

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03RMx xx 835 020 DLFLGC MW  
Nominal 3" diam round recessed Infinium downlight

### **Test Number**

SP-00758

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	15 W
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#### Lumen Output

Output Lumens	1318
Efficacy	87.86 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.6
Two luminaires, plane 90°	0.61
Four luminaires	0.64

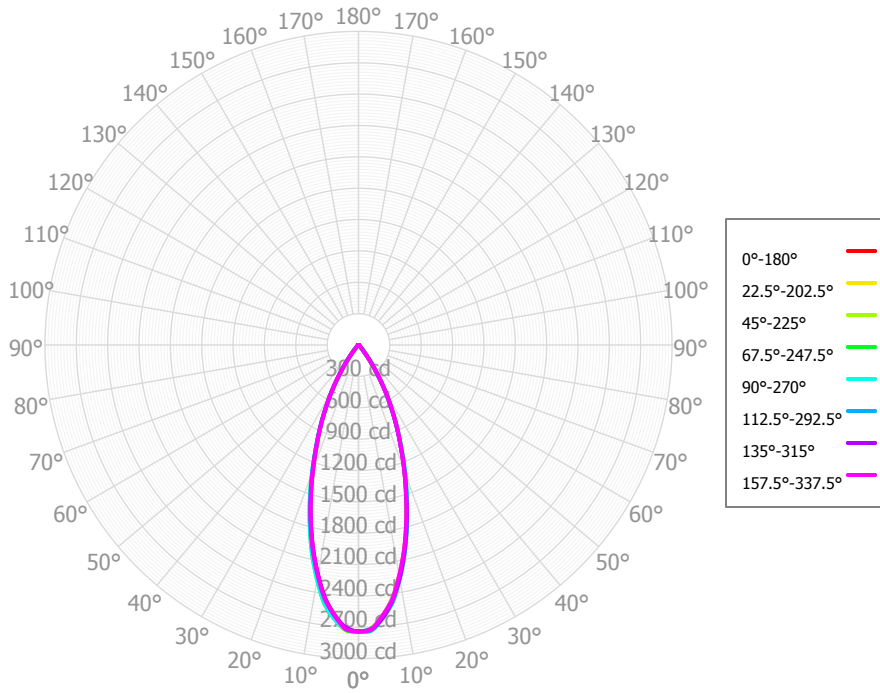
#### Full Beam Angle

0° - 180°	38°
90° - 270°	39°

### IES File Header Contents

Keyword	Value
TEST	SP-00758
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 020 DLFLGC MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 38 degrees
OTHER	Flood optic, Clear glass 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
_CRI	80
_CCTMULT	40K x 1.03
_LAMPMULT	07L x 0.40, 10L x 0.56, 15L x 0.78

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	240.92	18.28%	90.00° - 100.00°	0.07	0.01%
10.00° - 20.00°	485.82	36.86%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	392.89	29.81%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	151.28	11.48%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	24.34	1.85%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	9.84	0.75%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	6.97	0.53%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.25	0.32%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.46	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,317.76	99.99%	0.00° - 180.00°	1,317.83	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°	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86	2,740.86
2.50°	2,717.65	2,731.87	2,714.61	2,723.86	2,717.13	2,719.02	2,705.87	2,723.16	2,713.17	2,734.47	2,715.93	2,731.37	2,723.65	2,737.52	2,721.96	2,724.59	2,717.65
5.00°	2,605.96	2,602.68	2,614.82	2,610.08	2,614.49	2,600.41	2,602.86	2,599.24	2,595.58	2,603.67	2,619.03	2,629.40	2,634.78	2,627.15	2,627.32	2,602.24	2,605.96
7.50°	2,454.47	2,466.63	2,458.15	2,467.52	2,461.18	2,458.88	2,445.74	2,453.95	2,445.89	2,465.44	2,468.38	2,498.08	2,493.99	2,488.12	2,467.29	2,462.07	2,454.47
10.00°	2,245.76	2,242.94	2,257.52	2,256.07	2,260.83	2,244.18	2,234.77	2,237.54	2,229.76	2,242.53	2,257.20	2,278.16	2,281.58	2,275.36	2,265.55	2,239.72	2,245.76
12.50°	2,013.05	2,016.68	2,022.37	2,025.37	2,030.45	2,021.91	2,007.14	2,008.80	2,004.72	2,015.89	2,028.99	2,049.91	2,051.16	2,043.24	2,026.72	2,011.96	2,013.05
15.00°	1,764.95	1,762.94	1,777.49	1,782.32	1,788.57	1,776.19	1,763.29	1,763.01	1,761.69	1,768.32	1,782.27	1,798.09	1,797.13	1,789.43	1,778.38	1,761.24	1,764.95
17.50°	1,510.78	1,511.48	1,525.25	1,536.07	1,539.52	1,531.55	1,519.31	1,514.46	1,517.17	1,520.03	1,532.02	1,546.66	1,545.53	1,530.35	1,521.99	1,513.95	1,510.78
20.00°	1,281.31	1,282.96	1,291.77	1,302.98	1,304.01	1,290.05	1,275.22	1,281.66	1,269.81	1,277.82	1,278.11	1,296.28	1,296.94	1,293.25	1,284.07	1,280.46	1,281.31
22.50°	1,060.99	1,058.69	1,071.78	1,073.19	1,076.52	1,060.63	1,057.30	1,051.21	1,043.58	1,035.76	1,053.65	1,060.65	1,068.54	1,061.08	1,061.00	1,056.57	1,060.99
25.00°	869.11	871.33	872.09	875.23	873.29	864.07	862.43	861.77	855.51	854.13	858.54	863.10	864.77	864.02	861.52	869.11	869.11
27.50°	687.47	685.96	686.46	684.63	683.67	676.35	680.24	677.80	675.33	673.22	676.53	675.14	675.90	674.54	680.61	685.40	687.47
30.00°	518.89	515.75	515.73	517.26	516.70	512.06	508.97	515.42	509.09	512.47	507.13	510.48	504.30	511.65	514.33	514.87	518.89
32.50°	354.72	351.05	354.93	354.94	362.15	359.61	359.63	355.68	355.78	352.01	357.94	358.21	355.03	354.02	358.99	354.55	354.72
35.00°	229.97	226.36	228.11	233.40	239.39	236.61	228.28	233.37	224.08	231.18	227.26	235.25	230.37	235.01	233.69	228.39	229.97
37.50°	117.65	112.90	122.83	120.22	133.11	134.14	135.27	115.19	122.65	111.86	132.93	133.03	135.73	122.95	129.71	121.56	117.65
40.00°	69.69	72.28	66.08	74.48	76.27	79.72	72.14	70.96	69.98	72.01	70.70	77.04	73.47	74.88	70.09	76.22	69.69
42.50°	41.44	36.36	38.94	41.34	43.67	38.90	38.13	33.77	34.53	33.04	36.56	35.93	37.02	37.84	41.27	39.67	41.44
45.00°	28.54	27.86	25.45	29.44	27.91	29.12	26.33	25.09	25.81	25.11	26.36	26.10	27.03	27.37	26.06	29.20	28.54
47.50°	20.02	20.07	19.96	21.24	20.22	20.91	19.52	18.93	18.85	17.35	19.22	18.32	20.00	21.03	19.81	20.47	20.02
50.00°	15.64	16.30	16.20	16.86	15.65	16.10	16.31	15.36	14.47	14.16	14.56	14.72	15.87	16.36	15.68	16.68	15.64
52.50°	12.37	12.91	13.40	13.10	12.49	12.40	13.35	11.99	11.27	11.09	11.53	11.74	12.74	11.92	12.90	13.44	12.37
55.00°	10.45	11.44	11.13	11.06	10.44	10.99	10.56	10.08	9.75	10.38	9.78	9.94	10.57	10.21	10.99	11.71	10.45
57.50°	8.87	9.99	9.14	9.26	8.85	9.84	8.95	8.27	8.60	9.68	8.98	8.65	9.01	8.87	9.63	9.86	8.87
60.00°	8.27	8.60	8.39	8.55	8.54	9.20	8.13	7.56	7.98	8.95	8.89	8.27	7.99	8.25	8.86	7.72	8.27
62.50°	7.91	7.39	8.26	7.99	8.76	8.46	7.71	6.92	7.33	8.20	8.41	7.72	7.22	7.72	8.42	6.31	7.91
65.00°	7.21	6.96	7.36	7.30	7.56	7.53	7.55	6.48	6.63	7.08	7.66	6.84	6.67	7.29	7.72	6.68	7.21
67.50°	6.44	6.43	6.10	6.60	5.81	6.63	6.75	6.04	5.89	6.01	6.60	5.94	6.01	6.87	6.87	6.39	6.44
70.00°	5.11	5.63	5.06	5.98	5.46	5.74	5.67	5.48	5.12	5.21	5.40	5.01	5.29	5.91	5.83	4.91	5.11
72.50°	3.90	4.72	4.10	5.08	5.38	4.72	4.85	5.06	4.68	4.65	5.27	4.52	4.72	5.02	4.73	4.23	3.90
75.00°	3.56	3.68	3.50	3.30	4.63	3.71	4.06	4.90	4.23	4.38	4.94	4.15	4.06	4.38	4.22	4.13	3.56
77.50°	3.22	2.87	3.06	2.96	3.76	3.19	3.29	3.21	3.34	3.43	3.91	3.36	3.17	3.26	3.34	3.16	3.22
80.00°	2.67	2.11	2.70	2.75	2.81	2.68	2.73	2.01	2.74	2.67	3.23	2.66	2.48	2.20	2.12	2.37	2.67
82.50°	1.49	1.47	1.88	1.54	2.00	1.70	2.02	1.61	1.59	1.99	2.04	1.61	1.41	1.76	1.67	1.75	1.49
85.00°	1.30	1.11	1.01	1.01	1.09	1.07	0.99	1.22	0.89	1.28	1.21	1.09	0.98	1.21	1.12	1.39	1.30
87.50°	1.04	0.92	0.89	1.16	1.01	0.98	0.93	1.09	0.87	0.99	1.12	0.89	1.00	0.85	1.13	1.01	1.04
90.00°	0.97	0.94	1.06	0.61	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	0.93	1.13	0.97
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>	1,569	1,569	1,569	1,569	1,532	1,532	1,532	1,532	1,464	1,464	1,464	1,402	1,402	1,402	1,345	1,345	1,318
	<b>1</b>	1,503	1,470	1,440	1,413	1,471	1,442	1,415	1,391	1,389	1,367	1,348	1,340	1,323	1,308	1,295	1,282	1,257
	<b>2</b>	1,439	1,382	1,334	1,294	1,411	1,359	1,316	1,280	1,317	1,282	1,252	1,279	1,250	1,225	1,243	1,220	1,196
	<b>3</b>	1,378	1,303	1,245	1,199	1,353	1,285	1,232	1,189	1,252	1,207	1,171	1,220	1,183	1,152	1,191	1,161	1,139
	<b>4</b>	1,321	1,233	1,169	1,120	1,298	1,218	1,159	1,113	1,191	1,140	1,100	1,166	1,123	1,088	1,142	1,106	1,085
	<b>5</b>	1,266	1,170	1,102	1,053	1,246	1,158	1,095	1,048	1,135	1,081	1,039	1,114	1,067	1,030	1,094	1,054	1,035
	<b>6</b>	1,214	1,112	1,043	994	1,196	1,102	1,037	990	1,083	1,026	984	1,066	1,016	978	1,049	1,006	971
	<b>7</b>	1,166	1,059	990	942	1,150	1,051	986	939	1,035	977	935	1,020	969	930	1,006	960	925
	<b>8</b>	1,120	1,011	942	895	1,106	1,004	939	893	991	932	890	978	925	886	966	919	883
	<b>9</b>	1,077	967	899	853	1,064	961	896	852	949	890	849	938	885	846	928	879	844
	<b>10</b>	1,037	926	859	815	1,025	921	857	814	911	852	812	901	848	810	892	843	808

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	90.6 fc	3.8 ft
6.5 ft	64.9 fc	4.5 ft
7.5 ft	48.7 fc	5.2 ft
8.0 ft	42.8 fc	5.6 ft
10.0 ft	27.4 fc	6.9 ft
12.0 ft	19.0 fc	8.3 ft
14.0 ft	14.0 fc	9.7 ft
16.0 ft	10.7 fc	11.1 ft
20.0 ft	6.9 fc	13.9 ft
24.0 ft	4.8 fc	16.7 ft
28.0 ft	3.5 fc	19.5 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	939,089	939,089	939,089
<b>45.00°</b>	13,829	12,330	13,524
<b>55.00°</b>	6,241	6,647	6,234
<b>65.00°</b>	5,844	5,969	6,125
<b>75.00°</b>	4,715	4,636	6,124
<b>85.00°</b>	5,092	3,974	4,280

### 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>	7.7	8.7	8.1	9.0	9.3	7.4	8.3	7.8	8.6	8.9
	<b>3H</b>	9.4	10.2	9.8	10.6	10.9	9.2	10.0	9.5	10.3	10.7
	<b>4H</b>	10.0	10.7	10.4	11.1	11.5	10.0	10.7	10.4	11.1	11.5
	<b>6H</b>	10.5	11.2	10.9	11.5	11.9	10.6	11.2	11.0	11.6	12.0
	<b>8H</b>	10.6	11.3	11.0	11.6	12.1	10.7	11.4	11.2	11.8	12.2
	<b>12H</b>	10.7	11.3	11.2	11.7	12.1	10.8	11.4	11.2	11.8	12.2
<b>4H</b>	<b>2H</b>	8.3	9.1	8.7	9.4	9.8	8.1	8.8	8.5	9.2	9.6
	<b>3H</b>	10.1	10.7	10.5	11.2	11.6	10.0	10.6	10.4	11.0	11.4
	<b>4H</b>	10.8	11.4	11.3	11.8	12.2	10.9	11.4	11.3	11.8	12.3
	<b>6H</b>	11.4	11.9	11.9	12.4	12.8	11.6	12.1	12.1	12.5	13.0
	<b>8H</b>	11.6	12.0	12.1	12.5	13.0	11.8	12.2	12.3	12.7	13.1
	<b>12H</b>	11.8	12.1	12.2	12.6	13.1	11.9	12.3	12.4	12.8	13.2
<b>8H</b>	<b>4H</b>	11.0	11.5	11.5	11.9	12.4	11.2	11.6	11.7	12.1	12.5
	<b>6H</b>	11.8	12.1	12.3	12.6	13.1	12.1	12.4	12.6	12.9	13.4
	<b>8H</b>	12.0	12.3	12.6	12.9	13.4	12.3	12.6	12.9	13.1	13.6
	<b>12H</b>	12.3	12.6	12.8	13.1	13.6	12.5	12.8	13.0	13.3	13.9
<b>12H</b>	<b>4H</b>	11.0	11.4	11.5	11.9	12.4	11.2	11.6	11.7	12.1	12.5
	<b>6H</b>	11.8	12.1	12.4	12.6	13.2	12.1	12.4	12.6	12.9	13.4
	<b>8H</b>	12.1	12.4	12.7	12.9	13.5	12.4	12.7	13.0	13.2	13.8

Corrected UGR values based on total output lumens

SHR = 1.0