

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

LD2208LED 150L 35K xx TJL xx xx

24" x 5" High Lumen or Surface Mount Luminaire with Deep Conical Lens

Test Number

SP-01623

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	12689
Efficacy	138.37 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.35
Two luminaires, plane 90°	1.34
Four luminaires	1.44

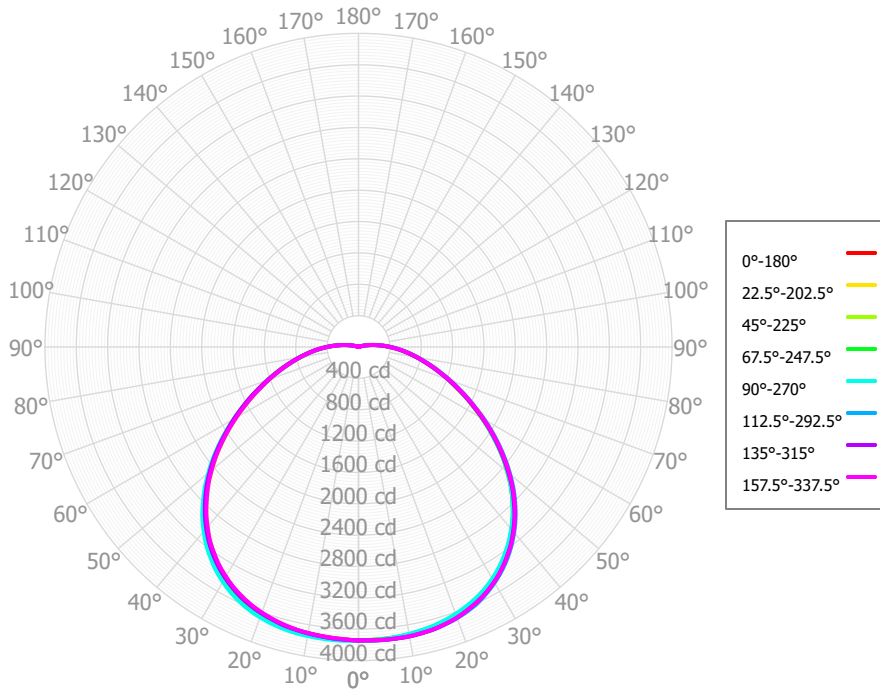
Full Beam Angle

0° - 180°	118°
90° - 270°	119°

IES File Header Contents

Keyword	Value
TEST	SP-01623
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/20/2023
ISSUEDATE	11/21/2023
LUMCAT	LD2208LED 150L 35K xx TJL xx xx
LUMINAIRE	24" x 5" High Lumen or Surface Mount Luminaire with Deep Conical Lens
OTHER	Beam Angle: 119 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°	362.06	2.85%	90.00° - 100.00°	285.72	2.25%
10.00° - 20.00°	1044.88	8.23%	100.00° - 110.00°	68.66	0.54%
20.00° - 30.00°	1637.78	12.91%	100.00° - 120.00°	74.28	0.59%
30.00° - 40.00°	2034.60	16.03%	120.00° - 130.00°	3.07	0.02%
40.00° - 50.00°	2142.14	16.88%	130.00° - 140.00°	2.81	0.02%
50.00° - 60.00°	1929.27	15.20%	140.00° - 150.00°	2.44	0.02%
60.00° - 70.00°	1501.24	11.83%	150.00° - 160.00°	1.87	0.01%
70.00° - 80.00°	1037.01	8.17%	160.00° - 170.00°	1.22	0.01%
80.00° - 90.00°	627.80	4.95%	170.00° - 180.00°	0.41	0.00%
0.00° - 90.00°	12316.79	97.07%	0.00° - 180.00°	12688.61	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°	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17	3744.17
2.50°	3747.35	3742.81	3740.63	3739.79	3745.80	3739.72	3738.79	3734.57	3734.34	3738.08	3740.10	3742.92	3753.16	3750.21	3746.55	3745.70	3747.35
5.00°	3751.29	3742.61	3739.46	3735.99	3739.66	3732.10	3732.72	3727.42	3725.80	3733.10	3738.44	3742.65	3753.84	3752.92	3748.63	3749.83	3751.29
7.50°	3747.72	3739.07	3733.51	3729.72	3728.75	3722.96	3721.39	3718.61	3716.72	3725.89	3731.93	3736.53	3750.09	3750.73	3750.87	3748.38	3747.72
10.00°	3743.44	3734.82	3726.51	3719.91	3717.43	3711.38	3709.76	3707.08	3706.46	3715.94	3724.34	3729.51	3744.93	3748.03	3750.20	3746.41	3743.44
12.50°	3728.77	3722.79	3714.32	3704.45	3701.74	3693.68	3695.06	3689.80	3693.69	3697.79	3711.18	3716.07	3735.70	3738.22	3741.01	3736.60	3728.77
15.00°	3713.28	3709.09	3698.31	3685.43	3683.87	3673.11	3677.92	3667.78	3675.36	3677.14	3694.58	3701.95	3722.01	3726.93	3727.34	3725.42	3713.28
17.50°	3689.63	3686.90	3671.08	3662.36	3654.95	3647.61	3648.36	3638.83	3648.93	3651.53	3667.59	3678.33	3699.61	3705.65	3704.91	3701.05	3689.63
20.00°	3662.81	3660.33	3639.73	3630.64	3623.33	3615.19	3616.33	3604.14	3614.87	3619.00	3636.71	3652.45	3671.33	3681.34	3674.45	3673.91	3662.81
22.50°	3620.92	3620.55	3600.22	3591.93	3583.40	3574.41	3576.72	3563.42	3572.93	3576.96	3597.94	3609.52	3634.94	3645.93	3632.95	3634.07	3620.92
25.00°	3574.17	3574.49	3552.94	3542.51	3537.75	3524.03	3530.15	3512.32	3520.25	3524.26	3551.33	3563.31	3587.96	3602.80	3584.76	3589.05	3574.17
27.50°	3513.45	3515.92	3494.94	3486.99	3480.32	3465.36	3469.27	3453.46	3459.60	3460.99	3493.54	3503.84	3530.63	3541.58	3530.04	3529.61	3513.45
30.00°	3446.25	3449.07	3425.76	3416.11	3413.52	3395.54	3401.28	3381.86	3388.48	3388.60	3424.89	3438.05	3461.08	3473.52	3461.06	3462.52	3446.25
32.50°	3366.66	3370.59	3345.64	3339.23	3333.38	3318.84	3323.18	3303.53	3311.93	3309.71	3345.25	3356.03	3383.08	3394.35	3382.20	3380.91	3366.66
35.00°	3276.66	3280.64	3253.80	3246.16	3243.50	3226.28	3234.36	3210.86	3219.77	3214.43	3253.49	3267.09	3289.93	3304.68	3288.37	3291.60	3276.66
37.50°	3172.59	3179.09	3153.74	3149.07	3143.79	3127.06	3134.70	3113.13	3122.24	3111.02	3153.02	3166.14	3189.39	3202.98	3187.24	3192.10	3172.59
40.00°	3056.81	3065.10	3037.92	3033.50	3032.11	3011.97	3022.33	2995.80	3006.35	2994.15	3038.87	3053.99	3072.26	3089.31	3068.65	3080.27	3056.81
42.50°	2929.80	2942.18	2914.32	2915.55	2911.73	2892.55	2900.70	2874.29	2886.57	2872.88	2917.78	2928.20	2949.82	2965.72	2944.36	2956.69	2929.80
45.00°	2792.12	2806.90	2776.86	2776.88	2777.80	2754.99	2767.87	2737.28	2751.81	2736.18	2781.04	2791.66	2807.51	2828.54	2803.53	2819.04	2792.12
47.50°	2647.10	2665.45	2634.88	2636.68	2636.92	2614.73	2629.36	2598.66	2615.52	2596.44	2639.04	2645.65	2661.38	2683.44	2659.51	2671.90	2647.10
50.00°	2492.05	2509.95	2478.37	2480.14	2483.14	2458.56	2478.19	2446.50	2461.08	2441.20	2485.64	2491.13	2502.01	2525.41	2497.31	2513.79	2492.05
52.50°	2332.21	2349.73	2319.08	2322.24	2324.96	2301.36	2322.70	2293.33	2305.84	2284.60	2329.90	2331.23	2341.50	2362.20	2333.59	2350.50	2332.21
55.00°	2163.34	2182.85	2152.24	2155.90	2160.52	2138.46	2158.53	2129.48	2142.63	2121.17	2165.65	2165.02	2172.02	2194.82	2166.91	2182.94	2163.34
57.50°	1991.59	2014.65	1984.77	1990.26	1994.79	1975.54	1992.59	1965.80	1979.44	1957.83	2000.60	1996.08	2002.63	2026.40	1999.96	2014.07	1991.59
60.00°	1825.36	1850.37	1819.33	1827.17	1832.73	1812.42	1833.30	1803.01	1816.35	1795.55	1836.27	1830.54	1834.09	1857.01	1830.30	1847.35	1825.36
62.50°	1660.16	1686.44	1655.18	1667.06	1671.03	1651.83	1674.66	1642.89	1656.33	1635.34	1673.00	1665.93	1668.26	1687.48	1663.15	1681.01	1660.16
65.00°	1508.41	1531.91	1504.38	1513.78	1519.69	1501.16	1523.09	1491.26	1505.79	1485.36	1521.67	1512.82	1515.17	1533.95	1507.77	1527.40	1508.41
67.50°	1357.84	1378.86	1356.48	1367.41	1369.74	1354.54	1372.84	1345.84	1360.82	1339.54	1372.88	1361.50	1365.81	1381.71	1357.09	1374.93	1357.84
70.00°	1222.30	1242.35	1222.48	1232.06	1234.86	1218.08	1237.08	1213.36	1227.37	1206.01	1236.80	1227.13	1227.26	1243.95	1220.02	1238.13	1222.30
72.50°	1088.37	1108.64	1092.13	1102.93	1102.61	1088.06	1104.32	1086.24	1099.60	1077.60	1104.55	1094.17	1094.70	1108.43	1088.01	1103.02	1088.37
75.00°	970.41	988.83	972.54	980.79	983.80	968.96	986.99	966.97	979.97	959.21	983.92	975.34	973.85	987.62	965.89	983.62	970.41
77.50°	855.36	873.01	858.86	868.48	869.18	857.80	872.78	855.79	867.74	847.81	869.32	858.71	860.15	870.31	852.44	867.41	855.36
80.00°	753.79	769.04	756.72	764.03	767.49	756.15	768.20	753.02	763.16	746.05	766.98	758.62	756.17	765.68	750.79	765.61	753.79
82.50°	655.86	670.49	659.09	666.86	669.27	659.53	669.23	657.90	667.28	651.05	669.98	660.49	659.23	665.79	655.04	667.26	655.86
85.00°	568.18	582.76	567.57	573.84	578.11	567.26	581.62	568.52	577.79	562.75	580.52	570.26	569.09	577.04	565.01	578.59	568.18
87.50°	482.21	496.94	480.84	489.47	490.04	480.29	495.23	481.71	491.14	478.16	493.79	482.35	482.34	490.57	479.25	491.98	482.21
90.00°	399.50	413.82	398.78	408.49	406.33	396.55	410.54	396.24	405.96	396.17	409.80	400.31	397.94	407.78	396.46	409.25	399.50
92.50°	321.86	336.88	323.72	332.34	328.80	320.60	332.19	319.42	329.92	320.72	333.07	322.83	322.48	331.40	320.56	331.85	321.86
95.00°	251.00	266.14	253.58	257.38	257.53	247.88	260.28	245.60	257.03	248.47	261.56	253.18	251.32	262.38	248.03	261.53	251.00
97.50°	189.01	202.86	192.05	196.93	195.44	188.44	197.13	186.85	196.14	187.77	199.42	190.71	191.11	200.43	188.71	198.56	189.01
100.00°	135.44	144.88	134.71	138.30	139.95	132.55	140.28	131.31	137.80	130.84	141.97	137.03	134.41	144.25	133.64	142.52	135.44
102.50°	92.67	99.81	92.22	98.64	95.81	91.30	95.66	90.37	94.94	90.10	95.96	92.50	93.11	97.85	92.25	97.33	92.67
105.00°	57.26	61.19	54.50	60.39	57.44	52.23	57.24	50.95	53.61	52.56	53.80	56.04	54.70	57.14	53.43	59.48	57.26

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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	15017	15017	15017	15017	14624	14624	14624	14624	13892	13892	13892	13222	13222	13222	12606	12606	12317
	1	13524	12838	12223	11669	13129	12509	11949	11442	11892	11431	11009	11326	10951	10603	10805	10503	10242
	2	12235	11103	10168	9382	11855	10826	9967	9239	10307	9586	8963	9828	9227	8700	9385	8890	8661
	3	11121	9704	8608	7734	10764	9471	8456	7639	9032	8166	7452	8626	7890	7272	8249	7629	7431
	4	10162	8569	7403	6512	9832	8372	7285	6445	8000	7059	6313	7655	6842	6184	7334	6636	6465
	5	9331	7636	6453	5579	9030	7469	6359	5530	7153	6179	5432	6858	6006	5337	6583	5840	5693
	6	8606	6861	5689	4848	8333	6718	5614	4811	6448	5467	4736	6195	5327	4664	5959	5192	5064
	7	7972	6209	5065	4264	7725	6086	5004	4234	5854	4883	4176	5636	4768	4119	5432	4656	4545
	8	7414	5656	4549	3789	7190	5550	4498	3765	5349	4398	3719	5161	4301	3673	4983	4208	4112
	9	6921	5182	4117	3397	6719	5091	4074	3378	4916	3990	3340	4752	3908	3302	4597	3829	3745
	10	6484	4774	3751	3070	6300	4695	3715	3054	4542	3643	3023	4398	3574	2991	4262	3506	3432

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	123.8 fc	18.4 ft
6.5 ft	88.6 fc	21.8 ft
7.5 ft	66.6 fc	25.1 ft
8.0 ft	58.5 fc	26.8 ft
10.0 ft	37.4 fc	33.5 ft
12.0 ft	26.0 fc	40.2 ft
14.0 ft	19.1 fc	46.9 ft
16.0 ft	14.6 fc	53.6 ft
20.0 ft	9.4 fc	67.0 ft
24.0 ft	6.5 fc	80.4 ft
28.0 ft	4.8 fc	93.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	12829	12829	12829
45.00°	13529	13455	13460
55.00°	12923	12856	12906
65.00°	12229	12196	12320
75.00°	12846	12875	13024
85.00°	22336	22312	22727

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	21.5	20.3	21.9	22.3	19.8	21.4	20.2	21.8	22.2
	3H	21.8	23.3	22.3	23.7	24.1	21.8	23.3	22.2	23.6	24.1
	4H	22.7	24.1	23.2	24.5	25.0	22.7	24.1	23.1	24.5	24.9
	6H	23.6	24.9	24.1	25.3	25.8	23.6	24.9	24.0	25.3	25.8
	8H	24.1	25.3	24.5	25.8	26.2	24.0	25.3	24.5	25.7	26.2
	12H	24.6	25.8	25.0	26.2	26.7	24.6	25.7	25.0	26.2	26.7
4H	2H	20.5	21.9	21.0	22.3	22.8	20.5	21.9	20.9	22.3	22.7
	3H	22.7	23.9	23.2	24.4	24.8	22.7	23.9	23.2	24.3	24.8
	4H	23.8	24.9	24.3	25.4	25.9	23.8	24.9	24.2	25.3	25.8
	6H	24.9	25.8	25.4	26.3	26.9	24.9	25.8	25.4	26.3	26.8
	8H	25.4	26.3	25.9	26.8	27.4	25.4	26.3	25.9	26.8	27.3
	12H	26.1	26.9	26.6	27.4	27.9	26.0	26.9	26.6	27.4	27.9
8H	4H	24.3	25.2	24.8	25.6	26.2	24.2	25.1	24.7	25.6	26.2
	6H	25.6	26.3	26.1	26.9	27.4	25.5	26.3	26.1	26.8	27.4
	8H	26.3	27.0	26.8	27.5	28.1	26.3	26.9	26.8	27.5	28.0
	12H	27.1	27.7	27.6	28.2	28.9	27.1	27.7	27.6	28.2	28.8
12H	4H	24.3	25.2	24.9	25.7	26.2	24.3	25.1	24.8	25.7	26.2
	6H	25.7	26.4	26.3	26.9	27.5	25.7	26.4	26.3	26.9	27.5
	8H	26.5	27.2	27.1	27.7	28.3	26.5	27.1	27.1	27.7	28.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0