

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

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### Spectrum Lighting Photometric Lab

#### Luminaire

EV04IND2GL 05L 35K xx DW xx FS xx

4" Wide x 24" linear pendant or surface mount for semi-direct illumination

#### Test Number

SP-01620

#### Test Date

11/15/2023

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

### Summary of Results

#### Power

Input Watts	7.6 W
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#### Lumen Output

Output Lumens	894
Efficacy	117.62 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

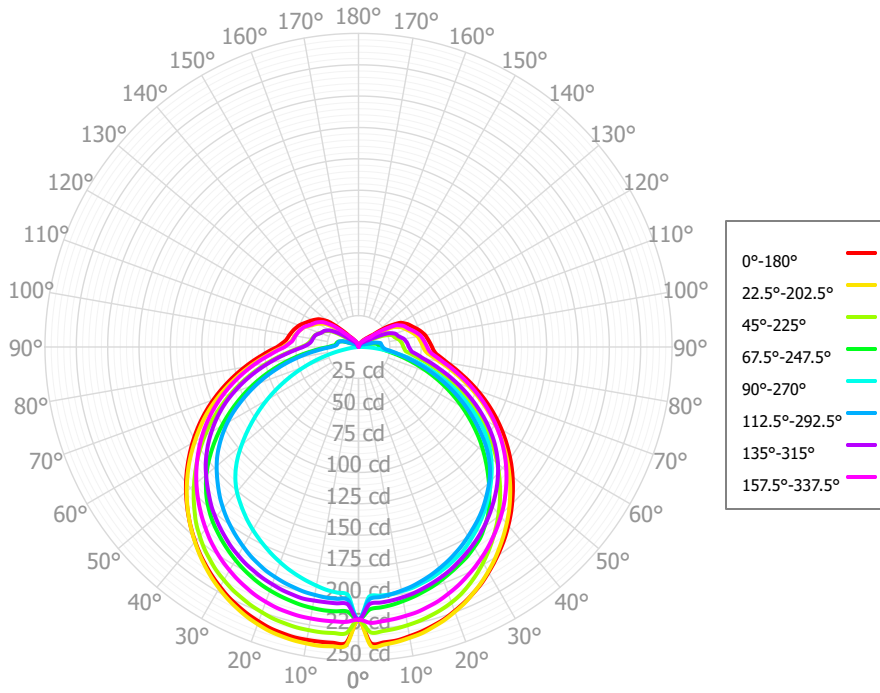
#### Full Beam Angle

0° - 180°	135°
90° - 270°	107°

### IES File Header Contents

Keyword	Value
TEST	SP-01620
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/15/2023
ISSUEDATE	11/16/2023
LUMCAT	EV04IND2GL 05L 35K xx DW xx FS xx
LUMINAIRE	4" Wide x 24" 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°	21.00	2.35%	90.00° - 100.00°	37.72	4.22%
10.00° - 20.00°	60.20	6.73%	100.00° - 110.00°	31.92	3.57%
20.00° - 30.00°	93.60	10.47%	100.00° - 120.00°	55.59	6.22%
30.00° - 40.00°	117.10	13.10%	120.00° - 130.00°	13.75	1.54%
40.00° - 50.00°	127.90	14.31%	130.00° - 140.00°	5.61	0.63%
50.00° - 60.00°	124.05	13.88%	140.00° - 150.00°	2.31	0.26%
60.00° - 70.00°	105.95	11.85%	150.00° - 160.00°	0.90	0.10%
70.00° - 80.00°	77.70	8.69%	160.00° - 170.00°	0.24	0.03%
80.00° - 90.00°	50.29	5.63%	170.00° - 180.00°	0.04	0.00%
0.00° - 90.00°	777.78	87.01%	0.00° - 180.00°	893.94	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°	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35	217.35
2.50°	236.81	239.05	227.89	209.42	199.09	201.61	205.16	219.37	236.50	238.69	228.55	211.09	197.65	201.27	205.12	220.18	236.81
5.00°	236.40	238.11	227.31	208.39	198.99	201.54	205.17	219.64	236.78	239.57	228.97	211.58	196.59	200.10	204.54	219.48	236.40
7.50°	235.94	237.10	226.54	207.32	198.80	201.47	205.19	219.87	237.03	240.29	229.42	211.79	195.35	198.87	203.82	218.75	235.94
10.00°	234.17	235.46	225.28	205.66	197.85	200.73	205.30	219.80	237.12	240.00	229.26	211.39	193.22	197.30	202.66	217.64	234.17
12.50°	232.35	233.78	223.79	203.87	196.86	199.96	205.43	219.63	237.07	239.58	228.97	210.71	191.00	195.61	201.27	216.49	232.35
15.00°	229.98	231.04	221.84	201.75	195.03	198.51	204.31	218.86	236.13	238.58	228.04	209.49	188.47	193.31	199.26	214.45	229.98
17.50°	227.48	228.25	219.59	199.57	193.18	197.02	203.08	217.92	234.98	237.33	227.02	208.14	185.80	190.90	197.13	212.33	227.48
20.00°	224.05	224.71	216.83	196.79	190.68	195.07	201.30	216.26	232.86	235.18	225.13	206.56	182.67	188.07	194.75	209.40	224.05
22.50°	220.54	221.06	213.39	193.95	188.15	193.02	199.49	214.36	230.58	232.77	223.18	204.59	179.41	185.13	192.08	206.37	220.54
25.00°	216.62	216.52	208.97	191.02	185.21	190.23	197.17	211.71	227.73	229.65	220.60	202.12	175.84	181.88	188.92	202.78	216.62
27.50°	212.48	211.91	204.10	188.10	182.14	187.32	194.81	208.90	224.64	226.27	217.99	199.33	172.20	178.45	185.68	199.11	212.48
30.00°	207.47	206.78	198.70	184.39	178.11	183.79	191.87	205.67	220.79	222.29	214.58	196.19	168.42	174.58	182.31	195.05	207.47
32.50°	202.40	201.53	192.92	180.62	174.01	180.20	188.86	202.22	216.78	218.04	211.13	192.78	164.42	170.71	178.66	190.87	202.40
35.00°	197.14	195.74	186.75	175.12	169.56	176.37	185.16	198.32	212.39	213.29	206.72	189.10	160.03	166.84	174.65	186.21	197.14
37.50°	191.71	189.88	180.37	169.51	165.01	172.38	181.42	194.13	207.73	208.30	202.24	185.21	155.52	162.63	170.39	181.48	191.71
40.00°	185.86	183.82	173.78	161.99	160.03	167.96	177.39	189.42	202.57	202.92	196.93	181.13	150.83	157.88	165.86	176.52	185.86
42.50°	179.85	177.58	166.84	154.42	154.96	163.33	173.23	184.57	197.21	197.33	191.45	176.36	145.22	153.03	161.12	171.35	179.85
45.00°	173.48	170.88	159.63	146.36	149.60	158.20	168.38	179.49	191.51	191.46	184.89	171.13	138.50	148.04	156.20	165.69	173.48
47.50°	167.02	164.04	152.18	138.28	144.08	152.99	163.53	174.23	185.65	185.30	178.25	165.01	130.65	142.17	150.85	159.92	167.02
50.00°	160.38	156.88	144.59	130.15	138.15	147.65	158.68	168.75	179.56	178.81	171.21	158.39	121.67	135.27	145.18	153.93	160.38
52.50°	153.54	149.67	136.73	121.88	131.76	141.85	153.60	163.01	173.21	172.14	164.10	150.79	112.50	127.53	138.88	147.71	153.54
55.00°	146.41	142.34	128.73	113.05	124.42	135.24	147.83	157.00	166.55	165.28	156.74	142.73	103.16	118.94	132.18	141.14	146.41
57.50°	139.17	134.78	120.57	104.22	116.44	128.26	141.86	150.82	159.77	158.12	149.26	134.37	93.74	110.19	124.69	134.36	139.17
60.00°	131.81	126.88	112.34	95.35	107.36	120.73	135.41	144.49	152.86	150.72	141.43	125.89	84.25	101.29	116.80	127.29	131.81
62.50°	124.26	118.95	104.00	86.44	98.21	112.59	128.74	137.80	145.75	143.34	133.43	117.06	74.60	92.31	108.56	120.02	124.26
65.00°	116.51	111.00	95.62	77.45	88.99	103.70	121.63	130.84	138.45	135.99	125.02	108.13	64.84	83.27	100.18	112.51	116.51
67.50°	108.69	102.99	86.97	68.46	79.50	94.78	114.12	123.60	130.89	128.11	116.56	99.17	55.17	74.09	91.67	104.92	108.69
70.00°	100.81	94.93	78.23	59.48	69.68	85.81	105.94	116.19	123.14	119.95	107.99	90.19	45.55	64.84	83.12	97.23	100.81
72.50°	93.08	87.06	70.01	50.71	60.08	76.72	97.63	108.60	115.31	111.74	99.42	80.97	36.23	55.91	74.83	89.62	93.08
75.00°	85.46	79.35	61.90	42.33	50.71	67.52	89.14	100.92	107.41	103.51	90.84	71.71	27.04	47.12	66.61	82.08	85.46
77.50°	78.47	72.09	54.59	34.53	41.41	58.55	80.68	93.24	99.67	95.47	82.34	62.62	18.81	39.41	59.38	75.09	78.47
80.00°	71.87	65.17	47.42	27.64	32.16	49.76	72.26	85.57	92.01	87.49	73.95	53.56	10.90	32.16	52.38	68.45	71.87
82.50°	66.65	59.67	42.49	22.20	23.61	41.57	64.24	78.17	84.66	79.86	65.81	45.16	5.84	26.70	47.41	63.07	66.65
85.00°	62.16	55.11	37.79	18.64	15.56	33.76	56.61	70.89	77.44	72.34	57.99	36.80	1.53	21.86	42.76	58.42	62.16
87.50°	59.92	52.76	36.71	16.63	9.12	27.47	50.03	64.75	71.03	66.03	51.21	30.33	0.63	20.17	41.31	56.06	59.92
90.00°	58.65	51.63	35.84	16.32	3.67	21.96	44.32	58.97	64.90	60.01	45.47	23.95	0.39	19.30	40.22	54.80	58.65
92.50°	57.46	50.69	35.31	16.14	1.24	19.23	40.76	55.76	61.30	56.66	41.74	21.04	0.30	18.82	39.52	53.68	57.46
95.00°	56.31	49.84	34.77	16.08	0.40	17.69	38.71	53.14	58.35	53.81	39.68	18.27	0.24	18.41	38.84	52.62	56.31
97.50°	55.16	48.92	33.91	15.55	0.15	17.13	37.62	52.01	56.91	52.63	38.40	18.04	0.25	18.11	37.84	51.56	55.16
100.00°	54.01	47.99	33.01	14.64	0.17	16.89	37.09	51.14	55.77	51.67	37.66	17.77	0.27	17.82	36.82	50.50	54.01
102.50°	52.35	46.29	31.42	12.43	0.18	16.52	36.43	50.11	54.55	50.41	36.83	17.26	0.28	15.80	34.92	48.72	52.35
105.00°	50.57	44.36	29.92	9.37	0.18	16.12	35.69	49.07	53.31	49.14	35.95	16.59	0.29	13.61	33.08	46.77	50.57

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	ptc	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%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	1037	1037	1037	1037	999	999	999	999	929	929	929	864	864	864	806	806	806	778
	1	927	876	831	791	890	844	804	767	784	751	721	729	703	678	679	658	638	633
	2	835	753	685	629	799	726	664	612	675	624	580	627	586	549	584	550	520	529
	3	756	655	576	514	723	632	559	501	588	527	477	547	497	454	510	468	432	450
	4	689	576	493	429	659	556	479	420	518	453	401	483	428	383	451	404	366	389
	5	632	511	427	365	604	494	416	358	462	395	343	432	374	329	403	354	315	341
	6	582	458	375	316	557	443	366	310	415	348	298	389	331	286	364	314	274	302
	7	538	414	333	276	515	401	325	271	376	310	261	353	295	251	332	281	242	271
	8	500	376	298	244	479	365	291	240	343	278	232	323	265	223	304	253	215	244
	9	466	344	269	218	447	334	263	214	315	252	207	297	241	200	280	230	193	222
	10	436	316	244	196	419	307	239	193	291	229	187	275	220	181	260	211	175	204

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	7.2 fc	27.1 ft
6.5 ft	5.1 fc	32.1 ft
7.5 ft	3.9 fc	37.0 ft
8.0 ft	3.4 fc	39.5 ft
10.0 ft	2.2 fc	49.3 ft
12.0 ft	1.5 fc	59.2 ft
14.0 ft	1.1 fc	69.0 ft
16.0 ft	0.8 fc	78.9 ft
20.0 ft	0.5 fc	98.6 ft
24.0 ft	0.4 fc	118.4 ft
28.0 ft	0.3 fc	138.1 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	3545	3545	3545
<b>45.00°</b>	2539	2497	3151
<b>55.00°</b>	2284	2182	3115
<b>65.00°</b>	2012	1829	2853
<b>75.00°</b>	1710	1408	2359
<b>85.00°</b>	1534	1101	1396

### 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	15.0	16.5	15.6	17.0	17.6	13.5	15.0	14.1	15.5	16.2
	3H	17.4	18.7	17.9	19.2	19.9	15.0	16.3	15.5	16.8	17.5
	4H	18.4	19.7	19.0	20.3	20.9	15.4	16.7	16.0	17.2	17.9
	6H	19.5	20.7	20.1	21.3	22.0	15.7	16.8	16.2	17.4	18.1
	8H	20.1	21.2	20.7	21.8	22.5	15.7	16.8	16.3	17.4	18.1
	12H	20.7	21.7	21.3	22.3	23.1	15.7	16.8	16.3	17.4	18.1
4H	2H	15.4	16.6	16.0	17.2	17.9	14.6	15.8	15.2	16.4	17.1
	3H	17.9	19.0	18.5	19.6	20.3	16.3	17.4	16.9	18.0	18.7
	4H	19.2	20.1	19.8	20.8	21.5	16.9	17.9	17.5	18.5	19.3
	6H	20.4	21.3	21.1	21.9	22.7	17.3	18.2	18.0	18.9	19.6
	8H	21.1	21.9	21.7	22.5	23.3	17.4	18.2	18.1	18.9	19.6
	12H	21.8	22.5	22.4	23.2	24.0	17.5	18.2	18.1	18.9	19.6
8H	4H	19.3	20.1	19.9	20.8	21.5	17.7	18.5	18.3	19.2	19.9
	6H	20.7	21.4	21.4	22.1	22.9	18.3	19.0	19.0	19.7	20.5
	8H	21.5	22.1	22.2	22.8	23.6	18.5	19.2	19.2	19.9	20.6
	12H	22.4	22.9	23.1	23.6	24.5	18.7	19.2	19.4	19.9	20.7
12H	4H	19.3	20.0	20.0	20.7	21.5	17.9	18.6	18.5	19.3	20.0
	6H	20.7	21.4	21.4	22.0	22.8	18.6	19.3	19.3	19.9	20.7
	8H	21.6	22.1	22.3	22.8	23.6	18.9	19.5	19.6	20.2	21.0

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0