

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

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

### **Test Number**

SP-00761

### **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	1203
Efficacy	80.17 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.96
Two luminaires, plane 90°	0.96
Four luminaires	0.9

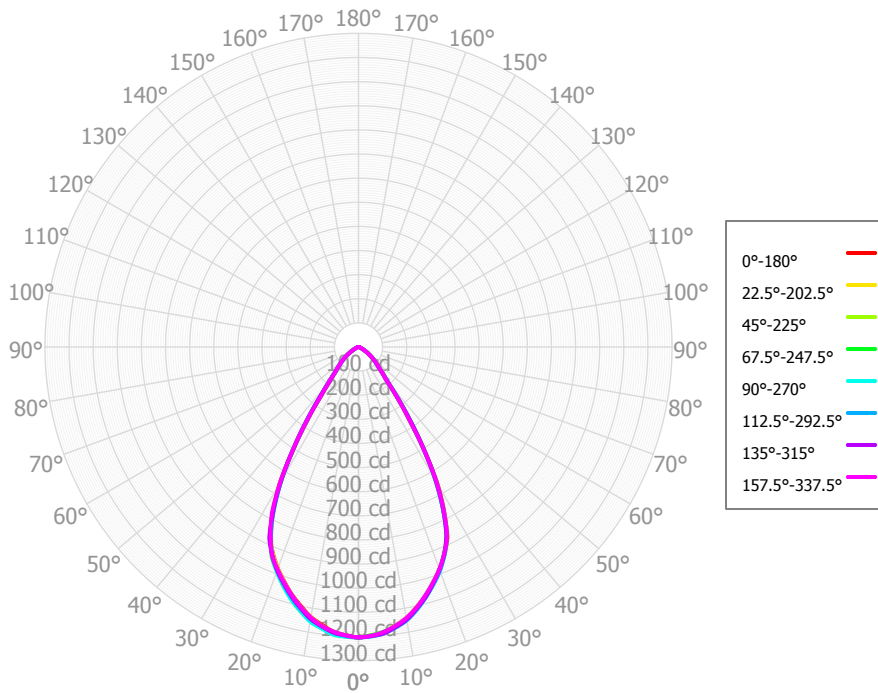
#### Full Beam Angle

0° - 180°	62°
90° - 270°	61°

### IES File Header Contents

Keyword	Value
TEST	SP-00761
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 020 DLWFGC MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 62 degrees
OTHER	Wide 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°	113.60	9.45%	90.00° - 100.00°	0.07	0.01%
10.00° - 20.00°	300.07	24.95%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	385.19	32.03%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	237.59	19.76%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	96.02	7.99%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	48.77	4.06%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	15.82	1.32%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.08	0.34%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.28	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,202.44	99.99%	0.00° - 180.00°	1,202.51	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°	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05	1,204.05
2.50°	1,197.64	1,196.73	1,197.56	1,197.14	1,199.75	1,198.75	1,197.29	1,196.95	1,196.43	1,197.54	1,196.89	1,201.49	1,202.26	1,201.46	1,199.48	1,199.12	1,197.64
5.00°	1,187.62	1,186.55	1,186.78	1,185.37	1,191.49	1,187.39	1,189.09	1,184.53	1,185.46	1,186.75	1,186.48	1,191.24	1,197.28	1,191.98	1,192.34	1,186.35	1,187.62
7.50°	1,165.91	1,165.60	1,166.52	1,168.27	1,172.23	1,169.99	1,167.63	1,166.56	1,161.69	1,165.53	1,167.82	1,175.31	1,177.06	1,174.11	1,171.81	1,166.61	1,165.91
10.00°	1,142.39	1,140.59	1,144.53	1,145.09	1,149.66	1,144.82	1,145.38	1,139.04	1,137.17	1,138.99	1,144.65	1,149.85	1,156.08	1,150.84	1,148.13	1,141.11	1,142.39
12.50°	1,107.07	1,105.91	1,107.98	1,112.85	1,112.69	1,112.98	1,108.13	1,105.14	1,101.08	1,105.15	1,111.07	1,119.91	1,119.32	1,116.23	1,112.09	1,107.11	1,107.07
15.00°	1,070.14	1,068.39	1,069.75	1,071.95	1,074.35	1,074.64	1,070.52	1,066.16	1,064.22	1,066.60	1,073.92	1,080.52	1,082.07	1,075.77	1,073.71	1,067.44	1,070.14
17.50°	1,025.88	1,026.14	1,025.52	1,028.80	1,031.53	1,031.66	1,028.52	1,024.41	1,021.32	1,022.79	1,030.26	1,037.66	1,037.14	1,032.17	1,028.48	1,025.11	1,025.88
20.00°	980.60	982.86	980.91	983.88	985.92	985.29	985.66	980.72	977.29	977.13	984.12	989.60	991.01	987.30	981.31	981.31	980.60
22.50°	931.98	929.41	927.46	927.40	933.36	936.98	934.06	936.18	927.37	929.76	934.23	940.09	934.61	930.19	929.71	927.89	931.98
25.00°	869.05	874.48	871.42	863.61	863.18	857.87	874.46	861.97	866.99	859.19	862.86	858.75	869.65	869.12	861.53	870.23	869.05
27.50°	768.66	763.47	759.74	760.74	757.88	764.61	763.71	777.68	766.96	771.01	765.11	770.79	757.97	760.01	762.56	765.04	768.66
30.00°	652.91	647.60	645.35	637.51	641.03	641.16	647.22	647.79	653.89	648.09	645.19	641.08	641.23	639.41	646.91	643.66	652.91
32.50°	505.64	502.92	502.74	505.62	505.50	506.52	505.71	506.08	503.70	503.88	503.12	505.62	504.99	505.28	506.39	505.20	505.64
35.00°	372.79	358.31	366.19	370.18	380.55	382.32	373.46	377.59	366.94	374.56	375.05	379.84	376.05	368.93	377.86	362.20	372.79
37.50°	263.54	266.20	267.24	272.17	269.44	261.06	270.90	251.58	260.35	252.76	258.70	254.83	268.93	271.43	263.78	266.53	263.54
40.00°	185.54	178.29	181.15	185.96	191.40	198.28	187.14	193.84	179.54	187.22	187.22	196.38	183.13	178.14	186.78	179.77	185.54
42.50°	150.10	148.95	149.76	146.60	149.05	147.27	151.25	144.25	145.42	144.06	146.18	140.60	146.67	145.91	147.26	145.73	150.10
45.00°	122.73	120.99	121.25	118.62	119.26	123.15	121.11	122.19	118.02	118.26	119.23	120.29	116.68	116.70	118.89	118.01	122.73
47.50°	104.29	103.67	102.12	100.12	100.69	102.81	102.44	101.86	100.41	97.73	99.96	100.25	98.55	99.14	99.68	100.63	104.29
50.00°	86.83	86.47	84.07	83.22	83.59	86.63	85.16	85.77	83.87	82.48	83.37	83.50	81.45	81.70	82.74	83.95	86.83
52.50°	70.26	69.92	68.72	67.76	67.56	70.76	70.11	69.76	68.60	68.45	67.98	67.20	65.90	66.71	67.31	68.67	70.26
55.00°	55.60	54.22	54.06	52.45	53.63	54.72	55.46	54.45	54.23	54.09	53.54	54.14	52.16	52.16	53.28	53.52	55.60
57.50°	42.38	41.63	40.79	40.39	40.96	38.83	41.36	39.73	40.75	39.68	39.43	41.41	40.65	41.51	40.01	40.85	42.38
60.00°	31.33	30.15	29.37	28.50	30.58	29.24	29.93	31.16	29.93	29.70	30.22	30.31	30.30	31.07	29.38	28.63	31.33
62.50°	21.59	21.77	20.92	21.21	21.32	19.98	21.41	22.83	21.26	20.15	22.27	20.45	21.11	21.82	19.90	21.15	21.59
65.00°	15.41	14.81	14.45	14.18	15.18	14.73	14.97	16.02	14.81	14.34	15.61	15.01	14.58	13.69	13.85	14.11	15.41
67.50°	10.95	10.86	10.54	10.68	10.21	9.84	10.25	10.06	9.75	8.98	9.20	10.35	10.16	9.93	8.99	9.70	10.95
70.00°	7.64	7.56	7.38	7.40	7.28	6.39	6.96	6.64	7.10	7.09	7.56	7.30	6.85	6.82	6.46	6.28	7.64
72.50°	4.73	5.03	4.81	4.85	4.84	4.12	4.34	4.66	5.28	5.26	5.70	4.81	4.07	4.94	4.49	5.17	4.73
75.00°	3.32	3.63	3.83	3.45	3.27	3.14	3.13	4.01	4.30	3.55	3.01	2.76	3.11	3.78	3.77	3.98	3.32
77.50°	2.24	2.76	2.97	2.94	2.45	2.78	2.31	2.67	2.99	2.52	2.48	2.24	2.47	2.97	2.86	2.80	2.24
80.00°	1.53	2.36	1.83	2.60	2.16	2.28	1.87	2.01	1.77	2.00	2.18	1.97	1.96	2.05	1.86	1.92	1.53
82.50°	1.24	1.30	1.39	1.59	1.19	1.32	1.63	1.55	1.29	1.70	1.33	1.55	1.20	1.29	1.17	1.60	1.24
85.00°	1.27	1.00	1.25	1.04	1.31	0.91	1.12	1.00	1.06	1.18	0.75	0.98	0.76	1.14	1.25	1.31	1.27
87.50°	0.97	1.15	0.81	0.97	1.01	0.55	1.01	0.90	1.13	1.15	1.06	0.80	1.08	0.89	1.09	1.06	0.97
90.00°	1.20	1.01	0.67	0.96	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	1.12	0.94	1.20
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.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	1,432	1,432	1,432	1,432	1,398	1,398	1,398	1,398	1,336	1,336	1,336	1,279	1,279	1,279	1,227	1,227	1,202
	1	1,360	1,324	1,293	1,264	1,330	1,298	1,270	1,244	1,249	1,226	1,205	1,204	1,186	1,169	1,163	1,149	1,136
	2	1,287	1,224	1,172	1,129	1,260	1,203	1,156	1,116	1,164	1,125	1,091	1,128	1,096	1,068	1,094	1,068	1,045
	3	1,216	1,134	1,070	1,019	1,192	1,117	1,058	1,011	1,085	1,035	995	1,055	1,014	979	1,028	993	964
	4	1,150	1,053	982	928	1,127	1,039	973	923	1,013	956	911	988	940	901	965	924	890
	5	1,087	981	906	851	1,067	969	899	847	947	886	840	927	874	832	908	862	825
	6	1,029	916	840	785	1,011	906	835	782	888	824	777	870	814	771	854	805	766
	7	976	858	781	728	959	849	777	726	834	769	722	819	761	718	805	753	714
	8	926	805	729	677	911	798	726	676	785	719	673	772	713	670	760	707	667
	9	879	758	683	633	866	752	680	632	740	675	629	729	670	627	719	665	625
	10	837	715	642	593	824	710	640	592	699	635	591	690	631	589	681	626	587

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	39.8 fc	6.6 ft
6.5 ft	28.5 fc	7.7 ft
7.5 ft	21.4 fc	8.9 ft
8.0 ft	18.8 fc	9.5 ft
10.0 ft	12.0 fc	11.9 ft
12.0 ft	8.4 fc	14.3 ft
14.0 ft	6.1 fc	16.7 ft
16.0 ft	4.7 fc	19.1 ft
20.0 ft	3.0 fc	23.8 ft
24.0 ft	2.1 fc	28.6 ft
28.0 ft	1.5 fc	33.4 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	412,539	412,539	412,539
<b>45.00°</b>	59,468	58,749	57,789
<b>55.00°</b>	33,214	32,295	32,038
<b>65.00°</b>	12,491	11,719	12,305
<b>75.00°</b>	4,396	5,068	4,326
<b>85.00°</b>	4,995	4,903	5,155

### 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>	17.9	18.9	18.2	19.3	19.6	17.7	18.8	18.0	19.1	19.4
	<b>3H</b>	18.0	19.0	18.4	19.3	19.7	17.8	18.8	18.2	19.1	19.5
	<b>4H</b>	18.0	18.9	18.4	19.2	19.6	17.8	18.6	18.2	19.0	19.4
	<b>6H</b>	17.9	18.7	18.3	19.1	19.5	17.7	18.5	18.1	18.9	19.3
	<b>8H</b>	17.9	18.6	18.3	19.0	19.4	17.7	18.4	18.1	18.8	19.2
	<b>12H</b>	17.8	18.6	18.3	18.9	19.4	17.6	18.4	18.1	18.7	19.2
<b>4H</b>	<b>2H</b>	17.8	18.7	18.2	19.0	19.4	17.7	18.5	18.1	18.9	19.3
	<b>3H</b>	18.0	18.7	18.4	19.1	19.5	17.8	18.5	18.3	19.0	19.4
	<b>4H</b>	18.0	18.6	18.4	19.0	19.5	17.8	18.4	18.2	18.9	19.3
	<b>6H</b>	17.9	18.5	18.4	18.9	19.4	17.8	18.3	18.2	18.8	19.2
	<b>8H</b>	17.9	18.4	18.4	18.9	19.3	17.7	18.2	18.2	18.7	19.2
	<b>12H</b>	17.9	18.3	18.4	18.8	19.3	17.7	18.1	18.2	18.6	19.1
<b>8H</b>	<b>4H</b>	17.9	18.4	18.3	18.8	19.3	17.7	18.2	18.2	18.6	19.1
	<b>6H</b>	17.8	18.2	18.4	18.7	19.2	17.7	18.1	18.2	18.6	19.1
	<b>8H</b>	17.8	18.2	18.3	18.7	19.2	17.6	18.0	18.2	18.5	19.0
	<b>12H</b>	17.8	18.1	18.3	18.6	19.2	17.6	17.9	18.2	18.4	19.0
<b>12H</b>	<b>4H</b>	17.8	18.3	18.3	18.7	19.2	17.6	18.1	18.1	18.6	19.0
	<b>6H</b>	17.8	18.1	18.3	18.6	19.2	17.6	18.0	18.2	18.4	19.0
	<b>8H</b>	17.8	18.1	18.3	18.6	19.2	17.6	17.9	18.1	18.4	19.0

Corrected UGR values based on total output lumens

SHR = 1.0