

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SDFO4PC30L35KMDE1-SD4FPCSGMF
4" Square aperture recessed LED downlight.

Test Number

SP-R1163

Test Date

8/21/2025

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

Summary of Results

Power

Input Watts	20.65 W
-------------	---------

Lumen Output

Output Lumens	2099
Efficacy	101.65 lm/W

Luminous Dimensions

0° - 180° Size	0.31
90° - 270° Size	0.31
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.38
Two luminaires, plane 90°	0.43
Four luminaires	0.48

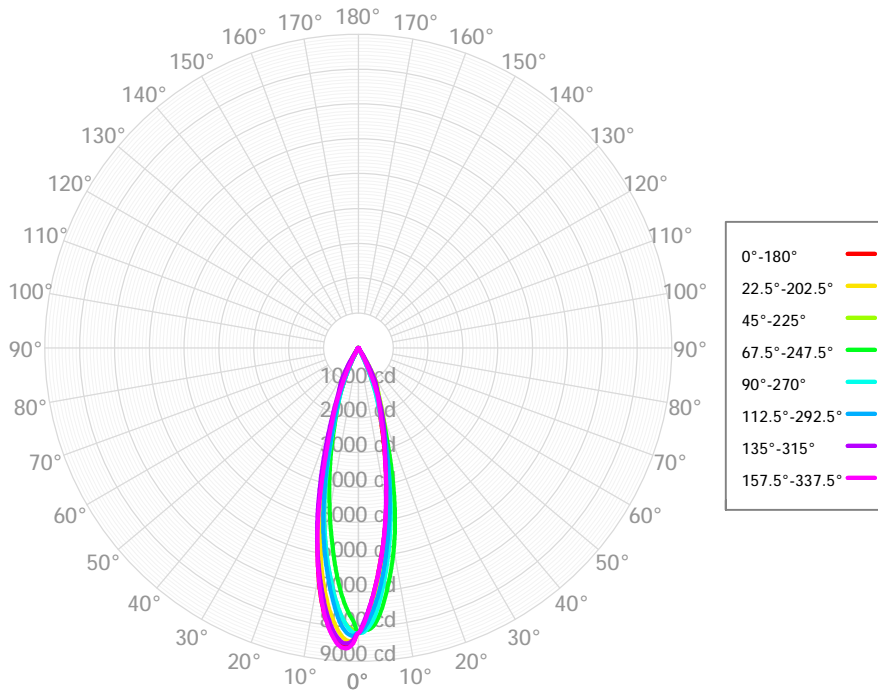
Full Beam Angle

0° - 180°	25°
90° - 270°	25°

IES File Header Contents

Keyword	Value
TEST	SP-R1163
TESTLAB	Spectrum Lighting Photometric Lab. VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	8/21/2025
ISSUEDATE	8/21/2025
LUMCAT	SDFO4PC30L35KMDE1-SD4FPCSGMF
LUMINAIRE	4" Square aperture recessed LED downlight.
DISTRIBUTION	Beam Angle 25.9
OTHER	CCT 3511 CRI 83.5 R9 7.5
OTHER	Total Luminaire wattage is approximate
OTHER	This report is prepared by Spectrum Lighting
_CRI	80+
_LAMPMULT	10L x 0.356, 15L x 0.516, 20L x 0.68, 40L x 1.3, 50L x 1.635

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	637.15	30.35%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	936.15	44.60%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	413.98	19.72%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	46.72	2.23%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	17.72	0.84%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	14.22	0.68%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	12.94	0.62%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	10.96	0.52%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	9.17	0.44%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	2099.00	100.00%	0.00° - 180.00°	2099.00	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°	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74	8185.74
1.00°	7963.44	8067.09	8025.06	8094.91	8164.72	8269.32	8383.55	8482.43	8448.14	8385.17	8105.05	7853.37	8179.21	8083.90	7910.46	7972.24	7963.44
2.00°	7629.90	7807.15	7863.42	8096.07	8043.49	8222.06	8485.75	8620.71	8567.95	8416.33	8017.60	7638.87	8050.10	7876.29	7599.69	7635.18	7629.90
3.00°	7269.03	7504.06	7663.61	8009.05	7853.90	8079.28	8478.30	8619.36	8583.33	8328.89	7856.09	7371.32	7857.21	7608.93	7263.12	7265.10	7269.03
4.00°	6891.52	7160.83	7391.24	7824.82	7572.95	7857.97	8357.42	8530.70	8487.38	8157.94	7618.39	7054.23	7600.24	7307.23	6900.33	6889.93	6891.52
5.00°	6501.91	6803.47	7055.07	7558.91	7241.18	7540.09	8165.83	8334.53	8310.31	7920.14	7323.99	6701.11	7296.09	6974.10	6528.61	6506.20	6501.91
6.00°	6121.29	6426.96	6693.10	7248.04	6864.26	7201.49	7901.92	8095.13	8072.37	7651.24	7001.86	6311.18	6962.73	6617.01	6162.53	6121.86	6121.29
7.00°	5747.37	6043.13	6316.84	6918.13	6482.35	6832.54	7588.38	7793.44	7790.18	7330.55	6655.28	5911.35	6603.50	6243.48	5771.32	5755.85	5747.37
8.00°	5371.99	5657.30	5933.44	6572.61	6094.82	6456.68	7233.18	7436.48	7452.35	6995.17	6290.52	5508.63	6260.74	5849.61	5369.11	5370.95	5371.99
9.00°	4991.07	5267.07	5557.47	6222.23	5694.48	6072.35	6856.20	7035.89	7056.05	6613.57	5909.55	5125.41	5889.31	5462.34	4967.98	4979.48	4991.07
10.00°	4612.72	4866.12	5172.22	5858.90	5286.98	5686.82	6476.59	6601.58	6609.86	6179.15	5519.67	4730.82	5509.82	5100.07	4560.04	4588.01	4612.72
11.00°	4219.66	4472.38	4811.00	5477.60	4866.81	5278.17	6080.99	6145.71	6122.50	5711.61	5123.68	4355.86	5113.42	4731.35	4179.06	4205.88	4219.66
12.00°	3827.31	4095.28	4442.28	5066.32	4437.41	4825.32	5677.22	5658.98	5615.18	5222.04	4723.30	3998.42	4690.56	4347.58	3823.86	3824.58	3827.31
13.00°	3463.18	3735.42	4078.06	4634.65	3984.33	4362.98	5257.30	5164.66	5071.68	4721.16	4327.51	3649.41	4246.75	3972.03	3495.80	3461.08	3463.18
14.00°	3127.97	3402.86	3730.97	4189.99	3526.99	3900.89	4814.21	4646.37	4512.14	4214.06	3944.32	3306.36	3795.72	3600.14	3209.74	3139.54	3127.97
15.00°	2809.52	3099.60	3412.69	3742.92	3089.30	3443.73	4352.75	4123.65	3953.89	3713.13	3589.17	2972.64	3344.06	3237.17	2955.18	2851.77	2809.52
16.00°	2506.41	2819.72	3097.62	3304.64	2677.34	3003.47	3912.18	3617.59	3418.62	3245.72	3254.87	2649.07	2913.15	2895.15	2737.15	2582.63	2506.41
17.00°	2231.13	2559.89	2803.96	2892.61	2321.34	2613.02	3490.06	3152.48	2938.55	2821.37	2933.27	2343.06	2517.11	2585.67	2544.65	2322.71	2231.13
18.00°	2009.99	2307.55	2538.65	2519.40	2022.85	2285.48	3083.39	2742.53	2534.01	2461.96	2637.24	2081.11	2185.47	2302.02	2353.65	2088.94	2009.99
19.00°	1835.50	2074.30	2300.10	2201.81	1771.71	2015.21	2704.42	2399.61	2178.61	2168.66	2362.61	1864.45	1913.74	2032.58	2161.31	1901.76	1835.50
20.00°	1676.47	1889.82	2078.28	1935.97	1563.65	1782.52	2352.87	2109.83	1891.82	1921.54	2104.37	1680.63	1684.36	1815.77	1962.68	1745.55	1676.47
21.00°	1490.24	1743.14	1874.78	1713.99	1348.52	1590.00	2044.35	1866.72	1591.47	1711.35	1866.68	1508.97	1465.21	1637.13	1763.25	1611.58	1490.24
22.00°	1263.46	1610.36	1689.53	1539.16	1119.38	1402.28	1765.36	1616.67	1286.76	1505.04	1649.29	1327.48	1236.38	1492.63	1584.52	1469.18	1263.46
23.00°	1017.53	1452.60	1536.06	1342.39	894.17	1198.35	1536.94	1346.20	1047.86	1275.08	1458.03	1125.16	1001.01	1350.59	1441.46	1271.77	1017.53
24.00°	785.93	1241.93	1412.95	1138.23	667.27	986.32	1381.08	1115.31	850.33	1068.74	1323.09	913.66	771.32	1184.57	1324.83	1048.17	785.93
25.00°	609.68	1008.32	1313.61	938.24	458.34	774.26	1270.99	928.00	610.70	905.01	1229.63	691.74	560.54	990.63	1227.36	816.47	609.68
26.00°	453.98	777.03	1232.01	728.91	284.47	566.67	1172.44	701.52	391.60	724.31	1148.67	488.83	373.47	793.82	1146.40	624.46	453.98
27.00°	289.92	587.16	1142.55	523.48	167.70	378.79	1084.00	467.37	217.03	509.31	1061.33	317.97	219.60	589.16	1051.61	489.97	289.92
28.00°	176.98	451.80	1012.70	344.97	112.08	223.26	971.40	264.99	124.43	315.21	942.27	184.61	123.96	404.67	909.16	333.04	176.98
29.00°	134.35	303.36	848.05	198.84	88.50	127.44	809.82	131.63	91.71	167.70	769.39	98.62	84.59	245.01	735.23	188.46	134.35
30.00°	112.56	169.57	672.48	111.41	72.61	88.71	655.75	84.43	66.54	92.47	579.10	78.72	69.88	131.64	570.40	115.96	112.56
31.00°	97.30	107.35	502.22	78.75	62.88	67.71	529.25	63.36	56.02	66.48	416.41	64.60	55.61	77.73	407.89	93.33	97.30
32.00°	84.82	83.97	345.66	58.04	56.67	54.83	379.92	52.10	54.80	48.28	296.70	56.24	55.78	61.19	293.00	73.48	84.82
33.00°	77.84	68.24	206.86	46.59	53.87	49.33	236.49	44.86	46.09	43.25	193.29	52.40	48.96	49.00	206.08	65.41	77.84
34.00°	70.08	61.46	109.39	43.06	50.27	48.73	128.34	44.58	42.93	36.19	106.69	47.77	45.88	41.18	119.86	57.77	70.08
35.00°	64.31	54.56	57.63	39.10	45.18	43.78	63.62	38.89	39.94	34.24	56.04	44.25	43.92	36.30	60.16	53.42	64.31
36.00°	58.27	48.42	42.87	35.95	43.24	37.38	40.14	34.36	38.14	30.60	38.82	44.46	39.21	33.12	42.13	50.11	58.27
37.00°	52.66	44.18	33.25	35.42	39.54	36.61	30.65	33.16	36.11	30.43	32.48	41.73	38.67	31.25	29.98	47.09	52.66
38.00°	47.85	39.75	27.75	32.70	36.52	33.92	28.59	32.52	32.28	29.23	29.58	38.25	35.61	32.04	25.52	44.81	47.85
39.00°	43.34	37.51	24.32	30.01	33.15	30.72	26.56	31.61	30.65	27.60	26.66	34.86	31.45	31.06	23.76	41.41	43.34
40.00°	41.52	36.20	23.02	27.37	29.63	28.88	24.53	29.26	30.40	26.57	23.73	32.24	30.03	28.97	22.31	36.72	41.52
41.00°	39.70	34.27	22.01	24.96	28.47	27.04	23.37	26.89	28.91	25.58	22.05	29.66	28.85	27.20	20.86	32.52	39.70
42.00°	37.65	32.04	21.14	22.92	28.45	26.44	22.75	24.11	26.44	24.74	20.84	27.98	27.97	25.67	20.42	29.21	37.65
43.00°	35.57	29.63	20.33	20.89	28.01	26.06	21.82	21.33	24.46	23.95	19.64	26.30	27.21	23.99	20.25	25.90	35.57

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	2499	2499	2499	2499	2441	2441	2441	2441	2332	2332	2332	2233	2233	2233	2142	2142	2099
	1	2404	2356	2312	2272	2354	2311	2272	2237	2227	2196	2168	2150	2126	2104	2079	2060	2020
	2	2318	2236	2168	2111	2274	2201	2140	2088	2135	2086	2043	2074	2035	2000	2018	1987	1949
	3	2238	2133	2052	1987	2200	2105	2031	1971	2053	1991	1941	2005	1954	1911	1960	1918	1882
	4	2164	2043	1954	1887	2130	2021	1939	1876	1978	1909	1855	1939	1881	1834	1903	1854	1821
	5	2094	1962	1870	1802	2065	1944	1859	1795	1910	1836	1780	1878	1815	1765	1848	1794	1763
	6	2029	1890	1796	1729	2003	1875	1787	1724	1847	1770	1713	1820	1753	1702	1796	1737	1709
	7	1968	1824	1730	1665	1944	1811	1723	1661	1788	1710	1653	1766	1697	1645	1745	1684	1657
	8	1910	1763	1671	1607	1889	1753	1665	1604	1733	1654	1598	1714	1644	1592	1697	1634	1609
	9	1855	1707	1616	1555	1836	1698	1612	1552	1681	1603	1548	1665	1594	1543	1650	1586	1563
	10	1804	1655	1566	1507	1787	1647	1562	1505	1633	1555	1501	1619	1548	1498	1606	1541	1520

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	270.6 fc	2.5 ft
6.5 ft	193.7 fc	2.9 ft
7.5 ft	145.5 fc	3.3 ft
8.0 ft	127.9 fc	3.6 ft
10.0 ft	81.9 fc	4.5 ft
12.0 ft	56.8 fc	5.4 ft
14.0 ft	41.8 fc	6.2 ft
16.0 ft	32.0 fc	7.1 ft
20.0 ft	20.5 fc	8.9 ft
24.0 ft	14.2 fc	10.7 ft
28.0 ft	10.4 fc	12.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	902252	902252	902252
45.00°	5102	3071	3954
55.00°	3896	2297	3748
65.00°	4306	2974	5084
75.00°	4611	4490	4297
85.00°	12589	11482	12064

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		Viewing C0-180					Viewing C90-270				
2H	2H	6.1	7.1	6.5	7.4	7.7	6.1	7.0	6.4	7.3	7.6
	3H	9.2	10.0	9.5	10.3	10.7	9.1	10.0	9.5	10.3	10.7
	4H	10.4	11.2	10.8	11.5	11.9	10.2	11.0	10.6	11.3	11.7
	6H	11.8	12.5	12.2	12.8	13.2	11.6	12.3	12.0	12.6	13.0
	8H	12.4	13.1	12.9	13.5	13.9	12.4	13.0	12.8	13.4	13.8
	12H	13.4	14.0	13.9	14.4	14.9	13.4	14.0	13.8	14.4	14.8
4H	2H	6.6	7.3	7.0	7.7	8.1	6.5	7.3	6.9	7.7	8.0
	3H	9.9	10.5	10.3	10.9	11.3	9.9	10.5	10.3	10.9	11.3
	4H	11.4	11.9	11.8	12.4	12.8	11.1	11.7	11.6	12.1	12.6
	6H	13.0	13.5	13.5	14.0	14.4	12.7	13.2	13.2	13.7	14.2
	8H	13.8	14.3	14.3	14.7	15.2	13.7	14.1	14.1	14.6	15.0
	12H	14.9	15.3	15.4	15.8	16.3	14.8	15.2	15.3	15.7	16.2
8H	4H	11.9	12.4	12.4	12.8	13.3	11.6	12.0	12.1	12.5	13.0
	6H	13.9	14.2	14.4	14.7	15.2	13.5	13.9	14.0	14.4	14.8
	8H	14.8	15.1	15.4	15.7	16.2	14.6	14.9	15.1	15.4	15.9
	12H	16.1	16.4	16.6	16.9	17.5	16.0	16.3	16.5	16.8	17.4
12H	4H	12.1	12.4	12.6	12.9	13.4	11.7	12.1	12.2	12.6	13.1
	6H	14.1	14.4	14.6	14.9	15.4	13.7	14.0	14.3	14.5	15.1
	8H	15.2	15.4	15.7	15.9	16.5	14.9	15.2	15.5	15.7	16.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0