



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4RG-4-00-L8-940-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] 08-17- 2020

[MANUFAC] WILLIAMS INDOOR

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

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

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

[LUMCAT] MX4Rxx-4-00-L8-940-F-DIM-UNV

[LAMPCAT] HLM 90 CRI, 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2742
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	94
Total Luminaire Watts	29.1
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)	0.33 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7560	7398	7094
55	7001	6581	6471
65	5905	5695	5515
75	4405	4356	4405
85	2035	2035	2035

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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	1121.817	1121.817	1121.817	1121.817	1121.817
5	1128.093	1115.541	1107.696	1106.127	1106.127
10	1107.696	1095.145	1085.731	1084.162	1082.593
15	1076.317	1060.627	1049.644	1048.075	1043.368
20	1021.403	1010.420	1007.282	1001.006	993.161
25	961.782	952.368	946.092	936.678	931.971
30	895.885	884.902	873.919	867.643	861.367
35	825.281	819.005	800.177	803.315	786.056
40	746.832	742.125	735.849	717.022	707.608
45	662.107	655.832	647.987	629.159	621.314
50	575.814	572.676	556.986	547.572	541.296
55	497.365	486.382	467.555	467.555	459.710
60	392.244	395.382	381.261	376.554	367.140
65	309.088	305.950	298.105	291.829	288.691
70	229.070	222.794	214.950	211.812	210.243
75	141.208	138.070	139.639	136.501	141.208
80	72.173	69.035	72.173	78.449	72.173
85	21.966	21.966	21.966	26.673	21.966
90	1.569	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	402.54	N.A.	14.70
0-30	837.81	N.A.	30.60
0-40	1342.23	N.A.	49.00
0-60	2262.88	N.A.	82.50
0-80	2709.07	N.A.	98.80
0-90	2741.58	N.A.	100.00
10-90	2636.12	N.A.	96.20
20-40	939.69	N.A.	34.30
20-50	1437.15	N.A.	52.40
40-70	1217.08	N.A.	44.40
60-80	446.20	N.A.	16.30
70-80	149.77	N.A.	5.50
80-90	32.50	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	2741.58	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	105.46
10-20	297.07
20-30	435.28
30-40	504.42
40-50	497.46
50-60	423.19
60-70	296.43
70-80	149.77
80-90	32.50
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	95	92	90	91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	77	84	79	76	81	77	74	72
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61
4	84	72	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53
5	77	65	56	50	75	64	56	50	62	55	49	60	54	49	58	52	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	42	40
7	67	53	45	39	65	53	44	39	51	44	38	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	42	34	29	53	41	34	29	40	33	28	39	33	28	38	32	28	26

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UGR TABLE - CORRECTED

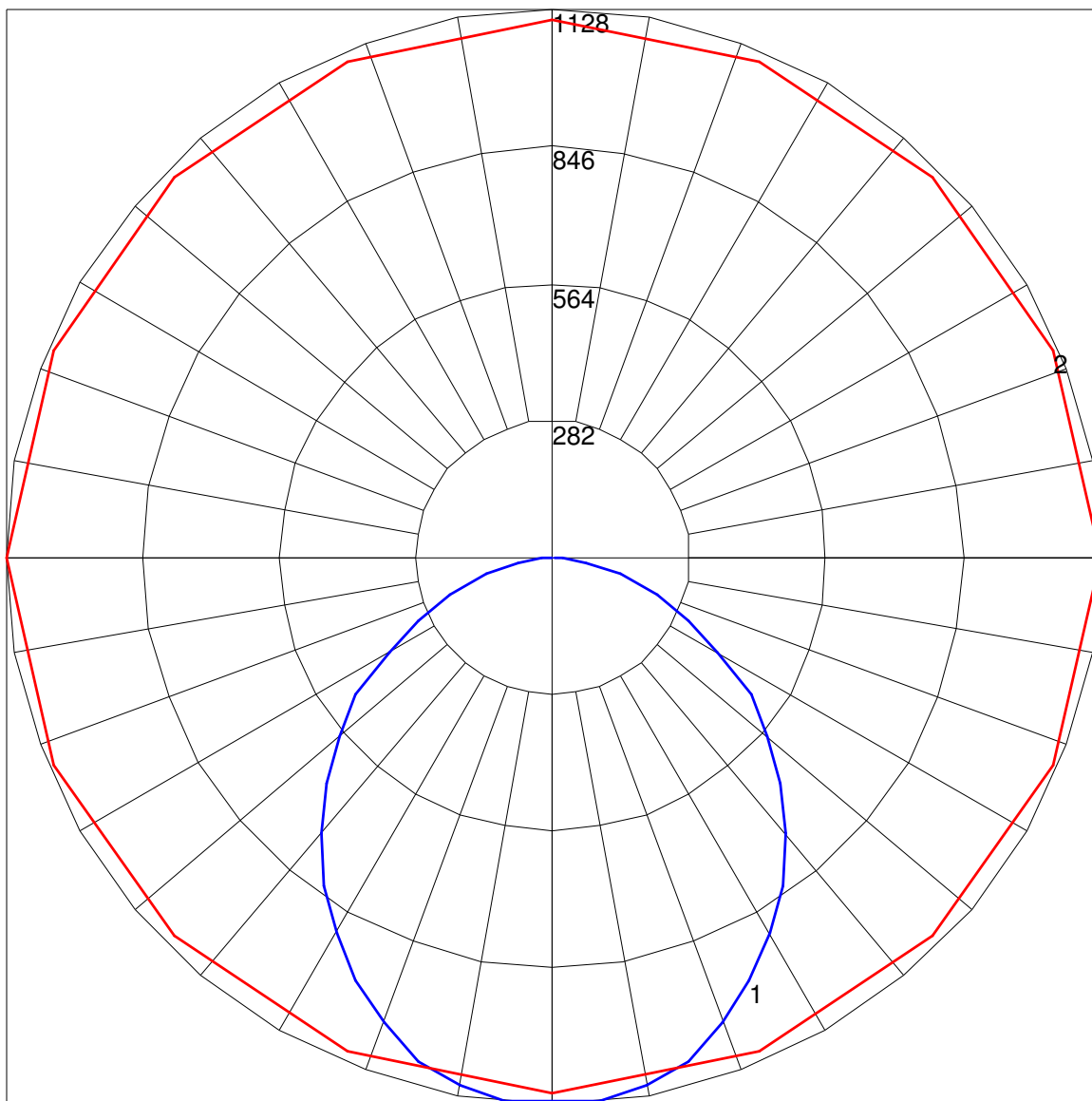
Reflectances

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	18.7	20.3	19.1	20.6	20.9	18.4	20.0	18.7	20.3	20.6
	3H	20.3	21.7	20.7	22.0	22.4	19.9	21.3	20.3	21.6	22.0
	4H	20.8	22.1	21.2	22.4	22.8	20.4	21.7	20.8	22.1	22.5
	6H	21.0	22.3	21.4	22.6	23.0	20.7	22.0	21.2	22.3	22.7
	8H	21.1	22.3	21.5	22.7	23.1	20.8	22.0	21.2	22.4	22.8
	12H	21.1	22.3	21.5	22.6	23.1	20.8	22.0	21.3	22.4	22.8
4H	2H	19.2	20.6	19.6	20.9	21.3	19.0	20.3	19.4	20.6	21.0
	3H	21.0	22.1	21.4	22.5	22.9	20.7	21.8	21.1	22.2	22.6
	4H	21.6	22.6	22.0	23.0	23.4	21.3	22.3	21.7	22.7	23.1
	6H	21.9	22.8	22.4	23.3	23.7	21.7	22.6	22.2	23.0	23.5
	8H	22.0	22.8	22.5	23.3	23.8	21.8	22.7	22.3	23.1	23.6
	12H	22.1	22.8	22.6	23.3	23.8	21.9	22.6	22.4	23.1	23.6
8H	4H	21.8	22.6	22.2	23.0	23.5	21.5	22.3	22.0	22.8	23.2
	6H	22.2	22.9	22.7	23.4	23.9	22.0	22.7	22.5	23.2	23.7
	8H	22.4	23.0	22.9	23.5	23.9	22.2	22.8	22.7	23.3	23.8
	12H	22.4	23.0	22.9	23.4	24.0	22.3	22.9	22.8	23.3	23.9
12H	4H	21.8	22.5	22.3	23.0	23.5	21.5	22.3	22.0	22.7	23.2
	6H	22.3	22.9	22.8	23.3	23.9	22.1	22.7	22.6	23.1	23.7
	8H	22.4	22.9	22.9	23.4	24.0	22.3	22.8	22.8	23.3	23.9

Maximum UGR = 24.0

POLAR GRAPH



Maximum Candela = 1128.093 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.)