



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4RG-4-00-L8-835-F-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20647.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 12-MAR-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 2-72 LED 23.75" ARRAYS 4' RECESSED GRID LUMINAIRE

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

[LUMCAT] MX4RG-4-00-L8-835-F-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3496
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	120
Total Luminaire Watts	29.2
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.16
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	10096	9881	9474
55	9350	8789	8642
65	7886	7606	7365
75	5883	5817	5883
85	2717	2717	2717

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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>	1430.715	1430.715	1430.715	1430.715	1430.715
<b>5</b>	1438.719	1422.711	1412.706	1410.705	1410.705
<b>10</b>	1412.706	1396.698	1384.692	1382.691	1380.690
<b>15</b>	1372.686	1352.676	1338.669	1336.668	1330.665
<b>20</b>	1302.651	1288.644	1284.642	1276.638	1266.633
<b>25</b>	1226.613	1214.607	1206.603	1194.597	1188.594
<b>30</b>	1142.571	1128.564	1114.557	1106.553	1098.549
<b>35</b>	1052.526	1044.522	1020.510	1024.512	1002.501
<b>40</b>	952.476	946.473	938.469	914.457	902.451
<b>45</b>	844.422	836.418	826.413	802.401	792.396
<b>50</b>	734.367	730.365	710.355	698.349	690.345
<b>55</b>	634.317	620.310	596.298	596.298	586.293
<b>60</b>	500.250	504.252	486.243	480.240	468.234
<b>65</b>	394.197	390.195	380.190	372.186	368.184
<b>70</b>	292.146	284.142	274.137	270.135	268.134
<b>75</b>	180.090	176.088	178.089	174.087	180.090
<b>80</b>	92.046	88.044	92.046	100.050	92.046
<b>85</b>	28.014	28.014	28.014	34.017	28.014
<b>90</b>	2.001	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	513.38	N.A.	14.70
0-30	1068.51	N.A.	30.60
0-40	1711.82	N.A.	49.00
0-60	2885.97	N.A.	82.50
0-80	3455.03	N.A.	98.80
0-90	3496.48	N.A.	100.00
10-90	3361.98	N.A.	96.20
20-40	1198.44	N.A.	34.30
20-50	1832.87	N.A.	52.40
40-70	1552.21	N.A.	44.40
60-80	569.06	N.A.	16.30
70-80	191.01	N.A.	5.50
80-90	41.45	N.A.	1.20
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	3496.48	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	134.50
10-20	378.88
20-30	555.13
30-40	643.31
40-50	634.43
50-60	539.72
60-70	378.05
70-80	191.01
80-90	41.45
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	86	86	86	86	84	84	84	84	80	80	80	77	77	77	74	74	74	72
1	79	76	73	70	77	74	72	69	71	69	67	68	67	65	66	64	63	62
2	72	67	62	58	70	65	61	57	63	59	56	60	57	55	58	56	53	52
3	66	59	53	49	64	58	52	48	56	51	47	54	50	47	52	49	46	44
4	61	52	46	42	59	51	46	41	50	45	41	48	44	40	46	43	40	38
5	56	47	41	36	54	46	40	36	45	39	35	43	39	35	42	38	35	33
6	52	42	36	32	50	42	36	32	40	35	31	39	35	31	38	34	31	29
7	48	39	32	28	47	38	32	28	37	32	28	36	31	28	35	31	27	26
8	45	35	29	25	44	35	29	25	34	29	25	33	28	25	32	28	25	23
9	42	32	27	23	41	32	26	23	31	26	23	30	26	22	30	25	22	21
10	39	30	24	21	38	30	24	21	29	24	21	28	24	20	28	23	20	19

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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

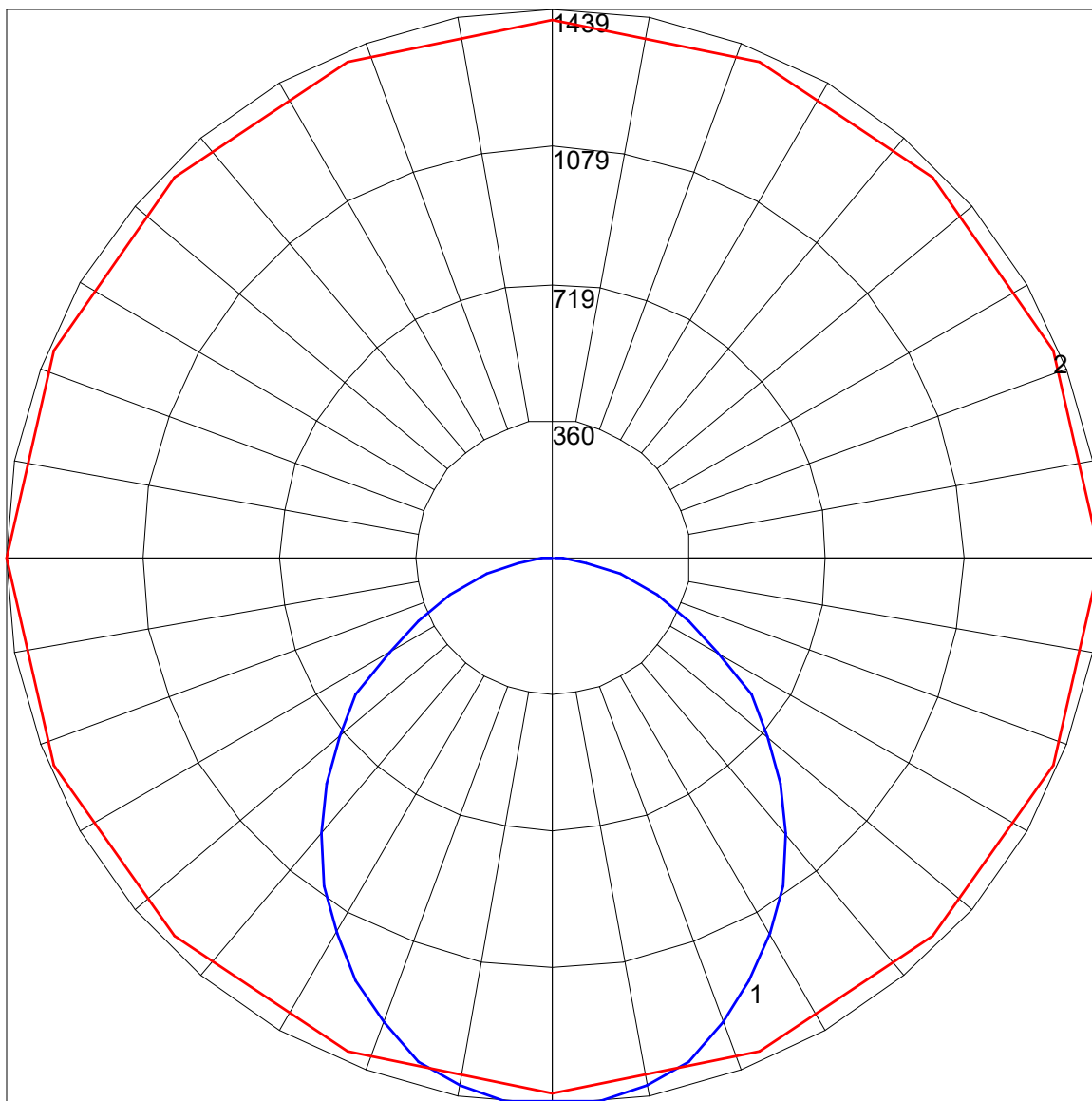
X=2H	Y=2H	20.9	22.5	21.2	22.8	23.1	20.5	22.1	20.9	22.4	22.7
	3H	22.4	23.9	22.8	24.2	24.5	22.1	23.5	22.4	23.8	24.2
	4H	22.9	24.2	23.3	24.6	25.0	22.6	23.9	23.0	24.3	24.6
	6H	23.2	24.4	23.6	24.8	25.2	22.9	24.1	23.3	24.5	24.9
	8H	23.2	24.4	23.7	24.8	25.2	23.0	24.2	23.4	24.5	24.9
	12H	23.3	24.4	23.7	24.8	25.2	23.0	24.1	23.4	24.5	24.9

UGR Viewed Endwise

4H	2H	21.4	22.7	21.8	23.1	23.4	21.1	22.4	21.5	22.8	23.2
	3H	23.1	24.3	23.6	24.7	25.1	22.8	23.9	23.2	24.3	24.7
	4H	23.7	24.7	24.2	25.1	25.6	23.4	24.4	23.9	24.9	25.3
	6H	24.1	25.0	24.6	25.4	25.9	23.9	24.8	24.3	25.2	25.7
	8H	24.2	25.0	24.7	25.4	25.9	24.0	24.8	24.5	25.3	25.7
	12H	24.2	25.0	24.7	25.4	25.9	24.1	24.8	24.5	25.3	25.7
8H	4H	23.9	24.7	24.4	25.2	25.7	23.7	24.5	24.1	24.9	25.4
	6H	24.4	25.0	24.9	25.5	26.0	24.2	24.9	24.7	25.4	25.8
	8H	24.5	25.1	25.0	25.6	26.1	24.4	25.0	24.9	25.5	26.0
	12H	24.6	25.1	25.1	25.6	26.2	24.5	25.0	25.0	25.5	26.1
12H	4H	23.9	24.7	24.4	25.1	25.6	23.7	24.4	24.2	24.9	25.4
	6H	24.4	25.0	24.9	25.5	26.0	24.2	24.8	24.7	25.3	25.8
	8H	24.6	25.1	25.1	25.6	26.1	24.4	25.0	24.9	25.5	26.0

Maximum UGR = 26.2

POLAR GRAPH



Maximum Candela = 1438.719 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.)