

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGECS4FX 20L 35HK XX AR4FX80 FO MW
Nom 4" diam Chicago Plenum downlight, Fusion Optix lens, Matte white finish

Test Number

SP-01177

Test Date

6/16/2020

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	16.6 W
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Lumen Output

Output Lumens	1377
Efficacy	82.96 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.1
Two luminaires, plane 90°	1.1
Four luminaires	1.15

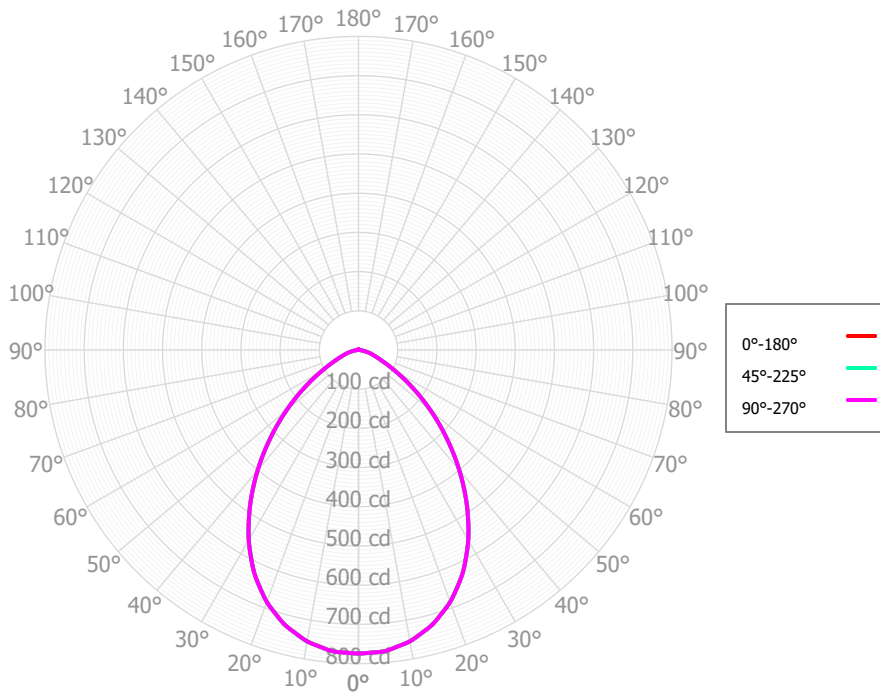
Full Beam Angle

0° - 180°	82°
90° - 270°	82°

IES File Header Contents

Keyword	Value
TEST	SP-01177
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/20/2020
LUMCAT	SGECS4FX 20L 35HK XX AR4FX80 FO MW
LUMINAIRE	Nom 4" diam Chicago Plenum downlight, Fusion Optix lens, Matte white finish
OTHER	Beam angle: 81.6 deg
LAMPCAT	N/A
LAMP	N/A, 90CRI/35HK
OTHER	Total luminaire wattage is approximate
OTHER	CCT Output Multipliers: 27HK x 0.93, 30HK x 0.97, 35HK x 1.0, 40HK x 1.02
OTHER	This report prepared by Spectrum Lighting, scaled for 27HK
_CRI	90+
_CCTMULT	27HK x 0.93, 30HK x 0.97, 35HK x 1.00, 40HK x 1.02
_LAMPMULT	10L x 0.58

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	76.04	5.51%	90.00° - 100.00°	1.44	0.10%
10.00° - 20.00°	203.63	14.77%	100.00° - 110.00°	1.32	0.10%
20.00° - 30.00°	287.47	20.85%	100.00° - 120.00°	2.57	0.19%
30.00° - 40.00°	299.77	21.74%	120.00° - 130.00°	1.07	0.08%
40.00° - 50.00°	244.88	17.76%	130.00° - 140.00°	1.02	0.07%
50.00° - 60.00°	152.79	11.08%	140.00° - 150.00°	0.72	0.05%
60.00° - 70.00°	70.49	5.11%	150.00° - 160.00°	0.57	0.04%
70.00° - 80.00°	29.56	2.14%	160.00° - 170.00°	0.35	0.03%
80.00° - 90.00°	6.52	0.47%	170.00° - 180.00°	0.12	0.01%
0.00° - 90.00°	1,371.16	99.43%	0.00° - 180.00°	1,379.02	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	774.40	774.40	774.40
2.50°	772.92	772.92	772.92
5.00°	771.35	771.35	771.35
7.50°	763.24	763.24	763.24
10.00°	754.89	754.89	754.89
12.50°	740.57	740.57	740.57
15.00°	725.96	725.96	725.96
17.50°	705.30	705.30	705.30
20.00°	684.09	684.09	684.09
22.50°	656.76	656.76	656.76
25.00°	628.65	628.65	628.65
27.50°	594.76	594.76	594.76
30.00°	560.11	560.11	560.11
32.50°	521.20	521.20	521.20
35.00°	481.91	481.91	481.91
37.50°	441.01	441.01	441.01
40.00°	400.03	400.03	400.03
42.50°	358.78	358.78	358.78
45.00°	318.01	318.01	318.01
47.50°	278.67	278.67	278.67
50.00°	240.25	240.25	240.25
52.50°	204.08	204.08	204.08
55.00°	169.58	169.58	169.58
57.50°	138.48	138.48	138.48
60.00°	110.25	110.25	110.25
62.50°	87.13	87.13	87.13
65.00°	67.84	67.84	67.84
67.50°	54.39	54.39	54.39
70.00°	43.40	43.40	43.40
72.50°	35.61	35.61	35.61
75.00°	27.88	27.88	27.88
77.50°	20.22	20.22	20.22
80.00°	13.85	13.85	13.85
82.50°	8.77	8.77	8.77
85.00°	5.07	5.07	5.07
87.50°	2.54	2.54	2.54
90.00°	1.38	1.38	1.38
92.50°	1.26	1.26	1.26
95.00°	1.28	1.28	1.28
97.50°	1.37	1.37	1.37
100.00°	1.34	1.34	1.34
102.50°	1.24	1.24	1.24
105.00°	1.22	1.22	1.22
107.50°	1.23	1.23	1.23
110.00°	1.26	1.26	1.26
112.50°	1.30	1.30	1.30

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	1,640	1,640	1,640	1,640	1,601	1,601	1,601	1,601	1,528	1,528	1,528	1,461	1,461	1,461	1,400	1,400	1,371
	1	1,532	1,481	1,435	1,394	1,496	1,450	1,408	1,370	1,391	1,357	1,326	1,337	1,310	1,285	1,288	1,266	1,239
	2	1,422	1,331	1,256	1,193	1,388	1,306	1,237	1,178	1,257	1,200	1,150	1,213	1,166	1,124	1,172	1,133	1,098
	3	1,319	1,200	1,108	1,034	1,288	1,179	1,093	1,025	1,139	1,066	1,006	1,102	1,040	989	1,067	1,016	972
	4	1,225	1,087	985	907	1,196	1,069	974	901	1,035	953	889	1,004	934	877	975	915	865
	5	1,140	988	883	804	1,113	973	874	800	945	858	791	919	843	783	894	828	774
	6	1,063	903	796	720	1,038	891	790	716	867	777	710	844	765	704	823	753	698
	7	993	830	723	649	971	819	718	646	798	708	642	779	698	637	761	688	633
	8	931	765	661	589	911	756	656	587	738	648	584	721	640	580	706	632	577
	9	875	709	607	538	856	700	603	537	685	596	534	671	590	531	657	583	529
	10	824	659	560	494	807	652	557	493	638	551	491	626	546	489	614	540	487

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	25.6 fc	9.5 ft
6.5 ft	18.3 fc	11.2 ft
7.5 ft	13.8 fc	12.9 ft
8.0 ft	12.1 fc	13.8 ft
10.0 ft	7.7 fc	17.2 ft
12.0 ft	5.4 fc	20.7 ft
14.0 ft	4.0 fc	24.1 ft
16.0 ft	3.0 fc	27.6 ft
20.0 ft	1.9 fc	34.5 ft
24.0 ft	1.3 fc	41.4 ft
28.0 ft	1.0 fc	48.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	117,924	117,924	117,924
45.00°	68,485	68,485	68,485
55.00°	45,022	45,022	45,022
65.00°	24,445	24,445	24,445
75.00°	16,403	16,403	16,403
85.00°	8,852	8,852	8,852

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	22.6	24.0	23.0	24.3	24.6	22.6	24.0	23.0	24.3	24.6
	3H	23.2	24.5	23.6	24.8	25.2	23.2	24.5	23.6	24.8	25.2
	4H	23.5	24.6	23.9	25.0	25.4	23.5	24.6	23.9	25.0	25.4
	6H	23.6	24.6	24.0	25.0	25.4	23.6	24.6	24.0	25.0	25.4
	8H	23.6	24.6	24.0	25.0	25.4	23.6	24.6	24.0	25.0	25.4
	12H	23.6	24.5	24.0	24.9	25.4	23.6	24.5	24.0	24.9	25.4
4H	2H	22.8	23.9	23.2	24.3	24.7	22.8	23.9	23.2	24.3	24.7
	3H	23.6	24.5	24.0	24.9	25.4	23.6	24.5	24.0	24.9	25.4
	4H	23.9	24.7	24.3	25.2	25.6	23.9	24.7	24.3	25.2	25.6
	6H	24.1	24.8	24.6	25.3	25.7	24.1	24.8	24.6	25.3	25.7
	8H	24.1	24.8	24.6	25.2	25.7	24.1	24.8	24.6	25.2	25.7
	12H	24.1	24.7	24.6	25.2	25.7	24.1	24.7	24.6	25.2	25.7
8H	4H	24.0	24.6	24.4	25.1	25.6	24.0	24.6	24.4	25.1	25.6
	6H	24.2	24.7	24.7	25.3	25.7	24.2	24.7	24.7	25.3	25.7
	8H	24.2	24.7	24.8	25.3	25.8	24.2	24.7	24.8	25.3	25.8
	12H	24.3	24.7	24.8	25.2	25.8	24.3	24.7	24.8	25.2	25.8
12H	4H	23.9	24.5	24.4	25.0	25.5	23.9	24.5	24.4	25.0	25.5
	6H	24.2	24.7	24.7	25.2	25.7	24.2	24.7	24.7	25.2	25.7
	8H	24.3	24.7	24.8	25.2	25.8	24.3	24.7	24.8	25.2	25.8

Corrected UGR values based on total output lumens

SHR = 1.0