



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-2-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

[ISSUEDATE] 13-NOV-2019

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] 2' DIRECT/INDIRECT WALL MOUNT LUMINAIRE

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

[LUMCAT] WMA-2-L40-835-AF-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4020
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	124
Total Luminaire Watts	32.4
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)	1.98 ft
Luminous Height	0.46 ft



### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8489	7919	8647
55	6948	6331	7058
65	5617	5019	5576
75	4445	3546	3655
85	4580	3373	1272

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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	720.056	720.056	720.056	720.056	720.056	720.056	720.056	720.056	720.056
5	785.967	777.262	761.095	738.710	715.703	702.645	682.125	667.202	660.362
10	829.494	814.571	784.102	740.575	692.074	657.253	618.079	592.585	583.258
15	854.367	838.200	795.916	734.979	668.445	614.970	563.360	529.782	517.346
20	904.733	876.752	816.436	730.005	634.868	556.520	489.986	445.838	431.536
25	881.104	854.367	785.967	690.831	587.610	502.422	430.292	386.766	369.355
30	879.861	846.905	767.935	656.009	535.378	437.132	356.919	311.527	294.738
35	870.534	836.334	746.793	625.541	497.448	395.471	314.636	265.513	249.968
40	831.981	795.295	698.914	570.200	435.267	330.181	249.968	203.954	188.408
45	810.840	769.179	664.715	522.942	382.413	274.840	197.735	154.831	140.529
50	744.306	703.889	598.803	463.870	328.316	225.095	152.343	111.926	100.733
55	682.125	641.708	536.622	404.176	273.596	175.350	108.817	73.374	62.181
60	606.264	568.334	473.197	348.213	225.095	134.311	75.861	43.527	34.200
65	549.680	511.128	416.613	294.116	179.081	95.759	41.661	16.789	11.193
70	475.063	440.241	351.322	240.019	133.689	59.072	14.302	3.109	3.109
75	420.343	378.060	279.193	180.947	89.541	27.981	3.109	5.596	5.596
80	409.773	365.002	254.320	133.689	52.854	3.109	5.596	5.596	7.462
85	404.798	358.162	243.128	105.086	20.520	3.109	10.571	18.032	20.520
90	369.355	328.316	222.608	95.137	0.000	10.571	19.276	26.116	28.603
95	402.311	359.406	244.993	105.086	21.763	3.731	14.923	21.763	24.251
100	407.285	365.002	255.564	134.311	54.719	3.109	5.596	8.084	9.949
105	417.856	378.060	282.923	182.190	90.784	23.629	3.109	5.596	5.596
110	474.441	442.729	355.675	240.640	133.689	53.476	11.193	3.109	4.974
115	545.949	512.993	419.100	297.225	179.703	91.406	39.796	13.680	9.949
120	601.290	567.090	474.441	350.079	226.339	132.445	72.752	41.661	32.956
125	676.529	639.842	540.353	407.285	278.571	175.350	110.682	73.374	62.181
130	734.357	700.158	598.803	465.735	332.668	225.095	152.343	111.926	100.733
135	800.269	765.448	664.715	524.807	385.522	274.840	197.735	153.587	140.529
140	825.141	793.429	700.780	572.687	441.485	332.046	251.833	205.819	190.896
145	863.072	831.981	746.793	626.784	506.153	397.336	316.501	268.000	251.833
150	870.534	843.796	767.935	657.875	542.218	439.619	360.650	314.014	297.225
155	874.264	851.258	784.724	692.074	595.072	502.422	432.158	387.387	371.220
160	894.162	873.021	813.949	730.005	642.329	558.385	490.608	450.190	434.645
165	851.879	838.200	796.538	736.845	678.394	615.592	564.603	531.647	519.833
170	822.654	812.083	782.237	740.575	702.645	657.253	619.322	595.072	585.745
175	784.724	779.128	762.339	743.063	727.517	705.754	685.856	670.933	664.715
180	721.921	721.921	721.921	721.921	721.921	721.921	721.921	721.921	721.921

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	259.64	N.A.	6.50
0-30	539.92	N.A.	13.40
0-40	868.41	N.A.	21.60
0-60	1488.74	N.A.	37.00
0-80	1876.64	N.A.	46.70
0-90	2008.65	N.A.	50.00
10-90	1940.57	N.A.	48.30
20-40	608.77	N.A.	15.10
20-50	939.15	N.A.	23.40
40-70	847.59	N.A.	21.10
60-80	387.90	N.A.	9.60
70-80	160.64	N.A.	4.00
80-90	132.01	N.A.	3.30
90-110	294.03	N.A.	7.30
90-120	520.83	N.A.	13.00
90-130	811.02	N.A.	20.20
90-150	1470.66	N.A.	36.60
90-180	2011.57	N.A.	50.00
110-180	1717.54	N.A.	42.70
0-180	4020.22	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	68.09
10-20	191.55
20-30	280.28
30-40	328.49
40-50	330.37
50-60	289.95
60-70	227.26
70-80	160.64
80-90	132.01
90-100	133.16
100-110	160.87
110-120	226.80
120-130	290.19
130-140	330.34
140-150	329.30
150-160	280.64
160-170	191.94
170-180	68.33

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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	208	208	208	208	192	192	192	192	162	162	162	134	134	134	109	109	109	97
1	188	179	170	163	173	165	158	151	139	134	129	115	111	108	93	90	88	78
2	171	155	143	132	157	143	132	123	121	113	106	100	94	89	81	77	73	64
3	155	136	121	110	143	126	113	102	107	97	88	89	81	75	72	67	62	54
4	142	120	105	92	130	111	97	87	95	84	75	79	71	64	64	58	53	46
5	130	107	91	79	120	99	85	74	85	73	65	71	62	55	58	51	46	40
6	120	96	80	69	110	89	75	65	76	65	56	64	55	49	52	46	41	35
7	111	87	71	60	102	81	67	57	69	58	50	58	49	43	48	41	36	31
8	103	79	64	53	95	73	60	50	63	52	44	53	45	38	44	37	32	28
9	96	72	57	47	88	67	54	45	58	47	39	49	40	34	41	34	29	25
10	90	66	52	42	83	62	49	40	53	43	36	45	37	31	38	31	27	23

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**UGR TABLE - CORRECTED**

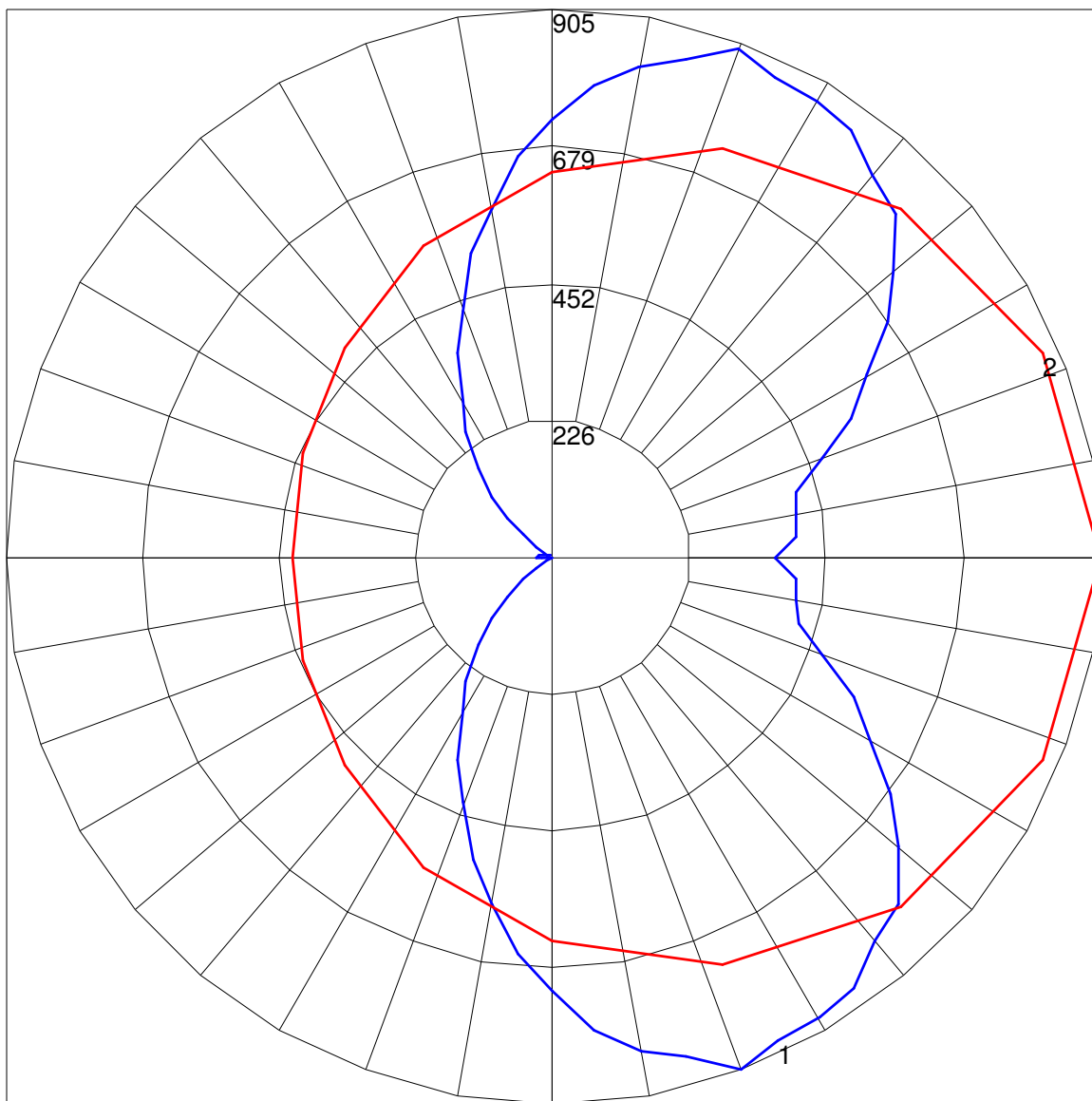
Reflectances

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	17.6	9.0	9.9	10.0	10.9	12.1
	3H	16.4	17.2	17.3	18.2	19.5	10.1	10.9	11.1	11.9	13.2
	4H	17.2	18.0	18.2	18.9	20.2	10.4	11.2	11.4	12.2	13.5
	6H	18.1	18.8	19.1	19.8	21.1	10.5	11.2	11.5	12.2	13.6
	8H	18.5	19.2	19.5	20.2	21.5	10.6	11.2	11.6	12.2	13.5
	12H	19.0	19.6	20.0	20.6	22.0	10.5	11.2	11.5	12.2	13.5
4H	2H	14.9	15.7	15.9	16.6	17.9	10.2	10.9	11.2	11.9	13.2
	3H	17.0	17.6	18.0	18.7	20.0	11.5	12.1	12.5	13.1	14.5
	4H	18.0	18.6	19.0	19.6	20.9	11.9	12.5	12.9	13.5	14.8
	6H	19.1	19.6	20.1	20.6	22.0	12.1	12.6	13.1	13.7	15.0
	8H	19.6	20.1	20.7	21.2	22.5	12.1	12.6	13.2	13.7	15.0
	12H	20.2	20.7	21.3	21.7	23.1	12.1	12.6	13.2	13.6	15.0
8H	4H	18.2	18.6	19.2	19.7	21.0	12.7	13.2	13.7	14.2	15.6
	6H	19.5	19.9	20.5	20.9	22.3	13.1	13.5	14.2	14.6	15.9
	8H	20.2	20.6	21.3	21.6	23.0	13.3	13.6	14.3	14.7	16.0
	12H	21.0	21.3	22.1	22.4	23.8	13.3	13.6	14.4	14.7	16.1
12H	4H	18.1	18.6	19.2	19.6	21.0	13.0	13.4	14.0	14.5	15.8
	6H	19.5	19.9	20.6	20.9	22.3	13.6	13.9	14.6	15.0	16.4
	8H	20.3	20.7	21.4	21.7	23.1	13.8	14.1	14.8	15.2	16.6

Maximum UGR = 23.8

POLAR GRAPH



Maximum Candela = 904.733 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.)