

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03SMx xx 835 015 DLNFGC MW  
Nom 3" Square Infinium recessed downlight

### **Test Number**

SP-007673\_M-015L

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	12.2 W
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#### Lumen Output

Output Lumens	694
Efficacy	56.88 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.51
Two luminaires, plane 90°	0.51
Four luminaires	0.56

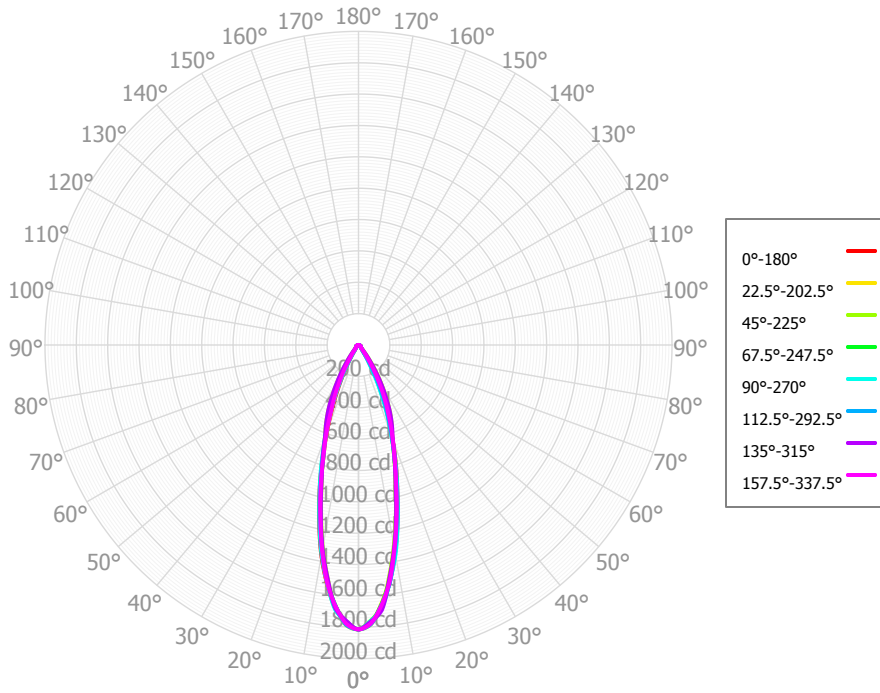
#### Full Beam Angle

0° - 180°	31°
90° - 270°	31°

### IES File Header Contents

Keyword	Value
TEST	SP-007673_M-015L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/11/2019
UPDATE	2/28/2019
LUMCAT	IF03SMx xx 835 015 DLNFGC MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 31 degrees
OTHER	Narrow Flood optic, Clear glass lens
OTHER	Aluminum bezel contains lens
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°	150.15	21.64%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	256.53	36.97%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	177.79	25.62%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	57.22	8.25%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	17.87	2.58%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	14.12	2.03%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	13.85	2.00%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.73	0.68%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.59	0.23%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	693.85	99.99%	0.00° - 180.00°	693.92	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°	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83	1,813.83
2.50°	1,768.28	1,785.11	1,761.02	1,777.07	1,763.07	1,788.03	1,762.76	1,780.87	1,770.57	1,789.90	1,766.08	1,781.52	1,768.13	1,783.85	1,767.65	1,779.74	1,768.28
5.00°	1,681.13	1,660.39	1,682.52	1,665.19	1,690.26	1,673.30	1,687.58	1,673.54	1,688.28	1,673.43	1,687.37	1,673.34	1,696.39	1,670.29	1,698.96	1,669.66	1,681.13
7.50°	1,523.95	1,516.45	1,494.66	1,517.59	1,525.50	1,531.18	1,505.92	1,530.93	1,536.34	1,535.72	1,503.27	1,522.73	1,529.23	1,529.55	1,506.06	1,523.83	1,523.95
10.00°	1,344.38	1,319.25	1,299.75	1,322.43	1,357.47	1,334.50	1,320.95	1,335.73	1,363.59	1,334.20	1,313.67	1,327.65	1,355.87	1,330.57	1,312.29	1,322.59	1,344.38
12.50°	1,151.56	1,123.68	1,102.74	1,125.66	1,155.24	1,126.55	1,111.66	1,123.44	1,158.17	1,124.12	1,103.03	1,115.11	1,153.05	1,132.70	1,108.39	1,124.60	1,151.56
15.00°	955.54	931.64	907.63	927.13	955.15	935.66	911.99	930.14	957.76	931.53	907.98	925.72	956.05	936.78	912.22	930.73	955.54
17.50°	789.21	760.11	765.79	762.61	782.53	747.09	760.09	741.51	763.79	740.28	757.53	743.26	779.52	763.29	769.46	767.61	789.21
20.00°	627.84	624.38	629.71	628.92	613.98	618.88	622.74	596.91	591.57	598.83	626.55	607.61	612.39	621.58	637.63	636.31	627.84
22.50°	494.08	501.38	554.52	511.10	475.19	495.09	538.45	459.84	442.14	459.63	539.58	482.68	470.28	493.69	557.66	519.34	494.08
25.00°	363.23	396.53	477.50	404.97	341.19	385.74	451.69	356.85	316.57	357.20	449.63	372.90	337.69	381.67	475.09	414.80	363.23
27.50°	262.74	299.93	388.32	303.67	230.92	277.32	358.16	257.57	211.63	256.75	354.24	265.47	225.27	277.15	383.65	318.36	262.74
30.00°	163.93	212.87	300.84	205.25	133.76	189.90	269.50	179.63	134.00	180.19	265.84	180.45	133.88	179.86	294.29	227.64	163.93
32.50°	106.32	139.99	221.00	131.04	83.30	106.49	191.60	102.87	75.83	108.42	187.65	97.47	78.53	109.92	210.46	151.99	106.32
35.00°	51.04	80.66	147.02	68.67	43.80	70.22	124.77	70.03	46.64	70.36	123.20	65.67	42.53	61.40	136.31	84.87	51.04
37.50°	38.53	46.85	92.27	42.63	34.38	37.53	77.41	38.42	34.09	37.91	75.31	36.25	33.25	37.51	82.63	51.55	38.53
40.00°	26.86	33.16	48.60	30.51	26.81	30.38	44.17	30.89	27.97	31.81	44.91	30.31	26.71	29.23	44.03	33.93	26.86
42.50°	22.68	25.24	33.76	25.17	23.27	24.18	30.95	23.96	24.83	26.40	31.93	24.56	23.28	24.30	30.84	25.79	22.68
45.00°	18.91	21.01	22.95	21.81	20.02	22.51	23.01	22.63	22.22	23.46	24.75	21.75	20.20	21.13	22.18	21.08	18.91
47.50°	17.44	18.38	20.38	19.55	17.24	20.49	21.32	21.10	19.81	20.71	22.27	19.16	17.44	19.04	19.78	18.66	17.44
50.00°	15.77	16.57	18.50	17.54	15.13	17.26	19.78	18.43	17.32	18.48	20.05	18.28	15.04	17.39	17.78	16.85	15.77
52.50°	13.25	15.93	17.76	15.75	13.96	14.94	18.40	16.30	14.82	16.62	18.01	17.37	12.91	15.59	16.24	15.17	13.25
55.00°	11.51	15.76	17.57	13.98	13.39	15.10	18.19	16.39	13.93	15.50	17.75	16.34	12.22	13.74	15.80	13.50	11.51
57.50°	12.17	15.69	18.13	15.14	13.52	15.47	18.90	16.48	13.36	15.52	18.45	15.69	12.42	14.03	16.38	14.55	12.17
60.00°	13.12	15.65	18.02	16.56	14.14	16.25	18.76	16.55	14.66	17.50	18.72	16.51	13.57	14.84	16.39	15.96	13.12
62.50°	14.77	15.49	17.18	16.14	15.22	16.25	18.06	16.21	16.20	17.73	18.80	16.67	15.21	15.01	15.98	15.75	14.77
65.00°	15.04	15.29	15.14	15.60	14.86	14.92	15.11	14.90	14.86	15.50	15.29	14.87	14.47	15.06	14.14	15.42	15.04
67.50°	12.68	12.96	12.02	12.60	13.35	12.19	11.03	12.40	13.07	12.45	10.65	12.24	12.83	12.60	11.41	12.10	12.68
70.00°	9.81	10.27	9.16	9.60	9.77	7.88	7.55	8.17	8.28	8.65	7.66	8.18	8.63	9.83	8.40	8.82	9.81
72.50°	6.37	6.67	6.44	6.60	5.19	5.05	4.54	5.33	4.73	5.67	5.28	5.09	4.68	6.11	5.27	6.04	6.37
75.00°	4.61	4.20	4.94	4.34	3.88	3.11	3.25	3.36	3.11	3.40	4.32	2.74	3.37	3.68	3.89	4.05	4.61
77.50°	3.61	3.64	3.99	2.82	3.03	2.85	2.41	2.80	2.77	2.82	3.06	2.22	2.48	3.01	2.89	2.96	3.61
80.00°	3.30	3.23	3.78	2.68	2.58	2.51	1.98	2.45	2.62	2.34	2.29	1.72	1.96	2.84	2.35	3.36	3.30
82.50°	3.01	2.53	2.53	2.17	1.74	2.19	1.74	1.86	2.00	2.05	1.87	1.41	1.52	2.03	1.96	2.71	3.01
85.00°	1.54	1.53	1.35	1.33	0.91	1.25	1.26	1.08	1.09	1.24	1.27	0.97	0.83	1.27	1.18	1.51	1.54
87.50°	0.89	0.92	1.46	0.93	0.97	0.89	0.91	0.99	1.25	1.00	0.92	0.63	0.89	1.20	0.94	1.12	0.89
90.00°	0.91	0.95	1.09	0.88	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.85	0.86	0.91
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.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	826	826	826	826	807	807	807	807	771	771	771	738	738	738	708	708	694
	<b>1</b>	790	772	756	741	773	757	743	729	729	718	707	703	694	686	680	673	659
	<b>2</b>	756	724	699	677	740	713	689	669	690	671	655	670	654	641	651	638	626
	<b>3</b>	723	683	651	626	710	673	645	621	655	631	612	639	619	602	624	607	596
	<b>4</b>	693	646	612	586	681	638	607	582	624	597	575	610	587	569	598	578	568
	<b>5</b>	665	613	578	551	654	607	574	549	595	566	544	584	559	539	574	552	542
	<b>6</b>	639	584	548	522	629	579	545	520	569	539	517	560	534	513	551	528	519
	<b>7</b>	614	558	522	496	606	554	519	495	545	515	492	538	510	490	530	506	498
	<b>8</b>	591	534	498	473	584	530	496	473	523	493	471	517	489	469	511	486	478
	<b>9</b>	570	512	477	453	563	509	475	452	503	472	451	497	470	449	492	467	460
	<b>10</b>	550	492	458	435	544	489	456	434	484	454	433	479	451	432	475	449	443

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	60.0 fc	3.1 ft
6.5 ft	42.9 fc	3.7 ft
7.5 ft	32.2 fc	4.2 ft
8.0 ft	28.3 fc	4.5 ft
10.0 ft	18.1 fc	5.6 ft
12.0 ft	12.6 fc	6.8 ft
14.0 ft	9.3 fc	7.9 ft
16.0 ft	7.1 fc	9.0 ft
20.0 ft	4.5 fc	11.3 ft
24.0 ft	3.1 fc	13.5 ft
28.0 ft	2.3 fc	15.8 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	762,654	762,654	762,654
<b>45.00°</b>	11,245	13,647	11,902
<b>55.00°</b>	8,440	12,878	9,814
<b>65.00°</b>	14,963	15,060	14,780
<b>75.00°</b>	7,492	8,033	6,300
<b>85.00°</b>	7,417	6,519	4,396

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	14.4	15.3	14.7	15.7	16.0	14.6	15.6	15.0	15.9	16.2
	<b>3H</b>	16.8	17.7	17.2	18.0	18.4	16.8	17.7	17.2	18.0	18.4
	<b>4H</b>	17.1	17.9	17.5	18.3	18.7	16.9	17.7	17.3	18.1	18.5
	<b>6H</b>	17.3	18.1	17.8	18.5	18.9	17.0	17.8	17.4	18.1	18.5
	<b>8H</b>	17.5	18.2	17.9	18.6	19.0	17.1	17.8	17.5	18.1	18.6
	<b>12H</b>	17.6	18.3	18.0	18.7	19.1	17.1	17.7	17.5	18.1	18.5
<b>4H</b>	<b>2H</b>	15.4	16.2	15.8	16.6	17.0	15.7	16.5	16.1	16.8	17.2
	<b>3H</b>	17.6	18.3	18.0	18.7	19.1	17.5	18.2	18.0	18.6	19.0
	<b>4H</b>	17.9	18.5	18.4	19.0	19.4	17.7	18.3	18.1	18.7	19.1
	<b>6H</b>	18.3	18.8	18.7	19.2	19.7	17.8	18.3	18.3	18.8	19.2
	<b>8H</b>	18.5	18.9	18.9	19.4	19.9	17.9	18.3	18.3	18.8	19.3
	<b>12H</b>	18.6	19.0	19.1	19.5	20.0	17.9	18.3	18.4	18.8	19.3
<b>8H</b>	<b>4H</b>	18.0	18.5	18.5	18.9	19.4	17.7	18.1	18.2	18.6	19.1
	<b>6H</b>	18.4	18.8	18.9	19.3	19.8	17.9	18.2	18.4	18.8	19.2
	<b>8H</b>	18.7	19.1	19.3	19.6	20.1	18.0	18.3	18.5	18.8	19.3
	<b>12H</b>	19.0	19.2	19.5	19.7	20.3	18.1	18.4	18.6	18.9	19.4
<b>12H</b>	<b>4H</b>	18.0	18.4	18.5	18.9	19.3	17.6	18.0	18.1	18.5	19.0
	<b>6H</b>	18.4	18.8	19.0	19.2	19.8	17.9	18.2	18.4	18.7	19.2
	<b>8H</b>	18.8	19.1	19.3	19.6	20.2	18.0	18.3	18.5	18.8	19.4

Corrected UGR values based on total output lumens

SHR = 1.0