



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD AU-FD.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN FROM BALLABS TEST NO. 20657.0  
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC  
 [ISSUEDATE] 18-JUN-2020  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836  
 [LUMINAIRE] 4' INDIRECT SUSPENDED LUMINAIRE  
 [MORE] WITH FROSTED ACRYLIC LENS  
 [LUMCAT] MX4UD-4-00-L8/835U/L8/835D-AF-DIM-UNV  
 [LAMPCAT] HLM 80 CRI, 3500K CCT  
 [SEARCH\_SOURCETYPE] LED  
 [SEARCH\_APPLICATION] Indoor, Architectural, Classroom, Indirect  
 [SEARCH\_MOUNTING] Suspended

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6799
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	122
Total Luminaire Watts	55.8
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)	4.00 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	9657	9222	8877
55	8898	8483	7957
65	7873	7405	7089
75	6057	5811	5766
85	2798	3464	3198

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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>
<b>0</b>	1302.191	1302.191	1302.191	1302.191	1302.191
<b>5</b>	1328.977	1300.131	1291.889	1285.021	1278.153
<b>10</b>	1311.120	1280.213	1270.598	1260.296	1252.741
<b>15</b>	1284.334	1249.994	1232.137	1215.653	1210.845
<b>20</b>	1228.016	1193.675	1184.060	1155.901	1151.093
<b>25</b>	1149.033	1122.247	1112.632	1091.341	1086.533
<b>30</b>	1070.050	1046.011	1033.649	1018.539	1010.984
<b>35</b>	995.874	967.715	947.797	938.869	930.627
<b>40</b>	913.457	891.479	862.633	848.897	837.908
<b>45</b>	807.688	792.578	771.287	758.238	742.441
<b>50</b>	710.161	684.749	680.628	656.590	643.541
<b>55</b>	603.706	588.596	575.547	554.942	539.832
<b>60</b>	505.492	483.514	475.959	457.415	444.366
<b>65</b>	393.542	381.866	370.190	358.515	354.394
<b>70</b>	289.147	278.845	271.290	260.301	265.109
<b>75</b>	185.439	186.125	177.884	177.884	176.510
<b>80</b>	91.346	96.840	94.093	99.587	92.719
<b>85</b>	28.846	34.340	35.714	41.895	32.967
<b>90</b>	0.000	0.000	0.000	0.000	0.000
<b>95</b>	62.913	61.655	64.171	62.913	66.688
<b>100</b>	133.376	134.634	127.084	133.376	132.117
<b>105</b>	225.229	223.970	223.970	220.196	216.421
<b>110</b>	322.115	317.082	313.307	310.790	304.499
<b>115</b>	426.550	420.259	412.710	400.127	400.127
<b>120</b>	529.728	518.404	507.079	500.788	494.497
<b>125</b>	624.097	621.581	608.998	596.416	590.124
<b>130</b>	722.242	720.984	708.401	697.077	693.302
<b>135</b>	815.353	817.870	804.029	788.930	783.897
<b>140</b>	914.756	909.723	900.915	879.524	879.524
<b>145</b>	1004.092	997.801	983.960	978.927	967.603
<b>150</b>	1078.330	1085.879	1072.038	1060.714	1055.681
<b>155</b>	1151.309	1157.600	1147.534	1133.693	1132.435
<b>160</b>	1215.480	1220.513	1210.447	1204.156	1197.864
<b>165</b>	1263.294	1269.585	1260.778	1254.486	1250.711
<b>170</b>	1297.267	1303.558	1296.009	1292.234	1292.234
<b>175</b>	1314.883	1322.432	1316.141	1312.366	1307.333
<b>180</b>	1319.916	1319.916	1319.916	1319.916	1319.916

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	471.00	N.A.	6.90
0-30	982.91	N.A.	14.50
0-40	1580.15	N.A.	23.20
0-60	2690.27	N.A.	39.60
0-80	3250.54	N.A.	47.80
0-90	3296.01	N.A.	48.50
10-90	3173.08	N.A.	46.70
20-40	1109.15	N.A.	16.30
20-50	1706.33	N.A.	25.10
40-70	1478.14	N.A.	21.70
60-80	560.27	N.A.	8.20
70-80	192.25	N.A.	2.80
80-90	45.47	N.A.	0.70
90-110	305.28	N.A.	4.50
90-120	712.85	N.A.	10.50
90-130	1257.68	N.A.	18.50
90-150	2495.01	N.A.	36.70
90-180	3502.85	N.A.	51.50
110-180	3197.58	N.A.	47.00
0-180	6798.86	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	122.93
10-20	348.07
20-30	511.90
30-40	597.24
40-50	597.18
50-60	512.93
60-70	368.02
70-80	192.25
80-90	45.47
90-100	70.44
100-110	234.84
110-120	407.58
120-130	544.83
130-140	620.02
140-150	617.30
150-160	527.57
160-170	355.32
170-180	124.95

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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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48
1	98	93	90	86	90	86	83	80	73	70	68	60	58	57	49	48	46	41
2	89	82	76	70	82	75	70	66	64	60	56	53	50	48	43	41	39	35
3	81	72	64	59	74	66	60	55	56	51	48	47	43	40	38	36	34	29
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	34	31	29	25
5	68	57	49	43	63	53	45	40	45	39	35	37	33	30	31	28	25	22
6	63	51	43	37	58	47	40	35	40	35	31	34	30	26	28	25	22	19
7	58	46	38	32	53	43	36	31	37	31	27	31	26	23	25	22	20	17
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	23	20	18	15
9	50	38	31	26	46	35	29	24	31	25	21	26	22	19	22	18	16	14
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15	13

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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	15.7	16.5	16.6	17.5	18.8	UGR Viewed Endwise			
	3H	17.2	18.0	18.2	19.0	20.3	15.2	16.0	16.2	17.0
	4H	17.8	18.5	18.8	19.5	20.8	16.7	17.5	17.7	18.5
	6H	18.0	18.7	19.1	19.7	21.0	17.3	18.0	18.3	19.0
	8H	18.1	18.7	19.1	19.7	21.1	17.6	18.3	18.6	19.3
	12H	18.1	18.7	19.1	19.7	21.1	17.7	18.3	18.7	19.3

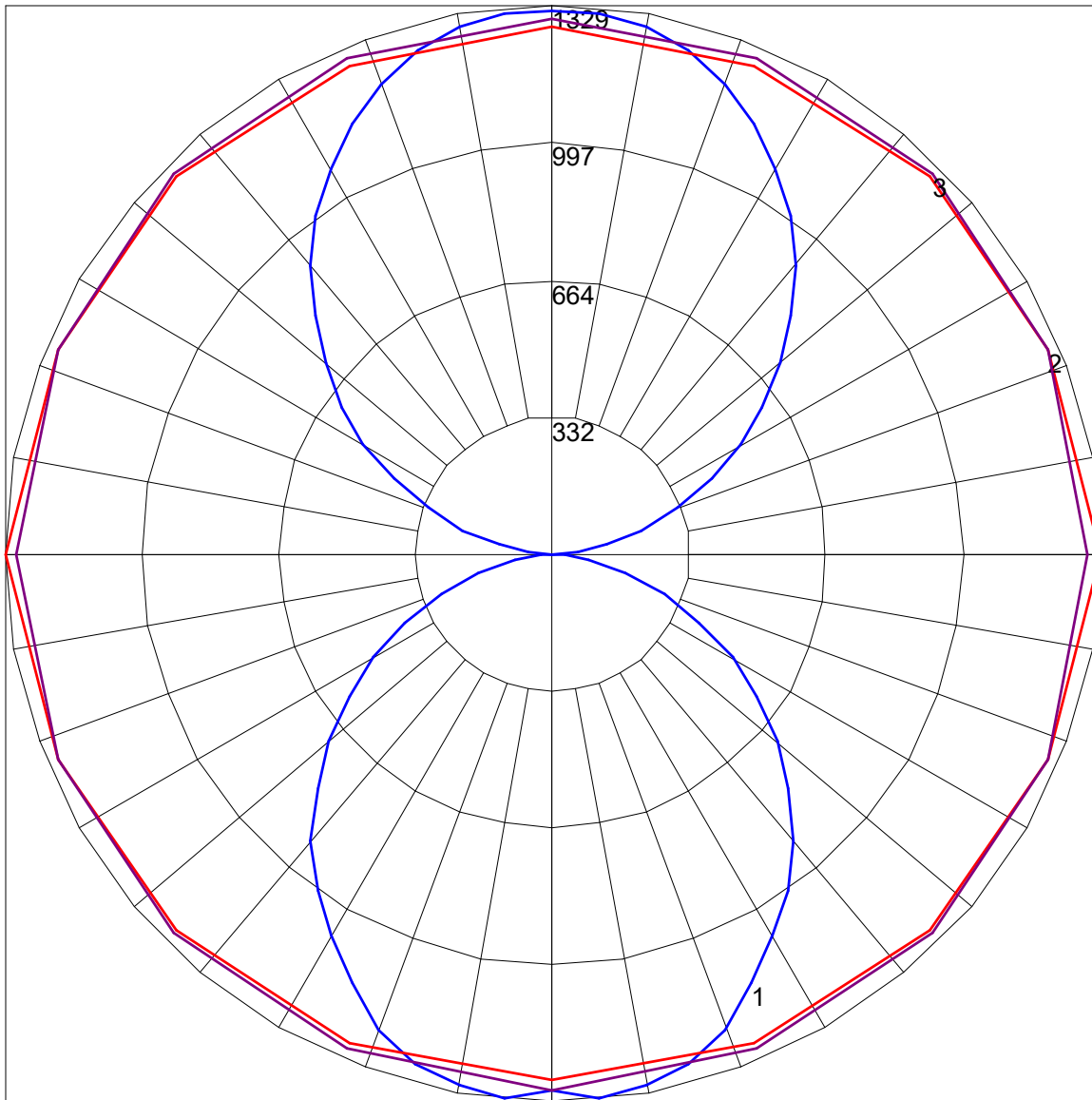
4H	2H	16.1	16.8	17.1	17.8	19.2	15.7	16.4	16.7	17.4
	3H	17.9	18.5	18.9	19.5	20.8	17.5	18.1	18.5	19.1
	4H	18.5	19.1	19.5	20.1	21.4	18.1	18.7	19.1	19.7
	6H	18.9	19.4	19.9	20.4	21.8	18.5	19.0	19.6	20.1
	8H	19.0	19.4	20.0	20.5	21.8	18.7	19.1	19.7	20.1
	12H	19.0	19.4	20.1	20.5	21.8	18.7	19.1	19.8	20.2

8H	4H	18.7	19.1	19.7	20.2	21.5	18.3	18.7	19.4	19.8
	6H	19.2	19.5	20.2	20.6	22.0	18.9	19.2	19.9	20.3
	8H	19.3	19.6	20.4	20.7	22.1	19.0	19.4	20.1	20.4
	12H	19.4	19.7	20.5	20.7	22.2	19.2	19.4	20.2	20.5

12H	4H	18.7	19.0	19.7	20.1	21.5	18.3	18.7	19.4	19.7
	6H	19.2	19.5	20.2	20.5	22.0	18.9	19.2	19.9	20.2
	8H	19.4	19.6	20.4	20.7	22.1	19.1	19.4	20.2	20.4

Maximum UGR = 22.2

POLAR GRAPH



Maximum Candela = 1328.977 Located At Horizontal Angle = 0, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)  
# 3 - Horizontal Cone Through Vertical Angle (0)