

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

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### Spectrum Lighting Photometric Lab

**Luminaire**

SN24 MED xx xx MWI A19 Opal  
24" x 23.5" Spin Pendant Medium Base E26 MWI

**Test Number**

SP-01612\_1

**Test Date**

12/18/2023

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

### Summary of Results

#### Power

Input Watts	10.8 W
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#### Lumen Output

Output Lumens	1012
Efficacy	93.73 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.66
Two luminaires, plane 90°	0.66
Four luminaires	1.06

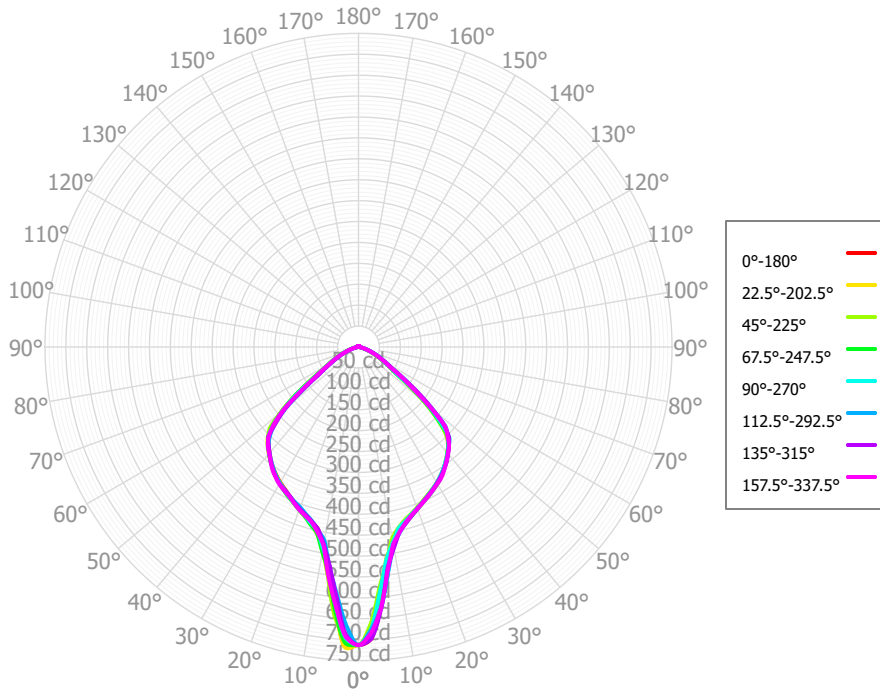
#### Full Beam Angle

0° - 180°	67°
90° - 270°	68°

### IES File Header Contents

Keyword	Value
TEST	SP-01612_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	12/18/2023
ISSUEDATE	12/20/2023
LUMCAT	SN24 MED xx xx MWI A19 Opal
LUMINAIRE	24" x 23.5" Spin Pendant Medium Base E26 MWI
OTHER	Beam Angle: 68 deg
OTHER	Tested Bulb: SATCO LED 11W A19 3000K Part Number S29811
OTHER	Total luminaire wattages are approximate
OTHER	This report prepared by Spectrum Lighting

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	54.50	5.38%	90.00° - 100.00°	2.11	0.21%
10.00° - 20.00°	123.10	12.16%	100.00° - 110.00°	2.01	0.20%
20.00° - 30.00°	181.58	17.94%	100.00° - 120.00°	3.95	0.39%
30.00° - 40.00°	222.59	21.99%	120.00° - 130.00°	1.78	0.18%
40.00° - 50.00°	226.36	22.36%	130.00° - 140.00°	1.58	0.16%
50.00° - 60.00°	120.54	11.91%	140.00° - 150.00°	1.26	0.12%
60.00° - 70.00°	50.06	4.95%	150.00° - 160.00°	0.95	0.09%
70.00° - 80.00°	17.18	1.70%	160.00° - 170.00°	0.58	0.06%
80.00° - 90.00°	3.96	0.39%	170.00° - 180.00°	0.20	0.02%
0.00° - 90.00°	999.87	98.78%	0.00° - 180.00°	1012.26	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°	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88	712.88
2.50°	699.02	691.07	663.98	683.18	677.13	667.41	690.05	694.77	716.40	720.19	696.59	709.61	697.35	677.58	698.80	685.00	699.02
5.00°	605.04	597.56	577.42	591.34	588.19	594.22	600.68	622.90	625.71	630.70	648.52	635.07	618.93	625.21	626.55	624.10	605.04
7.50°	520.39	509.65	516.61	516.26	512.13	531.40	527.72	552.19	534.06	545.93	556.42	544.00	530.63	543.37	533.40	537.91	520.39
10.00°	481.48	475.89	464.10	476.62	474.15	469.80	479.08	481.83	488.62	495.98	491.21	497.72	489.15	479.76	487.86	478.95	481.48
12.50°	448.36	445.54	443.01	447.64	444.33	449.33	446.70	453.67	446.77	452.84	457.98	456.74	450.42	455.07	453.45	453.84	448.36
15.00°	433.48	432.72	428.44	435.29	431.51	430.66	432.31	433.75	433.11	438.53	435.72	440.57	436.73	435.06	437.09	435.00	433.48
17.50°	420.16	420.66	418.55	423.47	420.08	419.04	420.86	423.61	420.33	425.15	423.33	425.49	423.40	422.35	423.19	422.01	420.16
20.00°	410.28	411.03	409.20	412.27	410.78	407.85	411.85	414.45	411.41	414.39	412.23	414.81	413.23	411.32	412.36	411.54	410.28
22.50°	400.90	401.89	399.95	402.72	401.55	400.25	402.02	403.82	402.19	404.04	402.00	404.33	403.14	402.24	401.73	402.83	400.90
25.00°	392.31	393.85	390.76	394.63	392.42	392.71	391.69	393.35	392.14	394.51	392.98	395.57	393.40	393.63	393.19	394.36	392.31
27.50°	383.73	385.69	383.07	386.26	383.60	385.42	384.24	386.29	382.63	385.36	384.55	386.65	384.09	385.42	384.64	386.01	383.73
30.00°	375.18	377.35	375.19	377.70	375.06	377.37	378.10	378.91	374.23	376.74	375.43	377.05	376.07	376.40	375.99	377.84	375.18
32.50°	365.47	367.49	365.82	367.54	365.21	367.06	368.06	369.21	365.11	367.08	366.08	367.19	366.82	366.83	367.11	369.73	365.47
35.00°	354.70	355.76	355.86	356.61	354.53	356.25	356.76	358.80	354.88	356.26	355.92	356.56	354.94	356.03	357.11	357.94	354.70
37.50°	343.46	343.81	343.26	344.20	343.12	344.39	344.05	345.40	343.59	344.84	345.58	345.20	343.12	344.64	346.44	345.24	343.46
40.00°	331.89	331.68	330.53	331.30	331.37	332.09	331.06	332.49	331.10	332.93	333.66	332.31	331.39	332.30	333.63	332.84	331.89
42.50°	318.94	317.34	317.39	317.92	319.46	319.06	318.28	320.94	318.38	320.35	321.52	318.86	318.77	319.63	320.38	320.48	318.94
45.00°	305.31	301.48	295.97	304.43	307.48	299.38	305.53	304.01	305.47	307.37	305.25	304.53	305.08	301.73	306.13	301.41	305.31
47.50°	267.33	262.38	257.45	260.93	267.11	271.95	267.83	276.41	275.50	277.85	288.01	278.60	276.48	282.65	278.77	281.33	267.33
50.00°	220.77	211.37	210.75	213.69	220.52	226.58	228.60	235.49	234.69	240.87	240.06	239.15	234.55	230.01	229.88	222.97	220.77
52.50°	167.90	161.03	151.55	160.09	166.33	165.56	170.70	175.13	183.59	189.41	192.07	191.86	185.51	173.18	180.46	166.18	167.90
55.00°	113.56	110.92	109.52	107.28	111.23	123.22	116.80	129.39	127.73	133.37	143.84	137.66	131.73	132.74	130.41	126.25	113.56
57.50°	90.69	87.82	87.21	88.36	90.26	93.04	94.70	99.58	98.61	104.66	100.80	103.65	100.64	93.69	96.31	90.14	90.69
60.00°	71.98	71.26	69.30	70.11	70.92	74.02	74.14	78.58	78.28	81.53	83.50	82.92	80.62	78.14	76.84	74.50	71.98
62.50°	59.06	58.43	55.19	57.72	59.47	60.30	60.43	64.85	64.59	67.10	67.31	66.94	65.81	63.01	61.68	59.71	59.06
65.00°	46.50	46.13	43.81	45.75	48.12	48.61	47.72	51.84	52.30	53.64	54.60	53.25	52.79	51.68	49.47	47.85	46.50
67.50°	36.87	35.69	34.19	35.83	37.68	37.60	37.92	39.28	41.48	42.96	42.92	42.21	42.08	40.58	38.69	36.88	36.87
70.00°	27.43	25.42	25.76	26.55	27.78	29.00	28.76	29.86	30.83	32.47	33.54	32.07	31.90	30.60	28.62	27.98	27.43
72.50°	19.81	19.14	17.89	19.28	20.41	20.94	20.90	21.86	23.19	24.21	25.16	24.05	24.20	21.67	20.94	20.25	19.81
75.00°	12.86	13.05	13.18	13.20	13.91	15.39	14.58	16.01	15.80	16.44	18.39	16.50	16.82	16.02	14.13	14.51	12.86
77.50°	9.30	8.92	9.51	9.70	10.07	10.15	10.55	10.85	11.77	12.37	12.82	11.73	11.67	11.01	9.97	9.92	9.30
80.00°	6.14	5.22	6.56	6.68	6.77	7.23	7.21	7.52	7.93	8.56	8.72	7.31	6.70	7.38	6.45	6.79	6.14
82.50°	4.23	3.82	3.76	4.40	4.62	4.46	4.63	4.56	5.49	5.85	5.66	4.99	4.82	4.66	4.65	4.41	4.23
85.00°	2.75	2.66	2.60	2.84	3.01	3.32	3.00	3.30	3.36	3.60	3.56	2.81	3.06	3.40	3.10	2.76	2.75
87.50°	2.20	2.28	1.63	2.15	2.24	2.29	2.20	2.21	2.55	2.68	2.36	2.35	2.46	2.54	2.47	1.91	2.20
90.00°	1.89	1.94	1.68	1.96	1.80	2.20	1.98	2.11	1.92	2.05	1.78	1.93	1.96	2.17	1.91	1.62	1.89
92.50°	1.96	1.71	1.77	2.21	1.74	2.11	2.13	2.03	1.79	2.02	1.65	1.87	2.00	1.97	2.07	1.71	1.96
95.00°	1.92	1.64	1.83	2.27	1.82	1.97	2.06	1.98	1.74	1.99	1.74	1.84	2.04	1.91	2.21	2.00	1.92
97.50°	1.75	1.82	1.88	2.18	2.01	1.86	1.89	1.93	1.83	1.97	1.77	1.90	2.05	1.96	2.13	2.02	1.75
100.00°	1.74	1.83	1.90	2.16	2.02	1.83	1.90	1.78	1.91	1.90	1.78	1.95	2.02	2.07	2.04	1.92	1.74
102.50°	1.89	1.62	1.94	2.16	1.90	1.80	1.98	1.71	2.00	1.77	1.79	1.94	1.93	2.12	1.95	1.86	1.89
105.00°	1.85	1.54	2.02	2.06	1.88	1.76	1.99	1.95	2.05	1.72	1.79	1.88	1.93	2.14	1.88	1.79	1.85

### 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>	1202	1202	1202	1202	1173	1173	1173	1173	1118	1118	1118	1068	1068	1068	1022	1022	1000
	<b>1</b>	1122	1084	1050	1019	1095	1060	1030	1002	1016	991	968	975	955	937	938	922	907
	<b>2</b>	1039	971	915	868	1013	952	900	857	915	872	835	882	846	815	850	822	796
	<b>3</b>	961	872	802	747	937	856	792	740	825	771	726	797	751	712	771	732	699
	<b>4</b>	890	785	709	651	867	772	701	646	746	685	636	722	669	627	700	655	617
	<b>5</b>	825	711	631	572	804	699	625	569	678	612	562	657	600	555	638	589	549
	<b>6</b>	766	646	566	508	748	636	560	505	618	550	500	601	541	495	584	532	490
	<b>7</b>	714	590	510	454	697	582	506	452	566	498	449	551	490	445	537	483	441
	<b>8</b>	667	542	463	409	651	535	460	408	521	453	405	508	447	402	496	441	399
	<b>9</b>	625	500	423	371	611	494	420	370	482	415	368	470	409	366	460	404	363
	<b>10</b>	587	463	389	339	574	457	386	338	447	382	336	437	377	334	428	373	333

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	23.6 fc	7.3 ft
6.5 ft	16.9 fc	8.7 ft
7.5 ft	12.7 fc	10.0 ft
8.0 ft	11.1 fc	10.7 ft
10.0 ft	7.1 fc	13.4 ft
12.0 ft	5.0 fc	16.0 ft
14.0 ft	3.6 fc	18.7 ft
16.0 ft	2.8 fc	21.4 ft
20.0 ft	1.8 fc	26.7 ft
24.0 ft	1.2 fc	32.1 ft
28.0 ft	0.9 fc	37.4 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	2443	2443	2443
<b>45.00°</b>	1479	1434	1490
<b>55.00°</b>	678	654	664
<b>65.00°</b>	377	355	390
<b>75.00°</b>	170	174	184
<b>85.00°</b>	108	102	118

### 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	7.3	8.8	7.7	9.1	9.4	8.0	9.4	8.4	9.7	10.1
	3H	8.0	9.3	8.4	9.6	10.0	8.7	9.9	9.1	10.3	10.7
	4H	8.1	9.3	8.6	9.7	10.1	8.8	10.0	9.2	10.3	10.8
	6H	8.2	9.2	8.6	9.6	10.1	8.8	9.9	9.3	10.3	10.7
	8H	8.1	9.2	8.6	9.6	10.0	8.8	9.8	9.3	10.3	10.7
	12H	8.1	9.1	8.6	9.5	10.0	8.8	9.8	9.3	10.2	10.7
4H	2H	7.6	8.8	8.0	9.1	9.6	8.2	9.4	8.7	9.8	10.2
	3H	8.4	9.3	8.8	9.8	10.2	9.1	10.0	9.5	10.4	10.9
	4H	8.6	9.4	9.0	9.8	10.3	9.2	10.1	9.7	10.5	11.0
	6H	8.6	9.4	9.1	9.8	10.3	9.3	10.1	9.8	10.5	11.0
	8H	8.6	9.3	9.1	9.8	10.3	9.3	10.0	9.8	10.5	11.0
	12H	8.6	9.2	9.1	9.7	10.2	9.3	9.9	9.8	10.4	10.9
8H	4H	8.6	9.2	9.0	9.7	10.2	9.3	10.0	9.8	10.4	10.9
	6H	8.6	9.2	9.2	9.7	10.2	9.4	9.9	9.9	10.4	11.0
	8H	8.6	9.2	9.2	9.7	10.2	9.4	9.9	9.9	10.4	10.9
	12H	8.7	9.1	9.2	9.6	10.2	9.4	9.8	9.9	10.4	11.0
12H	4H	8.5	9.1	9.0	9.6	10.1	9.2	9.8	9.7	10.4	10.9
	6H	8.6	9.1	9.2	9.6	10.2	9.3	9.9	9.9	10.3	10.9
	8H	8.6	9.1	9.2	9.6	10.2	9.4	9.8	9.9	10.3	10.9

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0