

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

EV320IND48OL 10L 35K EX DW XX MW  
Evenlight 4.5" Wide x 48" linear surface or wall mount luminaire

### **Test Number**

SP-00617\_1\_M-10L

### **Test Date**

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

### Summary of Results

#### Power

Input Watts	33 W
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#### Lumen Output

Output Lumens	3737
Efficacy	113.25 lm/W

#### Luminous Dimensions

0° - 180° Size	4.17
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

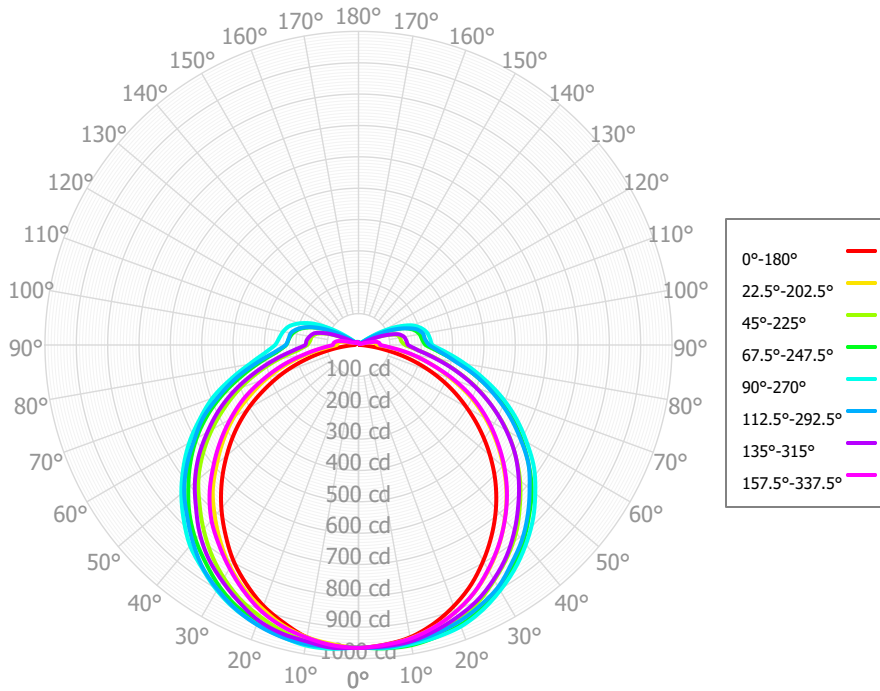
#### Full Beam Angle

0° - 180°	109°
90° - 270°	141°

### IES File Header Contents

Keyword	Value
TEST	SP-00617_1_M-10L
TESTLAB	VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	9/22/2017
UPDATE	3/9/2020
LUMCAT	EV320IND48OL 10L 35K EX DW XX MW
LUMINAIRE	Evenlight 4.5" Wide x 48" linear surface or wall mount luminaire
OTHER	48" Linear LED, Frosted Acrylic Lens
OTHER	Matte White interior finish
OTHER	112 Degree Beam Angle
LAMPCAT	N/A
LAMP	N/A, 1000 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°	97.53	2.61%	90.00° - 100.00°	152.88	4.09%
10.00° - 20.00°	266.16	7.12%	100.00° - 110.00°	123.28	3.30%
20.00° - 30.00°	411.45	11.01%	100.00° - 120.00°	187.73	5.02%
30.00° - 40.00°	509.44	13.63%	120.00° - 130.00°	17.27	0.46%
40.00° - 50.00°	550.75	14.74%	130.00° - 140.00°	6.26	0.17%
50.00° - 60.00°	532.58	14.25%	140.00° - 150.00°	4.89	0.13%
60.00° - 70.00°	456.23	12.21%	150.00° - 160.00°	3.57	0.10%
70.00° - 80.00°	332.28	8.89%	160.00° - 170.00°	2.17	0.06%
80.00° - 90.00°	205.40	5.50%	170.00° - 180.00°	0.79	0.02%
0.00° - 90.00°	3,361.82	89.95%	0.00° - 180.00°	3,737.39	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°	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07	966.07
5.00°	959.51	960.95	967.88	971.18	970.57	967.16	969.38	961.09	961.20	957.70	967.69	965.28	972.74	968.17	964.51	960.08	959.51
10.00°	946.85	950.20	962.21	972.21	969.01	968.96	959.70	947.83	946.83	946.43	959.47	965.70	972.87	962.58	959.65	950.99	946.85
15.00°	921.35	932.07	949.12	963.59	964.43	962.39	951.78	930.51	917.81	926.33	943.54	956.47	961.46	953.20	943.69	932.08	921.35
20.00°	887.01	905.82	933.04	950.59	955.34	948.90	934.48	904.16	885.64	895.42	920.83	938.19	947.62	938.42	922.93	905.82	887.01
25.00°	846.12	872.33	904.48	928.14	933.82	928.22	903.46	866.04	843.39	860.15	894.06	919.56	929.89	917.36	898.12	871.78	846.12
30.00°	795.44	829.50	866.12	899.21	903.83	899.80	869.37	822.57	796.41	817.65	858.40	888.33	903.39	891.23	863.08	827.11	795.44
35.00°	740.69	780.80	826.63	863.16	870.22	866.47	832.94	776.59	739.34	767.29	816.74	848.97	869.36	850.92	822.79	779.42	740.69
40.00°	681.86	725.81	781.68	817.69	830.42	821.49	787.15	729.62	680.30	713.05	768.62	808.80	835.68	811.28	773.82	726.39	681.86
45.00°	617.67	667.88	727.63	769.33	786.74	772.84	733.07	671.74	616.64	657.33	717.27	762.37	788.38	763.81	720.92	669.59	617.67
50.00°	547.61	603.56	672.50	721.21	735.86	725.77	681.27	604.87	548.81	589.68	666.45	708.59	737.51	712.48	667.31	607.51	547.61
55.00°	474.13	536.91	610.28	662.50	683.50	668.10	622.84	538.55	480.24	525.06	606.06	654.77	681.85	661.83	610.58	541.46	474.13
60.00°	398.20	467.96	546.52	599.97	619.21	604.60	556.62	471.33	406.68	458.17	540.02	596.91	623.42	595.50	544.00	474.79	398.20
65.00°	322.89	395.91	473.69	535.84	555.10	546.12	490.66	402.92	326.89	381.97	470.48	532.06	558.20	529.92	474.19	404.03	322.89
70.00°	244.08	314.97	402.48	465.15	486.03	472.15	418.59	325.45	249.97	310.29	401.01	460.71	496.22	460.29	399.50	324.16	244.08
75.00°	163.27	242.50	325.36	390.48	412.75	402.19	342.70	251.57	169.27	235.89	328.07	387.14	422.12	391.18	323.58	241.51	163.27
80.00°	83.53	168.60	254.19	322.58	344.52	330.00	272.33	177.37	96.38	164.29	258.77	319.68	353.09	317.02	249.77	173.59	83.53
85.00°	25.80	102.50	189.60	259.11	283.18	269.54	210.53	119.50	39.22	102.75	194.46	262.10	300.61	263.00	190.42	107.45	25.80
90.00°	6.02	62.17	148.71	214.14	235.98	232.32	170.04	82.20	11.91	69.70	163.57	230.65	265.94	225.59	158.41	69.77	6.02
95.00°	4.04	55.20	137.25	203.71	229.18	223.83	166.15	78.90	9.95	66.61	155.12	222.80	253.87	213.09	153.28	66.85	4.04
100.00°	5.29	47.64	134.56	197.78	222.63	219.08	157.98	69.53	11.09	58.44	151.16	213.48	244.25	208.85	147.81	58.44	5.29
105.00°	3.66	26.95	126.27	184.18	207.49	200.08	145.32	44.57	10.77	32.53	138.42	195.74	229.64	192.75	132.19	28.74	3.66
110.00°	4.48	12.53	89.19	156.37	182.79	167.45	108.39	20.96	10.19	21.52	104.59	164.52	201.48	155.28	91.09	12.45	4.48
115.00°	3.60	9.02	43.86	110.63	138.40	119.85	57.68	17.39	9.97	17.59	54.93	121.98	162.00	109.94	40.38	8.25	3.60
120.00°	3.60	6.80	11.73	65.13	85.25	67.02	22.04	15.31	10.03	13.16	19.04	71.17	105.43	57.89	7.74	5.66	3.60
125.00°	4.44	5.64	6.62	16.18	31.82	23.61	12.46	12.98	10.99	12.54	12.31	26.71	48.22	17.45	5.46	5.76	4.44
130.00°	4.38	5.14	5.38	5.38	6.24	11.43	11.27	9.95	9.56	11.03	12.08	13.18	14.02	4.74	5.72	4.07	4.38
135.00°	3.65	4.79	5.70	6.30	5.54	11.09	11.71	9.29	9.10	10.16	11.00	13.18	11.18	5.10	6.05	4.48	3.65
140.00°	4.20	5.54	6.41	5.66	5.44	11.91	12.05	10.17	9.87	9.84	9.31	11.10	11.19	5.04	5.01	4.64	4.20
145.00°	4.85	5.55	6.01	5.26	6.28	11.76	10.28	10.20	8.81	9.52	9.31	10.05	10.68	5.14	4.82	5.08	4.85
150.00°	4.80	4.91	7.23	5.21	7.07	10.32	9.28	8.93	8.69	9.79	8.61	9.85	11.64	5.78	6.04	5.22	4.80
155.00°	5.34	4.92	6.87	5.31	7.09	9.96	9.81	8.23	9.92	9.89	8.54	10.50	11.11	5.94	5.59	4.57	5.34
160.00°	5.55	5.60	6.56	6.58	7.10	10.00	9.32	7.68	8.26	9.01	9.70	10.71	10.89	6.52	4.98	5.79	5.55
165.00°	4.97	6.28	7.56	7.24	6.33	9.33	8.47	7.87	7.03	8.38	9.56	9.24	10.57	7.75	5.38	6.05	4.97
170.00°	6.10	6.13	6.70	8.54	9.23	8.37	7.36	6.94	6.99	7.69	7.75	9.15	10.39	7.58	7.22	6.21	6.10
175.00°	6.38	5.65	7.00	7.14	8.51	9.90	8.09	8.03	7.14	9.11	9.62	8.61	9.84	7.02	7.45	6.74	6.38
180.00°	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70

### 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>	4,360	4,360	4,360	4,360	4,215	4,215	4,215	4,215	3,944	3,944	3,944	3,696	3,696	3,696	3,469	3,469	3,362
	<b>1</b>	3,902	3,692	3,505	3,335	3,758	3,569	3,399	3,245	3,339	3,200	3,073	3,127	3,015	2,912	2,931	2,843	2,748
	<b>2</b>	3,516	3,174	2,892	2,654	3,379	3,070	2,812	2,593	2,873	2,659	2,475	2,692	2,516	2,361	2,525	2,381	2,253
	<b>3</b>	3,188	2,762	2,433	2,171	3,059	2,673	2,371	2,127	2,506	2,250	2,040	2,351	2,137	1,957	2,207	2,029	1,958
	<b>4</b>	2,907	2,431	2,083	1,817	2,788	2,355	2,033	1,783	2,212	1,936	1,718	2,078	1,844	1,654	1,954	1,756	1,695
	<b>5</b>	2,665	2,161	1,809	1,549	2,557	2,096	1,768	1,523	1,973	1,689	1,471	1,858	1,613	1,420	1,750	1,540	1,487
	<b>6</b>	2,455	1,938	1,590	1,341	2,357	1,881	1,556	1,320	1,775	1,490	1,278	1,675	1,427	1,237	1,582	1,366	1,320
	<b>7</b>	2,272	1,751	1,412	1,175	2,183	1,702	1,384	1,158	1,609	1,328	1,124	1,523	1,275	1,090	1,441	1,223	1,184
	<b>8</b>	2,112	1,593	1,266	1,041	2,031	1,550	1,242	1,027	1,469	1,194	998	1,393	1,149	970	1,322	1,105	1,070
	<b>9</b>	1,971	1,458	1,144	932	1,897	1,421	1,123	919	1,350	1,082	895	1,283	1,043	871	1,220	1,005	974
	<b>10</b>	1,845	1,342	1,041	840	1,779	1,309	1,023	830	1,246	988	809	1,187	953	788	1,131	920	893

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	31.9 fc	22.7 ft
6.5 ft	22.9 fc	26.8 ft
7.5 ft	17.2 fc	31.0 ft
8.0 ft	15.1 fc	33.0 ft
10.0 ft	9.7 fc	41.3 ft
12.0 ft	6.7 fc	49.5 ft
14.0 ft	4.9 fc	57.8 ft
16.0 ft	3.8 fc	66.0 ft
20.0 ft	2.4 fc	82.6 ft
24.0 ft	1.7 fc	99.1 ft
28.0 ft	1.2 fc	115.6 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	5,937	5,937	5,937
<b>45.00°</b>	5,158	4,809	4,868
<b>55.00°</b>	4,801	4,510	4,641
<b>65.00°</b>	4,318	4,111	4,321
<b>75.00°</b>	3,365	3,551	3,904
<b>85.00°</b>	1,241	2,906	3,549

### 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>	15.3	16.8	15.8	17.3	17.8	17.9	19.4	18.4	19.9	20.5
	<b>3H</b>	16.7	18.1	17.3	18.6	19.2	20.4	21.8	21.0	22.3	22.9
	<b>4H</b>	17.2	18.5	17.7	19.0	19.6	21.6	22.9	22.2	23.5	24.1
	<b>6H</b>	17.4	18.6	18.0	19.2	19.8	22.8	24.0	23.4	24.6	25.2
	<b>8H</b>	17.5	18.6	18.0	19.2	19.8	23.4	24.6	24.0	25.1	25.8
	<b>12H</b>	17.5	18.6	18.1	19.2	19.8	24.1	25.2	24.6	25.7	26.4
<b>4H</b>	<b>2H</b>	16.3	17.6	16.9	18.1	18.7	18.4	19.7	18.9	20.2	20.8
	<b>3H</b>	18.0	19.1	18.6	19.7	20.3	21.1	22.2	21.7	22.8	23.4
	<b>4H</b>	18.6	19.6	19.2	20.2	20.9	22.4	23.5	23.0	24.0	24.7
	<b>6H</b>	19.0	19.9	19.6	20.5	21.2	23.8	24.7	24.4	25.3	26.0
	<b>8H</b>	19.1	19.9	19.7	20.5	21.2	24.5	25.3	25.1	26.0	26.6
	<b>12H</b>	19.1	19.9	19.7	20.5	21.2	25.3	26.0	25.9	26.7	27.4
<b>8H</b>	<b>4H</b>	19.4	20.2	20.0	20.8	21.5	22.6	23.5	23.2	24.1	24.8
	<b>6H</b>	19.9	20.6	20.6	21.3	22.0	24.2	24.9	24.8	25.5	26.2
	<b>8H</b>	20.1	20.7	20.7	21.4	22.1	25.0	25.6	25.6	26.3	27.0
	<b>12H</b>	20.2	20.8	20.8	21.4	22.2	25.9	26.5	26.6	27.2	27.9
<b>12H</b>	<b>4H</b>	19.6	20.3	20.2	21.0	21.6	22.6	23.4	23.3	24.1	24.7
	<b>6H</b>	20.2	20.9	20.9	21.5	22.2	24.2	24.9	24.9	25.5	26.2
	<b>8H</b>	20.5	21.1	21.1	21.7	22.5	25.1	25.7	25.7	26.3	27.1

Corrected UGR values based on total output lumens

SHR = 1.0