

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

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### Spectrum Lighting Photometric Lab

#### Luminaire

LD2208LED 240L 35K xx DDA xx xx

24" x 5" High Lumen or Surface Mount Luminaire with Diffused Domed Acrylic  
Lens

#### Test Number

SP-01624\_1

#### Test Date

11/20/2023

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

### Summary of Results

#### Power

Input Watts	121.7 W
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#### Lumen Output

Output Lumens	14974
Efficacy	123.04 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	1.25
Two luminaires, plane 90°	1.25
Four luminaires	1.38

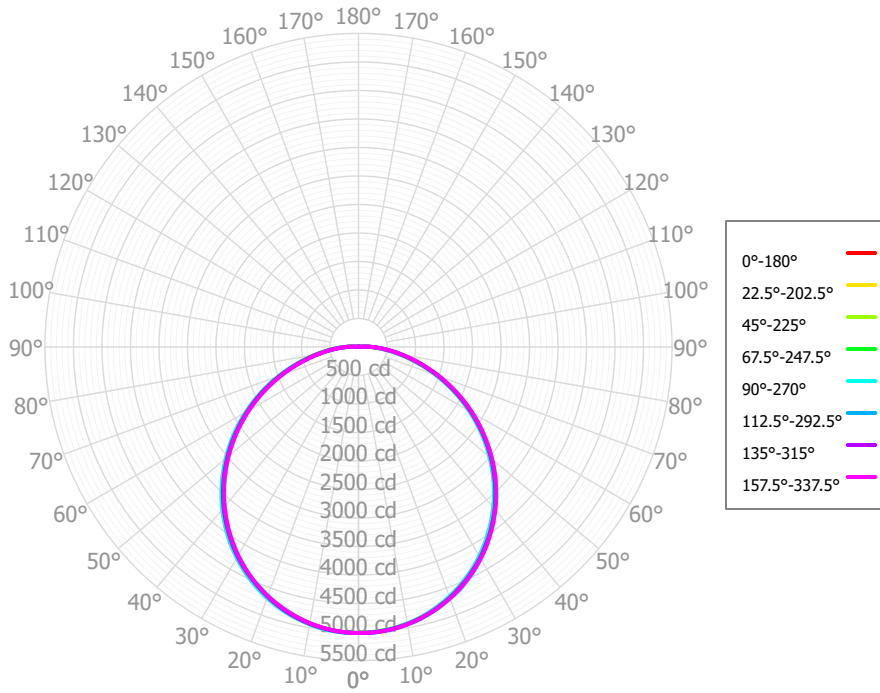
#### Full Beam Angle

0° - 180°	114°
90° - 270°	114°

### IES File Header Contents

Keyword	Value
TEST	SP-01624_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/20/2023
ISSUEDATE	11/21/2023
LUMCAT	LD2208LED 240L 35K xx DDA xx xx
LUMINAIRE	24" x 5" High Lumen or Surface Mount Luminaire with Diffused Domed Acrylic Lens
OTHER	Beam Angle: 114 deg
OTHER	80 CRI, 3500K tested
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+
_LAMPMULT	150L x 0.78
_CCTMULT	30K x 0.99, 40K x 1.03

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	481.97	3.22%	90.00° - 100.00°	93.67	0.63%
10.00° - 20.00°	1359.59	9.08%	100.00° - 110.00°	3.54	0.02%
20.00° - 30.00°	2063.09	13.78%	100.00° - 120.00°	6.53	0.04%
30.00° - 40.00°	2493.29	16.65%	120.00° - 130.00°	3.16	0.02%
40.00° - 50.00°	2595.48	17.33%	130.00° - 140.00°	2.96	0.02%
50.00° - 60.00°	2363.33	15.78%	140.00° - 150.00°	2.58	0.02%
60.00° - 70.00°	1844.78	12.32%	150.00° - 160.00°	2.24	0.01%
70.00° - 80.00°	1152.59	7.70%	160.00° - 170.00°	1.49	0.01%
80.00° - 90.00°	507.00	3.39%	170.00° - 180.00°	0.51	0.00%
0.00° - 90.00°	14861.11	99.24%	0.00° - 180.00°	14974.26	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°	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33	5017.33
2.50°	5010.96	5015.08	5009.80	5009.92	5012.47	5010.64	5012.70	5009.66	5010.66	5009.11	5012.17	5012.67	5018.78	5019.22	5012.68	5015.27	5010.96
5.00°	4995.35	4998.15	4992.44	4992.11	4991.76	4992.10	4998.18	4989.49	4993.33	4991.17	4998.07	4993.35	5004.29	5004.04	5000.36	5000.91	4995.35
7.50°	4968.83	4970.81	4964.57	4969.69	4965.19	4962.25	4968.28	4959.37	4967.72	4962.49	4973.75	4966.95	4980.27	4979.70	4971.90	4978.15	4968.83
10.00°	4930.04	4930.88	4930.34	4929.52	4924.72	4918.29	4930.45	4918.99	4926.47	4922.10	4936.97	4926.82	4940.25	4943.30	4937.80	4939.07	4930.04
12.50°	4880.90	4883.94	4878.67	4884.21	4879.45	4864.54	4879.43	4866.81	4876.80	4871.89	4887.46	4879.54	4893.02	4901.10	4887.26	4890.31	4880.90
15.00°	4821.76	4823.19	4818.15	4821.61	4812.26	4800.47	4818.83	4804.17	4814.90	4812.46	4827.49	4820.68	4835.59	4841.18	4832.14	4830.51	4821.76
17.50°	4751.11	4755.95	4743.00	4755.14	4739.04	4726.67	4744.82	4732.11	4747.44	4740.46	4758.45	4751.54	4768.33	4774.12	4759.23	4765.17	4751.11
20.00°	4671.04	4674.89	4661.62	4671.61	4654.16	4644.05	4661.48	4652.89	4665.47	4658.46	4677.81	4668.37	4689.14	4696.71	4682.43	4685.98	4671.04
22.50°	4579.68	4588.41	4567.47	4585.18	4566.83	4551.53	4567.12	4560.99	4578.08	4565.84	4588.53	4577.04	4599.92	4615.92	4588.84	4601.06	4579.68
25.00°	4480.50	4487.74	4468.90	4480.83	4462.79	4451.28	4466.64	4460.94	4477.01	4466.09	4487.07	4476.18	4500.26	4515.07	4492.55	4501.21	4480.50
27.50°	4371.62	4382.57	4357.36	4374.31	4356.12	4338.28	4359.95	4347.68	4371.76	4353.96	4377.99	4365.82	4391.67	4408.95	4381.83	4396.33	4371.62
30.00°	4257.00	4263.51	4242.17	4251.85	4231.26	4216.90	4241.11	4227.32	4249.83	4234.73	4259.09	4245.94	4275.22	4288.96	4269.49	4277.99	4257.00
32.50°	4128.44	4140.99	4113.08	4128.26	4104.41	4086.16	4111.64	4096.01	4123.94	4104.78	4134.95	4117.62	4148.50	4166.19	4139.74	4155.99	4128.44
35.00°	3992.88	4004.36	3980.96	3989.58	3964.61	3950.26	3974.58	3959.75	3985.69	3969.72	3998.10	3982.13	4014.11	4028.15	4008.89	4018.27	3992.88
37.50°	3845.63	3865.01	3834.81	3850.32	3824.04	3803.38	3831.90	3811.18	3845.17	3822.67	3855.66	3837.36	3870.27	3887.83	3862.98	3877.18	3845.63
40.00°	3693.55	3711.79	3686.43	3695.75	3671.86	3651.40	3678.65	3658.04	3687.98	3670.84	3702.84	3685.91	3720.40	3734.71	3716.37	3722.60	3693.55
42.50°	3535.00	3556.60	3523.22	3540.45	3519.08	3488.45	3518.80	3496.81	3528.65	3512.26	3546.21	3525.71	3559.49	3580.35	3551.62	3565.90	3535.00
45.00°	3374.27	3386.74	3358.37	3372.32	3347.93	3321.24	3351.28	3333.12	3360.79	3351.51	3379.24	3360.11	3392.69	3411.95	3386.32	3399.92	3374.27
47.50°	3200.46	3215.55	3184.45	3203.00	3176.11	3146.49	3179.70	3158.88	3192.28	3175.58	3209.23	3185.03	3218.57	3242.81	3212.35	3232.98	3200.46
50.00°	3023.11	3034.94	3009.93	3021.81	2994.30	2969.36	3000.24	2982.14	3011.87	2995.70	3030.53	3005.08	3041.14	3061.25	3037.18	3051.52	3023.11
52.50°	2837.08	2853.92	2823.22	2839.88	2811.87	2784.94	2817.26	2797.75	2831.01	2811.17	2849.84	2821.45	2858.81	2879.39	2851.06	2869.21	2837.08
55.00°	2649.20	2665.64	2636.11	2653.08	2623.94	2598.71	2628.93	2611.96	2643.36	2625.73	2660.47	2636.24	2674.68	2691.73	2663.97	2678.88	2649.20
57.50°	2456.17	2477.12	2442.51	2465.04	2434.86	2406.64	2438.65	2418.95	2455.29	2431.73	2469.58	2445.14	2480.59	2503.51	2470.73	2488.38	2456.17
60.00°	2262.34	2283.19	2248.66	2270.99	2238.74	2213.45	2245.15	2225.02	2258.26	2236.48	2272.68	2251.97	2283.49	2307.91	2276.38	2295.61	2262.34
62.50°	2064.19	2088.71	2050.80	2075.87	2042.23	2015.94	2050.72	2025.17	2061.13	2039.28	2075.03	2054.54	2085.72	2111.74	2076.83	2102.30	2064.19
65.00°	1865.59	1887.34	1852.91	1876.84	1843.93	1817.81	1852.57	1824.85	1862.95	1841.90	1879.68	1855.89	1887.79	1910.80	1877.95	1901.09	1865.59
67.50°	1668.19	1686.42	1654.77	1678.17	1646.20	1619.49	1653.56	1626.84	1664.84	1643.65	1684.50	1656.82	1688.12	1710.42	1681.44	1700.39	1668.19
70.00°	1470.87	1488.96	1457.20	1480.63	1450.54	1421.15	1455.54	1428.93	1467.20	1445.36	1485.86	1457.65	1488.14	1513.26	1485.31	1504.25	1470.87
72.50°	1275.76	1293.09	1263.23	1285.36	1256.50	1229.53	1257.70	1238.33	1271.25	1252.68	1287.24	1265.23	1295.02	1318.10	1290.27	1309.42	1275.76
75.00°	1081.22	1105.92	1072.66	1095.63	1067.09	1038.19	1074.35	1048.64	1084.14	1060.76	1101.28	1073.94	1102.77	1131.52	1100.42	1122.42	1081.22
77.50°	909.10	923.36	897.67	914.54	885.60	866.96	892.79	878.23	902.52	889.13	916.54	902.70	927.28	949.62	923.04	939.71	909.10
80.00°	738.83	759.79	728.95	751.06	722.58	697.03	733.82	710.28	742.51	719.80	756.13	733.74	753.13	783.57	754.60	776.34	738.83
82.50°	595.08	603.35	582.90	597.48	569.97	557.56	576.50	568.26	589.76	580.00	598.32	589.00	607.00	625.04	603.85	618.92	595.08
85.00°	454.08	470.36	444.20	460.72	437.75	420.07	448.00	429.85	459.53	442.73	467.08	445.94	462.04	487.36	463.28	482.28	454.08
87.50°	337.15	344.95	326.66	336.21	316.47	306.23	320.75	317.01	336.48	326.01	339.19	328.55	343.83	357.62	339.54	352.74	337.15
90.00°	224.64	239.63	218.29	229.23	213.10	196.66	223.76	209.45	231.77	214.31	233.76	212.42	227.13	245.84	229.31	243.39	224.64
92.50°	138.37	145.53	131.76	139.48	125.82	118.88	128.64	129.24	138.94	130.77	135.51	131.48	141.46	148.25	138.19	146.13	138.37
95.00°	61.86	76.13	62.59	70.88	60.73	49.20	70.06	58.90	71.45	57.40	72.90	53.52	60.45	77.23	69.24	76.87	61.86
97.50°	29.29	26.10	27.64	27.69	20.05	23.21	16.09	27.23	23.50	26.69	21.11	26.34	30.16	27.73	27.18	26.49	29.29
100.00°	3.93	11.51	5.35	11.27	8.25	2.29	8.73	3.12	10.18	2.96	10.23	1.74	3.64	12.48	5.15	12.33	3.93
102.50°	3.72	2.87	4.21	3.61	2.15	1.99	2.25	2.37	2.15	2.61	2.11	2.33	3.33	3.62	3.69	3.44	3.72
105.00°	3.44	3.36	3.62	3.75	1.85	1.81	1.83	1.86	1.99	2.36	2.38	2.79	3.07	3.48	3.10	3.16	3.44

### 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%	10%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
	<b>0</b>	17800	17800	17800	17800	17372	17372	17372	17372	16575	16575	16575	15846	15846	15846	15176	15176	15176
	<b>1</b>	16142	15377	14691	14073	15715	15022	14397	13831	14359	13843	13370	13749	13328	12938	13188	12849	12532
	<b>2</b>	14634	13343	12276	11379	14222	13047	12065	11233	12490	11663	10950	11977	11286	10680	11502	10931	10422
	<b>3</b>	13319	11686	10422	9415	12930	11437	10265	9321	10969	9965	9138	10535	9680	8961	10133	9410	8791
	<b>4</b>	12181	10335	8983	7951	11822	10126	8864	7888	9731	8633	7764	9364	8413	7643	9022	8203	7526
	<b>5</b>	11194	9223	7846	6830	10865	9046	7753	6785	8711	7572	6698	8400	7399	6613	8109	7233	6529
	<b>6</b>	10333	8297	6931	5950	10034	8147	6857	5918	7862	6712	5855	7596	6574	5792	7347	6440	5731
	<b>7</b>	9579	7519	6183	5247	9308	7391	6123	5223	7147	6006	5175	6919	5894	5128	6705	5785	5082
	<b>8</b>	8915	6858	5564	4675	8671	6748	5515	4656	6539	5419	4619	6342	5326	4583	6157	5236	4547
	<b>9</b>	8329	6292	5045	4202	8108	6198	5004	4188	6017	4924	4159	5846	4847	4130	5685	4772	4102
	<b>10</b>	7808	5804	4605	3807	7608	5722	4571	3795	5565	4504	3772	5416	4439	3749	5275	4376	3726

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	165.9 fc	16.8 ft
6.5 ft	118.8 fc	19.9 ft
7.5 ft	89.2 fc	22.9 ft
8.0 ft	78.4 fc	24.4 ft
10.0 ft	50.2 fc	30.6 ft
12.0 ft	34.8 fc	36.7 ft
14.0 ft	25.6 fc	42.8 ft
16.0 ft	19.6 fc	48.9 ft
20.0 ft	12.5 fc	61.1 ft
24.0 ft	8.7 fc	73.3 ft
28.0 ft	6.4 fc	85.6 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	17191	17191	17191
<b>45.00°</b>	16350	16273	16222
<b>55.00°</b>	15825	15747	15674
<b>65.00°</b>	15125	15022	14949
<b>75.00°</b>	14313	14200	14126
<b>85.00°</b>	17851	17462	17209

### 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	20.9	22.5	21.2	22.8	23.2	20.7	22.4	21.1	22.7	23.0
	3H	22.8	24.3	23.2	24.6	25.0	22.7	24.2	23.0	24.5	24.9
	4H	23.6	25.0	24.0	25.3	25.7	23.4	24.9	23.8	25.2	25.6
	6H	24.2	25.5	24.6	25.9	26.3	24.1	25.4	24.5	25.8	26.2
	8H	24.5	25.8	24.9	26.2	26.6	24.4	25.6	24.8	26.0	26.5
	12H	24.8	26.0	25.2	26.4	26.8	24.7	25.9	25.1	26.3	26.7
4H	2H	21.5	22.9	21.9	23.3	23.7	21.4	22.8	21.8	23.2	23.6
	3H	23.7	24.9	24.1	25.3	25.7	23.6	24.8	24.0	25.2	25.6
	4H	24.6	25.7	25.1	26.1	26.6	24.5	25.6	24.9	26.0	26.4
	6H	25.4	26.4	25.9	26.8	27.3	25.3	26.2	25.7	26.7	27.2
	8H	25.8	26.7	26.3	27.1	27.6	25.6	26.5	26.1	27.0	27.5
	12H	26.1	27.0	26.6	27.4	27.9	26.0	26.8	26.5	27.3	27.8
8H	4H	25.0	25.9	25.5	26.3	26.8	24.8	25.7	25.3	26.2	26.7
	6H	26.0	26.7	26.5	27.2	27.7	25.8	26.6	26.3	27.1	27.6
	8H	26.5	27.1	27.0	27.7	28.2	26.3	27.0	26.8	27.5	28.0
	12H	27.0	27.6	27.5	28.1	28.6	26.8	27.4	27.3	27.9	28.4
12H	4H	25.0	25.9	25.5	26.3	26.8	24.9	25.7	25.4	26.2	26.7
	6H	26.1	26.8	26.6	27.3	27.8	25.9	26.6	26.5	27.1	27.6
	8H	26.7	27.3	27.2	27.8	28.3	26.5	27.1	27.0	27.6	28.1

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0