

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SDFO4PC50L35KWDE1-SD4FPCSGMF
4" Square aperture recessed LED downlight

Test Number

SP-R250

Test Date

8/7/2025

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

Summary of Results

Power

Input Watts	35.6 W
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Lumen Output

Output Lumens	3614
Efficacy	101.52 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.76
Two luminaires, plane 90°	0.8
Four luminaires	0.75

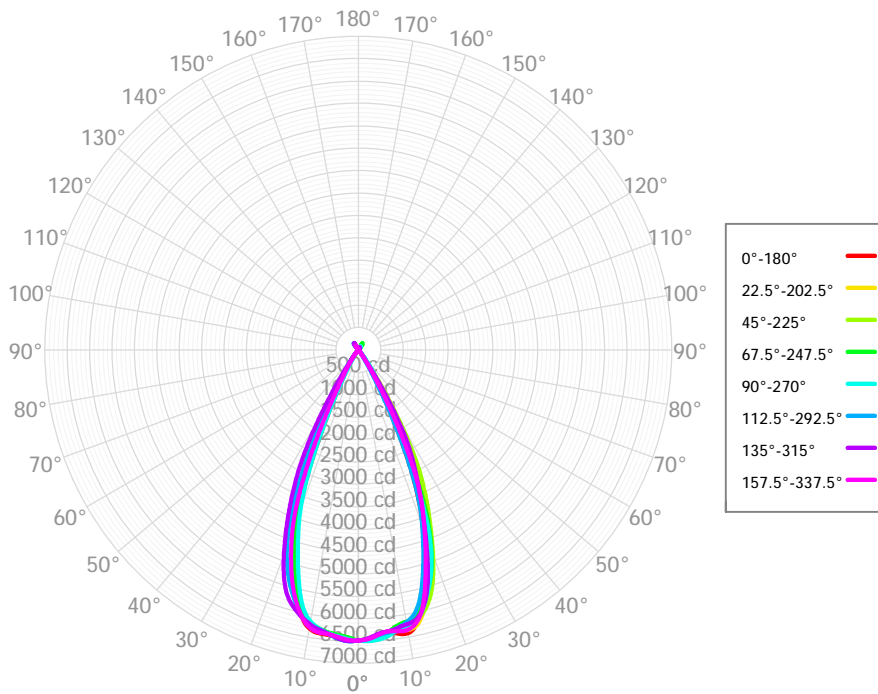
Full Beam Angle

0° - 180°	44°
90° - 270°	45°

IES File Header Contents

Keyword	Value
TEST	SP-R250
TESTLAB	Spectrum Lighting Photometric Lab. VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	8/7/2025
ISSUEDATE	8/7/2025
LUMCAT	SDFO4PC50L35KWDE1-SD4FPCSGMF
LUMINAIRE	4" Square aperture recessed LED downlight
DISTRIBUTION	Beam Angle 47
OTHER	CCT 3493 CRI 83.2 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°	607.19	16.80%	90.00° - 100.00°	1.68	0.05%
10.00° - 20.00°	1407.09	38.93%	100.00° - 110.00°	1.54	0.04%
20.00° - 30.00°	1328.04	36.75%	100.00° - 120.00°	3.30	0.09%
30.00° - 40.00°	209.81	5.81%	120.00° - 130.00°	2.09	0.06%
40.00° - 50.00°	14.20	0.39%	130.00° - 140.00°	7.09	0.20%
50.00° - 60.00°	8.10	0.22%	140.00° - 150.00°	39.99	1.11%
60.00° - 70.00°	4.80	0.13%	150.00° - 160.00°	11.52	0.32%
70.00° - 80.00°	2.70	0.07%	160.00° - 170.00°	2.38	0.07%
80.00° - 90.00°	2.45	0.07%	170.00° - 180.00°	0.39	0.01%
0.00° - 90.00°	3546.57	98.13%	0.00° - 180.00°	3614.00	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°	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33	6488.33
1.50°	6465.50	6469.35	6466.74	6461.52	6508.96	6510.31	6507.18	6485.75	6475.47	6454.98	6445.46	6441.00	6472.69	6473.10	6460.15	6470.11	6465.50
3.00°	6429.56	6435.33	6437.81	6442.84	6499.97	6492.75	6490.35	6456.71	6436.17	6416.35	6408.52	6401.67	6434.20	6420.41	6400.22	6424.97	6429.56
4.50°	6386.57	6395.49	6394.13	6415.54	6471.41	6443.17	6436.95	6413.96	6409.85	6399.27	6389.73	6371.48	6400.97	6375.28	6340.87	6359.90	6386.57
6.00°	6353.51	6353.62	6336.52	6354.83	6419.09	6378.22	6373.95	6381.12	6398.02	6378.14	6361.12	6344.43	6362.59	6345.95	6319.53	6318.90	6353.51
7.50°	6380.10	6328.75	6250.97	6244.67	6344.50	6313.88	6323.30	6374.50	6388.45	6343.39	6308.02	6300.06	6305.63	6294.93	6290.62	6336.86	6380.10
9.00°	6424.05	6339.51	6183.66	6183.82	6309.44	6271.29	6272.36	6345.67	6365.05	6285.39	6229.22	6239.05	6228.58	6227.09	6242.78	6357.47	6424.05
10.50°	6403.27	6349.54	6166.42	6153.45	6294.95	6210.00	6187.71	6253.29	6276.81	6178.04	6142.43	6135.54	6107.84	6148.77	6213.31	6332.86	6403.27
12.00°	6256.12	6287.85	6152.87	6081.29	6213.43	6081.70	6095.39	6083.19	6091.22	5976.68	6033.44	5979.59	5906.34	6026.19	6163.73	6228.81	6256.12
13.50°	5951.21	6106.19	6074.43	5928.00	6030.89	5883.21	5976.16	5854.35	5812.93	5683.22	5875.35	5746.10	5577.94	5803.48	6023.72	6027.04	5951.21
15.00°	5554.33	5793.31	5918.53	5735.23	5793.73	5654.72	5840.72	5576.78	5459.65	5310.76	5622.75	5406.42	5172.47	5475.03	5787.14	5690.66	5554.33
16.50°	5147.75	5412.01	5696.78	5520.86	5541.00	5412.00	5652.06	5241.46	5042.62	4896.09	5262.62	5012.10	4750.30	5091.36	5451.22	5278.78	5147.75
18.00°	4743.01	5031.17	5390.82	5254.80	5250.64	5127.22	5365.56	4861.65	4600.76	4483.22	4841.41	4612.77	4343.32	4691.66	5015.97	4868.00	4743.01
19.50°	4340.70	4657.86	5015.28	4913.42	4893.74	4778.80	4993.80	4455.89	4122.37	4057.09	4394.80	4217.81	3927.59	4296.69	4542.46	4464.26	4340.70
21.00°	3914.16	4285.02	4599.20	4494.78	4428.47	4373.21	4573.98	3985.31	3506.80	3566.93	3949.32	3830.01	3404.85	3899.41	4090.83	4075.29	3914.16
22.50°	3406.33	3907.16	4183.51	3999.38	3807.71	3883.00	4141.09	3383.10	2792.30	2974.55	3517.28	3406.57	2747.50	3411.75	3669.80	3695.23	3406.33
24.00°	2787.80	3445.91	3795.85	3370.68	3091.95	3267.34	3704.97	2697.32	2083.81	2337.60	3115.88	2840.23	2057.71	2787.30	3277.35	3246.82	2787.80
25.50°	2142.41	2868.02	3381.48	2692.18	2384.40	2594.87	3267.05	2012.48	1449.37	1702.14	2750.64	2194.16	1415.82	2113.45	2925.02	2686.62	2142.41
27.00°	1539.78	2216.69	2971.41	2025.61	1769.21	1941.71	2795.65	1390.95	983.83	1135.12	2420.23	1566.72	910.38	1469.99	2573.84	2055.78	1539.78
28.50°	1085.51	1565.13	2437.50	1432.93	1339.04	1364.58	2254.84	927.12	725.78	728.90	2032.83	992.84	607.83	919.04	2166.24	1435.08	1085.51
30.00°	813.13	1039.88	1851.31	1023.88	1064.86	970.41	1682.03	659.62	552.92	494.64	1525.56	557.31	429.09	557.32	1648.70	915.04	813.13
31.50°	624.93	740.94	1288.55	777.90	853.14	732.89	1155.77	489.63	416.17	343.27	1000.33	341.65	299.32	361.41	1099.86	584.51	624.93
33.00°	465.07	546.76	810.13	598.17	675.62	564.19	719.78	356.26	294.71	227.92	560.62	212.59	199.22	239.78	628.19	391.72	465.07
34.50°	329.62	395.38	469.67	449.28	522.84	426.06	415.96	242.82	190.71	144.25	257.00	137.13	130.96	154.36	286.51	258.70	329.62
36.00°	218.01	266.95	283.65	317.47	392.03	300.10	245.02	156.04	123.16	92.95	112.44	89.17	85.39	98.32	118.78	161.16	218.01
37.50°	137.10	167.88	173.08	209.63	271.91	197.64	145.56	94.64	82.73	64.03	57.20	58.67	58.84	62.37	66.13	96.64	137.10
39.00°	86.06	104.57	105.36	132.40	176.33	121.81	83.92	64.48	58.87	45.09	34.00	41.92	43.13	44.51	41.33	60.46	86.06
40.50°	55.65	65.07	64.23	83.33	109.13	72.75	51.92	41.81	43.30	32.61	23.82	26.11	34.14	31.54	24.02	39.71	55.65
42.00°	40.00	44.37	38.05	52.03	70.73	47.61	33.30	29.58	31.94	23.46	17.82	22.34	24.99	26.50	17.26	27.65	40.00
43.50°	27.80	30.92	21.69	33.75	47.78	29.99	19.82	21.84	25.73	18.00	14.51	19.17	24.80	22.41	14.06	23.27	27.80
45.00°	21.61	22.84	14.96	22.76	31.93	20.63	14.16	16.82	22.70	17.08	12.79	16.57	20.92	17.19	12.52	15.48	21.61
46.50°	17.26	17.51	10.88	16.75	25.64	15.90	11.35	14.72	19.00	13.90	11.00	13.21	16.02	13.93	10.15	14.44	17.26
48.00°	15.12	15.92	8.76	15.75	19.45	12.83	11.45	12.62	15.50	12.51	9.07	11.93	14.74	10.92	8.56	11.68	15.12
49.50°	13.87	12.54	7.79	11.13	17.18	8.96	8.31	11.64	13.91	11.11	8.64	10.04	14.65	10.30	8.85	12.09	13.87
51.00°	12.81	10.59	7.37	9.79	15.09	8.45	7.53	10.61	13.34	10.10	7.24	9.98	11.67	9.82	7.89	10.41	12.81
52.50°	12.36	9.14	5.94	8.29	12.32	8.18	6.33	8.59	15.23	8.93	6.26	8.89	9.96	7.73	6.89	10.38	12.36
54.00°	12.32	8.00	5.30	7.05	10.61	7.86	5.29	6.98	13.27	7.99	5.79	7.96	8.78	6.80	6.03	10.00	12.32
55.50°	12.97	6.98	5.22	6.33	9.82	7.38	4.71	6.01	10.98	7.89	6.09	7.16	8.23	6.77	5.27	9.18	12.97
57.00°	13.10	6.95	4.63	5.68	9.54	6.71	4.45	5.79	10.68	7.40	5.68	6.48	7.78	6.12	4.86	8.16	13.10
58.50°	11.68	6.93	3.89	5.09	9.41	5.85	4.39	6.06	10.40	6.35	4.74	5.85	7.42	5.32	4.58	7.06	11.68
60.00°	10.36	5.90	3.55	4.71	8.86	5.18	4.16	5.98	10.34	5.49	4.13	5.05	7.01	4.85	4.08	6.30	10.36
61.50°	10.03	4.80	3.43	4.54	8.15	4.78	3.78	5.51	10.28	5.10	3.85	4.15	6.53	4.50	3.45	5.72	10.03
63.00°	9.70	4.21	3.33	4.37	7.43	4.37	3.42	5.04	10.67	4.72	3.60	3.44	6.06	4.23	2.92	5.07	9.70
64.50°	9.57	3.94	3.26	4.26	6.70	3.92	3.21	4.52	11.16	4.34	3.58	3.51	5.62	4.10	2.84	4.27	9.57

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	4286	4286	4286	4286	4179	4179	4179	4179	3978	3978	3978	3794	3794	3794	3626	3626	3547
	1	4130	4048	3976	3910	4037	3965	3900	3842	3808	3758	3712	3665	3626	3590	3532	3503	3429
	2	3962	3816	3695	3594	3880	3750	3641	3549	3625	3537	3462	3510	3440	3379	3403	3349	3279
	3	3802	3609	3460	3341	3729	3555	3419	3310	3454	3342	3249	3361	3269	3191	3275	3199	3135
	4	3649	3422	3256	3129	3584	3378	3225	3107	3296	3167	3065	3219	3111	3023	3148	3057	2998
	5	3503	3252	3077	2948	3445	3216	3053	2932	3148	3008	2900	3084	2964	2870	3025	2922	2868
	6	3365	3097	2917	2788	3313	3067	2898	2776	3009	2862	2753	2956	2828	2730	2906	2795	2745
	7	3234	2954	2773	2646	3187	2929	2758	2637	2880	2729	2619	2834	2701	2602	2792	2674	2629
	8	3110	2822	2641	2517	3067	2800	2629	2510	2759	2606	2496	2720	2583	2483	2683	2561	2519
	9	2992	2700	2521	2400	2954	2681	2511	2394	2645	2491	2384	2611	2473	2373	2579	2454	2416
	10	2881	2587	2410	2293	2846	2570	2402	2288	2539	2385	2280	2509	2370	2271	2481	2354	2319

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	214.5 fc	4.5 ft
6.5 ft	153.6 fc	5.3 ft
7.5 ft	115.3 fc	6.1 ft
8.0 ft	101.4 fc	6.5 ft
10.0 ft	64.9 fc	8.2 ft
12.0 ft	45.1 fc	9.8 ft
14.0 ft	33.1 fc	11.4 ft
16.0 ft	25.3 fc	13.1 ft
20.0 ft	16.2 fc	16.3 ft
24.0 ft	11.3 fc	19.6 ft
28.0 ft	8.3 fc	22.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	629817	629817	629817
45.00°	2967	2053	4383
55.00°	2158	887	1706
65.00°	2196	744	1482
75.00°	1301	1038	1426
85.00°	2778	1830	2410

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	-0.4	0.4	0.0	0.8	1.1	-1.9	-1.0	-1.5	-0.7	-0.3
	3H	1.7	2.5	2.1	2.8	3.3	-0.2	0.5	0.2	0.9	1.3
	4H	2.2	2.9	2.7	3.3	3.7	0.7	1.4	1.2	1.8	2.2
	6H	2.9	3.5	3.3	3.9	4.4	1.6	2.3	2.1	2.7	3.1
	8H	3.3	3.9	3.8	4.4	4.8	2.1	2.7	2.6	3.2	3.6
	12H	3.9	4.5	4.4	4.9	5.4	2.7	3.3	3.2	3.7	4.2
4H	2H	-0.6	0.1	-0.1	0.5	1.0	-1.8	-1.1	-1.4	-0.7	-0.3
	3H	1.8	2.4	2.2	2.8	3.3	0.1	0.7	0.5	1.1	1.6
	4H	2.4	3.0	2.9	3.4	3.9	1.2	1.7	1.7	2.2	2.7
	6H	3.4	3.8	3.9	4.3	4.8	2.4	2.8	2.9	3.3	3.8
	8H	4.0	4.4	4.5	4.9	5.4	3.0	3.4	3.5	3.9	4.4
	12H	4.8	5.1	5.3	5.6	6.2	3.7	4.1	4.3	4.6	5.1
8H	4H	2.6	3.0	3.1	3.5	4.0	1.4	1.8	1.9	2.3	2.8
	6H	3.7	4.0	4.2	4.6	5.1	2.8	3.1	3.4	3.7	4.2
	8H	4.5	4.8	5.1	5.4	5.9	3.6	3.9	4.2	4.5	5.0
	12H	5.5	5.7	6.1	6.3	6.9	4.6	4.8	5.1	5.3	6.0
12H	4H	2.6	2.9	3.1	3.4	4.0	1.4	1.8	2.0	2.3	2.8
	6H	3.8	4.1	4.4	4.6	5.2	2.9	3.2	3.5	3.7	4.3
	8H	4.7	4.9	5.3	5.5	6.1	3.8	4.1	4.4	4.6	5.2

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0