

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03SMx xx 835 010 DLNFGN MW  
Nom 3" Square Infinium recessed downlight

### **Test Number**

SP-00763\_1\_M-010L

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	9.3 W
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#### Lumen Output

Output Lumens	519
Efficacy	55.77 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.51
Two luminaires, plane 90°	0.51
Four luminaires	0.56

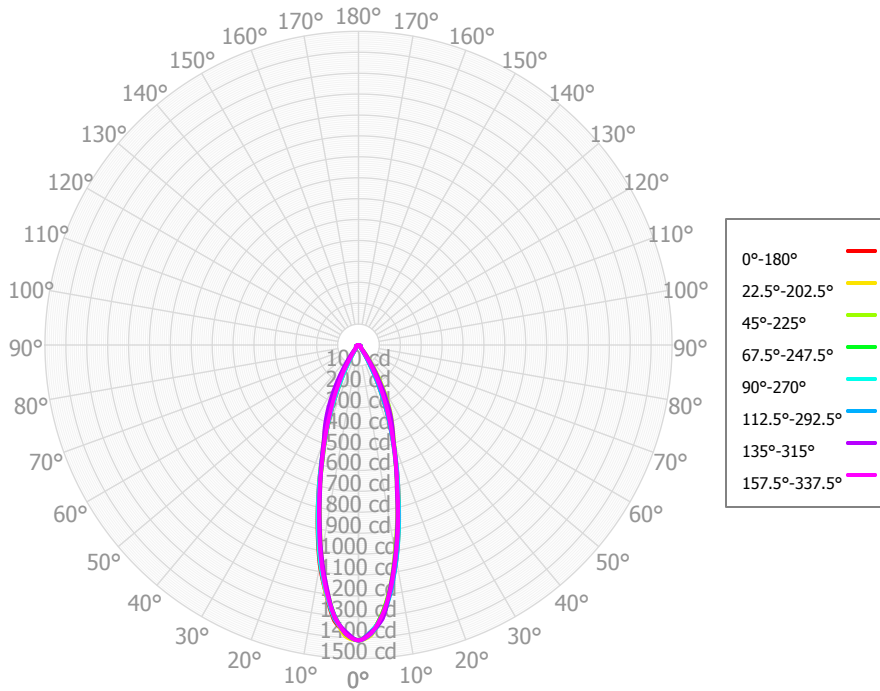
#### Full Beam Angle

0° - 180°	31°
90° - 270°	31°

### IES File Header Contents

Keyword	Value
TEST	SP-00763_1_M-010L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/11/2019
UPDATE	2/28/2019
LUMCAT	IF03SMx xx 835 010 DLNFGN MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 31 degrees
OTHER	Narrow 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°	116.64	22.49%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	198.47	38.27%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	132.06	25.46%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	37.16	7.17%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	10.09	1.95%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	7.92	1.53%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	11.15	2.15%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.07	0.78%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.02	0.20%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	518.58	99.99%	0.00° - 180.00°	518.62	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°	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99	1,412.99
2.50°	1,372.47	1,389.72	1,376.68	1,380.75	1,370.99	1,382.43	1,373.73	1,383.95	1,379.39	1,396.10	1,383.72	1,385.10	1,376.75	1,384.29	1,374.73	1,381.44	1,372.47
5.00°	1,311.47	1,289.76	1,293.40	1,292.55	1,305.52	1,302.79	1,310.64	1,304.34	1,324.42	1,304.93	1,302.68	1,302.19	1,316.98	1,308.18	1,315.99	1,297.55	1,311.47
7.50°	1,178.20	1,176.37	1,165.08	1,175.17	1,180.55	1,179.48	1,167.29	1,184.63	1,197.91	1,198.93	1,169.75	1,184.62	1,193.15	1,190.33	1,168.54	1,178.50	1,178.20
10.00°	1,043.27	1,023.29	1,004.49	1,022.52	1,046.18	1,032.56	1,020.20	1,035.91	1,066.93	1,039.26	1,018.29	1,033.75	1,058.81	1,038.86	1,015.81	1,027.75	1,043.27
12.50°	890.14	871.29	853.96	869.77	893.60	869.71	858.83	869.80	903.24	873.52	852.76	868.49	898.42	882.68	861.16	874.61	890.14
15.00°	739.38	721.82	709.21	716.92	739.35	721.90	708.11	719.00	741.91	721.97	709.37	716.60	742.16	723.39	708.46	719.68	739.38
17.50°	604.06	586.62	595.86	592.06	608.40	582.19	588.31	575.50	592.50	571.21	579.89	569.33	594.04	589.29	596.57	591.91	604.06
20.00°	473.57	477.37	496.75	489.36	478.59	474.75	485.04	460.97	450.77	458.51	486.53	454.26	456.88	468.60	489.04	480.51	473.57
22.50°	364.77	378.88	426.15	398.60	369.42	381.21	419.36	357.13	336.46	347.30	411.21	347.42	337.21	366.65	423.13	385.77	364.77
25.00°	262.23	296.28	365.91	315.67	261.82	294.07	350.76	273.11	231.95	264.88	332.92	258.17	231.00	272.55	355.20	298.97	262.23
27.50°	180.16	219.76	296.15	234.15	175.86	209.08	276.92	194.82	153.80	184.48	253.45	172.05	142.01	189.72	275.59	221.78	180.16
30.00°	108.55	150.60	223.81	153.36	95.62	139.63	206.74	132.12	89.07	122.58	184.64	110.49	79.39	110.56	199.27	148.29	108.55
32.50°	63.39	94.39	161.34	95.19	58.81	74.03	141.90	72.64	53.27	66.52	119.11	51.81	44.45	66.84	136.42	93.87	63.39
35.00°	30.41	50.87	100.76	46.30	27.11	46.02	89.54	46.30	28.56	43.27	75.68	35.31	25.45	31.80	80.81	44.99	30.41
37.50°	21.83	26.71	62.56	27.25	21.17	24.83	52.05	24.40	22.76	23.71	37.17	21.16	20.18	22.30	47.36	27.85	21.83
40.00°	15.73	18.10	27.28	17.90	16.15	18.62	28.87	19.55	18.32	18.87	24.51	17.84	16.74	17.09	22.04	17.48	15.73
42.50°	13.55	13.09	18.16	14.19	14.49	14.10	19.48	16.03	15.72	14.83	15.81	14.59	14.57	14.37	15.85	13.94	13.55
45.00°	11.71	10.45	10.80	11.83	12.76	12.92	14.12	13.45	13.81	13.18	13.07	12.48	12.59	11.91	11.28	11.38	11.71
47.50°	10.31	8.94	9.71	10.59	10.83	11.92	11.94	10.94	12.66	11.55	10.87	10.45	10.71	10.20	9.84	9.66	10.31
50.00°	8.69	8.02	8.69	9.54	9.14	10.07	10.75	10.09	11.26	9.99	10.56	9.20	9.27	8.55	8.72	8.02	8.69
52.50°	6.84	7.44	7.97	8.87	7.96	8.31	10.19	9.30	9.63	8.95	10.31	8.17	8.02	8.23	8.10	7.77	6.84
55.00°	6.03	6.99	7.48	8.22	7.42	8.35	10.46	9.23	8.58	8.89	10.34	8.36	7.64	7.97	8.36	7.56	6.03
57.50°	6.11	7.79	9.47	9.11	7.96	8.62	11.16	9.43	7.98	9.57	10.48	8.87	7.55	8.64	9.71	7.62	6.11
60.00°	7.36	9.00	11.19	10.08	9.58	10.94	12.55	11.54	9.34	11.36	12.15	10.69	8.90	9.45	10.99	7.84	7.36
62.50°	9.44	10.30	11.32	11.63	12.69	13.01	14.22	13.35	11.89	12.56	13.54	12.06	10.64	11.39	12.19	9.96	9.44
65.00°	10.57	11.62	11.13	12.97	13.65	13.73	13.14	13.85	12.79	13.06	13.02	12.12	11.69	12.70	11.67	11.62	10.57
67.50°	11.15	10.51	9.54	10.94	12.16	13.20	11.21	12.93	12.93	11.24	11.38	10.87	12.56	10.87	9.73	10.34	11.15
70.00°	9.29	8.99	7.72	8.68	9.47	9.07	8.18	8.66	9.14	7.61	6.68	7.45	8.50	8.66	7.34	8.58	9.29
72.50°	6.55	6.40	5.40	5.43	5.90	5.80	5.26	5.16	5.03	4.29	3.85	4.65	4.92	5.69	4.71	5.56	6.55
75.00°	4.09	4.18	3.78	3.28	3.71	3.34	3.04	2.32	2.42	1.78	2.42	2.39	2.28	3.41	3.52	3.61	4.09
77.50°	2.73	2.63	2.69	2.22	2.22	2.15	1.94	1.71	1.71	1.20	1.71	1.43	1.60	1.79	2.66	2.47	2.73
80.00°	2.81	2.55	2.45	1.97	1.84	1.52	1.36	1.50	1.40	1.49	1.34	1.02	1.18	1.65	2.13	2.10	2.81
82.50°	1.85	2.02	1.98	1.68	1.38	1.13	0.98	1.15	0.85	0.94	1.08	0.85	0.81	1.27	1.47	1.82	1.85
85.00°	0.77	1.00	1.10	1.12	0.74	0.63	0.80	0.58	0.71	0.56	0.57	0.64	0.51	0.70	0.91	1.11	0.77
87.50°	0.61	0.60	0.61	0.89	0.49	0.60	0.63	0.81	0.57	0.58	0.45	0.61	0.63	0.63	0.59	0.70	0.61
90.00°	0.48	0.44	0.54	0.81	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.67	0.63	0.48
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>	617	617	617	617	603	603	603	603	576	576	576	552	552	552	529	529	519
	<b>1</b>	591	578	566	555	578	566	556	546	546	537	529	526	520	514	509	504	499
	<b>2</b>	566	543	524	508	554	534	517	502	517	503	491	502	491	481	488	479	471
	<b>3</b>	542	512	489	471	532	505	484	467	492	474	460	480	465	453	468	456	446
	<b>4</b>	520	486	460	441	511	480	457	439	469	449	434	459	442	429	450	436	424
	<b>5</b>	500	462	436	416	492	457	433	415	448	427	411	440	422	407	433	417	404
	<b>6</b>	480	441	414	395	473	437	412	394	430	408	391	423	403	389	416	399	386
	<b>7</b>	463	422	395	376	456	418	393	375	412	390	374	406	387	372	401	383	370
	<b>8</b>	446	404	378	360	440	401	376	359	396	374	358	391	371	356	387	368	355
	<b>9</b>	430	388	362	345	425	386	361	344	381	359	343	377	357	342	373	355	341
	<b>10</b>	416	373	348	331	411	371	347	331	368	345	330	364	344	329	361	342	328

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	46.7 fc	3.1 ft
6.5 ft	33.4 fc	3.6 ft
7.5 ft	25.1 fc	4.2 ft
8.0 ft	22.1 fc	4.5 ft
10.0 ft	14.1 fc	5.6 ft
12.0 ft	9.8 fc	6.7 ft
14.0 ft	7.2 fc	7.8 ft
16.0 ft	5.5 fc	8.9 ft
20.0 ft	3.5 fc	11.2 ft
24.0 ft	2.5 fc	13.4 ft
28.0 ft	1.8 fc	15.7 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	594,113	594,113	594,113
<b>45.00°</b>	6,966	6,424	7,586
<b>55.00°</b>	4,419	5,485	5,436
<b>65.00°</b>	10,512	11,071	13,581
<b>75.00°</b>	6,648	6,139	6,024
<b>85.00°</b>	3,723	5,293	3,567

### 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>	10.7	11.7	11.1	12.0	12.3	11.8	12.8	12.1	13.1	13.4
	<b>3H</b>	15.7	16.6	16.1	16.9	17.3	16.3	17.1	16.7	17.5	17.8
	<b>4H</b>	16.2	17.0	16.6	17.4	17.8	16.5	17.3	16.9	17.7	18.1
	<b>6H</b>	16.5	17.2	16.9	17.6	18.0	16.6	17.3	17.0	17.7	18.1
	<b>8H</b>	16.6	17.3	17.0	17.7	18.1	16.6	17.2	17.0	17.6	18.1
	<b>12H</b>	16.6	17.3	17.1	17.7	18.1	16.5	17.2	17.0	17.6	18.0
<b>4H</b>	<b>2H</b>	13.0	13.8	13.4	14.1	14.5	14.0	14.8	14.4	15.2	15.5
	<b>3H</b>	16.8	17.4	17.2	17.8	18.2	17.3	17.9	17.7	18.3	18.7
	<b>4H</b>	17.3	17.9	17.7	18.3	18.7	17.5	18.1	17.9	18.5	18.9
	<b>6H</b>	17.6	18.1	18.0	18.5	19.0	17.5	18.0	18.0	18.5	19.0
	<b>8H</b>	17.7	18.2	18.2	18.6	19.1	17.5	18.0	18.0	18.5	18.9
	<b>12H</b>	17.8	18.2	18.3	18.7	19.1	17.5	17.9	18.0	18.4	18.9
<b>8H</b>	<b>4H</b>	17.3	17.8	17.8	18.3	18.7	17.5	17.9	17.9	18.4	18.9
	<b>6H</b>	17.8	18.1	18.3	18.6	19.1	17.5	17.9	18.1	18.4	18.9
	<b>8H</b>	18.0	18.3	18.5	18.8	19.3	17.6	17.9	18.1	18.4	18.9
	<b>12H</b>	18.1	18.4	18.6	18.9	19.5	17.6	17.9	18.1	18.4	19.0
<b>12H</b>	<b>4H</b>	17.3	17.7	17.8	18.2	18.7	17.4	17.8	17.9	18.3	18.8
	<b>6H</b>	17.8	18.1	18.3	18.6	19.1	17.5	17.8	18.0	18.3	18.9
	<b>8H</b>	18.0	18.3	18.6	18.8	19.4	17.6	17.8	18.1	18.3	18.9

Corrected UGR values based on total output lumens

SHR = 1.0