

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SDFO4PC40L35KMDE1-SD4FPCSGMF
4" Square aperture recessed LED downlight.

Test Number

SP-R1162

Test Date

8/7/2025

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

Summary of Results

Power

Input Watts	28.25 W
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Lumen Output

Output Lumens	2728
Efficacy	96.57 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.44
Two luminaires, plane 90°	0.39
Four luminaires	0.48

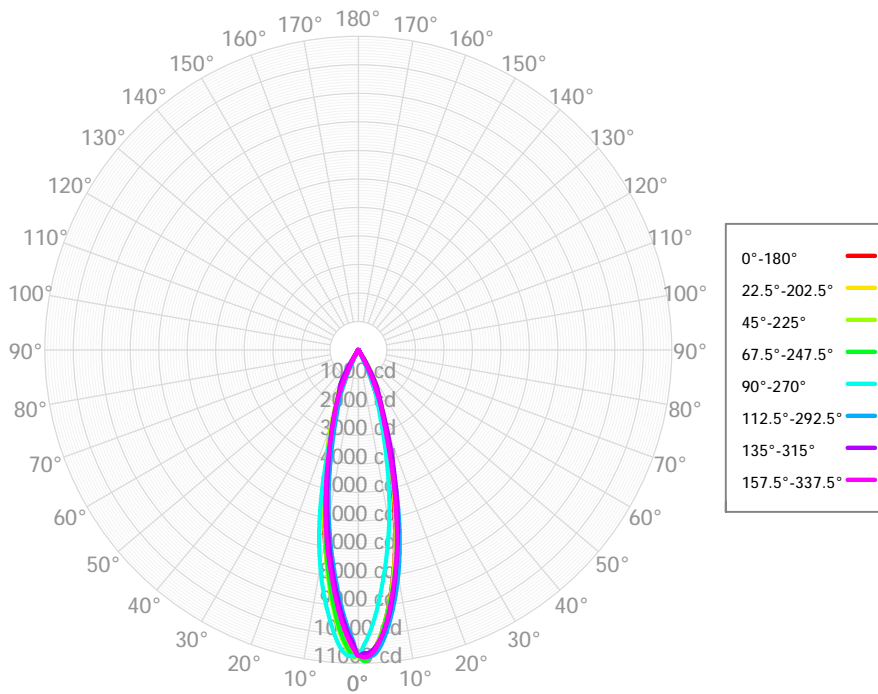
Full Beam Angle

0° - 180°	26°
90° - 270°	25°

IES File Header Contents

Keyword	Value
TEST	SP-R1162
TESTLAB	Spectrum Lighting Photometric Lab. VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	8/7/2025
ISSUEDATE	8/7/2025
LUMCAT	SDFO4PC40L35KMDE1-SD4FPCSGMF
LUMINAIRE	4" Square aperture recessed LED downlight.
DISTRIBUTION	Beam Angle 26.1
OTHER	CCT 3532 CRI 83.3 R9 6.7
OTHER	Total Luminaire wattage is approximate
OTHER	This report is prepared by Spectrum Lighting
_CRI	80+
_LAMPMULT	10L x 0.274, 15L x 0.397, 20L x 0.523, 30L x 0.769, 50L x 1.258

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	822.72	30.16%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	1212.16	44.43%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	543.88	19.94%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	62.56	2.29%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	24.02	0.88%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	19.70	0.72%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	16.73	0.61%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	14.10	0.52%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	12.13	0.44%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	2728.00	100.00%	0.00° - 180.00°	2728.00	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°	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99	10729.99
1.00°	10824.19	10851.74	10909.50	10916.89	10391.53	10217.86	10306.59	10476.15	10658.33	10700.40	10796.54	10737.91	10751.58	10722.54	10644.17	10790.49	10824.19
2.00°	10734.35	10763.67	10787.40	10826.91	10049.06	9827.60	9972.46	10158.94	10392.95	10432.49	10557.18	10482.78	10734.67	10781.98	10628.00	10749.95	10734.35
3.00°	10524.14	10555.19	10547.44	10602.10	9636.05	9380.33	9547.87	9777.26	10034.43	10068.43	10230.85	10152.79	10580.74	10707.63	10493.90	10588.21	10524.14
4.00°	10223.18	10262.97	10219.14	10275.63	9175.61	8901.45	9099.02	9331.80	9601.07	9620.73	9840.15	9747.92	10304.40	10507.62	10275.13	10310.66	10223.18
5.00°	9845.12	9896.41	9832.45	9883.46	8680.00	8404.41	8626.12	8851.59	9117.99	9124.42	9383.02	9276.98	9940.13	10202.06	9986.15	9962.26	9845.12
6.00°	9404.56	9462.27	9399.75	9439.00	8184.01	7900.91	8131.51	8363.29	8615.47	8619.56	8887.99	8762.65	9539.63	9833.15	9629.96	9564.00	9404.56
7.00°	8913.82	8979.14	8929.19	8994.66	7695.10	7414.05	7633.85	7886.34	8141.33	8129.12	8356.44	8229.57	9116.74	9426.10	9211.21	9098.69	8913.82
8.00°	8401.82	8465.32	8437.48	8553.03	7202.72	6926.88	7147.99	7430.25	7704.55	7656.81	7817.21	7688.03	8672.51	8991.68	8728.11	8601.88	8401.82
9.00°	7880.56	7929.44	7927.42	8083.74	6704.62	6439.30	6665.16	6973.34	7251.31	7180.63	7276.30	7145.25	8202.66	8536.36	8207.50	8111.59	7880.56
10.00°	7340.33	7394.63	7400.15	7597.72	6210.06	5953.25	6190.93	6495.97	6780.82	6713.89	6736.75	6614.46	7702.50	8052.86	7687.92	7609.05	7340.33
11.00°	6770.80	6837.27	6870.19	7088.13	5710.32	5463.69	5728.95	6009.21	6319.45	6246.94	6227.93	6096.24	7176.33	7540.92	7180.21	7071.98	6770.80
12.00°	6166.49	6266.19	6340.84	6535.21	5200.95	4977.51	5277.49	5538.61	5834.75	5768.39	5745.74	5583.80	6617.30	7000.85	6679.81	6492.46	6166.49
13.00°	5553.85	5685.77	5832.84	5948.68	4696.53	4504.70	4836.13	5078.31	5307.36	5245.68	5287.65	5079.58	6022.51	6423.12	6174.10	5891.71	5553.85
14.00°	4948.40	5114.91	5327.78	5340.49	4200.75	4044.42	4411.69	4628.55	4759.44	4718.07	4852.02	4597.92	5404.81	5814.88	5661.69	5314.98	4948.40
15.00°	4354.19	4570.89	4840.64	4738.57	3725.30	3612.85	4028.63	4196.66	4217.15	4212.26	4454.42	4139.11	4762.65	5187.46	5156.71	4748.76	4354.19
16.00°	3800.75	4060.45	4374.98	4163.29	3274.82	3210.06	3685.02	3777.83	3708.93	3714.49	4088.34	3704.78	4144.31	4555.60	4655.31	4192.87	3800.75
17.00°	3316.15	3584.34	3932.79	3638.39	2865.52	2850.90	3369.13	3382.69	3244.71	3260.45	3742.74	3276.40	3590.46	3953.67	4175.05	3679.01	3316.15
18.00°	2906.49	3161.64	3537.25	3172.76	2512.80	2524.89	3086.76	3019.15	2855.18	2854.29	3404.88	2878.28	3125.97	3433.03	3735.27	3226.24	2906.49
19.00°	2546.97	2811.33	3170.76	2775.69	2228.69	2263.13	2819.73	2701.93	2551.10	2547.92	3074.41	2555.71	2708.42	3003.84	3313.53	2854.33	2546.97
20.00°	2248.21	2510.10	2824.71	2458.58	2005.78	2050.41	2555.41	2455.45	2296.21	2307.62	2763.74	2294.83	2353.31	2629.43	2915.75	2546.74	2248.21
21.00°	1939.53	2254.40	2498.40	2211.26	1793.53	1875.00	2300.39	2235.60	2021.23	2106.94	2465.99	2075.83	1999.65	2318.93	2551.76	2289.86	1939.53
22.00°	1612.50	2006.64	2204.63	2009.86	1555.21	1696.18	2067.44	2043.39	1696.49	1884.54	2192.47	1877.09	1640.96	2024.79	2262.76	2070.29	1612.50
23.00°	1341.34	1716.32	1957.39	1807.77	1293.82	1476.40	1859.80	1815.66	1348.90	1604.79	1959.94	1644.23	1298.64	1716.87	2041.23	1809.74	1341.34
24.00°	1099.23	1430.27	1769.33	1576.06	1015.96	1231.84	1699.90	1523.32	1018.98	1299.76	1786.80	1382.97	975.76	1409.44	1836.12	1520.60	1099.23
25.00°	816.06	1212.34	1637.58	1309.00	747.19	970.82	1582.47	1217.57	768.83	1006.89	1654.85	1111.79	684.72	1113.68	1676.15	1288.10	816.06
26.00°	535.82	981.53	1533.50	1040.58	505.90	717.02	1490.26	922.87	580.77	759.91	1532.62	840.64	438.89	834.95	1544.12	1090.42	535.82
27.00°	311.17	696.81	1429.38	776.55	306.86	484.70	1401.86	699.49	369.58	574.77	1413.96	585.58	261.11	571.05	1374.95	826.95	311.17
28.00°	181.28	441.23	1276.86	533.31	169.53	288.82	1284.05	534.83	205.43	386.10	1244.15	366.51	168.87	340.11	1182.10	541.99	181.28
29.00°	129.47	245.88	1073.76	328.91	120.02	161.04	1126.88	360.02	143.87	211.97	1029.16	211.57	125.33	194.37	973.58	308.04	129.47
30.00°	102.19	145.57	875.36	180.70	95.34	107.72	914.34	197.65	120.53	126.11	805.58	130.85	103.59	132.03	756.77	157.10	102.19
31.00°	85.91	105.57	699.81	100.72	83.94	85.75	682.85	119.57	100.28	95.54	582.94	98.36	87.73	105.10	559.96	103.65	85.91
32.00°	77.10	78.49	520.56	74.77	79.55	71.32	468.69	90.63	91.23	78.54	389.74	77.30	75.21	80.66	400.32	77.61	77.10
33.00°	72.03	68.35	340.62	59.45	74.47	66.85	294.14	74.87	85.69	69.65	253.76	69.40	68.52	70.88	252.16	59.43	72.03
34.00°	64.94	61.35	192.21	53.47	70.25	59.08	173.69	64.43	79.82	62.79	161.55	60.63	63.22	65.11	133.97	54.14	64.94
35.00°	60.38	56.00	94.17	50.96	65.20	55.65	101.07	61.78	68.71	58.05	87.03	55.35	59.76	58.32	72.28	49.95	60.38
36.00°	58.27	52.20	59.47	45.75	63.25	55.14	65.18	57.02	62.77	52.49	54.63	52.02	53.08	53.41	49.96	46.20	58.27
37.00°	53.52	48.83	44.16	42.34	60.08	52.06	50.82	50.51	57.57	48.38	45.99	48.70	51.55	51.41	40.50	43.37	53.52
38.00°	49.42	46.28	36.77	40.30	57.05	49.28	40.53	44.83	54.61	45.01	38.79	45.89	48.31	48.84	34.43	40.24	49.42
39.00°	47.06	42.85	34.37	38.62	54.12	48.41	36.59	41.27	51.47	41.18	33.54	43.85	43.11	44.78	32.66	37.42	47.06
40.00°	43.69	39.07	30.27	37.22	51.32	45.95	34.11	38.82	48.19	38.67	31.35	42.10	40.95	39.67	30.64	34.73	43.69
41.00°	39.70	36.56	25.67	35.46	49.10	42.18	33.75	37.79	44.80	38.10	29.49	40.56	39.71	36.96	28.00	33.28	39.70
42.00°	36.94	34.57	24.36	33.35	48.18	38.85	33.84	36.56	41.31	37.27	28.42	38.44	38.50	36.18	25.42	32.41	36.94
43.00°	35.95	32.99	25.46	31.43	47.26	36.47	32.98	34.42	38.11	35.05	27.34	35.31	37.31	34.83	24.55	31.57	35.95

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	3248	3248	3248	3248	3172	3172	3172	3172	3031	3031	3031	2902	2902	2902	2784	2784	2728
	1	3125	3061	3004	2953	3059	3003	2952	2906	2894	2854	2817	2793	2762	2733	2701	2677	2624
	2	3012	2905	2817	2743	2955	2859	2780	2712	2774	2709	2653	2695	2643	2597	2622	2581	2531
	3	2908	2771	2665	2580	2858	2735	2638	2560	2667	2586	2520	2603	2537	2482	2545	2491	2445
	4	2811	2653	2537	2449	2767	2624	2517	2435	2569	2479	2407	2518	2442	2381	2471	2407	2354
	5	2720	2548	2428	2339	2681	2524	2413	2329	2480	2383	2309	2438	2355	2290	2399	2328	2288
	6	2635	2453	2331	2244	2601	2434	2320	2237	2397	2297	2223	2363	2275	2209	2331	2254	2217
	7	2554	2367	2245	2160	2524	2351	2236	2155	2320	2218	2144	2291	2201	2134	2264	2185	2150
	8	2479	2287	2167	2084	2452	2274	2160	2080	2248	2146	2073	2224	2132	2065	2201	2119	2087
	9	2408	2214	2096	2016	2383	2203	2090	2013	2181	2079	2007	2160	2068	2001	2141	2057	2027
	10	2340	2146	2030	1953	2318	2137	2025	1951	2118	2016	1946	2100	2007	1942	2083	1998	1971

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	354.7 fc	2.5 ft
6.5 ft	254.0 fc	3.0 ft
7.5 ft	190.8 fc	3.4 ft
8.0 ft	167.7 fc	3.7 ft
10.0 ft	107.3 fc	4.6 ft
12.0 ft	74.5 fc	5.5 ft
14.0 ft	54.7 fc	6.4 ft
16.0 ft	41.9 fc	7.3 ft
20.0 ft	26.8 fc	9.2 ft
24.0 ft	18.6 fc	11.0 ft
28.0 ft	13.7 fc	12.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1182686	1182686	1182686
45.00°	5095	3729	6843
55.00°	4298	3620	6515
65.00°	4508	3652	6097
75.00°	7202	5957	6022
85.00°	14141	16264	14505

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	6.8	7.8	7.2	8.1	8.4	8.0	8.9	8.3	9.2	9.5
	3H	9.6	10.4	10.0	10.7	11.1	10.3	11.1	10.7	11.4	11.8
	4H	11.2	11.9	11.6	12.3	12.7	11.4	12.2	11.9	12.6	13.0
	6H	12.5	13.2	12.9	13.5	13.9	12.8	13.5	13.3	13.9	14.3
	8H	13.3	13.9	13.7	14.3	14.7	13.5	14.2	14.0	14.6	15.0
	12H	14.2	14.8	14.6	15.2	15.6	14.4	15.0	14.8	15.4	15.8
4H	2H	7.3	8.0	7.7	8.4	8.8	8.3	9.1	8.7	9.5	9.8
	3H	10.3	11.0	10.8	11.4	11.8	10.9	11.5	11.3	11.9	12.3
	4H	12.1	12.7	12.6	13.1	13.6	12.4	12.9	12.8	13.3	13.8
	6H	13.6	14.1	14.1	14.6	15.0	14.0	14.4	14.4	14.9	15.4
	8H	14.6	15.0	15.1	15.5	15.9	14.8	15.2	15.2	15.7	16.1
	12H	15.6	16.0	16.1	16.5	17.0	15.8	16.2	16.3	16.6	17.1
8H	4H	12.6	13.1	13.1	13.5	14.0	12.7	13.2	13.2	13.6	14.1
	6H	14.4	14.7	14.9	15.2	15.7	14.6	14.9	15.1	15.4	15.9
	8H	15.5	15.8	16.1	16.4	16.9	15.6	15.9	16.1	16.4	16.9
	12H	16.9	17.1	17.4	17.6	18.2	16.9	17.2	17.4	17.7	18.3
12H	4H	12.7	13.1	13.2	13.6	14.1	12.9	13.2	13.4	13.7	14.2
	6H	14.6	14.9	15.1	15.4	15.9	14.8	15.1	15.3	15.6	16.1
	8H	15.9	16.2	16.4	16.7	17.3	15.9	16.2	16.4	16.7	17.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0