

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

LD2208LED 150L 35K xx DDA xx xx

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

Test Number

SP-01624

Test Date

11/20/2023

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

Summary of Results

Power

Input Watts	91.7 W
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Lumen Output

Output Lumens	11656
Efficacy	127.11 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

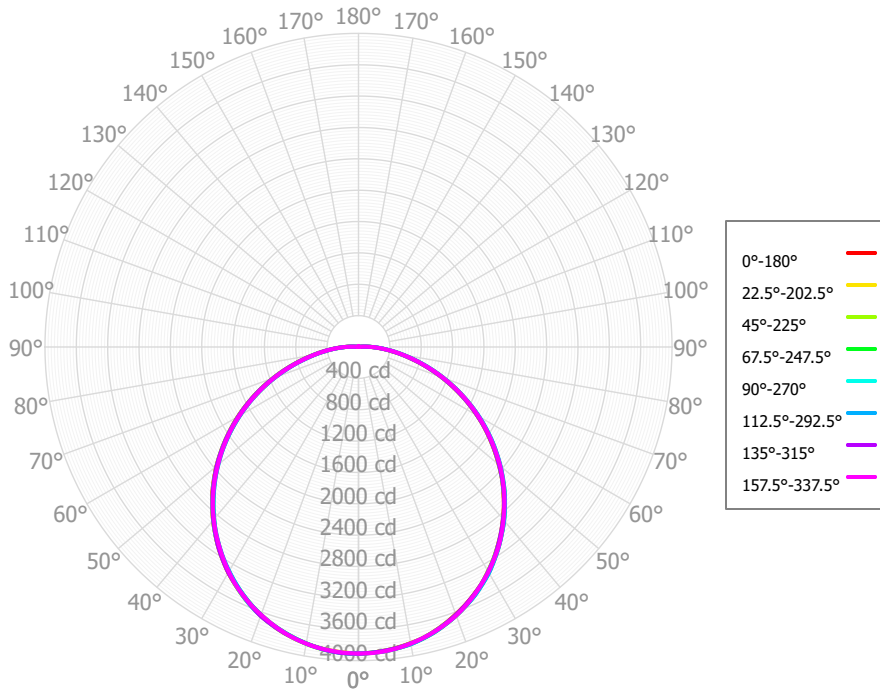
Full Beam Angle

0° - 180°	114°
90° - 270°	114°

IES File Header Contents

Keyword	Value
TEST	SP-01624
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/20/2023
ISSUEDATE	11/21/2023
LUMCAT	LD2208LED 150L 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	CCT Multipliers 30K x .99, 40K x 1.03
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	375.64	3.22%	90.00° - 100.00°	69.25	0.59%
10.00° - 20.00°	1059.72	9.09%	100.00° - 110.00°	3.28	0.03%
20.00° - 30.00°	1608.35	13.80%	100.00° - 120.00°	6.26	0.05%
30.00° - 40.00°	1942.45	16.66%	120.00° - 130.00°	2.86	0.02%
40.00° - 50.00°	2022.17	17.35%	130.00° - 140.00°	2.72	0.02%
50.00° - 60.00°	1841.01	15.79%	140.00° - 150.00°	2.28	0.02%
60.00° - 70.00°	1436.41	12.32%	150.00° - 160.00°	1.82	0.02%
70.00° - 80.00°	894.59	7.67%	160.00° - 170.00°	1.21	0.01%
80.00° - 90.00°	388.97	3.34%	170.00° - 180.00°	0.43	0.00%
0.00° - 90.00°	11569.31	99.26%	0.00° - 180.00°	11656.14	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°	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11	3911.11
2.50°	3904.28	3906.06	3902.36	3906.35	3904.03	3909.50	3911.73	3904.89	3908.04	3902.18	3909.25	3910.14	3910.02	3907.01	3903.32	3909.00	3904.28
5.00°	3888.35	3896.87	3887.53	3894.77	3893.10	3898.07	3898.84	3891.27	3893.16	3890.19	3898.18	3896.32	3897.52	3896.25	3888.31	3896.75	3888.35
7.50°	3865.90	3874.59	3868.67	3874.96	3872.87	3873.15	3874.35	3872.15	3871.33	3872.14	3878.38	3871.59	3874.40	3875.33	3868.82	3874.43	3865.90
10.00°	3836.25	3843.31	3838.38	3848.37	3844.48	3841.46	3842.70	3842.13	3842.55	3842.67	3846.37	3838.35	3842.42	3850.32	3840.45	3842.78	3836.25
12.50°	3802.20	3802.76	3803.31	3810.69	3805.13	3799.98	3803.46	3804.83	3806.21	3803.08	3807.01	3798.78	3804.28	3809.89	3803.31	3803.78	3802.20
15.00°	3752.42	3756.81	3753.15	3765.26	3757.63	3752.56	3760.29	3755.07	3763.45	3753.94	3758.91	3751.98	3758.69	3764.44	3755.70	3758.99	3752.42
17.50°	3694.52	3703.24	3697.85	3708.83	3702.34	3697.86	3707.85	3698.30	3709.80	3697.61	3705.92	3700.63	3708.74	3707.14	3699.30	3705.47	3694.52
20.00°	3629.21	3645.95	3634.50	3645.93	3642.16	3635.00	3651.44	3634.54	3648.30	3634.33	3648.00	3635.98	3647.57	3646.78	3634.70	3646.14	3629.21
22.50°	3560.73	3573.94	3568.96	3575.63	3571.32	3563.64	3576.17	3567.49	3576.43	3566.63	3578.83	3564.30	3580.87	3576.87	3564.24	3573.62	3560.73
25.00°	3483.15	3496.01	3487.14	3501.69	3494.84	3483.07	3494.30	3489.08	3498.23	3489.00	3499.88	3483.66	3497.93	3505.08	3485.92	3493.70	3483.15
27.50°	3402.37	3406.99	3401.91	3416.17	3406.99	3394.31	3408.64	3406.29	3412.89	3406.05	3412.62	3399.08	3408.37	3418.43	3402.87	3406.34	3402.37
30.00°	3306.96	3314.35	3304.16	3325.94	3314.14	3299.85	3321.92	3308.84	3323.91	3309.80	3319.24	3305.21	3313.99	3329.67	3308.85	3315.48	3306.96
32.50°	3207.44	3215.19	3204.50	3223.41	3211.43	3201.10	3221.11	3206.82	3223.67	3207.64	3219.62	3208.01	3218.02	3225.24	3209.31	3216.87	3207.44
35.00°	3097.62	3114.33	3096.91	3116.80	3105.17	3095.19	3117.25	3098.41	3118.66	3100.06	3116.12	3099.49	3111.53	3119.33	3099.79	3115.26	3097.62
37.50°	2985.57	3000.30	2988.52	3003.45	2991.92	2984.73	3001.06	2988.43	3003.78	2990.49	3004.20	2987.70	3002.27	3005.70	2986.10	3000.15	2985.57
40.00°	2865.45	2883.62	2869.59	2888.32	2876.66	2864.23	2882.90	2870.43	2885.50	2872.01	2887.87	2865.47	2880.77	2891.70	2868.88	2880.84	2865.45
42.50°	2744.04	2756.91	2750.08	2764.09	2750.94	2738.29	2756.72	2750.95	2762.55	2750.92	2762.41	2740.88	2756.79	2765.93	2750.45	2756.37	2744.04
45.00°	2613.25	2628.73	2616.44	2638.03	2622.81	2607.12	2629.67	2616.87	2638.30	2617.60	2632.98	2610.54	2625.89	2639.75	2619.19	2630.65	2613.25
47.50°	2481.44	2494.19	2482.35	2500.45	2485.52	2473.61	2495.88	2480.88	2502.71	2481.48	2499.07	2479.24	2493.98	2503.91	2484.45	2495.79	2481.44
50.00°	2337.62	2359.05	2338.03	2361.19	2346.66	2333.96	2361.69	2340.17	2364.70	2341.40	2363.57	2339.84	2354.16	2367.44	2342.02	2359.24	2337.62
52.50°	2193.07	2214.39	2193.73	2217.30	2204.60	2192.05	2216.76	2199.07	2219.23	2200.65	2220.68	2199.51	2213.60	2223.40	2197.98	2213.82	2193.07
55.00°	2047.11	2069.27	2049.80	2072.97	2062.16	2044.18	2071.51	2052.75	2072.59	2054.66	2075.68	2049.36	2063.98	2078.71	2051.74	2067.22	2047.11
57.50°	1900.95	1917.78	1904.80	1923.05	1911.72	1894.55	1920.12	1906.19	1924.42	1908.05	1924.52	1898.55	1913.92	1929.01	1905.15	1917.47	1900.95
60.00°	1747.73	1766.24	1751.06	1772.85	1760.73	1742.45	1768.66	1751.70	1776.08	1753.88	1772.00	1747.37	1761.35	1778.40	1751.90	1767.46	1747.73
62.50°	1594.35	1613.90	1596.87	1617.75	1605.10	1589.76	1616.33	1597.25	1621.47	1599.18	1619.39	1596.13	1608.72	1622.88	1597.95	1614.99	1594.35
65.00°	1438.66	1461.43	1440.19	1462.61	1449.39	1435.06	1463.56	1443.60	1466.50	1443.13	1466.76	1441.61	1454.74	1467.46	1442.33	1462.41	1438.66
67.50°	1283.27	1307.28	1284.20	1307.19	1295.39	1279.99	1307.10	1289.86	1311.70	1287.11	1311.56	1287.14	1300.63	1312.47	1286.61	1306.41	1283.27
70.00°	1130.38	1153.09	1131.13	1152.03	1141.64	1124.72	1151.31	1135.16	1156.99	1135.74	1156.09	1133.36	1144.73	1158.30	1132.86	1150.57	1130.38
72.50°	978.23	998.58	979.36	1000.19	991.80	969.42	999.36	981.65	1005.32	984.65	1005.31	980.39	989.86	1006.78	979.39	998.01	978.23
75.00°	830.48	846.64	831.91	850.08	843.01	824.88	850.02	836.31	854.71	838.20	854.83	835.07	842.83	858.50	835.17	846.85	830.48
77.50°	686.96	708.49	690.11	713.54	703.86	681.12	712.26	694.36	718.63	693.89	719.22	692.48	699.34	718.61	692.29	710.99	686.96
80.00°	562.29	575.05	563.56	580.28	568.51	560.88	579.69	569.30	584.80	569.56	584.34	566.92	574.89	585.69	568.06	577.57	562.29
82.50°	442.61	460.77	444.10	465.05	456.85	441.57	465.04	449.01	469.55	448.14	469.50	445.61	454.51	467.64	446.11	461.33	442.61
85.00°	340.19	351.45	340.42	354.13	348.75	341.65	355.52	346.91	357.45	344.92	355.97	343.86	350.96	357.64	342.94	349.05	340.19
87.50°	243.73	258.01	244.88	260.98	257.00	242.90	260.25	249.78	263.41	245.89	262.02	246.50	252.59	261.95	243.41	256.84	243.73
90.00°	163.78	172.28	164.41	174.13	170.59	164.66	173.20	167.70	174.37	166.13	171.10	164.79	171.12	175.81	164.70	170.37	163.78
92.50°	93.89	106.49	96.13	107.73	103.17	89.74	104.82	95.34	106.70	93.48	106.51	92.31	98.46	104.02	92.49	106.06	93.89
95.00°	46.86	52.44	46.77	52.08	46.62	46.65	50.11	46.84	48.64	46.61	47.68	46.20	48.96	50.66	48.17	50.88	46.86
97.50°	13.81	23.44	15.35	24.65	21.03	8.89	21.25	12.30	22.76	10.51	23.21	12.13	13.18	20.72	12.68	23.64	13.81
100.00°	7.21	4.46	7.51	5.50	3.00	5.20	3.38	6.13	3.69	5.62	3.19	6.17	7.08	4.62	6.79	3.99	7.21
102.50°	3.22	3.32	3.29	4.25	2.60	2.15	2.95	2.30	3.02	2.21	2.94	2.31	3.02	3.43	2.60	3.24	3.22
105.00°	3.37	2.77	3.12	3.51	2.30	2.06	2.58	2.43	2.51	2.32	2.67	2.50	2.63	2.80	2.97	2.80	3.37

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	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%	10%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	13856	13856	13856	13856	13523	13523	13523	13523	12903	12903	12903	12335	12335	12335	11814	11814	11569
	1	12568	11973	11440	10960	12236	11698	11212	10772	11182	10781	10414	10708	10380	10077	10271	10007	9784
	2	11395	10391	9561	8864	11074	10160	9397	8750	9728	9085	8530	9328	8791	8320	8959	8515	8318
	3	10371	9101	8118	7335	10069	8907	7996	7262	8543	7762	7119	8206	7541	6982	7893	7331	7160
	4	9485	8049	6998	6195	9206	7886	6905	6145	7579	6725	6049	7294	6554	5955	7028	6391	6243
	5	8717	7183	6112	5321	8461	7046	6039	5287	6785	5899	5219	6543	5764	5152	6317	5635	5507
	6	8046	6462	5399	4636	7814	6346	5341	4611	6124	5229	4562	5917	5121	4513	5723	5018	4907
	7	7459	5856	4817	4088	7249	5756	4770	4070	5567	4679	4032	5390	4592	3996	5223	4507	4411
	8	6942	5341	4334	3642	6752	5256	4296	3628	5093	4222	3599	4940	4149	3571	4796	4080	3997
	9	6485	4901	3930	3274	6314	4827	3898	3263	4686	3836	3241	4554	3776	3218	4429	3718	3646
	10	6080	4521	3588	2966	5924	4457	3561	2957	4334	3509	2939	4219	3458	2921	4109	3409	3346

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	129.3 fc	16.8 ft
6.5 ft	92.6 fc	19.8 ft
7.5 ft	69.5 fc	22.9 ft
8.0 ft	61.1 fc	24.4 ft
10.0 ft	39.1 fc	30.5 ft
12.0 ft	27.2 fc	36.6 ft
14.0 ft	20.0 fc	42.7 ft
16.0 ft	15.3 fc	48.8 ft
20.0 ft	9.8 fc	61.0 ft
24.0 ft	6.8 fc	73.3 ft
28.0 ft	5.0 fc	85.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	13400	13400	13400
45.00°	12662	12678	12709
55.00°	12228	12244	12318
65.00°	11664	11676	11750
75.00°	10994	11013	11160
85.00°	13374	13383	13710

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	19.9	21.6	20.3	21.9	22.3	19.9	21.5	20.3	21.9	22.2
	3H	21.9	23.4	22.2	23.7	24.1	21.8	23.3	22.2	23.7	24.0
	4H	22.6	24.0	23.0	24.4	24.8	22.6	24.0	23.0	24.4	24.8
	6H	23.3	24.6	23.7	25.0	25.4	23.2	24.6	23.7	24.9	25.3
	8H	23.5	24.8	24.0	25.2	25.6	23.5	24.8	24.0	25.2	25.6
	12H	23.8	25.0	24.2	25.4	25.8	23.8	25.0	24.2	25.4	25.8
4H	2H	20.6	22.0	21.0	22.4	22.8	20.6	22.0	21.0	22.3	22.7
	3H	22.7	23.9	23.2	24.4	24.8	22.7	23.9	23.1	24.3	24.7
	4H	23.7	24.7	24.1	25.2	25.6	23.6	24.7	24.1	25.1	25.6
	6H	24.5	25.4	24.9	25.9	26.3	24.4	25.4	24.9	25.8	26.3
	8H	24.8	25.7	25.3	26.2	26.6	24.8	25.7	25.3	26.1	26.6
	12H	25.1	25.9	25.6	26.4	26.9	25.1	25.9	25.6	26.4	26.9
8H	4H	24.0	24.9	24.5	25.4	25.9	24.0	24.9	24.5	25.4	25.8
	6H	25.0	25.7	25.5	26.2	26.7	25.0	25.7	25.5	26.2	26.7
	8H	25.5	26.1	26.0	26.7	27.2	25.4	26.1	26.0	26.6	27.1
	12H	25.9	26.5	26.5	27.0	27.6	25.9	26.5	26.4	27.0	27.6
12H	4H	24.1	24.9	24.6	25.4	25.9	24.1	24.9	24.6	25.4	25.9
	6H	25.1	25.8	25.6	26.3	26.8	25.1	25.8	25.6	26.3	26.8
	8H	25.6	26.2	26.2	26.7	27.3	25.6	26.2	26.1	26.7	27.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0