



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-8-00-L8-840U-L8-840D-A-F-(L5U)-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
 [ISSUEDATE] 16-NOV-2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836
 [LUMINAIRE] 4' DIRECT SUSPENDED LUMINAIRE
 [MORE] WITH FROSTED ACRYLIC LENS
 [LUMCAT] MX4UD-8-L8/840U/L8/840D-A-F-(L5U)-DIM-UNV
 [LAMPCAT] HLM 80 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	10998
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	126
Total Luminaire Watts	87.4
Ballast Factor	1.00
CIE Type	Semi-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)	8.00 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	9753	9313	8965
55	8987	8568	8036
65	7951	7479	7160
75	6117	5868	5823
85	2826	3499	3230

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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	2671.614	2671.614	2671.614	2671.614	2671.614
5	2726.568	2667.387	2650.478	2636.387	2622.296
10	2689.932	2626.524	2606.796	2585.660	2570.160
15	2634.978	2564.524	2527.888	2494.070	2484.206
20	2519.433	2448.980	2429.252	2371.480	2361.617
25	2357.389	2302.435	2282.708	2239.027	2229.163
30	2195.345	2146.027	2120.664	2089.664	2074.164
35	2043.165	1985.393	1944.529	1926.211	1909.302
40	1874.075	1828.985	1769.803	1741.622	1719.076
45	1657.077	1626.077	1582.396	1555.623	1523.215
50	1456.988	1404.852	1396.397	1347.080	1320.307
55	1238.581	1207.581	1180.808	1138.536	1107.536
60	1037.082	991.992	976.492	938.447	911.674
65	807.402	783.448	759.494	735.539	727.085
70	593.222	572.086	556.586	534.041	543.905
75	380.451	381.860	364.952	364.952	362.133
80	187.408	198.680	193.044	204.316	190.226
85	59.181	70.454	73.272	85.954	67.636
90	0.000	0.000	0.000	0.000	0.000
95	76.075	74.553	77.596	76.075	80.639
100	161.278	162.800	153.671	161.278	159.757
105	272.347	270.826	270.826	266.261	261.697
110	389.502	383.416	378.852	375.809	368.201
115	515.786	508.179	499.050	483.835	483.835
120	640.548	626.855	613.161	605.554	597.947
125	754.660	751.617	736.402	721.188	713.580
130	873.337	871.815	856.600	842.907	838.342
135	985.927	988.970	972.234	953.976	947.890
140	1106.125	1100.039	1089.389	1063.523	1063.523
145	1214.151	1206.544	1189.807	1183.721	1170.028
150	1303.919	1313.048	1296.312	1282.618	1276.532
155	1392.166	1399.773	1387.601	1370.865	1369.343
160	1469.762	1475.848	1463.676	1456.068	1448.461
165	1527.578	1535.186	1524.536	1516.928	1512.364
170	1568.659	1576.266	1567.137	1562.573	1562.573
175	1589.960	1599.089	1591.481	1586.917	1580.831
180	1596.046	1596.046	1596.046	1596.046	1596.046

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Zone	Lumens	%Lamp	%Fixt
0-20	966.33	N.A.	8.80
0-30	2016.57	N.A.	18.30
0-40	3241.88	N.A.	29.50
0-60	5519.43	N.A.	50.20
0-80	6668.9	N.A.	60.60
0-90	6762.18	N.A.	61.50
10-90	6509.98	N.A.	59.20
20-40	2275.56	N.A.	20.70
20-50	3500.76	N.A.	31.80
40-70	3032.59	N.A.	27.60
60-80	1149.46	N.A.	10.50
70-80	394.42	N.A.	3.60
80-90	93.29	N.A.	0.80
90-110	369.14	N.A.	3.40
90-120	861.99	N.A.	7.80
90-130	1520.79	N.A.	13.80
90-150	3016.97	N.A.	27.40
90-180	4235.66	N.A.	38.50
110-180	3866.52	N.A.	35.20
0-180	10997.84	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	252.21
10-20	714.12
20-30	1050.24
30-40	1225.32
40-50	1225.2
50-60	1052.35
60-70	755.04
70-80	394.42
80-90	93.29
90-100	85.17
100-110	283.97
110-120	492.85
120-130	658.81
130-140	749.73
140-150	746.44
150-160	637.94
160-170	429.66
170-180	151.09

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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	61
1	101	96	92	89	94	90	87	84	79	76	74	69	67	65	59	58	57	52
2	92	84	78	73	86	79	74	69	69	65	62	60	57	55	52	50	48	44
3	84	74	67	61	78	70	63	58	61	56	52	54	50	46	46	43	41	37
4	77	66	58	52	71	62	55	49	55	49	44	48	43	40	42	38	35	32
5	70	59	50	44	66	55	48	42	49	43	38	43	38	35	37	34	31	28
6	65	53	44	39	61	50	42	37	44	38	34	39	34	30	34	30	27	24
7	60	48	40	34	56	45	38	32	40	34	30	35	31	27	31	27	24	22
8	56	43	35	30	52	41	34	29	37	31	26	32	28	24	29	25	22	19
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	26	22	20	18
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	24	21	18	16

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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	16.8	17.7	17.6	18.6	19.7	16.3	17.3	17.2	18.1	19.2
	3H	18.4	19.2	19.2	20.1	21.2	17.8	18.7	18.7	19.6	20.7
	4H	18.9	19.7	19.8	20.6	21.7	18.4	19.2	19.3	20.1	21.2
	6H	19.2	19.9	20.1	20.8	22.0	18.7	19.5	19.6	20.4	21.5
	8H	19.2	19.9	20.1	20.9	22.0	18.8	19.5	19.7	20.4	21.6
	12H	19.2	19.9	20.1	20.8	22.0	18.8	19.5	19.7	20.4	21.6

UGR Viewed Endwise

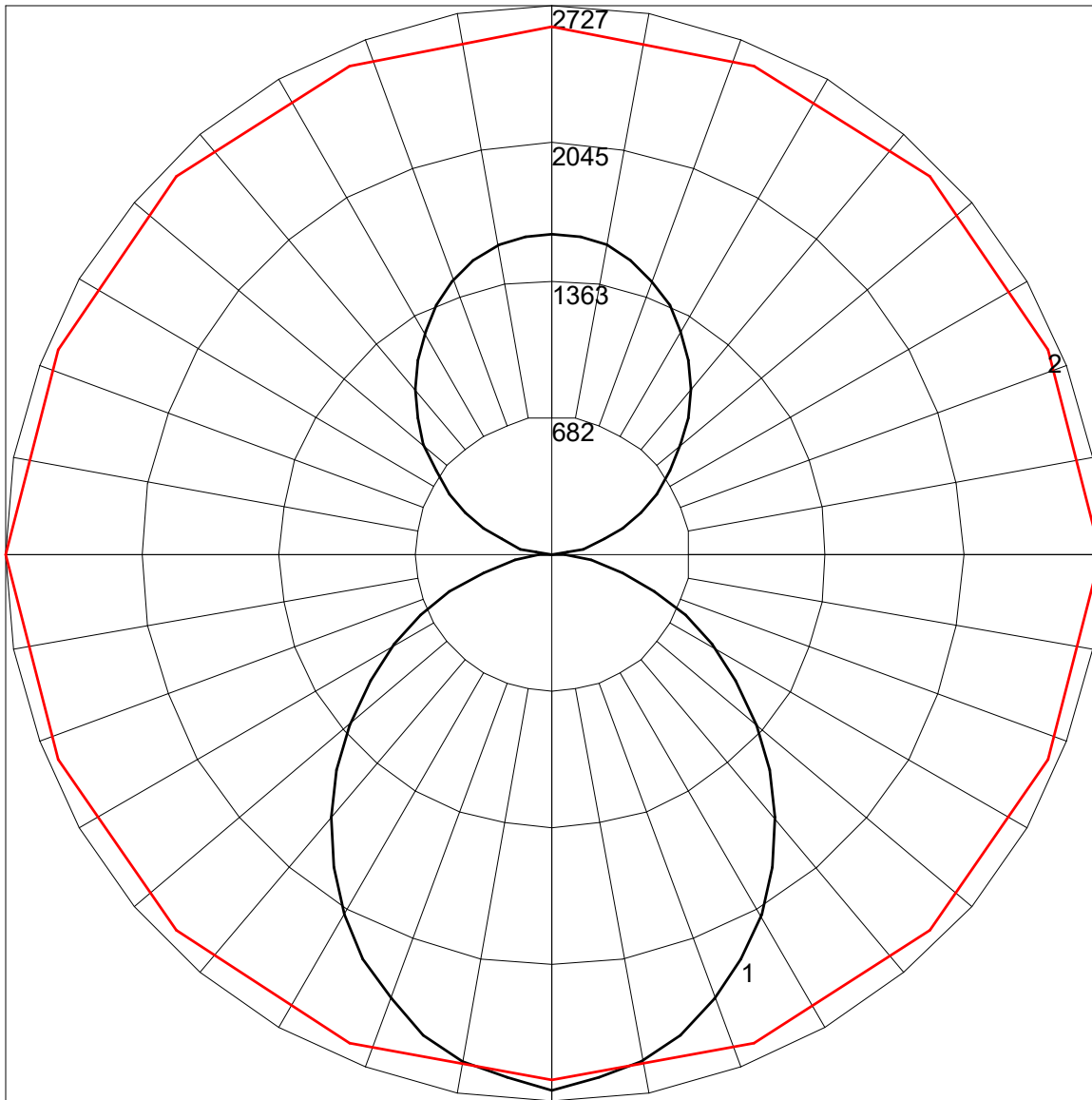
4H	2H	17.2	18.0	18.1	18.9	20.1	16.8	17.7	17.7	18.6	19.7
	3H	19.0	19.7	19.9	20.6	21.8	18.6	19.3	19.5	20.2	21.4
	4H	19.7	20.3	20.6	21.2	22.4	19.2	19.9	20.2	20.8	22.0
	6H	20.0	20.6	21.0	21.5	22.7	19.7	20.2	20.6	21.2	22.3
	8H	20.1	20.6	21.1	21.6	22.8	19.8	20.3	20.7	21.2	22.4
	12H	20.2	20.6	21.1	21.6	22.8	19.9	20.3	20.8	21.3	22.5
8H	4H	19.8	20.3	20.8	21.3	22.5	19.5	20.0	20.4	20.9	22.1
	6H	20.3	20.7	21.3	21.7	22.9	20.0	20.4	21.0	21.4	22.6
	8H	20.5	20.8	21.4	21.8	23.0	20.2	20.6	21.2	21.5	22.7
	12H	20.5	20.9	21.5	21.8	23.1	20.3	20.6	21.3	21.6	22.9
12H	4H	19.8	20.3	20.8	21.2	22.4	19.4	19.9	20.4	20.9	22.1
	6H	20.3	20.7	21.3	21.7	22.9	20.0	20.4	21.0	21.3	22.6
	8H	20.5	20.8	21.5	21.8	23.1	20.3	20.6	21.2	21.5	22.8

Maximum UGR = 23.1

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POLAR GRAPH



Maximum Candela = 2726.568 Located At Horizontal Angle = 0, Vertical Angle = 5

1 - Vertical Plane Through Horizontal Angles (90 - 270)

2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)