



IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-4-L32-8TW-AF-DIM-UNV 4000K_.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-L32-8TW-AF-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3318
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	124
Total Luminaire Watts	26.8
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	3485	3370	3920
55	2852	2708	3311
65	2306	2159	2747
75	1825	1534	1956
85	1880	1470	822

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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	594.315	594.315	594.315	594.315	594.315	594.315	594.315	594.315	594.315
5	648.716	641.531	628.187	609.711	590.722	579.944	563.008	550.690	545.045
10	684.642	672.325	647.177	611.251	571.219	542.479	510.146	489.103	481.405
15	705.171	691.827	656.928	606.632	551.717	507.580	464.982	437.268	427.003
20	746.742	723.647	673.864	602.526	524.003	459.336	404.421	367.982	356.178
25	727.240	705.171	648.716	570.193	484.998	414.686	355.152	319.226	304.856
30	726.213	699.012	633.833	541.452	441.887	360.797	294.591	257.126	243.269
35	718.515	690.288	616.383	516.304	410.580	326.411	259.692	219.147	206.316
40	686.695	656.415	576.865	470.627	359.258	272.522	206.316	168.338	155.507
45	669.245	634.859	548.638	431.622	315.633	226.845	163.206	127.793	115.989
50	614.330	580.971	494.236	382.866	270.983	185.787	125.740	92.381	83.142
55	563.008	529.648	442.913	333.596	225.819	144.729	89.814	60.561	51.323
60	500.394	469.088	390.564	287.406	185.787	110.857	62.613	35.926	28.227
65	453.691	421.871	343.861	242.755	147.809	79.037	34.386	13.857	9.238
70	392.104	363.363	289.972	198.105	110.343	48.756	11.804	2.566	2.566
75	346.940	312.041	230.438	149.348	73.904	23.095	2.566	4.619	4.619
80	338.215	301.263	209.909	110.343	43.624	2.566	4.619	4.619	6.159
85	334.109	295.618	200.671	86.735	16.936	2.566	8.725	14.884	16.936
90	304.856	270.983	183.735	78.523	0.000	8.725	15.910	21.555	23.608
95	332.057	296.644	202.211	86.735	17.963	3.079	12.317	17.963	20.016
100	336.162	301.263	210.935	110.857	45.164	2.566	4.619	6.672	8.212
105	344.887	312.041	233.517	150.375	74.931	19.503	2.566	4.619	4.619
110	391.591	365.416	293.565	198.618	110.343	44.137	9.238	2.566	4.106
115	450.612	423.411	345.914	245.322	148.322	75.444	32.846	11.291	8.212
120	496.289	468.061	391.591	288.946	186.814	109.317	60.047	34.386	27.201
125	558.389	528.109	445.993	336.162	229.925	144.729	91.354	60.561	51.323
130	606.119	577.891	494.236	384.406	274.575	185.787	125.740	92.381	83.142
135	660.521	631.780	548.638	433.162	318.200	226.845	163.206	126.767	115.989
140	681.050	654.875	578.405	472.680	364.390	274.062	207.856	169.877	157.560
145	712.356	686.695	616.383	517.331	417.765	327.951	261.232	221.200	207.856
150	718.515	696.446	633.833	542.992	447.532	362.850	297.671	259.179	245.322
155	721.594	702.605	647.690	571.219	491.156	414.686	356.691	319.739	306.395
160	738.018	720.568	671.812	602.526	530.161	460.876	404.935	371.575	358.744
165	703.118	691.827	657.441	608.172	559.928	508.093	466.008	438.807	429.056
170	678.997	670.272	645.637	611.251	579.944	542.479	511.172	491.156	483.458
175	647.690	643.071	629.214	613.304	600.473	582.510	566.087	553.770	548.638
180	595.854	595.854	595.854	595.854	595.854	595.854	595.854	595.854	595.854

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	214.30	N.A.	6.50
0-30	445.64	N.A.	13.40
0-40	716.76	N.A.	21.60
0-60	1228.77	N.A.	37.00
0-80	1548.93	N.A.	46.70
0-90	1657.89	N.A.	50.00
10-90	1601.69	N.A.	48.30
20-40	502.47	N.A.	15.10
20-50	775.15	N.A.	23.40
40-70	699.58	N.A.	21.10
60-80	320.16	N.A.	9.60
70-80	132.59	N.A.	4.00
80-90	108.96	N.A.	3.30
90-110	242.68	N.A.	7.30
90-120	429.88	N.A.	13.00
90-130	669.40	N.A.	20.20
90-150	1213.84	N.A.	36.60
90-180	1660.29	N.A.	50.00
110-180	1417.61	N.A.	42.70
0-180	3318.18	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	56.20
10-20	158.10
20-30	231.34
30-40	271.13
40-50	272.68
50-60	239.32
60-70	187.57
70-80	132.59
80-90	108.96
90-100	109.90
100-110	132.78
110-120	187.19
120-130	239.52
130-140	272.65
140-150	271.79
150-160	231.63
160-170	158.42
170-180	56.40

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	55	55	55	55	50	50	50	50	42	42	42	35	35	35	29	29	29	25
1	49	47	45	43	45	43	41	40	36	35	34	30	29	28	24	24	23	20
2	45	41	37	35	41	38	35	32	32	30	28	26	25	23	21	20	19	17
3	41	36	32	29	37	33	30	27	28	25	23	23	21	20	19	17	16	14
4	37	32	27	24	34	29	26	23	25	22	20	21	19	17	17	15	14	12
5	34	28	24	21	31	26	22	19	22	19	17	19	16	15	15	13	12	10
6	32	25	21	18	29	23	20	17	20	17	15	17	14	13	14	12	11	9
7	29	23	19	16	27	21	17	15	18	15	13	15	13	11	13	11	9	8
8	27	21	17	14	25	19	16	13	17	14	12	14	12	10	12	10	9	7
9	25	19	15	12	23	18	14	12	15	12	10	13	11	9	11	9	8	7
10	24	17	14	11	22	16	13	11	14	11	9	12	10	8	10	8	7	6

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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

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

UGR Viewed Endwise

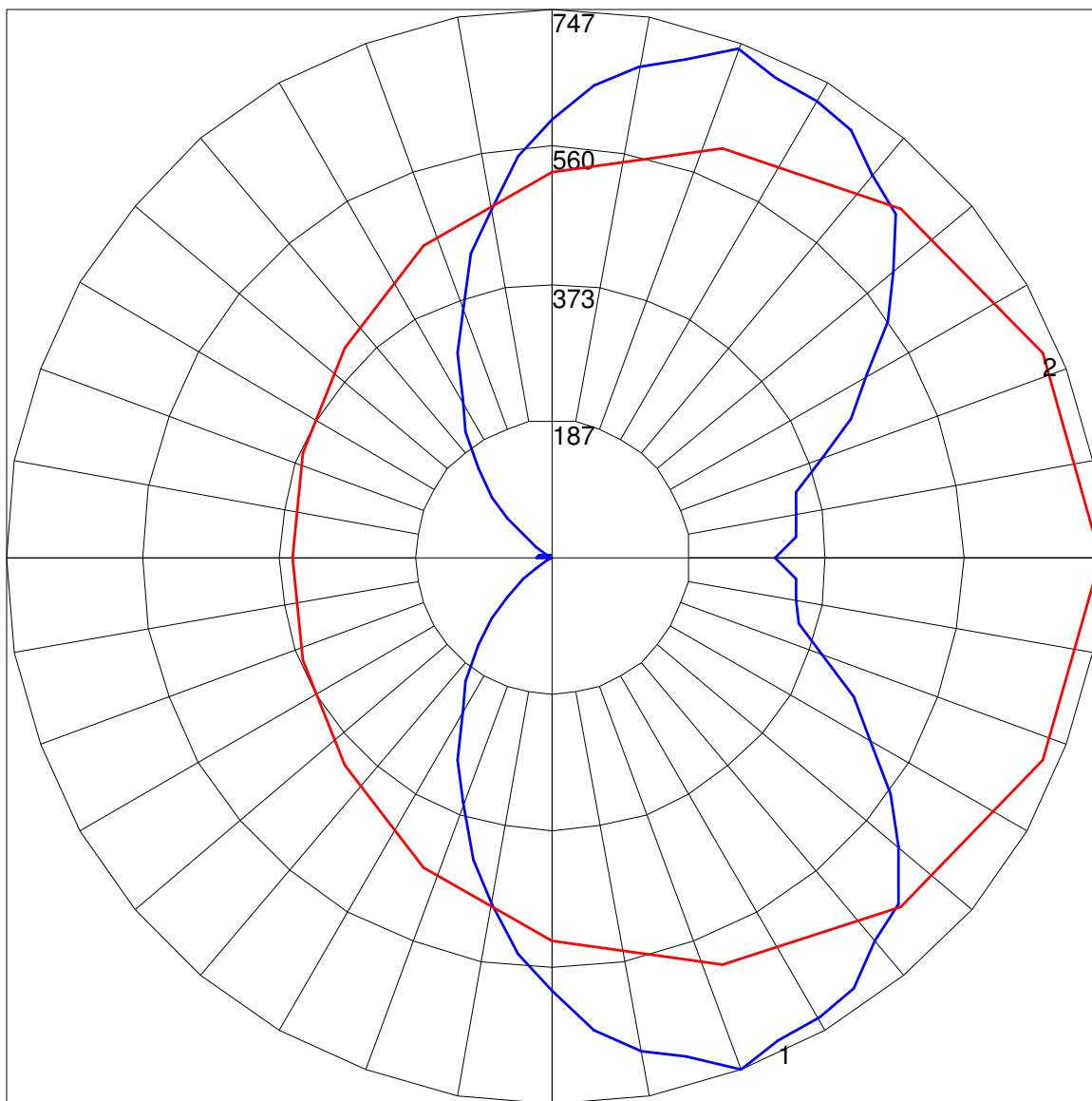
4H	2H	16.5	17.3	17.5	18.3	19.6	11.8	12.6	12.8	13.6	14.9
	3H	18.6	19.3	19.6	20.3	21.6	13.1	13.8	14.1	14.8	16.1
	4H	19.6	20.2	20.6	21.2	22.6	13.5	14.1	14.5	15.1	16.5
	6H	20.7	21.2	21.7	22.2	23.6	13.8	14.3	14.8	15.3	16.6
	8H	21.3	21.8	22.3	22.8	24.1	13.8	14.3	14.8	15.3	16.7
	12H	21.9	22.3	22.9	23.3	24.7	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 = 746.742 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.)