>55.00°</b>	186	368	404
<b>65.00°</b>	334	468	518
<b>75.00°</b>	465	711	376
<b>85.00°</b>	1756	1906	1844

### 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	-15.1	-14.5	-14.2	-13.5	-12.3	-14.1	-13.5	-13.1	-12.5	-11.2
	3H	-11.5	-10.9	-10.5	-10.0	-8.7	-11.0	-10.4	-10.0	-9.5	-8.2
	4H	-10.0	-9.4	-9.0	-8.5	-7.2	-10.1	-9.6	-9.1	-8.6	-7.3
	6H	-8.0	-7.5	-7.0	-6.6	-5.3	-8.4	-7.9	-7.4	-6.9	-5.6
	8H	-6.9	-6.4	-5.8	-5.4	-4.1	-6.9	-6.4	-5.9	-5.4	-4.1
	12H	-5.5	-5.1	-4.5	-4.1	-2.8	-5.3	-4.9	-4.3	-3.9	-2.6
4H	2H	-13.4	-12.9	-12.4	-11.9	-10.6	-12.8	-12.3	-11.8	-11.3	-10.0
	3H	-9.6	-9.2	-8.6	-8.2	-6.9	-9.4	-9.0	-8.4	-8.0	-6.7
	4H	-8.0	-7.6	-7.0	-6.6	-5.3	-8.5	-8.1	-7.4	-7.1	-5.7
	6H	-6.2	-5.9	-5.2	-4.9	-3.5	-6.6	-6.3	-5.6	-5.3	-3.9
	8H	-5.1	-4.8	-4.1	-3.8	-2.5	-5.1	-4.8	-4.1	-3.8	-2.5
	12H	-3.7	-3.5	-2.7	-2.4	-1.1	-3.6	-3.3	-2.5	-2.2	-0.9
8H	4H	-7.2	-6.8	-6.1	-5.8	-4.5	-7.5	-7.2	-6.5	-6.2	-4.8
	6H	-5.2	-4.9	-4.2	-3.9	-2.6	-5.4	-5.2	-4.4	-4.1	-2.8
	8H	-4.0	-3.8	-3.0	-2.8	-1.4	-3.9	-3.7	-2.8	-2.6	-1.3
	12H	-2.5	-2.3	-1.4	-1.3	0.1	-2.2	-2.0	-1.2	-1.0	0.4
12H	4H	-7.0	-6.7	-6.0	-5.7	-4.4	-7.3	-7.0	-6.3	-6.0	-4.7
	6H	-4.9	-4.7	-3.8	-3.6	-2.3	-5.1	-4.8	-4.0	-3.8	-2.4
	8H	-3.6	-3.4	-2.5	-2.3	-0.9	-3.4	-3.2	-2.4	-2.2	-0.8

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0