



IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-2-L15-8TW-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] 2' DIRECT/INDIRECT WALL MOUNT LUMINAIRE

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

[LUMCAT] WMA-2-L15-8TW-AF-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2065
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	123
Total Luminaire Watts	16.8
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)	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	4361	4068	4442
55	3569	3252	3626
65	2886	2578	2864
75	2283	1821	1877
85	2352	1733	653

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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	369.879	369.879	369.879	369.879	369.879	369.879	369.879	369.879	369.879
5	403.737	399.265	390.961	379.462	367.643	360.936	350.395	342.729	339.216
10	426.096	418.430	402.779	380.420	355.506	337.619	317.496	304.400	299.609
15	438.872	430.568	408.848	377.545	343.368	315.899	289.387	272.139	265.751
20	464.745	450.371	419.388	374.990	326.120	285.874	251.697	229.019	221.672
25	452.607	438.872	403.737	354.867	301.845	258.085	221.033	198.674	189.731
30	451.968	435.039	394.474	336.980	275.014	224.547	183.343	160.026	151.401
35	447.177	429.609	383.614	321.329	255.530	203.146	161.623	136.389	128.404
40	427.374	408.528	359.019	292.901	223.589	169.608	128.404	104.767	96.782
45	416.514	395.113	341.452	268.626	196.439	141.180	101.573	79.534	72.187
50	382.336	361.575	307.594	238.282	168.650	115.627	78.256	57.494	51.745
55	350.395	329.633	275.653	207.618	140.541	90.074	55.897	37.691	31.941
60	311.427	291.943	243.073	178.871	115.627	68.993	38.968	22.359	17.568
65	282.360	262.557	214.006	151.082	91.991	49.189	21.401	8.624	5.749
70	244.031	226.144	180.468	123.293	68.674	30.344	7.346	1.597	1.597
75	215.923	194.203	143.416	92.949	45.995	14.374	1.597	2.875	2.875
80	210.493	187.495	130.640	68.674	27.150	1.597	2.875	2.875	3.833
85	207.937	183.981	124.890	53.981	10.541	1.597	5.430	9.263	10.541
90	189.731	168.650	114.350	48.870	0.000	5.430	9.902	13.415	14.693
95	206.660	184.620	125.848	53.981	11.179	1.916	7.666	11.179	12.457
100	209.215	187.495	131.278	68.993	28.108	1.597	2.875	4.152	5.111
105	214.645	194.203	145.333	93.588	46.634	12.138	1.597	2.875	2.875
110	243.712	227.421	182.704	123.613	68.674	27.469	5.749	1.597	2.555
115	280.444	263.515	215.284	152.679	92.310	46.954	20.442	7.027	5.111
120	308.872	291.304	243.712	179.829	116.266	68.035	37.371	21.401	16.929
125	347.520	328.675	277.569	209.215	143.097	90.074	56.855	37.691	31.941
130	377.226	359.658	307.594	239.240	170.886	115.627	78.256	57.494	51.745
135	411.084	393.196	341.452	269.584	198.036	141.180	101.573	78.895	72.187
140	423.860	407.570	359.978	294.179	226.783	170.566	129.362	105.725	98.060
145	443.344	427.374	383.614	321.967	260.002	204.104	162.581	137.667	129.362
150	447.177	433.442	394.474	337.938	278.527	225.824	185.259	161.303	152.679
155	449.094	437.275	403.098	355.506	305.677	258.085	221.991	198.994	190.689
160	459.315	448.455	418.111	374.990	329.953	286.832	252.016	231.254	223.269
165	437.595	430.568	409.167	378.503	348.479	316.218	290.026	273.097	267.029
170	422.582	417.152	401.821	380.420	360.936	337.619	318.135	305.677	300.886
175	403.098	400.223	391.599	381.698	373.712	362.533	352.312	344.646	341.452
180	370.838	370.838	370.838	370.838	370.838	370.838	370.838	370.838	370.838

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	133.37	N.A.	6.50
0-30	277.35	N.A.	13.40
0-40	446.09	N.A.	21.60
0-60	764.74	N.A.	37.00
0-80	964.00	N.A.	46.70
0-90	1031.81	N.A.	50.00
10-90	996.83	N.A.	48.30
20-40	312.72	N.A.	15.10
20-50	482.42	N.A.	23.40
40-70	435.39	N.A.	21.10
60-80	199.26	N.A.	9.60
70-80	82.52	N.A.	4.00
80-90	67.81	N.A.	3.30
90-110	151.04	N.A.	7.30
90-120	267.54	N.A.	13.00
90-130	416.61	N.A.	20.20
90-150	755.45	N.A.	36.60
90-180	1033.3	N.A.	50.00
110-180	882.27	N.A.	42.70
0-180	2065.11	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	34.97
10-20	98.40
20-30	143.98
30-40	168.74
40-50	169.71
50-60	148.94
60-70	116.74
70-80	82.52
80-90	67.81
90-100	68.40
100-110	82.64
110-120	116.50
120-130	149.07
130-140	169.69
140-150	169.15
150-160	144.16
160-170	98.60
170-180	35.10

IES INDOOR REPORT**PHOTOMETRIC FILENAME : WMA-2-L15-8TW-AF-DIM-UNV 4000K_.IES****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	71	71	71	71	65	65	65	65	55	55	55	46	46	46	37	37	37	33
1	64	61	58	55	59	56	54	51	47	45	44	39	38	37	32	31	30	26
2	58	53	49	45	53	49	45	42	41	38	36	34	32	30	28	26	25	22
3	53	46	41	37	48	43	38	35	36	33	30	30	28	25	24	23	21	18
4	48	41	36	31	44	38	33	29	32	28	26	27	24	22	22	20	18	16
5	44	36	31	27	41	34	29	25	29	25	22	24	21	19	20	17	16	14
6	41	33	27	23	37	30	25	22	26	22	19	22	19	16	18	16	14	12
7	38	30	24	20	35	27	23	19	23	20	17	20	17	15	16	14	12	11
8	35	27	22	18	32	25	20	17	21	18	15	18	15	13	15	13	11	9
9	33	24	19	16	30	23	18	15	20	16	13	17	14	12	14	12	10	9
10	31	22	18	14	28	21	17	14	18	15	12	15	13	11	13	11	9	8

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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	16.0	16.9	17.0	17.9	19.1	10.5	11.4	11.5	12.4	13.6
	3H	17.9	18.7	18.8	19.7	21.0	11.6	12.4	12.6	13.4	14.7
	4H	18.7	19.5	19.7	20.4	21.7	11.9	12.7	12.9	13.7	15.0
	6H	19.6	20.3	20.6	21.3	22.6	12.0	12.7	13.0	13.7	15.1
	8H	20.0	20.7	21.0	21.7	23.0	12.1	12.7	13.1	13.7	15.0
	12H	20.5	21.1	21.5	22.1	23.5	12.0	12.7	13.0	13.7	15.0

UGR Viewed Endwise

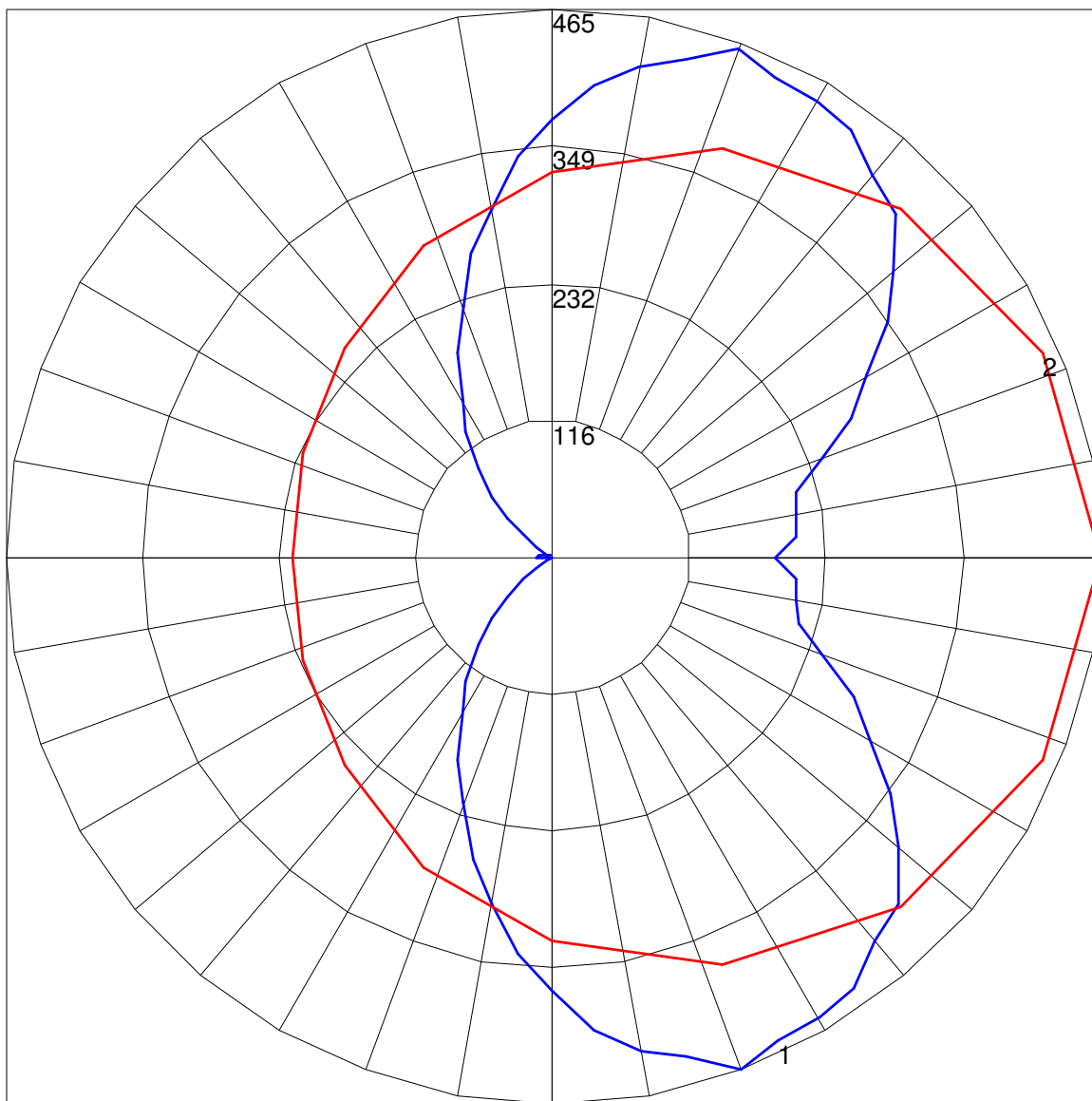
4H	2H	16.4	17.2	17.4	18.1	19.4	11.7	12.4	12.7	13.4	14.7
	3H	18.5	19.1	19.5	20.2	21.5	13.0	13.6	14.0	14.6	16.0
	4H	19.5	20.1	20.5	21.1	22.4	13.4	14.0	14.4	15.0	16.3
	6H	20.6	21.1	21.6	22.1	23.5	13.6	14.1	14.6	15.2	16.5
	8H	21.1	21.6	22.2	22.7	24.0	13.6	14.1	14.7	15.2	16.5
	12H	21.7	22.2	22.8	23.2	24.6	13.6	14.1	14.7	15.1	16.5

8H	4H	19.7	20.1	20.7	21.2	22.5	14.2	14.7	15.2	15.7	17.1
	6H	21.0	21.4	22.0	22.4	23.8	14.6	15.0	15.7	16.1	17.4
	8H	21.7	22.1	22.8	23.1	24.5	14.8	15.1	15.8	16.2	17.5
	12H	22.5	22.8	23.6	23.9	25.3	14.8	15.1	15.9	16.2	17.6

12H	4H	19.6	20.1	20.7	21.1	22.5	14.5	14.9	15.5	16.0	17.3
	6H	21.0	21.4	22.1	22.4	23.8	15.1	15.4	16.1	16.5	17.9
	8H	21.8	22.2	22.9	23.2	24.6	15.3	15.6	16.3	16.7	18.1

Maximum UGR = 25.3

POLAR GRAPH



Maximum Candela = 464.745 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.)