

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03SMx xx DWDD1020 WWWFLWMW

Nom 3" square recessed Infinium wall wash luminaire with 20L 27HK dim to warm emitter

### **Test Number**

SP-00950

### **Test Date**

11/6/2019

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

### Summary of Results

#### Power

Input Watts	21.5 W
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#### Lumen Output

Output Lumens	677
Efficacy	31.47 lm/W

#### Luminous Dimensions

0° - 180° Size	0.13
90° - 270° Size	0.13
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	1.53
Two luminaires, plane 90°	0.71
Four luminaires	1.09

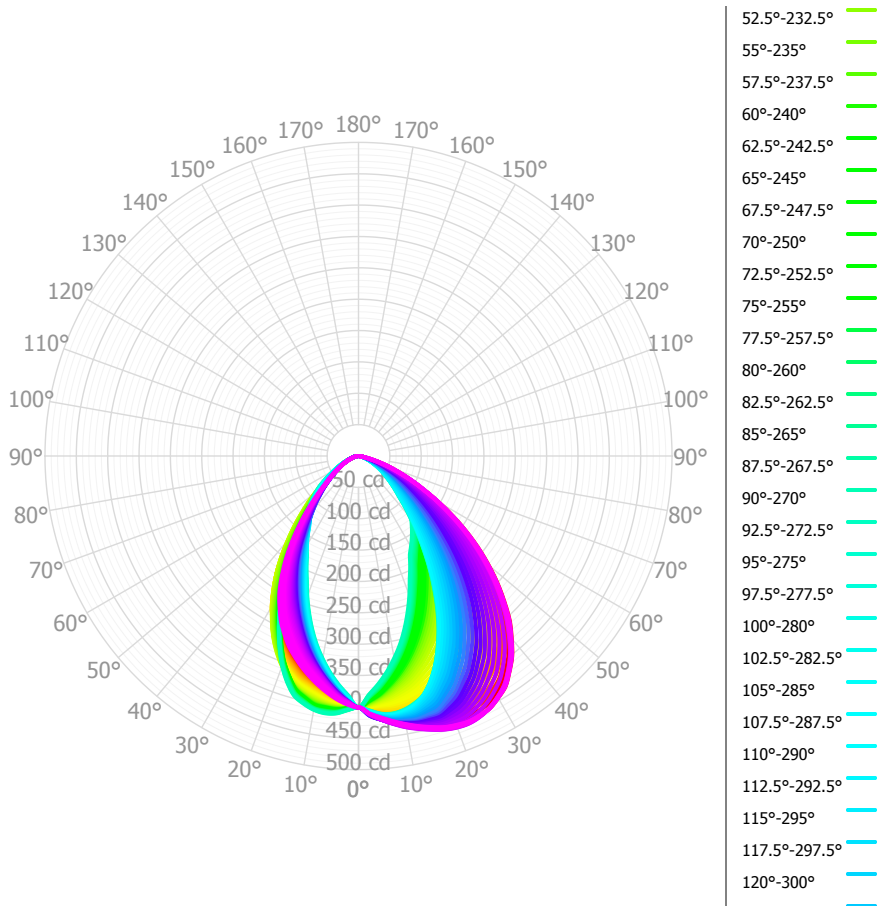
#### Full Beam Angle

0° - 180°	86°
90° - 270°	51°

### IES File Header Contents

Keyword	Value
TEST	SP-00950
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/6/2019
ISSUEDATE	11/27/2019
LUMCAT	IF03SMx xx DWDD1020 WWWFLWMW
LUMINAIRE	Nom 3" square recessed Infinium wall wash luminaire with 20L 27HK dim to warm emitter
OTHER	Wide Flood Optic
OTHER	Beam Angle: 86 deg x 128 deg
LAMPCAT	N/A
LAMP	N/A
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	95
_CCTMULT	N/A, dim to warm emitter
_LAMPMULT	7L x 0.38, 10L x 0.49, 15L x 0.8

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	38.14	5.64%	90.00° - 100.00°	0.08	0.01%
10.00° - 20.00°	103.46	15.29%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	141.86	20.97%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	143.95	21.27%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	116.21	17.17%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	77.24	11.41%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	40.03	5.92%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	13.53	2.00%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.23	0.33%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	676.65	100.00%	0.00° - 180.00°	676.65	100.00%

	0.00°	2.50°	5.00°	7.50°	10.00°	12.50°	15.00°	17.50°	20.00°	22.50°	25.00°	27.50°	30.00°	32.50°	35.00°	37.50°	40.00°	42.50°	45.00°	47.50°	50.00°
0.00°	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94	400.94
2.50°	411.24	410.34	409.44	408.53	407.63	406.73	405.83	404.93	404.03	403.13	402.33	401.53	400.73	399.93	399.12	398.32	397.52	396.72	395.92	395.19	394.41
5.00°	418.52	417.02	415.51	414.01	412.50	411.00	409.50	407.99	406.49	404.98	403.33	401.67	400.02	398.36	396.70	395.05	393.39	391.73	390.08	388.84	387.61
7.50°	426.22	424.24	422.26	420.28	418.30	416.32	414.34	412.37	410.39	408.41	405.67	402.93	400.18	397.44	394.70	391.96	389.22	386.48	383.73	381.53	379.31
10.00°	433.59	430.98	428.38	425.77	423.16	420.56	417.95	415.34	412.74	410.13	406.29	402.46	398.62	394.79	390.95	387.12	383.28	379.44	375.61	372.57	369.54
12.50°	440.72	437.31	433.91	430.50	427.09	423.69	420.28	416.87	413.47	410.06	405.30	400.54	395.78	391.02	386.26	381.50	376.74	371.98	367.22	363.16	359.11
15.00°	447.03	442.92	438.81	434.69	430.58	426.46	422.35	418.24	414.12	410.01	403.97	397.92	391.88	385.83	379.79	373.75	367.70	361.66	355.62	350.81	346.00
17.50°	452.87	448.10	443.33	438.57	433.80	429.03	424.27	419.50	414.73	409.97	402.61	395.26	387.90	380.55	373.19	365.83	358.48	351.12	343.77	338.07	332.31
20.00°	456.03	450.58	445.13	439.68	434.23	428.78	423.33	417.88	412.43	406.98	398.45	389.92	381.39	372.85	364.32	355.79	347.25	338.72	330.19	323.76	317.31
22.50°	458.00	451.80	445.59	439.39	433.18	426.97	420.77	414.56	408.36	402.15	392.62	383.09	373.56	364.03	354.50	344.97	335.44	325.90	316.37	309.19	302.01
25.00°	456.42	449.52	442.62	435.71	428.81	421.91	415.00	408.10	401.20	394.30	383.72	373.14	362.56	351.98	341.40	330.82	320.25	309.67	299.09	291.59	284.05
27.50°	453.65	446.03	438.40	430.78	423.15	415.52	407.90	400.27	392.64	385.02	373.50	361.99	350.47	338.96	327.45	315.93	304.42	292.90	281.39	273.69	265.95
30.00°	445.51	437.39	429.26	421.13	413.01	404.88	396.75	388.63	380.50	372.37	359.96	347.54	335.12	322.70	310.29	297.87	285.45	273.04	260.62	253.45	246.21
32.50°	436.16	427.54	418.92	410.30	401.68	393.06	384.44	375.82	367.20	358.58	345.41	332.24	319.07	305.90	292.73	279.55	266.38	253.21	240.04	233.76	227.41
35.00°	419.87	411.21	402.54	393.88	385.22	376.55	367.89	359.22	350.56	341.90	328.39	314.87	301.36	287.85	274.34	260.83	247.32	233.81	220.30	215.02	209.71
37.50°	402.65	393.97	385.29	376.60	367.92	359.24	350.55	341.87	333.19	324.51	310.83	297.16	283.48	269.81	256.14	242.46	228.79	215.11	201.44	197.23	193.01
40.00°	380.17	371.60	363.03	354.46	345.90	337.33	328.76	320.19	311.62	303.05	289.96	276.86	263.77	250.67	237.58	224.48	211.39	198.29	185.20	181.61	178.01
42.50°	357.32	348.84	340.36	331.88	323.40	314.92	306.44	297.96	289.48	281.00	268.60	256.21	243.82	231.42	219.03	206.64	194.24	181.85	169.46	166.36	163.21
45.00°	329.13	321.12	313.11	305.10	297.09	289.08	281.07	273.06	265.05	257.04	245.69	234.33	222.98	211.62	200.26	188.91	177.55	166.20	154.84	152.11	149.31
47.50°	300.81	293.27	285.73	278.19	270.65	263.11	255.58	248.04	240.50	232.96	222.63	212.30	201.97	191.63	181.30	170.97	160.64	150.31	139.97	137.63	135.21
50.00°	270.87	263.89	256.92	249.94	242.97	235.99	229.02	222.04	215.07	208.10	198.83	189.56	180.30	171.03	161.76	152.50	143.23	133.96	124.70	122.70	120.71
52.50°	240.77	234.38	227.99	221.60	215.20	208.81	202.42	196.03	189.64	183.25	175.15	167.06	158.96	150.86	142.77	134.67	126.58	118.48	110.38	108.60	106.81
55.00°	209.61	203.96	198.31	192.66	187.01	181.36	175.71	170.06	164.40	158.75	151.92	145.09	138.26	131.43	124.60	117.77	110.94	104.11	97.28	95.54	93.80
57.50°	178.58	173.68	168.78	163.88	158.98	154.08	149.18	144.28	139.38	134.48	128.89	123.31	117.73	112.15	106.57	100.99	95.40	89.82	84.24	82.53	80.82
60.00°	148.05	144.01	139.97	135.93	131.89	127.84	123.80	119.76	115.72	111.68	107.19	102.70	98.21	93.71	89.22	84.73	80.24	75.75	71.26	69.75	68.23
62.50°	119.41	116.13	112.86	109.58	106.31	103.03	99.76	96.48	93.21	89.93	86.42	82.91	79.41	75.90	72.39	68.88	65.37	61.86	58.36	57.05	55.75
65.00°	96.01	93.42	90.83	88.24	85.65	83.07	80.48	77.89	75.30	72.71	69.69	66.67	63.65	60.62	57.60	54.58	51.56	48.53	45.51	44.71	43.91
67.50°	74.48	72.46	70.43	68.41	66.38	64.36	62.33	60.30	58.28	56.25	53.87	51.48	49.09	46.70	44.32	41.93	39.54	37.16	34.77	34.26	33.74
70.00°	55.96	54.35	52.74	51.12	49.51	47.90	46.29	44.68	43.06	41.45	39.63	37.80	35.98	34.16	32.34	30.51	28.69	26.87	25.05	24.78	24.52
72.50°	39.12	37.94	36.77	35.59	34.41	33.23	32.05	30.87	29.69	28.51	27.43	26.35	25.27	24.19	23.11	22.03	20.95	19.86	18.78	18.51	18.23
75.00°	23.55	22.83	22.11	21.39	20.66	19.94	19.22	18.50	17.78	17.06	16.63	16.20	15.78	15.35	14.93	14.50	14.07	13.65	13.22	13.04	12.87
77.50°	10.92	10.74	10.55	10.37	10.19	10.00	9.82	9.63	9.45	9.27	9.16	9.06	8.96	8.86	8.76	8.66	8.56	8.46	8.36	8.20	8.05
80.00°	4.25	4.23	4.20	4.18	4.16	4.14	4.12	4.10	4.07	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	3.99	3.93
82.50°	1.49	1.52	1.54	1.57	1.59	1.62	1.64	1.67	1.69	1.72	1.74	1.76	1.79	1.81	1.83	1.85	1.88	1.90	1.92	1.90	1.89
85.00°	0.97	1.01	1.05	1.10	1.14	1.18	1.22	1.26	1.30	1.34	1.32	1.30	1.28	1.26	1.24	1.22	1.20	1.18	1.16	1.18	1.20
87.50°	1.29	1.27	1.26	1.25	1.24	1.22	1.21	1.20	1.19	1.17	1.18	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.27	1.26
90.00°	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	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>	806	806	806	806	787	787	787	787	752	752	752	720	720	720	690	690	677
	<b>1</b>	753	728	706	685	736	713	693	674	685	668	653	659	646	634	635	625	615
	<b>2</b>	699	654	617	586	683	642	608	580	619	591	566	598	574	554	578	559	542
	<b>3</b>	648	590	544	508	633	580	538	504	560	525	495	543	513	487	526	501	479
	<b>4</b>	602	534	484	446	588	525	479	443	509	469	437	495	460	432	481	451	426
	<b>5</b>	560	486	434	395	547	479	430	393	465	422	390	453	415	386	441	408	382
	<b>6</b>	522	444	392	354	511	438	389	353	427	383	350	416	377	347	406	371	344
	<b>7</b>	489	408	356	319	478	403	354	318	393	349	316	384	344	314	376	340	312
	<b>8</b>	458	377	325	290	448	372	323	290	364	320	288	356	316	287	349	312	285
	<b>9</b>	431	349	299	266	422	345	298	265	338	294	264	331	291	263	325	288	262
	<b>10</b>	406	325	276	244	398	322	275	244	315	272	243	309	270	242	304	267	241

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	13.3 fc	10.9 ft
6.5 ft	9.5 fc	12.9 ft
7.5 ft	7.1 fc	14.9 ft
8.0 ft	6.3 fc	15.8 ft
10.0 ft	4.0 fc	19.8 ft
12.0 ft	2.8 fc	23.8 ft
14.0 ft	2.0 fc	27.7 ft
16.0 ft	1.6 fc	31.7 ft
20.0 ft	1.0 fc	39.6 ft
24.0 ft	0.7 fc	47.5 ft
28.0 ft	0.5 fc	55.4 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	255,367	255,367	255,367
<b>45.00°</b>	296,457	139,470	100,193
<b>55.00°</b>	232,761	108,024	72,585
<b>65.00°</b>	144,687	68,590	43,808
<b>75.00°</b>	57,951	32,530	19,239
<b>85.00°</b>	7,111	8,441	8,068

### 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>	31.8	33.2	32.2	33.5	33.9	23.3	24.7	23.6	25.0	25.3
	<b>3H</b>	32.6	33.8	33.0	34.2	34.5	24.1	25.3	24.5	25.7	26.0
	<b>4H</b>	32.7	33.9	33.1	34.2	34.6	24.3	25.5	24.7	25.8	26.2
	<b>6H</b>	32.7	33.7	33.1	34.1	34.5	24.4	25.5	24.8	25.8	26.2
	<b>8H</b>	32.6	33.6	33.0	34.0	34.4	24.4	25.4	24.8	25.8	26.2
	<b>12H</b>	32.6	33.5	33.0	33.9	34.4	24.4	25.3	24.8	25.7	26.1
<b>4H</b>	<b>2H</b>	31.8	32.9	32.2	33.3	33.6	23.6	24.7	24.0	25.1	25.4
	<b>3H</b>	32.6	33.6	33.1	34.0	34.4	24.6	25.5	25.0	25.9	26.3
	<b>4H</b>	32.8	33.6	33.2	34.0	34.5	24.9	25.7	25.3	26.1	26.6
	<b>6H</b>	32.8	33.5	33.2	33.9	34.4	25.0	25.8	25.5	26.2	26.7
	<b>8H</b>	32.7	33.4	33.2	33.8	34.3	25.0	25.7	25.5	26.2	26.6
	<b>12H</b>	32.7	33.3	33.1	33.7	34.2	25.0	25.6	25.5	26.1	26.6
<b>8H</b>	<b>4H</b>	32.7	33.4	33.1	33.8	34.3	25.0	25.6	25.4	26.1	26.6
	<b>6H</b>	32.6	33.2	33.1	33.7	34.2	25.2	25.8	25.7	26.3	26.7
	<b>8H</b>	32.6	33.1	33.1	33.6	34.1	25.3	25.8	25.8	26.3	26.8
	<b>12H</b>	32.6	33.0	33.1	33.5	34.1	25.3	25.7	25.8	26.2	26.8
<b>12H</b>	<b>4H</b>	32.6	33.2	33.1	33.7	34.2	24.9	25.5	25.4	26.0	26.5
	<b>6H</b>	32.6	33.1	33.1	33.6	34.1	25.2	25.7	25.7	26.2	26.7
	<b>8H</b>	32.6	33.0	33.1	33.5	34.1	25.3	25.7	25.8	26.2	26.8

Corrected UGR values based on total output lumens

SHR = 1.0