Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

DMD22GY 220L 35K xx PR22 xx

Nom 22" diam round high bay with prismatic refractor

Test Number

SP-01566

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

Lumen Output

Output Lumens	21210
Efficacy	124.03 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.11
Two luminaires, plane 90°	1.11
Four luminaires	0.99

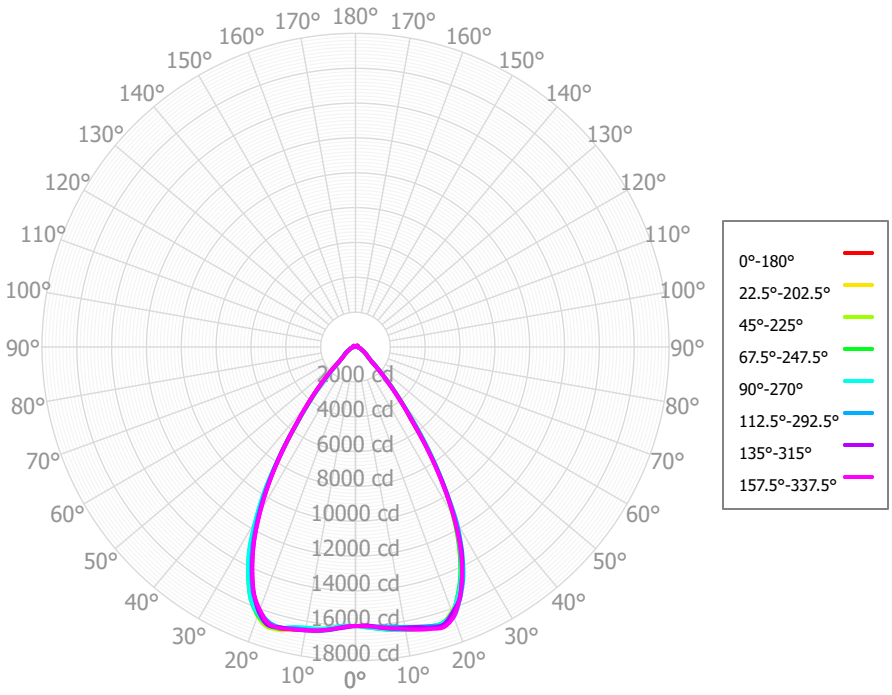
Full Beam Angle

0° - 180°	67°
90° - 270°	68°

IES File Header Contents

Keyword	Value
TEST	SP-01566
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 xx
LUMINAIRE	Nom 22" diam round high bay with prismatic refractor
LAMPCAT	N/A
LAMP	N/A
OTHER	Beam Angle: 67 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°	1580.48	7.45%	90.00° - 100.00°	108.02	0.51%
10.00° - 20.00°	4697.62	22.15%	100.00° - 110.00°	136.87	0.65%
20.00° - 30.00°	6466.97	30.49%	100.00° - 120.00°	264.39	1.25%
30.00° - 40.00°	4603.01	21.70%	120.00° - 130.00°	97.74	0.46%
40.00° - 50.00°	1695.00	7.99%	130.00° - 140.00°	61.58	0.29%
50.00° - 60.00°	697.69	3.29%	140.00° - 150.00°	35.57	0.17%
60.00° - 70.00°	438.71	2.07%	150.00° - 160.00°	19.52	0.09%
70.00° - 80.00°	286.05	1.35%	160.00° - 170.00°	7.17	0.03%
80.00° - 90.00°	148.72	0.70%	170.00° - 180.00°	1.43	0.01%
0.00° - 90.00°	20614.23	97.19%	0.00° - 180.00°	21209.63	100.00%

SPECTRUM LIGHTING INC.

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
0.00°	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	16022.38	160
2.50°	16027.74	16087.11	16060.47	16119.55	16123.24	16098.01	16137.60	16085.41	16089.33	16064.04	16088.16	16047.38	16016.04	16045.74	16006.58	16059.34	160
5.00°	16200.65	16203.61	16241.73	16244.66	16246.09	16306.22	16275.02	16273.13	16213.60	16246.78	16198.91	16230.43	16187.96	16110.30	16173.78	16154.72	162
7.50°	16359.55	16363.58	16385.55	16376.84	16378.83	16433.45	16427.45	16422.19	16357.32	16389.96	16342.63	16346.68	16314.38	16208.78	16311.58	16298.19	163
10.00°	16445.72	16478.41	16446.25	16491.70	16478.52	16468.80	16528.12	16504.35	16490.22	16475.67	16470.88	16403.45	16362.38	16320.89	16374.44	16455.41	164
12.50°	16541.09	16550.50	16525.76	16579.71	16551.63	16544.24	16599.61	16601.27	16619.71	16611.23	16589.13	16540.72	16469.34	16449.45	16472.99	16623.82	165
15.00°	16696.48	16600.66	16652.34	16627.77	16598.33	16669.97	16671.13	16726.69	16680.44	16827.16	16718.01	16758.40	16689.62	16585.94	16676.87	16758.83	166
17.50°	16780.12	16627.52	16625.30	16605.88	16621.19	16555.81	16742.67	16631.15	16716.37	16799.41	16854.53	16717.88	16715.16	16733.20	16725.51	16863.79	167
20.00°	16245.65	16257.02	16153.55	16277.27	16227.45	16103.15	16212.47	16057.98	16141.79	16334.16	16426.65	16392.37	16321.51	16493.56	16248.76	16484.20	162
22.50°	15654.94	15412.84	15498.68	15349.58	15411.63	15356.40	15256.89	15286.49	15317.75	15623.20	15550.21	15707.21	15711.94	15671.55	15631.92	15615.45	156
25.00°	14408.87	14331.58	14236.82	14270.27	14351.53	14149.26	14040.72	14023.73	14132.79	14411.18	14392.52	14583.09	14569.86	14642.52	14465.48	14478.33	144
27.50°	13130.13	12937.58	12884.98	12859.16	13017.90	12796.02	12620.52	12646.99	12778.92	13031.83	12983.88	13189.60	13263.12	13261.69	13180.82	13041.78	131
30.00°	11279.66	11320.45	11180.05	11304.83	11420.21	11184.27	11022.32	10950.18	11118.48	11262.65	11308.78	11426.62	11487.17	11618.59	11336.52	11330.32	112
32.50°	9422.91	9377.17	9416.44	9391.03	9495.55	9428.65	9267.62	9207.92	9294.76	9419.93	9370.91	9509.56	9622.82	9478.62	9449.53	9274.52	942
35.00°	7324.92	7448.81	7381.99	7497.08	7573.39	7388.83	7471.32	7319.85	7451.93	7383.72	7446.94	7358.14	7470.40	7423.64	7319.52	7290.23	732
37.50°	5227.26	5545.07	5458.63	5659.68	5654.74	5560.68	5634.60	5562.78	5597.76	5526.43	5538.09	5488.05	5484.06	5548.85	5293.71	5405.12	522
40.00°	4046.57	3952.43	4167.95	4009.09	4072.10	4209.47	4164.18	4301.77	4206.95	4204.92	4010.63	4101.22	4123.22	3920.44	4027.00	3862.71	404
42.50°	2865.87	2931.17	2931.29	2979.61	3008.27	2981.62	3093.05	3101.31	3121.80	2978.94	2949.67	2887.47	2857.29	2890.04	2805.35	2855.76	286
45.00°	2063.09	2046.78	2074.84	2042.97	2099.01	2067.25	2184.58	2176.32	2218.51	2088.45	2068.44	2005.33	2020.49	1988.35	2009.37	2003.77	206
47.50°	1269.85	1443.38	1282.57	1463.68	1455.09	1324.16	1472.14	1352.64	1450.28	1323.54	1434.31	1323.80	1282.23	1447.21	1253.50	1421.06	126
50.00°	1049.23	987.28	1071.71	968.85	993.76	1075.19	1007.37	1080.33	1019.47	1071.57	1003.80	1080.08	1076.64	1006.51	1056.06	997.33	104
52.50°	860.86	876.80	869.54	865.31	887.81	863.62	878.01	831.95	866.00	846.88	883.73	876.47	885.08	887.27	862.71	881.81	860
55.00°	757.31	773.77	781.85	764.94	788.38	778.16	767.75	743.39	748.70	753.87	774.50	771.42	789.73	773.33	762.57	773.08	757
57.50°	661.33	690.92	694.24	682.11	703.40	692.57	686.18	655.41	664.26	663.31	683.64	670.42	694.58	678.99	662.51	679.34	661
60.00°	570.49	605.69	608.36	598.72	615.68	606.43	601.02	572.54	579.87	587.46	595.28	580.68	601.13	585.86	567.06	586.59	570
62.50°	480.26	513.17	522.89	511.47	521.11	522.81	509.88	491.18	495.52	512.25	511.75	496.34	509.50	498.11	471.62	496.30	480
65.00°	418.90	430.27	460.62	428.59	437.53	451.06	430.60	427.94	428.61	441.95	438.67	429.53	440.62	416.79	410.25	417.21	418
67.50°	361.93	381.46	398.36	385.61	385.09	384.99	373.73	366.22	381.65	374.70	388.07	370.35	373.46	369.37	349.28	370.38	361
70.00°	327.32	335.93	365.94	343.50	338.32	351.12	327.07	332.34	343.03	338.62	343.47	339.78	339.84	324.00	319.62	327.96	327
72.50°	296.99	304.23	333.77	312.46	310.31	316.95	302.01	298.52	314.97	302.59	313.42	308.20	306.15	291.75	291.16	300.09	296
75.00°	264.03	272.13	294.41	281.12	280.29	280.50	274.06	267.18	282.70	267.23	280.53	272.04	269.76	259.08	256.78	269.59	264
77.50°	230.46	237.98	254.79	243.63	242.55	243.64	239.08	235.84	244.54	231.70	239.73	235.31	233.37	222.80	221.99	228.84	230
80.00°	196.09	203.51	212.63	206.19	205.56	202.90	202.61	197.03	205.14	191.69	199.27	195.50	193.40	186.81	187.66	189.47	196
82.50°	161.51	167.19	170.31	170.53	171.94	162.96	161.99	158.17	163.79	151.85	159.90	157.12	153.41	154.22	153.38	156.43	161
85.00°	135.07	132.65	138.11	134.87	140.07	133.44	126.53	130.30	130.07	127.41	124.42	128.49	130.18	122.63	127.37	125.87	135
87.50°	111.18	112.13	106.86	114.83	117.83	104.88	107.50	102.77	109.78	102.97	103.52	101.96	107.47	109.50	102.48	108.86	111
90.00°	99.68	93.66	97.28	94.93	98.29	97.86	92.76	95.96	95.15	94.87	86.69	93.66	97.39	96.72	94.00	94.31	99.6
92.50°	92.71	97.55	90.53	96.05	97.82	90.99	93.77	90.37	91.62	87.01	87.79	86.41	88.10	96.69	88.28	96.92	92.7
95.00°	98.09	102.07	100.94	97.91	98.48	92.69	95.80	95.96	91.09	94.23	90.29	91.50	92.12	96.66	93.44	100.36	98.0
97.50°	108.59	116.47	114.15	107.06	109.47	94.38	102.16	102.58	97.27	102.12	100.34	96.74	97.35	101.71	100.81	111.18	108
100.00°	122.05	130.53	123.94	116.66	120.29	103.99	109.57	112.86	105.00	114.18	110.82	104.99	111.31	106.78	108.47	121.77	122
102.50°	136.87	135.01	133.04	125.67	129.07	113.69	122.49	123.59	116.74	126.56	124.20	113.31	126.38	113.22	116.21	129.43	136
105.00°	142.49	139.46	136.87	134.62	137.51	123.16	134.04	129.45	126.56	131.64	136.27	124.90	132.57	119.70	126.67	136.79	142

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	25108	25108	25108	25108	24455	24455	24455	24455	23235	23235	23235	22120	22120	22120	21096	21096	21096	20614
	1	23698	23012	22397	21843	23102	22490	21938	21438	21513	21071	20666	20616	20266	19943	19789	19517	19262	19071
	2	22320	21129	20146	19319	21776	20706	19811	19053	19909	19175	18541	19175	18577	18051	18496	18014	17584	17608
	3	21018	19467	18266	17310	20522	19118	18015	17128	18460	17535	16774	17852	17080	16432	17288	16649	16102	16282
	4	19802	17995	16673	15663	19350	17705	16480	15534	17156	16110	15281	16647	15757	15036	16173	15420	14797	15090
RCR	5	18670	16688	15303	14281	18260	16444	15152	14186	15982	14860	14001	15551	14581	13820	15150	14314	13643	14018
	6	17621	15521	14112	13100	17248	15314	13991	13029	14921	13757	12890	14554	13533	12753	14211	13317	12618	13052
	7	16650	14476	13066	12078	16311	14299	12968	12024	13962	12778	11916	13646	12595	11810	13350	12418	11705	12181
	8	15753	13537	12143	11185	15445	13384	12062	11142	13093	11904	11056	12819	11752	10972	12562	11605	10890	11393
	9	14925	12690	11321	10396	14644	12558	11254	10362	12304	11122	10293	12065	10994	10225	11840	10871	10159	10681
	10	14162	11926	10588	9697	13906	11810	10530	9668	11587	10419	9612	11377	10310	9557	11179	10205	9502	10035

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 m	529.7 lx	7.3 m
6.5 m	379.2 lx	8.7 m
7.5 m	284.8 lx	10.0 m
8.0 m	250.3 lx	10.7 m
10.0 m	160.2 lx	13.3 m
12.0 m	111.3 lx	16.0 m
14.0 m	81.7 lx	18.7 m
16.0 m	62.6 lx	21.3 m
20.0 m	40.1 lx	26.7 m
24.0 m	27.8 lx	32.0 m
28.0 m	20.4 lx	37.3 m

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	6092	6092	6092
45.00°	703	707	715
55.00°	275	284	286
65.00°	168	185	176
75.00°	123	137	130
85.00°	78	79	80

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	11.9	12.9	12.3	13.3	13.7	11.9	13.0	12.3	13.4	13.7
	3H	11.2	12.1	11.6	12.5	13.0	11.2	12.1	11.6	12.5	13.0
	4H	10.9	11.8	11.4	12.2	12.7	10.9	11.8	11.4	12.2	12.7
	6H	10.7	11.5	11.1	11.9	12.4	10.7	11.5	11.1	11.9	12.4
	8H	10.6	11.3	11.1	11.8	12.3	10.6	11.3	11.1	11.8	12.3
	12H	10.5	11.2	11.0	11.7	12.2	10.5	11.2	11.0	11.6	12.1
4H	2H	11.4	12.3	11.9	12.7	13.2	11.4	12.3	11.9	12.7	13.2
	3H	10.5	11.3	11.0	11.7	12.2	10.5	11.3	11.0	11.7	12.2
	4H	10.1	10.8	10.6	11.3	11.8	10.1	10.8	10.6	11.3	11.8
	6H	9.8	10.4	10.3	10.9	11.4	9.8	10.3	10.3	10.8	11.4
	8H	9.6	10.2	10.2	10.7	11.2	9.6	10.1	10.1	10.6	11.2
	12H	9.5	10.0	10.0	10.5	11.0	9.5	9.9	10.0	10.5	11.0
8H	4H	9.8	10.4	10.4	10.9	11.4	9.8	10.4	10.4	10.9	11.4
	6H	9.4	9.8	10.0	10.4	10.9	9.4	9.8	9.9	10.3	10.9
	8H	9.2	9.6	9.8	10.1	10.7	9.2	9.5	9.7	10.1	10.7
	12H	9.0	9.3	9.6	9.9	10.5	9.0	9.3	9.5	9.9	10.5
12H	4H	9.8	10.2	10.3	10.8	11.3	9.8	10.2	10.3	10.7	11.3
	6H	9.3	9.7	9.9	10.2	10.8	9.3	9.7	9.9	10.2	10.8
	8H	9.1	9.4	9.6	10.0	10.6	9.1	9.4	9.6	9.9	10.6

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0