



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L12-835U-L8-835D-F-(L8.5U-L3.6D)-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 20195.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUE DATE] 16-APR-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836
 [LUMINAIRE] 4' DIRECT/INDIRECT SUSPENDED LUMINAIRE
 [MORE] WITH FROSTED ACRYLIC LENSES
 [LUMCAT] MX4UD-4-L12/835U/L8/835D-S-A-(L8.5U/L3.6D)-DIM-UNV
 [LAMPCAT] HLM 80 CRI, 3500K CCT
 [SEARCH_SOURCETYPE] LED
 [SEARCH_APPLICATION] Indoor, Architectural, Classroom, Direct
 [SEARCH_MOUNTING] Suspended

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4980
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	121
Total Luminaire Watts	41
Ballast Factor	1.00
CIE Type	Semi-Indirect
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	4335	4140	3985
55	3995	3809	3572
65	3534	3325	3183
75	2719	2609	2588
85	1256	1555	1436

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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	593.809	593.809	593.809	593.809	593.809
5	606.023	592.869	589.111	585.979	582.847
10	597.880	583.787	579.402	574.704	571.259
15	585.666	570.006	561.863	554.347	552.154
20	559.984	544.325	539.940	527.099	524.907
25	523.967	511.753	507.368	497.659	495.467
30	487.950	476.989	471.351	464.461	461.016
35	454.126	441.285	432.202	428.131	424.373
40	416.543	406.521	393.367	387.103	382.092
45	368.312	361.421	351.713	345.762	338.559
50	323.839	312.251	310.371	299.410	293.459
55	275.294	268.404	262.453	253.058	246.167
60	230.508	220.486	217.041	208.585	202.634
65	179.458	174.134	168.810	163.485	161.606
70	131.853	127.155	123.710	118.699	120.891
75	84.561	84.875	81.116	81.116	80.490
80	41.654	44.160	42.907	45.413	42.281
85	13.154	15.660	16.286	19.105	15.033
90	0.000	0.000	0.000	0.000	0.000
95	42.976	45.023	42.976	42.976	38.883
100	98.232	98.232	98.232	87.999	85.953
105	169.859	169.859	155.534	149.394	143.255
110	274.231	261.952	237.394	216.929	214.882
115	388.835	368.370	331.533	309.021	302.882
120	507.531	480.927	439.997	403.160	397.021
125	644.647	611.903	552.554	513.671	497.299
130	787.902	751.065	679.437	632.368	624.182
135	908.645	851.343	808.367	759.251	751.065
140	1033.481	988.459	929.110	884.087	871.808
145	1146.039	1131.713	1043.714	1000.738	990.505
150	1242.224	1225.852	1148.085	1113.295	1094.876
155	1326.131	1305.666	1242.224	1223.806	1205.387
160	1397.758	1385.479	1344.549	1322.038	1305.666
165	1448.921	1448.921	1420.270	1403.898	1389.572
170	1487.804	1491.897	1479.618	1473.479	1461.200
175	1508.269	1518.502	1514.409	1506.223	1500.083
180	1518.502	1518.502	1518.502	1518.502	1518.502

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Zone	Lumens	%Lamp	%Fixt
0-20	214.78	N.A.	4.30
0-30	448.21	N.A.	9.00
0-40	720.56	N.A.	14.50
0-60	1226.78	N.A.	24.60
0-80	1482.27	N.A.	29.80
0-90	1503.00	N.A.	30.20
10-90	1446.95	N.A.	29.10
20-40	505.78	N.A.	10.20
20-50	778.10	N.A.	15.60
40-70	674.04	N.A.	13.50
60-80	255.49	N.A.	5.10
70-80	87.67	N.A.	1.80
80-90	20.73	N.A.	0.40
90-110	220.49	N.A.	4.40
90-120	557.37	N.A.	11.20
90-130	1062.76	N.A.	21.30
90-150	2352.21	N.A.	47.20
90-180	3476.67	N.A.	69.80
110-180	3256.19	N.A.	65.40
0-180	4979.68	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	56.06
10-20	158.72
20-30	233.43
30-40	272.35
40-50	272.32
50-60	233.90
60-70	167.82
70-80	87.67
80-90	20.73
90-100	49.02
100-110	171.46
110-120	336.88
120-130	505.39
130-140	628.16
140-150	661.29
150-160	580.44
160-170	400.82
170-180	143.20

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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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38	30
1	93	89	86	82	84	80	77	74	63	61	59	48	47	45	34	33	32	26
2	85	78	72	67	76	70	65	61	56	52	49	42	40	38	30	28	27	22
3	78	69	61	56	69	62	56	51	49	45	41	37	34	32	26	25	23	18
4	71	61	53	47	63	55	48	43	43	39	35	33	30	27	23	22	20	16
5	65	54	46	40	58	49	42	37	39	34	30	30	26	24	21	19	17	14
6	60	48	40	35	53	44	37	32	35	30	26	27	23	21	19	17	15	12
7	55	43	36	30	49	39	33	28	32	27	23	24	21	18	17	15	14	11
8	51	39	32	27	46	36	29	25	29	24	20	22	19	16	16	14	12	10
9	47	36	28	24	43	32	26	22	26	21	18	20	17	14	15	13	11	9
10	44	33	26	21	40	30	24	19	24	19	16	19	15	13	14	11	10	8

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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	10.8	11.5	11.9	12.6	14.2	10.4	11.1	11.5	12.2	13.7
	3H	12.4	13.0	13.5	14.1	15.7	11.9	12.5	13.0	13.6	15.2
	4H	12.9	13.5	14.0	14.6	16.2	12.4	13.0	13.5	14.1	15.7
	6H	13.2	13.7	14.3	14.8	16.4	12.7	13.3	13.9	14.4	16.0
	8H	13.2	13.7	14.4	14.9	16.4	12.8	13.3	13.9	14.5	16.0
	12H	13.2	13.7	14.4	14.8	16.4	12.8	13.3	14.0	14.4	16.0

UGR Viewed Endwise

4H	2H	11.3	11.9	12.4	13.0	14.5	10.9	11.5	12.0	12.6	14.1
	3H	13.0	13.5	14.2	14.7	16.2	12.6	13.1	13.7	14.2	15.8
	4H	13.6	14.1	14.8	15.2	16.8	13.2	13.7	14.4	14.8	16.4
	6H	14.0	14.4	15.2	15.6	17.1	13.7	14.0	14.8	15.2	16.8
	8H	14.1	14.5	15.3	15.6	17.2	13.8	14.1	14.9	15.3	16.9
	12H	14.1	14.4	15.3	15.6	17.2	13.8	14.1	15.0	15.3	16.9

8H	4H	13.8	14.2	14.9	15.3	16.9	13.4	13.8	14.6	14.9	16.5
	6H	14.3	14.6	15.4	15.8	17.3	14.0	14.3	15.1	15.4	17.0
	8H	14.4	14.7	15.6	15.8	17.5	14.2	14.4	15.3	15.6	17.2
	12H	14.5	14.7	15.7	15.9	17.5	14.3	14.5	15.4	15.7	17.3

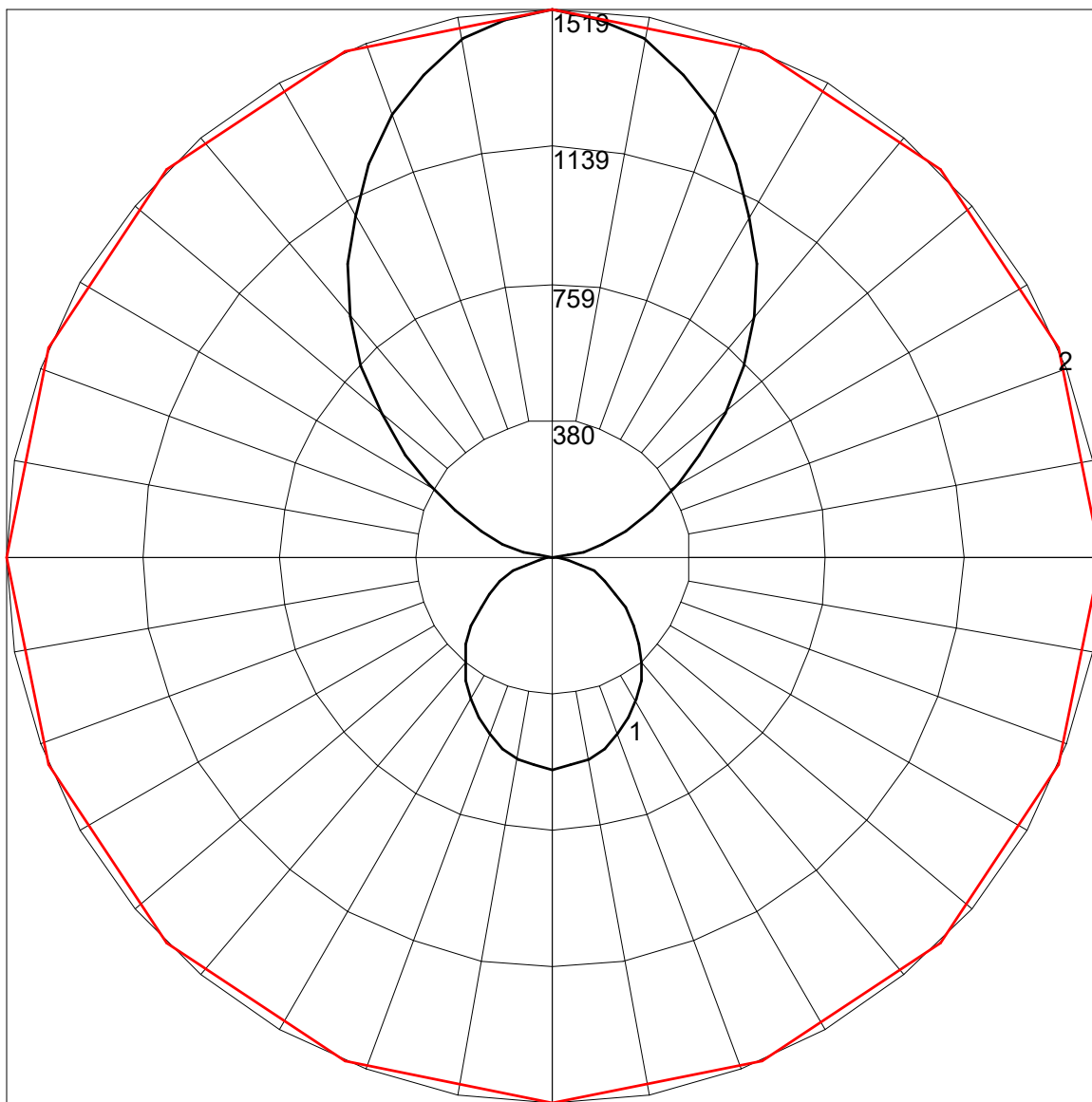
12H	4H	13.8	14.1	14.9	15.3	16.8	13.4	13.7	14.6	14.9	16.5
	6H	14.3	14.5	15.4	15.7	17.3	14.0	14.2	15.1	15.4	17.0
	8H	14.4	14.7	15.6	15.8	17.5	14.2	14.4	15.4	15.6	17.2

Maximum UGR = 17.5

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POLAR GRAPH



Maximum Candela = 1518.502 Located At Horizontal Angle = 0, Vertical Angle = 180

1 - Vertical Plane Through Horizontal Angles (90 - 270)

2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)