



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4WUD-4-00-P7-8TWU-P7-8TWD-AF-POE-UNV 4000K\_.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] 15-MAR-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 1-72 LED-UP 2-72 LED-DOWN 23.75" ARRAYS 4' LUMINAIRE

[MORE] WHITE ALUM BODY w/REFL & FLAT FROST LENSES-UP/DOWN

[LUMCAT] MX4WUD-4-00-P7-8TWU-P7-8TWD-AF-PoE-UNV 4000k

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5708
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	130
Total Luminaire Watts	44
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	7380	7218	7035
55	6724	6499	6274
65	5699	5529	5292
75	4321	4210	4210
85	2303	2467	2138

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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	1053.080	1053.080	1053.080	1053.080	1053.080
5	1064.950	1049.688	1044.601	1041.210	1039.514
10	1042.905	1025.948	1022.556	1015.773	1015.773
15	1010.685	993.728	986.945	981.857	978.466
20	963.204	947.942	941.158	936.071	930.984
25	907.243	891.981	886.893	878.415	875.023
30	839.412	829.237	824.150	812.279	802.104
35	766.493	764.797	756.318	742.752	734.273
40	695.270	683.400	681.704	668.138	661.355
45	617.264	608.785	603.698	586.740	588.436
50	535.867	530.779	525.692	512.126	507.039
55	456.165	451.078	440.903	430.728	425.641
60	367.984	366.289	354.418	349.331	344.244
65	284.891	283.195	276.412	271.325	264.542
70	210.277	205.190	196.711	200.102	196.711
75	132.271	128.879	128.879	132.271	128.879
80	66.135	72.919	72.919	72.919	67.831
85	23.741	25.437	25.437	25.437	22.045
90	1.696	1.696	1.696	1.696	1.696
95	39.003	40.699	39.003	33.916	33.916
100	91.572	89.876	89.876	83.093	76.310
105	157.708	157.708	149.229	140.750	128.879
110	247.584	242.497	227.235	220.452	208.581
115	335.765	327.286	317.111	300.153	286.587
120	444.295	444.295	417.162	398.509	388.334
125	552.825	561.304	523.996	512.126	495.168
130	669.833	676.617	644.397	625.743	612.177
135	776.668	766.493	756.318	747.839	744.448
140	876.719	875.023	869.936	858.065	861.457
145	963.204	964.899	959.812	951.333	964.899
150	1042.905	1046.297	1044.601	1032.731	1049.688
155	1103.953	1109.041	1109.041	1100.562	1117.520
160	1151.435	1161.610	1156.523	1151.435	1161.610
165	1190.438	1200.613	1190.438	1190.438	1195.526
170	1212.483	1224.354	1214.179	1212.483	1209.092
175	1229.441	1239.616	1229.441	1227.745	1219.267
180	1232.833	1232.833	1232.833	1232.833	1232.833

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : MX4WUD-4-00-P7-8TWU-P7-8TWD-AF-POE-UNV 4000K\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	377.81	N.A.	6.60
0-30	786.00	N.A.	13.80
0-40	1256.78	N.A.	22.00
0-60	2114.22	N.A.	37.00
0-80	2529.66	N.A.	44.30
0-90	2563.07	N.A.	44.90
10-90	2463.9	N.A.	43.20
20-40	878.97	N.A.	15.40
20-50	1342.6	N.A.	23.50
40-70	1132.29	N.A.	19.80
60-80	415.44	N.A.	7.30
70-80	140.59	N.A.	2.50
80-90	33.40	N.A.	0.60
90-110	205.84	N.A.	3.60
90-120	521.65	N.A.	9.10
90-130	997.10	N.A.	17.50
90-150	2181.86	N.A.	38.20
90-180	3144.89	N.A.	55.10
110-180	2939.04	N.A.	51.50
0-180	5707.95	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	99.17
10-20	278.64
20-30	408.19
30-40	470.78
40-50	463.63
50-60	393.80
60-70	274.85
70-80	140.59
80-90	33.40
90-100	44.49
100-110	161.35
110-120	315.81
120-130	475.44
130-140	584.88
140-150	599.88
150-160	509.50
160-170	336.59
170-180	116.94

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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	105	105	105	105	97	97	97	97	80	80	80	65	65	65	51	51	51	45
1	96	92	88	85	88	85	81	78	70	68	66	57	56	55	46	45	44	38
2	88	81	75	70	80	74	69	65	62	58	55	51	48	46	40	38	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32	27
4	73	63	55	49	67	58	51	46	49	44	40	40	36	33	32	29	27	24
5	67	56	48	42	62	52	45	40	44	38	34	36	32	29	29	26	24	21
6	62	50	42	37	57	46	39	34	39	34	30	33	28	25	26	23	21	18
7	57	45	38	32	52	42	35	30	36	30	26	30	26	22	24	21	19	16
8	53	41	34	28	49	38	31	27	32	27	23	27	23	20	22	19	17	14
9	50	38	30	25	45	35	28	24	30	25	21	25	21	18	20	17	15	13
10	46	34	27	23	42	32	26	21	27	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	14.3	15.1	15.3	16.1	17.5	13.9	14.8	14.9	15.8	17.1
	3H	15.8	16.5	16.8	17.5	18.9	15.4	16.2	16.4	17.2	18.5
	4H	16.2	16.9	17.3	17.9	19.3	15.9	16.6	16.9	17.6	19.0
	6H	16.5	17.1	17.5	18.2	19.5	16.2	16.8	17.2	17.9	19.3
	8H	16.5	17.1	17.6	18.2	19.6	16.3	16.9	17.3	17.9	19.3
	12H	16.6	17.1	17.6	18.2	19.6	16.3	16.9	17.3	17.9	19.3

### UGR Viewed Endwise

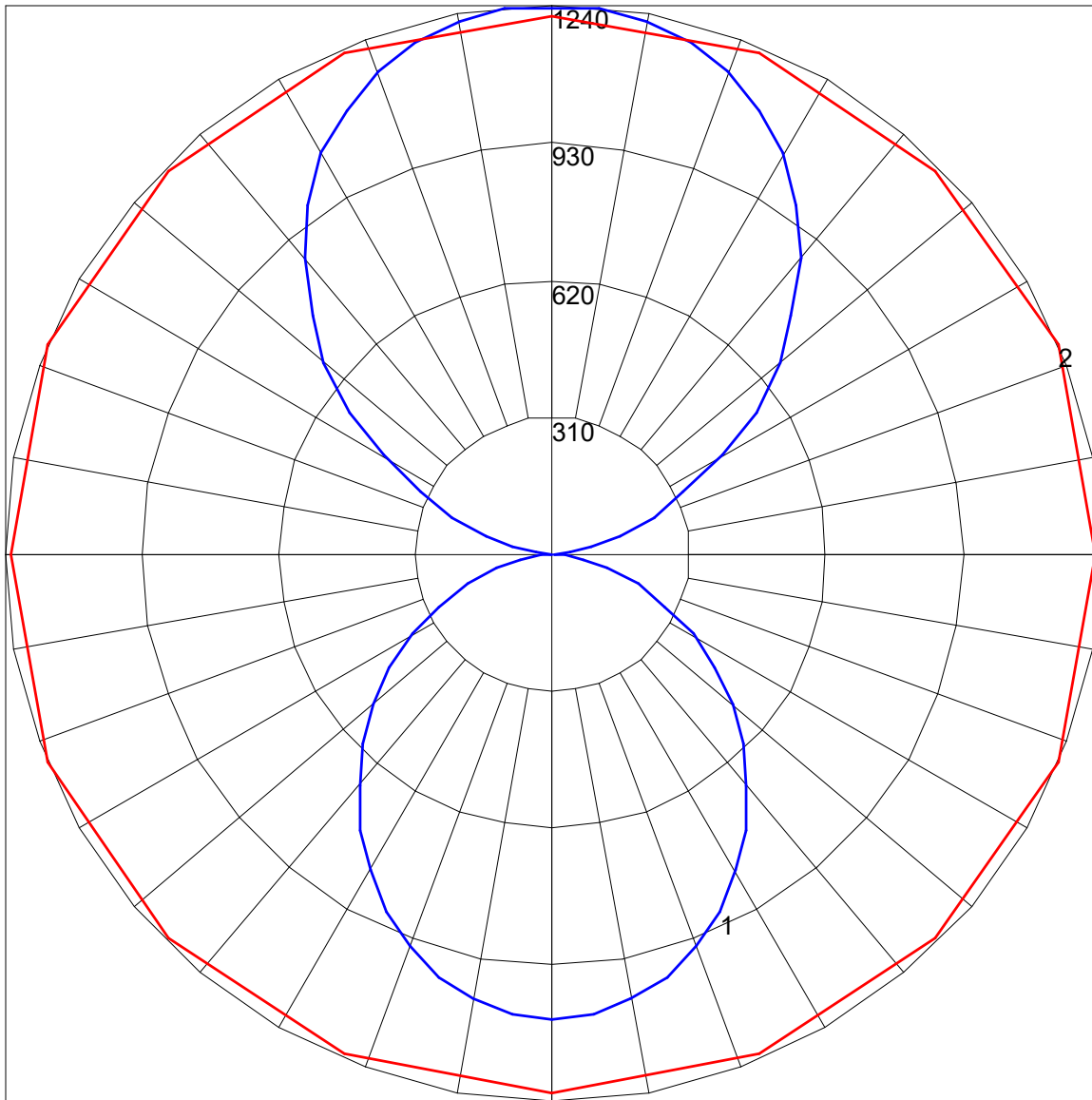
4H	2H	14.7	15.4	15.8	16.4	17.8	14.4	15.1	15.5	16.1	17.5
	3H	16.4	17.0	17.4	18.0	19.4	16.1	16.7	17.1	17.7	19.1
	4H	17.0	17.5	18.0	18.5	19.9	16.7	17.2	17.8	18.3	19.7
	6H	17.3	17.8	18.4	18.8	20.2	17.1	17.6	18.2	18.6	20.0
	8H	17.4	17.8	18.5	18.9	20.3	17.2	17.6	18.3	18.7	20.1
	12H	17.4	17.8	18.5	18.9	20.3	17.2	17.6	18.3	18.7	20.1
8H	4H	17.1	17.5	18.2	18.6	20.0	16.9	17.3	17.9	18.4	19.8
	6H	17.6	17.9	18.6	19.0	20.4	17.4	17.8	18.5	18.9	20.3
	8H	17.7	18.0	18.8	19.1	20.5	17.6	17.9	18.6	19.0	20.4
	12H	17.8	18.1	18.9	19.2	20.6	17.7	17.9	18.7	19.0	20.5
12H	4H	17.1	17.5	18.1	18.5	20.0	16.9	17.3	17.9	18.3	19.7
	6H	17.6	17.9	18.7	19.0	20.4	17.4	17.7	18.5	18.8	20.3
	8H	17.8	18.0	18.9	19.1	20.6	17.6	17.9	18.7	19.0	20.4

Maximum UGR = 20.6

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## POLAR GRAPH



Maximum Candela = 1239.616 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.)