

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

SGRTE6FX 50L 35K XX AR6223FX SG WF SO  
Nom 6 inch dia downlight with semi-diffuse finish and Solite lens

### Test Number

SP-01231\_1

### Test Date

5/5/2021

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

### Summary of Results

#### Power

Input Watts	38.4 W
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#### Lumen Output

Output Lumens	3901
Efficacy	101.59 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.5
90° - 270° Size	-0.5
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	0.86
Two luminaires, plane 90°	0.8
Four luminaires	0.84

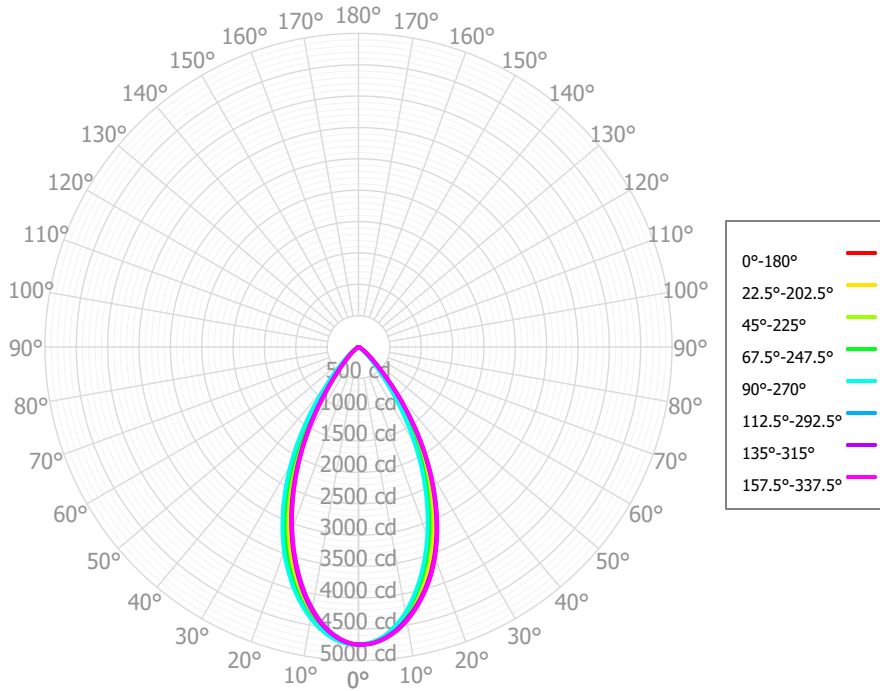
#### Full Beam Angle

0° - 180°	55°
90° - 270°	55°

### IES File Header Contents

Keyword	Value
TEST	SP-01231_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	5/5/2021
ISSUEDATE	6/10/2021
LUMCAT	SGRTE6FX 50L 35K XX AR6223FX SG WF SO
LUMINAIRE	Nom 6 inch dia downlight with semi-diffuse finish and Solite lens
OTHER	Beam Angle: 55 degrees
LAMPCAT	N/A
LAMP	FX Gen2
OTHER	CCT Output Multipliers: 27HK x 0.764, 30K x 0.96, 40K x 1.03, 50K x 1.04
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+
_CCTMULT	27HK x 0.77, 30K x 0.96, 40K x 1.03, 50K x 1.04
_LAMPMULT	10L x 0.18, 15L x 0.29, 20L x 0.39, 30L x 0.58, 40L x 0.78

**Candela Polar Plot**



**Zonal Lumen Summary**

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	439.54	11.27%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	1080.54	27.70%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1215.72	31.16%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	799.00	20.48%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	285.60	7.32%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	69.01	1.77%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	6.15	0.16%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.04	0.08%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.66	0.07%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	3901.25	100.00%	0.00° - 180.00°	3901.25	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°	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44	4746.44
2.50°	4729.37	4729.50	4712.01	4719.10	4715.32	4700.83	4709.52	4699.81	4719.14	4716.42	4726.87	4726.56	4729.67	4738.46	4733.25	4731.40	4729.37
5.00°	4656.48	4662.84	4636.78	4636.69	4632.41	4598.05	4613.01	4601.56	4629.72	4630.05	4659.65	4658.64	4664.26	4675.58	4665.43	4674.00	4656.48
7.50°	4547.59	4552.83	4509.16	4501.36	4486.53	4447.46	4465.32	4447.84	4494.81	4491.99	4541.37	4539.92	4545.47	4570.64	4557.89	4573.77	4547.59
10.00°	4395.05	4400.33	4335.08	4321.70	4302.98	4238.22	4266.80	4241.64	4302.95	4304.53	4373.12	4375.19	4393.47	4422.83	4409.40	4434.21	4395.05
12.50°	4215.55	4210.88	4124.78	4101.34	4069.43	3998.12	4027.31	3996.57	4072.20	4077.15	4157.98	4174.00	4201.04	4246.06	4234.81	4260.09	4215.55
15.00°	4005.32	3988.65	3884.30	3850.39	3809.64	3722.43	3751.06	3716.93	3802.35	3813.88	3914.94	3941.78	3985.06	4041.23	4034.93	4057.64	4005.32
17.50°	3765.07	3739.61	3614.99	3573.04	3517.11	3423.70	3446.98	3414.23	3507.45	3526.04	3647.29	3680.48	3736.89	3818.62	3802.34	3831.78	3765.07
20.00°	3492.65	3456.88	3323.11	3268.75	3207.16	3100.00	3126.53	3092.25	3191.30	3217.44	3352.66	3395.92	3471.17	3553.61	3539.92	3568.53	3492.65
22.50°	3190.23	3148.27	3004.88	2942.61	2876.77	2766.06	2794.46	2754.89	2862.39	2888.29	3035.65	3088.45	3167.36	3263.45	3245.25	3276.23	3190.23
25.00°	2857.56	2821.66	2667.26	2604.99	2535.43	2421.70	2445.63	2405.44	2512.18	2542.81	2700.39	2763.75	2844.14	2946.83	2922.94	2958.34	2857.56
27.50°	2519.99	2482.07	2319.93	2258.63	2181.99	2065.87	2085.62	2045.26	2149.86	2183.64	2350.90	2419.43	2503.99	2615.51	2590.01	2621.77	2519.99
30.00°	2177.78	2133.46	1965.90	1901.98	1824.58	1699.08	1725.19	1677.15	1785.56	1814.26	1990.90	2061.25	2155.80	2268.25	2248.51	2278.42	2177.78
32.50°	1827.45	1778.74	1613.92	1537.97	1463.04	1350.52	1364.50	1328.07	1420.21	1459.97	1623.22	1704.83	1798.11	1912.71	1896.74	1930.41	1827.45
35.00°	1469.88	1431.60	1263.26	1200.17	1129.44	1018.41	1042.41	992.17	1092.00	1116.23	1278.39	1349.59	1436.22	1559.16	1537.17	1580.06	1469.88
37.50°	1137.76	1089.28	955.16	879.98	823.09	744.48	742.95	724.75	782.24	827.51	949.26	1028.86	1108.75	1206.57	1201.44	1228.21	1137.76
40.00°	826.96	805.42	672.90	635.13	584.87	519.85	531.11	501.85	562.60	574.93	691.03	729.57	795.44	907.28	882.66	924.64	826.96
42.50°	589.09	556.35	476.72	437.75	409.12	361.34	367.34	351.74	384.69	404.19	478.50	520.64	577.77	632.07	638.98	650.12	589.09
45.00°	408.67	391.62	329.49	306.88	283.76	255.47	260.27	246.50	273.89	283.88	337.32	364.28	396.59	454.41	445.41	461.56	408.67
47.50°	285.48	273.87	233.39	215.28	201.84	178.08	182.25	173.50	192.01	201.13	239.25	261.13	286.90	317.71	314.88	321.45	285.48
50.00°	204.65	193.37	164.48	148.10	137.41	121.99	125.21	119.11	133.12	140.07	169.17	186.94	202.42	228.70	223.80	227.99	204.65
52.50°	142.15	132.28	110.38	94.41	87.15	76.68	78.20	74.79	83.42	92.07	114.93	129.23	141.12	158.26	155.93	159.12	142.15
55.00°	92.37	86.13	63.64	55.00	49.44	38.94	44.65	35.92	47.65	51.21	72.36	79.91	87.35	105.53	101.67	106.95	92.37
57.50°	55.00	47.26	34.44	22.98	21.28	18.23	17.09	16.87	17.05	26.57	35.98	44.60	50.05	59.18	61.65	63.00	55.00
60.00°	25.71	24.39	13.36	9.17	7.45	8.75	7.96	7.83	7.90	10.20	17.24	15.94	17.67	31.52	29.45	34.28	25.71
62.50°	11.00	8.76	5.83	4.14	3.86	4.96	6.47	5.05	6.10	5.27	7.34	5.88	7.48	10.08	13.22	12.54	11.00
65.00°	5.20	3.74	4.12	2.38	2.37	4.68	5.67	5.21	5.27	5.77	4.15	4.05	3.36	3.88	5.18	4.73	5.20
67.50°	2.68	3.18	3.20	2.09	2.30	4.07	5.14	4.97	4.75	5.46	4.09	3.35	2.05	2.35	2.87	2.86	2.68
70.00°	2.03	2.84	2.60	1.95	2.12	3.26	4.85	4.55	4.55	4.78	4.29	3.12	1.44	2.11	3.30	2.26	2.03
72.50°	2.05	2.60	2.23	1.86	1.85	3.16	4.65	4.28	4.45	4.45	4.59	3.00	1.59	2.23	2.94	2.16	2.05
75.00°	2.41	2.33	1.95	1.84	1.75	3.45	4.53	4.07	4.05	4.27	4.17	2.92	1.92	2.20	2.22	2.03	2.41
77.50°	2.41	2.05	2.04	1.86	1.75	3.56	4.43	3.91	3.58	3.87	3.45	3.05	1.87	2.13	1.91	1.88	2.41
80.00°	2.22	1.96	2.26	1.70	1.83	3.59	3.86	3.76	3.58	3.38	3.18	3.26	1.75	2.00	1.77	1.82	2.22
82.50°	1.94	1.92	2.15	1.47	1.96	3.44	3.15	3.49	3.70	3.66	3.08	3.01	1.61	1.85	1.62	1.78	1.94
85.00°	1.63	1.75	1.93	1.59	1.71	3.21	3.74	3.18	3.48	4.21	3.24	2.61	1.47	1.78	1.47	1.66	1.63
87.50°	1.64	1.54	1.80	1.82	1.27	3.04	4.68	3.39	3.19	3.65	3.47	2.64	1.18	1.72	1.47	1.53	1.64
90.00°	1.78	1.47	1.70	1.77	1.36	2.90	4.46	3.77	3.08	2.74	3.52	2.81	0.86	1.82	1.52	1.82	1.78

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	4644	4644	4644	4644	4536	4536	4536	4536	4335	4335	4335	4150	4150	4150	3981	3981	3901
	<b>1</b>	4427	4319	4222	4134	4331	4235	4148	4069	4077	4007	3944	3932	3877	3826	3798	3755	3680
	<b>2</b>	4208	4017	3860	3727	4121	3950	3807	3685	3824	3706	3604	3707	3611	3527	3600	3522	3453
	<b>3</b>	3994	3743	3549	3394	3916	3689	3510	3366	3586	3436	3312	3492	3366	3260	3404	3300	3236
	<b>4</b>	3791	3496	3279	3114	3720	3451	3251	3096	3367	3195	3059	3289	3142	3023	3216	3091	3033
	<b>5</b>	3598	3272	3043	2875	3535	3235	3021	2862	3165	2979	2836	3100	2938	2811	3039	2899	2846
	<b>6</b>	3417	3069	2835	2667	3360	3038	2818	2658	2979	2785	2640	2924	2753	2622	2873	2722	2674
	<b>7</b>	3248	2885	2650	2485	3196	2859	2636	2478	2809	2610	2465	2763	2585	2452	2719	2560	2517
	<b>8</b>	3090	2718	2484	2324	3043	2696	2473	2319	2653	2452	2309	2613	2432	2299	2576	2412	2373
	<b>9</b>	2943	2567	2336	2180	2900	2547	2327	2176	2511	2310	2169	2476	2293	2161	2444	2276	2241
	<b>10</b>	2807	2429	2202	2051	2768	2412	2195	2048	2380	2180	2042	2350	2166	2037	2321	2153	2121

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	156.9 fc	5.7 ft
6.5 ft	112.3 fc	6.7 ft
7.5 ft	84.4 fc	7.8 ft
8.0 ft	74.2 fc	8.3 ft
10.0 ft	47.5 fc	10.4 ft
12.0 ft	33.0 fc	12.4 ft
14.0 ft	24.2 fc	14.5 ft
16.0 ft	18.5 fc	16.6 ft
20.0 ft	11.9 fc	20.7 ft
24.0 ft	8.2 fc	24.9 ft
28.0 ft	6.1 fc	29.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	260200	260200	260200
<b>45.00°</b>	31683	25544	21999
<b>55.00°</b>	8828	6083	4725
<b>65.00°</b>	675	534	308
<b>75.00°</b>	511	412	370
<b>85.00°</b>	1025	1212	1076

### 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		Viewed crosswise					Viewed endwise				
2H	2H	9.4	10.4	9.8	10.7	11.1	6.1	7.1	6.5	7.4	7.7
	3H	9.2	10.1	9.6	10.5	10.8	6.0	6.8	6.3	7.2	7.5
	4H	9.2	10.0	9.6	10.3	10.7	5.9	6.7	6.3	7.1	7.5
	6H	9.1	9.8	9.5	10.2	10.6	5.9	6.6	6.3	7.0	7.4
	8H	9.0	9.7	9.5	10.1	10.5	5.9	6.5	6.3	6.9	7.4
	12H	9.0	9.7	9.4	10.1	10.5	5.9	6.5	6.3	6.9	7.3
4H	2H	9.1	10.0	9.5	10.3	10.7	5.9	6.7	6.3	7.0	7.4
	3H	9.0	9.6	9.4	10.0	10.4	5.7	6.4	6.2	6.8	7.2
	4H	8.9	9.5	9.3	9.9	10.3	5.7	6.3	6.1	6.7	7.2
	6H	8.8	9.3	9.3	9.7	10.2	5.8	6.3	6.2	6.7	7.2
	8H	8.8	9.2	9.2	9.7	10.2	5.8	6.3	6.3	6.7	7.2
	12H	8.7	9.1	9.2	9.6	10.1	5.9	6.3	6.4	6.8	7.2
8H	4H	8.7	9.2	9.2	9.6	10.1	5.7	6.1	6.1	6.6	7.0
	6H	8.6	9.0	9.1	9.5	10.0	5.8	6.2	6.3	6.7	7.2
	8H	8.6	8.9	9.1	9.5	10.0	6.0	6.3	6.5	6.8	7.3
	12H	8.6	8.9	9.2	9.4	10.0	6.2	6.5	6.7	7.0	7.6
12H	4H	8.6	9.0	9.1	9.5	10.0	5.6	6.0	6.1	6.5	7.0
	6H	8.6	8.9	9.1	9.4	9.9	5.8	6.2	6.4	6.6	7.2
	8H	8.6	8.9	9.1	9.4	9.9	6.1	6.4	6.6	6.9	7.4

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0