

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGECS4SQFX 20L 35K XX CA4FX SO SG
Nom 4" square Chicago Plenum downlight, Solite lens, Soft glow finish

Test Number

SP-01175_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	1563
Efficacy	110.86 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.25
Two luminaires, plane 90°	1.25
Four luminaires	1.15

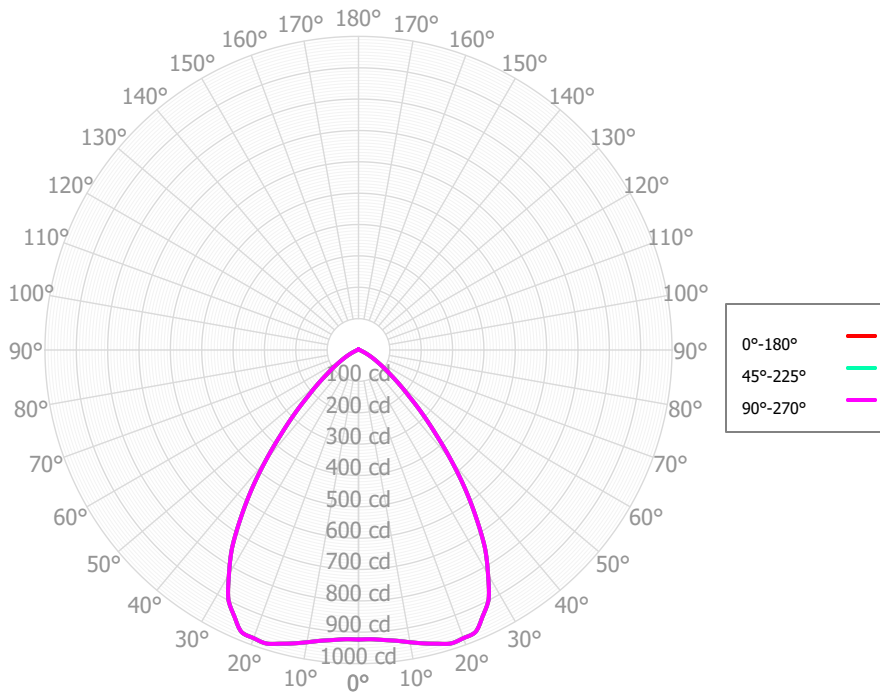
Full Beam Angle

0° - 180°	78°
90° - 270°	78°

IES File Header Contents

Keyword	Value
TEST	SP-01175_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 SO SG
LUMINAIRE	Nom 4" square Chicago Plenum downlight, Solite lens, Soft glow finish
OTHER	Beam angle: 78.5 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°	92.92	5.94%	90.00° - 100.00°	0.77	0.05%
10.00° - 20.00°	274.97	17.57%	100.00° - 110.00°	0.67	0.04%
20.00° - 30.00°	427.02	27.28%	100.00° - 120.00°	1.34	0.09%
30.00° - 40.00°	404.33	25.83%	120.00° - 130.00°	0.68	0.04%
40.00° - 50.00°	226.73	14.48%	130.00° - 140.00°	0.64	0.04%
50.00° - 60.00°	90.89	5.81%	140.00° - 150.00°	0.56	0.04%
60.00° - 70.00°	30.54	1.95%	150.00° - 160.00°	0.41	0.03%
70.00° - 80.00°	9.49	0.61%	160.00° - 170.00°	0.26	0.02%
80.00° - 90.00°	3.73	0.24%	170.00° - 180.00°	0.09	0.01%
0.00° - 90.00°	1,560.62	99.70%	0.00° - 180.00°	1,565.38	100.00%

Candela Distribution

	0.00°	45.00°	90.00°
0.00°	923.47	923.47	923.47
2.50°	923.47	923.47	923.47
5.00°	928.62	928.62	928.62
7.50°	935.61	935.61	935.61
10.00°	946.58	946.58	946.58
12.50°	958.55	958.55	958.55
15.00°	969.97	969.97	969.97
17.50°	981.29	981.29	981.29
20.00°	978.22	978.22	978.22
22.50°	974.00	974.00	974.00
25.00°	937.35	937.35	937.35
27.50°	898.54	898.54	898.54
30.00°	826.50	826.50	826.50
32.50°	751.64	751.64	751.64
35.00°	655.64	655.64	655.64
37.50°	559.16	559.16	559.16
40.00°	460.48	460.48	460.48
42.50°	366.85	366.85	366.85
45.00°	288.92	288.92	288.92
47.50°	219.63	219.63	219.63
50.00°	169.71	169.71	169.71
52.50°	127.30	127.30	127.30
55.00°	97.66	97.66	97.66
57.50°	73.11	73.11	73.11
60.00°	55.20	55.20	55.20
62.50°	40.45	40.45	40.45
65.00°	28.86	28.86	28.86
67.50°	20.34	20.34	20.34
70.00°	14.20	14.20	14.20
72.50°	10.60	10.60	10.60
75.00°	8.51	8.51	8.51
77.50°	6.98	6.98	6.98
80.00°	5.70	5.70	5.70
82.50°	4.54	4.54	4.54
85.00°	3.42	3.42	3.42
87.50°	2.31	2.31	2.31
90.00°	1.21	1.21	1.21
92.50°	0.84	0.84	0.84
95.00°	0.56	0.56	0.56
97.50°	0.54	0.54	0.54
100.00°	0.52	0.52	0.52
102.50°	0.59	0.59	0.59
105.00°	0.65	0.65	0.65
107.50°	0.69	0.69	0.69
110.00°	0.72	0.72	0.72
112.50°	0.65	0.65	0.65

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	1,862	1,862	1,862	1,862	1,819	1,819	1,819	1,819	1,737	1,737	1,737	1,662	1,662	1,662	1,593	1,593	1,593
	1	1,757	1,706	1,660	1,619	1,717	1,671	1,630	1,593	1,606	1,573	1,542	1,547	1,520	1,495	1,492	1,471	1,451
	2	1,649	1,558	1,483	1,420	1,612	1,530	1,461	1,403	1,477	1,420	1,371	1,428	1,382	1,340	1,383	1,345	1,311
	3	1,544	1,424	1,332	1,258	1,510	1,401	1,316	1,247	1,358	1,285	1,226	1,318	1,257	1,205	1,280	1,229	1,186
	4	1,446	1,305	1,202	1,124	1,415	1,286	1,190	1,116	1,250	1,167	1,102	1,217	1,146	1,088	1,185	1,125	1,074
	5	1,355	1,200	1,091	1,011	1,327	1,184	1,082	1,006	1,153	1,064	996	1,125	1,047	986	1,099	1,031	977
	6	1,271	1,106	995	916	1,245	1,093	988	912	1,067	974	905	1,043	961	898	1,020	948	891
	7	1,194	1,023	912	834	1,170	1,011	906	832	989	895	826	969	884	821	949	874	816
	8	1,123	949	839	764	1,101	939	834	762	920	825	758	902	816	754	885	808	750
	9	1,058	882	775	702	1,038	874	771	701	857	763	698	842	756	695	827	749	692
	10	999	823	718	648	981	816	715	647	802	709	645	788	703	642	775	697	640

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	30.5 fc	9.0 ft
6.5 ft	21.9 fc	10.6 ft
7.5 ft	16.4 fc	12.2 ft
8.0 ft	14.4 fc	13.1 ft
10.0 ft	9.2 fc	16.3 ft
12.0 ft	6.4 fc	19.6 ft
14.0 ft	4.7 fc	22.9 ft
16.0 ft	3.6 fc	26.1 ft
20.0 ft	2.3 fc	32.7 ft
24.0 ft	1.6 fc	39.2 ft
28.0 ft	1.2 fc	45.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	110,446	110,446	110,446
45.00°	48,867	48,867	48,867
55.00°	20,363	20,363	20,363
65.00°	8,168	8,168	8,168
75.00°	3,934	3,934	3,934
85.00°	4,691	4,691	4,691

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	17.9	19.1	18.3	19.5	19.8	17.9	19.1	18.3	19.5	19.8
	3H	18.2	19.2	18.5	19.5	19.9	18.2	19.2	18.5	19.5	19.9
	4H	18.2	19.2	18.6	19.5	19.9	18.2	19.2	18.6	19.5	19.9
	6H	18.2	19.1	18.6	19.5	19.9	18.2	19.1	18.6	19.5	19.9
	8H	18.2	19.0	18.6	19.4	19.9	18.2	19.0	18.6	19.4	19.9
	12H	18.2	19.0	18.6	19.4	19.8	18.2	19.0	18.6	19.4	19.8
4H	2H	18.0	18.9	18.4	19.3	19.7	18.0	18.9	18.4	19.3	19.7
	3H	18.3	19.0	18.7	19.5	19.9	18.3	19.0	18.7	19.5	19.9
	4H	18.3	19.0	18.8	19.4	19.9	18.3	19.0	18.8	19.4	19.9
	6H	18.4	19.0	18.9	19.4	19.9	18.4	19.0	18.9	19.4	19.9
	8H	18.4	19.0	18.9	19.4	19.9	18.4	19.0	18.9	19.4	19.9
	12H	18.4	18.9	18.9	19.4	19.9	18.4	18.9	18.9	19.4	19.9
8H	4H	18.3	18.8	18.7	19.3	19.7	18.3	18.8	18.7	19.3	19.7
	6H	18.4	18.8	18.9	19.3	19.8	18.4	18.8	18.9	19.3	19.8
	8H	18.4	18.8	19.0	19.4	19.9	18.4	18.8	19.0	19.4	19.9
	12H	18.5	18.9	19.0	19.4	20.0	18.5	18.9	19.0	19.4	20.0
12H	4H	18.2	18.7	18.7	19.2	19.7	18.2	18.7	18.7	19.2	19.7
	6H	18.3	18.8	18.9	19.2	19.8	18.3	18.8	18.9	19.2	19.8
	8H	18.4	18.8	19.0	19.3	19.9	18.4	18.8	19.0	19.3	19.9

Corrected UGR values based on total output lumens

SHR = 1.0