



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-4-L64-8TW-AF-DIM-UNV\_.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] WMA-4-L64-8TW-AF-DIM-UNV 4000k

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6511
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	6839	6612	7692
55	5597	5314	6497
65	4525	4236	5390
75	3581	3011	3838
85	3689	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	1166.239	1166.239	1166.239	1166.239	1166.239	1166.239	1166.239	1166.239	1166.239
5	1272.993	1258.894	1232.709	1196.453	1159.189	1138.040	1104.805	1080.634	1069.556
10	1343.491	1319.321	1269.972	1199.474	1120.919	1064.521	1001.072	959.781	944.674
15	1383.776	1357.591	1289.107	1190.410	1082.649	996.037	912.446	858.062	837.920
20	1465.352	1420.032	1322.342	1182.353	1028.264	901.368	793.607	722.101	698.938
25	1427.082	1383.776	1272.993	1118.905	951.724	813.749	696.924	626.426	598.226
30	1425.068	1371.691	1243.787	1062.506	867.126	708.002	578.084	504.565	477.373
35	1409.961	1354.570	1209.545	1013.158	805.692	640.525	509.600	430.038	404.860
40	1347.520	1288.100	1131.997	923.524	704.981	534.778	404.860	330.334	305.156
45	1313.278	1245.801	1076.606	846.984	619.376	445.145	320.263	250.772	227.608
50	1205.517	1140.054	969.852	751.308	531.757	364.576	246.743	181.281	163.153
55	1104.805	1039.343	869.140	654.625	443.131	284.006	176.245	118.840	100.712
60	981.937	920.503	766.415	563.984	364.576	217.537	122.868	70.498	55.391
65	890.290	827.849	674.767	476.365	290.049	155.096	67.477	27.192	18.128
70	769.436	713.037	569.020	388.746	216.530	95.676	23.164	5.036	5.036
75	680.810	612.326	452.195	293.070	145.025	45.320	5.036	9.064	9.064
80	663.689	591.177	411.910	216.530	85.605	5.036	9.064	9.064	12.085
85	655.632	580.098	393.782	170.202	33.235	5.036	17.121	29.206	33.235
90	598.226	531.757	360.547	154.089	0.000	17.121	31.221	42.299	46.327
95	651.603	582.112	396.803	170.202	35.249	6.043	24.171	35.249	39.277
100	659.660	591.177	413.924	217.537	88.626	5.036	9.064	13.092	16.114
105	676.781	612.326	458.237	295.085	147.039	38.270	5.036	9.064	9.064
110	768.429	717.066	576.070	389.754	216.530	86.612	18.128	5.036	8.057
115	884.247	830.870	678.796	481.401	291.056	148.046	64.455	22.157	16.114
120	973.880	918.489	768.429	567.006	366.590	214.515	117.832	67.477	53.377
125	1095.741	1036.321	875.183	659.660	451.188	284.006	179.266	118.840	100.712
130	1189.403	1134.011	969.852	754.329	538.807	364.576	246.743	181.281	163.153
135	1296.157	1239.759	1076.606	850.005	624.411	445.145	320.263	248.757	227.608
140	1336.442	1285.079	1135.019	927.553	715.052	537.799	407.882	333.355	309.184
145	1397.876	1347.520	1209.545	1015.172	819.792	643.546	512.622	434.067	407.882
150	1409.961	1366.655	1243.787	1065.528	878.204	712.030	584.127	508.593	481.401
155	1416.004	1378.740	1270.979	1120.919	963.809	813.749	699.945	627.433	601.248
160	1448.231	1413.989	1318.314	1182.353	1040.350	904.389	794.614	729.151	703.973
165	1379.748	1357.591	1290.114	1193.431	1098.762	997.044	914.460	861.083	841.948
170	1332.413	1315.292	1266.951	1199.474	1138.040	1064.521	1003.087	963.809	948.702
175	1270.979	1261.915	1234.723	1203.502	1178.325	1143.076	1110.848	1086.677	1076.606
180	1169.261	1169.261	1169.261	1169.261	1169.261	1169.261	1169.261	1169.261	1169.261

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	420.52	N.A.	6.50
0-30	874.49	N.A.	13.40
0-40	1406.53	N.A.	21.60
0-60	2411.24	N.A.	37.00
0-80	3039.51	N.A.	46.70
0-90	3253.32	N.A.	50.00
10-90	3143.05	N.A.	48.30
20-40	986.00	N.A.	15.10
20-50	1521.09	N.A.	23.40
40-70	1372.8	N.A.	21.10
60-80	628.26	N.A.	9.60
70-80	260.18	N.A.	4.00
80-90	213.82	N.A.	3.30
90-110	476.22	N.A.	7.30
90-120	843.56	N.A.	13.00
90-130	1313.57	N.A.	20.20
90-150	2381.95	N.A.	36.60
90-180	3258.04	N.A.	50.00
110-180	2781.81	N.A.	42.70
0-180	6511.36	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	110.27
10-20	310.25
20-30	453.96
30-40	532.04
40-50	535.09
50-60	469.63
60-70	368.08
70-80	260.18
80-90	213.82
90-100	215.67
100-110	260.55
110-120	367.34
120-130	470.01
130-140	535.03
140-150	533.35
150-160	454.54
160-170	310.88
170-180	110.67

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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	56	56	56	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**

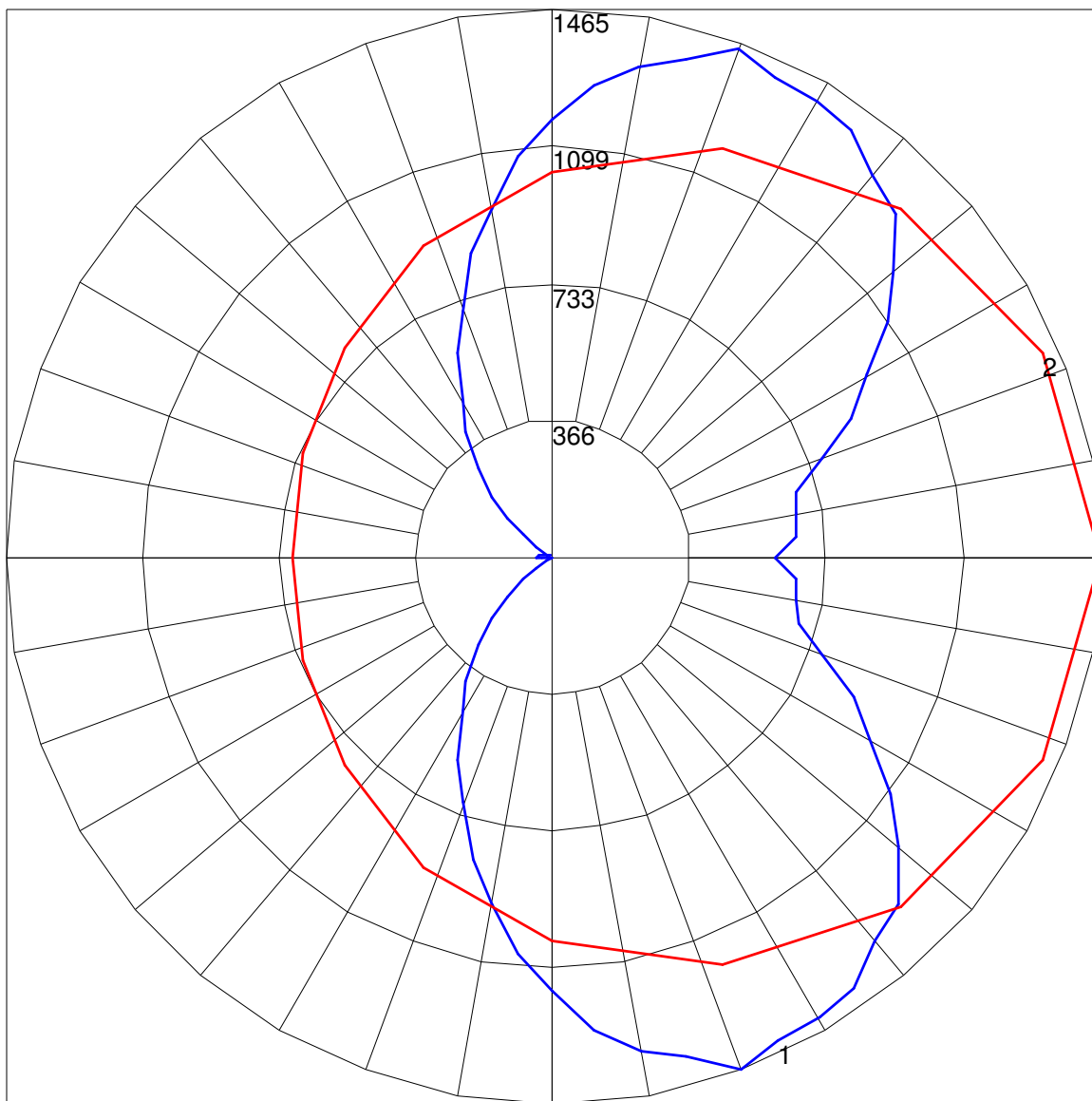
Reflectances

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					UGR Viewed Endwise				
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
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

POLAR GRAPH



Maximum Candela = 1465.352 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.)