

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

AF0810GV 15L 35K EX FG8 HM

Nom. 8" diam x 10" H tubular luminaire with matte white decorative acrylic shade

### **Test Number**

SP-00996\_M-15L

### **Test Date**

1/3/2020

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

### Summary of Results

#### Power

Input Watts	10 W
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#### Lumen Output

Output Lumens	1131
Efficacy	113.07 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.67
90° - 270° Size	-0.67
Height	0.58

#### Spacing Criterion

Two luminaires, plane 0°	0.84
Two luminaires, plane 90°	0.84
Four luminaires	0.88

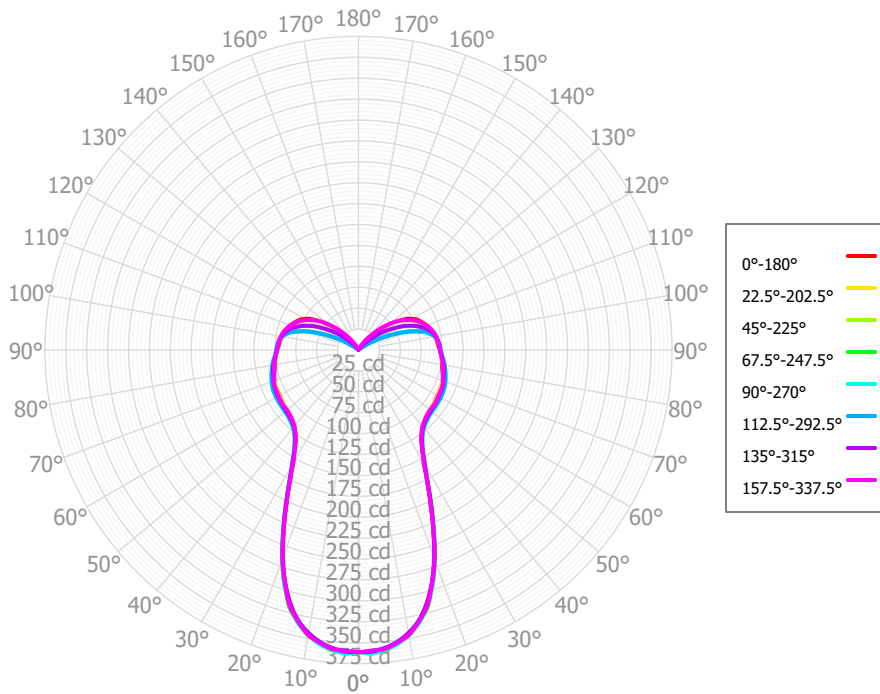
#### Full Beam Angle

0° - 180°	54°
90° - 270°	54°

### IES File Header Contents

Keyword	Value
TEST	SP-00996_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/3/2020
ISSUEDATE	1/7/2020
LUMCAT	AF0810GV 15L 35K EX FG8 HM
LUMINAIRE	Nom. 8" diam x 10" H tubular luminaire with matte white decorative acrylic shade
OTHER	Beam Angle (downlight): 54 degrees
OTHER	Uplight: 32.8%
OTHER	Downlight: 67.2%
LAMP	N/A
LAMPCAT	N/A
OTHER	CCT Multipliers: 27K x 0.97, 30K x 0.99, 40K x 1.03
OTHER	Total luminaire watts is approximate
OTHER	This report generated by Spectrum Lighting, scaled from 27L
_CRI	80+
_CCTMULT	27K x 0.97, 30K x 0.99, 40K x 1.03
_LAMPMULT	15L x 0.57

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	34.30	3.03%	90.00° - 100.00°	104.63	9.25%
10.00° - 20.00°	87.06	7.70%	100.00° - 110.00°	91.52	8.09%
20.00° - 30.00°	94.31	8.34%	100.00° - 120.00°	154.47	13.66%
30.00° - 40.00°	83.99	7.43%	120.00° - 130.00°	32.91	2.91%
40.00° - 50.00°	89.50	7.92%	130.00° - 140.00°	13.43	1.19%
50.00° - 60.00°	100.64	8.90%	140.00° - 150.00°	3.65	0.32%
60.00° - 70.00°	109.41	9.68%	150.00° - 160.00°	0.58	0.05%
70.00° - 80.00°	112.05	9.91%	160.00° - 170.00°	0.22	0.02%
80.00° - 90.00°	109.49	9.68%	170.00° - 180.00°	0.07	0.01%
0.00° - 90.00°	820.77	72.59%	0.00° - 180.00°	1,130.71	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°	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39	361.39
2.50°	360.79	360.52	362.29	361.29	363.65	360.08	361.17	359.94	360.79	360.52	362.29	361.29	363.65	360.08	361.17	359.94	360.79
5.00°	358.17	360.25	358.77	360.70	359.71	358.08	358.08	359.00	358.17	360.25	358.77	360.70	359.71	358.08	358.08	359.00	358.17
7.50°	352.71	353.80	353.97	353.98	355.15	352.16	352.60	353.28	352.71	353.80	353.97	353.98	355.15	352.16	352.60	353.28	352.71
10.00°	344.04	346.91	344.71	346.59	345.27	344.70	343.71	346.15	344.04	346.91	344.71	346.59	345.27	344.70	343.71	346.15	344.04
12.50°	332.11	333.54	334.03	333.46	334.71	331.56	332.42	332.89	332.11	333.54	334.03	333.46	334.71	331.56	332.42	332.89	332.11
15.00°	314.58	319.13	315.14	318.79	315.43	316.35	314.55	317.29	314.58	319.13	315.14	318.79	315.43	316.35	314.55	317.29	314.58
17.50°	291.84	293.78	293.94	293.41	295.22	292.21	292.35	292.46	291.84	293.78	293.94	293.41	295.22	292.21	292.35	292.46	291.84
20.00°	264.70	267.72	265.30	267.10	265.91	265.21	264.95	266.06	264.70	267.72	265.30	267.10	265.91	265.21	264.95	266.06	264.70
22.50°	233.80	235.45	234.83	235.48	235.84	235.34	234.46	234.19	233.80	235.45	234.83	235.48	235.84	235.34	234.46	234.19	233.80
25.00°	205.17	204.08	206.34	204.95	206.61	204.66	205.90	203.90	205.17	204.08	206.34	204.95	206.61	204.66	205.90	203.90	205.17
27.50°	178.30	179.02	178.29	180.03	177.43	180.08	178.39	178.37	178.30	179.02	178.29	180.03	177.43	180.08	178.39	178.37	178.30
30.00°	157.84	155.72	159.56	157.23	159.61	157.06	158.37	155.91	157.84	155.72	159.56	157.23	159.61	157.06	158.37	155.91	157.84
32.50°	142.08	142.61	142.61	143.69	142.17	143.53	142.15	142.05	142.08	142.61	142.61	143.69	142.17	143.53	142.15	142.05	142.08
35.00°	131.41	130.67	132.90	131.76	133.65	132.11	131.99	130.39	131.41	130.67	132.90	131.76	133.65	132.11	131.99	130.39	131.41
37.50°	124.14	124.71	124.34	125.97	125.32	126.07	124.62	124.24	124.14	124.71	124.34	125.97	125.32	126.07	124.62	124.24	124.14
40.00°	119.44	119.31	120.56	120.85	122.06	121.05	120.23	119.10	119.44	119.31	120.56	120.85	122.06	121.05	120.23	119.10	119.44
42.50°	116.30	116.35	117.43	118.07	118.85	118.41	117.07	116.22	116.30	116.35	117.43	118.07	118.85	118.41	117.07	116.22	116.30
45.00°	114.24	113.71	115.50	115.62	117.10	116.16	115.24	113.85	114.24	113.71	115.50	115.62	117.10	116.16	115.24	113.85	114.24
47.50°	112.78	112.33	113.70	114.14	115.41	115.09	113.91	112.58	112.78	112.33	113.70	114.14	115.41	115.09	113.91	112.58	112.78
50.00°	111.89	111.16	113.05	113.13	115.02	114.17	113.09	111.74	111.89	111.16	113.05	113.13	115.02	114.17	113.09	111.74	111.89
52.50°	111.29	110.76	112.50	113.43	114.62	113.98	112.44	111.69	111.29	110.76	112.50	113.43	114.62	113.98	112.44	111.69	111.29
55.00°	110.56	110.40	112.13	113.55	114.18	113.86	111.95	111.49	110.56	110.40	112.13	113.55	114.18	113.86	111.95	111.49	110.56
57.50°	109.76	110.16	111.78	113.23	113.73	113.78	111.51	111.03	109.76	110.16	111.78	113.23	113.73	113.78	111.51	111.03	109.76
60.00°	109.18	109.74	111.04	113.01	113.23	113.70	111.01	110.53	109.18	109.74	111.04	113.01	113.23	113.70	111.01	110.53	109.18
62.50°	108.69	108.86	110.29	113.03	112.74	113.00	110.50	109.98	108.69	108.86	110.29	113.03	112.74	113.00	110.50	109.98	108.69
65.00°	108.33	108.11	109.83	112.69	112.34	112.26	109.94	109.45	108.33	108.11	109.83	112.69	112.34	112.26	109.94	109.45	108.33
67.50°	108.02	107.67	109.38	111.61	111.84	111.28	109.37	108.94	108.02	107.67	109.38	111.61	111.84	111.28	109.37	108.94	108.02
70.00°	107.00	107.15	107.85	110.45	110.61	110.29	108.12	107.86	107.00	107.15	107.85	110.45	110.61	110.29	108.12	107.86	107.00
72.50°	105.73	106.42	106.33	109.13	109.29	108.82	106.73	106.01	105.73	106.42	106.33	109.13	109.29	108.82	106.73	106.01	105.73
75.00°	104.22	105.38	105.25	107.76	107.48	107.34	105.70	104.59	104.22	105.38	105.25	107.76	107.48	107.34	105.70	104.59	104.22
77.50°	102.65	103.70	104.16	106.29	105.77	105.87	104.73	103.71	102.65	103.70	104.16	106.29	105.77	105.87	104.73	103.71	102.65
80.00°	101.54	102.29	102.84	104.65	104.60	104.39	103.29	102.65	101.54	102.29	102.84	104.65	104.60	104.39	103.29	102.65	101.54
82.50°	100.56	101.40	101.50	102.73	103.23	102.51	101.77	101.37	100.56	101.40	101.50	102.73	103.23	102.51	101.77	101.37	100.56
85.00°	99.51	100.25	99.82	100.99	101.03	100.66	100.20	100.01	99.51	100.25	99.82	100.99	101.03	100.66	100.20	100.01	99.51
87.50°	98.44	98.66	98.22	99.49	99.15	99.39	98.62	98.57	98.44	98.66	98.22	99.49	99.15	99.39	98.62	98.57	98.44
90.00°	97.18	97.39	97.67	98.24	98.47	98.15	97.59	97.55	97.18	97.39	97.67	98.24	98.47	98.15	97.59	97.55	97.18
92.50°	95.88	96.61	97.11	97.34	97.69	97.43	96.60	96.93	95.88	96.61	97.11	97.34	97.69	97.43	96.60	96.93	95.88
95.00°	94.97	95.78	96.51	96.23	96.52	96.63	95.89	96.20	94.97	95.78	96.51	96.23	96.52	96.63	95.89	96.20	94.97
97.50°	94.13	94.86	95.78	94.89	95.04	95.00	95.20	95.38	94.13	94.86	95.78	94.89	95.04	95.00	95.20	95.38	94.13
100.00°	93.21	93.75	94.02	92.48	92.59	93.03	93.48	94.30	93.21	93.75	94.02	92.48	92.59	93.03	93.48	94.30	93.21
102.50°	92.28	92.40	92.06	88.85	89.18	88.31	91.70	93.01	92.28	92.40	92.06	88.85	89.18	88.31	91.70	93.01	92.28
105.00°	90.72	90.57	88.88	82.69	83.16	83.08	88.52	91.07	90.72	90.57	88.88	82.69	83.16	83.08	88.52	91.07	90.72
107.50°	89.06	88.17	85.39	73.89	75.79	74.08	85.29	88.63	89.06	88.17	85.39	73.89	75.79	74.08	85.29	88.63	89.06
110.00°	86.63	85.61	80.41	64.09	65.03	64.75	80.08	86.03	86.63	85.61	80.41	64.09	65.03	64.75	80.08	86.03	86.63
112.50°	84.12	82.89	75.19	53.35	54.30	53.40	74.84	83.32	84.12	82.89	75.19	53.35	54.30	53.40	74.84	83.32	84.12

### 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%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	<b>0</b>	1,272	1,272	1,272	1,272	1,207	1,207	1,207	1,207	1,084	1,084	1,084	972	972	972	869	869	869	821
	<b>1</b>	1,116	1,046	982	925	1,052	989	932	881	883	838	796	785	750	717	695	668	642	626
	<b>2</b>	1,003	895	806	730	943	847	766	698	755	690	634	671	619	574	593	552	516	516
	<b>3</b>	911	780	679	599	855	739	647	573	660	585	524	587	527	476	520	471	430	440
	<b>4</b>	833	690	585	505	782	654	558	484	586	507	445	523	458	406	464	411	368	385
	<b>5</b>	767	617	512	434	720	586	490	418	526	446	385	471	405	353	420	365	322	342
	<b>6</b>	709	556	454	380	667	529	435	366	477	398	339	429	363	312	384	329	285	308
	<b>7</b>	659	506	406	337	621	482	390	325	436	359	302	394	328	279	354	299	257	281
	<b>8</b>	615	463	367	302	580	442	353	292	402	326	272	364	299	252	329	274	233	258
	<b>9</b>	576	426	335	273	544	407	322	264	372	298	247	338	275	230	306	253	213	239
	<b>10</b>	541	394	307	248	512	378	296	241	346	275	226	316	254	211	287	235	197	222

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	11.9 fc	5.6 ft
6.5 ft	8.6 fc	6.7 ft
7.5 ft	6.4 fc	7.7 ft
8.0 ft	5.6 fc	8.2 ft
10.0 ft	3.6 fc	10.3 ft
12.0 ft	2.5 fc	12.3 ft
14.0 ft	1.8 fc	14.4 ft
16.0 ft	1.4 fc	16.4 ft
20.0 ft	0.9 fc	20.5 ft
24.0 ft	0.6 fc	24.6 ft
28.0 ft	0.5 fc	28.7 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	11,033	11,033	11,033
<b>45.00°</b>	2,346	2,372	2,405
<b>55.00°</b>	2,286	2,319	2,361
<b>65.00°</b>	2,327	2,359	2,413
<b>75.00°</b>	2,404	2,428	2,479
<b>85.00°</b>	2,563	2,571	2,603

### UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	-	-	-	-	-	-	-	-	-	-
	3H	-	-	-	-	-	-	-	-	-	-
	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
4H	2H	-	-	-	-	-	-	-	-	-	-
	3H	-	-	-	-	-	-	-	-	-	-
	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
8H	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
12H	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-

Corrected UGR values based on total output lumens

SHR = 1.0