



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-4-L100-835-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-L100-835-AF-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	10097
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	136
Total Luminaire Watts	74.4
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 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	10604	10253	11927
55	8679	8241	10075
65	7017	6568	8358
75	5553	4668	5951
85	5720	4472	2500

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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>	1808.379	1808.379	1808.379	1808.379	1808.379	1808.379	1808.379	1808.379	1808.379
<b>5</b>	1973.913	1952.050	1911.447	1855.228	1797.448	1764.653	1713.119	1675.640	1658.462
<b>10</b>	2083.228	2045.748	1969.228	1859.913	1738.105	1650.654	1552.270	1488.243	1464.818
<b>15</b>	2145.693	2105.091	1998.899	1845.859	1678.763	1544.462	1414.846	1330.517	1299.285
<b>20</b>	2272.186	2201.912	2050.433	1833.365	1594.434	1397.668	1230.572	1119.696	1083.778
<b>25</b>	2212.844	2145.693	1973.913	1734.982	1475.750	1261.805	1080.655	971.340	927.614
<b>30</b>	2209.721	2126.954	1928.625	1647.530	1344.572	1097.833	896.381	782.382	740.217
<b>35</b>	2186.296	2100.406	1875.530	1571.010	1249.312	993.203	790.190	666.820	627.779
<b>40</b>	2089.474	1997.338	1755.283	1432.024	1093.148	829.231	627.779	512.218	473.177
<b>45</b>	2036.379	1931.749	1669.393	1313.339	960.409	690.245	496.602	388.848	352.931
<b>50</b>	1869.283	1767.777	1503.859	1164.983	824.546	565.314	382.602	281.095	252.986
<b>55</b>	1713.119	1611.613	1347.695	1015.066	687.122	440.382	273.287	184.274	156.164
<b>60</b>	1522.599	1427.339	1188.408	874.518	565.314	337.314	190.520	109.315	85.890
<b>65</b>	1380.490	1283.668	1046.299	738.656	449.752	240.493	104.630	42.164	28.110
<b>70</b>	1193.093	1105.641	882.327	602.793	335.753	148.356	35.918	7.808	7.808
<b>75</b>	1055.669	949.477	701.176	454.437	224.876	70.274	7.808	14.055	14.055
<b>80</b>	1029.121	916.683	638.711	335.753	132.739	7.808	14.055	14.055	18.740
<b>85</b>	1016.628	899.505	610.601	263.917	51.534	7.808	26.548	45.288	51.534
<b>90</b>	927.614	824.546	559.067	238.931	0.000	26.548	48.411	65.589	71.835
<b>95</b>	1010.381	902.628	615.286	263.917	54.657	9.370	37.479	54.657	60.904
<b>100</b>	1022.874	916.683	641.834	337.314	137.424	7.808	14.055	20.301	24.986
<b>105</b>	1049.422	949.477	710.546	457.561	227.999	59.342	7.808	14.055	14.055
<b>110</b>	1191.531	1111.888	893.258	604.355	335.753	134.301	28.110	7.808	12.493
<b>115</b>	1371.120	1288.353	1052.545	746.464	451.314	229.561	99.945	34.356	24.986
<b>120</b>	1510.106	1424.216	1191.531	879.203	568.437	332.629	182.712	104.630	82.767
<b>125</b>	1699.064	1606.928	1357.065	1022.874	699.615	440.382	277.972	184.274	156.164
<b>130</b>	1844.297	1758.407	1503.859	1169.668	835.477	565.314	382.602	281.095	252.986
<b>135</b>	2009.831	1922.379	1669.393	1318.024	968.217	690.245	496.602	385.725	352.931
<b>140</b>	2072.296	1992.653	1759.968	1438.270	1108.764	833.916	632.464	516.903	479.423
<b>145</b>	2167.556	2089.474	1875.530	1574.133	1271.175	997.888	794.875	673.067	632.464
<b>150</b>	2186.296	2119.146	1928.625	1652.215	1361.750	1104.079	905.751	788.628	746.464
<b>155</b>	2195.666	2137.885	1970.790	1738.105	1494.490	1261.805	1085.340	972.902	932.299
<b>160</b>	2245.638	2192.543	2044.187	1833.365	1613.174	1402.353	1232.134	1130.627	1091.586
<b>165</b>	2139.447	2105.091	2000.461	1850.543	1703.749	1546.024	1417.969	1335.202	1305.531
<b>170</b>	2066.050	2039.502	1964.543	1859.913	1764.653	1650.654	1555.393	1494.490	1471.065
<b>175</b>	1970.790	1956.735	1914.571	1866.160	1827.119	1772.461	1722.489	1685.010	1669.393
<b>180</b>	1813.064	1813.064	1813.064	1813.064	1813.064	1813.064	1813.064	1813.064	1813.064

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	652.07	N.A.	6.50
0-30	1355.98	N.A.	13.40
0-40	2180.97	N.A.	21.60
0-60	3738.89	N.A.	37.00
0-80	4713.08	N.A.	46.70
0-90	5044.62	N.A.	50.00
10-90	4873.63	N.A.	48.30
20-40	1528.9	N.A.	15.10
20-50	2358.62	N.A.	23.40
40-70	2128.67	N.A.	21.10
60-80	974.19	N.A.	9.60
70-80	403.44	N.A.	4.00
80-90	331.54	N.A.	3.30
90-110	738.43	N.A.	7.30
90-120	1308.03	N.A.	13.00
90-130	2036.83	N.A.	20.20
90-150	3693.47	N.A.	36.60
90-180	5051.94	N.A.	50.00
110-180	4313.5	N.A.	42.70
0-180	10096.56	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	170.99
10-20	481.08
20-30	703.91
30-40	824.99
40-50	829.72
50-60	728.20
60-70	570.75
70-80	403.44
80-90	331.54
90-100	334.42
100-110	404.02
110-120	569.59
120-130	728.81
130-140	829.62
140-150	827.01
150-160	704.81
160-170	482.05
170-180	171.61

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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	261	261	261	261	241	241	241	241	203	203	203	169	169	169	137	137	137	122
1	236	224	214	204	217	207	198	190	174	168	162	144	140	135	117	114	110	97
2	214	195	179	166	197	180	166	155	152	142	133	126	118	112	102	97	92	80
3	195	171	152	138	179	158	142	129	134	121	111	111	102	94	90	83	78	68
4	178	151	131	116	164	140	122	109	119	105	94	99	89	80	80	73	67	58
5	164	135	114	99	150	125	107	93	106	92	81	89	78	70	72	65	58	50
6	151	121	101	86	138	112	94	81	96	81	71	80	69	61	66	58	51	44
7	139	109	89	75	128	101	84	71	87	73	62	73	62	54	60	52	45	39
8	129	99	80	67	119	92	75	63	79	65	55	67	56	48	55	47	41	35
9	121	90	72	59	111	84	67	56	72	59	50	61	51	43	51	43	37	31
10	113	83	65	53	104	77	61	50	67	54	45	57	46	39	47	39	33	29

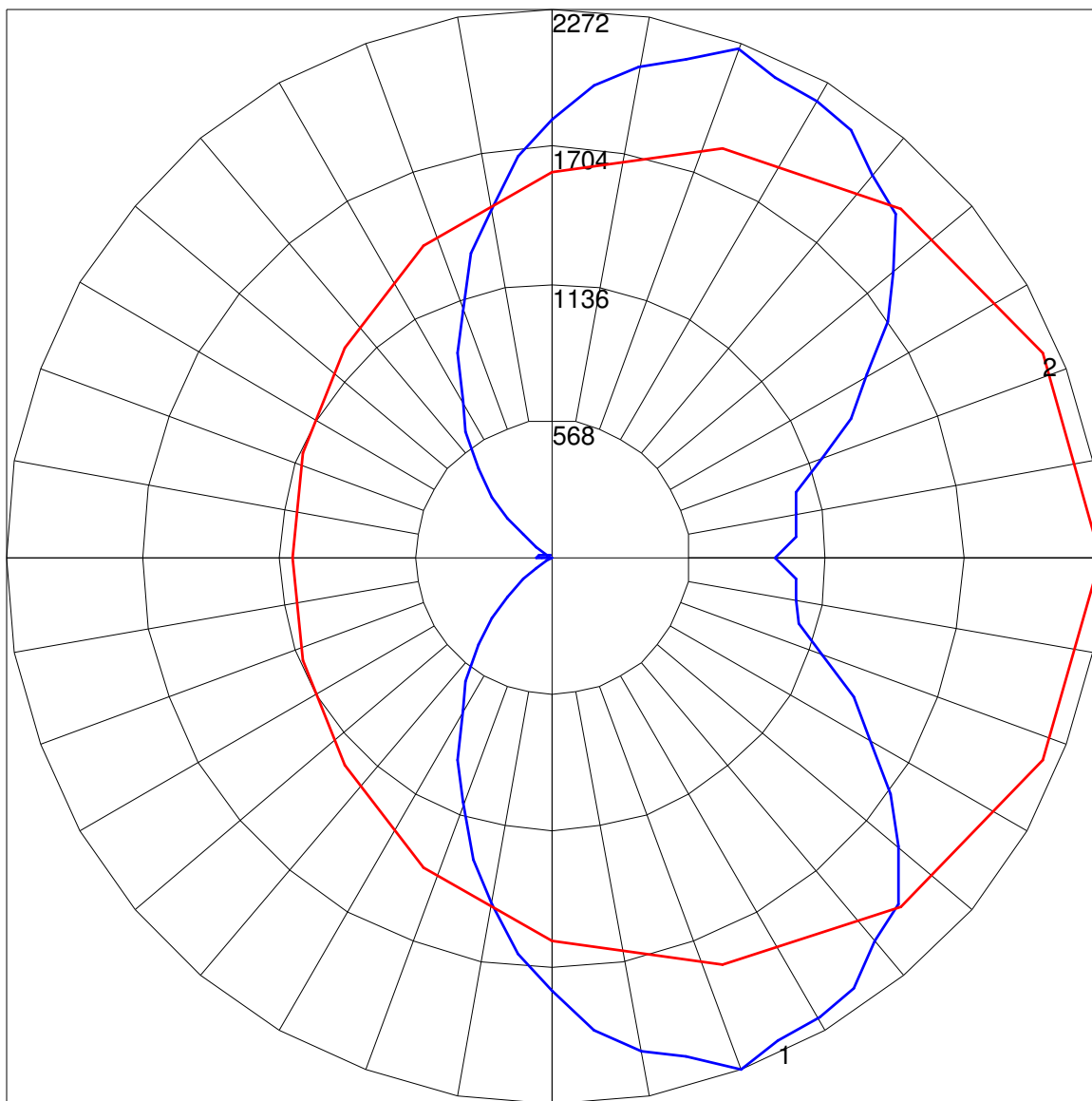
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**UGR TABLE - CORRECTED**

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 = 2272.186 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.)