



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-8-00-L8-835U-L8-835D-AF-(L5U-L5D)-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 20659.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 07-02-2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836
 [LUMINAIRE] 8' DIRECT/INDIRECT SUSPENDED LUMINAIRE
 [MORE] WITH FROSTED ACRYLIC LENS TOP/BTM
 [LUMCAT] MX4UD-8-00-L8-835U-L8-835D-AF-(L5U-L5D)-DIM-UNV
 [LAMPCAT] HLM 80 CRI, 3500K CCT
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] Indoor, Architectural, Classroom, Direct-Indirect
 [_SEARCH_MOUNTING] Suspended

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	8124
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	129
Total Luminaire Watts	63
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	8.00 ft
Luminous Width (90-270)	0.32 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	5252	5136	5007
55	4785	4625	4465
65	4056	3935	3766
75	3075	2996	2996
85	1639	1756	1522

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	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	1498.813	1498.813	1498.813	1498.813	1498.813
5	1515.708	1493.986	1486.745	1481.918	1479.504
10	1484.331	1460.196	1455.369	1445.715	1445.715
15	1438.474	1414.339	1404.684	1397.444	1392.617
20	1370.895	1349.173	1339.519	1332.278	1325.037
25	1291.248	1269.526	1262.285	1250.217	1245.390
30	1194.706	1180.225	1172.984	1156.089	1141.608
35	1090.923	1088.510	1076.442	1057.134	1045.066
40	989.554	972.659	970.246	950.938	941.283
45	878.531	866.463	859.223	835.087	837.501
50	762.681	755.440	748.200	728.891	721.651
55	649.244	642.004	627.522	613.041	605.800
60	523.740	521.326	504.431	497.191	489.950
65	405.476	403.062	393.408	386.168	376.513
70	299.280	292.039	279.971	284.799	279.971
75	188.257	183.430	183.430	188.257	183.430
80	94.128	103.783	103.783	103.783	96.542
85	33.790	36.203	36.203	36.203	31.376
90	2.414	2.414	2.414	2.414	2.414
95	55.512	57.925	55.512	48.271	48.271
100	130.332	127.918	127.918	118.264	108.610
105	224.460	224.460	212.392	200.324	183.430
110	352.378	345.137	323.415	313.761	296.866
115	477.882	465.815	451.333	427.198	407.889
120	632.349	632.349	593.733	567.184	552.702
125	786.816	798.884	745.786	728.891	704.756
130	953.351	963.005	917.148	890.599	871.290
135	1105.405	1090.923	1076.442	1064.374	1059.547
140	1247.804	1245.390	1238.150	1221.255	1226.082
145	1370.895	1373.308	1366.068	1354.000	1373.308
150	1484.331	1489.159	1486.745	1469.850	1493.986
155	1571.219	1578.460	1578.460	1566.392	1590.527
160	1638.798	1653.280	1646.039	1638.798	1653.280
165	1694.310	1708.791	1694.310	1694.310	1701.551
170	1725.686	1742.581	1728.100	1725.686	1720.859
175	1749.822	1764.303	1749.822	1747.408	1735.340
180	1754.649	1754.649	1754.649	1754.649	1754.649

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Zone	Lumens	%Lamp	%Fixt
0-20	537.72	N.A.	6.60
0-30	1118.69	N.A.	13.80
0-40	1788.73	N.A.	22.00
0-60	3009.1	N.A.	37.00
0-80	3600.38	N.A.	44.30
0-90	3647.93	N.A.	44.90
10-90	3506.79	N.A.	43.20
20-40	1251.01	N.A.	15.40
20-50	1910.88	N.A.	23.50
40-70	1611.55	N.A.	19.80
60-80	591.29	N.A.	7.30
70-80	200.10	N.A.	2.50
80-90	47.54	N.A.	0.60
90-110	292.97	N.A.	3.60
90-120	742.45	N.A.	9.10
90-130	1419.13	N.A.	17.50
90-150	3105.36	N.A.	38.20
90-180	4476.01	N.A.	55.10
110-180	4183.04	N.A.	51.50
0-180	8123.94	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	141.14
10-20	396.58
20-30	580.96
30-40	670.05
40-50	659.87
50-60	560.49
60-70	391.18
70-80	200.10
80-90	47.54
90-100	63.32
100-110	229.65
110-120	449.48
120-130	676.68
130-140	832.45
140-150	853.79
150-160	725.15
160-170	479.06
170-180	166.43

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	106	106	106	106	97	97	97	97	81	81	81	65	65	65	51	51	51	45
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44	38
2	88	81	75	70	81	75	69	65	62	59	55	51	48	46	40	39	37	32
3	81	71	64	58	74	66	59	54	55	50	47	45	42	39	36	34	32	27
4	74	63	55	50	67	58	51	46	49	44	40	40	37	34	32	30	27	24
5	68	56	48	42	62	52	45	40	44	38	34	36	32	29	29	26	24	21
6	62	51	43	37	57	47	40	35	39	34	30	33	29	26	26	23	21	18
7	58	46	38	32	53	42	35	30	36	30	26	30	26	23	24	21	19	16
8	54	41	34	29	49	38	32	27	33	27	23	27	23	20	22	19	17	14
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	20	17	15	13
10	47	35	28	23	43	32	26	21	28	22	19	23	19	16	19	16	14	12

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UGR TABLE - CORRECTED

Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size UGR Viewed Crosswise

X=2H	Y=2H	13.1	13.9	14.1	14.9	16.3	12.7	13.5	13.7	14.6	15.9
	3H	14.6	15.3	15.6	16.3	17.7	14.2	14.9	15.2	16.0	17.3
	4H	15.0	15.7	16.1	16.7	18.1	14.7	15.4	15.7	16.4	17.8
	6H	15.3	15.9	16.3	16.9	18.3	15.0	15.6	16.0	16.7	18.0
	8H	15.3	15.9	16.4	17.0	18.4	15.1	15.7	16.1	16.7	18.1
	12H	15.3	15.9	16.4	17.0	18.4	15.1	15.6	16.1	16.7	18.1

UGR Viewed Endwise

4H	2H	13.5	14.2	14.5	15.2	16.6	13.2	13.9	14.3	14.9	16.3
	3H	15.2	15.7	16.2	16.8	18.2	14.9	15.5	15.9	16.5	17.9
	4H	15.7	16.3	16.8	17.3	18.7	15.5	16.0	16.6	17.1	18.5
	6H	16.1	16.6	17.2	17.6	19.0	15.9	16.4	17.0	17.4	18.8
	8H	16.2	16.6	17.2	17.7	19.1	16.0	16.4	17.1	17.5	18.9
	12H	16.2	16.6	17.3	17.7	19.1	16.0	16.4	17.1	17.5	18.9

8H	4H	15.9	16.3	16.9	17.4	18.8	15.7	16.1	16.7	17.2	18.6
	6H	16.4	16.7	17.4	17.8	19.2	16.2	16.5	17.3	17.6	19.1
	8H	16.5	16.8	17.6	17.9	19.3	16.4	16.7	17.4	17.7	19.2
	12H	16.6	16.9	17.7	17.9	19.4	16.4	16.7	17.5	17.8	19.3

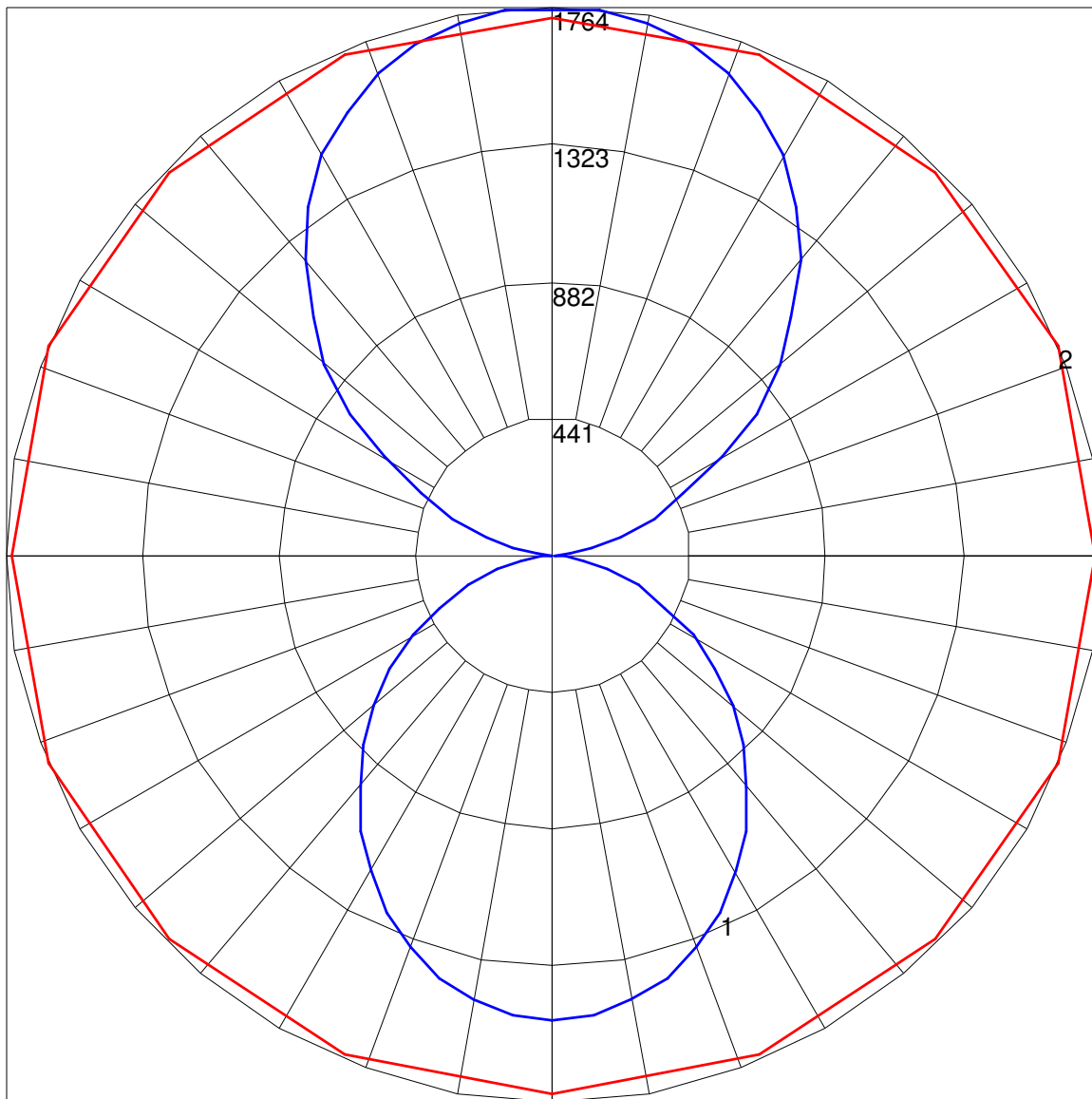
12H	4H	15.9	16.3	16.9	17.3	18.7	15.7	16.0	16.7	17.1	18.5
	6H	16.4	16.7	17.5	17.8	19.2	16.2	16.5	17.3	17.6	19.0
	8H	16.6	16.8	17.7	17.9	19.4	16.4	16.7	17.5	17.8	19.2

Maximum UGR = 19.4

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POLAR GRAPH



Maximum Candela = 1764.303 Located At Horizontal Angle = 22.5, Vertical Angle = 175

1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)

2 - Horizontal Cone Through Vertical Angle (175) (Through Max. Cd.)