

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03SMx xx DWDD1015 DLNFGPMW

Nom 3" Infinium Square Downlight, 15L dim to warm 27HK emitter

### **Test Number**

SP-00944\_2\_M-15L

### **Test Date**

11/6/2019

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

### Summary of Results

#### Power

Input Watts	17.2 W
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#### Lumen Output

Output Lumens	726
Efficacy	42.23 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.45
Two luminaires, plane 90°	0.45
Four luminaires	0.51

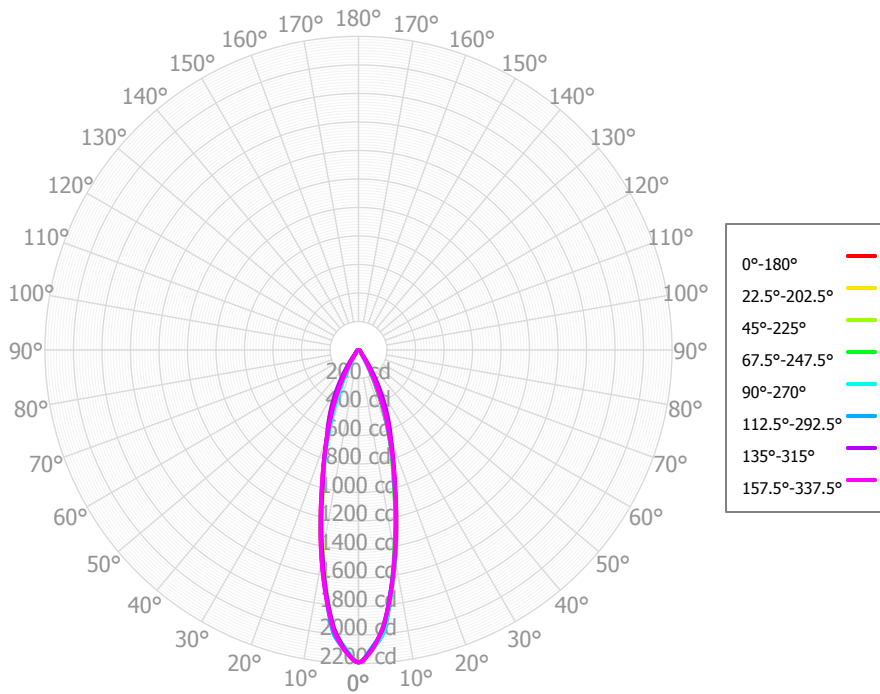
#### Full Beam Angle

0° - 180°	28°
90° - 270°	28°

### IES File Header Contents

Keyword	Value
TEST	SP-00944_2_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/6/2019
ISSUEDATE	11/13/2019
LUMCAT	IF03SMx xx DWDD1015 DLNFGPMW
LUMINAIRE	Nom 3" Infinium Square Downlight, 15L dim to warm 27HK emitter
OTHER	Beam angle: 27.8 degrees
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°	172.48	23.75%	90.00° - 100.00°	0.08	0.01%
10.00° - 20.00°	270.92	37.30%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	172.63	23.77%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	53.78	7.41%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.21	2.64%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	14.39	1.98%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	12.40	1.71%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	8.20	1.13%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.21	0.30%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	726.20	99.99%	0.00° - 180.00°	726.28	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°	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30	2,191.30
2.50°	2,105.76	2,108.75	2,108.61	2,114.63	2,108.94	2,111.68	2,107.62	2,117.59	2,103.65	2,112.07	2,098.60	2,113.69	2,095.29	2,093.60	2,103.51	2,111.29	2,105.76
5.00°	1,993.08	1,966.39	1,984.03	1,955.28	1,996.04	1,999.85	1,961.93	1,976.99	1,987.15	1,977.98	1,966.81	1,965.97	1,972.34	1,967.23	1,962.82	1,953.86	1,993.08
7.50°	1,737.94	1,727.83	1,720.33	1,723.51	1,738.90	1,743.19	1,727.40	1,746.79	1,738.89	1,732.26	1,711.10	1,734.45	1,722.62	1,716.00	1,717.91	1,726.51	1,737.94
10.00°	1,483.04	1,457.97	1,456.92	1,442.00	1,481.32	1,485.22	1,458.23	1,495.98	1,489.62	1,479.28	1,438.56	1,478.80	1,470.25	1,462.38	1,468.78	1,458.16	1,483.04
12.50°	1,230.65	1,207.62	1,194.29	1,189.47	1,221.56	1,220.90	1,209.08	1,226.19	1,232.82	1,215.28	1,189.18	1,204.05	1,218.12	1,213.95	1,214.08	1,212.88	1,230.65
15.00°	986.51	961.94	960.40	953.35	978.39	975.76	965.83	998.01	987.34	984.50	941.45	977.75	970.92	971.35	994.31	978.66	986.51
17.50°	794.16	781.24	788.69	777.34	792.64	797.14	800.99	800.79	799.40	795.03	791.12	782.31	782.19	794.19	812.82	795.29	794.16
20.00°	608.38	611.13	643.61	628.19	617.34	632.05	652.79	641.91	620.26	635.45	643.87	623.93	597.89	621.94	669.62	630.86	608.38
22.50°	451.91	472.54	544.08	500.47	470.36	503.66	551.70	505.91	472.86	506.38	548.84	484.35	443.16	482.24	560.40	492.25	451.91
25.00°	308.16	337.25	447.05	380.13	334.35	381.66	457.62	387.27	336.30	387.05	453.84	361.17	298.48	348.51	453.51	360.87	308.16
27.50°	205.59	238.87	353.44	275.01	221.41	273.10	365.37	277.11	229.11	275.77	359.17	244.73	198.68	241.30	348.30	257.33	205.59
30.00°	121.39	142.69	263.03	173.95	132.62	180.46	273.28	193.17	140.34	189.12	266.40	163.91	113.66	147.54	254.15	159.62	121.39
32.50°	82.48	100.76	176.27	115.32	84.06	114.36	197.57	119.21	91.59	118.87	185.61	94.24	77.48	97.26	166.55	108.60	82.48
35.00°	52.82	60.45	112.44	64.65	50.74	67.07	123.30	79.44	55.82	76.52	112.99	63.70	48.56	56.93	108.20	63.96	52.82
37.50°	41.57	47.42	69.78	46.59	38.42	45.73	84.23	49.48	42.35	49.46	75.31	42.08	38.15	41.99	63.56	48.08	41.57
40.00°	32.57	35.20	44.96	32.37	29.72	31.85	47.18	36.91	32.29	36.36	44.17	33.54	29.67	30.46	42.60	34.28	32.57
42.50°	27.12	29.55	33.45	27.03	25.05	26.28	35.45	28.08	26.93	29.28	34.26	27.12	25.06	25.69	30.25	29.09	27.12
45.00°	23.05	24.28	26.39	22.25	20.84	22.26	24.79	24.59	23.15	25.15	26.35	24.30	21.34	21.76	24.38	24.17	23.05
47.50°	20.75	21.05	22.09	19.16	17.05	19.65	21.48	21.85	21.19	21.99	23.37	21.82	19.03	19.14	20.34	21.88	20.75
50.00°	18.47	18.08	19.35	16.16	15.16	17.41	18.63	19.50	19.78	20.45	20.99	19.60	17.09	17.30	18.23	19.67	18.47
52.50°	16.23	16.15	17.39	14.63	14.68	15.46	17.89	17.18	18.88	19.32	19.75	17.41	15.60	16.47	16.52	18.39	16.23
55.00°	14.96	14.89	16.16	13.26	13.89	14.58	17.09	16.57	17.44	18.12	18.53	16.35	14.42	15.47	15.84	17.02	14.96
57.50°	14.52	15.51	15.21	13.34	12.91	14.36	16.09	16.01	15.59	16.92	17.36	15.31	13.56	14.29	15.30	15.06	14.52
60.00°	14.04	15.75	14.67	13.36	12.37	13.31	15.02	15.29	14.30	15.76	15.94	14.48	13.07	13.17	13.88	13.38	14.04
62.50°	13.53	15.15	14.25	12.97	12.03	11.85	13.74	14.51	13.36	14.61	14.23	13.58	12.92	12.10	12.39	13.04	13.53
65.00°	13.06	14.32	13.46	12.46	11.35	11.49	12.59	13.05	12.53	14.25	12.91	12.09	11.93	11.25	11.45	12.71	13.06
67.50°	12.63	13.09	12.59	11.50	10.53	11.56	11.68	11.77	11.76	13.79	11.98	10.79	10.36	10.56	10.52	12.39	12.63
70.00°	11.36	12.07	11.21	10.47	9.43	10.06	10.34	11.34	10.61	11.65	10.55	10.11	8.81	9.74	9.73	11.78	11.36
72.50°	9.82	11.25	9.84	9.33	8.19	8.31	8.59	10.36	9.33	10.05	8.88	9.04	7.27	8.83	8.94	10.73	9.82
75.00°	8.13	9.14	8.74	8.19	6.30	6.71	8.04	8.71	7.78	9.44	8.43	7.55	5.78	6.90	8.12	8.82	8.13
77.50°	6.29	6.84	7.59	6.86	5.19	5.71	6.82	6.89	6.28	7.00	6.94	5.99	4.70	5.34	6.04	6.47	6.29
80.00°	4.33	4.80	6.05	4.69	4.51	4.65	4.27	5.20	4.68	5.05	4.73	4.64	3.68	4.04	3.84	3.77	4.33
82.50°	2.67	2.98	3.30	3.25	2.77	2.29	2.50	3.60	2.88	3.85	3.03	3.20	2.22	2.53	2.19	2.55	2.67
85.00°	1.44	1.05	1.38	1.54	1.38	1.70	1.35	1.91	1.44	2.28	1.63	1.63	1.51	1.29	1.08	1.35	1.44
87.50°	1.06	1.15	1.14	1.31	1.40	0.94	1.01	1.09	1.23	1.46	1.37	1.63	1.17	1.01	0.89	1.12	1.06
90.00°	1.25	1.00	1.16	1.37	1.22	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	1.04	1.25
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>	865	865	865	865	844	844	844	844	807	807	807	773	773	773	741	741	726
	<b>1</b>	827	808	791	776	809	792	777	763	763	751	740	736	727	718	711	704	697
	<b>2</b>	791	759	732	709	776	746	722	701	723	703	686	702	686	671	682	669	658
	<b>3</b>	758	716	684	658	744	706	676	653	688	663	642	670	650	632	654	637	625
	<b>4</b>	727	679	643	616	715	671	638	613	656	628	606	642	618	599	629	608	597
	<b>5</b>	699	646	609	582	688	639	605	579	627	597	574	615	589	569	604	582	572
	<b>6</b>	672	616	579	552	662	611	576	550	601	570	547	591	564	543	582	558	549
	<b>7</b>	647	590	552	526	638	585	550	525	576	545	522	568	540	520	561	536	527
	<b>8</b>	624	565	529	503	616	562	527	502	554	523	500	547	519	498	541	515	507
	<b>9</b>	603	543	507	483	595	540	505	482	534	502	480	528	499	479	522	496	489
	<b>10</b>	582	523	488	464	576	520	486	463	515	484	462	510	481	461	505	479	472

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	72.4 fc	2.7 ft
6.5 ft	51.9 fc	3.2 ft
7.5 ft	39.0 fc	3.7 ft
8.0 ft	34.2 fc	4.0 ft
10.0 ft	21.9 fc	4.9 ft
12.0 ft	15.2 fc	5.9 ft
14.0 ft	11.2 fc	6.9 ft
16.0 ft	8.6 fc	7.9 ft
20.0 ft	5.5 fc	9.9 ft
24.0 ft	3.8 fc	11.9 ft
28.0 ft	2.8 fc	13.8 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	921,365	921,365	921,365
<b>45.00°</b>	13,709	15,694	12,391
<b>55.00°</b>	10,969	11,848	10,182
<b>65.00°</b>	12,998	13,390	11,288
<b>75.00°</b>	13,209	14,203	10,227
<b>85.00°</b>	6,953	6,636	6,639

### 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>	14.4	15.4	14.8	15.7	16.0	14.1	15.1	14.5	15.4	15.7
	<b>3H</b>	17.0	17.9	17.4	18.2	18.6	16.3	17.1	16.6	17.5	17.9
	<b>4H</b>	18.0	18.8	18.4	19.2	19.5	17.0	17.8	17.4	18.1	18.5
	<b>6H</b>	18.5	19.3	18.9	19.6	20.0	17.5	18.2	17.9	18.6	19.0
	<b>8H</b>	18.6	19.3	19.0	19.7	20.1	17.6	18.3	18.1	18.7	19.1
	<b>12H</b>	18.6	19.3	19.1	19.7	20.1	17.7	18.4	18.1	18.8	19.2
<b>4H</b>	<b>2H</b>	15.1	15.9	15.5	16.2	16.6	14.9	15.7	15.3	16.1	16.5
	<b>3H</b>	17.9	18.6	18.3	19.0	19.4	17.2	17.9	17.7	18.3	18.7
	<b>4H</b>	19.0	19.6	19.5	20.1	20.5	18.1	18.7	18.5	19.1	19.6
	<b>6H</b>	19.6	20.2	20.1	20.6	21.1	18.7	19.2	19.2	19.7	20.2
	<b>8H</b>	19.8	20.2	20.2	20.7	21.2	18.9	19.4	19.4	19.8	20.3
	<b>12H</b>	19.8	20.2	20.3	20.7	21.2	19.0	19.4	19.5	19.9	20.4
<b>8H</b>	<b>4H</b>	19.3	19.8	19.8	20.3	20.7	18.5	19.0	19.0	19.4	19.9
	<b>6H</b>	20.1	20.4	20.6	20.9	21.4	19.3	19.7	19.8	20.2	20.7
	<b>8H</b>	20.2	20.6	20.8	21.1	21.6	19.5	19.9	20.1	20.4	20.9
	<b>12H</b>	20.3	20.6	20.9	21.1	21.7	19.7	20.0	20.2	20.5	21.0
<b>12H</b>	<b>4H</b>	19.3	19.7	19.8	20.2	20.7	18.5	18.9	19.0	19.4	19.9
	<b>6H</b>	20.1	20.4	20.6	20.9	21.4	19.4	19.7	19.9	20.2	20.7
	<b>8H</b>	20.3	20.6	20.8	21.1	21.7	19.6	19.9	20.1	20.4	21.0

Corrected UGR values based on total output lumens

SHR = 1.0