



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4D-4-00-L15-940-F-(L13)-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  
 [ISSUE DATE] 03-31-2023  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836  
 [LUMINAIRE] 4'DIRECT SUSPENDED LUMINAIRE  
 [MORE] WITH FROSTED ACRYLIC LENS  
 [LUMCAT] MX4D-4-L15-940-F-(L13)-DIM-UNV  
 [LAMPCAT] HLM 90 CRI, 4000K 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	4480
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	106
Total Luminaire Watts	42.3
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	12923	12340	11879
55	11908	11352	10648
65	10535	9910	9487
75	8106	7776	7716
85	3744	4636	4279

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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>	1769.969	1769.969	1769.969	1769.969	1769.969
<b>5</b>	1806.376	1767.168	1755.966	1746.631	1737.295
<b>10</b>	1782.105	1740.096	1727.026	1713.024	1702.755
<b>15</b>	1745.697	1699.021	1674.749	1652.344	1645.810
<b>20</b>	1669.148	1622.471	1609.402	1571.127	1564.593
<b>25</b>	1561.792	1525.384	1512.315	1483.376	1476.841
<b>30</b>	1454.436	1421.763	1404.959	1384.422	1374.153
<b>35</b>	1353.615	1315.341	1288.268	1276.133	1264.930
<b>40</b>	1241.592	1211.719	1172.511	1153.840	1138.904
<b>45</b>	1097.829	1077.291	1048.352	1030.615	1009.144
<b>50</b>	965.268	930.727	925.126	892.453	874.716
<b>55</b>	820.571	800.033	782.296	754.290	733.753
<b>60</b>	687.076	657.204	646.935	621.730	603.993
<b>65</b>	534.911	519.041	503.171	487.302	481.700
<b>70</b>	393.015	379.012	368.743	353.807	360.342
<b>75</b>	252.053	252.986	241.784	241.784	239.917
<b>80</b>	124.159	131.627	127.893	135.362	126.026
<b>85</b>	39.208	46.676	48.543	56.945	44.809
<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	640.20	N.A.	14.30
0-30	1335.99	N.A.	29.80
0-40	2147.78	N.A.	47.90
0-60	3656.68	N.A.	81.60
0-80	4418.2	N.A.	98.60
0-90	4480.01	N.A.	100.00
10-90	4312.92	N.A.	96.30
20-40	1507.58	N.A.	33.70
20-50	2319.28	N.A.	51.80
40-70	2009.12	N.A.	44.80
60-80	761.53	N.A.	17.00
70-80	261.31	N.A.	5.80
80-90	61.80	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	4480.01	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	167.09
10-20	473.11
20-30	695.79
30-40	811.78
40-50	811.71
50-60	697.19
60-70	500.22
70-80	261.31
80-90	61.80
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	102	99	95	98	95	92	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	73	71
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	67	63	61
4	84	72	63	57	81	71	63	56	68	61	56	66	60	55	64	58	54	52
5	77	64	56	49	75	63	55	49	61	54	48	59	53	48	57	52	47	45
6	71	58	49	43	69	57	49	43	55	48	43	54	47	42	52	46	42	40
7	66	53	44	38	64	52	44	38	51	43	38	49	42	38	48	42	37	35
8	62	48	40	34	60	48	40	34	46	39	34	45	39	34	44	38	33	32
9	58	44	36	31	56	44	36	31	43	36	31	42	35	30	41	35	30	29
10	54	41	33	28	53	41	33	28	40	33	28	39	32	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	20.6	22.2	21.0	22.5	22.8	20.1	21.7	20.5	22.1	22.4
	3H	22.3	23.7	22.6	24.0	24.4	21.7	23.2	22.1	23.5	23.9
	4H	22.8	24.1	23.2	24.5	24.9	22.3	23.7	22.7	24.0	24.4
	6H	23.1	24.4	23.5	24.7	25.1	22.7	23.9	23.1	24.3	24.7
	8H	23.2	24.4	23.6	24.8	25.2	22.8	24.0	23.2	24.3	24.7
	12H	23.2	24.4	23.6	24.7	25.2	22.8	24.0	23.2	24.3	24.8

### UGR Viewed Endwise

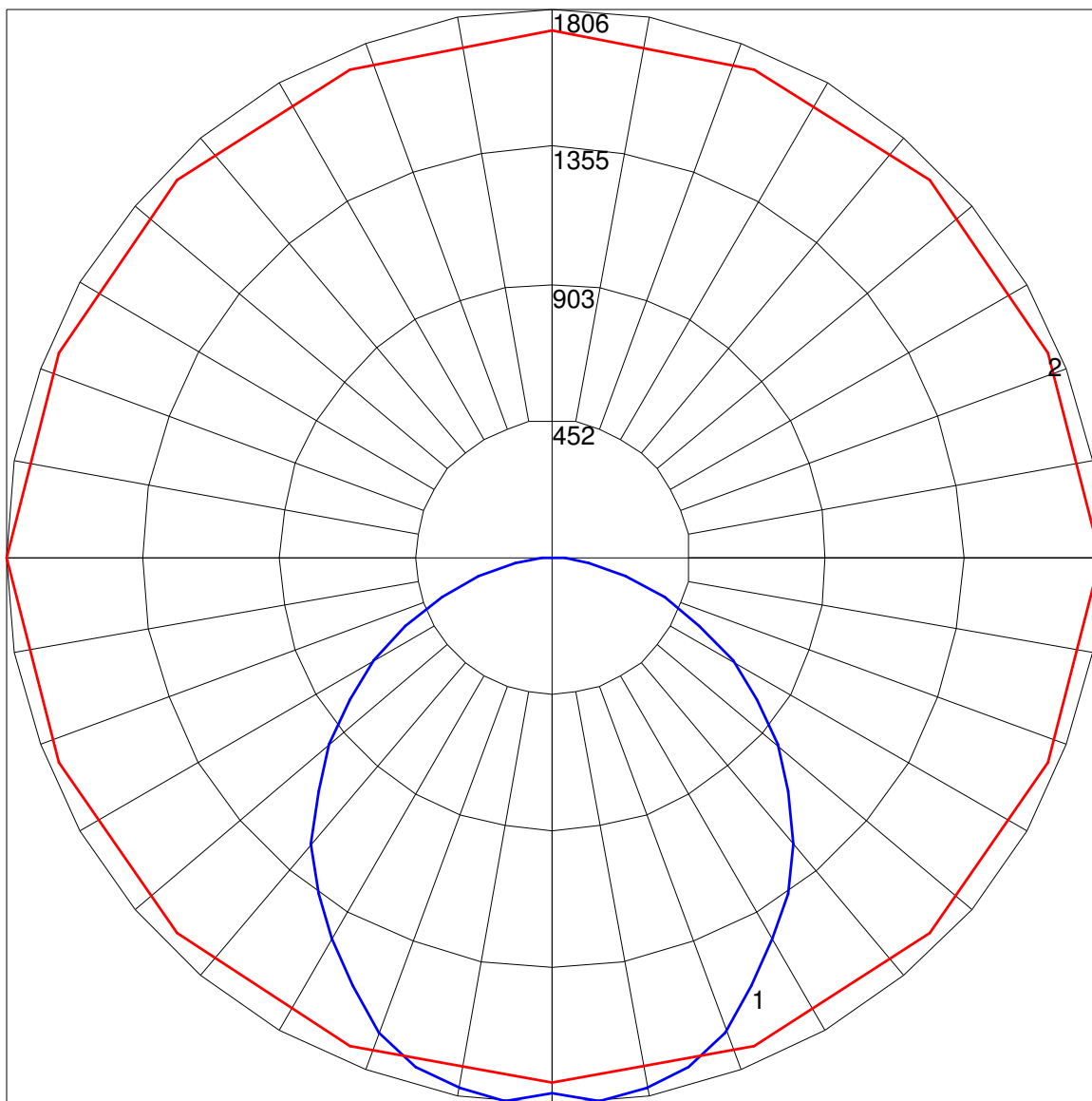
4H	2H	21.1	22.5	21.5	22.8	23.2	20.8	22.1	21.2	22.5	22.8
	3H	23.0	24.1	23.4	24.5	24.9	22.6	23.7	23.0	24.1	24.5
	4H	23.6	24.7	24.1	25.1	25.5	23.2	24.3	23.7	24.7	25.1
	6H	24.1	25.0	24.5	25.4	25.9	23.7	24.6	24.2	25.0	25.5
	8H	24.2	25.0	24.6	25.4	25.9	23.8	24.7	24.3	25.1	25.6
	12H	24.2	25.0	24.7	25.4	25.9	23.9	24.7	24.4	25.1	25.6

8H	4H	23.9	24.7	24.3	25.1	25.6	23.5	24.3	24.0	24.8	25.2
	6H	24.4	25.1	24.9	25.6	26.0	24.1	24.8	24.6	25.2	25.7
	8H	24.5	25.2	25.0	25.7	26.1	24.3	24.9	24.8	25.4	25.9
	12H	24.6	25.2	25.2	25.7	26.2	24.4	25.0	24.9	25.5	26.0

12H	4H	23.9	24.6	24.4	25.1	25.6	23.5	24.3	24.0	24.7	25.2
	6H	24.4	25.0	24.9	25.5	26.0	24.1	24.7	24.6	25.2	25.7
	8H	24.6	25.2	25.1	25.6	26.2	24.4	24.9	24.9	25.4	25.9

Maximum UGR = 26.2

POLAR GRAPH



Maximum Candela = 1806.376 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.)