

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SGECS4FX 10L 35HK XX AR4FX80 FO MW  
Nom 4" diam Chicago Plenum downlight, Fusion Optix lens, Matte white finish

### **Test Number**

SP-01177\_M-10L

### **Test Date**

6/16/2020

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

### Summary of Results

#### Power

Input Watts	8.1 W
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#### Lumen Output

Output Lumens	746
Efficacy	92.16 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.3
90° - 270° Size	-0.3
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	1.1
Two luminaires, plane 90°	1.1
Four luminaires	1.15

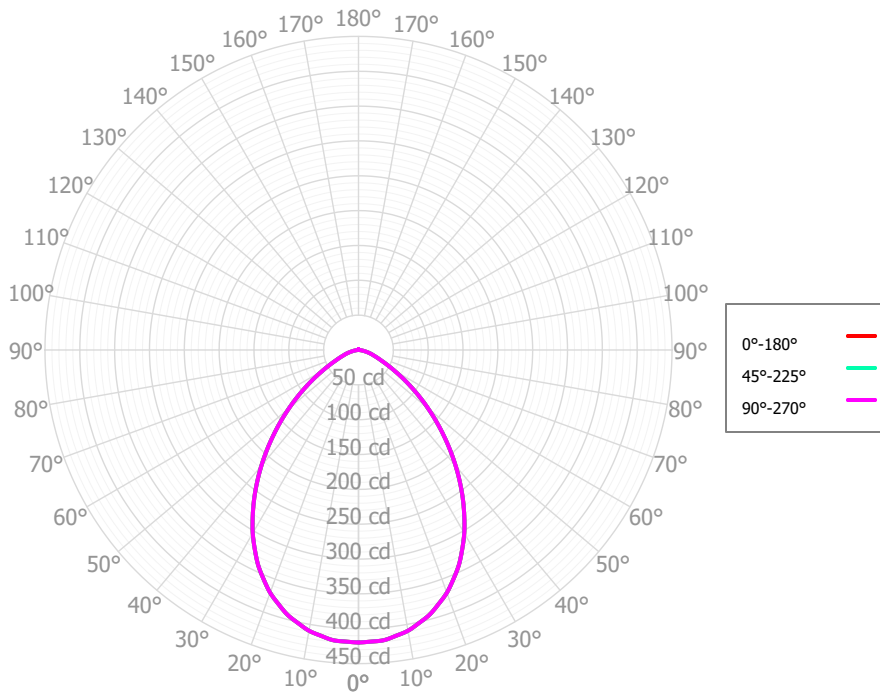
#### Full Beam Angle

0° - 180°	82°
90° - 270°	82°

### IES File Header Contents

Keyword	Value
TEST	SP-01177_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/20/2020
LUMCAT	SGECS4FX 10L 35HK XX AR4FX80 FO MW
LUMINAIRE	Nom 4" diam Chicago Plenum downlight, Fusion Optix lens, Matte white finish
OTHER	Beam angle: 81.6 deg
LAMPCAT	N/A
LAMP	N/A, 90CRI/35HK
OTHER	Total luminaire wattage is approximate
OTHER	CCT Output Multipliers: 27HK x 0.93, 30HK x 0.97, 35HK x 1.0, 40HK x 1.02
OTHER	This report prepared by Spectrum Lighting, scaled from 20L, 27HK

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	41.22	5.51%	90.00° - 100.00°	0.78	0.10%
10.00° - 20.00°	110.38	14.77%	100.00° - 110.00°	0.72	0.10%
20.00° - 30.00°	155.83	20.85%	100.00° - 120.00°	1.39	0.19%
30.00° - 40.00°	162.49	21.74%	120.00° - 130.00°	0.58	0.08%
40.00° - 50.00°	132.74	17.76%	130.00° - 140.00°	0.55	0.07%
50.00° - 60.00°	82.82	11.08%	140.00° - 150.00°	0.39	0.05%
60.00° - 70.00°	38.21	5.11%	150.00° - 160.00°	0.31	0.04%
70.00° - 80.00°	16.02	2.14%	160.00° - 170.00°	0.19	0.03%
80.00° - 90.00°	3.53	0.47%	170.00° - 180.00°	0.07	0.01%
0.00° - 90.00°	743.24	99.43%	0.00° - 180.00°	747.51	100.00%

### Candela Distribution

	0.00°	45.00°	90.00°
0.00°	419.77	419.77	419.77
2.50°	418.97	418.97	418.97
5.00°	418.11	418.11	418.11
7.50°	413.72	413.72	413.72
10.00°	409.19	409.19	409.19
12.50°	401.43	401.43	401.43
15.00°	393.51	393.51	393.51
17.50°	382.31	382.31	382.31
20.00°	370.82	370.82	370.82
22.50°	356.00	356.00	356.00
25.00°	340.76	340.76	340.76
27.50°	322.39	322.39	322.39
30.00°	303.61	303.61	303.61
32.50°	282.52	282.52	282.52
35.00°	261.22	261.22	261.22
37.50°	239.05	239.05	239.05
40.00°	216.84	216.84	216.84
42.50°	194.48	194.48	194.48
45.00°	172.38	172.38	172.38
47.50°	151.05	151.05	151.05
50.00°	130.23	130.23	130.23
52.50°	110.62	110.62	110.62
55.00°	91.92	91.92	91.92
57.50°	75.06	75.06	75.06
60.00°	59.76	59.76	59.76
62.50°	47.23	47.23	47.23
65.00°	36.77	36.77	36.77
67.50°	29.48	29.48	29.48
70.00°	23.52	23.52	23.52
72.50°	19.30	19.30	19.30
75.00°	15.11	15.11	15.11
77.50°	10.96	10.96	10.96
80.00°	7.51	7.51	7.51
82.50°	4.76	4.76	4.76
85.00°	2.75	2.75	2.75
87.50°	1.37	1.37	1.37
90.00°	0.75	0.75	0.75
92.50°	0.69	0.69	0.69
95.00°	0.69	0.69	0.69
97.50°	0.74	0.74	0.74
100.00°	0.73	0.73	0.73
102.50°	0.67	0.67	0.67
105.00°	0.66	0.66	0.66
107.50°	0.67	0.67	0.67
110.00°	0.68	0.68	0.68
112.50°	0.70	0.70	0.70

### 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>	889	889	889	889	868	868	868	828	828	828	792	792	792	759	759	759	743
	<b>1</b>	831	803	778	755	811	786	763	743	754	736	719	725	710	696	698	686	672
	<b>2</b>	771	722	681	647	752	708	670	639	682	650	624	658	632	609	635	614	595
	<b>3</b>	715	650	600	561	698	639	593	555	617	578	546	597	564	536	579	551	539
	<b>4</b>	664	589	534	492	648	579	528	488	561	517	482	544	506	475	529	496	486
	<b>5</b>	618	536	478	436	603	528	474	434	512	465	429	498	457	424	485	449	440
	<b>6</b>	576	490	432	390	563	483	428	388	470	421	385	458	415	382	446	408	400
	<b>7</b>	538	450	392	352	526	444	389	350	433	384	348	422	378	345	412	373	366
	<b>8</b>	505	415	358	319	494	410	356	318	400	351	316	391	347	314	383	343	336
	<b>9</b>	474	384	329	292	464	380	327	291	371	323	289	364	320	288	356	316	311
	<b>10</b>	447	357	304	268	437	353	302	267	346	299	266	339	296	265	333	293	288

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	13.9 fc	9.5 ft
6.5 ft	9.9 fc	11.2 ft
7.5 ft	7.5 fc	12.9 ft
8.0 ft	6.6 fc	13.8 ft
10.0 ft	4.2 fc	17.2 ft
12.0 ft	2.9 fc	20.7 ft
14.0 ft	2.1 fc	24.1 ft
16.0 ft	1.6 fc	27.6 ft
20.0 ft	1.0 fc	34.5 ft
24.0 ft	0.7 fc	41.4 ft
28.0 ft	0.5 fc	48.3 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	63,922	63,922	63,922
<b>45.00°</b>	37,122	37,122	37,122
<b>55.00°</b>	24,404	24,404	24,404
<b>65.00°</b>	13,250	13,250	13,250
<b>75.00°</b>	8,891	8,891	8,891
<b>85.00°</b>	4,798	4,798	4,798

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	20.5	21.8	20.8	22.2	22.5	20.5	21.8	20.8	22.2	22.5
	<b>3H</b>	21.1	22.3	21.5	22.7	23.1	21.1	22.3	21.5	22.7	23.1
	<b>4H</b>	21.3	22.5	21.7	22.8	23.2	21.3	22.5	21.7	22.8	23.2
	<b>6H</b>	21.4	22.5	21.9	22.9	23.3	21.4	22.5	21.9	22.9	23.3
	<b>8H</b>	21.5	22.4	21.9	22.8	23.3	21.5	22.4	21.9	22.8	23.3
	<b>12H</b>	21.4	22.4	21.9	22.8	23.2	21.4	22.4	21.9	22.8	23.2
<b>4H</b>	<b>2H</b>	20.7	21.8	21.1	22.2	22.5	20.7	21.8	21.1	22.2	22.5
	<b>3H</b>	21.5	22.4	21.9	22.8	23.2	21.5	22.4	21.9	22.8	23.2
	<b>4H</b>	21.8	22.6	22.2	23.0	23.5	21.8	22.6	22.2	23.0	23.5
	<b>6H</b>	22.0	22.7	22.4	23.1	23.6	22.0	22.7	22.4	23.1	23.6
	<b>8H</b>	22.0	22.7	22.5	23.1	23.6	22.0	22.7	22.5	23.1	23.6
	<b>12H</b>	22.0	22.6	22.5	23.1	23.6	22.0	22.6	22.5	23.1	23.6
<b>8H</b>	<b>4H</b>	21.8	22.5	22.3	23.0	23.4	21.8	22.5	22.3	23.0	23.4
	<b>6H</b>	22.1	22.6	22.6	23.1	23.6	22.1	22.6	22.6	23.1	23.6
	<b>8H</b>	22.1	22.6	22.6	23.1	23.6	22.1	22.6	22.6	23.1	23.6
	<b>12H</b>	22.2	22.6	22.7	23.1	23.7	22.2	22.6	22.7	23.1	23.7
<b>12H</b>	<b>4H</b>	21.8	22.4	22.3	22.9	23.4	21.8	22.4	22.3	22.9	23.4
	<b>6H</b>	22.1	22.6	22.6	23.0	23.6	22.1	22.6	22.6	23.0	23.6
	<b>8H</b>	22.1	22.6	22.7	23.1	23.7	22.1	22.6	22.7	23.1	23.7

Corrected UGR values based on total output lumens

SHR = 1.0