

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

## **Spectrum Lighting Photometric Lab**

### **Luminaire**

EV320IND24OL 05L 35K EX DW XX MW  
Evenlight 4.5" Wide x 24" linear surface or wall mount luminaire

### **Test Number**

SP-00617\_M-05L

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	8 W
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#### Lumen Output

Output Lumens	918
Efficacy	114.7 lm/W

#### Luminous Dimensions

0° - 180° Size	2.17
90° - 270° Size	0.42
Height	0.17

#### Spacing Criterion

Two luminaires, plane 0°	1.21
Two luminaires, plane 90°	1.39
Four luminaires	1.45

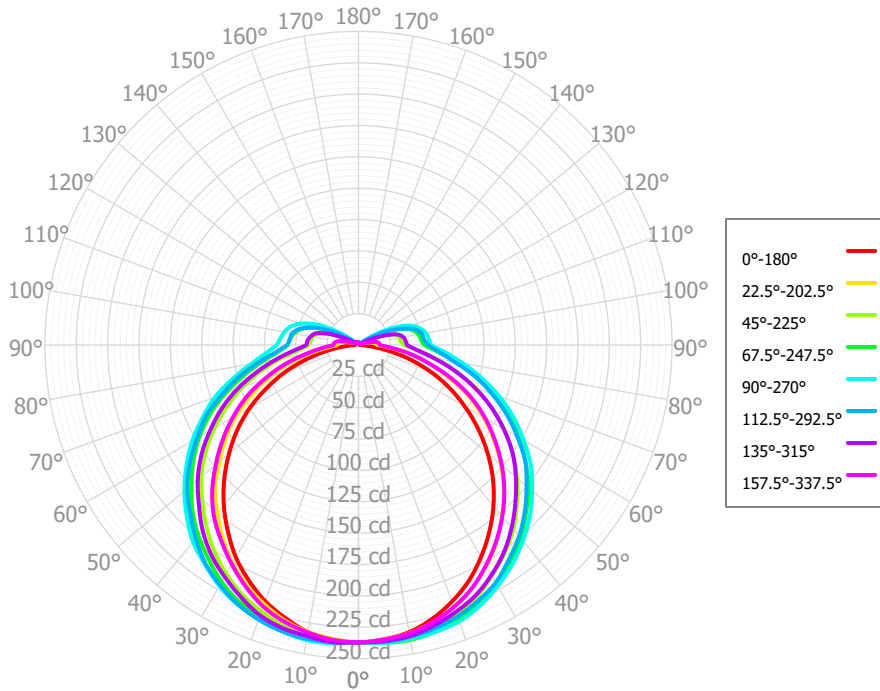
#### Full Beam Angle

0° - 180°	109°
90° - 270°	141°

### IES File Header Contents

Keyword	Value
TEST	SP-00617_M-05L
TESTLAB	VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	9/22/2017
UPDATE	3/9/2020
LUMCAT	EV320IND24OL 05L 35K EX DW XX MW
LUMINAIRE	Evenlight 4.5" Wide x 24" linear surface or wall mount luminaire
OTHER	24" Linear LED, Diffuse White Acrylic Lens
OTHER	Matte White interior finish
OTHER	112 Degree Beam Angle
LAMPCAT	N/A
LAMP	N/A, 512 Source Lms/Ft
OTHER	Total Luminaire Watts is approximate
OTHER	Tested CCT: 3500K
OTHER	CCT Output Multipliers: 30K x 0.972, 40K x 1.018, 50K x 1.087
OTHER	This report prepared by Spectrum Lighting, scaled from 20L

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	23.95	2.61%	90.00° - 100.00°	37.54	4.09%
10.00° - 20.00°	65.35	7.12%	100.00° - 110.00°	30.27	3.30%
20.00° - 30.00°	101.02	11.01%	100.00° - 120.00°	46.09	5.02%
30.00° - 40.00°	125.08	13.63%	120.00° - 130.00°	4.24	0.46%
40.00° - 50.00°	135.22	14.74%	130.00° - 140.00°	1.54	0.17%
50.00° - 60.00°	130.76	14.25%	140.00° - 150.00°	1.20	0.13%
60.00° - 70.00°	112.02	12.21%	150.00° - 160.00°	0.88	0.10%
70.00° - 80.00°	81.58	8.89%	160.00° - 170.00°	0.53	0.06%
80.00° - 90.00°	50.43	5.50%	170.00° - 180.00°	0.19	0.02%
0.00° - 90.00°	825.42	89.95%	0.00° - 180.00°	917.63	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°	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20	237.20
5.00°	235.58	235.94	237.64	238.45	238.30	237.46	238.01	235.97	236.00	235.14	237.59	237.00	238.83	237.71	236.81	235.73	235.58
10.00°	232.48	233.30	236.25	238.70	237.92	237.91	235.63	232.72	232.47	232.37	235.58	237.11	238.87	236.34	235.62	233.49	232.48
15.00°	226.22	228.85	233.03	236.59	236.79	236.29	233.69	228.47	225.35	227.44	231.67	234.84	236.06	234.04	231.70	228.85	226.22
20.00°	217.78	222.40	229.09	233.40	234.56	232.98	229.44	222.00	217.45	219.85	226.09	230.35	232.67	230.41	226.60	222.40	217.78
25.00°	207.75	214.18	222.07	227.88	229.28	227.90	221.82	212.63	207.07	211.19	219.52	225.78	228.31	225.24	220.51	214.05	207.75
30.00°	195.30	203.66	212.65	220.78	221.91	220.92	213.45	201.96	195.54	200.76	210.76	218.11	221.81	218.82	211.91	203.08	195.30
35.00°	181.86	191.71	202.96	211.93	213.66	212.74	204.51	190.67	181.53	188.39	200.53	208.45	213.45	208.92	202.02	191.37	181.86
40.00°	167.41	178.21	191.92	200.76	203.89	201.70	193.27	179.14	167.03	175.07	188.72	198.58	205.18	199.19	189.99	178.35	167.41
45.00°	151.66	163.98	178.65	188.89	193.17	189.75	179.99	164.93	151.40	161.39	176.11	187.18	193.57	187.54	177.01	164.40	151.66
50.00°	134.45	148.19	165.12	177.08	180.67	178.19	167.27	148.51	134.75	144.78	163.63	173.98	181.08	174.93	163.84	149.16	134.45
55.00°	116.41	131.82	149.84	162.66	167.82	164.04	152.92	132.23	117.91	128.92	148.80	160.76	167.41	162.50	149.91	132.94	116.41
60.00°	97.77	114.90	134.18	147.31	152.03	148.45	136.67	115.72	99.85	112.49	132.59	146.56	153.07	146.21	133.57	116.57	97.77
65.00°	79.28	97.21	116.30	131.56	136.29	134.09	120.47	98.93	80.26	93.78	115.52	130.63	137.05	130.11	116.43	99.20	79.28
70.00°	59.93	77.33	98.82	114.21	119.33	115.93	102.78	79.91	61.37	76.19	98.46	113.12	121.84	113.01	98.09	79.59	59.93
75.00°	40.09	59.54	79.88	95.87	101.34	98.75	84.14	61.77	41.56	57.92	80.55	95.05	103.64	96.04	79.45	59.30	40.09
80.00°	20.51	41.40	62.41	79.20	84.59	81.02	66.86	43.55	23.66	40.34	63.53	78.49	86.69	77.84	61.33	42.62	20.51
85.00°	6.34	25.17	46.55	63.62	69.53	66.18	51.69	29.34	9.63	25.23	47.74	64.35	73.81	64.57	46.75	26.38	6.34
90.00°	1.48	15.27	36.51	52.58	57.94	57.04	41.75	20.18	2.92	17.11	40.16	56.63	65.29	55.39	38.89	17.13	1.48
95.00°	0.99	13.55	33.70	50.02	56.27	54.96	40.79	19.37	2.44	16.36	38.09	54.70	62.33	52.32	37.63	16.41	0.99
100.00°	1.30	11.70	33.04	48.56	54.66	53.79	38.79	17.07	2.72	14.35	37.11	52.41	59.97	51.28	36.29	14.35	1.30
105.00°	0.90	6.62	31.00	45.22	50.94	49.12	35.68	10.94	2.64	7.99	33.99	48.06	56.38	47.33	32.46	7.06	0.90
110.00°	1.10	3.08	21.90	38.39	44.88	41.11	26.61	5.15	2.50	5.28	25.68	40.39	49.47	38.12	22.36	3.06	1.10
115.00°	0.88	2.21	10.77	27.16	33.98	29.43	14.16	4.27	2.45	4.32	13.49	29.95	39.77	26.99	9.91	2.03	0.88
120.00°	0.88	1.67	2.88	15.99	20.93	16.46	5.41	3.76	2.46	3.23	4.68	17.47	25.89	14.21	1.90	1.39	0.88
125.00°	1.09	1.39	1.62	3.97	7.81	5.80	3.06	3.19	2.70	3.08	3.02	6.56	11.84	4.28	1.34	1.41	1.09
130.00°	1.07	1.26	1.32	1.32	1.53	2.81	2.77	2.44	2.35	2.71	2.97	3.24	3.44	1.16	1.40	1.00	1.07
135.00°	0.90	1.18	1.40	1.55	1.36	2.72	2.88	2.28	2.24	2.49	2.70	3.24	2.75	1.25	1.49	1.10	0.90
140.00°	1.03	1.36	1.57	1.39	1.34	2.92	2.96	2.50	2.42	2.42	2.29	2.73	2.75	1.24	1.23	1.14	1.03
145.00°	1.19	1.36	1.48	1.29	1.54	2.89	2.52	2.50	2.16	2.34	2.28	2.47	2.62	1.26	1.18	1.25	1.19
150.00°	1.18	1.21	1.77	1.28	1.74	2.53	2.28	2.19	2.13	2.40	2.11	2.42	2.86	1.42	1.48	1.28	1.18
155.00°	1.31	1.21	1.69	1.30	1.74	2.45	2.41	2.02	2.44	2.43	2.10	2.58	2.73	1.46	1.37	1.12	1.31
160.00°	1.36	1.37	1.61	1.61	1.74	2.46	2.29	1.88	2.03	2.21	2.38	2.63	2.67	1.60	1.22	1.42	1.36
165.00°	1.22	1.54	1.86	1.78	1.55	2.29	2.08	1.93	1.73	2.06	2.35	2.27	2.60	1.90	1.32	1.49	1.22
170.00°	1.50	1.50	1.64	2.10	2.27	2.06	1.81	1.70	1.72	1.89	1.90	2.25	2.55	1.86	1.77	1.53	1.50
175.00°	1.57	1.39	1.72	1.75	2.09	2.43	1.99	1.97	1.75	2.24	2.36	2.11	2.42	1.72	1.83	1.65	1.57
180.00°	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89

### 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>	1,070	1,070	1,070	1,070	1,035	1,035	1,035	1,035	968	968	968	908	908	908	852	852	825
	<b>1</b>	958	907	860	819	923	876	835	797	820	786	755	768	740	715	720	698	675
	<b>2</b>	863	779	710	652	830	754	690	637	706	653	608	661	618	580	620	585	564
	<b>3</b>	783	678	597	533	751	656	582	522	615	553	501	577	525	481	542	498	481
	<b>4</b>	714	597	511	446	685	578	499	438	543	475	422	510	453	406	480	431	416
	<b>5</b>	654	531	444	380	628	515	434	374	484	415	361	456	396	349	430	378	365
	<b>6</b>	603	476	390	329	579	462	382	324	436	366	314	411	350	304	388	335	324
	<b>7</b>	558	430	347	289	536	418	340	284	395	326	276	374	313	268	354	300	291
	<b>8</b>	519	391	311	256	499	381	305	252	361	293	245	342	282	238	325	271	263
	<b>9</b>	484	358	281	229	466	349	276	226	331	266	220	315	256	214	299	247	239
	<b>10</b>	453	330	256	206	437	321	251	204	306	242	199	291	234	194	278	226	219

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	7.8 fc	22.7 ft
6.5 ft	5.6 fc	26.8 ft
7.5 ft	4.2 fc	31.0 ft
8.0 ft	3.7 fc	33.0 ft
10.0 ft	2.4 fc	41.3 ft
12.0 ft	1.6 fc	49.5 ft
14.0 ft	1.2 fc	57.8 ft
16.0 ft	0.9 fc	66.0 ft
20.0 ft	0.6 fc	82.6 ft
24.0 ft	0.4 fc	99.1 ft
28.0 ft	0.3 fc	115.6 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2,801	2,801	2,801
45.00°	2,349	2,224	2,297
55.00°	2,156	2,074	2,190
65.00°	1,897	1,876	2,039
75.00°	1,415	1,602	1,842
85.00°	453	1,286	1,675

### 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>	12.6	14.1	13.1	14.6	15.2	15.2	16.7	15.7	17.2	17.7
	<b>3H</b>	14.1	15.5	14.6	16.0	16.6	17.6	19.0	18.2	19.5	20.1
	<b>4H</b>	14.6	15.9	15.1	16.4	17.0	18.8	20.1	19.3	20.6	21.2
	<b>6H</b>	14.8	16.0	15.4	16.5	17.2	19.9	21.1	20.5	21.7	22.3
	<b>8H</b>	14.8	16.0	15.4	16.6	17.2	20.5	21.6	21.0	22.2	22.8
	<b>12H</b>	14.8	15.9	15.4	16.5	17.2	21.0	22.2	21.6	22.7	23.4
<b>4H</b>	<b>2H</b>	13.6	14.9	14.2	15.5	16.1	15.6	16.9	16.2	17.4	18.0
	<b>3H</b>	15.4	16.5	15.9	17.0	17.7	18.3	19.4	18.9	20.0	20.6
	<b>4H</b>	16.0	17.0	16.5	17.6	18.2	19.6	20.6	20.2	21.2	21.9
	<b>6H</b>	16.3	17.2	16.9	17.8	18.5	20.9	21.8	21.5	22.4	23.1
	<b>8H</b>	16.4	17.3	17.0	17.9	18.5	21.6	22.4	22.2	23.0	23.7
	<b>12H</b>	16.4	17.2	17.1	17.8	18.5	22.3	23.0	22.9	23.7	24.4
<b>8H</b>	<b>4H</b>	16.7	17.5	17.3	18.1	18.8	19.8	20.7	20.4	21.3	21.9
	<b>6H</b>	17.2	17.9	17.9	18.6	19.3	21.3	22.0	21.9	22.6	23.3
	<b>8H</b>	17.4	18.1	18.1	18.7	19.4	22.1	22.7	22.7	23.4	24.1
	<b>12H</b>	17.5	18.1	18.2	18.7	19.5	22.9	23.5	23.6	24.2	24.9
<b>12H</b>	<b>4H</b>	16.9	17.6	17.5	18.3	18.9	19.8	20.6	20.4	21.2	21.9
	<b>6H</b>	17.5	18.2	18.2	18.8	19.5	21.3	22.0	22.0	22.6	23.3
	<b>8H</b>	17.8	18.3	18.4	19.0	19.8	22.2	22.7	22.8	23.4	24.2

Corrected UGR values based on total output lumens

SHR = 1.0