

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

SGECS4SQFX 10L 35K XX CA4FX SO MW  
Nom 4" square Chicago Plenum downlight, Solite lens, Matte white finish

### Test Number

SP-01174\_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	6.6 W
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#### Lumen Output

Output Lumens	760
Efficacy	115.1 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	1.07

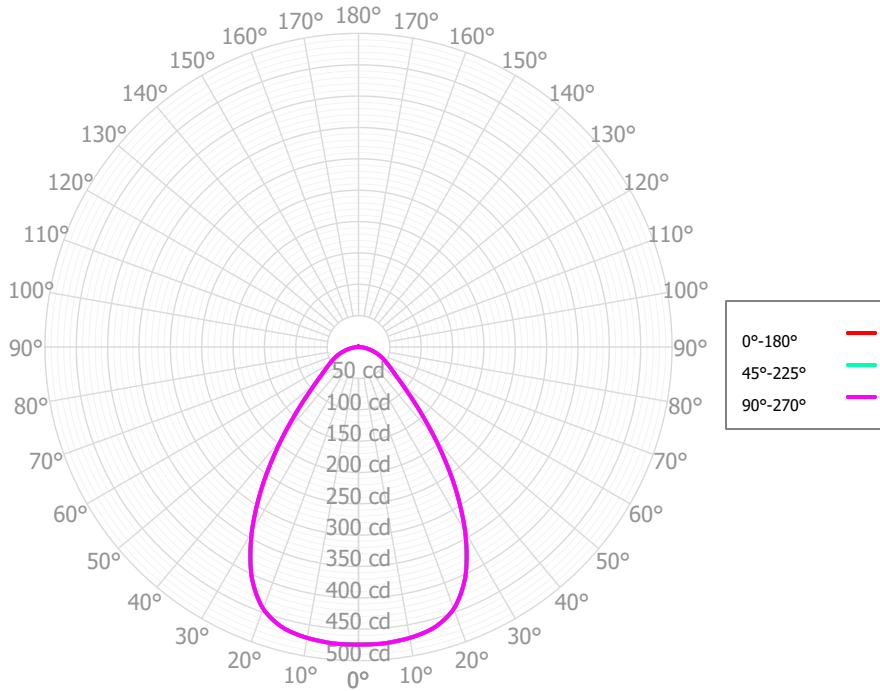
#### Full Beam Angle

0° - 180°	73°
90° - 270°	73°

### IES File Header Contents

Keyword	Value
TEST	SP-01174_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/17/2020
LUMCAT	SGECS4SQFX 10L 35K XX CA4FX SO MW
LUMINAIRE	Nom 4" square Chicago Plenum downlight, Solite lens, Matte white finish
OTHER	Beam angle: 73.5 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, scaled from 40L

**Candela Polar Plot**



**Zonal Lumen Summary**

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	47.04	6.18%	90.00° - 100.00°	0.53	0.07%
10.00° - 20.00°	130.29	17.12%	100.00° - 110.00°	0.27	0.04%
20.00° - 30.00°	182.91	24.04%	100.00° - 120.00°	0.54	0.07%
30.00° - 40.00°	163.82	21.53%	120.00° - 130.00°	0.30	0.04%
40.00° - 50.00°	101.11	13.29%	130.00° - 140.00°	0.27	0.04%
50.00° - 60.00°	60.65	7.97%	140.00° - 150.00°	0.24	0.03%
60.00° - 70.00°	42.05	5.53%	150.00° - 160.00°	0.18	0.02%
70.00° - 80.00°	23.82	3.13%	160.00° - 170.00°	0.12	0.02%
80.00° - 90.00°	6.93	0.91%	170.00° - 180.00°	0.04	0.01%
0.00° - 90.00°	758.62	99.71%	0.00° - 180.00°	760.84	100.00%

### Candela Distribution

	0.00°	45.00°	90.00°
0.00°	474.67	474.67	474.67
2.50°	474.67	474.67	474.67
5.00°	474.39	474.39	474.39
7.50°	472.92	472.92	472.92
10.00°	471.09	471.09	471.09
12.50°	468.14	468.14	468.14
15.00°	463.74	463.74	463.74
17.50°	455.73	455.73	455.73
20.00°	444.36	444.36	444.36
22.50°	426.28	426.28	426.28
25.00°	403.61	403.61	403.61
27.50°	373.53	373.53	373.53
30.00°	340.25	340.25	340.25
32.50°	302.78	302.78	302.78
35.00°	264.54	264.54	264.54
37.50°	225.46	225.46	225.46
40.00°	189.29	189.29	189.29
42.50°	155.73	155.73	155.73
45.00°	128.41	128.41	128.41
47.50°	105.68	105.68	105.68
50.00°	88.92	88.92	88.92
52.50°	75.78	75.78	75.78
55.00°	66.44	66.44	66.44
57.50°	58.95	58.95	58.95
60.00°	52.96	52.96	52.96
62.50°	47.54	47.54	47.54
65.00°	42.45	42.45	42.45
67.50°	37.45	37.45	37.45
70.00°	32.41	32.41	32.41
72.50°	27.36	27.36	27.36
75.00°	22.48	22.48	22.48
77.50°	17.63	17.63	17.63
80.00°	13.51	13.51	13.51
82.50°	9.47	9.47	9.47
85.00°	5.99	5.99	5.99
87.50°	2.56	2.56	2.56
90.00°	1.47	1.47	1.47
92.50°	0.44	0.44	0.44
95.00°	0.35	0.35	0.35
97.50°	0.27	0.27	0.27
100.00°	0.26	0.26	0.26
102.50°	0.25	0.25	0.25
105.00°	0.25	0.25	0.25
107.50°	0.26	0.26	0.26
110.00°	0.26	0.26	0.26
112.50°	0.27	0.27	0.27

### 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>	905	905	905	905	884	884	884	884	844	844	844	808	808	808	774	774	759
	<b>1</b>	846	817	791	768	826	800	777	756	768	749	732	739	723	709	712	699	685
	<b>2</b>	787	737	696	661	768	723	686	654	697	666	639	673	647	624	650	629	616
	<b>3</b>	733	668	618	578	715	657	611	573	635	596	563	615	582	554	596	568	557
	<b>4</b>	683	609	554	513	667	599	548	509	581	537	502	564	527	496	549	516	506
	<b>5</b>	639	558	501	459	624	550	496	457	534	488	452	520	479	447	507	471	462
	<b>6</b>	598	513	456	415	585	506	452	413	493	445	410	481	439	406	470	433	424
	<b>7</b>	561	474	417	377	549	468	414	376	457	409	374	447	404	371	437	399	391
	<b>8</b>	528	440	384	346	517	435	382	345	425	377	343	416	373	341	408	369	362
	<b>9</b>	498	409	355	318	488	405	353	318	397	349	316	389	346	315	382	342	337
	<b>10</b>	470	382	329	294	462	379	328	294	371	325	293	365	322	292	358	319	314

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	15.7 fc	8.2 ft
6.5 ft	11.2 fc	9.7 ft
7.5 ft	8.4 fc	11.2 ft
8.0 ft	7.4 fc	11.9 ft
10.0 ft	4.7 fc	14.9 ft
12.0 ft	3.3 fc	17.9 ft
14.0 ft	2.4 fc	20.9 ft
16.0 ft	1.9 fc	23.9 ft
20.0 ft	1.2 fc	29.9 ft
24.0 ft	0.8 fc	35.8 ft
28.0 ft	0.6 fc	41.8 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	56,770	56,770	56,770
<b>45.00°</b>	21,720	21,720	21,720
<b>55.00°</b>	13,853	13,853	13,853
<b>65.00°</b>	12,013	12,013	12,013
<b>75.00°</b>	10,389	10,389	10,389
<b>85.00°</b>	8,215	8,215	8,215

### 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>	18.9	20.2	19.2	20.5	20.8	18.9	20.2	19.2	20.5	20.8
	<b>3H</b>	20.6	21.7	20.9	22.1	22.4	20.6	21.7	20.9	22.1	22.4
	<b>4H</b>	21.2	22.3	21.6	22.6	23.0	21.2	22.3	21.6	22.6	23.0
	<b>6H</b>	21.6	22.6	22.0	23.0	23.4	21.6	22.6	22.0	23.0	23.4
	<b>8H</b>	21.7	22.7	22.2	23.1	23.5	21.7	22.7	22.2	23.1	23.5
	<b>12H</b>	21.8	22.8	22.3	23.1	23.6	21.8	22.8	22.3	23.1	23.6
<b>4H</b>	<b>2H</b>	19.4	20.5	19.8	20.9	21.3	19.4	20.5	19.8	20.9	21.3
	<b>3H</b>	21.3	22.2	21.7	22.6	23.0	21.3	22.2	21.7	22.6	23.0
	<b>4H</b>	22.1	22.9	22.5	23.3	23.7	22.1	22.9	22.5	23.3	23.7
	<b>6H</b>	22.6	23.3	23.1	23.8	24.2	22.6	23.3	23.1	23.8	24.2
	<b>8H</b>	22.8	23.5	23.3	23.9	24.4	22.8	23.5	23.3	23.9	24.4
	<b>12H</b>	22.9	23.5	23.4	24.0	24.5	22.9	23.5	23.4	24.0	24.5
<b>8H</b>	<b>4H</b>	22.3	23.0	22.8	23.4	23.9	22.3	23.0	22.8	23.4	23.9
	<b>6H</b>	23.0	23.5	23.5	24.0	24.5	23.0	23.5	23.5	24.0	24.5
	<b>8H</b>	23.2	23.7	23.8	24.2	24.7	23.2	23.7	23.8	24.2	24.7
	<b>12H</b>	23.4	23.9	24.0	24.4	24.9	23.4	23.9	24.0	24.4	24.9
<b>12H</b>	<b>4H</b>	22.3	22.9	22.8	23.4	23.9	22.3	22.9	22.8	23.4	23.9
	<b>6H</b>	23.0	23.5	23.6	24.0	24.5	23.0	23.5	23.6	24.0	24.5
	<b>8H</b>	23.3	23.8	23.9	24.3	24.8	23.3	23.8	23.9	24.3	24.8

Corrected UGR values based on total output lumens

SHR = 1.0