



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L8-840U-L8-840D-A-F-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST]GEN FROM BALLABS TEST NO. 20663.0  
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC  
[ISSUEDATE] 03-24-2020  
[MANUFAC] WILLIAMS INDOOR  
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836  
[LUMINAIRE] 4' DIRECT/INDIRECT SUSPENDED LUMINAIRE  
[MORE] WITH FROSTED ACRYLIC LENS TOP/BTM  
[LUMCAT] MX4UD-4-L8-840U-L8-840D-AF  
[LAMPCAT] HLM 80 CRI, 4000K 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	6933
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	116
Total Luminaire Watts	59.8
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)	0.32 ft
Luminous Width (90-270)	4.00 ft
Luminous Height	0.00 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8722	8697	8399
55	8094	7911	7545
65	6965	6799	6550
75	5415	5145	4874
85	2814	2412	1809

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**CANDELA TABULATION**

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>
<b>0</b>	1189.515	1189.515	1189.515	1189.515	1189.515	1189.515	1189.515	1189.515	1189.515
<b>5</b>	1210.238	1201.948	1197.804	1189.515	1168.791	1166.719	1166.719	1175.008	1179.153
<b>10</b>	1193.659	1187.442	1181.225	1168.791	1143.923	1141.851	1141.851	1152.213	1156.357
<b>15</b>	1156.357	1154.285	1145.996	1135.634	1123.200	1112.839	1106.622	1110.766	1112.839
<b>20</b>	1116.983	1110.766	1104.549	1090.043	1069.320	1061.030	1056.886	1058.958	1063.103
<b>25</b>	1056.886	1050.669	1048.596	1032.018	1013.367	1007.150	1003.005	996.788	1003.005
<b>30</b>	990.571	982.282	971.920	967.776	951.197	938.763	932.546	926.329	928.402
<b>35</b>	905.606	901.461	899.389	884.883	872.449	853.798	853.798	847.581	845.509
<b>40</b>	820.641	820.641	818.568	801.990	787.483	779.194	772.977	760.543	762.616
<b>45</b>	729.458	721.169	727.386	714.952	702.518	694.229	685.940	675.578	652.782
<b>50</b>	623.770	629.987	621.697	613.408	611.336	607.191	598.902	586.468	574.034
<b>55</b>	549.166	532.588	536.732	526.371	511.864	516.009	503.575	495.286	497.358
<b>60</b>	441.405	443.478	439.333	433.116	420.682	420.682	406.176	399.959	406.176
<b>65</b>	348.151	344.006	339.861	339.861	327.427	329.500	321.210	312.921	321.210
<b>70</b>	254.896	248.679	250.751	236.245	236.245	230.028	232.100	230.028	227.956
<b>75</b>	165.786	161.641	157.497	151.280	149.207	151.280	153.352	151.280	145.063
<b>80</b>	89.110	89.110	82.893	76.676	74.604	76.676	78.748	82.893	82.893
<b>85</b>	29.013	24.868	24.868	22.796	18.651	18.651	22.796	24.868	24.868
<b>90</b>	6.217	6.217	6.217	8.289	12.434	8.289	6.217	4.145	6.217
<b>95</b>	60.097	64.242	70.459	72.531	72.531	72.531	64.242	60.097	58.025
<b>100</b>	122.267	126.412	140.918	140.918	136.773	134.701	126.412	109.833	109.833
<b>105</b>	207.232	215.522	223.811	232.100	225.883	211.377	203.088	196.871	178.220
<b>110</b>	300.487	306.704	321.210	341.934	339.861	325.355	296.342	277.692	269.402
<b>115</b>	412.393	418.610	439.333	455.911	460.056	437.261	406.176	379.235	370.946
<b>120</b>	551.238	551.238	565.745	588.540	586.468	569.889	530.515	501.503	493.213
<b>125</b>	673.506	685.940	696.301	721.169	717.024	702.518	656.927	632.059	613.408
<b>130</b>	818.568	824.785	839.292	855.870	857.943	839.292	806.134	750.182	752.254
<b>135</b>	965.703	965.703	976.065	980.210	978.137	971.920	932.546	899.389	886.955
<b>140</b>	1083.826	1087.971	1092.115	1092.115	1092.115	1069.320	1046.524	1023.729	1017.512
<b>145</b>	1183.298	1197.804	1187.442	1197.804	1195.732	1175.008	1141.851	1129.417	1116.983
<b>150</b>	1276.552	1276.552	1276.552	1286.914	1286.914	1262.046	1243.395	1228.889	1214.382
<b>155</b>	1340.794	1338.722	1344.939	1349.084	1351.156	1330.433	1307.637	1293.131	1282.769
<b>160</b>	1388.458	1388.458	1392.602	1400.892	1409.181	1384.313	1361.518	1353.228	1344.939
<b>165</b>	1421.615	1421.615	1425.760	1431.977	1440.266	1421.615	1400.892	1392.602	1384.313
<b>170</b>	1434.049	1438.194	1442.338	1446.483	1458.917	1438.194	1423.687	1415.398	1413.326
<b>175</b>	1438.194	1434.049	1444.411	1456.844	1471.351	1452.700	1431.977	1423.687	1411.253
<b>180</b>	1440.266	1440.266	1440.266	1440.266	1440.266	1440.266	1440.266	1440.266	1440.266

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : MX4UD-4-00-L8-840U-L8-840D-A-F-DIM-UNV\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	430.02	N.A.	6.20
0-30	900.70	N.A.	13.00
0-40	1447.63	N.A.	20.90
0-60	2451.47	N.A.	35.40
0-80	2944.39	N.A.	42.50
0-90	2980.95	N.A.	43.00
10-90	2868.73	N.A.	41.40
20-40	1017.61	N.A.	14.70
20-50	1558.82	N.A.	22.50
40-70	1331.45	N.A.	19.20
60-80	492.92	N.A.	7.10
70-80	165.31	N.A.	2.40
80-90	36.56	N.A.	0.50
90-110	302.07	N.A.	4.40
90-120	725.40	N.A.	10.50
90-130	1337.17	N.A.	19.30
90-150	2802.69	N.A.	40.40
90-180	3952.32	N.A.	57.00
110-180	3650.26	N.A.	52.60
0-180	6933.27	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	112.22
10-20	317.80
20-30	470.68
30-40	546.93
40-50	541.21
50-60	462.63
60-70	327.61
70-80	165.31
80-90	36.56
90-100	73.57
100-110	228.50
110-120	423.34
120-130	611.76
130-140	732.99
140-150	732.54
150-160	612.26
160-170	399.95
170-180	137.43

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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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	50	50	50	43
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	44	43	42	37
2	88	81	75	70	80	74	69	64	61	58	54	50	47	45	39	37	36	31
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	32	31	26
4	73	63	55	49	67	58	51	46	48	43	39	39	36	33	31	28	26	23
5	67	56	48	42	61	51	45	39	43	38	34	35	31	28	28	25	23	20
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	25	23	20	17
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15
8	53	41	33	28	49	38	31	26	32	27	23	26	22	20	21	18	16	14
9	49	37	30	25	45	35	28	24	29	24	21	24	20	18	20	17	15	12
10	46	34	27	22	42	32	25	21	27	22	18	22	19	16	18	15	13	11

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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

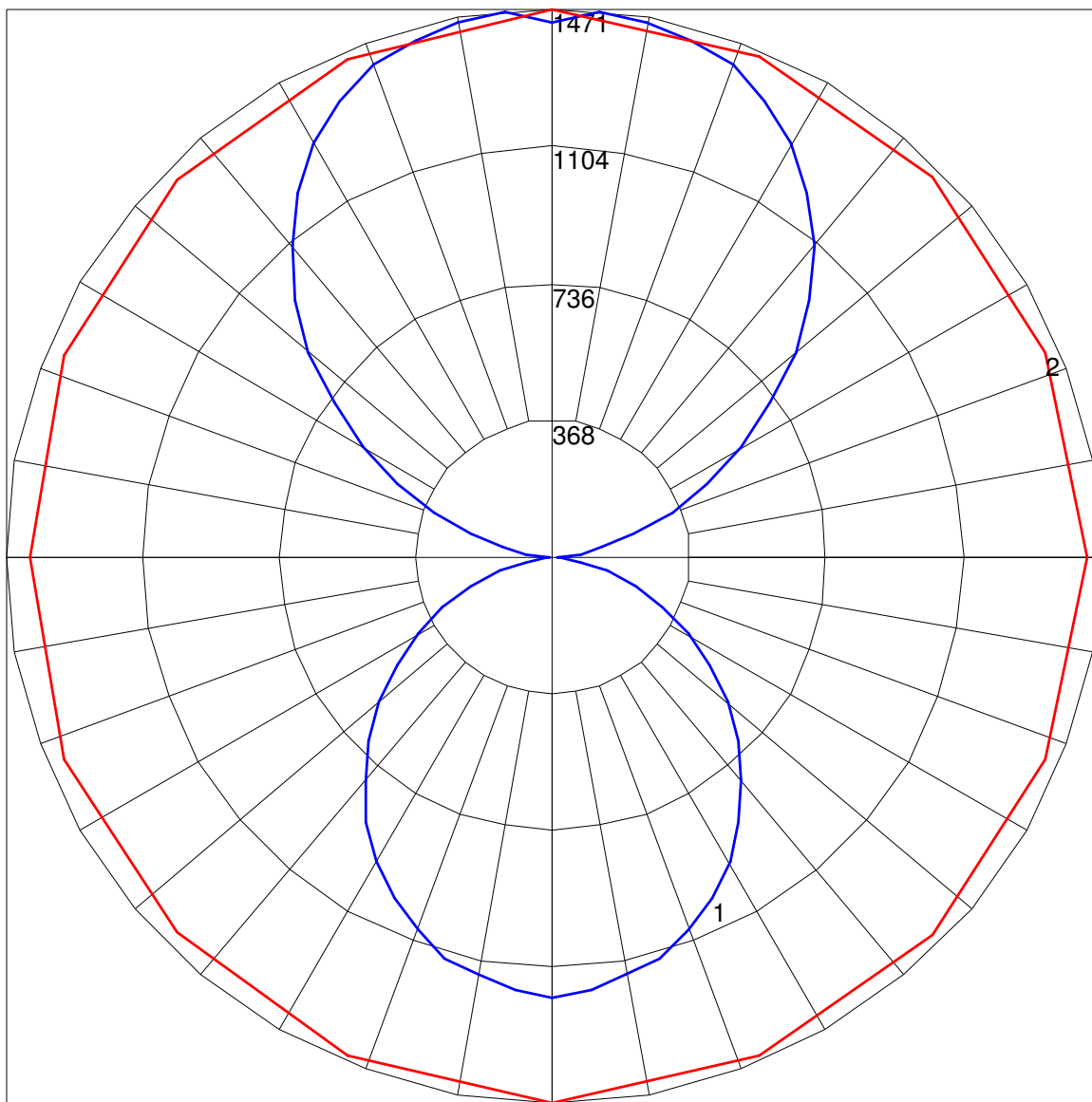
X=2H	Y=2H	14.7	15.5	15.8	16.6	17.9	14.5	15.3	15.5	16.3	17.7
	3H	16.3	17.0	17.3	18.0	19.4	15.9	16.7	17.0	17.7	19.1
	4H	16.8	17.4	17.8	18.5	19.9	16.4	17.1	17.4	18.1	19.5
	6H	17.1	17.7	18.1	18.7	20.1	16.6	17.3	17.7	18.3	19.7
	8H	17.1	17.7	18.2	18.8	20.2	16.7	17.3	17.7	18.3	19.7
	12H	17.1	17.7	18.2	18.7	20.2	16.7	17.2	17.7	18.3	19.7

### UGR Viewed Endwise

4H	2H	15.2	15.9	16.3	16.9	18.3	15.0	15.6	16.0	16.7	18.1
	3H	16.9	17.5	18.0	18.5	19.9	16.6	17.2	17.7	18.2	19.6
	4H	17.5	18.0	18.6	19.1	20.5	17.2	17.7	18.2	18.7	20.2
	6H	17.9	18.4	19.0	19.4	20.9	17.5	17.9	18.6	19.0	20.4
	8H	18.0	18.4	19.1	19.5	20.9	17.6	18.0	18.6	19.0	20.5
	12H	18.0	18.4	19.1	19.5	20.9	17.6	17.9	18.6	19.0	20.5
8H	4H	17.7	18.1	18.7	19.1	20.6	17.3	17.7	18.4	18.8	20.3
	6H	18.2	18.5	19.3	19.6	21.1	17.8	18.1	18.8	19.2	20.6
	8H	18.3	18.6	19.4	19.7	21.2	17.9	18.2	19.0	19.3	20.7
	12H	18.4	18.6	19.5	19.7	21.2	17.9	18.1	19.0	19.2	20.7
12H	4H	17.6	18.0	18.7	19.1	20.5	17.3	17.7	18.4	18.8	20.2
	6H	18.2	18.5	19.3	19.6	21.0	17.8	18.1	18.9	19.2	20.6
	8H	18.3	18.6	19.4	19.7	21.2	17.9	18.2	19.0	19.2	20.7

Maximum UGR = 21.2

POLAR GRAPH



Maximum Candela = 1471.351 Located At Horizontal Angle = 90, Vertical Angle = 175  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (175) (Through Max. Cd.)