



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-2-00-L8-840U-L8-840D-A-F-AC-DXX-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 20194.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 06/21/2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 2' DIRECT/INDIRECT SUSPENDED LED LUMINAIRE
 [MORE] WHITE REFLS w/FROSTED ACRYLIC LENS TOP/BTM
 [LUMCAT] MX4UD-2-00-L8-840U-L8-840D-A-F-AC-Dxx-DIM-UNV
 [LAMPCAT] HLMX 80 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3466
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	122
Total Luminaire Watts	28.4
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	2.00 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	10369	9882	9708
55	9384	8987	8847
65	7976	7947	7627
75	6155	6346	6251
85	2611	3811	3529

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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	728.303	728.303	728.303	728.303	728.303
5	737.911	721.283	720.174	717.218	712.784
10	721.652	706.502	708.350	702.438	696.895
15	699.112	686.549	687.288	679.528	673.986
20	671.768	661.792	655.510	646.642	643.316
25	631.492	625.210	617.081	606.735	603.040
30	589.368	583.825	575.696	561.285	557.590
35	545.027	538.006	524.704	511.771	508.815
40	498.838	488.122	472.603	462.996	462.626
45	440.455	431.218	419.763	411.634	412.373
50	381.334	373.944	366.554	356.577	360.272
55	323.321	317.778	309.649	306.323	304.845
60	263.091	259.396	254.223	253.484	251.267
65	202.491	202.122	201.752	199.166	193.623
70	146.695	147.434	149.651	148.173	143.370
75	95.703	96.072	98.659	99.768	97.181
80	47.667	52.470	51.731	54.687	53.579
85	13.672	19.584	19.954	19.214	18.475
90	2.587	5.173	6.282	5.173	5.173
95	6.651	11.085	12.194	11.824	12.194
100	27.344	37.690	38.059	33.625	35.473
105	64.664	70.207	72.054	62.447	62.078
110	114.178	112.700	116.765	101.985	101.615
115	169.974	165.171	167.757	143.370	144.109
120	227.618	226.509	220.597	197.688	198.057
125	290.804	286.000	274.546	257.918	249.049
130	356.577	344.752	343.274	326.277	309.280
135	418.285	404.983	404.613	389.833	377.269
140	476.667	463.735	464.104	450.802	441.194
145	536.158	517.683	520.639	503.642	499.207
150	585.673	568.675	572.740	555.373	550.200
155	625.210	608.952	615.233	599.714	595.280
160	659.205	642.208	644.794	634.448	630.014
165	687.288	670.290	667.704	661.792	656.619
170	702.807	686.179	684.701	680.637	675.833
175	714.262	698.373	697.634	694.678	691.722
180	704.655	704.655	704.655	704.655	704.655

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Zone	Lumens	%Lamp	%Fixt
0-20	261.41	N.A.	7.50
0-30	545.43	N.A.	15.70
0-40	874.34	N.A.	25.20
0-60	1479.07	N.A.	42.70
0-80	1782.38	N.A.	51.40
0-90	1808.22	N.A.	52.20
10-90	1739.82	N.A.	50.20
20-40	612.93	N.A.	17.70
20-50	938.74	N.A.	27.10
40-70	803.75	N.A.	23.20
60-80	303.30	N.A.	8.80
70-80	104.29	N.A.	3.00
80-90	25.84	N.A.	0.70
90-110	90.62	N.A.	2.60
90-120	249.13	N.A.	7.20
90-130	493.99	N.A.	14.30
90-150	1123.47	N.A.	32.40
90-180	1657.7	N.A.	47.80
110-180	1567.08	N.A.	45.20
0-180	3465.91	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	68.40
10-20	193.01
20-30	284.02
30-40	328.91
40-50	325.82
50-60	278.92
60-70	199.02
70-80	104.29
80-90	25.84
90-100	17.04
100-110	73.58
110-120	158.52
120-130	244.85
130-140	307.74
140-150	321.75
150-160	279.77
160-170	188.18
170-180	66.27

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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	50	49	44
2	90	82	76	71	83	76	71	67	65	61	58	55	52	50	46	44	42	37
3	82	72	65	59	76	67	61	56	58	53	49	49	45	42	40	38	36	32
4	75	64	56	50	69	60	53	47	51	46	42	44	39	36	36	33	31	27
5	69	57	49	43	63	53	46	41	46	40	36	39	35	31	33	29	27	24
6	63	51	43	38	59	48	41	36	41	36	32	35	31	28	30	26	24	21
7	59	46	38	33	54	43	36	31	38	32	28	32	28	24	27	24	21	19
8	55	42	34	29	50	39	33	28	34	29	25	29	25	22	25	22	19	17
9	51	39	31	26	47	36	29	25	31	26	22	27	23	20	23	20	17	15
10	47	35	28	23	44	33	27	22	29	24	20	25	21	18	21	18	16	14

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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	16.1	16.9	17.0	17.9	19.1	15.8	16.7	16.8	17.7	18.9
	3H	17.6	18.3	18.5	19.3	20.6	17.4	18.2	18.3	19.1	20.4
	4H	18.0	18.8	19.0	19.8	21.0	17.9	18.6	18.9	19.6	20.9
	6H	18.3	19.0	19.3	20.0	21.3	18.2	18.9	19.2	19.9	21.2
	8H	18.4	19.0	19.4	20.0	21.3	18.3	19.0	19.3	20.0	21.2
	12H	18.4	19.0	19.4	20.0	21.3	18.3	19.0	19.3	20.0	21.3

UGR Viewed Endwise

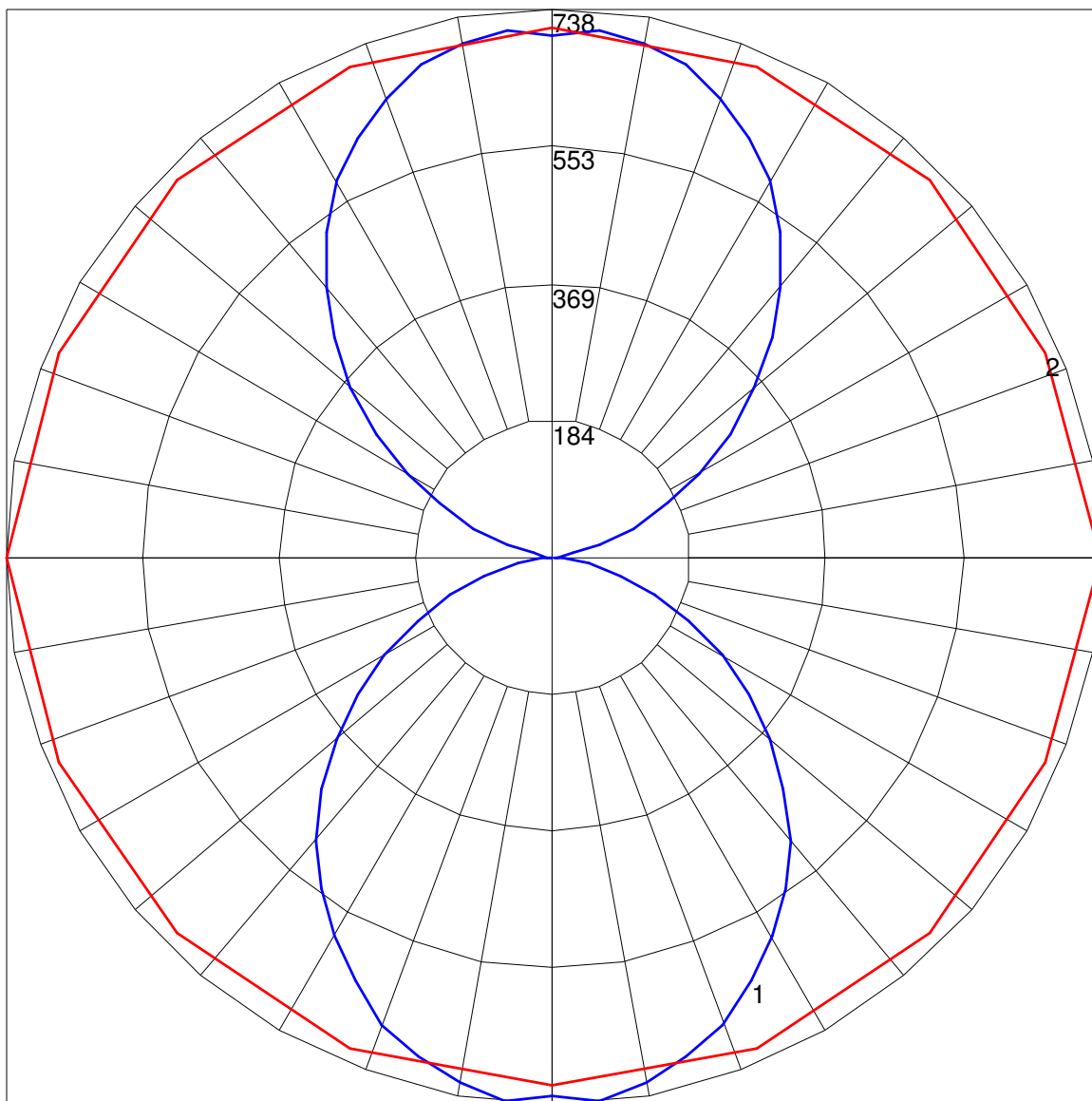
4H	2H	16.5	17.3	17.5	18.2	19.5	16.3	17.1	17.3	18.1	19.3
	3H	18.2	18.8	19.2	19.8	21.1	18.1	18.7	19.1	19.7	21.0
	4H	18.8	19.4	19.8	20.4	21.7	18.8	19.3	19.8	20.3	21.6
	6H	19.2	19.7	20.2	20.7	22.0	19.2	19.7	20.2	20.7	22.0
	8H	19.3	19.7	20.3	20.8	22.1	19.3	19.8	20.3	20.8	22.1
	12H	19.3	19.7	20.3	20.7	22.1	19.4	19.8	20.4	20.8	22.1
8H	4H	19.0	19.5	20.0	20.5	21.8	19.0	19.4	20.0	20.4	21.7
	6H	19.5	19.9	20.5	20.9	22.2	19.5	19.9	20.5	20.9	22.2
	8H	19.7	20.0	20.7	21.0	22.4	19.7	20.0	20.7	21.0	22.4
	12H	19.7	20.0	20.8	21.0	22.4	19.8	20.1	20.8	21.1	22.5
12H	4H	19.0	19.4	20.0	20.4	21.8	18.9	19.3	20.0	20.4	21.7
	6H	19.5	19.8	20.6	20.9	22.2	19.5	19.8	20.5	20.9	22.2
	8H	19.7	20.0	20.7	21.0	22.4	19.7	20.0	20.8	21.0	22.4

Maximum UGR = 22.5

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POLAR GRAPH



Maximum Candela = 737.911 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.)