

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGECS4SQFX 40L 35K XX CA4FX FO SG

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

Test Number

SP-01173

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	3037
Efficacy	100.23 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.23
Two luminaires, plane 90°	1.23
Four luminaires	1.3

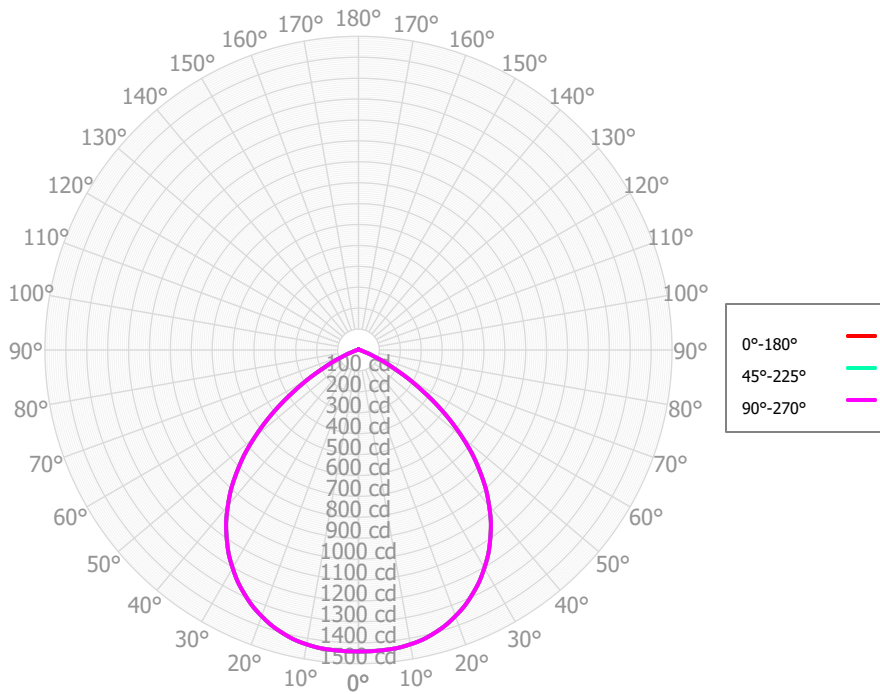
Full Beam Angle

0° - 180°	96°
90° - 270°	96°

IES File Header Contents

Keyword	Value
TEST	SP-01173
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 FO SG
LUMINAIRE	Nom 4" square Chicago Plenum downlight, Fusion Optix lens, Soft glow finish
OTHER	Beam angle: 96 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°	142.90	4.70%	90.00° - 100.00°	1.59	0.05%
10.00° - 20.00°	395.16	13.00%	100.00° - 110.00°	1.19	0.04%
20.00° - 30.00°	592.80	19.50%	100.00° - 120.00°	2.41	0.08%
30.00° - 40.00°	685.00	22.53%	120.00° - 130.00°	1.20	0.04%
40.00° - 50.00°	629.46	20.70%	130.00° - 140.00°	1.25	0.04%
50.00° - 60.00°	407.76	13.41%	140.00° - 150.00°	1.01	0.03%
60.00° - 70.00°	142.67	4.69%	150.00° - 160.00°	0.72	0.02%
70.00° - 80.00°	27.58	0.91%	160.00° - 170.00°	0.46	0.02%
80.00° - 90.00°	8.55	0.28%	170.00° - 180.00°	0.17	0.01%
0.00° - 90.00°	3,031.88	99.71%	0.00° - 180.00°	3,040.70	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	1,442.40	1,442.40	1,442.40
2.50°	1,442.40	1,442.40	1,442.40
5.00°	1,440.66	1,440.66	1,440.66
7.50°	1,437.76	1,437.76	1,437.76
10.00°	1,429.97	1,429.97	1,429.97
12.50°	1,419.34	1,419.34	1,419.34
15.00°	1,402.16	1,402.16	1,402.16
17.50°	1,381.78	1,381.78	1,381.78
20.00°	1,355.06	1,355.06	1,355.06
22.50°	1,325.71	1,325.71	1,325.71
25.00°	1,289.32	1,289.32	1,289.32
27.50°	1,250.48	1,250.48	1,250.48
30.00°	1,204.33	1,204.33	1,204.33
32.50°	1,156.13	1,156.13	1,156.13
35.00°	1,099.33	1,099.33	1,099.33
37.50°	1,040.61	1,040.61	1,040.61
40.00°	972.21	972.21	972.21
42.50°	902.13	902.13	902.13
45.00°	821.58	821.58	821.58
47.50°	739.73	739.73	739.73
50.00°	647.24	647.24	647.24
52.50°	553.88	553.88	553.88
55.00°	457.79	457.79	457.79
57.50°	361.59	361.59	361.59
60.00°	277.51	277.51	277.51
62.50°	194.35	194.35	194.35
65.00°	137.77	137.77	137.77
67.50°	83.20	83.20	83.20
70.00°	55.70	55.70	55.70
72.50°	30.37	30.37	30.37
75.00°	23.31	23.31	23.31
77.50°	16.76	16.76	16.76
80.00°	13.39	13.39	13.39
82.50°	10.18	10.18	10.18
85.00°	7.70	7.70	7.70
87.50°	5.28	5.28	5.28
90.00°	3.09	3.09	3.09
92.50°	1.41	1.41	1.41
95.00°	1.24	1.24	1.24
97.50°	1.11	1.11	1.11
100.00°	1.07	1.07	1.07
102.50°	1.06	1.06	1.06
105.00°	1.11	1.11	1.11
107.50°	1.17	1.17	1.17
110.00°	1.23	1.23	1.23
112.50°	1.26	1.26	1.26

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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	3,618	3,618	3,618	3,618	3,533	3,533	3,533	3,533	3,374	3,374	3,374	3,228	3,228	3,228	3,095	3,095	3,032
	1	3,384	3,272	3,172	3,081	3,304	3,204	3,113	3,031	3,076	3,003	2,935	2,959	2,900	2,845	2,851	2,804	2,746
	2	3,138	2,937	2,771	2,632	3,063	2,881	2,729	2,600	2,776	2,650	2,540	2,680	2,575	2,483	2,590	2,504	2,452
	3	2,904	2,639	2,433	2,270	2,834	2,593	2,403	2,250	2,505	2,344	2,210	2,425	2,288	2,173	2,350	2,235	2,188
	4	2,689	2,379	2,151	1,978	2,624	2,340	2,128	1,964	2,267	2,083	1,938	2,199	2,041	1,912	2,135	2,000	1,958
	5	2,493	2,153	1,915	1,740	2,434	2,120	1,897	1,731	2,059	1,863	1,712	2,001	1,829	1,695	1,947	1,797	1,761
	6	2,317	1,958	1,717	1,544	2,263	1,930	1,703	1,538	1,878	1,675	1,525	1,828	1,649	1,512	1,782	1,624	1,592
	7	2,158	1,789	1,549	1,382	2,109	1,765	1,538	1,377	1,720	1,516	1,367	1,678	1,495	1,358	1,638	1,474	1,446
	8	2,016	1,642	1,407	1,245	1,971	1,622	1,398	1,241	1,583	1,379	1,234	1,546	1,362	1,227	1,512	1,345	1,321
	9	1,889	1,514	1,285	1,130	1,848	1,496	1,277	1,127	1,463	1,262	1,121	1,431	1,248	1,116	1,401	1,233	1,212
	10	1,774	1,402	1,179	1,031	1,737	1,387	1,173	1,029	1,357	1,160	1,024	1,330	1,148	1,020	1,303	1,136	1,117

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	47.7 fc	12.2 ft
6.5 ft	34.1 fc	14.4 ft
7.5 ft	25.6 fc	16.7 ft
8.0 ft	22.5 fc	17.8 ft
10.0 ft	14.4 fc	22.2 ft
12.0 ft	10.0 fc	26.7 ft
14.0 ft	7.4 fc	31.1 ft
16.0 ft	5.6 fc	35.5 ft
20.0 ft	3.6 fc	44.4 ft
24.0 ft	2.5 fc	53.3 ft
28.0 ft	1.8 fc	62.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	172,510	172,510	172,510
45.00°	138,961	138,961	138,961
55.00°	95,456	95,456	95,456
65.00°	38,989	38,989	38,989
75.00°	10,771	10,771	10,771
85.00°	10,565	10,565	10,565

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	26.5	27.9	26.8	28.2	28.5	26.5	27.9	26.8	28.2	28.5
	3H	26.6	27.8	27.0	28.2	28.6	26.6	27.8	27.0	28.2	28.6
	4H	26.6	27.7	27.0	28.1	28.5	26.6	27.7	27.0	28.1	28.5
	6H	26.5	27.6	26.9	28.0	28.4	26.5	27.6	26.9	28.0	28.4
	8H	26.5	27.5	26.9	27.9	28.3	26.5	27.5	26.9	27.9	28.3
	12H	26.5	27.4	26.9	27.8	28.3	26.5	27.4	26.9	27.8	28.3
4H	2H	26.5	27.7	26.9	28.0	28.4	26.5	27.7	26.9	28.0	28.4
	3H	26.7	27.6	27.1	28.1	28.5	26.7	27.6	27.1	28.1	28.5
	4H	26.7	27.5	27.1	27.9	28.4	26.7	27.5	27.1	27.9	28.4
	6H	26.6	27.4	27.1	27.8	28.3	26.6	27.4	27.1	27.8	28.3
	8H	26.6	27.3	27.1	27.7	28.2	26.6	27.3	27.1	27.7	28.2
	12H	26.6	27.2	27.1	27.7	28.2	26.6	27.2	27.1	27.7	28.2
8H	4H	26.6	27.3	27.0	27.7	28.2	26.6	27.3	27.0	27.7	28.2
	6H	26.5	27.1	27.0	27.6	28.1	26.5	27.1	27.0	27.6	28.1
	8H	26.5	27.0	27.0	27.5	28.0	26.5	27.0	27.0	27.5	28.0
	12H	26.5	26.9	27.0	27.4	28.0	26.5	26.9	27.0	27.4	28.0
12H	4H	26.5	27.1	27.0	27.6	28.1	26.5	27.1	27.0	27.6	28.1
	6H	26.5	27.0	27.0	27.5	28.0	26.5	27.0	27.0	27.5	28.0
	8H	26.5	26.9	27.0	27.4	28.0	26.5	26.9	27.0	27.4	28.0

Corrected UGR values based on total output lumens

SHR = 1.0