

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

IF03RMx IC DWDD1007 DLNFGPMW

Nom 3" diam Infinium, dim to warm 7L emitter - Narrow flood optic, No lens

### Test Number

SP-00947\_2\_M-7L

### Test Date

5/1/2019

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	489
Efficacy	67.05 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.22
90° - 270° Size	-0.22
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	0.43
Two luminaires, plane 90°	0.43
Four luminaires	0.45

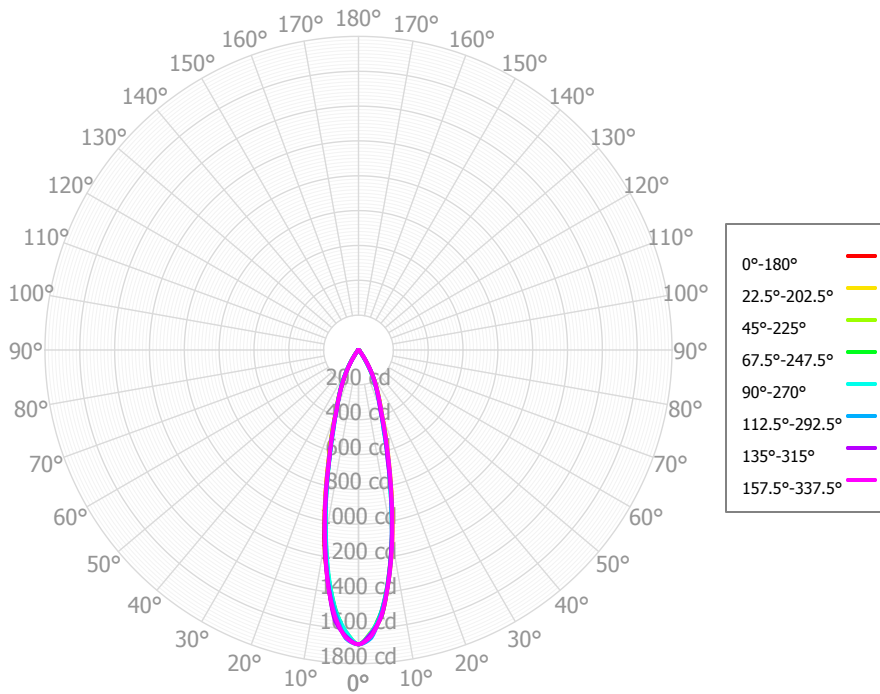
#### Full Beam Angle

0° - 180°	26°
90° - 270°	25°

### IES File Header Contents

Keyword	Value
TEST	SP-00947_2_M-7L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	5/1/2019
ISSUEDATE	11/15/2019
LUMCAT	IF03RMx IC DWDD1007 DLNFGPMW
LUMINAIRE	Nom 3" diam Infinium, dim to warm 7L emitter - Narrow flood optic, No lens
OTHER	Beam Angle: 25.9 degrees
OTHER	Shallow IC
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: N/A - dim to warm
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	132.36	27.04%	90.00° - 100.00°	0.03	0.01%
10.00° - 20.00°	183.25	37.44%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	109.87	22.45%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	38.57	7.88%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	9.52	1.94%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	6.53	1.33%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	5.57	1.14%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.05	0.62%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.70	0.14%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	489.43	99.99%	0.00° - 180.00°	489.46	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°	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36	1,689.36
2.50°	1,635.31	1,637.80	1,622.31	1,628.30	1,625.81	1,657.66	1,645.67	1,653.24	1,644.29	1,636.28	1,622.29	1,628.49	1,620.06	1,655.29	1,630.32	1,645.95	1,635.31
5.00°	1,529.81	1,525.56	1,532.95	1,507.63	1,518.72	1,515.82	1,557.62	1,537.94	1,547.87	1,519.24	1,532.53	1,499.77	1,504.21	1,507.84	1,531.78	1,524.95	1,529.81
7.50°	1,328.98	1,332.70	1,318.50	1,321.23	1,319.29	1,346.27	1,341.53	1,351.69	1,344.20	1,333.01	1,319.02	1,316.68	1,308.81	1,330.74	1,322.03	1,332.40	1,328.98
10.00°	1,104.91	1,119.47	1,103.27	1,103.04	1,101.52	1,094.09	1,118.75	1,106.94	1,128.85	1,104.94	1,104.38	1,082.90	1,078.12	1,098.66	1,097.73	1,114.61	1,104.91
12.50°	882.93	883.65	875.14	861.80	856.74	854.62	871.23	874.82	885.37	881.67	875.24	859.98	855.84	856.31	870.12	876.10	882.93
15.00°	661.37	682.60	654.48	663.68	649.41	647.03	646.86	651.77	668.99	660.93	654.73	645.89	636.79	663.28	642.21	677.05	661.37
17.50°	516.41	515.28	511.35	493.17	490.13	473.93	494.65	492.64	508.46	504.61	509.39	489.07	490.40	477.23	501.18	506.66	516.41
20.00°	383.13	395.65	377.45	381.65	372.01	374.67	365.34	374.09	377.60	377.67	374.28	372.93	367.42	381.27	364.58	391.25	383.13
22.50°	313.57	316.47	310.29	302.84	300.67	290.67	295.92	292.82	300.23	294.83	303.81	293.41	296.69	294.26	302.33	310.57	313.57
25.00°	251.27	251.74	245.31	241.99	237.63	235.23	231.25	232.05	231.35	229.42	236.07	236.83	240.16	242.73	241.67	248.91	251.27
27.50°	198.40	197.86	192.19	189.87	182.84	180.22	177.15	176.19	175.73	174.31	182.04	183.12	187.63	193.48	192.86	197.82	198.40
30.00°	146.24	147.43	140.68	138.79	131.44	125.91	126.51	122.66	125.45	122.63	130.43	130.96	135.97	143.04	144.25	148.47	146.24
32.50°	102.90	99.25	96.23	88.15	82.96	81.09	82.55	82.32	82.42	84.19	88.53	89.14	93.06	92.63	99.67	99.96	102.90
35.00°	59.88	64.73	57.19	57.19	50.74	49.64	48.25	47.39	50.38	49.47	52.21	52.15	51.65	61.16	57.08	65.70	59.88
37.50°	40.42	38.06	37.51	33.25	31.02	28.08	30.15	29.73	31.56	32.55	34.19	32.44	33.88	30.53	37.71	37.26	40.42
40.00°	21.48	23.86	21.38	22.53	19.87	18.83	17.74	18.06	19.32	19.69	19.67	19.71	19.22	21.83	19.92	23.55	21.48
42.50°	16.09	15.86	15.80	15.75	14.46	13.04	13.72	13.38	14.02	14.68	14.90	14.33	14.46	13.59	15.16	15.02	16.09
45.00°	10.96	12.16	11.31	12.61	11.41	11.03	10.80	10.71	10.70	11.08	11.18	11.46	10.59	11.38	10.89	11.49	10.96
47.50°	9.92	10.31	9.62	10.36	9.75	9.30	9.29	9.52	9.22	9.44	9.90	9.83	9.20	9.30	9.54	9.44	9.92
50.00°	8.95	9.13	8.32	8.80	8.56	7.86	8.03	8.67	8.16	8.07	8.85	8.55	7.95	8.31	8.25	8.39	8.95
52.50°	8.65	8.19	7.85	7.37	7.61	7.04	7.06	7.59	7.43	7.59	8.23	7.60	7.71	7.39	7.25	7.57	8.65
55.00°	8.33	7.94	7.46	7.37	7.12	6.75	6.67	6.47	6.85	7.20	7.60	6.71	7.48	6.95	6.53	7.11	8.33
57.50°	7.95	7.90	7.21	7.59	6.83	6.52	6.86	6.03	6.37	6.84	6.97	6.53	6.67	6.58	6.91	6.73	7.95
60.00°	7.55	7.68	6.95	7.19	6.54	6.32	6.46	5.69	5.89	6.49	6.39	6.48	5.89	6.57	7.01	6.66	7.55
62.50°	7.00	7.42	6.69	6.73	6.24	5.85	5.56	5.11	5.42	5.76	5.92	6.13	5.79	6.43	6.24	6.65	7.00
65.00°	6.47	6.92	6.37	5.99	5.85	5.18	5.05	4.51	4.83	5.05	5.46	5.73	5.64	5.80	5.55	6.33	6.47
67.50°	6.08	6.38	5.98	5.24	5.43	4.53	4.81	3.96	4.19	4.64	5.02	5.06	5.10	5.11	5.06	5.97	6.08
70.00°	5.63	5.56	5.30	4.33	4.53	3.88	3.75	3.45	3.45	4.26	4.08	4.40	4.52	4.24	4.45	5.06	5.63
72.50°	5.02	4.70	4.32	3.50	3.55	3.27	2.56	3.07	2.83	3.95	2.92	3.77	3.80	3.43	3.63	4.15	5.02
75.00°	4.05	3.85	3.47	2.93	2.70	2.63	2.28	2.40	2.64	3.06	2.44	2.92	2.95	2.69	2.98	3.37	4.05
77.50°	2.72	2.95	2.67	2.02	1.90	1.94	1.58	1.62	1.70	2.05	1.79	1.93	2.00	1.91	2.42	2.57	2.72
80.00°	1.83	1.98	1.89	0.99	1.18	0.92	0.88	1.02	0.92	1.29	1.20	1.08	0.99	1.17	1.58	1.74	1.83
82.50°	0.99	1.08	0.95	0.54	0.71	0.46	0.58	0.59	0.74	0.66	0.78	0.58	0.56	0.56	0.95	0.83	0.99
85.00°	0.48	0.71	0.53	0.47	0.61	0.41	0.51	0.44	0.50	0.50	0.47	0.65	0.52	0.34	0.58	0.48	0.48
87.50°	0.50	0.52	0.57	0.51	0.55	0.54	0.58	0.51	0.54	0.55	0.56	0.55	0.75	0.58	0.66	0.58	0.50
90.00°	0.57	0.44	0.47	0.40	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.47	0.52	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>	583	583	583	583	569	569	569	569	544	544	544	521	521	521	499	499	489
	<b>1</b>	559	547	536	527	547	537	527	518	517	509	502	499	493	488	482	478	468
	<b>2</b>	537	516	499	485	526	508	492	479	492	480	469	478	468	459	465	457	448
	<b>3</b>	516	489	468	452	506	482	464	448	470	454	441	458	445	435	448	437	429
	<b>4</b>	496	465	443	425	488	460	439	423	450	432	418	440	425	413	432	419	411
	<b>5</b>	478	444	420	403	470	440	418	401	431	412	398	424	407	394	417	402	395
	<b>6</b>	460	425	401	384	454	421	399	382	414	395	380	408	391	378	402	387	380
	<b>7</b>	444	408	384	367	439	405	382	366	399	379	364	394	376	362	389	373	367
	<b>8</b>	429	392	368	352	424	389	367	351	384	364	350	380	362	348	376	359	354
	<b>9</b>	415	377	354	338	411	375	353	338	371	351	337	367	349	336	364	347	342
	<b>10</b>	402	364	341	326	398	362	340	326	359	339	325	355	337	324	352	335	331

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	55.8 fc	2.5 ft
6.5 ft	40.0 fc	3.0 ft
7.5 ft	30.0 fc	3.4 ft
8.0 ft	26.4 fc	3.7 ft
10.0 ft	16.9 fc	4.6 ft
12.0 ft	11.7 fc	5.5 ft
14.0 ft	8.6 fc	6.4 ft
16.0 ft	6.6 fc	7.4 ft
20.0 ft	4.2 fc	9.2 ft
24.0 ft	2.9 fc	11.0 ft
28.0 ft	2.2 fc	12.9 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	478,363	478,363	478,363
<b>45.00°</b>	4,389	4,529	4,570
<b>55.00°</b>	4,113	3,684	3,516
<b>65.00°</b>	4,337	4,268	3,919
<b>75.00°</b>	4,427	3,797	2,949
<b>85.00°</b>	1,570	1,707	1,987

### 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>	8.7	9.6	9.0	10.0	10.3	7.8	8.8	8.2	9.1	9.4
	<b>3H</b>	11.2	12.0	11.6	12.4	12.7	10.0	10.9	10.4	11.2	11.6
	<b>4H</b>	12.1	12.9	12.5	13.2	13.6	10.7	11.5	11.1	11.8	12.2
	<b>6H</b>	12.5	13.2	12.9	13.6	14.0	10.9	11.6	11.3	12.0	12.4
	<b>8H</b>	12.5	13.2	13.0	13.6	14.0	10.9	11.6	11.4	12.0	12.4
	<b>12H</b>	12.5	13.2	13.0	13.5	14.0	10.9	11.6	11.4	11.9	12.4
<b>4H</b>	<b>2H</b>	9.3	10.1	9.7	10.4	10.8	8.4	9.2	8.8	9.6	10.0
	<b>3H</b>	11.9	12.6	12.4	13.0	13.4	10.7	11.3	11.1	11.8	12.2
	<b>4H</b>	12.9	13.5	13.3	13.9	14.3	11.5	12.0	11.9	12.5	12.9
	<b>6H</b>	13.4	13.9	13.9	14.3	14.8	11.8	12.3	12.2	12.7	13.2
	<b>8H</b>	13.5	13.9	13.9	14.4	14.8	11.8	12.2	12.2	12.7	13.2
	<b>12H</b>	13.5	13.9	14.0	14.4	14.8	11.8	12.2	12.3	12.7	13.1
<b>8H</b>	<b>4H</b>	13.1	13.5	13.5	14.0	14.4	11.6	12.0	12.0	12.5	12.9
	<b>6H</b>	13.7	14.0	14.2	14.5	15.0	11.9	12.3	12.4	12.8	13.3
	<b>8H</b>	13.8	14.1	14.3	14.6	15.1	11.9	12.3	12.5	12.8	13.3
	<b>12H</b>	13.8	14.1	14.3	14.6	15.2	12.0	12.3	12.5	12.8	13.4
<b>12H</b>	<b>4H</b>	13.0	13.4	13.5	13.9	14.4	11.5	11.9	12.0	12.4	12.9
	<b>6H</b>	13.6	14.0	14.2	14.4	15.0	11.9	12.2	12.4	12.7	13.2
	<b>8H</b>	13.8	14.0	14.3	14.5	15.1	12.0	12.2	12.5	12.7	13.3

Corrected UGR values based on total output lumens

SHR = 1.0