



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4D-4-00-L12-835-F-(L9)-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
 [ISSUEDATE] 16-APR-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836
 [LUMINAIRE] 4' DIRECT SUSPENDED LUMINAIRE
 [MORE] WITH FROSTED ACRYLIC LENS
 [LUMCAT] MX4D-4-L12-835-S-F-(L9)-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	3683
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	127
Total Luminaire Watts	29
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.30
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	10624	10145	9765
55	9789	9333	8754
65	8661	8147	7799
75	6664	6392	6343
85	3078	3811	3518

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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	1455.088	1455.088	1455.088	1455.088	1455.088
5	1485.019	1452.786	1443.576	1435.902	1428.227
10	1465.065	1430.530	1419.785	1408.274	1399.832
15	1435.134	1396.762	1376.808	1358.389	1353.017
20	1372.203	1333.831	1323.086	1291.621	1286.249
25	1283.946	1254.016	1243.271	1219.480	1214.108
30	1195.689	1168.829	1155.015	1138.131	1129.689
35	1112.805	1081.339	1059.083	1049.106	1039.897
40	1020.711	996.152	963.919	948.570	936.291
45	902.523	885.639	861.848	847.266	829.615
50	793.545	765.149	760.544	733.684	719.102
55	674.590	657.706	643.124	620.101	603.217
60	564.844	540.286	531.844	511.123	496.541
65	439.750	426.703	413.656	400.610	396.005
70	323.097	311.585	303.143	290.864	296.236
75	207.212	207.979	198.770	198.770	197.235
80	102.071	108.211	105.141	111.280	103.606
85	32.233	38.373	39.907	46.815	36.838
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	526.31	N.A.	14.30
0-30	1098.32	N.A.	29.80
0-40	1765.68	N.A.	47.90
0-60	3006.15	N.A.	81.60
0-80	3632.2	N.A.	98.60
0-90	3683.01	N.A.	100.00
10-90	3545.64	N.A.	96.30
20-40	1239.38	N.A.	33.70
20-50	1906.68	N.A.	51.80
40-70	1651.69	N.A.	44.80
60-80	626.05	N.A.	17.00
70-80	214.82	N.A.	5.80
80-90	50.81	N.A.	1.40
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	3683.01	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	137.36
10-20	388.94
20-30	572.01
30-40	667.37
40-50	667.30
50-60	573.16
60-70	411.23
70-80	214.82
80-90	50.81
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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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	109	109	109	109	106	106	106	106	102	102	102	97	97	97	93	93	93	91
1	100	96	92	89	97	94	90	87	90	87	84	86	84	82	83	81	79	78
2	91	84	78	73	89	82	77	72	79	74	70	76	72	69	73	70	67	65
3	83	74	67	61	81	73	66	60	70	64	59	67	62	58	65	61	57	55
4	76	66	58	52	74	65	57	52	62	56	51	60	55	50	58	53	50	48
5	70	59	51	45	69	58	50	45	56	49	44	54	48	44	53	47	43	41
6	65	53	45	39	63	52	45	39	51	44	39	49	43	39	48	42	38	36
7	60	48	40	35	59	48	40	35	46	39	35	45	39	34	44	38	34	32
8	56	44	37	31	55	44	36	31	42	36	31	41	35	31	40	35	31	29
9	53	41	33	28	51	40	33	28	39	33	28	38	32	28	37	32	28	26
10	49	38	30	26	48	37	30	26	36	30	25	35	29	25	35	29	25	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	20.2	21.8	20.6	22.1	22.4	19.7	21.3	20.1	21.7	22.0
	3H	21.9	23.3	22.2	23.6	24.0	21.3	22.8	21.7	23.1	23.5
	4H	22.4	23.7	22.8	24.1	24.5	21.9	23.3	22.3	23.6	24.0
	6H	22.7	24.0	23.1	24.3	24.7	22.3	23.5	22.7	23.9	24.3
	8H	22.8	24.0	23.2	24.4	24.8	22.4	23.6	22.8	23.9	24.3
	12H	22.8	24.0	23.2	24.3	24.8	22.4	23.6	22.8	23.9	24.4

UGR Viewed Endwise

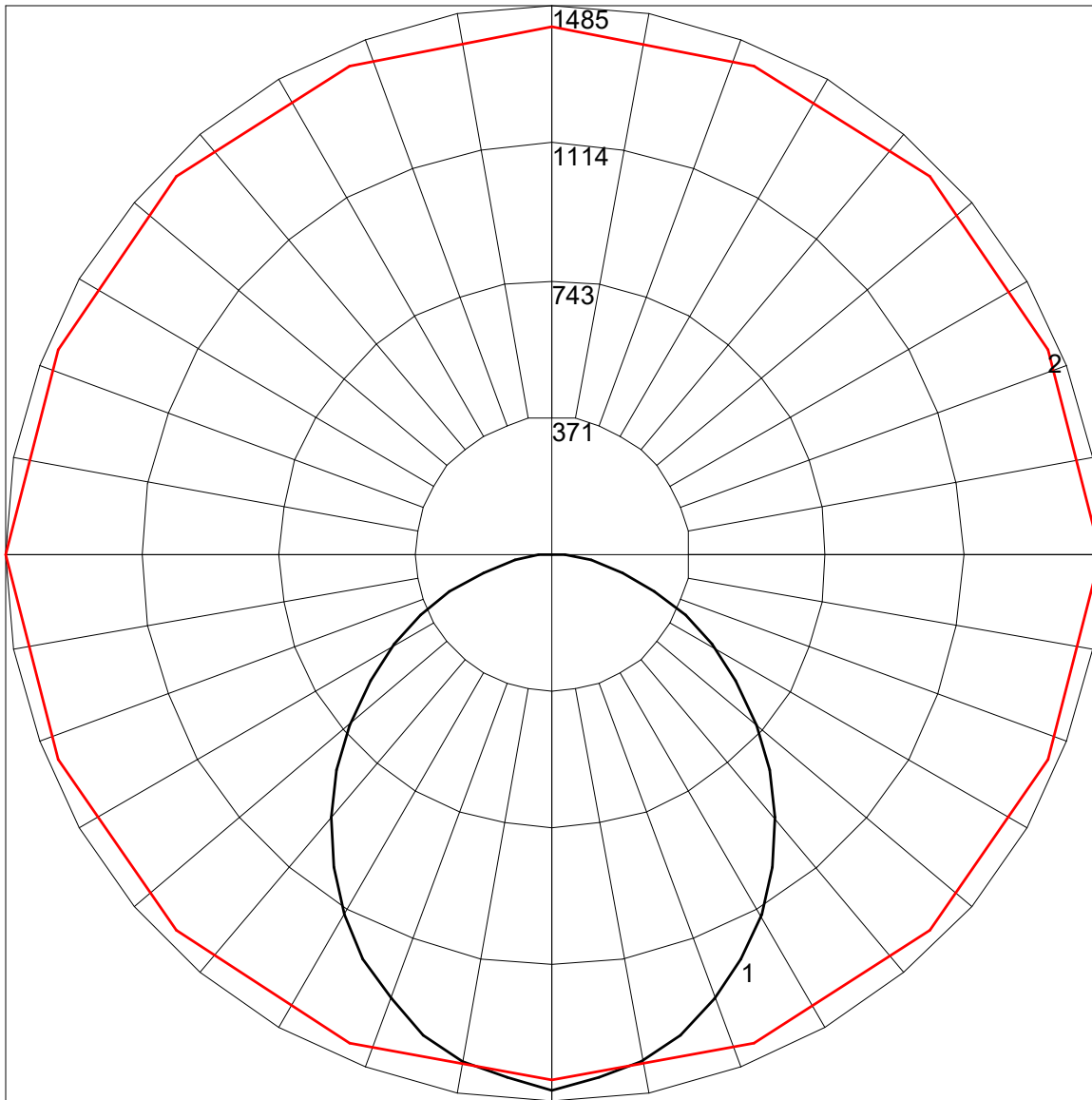
4H	2H	20.7	22.1	21.1	22.4	22.8	20.4	21.7	20.8	22.1	22.4
	3H	22.6	23.7	23.0	24.1	24.5	22.2	23.3	22.6	23.7	24.1
	4H	23.2	24.3	23.7	24.7	25.1	22.8	23.9	23.3	24.3	24.7
	6H	23.7	24.6	24.1	25.0	25.5	23.3	24.2	23.8	24.6	25.1
	8H	23.8	24.6	24.2	25.0	25.5	23.4	24.3	23.9	24.7	25.2
	12H	23.8	24.6	24.3	25.0	25.5	23.5	24.3	24.0	24.7	25.2

8H	4H	23.5	24.3	23.9	24.7	25.2	23.1	23.9	23.6	24.4	24.8
	6H	24.0	24.7	24.5	25.2	25.6	23.7	24.4	24.2	24.8	25.3
	8H	24.1	24.8	24.6	25.3	25.7	23.9	24.5	24.4	25.0	25.5
	12H	24.2	24.8	24.8	25.3	25.8	24.0	24.6	24.5	25.1	25.6

12H	4H	23.5	24.2	24.0	24.7	25.2	23.1	23.9	23.6	24.3	24.8
	6H	24.0	24.6	24.5	25.1	25.6	23.7	24.3	24.2	24.8	25.3
	8H	24.2	24.8	24.7	25.2	25.8	24.0	24.5	24.5	25.0	25.5

Maximum UGR = 25.8

POLAR GRAPH



Maximum Candela = 1485.019 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)