



IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMAUD-4-L32-8TWU-L32-8TWD-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] 4' DIRECT/INDIRECT WALL MOUNT LUMINAIRE

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

[LUMCAT] WMAUD-4-L32-8TWU-L32-8TWD-AF-DIMU-DIMD-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6512
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	119
Total Luminaire Watts	54.7
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)	3.98 ft
Luminous Height	0.46 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	6840	6613	7693
55	5598	5315	6498
65	4526	4237	5391
75	3581	3011	3839
85	3690	2884	1613

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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	1166.419	1166.419	1166.419	1166.419	1166.419	1166.419	1166.419	1166.419	1166.419
5	1273.189	1259.087	1232.898	1196.637	1159.368	1138.215	1104.975	1080.801	1069.721
10	1343.698	1319.524	1270.167	1199.659	1121.091	1064.684	1001.226	959.928	944.819
15	1383.989	1357.800	1289.306	1190.593	1082.815	996.190	912.587	858.194	838.049
20	1465.578	1420.251	1322.545	1182.535	1028.423	901.507	793.729	722.213	699.045
25	1427.302	1383.989	1273.189	1119.077	951.870	813.874	697.031	626.522	598.318
30	1425.287	1371.902	1243.978	1062.670	867.259	708.111	578.173	504.642	477.446
35	1410.178	1354.778	1209.731	1013.314	805.816	640.624	509.679	430.104	404.923
40	1347.727	1288.298	1132.171	923.667	705.089	534.860	404.923	330.385	305.203
45	1313.480	1245.993	1076.772	847.114	619.471	445.213	320.312	250.810	227.643
50	1205.702	1140.230	970.001	751.423	531.839	364.632	246.781	181.309	163.178
55	1104.975	1039.503	869.274	654.725	443.199	284.050	176.272	118.858	100.727
60	982.088	920.645	766.532	564.071	364.632	217.570	122.887	70.509	55.400
65	890.427	827.976	674.871	476.439	290.094	155.120	67.487	27.196	18.131
70	769.554	713.147	569.108	388.806	216.563	95.691	23.167	5.036	5.036
75	680.915	612.420	452.264	293.116	145.047	45.327	5.036	9.065	9.065
80	663.791	591.267	411.973	216.563	85.618	5.036	9.065	9.065	12.087
85	655.733	580.188	393.843	170.229	33.240	5.036	17.124	29.211	33.240
90	598.318	531.839	360.603	154.112	0.000	17.124	31.225	42.305	46.334
95	651.704	582.202	396.864	170.229	35.254	6.044	24.174	35.254	39.284
100	659.762	591.267	413.988	217.570	88.640	5.036	9.065	13.095	16.116
105	676.885	612.420	458.308	295.130	147.061	38.276	5.036	9.065	9.065
110	768.547	717.176	576.158	389.813	216.563	86.625	18.131	5.036	8.058
115	884.383	830.998	678.900	481.475	291.101	148.069	64.465	22.160	16.116
120	974.030	918.630	768.547	567.093	366.646	214.549	117.851	67.487	53.385
125	1095.910	1036.481	875.318	659.762	451.257	284.050	179.294	118.858	100.727
130	1189.586	1134.186	970.001	754.445	538.889	364.632	246.781	181.309	163.178
135	1296.356	1239.949	1076.772	850.136	624.507	445.213	320.312	248.796	227.643
140	1336.647	1285.276	1135.193	927.696	715.162	537.882	407.944	333.406	309.232
145	1398.091	1347.727	1209.731	1015.328	819.918	643.646	512.700	434.133	407.944
150	1410.178	1366.865	1243.978	1065.692	878.339	712.140	584.217	508.671	481.475
155	1416.222	1378.953	1271.175	1121.091	963.957	813.874	700.053	627.529	601.340
160	1448.454	1414.207	1318.516	1182.535	1040.510	904.528	794.736	729.263	704.082
165	1379.960	1357.800	1290.313	1193.615	1098.932	997.197	914.601	861.216	842.078
170	1332.618	1315.495	1267.146	1199.659	1138.215	1064.684	1003.241	963.957	948.848
175	1271.175	1262.109	1234.913	1203.688	1178.506	1143.251	1111.019	1086.844	1076.772
180	1169.440	1169.440	1169.440	1169.440	1169.440	1169.440	1169.440	1169.440	1169.440

IES INDOOR REPORT**PHOTOMETRIC FILENAME : WMAUD-4-L32-8TWU-L32-8TWD-AF-DIMU-DIMD-UNV 4000K.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	420.59	N.A.	6.50
0-30	874.62	N.A.	13.40
0-40	1406.74	N.A.	21.60
0-60	2411.61	N.A.	37.00
0-80	3039.97	N.A.	46.70
0-90	3253.82	N.A.	50.00
10-90	3143.53	N.A.	48.30
20-40	986.15	N.A.	15.10
20-50	1521.33	N.A.	23.40
40-70	1373.01	N.A.	21.10
60-80	628.36	N.A.	9.60
70-80	260.22	N.A.	4.00
80-90	213.85	N.A.	3.30
90-110	476.29	N.A.	7.30
90-120	843.69	N.A.	13.00
90-130	1313.77	N.A.	20.20
90-150	2382.32	N.A.	36.60
90-180	3258.54	N.A.	50.00
110-180	2782.24	N.A.	42.70
0-180	6512.36	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	110.29
10-20	310.30
20-30	454.03
30-40	532.12
40-50	535.17
50-60	469.70
60-70	368.14
70-80	260.22
80-90	213.85
90-100	215.70
100-110	260.59
110-120	367.39
120-130	470.09
130-140	535.11
140-150	533.43
150-160	454.61
160-170	310.93
170-180	110.69

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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	84	84	84	70	70	70	57	57	57	50
1	97	93	88	84	90	85	82	78	72	69	67	60	58	56	48	47	46	40
2	88	81	74	68	81	74	69	64	63	58	55	52	49	46	42	40	38	33
3	81	71	63	57	74	65	59	53	55	50	46	46	42	39	37	34	32	28
4	74	62	54	48	68	58	51	45	49	43	39	41	37	33	33	30	28	24
5	68	56	47	41	62	52	44	39	44	38	34	37	32	29	30	27	24	21
6	62	50	42	36	57	46	39	33	39	34	29	33	29	25	27	24	21	18
7	58	45	37	31	53	42	35	29	36	30	26	30	26	22	25	21	19	16
8	53	41	33	28	49	38	31	26	33	27	23	28	23	20	23	19	17	14
9	50	37	30	24	46	35	28	23	30	24	20	25	21	18	21	18	15	13
10	47	34	27	22	43	32	25	21	28	22	18	23	19	16	20	16	14	12

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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

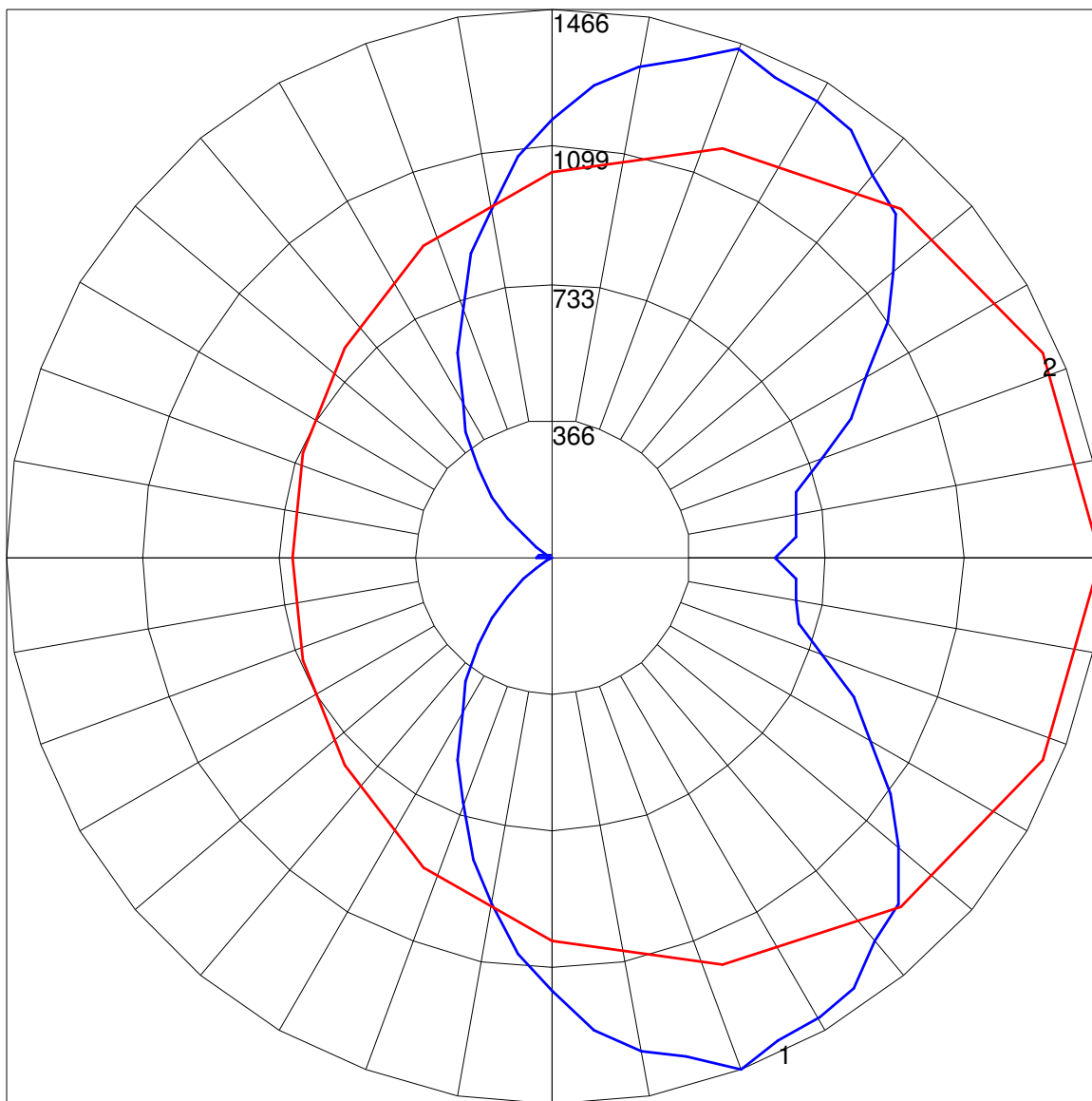
12H	4H	19.8	20.2	20.8	21.3	22.6	14.7	15.1	15.7	16.2	17.5
	6H	21.2	21.5	22.2	22.6	24.0	15.3	15.6	16.3	16.7	18.1
	8H	22.0	22.3	23.0	23.3	24.8	15.5	15.8	16.5	16.9	18.3

Maximum UGR = 25.4

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POLAR GRAPH



Maximum Candela = 1465.578 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.)