

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

DMD22GY 220L 35K xx DF22 xx
Nom 22" diam round high bay with diffuse refractor

Test Number

SP-01565

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	21165
Efficacy	123.77 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.13
Two luminaires, plane 90°	1.13
Four luminaires	1.07

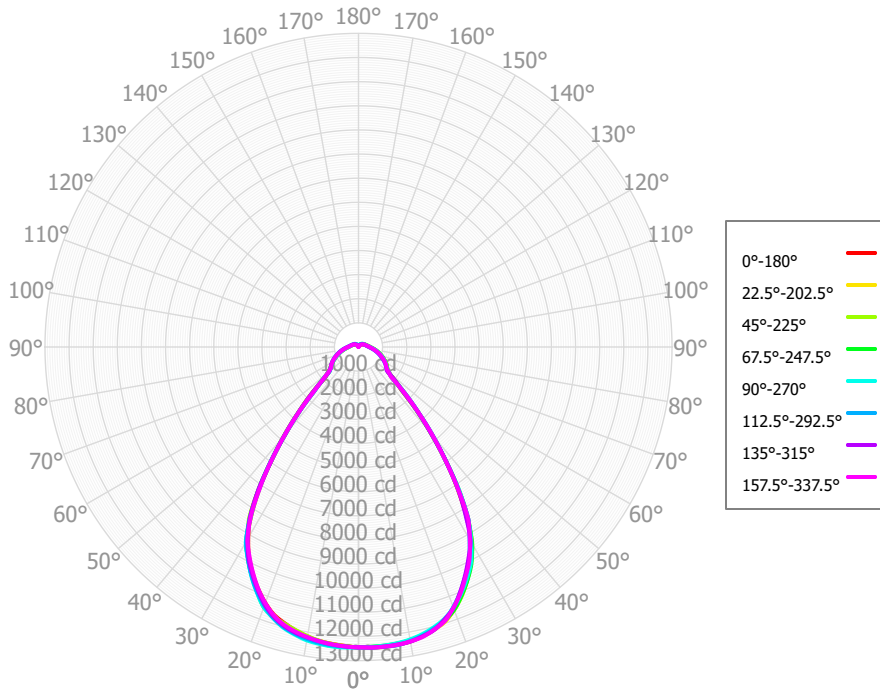
Full Beam Angle

0° - 180°	74°
90° - 270°	74°

IES File Header Contents

Keyword	Value
TEST	SP-01565
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/18/2023
ISSUEDATE	9/19/2023
LUMCAT	DMD22GY 220L 35K xx DF22 xx
LUMINAIRE	Nom 22" diam round high bay with diffuse refractor
LAMPCAT	N/A
LAMP	N/A
OTHER	Beam Angle: 74 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°	1200.38	5.67%	90.00° - 100.00°	421.55	1.99%
10.00° - 20.00°	3379.62	15.97%	100.00° - 110.00°	320.22	1.51%
20.00° - 30.00°	4805.12	22.70%	100.00° - 120.00°	563.81	2.66%
30.00° - 40.00°	4411.00	20.84%	120.00° - 130.00°	174.63	0.83%
40.00° - 50.00°	2175.82	10.28%	130.00° - 140.00°	113.76	0.54%
50.00° - 60.00°	1267.59	5.99%	140.00° - 150.00°	66.54	0.31%
60.00° - 70.00°	1094.74	5.17%	150.00° - 160.00°	32.09	0.15%
70.00° - 80.00°	849.22	4.01%	160.00° - 170.00°	9.87	0.05%
80.00° - 90.00°	597.51	2.82%	170.00° - 180.00°	1.48	0.01%
0.00° - 90.00°	19780.99	93.46%	0.00° - 180.00°	21164.71	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°	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43	12454.43
2.50°	12471.86	12460.50	12452.94	12438.54	12452.50	12444.57	12431.29	12427.13	12410.42	12416.10	12425.86	12427.64	12475.20	12473.56	12472.76	12471.80	12471.80
5.00°	12482.42	12457.41	12449.98	12429.03	12424.67	12419.23	12384.10	12381.59	12361.43	12365.94	12371.77	12408.93	12466.00	12473.32	12468.83	12468.83	12468.83
7.50°	12453.97	12440.84	12414.57	12399.52	12386.67	12375.58	12311.55	12314.84	12301.67	12295.03	12297.38	12359.06	12418.18	12468.61	12440.56	12456.92	12456.92
10.00°	12396.96	12379.23	12337.65	12349.12	12314.72	12295.82	12229.14	12214.22	12193.06	12205.88	12173.32	12303.73	12352.04	12379.45	12403.36	12394.42	12394.42
12.50°	12281.30	12285.82	12235.20	12240.35	12199.58	12183.65	12131.10	12087.21	12043.02	12080.77	12025.82	12148.85	12213.96	12266.75	12285.93	12313.53	12281.30
15.00°	12129.37	12133.49	12104.65	12099.66	12037.93	12017.14	11968.43	11924.06	11856.59	11928.84	11871.46	11981.87	12047.23	12090.90	12144.35	12128.44	12129.37
17.50°	11867.13	11945.54	11891.27	11885.96	11826.03	11772.66	11717.91	11667.19	11643.60	11669.33	11714.38	11734.47	11782.53	11901.09	11849.19	11912.92	11867.13
20.00°	11546.76	11589.69	11600.38	11595.58	11508.66	11417.84	11369.97	11299.87	11296.24	11341.00	11369.51	11481.22	11485.58	11482.40	11517.82	11505.49	11546.76
22.50°	11083.02	11148.81	11183.77	11157.21	11093.06	10992.98	10909.70	10858.26	10864.81	10892.52	10964.41	10979.42	11014.38	11025.21	11003.03	11053.33	11083.02
25.00°	10556.53	10637.92	10665.77	10679.65	10616.83	10484.11	10413.99	10342.26	10369.29	10378.47	10453.13	10469.43	10497.68	10482.20	10454.94	10513.65	10556.53
27.50°	9974.67	10097.14	10075.99	10138.69	10092.68	9924.68	9883.06	9790.84	9840.15	9820.81	9914.93	9908.71	9928.37	9929.30	9877.64	9958.72	9974.67
30.00°	9372.61	9326.94	9437.17	9412.05	9354.55	9312.99	9193.83	9209.27	9145.95	9243.33	9198.45	9325.33	9348.55	9213.26	9296.62	9227.15	9372.61
32.50°	8328.95	8476.74	8415.31	8431.72	8471.06	8376.89	8370.88	8289.95	8379.80	8263.21	8446.68	8282.53	8307.30	8486.31	8262.42	8473.44	8328.95
35.00°	7155.77	7245.00	7169.67	7281.80	7291.84	7155.82	7253.62	7123.43	7220.59	7132.77	7215.27	7219.78	7197.45	7210.71	7192.83	7210.69	7155.77
37.50°	5936.60	5906.97	5931.06	5932.54	5943.45	5939.82	5925.61	5933.94	5918.54	5936.66	5915.60	5949.43	5966.64	5923.07	5942.25	5909.18	5936.60
40.00°	4706.91	4743.82	4695.88	4704.12	4758.84	4727.64	4752.73	4730.26	4788.48	4720.40	4793.42	4705.87	4723.52	4795.88	4685.34	4779.27	4706.91
42.50°	3611.44	3619.28	3584.92	3598.19	3652.48	3627.04	3675.03	3645.55	3708.62	3653.67	3688.26	3650.36	3652.70	3678.27	3622.05	3656.66	3611.44
45.00°	2539.49	2717.45	2524.97	2693.16	2742.02	2597.75	2765.86	2623.48	2791.38	2622.97	2776.63	2667.76	2591.28	2735.45	2580.84	2722.85	2539.49
47.50°	2029.76	1853.04	1990.91	1961.14	1910.12	1992.02	1944.77	2027.51	1912.01	2068.93	1874.53	2063.16	2061.22	1860.98	2039.94	1822.31	2029.76
50.00°	1590.99	1645.81	1632.59	1600.57	1612.49	1617.31	1602.75	1617.90	1639.92	1603.76	1668.27	1562.47	1548.63	1656.07	1537.92	1645.42	1590.99
52.50°	1502.85	1514.20	1506.90	1511.23	1492.21	1456.71	1468.59	1458.54	1473.54	1481.36	1472.82	1471.35	1468.85	1468.68	1465.88	1477.98	1502.85
55.00°	1441.69	1445.65	1444.34	1437.11	1417.86	1393.32	1388.93	1390.45	1396.23	1404.17	1399.31	1383.61	1389.37	1398.86	1394.08	1412.83	1441.69
57.50°	1373.00	1381.30	1376.49	1372.52	1355.62	1327.36	1328.63	1320.65	1330.06	1328.24	1325.16	1306.43	1314.12	1327.04	1324.11	1346.60	1373.00
60.00°	1303.98	1307.63	1307.53	1300.83	1285.43	1260.44	1257.63	1250.35	1250.32	1252.43	1242.79	1226.93	1237.53	1245.42	1252.32	1272.79	1303.98
62.50°	1220.61	1233.58	1231.03	1225.42	1213.64	1186.88	1183.54	1169.67	1169.55	1165.02	1159.92	1141.46	1149.45	1162.89	1171.03	1197.47	1220.61
65.00°	1137.50	1151.74	1153.38	1149.97	1137.31	1111.28	1107.34	1086.61	1085.92	1077.15	1072.99	1057.32	1062.28	1076.98	1090.01	1114.37	1137.50
67.50°	1059.86	1070.28	1078.33	1074.51	1060.29	1037.64	1030.67	1007.97	1002.24	991.77	986.90	975.97	980.46	993.94	1010.12	1033.16	1059.86
70.00°	982.48	995.70	1003.56	1000.60	988.53	964.49	953.84	930.10	924.61	906.89	905.77	897.67	900.48	919.63	931.95	959.56	982.48
72.50°	907.88	921.50	931.51	927.25	917.29	893.26	876.97	857.49	847.22	834.32	826.44	824.86	828.75	846.01	859.29	886.46	907.88
75.00°	833.88	850.90	859.63	856.02	845.32	822.39	807.11	785.55	775.23	761.92	754.97	753.84	757.94	774.14	788.04	814.95	833.88
77.50°	764.08	780.69	787.96	785.42	773.31	754.32	738.09	716.51	703.84	691.58	685.26	685.52	690.33	704.92	720.50	744.77	764.08
80.00°	695.12	713.06	716.46	715.78	706.08	686.62	674.53	647.69	638.91	622.30	621.56	619.71	624.21	641.21	654.61	677.98	695.12
82.50°	630.47	646.23	652.09	646.36	639.11	622.14	611.37	588.49	575.15	561.10	559.56	557.13	562.25	579.40	592.30	613.78	630.47
85.00°	568.36	583.30	588.38	586.18	580.25	557.93	553.23	529.67	519.52	502.03	502.32	500.82	505.11	520.88	533.69	555.10	568.36
87.50°	516.19	524.59	534.88	527.62	522.38	509.11	495.44	481.52	466.36	454.38	450.89	451.39	459.25	470.25	481.77	502.11	516.19
90.00°	468.29	481.98	483.37	486.79	478.60	460.91	454.19	434.02	425.87	410.42	412.77	411.81	418.19	431.30	438.11	459.28	468.29
92.50°	433.93	442.34	449.64	448.18	436.20	426.98	413.59	400.88	388.49	381.77	378.87	381.45	386.57	397.14	407.18	422.21	433.93
95.00°	402.02	411.67	417.07	416.58	405.41	393.46	385.82	368.64	363.54	355.02	353.13	355.21	358.76	368.98	378.80	393.96	402.02
97.50°	376.40	383.41	391.81	385.54	375.92	369.57	358.63	346.30	339.60	334.61	330.16	332.31	337.23	345.15	353.81	368.15	376.40
100.00°	352.48	361.18	367.17	363.69	354.28	345.91	337.51	324.62	318.85	315.25	311.64	312.91	317.64	325.99	332.05	345.50	352.48
102.50°	332.22	340.30	345.37	342.17	333.50	325.01	317.12	307.57	299.44	298.71	295.26	295.93	300.73	309.06	313.92	325.83	332.22
105.00°	313.11	322.20	324.88	323.87	316.67	305.27	301.73	290.88	283.47	283.25	281.81	280.99	286.07	294.18	299.21	309.47	313.11

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	24867	24867	24867	24867	24127	24127	24127	24127	22748	22748	22748	21485	21485	21485	20326	20326	20326
	1	23012	22138	21355	20650	22313	21531	20825	20186	20393	19824	19303	19347	18894	18475	18384	18028	17696
	2	21360	19900	18694	17680	20709	19396	18298	17368	18448	17545	16765	17575	16837	16190	16767	16171	15641
	3	19871	18015	16579	15436	19272	17593	16276	15214	16798	15693	14783	16062	15141	14367	15380	14618	13966
	4	18530	16411	14860	13675	17982	16055	14621	13512	15382	14160	13192	14758	13721	12881	14177	13303	12579
	5	17318	15029	13431	12251	16819	14727	13239	12126	14154	12868	11882	13620	12512	11642	13123	12172	11409
	6	16220	13828	12223	11071	15766	13569	12066	10974	13078	11762	10781	12618	11470	10593	12189	11189	10408
	7	15225	12776	11189	10077	14812	12553	11059	9999	12128	10807	9844	11730	10563	9692	11356	10328	9543
	8	14321	11850	10295	9227	13946	11655	10186	9163	11285	9973	9037	10938	9768	8912	10611	9569	8789
	9	13499	11029	9515	8493	13158	10859	9422	8440	10535	9241	8334	10229	9066	8231	9941	8896	8128
	10	12752	10299	8830	7853	12441	10149	8751	7808	9863	8595	7719	9593	8443	7631	9338	8297	7544

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 m	411.7 lx	8.3 m
6.5 m	294.8 lx	9.8 m
7.5 m	221.4 lx	11.3 m
8.0 m	194.6 lx	12.0 m
10.0 m	124.5 lx	15.0 m
12.0 m	86.5 lx	18.0 m
14.0 m	63.5 lx	21.0 m
16.0 m	48.7 lx	24.0 m
20.0 m	31.1 lx	30.0 m
24.0 m	21.6 lx	36.0 m
28.0 m	15.9 lx	42.0 m

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	4735	4735	4735
45.00°	866	861	935
55.00°	524	525	515
65.00°	457	464	457
75.00°	388	400	394
85.00°	326	338	333

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	16.3	17.6	16.8	18.0	18.5	16.1	17.3	16.6	17.8	18.3
	3H	15.0	16.1	15.5	16.6	17.1	14.8	15.9	15.3	16.4	16.9
	4H	14.4	15.4	14.9	15.9	16.5	14.2	15.2	14.7	15.7	16.3
	6H	13.8	14.8	14.3	15.2	15.8	13.6	14.6	14.1	15.1	15.6
	8H	13.5	14.4	14.1	14.9	15.5	13.3	14.2	13.9	14.8	15.3
	12H	13.2	14.1	13.8	14.6	15.2	13.1	13.9	13.6	14.4	15.0
4H	2H	15.8	16.8	16.3	17.3	17.8	15.5	16.6	16.1	17.0	17.6
	3H	14.0	14.8	14.5	15.4	15.9	13.8	14.6	14.3	15.1	15.7
	4H	12.8	13.6	13.4	14.1	14.7	12.7	13.4	13.2	14.0	14.6
	6H	11.4	12.1	12.0	12.6	13.3	11.3	12.0	11.9	12.6	13.2
	8H	10.5	11.1	11.1	11.7	12.3	10.5	11.1	11.1	11.7	12.3
	12H	9.4	10.0	10.0	10.6	11.2	9.5	10.1	10.1	10.7	11.3
8H	4H	12.2	12.8	12.7	13.4	14.0	12.0	12.7	12.6	13.2	13.9
	6H	9.8	10.3	10.4	10.9	11.5	9.8	10.4	10.4	11.0	11.6
	8H	7.4	7.8	8.0	8.5	9.1	7.8	8.3	8.4	8.9	9.6
	12H	-6.2	-5.8	-5.6	-5.2	-4.5	2.7	3.1	3.3	3.7	4.4
12H	4H	12.0	12.6	12.6	13.2	13.8	11.9	12.5	12.5	13.1	13.7
	6H	9.3	9.8	9.9	10.4	11.0	9.4	9.9	10.0	10.5	11.2
	8H	5.9	6.3	6.5	6.9	7.6	6.7	7.1	7.3	7.7	8.4

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0