

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

DMD22GY 220L 35K xx PR22 BC22 CN xx

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

Test Number

SP-01566_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	20293
Efficacy	118.67 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.44
Two luminaires, plane 90°	1.43
Four luminaires	1.26

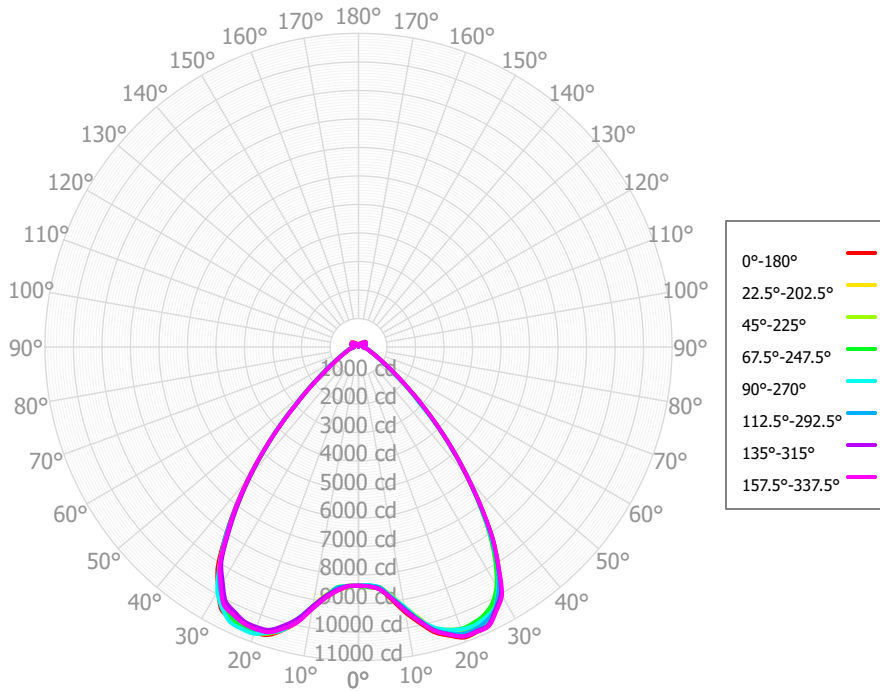
Full Beam Angle

0° - 180°	83°
90° - 270°	82°

IES File Header Contents

Keyword	Value
TEST	SP-01566_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 PR22 BC22 CN xx
LUMINAIRE	Nom 22" diam round high bay with prismatic refractor and conical lens
LAMPCAT	N/A
LAMP	N/A
OTHER	Beam Angle: 83 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°	854.62	4.21%	90.00° - 100.00°	211.65	1.04%
10.00° - 20.00°	2896.27	14.27%	100.00° - 110.00°	271.04	1.34%
20.00° - 30.00°	4813.00	23.72%	100.00° - 120.00°	543.30	2.68%
30.00° - 40.00°	4979.62	24.54%	120.00° - 130.00°	225.99	1.11%
40.00° - 50.00°	3027.94	14.92%	130.00° - 140.00°	145.41	0.72%
50.00° - 60.00°	1270.88	6.26%	140.00° - 150.00°	79.24	0.39%
60.00° - 70.00°	608.11	3.00%	150.00° - 160.00°	42.24	0.21%
70.00° - 80.00°	367.10	1.81%	160.00° - 170.00°	15.84	0.08%
80.00° - 90.00°	209.48	1.03%	170.00° - 180.00°	2.62	0.01%
0.00° - 90.00°	19027.02	93.76%	0.00° - 180.00°	20293.32	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°	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55	8376.55
2.50°	8425.48	8431.12	8429.70	8441.64	8359.15	8409.58	8389.69	8410.65	8426.44	8433.16	8384.29	8416.26	8399.98	8385.85	8407.59	8413.06	8421.11
5.00°	8538.08	8480.34	8471.90	8459.06	8482.39	8477.53	8545.45	8585.73	8587.92	8544.76	8500.39	8458.40	8487.40	8465.62	8536.00	8530.08	8531.11
7.50°	8942.01	8882.70	8805.00	8860.26	8833.24	8847.19	8808.46	8882.17	8883.41	8844.34	8775.11	8828.00	8864.36	8871.19	8887.99	8898.41	8941.11
10.00°	9456.13	9335.47	9252.41	9272.39	9256.15	9233.25	9230.62	9333.55	9320.97	9252.89	9216.17	9243.89	9289.92	9302.89	9363.60	9399.95	9451.11
12.50°	9918.80	9808.96	9738.53	9779.79	9789.97	9739.86	9754.67	9888.20	9885.53	9840.37	9801.40	9812.16	9787.83	9829.36	9829.45	9865.13	9911.11
15.00°	10369.24	10272.34	10234.11	10224.56	10179.38	10188.95	10117.05	10239.11	10290.58	10277.39	10221.60	10275.78	10282.45	10275.44	10291.62	10317.24	10369.24
17.50°	10619.62	10489.73	10449.30	10399.83	10412.04	10410.71	10407.42	10495.13	10593.73	10538.33	10539.77	10515.64	10505.54	10535.51	10566.19	10583.27	10619.62
20.00°	10846.16	10679.37	10628.34	10519.91	10536.87	10553.58	10453.10	10534.45	10659.89	10641.04	10647.37	10643.83	10704.17	10700.27	10797.29	10807.87	10846.16
22.50°	10830.14	10681.15	10605.30	10491.36	10577.56	10501.11	10428.78	10508.29	10622.50	10612.43	10666.28	10605.13	10704.75	10712.09	10793.46	10820.48	10830.14
25.00°	10786.93	10623.21	10560.31	10388.38	10489.68	10387.84	10262.50	10374.53	10522.06	10490.45	10500.50	10483.73	10647.53	10606.16	10762.82	10810.48	10786.93
27.50°	10420.49	10341.83	10246.29	10151.00	10330.69	10170.97	10073.06	10222.32	10404.01	10314.13	10284.36	10273.82	10352.63	10367.25	10401.97	10462.93	10420.49
30.00°	9981.62	9917.42	9861.45	9689.52	9798.75	9738.43	9531.91	9662.16	9839.80	9769.03	9688.50	9757.75	9906.57	9843.86	10003.21	10071.34	9981.62
32.50°	9110.73	9148.04	9039.45	8941.22	9128.60	9048.12	8958.12	9065.01	9205.26	9076.43	9036.65	9009.56	9067.50	9092.73	9133.51	9155.32	9110.73
35.00°	8181.45	8224.30	8155.29	8025.99	8116.16	8140.44	7949.58	8058.38	8158.57	8053.39	8025.84	8041.75	8126.57	8121.37	8218.12	8205.27	8181.45
37.50°	7055.92	7047.41	7052.82	6959.31	7026.19	7048.50	6937.99	7044.99	7087.54	6945.93	6998.08	6958.00	7007.29	7024.83	7039.01	7072.90	7055.92
40.00°	5959.42	5917.83	5959.90	5907.28	5946.76	5953.81	5902.50	5973.12	5991.67	5898.63	5947.80	5906.14	5924.40	5942.90	5896.41	5960.73	5959.42
42.50°	4926.01	4842.78	4888.88	4864.76	4868.52	4857.46	4871.69	4909.69	4905.05	4859.37	4905.77	4865.68	4886.74	4866.66	4873.75	4912.66	4926.01
45.00°	3944.95	3860.56	3897.56	3880.80	3872.99	3875.33	3859.66	3882.32	3887.95	3893.70	3923.30	3909.46	3918.73	3922.41	3908.96	3928.78	3944.95
47.50°	3043.33	2955.34	3031.14	2922.88	2903.63	2940.86	2946.65	2946.72	2940.99	2947.06	3005.45	2971.44	3012.12	3010.04	3069.70	3078.09	3043.33
50.00°	2312.34	2276.87	2320.25	2276.15	2288.20	2281.94	2286.65	2257.17	2275.24	2314.58	2334.69	2318.36	2317.24	2367.47	2346.36	2353.93	2312.34
52.50°	1766.66	1730.22	1781.11	1718.26	1712.90	1695.68	1729.46	1675.35	1693.24	1718.79	1747.79	1695.33	1753.74	1757.83	1795.97	1813.87	1766.66
55.00°	1363.26	1361.48	1385.38	1365.89	1363.04	1348.49	1352.35	1287.25	1321.01	1356.34	1363.23	1350.04	1366.03	1397.28	1368.73	1395.30	1363.26
57.50°	1069.37	1063.80	1103.51	1046.95	1051.62	1034.82	1057.00	992.29	1018.26	1034.71	1053.79	1020.59	1053.91	1053.61	1073.09	1101.66	1069.37
60.00°	862.24	871.74	899.68	870.57	866.53	870.94	861.94	814.40	835.09	859.49	869.40	859.16	864.79	870.17	853.84	884.10	862.24
62.50°	701.67	706.03	739.14	704.85	705.42	715.67	706.00	673.74	686.28	705.35	716.51	706.50	710.05	697.51	692.42	721.91	701.67
65.00°	592.33	598.47	628.44	606.10	595.49	608.19	584.09	566.73	578.94	599.51	600.46	600.48	608.22	590.39	577.94	606.49	592.33
67.50°	501.65	498.66	536.61	512.49	507.12	507.38	500.43	488.39	498.39	511.37	515.92	506.40	514.49	494.76	488.59	515.07	501.65
70.00°	441.31	446.76	474.54	458.95	450.47	452.38	440.53	428.58	441.11	451.39	457.88	449.28	457.80	438.25	427.86	450.78	441.31
72.50°	387.69	396.57	419.41	406.00	399.28	399.68	392.48	378.42	390.33	396.35	404.32	394.85	402.99	384.24	377.34	395.87	387.69
75.00°	340.04	348.90	366.64	355.43	353.84	355.47	349.44	332.53	343.53	346.85	353.39	345.99	349.46	335.79	331.46	346.29	340.04
77.50°	293.04	301.62	314.15	306.26	306.62	309.98	301.12	287.58	296.61	297.45	303.20	297.00	296.61	288.06	286.58	297.80	293.04
80.00°	251.41	256.80	268.88	260.67	258.03	261.46	251.35	242.91	249.64	248.14	253.31	247.82	248.75	241.42	245.65	253.58	251.41
82.50°	211.03	215.88	224.62	220.31	219.67	218.95	212.64	206.86	211.94	208.89	212.90	208.48	205.57	204.07	205.14	209.76	211.03
85.00°	186.65	188.90	192.84	189.09	186.70	186.21	175.57	172.21	176.70	175.31	174.90	179.21	180.76	176.76	181.28	187.09	186.65
87.50°	166.91	170.65	166.66	171.23	173.90	167.97	164.13	162.76	164.43	163.26	163.67	164.35	164.45	164.57	159.89	166.66	166.91
90.00°	172.50	172.38	173.01	169.73	168.17	166.32	155.03	155.51	155.56	159.51	156.00	159.95	169.05	164.13	167.11	170.48	172.50
92.50°	180.64	180.22	181.37	177.50	180.70	175.47	172.41	174.81	173.44	173.60	172.14	172.10	177.76	174.16	175.82	176.67	180.64
95.00°	196.83	197.62	196.54	193.43	197.17	193.53	189.62	193.82	192.35	191.95	189.23	192.71	193.40	189.97	192.43	194.80	196.83
97.50°	213.53	214.24	212.98	211.10	215.67	210.97	205.65	210.63	207.41	208.76	207.54	210.29	210.47	207.35	209.58	212.51	213.53
100.00°	231.32	229.98	232.16	229.84	234.37	228.04	222.11	227.61	222.89	225.39	225.83	226.84	229.25	225.32	228.44	228.96	231.32
102.50°	247.61	246.03	249.14	245.71	251.88	242.29	240.20	245.25	241.30	242.34	243.98	242.33	246.15	244.91	246.32	245.05	247.61
105.00°	261.71	262.32	262.82	260.36	268.35	255.41	255.65	259.92	258.01	258.91	260.27	257.59	261.45	264.86	262.16	260.41	261.71

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	23857	23857	23857	23857	23155	23155	23155	23155	21845	21845	21845	20646	20646	20646	19545	19545	19545
	1	22302	21558	20891	20291	21649	20986	20388	19846	19916	19438	18999	18933	18555	18205	18027	17732	17457
	2	20776	19482	18412	17514	20171	19009	18038	17215	18120	17324	16637	17301	16654	16086	16544	16023	15560
	3	19343	17657	16352	15312	18785	17261	16065	15101	16515	15514	14690	15825	14993	14293	15185	14499	13911
	4	18018	16058	14624	13528	17506	15724	14398	13373	15093	13964	13070	14507	13550	12775	13962	13155	12488
	5	16801	14657	13160	12054	16332	14373	12979	11937	13834	12629	11706	13332	12295	11480	12864	11974	11260
	6	15688	13426	11908	10818	15261	13182	11760	10726	12719	11474	10546	12286	11199	10369	11881	10935	10195
	7	14674	12342	10829	9769	14284	12131	10707	9696	11729	10469	9552	11354	10240	9410	11001	10020	9270
	8	13752	11384	9894	8870	13396	11200	9791	8811	10850	9591	8693	10522	9398	8577	10213	9211	8462
	9	12913	10535	9078	8094	12589	10375	8991	8045	10068	8821	7947	9779	8656	7850	9506	8496	7755
	10	12151	9782	8363	7419	11854	9640	8289	7378	9369	8142	7295	9113	8000	7214	8871	7862	7133

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 m	276.9 lx	9.7 m
6.5 m	198.3 lx	11.4 m
7.5 m	148.9 lx	13.2 m
8.0 m	130.9 lx	14.1 m
10.0 m	83.8 lx	17.6 m
12.0 m	58.2 lx	21.1 m
14.0 m	42.7 lx	24.6 m
16.0 m	32.7 lx	28.1 m
20.0 m	20.9 lx	35.1 m
24.0 m	14.5 lx	42.2 m
28.0 m	10.7 lx	49.2 m

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	3185	3185	3185
45.00°	1345	1328	1320
55.00°	495	503	495
65.00°	238	253	239
75.00°	158	171	165
85.00°	107	111	107

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	14.9	16.0	15.3	16.5	16.9	14.6	15.7	15.0	16.2	16.6
	3H	14.3	15.4	14.8	15.8	16.3	14.0	15.0	14.5	15.5	16.0
	4H	14.1	15.1	14.6	15.6	16.1	13.8	14.7	14.3	15.2	15.7
	6H	14.0	14.9	14.5	15.3	15.9	13.6	14.5	14.1	15.0	15.5
	8H	13.9	14.7	14.4	15.2	15.8	13.5	14.3	14.0	14.9	15.4
	12H	13.8	14.6	14.3	15.1	15.7	13.4	14.2	14.0	14.7	15.3
4H	2H	14.5	15.4	15.0	15.9	16.4	14.2	15.1	14.7	15.6	16.1
	3H	13.8	14.6	14.3	15.1	15.7	13.5	14.3	14.0	14.8	15.3
	4H	13.5	14.3	14.1	14.8	15.4	13.2	13.9	13.7	14.4	15.0
	6H	13.3	13.9	13.9	14.5	15.1	12.9	13.5	13.5	14.1	14.7
	8H	13.2	13.8	13.8	14.3	15.0	12.8	13.4	13.3	13.9	14.5
	12H	13.1	13.6	13.7	14.2	14.8	12.7	13.2	13.3	13.8	14.4
8H	4H	13.3	13.9	13.9	14.5	15.1	12.9	13.5	13.5	14.1	14.7
	6H	13.0	13.5	13.6	14.1	14.7	12.6	13.1	13.2	13.7	14.3
	8H	12.9	13.3	13.5	13.9	14.6	12.4	12.9	13.1	13.5	14.1
	12H	12.7	13.1	13.4	13.7	14.4	12.3	12.7	12.9	13.3	14.0
12H	4H	13.3	13.8	13.8	14.4	15.0	12.9	13.4	13.4	14.0	14.6
	6H	12.9	13.4	13.6	14.0	14.6	12.5	12.9	13.1	13.5	14.2
	8H	12.8	13.2	13.4	13.8	14.5	12.3	12.7	13.0	13.3	14.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0