Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03SSx IC 835 007 N11 DLFLGN MW

Nom 3" Square Infinium recessed downlight

Test Number

SP-00778_1_M-007L

Test Date

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

Summary of Results

Power

Input Watts	5.4 W

Lumen Output

Output Lumens	376
Efficacy	69.58 lm/W

Luminous Dimensions

0° - 180° Size	0.16
90° - 270° Size	0.16
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.65
Two luminaires, plane 90°	0.66
Four luminaires	0.7

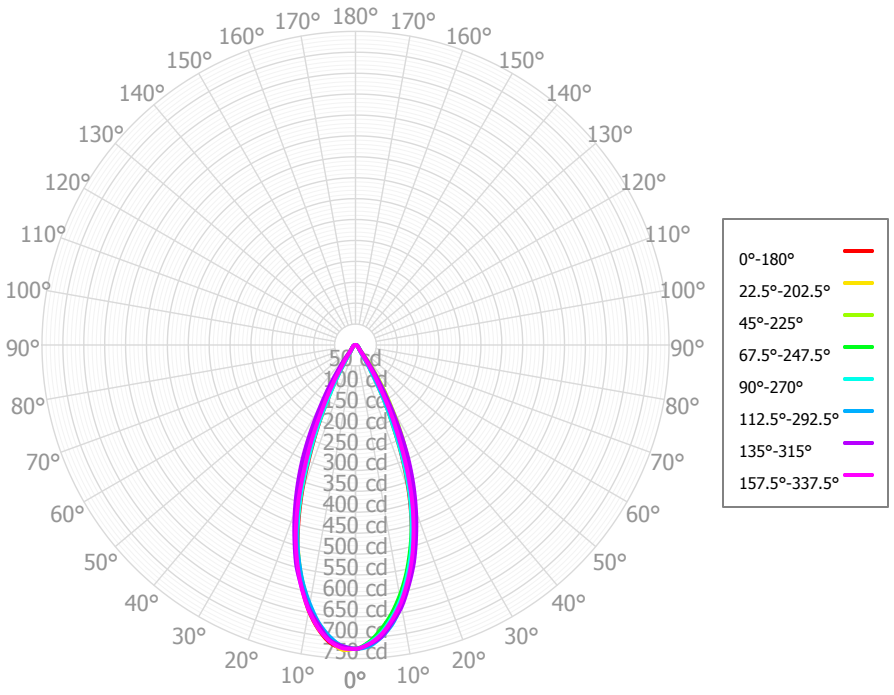
Full Beam Angle

0° - 180°	41°
90° - 270°	41°

IES File Header Contents

Keyword	Value
TEST	SP-00778_1_M-007L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/11/2019
UPDATE	3/11/2019
LUMCAT	IF03SSx IC 835 007 N11 DLFLGN MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 41 degrees
OTHER	Flood optic, Open aperture / no lens
OTHER	Aluminum bezel
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multiplier: 40K x 1.03
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 20L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	65.37	17.40%	90.00° - 100.00°	0.03	0.01%
10.00° - 20.00°	143.50	38.19%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	110.63	29.44%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	30.70	8.17%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	9.78	2.60%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	6.66	1.77%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	5.19	1.38%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.08	0.82%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.78	0.21%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	375.68	99.99%	0.00° - 180.00°	375.71	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82	726.82
2.50°	715.54	716.77	713.71	712.30	714.71	722.38	720.74	725.87	726.69	729.46	722.08	721.81	720.31	721.58	717.42	716.65	715.54
5.00°	694.37	689.38	689.64	684.79	693.14	700.99	708.67	711.27	713.79	708.27	705.99	703.52	704.45	702.44	701.67	696.02	694.37
7.50°	660.70	658.20	654.56	651.02	659.26	670.93	674.92	683.26	684.75	683.03	672.94	676.37	675.12	673.74	670.10	664.47	660.70
10.00°	621.35	615.08	615.22	609.06	619.03	629.00	640.19	644.13	644.85	635.89	632.77	634.90	636.00	632.25	635.73	625.83	621.35
12.50°	570.43	568.22	569.50	560.86	568.24	582.45	593.91	595.57	592.20	586.48	583.05	587.69	586.56	584.22	588.73	577.50	570.43
15.00°	515.41	511.96	521.90	505.94	513.16	526.61	546.62	538.67	529.39	525.69	529.22	530.72	527.80	529.08	539.33	524.05	515.41
17.50°	446.11	451.32	465.05	448.09	447.09	468.01	485.59	476.02	456.74	464.23	470.78	470.69	460.94	466.53	481.68	461.81	446.11
20.00°	372.92	382.02	406.16	387.68	377.52	398.13	424.34	400.99	374.78	384.56	409.92	395.47	381.26	397.24	422.96	395.85	372.92
22.50°	292.80	311.24	348.42	319.23	295.62	325.69	361.36	318.97	285.35	305.14	346.83	316.75	292.40	319.84	361.47	322.15	292.80
25.00°	211.31	238.13	290.85	244.89	210.75	249.62	297.48	243.08	206.60	230.16	279.29	237.77	209.73	236.46	296.78	245.92	211.31
27.50°	146.79	172.34	230.87	177.24	142.58	172.98	229.00	169.96	134.77	157.56	208.42	158.74	130.63	163.94	225.52	179.66	146.79
30.00°	84.46	116.18	170.67	113.55	77.17	115.60	164.29	114.46	83.99	105.30	148.95	103.50	79.62	97.91	160.57	115.94	84.46
32.50°	53.70	72.05	122.49	69.74	48.31	59.96	113.39	65.18	44.33	57.94	96.53	50.66	41.72	58.23	106.23	73.49	53.70
35.00°	25.19	40.82	75.04	35.29	23.24	39.50	68.75	40.56	26.89	36.97	61.01	34.93	26.19	31.49	63.37	34.83	25.19
37.50°	19.53	23.02	48.20	21.71	18.50	20.64	42.00	22.62	18.88	19.62	33.85	20.85	18.94	20.59	36.11	23.68	19.53
40.00°	14.43	16.93	22.77	16.09	14.76	17.18	21.92	17.56	15.65	16.72	21.99	17.53	15.35	15.79	19.59	15.58	14.43
42.50°	12.82	13.39	17.60	13.85	12.97	13.83	16.62	15.05	13.98	14.24	16.06	14.31	12.78	13.41	14.93	13.35	12.82
45.00°	11.25	11.71	12.84	12.59	11.22	12.24	12.65	13.32	12.64	13.01	13.25	12.74	11.66	11.75	11.84	11.46	11.25
47.50°	10.00	10.53	11.37	11.09	10.31	10.73	11.02	11.68	11.38	11.73	11.39	11.21	10.85	10.45	10.23	10.13	10.00
50.00°	8.80	9.64	9.86	9.54	9.38	9.88	9.58	10.08	10.08	10.32	9.59	9.91	9.77	9.22	8.91	8.80	8.80
52.50°	7.91	8.53	8.14	8.22	8.35	8.95	8.41	8.48	8.77	9.07	7.80	8.70	8.64	8.35	7.82	7.23	7.91
55.00°	6.97	7.30	6.66	6.94	7.33	7.65	7.36	7.62	7.61	8.10	7.18	7.97	7.87	7.53	7.00	5.79	6.97
57.50°	5.85	6.40	6.07	6.38	6.32	6.51	6.46	6.79	6.46	7.20	6.74	7.23	7.13	6.50	6.35	5.60	5.85
60.00°	4.98	5.63	5.66	5.89	5.50	5.98	5.97	6.30	5.71	6.41	6.46	6.50	6.23	5.44	5.63	5.38	4.98
62.50°	4.97	5.32	5.74	5.62	5.41	5.52	5.86	5.86	4.98	5.89	6.19	5.84	5.35	5.08	4.87	4.93	4.97
65.00°	4.93	5.14	5.69	5.36	5.29	5.28	5.56	5.91	5.19	5.69	5.60	5.38	5.41	4.73	4.61	4.57	4.93
67.50°	4.77	5.04	5.34	5.04	5.09	5.08	5.09	5.74	5.28	5.40	4.99	4.76	5.33	4.47	4.55	4.54	4.77
70.00°	4.34	4.96	4.96	4.69	4.57	4.95	4.60	4.70	4.69	5.04	4.23	3.88	4.56	4.14	3.93	4.22	4.34
72.50°	3.51	4.16	4.55	4.12	3.53	4.06	4.07	3.61	3.73	3.96	3.41	3.11	3.71	3.59	3.23	3.34	3.51
75.00°	3.01	3.40	3.95	3.36	2.75	2.71	3.18	2.46	2.30	2.75	2.54	2.39	2.77	2.85	2.92	2.93	3.01
77.50°	2.59	2.74	3.26	2.40	2.12	2.03	2.24	1.57	1.59	1.60	1.57	1.46	1.80	1.96	2.28	2.61	2.59
80.00°	1.78	1.82	2.54	1.81	1.60	1.33	1.40	1.08	1.08	0.82	0.99	1.03	1.12	1.13	1.46	1.59	1.78
82.50°	1.25	1.17	1.59	1.15	1.00	0.87	0.96	0.77	0.70	0.54	0.64	0.67	0.64	0.80	1.10	1.02	1.25
85.00°	0.69	0.84	0.85	0.60	0.52	0.69	0.74	0.45	0.49	0.49	0.52	0.46	0.51	0.60	0.71	0.70	0.69
87.50°	0.47	0.60	0.45	0.48	0.46	0.48	0.47	0.45	0.40	0.56	0.44	0.47	0.42	0.47	0.52	0.40	0.47
90.00°	0.49	0.43	0.42	0.59	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.54	0.58	0.49
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	447	447	447	447	437	437	437	437	417	417	417	400	400	400	383	383	383	376
	1	428	418	409	401	418	410	402	394	394	388	382	380	376	371	368	364	360	357
	2	409	391	377	365	400	385	372	361	373	363	353	362	353	346	352	345	339	338
	3	391	368	351	338	383	363	348	335	354	340	330	345	334	324	336	327	320	321
	4	374	348	329	315	367	344	326	313	336	321	309	329	316	306	322	311	302	305
RCR	5	358	330	310	296	352	326	308	294	320	304	292	314	300	289	308	296	287	291
	6	343	313	293	279	338	311	292	278	305	289	276	300	286	274	295	283	273	278
	7	330	299	278	264	325	296	277	264	292	275	262	287	272	261	283	270	260	266
	8	317	285	265	251	313	283	264	251	279	262	250	276	260	249	272	258	248	254
	9	305	273	253	240	301	271	252	239	268	250	239	264	249	238	261	247	237	244
	10	293	261	242	229	290	260	241	229	257	240	228	254	238	228	251	237	227	234

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	24.0 fc	4.1 ft
6.5 ft	17.2 fc	4.8 ft
7.5 ft	12.9 fc	5.6 ft
8.0 ft	11.4 fc	5.9 ft
10.0 ft	7.3 fc	7.4 ft
12.0 ft	5.0 fc	8.9 ft
14.0 ft	3.7 fc	10.4 ft
16.0 ft	2.8 fc	11.9 ft
20.0 ft	1.8 fc	14.8 ft
24.0 ft	1.3 fc	17.8 ft
28.0 ft	0.9 fc	20.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	305,602	305,602	305,602
45.00°	6,689	7,634	6,674
55.00°	5,111	4,882	5,374
65.00°	4,901	5,658	5,266
75.00°	4,891	6,416	4,464
85.00°	3,319	4,117	2,519

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	10.2	11.2	10.6	11.5	11.8	11.2	12.2	11.5	12.5	12.8
	3H	12.7	13.6	13.1	13.9	14.3	13.3	14.2	13.7	14.5	14.9
	4H	13.6	14.4	14.0	14.7	15.1	13.9	14.7	14.3	15.1	15.4
	6H	14.2	14.9	14.6	15.3	15.7	14.2	14.9	14.6	15.3	15.7
	8H	14.3	15.0	14.8	15.4	15.8	14.2	14.9	14.6	15.3	15.7
	12H	14.4	15.0	14.8	15.4	15.9	14.2	14.9	14.7	15.3	15.7
4H	2H	11.0	11.8	11.4	12.1	12.5	11.8	12.6	12.2	13.0	13.4
	3H	13.7	14.3	14.1	14.7	15.1	14.1	14.8	14.5	15.2	15.6
	4H	14.6	15.2	15.1	15.6	16.1	14.7	15.3	15.2	15.8	16.2
	6H	15.3	15.8	15.8	16.3	16.8	15.1	15.6	15.5	16.0	16.5
	8H	15.5	16.0	16.0	16.4	16.9	15.1	15.6	15.6	16.0	16.5
	12H	15.6	16.0	16.1	16.5	17.0	15.2	15.6	15.6	16.0	16.5
8H	4H	15.0	15.5	15.5	15.9	16.4	14.9	15.4	15.4	15.8	16.3
	6H	15.8	16.2	16.3	16.7	17.2	15.3	15.7	15.8	16.2	16.7
	8H	16.0	16.3	16.6	16.9	17.4	15.4	15.7	15.9	16.2	16.7
	12H	16.2	16.5	16.7	17.0	17.6	15.5	15.8	16.0	16.3	16.9
12H	4H	15.0	15.4	15.5	15.9	16.4	14.9	15.3	15.4	15.8	16.2
	6H	15.8	16.2	16.4	16.6	17.2	15.3	15.6	15.8	16.1	16.6
	8H	16.1	16.4	16.6	16.9	17.5	15.4	15.7	15.9	16.2	16.8

Corrected UGR values based on total output lumens

SHR = 1.0