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_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

Lumen Output

Output Lumens	729
Efficacy	110.44 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

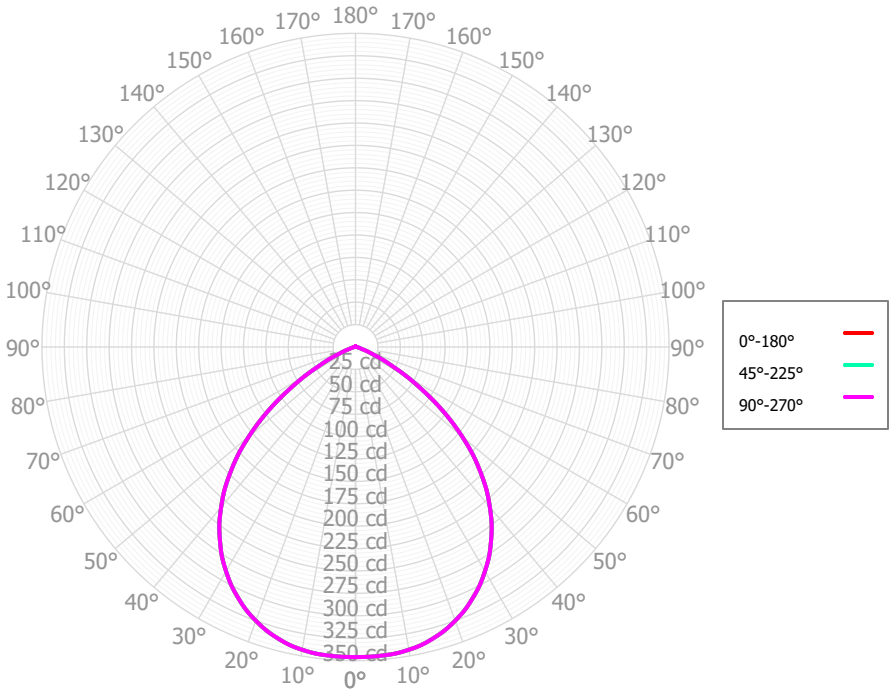
Full Beam Angle

0° - 180°	96°
90° - 270°	96°

IES File Header Contents

Keyword	Value
TEST	SP-01173_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/17/2020
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, scaled from 40L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	34.30	4.70%	90.00° - 100.00°	0.38	0.05%
10.00° - 20.00°	94.84	13.00%	100.00° - 110.00°	0.29	0.04%
20.00° - 30.00°	142.27	19.50%	100.00° - 120.00°	0.58	0.08%
30.00° - 40.00°	164.40	22.53%	120.00° - 130.00°	0.29	0.04%
40.00° - 50.00°	151.07	20.70%	130.00° - 140.00°	0.30	0.04%
50.00° - 60.00°	97.86	13.41%	140.00° - 150.00°	0.24	0.03%
60.00° - 70.00°	34.24	4.69%	150.00° - 160.00°	0.17	0.02%
70.00° - 80.00°	6.62	0.91%	160.00° - 170.00°	0.11	0.02%
80.00° - 90.00°	2.05	0.28%	170.00° - 180.00°	0.04	0.01%
0.00° - 90.00°	727.65	99.71%	0.00° - 180.00°	729.77	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	346.18	346.18	346.18
2.50°	346.18	346.18	346.18
5.00°	345.76	345.76	345.76
7.50°	345.06	345.06	345.06
10.00°	343.19	343.19	343.19
12.50°	340.64	340.64	340.64
15.00°	336.52	336.52	336.52
17.50°	331.63	331.63	331.63
20.00°	325.21	325.21	325.21
22.50°	318.17	318.17	318.17
25.00°	309.44	309.44	309.44
27.50°	300.11	300.11	300.11
30.00°	289.04	289.04	289.04
32.50°	277.47	277.47	277.47
35.00°	263.84	263.84	263.84
37.50°	249.75	249.75	249.75
40.00°	233.33	233.33	233.33
42.50°	216.51	216.51	216.51
45.00°	197.18	197.18	197.18
47.50°	177.54	177.54	177.54
50.00°	155.34	155.34	155.34
52.50°	132.93	132.93	132.93
55.00°	109.87	109.87	109.87
57.50°	86.78	86.78	86.78
60.00°	66.60	66.60	66.60
62.50°	46.64	46.64	46.64
65.00°	33.07	33.07	33.07
67.50°	19.97	19.97	19.97
70.00°	13.37	13.37	13.37
72.50°	7.29	7.29	7.29
75.00°	5.59	5.59	5.59
77.50°	4.02	4.02	4.02
80.00°	3.21	3.21	3.21
82.50°	2.44	2.44	2.44
85.00°	1.85	1.85	1.85
87.50°	1.27	1.27	1.27
90.00°	0.74	0.74	0.74
92.50°	0.34	0.34	0.34
95.00°	0.30	0.30	0.30
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°	0.27	0.27	0.27
107.50°	0.28	0.28	0.28
110.00°	0.30	0.30	0.30
112.50°	0.30	0.30	0.30

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%
	0	868	868	868	868	848	848	848	848	810	810	810	775	775	775	743	743	743	728
	1	812	785	761	740	793	769	747	727	738	721	704	710	696	683	684	673	662	659
	2	753	705	665	632	735	692	655	624	666	636	610	643	618	596	622	601	583	588
	3	697	633	584	545	680	622	577	540	601	562	531	582	549	521	564	536	513	525
	4	645	571	516	475	630	562	511	471	544	500	465	528	490	459	512	480	453	470
RCR	5	598	517	460	418	584	509	455	415	494	447	411	480	439	407	467	431	403	423
	6	556	470	412	371	543	463	409	369	451	402	366	439	396	363	428	390	360	382
	7	518	429	372	332	506	424	369	330	413	364	328	403	359	326	393	354	324	347
	8	484	394	338	299	473	389	335	298	380	331	296	371	327	295	363	323	293	317
	9	453	363	308	271	443	359	306	270	351	303	269	343	299	268	336	296	266	291
	10	426	336	283	247	417	333	281	247	326	278	246	319	276	245	313	273	244	268

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	11.4 fc	12.2 ft
6.5 ft	8.2 fc	14.4 ft
7.5 ft	6.2 fc	16.7 ft
8.0 ft	5.4 fc	17.8 ft
10.0 ft	3.5 fc	22.2 ft
12.0 ft	2.4 fc	26.7 ft
14.0 ft	1.8 fc	31.1 ft
16.0 ft	1.4 fc	35.5 ft
20.0 ft	0.9 fc	44.4 ft
24.0 ft	0.6 fc	53.3 ft
28.0 ft	0.4 fc	62.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	41,402	41,402	41,402
45.00°	33,351	33,351	33,351
55.00°	22,909	22,909	22,909
65.00°	9,357	9,357	9,357
75.00°	2,585	2,585	2,585
85.00°	2,536	2,536	2,536

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	21.5	22.9	21.9	23.2	23.6	21.5	22.9	21.9	23.2	23.6
	3H	21.6	22.9	22.0	23.2	23.6	21.6	22.9	22.0	23.2	23.6
	4H	21.6	22.8	22.0	23.1	23.5	21.6	22.8	22.0	23.1	23.5
	6H	21.6	22.6	22.0	23.0	23.4	21.6	22.6	22.0	23.0	23.4
	8H	21.5	22.5	22.0	22.9	23.4	21.5	22.5	22.0	22.9	23.4
	12H	21.5	22.5	21.9	22.9	23.3	21.5	22.5	21.9	22.9	23.3
4H	2H	21.6	22.7	22.0	23.1	23.5	21.6	22.7	22.0	23.1	23.5
	3H	21.7	22.7	22.2	23.1	23.5	21.7	22.7	22.2	23.1	23.5
	4H	21.7	22.6	22.2	23.0	23.4	21.7	22.6	22.2	23.0	23.4
	6H	21.7	22.4	22.1	22.9	23.3	21.7	22.4	22.1	22.9	23.3
	8H	21.6	22.3	22.1	22.8	23.3	21.6	22.3	22.1	22.8	23.3
	12H	21.6	22.2	22.1	22.7	23.2	21.6	22.2	22.1	22.7	23.2
8H	4H	21.6	22.3	22.1	22.7	23.2	21.6	22.3	22.1	22.7	23.2
	6H	21.6	22.1	22.1	22.6	23.1	21.6	22.1	22.1	22.6	23.1
	8H	21.6	22.1	22.1	22.6	23.1	21.6	22.1	22.1	22.6	23.1
	12H	21.5	22.0	22.1	22.5	23.1	21.5	22.0	22.1	22.5	23.1
12H	4H	21.6	22.2	22.1	22.7	23.1	21.6	22.2	22.1	22.7	23.1
	6H	21.5	22.0	22.1	22.5	23.1	21.5	22.0	22.1	22.5	23.1
	8H	21.5	22.0	22.0	22.5	23.0	21.5	22.0	22.0	22.5	23.0

Corrected UGR values based on total output lumens

SHR = 1.0