

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03RSx IC 835 010 N11 DLWFGP MW

### **Test Number**

SP-00777\_2\_M-010L

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	7.3 W
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#### Lumen Output

Output Lumens	688
Efficacy	94.23 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.2
90° - 270° Size	-0.2
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	0.95
Two luminaires, plane 90°	0.95
Four luminaires	0.89

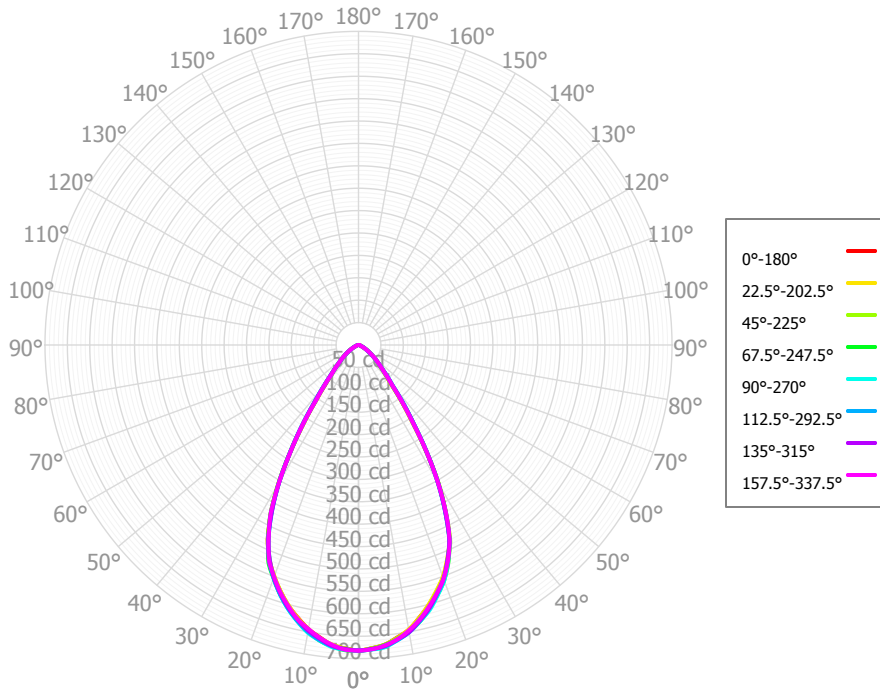
#### Full Beam Angle

0° - 180°	61°
90° - 270°	61°

### IES File Header Contents

Keyword	Value
TEST	SP-00777_2_M-010L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	3/11/2019
LUMCAT	IF03RSx IC 835 010 N11 DLWFGP MW
LUMINIARE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 61 degrees
OTHER	Wide flood optic, Solite Lens
OTHER	Aluminum bezel contains lens
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multipliers: 40K x 1.03
OTHER	Total luminaire wattages 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°	64.36	9.36%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	169.59	24.66%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	213.79	31.08%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	136.90	19.90%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	58.75	8.54%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	29.11	4.23%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	11.15	1.62%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.30	0.48%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.85	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	687.82	99.99%	0.00° - 180.00°	687.86	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°	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21	682.21
2.50°	677.82	677.95	678.00	679.87	680.60	680.58	679.27	681.00	678.38	678.30	678.49	682.13	680.82	680.00	679.26	680.10	677.82
5.00°	671.81	671.60	672.14	672.51	677.33	675.01	674.42	671.96	672.69	671.50	673.06	674.79	677.02	675.33	675.01	673.29	671.81
7.50°	659.15	660.05	660.60	663.23	664.48	664.92	661.60	659.58	658.74	660.03	661.90	665.52	665.44	665.03	663.27	663.02	659.15
10.00°	645.89	644.99	647.96	649.42	651.18	650.18	647.52	643.94	644.05	644.28	647.87	648.50	652.16	651.34	651.14	647.18	645.89
12.50°	624.45	624.64	626.90	632.44	632.24	631.18	627.94	627.27	624.15	625.02	627.37	630.11	631.60	631.79	630.38	628.33	624.45
15.00°	602.66	601.42	604.76	609.56	612.88	608.65	606.87	604.10	603.26	602.28	604.88	606.80	609.59	609.37	609.26	605.57	602.66
17.50°	578.17	576.53	579.65	585.34	586.70	583.46	580.95	579.37	577.76	577.20	578.84	582.94	582.90	583.63	582.51	581.32	578.17
20.00°	552.25	550.91	554.34	559.04	559.38	553.93	552.69	550.88	550.78	549.27	551.09	554.28	553.72	556.61	554.85	555.50	552.25
22.50°	519.24	517.18	520.12	524.57	522.24	521.75	518.63	521.77	518.75	519.78	520.85	525.34	518.40	519.58	519.63	521.84	519.24
25.00°	480.62	480.65	484.82	479.91	481.31	474.83	476.59	474.52	479.53	475.33	479.24	476.11	475.60	479.59	480.39	481.27	480.62
27.50°	421.31	420.93	422.32	423.37	419.38	420.60	418.61	425.47	421.01	424.36	424.00	425.78	418.05	418.85	419.14	423.78	421.31
30.00°	357.26	355.26	358.76	354.58	355.39	354.34	355.36	354.58	356.94	356.46	358.67	354.98	355.25	353.55	355.53	354.15	357.26
32.50°	280.01	281.50	283.21	284.86	283.42	283.31	283.55	282.68	281.27	282.74	283.52	284.65	284.03	284.09	282.84	283.02	280.01
35.00°	210.09	206.20	210.78	214.35	216.45	221.10	218.52	218.07	212.98	216.82	217.44	219.03	219.62	214.02	215.12	211.01	210.09
37.50°	155.98	156.29	158.68	160.36	164.31	161.55	162.39	155.19	157.06	152.94	158.77	157.70	164.06	165.56	162.29	159.04	155.98
40.00°	113.05	109.48	112.04	117.78	120.20	123.65	120.41	121.04	114.64	118.47	118.81	122.07	121.64	118.99	118.07	116.57	113.05
42.50°	89.96	88.92	90.16	90.81	94.85	90.63	93.70	88.82	90.97	89.46	91.23	90.20	93.50	95.82	93.79	91.49	89.96
45.00°	71.52	69.96	70.65	72.65	73.78	74.04	73.65	73.73	72.43	73.96	73.07	73.92	73.26	73.63	73.64	72.85	71.52
47.50°	59.72	58.82	59.17	59.55	60.64	60.04	59.53	59.50	59.69	60.12	59.92	59.22	60.00	61.19	61.07	60.61	59.72
50.00°	49.03	47.89	48.31	48.75	49.14	49.59	48.77	50.04	49.03	49.88	49.23	49.61	49.12	48.95	49.55	50.21	49.03
52.50°	39.63	39.68	39.03	40.07	40.11	39.48	40.45	40.89	40.29	39.88	39.61	40.48	39.94	39.61	39.61	41.04	39.63
55.00°	31.54	31.58	30.78	32.14	31.96	32.40	32.68	32.90	32.60	32.48	32.15	32.54	31.82	30.63	31.09	32.14	31.54
57.50°	24.74	24.63	24.63	25.44	24.90	25.45	25.23	25.52	25.72	25.16	25.42	25.34	24.35	24.44	24.32	25.20	24.74
60.00°	19.01	18.16	18.76	19.07	19.27	20.19	19.55	19.95	19.96	19.51	20.22	19.58	19.01	18.57	18.67	18.54	19.01
62.50°	14.13	14.81	13.37	14.58	15.09	15.05	14.71	14.89	14.89	14.06	15.39	14.50	14.68	14.25	14.14	13.97	14.13
65.00°	10.52	11.35	9.45	10.46	11.44	11.86	10.94	10.98	10.89	10.77	11.18	10.51	11.51	10.38	10.22	9.57	10.52
67.50°	7.72	7.46	7.49	7.56	8.23	8.84	7.55	7.93	7.40	7.75	7.09	7.51	8.74	8.05	6.82	7.08	7.72
70.00°	5.73	4.58	5.84	4.92	5.84	6.63	5.24	6.13	5.20	5.76	5.28	5.53	6.19	5.92	4.94	4.84	5.73
72.50°	4.07	3.66	4.45	3.99	3.89	4.87	3.36	4.34	3.45	4.18	3.69	4.19	3.99	4.09	3.80	3.85	4.07
75.00°	3.03	2.93	3.40	2.98	2.98	3.68	2.68	2.68	2.74	3.05	2.56	3.04	2.83	3.03	2.79	2.82	3.03
77.50°	2.17	2.26	2.45	1.85	2.23	2.50	1.98	2.26	1.96	2.18	2.23	1.77	2.18	2.28	1.95	1.77	2.17
80.00°	1.52	1.31	1.60	1.30	1.58	1.58	1.37	1.45	1.32	1.36	1.64	1.55	1.55	1.55	1.37	1.30	1.52
82.50°	0.84	0.94	1.02	0.93	1.10	0.98	0.93	0.84	0.94	0.84	0.90	1.01	0.89	0.91	0.91	0.99	0.84
85.00°	0.68	0.66	0.69	0.83	0.72	0.70	0.67	0.67	0.56	0.75	0.64	0.64	0.66	0.69	0.85	0.61	0.68
87.50°	0.55	0.55	0.45	0.53	0.71	0.68	0.87	0.53	0.59	0.52	0.57	0.63	0.74	0.59	0.58	0.56	0.55
90.00°	0.50	0.54	0.73	0.55	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.68	0.42	0.50
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>	819	819	819	819	800	800	800	800	764	764	764	732	732	732	702	702	688
	<b>1</b>	777	757	738	722	760	742	725	710	714	700	688	688	677	668	664	656	648
	<b>2</b>	735	698	668	643	719	686	659	636	664	641	622	643	625	608	624	609	596
	<b>3</b>	694	646	609	580	680	636	602	575	618	589	566	601	577	557	585	565	548
	<b>4</b>	655	599	558	527	643	591	553	524	576	543	518	562	534	511	549	525	505
	<b>5</b>	619	558	515	483	608	551	511	481	538	503	476	527	496	472	516	489	468
	<b>6</b>	586	521	476	445	576	515	473	443	504	468	440	494	462	437	485	456	434
	<b>7</b>	555	487	443	412	546	482	441	411	473	436	409	465	431	406	457	427	404
	<b>8</b>	527	457	413	383	518	453	411	382	445	408	381	438	404	379	431	400	377
	<b>9</b>	500	430	387	358	492	426	385	357	420	382	356	413	379	355	407	376	353
	<b>10</b>	476	405	363	335	468	402	362	335	397	359	334	391	357	333	386	354	332

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	22.6 fc	6.5 ft
6.5 ft	16.1 fc	7.7 ft
7.5 ft	12.1 fc	8.8 ft
8.0 ft	10.7 fc	9.4 ft
10.0 ft	6.8 fc	11.8 ft
12.0 ft	4.7 fc	14.1 ft
14.0 ft	3.5 fc	16.5 ft
16.0 ft	2.7 fc	18.9 ft
20.0 ft	1.7 fc	23.6 ft
24.0 ft	1.2 fc	28.3 ft
28.0 ft	0.9 fc	33.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	233,743	233,743	233,743
<b>45.00°</b>	34,654	34,234	35,752
<b>55.00°</b>	18,843	18,387	19,090
<b>65.00°</b>	8,525	7,657	9,272
<b>75.00°</b>	4,012	4,497	3,952
<b>85.00°</b>	2,693	2,710	2,831

### 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>	16.3	17.4	16.6	17.7	18.0	16.4	17.5	16.7	17.8	18.1
	<b>3H</b>	16.5	17.5	16.9	17.8	18.2	16.7	17.7	17.1	18.0	18.4
	<b>4H</b>	16.6	17.4	17.0	17.8	18.2	16.8	17.7	17.2	18.0	18.4
	<b>6H</b>	16.5	17.3	16.9	17.7	18.1	16.7	17.6	17.2	17.9	18.3
	<b>8H</b>	16.5	17.3	16.9	17.7	18.1	16.7	17.5	17.2	17.9	18.3
	<b>12H</b>	16.5	17.2	16.9	17.6	18.0	16.7	17.4	17.1	17.8	18.2
<b>4H</b>	<b>2H</b>	16.3	17.1	16.7	17.5	17.9	16.4	17.3	16.8	17.7	18.1
	<b>3H</b>	16.6	17.3	17.0	17.7	18.1	16.9	17.6	17.3	18.0	18.4
	<b>4H</b>	16.7	17.3	17.1	17.7	18.2	16.9	17.6	17.4	18.0	18.5
	<b>6H</b>	16.7	17.2	17.1	17.7	18.1	17.0	17.5	17.4	18.0	18.4
	<b>8H</b>	16.6	17.1	17.1	17.6	18.1	16.9	17.4	17.4	17.9	18.4
	<b>12H</b>	16.6	17.0	17.1	17.5	18.0	16.9	17.3	17.4	17.8	18.3
<b>8H</b>	<b>4H</b>	16.6	17.1	17.0	17.5	18.0	16.9	17.4	17.3	17.8	18.3
	<b>6H</b>	16.6	17.0	17.1	17.5	18.0	16.9	17.3	17.4	17.8	18.3
	<b>8H</b>	16.6	16.9	17.1	17.5	18.0	16.9	17.2	17.4	17.8	18.3
	<b>12H</b>	16.6	16.9	17.1	17.4	18.0	16.9	17.2	17.4	17.7	18.3
<b>12H</b>	<b>4H</b>	16.5	17.0	17.0	17.5	17.9	16.8	17.2	17.3	17.7	18.2
	<b>6H</b>	16.6	16.9	17.1	17.4	17.9	16.8	17.2	17.4	17.7	18.2
	<b>8H</b>	16.6	16.9	17.1	17.4	17.9	16.8	17.2	17.4	17.7	18.2

Corrected UGR values based on total output lumens

SHR = 1.0