

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SGECS4SQFX 40L 35K XX CA4FX FO MW

Nom 4" square Chicago Plenum downlight, Fusion Optix lens, Matte white finish

Test Number

SP-01172

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
-------------	--------

Lumen Output

Output Lumens	3052
Efficacy	100.72 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.11
Two luminaires, plane 90°	1.11
Four luminaires	1.18

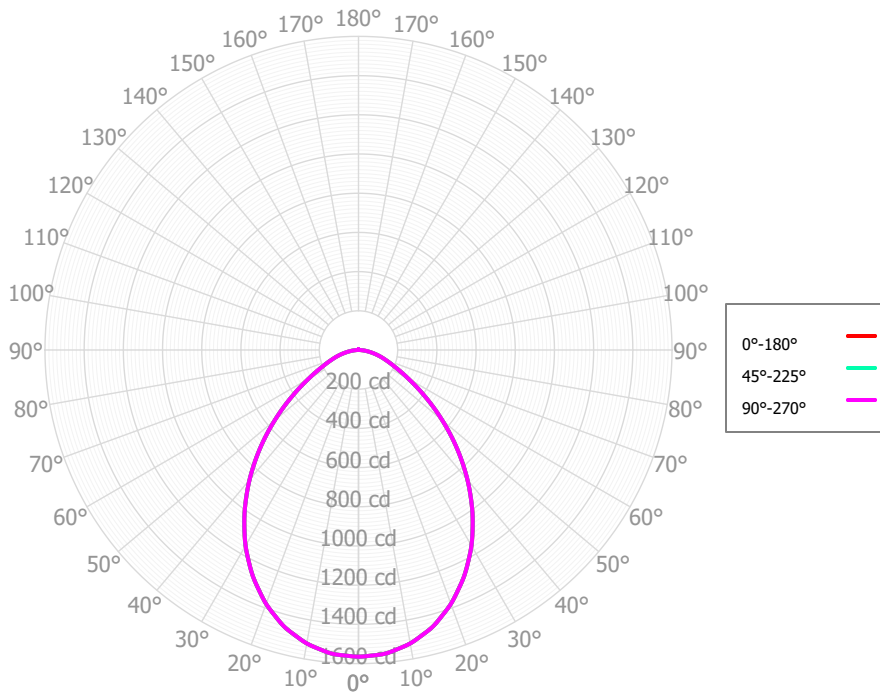
Full Beam Angle

0° - 180°	85°
90° - 270°	85°

IES File Header Contents

Keyword	Value
TEST	SP-01172
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 MW
LUMINAIRE	Nom 4" square Chicago Plenum downlight, Fusion Optix lens, Matte white finish
OTHER	Beam angle: 85.4 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°	153.34	5.02%	90.00° - 100.00°	2.26	0.07%
10.00° - 20.00°	410.25	13.43%	100.00° - 110.00°	1.39	0.05%
20.00° - 30.00°	584.24	19.12%	100.00° - 120.00°	2.65	0.09%
30.00° - 40.00°	631.06	20.65%	120.00° - 130.00°	1.16	0.04%
40.00° - 50.00°	546.66	17.89%	130.00° - 140.00°	1.02	0.03%
50.00° - 60.00°	373.85	12.23%	140.00° - 150.00°	0.90	0.03%
60.00° - 70.00°	209.40	6.85%	150.00° - 160.00°	0.72	0.02%
70.00° - 80.00°	106.95	3.50%	160.00° - 170.00°	0.43	0.01%
80.00° - 90.00°	30.58	1.00%	170.00° - 180.00°	0.16	0.01%
0.00° - 90.00°	3,046.33	99.70%	0.00° - 180.00°	3,055.62	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	1,565.14	1,565.14	1,565.14
2.50°	1,560.95	1,560.95	1,560.95
5.00°	1,555.62	1,555.62	1,555.62
7.50°	1,539.17	1,539.17	1,539.17
10.00°	1,520.54	1,520.54	1,520.54
12.50°	1,492.07	1,492.07	1,492.07
15.00°	1,462.33	1,462.33	1,462.33
17.50°	1,421.00	1,421.00	1,421.00
20.00°	1,378.81	1,378.81	1,378.81
22.50°	1,327.00	1,327.00	1,327.00
25.00°	1,274.74	1,274.74	1,274.74
27.50°	1,214.17	1,214.17	1,214.17
30.00°	1,152.93	1,152.93	1,152.93
32.50°	1,083.63	1,083.63	1,083.63
35.00°	1,013.73	1,013.73	1,013.73
37.50°	939.70	939.70	939.70
40.00°	865.14	865.14	865.14
42.50°	788.10	788.10	788.10
45.00°	711.02	711.02	711.02
47.50°	633.77	633.77	633.77
50.00°	557.75	557.75	557.75
52.50°	485.03	485.03	485.03
55.00°	415.43	415.43	415.43
57.50°	352.44	352.44	352.44
60.00°	295.06	295.06	295.06
62.50°	247.36	247.36	247.36
65.00°	206.21	206.21	206.21
67.50°	174.27	174.27	174.27
70.00°	146.43	146.43	146.43
72.50°	123.27	123.27	123.27
75.00°	100.82	100.82	100.82
77.50°	79.05	79.05	79.05
80.00°	59.36	59.36	59.36
82.50°	41.31	41.31	41.31
85.00°	26.05	26.05	26.05
87.50°	12.57	12.57	12.57
90.00°	5.68	5.68	5.68
92.50°	2.25	2.25	2.25
95.00°	1.25	1.25	1.25
97.50°	1.27	1.27	1.27
100.00°	1.34	1.34	1.34
102.50°	1.44	1.44	1.44
105.00°	1.35	1.35	1.35
107.50°	1.21	1.21	1.21
110.00°	1.21	1.21	1.21
112.50°	1.23	1.23	1.23

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	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%
RCR	0	3,635	3,635	3,635	3,635	3,550	3,550	3,550	3,550	3,390	3,390	3,390	3,244	3,244	3,244	3,109	3,109	3,046
	1	3,375	3,252	3,142	3,042	3,294	3,183	3,083	2,992	3,054	2,972	2,897	2,935	2,869	2,807	2,825	2,772	2,714
	2	3,116	2,900	2,722	2,572	3,039	2,843	2,680	2,541	2,737	2,600	2,481	2,638	2,524	2,425	2,547	2,454	2,371
	3	2,878	2,598	2,381	2,208	2,806	2,550	2,350	2,188	2,462	2,290	2,149	2,379	2,234	2,112	2,303	2,181	2,076
	4	2,663	2,340	2,103	1,922	2,597	2,300	2,080	1,909	2,226	2,034	1,883	2,157	1,991	1,857	2,092	1,950	1,833
	5	2,471	2,120	1,874	1,693	2,410	2,087	1,856	1,684	2,024	1,821	1,666	1,965	1,787	1,648	1,910	1,755	1,631
	6	2,299	1,931	1,684	1,507	2,244	1,903	1,670	1,500	1,849	1,642	1,487	1,799	1,615	1,474	1,753	1,590	1,462
	7	2,145	1,768	1,524	1,353	2,095	1,744	1,512	1,348	1,698	1,490	1,338	1,656	1,469	1,329	1,616	1,448	1,320
	8	2,007	1,627	1,388	1,224	1,961	1,606	1,379	1,220	1,567	1,360	1,213	1,530	1,343	1,206	1,495	1,326	1,199
	9	1,883	1,504	1,272	1,115	1,842	1,486	1,264	1,112	1,452	1,249	1,106	1,420	1,234	1,101	1,390	1,220	1,095
	10	1,772	1,396	1,171	1,021	1,734	1,381	1,165	1,019	1,351	1,152	1,015	1,323	1,140	1,010	1,297	1,128	1,006

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	51.7 fc	10.1 ft
6.5 ft	37.0 fc	12.0 ft
7.5 ft	27.8 fc	13.8 ft
8.0 ft	24.5 fc	14.8 ft
10.0 ft	15.7 fc	18.4 ft
12.0 ft	10.9 fc	22.1 ft
14.0 ft	8.0 fc	25.8 ft
16.0 ft	6.1 fc	29.5 ft
20.0 ft	3.9 fc	36.9 ft
24.0 ft	2.7 fc	44.3 ft
28.0 ft	2.0 fc	51.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	187,190	187,190	187,190
45.00°	120,261	120,261	120,261
55.00°	86,623	86,623	86,623
65.00°	58,358	58,358	58,358
75.00°	46,587	46,587	46,587
85.00°	35,752	35,752	35,752

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	26.3	27.7	26.6	28.0	28.4	26.3	27.7	26.6	28.0	28.4
	3H	27.3	28.6	27.7	29.0	29.3	27.3	28.6	27.7	29.0	29.3
	4H	27.8	29.0	28.2	29.3	29.7	27.8	29.0	28.2	29.3	29.7
	6H	28.1	29.2	28.5	29.6	30.0	28.1	29.2	28.5	29.6	30.0
	8H	28.2	29.2	28.6	29.6	30.0	28.2	29.2	28.6	29.6	30.0
	12H	28.2	29.2	28.7	29.6	30.1	28.2	29.2	28.7	29.6	30.1
4H	2H	26.6	27.8	27.0	28.2	28.6	26.6	27.8	27.0	28.2	28.6
	3H	27.9	28.9	28.3	29.3	29.7	27.9	28.9	28.3	29.3	29.7
	4H	28.4	29.3	28.9	29.8	30.2	28.4	29.3	28.9	29.8	30.2
	6H	28.9	29.7	29.3	30.1	30.6	28.9	29.7	29.3	30.1	30.6
	8H	29.0	29.7	29.5	30.2	30.7	29.0	29.7	29.5	30.2	30.7
	12H	29.1	29.8	29.6	30.2	30.7	29.1	29.8	29.6	30.2	30.7
8H	4H	28.6	29.4	29.1	29.8	30.3	28.6	29.4	29.1	29.8	30.3
	6H	29.2	29.8	29.7	30.3	30.7	29.2	29.8	29.7	30.3	30.7
	8H	29.4	29.9	29.9	30.4	30.9	29.4	29.9	29.9	30.4	30.9
	12H	29.5	30.0	30.0	30.5	31.1	29.5	30.0	30.0	30.5	31.1
12H	4H	28.6	29.3	29.1	29.8	30.3	28.6	29.3	29.1	29.8	30.3
	6H	29.2	29.7	29.7	30.2	30.8	29.2	29.7	29.7	30.2	30.8
	8H	29.4	29.9	29.9	30.4	31.0	29.4	29.9	29.9	30.4	31.0

Corrected UGR values based on total output lumens

SHR = 1.0