



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-P7-8TWU-P7-8TWD-F-A-POE 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] 2-72 LED TOP & 4-72 LED BTM 4' DIRECT/INDIRECT LUMINAIRE

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

[LUMCAT] MX4UD-4-P7-8TWU-P7-8TWD-F-A-PoE 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	8538	8137	7994
55	7727	7400	7285
65	6568	6544	6280
75	5069	5225	5147
85	2150	3138	2906

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	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	1199.410	1199.410	1199.410	1199.410	1199.410
5	1215.232	1187.848	1186.022	1181.154	1173.852
10	1188.456	1163.507	1166.549	1156.813	1147.685
15	1151.336	1130.646	1131.863	1119.084	1109.956
20	1106.305	1089.875	1079.530	1064.925	1059.448
25	1039.976	1029.631	1016.243	999.204	993.119
30	970.603	961.475	948.088	924.355	918.270
35	897.580	886.018	864.111	842.812	837.944
40	821.514	803.866	778.308	762.486	761.878
45	725.366	710.153	691.289	677.901	679.118
50	628.002	615.831	603.660	587.230	593.315
55	532.463	523.335	509.947	504.470	502.036
60	433.272	427.187	418.668	417.451	413.799
65	333.474	332.865	332.257	327.997	318.869
70	241.586	242.803	246.454	244.020	236.109
75	157.609	158.217	162.477	164.303	160.043
80	78.500	86.411	85.194	90.062	88.237
85	22.516	32.252	32.861	31.643	30.426
90	4.260	8.519	10.345	8.519	8.519
95	10.954	18.256	20.081	19.473	20.081
100	45.031	62.070	62.678	55.376	58.419
105	106.493	115.620	118.663	102.841	102.233
110	188.035	185.601	192.295	167.954	167.345
115	279.923	272.012	276.272	236.109	237.326
120	374.854	373.028	363.292	325.563	326.171
125	478.912	471.001	452.137	424.753	410.148
130	587.230	567.757	565.323	537.331	509.338
135	688.854	666.947	666.339	641.998	621.308
140	785.002	763.703	764.312	742.405	726.583
145	882.975	852.549	857.417	829.425	822.122
150	964.518	936.526	943.219	914.619	906.099
155	1029.631	1002.855	1013.200	987.642	980.340
160	1085.615	1057.623	1061.883	1044.844	1037.541
165	1131.863	1103.871	1099.611	1089.875	1081.355
170	1157.422	1130.038	1127.604	1120.910	1112.999
175	1176.286	1150.119	1148.902	1144.034	1139.166
180	1160.464	1160.464	1160.464	1160.464	1160.464

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Zone	Lumens	%Lamp	%Fixt
0-20	430.51	N.A.	7.50
0-30	898.24	N.A.	15.70
0-40	1439.91	N.A.	25.20
0-60	2435.82	N.A.	42.70
0-80	2935.31	N.A.	51.40
0-90	2977.87	N.A.	52.20
10-90	2865.23	N.A.	50.20
20-40	1009.4	N.A.	17.70
20-50	1545.97	N.A.	27.10
40-70	1323.66	N.A.	23.20
60-80	499.49	N.A.	8.80
70-80	171.74	N.A.	3.00
80-90	42.56	N.A.	0.70
90-110	149.23	N.A.	2.60
90-120	410.29	N.A.	7.20
90-130	813.52	N.A.	14.30
90-150	1850.2	N.A.	32.40
90-180	2729.99	N.A.	47.80
110-180	2580.76	N.A.	45.20
0-180	5707.86	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	112.64
10-20	317.87
20-30	467.74
30-40	541.67
40-50	536.57
50-60	459.34
60-70	327.75
70-80	171.74
80-90	42.56
90-100	28.06
100-110	121.17
110-120	261.05
120-130	403.23
130-140	506.80
140-150	529.88
150-160	460.74
160-170	309.91
170-180	109.14

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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	50	49	44
2	90	82	76	71	83	76	71	67	65	61	58	55	52	50	46	44	42	37
3	82	72	65	59	76	67	61	56	58	53	49	49	45	42	40	38	36	32
4	75	64	56	50	69	60	53	47	51	46	42	44	39	36	36	33	31	27
5	69	57	49	43	63	53	46	41	46	40	36	39	35	31	33	29	27	24
6	63	51	43	38	59	48	41	36	41	36	32	35	31	28	30	26	24	21
7	59	46	38	33	54	43	36	31	38	32	28	32	28	24	27	24	21	19
8	55	42	34	29	50	39	33	28	34	29	25	29	25	22	25	22	19	17
9	51	39	31	26	47	36	29	25	31	26	22	27	23	20	23	20	17	15
10	47	35	28	23	44	33	27	22	29	24	20	25	21	18	21	18	16	14

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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	15.5	16.3	16.4	17.3	18.5	15.2	16.1	16.2	17.1	18.3
	3H	17.0	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	20.7	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	19.4	20.6
	12H	17.8	18.4	18.8	19.4	20.7	17.7	18.4	18.7	19.3	20.7

UGR Viewed Endwise

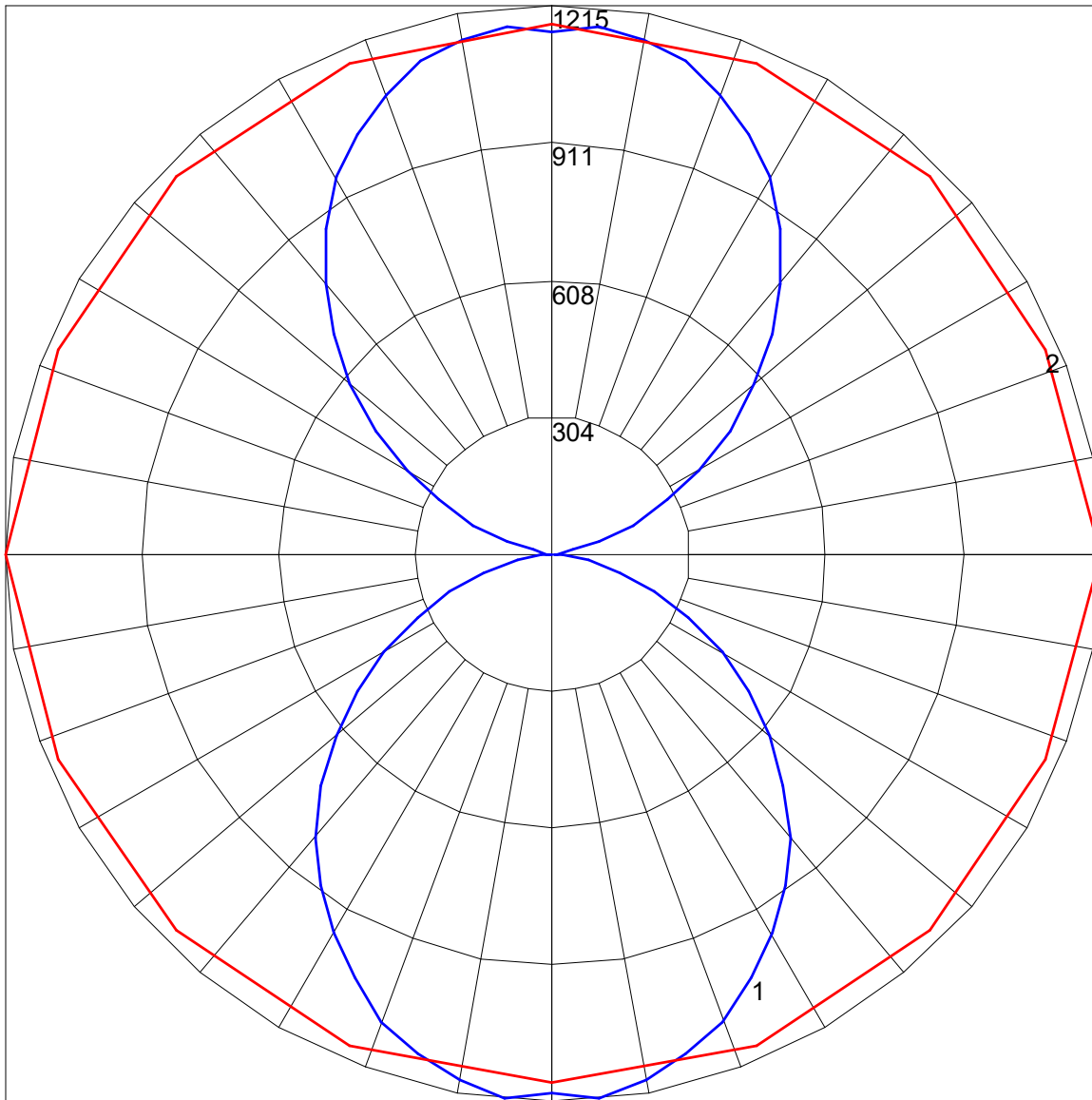
4H	2H	15.9	16.7	16.9	17.6	18.9	15.7	16.5	16.7	17.4	18.7
	3H	17.6	18.2	18.6	19.2	20.5	17.5	18.1	18.5	19.1	20.4
	4H	18.2	18.8	19.2	19.8	21.1	18.1	18.7	19.1	19.7	21.0
	6H	18.6	19.1	19.6	20.1	21.4	18.6	19.1	19.6	20.1	21.4
	8H	18.7	19.1	19.7	20.2	21.5	18.7	19.2	19.7	20.2	21.5
	12H	18.7	19.1	19.7	20.1	21.5	18.8	19.2	19.8	20.2	21.5
8H	4H	18.4	18.9	19.4	19.9	21.2	18.3	18.8	19.4	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	21.8	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	19.8	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 = 1215.232 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.)