

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

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

### **Test Number**

SP-00780\_1\_M-015

### **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	740
Efficacy	72.51 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.39
Two luminaires, plane 90°	0.41
Four luminaires	0.43

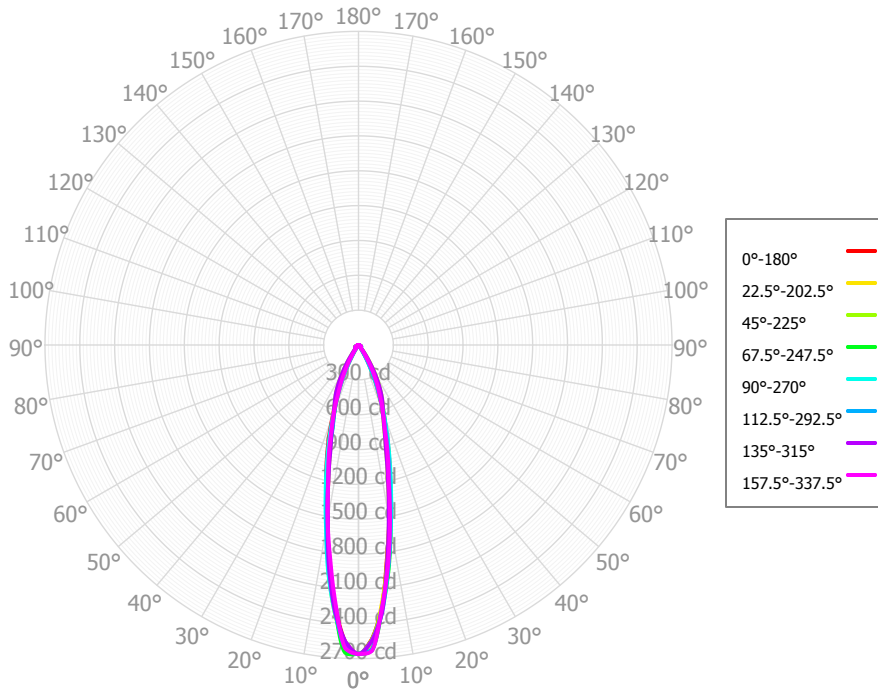
#### Full Beam Angle

0° - 180°	24°
90° - 270°	24°

### IES File Header Contents

Keyword	Value
TEST	SP-00780_1_M-015
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 DLSPGN MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 24 degrees
OTHER	Spot 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°	195.71	26.46%	90.00° - 100.00°	0.07	0.01%
10.00° - 20.00°	272.50	36.84%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	173.10	23.40%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	46.63	6.30%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	8.71	1.18%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	18.93	2.56%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	16.83	2.28%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	5.09	0.69%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.07	0.28%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	739.58	99.99%	0.00° - 180.00°	739.65	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°	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04	2,660.04
2.50°	2,544.58	2,608.01	2,550.42	2,632.19	2,556.64	2,610.44	2,559.90	2,614.44	2,563.65	2,625.52	2,588.58	2,651.44	2,578.78	2,624.99	2,555.75	2,636.86	2,544.58
5.00°	2,285.46	2,259.43	2,286.05	2,301.41	2,316.00	2,298.07	2,307.04	2,248.67	2,282.13	2,282.65	2,322.69	2,294.00	2,317.42	2,291.12	2,317.32	2,286.14	2,285.46
7.50°	1,868.00	1,909.62	1,884.27	1,967.83	1,938.34	1,940.91	1,938.15	1,863.40	1,939.27	1,898.78	1,968.10	1,936.59	1,986.01	1,949.87	1,890.61	1,932.66	1,868.00
10.00°	1,525.84	1,554.18	1,510.58	1,592.94	1,597.63	1,576.73	1,517.76	1,532.15	1,556.99	1,548.81	1,541.94	1,579.96	1,606.35	1,579.91	1,502.23	1,558.63	1,525.84
12.50°	1,262.57	1,223.95	1,160.46	1,231.57	1,293.14	1,211.70	1,205.12	1,203.11	1,280.02	1,201.87	1,208.09	1,230.65	1,304.48	1,239.14	1,170.24	1,205.07	1,262.57
15.00°	1,023.44	988.98	907.81	1,000.90	1,037.29	967.81	933.12	988.50	1,062.57	977.87	940.15	983.36	1,049.87	991.62	907.60	969.23	1,023.44
17.50°	806.43	774.26	726.52	782.12	823.09	734.10	761.15	776.26	851.00	760.13	756.84	746.24	827.74	770.78	735.16	751.73	806.43
20.00°	621.84	622.66	612.09	644.79	636.19	607.58	621.44	617.08	642.29	614.55	626.07	603.76	622.67	622.60	610.57	616.80	621.84
22.50°	463.58	483.65	540.88	510.59	469.98	486.00	533.83	461.69	475.91	470.93	531.65	465.60	461.46	483.40	540.35	488.78	463.58
25.00°	333.24	378.20	459.25	393.08	329.59	379.70	460.10	352.12	327.45	365.87	457.06	356.22	320.36	364.94	457.97	385.98	333.24
27.50°	222.66	277.33	371.78	279.34	206.25	273.89	367.78	245.38	218.47	261.78	367.28	249.97	209.39	253.96	363.35	286.45	222.66
30.00°	138.54	186.83	279.50	181.55	122.53	181.65	271.38	162.44	123.65	176.64	270.38	160.10	110.19	158.01	269.42	196.98	138.54
32.50°	70.94	110.40	184.86	96.19	61.86	92.25	187.92	86.42	75.15	95.32	186.36	81.46	64.00	83.55	176.11	117.97	70.94
35.00°	38.70	61.73	115.26	54.62	34.66	57.27	106.68	52.90	40.52	58.68	107.59	49.41	35.54	46.37	105.33	66.02	38.70
37.50°	25.57	27.05	56.16	22.10	24.26	24.64	65.20	24.06	27.51	25.53	64.47	23.57	24.82	21.44	51.88	27.05	25.57
40.00°	17.24	16.16	29.18	16.11	17.41	17.78	28.96	18.10	19.91	19.93	33.60	18.75	19.02	14.93	23.90	17.09	17.24
42.50°	11.17	9.36	13.61	11.23	12.08	11.45	18.37	12.84	14.93	14.66	19.96	14.29	14.57	10.47	13.23	9.86	11.17
45.00°	7.75	8.57	9.06	9.13	8.77	9.17	10.10	10.32	10.46	11.26	11.26	10.85	10.44	8.73	8.27	7.86	7.75
47.50°	5.40	8.33	7.84	8.23	6.21	7.77	9.78	8.99	8.97	8.74	9.60	8.85	8.40	8.22	6.69	6.93	5.40
50.00°	7.16	8.78	10.97	9.90	9.23	11.45	9.87	11.58	7.96	10.26	9.62	10.35	6.76	9.13	8.46	7.82	7.16
52.50°	10.34	12.80	15.17	13.64	13.97	16.18	19.28	16.28	15.20	13.79	17.45	14.56	12.52	13.23	11.95	11.20	10.34
55.00°	17.49	20.89	20.79	21.18	20.74	25.69	28.78	26.76	23.40	25.05	26.75	24.46	19.29	20.63	18.46	18.21	17.49
57.50°	25.79	24.77	26.70	25.54	28.04	32.58	30.66	33.31	29.05	33.08	29.66	30.41	24.34	25.02	26.31	23.22	25.79
60.00°	25.61	24.40	23.93	24.74	27.27	29.62	32.13	30.75	34.50	30.87	31.64	29.17	29.22	26.71	25.03	25.67	25.61
62.50°	23.45	20.86	19.80	21.32	24.81	25.27	24.63	25.94	28.23	26.58	24.42	24.91	25.34	23.93	20.26	23.52	23.45
65.00°	18.35	14.53	14.53	14.20	18.03	16.64	17.16	16.61	21.47	16.72	16.23	15.85	20.92	17.60	14.84	16.15	18.35
67.50°	12.68	9.91	9.13	9.17	10.53	9.64	10.00	9.50	13.95	9.22	10.00	9.34	13.58	11.68	9.21	10.46	12.68
70.00°	9.39	6.49	5.75	6.45	8.16	5.88	4.54	5.47	7.43	5.95	4.53	5.68	7.53	6.01	5.46	6.26	9.39
72.50°	6.80	5.36	3.19	5.01	6.34	4.03	3.29	4.08	4.75	4.15	2.76	4.28	6.77	4.73	2.44	5.09	6.80
75.00°	6.75	5.10	3.41	4.30	5.50	3.57	3.26	4.02	3.89	3.35	2.14	3.89	6.37	4.60	3.29	5.24	6.75
77.50°	8.56	5.97	4.44	5.26	5.93	3.64	3.62	3.74	4.39	3.04	2.54	3.97	6.21	4.66	4.13	6.31	8.56
80.00°	9.77	6.30	4.79	4.75	6.03	3.98	3.01	3.48	5.06	2.72	3.00	4.18	5.86	4.71	4.57	6.50	9.77
82.50°	4.24	4.37	2.00	3.17	1.69	3.15	1.92	2.26	2.24	1.98	1.84	2.62	1.83	3.40	2.77	4.62	4.24
85.00°	0.77	1.43	1.29	1.58	0.68	1.48	1.09	1.07	1.14	0.97	1.25	0.88	1.25	1.25	1.72	1.56	0.77
87.50°	0.72	0.83	1.00	0.80	0.80	1.00	0.91	1.30	0.96	1.09	1.04	0.82	0.84	0.95	1.11	1.14	0.72
90.00°	1.09	1.13	0.95	0.69	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.95	1.10	1.09
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.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%	
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	881	881	881	881	860	860	860	860	822	822	822	787	787	787	755	755	755	740
	1	843	825	808	792	825	809	794	780	779	767	756	751	742	733	726	719	712	705
	2	808	776	749	726	792	763	739	718	739	720	703	718	702	688	698	685	674	672
	3	775	733	701	675	761	723	694	670	704	680	659	687	666	649	671	654	639	641
	4	745	696	661	634	732	688	656	631	673	645	623	659	635	616	646	626	609	614
	5	716	664	627	600	705	657	623	598	645	615	592	633	607	587	622	600	582	590
	6	690	635	598	571	680	629	595	569	619	588	566	609	582	562	600	577	558	567
	7	666	609	572	546	657	604	569	544	596	564	542	587	560	539	580	555	536	546
	8	643	585	549	523	635	581	547	522	574	543	520	567	539	518	561	535	516	527
	9	622	564	528	503	615	560	526	503	554	523	501	548	520	500	543	517	498	509
	10	602	544	509	485	596	541	507	485	536	505	483	530	502	482	526	500	481	493

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	87.9 fc	2.3 ft
6.5 ft	63.0 fc	2.8 ft
7.5 ft	47.3 fc	3.2 ft
8.0 ft	41.6 fc	3.4 ft
10.0 ft	26.6 fc	4.3 ft
12.0 ft	18.5 fc	5.1 ft
14.0 ft	13.6 fc	6.0 ft
16.0 ft	10.4 fc	6.8 ft
20.0 ft	6.7 fc	8.5 ft
24.0 ft	4.6 fc	10.2 ft
28.0 ft	3.4 fc	11.9 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	1,118,456	1,118,456	1,118,456
<b>45.00°</b>	4,610	5,389	5,215
<b>55.00°</b>	12,824	15,240	15,204
<b>65.00°</b>	18,252	14,459	17,940
<b>75.00°</b>	10,965	5,538	8,942
<b>85.00°</b>	3,730	6,242	3,262

### 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>	17.7	18.7	18.0	19.0	19.3	19.2	20.2	19.6	20.5	20.8
	<b>3H</b>	18.4	19.3	18.8	19.6	20.0	19.6	20.4	19.9	20.8	21.1
	<b>4H</b>	18.7	19.5	19.1	19.9	20.2	19.7	20.5	20.1	20.8	21.2
	<b>6H</b>	19.7	20.4	20.1	20.8	21.2	19.9	20.7	20.4	21.1	21.5
	<b>8H</b>	20.0	20.7	20.4	21.1	21.5	20.0	20.7	20.4	21.1	21.5
	<b>12H</b>	20.0	20.7	20.4	21.0	21.5	20.0	20.6	20.4	21.0	21.4
<b>4H</b>	<b>2H</b>	18.0	18.8	18.4	19.1	19.5	19.4	20.2	19.8	20.6	21.0
	<b>3H</b>	18.7	19.4	19.1	19.8	20.2	19.7	20.4	20.2	20.8	21.2
	<b>4H</b>	19.0	19.6	19.5	20.0	20.5	19.9	20.5	20.3	20.9	21.3
	<b>6H</b>	20.3	20.8	20.8	21.2	21.7	20.3	20.8	20.7	21.2	21.7
	<b>8H</b>	20.7	21.1	21.2	21.6	22.1	20.3	20.8	20.8	21.3	21.7
	<b>12H</b>	20.7	21.1	21.2	21.6	22.1	20.3	20.7	20.8	21.2	21.7
<b>8H</b>	<b>4H</b>	19.0	19.5	19.5	19.9	20.4	19.8	20.2	20.2	20.7	21.1
	<b>6H</b>	20.5	20.8	21.0	21.3	21.8	20.2	20.6	20.8	21.1	21.6
	<b>8H</b>	21.0	21.3	21.5	21.8	22.3	20.4	20.7	20.9	21.2	21.7
	<b>12H</b>	21.1	21.4	21.6	21.9	22.5	20.4	20.7	21.0	21.2	21.8
<b>12H</b>	<b>4H</b>	19.0	19.4	19.5	19.9	20.4	19.7	20.1	20.2	20.6	21.1
	<b>6H</b>	20.5	20.8	21.0	21.3	21.8	20.2	20.5	20.8	21.0	21.6
	<b>8H</b>	21.0	21.3	21.6	21.8	22.4	20.4	20.7	20.9	21.2	21.8

Corrected UGR values based on total output lumens

SHR = 1.0