



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L8-835U-L15-835D-A-F-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 20656.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIOES, INC
 [ISSUE DATE] 06-30-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4' LED DIRECT/INDIRECT SUSPENDED LUMINAIRE
 [MORE] WHITE ALUM BODY w/WHITE REFL & FLAT FROST LENS
 [LUMCAT] MX4UD-4-00-L8-835U-L15-835D-A-F-DIM-UNV
 [LAMPCAT] HLMX 80 CRI 3500K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9279
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	122
Total Luminaire Watts	76
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.22
Spacing Criterion (Diagonal)	1.32
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	16869	17047	17446
55	15378	15926	16090
65	13147	13444	13741
75	10430	10552	10309
85	5763	5042	4322

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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>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>
0	2398.581	2398.581	2398.581	2398.581	2398.581	2398.581	2398.581	2398.581	2398.581
5	2402.294	2398.581	2398.581	2417.146	2417.146	2394.868	2391.155	2387.442	2383.729
10	2354.026	2354.026	2350.313	2380.016	2372.590	2357.739	2339.174	2335.461	2346.600
15	2279.766	2283.479	2287.192	2305.757	2305.757	2290.905	2272.340	2264.914	2272.340
20	2183.229	2190.655	2198.081	2220.358	2220.358	2205.507	2179.516	2172.090	2175.803
25	2068.126	2064.414	2082.979	2090.404	2097.830	2082.979	2060.701	2053.275	2042.136
30	1908.469	1941.885	1938.172	1953.024	1964.163	1941.885	1919.608	1908.469	1893.617
35	1759.950	1778.515	1778.515	1811.931	1804.505	1808.218	1752.524	1756.237	1737.672
40	1596.579	1604.005	1607.718	1641.135	1644.848	1633.709	1600.292	1578.014	1570.588
45	1410.930	1414.643	1425.782	1451.773	1459.199	1436.921	1422.069	1422.069	1399.791
50	1228.994	1217.855	1247.559	1266.124	1273.550	1254.985	1243.846	1217.855	1206.717
55	1043.346	1065.624	1080.475	1113.892	1091.614	1076.762	1039.633	1035.920	1028.494
60	850.271	853.984	865.123	876.262	891.114	883.688	883.688	842.845	839.132
65	657.196	660.909	672.048	683.187	686.900	683.187	664.622	660.909	642.344
70	482.687	493.826	482.687	490.113	497.539	504.964	490.113	478.974	467.835
75	319.316	315.603	323.029	315.603	315.603	308.177	319.316	304.464	297.038
80	167.084	167.084	163.371	155.945	155.945	155.945	155.945	167.084	159.658
85	59.408	63.121	51.982	48.269	44.556	48.269	48.269	55.695	51.982
90	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95	39.689	41.579	39.689	39.689	35.909	39.689	39.689	41.579	39.689
100	90.717	90.717	90.717	81.267	79.377	81.267	90.717	90.717	90.717
105	156.865	156.865	143.635	137.965	132.296	137.965	143.635	156.865	156.865
110	253.251	241.912	219.232	200.333	198.443	200.333	219.232	241.912	253.251
115	359.088	340.188	306.169	285.380	279.710	285.380	306.169	340.188	359.088
120	468.704	444.135	406.336	372.317	366.647	372.317	406.336	444.135	468.704
125	595.330	565.091	510.282	474.374	459.254	474.374	510.282	565.091	595.330
130	727.625	693.606	627.458	583.990	576.430	583.990	627.458	693.606	727.625
135	839.131	786.213	746.524	701.166	693.606	701.166	746.524	786.213	839.131
140	954.417	912.839	858.031	816.452	805.112	816.452	858.031	912.839	954.417
145	1058.364	1045.134	963.867	924.178	914.729	924.178	963.867	1045.134	1058.364
150	1147.191	1132.071	1060.254	1028.125	1011.115	1028.125	1060.254	1132.071	1147.191
155	1224.678	1205.779	1147.191	1130.181	1113.172	1130.181	1147.191	1205.779	1224.678
160	1290.826	1279.486	1241.687	1220.898	1205.779	1220.898	1241.687	1279.486	1290.826
165	1338.074	1338.074	1311.615	1296.495	1283.266	1296.495	1311.615	1338.074	1338.074
170	1373.983	1377.763	1366.423	1360.753	1349.414	1360.753	1366.423	1377.763	1373.983
175	1392.882	1402.332	1398.552	1390.992	1385.322	1390.992	1398.552	1402.332	1392.882
180	1402.332	1402.332	1402.332	1402.332	1402.332	1402.332	1402.332	1402.332	1402.332

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	872.08	N.A.	9.40
0-30	1826.93	N.A.	19.70
0-40	2939.62	N.A.	31.70
0-60	4992.28	N.A.	53.80
0-80	5996.49	N.A.	64.60
0-90	6068.48	N.A.	65.40
10-90	5841.03	N.A.	62.90
20-40	2067.54	N.A.	22.30
20-50	3170.63	N.A.	34.20
40-70	2720.07	N.A.	29.30
60-80	1004.21	N.A.	10.80
70-80	336.79	N.A.	3.60
80-90	71.99	N.A.	0.80
90-110	203.62	N.A.	2.20
90-120	514.73	N.A.	5.50
90-130	981.45	N.A.	10.60
90-150	2172.26	N.A.	23.40
90-180	3210.7	N.A.	34.60
110-180	3007.08	N.A.	32.40
0-180	9279.18	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	227.45
10-20	644.63
20-30	954.85
30-40	1112.69
40-50	1103.09
50-60	949.56
60-70	667.42
70-80	336.79
80-90	71.99
90-100	45.27
100-110	158.35
110-120	311.11
120-130	466.73
130-140	580.11
140-150	610.70
150-160	536.04
160-170	370.16
170-180	132.25

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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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	70	70	70	65
1	102	97	93	90	95	92	88	85	81	79	76	71	70	68	63	61	60	56
2	93	85	79	74	87	80	75	70	71	67	63	63	60	57	55	53	51	47
3	85	75	68	62	79	71	64	59	63	58	53	56	52	48	49	46	43	40
4	77	66	58	52	73	63	56	50	56	50	46	50	45	42	44	40	37	34
5	71	59	51	45	67	56	49	43	50	44	40	45	40	36	40	36	33	30
6	66	53	45	39	62	51	43	38	45	39	35	41	36	32	36	32	29	26
7	61	48	40	35	57	46	38	33	41	35	31	37	32	28	33	29	26	23
8	57	44	36	31	53	42	35	30	38	32	27	34	29	25	30	26	23	21
9	53	40	33	27	50	38	31	26	35	29	25	31	26	23	28	24	21	19
10	49	37	30	25	46	35	28	24	32	26	22	29	24	21	26	22	19	17

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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

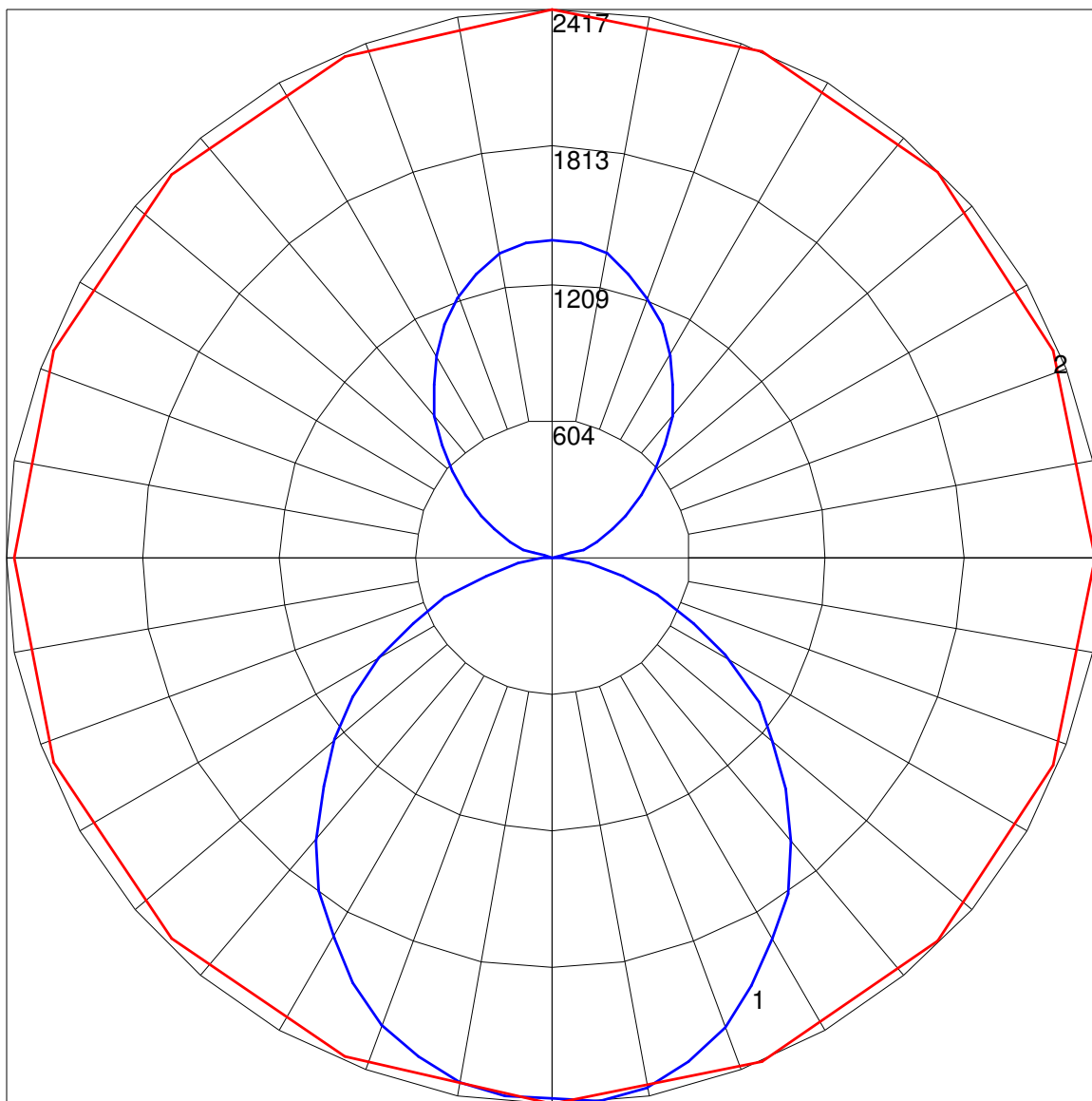
X=2H	Y=2H	18.9	19.9	19.7	20.8	21.8	19.1	20.1	20.0	21.0	22.0
	3H	20.4	21.3	21.2	22.2	23.2	20.6	21.5	21.5	22.4	23.4
	4H	20.9	21.8	21.8	22.6	23.7	21.1	21.9	21.9	22.8	23.9
	6H	21.2	22.0	22.1	22.8	23.9	21.3	22.1	22.2	23.0	24.1
	8H	21.3	22.0	22.1	22.9	24.0	21.4	22.1	22.2	23.0	24.1
	12H	21.3	22.0	22.2	22.9	24.0	21.4	22.1	22.2	23.0	24.1

UGR Viewed Endwise

4H	2H	19.4	20.3	20.3	21.1	22.2	19.6	20.4	20.4	21.3	22.4
	3H	21.1	21.8	22.0	22.7	23.8	21.3	22.0	22.1	22.9	23.9
	4H	21.7	22.3	22.6	23.2	24.4	21.8	22.5	22.7	23.4	24.5
	6H	22.1	22.7	23.0	23.6	24.7	22.2	22.7	23.1	23.6	24.8
	8H	22.2	22.7	23.1	23.6	24.8	22.2	22.8	23.1	23.7	24.8
	12H	22.2	22.7	23.2	23.6	24.8	22.2	22.7	23.2	23.6	24.8
8H	4H	21.9	22.4	22.8	23.3	24.5	22.0	22.5	22.9	23.4	24.6
	6H	22.4	22.8	23.3	23.8	24.9	22.4	22.8	23.3	23.8	24.9
	8H	22.6	22.9	23.5	23.9	25.0	22.6	22.9	23.5	23.9	25.0
	12H	22.6	23.0	23.6	23.9	25.1	22.6	22.9	23.5	23.8	25.1
12H	4H	21.9	22.3	22.8	23.3	24.4	22.0	22.4	22.9	23.4	24.5
	6H	22.4	22.8	23.3	23.7	24.9	22.4	22.8	23.4	23.7	24.9
	8H	22.6	22.9	23.5	23.8	25.0	22.6	22.9	23.5	23.8	25.0

Maximum UGR = 25.1

POLAR GRAPH



Maximum Candela = 2417.146 Located At Horizontal Angle = 67.5, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (67.5 - 247.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)