

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SDFO4PC50L35KXWE1-SD4FPCSGMF
4" Square aperture recessed LED downlight

Test Number

SP-R251

Test Date

8/7/2025

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

Summary of Results

Power

Input Watts	35.53 W
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Lumen Output

Output Lumens	3638
Efficacy	102.39 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.88
Two luminaires, plane 90°	0.9
Four luminaires	0.82

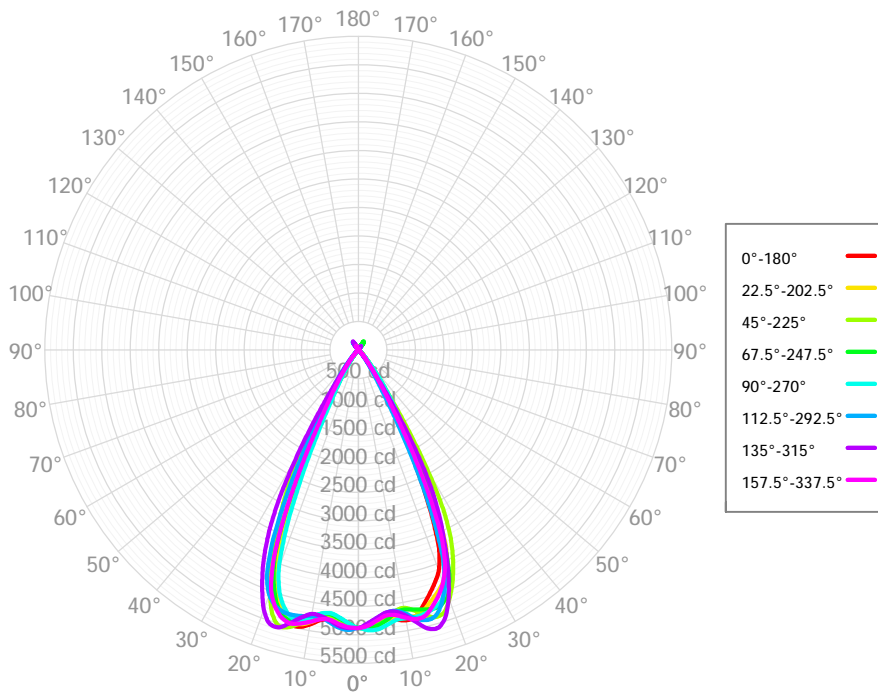
Full Beam Angle

0° - 180°	50°
90° - 270°	50°

IES File Header Contents

Keyword	Value
TEST	SP-R251
TESTLAB	Spectrum Lighting Photometric Lab. VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	8/7/2025
ISSUEDATE	8/7/2025
LUMCAT	SDFO4PC50L35KXWE1-SD4FPCSGMF
LUMINAIRE	4" Square aperture recessed LED downlight
DISTRIBUTION	Beam Angle 53.3
OTHER	CCT 3490 CRI 83.1 R9 5.8
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°	457.87	12.59%	90.00° - 100.00°	1.79	0.05%
10.00° - 20.00°	1342.33	36.90%	100.00° - 110.00°	1.71	0.05%
20.00° - 30.00°	1333.54	36.66%	100.00° - 120.00°	3.36	0.09%
30.00° - 40.00°	364.10	10.01%	120.00° - 130.00°	2.03	0.06%
40.00° - 50.00°	57.08	1.57%	130.00° - 140.00°	7.71	0.21%
50.00° - 60.00°	9.47	0.26%	140.00° - 150.00°	35.65	0.98%
60.00° - 70.00°	4.73	0.13%	150.00° - 160.00°	9.89	0.27%
70.00° - 80.00°	2.92	0.08%	160.00° - 170.00°	3.08	0.08%
80.00° - 90.00°	2.13	0.06%	170.00° - 180.00°	0.30	0.01%
0.00° - 90.00°	3574.18	98.25%	0.00° - 180.00°	3638.00	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°	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07	4878.07
2.00°	4867.05	4888.02	4872.92	4882.83	4921.37	4916.06	4883.61	4869.30	4852.91	4826.90	4823.25	4796.90	4798.96	4805.67	4798.40	4841.76	4867.05
4.00°	4795.47	4828.12	4828.57	4848.43	4914.20	4885.16	4855.10	4823.33	4792.77	4767.62	4757.67	4724.40	4706.60	4714.03	4709.15	4756.41	4795.47
6.00°	4745.04	4766.31	4739.31	4764.11	4849.55	4807.30	4774.28	4761.35	4750.64	4731.80	4709.23	4663.42	4644.27	4637.64	4634.58	4686.00	4745.04
8.00°	4778.53	4733.87	4626.27	4657.93	4782.94	4732.59	4715.42	4773.23	4787.31	4756.84	4703.50	4675.72	4671.32	4621.55	4636.39	4698.61	4778.53
10.00°	4817.40	4763.89	4596.50	4626.46	4781.29	4739.32	4703.91	4842.29	4890.94	4851.22	4760.90	4767.88	4763.04	4690.60	4726.67	4769.25	4817.40
12.00°	4792.08	4775.02	4670.85	4656.80	4790.17	4773.43	4797.91	4906.66	4966.51	4922.54	4896.58	4855.63	4846.08	4814.38	4881.65	4829.27	4792.08
14.00°	4645.96	4714.31	4793.30	4692.04	4776.59	4791.35	4936.87	4943.09	4956.20	4918.33	5011.56	4896.95	4840.49	4886.22	5036.77	4813.95	4645.96
16.00°	4482.40	4594.85	4876.34	4725.97	4730.56	4781.01	5063.62	4885.45	4832.56	4801.12	5040.55	4844.42	4706.56	4868.71	5073.50	4692.75	4482.40
18.00°	4316.40	4480.27	4850.09	4703.25	4654.75	4719.67	5046.50	4733.34	4606.24	4585.06	4879.35	4654.57	4475.45	4704.98	4938.05	4540.14	4316.40
20.00°	4125.53	4341.52	4662.85	4568.66	4473.36	4572.08	4847.51	4478.03	4223.44	4252.75	4532.31	4343.57	4084.37	4421.11	4632.12	4346.18	4125.53
22.00°	3784.97	4152.61	4406.43	4265.20	4076.51	4281.99	4503.53	3971.50	3542.33	3705.38	4063.01	3917.70	3365.72	3974.36	4211.77	4064.02	3784.97
24.00°	3146.28	3783.69	4090.89	3689.66	3389.65	3719.66	4101.70	3184.36	2665.68	2899.99	3536.81	3174.98	2455.70	3225.16	3729.83	3581.24	3146.28
26.00°	2385.85	3120.60	3710.02	2929.25	2629.16	2930.54	3599.53	2290.15	1826.89	2012.15	3017.13	2241.49	1583.68	2324.45	3240.88	2836.37	2385.85
28.00°	1705.91	2325.77	3179.83	2161.56	1990.07	2114.55	2948.55	1504.62	1237.82	1226.00	2471.54	1373.87	981.45	1466.64	2686.78	2002.60	1705.91
30.00°	1304.57	1621.64	2413.41	1571.24	1583.28	1463.79	2158.20	1026.86	890.26	761.36	1788.92	759.23	670.60	853.64	1946.69	1284.08	1304.57
32.00°	987.78	1162.18	1629.21	1205.35	1259.53	1078.29	1392.83	738.95	632.36	516.47	1076.69	474.13	451.04	541.43	1184.34	840.05	987.78
34.00°	717.67	856.98	1010.78	900.66	959.47	789.69	814.13	508.54	430.61	342.71	538.97	308.65	296.97	356.26	606.04	571.76	717.67
36.00°	495.92	608.58	637.15	644.22	699.17	563.72	481.00	337.40	282.26	223.32	243.45	199.49	189.04	231.12	301.21	387.83	495.92
38.00°	336.24	418.91	429.54	444.53	489.08	383.57	305.28	215.60	181.68	144.84	131.56	124.69	117.72	148.76	183.78	264.36	336.24
40.00°	232.66	282.53	281.91	299.49	327.33	247.63	191.85	136.12	114.06	89.04	75.46	77.06	69.42	92.94	119.62	185.07	232.66
42.00°	169.24	198.96	193.76	202.27	215.03	158.25	115.84	78.75	67.86	53.62	43.94	47.45	43.72	56.71	75.31	132.48	169.24
44.00°	128.39	147.29	138.19	137.61	141.54	96.03	62.67	42.96	41.50	30.86	27.68	30.28	30.97	34.98	45.32	93.95	128.39
46.00°	98.75	112.61	99.26	94.06	91.66	53.60	32.18	28.19	29.38	20.33	16.70	20.76	21.14	22.17	26.37	66.17	98.75
48.00°	71.21	84.42	68.78	61.32	56.60	29.33	17.09	19.44	21.95	14.57	12.24	15.81	15.97	16.99	15.25	44.32	71.21
50.00°	50.47	57.20	43.13	34.90	33.46	16.27	11.10	13.26	16.61	10.46	9.81	12.27	13.55	12.21	10.40	27.73	50.47
52.00°	30.79	35.56	22.82	18.09	18.93	10.02	8.08	10.08	12.68	9.12	7.73	9.10	10.91	9.58	8.71	16.33	30.79
54.00°	18.37	21.15	10.80	10.45	11.34	6.71	5.66	8.29	11.02	6.48	6.73	9.40	9.48	8.33	6.37	9.55	18.37
56.00°	12.09	12.45	5.49	7.42	9.03	5.67	4.85	6.88	10.95	5.80	5.50	8.08	8.72	6.92	5.41	7.26	12.09
58.00°	10.46	7.12	4.47	5.82	8.61	5.38	4.41	5.73	10.49	5.25	4.82	6.60	7.71	5.88	5.14	6.79	10.46
60.00°	9.40	5.63	3.76	4.86	8.23	4.96	4.81	4.91	10.18	5.99	4.60	5.34	5.86	4.91	3.70	6.03	9.40
62.00°	8.97	5.02	3.44	4.54	6.63	4.07	4.45	5.41	10.03	5.09	4.47	4.84	6.11	3.74	3.59	5.93	8.97
64.00°	8.74	4.34	3.40	4.31	5.72	3.85	4.11	5.45	10.31	4.13	3.73	4.58	5.64	3.52	3.55	5.26	8.74
66.00°	8.68	3.66	3.83	4.14	5.21	4.46	3.79	4.29	10.74	3.40	2.99	4.52	4.33	3.79	3.55	4.46	8.68
68.00°	7.26	3.38	3.74	4.23	4.40	4.01	3.08	3.73	7.42	3.02	2.92	4.05	4.14	3.24	3.17	4.18	7.26
70.00°	5.25	3.08	3.23	4.20	3.60	3.17	2.36	3.53	4.37	2.82	2.76	3.30	4.28	2.72	2.69	3.81	5.25
72.00°	4.64	2.61	2.78	3.76	3.62	2.94	2.23	3.22	3.79	2.54	2.34	2.83	3.94	2.62	2.54	3.04	4.64
74.00°	4.46	2.17	2.37	3.33	3.63	2.87	2.09	2.86	3.20	2.24	2.02	2.51	3.50	2.52	2.45	2.31	4.46
76.00°	4.20	2.37	2.13	2.97	3.29	2.66	2.06	2.46	2.63	2.09	2.21	2.30	3.26	2.52	2.39	2.28	4.20
78.00°	3.88	2.57	2.13	2.62	2.90	2.36	2.04	2.01	2.07	2.07	2.39	2.22	3.11	2.52	2.34	2.24	3.88
80.00°	3.54	2.60	2.13	2.46	2.64	2.11	1.90	1.63	1.81	2.05	2.47	2.13	2.84	2.33	2.25	2.09	3.54
82.00°	3.11	2.54	2.13	2.36	2.47	2.02	1.66	1.79	1.74	2.11	2.53	1.99	2.32	1.98	2.06	1.89	3.11
84.00°	2.69	2.42	2.14	2.22	2.31	1.93	1.44	1.95	1.69	2.16	2.33	1.86	1.80	1.66	1.86	1.74	2.69
86.00°	2.20	2.07	1.89	1.99	2.30	1.94	1.46	2.12	1.68	2.01	1.69	1.90	1.70	1.49	1.82	1.71	2.20

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	4316	4316	4316	4316	4208	4208	4208	4208	4007	4007	4007	3823	3823	3823	3654	3654	3574
	1	4132	4039	3955	3880	4037	3954	3880	3812	3796	3738	3684	3651	3606	3563	3517	3482	3408
	2	3952	3790	3657	3545	3867	3723	3602	3500	3597	3499	3414	3480	3402	3333	3372	3310	3241
	3	3778	3567	3404	3274	3703	3513	3364	3244	3411	3287	3184	3316	3213	3127	3228	3144	3080
	4	3613	3366	3185	3047	3545	3321	3155	3026	3237	3096	2984	3159	3040	2943	3086	2986	2928
	5	3455	3183	2992	2852	3395	3146	2969	2836	3076	2923	2806	3011	2879	2776	2950	2837	2784
	6	3306	3015	2820	2680	3251	2984	2802	2669	2925	2765	2646	2871	2731	2624	2819	2697	2649
	7	3165	2862	2665	2527	3115	2835	2650	2519	2785	2621	2502	2739	2593	2485	2695	2566	2522
	8	3031	2720	2524	2390	2987	2698	2512	2383	2655	2489	2370	2615	2466	2357	2577	2444	2403
	9	2905	2590	2396	2265	2865	2570	2386	2260	2533	2366	2249	2498	2347	2239	2465	2329	2292
	10	2787	2469	2278	2151	2750	2452	2270	2147	2420	2253	2139	2389	2237	2130	2360	2222	2188

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	161.3 fc	5.1 ft
6.5 ft	115.5 fc	6.1 ft
7.5 ft	86.7 fc	7.0 ft
8.0 ft	76.2 fc	7.4 ft
10.0 ft	48.8 fc	9.3 ft
12.0 ft	33.9 fc	11.2 ft
14.0 ft	24.9 fc	13.0 ft
16.0 ft	19.1 fc	14.9 ft
20.0 ft	12.2 fc	18.6 ft
24.0 ft	8.5 fc	22.3 ft
28.0 ft	6.2 fc	26.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	473511	473511	473511
45.00°	15591	16299	16007
55.00°	2577	1378	1723
65.00°	2001	830	1255
75.00°	1623	844	1298
85.00°	2724	2243	2569

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	-0.7	0.2	-0.3	0.6	0.9	-2.1	-1.2	-1.7	-0.9	-0.5
	3H	1.2	1.9	1.6	2.3	2.7	-0.4	0.4	0.0	0.7	1.1
	4H	1.8	2.6	2.3	3.0	3.4	0.4	1.1	0.9	1.5	2.0
	6H	2.8	3.5	3.3	3.9	4.3	1.4	2.0	1.8	2.4	2.9
	8H	3.3	3.9	3.8	4.4	4.8	1.9	2.5	2.3	2.9	3.4
	12H	3.9	4.4	4.3	4.9	5.3	2.4	3.0	2.8	3.4	3.9
4H	2H	-0.7	0.0	-0.2	0.4	0.9	-1.9	-1.2	-1.5	-0.8	-0.4
	3H	1.3	1.9	1.7	2.3	2.8	-0.1	0.5	0.4	0.9	1.4
	4H	2.1	2.6	2.5	3.0	3.5	0.9	1.4	1.4	1.9	2.4
	6H	3.3	3.7	3.8	4.2	4.7	2.1	2.5	2.6	3.0	3.5
	8H	3.9	4.4	4.5	4.8	5.4	2.7	3.1	3.2	3.6	4.1
	12H	4.7	5.0	5.2	5.5	6.1	3.4	3.8	3.9	4.3	4.8
8H	4H	2.2	2.6	2.7	3.1	3.6	1.1	1.5	1.6	2.0	2.5
	6H	3.6	3.9	4.1	4.4	5.0	2.5	2.8	3.0	3.3	3.9
	8H	4.4	4.7	5.0	5.2	5.8	3.3	3.6	3.8	4.1	4.7
	12H	5.4	5.6	5.9	6.1	6.8	4.2	4.5	4.8	5.0	5.6
12H	4H	2.2	2.5	2.7	3.1	3.6	1.1	1.5	1.6	2.0	2.5
	6H	3.6	3.9	4.2	4.4	5.0	2.6	2.9	3.2	3.4	4.0
	8H	4.6	4.8	5.1	5.4	6.0	3.5	3.8	4.1	4.3	4.9

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0