



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-4-L40-835-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

[ISSUE DATE] 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-L40-835-AF-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4139
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	138
Total Luminaire Watts	30
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	4347	4203	4890
55	3558	3378	4130
65	2877	2693	3426
75	2276	1914	2440
85	2345	1833	1025

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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>	741.371	741.371	741.371	741.371	741.371	741.371	741.371	741.371	741.371
<b>5</b>	809.234	800.271	783.625	760.577	736.889	723.445	702.318	686.952	679.910
<b>10</b>	854.049	838.684	807.313	762.498	712.561	676.709	636.375	610.126	600.523
<b>15</b>	879.658	863.012	819.477	756.736	688.233	633.174	580.036	545.464	532.660
<b>20</b>	931.515	902.705	840.604	751.614	653.661	572.994	504.491	459.035	444.310
<b>25</b>	907.187	879.658	809.234	711.281	605.005	517.295	443.030	398.215	380.289
<b>30</b>	905.906	871.975	790.667	675.428	551.226	450.072	367.484	320.748	303.463
<b>35</b>	896.303	861.091	768.900	644.058	512.173	407.178	323.950	273.372	257.367
<b>40</b>	856.610	818.837	719.603	587.079	448.152	339.955	257.367	209.991	193.986
<b>45</b>	834.842	791.948	684.391	538.422	393.733	282.976	203.589	159.414	144.689
<b>50</b>	766.339	724.725	616.529	477.602	338.034	231.758	156.853	115.239	103.715
<b>55</b>	702.318	660.703	552.507	416.141	281.695	180.541	112.038	75.546	64.022
<b>60</b>	624.211	585.158	487.205	358.521	231.758	138.287	78.106	44.815	35.212
<b>65</b>	565.951	526.258	428.945	302.822	184.382	98.593	42.895	17.286	11.524
<b>70</b>	489.125	453.273	361.722	247.124	137.647	60.821	14.725	3.201	3.201
<b>75</b>	432.786	389.252	287.457	186.303	92.191	28.810	3.201	5.762	5.762
<b>80</b>	421.903	375.807	261.849	137.647	54.418	3.201	5.762	5.762	7.683
<b>85</b>	416.781	368.765	250.325	108.197	21.127	3.201	10.884	18.566	21.127
<b>90</b>	380.289	338.034	229.198	97.953	0.000	10.884	19.847	26.889	29.450
<b>95</b>	414.220	370.045	252.245	108.197	22.408	3.841	15.365	22.408	24.968
<b>100</b>	419.342	375.807	263.129	138.287	56.339	3.201	5.762	8.323	10.243
<b>105</b>	430.226	389.252	291.299	187.583	93.472	24.328	3.201	5.762	5.762
<b>110</b>	488.485	455.834	366.204	247.764	137.647	55.059	11.524	3.201	5.122
<b>115</b>	562.110	528.179	431.506	306.024	185.023	94.112	40.974	14.085	10.243
<b>120</b>	619.089	583.877	488.485	360.442	233.039	136.366	74.905	42.895	33.931
<b>125</b>	696.556	658.783	556.348	419.342	286.817	180.541	113.959	75.546	64.022
<b>130</b>	756.096	720.884	616.529	479.522	342.516	231.758	156.853	115.239	103.715
<b>135</b>	823.959	788.107	684.391	540.343	396.934	282.976	203.589	158.133	144.689
<b>140</b>	849.567	816.916	721.524	589.639	454.554	341.876	259.288	211.912	196.546
<b>145</b>	888.621	856.610	768.900	645.338	521.136	409.098	325.870	275.933	259.288
<b>150</b>	896.303	868.774	790.667	677.349	558.269	452.633	371.326	323.309	306.024
<b>155</b>	900.144	876.456	807.953	712.561	612.687	517.295	444.950	398.855	382.209
<b>160</b>	920.631	898.864	838.043	751.614	661.344	574.914	505.131	463.517	447.511
<b>165</b>	877.097	863.012	820.117	758.657	698.476	633.814	581.317	547.385	535.221
<b>170</b>	847.006	836.123	805.392	762.498	723.445	676.709	637.656	612.687	603.084
<b>175</b>	807.953	802.191	784.905	765.059	749.053	726.646	706.159	690.794	684.391
<b>180</b>	743.291	743.291	743.291	743.291	743.291	743.291	743.291	743.291	743.291

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	267.32	N.A.	6.50
0-30	555.90	N.A.	13.40
0-40	894.12	N.A.	21.60
0-60	1532.81	N.A.	37.00
0-80	1932.19	N.A.	46.70
0-90	2068.11	N.A.	50.00
10-90	1998.01	N.A.	48.30
20-40	626.79	N.A.	15.10
20-50	966.95	N.A.	23.40
40-70	872.68	N.A.	21.10
60-80	399.38	N.A.	9.60
70-80	165.40	N.A.	4.00
80-90	135.92	N.A.	3.30
90-110	302.73	N.A.	7.30
90-120	536.24	N.A.	13.00
90-130	835.03	N.A.	20.20
90-150	1514.19	N.A.	36.60
90-180	2071.11	N.A.	50.00
110-180	1768.38	N.A.	42.70
0-180	4139.23	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	70.10
10-20	197.22
20-30	288.58
30-40	338.21
40-50	340.15
50-60	298.54
60-70	233.99
70-80	165.40
80-90	135.92
90-100	137.10
100-110	165.63
110-120	233.51
120-130	298.79
130-140	340.12
140-150	339.05
150-160	288.95
160-170	197.62
170-180	70.35

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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	69	69	69	69	63	63	63	63	53	53	53	44	44	44	36	36	36	32
1	62	59	56	54	57	54	52	50	46	44	42	38	37	36	31	30	29	26
2	56	51	47	44	52	47	44	41	40	37	35	33	31	29	27	25	24	21
3	51	45	40	36	47	42	37	34	35	32	29	29	27	25	24	22	20	18
4	47	40	34	30	43	37	32	29	31	28	25	26	23	21	21	19	18	15
5	43	35	30	26	39	33	28	24	28	24	21	23	20	18	19	17	15	13
6	40	32	26	23	36	29	25	21	25	21	19	21	18	16	17	15	13	12
7	37	29	23	20	34	27	22	19	23	19	16	19	16	14	16	14	12	10
8	34	26	21	17	31	24	20	16	21	17	15	18	15	13	14	12	11	9
9	32	24	19	16	29	22	18	15	19	15	13	16	13	11	13	11	10	8
10	30	22	17	14	27	20	16	13	18	14	12	15	12	10	12	10	9	7

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**UGR TABLE - CORRECTED**

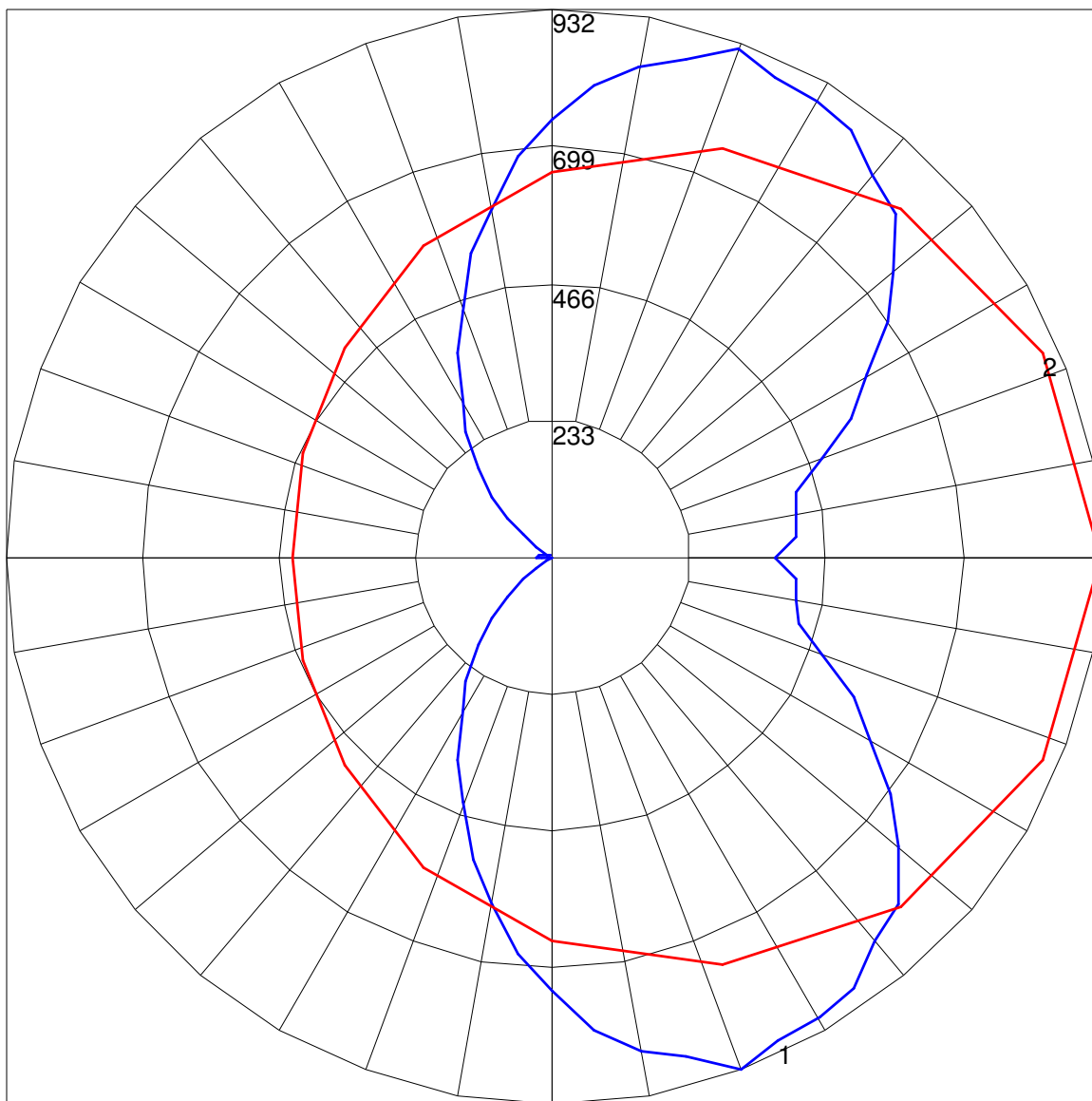
Reflectances

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 = 931.515 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.)