

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SGECS4SQFX 40L 35K XX CA4FX SO SG

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

### **Test Number**

SP-01175

### **Test Date**

6/16/2020

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

### Summary of Results

#### Power

Input Watts	30.3 W
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#### Lumen Output

Output Lumens	3126
Efficacy	103.17 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	1.25
Two luminaires, plane 90°	1.25
Four luminaires	1.15

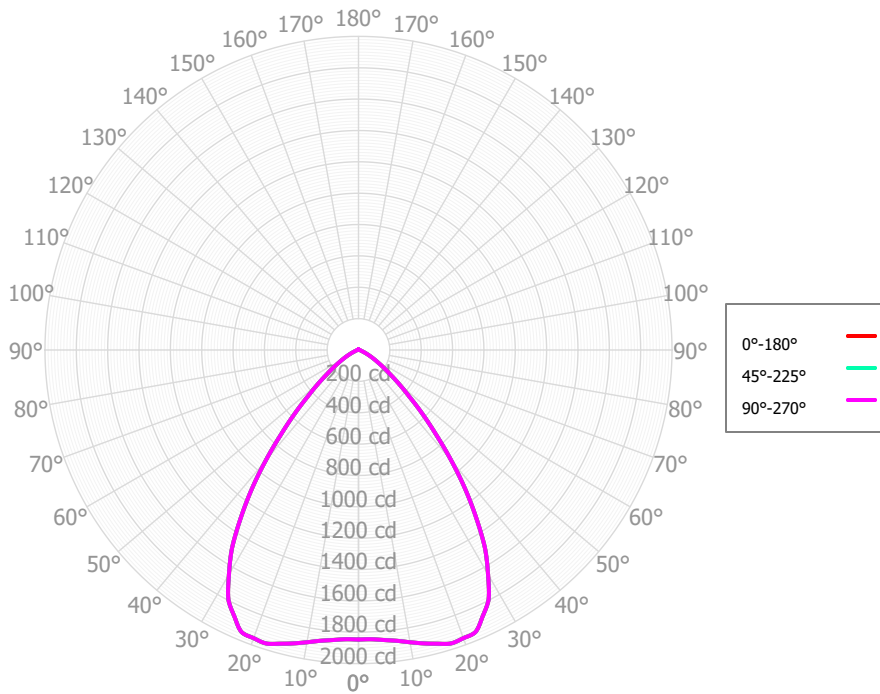
#### Full Beam Angle

0° - 180°	78°
90° - 270°	78°

### IES File Header Contents

Keyword	Value
TEST	SP-01175
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/16/2020
LUMCAT	SGECS4SQFX 40L 35K XX CA4FX SO SG
LUMINAIRE	Nom 4" square Chicago Plenum downlight, Solite lens, Soft glow finish
OTHER	Beam angle: 78.5 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
_CCT	80+
_CCTMULT	30K x 0.97, 40K x 1.03, 50K x 1.03
_LAMPMULT	10L x 0.24, 20L x 0.50, 30L x 0.75

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	185.84	5.94%	90.00° - 100.00°	1.53	0.05%
10.00° - 20.00°	549.95	17.57%	100.00° - 110.00°	1.35	0.04%
20.00° - 30.00°	854.03	27.28%	100.00° - 120.00°	2.68	0.09%
30.00° - 40.00°	808.66	25.83%	120.00° - 130.00°	1.35	0.04%
40.00° - 50.00°	453.45	14.48%	130.00° - 140.00°	1.29	0.04%
50.00° - 60.00°	181.78	5.81%	140.00° - 150.00°	1.12	0.04%
60.00° - 70.00°	61.08	1.95%	150.00° - 160.00°	0.83	0.03%
70.00° - 80.00°	18.98	0.61%	160.00° - 170.00°	0.53	0.02%
80.00° - 90.00°	7.47	0.24%	170.00° - 180.00°	0.18	0.01%
0.00° - 90.00°	3,121.25	99.70%	0.00° - 180.00°	3,130.75	100.00%

### Candela Distribution

	0.00°	45.00°	90.00°
0.00°	1,846.94	1,846.94	1,846.94
2.50°	1,846.94	1,846.94	1,846.94
5.00°	1,857.23	1,857.23	1,857.23
7.50°	1,871.22	1,871.22	1,871.22
10.00°	1,893.16	1,893.16	1,893.16
12.50°	1,917.10	1,917.10	1,917.10
15.00°	1,939.93	1,939.93	1,939.93
17.50°	1,962.59	1,962.59	1,962.59
20.00°	1,956.44	1,956.44	1,956.44
22.50°	1,948.00	1,948.00	1,948.00
25.00°	1,874.71	1,874.71	1,874.71
27.50°	1,797.08	1,797.08	1,797.08
30.00°	1,653.00	1,653.00	1,653.00
32.50°	1,503.27	1,503.27	1,503.27
35.00°	1,311.29	1,311.29	1,311.29
37.50°	1,118.33	1,118.33	1,118.33
40.00°	920.96	920.96	920.96
42.50°	733.71	733.71	733.71
45.00°	577.83	577.83	577.83
47.50°	439.26	439.26	439.26
50.00°	339.42	339.42	339.42
52.50°	254.61	254.61	254.61
55.00°	195.31	195.31	195.31
57.50°	146.22	146.22	146.22
60.00°	110.41	110.41	110.41
62.50°	80.91	80.91	80.91
65.00°	57.73	57.73	57.73
67.50°	40.68	40.68	40.68
70.00°	28.41	28.41	28.41
72.50°	21.20	21.20	21.20
75.00°	17.03	17.03	17.03
77.50°	13.96	13.96	13.96
80.00°	11.39	11.39	11.39
82.50°	9.07	9.07	9.07
85.00°	6.84	6.84	6.84
87.50°	4.63	4.63	4.63
90.00°	2.42	2.42	2.42
92.50°	1.68	1.68	1.68
95.00°	1.13	1.13	1.13
97.50°	1.07	1.07	1.07
100.00°	1.05	1.05	1.05
102.50°	1.17	1.17	1.17
105.00°	1.29	1.29	1.29
107.50°	1.39	1.39	1.39
110.00°	1.45	1.45	1.45
112.50°	1.31	1.31	1.31

### 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>	3,725	3,725	3,725	3,725	3,637	3,637	3,637	3,637	3,473	3,473	3,473	3,324	3,324	3,324	3,186	3,186	3,121
	<b>1</b>	3,515	3,412	3,321	3,238	3,434	3,343	3,260	3,185	3,213	3,146	3,085	3,093	3,040	2,991	2,983	2,941	2,881
	<b>2</b>	3,298	3,116	2,966	2,839	3,224	3,060	2,922	2,806	2,954	2,840	2,742	2,857	2,763	2,681	2,767	2,690	2,635
	<b>3</b>	3,089	2,849	2,663	2,515	3,021	2,803	2,631	2,493	2,716	2,571	2,451	2,635	2,513	2,410	2,561	2,459	2,409
	<b>4</b>	2,893	2,611	2,405	2,247	2,830	2,573	2,381	2,233	2,500	2,335	2,204	2,433	2,291	2,176	2,371	2,249	2,205
	<b>5</b>	2,710	2,400	2,183	2,023	2,653	2,368	2,164	2,012	2,307	2,129	1,992	2,250	2,095	1,973	2,197	2,062	2,022
	<b>6</b>	2,542	2,212	1,991	1,832	2,490	2,185	1,976	1,825	2,134	1,948	1,810	2,085	1,922	1,796	2,040	1,896	1,860
	<b>7</b>	2,387	2,046	1,824	1,669	2,340	2,022	1,812	1,663	1,978	1,790	1,653	1,937	1,768	1,642	1,899	1,748	1,716
	<b>8</b>	2,246	1,897	1,678	1,527	2,203	1,877	1,669	1,523	1,839	1,650	1,515	1,804	1,633	1,508	1,770	1,616	1,588
	<b>9</b>	2,116	1,765	1,550	1,404	2,077	1,748	1,542	1,401	1,715	1,527	1,395	1,684	1,512	1,389	1,655	1,498	1,474
	<b>10</b>	1,998	1,647	1,436	1,297	1,962	1,632	1,430	1,294	1,603	1,417	1,289	1,576	1,405	1,285	1,550	1,394	1,371

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	61.1 fc	9.0 ft
6.5 ft	43.7 fc	10.6 ft
7.5 ft	32.8 fc	12.2 ft
8.0 ft	28.9 fc	13.1 ft
10.0 ft	18.5 fc	16.3 ft
12.0 ft	12.8 fc	19.6 ft
14.0 ft	9.4 fc	22.9 ft
16.0 ft	7.2 fc	26.1 ft
20.0 ft	4.6 fc	32.7 ft
24.0 ft	3.2 fc	39.2 ft
28.0 ft	2.4 fc	45.7 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	220,893	220,893	220,893
<b>45.00°</b>	97,734	97,734	97,734
<b>55.00°</b>	40,725	40,725	40,725
<b>65.00°</b>	16,337	16,337	16,337
<b>75.00°</b>	7,867	7,867	7,867
<b>85.00°</b>	9,383	9,383	9,383

### 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>	20.3	21.5	20.7	21.9	22.2	20.3	21.5	20.7	21.9	22.2
	<b>3H</b>	20.6	21.6	21.0	22.0	22.3	20.6	21.6	21.0	22.0	22.3
	<b>4H</b>	20.6	21.6	21.0	21.9	22.3	20.6	21.6	21.0	21.9	22.3
	<b>6H</b>	20.6	21.5	21.0	21.9	22.3	20.6	21.5	21.0	21.9	22.3
	<b>8H</b>	20.6	21.5	21.1	21.9	22.3	20.6	21.5	21.1	21.9	22.3
	<b>12H</b>	20.6	21.4	21.1	21.8	22.2	20.6	21.4	21.1	21.8	22.2
<b>4H</b>	<b>2H</b>	20.4	21.3	20.8	21.7	22.1	20.4	21.3	20.8	21.7	22.1
	<b>3H</b>	20.7	21.5	21.1	21.9	22.3	20.7	21.5	21.1	21.9	22.3
	<b>4H</b>	20.7	21.4	21.2	21.9	22.3	20.7	21.4	21.2	21.9	22.3
	<b>6H</b>	20.8	21.4	21.3	21.9	22.3	20.8	21.4	21.3	21.9	22.3
	<b>8H</b>	20.8	21.4	21.3	21.8	22.3	20.8	21.4	21.3	21.8	22.3
	<b>12H</b>	20.9	21.3	21.3	21.8	22.3	20.9	21.3	21.3	21.8	22.3
<b>8H</b>	<b>4H</b>	20.7	21.2	21.1	21.7	22.2	20.7	21.2	21.1	21.7	22.2
	<b>6H</b>	20.8	21.2	21.3	21.7	22.2	20.8	21.2	21.3	21.7	22.2
	<b>8H</b>	20.8	21.2	21.4	21.8	22.3	20.8	21.2	21.4	21.8	22.3
	<b>12H</b>	20.9	21.3	21.5	21.8	22.4	20.9	21.3	21.5	21.8	22.4
<b>12H</b>	<b>4H</b>	20.6	21.1	21.1	21.6	22.1	20.6	21.1	21.1	21.6	22.1
	<b>6H</b>	20.8	21.2	21.3	21.6	22.2	20.8	21.2	21.3	21.6	22.2
	<b>8H</b>	20.8	21.2	21.4	21.7	22.3	20.8	21.2	21.4	21.7	22.3

Corrected UGR values based on total output lumens

SHR = 1.0