

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGECS4SQFX 20L 35K XX CA4FX FO SG

Nom 4" square Chicago Plenum downlight, Fusion Optix lens, Soft glow finish

Test Number

SP-01173_M-20L

Test Date

6/16/2020

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

Summary of Results

Power

Input Watts	14.1 W
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Lumen Output

Output Lumens	1519
Efficacy	107.7 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.23
Two luminaires, plane 90°	1.23
Four luminaires	1.3

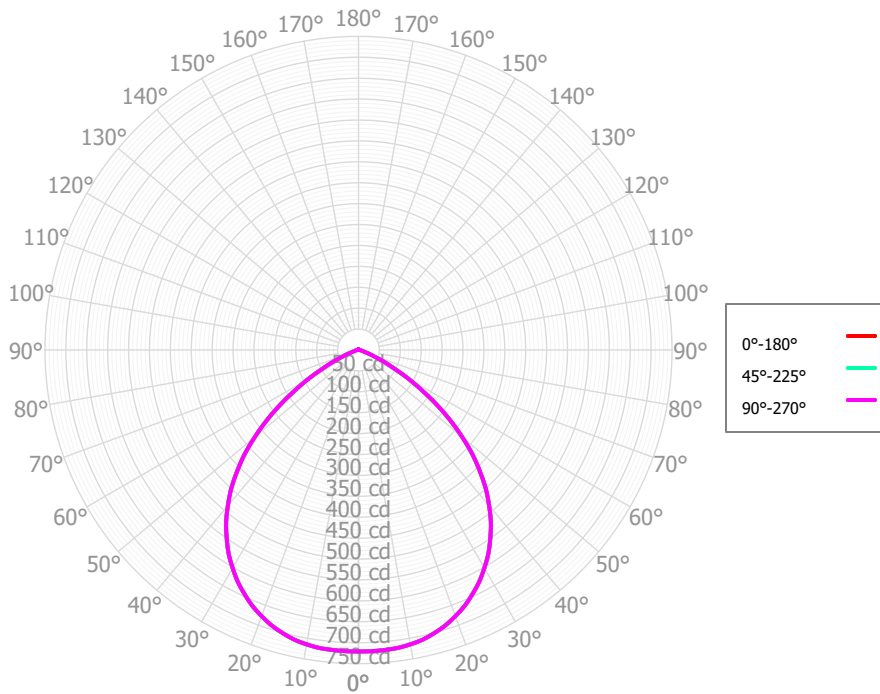
Full Beam Angle

0° - 180°	96°
90° - 270°	96°

IES File Header Contents

Keyword	Value
TEST	SP-01173_M-20L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	6/16/2020
ISSUEDATE	7/17/2020
LUMCAT	SGECS4SQFX 20L 35K XX CA4FX FO SG
LUMINAIRE	Nom 4" square Chicago Plenum downlight, Fusion Optix lens, Soft glow finish
OTHER	Beam angle: 96 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°	71.45	4.70%	90.00° - 100.00°	0.80	0.05%
10.00° - 20.00°	197.58	13.00%	100.00° - 110.00°	0.59	0.04%
20.00° - 30.00°	296.40	19.50%	100.00° - 120.00°	1.21	0.08%
30.00° - 40.00°	342.50	22.53%	120.00° - 130.00°	0.60	0.04%
40.00° - 50.00°	314.73	20.70%	130.00° - 140.00°	0.62	0.04%
50.00° - 60.00°	203.88	13.41%	140.00° - 150.00°	0.50	0.03%
60.00° - 70.00°	71.34	4.69%	150.00° - 160.00°	0.36	0.02%
70.00° - 80.00°	13.79	0.91%	160.00° - 170.00°	0.23	0.02%
80.00° - 90.00°	4.27	0.28%	170.00° - 180.00°	0.08	0.01%
0.00° - 90.00°	1,515.94	99.71%	0.00° - 180.00°	1,520.35	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	721.20	721.20	721.20
2.50°	721.20	721.20	721.20
5.00°	720.33	720.33	720.33
7.50°	718.88	718.88	718.88
10.00°	714.98	714.98	714.98
12.50°	709.67	709.67	709.67
15.00°	701.08	701.08	701.08
17.50°	690.89	690.89	690.89
20.00°	677.53	677.53	677.53
22.50°	662.86	662.86	662.86
25.00°	644.66	644.66	644.66
27.50°	625.24	625.24	625.24
30.00°	602.16	602.16	602.16
32.50°	578.06	578.06	578.06
35.00°	549.67	549.67	549.67
37.50°	520.31	520.31	520.31
40.00°	486.11	486.11	486.11
42.50°	451.06	451.06	451.06
45.00°	410.79	410.79	410.79
47.50°	369.86	369.86	369.86
50.00°	323.62	323.62	323.62
52.50°	276.94	276.94	276.94
55.00°	228.90	228.90	228.90
57.50°	180.79	180.79	180.79
60.00°	138.75	138.75	138.75
62.50°	97.17	97.17	97.17
65.00°	68.89	68.89	68.89
67.50°	41.60	41.60	41.60
70.00°	27.85	27.85	27.85
72.50°	15.19	15.19	15.19
75.00°	11.65	11.65	11.65
77.50°	8.38	8.38	8.38
80.00°	6.70	6.70	6.70
82.50°	5.09	5.09	5.09
85.00°	3.85	3.85	3.85
87.50°	2.64	2.64	2.64
90.00°	1.55	1.55	1.55
92.50°	0.70	0.70	0.70
95.00°	0.62	0.62	0.62
97.50°	0.55	0.55	0.55
100.00°	0.54	0.54	0.54
102.50°	0.53	0.53	0.53
105.00°	0.56	0.56	0.56
107.50°	0.58	0.58	0.58
110.00°	0.62	0.62	0.62
112.50°	0.63	0.63	0.63

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	1,809	1,809	1,809	1,809	1,766	1,766	1,766	1,766	1,687	1,687	1,687	1,614	1,614	1,614	1,547	1,547	1,547
	1	1,692	1,636	1,586	1,541	1,652	1,602	1,557	1,515	1,538	1,501	1,467	1,480	1,450	1,422	1,426	1,402	1,380
	2	1,569	1,469	1,386	1,316	1,532	1,441	1,365	1,300	1,388	1,325	1,270	1,340	1,287	1,241	1,295	1,252	1,214
	3	1,452	1,319	1,217	1,135	1,417	1,296	1,201	1,125	1,253	1,172	1,105	1,212	1,144	1,086	1,175	1,117	1,068
	4	1,344	1,189	1,076	989	1,312	1,170	1,064	982	1,133	1,042	969	1,099	1,020	956	1,068	1,000	944
	5	1,247	1,077	958	870	1,217	1,060	949	865	1,029	931	856	1,000	915	847	974	899	839
	6	1,158	979	859	772	1,131	965	851	769	939	838	762	914	824	756	891	812	750
	7	1,079	894	775	691	1,054	883	769	688	860	758	684	839	747	679	819	737	674
	8	1,008	821	703	623	986	811	699	621	791	690	617	773	681	614	756	673	610
	9	944	757	642	565	924	748	638	563	731	631	561	716	624	558	701	617	555
	10	887	701	590	515	868	693	586	514	679	580	512	665	574	510	652	568	508

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	23.8 fc	12.2 ft
6.5 ft	17.1 fc	14.4 ft
7.5 ft	12.8 fc	16.7 ft
8.0 ft	11.3 fc	17.8 ft
10.0 ft	7.2 fc	22.2 ft
12.0 ft	5.0 fc	26.7 ft
14.0 ft	3.7 fc	31.1 ft
16.0 ft	2.8 fc	35.5 ft
20.0 ft	1.8 fc	44.4 ft
24.0 ft	1.3 fc	53.3 ft
28.0 ft	0.9 fc	62.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	86,255	86,255	86,255
45.00°	69,480	69,480	69,480
55.00°	47,728	47,728	47,728
65.00°	19,495	19,495	19,495
75.00°	5,385	5,385	5,385
85.00°	5,282	5,282	5,282

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	24.1	25.5	24.4	25.8	26.1	24.1	25.5	24.4	25.8	26.1
	3H	24.2	25.4	24.6	25.8	26.1	24.2	25.4	24.6	25.8	26.1
	4H	24.2	25.3	24.6	25.7	26.1	24.2	25.3	24.6	25.7	26.1
	6H	24.1	25.2	24.5	25.6	26.0	24.1	25.2	24.5	25.6	26.0
	8H	24.1	25.1	24.5	25.5	25.9	24.1	25.1	24.5	25.5	25.9
	12H	24.1	25.0	24.5	25.4	25.9	24.1	25.0	24.5	25.4	25.9
4H	2H	24.1	25.3	24.5	25.6	26.0	24.1	25.3	24.5	25.6	26.0
	3H	24.3	25.2	24.7	25.6	26.1	24.3	25.2	24.7	25.6	26.1
	4H	24.3	25.1	24.7	25.5	26.0	24.3	25.1	24.7	25.5	26.0
	6H	24.2	25.0	24.7	25.4	25.9	24.2	25.0	24.7	25.4	25.9
	8H	24.2	24.9	24.7	25.3	25.8	24.2	24.9	24.7	25.3	25.8
	12H	24.2	24.8	24.7	25.3	25.7	24.2	24.8	24.7	25.3	25.7
8H	4H	24.2	24.8	24.6	25.3	25.8	24.2	24.8	24.6	25.3	25.8
	6H	24.1	24.7	24.6	25.2	25.7	24.1	24.7	24.6	25.2	25.7
	8H	24.1	24.6	24.6	25.1	25.6	24.1	24.6	24.6	25.1	25.6
	12H	24.1	24.5	24.6	25.0	25.6	24.1	24.5	24.6	25.0	25.6
12H	4H	24.1	24.7	24.6	25.2	25.7	24.1	24.7	24.6	25.2	25.7
	6H	24.1	24.6	24.6	25.1	25.6	24.1	24.6	24.6	25.1	25.6
	8H	24.1	24.5	24.6	25.0	25.6	24.1	24.5	24.6	25.0	25.6

Corrected UGR values based on total output lumens

SHR = 1.0