

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGECS4FX 20L 35HK XX AR4FX60 SO MW
Nom 4" diam Chicago Plenum downlight, Solite lens, Matte white finish

Test Number

SP-01179

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	1548
Efficacy	93.28 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.98
Two luminaires, plane 90°	0.98
Four luminaires	0.96

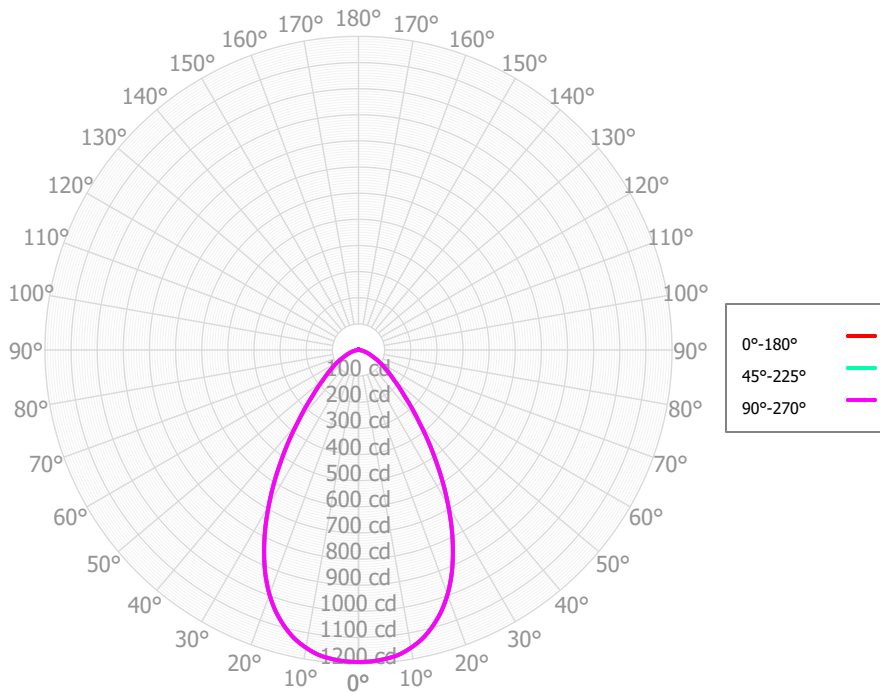
Full Beam Angle

0° - 180°	65°
90° - 270°	65°

IES File Header Contents

Keyword	Value
TEST	SP-01179
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/20/2020
LUMCAT	SGECS4FX 20L 35HK XX AR4FX60 SO MW
LUMINAIRE	Nom 4" diam Chicago Plenum downlight, Solite lens, Matte white finish
OTHER	Beam angle: 65.2 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 from 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°	117.02	7.54%	90.00° - 100.00°	1.30	0.08%
10.00° - 20.00°	305.70	19.70%	100.00° - 110.00°	1.38	0.09%
20.00° - 30.00°	388.43	25.04%	100.00° - 120.00°	2.63	0.17%
30.00° - 40.00°	321.19	20.70%	120.00° - 130.00°	1.17	0.08%
40.00° - 50.00°	197.37	12.72%	130.00° - 140.00°	0.99	0.06%
50.00° - 60.00°	116.11	7.48%	140.00° - 150.00°	0.88	0.06%
60.00° - 70.00°	62.49	4.03%	150.00° - 160.00°	0.65	0.04%
70.00° - 80.00°	28.05	1.81%	160.00° - 170.00°	0.43	0.03%
80.00° - 90.00°	6.89	0.44%	170.00° - 180.00°	0.14	0.01%
0.00° - 90.00°	1,543.25	99.47%	0.00° - 180.00°	1,551.44	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	1,194.19	1,194.19	1,194.19
2.50°	1,192.78	1,192.78	1,192.78
5.00°	1,186.74	1,186.74	1,186.74
7.50°	1,176.65	1,176.65	1,176.65
10.00°	1,157.11	1,157.11	1,157.11
12.50°	1,131.46	1,131.46	1,131.46
15.00°	1,095.10	1,095.10	1,095.10
17.50°	1,050.90	1,050.90	1,050.90
20.00°	996.12	996.12	996.12
22.50°	931.06	931.06	931.06
25.00°	855.37	855.37	855.37
27.50°	773.46	773.46	773.46
30.00°	686.55	686.55	686.55
32.50°	600.37	600.37	600.37
35.00°	514.65	514.65	514.65
37.50°	436.67	436.67	436.67
40.00°	362.28	362.28	362.28
42.50°	303.18	303.18	303.18
45.00°	249.31	249.31	249.31
47.50°	210.57	210.57	210.57
50.00°	175.42	175.42	175.42
52.50°	150.80	150.80	150.80
55.00°	127.70	127.70	127.70
57.50°	109.54	109.54	109.54
60.00°	91.73	91.73	91.73
62.50°	76.01	76.01	76.01
65.00°	60.67	60.67	60.67
67.50°	50.53	50.53	50.53
70.00°	40.73	40.73	40.73
72.50°	33.28	33.28	33.28
75.00°	26.07	26.07	26.07
77.50°	19.84	19.84	19.84
80.00°	13.99	13.99	13.99
82.50°	9.21	9.21	9.21
85.00°	5.25	5.25	5.25
87.50°	3.08	3.08	3.08
90.00°	1.61	1.61	1.61
92.50°	1.27	1.27	1.27
95.00°	1.07	1.07	1.07
97.50°	1.05	1.05	1.05
100.00°	1.12	1.12	1.12
102.50°	1.30	1.30	1.30
105.00°	1.36	1.36	1.36
107.50°	1.34	1.34	1.34
110.00°	1.29	1.29	1.29
112.50°	1.21	1.21	1.21

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	1,845	1,845	1,845	1,845	1,801	1,801	1,801	1,801	1,719	1,719	1,719	1,644	1,644	1,644	1,576	1,576	1,543
	1	1,734	1,681	1,633	1,590	1,694	1,646	1,603	1,564	1,581	1,546	1,514	1,521	1,493	1,467	1,465	1,443	1,413
	2	1,623	1,529	1,451	1,386	1,585	1,500	1,429	1,369	1,447	1,388	1,337	1,398	1,349	1,307	1,353	1,313	1,278
	3	1,518	1,395	1,300	1,224	1,484	1,372	1,284	1,213	1,328	1,253	1,192	1,287	1,224	1,172	1,249	1,197	1,152
	4	1,421	1,278	1,174	1,094	1,390	1,259	1,162	1,086	1,222	1,138	1,072	1,189	1,116	1,058	1,157	1,095	1,044
	5	1,333	1,177	1,067	987	1,304	1,160	1,058	982	1,130	1,040	971	1,101	1,023	961	1,074	1,006	952
	6	1,252	1,087	977	897	1,226	1,074	969	893	1,048	955	886	1,023	941	879	1,001	928	872
	7	1,179	1,009	899	821	1,155	997	893	818	975	881	813	954	870	808	935	860	802
	8	1,112	939	831	756	1,091	929	826	754	910	817	750	892	808	746	876	799	742
	9	1,051	878	771	700	1,031	869	767	698	853	760	695	837	752	692	822	745	689
	10	995	823	719	650	978	815	716	649	801	710	647	787	703	644	774	697	642

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	39.5 fc	7.0 ft
6.5 ft	28.3 fc	8.3 ft
7.5 ft	21.2 fc	9.6 ft
8.0 ft	18.7 fc	10.2 ft
10.0 ft	11.9 fc	12.8 ft
12.0 ft	8.3 fc	15.3 ft
14.0 ft	6.1 fc	17.9 ft
16.0 ft	4.7 fc	20.5 ft
20.0 ft	3.0 fc	25.6 ft
24.0 ft	2.1 fc	30.7 ft
28.0 ft	1.5 fc	35.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	181,850	181,850	181,850
45.00°	53,691	53,691	53,691
55.00°	33,904	33,904	33,904
65.00°	21,859	21,859	21,859
75.00°	15,337	15,337	15,337
85.00°	9,178	9,178	9,178

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	20.7	22.0	21.1	22.3	22.6	20.7	22.0	21.1	22.3	22.6
	3H	21.6	22.7	22.0	23.1	23.5	21.6	22.7	22.0	23.1	23.5
	4H	21.9	22.9	22.3	23.3	23.7	21.9	22.9	22.3	23.3	23.7
	6H	22.1	23.0	22.5	23.4	23.8	22.1	23.0	22.5	23.4	23.8
	8H	22.1	23.0	22.6	23.4	23.8	22.1	23.0	22.6	23.4	23.8
	12H	22.1	23.0	22.6	23.4	23.8	22.1	23.0	22.6	23.4	23.8
4H	2H	21.0	22.0	21.4	22.4	22.8	21.0	22.0	21.4	22.4	22.8
	3H	22.1	22.9	22.5	23.3	23.7	22.1	22.9	22.5	23.3	23.7
	4H	22.5	23.2	22.9	23.6	24.1	22.5	23.2	22.9	23.6	24.1
	6H	22.7	23.4	23.2	23.8	24.3	22.7	23.4	23.2	23.8	24.3
	8H	22.8	23.4	23.3	23.8	24.3	22.8	23.4	23.3	23.8	24.3
	12H	22.8	23.3	23.3	23.8	24.3	22.8	23.3	23.3	23.8	24.3
8H	4H	22.5	23.1	23.0	23.6	24.1	22.5	23.1	23.0	23.6	24.1
	6H	22.9	23.4	23.4	23.9	24.4	22.9	23.4	23.4	23.9	24.4
	8H	23.0	23.4	23.5	23.9	24.4	23.0	23.4	23.5	23.9	24.4
	12H	23.0	23.4	23.6	23.9	24.5	23.0	23.4	23.6	23.9	24.5
12H	4H	22.5	23.1	23.0	23.5	24.0	22.5	23.1	23.0	23.5	24.0
	6H	22.9	23.3	23.4	23.8	24.3	22.9	23.3	23.4	23.8	24.3
	8H	23.0	23.4	23.5	23.9	24.5	23.0	23.4	23.5	23.9	24.5

Corrected UGR values based on total output lumens

SHR = 1.0