

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

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### Spectrum Lighting Photometric Lab

**Luminaire**

EV04IND2GL 15L 35K xx DW xx FS xx

4" Wide x 48" linear pendant or surface mount for semi-direct illumination

**Test Number**

SP-01620\_2

**Test Date**

11/15/2023

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

### Summary of Results

#### Power

Input Watts	22.9 W
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#### Lumen Output

Output Lumens	2618
Efficacy	114.32 lm/W

#### Luminous Dimensions

0° - 180° Size	0.33
90° - 270° Size	2
Height	0.19

#### Spacing Criterion

Two luminaires, plane 0°	1.39
Two luminaires, plane 90°	1.23
Four luminaires	1.46

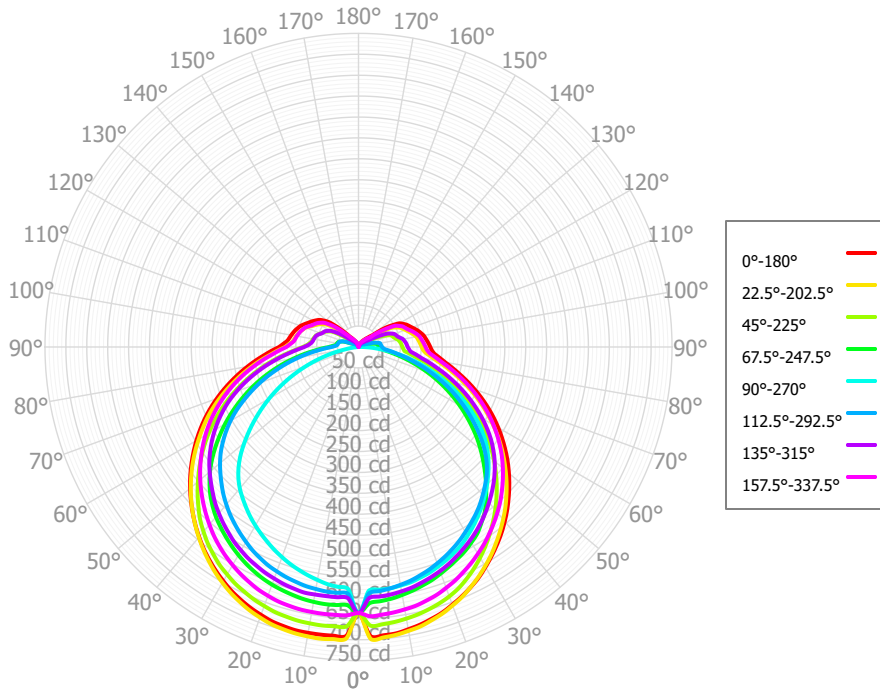
#### Full Beam Angle

0° - 180°	135°
90° - 270°	107°

### IES File Header Contents

Keyword	Value
TEST	SP-01620_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/15/2023
ISSUEDATE	11/16/2023
LUMCAT	EV04IND2GL 15L 35K xx DW xx FS xx
LUMINAIRE	4" Wide x 48" linear pendant or surface mount for semi-direct illumination
OTHER	Diffuse White Acrylic Lens
OTHER	Matte White interior finish
OTHER	Beam Angle 135 deg x 107 deg
OTHER	2000 Source Lms/Ft
OTHER	80+ CRI
OTHER	CCT Output Multipliers: 30K x 0.98, 40K x 1.0
OTHER	Total Luminaire Watts is approximate
OTHER	This report prepared by Spectrum Lighting, Scaled from the EV04IND4GL 20L 35K

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	61.50	2.35%	90.00° - 100.00°	110.47	4.22%
10.00° - 20.00°	176.29	6.73%	100.00° - 110.00°	93.48	3.57%
20.00° - 30.00°	274.11	10.47%	100.00° - 120.00°	162.79	6.22%
30.00° - 40.00°	342.93	13.10%	120.00° - 130.00°	40.26	1.54%
40.00° - 50.00°	374.57	14.31%	130.00° - 140.00°	16.44	0.63%
50.00° - 60.00°	363.30	13.88%	140.00° - 150.00°	6.77	0.26%
60.00° - 70.00°	310.27	11.85%	150.00° - 160.00°	2.63	0.10%
70.00° - 80.00°	227.55	8.69%	160.00° - 170.00°	0.70	0.03%
80.00° - 90.00°	147.27	5.63%	170.00° - 180.00°	0.12	0.00%
0.00° - 90.00°	2277.79	87.01%	0.00° - 180.00°	2617.96	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°	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54	636.54
2.50°	693.51	700.07	667.38	613.29	583.05	590.42	600.82	642.45	692.62	699.02	669.32	618.18	578.83	589.42	600.71	644.81	693.51
5.00°	692.31	697.33	665.69	610.28	582.74	590.24	600.85	643.24	693.41	701.61	670.55	619.62	575.73	585.99	599.02	642.77	692.31
7.50°	690.98	694.37	663.44	607.14	582.21	590.03	600.91	643.91	694.16	703.71	671.87	620.26	572.10	582.42	596.91	640.62	690.98
10.00°	685.79	689.56	659.74	602.29	579.42	587.85	601.25	643.71	694.41	702.85	671.39	619.08	565.85	577.81	593.52	637.39	685.79
12.50°	680.46	684.65	655.39	597.04	576.52	585.59	601.62	643.19	694.28	701.61	670.57	617.07	559.36	572.85	589.43	634.00	680.46
15.00°	673.52	676.63	649.67	590.84	571.16	581.35	598.33	640.96	691.53	698.71	667.83	613.52	551.96	566.12	583.55	628.04	673.52
17.50°	666.20	668.45	643.08	584.47	565.74	576.99	594.74	638.20	688.17	695.05	664.83	609.55	544.12	559.06	577.32	621.83	666.20
20.00°	656.14	658.07	635.00	576.33	558.43	571.28	589.52	633.32	681.94	688.75	659.32	604.93	534.95	550.77	570.33	613.23	656.14
22.50°	645.86	647.38	624.93	567.98	551.02	565.26	584.23	627.76	675.26	681.69	653.60	599.16	525.41	542.17	562.52	604.37	645.86
25.00°	634.38	634.11	611.98	559.43	542.41	557.09	577.42	620.01	666.93	672.56	646.04	591.91	514.95	532.64	553.27	593.86	634.38
27.50°	622.26	620.59	597.73	550.85	533.42	548.57	570.53	611.79	657.86	662.66	638.40	583.74	504.29	522.59	543.77	583.10	622.26
30.00°	607.58	605.58	581.91	539.99	521.60	538.25	561.90	602.31	646.61	651.00	628.41	574.55	493.24	511.28	533.91	571.22	607.58
32.50°	592.73	590.21	564.98	528.96	509.59	527.74	553.09	592.21	634.87	638.56	618.30	564.56	481.50	499.95	523.21	558.96	592.73
35.00°	577.33	573.23	546.92	512.87	496.58	516.50	542.26	580.79	621.99	624.65	605.40	553.80	468.66	488.60	511.49	545.34	577.33
37.50°	561.43	556.06	528.22	496.42	483.25	504.83	531.31	568.52	608.36	610.01	592.26	542.39	455.44	476.27	499.01	531.48	561.43
40.00°	544.31	538.32	508.94	474.41	468.66	491.88	519.51	554.74	593.25	594.26	576.71	530.46	441.72	462.35	485.75	516.96	544.31
42.50°	526.69	520.06	488.60	452.23	453.81	478.33	507.31	540.52	577.55	577.89	560.68	516.50	425.27	448.15	471.86	501.82	526.69
45.00°	508.06	500.43	467.48	428.62	438.13	463.29	493.11	525.65	560.86	560.71	541.48	501.17	405.62	433.54	457.43	485.24	508.06
47.50°	489.13	480.39	445.67	404.97	421.96	448.04	478.91	510.25	543.69	542.66	522.03	483.24	382.62	416.36	441.76	468.32	489.13
50.00°	469.68	459.44	423.43	381.14	404.58	432.41	464.72	494.20	525.86	523.67	501.41	463.85	356.33	396.16	425.18	450.79	469.68
52.50°	449.65	438.30	400.42	356.94	385.87	415.41	449.83	477.39	507.26	504.11	480.58	441.59	329.46	373.50	406.73	432.59	449.65
55.00°	428.76	416.85	376.99	331.08	364.38	396.06	432.93	459.78	487.76	484.03	459.02	418.01	302.11	348.34	387.09	413.35	428.76
57.50°	407.57	394.72	353.10	305.20	341.01	375.61	415.44	441.68	467.89	463.06	437.11	393.51	274.52	322.69	365.17	393.48	407.57
60.00°	386.02	371.58	329.01	279.23	314.40	353.57	396.56	423.14	447.66	441.39	414.18	368.66	246.74	296.63	342.05	372.78	386.02
62.50°	363.90	348.36	304.58	253.16	287.62	329.72	377.03	403.55	426.82	419.79	390.75	342.82	218.47	270.33	317.93	351.48	363.90
65.00°	341.20	325.06	280.04	226.81	260.60	303.70	356.21	383.16	405.47	398.24	366.14	316.68	189.89	243.85	293.37	329.50	341.20
67.50°	318.29	301.61	254.69	200.48	232.81	277.56	334.20	361.98	383.33	375.19	341.36	290.41	161.58	216.99	268.46	307.25	318.29
70.00°	295.22	278.01	229.11	174.19	204.06	251.30	310.24	340.27	360.64	351.28	316.27	264.12	133.40	189.90	243.42	284.74	295.22
72.50°	272.58	254.95	205.03	148.52	175.95	224.68	285.91	318.05	337.68	327.24	291.16	237.12	106.12	163.72	219.14	262.47	272.58
75.00°	250.26	232.38	181.28	123.97	148.51	197.74	261.05	295.56	314.57	303.15	266.03	210.00	79.19	138.01	195.07	240.39	250.26
77.50°	229.79	211.11	159.89	101.13	121.26	171.48	236.28	273.07	291.90	279.58	241.14	183.40	55.08	115.43	173.91	219.89	229.79
80.00°	210.47	190.86	138.86	80.95	94.19	145.73	211.62	250.59	269.46	256.21	216.56	156.86	31.91	94.17	153.39	200.47	210.47
82.50°	195.19	174.76	124.43	65.02	69.13	121.75	188.12	228.94	247.94	233.87	192.74	132.25	17.10	78.20	138.84	184.71	195.19
85.00°	182.04	161.39	110.67	54.60	45.57	98.87	165.79	207.60	226.78	211.84	169.82	107.78	4.49	64.02	125.22	171.08	182.04
87.50°	175.47	154.52	107.51	48.70	26.71	80.45	146.51	189.64	208.02	193.37	149.98	88.83	1.84	59.06	120.99	164.17	175.47
90.00°	171.75	151.20	104.96	47.79	10.75	64.32	129.78	172.69	190.07	175.75	133.17	70.13	1.14	56.52	117.78	160.48	171.75
92.50°	168.29	148.44	103.40	47.26	3.63	56.32	119.37	163.29	179.52	165.94	122.25	61.61	0.89	55.11	115.72	157.21	168.29
95.00°	164.90	145.95	101.82	47.10	1.16	51.82	113.37	155.61	170.89	157.59	116.22	53.52	0.70	53.93	113.73	154.11	164.90
97.50°	161.54	143.27	99.32	45.53	0.45	50.15	110.17	152.32	166.66	154.14	112.45	52.83	0.73	53.04	110.82	151.00	161.54
100.00°	158.18	140.54	96.67	42.86	0.49	49.47	108.63	149.75	163.33	151.31	110.30	52.05	0.78	52.19	107.83	147.89	158.18
102.50°	153.30	135.56	92.00	36.42	0.52	48.39	106.68	146.75	159.74	147.64	107.87	50.54	0.82	46.27	102.26	142.69	153.30
105.00°	148.09	129.91	87.61	27.43	0.54	47.21	104.53	143.70	156.12	143.90	105.27	48.59	0.85	39.86	96.88	136.98	148.09

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>ptc</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>	3036	3036	3036	3036	2925	2925	2925	2925	2720	2720	2720	2532	2532	2532	2359	2359	2278
	<b>1</b>	2714	2567	2435	2316	2605	2473	2354	2246	2297	2201	2112	2136	2059	1987	1987	1926	1855
	<b>2</b>	2445	2205	2007	1841	2341	2125	1945	1792	1975	1827	1698	1837	1715	1609	1709	1611	1549
	<b>3</b>	2215	1918	1687	1504	2119	1850	1638	1468	1721	1544	1398	1602	1455	1331	1492	1370	1317
	<b>4</b>	2019	1686	1443	1257	1930	1628	1403	1229	1518	1327	1175	1416	1254	1123	1320	1184	1138
	<b>5</b>	1850	1498	1252	1070	1769	1448	1219	1048	1353	1156	1005	1264	1095	963	1182	1038	998
	<b>6</b>	1704	1342	1099	924	1630	1298	1071	907	1216	1019	872	1139	968	837	1067	919	885
	<b>7</b>	1576	1211	975	809	1509	1173	952	794	1102	907	765	1034	864	736	971	822	792
	<b>8</b>	1464	1101	872	715	1403	1068	853	703	1005	814	679	946	777	654	890	742	715
	<b>9</b>	1365	1007	787	639	1310	978	770	628	922	737	607	870	705	587	821	674	651
	<b>10</b>	1277	926	715	575	1227	900	700	566	851	672	548	804	644	530	761	617	596

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	21.0 fc	27.1 ft
6.5 ft	15.1 fc	32.1 ft
7.5 ft	11.3 fc	37.0 ft
8.0 ft	9.9 fc	39.5 ft
10.0 ft	6.4 fc	49.3 ft
12.0 ft	4.4 fc	59.2 ft
14.0 ft	3.2 fc	69.0 ft
16.0 ft	2.5 fc	78.9 ft
20.0 ft	1.6 fc	98.6 ft
24.0 ft	1.1 fc	118.4 ft
28.0 ft	0.8 fc	138.1 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	10381	10381	10381
45.00°	7436	7313	9228
55.00°	6690	6391	9123
65.00°	5892	5357	8355
75.00°	5008	4124	6909
85.00°	4493	3225	4088

### 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	18.8	20.2	19.3	20.8	21.4	17.3	18.7	17.8	19.3	19.9
	3H	21.1	22.4	21.7	23.0	23.6	18.7	20.0	19.3	20.6	21.2
	4H	22.2	23.4	22.8	24.0	24.7	19.1	20.4	19.7	21.0	21.6
	6H	23.3	24.4	23.9	25.0	25.7	19.4	20.5	20.0	21.1	21.8
	8H	23.8	24.9	24.4	25.5	26.2	19.4	20.5	20.0	21.2	21.9
	12H	24.4	25.5	25.0	26.1	26.8	19.5	20.5	20.1	21.1	21.8
4H	2H	19.1	20.4	19.7	20.9	21.6	18.3	19.6	18.9	20.1	20.8
	3H	21.7	22.7	22.2	23.3	24.0	20.0	21.1	20.6	21.7	22.4
	4H	22.9	23.9	23.5	24.5	25.2	20.7	21.6	21.3	22.3	23.0
	6H	24.2	25.0	24.8	25.7	26.4	21.1	21.9	21.7	22.6	23.3
	8H	24.8	25.6	25.4	26.3	27.0	21.2	22.0	21.8	22.6	23.4
	12H	25.5	26.3	26.2	26.9	27.7	21.2	22.0	21.9	22.6	23.4
8H	4H	23.0	23.9	23.7	24.5	25.3	21.4	22.2	22.1	22.9	23.6
	6H	24.5	25.1	25.1	25.8	26.6	22.1	22.7	22.7	23.4	24.2
	8H	25.2	25.9	25.9	26.6	27.3	22.3	22.9	22.9	23.6	24.3
	12H	26.1	26.7	26.8	27.4	28.2	22.4	23.0	23.1	23.6	24.5
12H	4H	23.0	23.8	23.7	24.5	25.2	21.6	22.4	22.3	23.0	23.8
	6H	24.5	25.1	25.2	25.8	26.6	22.4	23.0	23.0	23.7	24.5
	8H	25.3	25.9	26.0	26.6	27.4	22.7	23.2	23.3	23.9	24.7

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0