



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-7-L8-835U-L12-835D-AF-DIM-UNV\_.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] 30-JUN2020  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836  
 [LUMINAIRE] 7' INDIRECT SUSPENDED LUMINAIRE  
 [MORE] WITH FROSTED ACRYLIC LENS  
 [LUMCAT] MX4U-7-00-L8-835-A-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	14526
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	131
Total Luminaire Watts	110.8
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)	7.00 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	13910	13488	13278
55	12774	12255	11908
65	10873	10696	10344
75	8253	8637	8157
85	3990	5130	4845

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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>	3449.811	3449.811	3449.811	3449.811	3449.811
<b>5</b>	3465.235	3429.246	3413.822	3403.539	3403.539
<b>10</b>	3403.539	3367.550	3352.126	3341.844	3331.561
<b>15</b>	3285.289	3259.583	3233.876	3223.594	3208.170
<b>20</b>	3146.474	3110.485	3089.920	3059.072	3048.790
<b>25</b>	2966.529	2925.399	2904.833	2868.844	2863.703
<b>30</b>	2786.584	2740.312	2699.181	2688.899	2663.192
<b>35</b>	2534.660	2503.812	2467.823	2431.834	2431.834
<b>40</b>	2298.160	2267.312	2221.041	2210.758	2174.769
<b>45</b>	2035.954	2005.106	1974.258	1943.411	1943.411
<b>50</b>	1789.172	1748.041	1722.335	1701.770	1676.063
<b>55</b>	1516.683	1480.694	1454.987	1429.281	1413.857
<b>60</b>	1233.912	1213.346	1197.922	1177.357	1161.933
<b>65</b>	951.140	945.999	935.716	910.010	904.868
<b>70</b>	704.358	699.217	683.793	673.510	663.227
<b>75</b>	442.152	457.576	462.717	447.293	437.010
<b>80</b>	226.217	236.500	236.500	241.641	246.782
<b>85</b>	71.978	77.119	92.543	82.261	87.402
<b>90</b>	0.000	0.000	0.000	0.000	0.000
<b>95</b>	108.639	106.466	110.811	108.639	115.157
<b>100</b>	230.314	232.487	219.450	230.314	228.141
<b>105</b>	388.926	386.754	386.754	380.235	373.717
<b>110</b>	556.230	547.539	541.020	536.675	525.811
<b>115</b>	736.570	725.706	712.670	690.942	690.942
<b>120</b>	914.737	895.182	875.628	864.764	853.900
<b>125</b>	1077.695	1073.350	1051.622	1029.894	1019.031
<b>130</b>	1247.172	1244.999	1223.271	1203.716	1197.198
<b>135</b>	1407.957	1412.302	1388.402	1362.329	1353.638
<b>140</b>	1579.606	1570.915	1555.705	1518.768	1518.768
<b>145</b>	1733.873	1723.009	1699.108	1690.417	1670.862
<b>150</b>	1862.066	1875.103	1851.203	1831.648	1822.957
<b>155</b>	1988.087	1998.951	1981.569	1957.668	1955.496
<b>160</b>	2098.899	2107.590	2090.208	2079.344	2068.480
<b>165</b>	2181.464	2192.328	2177.119	2166.255	2159.736
<b>170</b>	2240.129	2250.993	2237.956	2231.438	2231.438
<b>175</b>	2270.548	2283.584	2272.721	2266.202	2257.511
<b>180</b>	2279.239	2279.239	2279.239	2279.239	2279.239

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1237.68	N.A.	8.50
0-30	2577.04	N.A.	17.70
0-40	4125.66	N.A.	28.40
0-60	6959.82	N.A.	47.90
0-80	8367.39	N.A.	57.60
0-90	8477.23	N.A.	58.40
10-90	8152.65	N.A.	56.10
20-40	2887.97	N.A.	19.90
20-50	4416.37	N.A.	30.40
40-70	3760.06	N.A.	25.90
60-80	1407.58	N.A.	9.70
70-80	481.67	N.A.	3.30
80-90	109.84	N.A.	0.80
90-110	527.15	N.A.	3.60
90-120	1230.96	N.A.	8.50
90-130	2171.78	N.A.	15.00
90-150	4308.39	N.A.	29.70
90-180	6048.74	N.A.	41.60
110-180	5521.59	N.A.	38.00
0-180	14525.97	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	324.58
10-20	913.10
20-30	1339.36
30-40	1548.62
40-50	1528.4
50-60	1305.76
60-70	925.90
70-80	481.67
80-90	109.84
90-100	121.63
100-110	405.52
110-120	703.81
120-130	940.81
130-140	1070.65
140-150	1065.96
150-160	911.01
160-170	613.57
170-180	215.77

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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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	64	64	64	58
1	100	96	92	88	93	89	86	83	78	75	73	67	65	63	57	56	54	50
2	91	84	78	72	85	78	73	68	68	64	61	59	56	53	50	48	46	42
3	83	74	66	60	77	69	63	57	60	55	51	52	48	45	45	42	39	36
4	76	65	57	51	71	61	54	49	54	48	44	47	42	39	40	37	34	31
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30	27
6	65	52	44	38	60	49	42	37	43	37	33	38	33	30	33	29	26	23
7	60	47	39	34	56	45	37	32	39	34	29	35	30	26	30	26	23	21
8	56	43	35	30	52	41	34	29	36	30	26	32	27	23	27	24	21	19
9	52	39	32	27	48	37	30	26	33	27	23	29	24	21	25	22	19	17
10	48	36	29	24	45	34	28	23	31	25	21	27	22	19	24	20	17	15

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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	17.7	18.6	18.6	19.5	20.7	17.4	18.3	18.3	19.2	20.4
	3H	19.2	20.0	20.1	21.0	22.1	18.9	19.8	19.8	20.7	21.8
	4H	19.7	20.5	20.6	21.4	22.6	19.4	20.2	20.4	21.1	22.3
	6H	20.0	20.7	20.9	21.6	22.8	19.8	20.5	20.7	21.4	22.6
	8H	20.0	20.7	21.0	21.7	22.9	19.8	20.5	20.8	21.5	22.7
	12H	20.0	20.7	21.0	21.6	22.9	19.9	20.5	20.8	21.5	22.7

### UGR Viewed Endwise

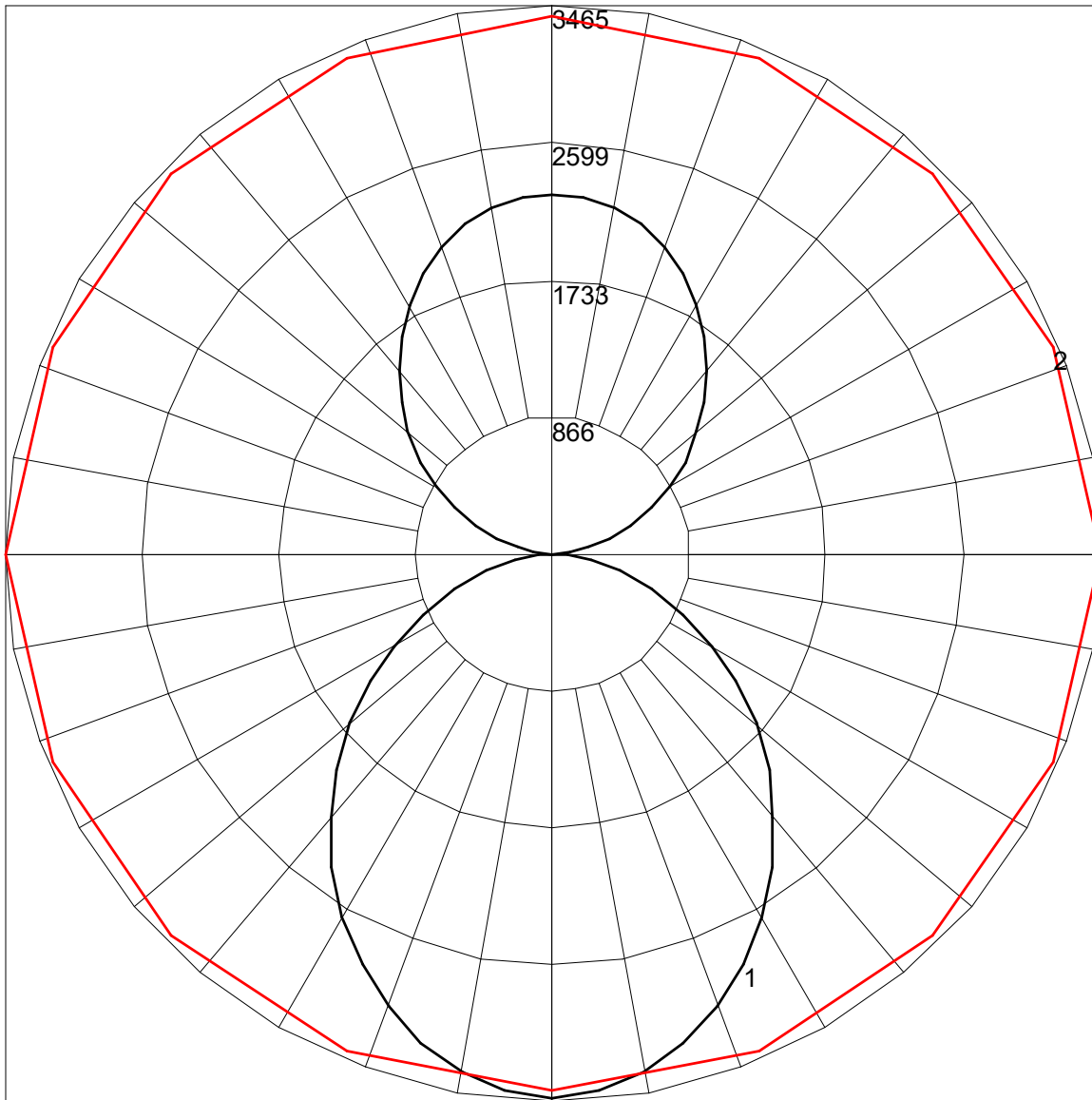
4H	2H	18.2	18.9	19.1	19.9	21.0	17.9	18.7	18.9	19.6	20.8
	3H	19.9	20.5	20.8	21.5	22.7	19.6	20.3	20.6	21.2	22.4
	4H	20.5	21.1	21.4	22.0	23.3	20.3	20.9	21.2	21.8	23.0
	6H	20.9	21.4	21.8	22.3	23.6	20.7	21.2	21.6	22.2	23.4
	8H	21.0	21.4	21.9	22.4	23.6	20.8	21.3	21.8	22.3	23.5
	12H	21.0	21.4	22.0	22.4	23.6	20.9	21.3	21.8	22.3	23.5

8H	4H	20.7	21.2	21.6	22.1	23.4	20.5	21.0	21.4	21.9	23.2
	6H	21.1	21.5	22.1	22.5	23.8	21.0	21.4	22.0	22.4	23.6
	8H	21.3	21.6	22.3	22.6	23.9	21.2	21.5	22.2	22.5	23.8
	12H	21.3	21.7	22.3	22.6	23.9	21.3	21.6	22.3	22.6	23.9

12H	4H	20.7	21.1	21.6	22.1	23.3	20.5	20.9	21.4	21.9	23.1
	6H	21.2	21.5	22.2	22.5	23.8	21.0	21.4	22.0	22.3	23.6
	8H	21.3	21.6	22.3	22.6	23.9	21.2	21.5	22.2	22.5	23.8

Maximum UGR = 23.9

POLAR GRAPH



Maximum Candela = 3465.235 Located At Horizontal Angle = 0, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)