



IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMAUD-3-L23-8TWU-L23-8TWD-AF-DIMU-DIMD-UNV 4000K.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 17320.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 14-NOV-2019

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 3' DIRECT/INDIRECT WALL MOUNT LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC LENS ON TOP & BOTTOM

[LUMCAT] WMAUD-4-L23-8TWU-L23-8TWD-AF-DIMU-DIMD-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4722
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	123
Total Luminaire Watts	38.5
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 w/Sides
Luminous Length (0-180)	0.28 ft
Luminous Width (90-270)	2.98 ft
Luminous Height	0.46 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	6624	6328	7201
55	5422	5077	6009
65	4383	4039	4896
75	3469	2865	3377
85	3574	2738	1312

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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	845.797	845.797	845.797	845.797	845.797	845.797	845.797	845.797	845.797
5	923.219	912.993	894.003	867.709	840.684	825.346	801.243	783.713	775.679
10	974.346	956.817	921.027	869.900	812.929	772.027	726.012	696.066	685.110
15	1003.562	984.572	934.905	863.326	785.174	722.360	661.737	622.296	607.688
20	1062.724	1029.856	959.008	857.483	745.733	653.703	575.551	523.693	506.894
25	1034.969	1003.562	923.219	811.468	690.223	590.159	505.433	454.305	433.854
30	1033.508	994.797	902.037	770.566	628.870	513.467	419.246	365.928	346.207
35	1022.552	982.380	877.204	734.777	584.316	464.531	369.580	311.878	293.619
40	977.268	934.174	820.963	669.772	511.276	387.839	293.619	239.569	221.310
45	952.434	903.498	780.792	614.262	449.193	322.834	232.265	181.868	165.069
50	874.282	826.806	703.370	544.874	385.648	264.403	178.947	131.471	118.324
55	801.243	753.767	630.330	474.756	321.374	205.971	127.819	86.187	73.039
60	712.135	667.581	555.830	409.021	264.403	157.765	89.108	51.128	40.172
65	645.669	600.384	489.364	345.477	210.354	112.481	48.936	19.721	13.147
70	558.021	517.119	412.673	281.932	157.035	69.387	16.799	3.652	3.652
75	493.747	444.080	327.947	212.545	105.177	32.868	3.652	6.574	6.574
80	481.330	428.742	298.731	157.035	62.084	3.652	6.574	6.574	8.765
85	475.487	420.707	285.584	123.437	24.103	3.652	12.417	21.181	24.103
90	433.854	385.648	261.481	111.750	0.000	12.417	22.642	30.677	33.598
95	472.565	422.168	287.775	123.437	25.564	4.382	17.529	25.564	28.485
100	478.408	428.742	300.192	157.765	64.275	3.652	6.574	9.495	11.686
105	490.825	444.080	332.329	214.006	106.638	27.755	3.652	6.574	6.574
110	557.291	520.041	417.786	282.663	157.035	62.814	13.147	3.652	5.843
115	641.286	602.575	492.286	349.129	211.084	107.368	46.745	16.069	11.686
120	706.291	666.120	557.291	411.212	265.864	155.574	85.456	48.936	38.711
125	794.669	751.576	634.713	478.408	327.217	205.971	130.010	86.187	73.039
130	862.596	822.424	703.370	547.065	390.761	264.403	178.947	131.471	118.324
135	940.018	899.116	780.792	616.453	452.845	322.834	232.265	180.407	165.069
140	969.233	931.983	823.155	672.693	518.580	390.031	295.810	241.761	224.231
145	1013.787	977.268	877.204	736.238	594.541	466.722	371.771	314.800	295.810
150	1022.552	991.145	902.037	772.757	636.904	516.389	423.629	368.849	349.129
155	1026.935	999.910	921.758	812.929	698.987	590.159	507.624	455.036	436.045
160	1050.307	1025.474	956.086	857.483	754.497	655.894	576.281	528.806	510.546
165	1000.640	984.572	935.635	865.517	796.860	723.090	663.198	624.487	610.610
170	966.312	953.895	918.836	869.900	825.346	772.027	727.473	698.987	688.032
175	921.758	915.184	895.464	872.821	854.561	828.998	805.625	788.096	780.792
180	847.988	847.988	847.988	847.988	847.988	847.988	847.988	847.988	847.988

IES INDOOR REPORT**PHOTOMETRIC FILENAME : WMAUD-3-L23-8TWU-L23-8TWD-AF-DIMU-DIMD-UNV 4000K.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	304.98	N.A.	6.50
0-30	634.21	N.A.	13.40
0-40	1020.06	N.A.	21.60
0-60	1748.72	N.A.	37.00
0-80	2204.35	N.A.	46.70
0-90	2359.42	N.A.	50.00
10-90	2279.44	N.A.	48.30
20-40	715.08	N.A.	15.10
20-50	1103.15	N.A.	23.40
40-70	995.60	N.A.	21.10
60-80	455.64	N.A.	9.60
70-80	188.69	N.A.	4.00
80-90	155.07	N.A.	3.30
90-110	345.37	N.A.	7.30
90-120	611.78	N.A.	13.00
90-130	952.65	N.A.	20.20
90-150	1727.47	N.A.	36.60
90-180	2362.84	N.A.	50.00
110-180	2017.47	N.A.	42.70
0-180	4722.26	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	79.98
10-20	225.00
20-30	329.23
30-40	385.85
40-50	388.07
50-60	340.59
60-70	266.94
70-80	188.69
80-90	155.07
90-100	156.41
100-110	188.96
110-120	266.40
120-130	340.87
130-140	388.02
140-150	386.80
150-160	329.64
160-170	225.46
170-180	80.26

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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	78	78	78	78	72	72	72	72	60	60	60	50	50	50	41	41	41	36
1	70	67	64	61	64	62	59	56	52	50	48	43	42	40	35	34	33	29
2	64	58	53	49	58	54	49	46	45	42	39	37	35	33	30	29	27	24
3	58	51	45	41	53	47	42	38	40	36	33	33	30	28	27	25	23	20
4	53	45	39	35	49	42	36	32	35	31	28	29	26	24	24	22	20	17
5	49	40	34	30	45	37	32	28	32	27	24	26	23	21	22	19	17	15
6	45	36	30	26	41	33	28	24	28	24	21	24	21	18	20	17	15	13
7	41	32	27	22	38	30	25	21	26	22	19	22	18	16	18	15	14	12
8	38	29	24	20	35	27	22	19	23	19	16	20	17	14	16	14	12	10
9	36	27	21	18	33	25	20	17	22	18	15	18	15	13	15	13	11	9
10	33	25	19	16	31	23	18	15	20	16	13	17	14	12	14	12	10	8

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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	17.0	17.1	18.0	19.3	10.6	11.5	11.6	12.5	13.8
	3H	18.0	18.8	19.0	19.8	21.1	11.7	12.5	12.7	13.5	14.8
	4H	18.8	19.6	19.8	20.6	21.9	12.0	12.8	13.0	13.8	15.1
	6H	19.7	20.4	20.7	21.4	22.7	12.2	12.9	13.2	13.9	15.2
	8H	20.1	20.8	21.1	21.8	23.1	12.2	12.8	13.2	13.9	15.2
	12H	20.6	21.3	21.6	22.3	23.6	12.2	12.8	13.2	13.8	15.1

UGR Viewed Endwise

4H	2H	16.5	17.3	17.5	18.3	19.6	11.8	12.6	12.8	13.6	14.9
	3H	18.6	19.3	19.6	20.3	21.6	13.1	13.8	14.1	14.8	16.1
	4H	19.6	20.2	20.6	21.2	22.6	13.5	14.1	14.5	15.1	16.5
	6H	20.7	21.2	21.7	22.2	23.6	13.8	14.3	14.8	15.3	16.6
	8H	21.3	21.8	22.3	22.8	24.1	13.8	14.3	14.8	15.3	16.7
	12H	21.9	22.3	22.9	23.3	24.7	13.8	14.2	14.8	15.3	16.6

8H	4H	19.8	20.3	20.8	21.3	22.7	14.4	14.9	15.4	15.9	17.2
	6H	21.1	21.5	22.2	22.6	23.9	14.8	15.2	15.9	16.3	17.6
	8H	21.9	22.2	22.9	23.3	24.6	15.0	15.3	16.0	16.4	17.7
	12H	22.7	23.0	23.7	24.0	25.4	15.0	15.3	16.1	16.4	17.8

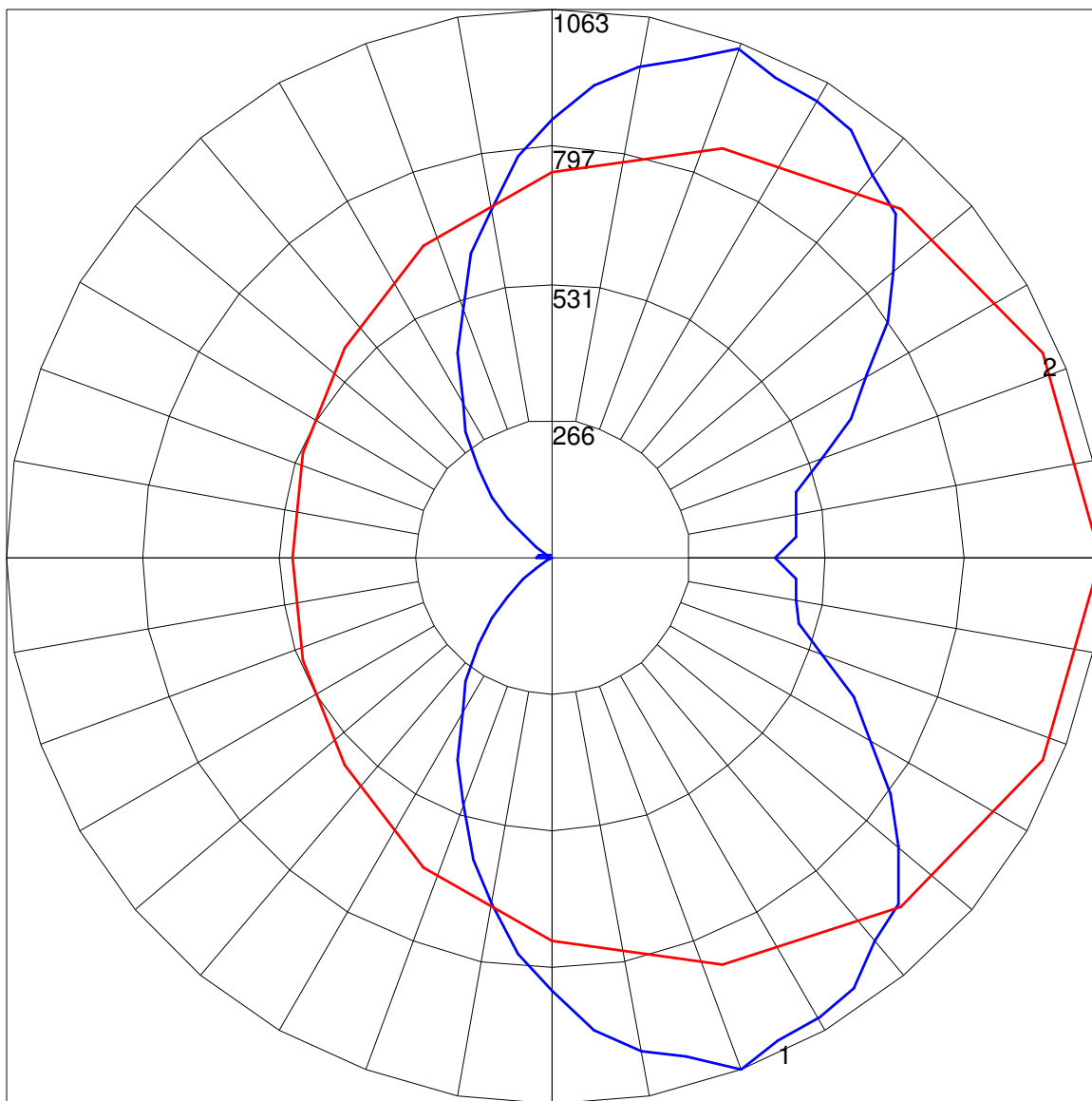
12H	4H	19.8	20.2	20.8	21.3	22.6	14.7	15.1	15.7	16.2	17.5
	6H	21.2	21.5	22.2	22.6	24.0	15.3	15.6	16.3	16.7	18.1
	8H	22.0	22.3	23.0	23.3	24.8	15.5	15.8	16.5	16.9	18.3

Maximum UGR = 25.4

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POLAR GRAPH



Maximum Candela = 1062.724 Located At Horizontal Angle = 0, Vertical Angle = 20

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Horizontal Cone Through Vertical Angle (20) (Through Max. Cd.)