

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

DMD22GY 220L 35K xx AL22 MWI BC22 CN xx

Nom 22" diam round high bay with aluminum shade, matte white inside and
conical lens

Test Number

SP-01567_1

Test Date

9/18/2023

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

Summary of Results

Power

Input Watts	171 W
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Lumen Output

Output Lumens	20295
Efficacy	118.68 lm/W

Luminous Dimensions

0° - 180° Size	-1.83
90° - 270° Size	-1.83
Height	0.77

Spacing Criterion

Two luminaires, plane 0°	1.72
Two luminaires, plane 90°	1.72
Four luminaires	1.6

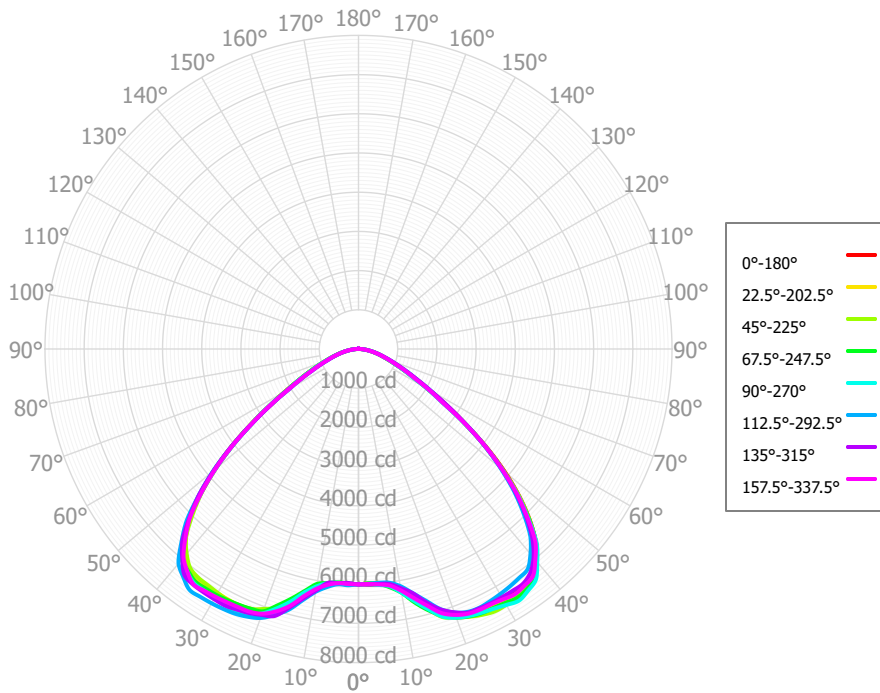
Full Beam Angle

0° - 180°	107°
90° - 270°	107°

IES File Header Contents

Keyword	Value
TEST	SP-01567_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/18/2023
ISSUEDATE	9/19/2023
LUMCAT	DMD22GY 220L 35K xx AL22 MWI BC22 CN xx
LUMINAIRE	Nom 22" diam round high bay with aluminum shade, matte white inside and conical lens
LAMPCAT	N/A
LAMP	N/A
OTHER	Beam Angle: 107 deg
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+
_CCTMULT	40K x 1.01
_LAMPMULT	160L x 0.73, 200L x 0.91

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	589.57	2.91%	90.00° - 100.00°	15.34	0.08%
10.00° - 20.00°	1929.15	9.51%	100.00° - 110.00°	3.20	0.02%
20.00° - 30.00°	3388.55	16.70%	100.00° - 120.00°	6.64	0.03%
30.00° - 40.00°	4565.22	22.49%	120.00° - 130.00°	3.78	0.02%
40.00° - 50.00°	4639.40	22.86%	130.00° - 140.00°	3.56	0.02%
50.00° - 60.00°	2990.52	14.74%	140.00° - 150.00°	3.06	0.02%
60.00° - 70.00°	1363.17	6.72%	150.00° - 160.00°	2.42	0.01%
70.00° - 80.00°	606.91	2.99%	160.00° - 170.00°	1.62	0.01%
80.00° - 90.00°	185.06	0.91%	170.00° - 180.00°	0.60	0.00%
0.00° - 90.00°	20257.54	99.82%	0.00° - 180.00°	20294.56	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°	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97	6006.97
2.50°	6018.75	5989.56	5984.99	5988.69	6010.45	6035.09	5977.23	6003.04	6001.97	6003.88	5999.63	5987.10	6019.30	5993.92	6015.15	6001.49	6018.75
5.00°	6038.45	5988.29	6014.57	6018.77	6044.75	6026.10	5996.37	5999.29	6023.15	5993.02	6014.81	5978.03	5990.51	5988.32	6016.67	6031.70	6038.45
7.50°	6100.35	6088.10	6064.29	6132.97	6107.48	6125.47	6021.55	6072.06	6049.42	6066.42	6031.76	6025.16	6028.90	6015.99	6048.64	6087.63	6100.35
10.00°	6302.51	6227.77	6284.59	6312.05	6311.98	6289.12	6260.99	6216.04	6213.85	6147.73	6188.55	6087.27	6149.28	6144.15	6194.62	6258.95	6302.51
12.50°	6541.99	6521.01	6523.77	6624.56	6587.50	6561.96	6521.76	6463.08	6396.16	6392.02	6352.44	6321.92	6361.61	6377.33	6381.92	6507.60	6541.99
15.00°	6881.06	6800.46	6872.67	6903.58	6873.32	6888.83	6832.49	6791.33	6696.10	6644.54	6644.82	6591.71	6669.01	6651.44	6694.17	6780.77	6881.06
17.50°	7150.03	7037.14	7176.95	7125.22	7163.41	7116.97	7146.01	7022.41	7005.34	6888.09	6923.12	6858.37	6940.63	6961.81	6968.78	7067.73	7150.03
20.00°	7263.17	7236.79	7288.71	7293.13	7295.14	7304.14	7221.47	7188.86	7134.68	7124.85	7059.21	7124.56	7180.91	7155.55	7151.11	7221.29	7263.17
22.50°	7349.33	7343.52	7394.99	7383.64	7372.74	7394.66	7293.41	7256.14	7257.51	7173.27	7181.29	7175.73	7316.52	7261.89	7280.35	7311.41	7349.33
25.00°	7385.73	7413.70	7482.49	7439.59	7425.75	7452.61	7337.92	7267.20	7282.48	7217.49	7207.73	7205.58	7373.38	7287.17	7302.30	7338.85	7385.73
27.50°	7403.07	7407.20	7544.56	7452.88	7472.09	7477.53	7378.81	7282.98	7306.08	7207.83	7223.26	7227.59	7373.48	7260.48	7316.45	7341.35	7403.07
30.00°	7390.94	7409.68	7536.89	7483.67	7541.43	7493.63	7369.71	7301.00	7299.68	7201.42	7185.14	7249.20	7337.58	7225.16	7317.25	7376.21	7390.94
32.50°	7375.01	7427.82	7512.61	7533.05	7615.69	7502.39	7359.85	7318.59	7291.26	7220.39	7149.90	7250.52	7317.70	7185.14	7316.75	7421.47	7375.01
35.00°	7354.07	7392.97	7450.47	7486.82	7534.97	7509.62	7343.47	7336.02	7260.95	7216.56	7125.47	7248.76	7306.44	7137.80	7314.32	7377.37	7354.07
37.50°	7253.85	7279.20	7321.89	7354.61	7430.18	7340.87	7286.84	7170.37	7200.69	7084.69	7050.67	7142.39	7174.85	7087.13	7201.07	7310.66	7253.85
40.00°	7063.59	7047.94	7067.83	7083.56	7094.44	7144.59	6995.74	6946.44	6932.73	6904.56	6823.26	7013.53	6989.47	6828.63	6951.18	7019.86	7063.59
42.50°	6705.43	6668.98	6707.09	6706.85	6733.97	6687.91	6656.73	6537.39	6619.52	6522.03	6512.38	6575.44	6589.06	6493.12	6571.28	6685.02	6705.43
45.00°	6185.67	6155.96	6175.14	6160.11	6130.00	6204.21	6110.52	6080.96	6075.19	6084.93	5996.61	6113.55	6108.61	5972.07	6055.60	6106.51	6185.67
47.50°	5568.30	5500.21	5558.48	5502.61	5511.75	5526.87	5526.67	5444.29	5499.30	5465.36	5428.57	5457.33	5463.42	5394.76	5458.33	5493.85	5568.30
50.00°	4871.34	4803.34	4827.29	4796.13	4785.41	4838.75	4813.49	4772.65	4798.30	4812.88	4753.01	4790.25	4769.04	4734.67	4787.78	4785.32	4871.34
52.50°	4113.61	4068.81	4075.46	4062.48	4056.35	4077.87	4086.63	4051.89	4086.21	4072.08	4057.57	4060.05	4042.54	4055.00	4075.57	4067.86	4113.61
55.00°	3313.39	3338.72	3300.02	3318.19	3278.25	3318.23	3321.45	3324.36	3339.51	3348.95	3328.03	3344.23	3308.57	3337.74	3331.71	3303.30	3313.39
57.50°	2644.76	2612.11	2630.24	2568.99	2517.50	2659.83	2627.06	2677.44	2658.18	2665.28	2679.05	2690.51	2686.39	2613.66	2689.07	2536.59	2644.76
60.00°	2053.44	2062.82	2064.38	2035.82	2022.68	2020.08	2094.39	2037.85	2141.59	2085.69	2147.87	2100.67	2084.09	2126.13	2112.32	2062.85	2053.44
62.50°	1630.64	1631.23	1629.14	1584.27	1550.33	1653.12	1637.16	1665.49	1691.44	1698.95	1714.56	1729.90	1706.67	1668.54	1689.93	1597.50	1630.64
65.00°	1291.77	1311.38	1304.34	1271.86	1274.65	1300.00	1322.68	1305.95	1381.36	1363.18	1402.13	1390.13	1357.99	1367.92	1351.73	1312.34	1291.77
67.50°	1038.21	1053.75	1046.85	1002.57	1013.19	1064.58	1053.67	1078.61	1107.67	1107.70	1135.81	1135.43	1120.41	1079.96	1094.99	1034.97	1038.21
70.00°	819.71	855.73	837.47	818.28	836.37	841.53	857.76	854.77	897.85	888.82	917.74	906.09	891.45	887.36	875.74	851.85	819.71
72.50°	667.19	685.75	677.78	654.61	670.38	692.65	690.18	706.82	717.73	718.54	737.87	734.60	732.37	698.54	710.21	675.42	667.19
75.00°	537.07	555.43	547.95	538.06	553.23	551.53	560.94	561.46	582.02	571.08	592.35	580.61	575.76	569.41	564.94	550.93	537.07
77.50°	426.18	440.41	433.80	430.32	439.45	444.68	442.34	448.12	458.26	449.27	461.65	459.69	456.39	441.35	443.40	429.31	426.18
80.00°	320.46	337.61	327.63	329.70	337.69	340.34	336.11	337.03	349.59	339.10	342.39	346.31	338.23	335.56	329.05	323.70	320.46
82.50°	231.31	238.69	237.58	230.02	241.30	244.83	241.05	243.12	250.51	240.16	244.13	245.06	245.87	232.11	237.01	224.36	231.31
85.00°	145.56	162.30	154.34	158.82	160.19	158.57	156.98	154.76	161.84	158.89	159.56	159.58	156.45	154.47	150.36	151.25	145.56
87.50°	90.68	91.53	96.94	90.04	91.20	98.20	93.41	96.94	95.09	92.29	97.14	95.42	98.19	81.94	94.91	86.05	90.68
90.00°	40.54	53.05	48.57	51.37	50.29	48.38	47.19	45.74	48.49	47.88	46.82	48.20	44.65	45.39	45.28	46.63	40.54
92.50°	21.77	20.82	24.34	13.98	19.67	23.05	20.48	21.91	20.72	19.05	20.96	20.64	23.52	13.91	24.61	15.93	21.77
95.00°	6.32	10.69	6.82	8.68	9.06	5.62	7.76	3.42	7.62	6.22	6.39	5.67	5.81	7.95	7.74	8.55	6.32
97.50°	4.07	3.59	3.76	3.60	2.41	3.35	2.66	2.59	2.07	2.85	2.26	3.10	5.44	3.26	5.63	3.80	4.07
100.00°	2.58	2.95	3.86	3.89	2.19	1.94	2.16	1.97	1.55	1.64	2.08	1.85	5.05	3.58	4.71	4.81	2.58
102.50°	3.23	2.88	3.69	4.19	1.98	1.90	1.80	1.96	1.83	1.50	1.81	1.69	4.61	3.97	4.53	5.23	3.23
105.00°	3.90	3.85	3.48	4.67	1.80	1.93	1.50	1.88	2.55	1.56	1.50	1.68	4.24	4.56	4.38	4.53	3.90

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	24151	24151	24151	24151	23585	23585	23585	23585	22529	22529	22529	21562	21562	21562	20675	20675	20675
	1	22369	21528	20774	20095	21828	21070	20386	19767	20213	19653	19140	19425	18972	18552	18699	18338	17999
	2	20558	19069	17839	16806	20042	18691	17562	16605	17981	17034	16218	17326	16539	15848	16720	16072	15495
	3	18878	16933	15429	14230	18393	16618	15225	14102	16023	14833	13853	15473	14462	13613	14963	14111	13381
	4	17357	15105	13456	12196	16907	14840	13301	12111	14339	13003	11945	13874	12719	11783	13442	12448	11626
	5	15994	13543	11830	10566	15580	13319	11710	10508	12895	11479	10393	12500	11257	10281	12131	11044	10171
	6	14777	12207	10481	9243	14399	12016	10387	9202	11655	10203	9120	11317	10026	9040	11002	9857	8962
	7	13693	11060	9353	8157	13349	10897	9277	8126	10588	9129	8067	10298	8987	8008	10026	8849	7950
	8	12728	10073	8402	7255	12415	9933	8340	7232	9666	8219	7187	9416	8103	7143	9180	7990	7099
	9	11867	9218	7595	6499	11583	9097	7544	6481	8866	7444	6447	8649	7347	6413	8444	7253	6379
	10	11099	8475	6905	5860	10841	8370	6862	5846	8169	6779	5819	7979	6697	5792	7800	6619	5766

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 m	198.6 lx	14.8 m
6.5 m	142.2 lx	17.5 m
7.5 m	106.8 lx	20.2 m
8.0 m	93.9 lx	21.6 m
10.0 m	60.1 lx	27.0 m
12.0 m	41.7 lx	32.4 m
14.0 m	30.6 lx	37.8 m
16.0 m	23.5 lx	43.2 m
20.0 m	15.0 lx	53.9 m
24.0 m	10.4 lx	64.7 m
28.0 m	7.7 lx	75.5 m

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2284	2284	2284
45.00°	2166	2162	2146
55.00°	1244	1239	1231
65.00°	541	546	534
75.00°	263	268	271
85.00°	89	95	98

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	19.0	20.5	19.4	20.8	21.2	19.2	20.7	19.6	21.0	21.4
	3H	18.3	19.6	18.6	20.0	20.3	18.4	19.8	18.8	20.1	20.5
	4H	18.1	19.4	18.5	19.7	20.1	18.2	19.5	18.7	19.9	20.3
	6H	18.0	19.1	18.4	19.5	19.9	18.1	19.3	18.5	19.7	20.1
	8H	17.9	19.0	18.3	19.4	19.8	18.1	19.2	18.5	19.6	20.0
	12H	17.9	18.9	18.3	19.3	19.8	18.0	19.1	18.5	19.5	19.9
4H	2H	18.5	19.8	18.9	20.1	20.5	18.7	20.0	19.1	20.3	20.7
	3H	17.6	18.7	18.0	19.1	19.5	17.8	18.8	18.2	19.2	19.6
	4H	17.4	18.3	17.8	18.7	19.1	17.5	18.4	17.9	18.9	19.3
	6H	17.2	18.0	17.6	18.4	18.9	17.3	18.1	17.8	18.6	19.1
	8H	17.1	17.9	17.6	18.3	18.8	17.3	18.0	17.7	18.5	18.9
	12H	17.1	17.7	17.5	18.2	18.7	17.2	17.9	17.7	18.4	18.8
8H	4H	17.2	17.9	17.6	18.4	18.8	17.3	18.1	17.8	18.5	19.0
	6H	16.9	17.6	17.4	18.1	18.5	17.1	17.7	17.6	18.2	18.7
	8H	16.8	17.4	17.4	17.9	18.4	17.0	17.6	17.5	18.1	18.6
	12H	16.8	17.3	17.3	17.8	18.4	16.9	17.4	17.4	17.9	18.5
12H	4H	17.1	17.8	17.6	18.3	18.8	17.3	18.0	17.8	18.4	18.9
	6H	16.9	17.5	17.4	17.9	18.5	17.0	17.6	17.6	18.1	18.6
	8H	16.8	17.3	17.3	17.8	18.4	16.9	17.4	17.5	17.9	18.5

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0