

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03RSx IC 835 010 N11 DLSPGP MW

### **Test Number**

SP-00776\_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	764
Efficacy	104.68 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.4
Two luminaires, plane 90°	0.4
Four luminaires	0.43

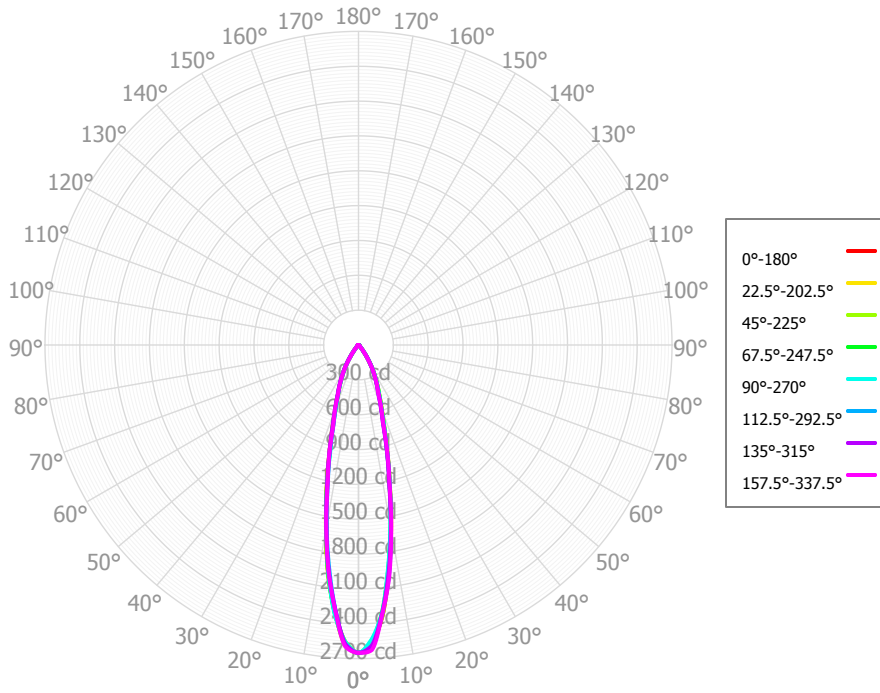
#### Full Beam Angle

0° - 180°	24°
90° - 270°	24°

### IES File Header Contents

Keyword	Value
TEST	SP-00776_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 DLSPGP MW
LUMINIARE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 24 degrees
OTHER	Spot 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°	199.26	26.08%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	266.62	34.89%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	175.15	22.92%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	78.75	10.31%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	18.15	2.38%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	12.65	1.66%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	8.55	1.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.02	0.53%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.96	0.13%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	764.11	99.99%	0.00° - 180.00°	764.16	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°	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58	2,650.58
2.50°	2,581.02	2,594.59	2,559.54	2,561.07	2,541.99	2,581.17	2,579.41	2,599.58	2,568.97	2,592.69	2,559.60	2,580.10	2,562.19	2,610.20	2,593.58	2,629.18	2,581.02
5.00°	2,348.97	2,327.90	2,347.73	2,317.31	2,322.94	2,288.22	2,289.46	2,296.78	2,312.01	2,315.90	2,327.11	2,322.29	2,334.40	2,322.97	2,331.15	2,332.89	2,348.97
7.50°	1,987.87	1,983.60	1,974.20	1,953.37	1,946.06	1,937.73	1,969.33	1,967.36	1,988.85	2,002.60	1,987.32	1,994.67	1,985.51	2,006.72	1,983.72	2,020.43	1,987.87
10.00°	1,618.27	1,613.47	1,607.92	1,594.04	1,582.62	1,579.50	1,592.90	1,598.14	1,602.34	1,613.06	1,598.16	1,599.41	1,587.01	1,606.63	1,607.63	1,619.16	1,618.27
12.50°	1,242.66	1,235.76	1,252.13	1,237.97	1,240.41	1,219.79	1,252.98	1,226.34	1,263.92	1,259.38	1,265.22	1,256.07	1,249.14	1,239.10	1,221.89	1,240.23	1,242.66
15.00°	955.66	966.03	957.84	958.14	950.09	958.44	972.85	970.33	965.72	970.25	954.29	956.70	932.24	950.97	943.77	957.99	955.66
17.50°	723.84	722.69	741.09	725.19	732.09	711.79	745.82	718.34	743.48	732.82	743.74	736.93	729.32	709.17	695.70	707.03	723.84
20.00°	570.63	583.74	577.71	574.00	566.40	579.61	594.38	589.19	577.49	577.16	566.27	576.83	559.86	565.47	555.33	566.17	570.63
22.50°	459.78	465.11	473.96	466.30	464.30	459.64	474.10	461.99	463.24	455.22	461.87	463.73	459.97	446.91	439.94	443.12	459.78
25.00°	377.76	385.47	386.34	383.73	378.84	385.86	393.05	386.25	382.34	379.66	377.84	381.30	376.75	374.16	366.62	373.16	377.76
27.50°	309.32	311.80	314.48	312.84	311.31	315.37	317.90	311.05	310.70	309.63	309.29	308.57	307.23	304.64	301.01	304.62	309.32
30.00°	240.49	242.86	245.47	245.68	245.20	248.58	249.26	243.13	244.33	246.36	244.24	241.35	240.38	240.29	236.11	239.64	240.49
32.50°	171.51	174.43	178.90	180.01	180.43	181.92	184.79	176.63	181.87	184.56	181.58	178.87	178.80	178.30	171.31	176.97	171.51
35.00°	118.22	120.24	122.68	125.32	125.39	127.74	124.32	122.87	121.33	124.31	119.37	118.75	118.00	119.59	119.32	119.32	118.22
37.50°	70.25	67.06	74.29	74.37	78.48	74.52	79.46	73.06	80.38	79.34	79.88	77.57	78.17	74.24	68.61	72.34	70.25
40.00°	45.19	45.08	45.22	48.04	48.10	50.20	47.90	48.85	47.74	48.79	43.50	44.41	40.57	45.12	45.55	45.29	45.19
42.50°	26.71	24.25	28.89	28.66	29.75	27.12	29.50	27.77	31.37	30.06	30.31	28.98	27.73	26.20	24.17	26.14	26.71
45.00°	20.15	19.50	20.45	21.63	20.63	22.15	20.88	22.58	20.85	21.08	19.42	20.02	16.65	18.26	19.18	19.96	20.15
47.50°	16.37	14.91	16.59	17.50	17.36	17.56	17.15	18.24	17.60	17.03	17.94	16.43	15.06	14.22	14.69	15.82	16.37
50.00°	15.36	14.66	15.17	16.07	15.87	16.65	16.64	17.34	16.54	16.52	17.03	14.49	13.78	13.86	14.84	14.57	15.36
52.50°	14.87	14.40	14.98	15.13	15.37	15.77	16.36	16.35	15.78	15.56	15.64	13.84	13.70	13.30	14.96	13.84	14.87
55.00°	13.68	13.85	14.62	15.20	15.48	15.18	16.22	15.07	15.09	14.30	14.24	13.53	13.57	12.59	14.13	13.73	13.68
57.50°	12.39	13.24	14.20	15.41	15.87	14.45	14.43	13.56	13.40	13.18	13.16	12.43	12.13	11.72	13.22	12.76	12.39
60.00°	11.41	12.09	12.24	13.29	13.49	12.97	11.83	11.41	11.51	12.13	12.05	11.17	10.69	10.72	11.06	10.81	11.41
62.50°	10.47	10.93	9.73	10.94	9.95	11.29	10.43	9.60	9.67	10.44	10.48	9.72	9.44	9.36	9.00	9.28	10.47
65.00°	8.99	9.69	8.50	9.38	8.37	8.78	9.56	8.62	7.83	8.43	8.84	8.23	8.22	7.77	7.81	8.15	8.99
67.50°	7.47	8.32	7.67	7.87	7.47	6.69	7.81	7.32	6.79	6.63	6.63	7.21	7.16	6.62	6.67	7.02	7.47
70.00°	6.08	6.33	6.11	6.14	6.00	5.74	5.80	5.48	5.74	4.90	4.94	6.12	5.92	5.67	5.74	5.89	6.08
72.50°	4.88	4.92	4.46	4.72	4.41	4.93	5.00	4.34	4.33	4.17	4.37	4.50	4.35	4.91	4.92	4.70	4.88
75.00°	4.31	4.36	3.69	4.33	3.74	4.26	4.27	3.65	3.08	3.47	3.29	3.31	3.76	4.02	4.29	3.55	4.31
77.50°	3.33	3.17	2.73	3.31	3.06	3.33	3.59	3.34	2.08	2.80	2.23	2.50	3.16	2.67	2.92	2.69	3.33
80.00°	2.15	2.07	1.58	2.00	2.36	2.17	2.31	2.37	1.94	1.64	1.68	1.90	1.86	1.97	1.78	1.89	2.15
82.50°	1.10	1.36	1.08	1.05	0.99	1.16	1.12	1.23	1.03	0.94	0.87	0.80	0.69	1.08	1.14	1.21	1.10
85.00°	0.52	0.70	0.85	0.71	0.70	0.89	0.81	0.73	0.49	0.42	0.60	0.75	0.75	0.51	0.58	0.73	0.52
87.50°	0.55	0.63	0.83	0.55	0.41	0.61	0.84	0.79	0.78	0.56	0.47	0.60	0.55	0.84	0.61	0.73	0.55
90.00°	0.56	0.64	0.56	0.61	0.46	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.74	0.59	0.56
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>	910	910	910	910	889	889	889	889	849	849	849	813	813	813	780	780	764
	<b>1</b>	872	853	836	821	854	837	822	808	806	794	783	778	768	760	752	745	730
	<b>2</b>	836	803	776	753	820	790	766	745	766	746	729	744	727	713	723	710	696
	<b>3</b>	802	759	726	700	787	749	719	694	729	704	684	711	691	673	695	678	665
	<b>4</b>	770	721	684	657	757	712	679	653	696	668	645	682	658	638	668	648	636
	<b>5</b>	740	686	648	620	729	679	644	618	666	636	612	654	628	607	643	620	609
	<b>6</b>	712	655	617	589	702	649	613	587	639	607	583	629	601	579	619	595	585
	<b>7</b>	686	627	589	562	677	622	586	560	613	581	557	605	576	555	597	571	562
	<b>8</b>	662	602	564	537	654	598	561	536	590	557	534	583	554	532	576	550	541
	<b>9</b>	640	578	541	516	632	575	539	515	568	536	513	562	533	512	557	530	522
	<b>10</b>	618	557	520	496	612	554	519	495	549	516	494	543	514	493	538	511	504

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	87.6 fc	2.3 ft
6.5 ft	62.7 fc	2.7 ft
7.5 ft	47.1 fc	3.2 ft
8.0 ft	41.4 fc	3.4 ft
10.0 ft	26.5 fc	4.2 ft
12.0 ft	18.4 fc	5.1 ft
14.0 ft	13.5 fc	5.9 ft
16.0 ft	10.4 fc	6.8 ft
20.0 ft	6.6 fc	8.4 ft
24.0 ft	4.6 fc	10.1 ft
28.0 ft	3.4 fc	11.8 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	908,157	908,157	908,157
<b>45.00°</b>	9,761	9,908	9,998
<b>55.00°</b>	8,171	8,733	9,245
<b>65.00°</b>	7,286	6,889	6,785
<b>75.00°</b>	5,707	4,890	4,949
<b>85.00°</b>	2,054	3,340	2,759

### 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>	11.6	12.5	11.9	12.8	13.2	11.9	12.9	12.3	13.2	13.5
	<b>3H</b>	12.9	13.8	13.3	14.1	14.5	13.0	13.9	13.4	14.2	14.6
	<b>4H</b>	13.4	14.1	13.8	14.5	14.9	13.4	14.2	13.8	14.5	14.9
	<b>6H</b>	13.6	14.3	14.0	14.7	15.1	13.6	14.3	14.0	14.7	15.1
	<b>8H</b>	13.6	14.3	14.1	14.7	15.1	13.6	14.3	14.1	14.7	15.1
	<b>12H</b>	13.6	14.3	14.1	14.7	15.1	13.6	14.3	14.0	14.6	15.1
<b>4H</b>	<b>2H</b>	11.9	12.7	12.3	13.0	13.4	12.3	13.1	12.7	13.5	13.9
	<b>3H</b>	13.4	14.0	13.8	14.5	14.9	13.6	14.2	14.0	14.6	15.0
	<b>4H</b>	13.9	14.5	14.4	14.9	15.4	14.0	14.6	14.4	15.0	15.5
	<b>6H</b>	14.3	14.8	14.8	15.2	15.7	14.3	14.8	14.8	15.3	15.7
	<b>8H</b>	14.3	14.8	14.8	15.2	15.7	14.3	14.8	14.8	15.3	15.7
	<b>12H</b>	14.3	14.7	14.8	15.2	15.7	14.3	14.7	14.8	15.2	15.7
<b>8H</b>	<b>4H</b>	14.0	14.5	14.5	15.0	15.4	14.1	14.5	14.6	15.0	15.5
	<b>6H</b>	14.5	14.8	15.0	15.3	15.8	14.5	14.9	15.0	15.4	15.8
	<b>8H</b>	14.6	14.9	15.1	15.4	15.9	14.5	14.9	15.1	15.4	15.9
	<b>12H</b>	14.6	14.9	15.1	15.4	15.9	14.6	14.9	15.1	15.4	15.9
<b>12H</b>	<b>4H</b>	14.0	14.4	14.5	14.9	15.4	14.1	14.4	14.5	14.9	15.4
	<b>6H</b>	14.4	14.8	15.0	15.2	15.8	14.5	14.8	15.0	15.3	15.8
	<b>8H</b>	14.6	14.8	15.1	15.3	15.9	14.5	14.8	15.1	15.3	15.9

Corrected UGR values based on total output lumens

SHR = 1.0