



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4D-4-00-L12-940-F-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN FROM BALLABS TEST NO. 29653.0  
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC  
 [ISSUE DATE] 08/25/2020  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO  
 [LUMINAIRE] 4' SUSPENDED LED DOWNLIGHT LUMINAIRE  
 [MORE] WHITE ALUM BODY w/WHITE REFL & FLAT FROST LENS  
 [LUMCAT] MX4D-4-00-L12-940-F-DIM-UNV  
 [LAMPCAT] HLMX 90 CRI 4000K CCT

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4042
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	94
Total Luminaire Watts	43.2
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)	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	11605	11254	11078
55	10658	10225	9936
65	9071	8924	8630
75	6886	7206	6806
85	3329	4280	4042

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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	1644.744	1644.744	1644.744	1644.744	1644.744
5	1652.097	1634.939	1627.586	1622.683	1622.683
10	1622.683	1605.525	1598.171	1593.269	1588.367
15	1566.306	1554.050	1541.794	1536.892	1529.538
20	1500.124	1482.966	1473.161	1458.454	1453.552
25	1414.333	1394.723	1384.918	1367.760	1365.309
30	1328.541	1306.481	1286.871	1281.969	1269.713
35	1208.433	1193.726	1176.568	1159.410	1159.410
40	1095.679	1080.972	1058.911	1054.009	1036.850
45	970.668	955.961	941.254	926.547	926.547
50	853.012	833.402	821.146	811.342	799.086
55	723.099	705.941	693.685	681.429	674.075
60	588.284	578.479	571.126	561.321	553.967
65	453.469	451.018	446.115	433.859	431.408
70	335.812	333.361	326.007	321.105	316.203
75	210.802	218.155	220.606	213.253	208.351
80	107.852	112.754	112.754	115.206	117.657
85	34.317	36.768	44.121	39.219	41.670
90	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	590.08	N.A.	14.60
0-30	1228.64	N.A.	30.40
0-40	1966.96	N.A.	48.70
0-60	3318.19	N.A.	82.10
0-80	3989.27	N.A.	98.70
0-90	4041.63	N.A.	100.00
10-90	3886.88	N.A.	96.20
20-40	1376.88	N.A.	34.10
20-50	2105.56	N.A.	52.10
40-70	1792.66	N.A.	44.40
60-80	671.08	N.A.	16.60
70-80	229.64	N.A.	5.70
80-90	52.37	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	4041.63	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	154.75
10-20	435.33
20-30	638.56
30-40	738.32
40-50	728.68
50-60	622.54
60-70	441.44
70-80	229.64
80-90	52.37
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**

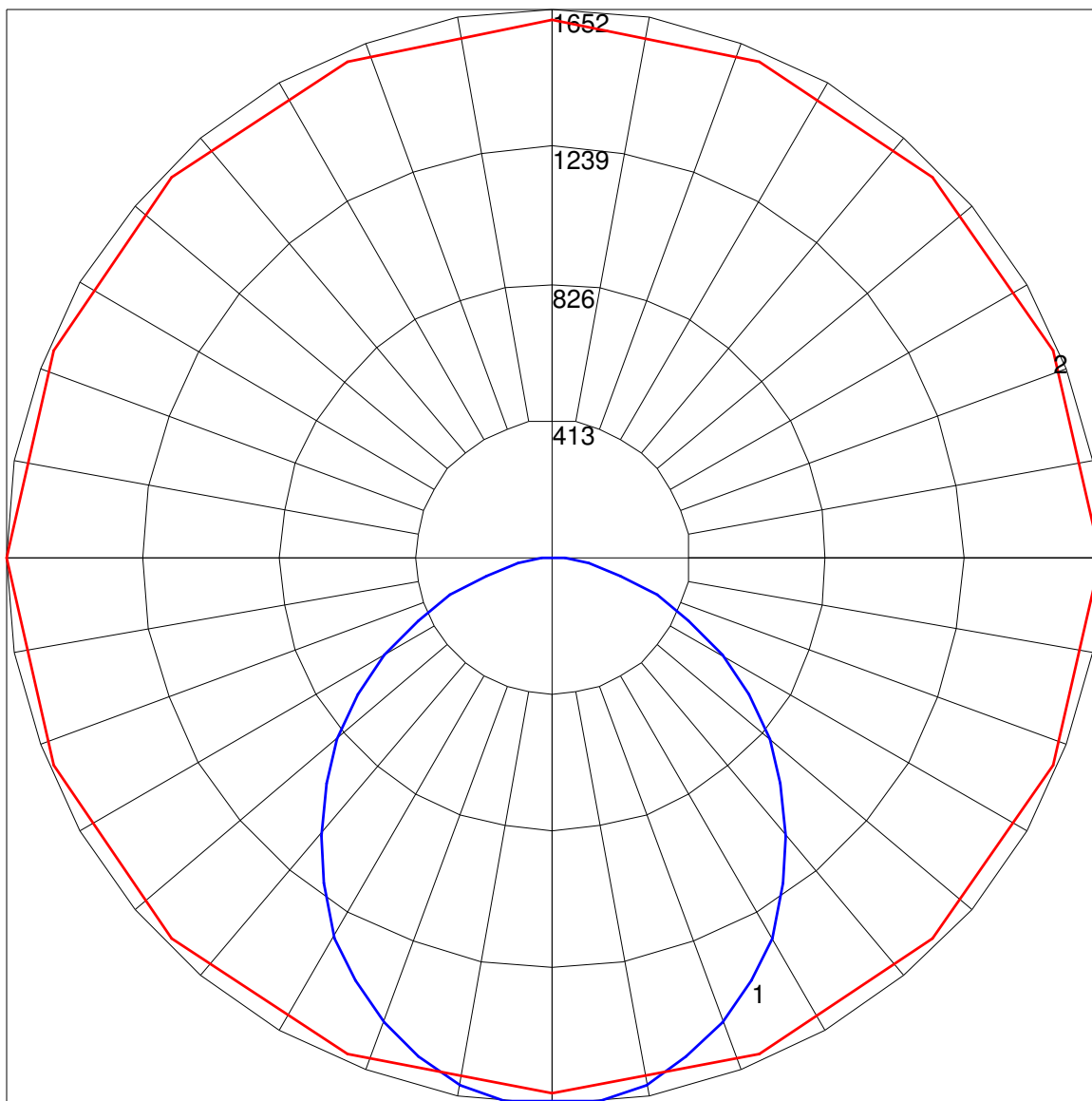
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	20.2	21.8	20.6	22.1	22.4	19.9	21.5	20.3	21.8	22.2
	3H	21.8	23.2	22.2	23.5	23.9	21.5	22.9	21.9	23.2	23.6
	4H	22.3	23.6	22.7	24.0	24.4	22.0	23.4	22.4	23.7	24.1
	6H	22.6	23.9	23.0	24.2	24.6	22.4	23.6	22.8	24.0	24.4
	8H	22.7	23.9	23.1	24.3	24.7	22.5	23.7	22.9	24.1	24.5
	12H	22.7	23.8	23.1	24.2	24.7	22.5	23.7	23.0	24.1	24.5
4H	2H	20.7	22.1	21.1	22.4	22.8	20.5	21.9	20.9	22.2	22.6
	3H	22.5	23.7	22.9	24.1	24.5	22.3	23.4	22.7	23.8	24.2
	4H	23.2	24.2	23.6	24.6	25.0	22.9	24.0	23.4	24.4	24.8
	6H	23.6	24.5	24.0	24.9	25.4	23.4	24.3	23.9	24.7	25.2
	8H	23.7	24.5	24.1	24.9	25.4	23.5	24.4	24.0	24.8	25.3
	12H	23.7	24.5	24.2	24.9	25.4	23.6	24.4	24.1	24.8	25.3
8H	4H	23.4	24.2	23.9	24.7	25.1	23.2	24.0	23.7	24.5	24.9
	6H	23.9	24.6	24.4	25.1	25.5	23.8	24.4	24.2	24.9	25.4
	8H	24.0	24.7	24.5	25.2	25.7	23.9	24.5	24.4	25.1	25.5
	12H	24.1	24.7	24.7	25.2	25.7	24.1	24.6	24.6	25.1	25.7
12H	4H	23.4	24.2	23.9	24.6	25.1	23.2	24.0	23.7	24.4	24.9
	6H	23.9	24.5	24.4	25.0	25.5	23.8	24.4	24.3	24.9	25.4
	8H	24.1	24.7	24.6	25.1	25.7	24.0	24.5	24.5	25.0	25.6

Maximum UGR = 25.7

POLAR GRAPH



Maximum Candela = 1652.097 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.)