



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4WUD-8-00-L8-8TWU-L8-8TWD-AF-DIM-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] 2-72 LED-UP 4-72 LED-DOWN 23.75" ARRAYS 8' LUMINAIRE

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

[LUMCAT] MX4WUD-8-00-L8-8TWU-L8-8TWD-AF-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	13335
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)	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	17242	16863	16437
55	15708	15183	14657
65	13315	12918	12364
75	10094	9835	9835
85	5380	5765	4996

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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	2460.278	2460.278	2460.278	2460.278	2460.278
5	2488.010	2452.354	2440.469	2432.545	2428.583
10	2436.507	2396.889	2388.965	2373.118	2373.118
15	2361.233	2321.615	2305.768	2293.882	2285.959
20	2250.302	2214.646	2198.799	2186.914	2175.028
25	2119.563	2083.907	2072.021	2052.212	2044.289
30	1961.091	1937.320	1925.435	1897.702	1873.931
35	1790.734	1786.772	1766.963	1735.268	1715.459
40	1624.338	1596.605	1592.644	1560.949	1545.102
45	1442.095	1422.286	1410.401	1370.783	1374.745
50	1251.929	1240.043	1228.158	1196.464	1184.578
55	1065.724	1053.839	1030.068	1006.297	994.412
60	859.711	855.749	828.016	816.131	804.245
65	665.582	661.621	645.773	633.888	618.041
70	491.263	479.378	459.569	467.492	459.569
75	309.020	301.097	301.097	309.020	301.097
80	154.510	170.357	170.357	170.357	158.472
85	55.465	59.427	59.427	59.427	51.503
90	3.962	3.962	3.962	3.962	3.962
95	91.121	95.083	91.121	79.236	79.236
100	213.937	209.975	209.975	194.128	178.281
105	368.447	368.447	348.638	328.829	301.097
110	578.423	566.537	530.881	515.034	487.301
115	784.436	764.627	740.857	701.239	669.544
120	1037.992	1037.992	974.603	931.023	907.252
125	1291.547	1311.356	1224.196	1196.464	1156.846
130	1564.911	1580.758	1505.484	1461.904	1430.210
135	1814.504	1790.734	1766.963	1747.154	1739.230
140	2048.251	2044.289	2032.403	2004.671	2012.594
145	2250.302	2254.264	2242.379	2222.570	2254.264
150	2436.507	2444.431	2440.469	2412.736	2452.354
155	2579.132	2591.017	2591.017	2571.208	2610.826
160	2690.062	2713.833	2701.948	2690.062	2713.833
165	2781.184	2804.954	2781.184	2781.184	2793.069
170	2832.687	2860.420	2836.649	2832.687	2824.763
175	2872.305	2896.076	2872.305	2868.343	2848.534
180	2880.229	2880.229	2880.229	2880.229	2880.229

IES INDOOR REPORT**PHOTOMETRIC FILENAME : MX4WUD-8-00-L8-8TWU-L8-8TWD-AF-DIM-UNV 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	882.67	N.A.	6.60
0-30	1836.31	N.A.	13.80
0-40	2936.18	N.A.	22.00
0-60	4939.38	N.A.	37.00
0-80	5909.97	N.A.	44.30
0-90	5988.01	N.A.	44.90
10-90	5756.33	N.A.	43.20
20-40	2053.51	N.A.	15.40
20-50	3136.68	N.A.	23.50
40-70	2645.33	N.A.	19.80
60-80	970.59	N.A.	7.30
70-80	328.47	N.A.	2.50
80-90	78.04	N.A.	0.60
90-110	480.90	N.A.	3.60
90-120	1218.72	N.A.	9.10
90-130	2329.48	N.A.	17.50
90-150	5097.41	N.A.	38.20
90-180	7347.3	N.A.	55.10
110-180	6866.39	N.A.	51.50
0-180	13335.31	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	231.68
10-20	650.98
20-30	953.64
30-40	1099.87
40-50	1083.17
50-60	920.03
60-70	642.12
70-80	328.47
80-90	78.04
90-100	103.94
100-110	376.96
110-120	737.82
120-130	1110.76
130-140	1366.45
140-150	1401.48
150-160	1190.33
160-170	786.36
170-180	273.20

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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	212	212	212	212	194	194	194	194	161	161	161	131	131	131	103	103	103	90
1	194	185	178	171	177	170	164	158	142	137	133	116	112	110	92	90	88	76
2	177	162	150	140	161	149	139	130	125	117	111	102	97	92	81	77	74	65
3	161	143	128	117	147	131	119	109	110	101	93	90	84	78	72	67	64	55
4	148	126	111	99	135	116	103	92	98	88	80	81	73	67	64	59	55	47
5	135	113	97	85	124	104	90	79	88	77	69	72	64	58	58	52	48	41
6	125	101	85	74	114	93	79	69	79	68	60	65	57	51	53	47	42	36
7	115	91	76	65	106	84	71	61	72	61	53	60	51	45	48	42	38	32
8	107	83	68	57	98	77	63	54	65	55	47	54	46	40	44	38	34	29
9	100	76	61	51	91	70	57	48	60	49	42	50	42	36	41	35	31	26
10	93	69	55	46	85	64	52	43	55	45	38	46	38	33	38	32	28	24

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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	14.8	15.6	15.8	16.6	18.0	14.4	15.3	15.4	16.3	17.6
	3H	16.3	17.0	17.3	18.0	19.4	15.9	16.7	16.9	17.7	19.0
	4H	16.7	17.4	17.8	18.4	19.8	16.4	17.1	17.4	18.1	19.5
	6H	17.0	17.6	18.0	18.7	20.0	16.7	17.3	17.7	18.4	19.8
	8H	17.0	17.6	18.1	18.7	20.1	16.8	17.4	17.8	18.4	19.8
	12H	17.1	17.6	18.1	18.7	20.1	16.8	17.4	17.8	18.4	19.8

UGR Viewed Endwise

4H	2H	15.2	15.9	16.3	16.9	18.3	14.9	15.6	16.0	16.6	18.0
	3H	16.9	17.5	17.9	18.5	19.9	16.6	17.2	17.6	18.2	19.6
	4H	17.5	18.0	18.5	19.0	20.4	17.2	17.7	18.3	18.8	20.2
	6H	17.8	18.3	18.9	19.3	20.7	17.6	18.1	18.7	19.1	20.5
	8H	17.9	18.3	19.0	19.4	20.8	17.7	18.1	18.8	19.2	20.6
	12H	17.9	18.3	19.0	19.4	20.8	17.7	18.1	18.8	19.2	20.6

8H	4H	17.6	18.0	18.7	19.1	20.5	17.4	17.8	18.4	18.9	20.3
	6H	18.1	18.4	19.1	19.5	20.9	17.9	18.3	19.0	19.4	20.8
	8H	18.2	18.5	19.3	19.6	21.0	18.1	18.4	19.1	19.5	20.9
	12H	18.3	18.6	19.4	19.7	21.1	18.2	18.4	19.2	19.5	21.0

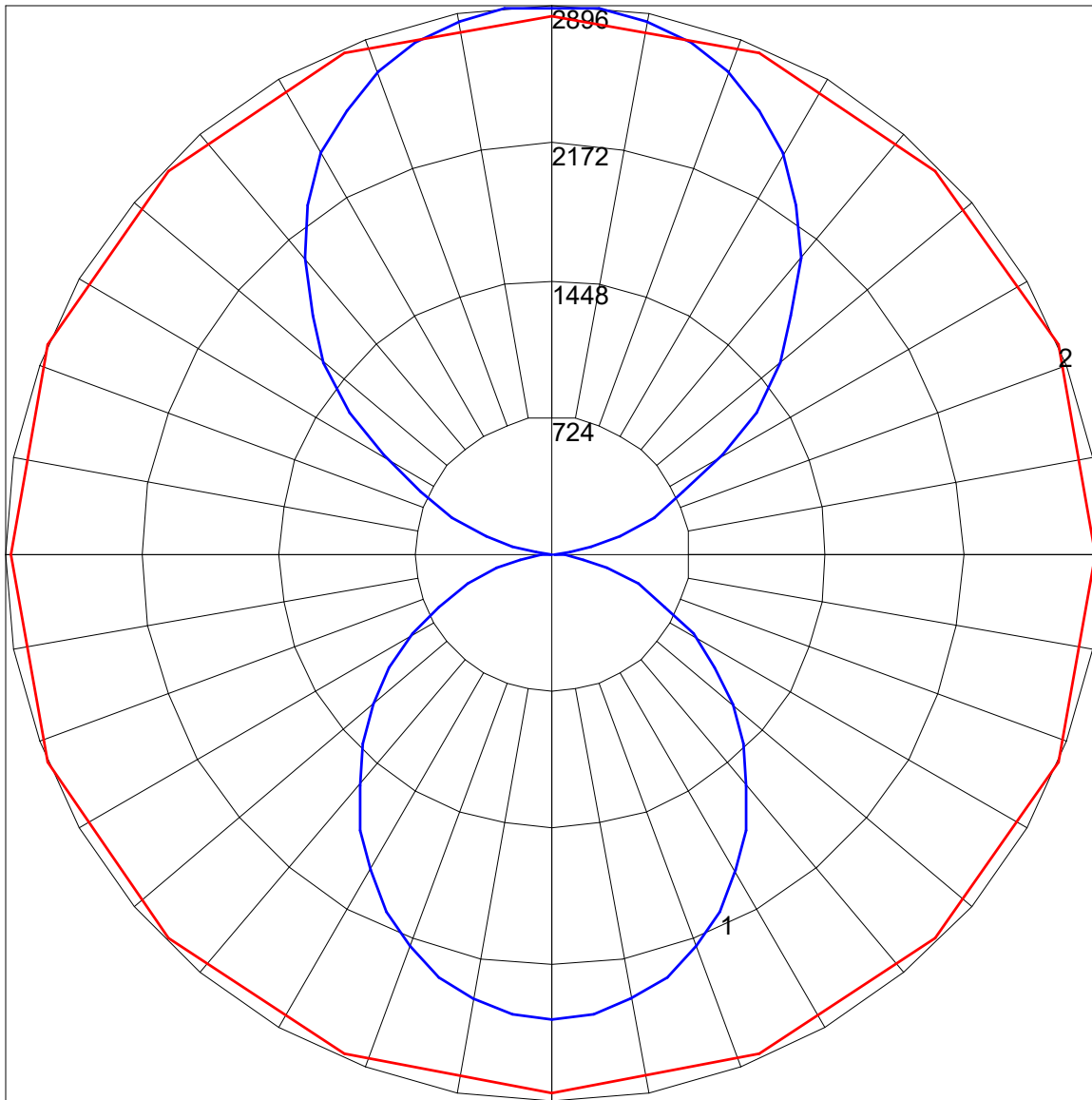
12H	4H	17.6	18.0	18.6	19.0	20.5	17.4	17.8	18.4	18.8	20.2
	6H	18.1	18.4	19.2	19.5	20.9	17.9	18.2	19.0	19.3	20.8
	8H	18.3	18.5	19.4	19.6	21.1	18.1	18.4	19.2	19.5	20.9

Maximum UGR = 21.1

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POLAR GRAPH



Maximum Candela = 2896.076 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.)