

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

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### Spectrum Lighting Photometric Lab

Luminaire

SDFO4PC50L35KMDE1-SD4FPCSGMFSOX  
4" Square aperture recessed LED downlight

Test Number

SP-R246

Test Date

8/7/2025

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

## Summary of Results

### Power

Input Watts	35.4 W
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### Lumen Output

Output Lumens	3327
Efficacy	93.98 lm/W

### Luminous Dimensions

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

### Spacing Criterion

Two luminaires, plane 0°	0.53
Two luminaires, plane 90°	0.53
Four luminaires	0.55

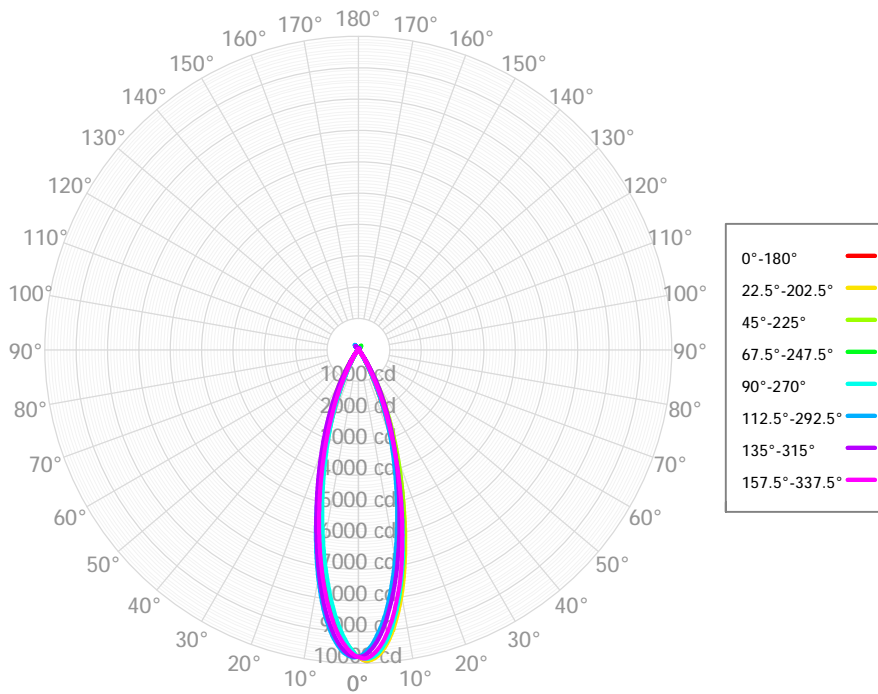
### Full Beam Angle

0° - 180°	30°
90° - 270°	29°

## IES File Header Contents

Keyword	Value
TEST	SP-R246
TESTLAB	Spectrum Lighting Photometric Lab. VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	8/7/2025
ISSUEDATE	8/7/2025
LUMCAT	SDFO4PC50L35KMDE1-SD4FPCSGMFSOX
LUMINAIRE	4" Square aperture recessed LED downlight
DISTRIBUTION	Beam Angle 30.4
OTHER	CCT 3487 CRI 82.9 R9 5.1
OTHER	Total Luminaire wattage is approximate
OTHER	This report is prepared by Spectrum Lighting

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	802.12	24.11%	90.00° - 100.00°	1.53	0.05%
10.00° - 20.00°	1373.47	41.28%	100.00° - 110.00°	1.48	0.04%
20.00° - 30.00°	791.07	23.78%	100.00° - 120.00°	2.85	0.09%
30.00° - 40.00°	201.59	6.06%	120.00° - 130.00°	2.00	0.06%
40.00° - 50.00°	55.54	1.67%	130.00° - 140.00°	8.45	0.25%
50.00° - 60.00°	27.35	0.82%	140.00° - 150.00°	30.82	0.93%
60.00° - 70.00°	11.95	0.36%	150.00° - 160.00°	10.97	0.33%
70.00° - 80.00°	3.82	0.11%	160.00° - 170.00°	1.19	0.04%
80.00° - 90.00°	2.04	0.06%	170.00° - 180.00°	0.22	0.01%
0.00° - 90.00°	3268.96	98.26%	0.00° - 180.00°	3327.00	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°	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73	9792.73
1.00°	9889.83	9900.86	9808.82	9831.45	9843.58	9809.39	9785.45	9711.87	9723.04	9701.07	9624.07	9638.06	9621.86	9689.97	9762.13	9846.87	9889.83
2.00°	9868.81	9909.69	9810.60	9823.78	9848.75	9748.11	9699.71	9553.56	9541.30	9515.70	9441.61	9448.25	9410.47	9540.89	9642.66	9806.88	9868.81
3.00°	9778.15	9852.24	9746.71	9748.91	9780.25	9636.43	9554.85	9353.51	9311.70	9272.32	9201.93	9204.56	9140.27	9332.31	9465.90	9691.13	9778.15
4.00°	9633.39	9730.38	9608.98	9601.80	9653.24	9443.12	9353.84	9108.53	9044.15	8985.87	8916.82	8908.37	8832.09	9051.70	9240.03	9517.85	9633.39
5.00°	9431.47	9543.54	9410.73	9395.05	9446.68	9205.18	9087.23	8814.57	8740.41	8663.96	8590.74	8574.18	8486.61	8758.00	8953.23	9299.10	9431.47
6.00°	9181.43	9306.84	9157.89	9127.88	9204.55	8921.20	8785.87	8466.60	8404.77	8313.56	8234.57	8208.09	8107.42	8410.88	8629.96	9019.11	9181.43
7.00°	8891.85	9018.97	8860.23	8805.75	8883.11	8583.92	8447.04	8111.80	8028.65	7937.71	7851.97	7815.01	7685.28	8008.48	8271.30	8710.75	8891.85
8.00°	8546.99	8689.93	8520.99	8451.46	8529.04	8206.54	8067.07	7709.14	7638.94	7534.43	7451.39	7402.86	7260.16	7603.05	7888.06	8351.30	8546.99
9.00°	8168.20	8327.48	8155.47	8065.35	8138.89	7792.35	7656.91	7301.33	7213.33	7111.95	7031.97	6980.89	6838.84	7190.83	7496.77	7970.29	8168.20
10.00°	7760.23	7937.64	7762.97	7660.32	7714.79	7361.05	7229.24	6876.41	6788.87	6687.87	6611.34	6558.81	6399.87	6761.79	7087.09	7595.62	7760.23
11.00°	7308.27	7528.21	7346.57	7224.18	7266.87	6924.98	6802.58	6438.73	6352.89	6262.87	6185.95	6136.63	5963.29	6330.28	6657.36	7160.10	7308.27
12.00°	6838.70	7081.03	6924.25	6782.80	6822.70	6468.45	6370.30	6003.42	5908.82	5830.00	5786.58	5717.18	5532.91	5916.97	6233.06	6697.49	6838.70
13.00°	6366.62	6631.95	6501.24	6319.44	6324.48	6002.31	5956.16	5566.05	5462.40	5400.08	5400.01	5311.53	5115.65	5498.52	5830.74	6247.03	6366.62
14.00°	5889.60	6177.53	6074.55	5862.68	5839.99	5561.69	5538.04	5136.55	5035.24	4983.55	5028.75	4921.09	4708.40	5099.06	5425.88	5804.23	5889.60
15.00°	5404.89	5724.13	5648.22	5401.64	5351.52	5122.74	5137.83	4723.48	4593.16	4584.09	4671.58	4545.50	4307.54	4702.16	5034.66	5356.99	5404.89
16.00°	4924.69	5274.51	5233.83	4951.03	4879.14	4685.00	4755.34	4318.74	4172.97	4193.37	4342.09	4186.85	3922.01	4329.06	4671.18	4918.78	4924.69
17.00°	4457.43	4831.24	4834.92	4515.48	4416.47	4282.81	4392.48	3933.42	3770.70	3820.05	4036.04	3842.32	3556.36	3976.74	4324.15	4502.45	4457.43
18.00°	4005.86	4403.66	4447.88	4111.34	3984.13	3898.70	4042.70	3568.39	3384.51	3469.17	3741.46	3516.83	3215.54	3643.57	4004.30	4099.88	4005.86
19.00°	3580.18	3991.46	4068.79	3724.34	3577.30	3535.06	3710.75	3213.76	3017.14	3134.78	3460.07	3205.02	2895.55	3315.90	3694.18	3704.50	3580.18
20.00°	3175.55	3596.06	3709.42	3353.83	3186.93	3195.62	3396.58	2875.61	2676.56	2819.32	3189.32	2906.85	2580.01	3012.43	3395.22	3336.25	3175.55
21.00°	2799.18	3232.56	3367.40	3006.04	2818.27	2873.69	3099.81	2566.36	2345.40	2521.15	2928.97	2620.07	2275.97	2723.98	3107.83	2992.85	2799.18
22.00°	2440.23	2887.32	3046.12	2670.91	2462.00	2562.58	2813.71	2273.61	2032.70	2235.75	2680.15	2344.41	1986.98	2446.15	2832.84	2670.72	2440.23
23.00°	2106.60	2560.31	2744.53	2354.59	2129.42	2266.34	2545.57	1997.13	1748.49	1966.76	2438.47	2079.67	1708.95	2175.60	2568.84	2367.85	2106.60
24.00°	1793.67	2251.91	2459.93	2053.16	1823.45	1982.92	2293.36	1737.28	1482.53	1710.72	2212.30	1824.72	1449.59	1911.94	2322.49	2079.93	1793.67
25.00°	1512.38	1965.22	2194.14	1766.57	1539.92	1712.96	2057.44	1489.21	1242.88	1470.24	1995.56	1573.94	1213.77	1658.39	2084.68	1808.19	1512.38
26.00°	1260.56	1691.70	1943.75	1502.32	1280.89	1461.48	1831.46	1263.72	1030.23	1250.39	1786.23	1338.19	1004.22	1421.54	1863.74	1554.20	1260.56
27.00°	1038.63	1436.33	1707.07	1263.25	1062.08	1228.19	1621.12	1063.16	849.58	1051.41	1588.90	1124.24	822.23	1201.21	1647.98	1317.67	1038.63
28.00°	853.20	1205.20	1485.64	1049.85	876.40	1024.54	1416.20	887.44	699.80	878.88	1399.32	931.74	670.12	1002.03	1446.81	1103.03	853.20
29.00°	697.75	1004.52	1275.59	867.56	721.20	846.22	1220.20	737.05	575.48	725.98	1220.81	759.64	545.67	825.14	1255.78	917.04	697.75
30.00°	572.41	830.50	1076.82	716.28	594.69	695.37	1036.40	610.91	472.05	600.88	1051.53	620.47	449.39	675.26	1073.25	757.62	572.41
31.00°	468.60	681.73	898.02	590.65	492.24	573.39	866.62	506.41	389.14	499.19	890.11	501.93	376.54	550.22	901.68	623.61	468.60
32.00°	385.97	560.97	739.11	486.24	405.16	469.56	716.08	420.93	324.04	413.19	740.77	411.09	317.72	450.95	746.30	515.44	385.97
33.00°	317.02	462.21	602.96	401.43	336.02	385.31	583.90	347.81	269.76	340.47	609.07	342.44	265.87	374.03	609.22	425.82	317.02
34.00°	259.81	380.82	492.11	330.38	283.24	320.24	473.17	287.31	228.21	284.49	498.38	283.33	228.41	312.55	498.77	350.04	259.81
35.00°	213.98	313.07	397.44	274.33	239.96	263.70	382.01	239.90	193.39	231.12	404.17	234.96	199.53	261.68	399.46	287.45	213.98
36.00°	177.97	255.51	323.75	229.05	205.59	220.20	311.81	199.23	162.62	192.22	325.58	198.40	177.04	221.11	326.46	238.99	177.97
37.00°	149.32	209.05	264.01	190.37	178.32	183.42	257.41	167.64	140.55	160.55	265.51	168.67	155.39	188.48	267.64	195.48	149.32
38.00°	127.53	175.36	215.15	160.88	157.78	150.72	212.79	142.59	127.36	133.73	216.72	146.00	138.89	161.70	221.38	163.52	127.53
39.00°	112.37	145.99	178.86	137.58	141.09	132.97	175.56	122.34	115.39	115.00	177.37	124.51	129.61	141.42	177.79	136.24	112.37
40.00°	100.78	120.26	147.51	119.32	126.70	115.66	144.29	106.96	104.46	103.01	146.74	112.61	118.13	123.07	150.41	114.78	100.78
41.00°	90.40	101.38	120.99	107.36	115.41	100.05	119.21	98.34	98.07	90.70	120.44	99.93	109.73	110.50	123.98	101.09	90.40
42.00°	83.18	88.07	101.10	97.89	106.16	89.86	101.15	89.51	91.81	81.06	101.28	90.17	100.42	98.48	104.96	88.31	83.18
43.00°	76.77	76.34	84.46	87.97	96.97	81.73	86.47	80.84	85.13	72.98	86.43	82.39	91.67	89.70	88.91	78.70	76.77

### 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	3947	3947	3947	3947	3848	3848	3848	3848	3664	3664	3664	3496	3496	3496	3342	3342	3269
	1	3793	3714	3643	3579	3707	3637	3574	3517	3493	3444	3399	3361	3323	3288	3239	3211	3142
	2	3645	3509	3397	3303	3569	3448	3347	3262	3334	3253	3182	3229	3164	3106	3131	3080	3016
	3	3505	3329	3193	3084	3438	3280	3156	3056	3188	3085	3001	3103	3018	2948	3024	2955	2896
	4	3373	3168	3019	2904	3314	3129	2991	2884	3053	2937	2845	2984	2886	2807	2919	2837	2783
	5	3249	3024	2867	2752	3196	2992	2846	2737	2929	2804	2708	2872	2765	2681	2818	2727	2676
	6	3132	2894	2734	2619	3085	2866	2717	2608	2815	2684	2587	2766	2653	2566	2721	2623	2576
	7	3022	2775	2615	2502	2980	2752	2601	2494	2708	2575	2478	2667	2550	2462	2629	2525	2483
	8	2919	2666	2507	2398	2881	2646	2496	2391	2609	2475	2379	2574	2454	2366	2541	2434	2395
	9	2822	2566	2409	2303	2787	2549	2400	2298	2517	2382	2288	2486	2365	2278	2458	2349	2313
	10	2730	2473	2319	2217	2699	2458	2312	2213	2431	2297	2205	2404	2283	2197	2379	2269	2236

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	323.7 fc	3.0 ft
6.5 ft	231.8 fc	3.5 ft
7.5 ft	174.1 fc	4.0 ft
8.0 ft	153.0 fc	4.3 ft
10.0 ft	97.9 fc	5.4 ft
12.0 ft	68.0 fc	6.5 ft
14.0 ft	50.0 fc	7.5 ft
16.0 ft	38.3 fc	8.6 ft
20.0 ft	24.5 fc	10.8 ft
24.0 ft	17.0 fc	12.9 ft
28.0 ft	12.5 fc	15.1 ft

### Average Luminaire Luminance [cd/m<sup>2</sup>]

	0.00°	45.00°	90.00°
0.00°	950573	950573	950573
45.00°	9093	8220	11001
55.00°	5949	3304	5781
65.00°	3293	1446	3335
75.00°	1304	1037	1660
85.00°	1910	2262	2476

### 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	7.3	8.2	7.7	8.6	8.9	7.8	8.7	8.2	9.1	9.4
	3H	7.7	8.5	8.2	8.9	9.3	8.3	9.1	8.7	9.5	9.9
	4H	7.8	8.5	8.2	8.9	9.3	8.4	9.1	8.8	9.5	9.9
	6H	7.9	8.6	8.3	9.0	9.4	8.4	9.1	8.9	9.5	9.9
	8H	8.0	8.6	8.4	9.0	9.5	8.4	9.0	8.9	9.5	9.9
	12H	8.0	8.6	8.5	9.0	9.5	8.4	9.0	8.9	9.5	9.9
4H	2H	7.1	7.9	7.6	8.3	8.7	7.6	8.4	8.1	8.8	9.2
	3H	7.6	8.2	8.1	8.7	9.1	8.2	8.8	8.6	9.2	9.7
	4H	7.7	8.2	8.2	8.7	9.2	8.3	8.8	8.8	9.3	9.8
	6H	7.9	8.4	8.4	8.9	9.4	8.4	8.8	8.9	9.3	9.8
	8H	8.1	8.5	8.6	9.0	9.5	8.4	8.8	8.9	9.3	9.9
	12H	8.2	8.5	8.7	9.0	9.6	8.5	8.9	9.0	9.4	9.9
8H	4H	7.6	8.0	8.1	8.5	9.0	8.2	8.6	8.7	9.1	9.6
	6H	7.9	8.2	8.4	8.8	9.3	8.3	8.7	8.9	9.2	9.7
	8H	8.1	8.4	8.7	8.9	9.5	8.4	8.7	9.0	9.3	9.8
	12H	8.3	8.6	8.9	9.1	9.7	8.6	8.9	9.2	9.4	10.0
12H	4H	7.6	7.9	8.1	8.4	9.0	8.1	8.5	8.6	9.0	9.5
	6H	7.9	8.2	8.4	8.7	9.2	8.3	8.6	8.8	9.1	9.7
	8H	8.1	8.4	8.7	8.9	9.5	8.4	8.7	9.0	9.2	9.8

Corrected UGR values based on total output energy  
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0