

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

994 Jefferson Street  
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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03RSx IC 835 015 N11 DLSPGP MW

### **Test Number**

SP-00776\_2\_M-015L

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	10.2 W
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#### Lumen Output

Output Lumens	1064
Efficacy	104.35 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.4
Two luminaires, plane 90°	0.4
Four luminaires	0.43

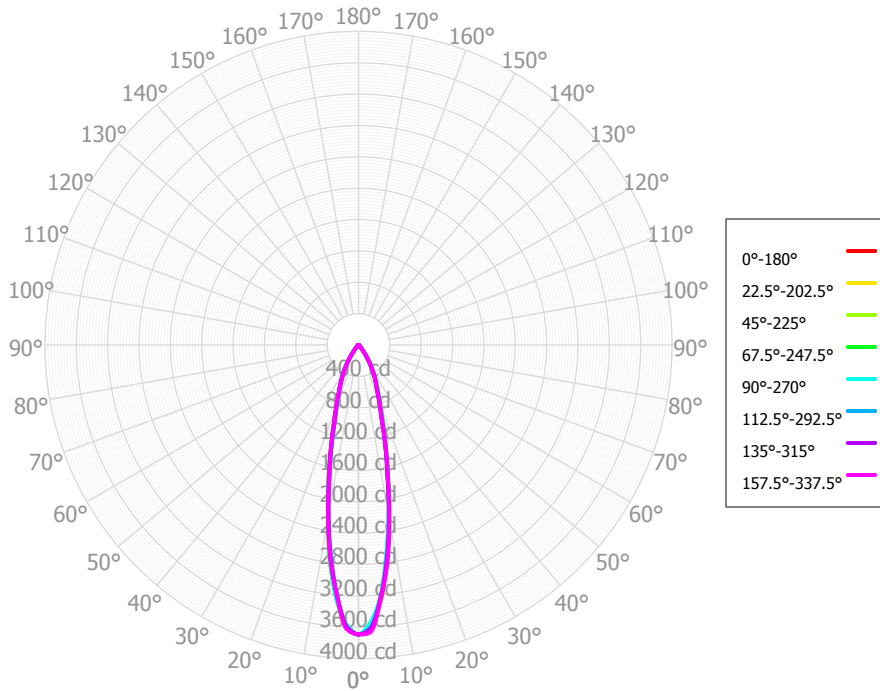
#### Full Beam Angle

0° - 180°	24°
90° - 270°	24°

### IES File Header Contents

Keyword	Value
TEST	SP-00776_2_M-015L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	4/3/2019
LUMCAT	IF03RSx IC 835 015 N11 DLSPGP MW
LUMINIARE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 24 degrees
OTHER	Spot optic, Solite lens
OTHER	Aluminum bezel contains lens
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multiplier: 27K x 0.95, 30K x 0.98, 40K x 1.03
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 20L
_CRI	80
_CCTMULT	27K x 0.95, 30K x 0.98, 40K x 1.03
_LAMPMULT	07L x 0.40, 10L x 0.56

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	277.54	26.08%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	371.37	34.89%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	243.97	22.92%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	109.69	10.31%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	25.28	2.38%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	17.62	1.66%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	11.90	1.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	5.60	0.53%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.33	0.13%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,064.30	99.99%	0.00° - 180.00°	1,064.36	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°	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88	3,691.88
2.50°	3,594.99	3,613.89	3,565.07	3,567.20	3,540.63	3,595.20	3,592.75	3,620.84	3,578.21	3,611.25	3,565.16	3,593.71	3,568.77	3,635.63	3,612.49	3,662.08	3,594.99
5.00°	3,271.77	3,242.44	3,270.05	3,227.69	3,235.52	3,187.16	3,188.90	3,199.09	3,220.30	3,225.71	3,241.34	3,234.62	3,251.48	3,235.56	3,246.96	3,249.39	3,271.77
7.50°	2,768.82	2,762.88	2,749.77	2,720.77	2,710.58	2,698.98	2,743.00	2,740.26	2,770.18	2,789.34	2,768.06	2,778.29	2,765.53	2,795.07	2,763.03	2,814.16	2,768.82
10.00°	2,254.02	2,247.33	2,239.60	2,220.27	2,204.36	2,200.01	2,218.68	2,225.97	2,231.83	2,246.76	2,226.02	2,227.75	2,210.48	2,237.81	2,239.19	2,255.26	2,254.02
12.50°	1,730.85	1,721.24	1,744.03	1,724.32	1,727.71	1,698.99	1,745.22	1,708.12	1,760.46	1,754.14	1,762.26	1,749.53	1,739.88	1,725.89	1,701.91	1,727.47	1,730.85
15.00°	1,331.10	1,345.54	1,334.13	1,334.55	1,323.35	1,334.97	1,355.04	1,351.53	1,345.11	1,351.43	1,329.19	1,332.54	1,298.48	1,324.56	1,314.53	1,334.34	1,331.10
17.50°	1,008.21	1,006.60	1,032.23	1,010.08	1,019.70	991.42	1,038.82	1,000.55	1,035.56	1,020.71	1,035.92	1,026.44	1,015.83	987.77	969.00	984.79	1,008.21
20.00°	794.80	813.07	804.67	799.50	788.92	807.31	827.89	820.65	804.36	803.90	788.73	803.44	779.81	787.61	773.49	788.59	794.80
22.50°	640.41	647.83	660.15	649.49	646.70	640.21	660.36	643.49	645.23	634.05	643.32	645.91	640.67	622.48	612.77	617.20	640.41
25.00°	526.16	536.90	538.12	534.49	527.66	537.45	547.46	537.99	532.54	528.81	526.27	531.09	524.77	521.15	510.66	519.76	526.16
27.50°	430.83	434.30	438.03	435.74	433.61	439.26	442.79	433.25	432.76	431.28	430.79	429.80	427.93	424.32	419.26	424.30	430.83
30.00°	334.97	338.27	341.91	342.20	341.53	346.24	347.18	338.65	340.31	343.15	340.19	336.16	334.82	334.69	328.86	333.78	334.97
32.50°	238.89	242.96	249.18	250.72	251.31	253.39	257.38	246.02	253.32	257.06	252.92	249.15	249.04	248.35	238.60	246.49	238.89
35.00°	164.67	167.48	170.87	174.56	174.65	177.93	173.16	171.14	169.00	173.15	166.26	165.41	164.36	166.58	166.19	166.20	164.67
37.50°	97.84	93.40	103.47	103.59	109.32	103.80	110.68	101.76	111.95	110.51	111.26	108.04	108.88	103.41	95.56	100.76	97.84
40.00°	62.94	62.79	62.99	66.92	67.00	69.92	66.72	68.05	66.50	67.95	60.60	61.86	56.51	62.84	63.44	63.08	62.94
42.50°	37.20	33.78	40.23	39.91	41.44	37.78	41.09	38.68	43.69	41.87	42.21	40.36	38.63	36.49	33.66	36.40	37.20
45.00°	28.06	27.16	28.48	30.13	28.74	30.85	29.09	31.46	29.04	29.36	27.05	27.88	23.20	25.43	26.72	27.80	28.06
47.50°	22.80	20.76	23.11	24.38	24.19	24.46	23.89	25.41	24.52	23.72	24.99	22.89	20.98	19.80	20.46	22.03	22.80
50.00°	21.39	20.42	21.13	22.38	22.11	23.19	23.17	24.15	23.03	23.01	23.72	20.18	19.20	19.30	20.67	20.30	21.39
52.50°	20.71	20.05	20.86	21.08	21.41	21.97	22.79	22.77	21.97	21.67	21.78	19.28	19.08	18.53	20.83	19.27	20.71
55.00°	19.05	19.29	20.36	21.17	21.56	21.14	22.59	20.99	21.02	19.91	19.83	18.85	18.91	17.54	19.69	19.13	19.05
57.50°	17.25	18.45	19.77	21.46	22.10	20.12	20.10	18.89	18.67	18.35	18.32	17.32	16.89	16.32	18.41	17.77	17.25
60.00°	15.90	16.84	17.05	18.51	18.79	18.06	16.48	15.89	16.04	16.90	16.79	15.56	14.89	14.93	15.41	15.06	15.90
62.50°	14.58	15.22	13.55	15.24	13.87	15.73	14.53	13.38	13.47	14.54	14.60	13.54	13.15	13.04	12.54	12.93	14.58
65.00°	12.52	13.50	11.84	13.07	11.66	12.23	13.31	12.01	10.91	11.74	12.32	11.47	11.44	10.83	10.88	11.35	12.52
67.50°	10.41	11.58	10.68	10.96	10.41	9.32	10.88	10.19	9.45	9.23	9.24	10.04	9.97	9.22	9.29	9.78	10.41
70.00°	8.47	8.82	8.51	8.56	8.35	8.00	8.08	7.64	8.00	6.83	6.89	8.52	8.25	7.89	7.99	8.20	8.47
72.50°	6.80	6.85	6.21	6.57	6.14	6.87	6.97	6.05	6.04	5.81	6.08	6.27	6.05	6.83	6.86	6.55	6.80
75.00°	6.00	6.07	5.15	6.03	5.21	5.93	5.95	5.08	4.30	4.84	4.58	4.61	5.24	5.60	5.97	4.95	6.00
77.50°	4.64	4.42	3.81	4.62	4.26	4.64	5.00	4.65	2.90	3.89	3.11	3.48	4.41	3.71	4.07	3.75	4.64
80.00°	3.00	2.88	2.20	2.79	3.29	3.03	3.22	3.30	2.71	2.28	2.33	2.64	2.59	2.74	2.47	2.63	3.00
82.50°	1.53	1.90	1.51	1.47	1.37	1.62	1.56	1.72	1.44	1.30	1.21	1.12	0.96	1.51	1.59	1.68	1.53
85.00°	0.73	0.97	1.18	0.98	0.98	1.24	1.12	1.02	0.69	0.59	0.83	1.05	1.04	0.72	0.81	1.01	0.73
87.50°	0.77	0.87	1.15	0.77	0.57	0.85	1.17	1.11	1.09	0.78	0.65	0.83	0.77	1.17	0.85	1.01	0.77
90.00°	0.78	0.89	0.78	0.85	0.64	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.02	0.83	0.78
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>	1,267	1,267	1,267	1,267	1,238	1,238	1,238	1,238	1,183	1,183	1,183	1,132	1,132	1,132	1,086	1,086	1,064
	<b>1</b>	1,215	1,188	1,165	1,143	1,189	1,166	1,144	1,125	1,123	1,106	1,091	1,083	1,070	1,058	1,047	1,037	1,017
	<b>2</b>	1,164	1,119	1,081	1,049	1,142	1,101	1,066	1,037	1,067	1,039	1,015	1,036	1,013	993	1,007	989	970
	<b>3</b>	1,117	1,058	1,012	975	1,097	1,043	1,001	967	1,016	981	952	991	962	937	968	944	926
	<b>4</b>	1,073	1,004	953	915	1,055	992	945	909	970	930	899	950	916	889	931	902	886
	<b>5</b>	1,031	956	903	864	1,015	946	897	860	928	885	853	911	874	846	896	864	849
	<b>6</b>	992	912	859	820	978	905	854	818	890	845	812	876	837	807	863	829	815
	<b>7</b>	956	873	820	782	943	867	816	780	854	809	776	843	802	773	832	796	783
	<b>8</b>	922	838	785	748	911	832	782	747	822	776	744	812	771	741	802	766	754
	<b>9</b>	891	806	753	718	881	801	751	717	792	747	715	783	742	713	775	738	727
	<b>10</b>	861	776	725	691	852	772	723	690	764	719	688	757	716	687	750	712	702

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	122.0 fc	2.3 ft
6.5 ft	87.4 fc	2.7 ft
7.5 ft	65.6 fc	3.2 ft
8.0 ft	57.7 fc	3.4 ft
10.0 ft	36.9 fc	4.2 ft
12.0 ft	25.6 fc	5.1 ft
14.0 ft	18.8 fc	5.9 ft
16.0 ft	14.4 fc	6.8 ft
20.0 ft	9.2 fc	8.4 ft
24.0 ft	6.4 fc	10.1 ft
28.0 ft	4.7 fc	11.8 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	1,264,934	1,264,934	1,264,934
<b>45.00°</b>	13,596	13,801	13,926
<b>55.00°</b>	11,381	12,164	12,877
<b>65.00°</b>	10,149	9,595	9,450
<b>75.00°</b>	7,949	6,811	6,894
<b>85.00°</b>	2,860	4,652	3,843

### 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>	12.7	13.7	13.1	14.0	14.3	13.1	14.0	13.4	14.4	14.7
	<b>3H</b>	14.1	14.9	14.4	15.2	15.6	14.2	15.0	14.6	15.4	15.7
	<b>4H</b>	14.5	15.3	14.9	15.6	16.0	14.5	15.3	14.9	15.7	16.1
	<b>6H</b>	14.8	15.5	15.2	15.9	16.3	14.8	15.5	15.2	15.9	16.3
	<b>8H</b>	14.8	15.5	15.2	15.9	16.3	14.8	15.5	15.2	15.8	16.3
	<b>12H</b>	14.8	15.4	15.2	15.8	16.2	14.8	15.4	15.2	15.8	16.2
<b>4H</b>	<b>2H</b>	13.0	13.8	13.4	14.2	14.6	13.5	14.3	13.9	14.6	15.0
	<b>3H</b>	14.6	15.2	15.0	15.6	16.0	14.7	15.4	15.1	15.8	16.2
	<b>4H</b>	15.1	15.7	15.5	16.1	16.5	15.2	15.7	15.6	16.2	16.6
	<b>6H</b>	15.5	15.9	15.9	16.4	16.9	15.5	16.0	16.0	16.4	16.9
	<b>8H</b>	15.5	15.9	16.0	16.4	16.9	15.5	16.0	16.0	16.4	16.9
	<b>12H</b>	15.5	15.9	16.0	16.4	16.8	15.5	15.9	16.0	16.4	16.9
<b>8H</b>	<b>4H</b>	15.2	15.7	15.7	16.1	16.6	15.2	15.7	15.7	16.1	16.6
	<b>6H</b>	15.6	16.0	16.1	16.5	17.0	15.6	16.0	16.2	16.5	17.0
	<b>8H</b>	15.7	16.0	16.2	16.5	17.0	15.7	16.0	16.2	16.5	17.0
	<b>12H</b>	15.7	16.0	16.3	16.5	17.1	15.7	16.0	16.3	16.5	17.1
<b>12H</b>	<b>4H</b>	15.2	15.6	15.7	16.0	16.5	15.2	15.6	15.7	16.1	16.6
	<b>6H</b>	15.6	15.9	16.1	16.4	16.9	15.6	15.9	16.2	16.4	17.0
	<b>8H</b>	15.7	16.0	16.2	16.5	17.1	15.7	16.0	16.2	16.5	17.1

Corrected UGR values based on total output lumens

SHR = 1.0