

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

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

### **Test Number**

SP-00765\_1\_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	777
Efficacy	76.21 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	0.9

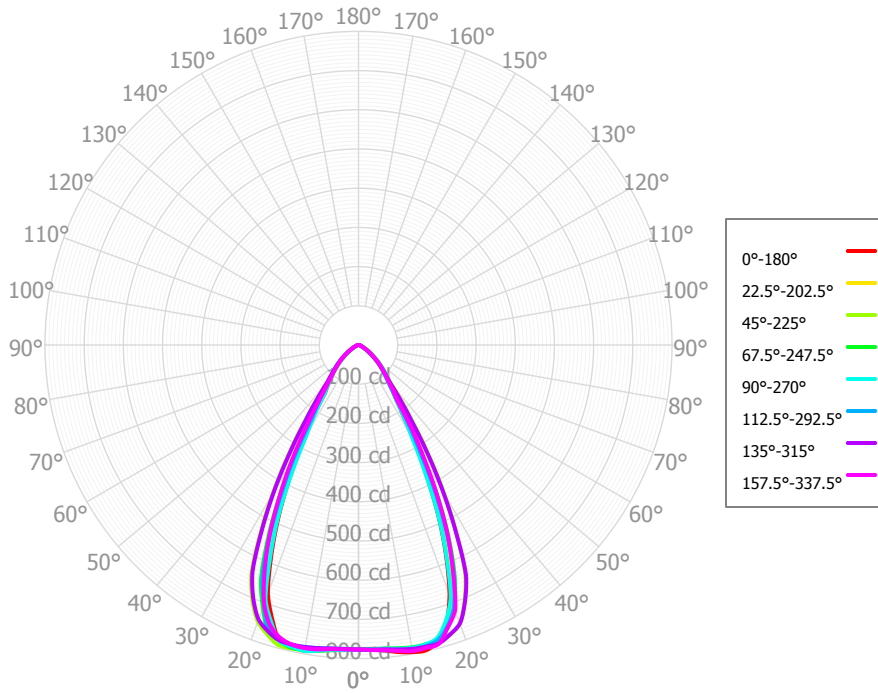
#### Full Beam Angle

0° - 180°	54°
90° - 270°	54°

### IES File Header Contents

Keyword	Value
TEST	SP-00765_1_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 DLWFGN MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 54 degrees
OTHER	Wide Flood optic, Open aperture / no lens
OTHER	Aluminum bezel
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°	75.93	9.77%	90.00° - 100.00°	0.05	0.01%
10.00° - 20.00°	216.88	27.90%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	244.42	31.44%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	124.86	16.06%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	65.26	8.39%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	32.45	4.17%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	11.92	1.53%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.37	0.56%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.22	0.16%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	777.32	99.99%	0.00° - 180.00°	777.37	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°	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22	777.22
2.50°	778.73	777.46	778.20	776.51	777.64	776.27	776.85	777.57	778.17	777.51	779.59	778.18	779.34	778.75	777.92	779.25	778.73
5.00°	782.62	780.43	777.98	778.10	777.61	777.71	777.50	778.98	780.45	780.82	780.72	781.76	780.54	781.89	779.56	781.85	782.62
7.50°	790.33	784.75	781.52	780.28	781.54	780.27	780.34	783.39	785.74	786.37	786.16	786.42	786.72	785.44	783.54	787.22	790.33
10.00°	795.67	789.93	784.93	783.23	784.58	782.44	782.82	785.64	792.17	789.20	791.28	789.26	792.69	789.49	787.35	793.16	795.67
12.50°	797.76	789.90	787.20	783.09	783.04	784.43	782.84	783.26	787.95	789.67	793.14	791.35	788.53	787.89	788.76	792.05	797.76
15.00°	781.87	787.20	787.37	779.62	774.49	774.79	780.43	773.31	780.50	778.32	792.18	780.87	781.54	780.24	788.45	789.96	781.87
17.50°	745.84	753.64	775.55	756.29	739.86	761.39	766.35	750.02	732.83	758.61	774.09	766.45	741.39	754.14	775.15	756.56	745.84
20.00°	679.45	707.10	756.37	715.25	688.19	705.90	745.56	704.21	676.24	703.72	751.11	713.34	693.25	711.96	756.46	720.74	679.45
22.50°	585.28	625.54	707.69	642.15	588.60	640.29	701.41	626.34	581.73	628.11	706.48	651.06	591.22	636.21	709.74	631.96	585.28
25.00°	483.88	532.60	645.02	545.75	484.67	536.40	640.56	537.59	481.51	534.36	647.45	547.83	486.72	536.32	649.52	541.33	483.88
27.50°	376.92	432.43	539.68	439.73	370.90	425.74	535.44	436.23	377.46	432.08	541.56	437.70	370.31	428.04	539.04	437.27	376.92
30.00°	287.86	330.51	435.23	327.97	274.78	322.67	430.54	338.89	273.05	333.84	436.06	331.79	265.79	314.80	430.33	334.67	287.86
32.50°	209.94	251.09	332.92	246.65	210.50	220.44	326.14	245.48	210.13	237.11	331.52	226.32	202.58	233.56	326.55	250.58	209.94
35.00°	166.05	175.66	243.26	180.10	163.04	176.91	236.22	180.49	149.35	179.30	239.43	176.16	150.75	167.42	235.26	172.83	166.05
37.50°	139.15	145.21	177.65	144.14	140.06	136.39	171.17	138.06	128.26	132.81	172.68	128.72	129.05	133.00	172.29	143.14	139.15
40.00°	119.75	119.78	128.87	119.86	120.71	118.15	123.67	111.32	107.66	110.39	122.42	110.86	109.76	110.52	123.99	115.79	119.75
42.50°	103.39	103.46	106.20	102.52	105.78	100.24	100.89	94.68	95.15	93.07	99.05	93.22	95.65	95.09	102.17	100.14	103.39
45.00°	88.47	87.61	87.57	87.25	90.66	86.85	82.69	80.60	82.46	79.47	79.91	79.62	81.28	81.72	83.39	85.12	88.47
47.50°	73.99	73.94	74.10	73.68	75.35	73.41	69.78	67.89	68.28	66.41	66.33	66.26	66.47	68.17	69.04	72.33	73.99
50.00°	59.43	60.35	60.76	60.48	61.25	59.53	57.86	56.28	54.52	54.26	54.26	55.13	53.26	54.60	56.02	59.67	59.43
52.50°	44.84	48.42	47.56	48.24	48.13	46.22	46.85	45.14	43.03	42.19	43.87	44.11	42.30	43.90	44.62	47.38	44.84
55.00°	35.87	36.90	36.70	36.14	37.36	36.45	36.79	36.20	32.60	32.90	34.52	33.80	32.83	33.63	34.88	36.28	35.87
57.50°	27.84	29.34	27.87	28.10	28.18	27.32	27.47	27.98	26.35	23.76	26.11	24.38	25.08	26.15	26.76	27.78	27.84
60.00°	21.79	22.11	21.02	20.43	21.45	20.92	20.41	21.98	20.34	18.78	19.64	18.61	18.97	18.92	20.19	20.35	21.79
62.50°	15.93	16.97	15.59	15.82	16.06	15.19	14.81	16.54	15.08	13.93	14.60	13.50	14.40	14.11	14.86	14.79	15.93
65.00°	12.29	12.33	11.68	11.38	12.54	11.56	11.04	12.25	10.87	10.91	10.64	10.48	11.03	9.48	11.24	10.45	12.29
67.50°	8.87	9.69	8.65	8.78	9.83	8.41	8.18	8.16	8.93	8.19	7.31	7.97	8.55	8.51	8.77	7.82	8.87
70.00°	7.56	7.42	6.78	6.45	7.87	6.20	6.00	6.64	6.98	6.93	5.67	6.40	6.59	7.40	6.42	5.97	7.56
72.50°	6.11	5.82	5.31	5.26	6.14	4.72	4.09	5.22	5.01	5.60	4.55	5.13	4.90	5.64	4.13	4.72	6.11
75.00°	4.38	4.49	4.16	4.21	4.97	3.73	2.87	3.87	4.19	4.20	3.78	4.06	4.22	4.07	3.55	3.56	4.38
77.50°	3.35	3.36	3.10	3.26	3.61	2.94	2.32	2.85	3.32	3.08	3.06	3.03	2.99	2.72	2.77	2.60	3.35
80.00°	2.51	2.53	2.20	2.18	2.13	2.20	2.05	2.12	1.99	2.12	2.25	2.09	1.69	2.34	1.78	1.96	2.51
82.50°	1.61	1.57	1.79	1.62	1.04	1.41	1.49	1.63	1.08	1.50	1.23	1.32	1.12	1.56	1.29	1.40	1.61
85.00°	0.89	1.22	1.22	1.09	0.76	0.84	0.99	0.96	0.80	1.10	0.93	0.89	0.79	1.12	1.28	0.90	0.89
87.50°	1.00	0.84	0.80	1.02	0.80	0.79	0.78	0.76	0.83	0.92	0.91	0.85	0.94	0.62	0.75	0.74	1.00
90.00°	0.57	0.69	0.77	0.74	0.77	0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.63	0.74	0.25	0.57
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>	925	925	925	925	904	904	904	904	864	864	864	827	827	827	793	793	777
	<b>1</b>	879	856	836	817	860	839	821	804	808	793	779	779	767	756	752	743	728
	<b>2</b>	832	792	758	730	815	778	748	722	753	728	706	729	709	691	708	691	678
	<b>3</b>	787	734	693	661	771	723	686	655	703	671	645	684	657	634	666	644	631
	<b>4</b>	745	683	638	603	731	674	632	599	657	621	592	641	610	585	627	600	589
	<b>5</b>	706	637	590	554	693	630	585	552	616	577	547	602	569	542	590	561	550
	<b>6</b>	669	596	548	513	657	590	544	511	578	538	507	567	531	504	557	525	516
	<b>7</b>	635	560	511	477	624	554	508	475	544	503	473	535	498	470	526	493	485
	<b>8</b>	603	527	478	445	594	522	476	444	513	472	442	505	468	440	498	464	456
	<b>9</b>	574	497	449	417	565	493	447	416	485	444	415	478	440	413	472	437	430
	<b>10</b>	547	469	423	392	539	466	422	391	460	419	390	454	416	389	448	413	407

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	25.7 fc	5.6 ft
6.5 ft	18.4 fc	6.6 ft
7.5 ft	13.8 fc	7.6 ft
8.0 ft	12.1 fc	8.1 ft
10.0 ft	7.8 fc	10.2 ft
12.0 ft	5.4 fc	12.2 ft
14.0 ft	4.0 fc	14.2 ft
16.0 ft	3.0 fc	16.3 ft
20.0 ft	1.9 fc	20.3 ft
24.0 ft	1.3 fc	24.4 ft
28.0 ft	1.0 fc	28.5 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	326,795	326,795	326,795
<b>45.00°</b>	52,604	52,070	53,910
<b>55.00°</b>	26,294	26,906	27,387
<b>65.00°</b>	12,229	11,622	12,479
<b>75.00°</b>	7,113	6,760	8,069
<b>85.00°</b>	4,315	5,871	3,644

### 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>	18.3	19.4	18.7	19.7	20.0	17.7	18.8	18.1	19.1	19.4
	<b>3H</b>	18.7	19.6	19.0	19.9	20.3	18.1	19.1	18.5	19.4	19.8
	<b>4H</b>	18.8	19.6	19.2	20.0	20.4	18.2	19.1	18.6	19.5	19.9
	<b>6H</b>	18.8	19.6	19.2	20.0	20.4	18.3	19.1	18.7	19.5	19.8
	<b>8H</b>	18.8	19.5	19.2	19.9	20.3	18.2	19.0	18.7	19.4	19.8
	<b>12H</b>	18.8	19.5	19.2	19.9	20.3	18.2	18.9	18.6	19.3	19.8
<b>4H</b>	<b>2H</b>	18.3	19.2	18.7	19.6	20.0	17.7	18.6	18.1	19.0	19.4
	<b>3H</b>	18.8	19.5	19.2	19.9	20.3	18.2	18.9	18.6	19.4	19.8
	<b>4H</b>	18.9	19.5	19.3	20.0	20.4	18.4	19.0	18.8	19.5	19.9
	<b>6H</b>	19.0	19.6	19.5	20.0	20.5	18.5	19.0	19.0	19.5	20.0
	<b>8H</b>	19.0	19.5	19.5	20.0	20.4	18.5	19.0	18.9	19.4	19.9
	<b>12H</b>	19.0	19.4	19.5	19.9	20.4	18.5	18.9	18.9	19.4	19.9
<b>8H</b>	<b>4H</b>	18.8	19.4	19.3	19.8	20.3	18.3	18.8	18.8	19.3	19.8
	<b>6H</b>	19.0	19.4	19.5	19.9	20.4	18.5	18.9	19.0	19.4	19.9
	<b>8H</b>	19.0	19.4	19.5	19.9	20.4	18.5	18.9	19.0	19.4	19.9
	<b>12H</b>	19.0	19.4	19.6	19.9	20.4	18.5	18.8	19.0	19.3	19.9
<b>12H</b>	<b>4H</b>	18.8	19.2	19.3	19.7	20.2	18.3	18.7	18.8	19.2	19.7
	<b>6H</b>	18.9	19.3	19.5	19.8	20.3	18.4	18.8	19.0	19.3	19.8
	<b>8H</b>	19.0	19.3	19.5	19.8	20.4	18.5	18.8	19.0	19.3	19.9

Corrected UGR values based on total output lumens

SHR = 1.0