

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03RMx xx 835 010 DLNFGP MW  
Nominal 3" diam round recessed Infinium downlight

### **Test Number**

SP-00759\_2\_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	754
Efficacy	81.1 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°	0.48
Four luminaires	0.49

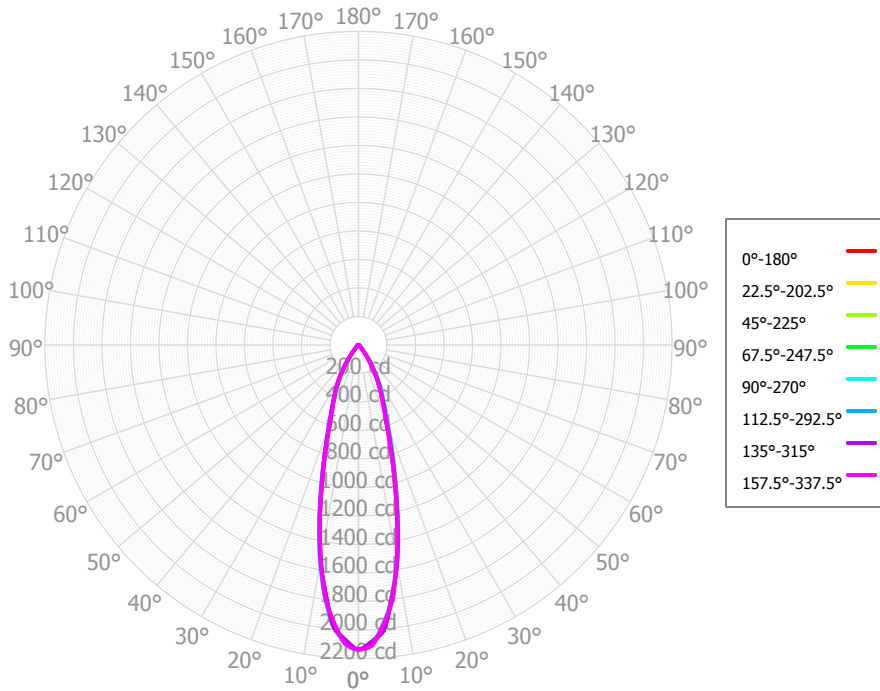
#### Full Beam Angle

0° - 180°	28°
90° - 270°	29°

### IES File Header Contents

Keyword	Value
TEST	SP-00759_2_M-010L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 010 DLNFGP MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 28 degrees
OTHER	Narrow flood optic, Solite 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, scaled from 20L

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	176.21	23.36%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	272.54	36.13%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	180.41	23.92%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	82.74	10.97%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.53	2.59%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	10.11	1.34%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	7.38	0.98%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.25	0.56%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.03	0.14%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	754.21	99.99%	0.00° - 180.00°	754.25	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°	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57	2,136.57
2.50°	2,086.84	2,097.41	2,085.45	2,087.55	2,094.21	2,099.80	2,072.56	2,099.18	2,075.99	2,092.27	2,083.80	2,083.68	2,097.07	2,107.19	2,085.97	2,112.76	2,086.84
5.00°	2,013.11	1,974.93	1,991.15	1,994.11	1,982.38	1,960.22	1,988.78	1,957.94	1,987.54	1,969.88	1,983.62	1,992.97	1,981.81	1,968.43	2,012.89	1,976.28	2,013.11
7.50°	1,784.62	1,791.80	1,782.00	1,787.04	1,793.27	1,792.67	1,763.56	1,785.36	1,764.50	1,784.21	1,777.40	1,782.60	1,792.86	1,806.09	1,788.71	1,810.76	1,784.62
10.00°	1,553.83	1,542.11	1,540.64	1,557.17	1,542.59	1,526.90	1,535.49	1,520.04	1,535.30	1,526.36	1,546.37	1,544.10	1,552.36	1,540.33	1,558.69	1,541.08	1,553.83
12.50°	1,256.92	1,254.02	1,262.82	1,271.92	1,277.03	1,262.08	1,255.78	1,254.03	1,249.97	1,260.05	1,261.84	1,269.61	1,268.79	1,259.94	1,264.85	1,252.82	1,256.92
15.00°	965.99	994.65	976.77	1,006.89	1,001.04	999.97	982.47	986.29	974.84	985.22	998.50	988.49	1,011.19	1,001.32	980.00	988.13	965.99
17.50°	756.42	749.48	771.73	784.24	785.95	769.54	779.31	754.56	765.65	765.52	774.23	782.02	772.44	744.83	764.07	726.66	756.42
20.00°	558.46	590.11	580.89	601.20	607.73	616.08	588.86	599.72	575.53	594.03	593.62	586.13	602.92	599.26	565.80	580.65	558.46
22.50°	465.11	467.43	476.01	489.21	488.63	486.19	492.93	474.03	481.67	475.66	482.27	483.34	477.47	460.48	467.45	445.39	465.11
25.00°	374.80	381.30	382.60	393.55	400.77	405.74	401.45	401.55	394.74	398.21	390.26	389.66	386.33	383.76	374.40	371.39	374.80
27.50°	304.03	308.31	312.03	323.52	326.46	330.03	335.14	331.68	335.43	329.74	325.16	320.19	313.99	308.58	305.20	300.88	304.03
30.00°	234.04	237.31	243.53	255.33	258.25	262.82	268.49	265.96	273.64	267.25	259.85	252.20	246.24	241.18	237.27	232.78	234.04
32.50°	167.94	166.92	179.24	189.64	194.78	198.23	200.32	201.21	203.64	202.72	194.27	189.55	180.69	174.48	173.88	165.00	167.94
35.00°	107.46	114.17	115.19	132.48	133.15	137.76	136.78	137.81	139.13	137.00	136.87	127.32	127.94	123.12	116.33	113.39	107.46
37.50°	69.29	65.78	78.62	85.51	90.95	89.40	90.06	87.64	89.73	90.12	88.17	88.17	80.36	73.89	76.17	63.32	69.29
40.00°	37.76	43.30	42.89	52.66	55.04	57.47	50.86	53.31	49.89	52.68	54.54	50.10	53.18	49.64	43.66	44.34	37.76
42.50°	27.73	25.87	31.50	34.48	37.54	35.55	34.13	31.09	32.60	33.57	34.86	36.05	32.89	27.43	30.57	26.47	27.73
45.00°	19.59	19.61	20.53	23.30	24.91	25.58	20.97	21.67	19.86	22.27	22.99	22.77	23.94	21.66	20.58	21.03	19.59
47.50°	16.66	15.05	17.59	18.42	19.36	19.08	16.75	15.91	16.22	16.81	17.51	18.62	18.20	16.43	17.27	15.95	16.66
50.00°	14.05	13.65	14.73	14.87	15.34	16.17	13.38	13.51	13.30	13.48	14.15	14.77	15.14	14.32	14.57	13.71	14.05
52.50°	12.20	12.60	12.74	12.38	13.63	13.70	11.83	11.56	11.59	11.67	12.31	13.42	12.70	12.36	12.99	11.70	12.20
55.00°	10.77	10.66	10.91	11.26	12.31	11.62	10.55	9.98	10.14	10.32	10.89	12.07	11.54	11.06	11.66	10.98	10.77
57.50°	10.17	8.66	10.27	11.07	10.86	10.55	9.79	9.09	9.07	9.44	9.73	10.70	10.63	9.72	10.71	10.24	10.17
60.00°	9.40	8.85	9.50	10.15	9.40	10.28	8.86	8.69	8.60	8.68	8.70	9.36	9.93	8.27	9.48	9.33	9.40
62.50°	8.34	9.11	8.03	8.80	9.04	9.77	7.66	8.11	8.91	7.89	7.75	8.19	9.26	7.06	7.84	8.40	8.34
65.00°	7.21	7.53	6.81	7.94	8.78	9.08	7.02	7.42	8.29	7.08	7.23	6.93	7.81	6.59	6.62	7.34	7.21
67.50°	5.95	6.00	6.71	7.35	7.66	8.14	7.09	6.36	6.70	6.10	6.89	5.40	6.38	6.03	5.90	6.24	5.95
70.00°	5.21	5.32	6.41	6.68	6.50	7.08	6.60	5.15	5.68	5.22	5.58	4.89	5.34	5.27	5.01	5.04	5.21
72.50°	5.00	4.67	5.58	5.97	5.13	6.05	5.78	5.07	4.93	4.99	4.37	5.41	4.35	4.40	3.96	4.07	5.00
75.00°	3.97	4.08	4.44	4.93	4.11	4.89	4.25	4.40	4.40	4.31	3.71	4.70	3.46	3.41	3.52	3.38	3.97
77.50°	2.70	3.12	3.01	3.78	4.03	3.48	3.24	2.66	3.49	3.27	2.88	3.34	2.95	2.57	3.06	2.48	2.70
80.00°	1.82	2.02	1.79	2.43	3.01	2.48	2.50	2.48	2.41	2.08	1.90	1.85	1.67	1.79	1.84	1.64	1.82
82.50°	1.21	1.31	1.02	1.27	1.66	1.38	1.36	1.45	1.49	1.06	0.94	1.08	0.72	1.06	0.94	0.98	1.21
85.00°	0.75	0.91	0.73	0.86	0.65	0.65	0.57	0.77	0.81	0.67	1.12	0.64	0.72	0.42	0.58	0.69	0.75
87.50°	0.72	0.56	0.74	0.94	0.77	0.55	0.68	0.56	0.83	0.80	0.66	0.84	0.00	0.66	0.55	0.61	0.72
90.00°	0.59	0.41	0.55	1.04	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.60	0.75	0.59
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>	898	898	898	898	877	877	877	877	838	838	838	802	802	802	770	770	754
	<b>1</b>	860	841	824	809	842	825	810	796	795	783	772	767	758	749	741	734	719
	<b>2</b>	824	791	764	741	808	779	754	733	754	734	717	732	716	702	712	699	685
	<b>3</b>	790	747	714	688	776	737	707	682	718	693	672	700	679	661	683	666	654
	<b>4</b>	758	708	672	644	745	700	666	640	684	656	633	670	646	626	656	636	624
	<b>5</b>	728	673	635	607	716	667	631	605	654	623	600	642	615	594	631	608	597
	<b>6</b>	699	642	603	576	689	636	600	574	626	594	570	616	588	566	606	582	572
	<b>7</b>	673	613	575	548	664	609	572	546	600	567	544	591	562	541	584	558	549
	<b>8</b>	648	588	549	523	640	584	547	522	576	543	520	569	539	518	562	536	527
	<b>9</b>	625	564	526	501	618	560	524	500	554	521	498	548	518	497	542	515	507
	<b>10</b>	604	542	505	480	597	539	504	480	533	501	479	528	498	477	523	496	489

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	70.6 fc	2.8 ft
6.5 ft	50.6 fc	3.3 ft
7.5 ft	38.0 fc	3.8 ft
8.0 ft	33.4 fc	4.1 ft
10.0 ft	21.4 fc	5.1 ft
12.0 ft	14.8 fc	6.1 ft
14.0 ft	10.9 fc	7.1 ft
16.0 ft	8.3 fc	8.1 ft
20.0 ft	5.3 fc	10.2 ft
24.0 ft	3.7 fc	12.2 ft
28.0 ft	2.7 fc	14.2 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	732,043	732,043	732,043
<b>45.00°</b>	9,493	9,947	12,070
<b>55.00°</b>	6,434	6,516	7,351
<b>65.00°</b>	5,842	5,519	7,121
<b>75.00°</b>	5,258	5,883	5,436
<b>85.00°</b>	2,955	2,878	2,573

### 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>	9.6	10.6	10.0	10.9	11.2	10.3	11.3	10.7	11.6	11.9
	<b>3H</b>	11.2	12.0	11.6	12.4	12.7	12.0	12.9	12.4	13.2	13.6
	<b>4H</b>	11.9	12.6	12.3	13.0	13.4	12.6	13.4	13.0	13.8	14.1
	<b>6H</b>	12.2	12.9	12.6	13.3	13.7	13.1	13.8	13.5	14.2	14.6
	<b>8H</b>	12.2	12.9	12.7	13.3	13.7	13.1	13.8	13.6	14.2	14.6
	<b>12H</b>	12.3	12.9	12.7	13.3	13.7	13.1	13.8	13.6	14.2	14.6
<b>4H</b>	<b>2H</b>	10.0	10.8	10.4	11.2	11.6	10.7	11.4	11.1	11.8	12.2
	<b>3H</b>	11.9	12.5	12.3	12.9	13.3	12.7	13.3	13.1	13.7	14.1
	<b>4H</b>	12.7	13.2	13.1	13.6	14.1	13.5	14.1	13.9	14.5	14.9
	<b>6H</b>	13.1	13.6	13.5	14.0	14.5	14.0	14.5	14.5	15.0	15.4
	<b>8H</b>	13.1	13.6	13.6	14.0	14.5	14.1	14.6	14.6	15.0	15.5
	<b>12H</b>	13.2	13.6	13.7	14.1	14.5	14.1	14.5	14.6	15.0	15.5
<b>8H</b>	<b>4H</b>	12.9	13.4	13.4	13.8	14.3	13.7	14.1	14.1	14.6	15.0
	<b>6H</b>	13.4	13.7	13.9	14.2	14.7	14.3	14.6	14.8	15.1	15.6
	<b>8H</b>	13.5	13.8	14.0	14.3	14.8	14.4	14.7	14.9	15.2	15.7
	<b>12H</b>	13.6	13.9	14.1	14.4	15.0	14.5	14.7	15.0	15.2	15.8
<b>12H</b>	<b>4H</b>	12.9	13.3	13.4	13.8	14.2	13.6	14.0	14.1	14.5	15.0
	<b>6H</b>	13.4	13.7	13.9	14.2	14.7	14.3	14.6	14.8	15.1	15.6
	<b>8H</b>	13.5	13.8	14.1	14.3	14.9	14.4	14.7	15.0	15.2	15.8

Corrected UGR values based on total output lumens

SHR = 1.0