Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGECS4SQFX 30L 35K XX CA4FX FO SG

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

Test Number

SP-01173_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

Lumen Output

Output Lumens	2278
Efficacy	104.01 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

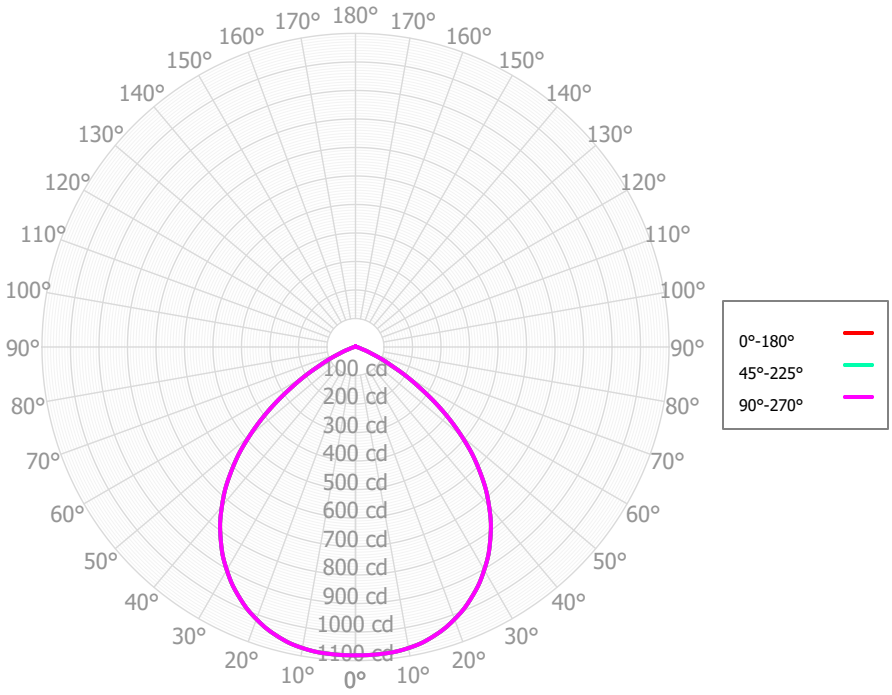
Full Beam Angle

0° - 180°	96°
90° - 270°	96°

IES File Header Contents

Keyword	Value
TEST	SP-01173_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/17/2020
LUMCAT	SGECS4SQFX 30L 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, scaled from 40L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	107.18	4.70%	90.00° - 100.00°	1.20	0.05%
10.00° - 20.00°	296.37	13.00%	100.00° - 110.00°	0.89	0.04%
20.00° - 30.00°	444.60	19.50%	100.00° - 120.00°	1.81	0.08%
30.00° - 40.00°	513.75	22.53%	120.00° - 130.00°	0.90	0.04%
40.00° - 50.00°	472.09	20.70%	130.00° - 140.00°	0.94	0.04%
50.00° - 60.00°	305.82	13.41%	140.00° - 150.00°	0.76	0.03%
60.00° - 70.00°	107.01	4.69%	150.00° - 160.00°	0.54	0.02%
70.00° - 80.00°	20.68	0.91%	160.00° - 170.00°	0.35	0.02%
80.00° - 90.00°	6.41	0.28%	170.00° - 180.00°	0.13	0.01%
0.00° - 90.00°	2,273.91	99.71%	0.00° - 180.00°	2,280.52	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	1,081.80	1,081.80	1,081.80
2.50°	1,081.80	1,081.80	1,081.80
5.00°	1,080.50	1,080.50	1,080.50
7.50°	1,078.32	1,078.32	1,078.32
10.00°	1,072.47	1,072.47	1,072.47
12.50°	1,064.51	1,064.51	1,064.51
15.00°	1,051.62	1,051.62	1,051.62
17.50°	1,036.34	1,036.34	1,036.34
20.00°	1,016.29	1,016.29	1,016.29
22.50°	994.29	994.29	994.29
25.00°	966.99	966.99	966.99
27.50°	937.86	937.86	937.86
30.00°	903.25	903.25	903.25
32.50°	867.09	867.09	867.09
35.00°	824.50	824.50	824.50
37.50°	780.46	780.46	780.46
40.00°	729.16	729.16	729.16
42.50°	676.59	676.59	676.59
45.00°	616.18	616.18	616.18
47.50°	554.80	554.80	554.80
50.00°	485.43	485.43	485.43
52.50°	415.41	415.41	415.41
55.00°	343.34	343.34	343.34
57.50°	271.19	271.19	271.19
60.00°	208.13	208.13	208.13
62.50°	145.76	145.76	145.76
65.00°	103.33	103.33	103.33
67.50°	62.40	62.40	62.40
70.00°	41.77	41.77	41.77
72.50°	22.78	22.78	22.78
75.00°	17.48	17.48	17.48
77.50°	12.57	12.57	12.57
80.00°	10.04	10.04	10.04
82.50°	7.63	7.63	7.63
85.00°	5.77	5.77	5.77
87.50°	3.96	3.96	3.96
90.00°	2.32	2.32	2.32
92.50°	1.05	1.05	1.05
95.00°	0.93	0.93	0.93
97.50°	0.83	0.83	0.83
100.00°	0.80	0.80	0.80
102.50°	0.80	0.80	0.80
105.00°	0.84	0.84	0.84
107.50°	0.88	0.88	0.88
110.00°	0.92	0.92	0.92
112.50°	0.94	0.94	0.94

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
RCR	0	2,713	2,713	2,713	2,713	2,649	2,649	2,649	2,649	2,530	2,530	2,530	2,421	2,421	2,421	2,321	2,321	2,321	2,274
	1	2,538	2,454	2,379	2,311	2,478	2,403	2,335	2,273	2,307	2,252	2,201	2,219	2,175	2,134	2,138	2,103	2,070	2,059
	2	2,353	2,203	2,078	1,974	2,297	2,161	2,047	1,950	2,082	1,987	1,905	2,010	1,931	1,862	1,943	1,878	1,821	1,839
	3	2,178	1,979	1,825	1,702	2,126	1,944	1,802	1,687	1,879	1,758	1,658	1,818	1,716	1,630	1,762	1,676	1,602	1,641
	4	2,017	1,784	1,614	1,483	1,968	1,755	1,596	1,473	1,700	1,562	1,454	1,649	1,530	1,434	1,602	1,500	1,416	1,469
	5	1,870	1,615	1,437	1,305	1,825	1,590	1,423	1,298	1,544	1,397	1,284	1,501	1,372	1,271	1,460	1,348	1,258	1,321
	6	1,738	1,469	1,288	1,158	1,697	1,448	1,277	1,153	1,408	1,257	1,143	1,371	1,237	1,134	1,337	1,218	1,124	1,194
	7	1,619	1,342	1,162	1,036	1,582	1,324	1,154	1,033	1,290	1,137	1,025	1,258	1,121	1,018	1,229	1,106	1,011	1,085
	8	1,512	1,232	1,055	934	1,478	1,216	1,048	931	1,187	1,035	926	1,160	1,022	920	1,134	1,009	915	990
	9	1,416	1,136	963	847	1,386	1,122	958	845	1,097	946	841	1,073	936	837	1,051	925	833	909
	10	1,330	1,051	884	773	1,303	1,040	880	771	1,018	870	768	997	861	765	978	852	762	838

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	35.8 fc	12.2 ft
6.5 ft	25.6 fc	14.4 ft
7.5 ft	19.2 fc	16.7 ft
8.0 ft	16.9 fc	17.8 ft
10.0 ft	10.8 fc	22.2 ft
12.0 ft	7.5 fc	26.7 ft
14.0 ft	5.5 fc	31.1 ft
16.0 ft	4.2 fc	35.5 ft
20.0 ft	2.7 fc	44.4 ft
24.0 ft	1.9 fc	53.3 ft
28.0 ft	1.4 fc	62.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	129,382	129,382	129,382
45.00°	104,220	104,220	104,220
55.00°	71,592	71,592	71,592
65.00°	29,242	29,242	29,242
75.00°	8,078	8,078	8,078
85.00°	7,923	7,923	7,923

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	25.5	26.9	25.8	27.2	27.5	25.5	26.9	25.8	27.2	27.5
	3H	25.6	26.8	26.0	27.2	27.6	25.6	26.8	26.0	27.2	27.6
	4H	25.6	26.7	26.0	27.1	27.5	25.6	26.7	26.0	27.1	27.5
	6H	25.5	26.6	25.9	27.0	27.4	25.5	26.6	25.9	27.0	27.4
	8H	25.5	26.5	25.9	26.9	27.3	25.5	26.5	25.9	26.9	27.3
	12H	25.5	26.4	25.9	26.8	27.3	25.5	26.4	25.9	26.8	27.3
4H	2H	25.5	26.7	25.9	27.0	27.4	25.5	26.7	25.9	27.0	27.4
	3H	25.7	26.6	26.1	27.1	27.5	25.7	26.6	26.1	27.1	27.5
	4H	25.7	26.5	26.1	26.9	27.4	25.7	26.5	26.1	26.9	27.4
	6H	25.6	26.4	26.1	26.8	27.3	25.6	26.4	26.1	26.8	27.3
	8H	25.6	26.3	26.1	26.7	27.2	25.6	26.3	26.1	26.7	27.2
	12H	25.6	26.2	26.1	26.7	27.2	25.6	26.2	26.1	26.7	27.2
8H	4H	25.6	26.3	26.0	26.7	27.2	25.6	26.3	26.0	26.7	27.2
	6H	25.5	26.1	26.0	26.6	27.1	25.5	26.1	26.0	26.6	27.1
	8H	25.5	26.0	26.0	26.5	27.0	25.5	26.0	26.0	26.5	27.0
	12H	25.5	25.9	26.0	26.4	27.0	25.5	25.9	26.0	26.4	27.0
12H	4H	25.5	26.1	26.0	26.6	27.1	25.5	26.1	26.0	26.6	27.1
	6H	25.5	26.0	26.0	26.5	27.0	25.5	26.0	26.0	26.5	27.0
	8H	25.5	25.9	26.0	26.4	27.0	25.5	25.9	26.0	26.4	27.0

Corrected UGR values based on total output lumens

SHR = 1.0