Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SGECS4FX 10L 35K XX AR4FX60 FO MW

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

Test Number

SP-01170_M-10L

Test Date

6/16/2020

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

Summary of Results

Power

Input Watts	6.6 W

Lumen Output

Output Lumens	631
Efficacy	95.6 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

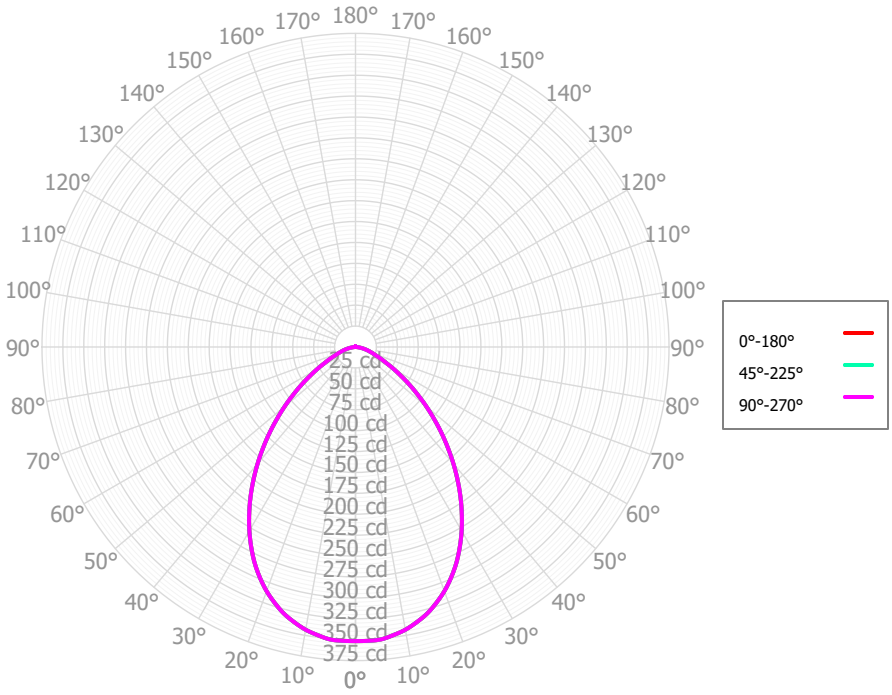
Full Beam Angle

0° - 180°	82°
90° - 270°	82°

IES File Header Contents

Keyword	Value
TEST	SP-01170_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/16/2020
LUMCAT	SGECS4FX 10L 35K XX AR4FX60 FO MW
LUMINAIRE	Nom 4" diam Chicago Plenum downlight, Fusion Optix lens, Matte white finish
OTHER	Beam angle: 81.7 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, scaled from 40L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	34.61	5.48%	90.00° - 100.00°	0.33	0.05%
10.00° - 20.00°	92.66	14.67%	100.00° - 110.00°	0.27	0.04%
20.00° - 30.00°	130.54	20.66%	100.00° - 120.00°	0.53	0.08%
30.00° - 40.00°	136.20	21.56%	120.00° - 130.00°	0.24	0.04%
40.00° - 50.00°	111.92	17.71%	130.00° - 140.00°	0.23	0.04%
50.00° - 60.00°	71.09	11.25%	140.00° - 150.00°	0.20	0.03%
60.00° - 70.00°	34.34	5.44%	150.00° - 160.00°	0.16	0.03%
70.00° - 80.00°	15.14	2.40%	160.00° - 170.00°	0.10	0.02%
80.00° - 90.00°	3.52	0.56%	170.00° - 180.00°	0.03	0.01%
0.00° - 90.00°	630.02	99.71%	0.00° - 180.00°	631.84	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	351.79	351.79	351.79
2.50°	351.79	351.79	351.79
5.00°	351.07	351.07	351.07
7.50°	347.56	347.56	347.56
10.00°	343.41	343.41	343.41
12.50°	337.34	337.34	337.34
15.00°	330.31	330.31	330.31
17.50°	321.08	321.08	321.08
20.00°	310.81	310.81	310.81
22.50°	298.67	298.67	298.67
25.00°	285.28	285.28	285.28
27.50°	270.06	270.06	270.06
30.00°	253.92	253.92	253.92
32.50°	236.67	236.67	236.67
35.00°	218.89	218.89	218.89
37.50°	200.59	200.59	200.59
40.00°	182.14	182.14	182.14
42.50°	163.58	163.58	163.58
45.00°	145.42	145.42	145.42
47.50°	127.54	127.54	127.54
50.00°	110.55	110.55	110.55
52.50°	94.03	94.03	94.03
55.00°	79.10	79.10	79.10
57.50°	64.83	64.83	64.83
60.00°	52.92	52.92	52.92
62.50°	41.77	41.77	41.77
65.00°	33.75	33.75	33.75
67.50°	26.47	26.47	26.47
70.00°	21.84	21.84	21.84
72.50°	17.65	17.65	17.65
75.00°	14.20	14.20	14.20
77.50°	10.84	10.84	10.84
80.00°	7.79	7.79	7.79
82.50°	4.77	4.77	4.77
85.00°	2.88	2.88	2.88
87.50°	1.08	1.08	1.08
90.00°	0.63	0.63	0.63
92.50°	0.24	0.24	0.24
95.00°	0.25	0.25	0.25
97.50°	0.26	0.26	0.26
100.00°	0.26	0.26	0.26
102.50°	0.25	0.25	0.25
105.00°	0.25	0.25	0.25
107.50°	0.25	0.25	0.25
110.00°	0.26	0.26	0.26
112.50°	0.27	0.27	0.27

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%
	0	752	752	752	752	734	734	734	734	701	701	701	671	671	671	643	643	643	630
	1	702	678	657	637	685	664	644	627	637	621	607	613	600	588	590	580	571	568
	2	651	609	574	545	635	597	565	538	575	549	526	555	533	514	537	518	502	507
	3	603	548	506	472	589	539	499	467	520	487	459	504	475	451	488	464	444	454
	4	560	496	449	413	547	488	444	411	473	435	405	459	426	400	446	418	395	409
RCR	5	521	451	402	366	509	444	398	364	431	391	360	420	384	357	408	378	353	370
	6	486	412	363	327	474	406	360	326	396	354	323	385	349	321	376	343	318	337
	7	454	378	329	295	444	373	327	294	364	322	292	355	318	290	347	314	288	308
	8	425	349	301	268	416	345	299	267	337	295	266	329	292	264	322	288	263	283
	9	400	323	276	245	391	319	275	244	313	272	243	306	269	242	300	266	241	261
	10	376	300	255	225	369	297	254	224	291	251	223	286	249	222	280	246	222	242

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	11.6 fc	9.5 ft
6.5 ft	8.3 fc	11.2 ft
7.5 ft	6.3 fc	13.0 ft
8.0 ft	5.5 fc	13.8 ft
10.0 ft	3.5 fc	17.3 ft
12.0 ft	2.4 fc	20.7 ft
14.0 ft	1.8 fc	24.2 ft
16.0 ft	1.4 fc	27.7 ft
20.0 ft	0.9 fc	34.6 ft
24.0 ft	0.6 fc	41.5 ft
28.0 ft	0.4 fc	48.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	53,570	53,570	53,570
45.00°	31,318	31,318	31,318
55.00°	21,001	21,001	21,001
65.00°	12,162	12,162	12,162
75.00°	8,357	8,357	8,357
85.00°	5,033	5,033	5,033

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	20.0	21.4	20.4	21.7	22.1	20.0	21.4	20.4	21.7	22.1
	3H	20.8	22.0	21.1	22.3	22.7	20.8	22.0	21.1	22.3	22.7
	4H	21.0	22.2	21.4	22.5	22.9	21.0	22.2	21.4	22.5	22.9
	6H	21.2	22.2	21.6	22.6	23.0	21.2	22.2	21.6	22.6	23.0
	8H	21.2	22.2	21.6	22.6	23.0	21.2	22.2	21.6	22.6	23.0
	12H	21.2	22.2	21.7	22.6	23.0	21.2	22.2	21.7	22.6	23.0
4H	2H	20.3	21.4	20.7	21.8	22.2	20.3	21.4	20.7	21.8	22.2
	3H	21.2	22.1	21.6	22.5	22.9	21.2	22.1	21.6	22.5	22.9
	4H	21.5	22.4	22.0	22.8	23.2	21.5	22.4	22.0	22.8	23.2
	6H	21.8	22.5	22.3	23.0	23.4	21.8	22.5	22.3	23.0	23.4
	8H	21.8	22.5	22.3	23.0	23.4	21.8	22.5	22.3	23.0	23.4
	12H	21.9	22.5	22.4	23.0	23.4	21.9	22.5	22.4	23.0	23.4
8H	4H	21.6	22.3	22.1	22.8	23.2	21.6	22.3	22.1	22.8	23.2
	6H	21.9	22.5	22.4	23.0	23.5	21.9	22.5	22.4	23.0	23.5
	8H	22.0	22.5	22.5	23.0	23.5	22.0	22.5	22.5	23.0	23.5
	12H	22.1	22.5	22.6	23.0	23.6	22.1	22.5	22.6	23.0	23.6
12H	4H	21.6	22.2	22.1	22.7	23.2	21.6	22.2	22.1	22.7	23.2
	6H	21.9	22.4	22.5	22.9	23.5	21.9	22.4	22.5	22.9	23.5
	8H	22.0	22.5	22.6	23.0	23.6	22.0	22.5	22.6	23.0	23.6

Corrected UGR values based on total output lumens

SHR = 1.0