

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

DMD22GY 220L 35K xx DF22 BC22 CNFR xx

Nom 22" diam round high bay with diffuse refractor and conical frosted lens

Test Number

SP-01565_2

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	20189
Efficacy	118.06 lm/W

Luminous Dimensions

0° - 180° Size	-1.83
90° - 270° Size	-1.83
Height	0.83

Spacing Criterion

Two luminaires, plane 0°	1.27
Two luminaires, plane 90°	1.29
Four luminaires	1.26

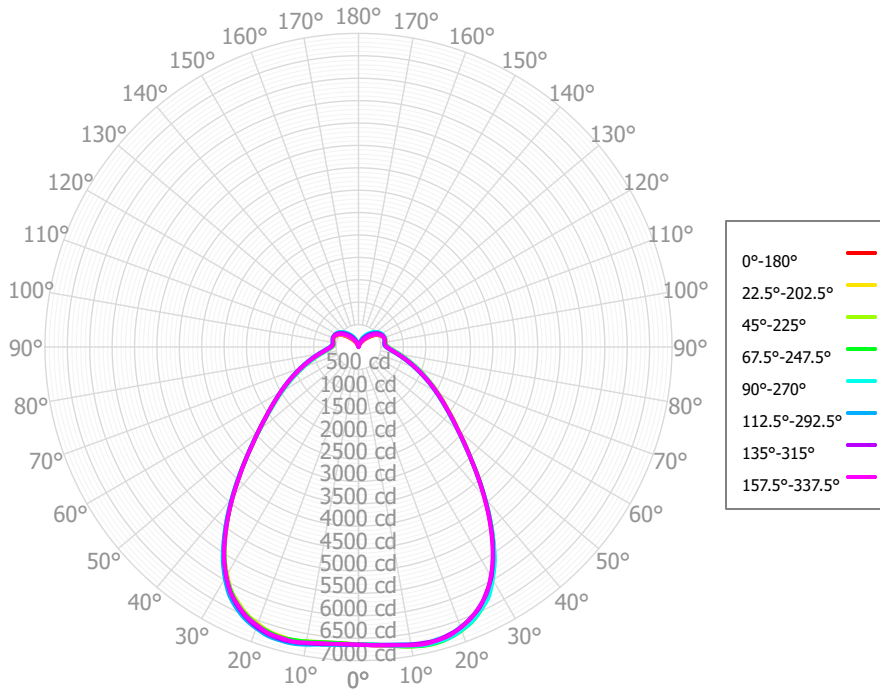
Full Beam Angle

0° - 180°	92°
90° - 270°	92°

IES File Header Contents

Keyword	Value
TEST	SP-01565_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/18/2023
ISSUE DATE	9/19/2023
LUMCAT	DMD22GY 220L 35K xx DF22 BC22 CNFR xx
LUMINAIRE	Nom 22" diam round high bay with diffuse refractor and conical frosted lens
LAMPCAT	N/A
LAMP	N/A
OTHER	Beam Angle: 92 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°	648.70	3.21%	90.00° - 100.00°	648.49	3.21%
10.00° - 20.00°	1908.97	9.46%	100.00° - 110.00°	633.94	3.14%
20.00° - 30.00°	2933.82	14.53%	100.00° - 120.00°	1219.36	6.04%
30.00° - 40.00°	3238.68	16.04%	120.00° - 130.00°	463.76	2.30%
40.00° - 50.00°	2764.55	13.69%	130.00° - 140.00°	308.97	1.53%
50.00° - 60.00°	2163.63	10.72%	140.00° - 150.00°	169.45	0.84%
60.00° - 70.00°	1651.06	8.18%	150.00° - 160.00°	71.46	0.35%
70.00° - 80.00°	1172.18	5.81%	160.00° - 170.00°	19.31	0.10%
80.00° - 90.00°	804.21	3.98%	170.00° - 180.00°	2.27	0.01%
0.00° - 90.00°	17285.78	85.62%	0.00° - 180.00°	20188.85	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°	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99	6646.99
2.50°	6664.63	6657.81	6659.22	6650.74	6660.10	6654.87	6651.03	6637.99	6638.25	6628.87	6624.46	6627.96	6659.57	6650.22	6665.34	6662.54	6664.63
5.00°	6692.79	6695.87	6693.06	6682.68	6686.53	6673.52	6657.43	6652.69	6644.03	6638.22	6629.75	6627.51	6670.80	6674.10	6677.04	6689.85	6692.79
7.50°	6730.84	6734.36	6736.27	6737.29	6724.65	6697.39	6686.98	6668.55	6659.41	6648.60	6645.89	6648.51	6695.80	6700.60	6708.33	6719.06	6730.84
10.00°	6780.00	6778.24	6790.94	6786.65	6769.07	6746.06	6716.39	6703.35	6683.43	6679.56	6673.13	6680.10	6740.25	6740.53	6745.90	6762.05	6780.00
12.50°	6803.45	6816.08	6820.23	6829.51	6816.13	6783.93	6745.54	6736.25	6712.12	6706.18	6705.93	6698.55	6765.23	6781.23	6764.31	6795.96	6803.45
15.00°	6802.02	6804.91	6823.22	6835.80	6816.13	6781.51	6750.51	6719.55	6698.56	6686.53	6695.03	6711.65	6766.65	6762.95	6777.78	6782.92	6802.02
17.50°	6766.51	6782.03	6787.54	6803.83	6800.20	6760.33	6719.34	6697.67	6666.11	6658.50	6666.12	6670.21	6734.97	6741.93	6729.59	6754.53	6766.51
20.00°	6703.07	6693.46	6717.43	6735.55	6724.55	6683.74	6652.47	6611.69	6587.91	6572.85	6583.50	6610.78	6668.84	6652.19	6669.31	6664.68	6703.07
22.50°	6593.63	6591.61	6605.62	6634.59	6632.52	6586.75	6539.92	6517.36	6492.68	6476.50	6482.92	6497.59	6564.07	6557.63	6544.89	6557.27	6593.63
25.00°	6451.87	6432.74	6462.40	6475.17	6471.39	6439.94	6384.82	6359.50	6338.46	6327.24	6321.97	6370.08	6425.22	6391.59	6411.50	6394.63	6451.87
27.50°	6229.80	6243.22	6242.63	6270.58	6295.70	6248.25	6183.61	6181.84	6166.27	6151.68	6144.68	6153.05	6214.75	6212.28	6178.71	6196.49	6229.80
30.00°	5960.29	5951.20	5974.23	5981.03	5991.29	5966.23	5914.52	5898.25	5884.60	5874.75	5866.28	5917.80	5950.80	5919.19	5936.69	5906.52	5960.29
32.50°	5614.06	5630.04	5626.45	5636.12	5666.56	5640.56	5583.07	5591.78	5576.86	5571.91	5566.41	5571.62	5613.67	5610.33	5579.03	5582.75	5614.06
35.00°	5230.02	5229.30	5235.77	5237.69	5249.88	5241.59	5205.52	5190.97	5188.58	5190.24	5178.54	5208.65	5229.80	5209.06	5216.10	5187.21	5230.02
37.50°	4812.43	4818.36	4816.33	4810.02	4823.53	4828.41	4791.58	4784.67	4785.96	4797.38	4777.07	4793.14	4817.19	4803.09	4796.09	4780.64	4812.43
40.00°	4380.98	4384.66	4383.78	4379.40	4385.56	4394.87	4372.57	4360.25	4367.23	4376.44	4358.31	4372.44	4388.97	4376.14	4376.03	4354.28	4380.98
42.50°	3969.91	3967.19	3970.28	3947.41	3946.94	3976.08	3950.19	3946.09	3946.43	3966.70	3937.79	3963.15	3974.67	3957.78	3964.06	3944.17	3969.91
45.00°	3565.79	3580.25	3563.88	3563.60	3566.33	3575.45	3569.77	3559.09	3572.56	3580.10	3565.32	3554.49	3566.65	3569.71	3557.87	3558.52	3565.79
47.50°	3233.17	3227.95	3227.29	3197.99	3188.71	3218.81	3213.18	3200.80	3202.54	3223.01	3195.63	3214.30	3219.94	3205.00	3224.88	3210.70	3233.17
50.00°	2919.93	2930.22	2911.61	2903.16	2902.87	2907.99	2911.50	2904.84	2911.06	2917.48	2901.35	2877.26	2895.84	2905.98	2900.94	2911.65	2919.93
52.50°	2668.92	2662.42	2660.87	2630.27	2621.61	2638.18	2635.76	2632.58	2622.84	2639.78	2609.98	2616.31	2627.36	2626.57	2647.13	2645.98	2668.92
55.00°	2430.84	2434.96	2425.65	2409.88	2408.26	2404.57	2405.56	2403.72	2401.35	2402.91	2383.14	2359.30	2375.66	2392.08	2401.36	2416.75	2430.84
57.50°	2231.65	2225.47	2227.52	2202.23	2198.81	2199.40	2193.34	2191.39	2181.55	2185.37	2159.15	2156.47	2166.44	2173.72	2199.22	2208.45	2231.65
60.00°	2038.50	2036.49	2036.20	2022.19	2022.74	2015.78	2008.86	2004.43	1998.07	1992.12	1976.00	1956.77	1967.21	1986.47	2001.86	2019.50	2038.50
62.50°	1862.29	1859.52	1868.20	1847.31	1849.25	1844.02	1833.23	1825.19	1816.03	1809.37	1793.96	1783.70	1789.54	1805.64	1824.39	1840.03	1862.29
65.00°	1687.90	1694.16	1703.20	1688.49	1691.37	1679.94	1672.44	1656.08	1649.23	1637.81	1621.68	1613.28	1615.76	1635.18	1651.78	1668.09	1687.90
67.50°	1535.12	1541.39	1555.20	1531.80	1536.83	1530.05	1515.47	1498.78	1485.45	1478.16	1454.08	1458.21	1462.22	1474.02	1495.29	1511.50	1535.12
70.00°	1383.62	1399.07	1408.52	1396.56	1397.49	1387.86	1374.86	1354.60	1343.07	1329.43	1314.28	1307.95	1311.23	1325.68	1346.11	1365.36	1383.62
72.50°	1252.75	1267.75	1278.20	1263.07	1262.52	1258.04	1237.45	1221.17	1204.18	1194.07	1177.56	1178.42	1183.37	1190.21	1216.42	1231.99	1252.75
75.00°	1122.73	1144.26	1148.61	1145.16	1142.97	1133.81	1117.87	1098.01	1082.95	1069.07	1054.72	1053.05	1057.36	1069.74	1092.27	1105.92	1122.73
77.50°	1015.61	1031.36	1039.71	1027.86	1028.53	1023.00	1000.85	984.81	965.75	955.70	937.82	941.96	951.84	959.14	980.25	994.01	1015.61
80.00°	909.97	924.82	931.90	931.28	928.49	917.25	901.72	879.70	864.46	849.92	841.57	839.06	847.21	858.43	877.76	888.84	909.97
82.50°	825.65	839.12	847.61	835.85	836.05	829.42	804.24	791.92	770.80	763.91	753.15	758.63	764.99	773.77	792.84	806.71	825.65
85.00°	744.97	763.86	765.87	766.86	761.37	747.00	735.81	716.01	700.83	688.91	686.89	686.41	684.46	702.74	719.66	733.77	744.97
87.50°	696.04	707.26	711.58	700.43	698.12	690.54	668.67	658.27	640.08	635.61	629.23	632.94	638.61	650.47	664.90	682.00	696.04
90.00°	650.95	658.50	661.08	662.29	656.93	640.33	631.50	611.14	602.43	592.54	591.42	590.29	595.39	611.87	623.50	637.05	650.95
92.50°	628.69	633.49	637.67	627.52	625.15	614.36	595.38	585.88	573.98	570.45	564.20	568.07	580.65	588.98	599.80	614.13	628.69
95.00°	610.16	616.60	618.06	617.36	608.80	592.76	585.63	571.44	564.82	556.47	557.22	555.15	568.01	575.74	587.01	596.93	610.16
97.50°	608.45	613.55	617.74	609.10	600.42	590.07	577.01	569.72	560.67	558.27	555.21	557.13	569.98	575.42	586.44	597.31	608.45
100.00°	608.18	614.32	617.99	611.04	603.03	589.84	582.54	573.18	565.41	564.99	561.23	562.72	573.32	581.83	589.37	601.16	608.18
102.50°	612.95	618.18	620.44	613.94	607.15	596.29	588.37	581.23	572.05	573.35	568.85	573.18	583.48	591.39	595.66	606.46	612.95
105.00°	615.80	622.68	622.58	620.74	613.07	603.28	596.45	590.81	581.53	582.13	578.68	583.33	593.48	602.31	601.24	611.97	615.80

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	23343	23343	23343	23343	22463	22463	22463	22463	20819	20819	20819	19316	19316	19316	17935	17935	17935
	1	21213	20228	19345	18550	20366	19486	18694	17975	18097	17462	16880	16821	16318	15853	15645	15253	14886
	2	19363	17733	16387	15256	18566	17105	15885	14850	15925	14929	14069	14837	14030	13323	13831	13185	12610
	3	17737	15686	14099	12835	16998	15151	13701	12534	14143	12939	11948	13211	12218	11383	12346	11534	10838
	4	16310	13991	12293	10996	15631	13533	11972	10764	12668	11352	10310	11866	10762	9868	11119	10199	9439
	5	15054	12573	10839	9560	14434	12179	10575	9375	11432	10063	9013	10737	9573	8658	10089	9103	8312
	6	13944	11373	9648	8410	13378	11032	9427	8260	10384	8998	7965	9780	8586	7675	9214	8190	7390
	7	12959	10351	8659	7473	12445	10053	8472	7349	9488	8109	7104	8958	7758	6862	8461	7420	6625
	8	12085	9472	7828	6698	11616	9211	7668	6594	8715	7356	6387	8248	7055	6183	7809	6764	5982
	9	11305	8711	7122	6049	10878	8482	6984	5960	8043	6715	5784	7630	6454	5609	7240	6201	5437
	10	10608	8050	6518	5499	10217	7846	6398	5422	7455	6163	5270	7087	5934	5120	6739	5712	4971

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 m	219.7 lx	11.4 m
6.5 m	157.3 lx	13.5 m
7.5 m	118.2 lx	15.6 m
8.0 m	103.9 lx	16.6 m
10.0 m	66.5 lx	20.8 m
12.0 m	46.2 lx	24.9 m
14.0 m	33.9 lx	29.1 m
16.0 m	26.0 lx	33.2 m
20.0 m	16.6 lx	41.5 m
24.0 m	11.5 lx	49.8 m
28.0 m	8.5 lx	58.1 m

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2527	2527	2527
45.00°	1215	1215	1216
55.00°	883	881	875
65.00°	678	685	680
75.00°	523	535	532
85.00°	428	440	437

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	19.3	20.6	19.9	21.2	21.9	19.2	20.5	19.8	21.1	21.7
	3H	18.3	19.5	18.9	20.1	20.8	18.2	19.4	18.8	20.0	20.6
	4H	17.9	19.0	18.5	19.6	20.3	17.8	18.9	18.4	19.5	20.2
	6H	17.5	18.6	18.2	19.2	19.9	17.4	18.4	18.0	19.1	19.8
	8H	17.4	18.3	18.0	19.0	19.7	17.3	18.2	17.9	18.9	19.6
	12H	17.2	18.1	17.8	18.8	19.5	17.1	18.0	17.7	18.7	19.4
4H	2H	18.8	19.9	19.5	20.5	21.2	18.7	19.8	19.3	20.4	21.1
	3H	17.5	18.4	18.1	19.1	19.8	17.4	18.3	18.0	19.0	19.7
	4H	16.8	17.7	17.5	18.3	19.1	16.7	17.6	17.4	18.2	19.0
	6H	16.1	16.9	16.8	17.6	18.3	16.0	16.8	16.7	17.5	18.2
	8H	15.8	16.5	16.4	17.1	17.9	15.7	16.4	16.4	17.1	17.8
	12H	15.4	16.0	16.1	16.7	17.5	15.3	16.0	16.0	16.7	17.5
8H	4H	16.4	17.1	17.1	17.8	18.6	16.3	17.0	17.0	17.7	18.5
	6H	15.4	16.0	16.1	16.7	17.5	15.4	16.0	16.1	16.7	17.5
	8H	14.8	15.4	15.5	16.1	16.9	14.8	15.3	15.5	16.0	16.8
	12H	14.1	14.6	14.8	15.3	16.1	14.1	14.6	14.8	15.3	16.1
12H	4H	16.3	17.0	17.0	17.7	18.5	16.2	16.9	16.9	17.6	18.4
	6H	15.3	15.8	16.0	16.5	17.3	15.2	15.7	15.9	16.4	17.3
	8H	14.6	15.0	15.3	15.7	16.6	14.5	15.0	15.2	15.7	16.6

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0