



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4D-2-00-L12-840-F-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 29653.0

[TESTLABV] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 31 AUGUST 2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 2' SUSPENDED LINEAR LED DOWNLIGHT LUMINAIRE

[MORE] WHITE ALUM BODY w/WHITE REFL & FLAT FROST LENS

[LUMCAT] MX4D-2-00-L12-840-F-DIM-UNV

[LAMPCAT] HLMX 80 CRI 4000K CCT

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2528
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	123
Total Luminaire Watts	20.5
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.28
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.99 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	14590	14148	13927
55	13399	12854	12491
65	11404	11219	10849
75	8656	9059	8556
85	4185	5380	5082

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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>
<b>0</b>	1028.677	1028.677	1028.677	1028.677	1028.677
<b>5</b>	1033.276	1022.544	1017.945	1014.879	1014.879
<b>10</b>	1014.879	1004.148	999.549	996.482	993.416
<b>15</b>	979.619	971.954	964.288	961.222	956.623
<b>20</b>	938.227	927.495	921.363	912.165	909.099
<b>25</b>	884.570	872.305	866.173	855.442	853.909
<b>30</b>	830.913	817.116	804.851	801.785	794.120
<b>35</b>	755.794	746.595	735.864	725.133	725.133
<b>40</b>	685.273	676.075	662.278	659.211	648.480
<b>45</b>	607.088	597.889	588.691	579.493	579.493
<b>50</b>	533.501	521.237	513.572	507.440	499.774
<b>55</b>	452.250	441.518	433.853	426.188	421.589
<b>60</b>	367.932	361.800	357.201	351.068	346.469
<b>65</b>	283.614	282.081	279.015	271.350	269.817
<b>70</b>	210.028	208.495	203.896	200.830	197.763
<b>75</b>	131.842	136.441	137.974	133.375	130.309
<b>80</b>	67.454	70.520	70.520	72.053	73.586
<b>85</b>	21.463	22.996	27.595	24.529	26.062
<b>90</b>	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	369.06	N.A.	14.60
0-30	768.43	N.A.	30.40
0-40	1230.2	N.A.	48.70
0-60	2075.3	N.A.	82.10
0-80	2495.02	N.A.	98.70
0-90	2527.77	N.A.	100.00
10-90	2430.98	N.A.	96.20
20-40	861.15	N.A.	34.10
20-50	1316.89	N.A.	52.10
40-70	1121.19	N.A.	44.40
60-80	419.72	N.A.	16.60
70-80	143.63	N.A.	5.70
80-90	32.75	N.A.	1.30
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	2527.77	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	96.79
10-20	272.27
20-30	399.37
30-40	461.77
40-50	455.74
50-60	389.36
60-70	276.09
70-80	143.63
80-90	32.75
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	87	82	77	83	79	75	80	77	74	72
3	91	81	73	67	89	80	72	67	77	70	65	74	69	64	71	67	63	61
4	84	72	64	57	82	71	63	57	68	62	56	66	60	55	64	59	55	52
5	77	65	56	50	75	64	56	49	62	54	49	60	53	48	58	52	48	46
6	72	59	50	44	70	58	49	43	56	48	43	54	48	43	53	47	42	40
7	66	53	45	39	65	52	44	39	51	44	38	49	43	38	48	42	38	36
8	62	49	40	35	60	48	40	35	47	39	34	45	39	34	44	38	34	32
9	58	45	37	31	57	44	36	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	28	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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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	20.9	22.5	21.3	22.8	23.1	20.7	22.2	21.0	22.6	22.9
	3H	22.5	23.9	22.9	24.3	24.6	22.2	23.6	22.6	24.0	24.3
	4H	23.0	24.4	23.4	24.7	25.1	22.7	24.1	23.1	24.4	24.8
	6H	23.3	24.6	23.8	24.9	25.3	23.1	24.4	23.5	24.7	25.1
	8H	23.4	24.6	23.8	25.0	25.4	23.2	24.4	23.6	24.8	25.2
	12H	23.4	24.6	23.9	24.9	25.4	23.3	24.4	23.7	24.8	25.2

UGR Viewed Endwise

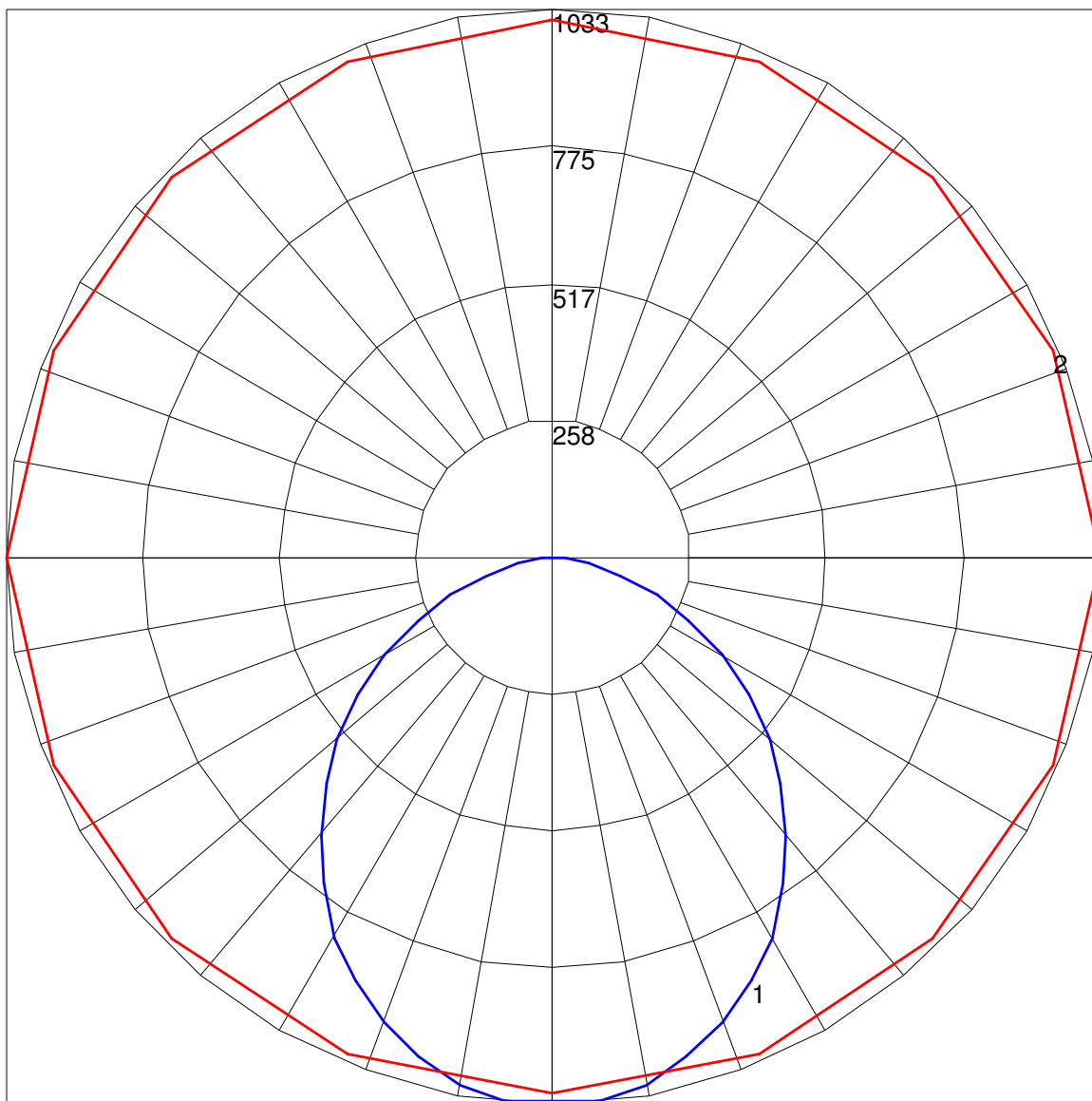
4H	2H	21.5	22.8	21.9	23.2	23.5	21.2	22.6	21.6	22.9	23.3
	3H	23.3	24.4	23.7	24.8	25.2	23.0	24.1	23.4	24.5	24.9
	4H	23.9	24.9	24.3	25.3	25.8	23.7	24.7	24.1	25.1	25.5
	6H	24.3	25.2	24.8	25.6	26.1	24.1	25.0	24.6	25.5	25.9
	8H	24.4	25.2	24.9	25.7	26.1	24.3	25.1	24.7	25.5	26.0
	12H	24.4	25.2	24.9	25.7	26.1	24.3	25.1	24.8	25.6	26.0

8H	4H	24.1	25.0	24.6	25.4	25.9	23.9	24.8	24.4	25.2	25.7
	6H	24.6	25.3	25.1	25.8	26.3	24.5	25.2	25.0	25.7	26.1
	8H	24.8	25.4	25.3	25.9	26.4	24.7	25.3	25.2	25.8	26.3
	12H	24.9	25.4	25.4	25.9	26.5	24.8	25.3	25.3	25.8	26.4

12H	4H	24.1	24.9	24.6	25.4	25.8	23.9	24.7	24.4	25.2	25.6
	6H	24.7	25.3	25.2	25.7	26.3	24.5	25.1	25.0	25.6	26.1
	8H	24.8	25.4	25.4	25.9	26.4	24.7	25.3	25.2	25.8	26.3

Maximum UGR = 26.5

POLAR GRAPH



Maximum Candela = 1033.276 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.)