

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03SSx IC 835 010 N11 DLFLGC MW  
Nom 3" Square Infinium recessed downlight

### **Test Number**

SP-00778\_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	499
Efficacy	68.34 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.66
Two luminaires, plane 90°	0.67
Four luminaires	0.71

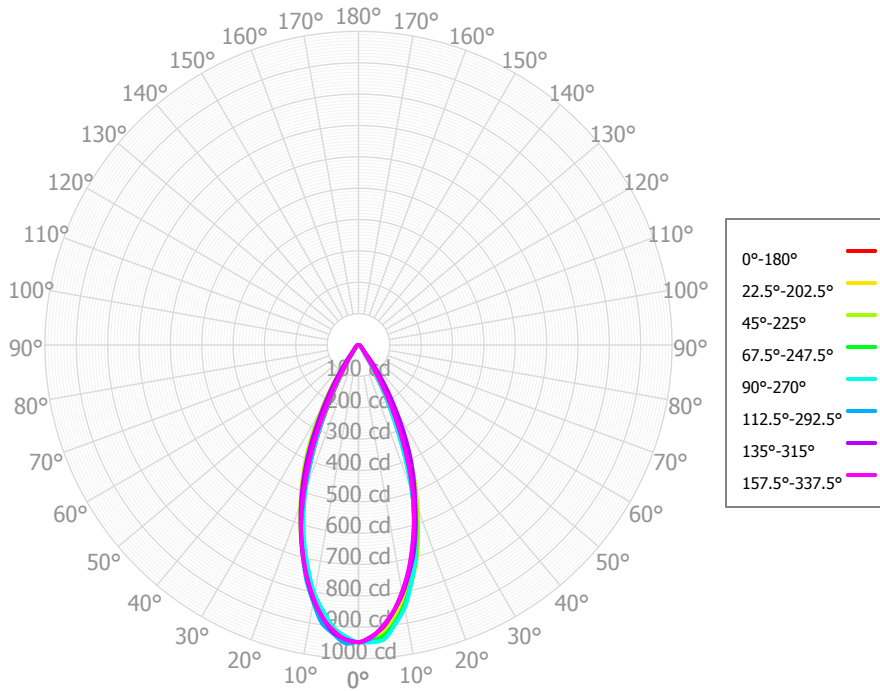
#### Full Beam Angle

0° - 180°	41°
90° - 270°	41°

### IES File Header Contents

Keyword	Value
TEST	SP-00778_M-010L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/11/2019
UPDATE	3/11/2019
LUMCAT	IF03SSx IC 835 010 N11 DLFLGC MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 41 degrees
OTHER	Flood optic, Clear glass lens
OTHER	Aluminum bezel contains lens
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°	85.23	17.08%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	186.71	37.43%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	148.47	29.76%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	46.17	9.26%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	13.87	2.78%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	8.32	1.67%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	5.99	1.20%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.07	0.61%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.01	0.20%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	498.84	99.99%	0.00° - 180.00°	498.88	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°	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82	947.82
2.50°	934.15	939.71	939.81	946.03	949.41	952.34	939.55	940.97	935.61	935.43	931.45	933.68	930.56	936.27	930.57	932.87	934.15
5.00°	913.23	913.53	926.66	930.57	942.08	924.52	920.82	914.14	915.38	905.54	911.44	905.85	905.81	898.75	903.85	898.81	913.23
7.50°	866.05	877.51	885.06	892.93	898.17	894.90	876.50	877.51	870.92	868.50	864.32	863.91	857.05	858.56	857.19	856.18	866.05
10.00°	815.31	822.45	840.28	841.46	850.82	832.00	825.92	821.42	820.08	811.23	816.32	809.98	806.58	800.62	807.42	799.37	815.31
12.50°	745.49	760.05	777.80	775.78	778.17	768.13	759.43	759.52	751.71	749.11	753.33	745.47	736.12	739.70	745.55	735.74	745.49
15.00°	674.27	685.93	711.44	703.01	700.90	689.17	689.56	685.94	678.55	676.95	689.34	675.83	664.15	665.42	682.47	662.99	674.27
17.50°	588.36	605.36	630.01	614.74	600.60	607.78	612.94	609.81	595.11	603.13	615.11	602.40	581.83	588.41	605.51	587.47	588.36
20.00°	501.47	516.47	548.58	520.40	497.49	507.02	535.13	516.83	501.88	516.17	541.04	517.35	495.77	502.49	528.08	508.86	501.47
22.50°	392.79	422.43	467.14	418.23	384.13	406.93	455.43	421.23	391.46	427.90	467.96	425.37	391.98	414.95	457.91	421.81	392.79
25.00°	285.61	322.97	384.15	313.63	277.94	310.28	372.66	323.57	286.58	330.03	392.85	335.96	292.47	323.19	387.34	327.10	285.61
27.50°	196.90	232.89	297.54	230.12	191.51	219.35	285.80	225.72	189.55	231.80	309.19	247.76	207.62	237.91	310.18	240.37	196.90
30.00°	114.02	151.07	218.12	151.41	117.96	150.35	208.88	153.98	115.99	157.55	229.12	174.61	132.26	165.81	234.53	159.52	114.02
32.50°	72.81	93.40	151.98	99.36	72.51	90.55	142.74	83.67	69.41	85.68	160.65	107.26	82.10	105.55	171.35	101.00	72.81
35.00°	37.35	52.99	97.23	51.43	40.14	57.15	92.40	58.36	41.29	56.96	100.90	68.48	44.06	64.54	111.85	56.18	37.35
37.50°	29.22	33.41	59.91	36.15	30.80	32.19	55.99	34.18	30.92	30.49	62.72	38.07	31.63	36.73	71.78	35.20	29.22
40.00°	22.18	25.83	34.62	24.10	23.66	26.02	34.61	26.59	23.80	24.23	34.23	27.18	22.27	26.78	37.71	25.92	22.18
42.50°	18.96	20.81	24.24	20.84	19.61	21.18	24.31	19.59	19.23	18.52	24.60	20.54	18.04	20.14	27.12	21.03	18.96
45.00°	15.99	17.00	17.95	17.92	16.47	18.77	18.51	17.19	16.04	15.88	17.34	16.79	14.52	17.16	18.48	17.81	15.99
47.50°	13.71	14.65	15.80	15.03	14.37	16.25	15.41	14.90	13.73	13.40	13.89	13.47	11.99	14.36	15.51	14.95	13.71
50.00°	11.69	12.83	13.53	12.21	12.63	13.56	12.98	13.20	11.76	11.61	11.29	12.16	10.04	11.72	12.78	12.20	11.69
52.50°	10.22	10.65	11.16	10.70	11.22	11.27	10.87	11.52	9.98	10.03	9.82	11.02	8.74	9.78	10.58	10.93	10.22
55.00°	8.87	8.37	9.53	9.24	9.75	9.44	9.68	9.92	8.44	9.11	8.74	9.13	7.69	8.35	8.84	9.99	8.87
57.50°	7.75	7.30	8.41	8.12	8.23	8.49	8.83	8.41	7.01	8.21	8.08	7.24	6.87	7.59	7.93	8.97	7.75
60.00°	6.89	6.49	7.80	7.14	7.45	8.41	8.23	7.18	6.50	7.37	7.42	6.79	6.21	7.23	7.28	7.94	6.89
62.50°	6.40	6.18	7.48	6.82	7.14	7.79	7.70	6.22	6.29	6.57	6.74	6.34	5.68	6.77	7.01	7.17	6.40
65.00°	5.91	5.93	6.59	6.42	6.49	6.76	6.65	5.89	5.74	5.85	5.93	5.81	5.43	6.25	6.46	6.42	5.91
67.50°	5.43	5.51	5.43	5.70	5.66	5.55	5.50	5.35	5.10	5.13	5.02	5.22	5.35	5.34	5.57	5.74	5.43
70.00°	4.93	5.02	4.53	4.78	4.41	4.26	4.21	4.50	4.06	4.43	4.22	4.32	4.45	4.28	4.64	5.03	4.93
72.50°	4.40	4.02	3.68	3.51	3.08	3.35	3.10	3.69	3.15	3.56	3.48	3.65	3.36	3.64	3.66	4.11	4.40
75.00°	3.20	2.94	2.58	2.77	2.59	2.56	2.41	2.90	2.64	2.63	3.10	3.25	2.67	3.01	3.08	3.21	3.20
77.50°	2.19	1.77	1.87	2.29	1.97	1.94	1.75	2.15	2.30	1.70	2.25	2.54	2.25	2.33	2.53	2.33	2.19
80.00°	1.79	1.53	1.53	1.93	1.32	1.39	1.33	1.71	1.80	1.51	1.41	1.91	1.88	1.78	1.86	1.91	1.79
82.50°	1.53	1.15	1.27	1.36	1.24	1.06	1.07	1.40	1.24	1.15	1.25	1.49	1.24	1.30	1.10	1.39	1.53
85.00°	0.81	0.88	0.89	0.65	0.55	0.57	0.81	0.93	0.94	0.69	0.71	0.98	0.67	0.95	0.88	0.89	0.81
87.50°	0.75	0.66	0.60	0.76	0.43	0.66	0.69	0.78	0.71	0.56	0.67	0.53	0.67	0.68	0.52	0.72	0.75
90.00°	0.50	0.72	0.64	0.72	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.59	0.60	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>	594	594	594	594	580	580	580	580	554	554	554	531	531	531	509	509	499
	<b>1</b>	568	555	543	532	556	544	534	524	524	516	508	505	499	493	488	483	479
	<b>2</b>	543	520	501	486	532	511	495	480	495	482	470	481	469	460	467	458	449
	<b>3</b>	519	489	467	448	509	482	462	445	470	452	438	458	443	431	447	435	426
	<b>4</b>	496	462	437	418	488	456	433	415	446	426	411	436	419	406	427	413	405
	<b>5</b>	475	438	411	392	468	433	409	390	424	403	387	416	398	384	409	393	386
	<b>6</b>	455	416	389	370	449	412	387	368	405	382	366	398	378	364	392	375	368
	<b>7</b>	437	396	369	350	431	392	367	349	386	364	347	381	361	345	375	357	352
	<b>8</b>	420	377	351	332	414	375	349	332	369	347	330	365	344	329	360	342	336
	<b>9</b>	403	360	334	317	398	358	333	316	354	331	315	350	329	314	346	327	322
	<b>10</b>	388	345	319	302	383	343	318	302	339	317	301	336	315	300	332	313	309

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	31.3 fc	4.1 ft
6.5 ft	22.4 fc	4.9 ft
7.5 ft	16.9 fc	5.6 ft
8.0 ft	14.8 fc	6.0 ft
10.0 ft	9.5 fc	7.5 ft
12.0 ft	6.6 fc	9.0 ft
14.0 ft	4.8 fc	10.5 ft
16.0 ft	3.7 fc	12.0 ft
20.0 ft	2.4 fc	15.0 ft
24.0 ft	1.6 fc	18.0 ft
28.0 ft	1.2 fc	21.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	398,525	398,525	398,525
<b>45.00°</b>	9,510	10,676	9,792
<b>55.00°</b>	6,504	6,987	7,146
<b>65.00°</b>	5,879	6,552	6,454
<b>75.00°</b>	5,206	4,197	4,210
<b>85.00°</b>	3,894	4,289	2,665

### 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>	11.3	12.3	11.7	12.6	12.9	11.2	12.1	11.5	12.4	12.8
	<b>3H</b>	13.2	14.1	13.6	14.4	14.8	13.0	13.8	13.3	14.1	14.5
	<b>4H</b>	13.9	14.7	14.3	15.0	15.4	13.4	14.2	13.8	14.6	15.0
	<b>6H</b>	14.2	14.9	14.6	15.3	15.7	13.7	14.5	14.2	14.8	15.2
	<b>8H</b>	14.3	15.0	14.8	15.4	15.8	13.9	14.5	14.3	14.9	15.3
	<b>12H</b>	14.4	15.1	14.8	15.4	15.9	13.9	14.6	14.3	14.9	15.4
<b>4H</b>	<b>2H</b>	12.0	12.8	12.4	13.1	13.5	11.8	12.6	12.2	12.9	13.3
	<b>3H</b>	14.0	14.7	14.4	15.1	15.5	13.7	14.3	14.1	14.7	15.1
	<b>4H</b>	14.7	15.3	15.1	15.7	16.2	14.2	14.8	14.7	15.2	15.7
	<b>6H</b>	15.1	15.6	15.6	16.0	16.5	14.7	15.2	15.1	15.6	16.1
	<b>8H</b>	15.3	15.7	15.7	16.2	16.7	14.8	15.3	15.3	15.7	16.2
	<b>12H</b>	15.4	15.8	15.9	16.3	16.8	14.9	15.3	15.4	15.8	16.3
<b>8H</b>	<b>4H</b>	14.8	15.3	15.3	15.7	16.2	14.4	14.8	14.8	15.3	15.8
	<b>6H</b>	15.3	15.7	15.8	16.2	16.7	14.9	15.3	15.4	15.8	16.3
	<b>8H</b>	15.6	15.9	16.1	16.4	16.9	15.1	15.5	15.7	16.0	16.5
	<b>12H</b>	15.8	16.1	16.3	16.6	17.2	15.3	15.6	15.8	16.1	16.7
<b>12H</b>	<b>4H</b>	14.8	15.2	15.3	15.7	16.2	14.3	14.7	14.8	15.2	15.7
	<b>6H</b>	15.3	15.7	15.9	16.1	16.7	14.9	15.2	15.5	15.7	16.3
	<b>8H</b>	15.6	15.9	16.2	16.4	17.0	15.2	15.5	15.7	16.0	16.6

Corrected UGR values based on total output lumens

SHR = 1.0