

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

EV320IND24OL 20L 35K EX DW XX MW
Evenlight 4.5" Wide x 24" linear surface or wall mount luminaire

Test Number

SP-00617_M-20L

Test Date

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

Summary of Results

Power

Input Watts	30.6 W
-------------	--------

Lumen Output

Output Lumens	3399
Efficacy	111.07 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

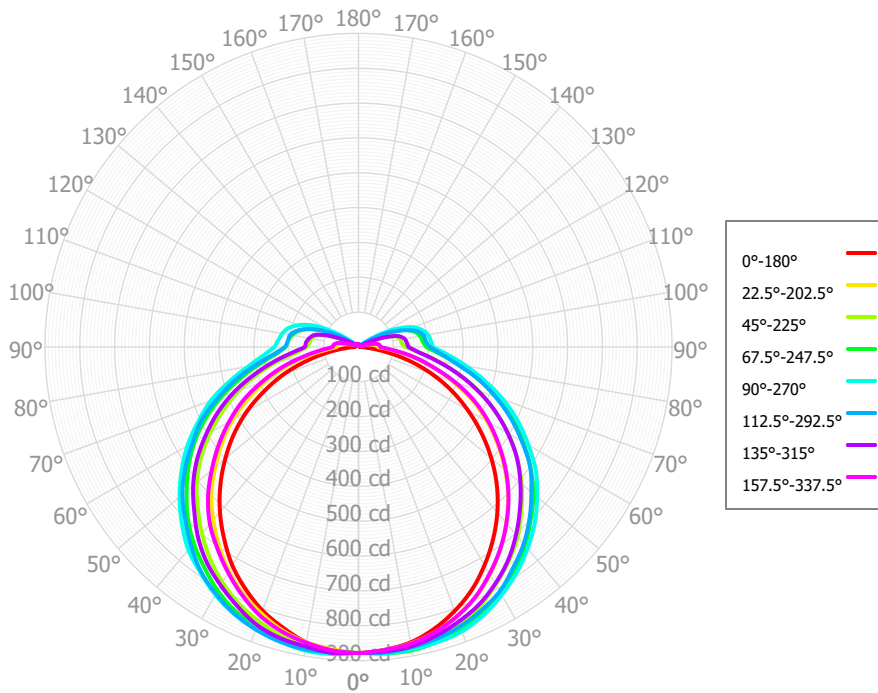
Full Beam Angle

0° - 180°	109°
90° - 270°	141°

IES File Header Contents

Keyword	Value
TEST	SP-00617_M-20L
TESTLAB	VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	9/22/2017
UPDATE	3/9/2020
LUMCAT	EV320IND24OL 20L 35K EX DW XX MW
LUMINAIRE	Evenlight 4.5" Wide x 24" linear surface or wall mount luminaire
OTHER	24" Linear LED, Frosted Acrylic Lens
OTHER	Matte White finish
OTHER	112 Degree Beam Angle
LAMPCAT	N/A
LAMP	N/A, 2000 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
_CRI	82
_CCTMULT	30K x 0.972, 40K x 1.018, 50K x 1.087
_LAMPMULT	5L x 0.27, 7L x 0.375, 10L x 0.545, 13L x 0.681

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	88.69	2.61%	90.00° - 100.00°	139.02	4.09%
10.00° - 20.00°	242.04	7.12%	100.00° - 110.00°	112.11	3.30%
20.00° - 30.00°	374.15	11.01%	100.00° - 120.00°	170.71	5.02%
30.00° - 40.00°	463.26	13.63%	120.00° - 130.00°	15.70	0.46%
40.00° - 50.00°	500.83	14.74%	130.00° - 140.00°	5.70	0.17%
50.00° - 60.00°	484.31	14.25%	140.00° - 150.00°	4.44	0.13%
60.00° - 70.00°	414.88	12.21%	150.00° - 160.00°	3.25	0.10%
70.00° - 80.00°	302.16	8.89%	160.00° - 170.00°	1.98	0.06%
80.00° - 90.00°	186.78	5.50%	170.00° - 180.00°	0.72	0.02%
0.00° - 90.00°	3,057.10	89.95%	0.00° - 180.00°	3,398.62	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°	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50	878.50
5.00°	872.54	873.84	880.15	883.15	882.59	879.49	881.51	873.98	874.07	870.90	879.98	877.79	884.57	880.41	877.09	873.06	872.54
10.00°	861.03	864.08	875.00	884.09	881.17	881.13	872.71	861.92	861.01	860.64	872.50	878.17	884.69	875.33	872.67	864.79	861.03
15.00°	837.84	847.58	863.09	876.25	877.02	875.15	865.51	846.17	834.62	842.37	858.02	869.78	874.31	866.80	858.15	847.60	837.84
20.00°	806.61	823.72	848.47	864.43	868.75	862.89	849.77	822.21	805.36	814.26	837.36	853.15	861.72	853.36	839.28	823.71	806.61
25.00°	769.43	793.26	822.49	844.01	849.18	844.08	821.57	787.54	766.94	782.18	813.02	836.21	845.60	834.21	816.72	792.76	769.43
30.00°	723.34	754.31	787.61	817.71	821.90	818.24	790.57	748.01	724.22	743.54	780.59	807.81	821.51	810.45	784.85	752.14	723.34
35.00°	673.55	710.03	751.71	784.92	791.34	787.93	757.44	706.20	672.33	697.74	742.71	772.02	790.56	773.79	748.21	708.77	673.55
40.00°	620.05	660.02	710.83	743.57	755.15	747.03	715.80	663.48	618.63	648.42	698.95	735.49	759.94	737.74	703.68	660.54	620.05
45.00°	561.69	607.34	661.68	699.60	715.43	702.79	666.62	610.85	560.74	597.75	652.26	693.27	716.92	694.58	655.58	608.90	561.69
50.00°	497.98	548.85	611.54	655.84	669.16	659.98	619.52	550.04	499.07	536.23	606.04	644.36	670.66	647.90	606.82	552.44	497.98
55.00°	431.16	488.24	554.96	602.45	621.54	607.54	566.39	489.73	436.71	477.46	551.13	595.42	620.04	601.84	555.24	492.38	431.16
60.00°	362.11	425.54	496.98	545.59	563.09	549.80	506.17	428.61	369.82	416.64	491.07	542.80	566.91	541.52	494.69	431.75	362.11
65.00°	293.62	360.02	430.76	487.28	504.79	496.62	446.19	366.40	297.26	347.35	427.83	483.83	507.60	481.89	431.21	367.41	293.62
70.00°	221.95	286.42	366.00	422.99	441.97	429.36	380.65	295.95	227.31	282.17	364.66	418.95	451.24	418.57	363.29	294.78	221.95
75.00°	148.48	220.52	295.87	355.08	375.33	365.73	311.64	228.77	153.92	214.51	298.33	352.05	383.86	355.72	294.25	219.62	148.48
80.00°	75.96	153.32	231.15	293.35	313.29	300.09	247.65	161.29	87.65	149.40	235.31	290.71	321.08	288.28	227.13	157.85	75.96
85.00°	23.46	93.21	172.42	235.62	257.51	245.11	191.45	108.67	35.67	93.44	176.83	238.35	273.36	239.16	173.16	97.72	23.46
90.00°	5.47	56.54	135.23	194.73	214.59	211.26	154.63	74.75	10.83	63.38	148.75	209.75	241.83	205.14	144.05	63.45	5.47
95.00°	3.67	50.20	124.81	185.24	208.41	203.54	151.09	71.75	9.05	60.58	141.06	202.61	230.86	193.77	139.38	60.79	3.67
100.00°	4.81	43.32	122.36	179.85	202.45	199.22	143.66	63.23	10.09	53.14	137.46	194.13	222.11	189.92	134.42	53.15	4.81
105.00°	3.33	24.51	114.83	167.48	188.69	181.94	132.15	40.53	9.79	29.58	125.88	178.00	208.83	175.28	120.21	26.13	3.33
110.00°	4.08	11.39	81.11	142.19	166.22	152.27	98.56	19.06	9.27	19.57	95.11	149.61	183.22	141.20	82.83	11.32	4.08
115.00°	3.27	8.20	39.88	100.60	125.86	108.99	52.45	15.82	9.06	15.99	49.96	110.92	147.31	99.98	36.72	7.51	3.27
120.00°	3.27	6.18	10.66	59.23	77.52	60.95	20.04	13.92	9.12	11.96	17.32	64.72	95.88	52.65	7.04	5.15	3.27
125.00°	4.04	5.13	6.02	14.71	28.94	21.47	11.33	11.80	9.99	11.40	11.19	24.29	43.85	15.87	4.96	5.23	4.04
130.00°	3.98	4.67	4.89	4.89	5.67	10.39	10.25	9.05	8.70	10.03	10.99	11.99	12.75	4.31	5.20	3.71	3.98
135.00°	3.32	4.35	5.19	5.73	5.04	10.08	10.65	8.45	8.28	9.24	10.00	11.99	10.17	4.63	5.50	4.08	3.32
140.00°	3.82	5.04	5.83	5.15	4.95	10.83	10.96	9.25	8.98	8.95	8.47	10.10	10.18	4.58	4.56	4.22	3.82
145.00°	4.41	5.05	5.47	4.78	5.71	10.69	9.35	9.28	8.01	8.66	8.46	9.14	9.71	4.67	4.38	4.62	4.41
150.00°	4.37	4.46	6.57	4.74	6.43	9.38	8.43	8.12	7.90	8.91	7.83	8.96	10.59	5.26	5.50	4.75	4.37
155.00°	4.86	4.48	6.25	4.83	6.45	9.06	8.92	7.49	9.03	8.99	7.77	9.55	10.10	5.40	5.09	4.16	4.86
160.00°	5.05	5.09	5.96	5.98	6.46	9.10	8.48	6.98	7.51	8.19	8.82	9.74	9.90	5.93	4.53	5.27	5.05
165.00°	4.52	5.72	6.88	6.58	5.75	8.49	7.70	7.16	6.39	7.62	8.69	8.40	9.62	7.05	4.89	5.51	4.52
170.00°	5.55	5.57	6.09	7.77	8.39	7.61	6.69	6.31	6.36	7.00	7.05	8.32	9.45	6.89	6.57	5.65	5.55
175.00°	5.80	5.14	6.36	6.49	7.74	9.00	7.35	7.31	6.49	8.28	8.75	7.83	8.95	6.38	6.78	6.13	5.80
180.00°	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
RCR	0	3,965	3,965	3,965	3,965	3,833	3,833	3,833	3,833	3,587	3,587	3,587	3,361	3,361	3,361	3,154	3,154	3,057
	1	3,548	3,358	3,187	3,033	3,417	3,246	3,091	2,951	3,036	2,910	2,794	2,843	2,742	2,648	2,666	2,585	2,499
	2	3,198	2,887	2,630	2,414	3,072	2,792	2,557	2,358	2,613	2,418	2,250	2,448	2,288	2,147	2,296	2,165	2,091
	3	2,899	2,512	2,213	1,974	2,782	2,431	2,156	1,934	2,279	2,046	1,855	2,138	1,943	1,780	2,007	1,845	1,780
	4	2,643	2,211	1,894	1,652	2,536	2,142	1,849	1,622	2,011	1,760	1,562	1,890	1,677	1,504	1,777	1,597	1,447
	5	2,423	1,965	1,645	1,409	2,325	1,906	1,608	1,385	1,794	1,536	1,338	1,689	1,467	1,292	1,592	1,400	1,247
	6	2,233	1,762	1,446	1,219	2,143	1,711	1,415	1,200	1,614	1,355	1,162	1,524	1,298	1,125	1,439	1,242	1,088
	7	2,066	1,592	1,284	1,069	1,985	1,548	1,258	1,053	1,464	1,208	1,022	1,385	1,159	991	1,311	1,112	961
	8	1,921	1,448	1,151	947	1,847	1,410	1,129	934	1,336	1,086	908	1,267	1,045	882	1,202	1,005	857
	9	1,792	1,326	1,040	847	1,725	1,292	1,021	836	1,227	984	814	1,166	949	792	1,109	914	770
	10	1,678	1,220	947	764	1,617	1,191	930	755	1,133	898	736	1,080	867	717	1,029	837	698

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	29.0 fc	22.7 ft
6.5 ft	20.8 fc	26.8 ft
7.5 ft	15.6 fc	31.0 ft
8.0 ft	13.7 fc	33.0 ft
10.0 ft	8.8 fc	41.3 ft
12.0 ft	6.1 fc	49.5 ft
14.0 ft	4.5 fc	57.8 ft
16.0 ft	3.4 fc	66.0 ft
20.0 ft	2.2 fc	82.6 ft
24.0 ft	1.5 fc	99.1 ft
28.0 ft	1.1 fc	115.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	10,375	10,375	10,375
45.00°	8,700	8,238	8,506
55.00°	7,984	7,680	8,110
65.00°	7,025	6,948	7,552
75.00°	5,242	5,935	6,822
85.00°	1,677	4,764	6,202

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	17.2	18.7	17.7	19.2	19.7	19.7	21.2	20.2	21.7	22.3
	3H	18.6	20.0	19.2	20.5	21.1	22.2	23.6	22.7	24.1	24.7
	4H	19.1	20.4	19.6	20.9	21.5	23.3	24.6	23.9	25.2	25.8
	6H	19.3	20.6	19.9	21.1	21.7	24.5	25.7	25.0	26.2	26.8
	8H	19.4	20.5	19.9	21.1	21.7	25.0	26.2	25.6	26.7	27.4
	12H	19.4	20.5	20.0	21.1	21.7	25.6	26.7	26.2	27.3	27.9
4H	2H	18.2	19.5	18.7	20.0	20.6	20.2	21.5	20.7	22.0	22.6
	3H	19.9	21.0	20.5	21.6	22.2	22.8	24.0	23.4	24.5	25.2
	4H	20.5	21.5	21.1	22.1	22.8	24.1	25.2	24.7	25.7	26.4
	6H	20.9	21.8	21.5	22.4	23.1	25.5	26.4	26.0	27.0	27.6
	8H	21.0	21.8	21.6	22.4	23.1	26.1	27.0	26.7	27.6	28.2
	12H	21.0	21.8	21.6	22.4	23.1	26.8	27.6	27.4	28.2	28.9
8H	4H	21.2	22.1	21.8	22.7	23.4	24.4	25.2	25.0	25.8	26.5
	6H	21.8	22.5	22.4	23.1	23.8	25.8	26.5	26.5	27.2	27.9
	8H	22.0	22.6	22.6	23.3	24.0	26.6	27.3	27.3	27.9	28.6
	12H	22.1	22.6	22.7	23.3	24.0	27.5	28.1	28.1	28.7	29.5
12H	4H	21.4	22.2	22.0	22.8	23.5	24.4	25.1	25.0	25.8	26.5
	6H	22.1	22.7	22.7	23.3	24.1	25.9	26.5	26.5	27.1	27.9
	8H	22.3	22.9	23.0	23.5	24.3	26.7	27.3	27.4	27.9	28.7

Corrected UGR values based on total output lumens

SHR = 1.0