Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGECS4FX 40L 35K XX AR4FX60 SO MW

Nom 4" diam Chicago Plenum downlight, Solite lens, Matte white finish

Test Number

SP-01168

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	2957
Efficacy	97.61 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.94
Two luminaires, plane 90°	0.94
Four luminaires	0.94

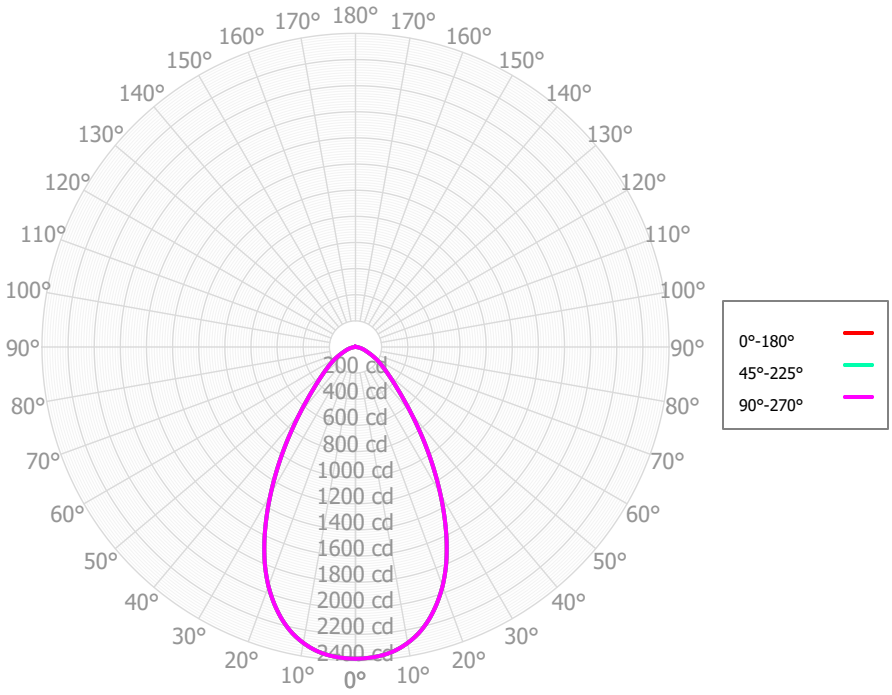
Full Beam Angle

0° - 180°	63°
90° - 270°	63°

IES File Header Contents

Keyword	Value
TEST	SP-01168
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/15/2020
LUMCAT	SGECS4FX 40L 35K XX AR4FX60 SO MW
LUMINAIRE	Nom 4" diam Chicago Plenum downlight, Solite lens, Matte white finish
OTHER	Beam angle: 63 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°	233.16	7.87%	90.00° - 100.00°	1.31	0.04%
10.00° - 20.00°	602.82	20.34%	100.00° - 110.00°	1.18	0.04%
20.00° - 30.00°	748.64	25.26%	100.00° - 120.00°	2.52	0.09%
30.00° - 40.00°	596.28	20.12%	120.00° - 130.00°	1.16	0.04%
40.00° - 50.00°	360.90	12.18%	130.00° - 140.00°	1.10	0.04%
50.00° - 60.00°	221.43	7.47%	140.00° - 150.00°	0.99	0.03%
60.00° - 70.00°	121.71	4.11%	150.00° - 160.00°	0.77	0.03%
70.00° - 80.00°	56.93	1.92%	160.00° - 170.00°	0.50	0.02%
80.00° - 90.00°	12.99	0.44%	170.00° - 180.00°	0.16	0.01%
0.00° - 90.00°	2,954.87	99.71%	0.00° - 180.00°	2,963.39	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	2,386.25	2,386.25	2,386.25
2.50°	2,381.72	2,381.72	2,381.72
5.00°	2,368.47	2,368.47	2,368.47
7.50°	2,342.65	2,342.65	2,342.65
10.00°	2,300.37	2,300.37	2,300.37
12.50°	2,242.22	2,242.22	2,242.22
15.00°	2,163.42	2,163.42	2,163.42
17.50°	2,064.65	2,064.65	2,064.65
20.00°	1,948.36	1,948.36	1,948.36
22.50°	1,810.73	1,810.73	1,810.73
25.00°	1,651.10	1,651.10	1,651.10
27.50°	1,477.66	1,477.66	1,477.66
30.00°	1,298.84	1,298.84	1,298.84
32.50°	1,122.78	1,122.78	1,122.78
35.00°	954.93	954.93	954.93
37.50°	799.34	799.34	799.34
40.00°	662.23	662.23	662.23
42.50°	547.17	547.17	547.17
45.00°	456.69	456.69	456.69
47.50°	386.37	386.37	386.37
50.00°	329.54	329.54	329.54
52.50°	283.19	283.19	283.19
55.00°	245.29	245.29	245.29
57.50°	211.55	211.55	211.55
60.00°	179.02	179.02	179.02
62.50°	147.90	147.90	147.90
65.00°	119.39	119.39	119.39
67.50°	96.74	96.74	96.74
70.00°	80.26	80.26	80.26
72.50°	66.80	66.80	66.80
75.00°	53.55	53.55	53.55
77.50°	41.15	41.15	41.15
80.00°	29.15	29.15	29.15
82.50°	18.50	18.50	18.50
85.00°	9.74	9.74	9.74
87.50°	4.08	4.08	4.08
90.00°	1.87	1.87	1.87
92.50°	1.46	1.46	1.46
95.00°	1.06	1.06	1.06
97.50°	0.91	0.91	0.91
100.00°	0.87	0.87	0.87
102.50°	1.05	1.05	1.05
105.00°	1.17	1.17	1.17
107.50°	1.19	1.19	1.19
110.00°	1.23	1.23	1.23
112.50°	1.33	1.33	1.33

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	3,526	3,526	3,526	3,526	3,443	3,443	3,443	3,443	3,288	3,288	3,288	3,146	3,146	3,146	3,016	3,016	3,016	2,955
	1	3,315	3,213	3,122	3,040	3,239	3,147	3,065	2,991	3,024	2,957	2,896	2,910	2,857	2,808	2,806	2,764	2,724	2,707
	2	3,103	2,924	2,776	2,652	3,032	2,870	2,735	2,621	2,770	2,658	2,561	2,677	2,585	2,503	2,591	2,516	2,449	2,464
	3	2,904	2,670	2,489	2,345	2,839	2,626	2,459	2,325	2,544	2,402	2,285	2,467	2,348	2,247	2,396	2,296	2,210	2,249
	4	2,721	2,450	2,251	2,099	2,662	2,413	2,228	2,085	2,344	2,184	2,058	2,280	2,143	2,032	2,221	2,104	2,006	2,062
	5	2,554	2,257	2,049	1,896	2,500	2,226	2,032	1,886	2,169	1,998	1,868	2,115	1,966	1,849	2,065	1,935	1,831	1,898
	6	2,401	2,088	1,878	1,727	2,352	2,062	1,864	1,720	2,013	1,838	1,706	1,968	1,812	1,693	1,925	1,788	1,680	1,754
	7	2,262	1,939	1,730	1,583	2,218	1,917	1,719	1,578	1,876	1,698	1,568	1,837	1,677	1,558	1,800	1,658	1,549	1,628
	8	2,135	1,808	1,602	1,460	2,095	1,789	1,593	1,456	1,753	1,575	1,449	1,720	1,559	1,441	1,688	1,543	1,434	1,516
	9	2,020	1,691	1,489	1,353	1,983	1,675	1,482	1,350	1,644	1,468	1,344	1,615	1,454	1,339	1,587	1,441	1,333	1,417
	10	1,914	1,586	1,390	1,259	1,881	1,572	1,384	1,257	1,546	1,372	1,253	1,520	1,361	1,248	1,496	1,350	1,244	1,329

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	78.9 fc	6.7 ft
6.5 ft	56.5 fc	8.0 ft
7.5 ft	42.4 fc	9.2 ft
8.0 ft	37.3 fc	9.8 ft
10.0 ft	23.9 fc	12.3 ft
12.0 ft	16.6 fc	14.7 ft
14.0 ft	12.2 fc	17.2 ft
16.0 ft	9.3 fc	19.6 ft
20.0 ft	6.0 fc	24.5 ft
24.0 ft	4.1 fc	29.4 ft
28.0 ft	3.0 fc	34.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	363,374	363,374	363,374
45.00°	98,349	98,349	98,349
55.00°	65,122	65,122	65,122
65.00°	43,017	43,017	43,017
75.00°	31,504	31,504	31,504
85.00°	17,020	17,020	17,020

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	23.1	24.3	23.5	24.7	25.0	23.1	24.3	23.5	24.7	25.0
	3H	24.0	25.1	24.4	25.4	25.8	24.0	25.1	24.4	25.4	25.8
	4H	24.3	25.3	24.7	25.7	26.1	24.3	25.3	24.7	25.7	26.1
	6H	24.5	25.5	24.9	25.8	26.2	24.5	25.5	24.9	25.8	26.2
	8H	24.6	25.4	25.0	25.8	26.3	24.6	25.4	25.0	25.8	26.3
	12H	24.6	25.4	25.0	25.8	26.2	24.6	25.4	25.0	25.8	26.2
4H	2H	23.4	24.4	23.8	24.7	25.1	23.4	24.4	23.8	24.7	25.1
	3H	24.4	25.3	24.9	25.7	26.1	24.4	25.3	24.9	25.7	26.1
	4H	24.9	25.6	25.3	26.1	26.5	24.9	25.6	25.3	26.1	26.5
	6H	25.2	25.8	25.7	26.3	26.8	25.2	25.8	25.7	26.3	26.8
	8H	25.2	25.9	25.7	26.3	26.8	25.2	25.9	25.7	26.3	26.8
	12H	25.3	25.8	25.8	26.3	26.8	25.3	25.8	25.8	26.3	26.8
8H	4H	25.0	25.6	25.5	26.0	26.5	25.0	25.6	25.5	26.0	26.5
	6H	25.4	25.9	25.9	26.4	26.9	25.4	25.9	25.9	26.4	26.9
	8H	25.5	25.9	26.0	26.4	26.9	25.5	25.9	26.0	26.4	26.9
	12H	25.5	25.9	26.1	26.4	27.0	25.5	25.9	26.1	26.4	27.0
12H	4H	25.0	25.5	25.5	26.0	26.5	25.0	25.5	25.5	26.0	26.5
	6H	25.4	25.8	25.9	26.3	26.8	25.4	25.8	25.9	26.3	26.8
	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