



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-8-00-L8-8TWU-L8-8TWD-F-A-DIM-UNV 4000K\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20194.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 13-MAR-2020

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] 4-72 LED TOP & 8-72 LED BTM 8' DIRECT/INDIRECT LUMINAIRE

[MORE] WHITE REFLS w/FROSTED ACRYLIC LENS TOP/BTM

[LUMCAT] MX4UD-8-L8-8TWU-L8-8TWD-F-A-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	13336
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	124
Total Luminaire Watts	107.2
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	9974	9506	9338
55	9026	8645	8511
65	7672	7644	7336
75	5921	6104	6012
85	2512	3666	3394

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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>
0	2802.265	2802.265	2802.265	2802.265	2802.265
5	2839.231	2775.252	2770.987	2759.613	2742.552
10	2776.674	2718.382	2725.491	2702.743	2681.417
15	2689.947	2641.608	2644.451	2614.595	2593.268
20	2584.738	2546.351	2522.181	2488.059	2475.263
25	2429.767	2405.598	2374.319	2334.510	2320.293
30	2267.688	2246.362	2215.083	2159.635	2145.418
35	2097.078	2070.065	2018.882	1969.121	1957.747
40	1919.360	1878.129	1818.416	1781.450	1780.029
45	1694.724	1659.180	1615.106	1583.827	1586.671
50	1467.244	1438.809	1410.374	1371.987	1386.204
55	1244.030	1222.703	1191.425	1178.629	1172.942
60	1012.285	998.067	978.163	975.319	966.789
65	779.118	777.696	776.274	766.322	744.996
70	564.434	567.277	575.808	570.121	551.638
75	368.233	369.654	379.607	383.872	373.920
80	183.405	201.888	199.045	210.419	206.153
85	52.605	75.353	76.774	73.931	71.087
90	9.952	19.904	24.170	19.904	19.904
95	25.591	42.652	46.918	45.496	46.918
100	105.209	145.018	146.440	129.379	136.488
105	248.806	270.132	277.241	240.275	238.854
110	439.320	433.633	449.272	392.402	390.981
115	654.004	635.521	645.474	551.638	554.482
120	875.797	871.532	848.784	760.635	762.057
125	1118.916	1100.433	1056.359	992.380	958.258
130	1371.987	1326.491	1320.804	1255.404	1190.003
135	1609.419	1558.236	1556.814	1499.944	1451.605
140	1834.055	1784.294	1785.716	1734.533	1697.567
145	2062.956	1991.869	2003.243	1937.843	1920.782
150	2253.471	2188.070	2203.709	2136.887	2116.983
155	2405.598	2343.041	2367.210	2307.497	2290.436
160	2536.399	2470.998	2480.950	2441.141	2424.080
165	2644.451	2579.051	2569.099	2546.351	2526.446
170	2704.165	2640.186	2634.499	2618.860	2600.377
175	2748.239	2687.104	2684.260	2672.886	2661.512
180	2711.274	2711.274	2711.274	2711.274	2711.274

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : MX4UD-8-00-L8-8TWU-L8-8TWD-F-A-DIM-UNV 4000K\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1005.82	N.A.	7.50
0-30	2098.62	N.A.	15.70
0-40	3364.16	N.A.	25.20
0-60	5690.98	N.A.	42.70
0-80	6857.98	N.A.	51.40
0-90	6957.4	N.A.	52.20
10-90	6694.23	N.A.	50.20
20-40	2358.34	N.A.	17.70
20-50	3611.97	N.A.	27.10
40-70	3092.56	N.A.	23.20
60-80	1167.00	N.A.	8.80
70-80	401.26	N.A.	3.00
80-90	99.43	N.A.	0.70
90-110	348.66	N.A.	2.60
90-120	958.59	N.A.	7.20
90-130	1900.69	N.A.	14.30
90-150	4322.75	N.A.	32.40
90-180	6378.26	N.A.	47.80
110-180	6029.6	N.A.	45.20
0-180	13335.67	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	263.17
10-20	742.65
20-30	1092.8
30-40	1265.54
40-50	1253.63
50-60	1073.19
60-70	765.74
70-80	401.26
80-90	99.43
90-100	65.56
100-110	283.10
110-120	609.92
120-130	942.10
130-140	1184.06
140-150	1238.00
150-160	1076.46
160-170	724.07
170-180	254.98

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## COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	126	126	126	126	116	116	116	116	99	99	99	83	83	83	68	68	68	61
1	115	110	106	101	106	102	98	95	87	84	82	73	71	69	60	59	58	52
2	105	96	89	83	97	89	83	78	76	72	68	64	61	58	53	51	49	44
3	96	85	76	69	88	79	71	65	67	62	57	57	53	49	47	44	42	37
4	88	75	66	59	81	70	62	55	60	54	49	51	46	42	42	39	36	32
5	80	67	57	50	74	62	54	48	54	47	42	46	41	37	38	34	31	28
6	74	60	51	44	68	56	48	41	48	42	37	41	36	32	35	31	28	24
7	69	54	45	38	63	51	42	36	44	37	32	38	32	29	32	28	25	22
8	64	49	40	34	59	46	38	32	40	34	29	34	29	25	29	25	22	19
9	59	45	36	30	55	42	34	29	37	30	26	32	27	23	27	23	20	18
10	55	41	33	27	51	39	31	26	34	28	23	29	24	21	25	21	18	16

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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	15.4	16.3	16.4	17.3	18.5	15.2	16.1	16.2	17.0	18.3
	3H	16.9	17.7	17.9	18.7	20.0	16.8	17.5	17.7	18.5	19.8
	4H	17.4	18.2	18.4	19.1	20.4	17.3	18.0	18.3	19.0	20.3
	6H	17.7	18.4	18.7	19.4	20.6	17.6	18.3	18.6	19.3	20.6
	8H	17.8	18.4	18.7	19.4	20.7	17.7	18.4	18.7	19.3	20.6
	12H	17.8	18.4	18.7	19.4	20.7	17.7	18.3	18.7	19.3	20.6

### UGR Viewed Endwise

4H	2H	15.9	16.7	16.9	17.6	18.9	15.7	16.5	16.7	17.4	18.7
	3H	17.6	18.2	18.6	19.2	20.5	17.5	18.1	18.5	19.1	20.4
	4H	18.2	18.8	19.2	19.8	21.1	18.1	18.7	19.1	19.7	21.0
	6H	18.6	19.1	19.6	20.1	21.4	18.6	19.1	19.6	20.1	21.4
	8H	18.7	19.1	19.7	20.1	21.5	18.7	19.1	19.7	20.2	21.5
	12H	18.7	19.1	19.7	20.1	21.5	18.7	19.1	19.8	20.2	21.5

8H	4H	18.4	18.9	19.4	19.9	21.2	18.3	18.8	19.3	19.8	21.1
	6H	18.9	19.3	19.9	20.3	21.6	18.9	19.3	19.9	20.3	21.6
	8H	19.0	19.4	20.1	20.4	21.7	19.1	19.4	20.1	20.4	21.8
	12H	19.1	19.4	20.2	20.4	21.8	19.2	19.5	20.2	20.5	21.9

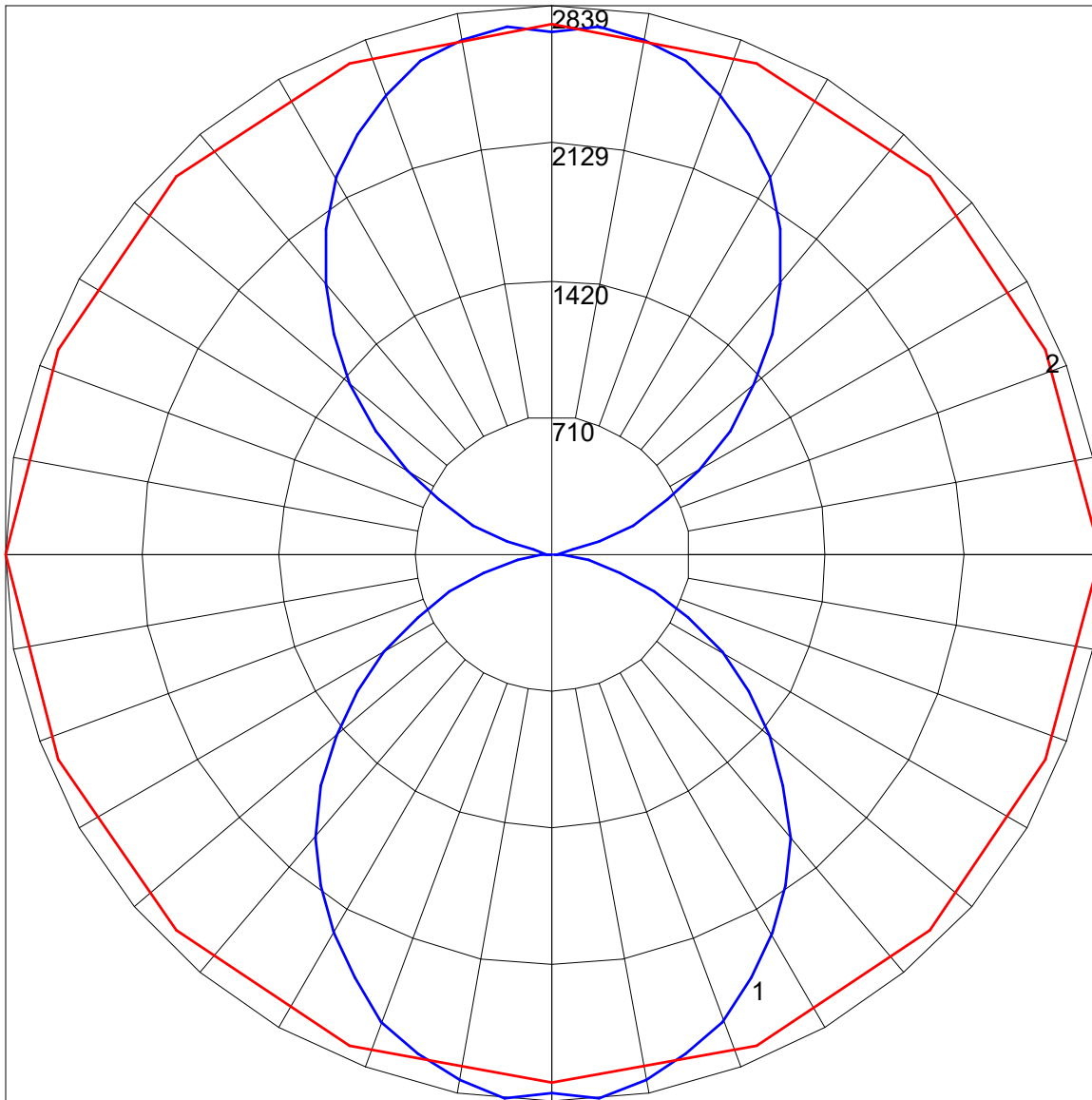
12H	4H	18.4	18.8	19.4	19.8	21.2	18.3	18.7	19.3	19.7	21.1
	6H	18.9	19.2	19.9	20.3	21.6	18.9	19.2	19.9	20.3	21.6
	8H	19.1	19.4	20.1	20.4	21.8	19.1	19.4	20.2	20.4	21.8

Maximum UGR = 21.9

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## POLAR GRAPH



Maximum Candela = 2839.231 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.)