

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SDFO4PC50L35KMDE1-SD4FPCSGMF
4" Square aperture recessed LED downlight

Test Number

SP-R248

Test Date

8/7/2025

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

Summary of Results

Power

Input Watts	35.34 W
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Lumen Output

Output Lumens	3432
Efficacy	97.11 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.46
Two luminaires, plane 90°	0.46
Four luminaires	0.47

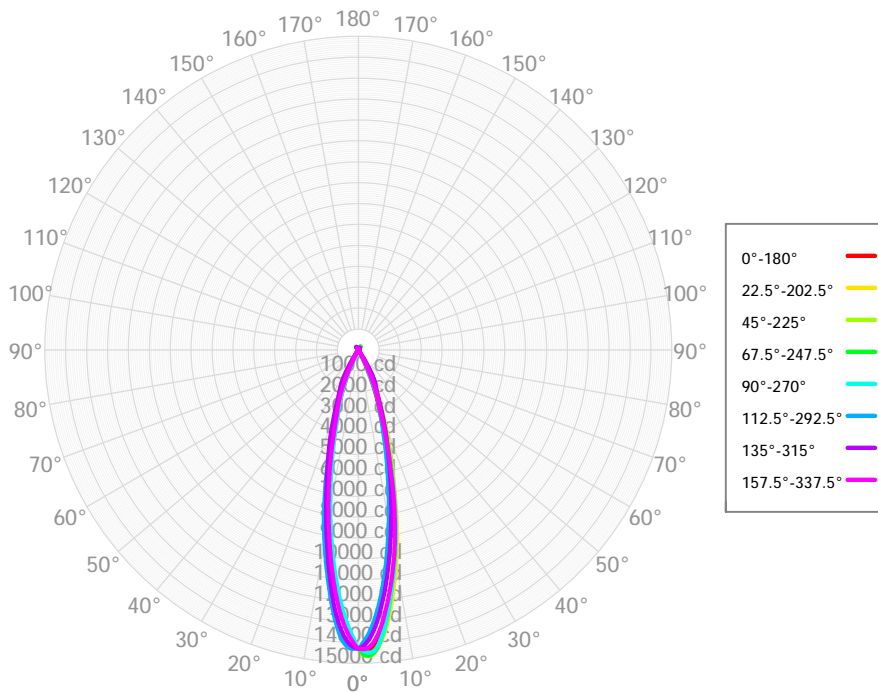
Full Beam Angle

0° - 180°	24°
90° - 270°	24°

IES File Header Contents

Keyword	Value
TEST	SP-R248
TESTLAB	Spectrum Lighting Photometric Lab. VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	8/7/2025
ISSUEDATE	8/7/2025
LUMCAT	SDFO4PC50L35KMDE1-SD4FPCSGMF
LUMINAIRE	4" Square aperture recessed LED downlight
DISTRIBUTION	Beam Angle 24.7
OTHER	CCT 3496 CRI 83.0 R9 5.3
OTHER	Total Luminaire wattage is approximate
OTHER	This report is prepared by Spectrum Lighting
_CRI	80+
_LAMPMULT	10L x 0.218, 15L x 0.316, 20L x 0.416, 30L x 0.612, 40L x 0.795

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	1080.81	31.49%	90.00° - 100.00°	1.14	0.03%
10.00° - 20.00°	1518.68	44.25%	100.00° - 110.00°	1.21	0.04%
20.00° - 30.00°	673.93	19.64%	100.00° - 120.00°	2.36	0.07%
30.00° - 40.00°	60.71	1.77%	120.00° - 130.00°	1.42	0.04%
40.00° - 50.00°	10.33	0.30%	130.00° - 140.00°	7.40	0.22%
50.00° - 60.00°	5.56	0.16%	140.00° - 150.00°	42.09	1.23%
60.00° - 70.00°	3.93	0.11%	150.00° - 160.00°	17.24	0.50%
70.00° - 80.00°	2.38	0.07%	160.00° - 170.00°	2.23	0.07%
80.00° - 90.00°	1.57	0.05%	170.00° - 180.00°	0.21	0.01%
0.00° - 90.00°	3357.91	97.84%	0.00° - 180.00°	3432.00	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°	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38	14281.38
1.00°	14473.27	14580.24	14592.50	14576.84	14400.11	14310.25	14214.97	14006.68	14004.43	13995.77	13984.63	13995.67	13773.35	13984.34	14157.41	14325.67	14473.27
2.00°	14450.69	14634.43	14663.49	14635.37	14504.30	14238.46	14009.54	13627.53	13570.64	13525.54	13512.54	13534.60	13293.28	13624.99	13904.06	14244.50	14450.69
3.00°	14262.60	14484.22	14521.68	14492.67	14419.13	13970.19	13653.65	13153.05	13038.00	12964.76	12966.86	12994.25	12734.08	13156.46	13512.38	14006.20	14262.60
4.00°	13915.54	14174.65	14186.06	14123.45	14111.69	13515.42	13169.54	12570.10	12428.77	12340.49	12342.69	12377.26	12094.01	12594.79	13005.43	13623.68	13915.54
5.00°	13444.97	13727.02	13677.45	13581.08	13619.89	12919.72	12556.58	11909.62	11762.71	11658.21	11672.83	11705.00	11407.25	11956.21	12409.10	13123.92	13444.97
6.00°	12874.29	13171.00	13025.16	12922.58	12981.78	12222.13	11852.44	11198.83	11056.53	10936.52	10964.80	10989.25	10696.69	11275.09	11759.09	12529.96	12874.29
7.00°	12247.03	12539.26	12267.20	12175.75	12256.68	11481.93	11095.54	10451.79	10329.53	10191.38	10200.25	10239.12	9958.20	10561.17	11072.60	11902.26	12247.03
8.00°	11601.03	11846.46	11459.91	11392.50	11518.74	10750.69	10320.52	9682.22	9585.45	9432.11	9416.43	9473.19	9212.42	9826.32	10373.73	11261.28	11601.03
9.00°	10928.84	11124.97	10678.03	10647.54	10805.82	10040.32	9536.11	8910.90	8829.19	8665.02	8652.25	8713.27	8473.36	9093.34	9662.35	10588.84	10928.84
10.00°	10202.06	10413.92	9947.22	9936.05	10097.77	9341.59	8793.97	8175.81	8078.54	7924.10	7900.65	7974.13	7750.77	8362.32	8942.87	9921.91	10202.06
11.00°	9420.65	9678.73	9240.03	9198.64	9388.55	8616.33	8090.37	7481.88	7355.61	7215.49	7201.39	7271.73	7032.27	7646.16	8235.11	9188.63	9420.65
12.00°	8590.95	8887.61	8535.46	8430.16	8616.56	7866.68	7424.64	6798.94	6656.90	6528.25	6573.22	6594.87	6345.01	6943.89	7569.66	8410.01	8590.95
13.00°	7733.18	8074.37	7839.20	7658.46	7825.35	7126.41	6779.90	6133.26	5975.35	5876.90	6005.21	5957.25	5703.05	6295.08	6938.28	7623.63	7733.18
14.00°	6856.80	7252.84	7170.07	6906.67	7014.92	6424.12	6179.34	5504.19	5315.93	5268.36	5503.34	5386.93	5082.74	5679.77	6329.23	6837.17	6856.80
15.00°	5998.54	6439.93	6516.77	6176.38	6219.53	5736.89	5663.81	4922.30	4682.92	4683.31	5058.31	4866.84	4483.88	5101.17	5749.14	6069.65	5998.54
16.00°	5181.41	5674.05	5887.68	5475.67	5449.59	5073.21	5173.32	4365.75	4097.09	4133.32	4659.44	4373.36	3936.59	4560.33	5223.40	5340.85	5181.41
17.00°	4422.57	4964.88	5296.25	4818.60	4734.66	4458.63	4727.50	3857.48	3589.73	3647.92	4293.70	3914.28	3473.90	4048.51	4741.30	4680.73	4422.57
18.00°	3769.80	4318.59	4736.70	4223.47	4107.13	3916.10	4284.27	3428.64	3173.59	3248.56	3949.58	3500.43	3107.77	3606.68	4289.04	4086.77	3769.80
19.00°	3252.17	3743.14	4190.76	3723.19	3592.56	3447.47	3859.46	3089.61	2828.42	2925.19	3612.66	3153.90	2809.25	3244.54	3862.29	3553.66	3252.17
20.00°	2838.85	3268.03	3681.81	3306.64	3155.41	3087.68	3447.81	2803.75	2511.23	2647.90	3273.84	2872.53	2533.36	2951.52	3459.61	3113.05	2838.85
21.00°	2484.32	2897.70	3219.35	2954.50	2772.89	2773.35	3068.67	2536.70	2168.26	2390.42	2938.27	2635.89	2197.82	2696.14	3066.84	2776.93	2484.32
22.00°	2117.47	2599.53	2791.40	2644.88	2375.11	2510.58	2729.31	2240.74	1796.55	2095.97	2621.26	2417.29	1828.54	2438.16	2703.36	2510.23	2117.47
23.00°	1747.08	2329.41	2458.27	2307.21	1960.26	2210.87	2459.43	1902.77	1419.50	1765.45	2342.53	2128.92	1452.51	2115.96	2394.62	2257.62	1747.08
24.00°	1373.15	2027.14	2238.58	1937.78	1551.81	1863.68	2256.55	1547.67	1057.06	1436.74	2132.04	1790.95	1090.57	1755.04	2159.46	1970.56	1373.15
25.00°	1017.79	1691.69	2075.54	1562.96	1159.77	1514.10	2079.87	1192.51	724.28	1116.92	1977.51	1449.50	757.55	1397.27	1997.39	1662.56	1017.79
26.00°	687.54	1346.85	1911.32	1202.00	810.38	1165.79	1915.21	855.74	449.97	802.27	1845.84	1114.85	473.50	1052.52	1874.04	1333.19	687.54
27.00°	409.44	1003.35	1760.34	852.25	515.52	832.82	1742.38	557.64	257.08	521.61	1742.98	791.12	261.78	732.83	1746.95	1002.37	409.44
28.00°	218.99	674.83	1566.16	544.22	292.72	542.92	1528.20	322.24	159.78	302.47	1609.01	507.75	152.49	451.79	1587.82	689.95	218.99
29.00°	124.44	392.37	1300.04	300.07	188.13	306.86	1276.19	177.08	118.44	167.84	1387.47	282.47	113.08	239.75	1369.37	419.98	124.44
30.00°	83.52	190.80	1020.20	162.42	136.89	164.40	1007.76	112.05	93.61	112.21	1116.23	141.79	90.90	133.60	1099.73	218.13	83.52
31.00°	60.45	96.21	749.46	104.57	108.26	105.70	743.86	82.65	82.83	78.01	842.66	89.06	78.54	88.60	825.54	111.85	60.45
32.00°	52.25	64.01	504.12	77.80	93.00	76.91	502.23	66.17	72.52	61.24	591.64	65.31	67.94	66.73	574.54	68.71	52.25
33.00°	46.19	42.51	306.51	59.02	79.87	59.38	307.20	57.03	66.35	52.97	377.00	51.48	57.42	55.36	360.87	46.41	46.19
34.00°	41.02	33.43	158.16	48.59	74.30	49.03	160.89	50.67	58.64	47.45	208.54	43.55	50.84	44.79	197.89	33.20	41.02
35.00°	35.37	32.31	68.93	46.36	60.66	44.73	69.63	41.33	50.42	41.50	98.71	40.18	46.89	43.33	93.61	30.23	35.37
36.00°	29.19	25.68	31.87	41.56	56.41	39.00	37.02	35.63	46.13	32.95	53.37	35.88	41.23	36.36	45.70	26.24	29.19
37.00°	28.28	24.71	20.52	33.34	47.87	32.99	26.90	33.04	42.17	29.72	32.32	30.56	36.93	32.96	26.65	25.47	28.28
38.00°	27.94	19.62	16.23	28.17	46.57	29.63	21.58	31.22	37.21	29.66	20.20	25.83	34.02	30.14	18.32	22.36	27.94
39.00°	24.99	18.36	11.28	24.93	41.00	27.23	18.02	30.58	34.41	27.18	15.65	22.18	30.25	26.51	14.09	21.05	24.99
40.00°	24.61	18.23	9.92	22.28	33.81	23.38	15.32	27.02	32.45	23.91	13.16	22.68	27.75	22.39	11.83	20.65	24.61
41.00°	24.23	16.77	9.27	18.63	31.06	19.89	14.55	23.47	30.61	20.56	12.55	23.54	25.26	20.21	9.81	17.31	24.23
42.00°	21.84	15.31	8.14	14.97	28.31	17.53	13.96	19.97	28.78	18.29	11.95	20.37	22.14	18.22	8.54	13.86	21.84
43.00°	19.44	13.89	6.92	13.54	24.70	15.17	12.31	16.46	24.48	16.09	10.91	16.97	19.01	17.39	7.28	11.99	19.44

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	4068	4068	4068	4068	3965	3965	3965	3965	3772	3772	3772	3596	3596	3596	3434	3434	3358
	1	3924	3849	3782	3721	3835	3769	3709	3655	3619	3573	3530	3481	3446	3413	3354	3327	3303
	2	3790	3662	3557	3468	3712	3599	3505	3424	3480	3405	3340	3370	3311	3259	3269	3222	3181
	3	3664	3500	3373	3272	3596	3449	3334	3241	3354	3259	3182	3265	3189	3124	3183	3122	3069
	4	3546	3356	3217	3111	3486	3315	3188	3089	3238	3131	3047	3166	3077	3005	3099	3025	2965
	5	3435	3228	3083	2976	3382	3194	3060	2960	3130	3016	2928	3071	2974	2898	3015	2933	2868
	6	3331	3111	2964	2858	3284	3083	2946	2846	3030	2911	2822	2980	2878	2799	2934	2846	2777
	7	3232	3005	2857	2754	3190	2981	2843	2745	2936	2815	2727	2895	2788	2709	2855	2762	2691
	8	3139	2907	2760	2660	3102	2887	2749	2653	2849	2726	2639	2813	2704	2625	2780	2683	2611
	9	3051	2816	2672	2575	3017	2799	2662	2569	2766	2644	2558	2736	2626	2547	2707	2608	2536
	10	2968	2732	2590	2496	2938	2717	2582	2492	2689	2567	2483	2662	2552	2474	2637	2537	2465

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	472.1 fc	2.4 ft
6.5 ft	338.0 fc	2.8 ft
7.5 ft	253.9 fc	3.3 ft
8.0 ft	223.1 fc	3.5 ft
10.0 ft	142.8 fc	4.3 ft
12.0 ft	99.2 fc	5.2 ft
14.0 ft	72.9 fc	6.1 ft
16.0 ft	55.8 fc	6.9 ft
20.0 ft	35.7 fc	8.7 ft
24.0 ft	24.8 fc	10.4 ft
28.0 ft	18.2 fc	12.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1386283	1386283	1386283
45.00°	2164	998	2444
55.00°	1514	509	1565
65.00°	2259	470	1214
75.00°	983	554	991
85.00°	2327	1597	1823

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	-3.0	-2.1	-2.6	-1.8	-1.4	-3.3	-2.4	-2.9	-2.0	-1.7
	3H	0.2	1.0	0.7	1.4	1.8	-1.2	-0.4	-0.7	0.0	0.4
	4H	0.7	1.4	1.2	1.8	2.3	-0.2	0.5	0.3	0.9	1.4
	6H	1.3	1.9	1.7	2.3	2.8	0.7	1.3	1.1	1.7	2.2
	8H	1.7	2.3	2.1	2.7	3.2	1.2	1.8	1.7	2.3	2.7
	12H	2.2	2.8	2.7	3.2	3.7	1.7	2.3	2.2	2.7	3.2
4H	2H	-3.1	-2.3	-2.6	-1.9	-1.5	-3.1	-2.4	-2.7	-2.0	-1.6
	3H	0.3	0.8	0.7	1.3	1.7	-0.9	-0.3	-0.4	0.1	0.6
	4H	0.9	1.4	1.4	1.9	2.4	0.3	0.8	0.8	1.3	1.8
	6H	1.6	2.1	2.1	2.5	3.1	1.5	1.9	2.0	2.4	2.9
	8H	2.1	2.5	2.6	3.0	3.6	2.2	2.6	2.7	3.1	3.6
	12H	2.8	3.2	3.4	3.7	4.3	2.8	3.1	3.3	3.6	4.2
8H	4H	1.0	1.4	1.5	1.9	2.4	0.4	0.8	0.9	1.3	1.8
	6H	1.8	2.1	2.4	2.7	3.2	1.9	2.2	2.4	2.7	3.3
	8H	2.4	2.7	3.0	3.2	3.8	2.8	3.0	3.3	3.6	4.1
	12H	3.3	3.5	3.9	4.1	4.7	3.6	3.8	4.1	4.3	5.0
12H	4H	1.0	1.3	1.5	1.9	2.4	0.4	0.8	0.9	1.3	1.8
	6H	1.9	2.2	2.5	2.7	3.3	1.9	2.2	2.5	2.7	3.3
	8H	2.6	2.8	3.2	3.4	4.0	2.9	3.2	3.5	3.7	4.3

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0