



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-L8-940U-L8-940D-A-F-DIM-UNV_.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] 20-MAY-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 4'DIRECT/INDIRECT LED LUMINAIRE

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

[LUMCAT] MX4UD-4-00-L8-940U-L8-940D-A-F-DIM-UNV

[LAMPCAT] HLM MX REV 2 90 CRI 4000K CCT

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] INDOOR, ARCHITECTURAL, COMMERCIAL, OFFICE

[_SEARCH_MOUNTING] SUSPENDED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5789
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	102
Total Luminaire Watts	56.8
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)	4.00 ft
Luminous Width (90-270)	0.33 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8399	8005	7864
55	7601	7280	7167
65	6461	6437	6178
75	4986	5140	5063
85	2115	3087	2858

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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	1216.431	1216.431	1216.431	1216.431	1216.431
5	1232.477	1204.705	1202.853	1197.916	1190.510
10	1205.322	1180.018	1183.104	1173.229	1163.972
15	1167.675	1146.691	1147.925	1134.965	1125.707
20	1122.005	1105.341	1094.849	1080.037	1074.483
25	1054.734	1044.242	1030.664	1013.384	1007.212
30	984.377	975.119	961.542	937.472	931.301
35	910.317	898.591	876.373	854.772	849.835
40	833.172	815.274	789.353	773.307	772.690
45	735.660	720.231	701.099	687.521	688.755
50	636.913	624.570	612.227	595.563	601.735
55	540.019	530.761	517.184	511.629	509.160
60	439.421	433.249	424.609	423.375	419.672
65	338.206	337.589	336.972	332.652	323.394
70	245.014	246.249	249.951	247.483	239.460
75	159.846	160.463	164.783	166.634	162.314
80	79.614	87.637	86.403	91.340	89.489
85	22.835	32.710	33.327	32.093	30.858
90	4.320	8.640	10.492	8.640	8.640
95	11.109	18.515	20.366	19.749	20.366
100	45.670	62.951	63.568	56.162	59.248
105	108.004	117.261	120.347	104.301	103.684
110	190.704	188.235	195.024	170.337	169.720
115	283.896	275.872	280.193	239.460	240.694
120	380.173	378.322	368.447	330.183	330.800
125	485.708	477.685	458.553	430.781	415.969
130	595.563	575.814	573.346	544.956	516.566
135	698.630	676.412	675.795	651.108	630.125
140	796.142	774.541	775.158	752.940	736.894
145	895.505	864.647	869.584	841.195	833.789
150	978.205	949.816	956.605	927.598	918.957
155	1044.242	1017.087	1027.578	1001.657	994.252
160	1101.021	1072.631	1076.952	1059.671	1052.265
165	1147.925	1119.536	1115.216	1105.341	1096.701
170	1173.846	1146.074	1143.605	1136.816	1128.793
175	1192.978	1166.440	1165.206	1160.269	1155.331
180	1176.932	1176.932	1176.932	1176.932	1176.932

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	436.62	N.A.	7.50
0-30	910.99	N.A.	15.70
0-40	1460.34	N.A.	25.20
0-60	2470.39	N.A.	42.70
0-80	2976.97	N.A.	51.40
0-90	3020.13	N.A.	52.20
10-90	2905.89	N.A.	50.20
20-40	1023.73	N.A.	17.70
20-50	1567.91	N.A.	27.10
40-70	1342.44	N.A.	23.20
60-80	506.58	N.A.	8.80
70-80	174.18	N.A.	3.00
80-90	43.16	N.A.	0.70
90-110	151.35	N.A.	2.60
90-120	416.11	N.A.	7.20
90-130	825.07	N.A.	14.30
90-150	1876.46	N.A.	32.40
90-180	2768.73	N.A.	47.80
110-180	2617.38	N.A.	45.20
0-180	5788.86	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	114.24
10-20	322.38
20-30	474.37
30-40	549.35
40-50	544.18
50-60	465.86
60-70	332.40
70-80	174.18
80-90	43.16
90-100	28.46
100-110	122.89
110-120	264.76
120-130	408.96
130-140	513.99
140-150	537.40
150-160	467.28
160-170	314.31
170-180	110.69

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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	15.4	16.2	16.3	17.2	18.4	UGR Viewed Endwise	15.1	16.0	16.1	16.9	18.2
	3H	16.8	17.6	17.8	18.6	19.9		16.7	17.4	17.6	18.4	19.7
	4H	17.3	18.1	18.3	19.0	20.3		17.2	17.9	18.2	18.9	20.2
	6H	17.6	18.3	18.6	19.3	20.6		17.5	18.2	18.5	19.2	20.5
	8H	17.7	18.3	18.6	19.3	20.6		17.6	18.3	18.6	19.3	20.5
	12H	17.7	18.3	18.6	19.3	20.6		17.6	18.3	18.6	19.2	20.5

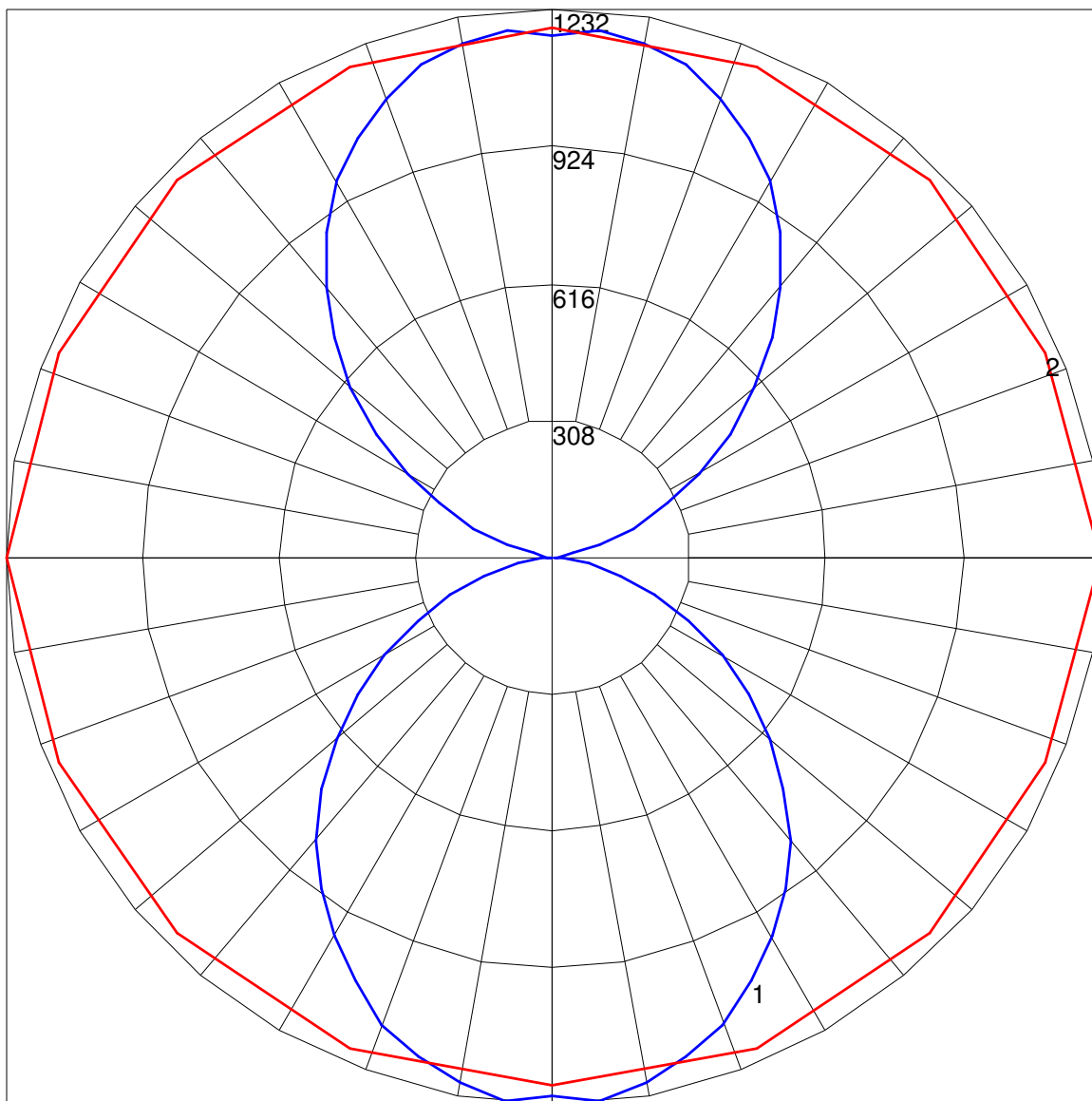
4H	2H	15.8	16.6	16.8	17.5	18.8		15.6	16.4	16.6	17.3	18.6
	3H	17.5	18.1	18.5	19.1	20.4		17.4	18.0	18.4	19.0	20.3
	4H	18.1	18.7	19.1	19.7	21.0		18.0	18.6	19.0	19.6	20.9
	6H	18.5	19.0	19.5	20.0	21.3		18.5	19.0	19.5	20.0	21.3
	8H	18.6	19.0	19.6	20.0	21.4		18.6	19.1	19.6	20.1	21.4
	12H	18.6	19.0	19.6	20.0	21.4		18.6	19.1	19.7	20.1	21.4

8H	4H	18.3	18.8	19.3	19.8	21.1		18.2	18.7	19.2	19.7	21.0
	6H	18.8	19.2	19.8	20.2	21.5		18.8	19.2	19.8	20.2	21.5
	8H	18.9	19.3	20.0	20.3	21.6		19.0	19.3	20.0	20.3	21.7
	12H	19.0	19.3	20.1	20.3	21.7		19.1	19.4	20.1	20.4	21.8

12H	4H	18.3	18.7	19.3	19.7	21.1		18.2	18.6	19.2	19.6	21.0
	6H	18.8	19.1	19.8	20.2	21.5		18.8	19.1	19.8	20.2	21.5
	8H	19.0	19.3	20.0	20.3	21.7		19.0	19.3	20.1	20.3	21.7

Maximum UGR = 21.8

POLAR GRAPH



Maximum Candela = 1232.477 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.)