

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03RMx xx 835 007 DLNFGN MW

### **Test Number**

SP-00759\_1\_M-007L

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	7.4 W
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#### Lumen Output

Output Lumens	555
Efficacy	74.94 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.47
Two luminaires, plane 90°	0.47
Four luminaires	0.48

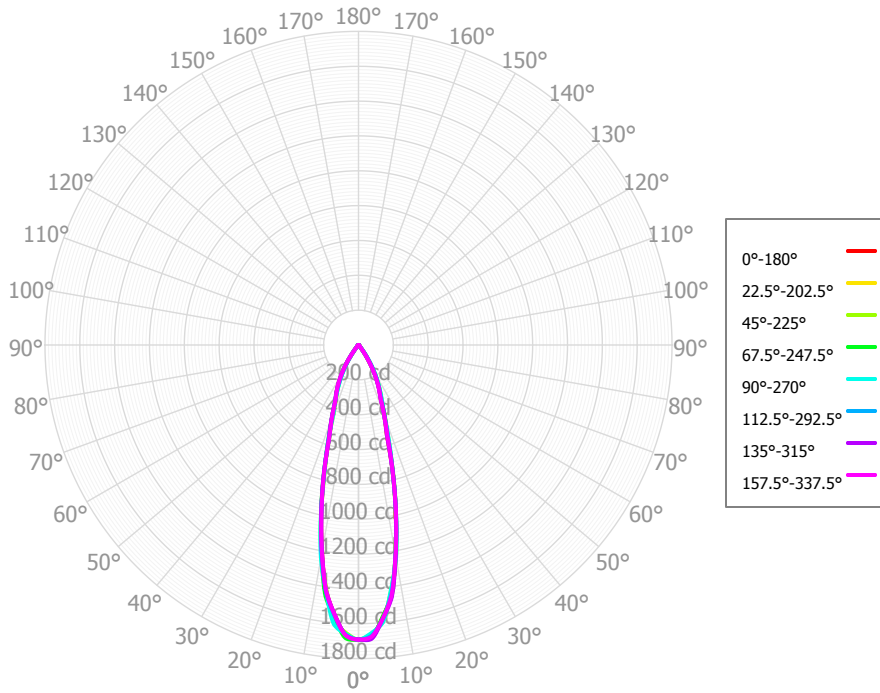
#### Full Beam Angle

0° - 180°	28°
90° - 270°	28°

### IES File Header Contents

Keyword	Value
TEST	SP-00759_1_M-007L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 007 DLNFGN MW
LUMINIARE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 28 degrees
OTHER	Narrow flood optic, open aperture / no lens
OTHER	Aluminum bezel
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°	140.75	25.38%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	208.89	37.67%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	132.46	23.88%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	52.25	9.42%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	7.01	1.26%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	4.29	0.77%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	5.26	0.95%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.94	0.53%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.69	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	554.55	99.99%	0.00° - 180.00°	554.58	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°	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14	1,691.14
2.50°	1,680.36	1,686.01	1,660.73	1,684.24	1,656.96	1,666.58	1,668.74	1,669.64	1,668.55	1,680.01	1,654.46	1,684.84	1,661.08	1,672.57	1,689.60	1,677.85	1,680.36
5.00°	1,574.95	1,572.17	1,595.96	1,571.06	1,599.37	1,562.94	1,556.71	1,558.10	1,559.04	1,562.98	1,590.26	1,571.53	1,611.05	1,581.02	1,581.26	1,581.04	1,574.95
7.50°	1,448.38	1,454.43	1,425.29	1,451.78	1,422.73	1,428.73	1,427.72	1,423.35	1,423.67	1,436.99	1,415.53	1,453.00	1,427.66	1,445.68	1,461.74	1,450.47	1,448.38
10.00°	1,225.44	1,221.98	1,238.91	1,222.75	1,240.35	1,218.03	1,208.19	1,209.91	1,206.20	1,212.61	1,227.31	1,222.31	1,241.56	1,223.10	1,229.61	1,224.43	1,225.44
12.50°	986.53	989.84	991.98	994.14	995.17	983.57	988.22	980.63	986.76	988.32	989.35	992.35	995.62	995.64	990.22	994.94	986.53
15.00°	763.36	763.87	760.14	770.24	758.36	770.56	766.26	768.05	762.04	764.68	747.14	771.10	755.07	759.66	765.38	757.21	763.36
17.50°	542.18	546.98	577.19	559.38	584.39	563.04	567.70	558.06	567.97	557.05	579.48	561.52	582.69	566.37	541.31	555.91	542.18
20.00°	433.02	438.62	424.39	447.60	426.33	447.44	451.41	447.22	444.38	442.12	415.34	448.24	421.25	437.70	435.14	430.31	433.02
22.50°	333.41	336.35	353.27	344.46	357.73	351.12	351.60	347.44	346.26	339.43	350.98	343.50	351.15	339.45	330.92	330.63	333.41
25.00°	279.52	283.05	287.17	291.78	292.15	295.33	300.84	297.53	298.33	293.50	288.04	290.48	283.11	281.90	278.21	277.34	279.52
27.50°	227.95	228.96	232.58	238.73	240.26	246.12	249.15	251.40	248.93	245.98	238.26	237.16	227.68	225.57	225.26	222.64	227.95
30.00°	168.21	170.11	177.56	183.97	188.25	192.90	195.08	196.61	196.99	192.48	188.23	182.36	172.98	170.65	169.03	165.77	168.21
32.50°	108.59	113.51	121.68	130.49	135.85	139.19	141.68	141.50	143.41	139.31	133.70	128.93	121.86	118.97	114.03	112.59	108.59
35.00°	65.84	67.58	73.69	81.73	87.13	91.78	89.72	91.07	87.35	87.20	80.93	80.78	74.61	70.65	70.00	64.48	65.84
37.50°	24.77	28.96	39.33	40.74	49.82	44.90	48.03	41.58	45.69	44.08	47.80	40.24	42.43	38.05	30.41	32.16	24.77
40.00°	16.68	18.16	16.36	23.88	20.89	27.50	25.54	24.90	22.83	24.71	17.76	23.94	16.54	19.67	19.46	18.70	16.68
42.50°	9.14	9.58	10.68	11.06	13.73	11.54	10.38	9.09	9.18	10.24	11.38	11.12	11.23	10.02	9.94	10.61	9.14
45.00°	7.78	8.12	7.11	8.78	8.34	9.05	7.09	6.83	6.19	6.80	5.84	7.74	7.07	7.27	7.69	8.21	7.78
47.50°	6.50	6.79	6.31	6.97	6.92	6.77	5.18	4.76	4.73	4.42	5.20	5.30	6.06	5.74	5.79	6.48	6.50
50.00°	5.89	5.83	5.74	6.21	5.85	6.26	5.24	4.70	4.84	4.09	4.62	5.02	5.18	5.06	5.27	5.37	5.89
52.50°	5.32	5.18	5.42	5.48	5.45	5.73	5.17	4.63	4.69	3.97	4.32	4.61	4.58	4.91	4.78	4.84	5.32
55.00°	5.01	5.24	5.09	4.82	5.16	4.88	4.96	4.43	4.32	4.18	4.04	3.94	4.07	5.08	4.44	4.79	5.01
57.50°	4.82	5.42	4.74	4.47	5.06	4.18	4.97	4.35	4.12	4.37	3.88	3.77	3.70	4.90	4.41	4.91	4.82
60.00°	5.12	5.86	5.06	4.64	5.25	5.06	5.22	4.91	4.08	4.52	3.95	4.46	3.96	4.53	5.26	5.15	5.12
62.50°	5.43	6.18	5.98	5.11	5.86	5.89	5.42	5.36	4.49	4.81	4.74	4.87	5.30	4.63	5.91	5.58	5.43
65.00°	5.75	6.31	6.01	6.00	5.97	6.41	5.57	5.32	5.22	5.28	5.20	4.87	5.85	4.94	6.06	6.12	5.75
67.50°	5.70	5.83	5.32	5.85	5.43	6.56	5.38	5.21	5.44	5.31	4.90	4.68	5.35	4.75	5.84	5.42	5.70
70.00°	4.68	4.56	4.51	4.50	4.60	5.23	4.94	4.89	5.41	4.91	4.23	4.29	4.48	4.39	4.99	4.15	4.68
72.50°	3.47	3.42	3.63	3.21	3.48	4.28	4.18	4.26	4.21	3.93	3.16	3.53	3.38	3.19	3.57	3.06	3.47
75.00°	2.08	2.36	2.65	1.95	2.75	3.86	3.31	3.29	2.97	2.78	2.50	2.63	2.52	2.20	1.77	2.13	2.08
77.50°	1.48	1.63	1.86	1.78	2.17	3.00	2.32	2.60	2.11	1.94	1.92	1.72	1.78	1.72	1.38	1.54	1.48
80.00°	0.99	0.92	1.46	1.39	1.73	2.06	1.68	1.76	1.63	1.37	1.33	1.21	1.09	1.05	0.93	0.99	0.99
82.50°	0.63	0.51	0.93	0.91	1.04	1.15	0.91	0.89	0.83	0.83	0.70	0.75	0.47	0.65	0.53	0.80	0.63
85.00°	0.55	0.53	0.48	0.64	0.66	0.42	0.42	0.51	0.48	0.49	0.31	0.36	0.47	0.46	0.40	0.67	0.55
87.50°	0.38	0.56	0.37	0.50	0.53	0.48	0.46	0.43	0.46	0.43	0.43	0.44	0.47	0.50	0.48	0.51	0.38
90.00°	0.57	0.41	0.46	0.46	0.43	0.68	0.43	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	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>	660	660	660	660	645	645	645	645	616	616	616	590	590	590	566	566	555
	<b>1</b>	634	620	608	597	620	608	597	588	586	577	570	566	559	553	547	542	531
	<b>2</b>	608	585	566	550	596	576	558	543	558	544	532	542	530	520	527	518	508
	<b>3</b>	584	554	531	512	574	547	525	508	533	515	500	520	505	493	508	495	486
	<b>4</b>	562	527	501	482	553	521	497	479	510	489	473	499	482	468	489	475	466
	<b>5</b>	541	503	476	456	533	498	473	454	488	467	450	480	461	446	472	456	448
	<b>6</b>	521	481	453	434	514	476	451	432	469	446	430	462	442	427	455	438	430
	<b>7</b>	503	461	433	414	496	457	431	413	451	428	411	445	424	409	439	421	414
	<b>8</b>	485	442	415	397	479	439	414	396	434	411	394	429	408	393	424	405	399
	<b>9</b>	469	425	399	381	464	423	398	380	418	395	379	414	393	378	410	391	385
	<b>10</b>	454	410	384	366	449	408	383	366	404	381	365	400	379	364	396	377	372

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	55.9 fc	2.8 ft
6.5 ft	40.0 fc	3.3 ft
7.5 ft	30.1 fc	3.8 ft
8.0 ft	26.4 fc	4.0 ft
10.0 ft	16.9 fc	5.0 ft
12.0 ft	11.7 fc	6.0 ft
14.0 ft	8.6 fc	7.0 ft
16.0 ft	6.6 fc	8.0 ft
20.0 ft	4.2 fc	10.0 ft
24.0 ft	2.9 fc	12.0 ft
28.0 ft	2.2 fc	14.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	579,428	579,428	579,428
<b>45.00°</b>	3,768	3,445	4,042
<b>55.00°</b>	2,995	3,041	3,083
<b>65.00°</b>	4,663	4,869	4,837
<b>75.00°</b>	2,747	3,507	3,640
<b>85.00°</b>	2,171	1,901	2,610

### 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>	6.4	7.3	6.7	7.6	7.9	4.8	5.8	5.2	6.1	6.4
	<b>3H</b>	9.9	10.7	10.3	11.1	11.4	9.4	10.3	9.8	10.6	11.0
	<b>4H</b>	10.4	11.2	10.8	11.5	11.9	10.3	11.1	10.7	11.4	11.8
	<b>6H</b>	10.6	11.3	11.0	11.6	12.0	10.7	11.4	11.2	11.8	12.2
	<b>8H</b>	10.6	11.2	11.0	11.6	12.0	10.8	11.5	11.3	11.9	12.3
	<b>12H</b>	10.6	11.2	11.0	11.6	12.0	10.8	11.5	11.3	11.9	12.3
<b>4H</b>	<b>2H</b>	7.8	8.5	8.2	8.9	9.3	6.6	7.3	7.0	7.7	8.1
	<b>3H</b>	10.9	11.5	11.3	11.9	12.3	10.6	11.2	11.0	11.6	12.0
	<b>4H</b>	11.4	12.0	11.8	12.4	12.8	11.6	12.1	12.0	12.5	13.0
	<b>6H</b>	11.6	12.1	12.1	12.5	13.0	12.1	12.6	12.6	13.0	13.5
	<b>8H</b>	11.6	12.1	12.1	12.5	13.0	12.2	12.6	12.7	13.1	13.5
	<b>12H</b>	11.7	12.0	12.2	12.5	13.0	12.2	12.6	12.7	13.1	13.6
<b>8H</b>	<b>4H</b>	11.5	12.0	12.0	12.4	12.9	11.8	12.3	12.3	12.7	13.2
	<b>6H</b>	11.8	12.1	12.3	12.7	13.1	12.5	12.8	13.0	13.3	13.8
	<b>8H</b>	11.9	12.2	12.4	12.7	13.2	12.6	12.9	13.2	13.4	13.9
	<b>12H</b>	12.0	12.2	12.5	12.7	13.3	12.7	13.0	13.2	13.5	14.0
<b>12H</b>	<b>4H</b>	11.5	11.9	12.0	12.4	12.8	11.8	12.2	12.3	12.7	13.2
	<b>6H</b>	11.8	12.1	12.3	12.6	13.1	12.5	12.8	13.0	13.3	13.8
	<b>8H</b>	11.9	12.1	12.4	12.6	13.2	12.7	12.9	13.2	13.4	14.0

Corrected UGR values based on total output lumens

SHR = 1.0