

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03SSx IC 835 015 N11 DLWFGC MW  
Nom 3" Square Infinium recessed downlight

### **Test Number**

SP-00765\_M-015L

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	10.2 W
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#### Lumen Output

Output Lumens	724
Efficacy	71.01 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.9
Two luminaires, plane 90°	0.9
Four luminaires	0.91

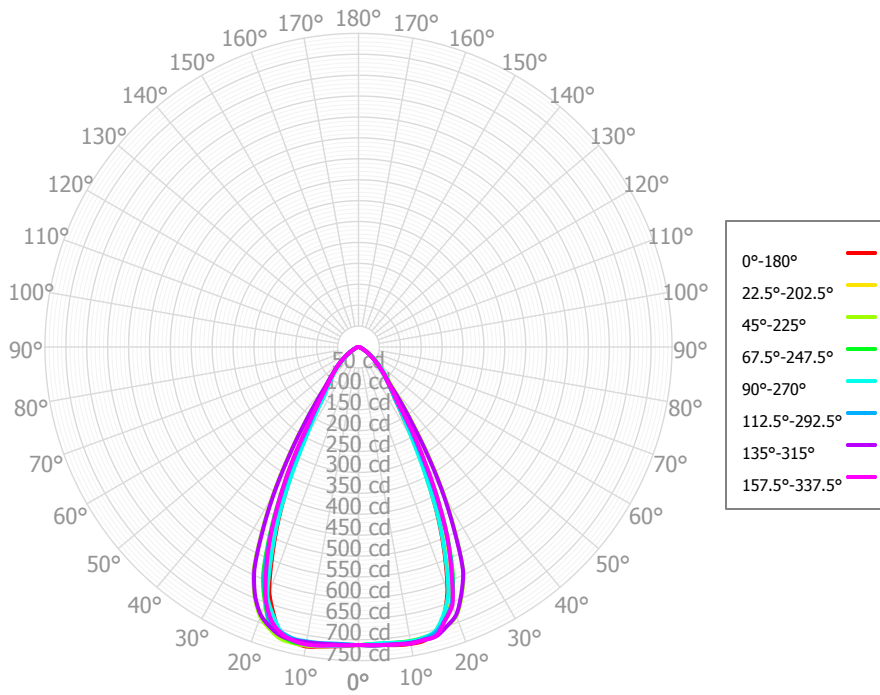
#### Full Beam Angle

0° - 180°	55°
90° - 270°	54°

### IES File Header Contents

Keyword	Value
TEST	SP-00765_M-015L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/11/2019
UPDATE	4/4/2019
LUMCAT	IF03SSx IC 835 015 N11 DLWFGC MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 54 degrees
OTHER	Wide Flood optic, Clear glass lens
OTHER	Aluminum bezel contains lens
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multiplier: 27K x 0.95, 30K x 0.98, 40K x 1.03
OTHER	Total luminaire wattage is approximate, +2W for thermal protection
OTHER	This report prepared by Spectrum Lighting, scaled from 20L
_CRI	80
_CCTMULT	27K x 0.95, 30K x 0.98, 40K x 1.03
_LAMPMULT	07L x 0.40, 10L x 0.56

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	69.51	9.60%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	197.76	27.30%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	226.56	31.28%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	119.26	16.47%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	62.32	8.60%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	31.73	4.38%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	11.81	1.63%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.08	0.56%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.19	0.16%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	724.21	99.99%	0.00° - 180.00°	724.27	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°	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00	713.00
2.50°	714.43	714.19	711.27	712.13	711.30	711.68	713.68	714.75	716.07	713.99	714.72	713.15	714.79	714.92	714.49	714.15	714.43
5.00°	715.78	715.45	711.46	712.52	710.89	712.18	713.92	716.76	718.91	716.71	718.24	715.54	717.61	715.83	715.40	715.41	715.78
7.50°	719.24	717.17	713.13	713.28	713.38	714.37	715.60	720.70	722.92	722.13	721.89	718.82	720.20	717.36	717.02	717.84	719.24
10.00°	721.07	719.17	714.66	714.51	715.12	715.19	717.11	722.58	727.25	724.61	725.07	721.15	722.53	719.45	718.64	720.47	721.07
12.50°	720.11	716.53	714.45	712.40	713.12	715.19	717.95	719.79	722.86	724.34	724.99	723.09	716.38	716.05	718.12	718.16	720.11
15.00°	706.90	711.78	712.79	706.91	704.73	707.33	715.57	710.29	716.70	714.19	722.27	713.45	708.10	708.52	716.61	715.26	706.90
17.50°	676.91	684.27	701.08	686.38	673.74	695.73	702.51	688.65	672.91	696.44	707.23	700.18	675.99	685.28	701.07	686.84	676.91
20.00°	622.11	648.60	684.36	653.10	628.05	648.73	682.70	647.09	623.99	647.67	686.86	653.04	636.37	652.57	682.62	656.97	622.11
22.50°	539.44	576.89	644.60	589.57	543.17	588.70	645.91	576.68	538.32	579.47	648.13	597.79	546.85	585.06	641.89	580.56	539.44
25.00°	450.51	495.33	593.09	505.35	452.64	498.89	590.23	497.37	450.00	495.92	594.61	506.94	454.58	500.62	592.18	503.01	450.51
27.50°	355.79	405.50	500.89	411.53	350.00	400.51	497.44	407.53	355.83	404.73	502.03	410.27	349.76	403.71	498.11	409.48	355.79
30.00°	272.81	314.07	408.31	312.37	262.04	307.84	404.02	319.79	262.62	316.04	408.80	313.62	254.82	302.00	403.99	317.37	272.81
32.50°	198.57	239.14	314.71	236.41	198.95	216.34	309.61	234.11	203.47	228.33	314.20	216.97	192.42	226.20	309.65	238.47	198.57
35.00°	154.32	166.32	231.93	170.78	153.39	171.89	229.09	174.55	147.49	173.94	231.50	168.65	141.86	157.93	224.50	166.37	154.32
37.50°	128.29	137.13	171.20	136.69	131.64	133.73	166.54	135.55	126.03	129.73	168.48	122.78	121.48	128.02	164.62	135.16	128.29
40.00°	109.55	110.91	124.64	113.41	113.48	113.64	123.26	110.35	105.59	108.31	121.85	106.71	103.21	106.32	117.04	107.18	109.55
42.50°	94.37	94.89	101.72	97.23	99.37	94.96	100.14	94.02	92.03	91.95	97.34	90.82	89.24	90.12	95.69	92.52	94.37
45.00°	80.92	79.17	83.03	82.90	85.38	82.39	82.44	80.78	78.68	78.94	78.60	77.61	75.97	74.73	77.46	78.26	80.92
47.50°	68.14	68.25	69.99	69.88	71.51	69.94	69.49	69.15	66.28	66.45	66.16	64.53	63.83	63.16	64.63	65.22	68.14
50.00°	55.46	57.28	57.87	57.11	58.81	57.62	57.77	57.23	54.24	54.47	54.35	52.56	52.30	51.91	52.94	52.94	55.46
52.50°	42.81	45.90	46.74	45.82	46.98	45.51	46.93	45.20	43.33	42.53	43.11	41.23	41.57	42.64	42.87	42.51	42.81
55.00°	33.98	35.06	36.81	34.69	36.76	36.03	37.13	35.79	33.36	34.09	34.05	33.22	32.29	33.48	34.12	33.21	33.98
57.50°	25.98	27.56	27.95	27.11	27.53	27.06	27.91	27.21	25.79	25.82	26.57	25.61	24.55	26.29	26.84	26.07	25.98
60.00°	19.98	20.56	20.84	19.73	20.56	21.43	21.57	20.89	19.27	20.28	20.39	19.51	18.62	19.35	20.65	19.66	19.98
62.50°	14.26	15.69	14.99	15.37	14.69	16.05	16.55	15.10	14.85	14.88	14.98	14.09	14.25	15.43	15.46	14.35	14.26
65.00°	10.95	11.39	11.05	11.17	10.82	11.71	12.34	12.00	11.09	11.19	11.28	10.60	11.24	11.64	11.39	10.43	10.95
67.50°	7.88	8.85	8.21	9.26	7.72	8.07	8.41	9.33	8.32	7.91	8.38	7.69	9.16	8.69	8.15	8.19	7.88
70.00°	6.40	6.57	6.39	7.21	5.73	6.09	6.37	7.02	6.40	6.50	6.80	5.80	7.20	6.16	5.83	6.18	6.40
72.50°	5.02	4.67	4.92	4.66	4.08	4.59	4.67	5.02	5.15	5.35	5.48	4.86	5.30	4.75	3.92	4.34	5.02
75.00°	3.87	3.52	4.04	3.15	3.36	3.45	3.40	3.85	3.78	4.51	4.12	4.41	3.63	3.79	3.65	3.49	3.87
77.50°	2.79	2.71	2.97	2.45	2.73	2.41	2.70	2.87	2.84	3.16	3.19	2.54	2.33	3.10	2.96	2.65	2.79
80.00°	1.97	2.05	1.82	1.69	2.08	1.93	2.00	1.95	2.43	2.07	2.38	1.60	1.58	2.15	1.70	1.76	1.97
82.50°	1.52	1.64	1.51	1.15	0.96	1.47	1.25	1.21	1.64	1.37	1.44	1.32	1.31	1.79	1.40	1.57	1.52
85.00°	0.78	0.89	0.69	0.82	0.70	1.00	1.18	1.10	0.72	1.01	1.10	0.99	0.71	1.14	1.35	0.73	0.78
87.50°	0.90	0.76	0.61	0.67	0.76	0.85	0.91	1.10	0.96	0.90	0.83	0.97	0.81	0.68	0.98	0.85	0.90
90.00°	0.64	1.04	0.65	0.83	1.18	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.97	0.90	0.76	0.64
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>	862	862	862	862	842	842	842	842	805	805	805	770	770	770	739	739	724
	<b>1</b>	819	797	778	760	801	781	764	748	752	738	725	725	714	704	700	691	677
	<b>2</b>	775	737	705	679	758	724	696	671	700	677	657	679	659	642	658	643	630
	<b>3</b>	732	683	644	613	717	672	637	608	653	623	599	635	610	589	619	598	586
	<b>4</b>	693	634	592	559	679	626	586	556	610	576	549	595	566	543	582	557	546
	<b>5</b>	656	592	547	514	643	585	543	511	571	535	507	559	527	502	547	520	510
	<b>6</b>	621	553	507	475	610	547	504	473	536	498	470	526	492	466	516	486	478
	<b>7</b>	589	519	473	441	579	514	470	440	504	465	437	495	461	435	487	456	448
	<b>8</b>	560	488	442	411	551	483	440	410	475	436	408	468	432	407	461	429	422
	<b>9</b>	532	460	415	385	524	456	413	384	449	410	383	442	407	382	436	404	398
	<b>10</b>	507	434	391	362	500	431	389	361	425	387	360	419	384	359	414	381	376

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	23.6 fc	5.7 ft
6.5 ft	16.9 fc	6.7 ft
7.5 ft	12.7 fc	7.7 ft
8.0 ft	11.1 fc	8.2 ft
10.0 ft	7.1 fc	10.3 ft
12.0 ft	5.0 fc	12.4 ft
14.0 ft	3.6 fc	14.4 ft
16.0 ft	2.8 fc	16.5 ft
20.0 ft	1.8 fc	20.6 ft
24.0 ft	1.2 fc	24.7 ft
28.0 ft	0.9 fc	28.8 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	299,794	299,794	299,794
<b>45.00°</b>	48,120	49,373	50,771
<b>55.00°</b>	24,911	26,981	26,948
<b>65.00°</b>	10,894	10,990	10,769
<b>75.00°</b>	6,279	6,563	5,464
<b>85.00°</b>	3,763	3,330	3,367

### 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>	18.1	19.2	18.5	19.5	19.8	18.0	19.1	18.4	19.4	19.7
	<b>3H</b>	18.4	19.4	18.8	19.7	20.1	18.3	19.3	18.7	19.6	20.0
	<b>4H</b>	18.5	19.4	18.9	19.7	20.1	18.4	19.3	18.8	19.7	20.0
	<b>6H</b>	18.5	19.3	18.9	19.7	20.1	18.4	19.2	18.8	19.6	20.0
	<b>8H</b>	18.5	19.3	18.9	19.7	20.1	18.4	19.1	18.8	19.5	19.9
	<b>12H</b>	18.5	19.2	18.9	19.6	20.0	18.3	19.1	18.8	19.5	19.9
<b>4H</b>	<b>2H</b>	18.1	19.0	18.5	19.4	19.8	18.1	19.0	18.5	19.3	19.7
	<b>3H</b>	18.6	19.3	19.0	19.7	20.1	18.5	19.2	18.9	19.6	20.0
	<b>4H</b>	18.7	19.3	19.1	19.7	20.2	18.6	19.3	19.1	19.7	20.1
	<b>6H</b>	18.7	19.3	19.2	19.7	20.2	18.7	19.2	19.1	19.7	20.1
	<b>8H</b>	18.7	19.2	19.2	19.7	20.2	18.6	19.2	19.1	19.6	20.1
	<b>12H</b>	18.7	19.2	19.2	19.6	20.1	18.6	19.1	19.1	19.6	20.0
<b>8H</b>	<b>4H</b>	18.6	19.1	19.1	19.6	20.0	18.6	19.1	19.1	19.6	20.0
	<b>6H</b>	18.7	19.1	19.2	19.6	20.1	18.7	19.1	19.2	19.6	20.1
	<b>8H</b>	18.7	19.1	19.3	19.6	20.1	18.7	19.0	19.2	19.6	20.1
	<b>12H</b>	18.8	19.1	19.3	19.6	20.2	18.7	19.0	19.2	19.5	20.1
<b>12H</b>	<b>4H</b>	18.6	19.0	19.1	19.5	20.0	18.5	19.0	19.0	19.5	20.0
	<b>6H</b>	18.7	19.0	19.2	19.5	20.0	18.6	19.0	19.2	19.5	20.0
	<b>8H</b>	18.7	19.0	19.2	19.5	20.1	18.7	19.0	19.2	19.5	20.1

Corrected UGR values based on total output lumens

SHR = 1.0