



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L15-835U-L15-835D-AF-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20659.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 13-MAR-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 1-72 LED-UP 2-72 LED-DOWN 23.75" ARRAYS 4' LUMINAIRE

[MORE] WHITE ALUM BODY w/REFL & FLAT FROST LENSES-UP/DOWN

[LUMCAT] MX4UD-4-00-L15-835U-L15-835D-AF-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	11540
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	105
Total Luminaire Watts	110.4
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)	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	14921	14593	14224
55	13593	13139	12684
65	11522	11179	10699
75	8735	8511	8511
85	4656	4988	4323

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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	2129.038	2129.038	2129.038	2129.038	2129.038
5	2153.036	2122.181	2111.896	2105.039	2101.610
10	2108.467	2074.183	2067.326	2053.613	2053.613
15	2043.328	2009.044	1995.330	1985.045	1978.188
20	1947.332	1916.477	1902.763	1892.478	1882.193
25	1834.195	1803.339	1793.054	1775.912	1769.055
30	1697.059	1676.489	1666.203	1642.205	1621.634
35	1549.638	1546.209	1529.067	1501.640	1484.498
40	1405.645	1381.646	1378.218	1350.790	1337.077
45	1247.938	1230.796	1220.511	1186.227	1189.655
50	1083.375	1073.090	1062.805	1035.377	1025.092
55	922.240	911.955	891.385	870.814	860.529
60	743.963	740.535	716.536	706.251	695.966
65	575.972	572.543	558.830	548.544	534.831
70	425.122	414.837	397.695	404.551	397.695
75	267.415	260.559	260.559	267.415	260.559
80	133.708	147.421	147.421	147.421	137.136
85	47.998	51.426	51.426	51.426	44.569
90	3.428	3.428	3.428	3.428	3.428
95	78.853	82.282	78.853	68.568	68.568
100	185.134	181.705	181.705	167.992	154.278
105	318.841	318.841	301.699	284.557	260.559
110	500.547	490.261	459.406	445.692	421.693
115	678.824	661.682	641.111	606.827	579.400
120	898.241	898.241	843.387	805.674	785.104
125	1117.659	1134.801	1059.376	1035.377	1001.093
130	1354.219	1367.932	1302.793	1265.080	1237.653
135	1570.208	1549.638	1529.067	1511.925	1505.068
140	1772.484	1769.055	1758.770	1734.771	1741.628
145	1947.332	1950.761	1940.476	1923.333	1950.761
150	2108.467	2115.324	2111.896	2087.897	2122.181
155	2231.890	2242.175	2242.175	2225.033	2259.317
160	2327.885	2348.455	2338.170	2327.885	2348.455
165	2406.738	2427.309	2406.738	2406.738	2417.023
170	2451.307	2475.306	2454.736	2451.307	2444.451
175	2485.591	2506.162	2485.591	2482.163	2465.021
180	2492.448	2492.448	2492.448	2492.448	2492.448

IES INDOOR REPORT**PHOTOMETRIC FILENAME : MX4UD-4-00-L15-835U-L15-835D-AF-DIM-UNV_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	763.83	N.A.	6.60
0-30	1589.08	N.A.	13.80
0-40	2540.87	N.A.	22.00
0-60	4274.37	N.A.	37.00
0-80	5114.28	N.A.	44.30
0-90	5181.82	N.A.	44.90
10-90	4981.33	N.A.	43.20
20-40	1777.04	N.A.	15.40
20-50	2714.37	N.A.	23.50
40-70	2289.17	N.A.	19.80
60-80	839.91	N.A.	7.30
70-80	284.24	N.A.	2.50
80-90	67.53	N.A.	0.60
90-110	416.16	N.A.	3.60
90-120	1054.64	N.A.	9.10
90-130	2015.85	N.A.	17.50
90-150	4411.12	N.A.	38.20
90-180	6358.09	N.A.	55.10
110-180	5941.93	N.A.	51.50
0-180	11539.91	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	200.49
10-20	563.34
20-30	825.25
30-40	951.79
40-50	937.34
50-60	796.17
60-70	555.67
70-80	284.24
80-90	67.53
90-100	89.95
100-110	326.21
110-120	638.48
120-130	961.21
130-140	1182.48
140-150	1212.79
150-160	1030.07
160-170	680.49
170-180	236.42

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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	129	129	129	129	118	118	118	118	98	98	98	80	80	80	63	63	63	55
1	118	113	108	104	108	104	100	96	86	84	81	70	69	67	56	55	53	47
2	108	99	91	85	98	91	85	79	76	71	67	62	59	56	49	47	45	39
3	98	87	78	71	90	80	72	66	67	61	57	55	51	48	44	41	39	33
4	90	77	68	60	82	71	63	56	60	53	48	49	45	41	39	36	33	29
5	83	69	59	52	75	63	55	48	53	47	42	44	39	35	35	32	29	25
6	76	62	52	45	69	57	48	42	48	41	37	40	35	31	32	29	26	22
7	70	56	46	39	64	51	43	37	44	37	32	36	31	28	29	26	23	20
8	65	50	41	35	60	47	38	33	40	33	29	33	28	25	27	23	21	18
9	61	46	37	31	56	43	35	29	36	30	26	31	26	22	25	21	19	16
10	57	42	34	28	52	39	31	26	34	27	23	28	23	20	23	20	17	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	16.0	16.8	17.0	17.8	19.2	15.6	16.5	16.6	17.5	18.8
	3H	17.5	18.2	18.5	19.2	20.6	17.1	17.9	18.1	18.9	20.2
	4H	17.9	18.6	19.0	19.6	21.0	17.6	18.3	18.6	19.3	20.7
	6H	18.2	18.8	19.2	19.9	21.2	17.9	18.5	18.9	19.6	21.0
	8H	18.2	18.8	19.3	19.9	21.3	18.0	18.6	19.0	19.6	21.0
	12H	18.3	18.8	19.3	19.9	21.3	18.0	18.6	19.0	19.6	21.0

UGR Viewed Endwise

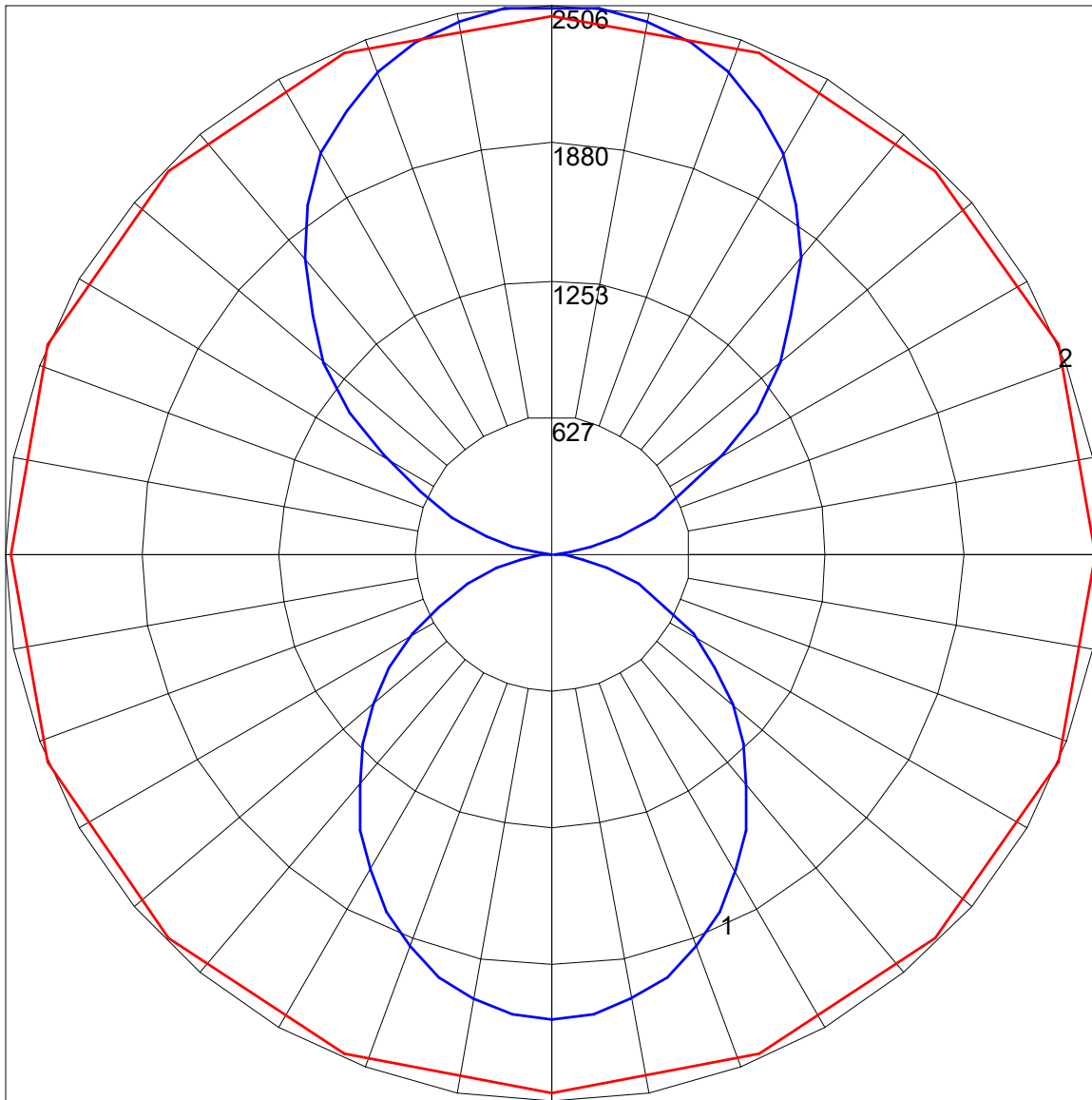
4H	2H	16.4	17.1	17.5	18.1	19.5	16.1	16.8	17.2	17.8	19.2
	3H	18.1	18.7	19.1	19.7	21.1	17.8	18.4	18.8	19.4	20.8
	4H	18.7	19.2	19.7	20.2	21.6	18.4	18.9	19.5	20.0	21.4
	6H	19.0	19.5	20.1	20.5	21.9	18.8	19.3	19.9	20.3	21.7
	8H	19.1	19.5	20.2	20.6	22.0	18.9	19.3	20.0	20.4	21.8
	12H	19.1	19.5	20.2	20.6	22.0	18.9	19.3	20.0	20.4	21.8

8H	4H	18.8	19.2	19.9	20.3	21.7	18.6	19.0	19.6	20.1	21.5
	6H	19.3	19.6	20.3	20.7	22.1	19.1	19.5	20.2	20.6	22.0
	8H	19.4	19.7	20.5	20.8	22.2	19.3	19.6	20.3	20.7	22.1
	12H	19.5	19.8	20.6	20.8	22.3	19.4	19.6	20.4	20.7	22.2

12H	4H	18.8	19.2	19.8	20.2	21.7	18.6	19.0	19.6	20.0	21.4
	6H	19.3	19.6	20.4	20.7	22.1	19.1	19.4	20.2	20.5	22.0
	8H	19.5	19.7	20.6	20.8	22.3	19.3	19.6	20.4	20.7	22.1

Maximum UGR = 22.3

POLAR GRAPH



Maximum Candela = 2506.162 Located At Horizontal Angle = 22.5, Vertical Angle = 175
1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (175) (Through Max. Cd.)