

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

SGECS4FX 20L 35HK XX AR4FX60 SO SG  
Nom 4" diam Chicago Plenum downlight, Solite lens, Soft glow finish

### Test Number

SP-01180

### Test Date

6/16/2020

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

### Summary of Results

#### Power

Input Watts	16.6 W
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#### Lumen Output

Output Lumens	1491
Efficacy	89.85 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.83
Two luminaires, plane 90°	0.83
Four luminaires	0.86

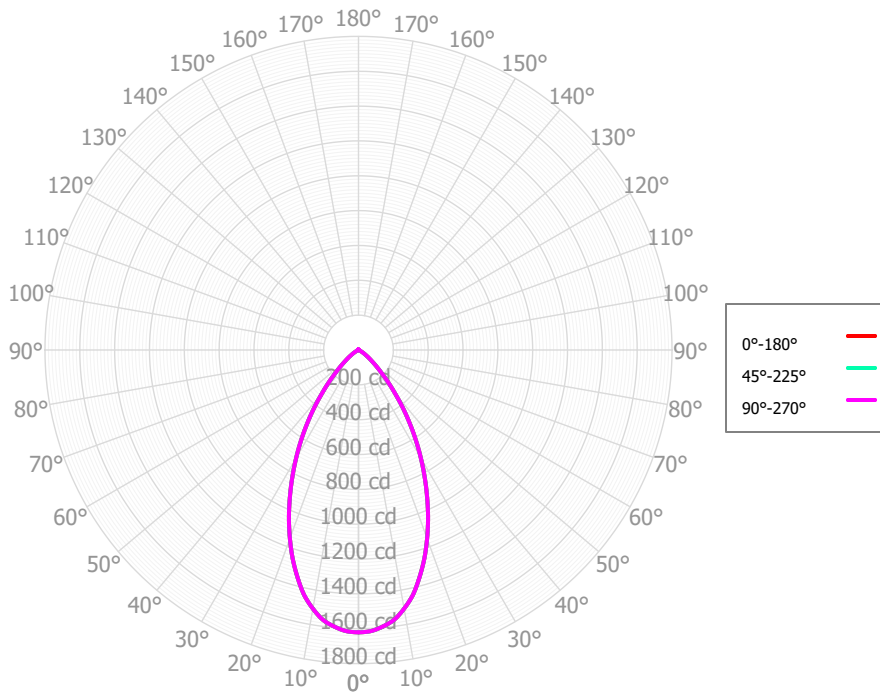
#### Full Beam Angle

0° - 180°	56°
90° - 270°	56°

### IES File Header Contents

Keyword	Value
TEST	SP-01180
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/20/2020
LUMCAT	SGECS4FX 20L 35HK 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, 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 27HK
_CRI	90+
_CCTMULT	27HK x 0.93, 30HK x 0.97, 35HK x 1.00, 40HK x 1.02
_LAMPMULT	10L x 0.58

**Candela Polar Plot**



**Zonal Lumen Summary**

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	155.68	10.41%	90.00° - 100.00°	1.27	0.09%
10.00° - 20.00°	374.92	25.07%	100.00° - 110.00°	1.33	0.09%
20.00° - 30.00°	424.62	28.39%	100.00° - 120.00°	2.53	0.17%
30.00° - 40.00°	317.98	21.26%	120.00° - 130.00°	1.23	0.08%
40.00° - 50.00°	151.74	10.15%	130.00° - 140.00°	1.23	0.08%
50.00° - 60.00°	50.32	3.36%	140.00° - 150.00°	0.92	0.06%
60.00° - 70.00°	9.27	0.62%	150.00° - 160.00°	0.67	0.04%
70.00° - 80.00°	1.38	0.09%	160.00° - 170.00°	0.43	0.03%
80.00° - 90.00°	1.16	0.08%	170.00° - 180.00°	0.15	0.01%
0.00° - 90.00°	1,487.08	99.44%	0.00° - 180.00°	1,495.51	100.00%

### Candela Distribution

	0.00°	45.00°	90.00°
0.00°	1,620.78	1,620.78	1,620.78
2.50°	1,615.50	1,615.50	1,615.50
5.00°	1,594.09	1,594.09	1,594.09
7.50°	1,562.84	1,562.84	1,562.84
10.00°	1,508.08	1,508.08	1,508.08
12.50°	1,441.41	1,441.41	1,441.41
15.00°	1,352.07	1,352.07	1,352.07
17.50°	1,256.58	1,256.58	1,256.58
20.00°	1,151.61	1,151.61	1,151.61
22.50°	1,043.69	1,043.69	1,043.69
25.00°	932.03	932.03	932.03
27.50°	822.62	822.62	822.62
30.00°	715.55	715.55	715.55
32.50°	611.84	611.84	611.84
35.00°	511.00	511.00	511.00
37.50°	417.02	417.02	417.02
40.00°	327.84	327.84	327.84
42.50°	253.89	253.89	253.89
45.00°	188.64	188.64	188.64
47.50°	141.27	141.27	141.27
50.00°	102.05	102.05	102.05
52.50°	75.08	75.08	75.08
55.00°	52.51	52.51	52.51
57.50°	37.30	37.30	37.30
60.00°	24.12	24.12	24.12
62.50°	14.91	14.91	14.91
65.00°	6.48	6.48	6.48
67.50°	3.73	3.73	3.73
70.00°	1.74	1.74	1.74
72.50°	1.43	1.43	1.43
75.00°	1.25	1.25	1.25
77.50°	1.15	1.15	1.15
80.00°	1.06	1.06	1.06
82.50°	1.03	1.03	1.03
85.00°	1.00	1.00	1.00
87.50°	1.10	1.10	1.10
90.00°	1.19	1.19	1.19
92.50°	1.20	1.20	1.20
95.00°	1.20	1.20	1.20
97.50°	1.13	1.13	1.13
100.00°	1.10	1.10	1.10
102.50°	1.22	1.22	1.22
105.00°	1.31	1.31	1.31
107.50°	1.31	1.31	1.31
110.00°	1.28	1.28	1.28
112.50°	1.18	1.18	1.18

### 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>	1,778	1,778	1,778	1,778	1,736	1,736	1,736	1,736	1,657	1,657	1,657	1,585	1,585	1,585	1,518	1,518	1,487
	<b>1</b>	1,691	1,647	1,608	1,573	1,653	1,614	1,579	1,547	1,552	1,524	1,498	1,494	1,472	1,452	1,442	1,424	1,395
	<b>2</b>	1,601	1,524	1,460	1,407	1,566	1,497	1,440	1,391	1,447	1,400	1,359	1,401	1,362	1,328	1,358	1,327	1,299
	<b>3</b>	1,514	1,412	1,334	1,271	1,483	1,391	1,319	1,260	1,350	1,289	1,239	1,312	1,261	1,218	1,277	1,235	1,199
	<b>4</b>	1,431	1,312	1,225	1,158	1,403	1,294	1,213	1,151	1,260	1,191	1,136	1,229	1,170	1,122	1,200	1,149	1,108
	<b>5</b>	1,354	1,222	1,130	1,062	1,328	1,207	1,121	1,057	1,179	1,104	1,046	1,153	1,087	1,036	1,128	1,072	1,026
	<b>6</b>	1,281	1,141	1,047	979	1,258	1,129	1,040	976	1,105	1,027	968	1,083	1,014	961	1,062	1,001	954
	<b>7</b>	1,214	1,068	974	908	1,193	1,058	968	905	1,038	958	899	1,019	947	894	1,001	937	888
	<b>8</b>	1,152	1,003	909	845	1,133	994	905	843	977	896	838	960	887	834	945	879	830
	<b>9</b>	1,095	944	852	789	1,077	936	848	788	921	841	784	907	834	781	894	827	778
	<b>10</b>	1,042	891	800	740	1,026	884	797	739	871	791	736	858	785	734	847	780	731

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	53.6 fc	5.8 ft
6.5 ft	38.4 fc	6.8 ft
7.5 ft	28.8 fc	7.9 ft
8.0 ft	25.3 fc	8.4 ft
10.0 ft	16.2 fc	10.5 ft
12.0 ft	11.3 fc	12.6 ft
14.0 ft	8.3 fc	14.8 ft
16.0 ft	6.3 fc	16.9 ft
20.0 ft	4.1 fc	21.1 ft
24.0 ft	2.8 fc	25.3 ft
28.0 ft	2.1 fc	29.5 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	246,810	246,810	246,810
<b>45.00°</b>	40,623	40,623	40,623
<b>55.00°</b>	13,941	13,941	13,941
<b>65.00°</b>	2,334	2,334	2,334
<b>75.00°</b>	735	735	735
<b>85.00°</b>	1,747	1,747	1,747

### 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>	13.5	14.6	13.9	14.9	15.2	13.5	14.6	13.9	14.9	15.2
	<b>3H</b>	13.4	14.3	13.8	14.6	15.0	13.4	14.3	13.8	14.6	15.0
	<b>4H</b>	13.3	14.1	13.7	14.5	14.9	13.3	14.1	13.7	14.5	14.9
	<b>6H</b>	13.2	14.0	13.6	14.4	14.8	13.2	14.0	13.6	14.4	14.8
	<b>8H</b>	13.1	13.9	13.6	14.3	14.7	13.1	13.9	13.6	14.3	14.7
	<b>12H</b>	13.1	13.8	13.6	14.2	14.7	13.1	13.8	13.6	14.2	14.7
<b>4H</b>	<b>2H</b>	13.3	14.2	13.7	14.5	14.9	13.3	14.2	13.7	14.5	14.9
	<b>3H</b>	13.2	13.9	13.6	14.3	14.7	13.2	13.9	13.6	14.3	14.7
	<b>4H</b>	13.1	13.7	13.5	14.1	14.6	13.1	13.7	13.5	14.1	14.6
	<b>6H</b>	13.0	13.5	13.5	14.0	14.5	13.0	13.5	13.5	14.0	14.5
	<b>8H</b>	12.9	13.4	13.4	13.9	14.4	12.9	13.4	13.4	13.9	14.4
	<b>12H</b>	12.9	13.3	13.4	13.8	14.3	12.9	13.3	13.4	13.8	14.3
<b>8H</b>	<b>4H</b>	12.9	13.4	13.4	13.8	14.3	12.9	13.4	13.4	13.8	14.3
	<b>6H</b>	12.8	13.2	13.3	13.7	14.2	12.8	13.2	13.3	13.7	14.2
	<b>8H</b>	12.8	13.1	13.3	13.7	14.2	12.8	13.1	13.3	13.7	14.2
	<b>12H</b>	12.8	13.1	13.3	13.6	14.2	12.8	13.1	13.3	13.6	14.2
<b>12H</b>	<b>4H</b>	12.8	13.3	13.3	13.8	14.3	12.8	13.3	13.3	13.8	14.3
	<b>6H</b>	12.7	13.1	13.3	13.6	14.1	12.7	13.1	13.3	13.6	14.1
	<b>8H</b>	12.7	13.0	13.3	13.5	14.1	12.7	13.0	13.3	13.5	14.1

Corrected UGR values based on total output lumens

SHR = 1.0