

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

SGECS4FX 30L 35K XX AR4FX60 SO SG

Nom 4" diam Chicago Plenum downlight, Solite lens, Soft glow finish

### Test Number

SP-01169\_M-30L

### Test Date

6/16/2020

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

### Summary of Results

#### Power

Input Watts	21.9 W
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#### Lumen Output

Output Lumens	2221
Efficacy	101.41 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.84
Two luminaires, plane 90°	0.84
Four luminaires	0.87

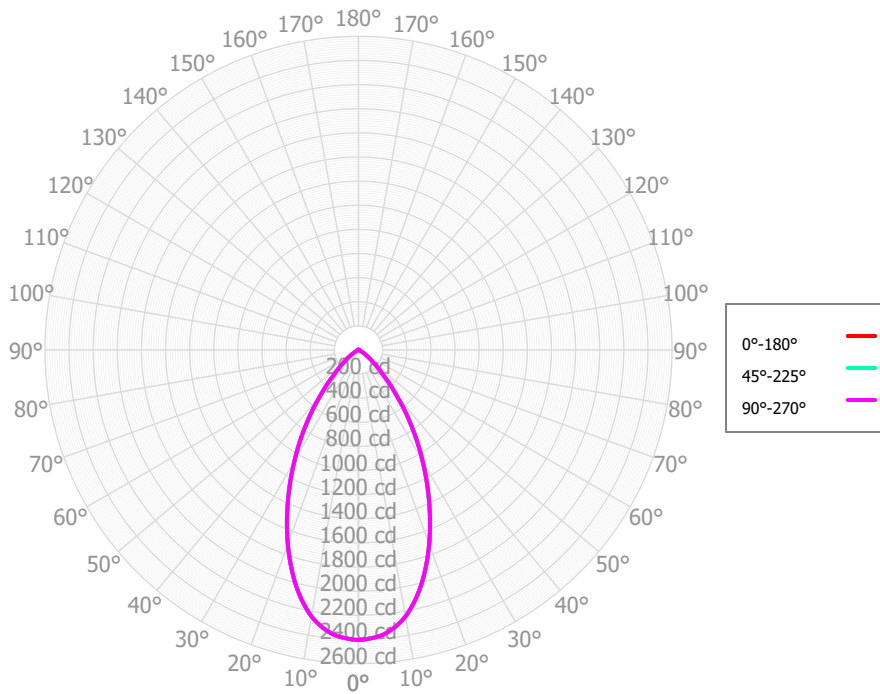
#### Full Beam Angle

0° - 180°	56°
90° - 270°	56°

### IES File Header Contents

Keyword	Value
TEST	SP-01169_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/16/2020
LUMCAT	SGECS4FX 30L 35K XX AR4FX60 SO SG
LUMINAIRE	Nom 4" diam Chicago Plenum downlight, Solite lens, Soft glow finish
OTHER	Beam angle: 55.6 deg
LAMPCAT	N/A
LAMP	N/A
OTHER	Total luminaire wattage is approximate
OTHER	CCT Output Multipliers: 30K x 0.97, 40K x 1.03, 50K x 1.03
OTHER	This report prepared by Spectrum Lighting, scaled from 40L

**Candela Polar Plot**



**Zonal Lumen Summary**

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	231.15	10.38%	90.00° - 100.00°	0.76	0.03%
10.00° - 20.00°	557.55	25.04%	100.00° - 110.00°	0.81	0.04%
20.00° - 30.00°	631.04	28.34%	100.00° - 120.00°	1.66	0.07%
30.00° - 40.00°	473.68	21.27%	120.00° - 130.00°	0.74	0.03%
40.00° - 50.00°	228.92	10.28%	130.00° - 140.00°	0.89	0.04%
50.00° - 60.00°	80.85	3.63%	140.00° - 150.00°	0.77	0.03%
60.00° - 70.00°	16.05	0.72%	150.00° - 160.00°	0.58	0.03%
70.00° - 80.00°	0.94	0.04%	160.00° - 170.00°	0.40	0.02%
80.00° - 90.00°	0.78	0.04%	170.00° - 180.00°	0.14	0.01%
0.00° - 90.00°	2,220.96	99.73%	0.00° - 180.00°	2,226.92	100.00%

### Candela Distribution

	0.00°	45.00°	90.00°
0.00°	2,404.69	2,404.69	2,404.69
2.50°	2,393.13	2,393.13	2,393.13
5.00°	2,368.90	2,368.90	2,368.90
7.50°	2,317.90	2,317.90	2,317.90
10.00°	2,244.13	2,244.13	2,244.13
12.50°	2,139.13	2,139.13	2,139.13
15.00°	2,013.48	2,013.48	2,013.48
17.50°	1,868.45	1,868.45	1,868.45
20.00°	1,713.66	1,713.66	1,713.66
22.50°	1,550.84	1,550.84	1,550.84
25.00°	1,385.05	1,385.05	1,385.05
27.50°	1,222.84	1,222.84	1,222.84
30.00°	1,061.59	1,061.59	1,061.59
32.50°	910.37	910.37	910.37
35.00°	760.89	760.89	760.89
37.50°	624.13	624.13	624.13
40.00°	488.49	488.49	488.49
42.50°	383.43	383.43	383.43
45.00°	280.75	280.75	280.75
47.50°	217.50	217.50	217.50
50.00°	157.03	157.03	157.03
52.50°	119.61	119.61	119.61
55.00°	84.72	84.72	84.72
57.50°	62.31	62.31	62.31
60.00°	41.47	41.47	41.47
62.50°	25.84	25.84	25.84
65.00°	12.79	12.79	12.79
67.50°	5.90	5.90	5.90
70.00°	1.34	1.34	1.34
72.50°	0.99	0.99	0.99
75.00°	0.77	0.77	0.77
77.50°	0.75	0.75	0.75
80.00°	0.73	0.73	0.73
82.50°	0.71	0.71	0.71
85.00°	0.71	0.71	0.71
87.50°	0.72	0.72	0.72
90.00°	0.72	0.72	0.72
92.50°	0.71	0.71	0.71
95.00°	0.70	0.70	0.70
97.50°	0.69	0.69	0.69
100.00°	0.70	0.70	0.70
102.50°	0.71	0.71	0.71
105.00°	0.76	0.76	0.76
107.50°	0.82	0.82	0.82
110.00°	0.85	0.85	0.85
112.50°	0.86	0.86	0.86

### 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%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	2,650	2,650	2,650	2,650	2,587	2,587	2,587	2,587	2,471	2,471	2,471	2,365	2,365	2,365	2,267	2,267	2,267	2,221
	1	2,519	2,454	2,397	2,344	2,463	2,406	2,354	2,306	2,314	2,272	2,234	2,230	2,197	2,166	2,153	2,127	2,103	2,084
	2	2,385	2,270	2,176	2,096	2,334	2,231	2,145	2,072	2,158	2,087	2,025	2,090	2,032	1,981	2,027	1,980	1,939	1,941
	3	2,255	2,104	1,987	1,893	2,209	2,072	1,964	1,877	2,012	1,921	1,846	1,956	1,880	1,816	1,905	1,842	1,787	1,805
	4	2,132	1,954	1,823	1,724	2,090	1,927	1,807	1,713	1,878	1,774	1,692	1,832	1,743	1,671	1,789	1,714	1,651	1,681
	5	2,016	1,819	1,682	1,580	1,978	1,797	1,669	1,573	1,756	1,644	1,558	1,717	1,620	1,543	1,681	1,597	1,529	1,567
	6	1,908	1,698	1,558	1,457	1,873	1,680	1,548	1,451	1,645	1,528	1,441	1,613	1,509	1,430	1,582	1,491	1,420	1,464
	7	1,807	1,590	1,449	1,350	1,776	1,574	1,441	1,346	1,545	1,425	1,338	1,517	1,410	1,330	1,491	1,395	1,323	1,371
	8	1,715	1,492	1,352	1,256	1,686	1,479	1,346	1,253	1,453	1,333	1,247	1,430	1,321	1,241	1,407	1,309	1,236	1,287
	9	1,629	1,404	1,266	1,173	1,603	1,393	1,261	1,171	1,371	1,251	1,166	1,350	1,241	1,162	1,331	1,231	1,158	1,211
	10	1,550	1,325	1,190	1,100	1,527	1,315	1,185	1,098	1,296	1,177	1,094	1,278	1,168	1,091	1,260	1,160	1,088	1,143

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	79.5 fc	5.8 ft
6.5 ft	56.9 fc	6.9 ft
7.5 ft	42.7 fc	7.9 ft
8.0 ft	37.6 fc	8.4 ft
10.0 ft	24.0 fc	10.6 ft
12.0 ft	16.7 fc	12.7 ft
14.0 ft	12.3 fc	14.8 ft
16.0 ft	9.4 fc	16.9 ft
20.0 ft	6.0 fc	21.1 ft
24.0 ft	4.2 fc	25.3 ft
28.0 ft	3.1 fc	29.5 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	366,181	366,181	366,181
<b>45.00°</b>	60,460	60,460	60,460
<b>55.00°</b>	22,491	22,491	22,491
<b>65.00°</b>	4,607	4,607	4,607
<b>75.00°</b>	455	455	455
<b>85.00°</b>	1,242	1,242	1,242

### 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>	15.7	16.8	16.1	17.1	17.4	15.7	16.8	16.1	17.1	17.4
	<b>3H</b>	15.6	16.5	15.9	16.8	17.2	15.6	16.5	15.9	16.8	17.2
	<b>4H</b>	15.5	16.3	15.9	16.7	17.1	15.5	16.3	15.9	16.7	17.1
	<b>6H</b>	15.4	16.2	15.8	16.5	16.9	15.4	16.2	15.8	16.5	16.9
	<b>8H</b>	15.3	16.1	15.7	16.5	16.9	15.3	16.1	15.7	16.5	16.9
	<b>12H</b>	15.3	16.0	15.7	16.4	16.8	15.3	16.0	15.7	16.4	16.8
<b>4H</b>	<b>2H</b>	15.5	16.4	15.9	16.7	17.1	15.5	16.4	15.9	16.7	17.1
	<b>3H</b>	15.4	16.1	15.8	16.5	16.9	15.4	16.1	15.8	16.5	16.9
	<b>4H</b>	15.2	15.9	15.7	16.3	16.8	15.2	15.9	15.7	16.3	16.8
	<b>6H</b>	15.1	15.7	15.6	16.1	16.6	15.1	15.7	15.6	16.1	16.6
	<b>8H</b>	15.1	15.6	15.6	16.0	16.5	15.1	15.6	15.6	16.0	16.5
	<b>12H</b>	15.0	15.5	15.5	16.0	16.4	15.0	15.5	15.5	16.0	16.4
<b>8H</b>	<b>4H</b>	15.1	15.6	15.6	16.0	16.5	15.1	15.6	15.6	16.0	16.5
	<b>6H</b>	15.0	15.4	15.5	15.9	16.4	15.0	15.4	15.5	15.9	16.4
	<b>8H</b>	14.9	15.2	15.4	15.8	16.3	14.9	15.2	15.4	15.8	16.3
	<b>12H</b>	14.8	15.2	15.4	15.7	16.2	14.8	15.2	15.4	15.7	16.2
<b>12H</b>	<b>4H</b>	15.0	15.4	15.5	15.9	16.4	15.0	15.4	15.5	15.9	16.4
	<b>6H</b>	14.9	15.3	15.4	15.7	16.3	14.9	15.3	15.4	15.7	16.3
	<b>8H</b>	14.8	15.2	15.4	15.7	16.2	14.8	15.2	15.4	15.7	16.2

Corrected UGR values based on total output lumens

SHR = 1.0