



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-4-L80-835-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] 13-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-L80-835-AF-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7989
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	126
Total Luminaire Watts	63.3
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	8391	8113	9438
55	6868	6521	7972
65	5552	5198	6614
75	4394	3694	4709
85	4527	3538	1979

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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>
<b>0</b>	1430.977	1430.977	1430.977	1430.977	1430.977	1430.977	1430.977	1430.977	1430.977
<b>5</b>	1561.964	1544.664	1512.535	1468.048	1422.326	1396.376	1355.597	1325.939	1312.346
<b>10</b>	1648.465	1618.808	1558.257	1471.756	1375.369	1306.168	1228.317	1177.652	1159.116
<b>15</b>	1697.894	1665.765	1581.736	1460.634	1328.411	1222.138	1119.572	1052.843	1028.128
<b>20</b>	1797.989	1742.381	1622.515	1450.748	1261.681	1105.979	973.756	886.019	857.597
<b>25</b>	1751.031	1697.894	1561.964	1372.897	1167.766	998.471	855.126	768.625	734.024
<b>30</b>	1748.559	1683.066	1526.128	1303.696	1063.964	868.719	709.310	619.101	585.736
<b>35</b>	1730.023	1662.058	1484.113	1243.145	988.585	785.925	625.280	527.657	496.764
<b>40</b>	1653.408	1580.500	1388.962	1133.165	865.012	656.173	496.764	405.320	374.426
<b>45</b>	1611.393	1528.599	1320.996	1039.250	759.975	546.193	392.962	307.697	279.275
<b>50</b>	1479.170	1398.847	1190.009	921.855	652.466	447.335	302.754	222.432	200.188
<b>55</b>	1355.597	1275.274	1066.436	803.225	543.722	348.476	216.253	145.816	123.573
<b>60</b>	1204.838	1129.458	940.391	692.009	447.335	266.918	150.759	86.501	67.965
<b>65</b>	1092.386	1015.771	827.940	584.501	355.891	190.303	82.794	33.365	22.243
<b>70</b>	944.098	874.898	698.188	476.992	265.682	117.394	28.422	6.179	6.179
<b>75</b>	835.354	751.324	554.843	359.598	177.945	55.608	6.179	11.122	11.122
<b>80</b>	814.347	725.374	505.414	265.682	105.037	6.179	11.122	11.122	14.829
<b>85</b>	804.461	711.781	483.171	208.839	40.779	6.179	21.007	35.836	40.779
<b>90</b>	734.024	652.466	442.392	189.067	0.000	21.007	38.308	51.901	56.844
<b>95</b>	799.518	714.253	486.878	208.839	43.251	7.414	29.658	43.251	48.194
<b>100</b>	809.404	725.374	507.885	266.918	108.744	6.179	11.122	16.065	19.772
<b>105</b>	830.411	751.324	562.258	362.069	180.417	46.958	6.179	11.122	11.122
<b>110</b>	942.863	879.840	706.838	478.228	265.682	106.273	22.243	6.179	9.886
<b>115</b>	1084.972	1019.478	832.883	590.679	357.126	181.652	79.087	27.186	19.772
<b>120</b>	1194.952	1126.987	942.863	695.717	449.806	263.211	144.581	82.794	65.494
<b>125</b>	1344.475	1271.567	1073.850	809.404	553.607	348.476	219.960	145.816	123.573
<b>130</b>	1459.398	1391.433	1190.009	925.563	661.116	447.335	302.754	222.432	200.188
<b>135</b>	1590.386	1521.185	1320.996	1042.957	766.153	546.193	392.962	305.226	279.275
<b>140</b>	1639.815	1576.793	1392.669	1138.108	877.369	659.880	500.471	409.027	379.369
<b>145</b>	1715.195	1653.408	1484.113	1245.617	1005.885	789.632	628.987	532.600	500.471
<b>150</b>	1730.023	1676.887	1526.128	1307.403	1077.557	873.662	716.724	624.044	590.679
<b>155</b>	1737.438	1691.716	1559.493	1375.369	1182.595	998.471	858.833	769.860	737.731
<b>160</b>	1776.981	1734.966	1617.572	1450.748	1276.510	1109.686	974.992	894.669	863.776
<b>165</b>	1692.951	1665.765	1582.971	1464.341	1348.183	1223.374	1122.044	1056.550	1033.071
<b>170</b>	1634.872	1613.865	1554.550	1471.756	1396.376	1306.168	1230.788	1182.595	1164.059
<b>175</b>	1559.493	1548.371	1515.006	1476.699	1445.805	1402.555	1363.011	1333.354	1320.996
<b>180</b>	1434.684	1434.684	1434.684	1434.684	1434.684	1434.684	1434.684	1434.684	1434.684

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	515.98	N.A.	6.50
0-30	1072.99	N.A.	13.40
0-40	1725.81	N.A.	21.60
0-60	2958.6	N.A.	37.00
0-80	3729.48	N.A.	46.70
0-90	3991.83	N.A.	50.00
10-90	3856.52	N.A.	48.30
20-40	1209.82	N.A.	15.10
20-50	1866.38	N.A.	23.40
40-70	1684.42	N.A.	21.10
60-80	770.88	N.A.	9.60
70-80	319.25	N.A.	4.00
80-90	262.35	N.A.	3.30
90-110	584.33	N.A.	7.30
90-120	1035.05	N.A.	13.00
90-130	1611.75	N.A.	20.20
90-150	2922.66	N.A.	36.60
90-180	3997.61	N.A.	50.00
110-180	3413.29	N.A.	42.70
0-180	7989.44	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	135.31
10-20	380.68
20-30	557.01
30-40	652.81
40-50	656.56
50-60	576.23
60-70	451.63
70-80	319.25
80-90	262.35
90-100	264.62
100-110	319.70
110-120	450.72
120-130	576.71
130-140	656.48
140-150	654.42
150-160	557.72
160-170	381.45
170-180	135.79

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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	207	207	207	207	191	191	191	191	161	161	161	133	133	133	108	108	108	96
1	187	178	169	162	172	164	157	150	138	133	128	114	111	107	93	90	87	77
2	170	154	142	131	156	143	132	122	120	112	105	100	94	88	81	77	73	64
3	154	135	121	109	142	125	112	102	106	96	88	88	81	74	71	66	62	54
4	141	120	104	92	129	111	97	86	94	83	75	78	70	64	64	58	53	46
5	130	107	91	79	119	99	85	74	84	73	64	70	62	55	57	51	46	40
6	119	96	80	68	110	89	74	64	76	64	56	63	55	48	52	46	40	35
7	110	86	71	60	101	80	66	56	69	57	49	58	49	43	48	41	36	31
8	102	78	63	53	94	73	59	50	63	52	44	53	44	38	44	37	32	28
9	95	71	57	47	88	67	53	44	57	47	39	49	40	34	40	34	29	25
10	89	66	51	42	82	61	48	40	53	42	35	45	37	31	37	31	26	23

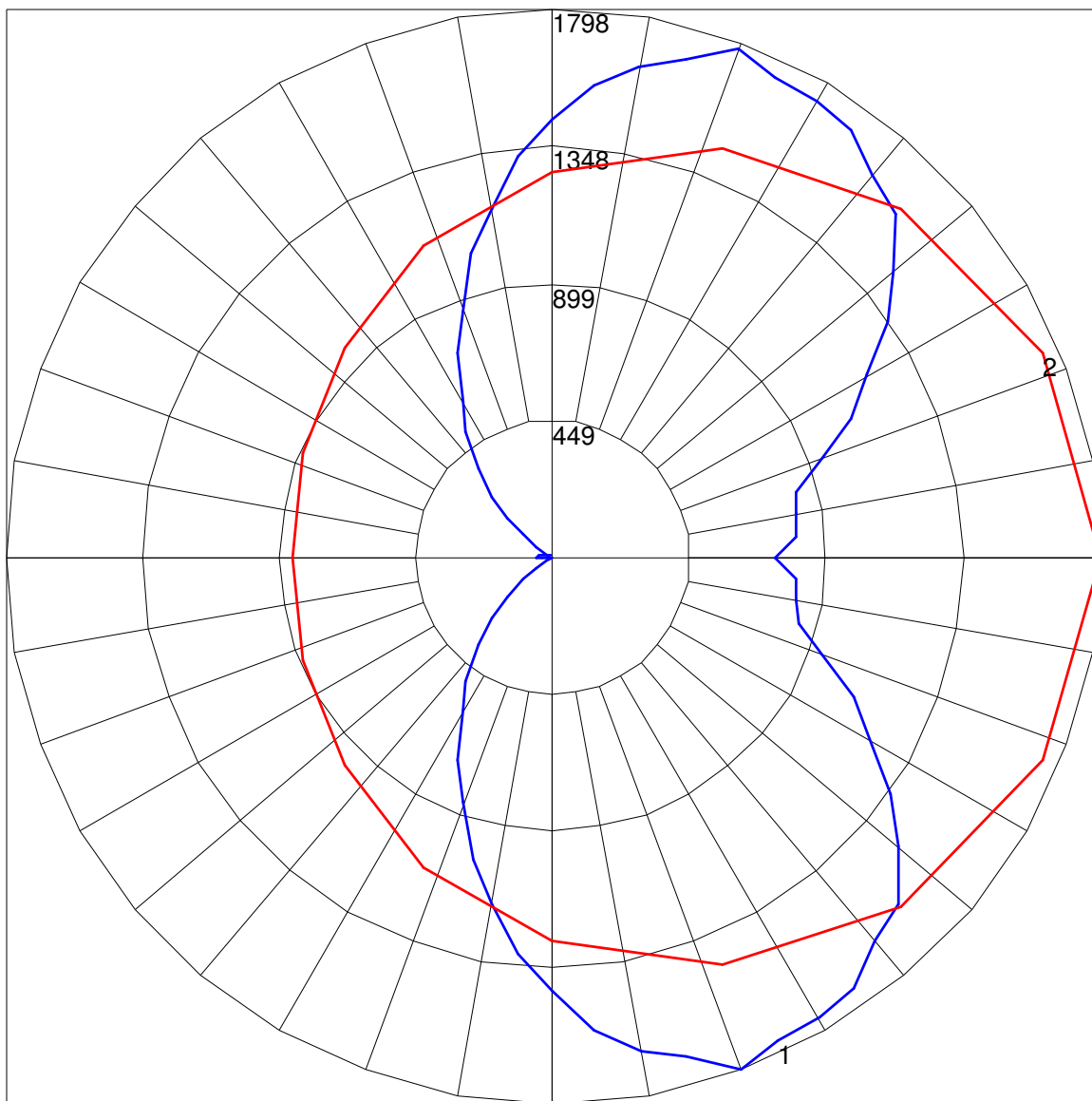
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**UGR TABLE - CORRECTED**

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	14.5	15.4	15.5	16.4	17.7	9.0	9.9	10.0	10.9	12.2
	3H	16.4	17.2	17.4	18.2	19.5	10.1	10.9	11.1	11.9	13.2
	4H	17.2	18.0	18.2	19.0	20.3	10.4	11.2	11.4	12.2	13.5
	6H	18.1	18.8	19.1	19.8	21.1	10.6	11.3	11.6	12.3	13.6
	8H	18.5	19.2	19.5	20.2	21.5	10.6	11.2	11.6	12.3	13.6
	12H	19.0	19.7	20.0	20.7	22.0	10.6	11.2	11.6	12.2	13.5
4H	2H	14.9	15.7	15.9	16.7	18.0	10.2	11.0	11.2	12.0	13.3
	3H	17.0	17.7	18.0	18.7	20.0	11.5	12.2	12.5	13.2	14.5
	4H	18.0	18.6	19.0	19.6	21.0	11.9	12.5	12.9	13.5	14.9
	6H	19.1	19.6	20.1	20.6	22.0	12.2	12.7	13.2	13.7	15.0
	8H	19.7	20.2	20.7	21.2	22.5	12.2	12.7	13.2	13.7	15.1
	12H	20.3	20.7	21.3	21.7	23.1	12.2	12.6	13.2	13.7	15.0
8H	4H	18.2	18.7	19.2	19.7	21.1	12.8	13.3	13.8	14.3	15.6
	6H	19.5	19.9	20.6	21.0	22.3	13.2	13.6	14.3	14.7	16.0
	8H	20.3	20.6	21.3	21.7	23.0	13.4	13.7	14.4	14.8	16.1
	12H	21.1	21.4	22.1	22.4	23.8	13.4	13.7	14.5	14.8	16.2
12H	4H	18.2	18.6	19.2	19.7	21.0	13.1	13.5	14.1	14.6	15.9
	6H	19.6	19.9	20.6	21.0	22.4	13.7	14.0	14.7	15.1	16.5
	8H	20.4	20.7	21.4	21.7	23.2	13.9	14.2	14.9	15.3	16.7

Maximum UGR = 23.8

POLAR GRAPH



Maximum Candela = 1797.989 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.)