

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGECS4FX 20L 35HK XX AR4FX80 FO SG
Nom 4" diam Chicago Plenum downlight, Fusion Optix lens, Soft glow finish

Test Number

SP-01178

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	82.93 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.09
Two luminaires, plane 90°	1.09
Four luminaires	1.09

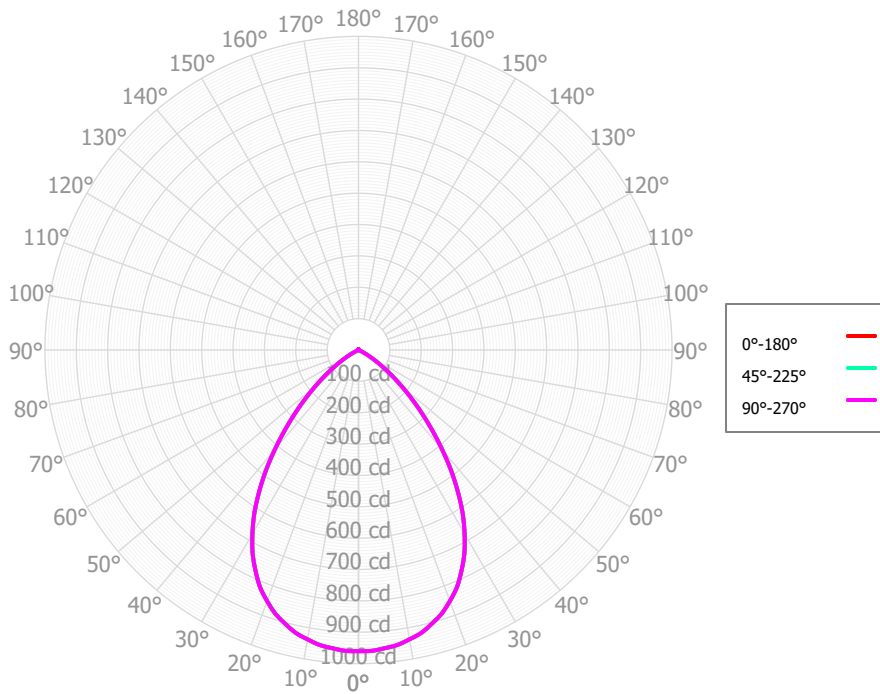
Full Beam Angle

0° - 180°	75°
90° - 270°	75°

IES File Header Contents

Keyword	Value
TEST	SP-01178
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 SG
LUMINAIRE	Nom 4" diam Chicago Plenum downlight, Fusion Optix lens, Soft glow finish
OTHER	Beam angle: 75.4 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°	94.39	6.85%	90.00° - 100.00°	1.13	0.08%
10.00° - 20.00°	253.93	18.41%	100.00° - 110.00°	1.13	0.08%
20.00° - 30.00°	354.95	25.74%	100.00° - 120.00°	2.24	0.16%
30.00° - 40.00°	342.11	24.81%	120.00° - 130.00°	1.02	0.07%
40.00° - 50.00°	222.12	16.11%	130.00° - 140.00°	0.91	0.07%
50.00° - 60.00°	89.21	6.47%	140.00° - 150.00°	0.70	0.05%
60.00° - 70.00°	12.97	0.94%	150.00° - 160.00°	0.55	0.04%
70.00° - 80.00°	1.22	0.09%	160.00° - 170.00°	0.34	0.02%
80.00° - 90.00°	1.03	0.07%	170.00° - 180.00°	0.13	0.01%
0.00° - 90.00°	1,371.94	99.49%	0.00° - 180.00°	1,378.96	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	960.59	960.59	960.59
2.50°	960.55	960.55	960.55
5.00°	954.96	954.96	954.96
7.50°	949.01	949.01	949.01
10.00°	937.11	937.11	937.11
12.50°	924.31	924.31	924.31
15.00°	903.86	903.86	903.86
17.50°	881.94	881.94	881.94
20.00°	852.20	852.20	852.20
22.50°	819.77	819.77	819.77
25.00°	777.15	777.15	777.15
27.50°	731.43	731.43	731.43
30.00°	676.72	676.72	676.72
32.50°	618.61	618.61	618.61
35.00°	552.90	552.90	552.90
37.50°	485.67	485.67	485.67
40.00°	415.72	415.72	415.72
42.50°	348.96	348.96	348.96
45.00°	286.82	286.82	286.82
47.50°	229.90	229.90	229.90
50.00°	179.10	179.10	179.10
52.50°	134.55	134.55	134.55
55.00°	96.01	96.01	96.01
57.50°	64.67	64.67	64.67
60.00°	39.00	39.00	39.00
62.50°	21.28	21.28	21.28
65.00°	8.60	8.60	8.60
67.50°	3.24	3.24	3.24
70.00°	1.63	1.63	1.63
72.50°	1.13	1.13	1.13
75.00°	1.10	1.10	1.10
77.50°	1.07	1.07	1.07
80.00°	1.04	1.04	1.04
82.50°	0.97	0.97	0.97
85.00°	0.89	0.89	0.89
87.50°	0.92	0.92	0.92
90.00°	0.96	0.96	0.96
92.50°	1.02	1.02	1.02
95.00°	1.09	1.09	1.09
97.50°	1.05	1.05	1.05
100.00°	1.02	1.02	1.02
102.50°	1.04	1.04	1.04
105.00°	1.07	1.07	1.07
107.50°	1.10	1.10	1.10
110.00°	1.12	1.12	1.12
112.50°	1.11	1.11	1.11

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%	10%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	1,640	1,640	1,640	1,640	1,601	1,601	1,601	1,601	1,528	1,528	1,528	1,462	1,462	1,462	1,401	1,401	1,401
	1	1,551	1,507	1,468	1,432	1,515	1,476	1,441	1,409	1,418	1,390	1,364	1,365	1,343	1,322	1,317	1,299	1,282
	2	1,457	1,379	1,314	1,260	1,424	1,354	1,295	1,245	1,307	1,259	1,216	1,264	1,224	1,189	1,224	1,192	1,163
	3	1,366	1,263	1,182	1,119	1,336	1,242	1,168	1,109	1,204	1,141	1,090	1,168	1,115	1,071	1,135	1,091	1,054
	4	1,280	1,158	1,069	1,001	1,253	1,141	1,058	994	1,109	1,038	981	1,080	1,018	969	1,052	1,000	956
	5	1,200	1,065	971	902	1,175	1,051	963	897	1,024	947	888	999	932	879	976	917	870
	6	1,126	983	887	818	1,103	971	880	814	948	868	808	927	856	801	907	844	795
	7	1,058	910	813	746	1,038	899	808	743	880	798	738	861	788	733	844	779	729
	8	996	844	749	683	977	836	745	681	819	736	678	803	729	674	788	721	671
	9	939	786	692	629	922	779	689	628	764	682	625	750	676	622	737	669	619
	10	887	734	643	582	872	728	640	581	715	634	578	703	629	576	692	623	574

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	31.8 fc	8.5 ft
6.5 ft	22.7 fc	10.0 ft
7.5 ft	17.1 fc	11.6 ft
8.0 ft	15.0 fc	12.4 ft
10.0 ft	9.6 fc	15.5 ft
12.0 ft	6.7 fc	18.5 ft
14.0 ft	4.9 fc	21.6 ft
16.0 ft	3.8 fc	24.7 ft
20.0 ft	2.4 fc	30.9 ft
24.0 ft	1.7 fc	37.1 ft
28.0 ft	1.2 fc	43.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	146,277	146,277	146,277
45.00°	61,768	61,768	61,768
55.00°	25,489	25,489	25,489
65.00°	3,099	3,099	3,099
75.00°	648	648	648
85.00°	1,556	1,556	1,556

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	17.4	18.6	17.8	18.9	19.3	17.4	18.6	17.8	18.9	19.3
	3H	17.3	18.3	17.7	18.7	19.1	17.3	18.3	17.7	18.7	19.1
	4H	17.2	18.2	17.6	18.5	18.9	17.2	18.2	17.6	18.5	18.9
	6H	17.1	18.0	17.5	18.4	18.8	17.1	18.0	17.5	18.4	18.8
	8H	17.1	17.9	17.5	18.3	18.7	17.1	17.9	17.5	18.3	18.7
	12H	17.0	17.8	17.5	18.2	18.7	17.0	17.8	17.5	18.2	18.7
4H	2H	17.2	18.2	17.6	18.6	19.0	17.2	18.2	17.6	18.6	19.0
	3H	17.1	17.9	17.5	18.3	18.7	17.1	17.9	17.5	18.3	18.7
	4H	17.0	17.7	17.4	18.1	18.6	17.0	17.7	17.4	18.1	18.6
	6H	16.9	17.5	17.4	17.9	18.4	16.9	17.5	17.4	17.9	18.4
	8H	16.8	17.4	17.3	17.8	18.3	16.8	17.4	17.3	17.8	18.3
	12H	16.8	17.3	17.3	17.8	18.3	16.8	17.3	17.3	17.8	18.3
8H	4H	16.8	17.4	17.3	17.8	18.3	16.8	17.4	17.3	17.8	18.3
	6H	16.7	17.2	17.2	17.7	18.2	16.7	17.2	17.2	17.7	18.2
	8H	16.7	17.1	17.2	17.6	18.1	16.7	17.1	17.2	17.6	18.1
	12H	16.6	17.0	17.1	17.5	18.1	16.6	17.0	17.1	17.5	18.1
12H	4H	16.8	17.3	17.3	17.8	18.2	16.8	17.3	17.3	17.8	18.2
	6H	16.7	17.1	17.2	17.5	18.1	16.7	17.1	17.2	17.5	18.1
	8H	16.6	17.0	17.1	17.5	18.1	16.6	17.0	17.1	17.5	18.1

Corrected UGR values based on total output lumens

SHR = 1.0