

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

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

### **Test Number**

SP-00762\_1\_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	733
Efficacy	60.05 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

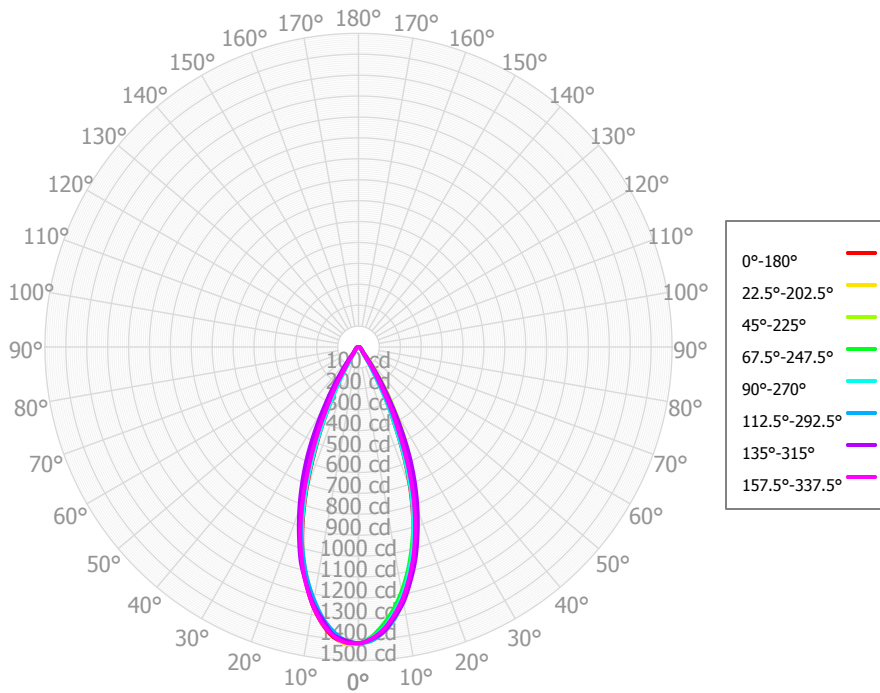
#### Full Beam Angle

0° - 180°	41°
90° - 270°	41°

### IES File Header Contents

Keyword	Value
TEST	SP-00762_1_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 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°	127.48	17.40%	90.00° - 100.00°	0.07	0.01%
10.00° - 20.00°	279.82	38.19%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	215.72	29.44%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	59.87	8.17%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.06	2.60%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	12.98	1.77%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	10.12	1.38%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	6.01	0.82%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.51	0.21%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	732.57	99.99%	0.00° - 180.00°	732.64	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°	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30	1,417.30
2.50°	1,395.30	1,397.71	1,391.74	1,388.98	1,393.68	1,408.63	1,405.44	1,415.44	1,417.04	1,422.45	1,408.06	1,407.54	1,404.61	1,407.09	1,398.97	1,397.48	1,395.30
5.00°	1,354.02	1,344.28	1,344.80	1,335.35	1,351.63	1,366.93	1,381.91	1,386.98	1,391.89	1,381.13	1,376.69	1,371.86	1,373.67	1,369.76	1,368.27	1,357.25	1,354.02
7.50°	1,288.37	1,283.49	1,276.40	1,269.49	1,285.56	1,308.30	1,316.09	1,332.35	1,335.26	1,331.91	1,312.23	1,318.91	1,316.49	1,313.78	1,306.70	1,295.72	1,288.37
10.00°	1,211.63	1,199.40	1,199.67	1,187.66	1,207.11	1,226.56	1,248.38	1,256.06	1,257.46	1,239.98	1,233.90	1,238.06	1,240.20	1,232.90	1,239.67	1,220.37	1,211.63
12.50°	1,112.34	1,108.03	1,110.53	1,093.67	1,108.07	1,135.77	1,158.12	1,161.36	1,154.79	1,143.64	1,136.94	1,146.00	1,143.80	1,139.23	1,148.02	1,126.12	1,112.34
15.00°	1,005.05	998.33	1,017.70	986.57	1,000.67	1,026.89	1,065.90	1,050.40	1,032.32	1,025.10	1,031.98	1,034.91	1,029.22	1,031.71	1,051.69	1,021.89	1,005.05
17.50°	869.91	880.08	906.85	873.78	871.83	912.62	946.90	928.25	890.65	905.24	918.02	917.85	898.83	909.73	939.27	900.53	869.91
20.00°	727.19	744.93	792.01	755.99	736.17	776.36	827.47	781.92	730.81	749.89	799.33	771.17	743.45	774.62	824.77	771.90	727.19
22.50°	570.96	606.92	679.41	622.51	576.45	635.10	704.66	621.99	556.44	595.03	676.33	617.66	570.19	623.70	704.87	628.19	570.96
25.00°	412.05	464.36	567.16	477.53	410.96	486.75	580.09	474.00	402.87	448.81	544.61	463.65	408.98	461.09	578.71	479.54	412.05
27.50°	286.23	336.07	450.19	345.62	278.03	337.31	446.54	331.43	262.79	307.24	406.42	309.55	254.73	319.69	439.77	350.34	286.23
30.00°	164.70	226.54	332.80	221.42	150.49	225.41	320.37	223.20	163.78	205.34	290.45	201.82	155.27	190.92	313.11	226.07	164.70
32.50°	104.71	140.50	238.86	135.99	94.20	116.91	221.10	127.10	86.44	112.98	188.23	98.79	81.35	113.55	207.14	143.30	104.71
35.00°	49.13	79.60	146.32	68.81	45.31	77.02	134.06	79.09	52.44	72.08	118.98	68.12	51.06	61.41	123.57	67.92	49.13
37.50°	38.09	44.89	93.98	42.33	36.08	40.26	81.90	44.11	36.82	38.26	66.01	40.65	36.93	40.16	70.42	46.17	38.09
40.00°	28.13	33.01	44.41	31.37	28.79	33.50	42.74	34.24	30.52	32.61	42.89	34.18	29.93	30.78	38.21	30.37	28.13
42.50°	25.01	26.10	34.31	27.00	25.30	26.97	32.41	29.34	27.27	27.77	31.32	27.90	24.91	26.15	29.11	26.03	25.01
45.00°	21.94	22.83	25.03	24.55	21.89	23.87	24.67	25.96	24.65	25.37	25.83	24.85	22.75	22.91	23.10	22.35	21.94
47.50°	19.51	20.53	22.17	21.62	20.10	20.93	21.50	22.78	22.19	22.87	22.21	21.85	21.17	20.37	19.94	19.76	19.51
50.00°	17.17	18.80	19.22	18.59	18.30	19.26	18.68	19.66	19.65	20.13	18.70	19.33	19.05	17.99	17.37	17.15	17.17
52.50°	15.42	16.62	15.87	16.03	16.29	17.45	16.39	16.54	17.10	17.68	15.22	16.97	16.85	16.29	15.25	14.10	15.42
55.00°	13.60	14.24	12.99	13.53	14.29	14.92	14.35	14.86	14.83	15.79	14.01	15.53	15.36	14.68	13.65	11.29	13.60
57.50°	11.41	12.49	11.84	12.45	12.33	12.70	12.60	13.23	12.60	14.04	13.15	14.10	13.91	12.67	12.39	10.92	11.41
60.00°	9.72	10.97	11.04	11.49	10.72	11.66	11.64	12.29	11.13	12.51	12.59	12.68	12.14	10.62	10.98	10.49	9.72
62.50°	9.70	10.37	11.19	10.97	10.55	10.77	11.43	11.44	9.72	11.48	12.07	11.39	10.43	9.90	9.49	9.62	9.70
65.00°	9.61	10.03	11.09	10.45	10.32	10.31	10.83	11.52	10.11	11.09	10.93	10.48	10.54	9.23	8.99	8.92	9.61
67.50°	9.30	9.84	10.41	9.84	9.93	9.91	9.93	11.19	10.29	10.53	9.73	9.28	10.38	8.71	8.88	8.85	9.30
70.00°	8.47	9.68	9.68	9.14	8.92	9.64	8.97	9.16	9.15	9.82	8.24	7.56	8.88	8.08	7.67	8.22	8.47
72.50°	6.84	8.11	8.87	8.04	6.88	7.91	7.94	7.04	7.28	7.72	6.66	6.07	7.23	7.00	6.29	6.51	6.84
75.00°	5.87	6.63	7.70	6.56	5.36	5.28	6.21	4.80	4.49	5.36	4.96	4.66	5.40	5.56	5.70	5.71	5.87
77.50°	5.05	5.34	6.35	4.68	4.13	3.97	4.37	3.07	3.10	3.12	3.06	2.85	3.50	3.83	4.46	5.08	5.05
80.00°	3.46	3.55	4.95	3.53	3.11	2.60	2.72	2.11	2.11	1.60	1.93	2.00	2.19	2.21	2.84	3.10	3.46
82.50°	2.43	2.29	3.10	2.25	1.96	1.70	1.88	1.49	1.36	1.06	1.25	1.31	1.24	1.57	2.14	1.99	2.43
85.00°	1.34	1.63	1.66	1.17	1.02	1.35	1.44	0.88	0.96	0.95	1.02	0.90	0.99	1.17	1.39	1.37	1.34
87.50°	0.92	1.18	0.88	0.93	0.91	0.94	0.91	0.88	0.77	1.09	0.85	0.92	0.82	0.92	1.01	0.77	0.92
90.00°	0.96	0.85	0.82	1.14	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	1.06	1.12	0.96
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>	872	872	872	872	852	852	852	852	814	814	814	779	779	779	748	748	733
	<b>1</b>	834	814	797	781	816	799	783	769	769	757	745	742	732	723	717	709	695
	<b>2</b>	797	763	736	713	781	751	726	705	727	707	689	706	689	675	686	672	659
	<b>3</b>	762	718	685	658	748	708	678	653	690	664	643	672	651	633	656	638	626
	<b>4</b>	729	679	642	614	716	671	637	610	655	626	603	641	616	596	628	607	596
	<b>5</b>	698	643	605	576	687	637	601	574	624	593	569	612	585	564	601	578	568
	<b>6</b>	670	611	572	544	660	606	569	542	595	563	539	585	557	535	576	551	542
	<b>7</b>	643	582	543	516	634	578	541	514	569	536	512	560	531	509	553	526	518
	<b>8</b>	618	556	517	490	609	552	515	489	544	511	487	537	507	485	531	504	496
	<b>9</b>	594	531	493	467	587	528	492	467	522	488	465	516	485	464	510	482	475
	<b>10</b>	572	509	472	447	565	506	470	446	501	468	445	495	465	444	490	463	456

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	46.9 fc	4.1 ft
6.5 ft	33.5 fc	4.8 ft
7.5 ft	25.2 fc	5.6 ft
8.0 ft	22.1 fc	5.9 ft
10.0 ft	14.2 fc	7.4 ft
12.0 ft	9.8 fc	8.9 ft
14.0 ft	7.2 fc	10.4 ft
16.0 ft	5.5 fc	11.9 ft
20.0 ft	3.5 fc	14.8 ft
24.0 ft	2.5 fc	17.8 ft
28.0 ft	1.8 fc	20.7 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	595,924	595,924	595,924
<b>45.00°</b>	13,044	14,886	13,015
<b>55.00°</b>	9,967	9,520	10,479
<b>65.00°</b>	9,556	11,032	10,268
<b>75.00°</b>	9,537	12,511	8,706
<b>85.00°</b>	6,472	8,029	4,912

### 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>	12.6	13.5	12.9	13.8	14.2	13.5	14.5	13.9	14.8	15.1
	<b>3H</b>	15.0	15.9	15.4	16.2	16.6	15.6	16.5	16.0	16.8	17.2
	<b>4H</b>	15.9	16.7	16.3	17.0	17.4	16.2	17.0	16.6	17.4	17.8
	<b>6H</b>	16.5	17.2	16.9	17.6	18.0	16.5	17.2	16.9	17.6	18.0
	<b>8H</b>	16.6	17.3	17.1	17.7	18.1	16.5	17.2	17.0	17.6	18.0
	<b>12H</b>	16.7	17.4	17.1	17.8	18.2	16.5	17.2	17.0	17.6	18.0
<b>4H</b>	<b>2H</b>	13.3	14.1	13.7	14.5	14.9	14.2	15.0	14.6	15.3	15.7
	<b>3H</b>	16.0	16.7	16.4	17.1	17.5	16.4	17.1	16.9	17.5	17.9
	<b>4H</b>	16.9	17.5	17.4	18.0	18.4	17.1	17.6	17.5	18.1	18.5
	<b>6H</b>	17.6	18.1	18.1	18.6	19.1	17.4	17.9	17.9	18.3	18.8
	<b>8H</b>	17.8	18.3	18.3	18.7	19.2	17.4	17.9	17.9	18.4	18.8
	<b>12H</b>	17.9	18.3	18.4	18.8	19.3	17.5	17.9	18.0	18.4	18.8
<b>8H</b>	<b>4H</b>	17.3	17.8	17.8	18.2	18.7	17.2	17.7	17.7	18.2	18.6
	<b>6H</b>	18.1	18.5	18.6	19.0	19.5	17.6	18.0	18.1	18.5	19.0
	<b>8H</b>	18.3	18.7	18.9	19.2	19.7	17.7	18.0	18.3	18.6	19.1
	<b>12H</b>	18.5	18.8	19.0	19.3	19.9	17.8	18.1	18.3	18.6	19.2
<b>12H</b>	<b>4H</b>	17.3	17.7	17.8	18.2	18.7	17.2	17.6	17.7	18.1	18.6
	<b>6H</b>	18.2	18.5	18.7	19.0	19.5	17.6	17.9	18.1	18.4	18.9
	<b>8H</b>	18.4	18.7	19.0	19.2	19.8	17.7	18.0	18.3	18.5	19.1

Corrected UGR values based on total output lumens

SHR = 1.0