

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

AF0618GV 15L 35K EX FG6 HM

Nom. 6" diam x 18" H tubular luminaire with matte white decorative acrylic shade

### Test Number

SP-00994\_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	987
Efficacy	98.69 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.5
90° - 270° Size	-0.5
Height	1.25

#### Spacing Criterion

Two luminaires, plane 0°	0.65
Two luminaires, plane 90°	0.65
Four luminaires	0.88

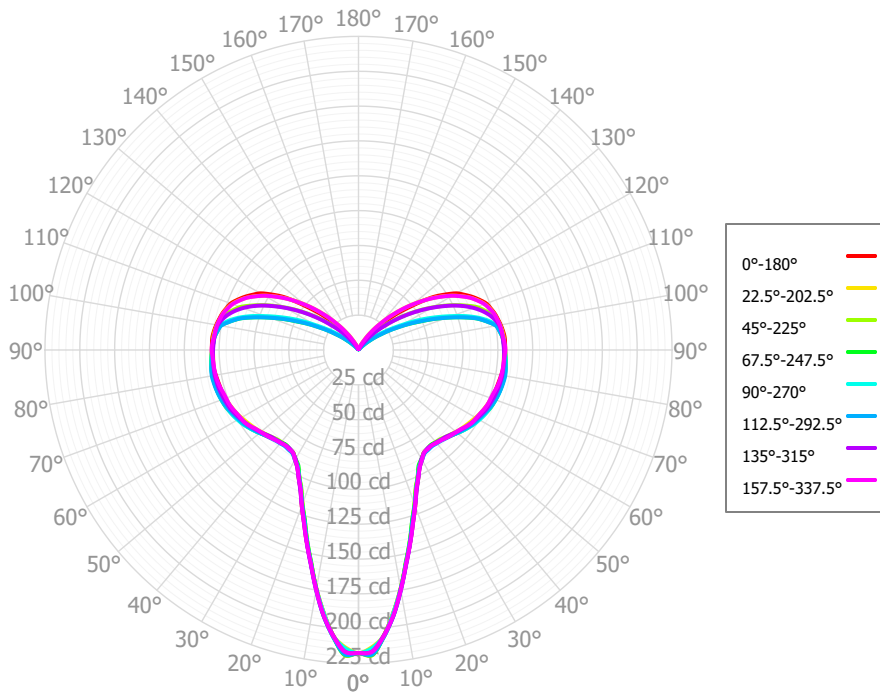
#### Full Beam Angle

0° - 180°	44°
90° - 270°	44°

### IES File Header Contents

Keyword	Value
TEST	SP-00994_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/3/2020
ISSUEDATE	1/7/2020
LUMCAT	AF0618GV 15L 35K EX FG6 HM
LUMINAIRE	Nom. 6" diam x 18" H tubular luminaire with matte white decorative acrylic shade
OTHER	Beam Angle (downlight): 45 degrees
OTHER	Uplight: 35.1%
OTHER	Downlight: 64.9%
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

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	18.86	1.91%	90.00° - 100.00°	113.37	11.49%
10.00° - 20.00°	39.80	4.03%	100.00° - 110.00°	100.02	10.14%
20.00° - 30.00°	46.77	4.74%	100.00° - 120.00°	170.73	17.30%
30.00° - 40.00°	54.80	5.55%	120.00° - 130.00°	39.80	4.03%
40.00° - 50.00°	68.99	6.99%	130.00° - 140.00°	16.71	1.69%
50.00° - 60.00°	85.71	8.68%	140.00° - 150.00°	4.82	0.49%
60.00° - 70.00°	100.26	10.16%	150.00° - 160.00°	0.90	0.09%
70.00° - 80.00°	110.29	11.18%	160.00° - 170.00°	0.23	0.02%
80.00° - 90.00°	114.79	11.63%	170.00° - 180.00°	0.07	0.01%
0.00° - 90.00°	640.27	64.88%	0.00° - 180.00°	986.91	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°	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54	217.54
2.50°	216.96	213.72	219.49	219.03	214.44	218.88	216.81	216.97	216.96	213.72	219.49	219.03	214.44	218.88	216.81	216.97	216.96
5.00°	206.04	206.29	206.47	206.88	206.45	207.04	206.18	206.46	206.04	206.29	206.47	206.88	206.45	207.04	206.18	206.46	206.04
7.50°	190.73	190.32	191.51	192.05	190.61	192.27	192.36	191.96	190.73	190.32	191.51	192.05	190.61	192.27	192.36	191.96	190.73
10.00°	174.16	173.96	174.22	174.49	174.23	175.05	174.39	175.08	174.16	173.96	174.22	174.49	174.23	175.05	174.39	175.08	174.16
12.50°	157.20	157.22	156.72	156.52	157.41	157.40	157.95	157.52	157.20	157.22	156.72	156.52	157.41	157.40	157.95	157.52	157.20
15.00°	143.22	142.28	142.41	142.13	142.72	142.95	143.14	143.40	143.22	142.28	142.41	142.13	142.72	142.95	143.14	143.40	143.22
17.50°	129.89	128.73	128.27	128.07	129.43	128.83	130.07	130.00	129.89	128.73	128.27	128.07	129.43	128.83	130.07	130.00	129.89
20.00°	119.03	117.57	117.61	117.83	118.25	118.49	118.53	118.98	119.03	117.57	117.61	117.83	118.25	118.49	118.53	118.98	119.03
22.50°	108.55	107.91	107.20	107.77	108.20	108.35	109.09	108.30	108.55	107.91	107.20	107.77	108.20	108.35	109.09	108.30	108.55
25.00°	101.57	100.54	100.48	100.48	100.80	101.40	101.13	101.47	101.57	100.54	100.48	100.48	100.80	101.40	101.13	101.47	101.57
27.50°	94.90	94.34	94.14	93.47	94.50	94.65	95.16	94.93	94.90	94.34	94.14	93.47	94.50	94.65	95.16	94.93	94.90
30.00°	91.03	90.51	90.58	90.35	90.84	91.21	90.33	91.11	91.03	90.51	90.58	90.35	90.84	91.21	90.33	91.11	91.03
32.50°	87.29	87.63	87.48	87.48	88.03	88.06	87.77	87.42	87.29	87.63	87.48	87.48	88.03	88.06	87.77	87.42	87.29
35.00°	86.68	86.55	86.54	86.42	87.09	87.40	86.24	86.82	86.68	86.55	86.54	86.42	87.09	87.40	86.24	86.82	86.68
37.50°	86.14	86.01	85.89	85.70	86.59	86.92	86.19	86.33	86.14	86.01	85.89	85.70	86.59	86.92	86.19	86.33	86.14
40.00°	86.68	86.52	86.23	86.61	87.03	87.48	86.66	87.08	86.68	86.52	86.23	86.61	87.03	87.48	86.66	87.08	86.68
42.50°	87.36	87.28	86.85	87.62	87.62	88.17	87.44	87.89	87.36	87.28	86.85	87.62	87.62	88.17	87.44	87.89	87.36
45.00°	89.02	88.49	88.21	88.92	89.02	89.37	88.30	89.16	89.02	88.49	88.21	88.92	89.02	89.37	88.30	89.16	89.02
47.50°	90.70	89.78	89.83	90.46	90.51	90.74	89.91	90.41	90.70	89.78	89.83	90.46	90.51	90.74	89.91	90.41	90.70
50.00°	92.43	91.31	91.98	92.64	92.62	92.58	91.66	91.60	92.43	91.31	91.98	92.64	92.62	92.58	91.66	91.60	92.43
52.50°	94.03	92.86	93.85	94.72	94.75	94.45	93.41	93.00	94.03	92.86	93.85	94.72	94.75	94.45	93.41	93.00	94.03
55.00°	95.18	94.24	95.25	96.57	96.73	96.39	95.16	95.09	95.18	94.24	95.25	96.57	96.73	96.39	95.16	95.09	95.18
57.50°	96.37	95.61	96.73	98.28	98.69	98.10	96.68	96.82	96.37	95.61	96.73	98.28	98.69	98.10	96.68	96.82	96.37
60.00°	97.68	97.09	98.32	99.71	100.17	99.41	98.17	97.59	97.68	97.09	98.32	99.71	100.17	99.41	98.17	97.59	97.68
62.50°	98.89	98.55	99.85	101.18	101.62	100.81	99.61	98.52	98.89	98.55	99.85	101.18	101.62	100.81	99.61	98.52	98.89
65.00°	99.92	99.63	101.30	102.70	102.69	102.35	101.03	99.74	99.92	99.63	101.30	102.70	102.69	102.35	101.03	99.74	99.92
67.50°	100.88	100.66	102.26	103.86	103.73	103.62	101.88	100.67	100.88	100.66	102.26	103.86	103.73	103.62	101.88	100.67	100.88
70.00°	101.72	101.34	102.77	104.63	104.65	104.57	102.73	101.12	101.72	101.34	102.77	104.63	104.65	104.57	102.73	101.12	101.72
72.50°	102.38	102.13	103.41	105.28	105.45	105.39	103.41	101.83	102.38	102.13	103.41	105.28	105.45	105.39	103.41	101.83	102.38
75.00°	102.80	103.42	104.17	105.80	105.77	106.07	104.05	102.86	102.80	103.42	104.17	105.80	105.77	106.07	104.05	102.86	102.80
77.50°	103.34	104.50	104.68	106.19	106.08	106.56	104.45	103.62	103.34	104.50	104.68	106.19	106.08	106.56	104.45	103.62	103.34
80.00°	104.02	104.82	105.04	106.49	106.33	106.89	104.76	104.10	104.02	104.82	105.04	106.49	106.33	106.89	104.76	104.10	104.02
82.50°	104.62	104.96	105.29	106.42	106.36	106.56	104.70	104.42	104.62	104.96	105.29	106.42	106.36	106.56	104.70	104.42	104.62
85.00°	105.14	104.62	105.50	106.13	105.91	105.81	104.63	104.59	105.14	104.62	105.50	106.13	105.91	105.81	104.63	104.59	105.14
87.50°	105.34	104.42	105.24	105.65	105.43	105.30	104.56	104.92	105.34	104.42	105.24	105.65	105.43	105.30	104.56	104.92	105.34
90.00°	105.29	104.54	104.80	105.07	104.91	104.91	104.42	105.36	105.29	104.54	104.80	105.07	104.91	104.91	104.42	105.36	105.29
92.50°	105.27	104.60	104.46	104.45	104.47	104.39	104.12	105.01	105.27	104.60	104.46	104.45	104.47	104.39	104.12	105.01	105.27
95.00°	105.26	104.57	104.15	103.80	104.16	103.81	103.86	104.21	105.26	104.57	104.15	103.80	104.16	103.81	103.86	104.21	105.26
97.50°	104.59	104.09	103.67	102.29	102.93	102.17	103.65	103.58	104.59	104.09	103.67	102.29	102.93	102.17	103.65	103.58	104.59
100.00°	103.59	102.97	103.15	100.55	100.63	100.20	102.63	103.02	103.59	102.97	103.15	100.55	100.63	100.20	102.63	103.02	103.59
102.50°	102.42	101.85	101.14	94.56	96.02	94.42	100.35	101.94	102.42	101.85	101.14	94.56	96.02	94.42	100.35	101.94	102.42
105.00°	101.18	100.72	98.92	87.67	89.26	87.76	97.25	100.69	101.18	100.72	98.92	87.67	89.26	87.76	97.25	100.69	101.18
107.50°	99.43	98.90	94.64	78.02	80.78	78.06	93.13	98.59	99.43	98.90	94.64	78.02	80.78	78.06	93.13	98.59	99.43
110.00°	97.53	96.44	90.20	67.98	70.96	67.86	88.13	96.26	97.53	96.44	90.20	67.98	70.96	67.86	88.13	96.26	97.53
112.50°	94.02	92.95	83.24	58.04	61.76	58.22	82.22	92.59	94.02	92.95	83.24	58.04	61.76	58.22	82.22	92.59	94.02

### 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>	1,092	1,092	1,092	1,092	1,027	1,027	1,027	1,027	904	904	904	792	792	792	689	689	640
	<b>1</b>	943	876	816	762	879	819	765	717	712	669	630	614	580	549	523	497	456
	<b>2</b>	840	739	655	585	779	689	614	551	597	537	485	511	464	422	433	395	360
	<b>3</b>	756	636	542	468	701	593	509	441	513	445	389	439	385	339	370	327	297
	<b>4</b>	687	556	459	386	636	519	432	364	449	378	322	385	327	281	325	279	253
	<b>5</b>	629	492	396	325	582	460	373	308	399	327	272	343	284	238	290	243	220
	<b>6</b>	579	440	346	279	536	412	326	264	358	288	235	309	250	206	262	215	195
	<b>7</b>	535	396	306	243	496	372	289	230	325	256	205	281	223	181	240	192	175
	<b>8</b>	497	360	273	214	462	338	259	203	296	229	182	257	201	160	221	174	159
	<b>9</b>	463	329	246	191	431	309	233	181	272	208	163	238	183	144	205	159	146
	<b>10</b>	434	302	224	171	404	285	212	163	252	190	147	220	168	131	191	147	135

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	7.2 fc	4.5 ft
6.5 ft	5.1 fc	5.3 ft
7.5 ft	3.9 fc	6.1 ft
8.0 ft	3.4 fc	6.5 ft
10.0 ft	2.2 fc	8.2 ft
12.0 ft	1.5 fc	9.8 ft
14.0 ft	1.1 fc	11.4 ft
16.0 ft	0.8 fc	13.1 ft
20.0 ft	0.5 fc	16.3 ft
24.0 ft	0.4 fc	19.6 ft
28.0 ft	0.3 fc	22.9 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	11,926	11,926	11,926
<b>45.00°</b>	1,650	1,635	1,650
<b>55.00°</b>	1,640	1,641	1,667
<b>65.00°</b>	1,656	1,679	1,702
<b>75.00°</b>	1,691	1,713	1,739
<b>85.00°</b>	1,769	1,775	1,782

### 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