



IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-4-L40-940-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] 09-20-2022

[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-L40-940-AF-DIM-UNV

[LAMPCAT] HLM 90 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3559
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	119
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	3738	3614	4204
55	3059	2905	3551
65	2473	2315	2946
75	1957	1646	2098
85	2017	1576	881

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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	637.482	637.482	637.482	637.482	637.482	637.482	637.482	637.482	637.482
5	695.835	688.128	673.815	653.997	633.629	622.068	603.901	590.689	584.634
10	734.371	721.159	694.184	655.649	612.710	581.881	547.200	524.629	516.372
15	756.391	742.078	704.643	650.694	591.790	544.447	498.755	469.028	458.018
20	800.981	776.209	722.810	646.290	562.063	492.700	433.796	394.710	382.049
25	780.062	756.391	695.835	611.609	520.225	444.806	380.948	342.413	326.999
30	778.961	749.785	679.871	580.780	473.983	387.003	315.989	275.802	260.938
35	770.704	740.426	661.154	553.806	440.402	350.120	278.554	235.065	221.302
40	736.573	704.093	618.765	504.811	385.352	292.317	221.302	180.565	166.802
45	717.856	680.972	588.487	462.973	338.559	243.322	175.060	137.075	124.414
50	658.952	623.169	530.134	410.675	290.665	199.282	134.873	99.090	89.181
55	603.901	568.119	475.084	357.827	242.221	155.242	96.338	64.959	55.050
60	536.740	503.159	418.933	308.282	199.282	118.909	67.161	38.535	30.278
65	486.644	452.513	368.837	260.388	158.545	84.777	36.884	14.864	9.909
70	420.584	389.756	311.034	212.494	118.358	52.298	12.662	2.753	2.753
75	372.140	334.706	247.176	160.196	79.272	24.773	2.753	4.955	4.955
80	362.781	323.145	225.156	118.358	46.793	2.753	4.955	4.955	6.606
85	358.377	317.090	215.247	93.035	18.167	2.753	9.359	15.965	18.167
90	326.999	290.665	197.080	84.227	0.000	9.359	17.066	23.121	25.323
95	356.175	318.191	216.898	93.035	19.268	3.303	13.212	19.268	21.470
100	360.579	323.145	226.257	118.909	48.444	2.753	4.955	7.157	8.808
105	369.938	334.706	250.479	161.297	80.373	20.919	2.753	4.955	4.955
110	420.034	391.958	314.888	213.045	118.358	47.343	9.909	2.753	4.404
115	483.341	454.165	371.039	263.140	159.095	80.924	35.232	12.111	8.808
120	532.336	502.058	420.034	309.933	200.383	117.257	64.409	36.884	29.177
125	598.947	566.467	478.387	360.579	246.625	155.242	97.989	64.959	55.050
130	650.144	619.866	530.134	412.327	294.519	199.282	134.873	99.090	89.181
135	708.497	677.669	588.487	464.624	341.312	243.322	175.060	135.974	124.414
140	730.517	702.441	620.417	507.013	390.857	293.968	222.954	182.216	169.004
145	764.098	736.573	661.154	554.907	448.109	351.771	280.206	237.267	222.954
150	770.704	747.032	679.871	582.432	480.038	389.205	319.292	278.004	263.140
155	774.007	753.638	694.734	612.710	526.831	444.806	382.599	342.963	328.650
160	791.623	772.906	720.608	646.290	568.669	494.351	434.347	398.564	384.801
165	754.189	742.078	705.194	652.346	600.598	544.998	499.856	470.680	460.220
170	728.315	718.957	692.532	655.649	622.068	581.881	548.301	526.831	518.574
175	694.734	689.780	674.916	657.851	644.088	624.821	607.204	593.992	588.487
180	639.134	639.134	639.134	639.134	639.134	639.134	639.134	639.134	639.134

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	229.86	N.A.	6.50
0-30	478.01	N.A.	13.40
0-40	768.83	N.A.	21.60
0-60	1318.02	N.A.	37.00
0-80	1661.43	N.A.	46.70
0-90	1778.31	N.A.	50.00
10-90	1718.03	N.A.	48.30
20-40	538.96	N.A.	15.10
20-50	831.45	N.A.	23.40
40-70	750.39	N.A.	21.10
60-80	343.42	N.A.	9.60
70-80	142.22	N.A.	4.00
80-90	116.87	N.A.	3.30
90-110	260.31	N.A.	7.30
90-120	461.10	N.A.	13.00
90-130	718.02	N.A.	20.20
90-150	1302.01	N.A.	36.60
90-180	1780.89	N.A.	50.00
110-180	1520.58	N.A.	42.70
0-180	3559.2	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	60.28
10-20	169.59
20-30	248.14
30-40	290.82
40-50	292.49
50-60	256.70
60-70	201.20
70-80	142.22
80-90	116.87
90-100	117.89
100-110	142.42
110-120	200.79
120-130	256.92
130-140	292.45
140-150	291.54
150-160	248.46
160-170	169.93
170-180	60.49

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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	97	92	88	84	89	85	81	78	71	69	66	59	57	55	48	47	45	40
2	88	80	73	68	81	74	68	63	62	58	54	52	49	46	42	40	38	33
3	80	70	62	56	73	65	58	53	55	50	46	46	42	39	37	34	32	28
4	73	62	54	48	67	57	50	45	49	43	39	41	36	33	33	30	27	24
5	67	55	47	41	62	51	44	38	44	38	33	36	32	29	30	26	24	21
6	62	50	41	35	57	46	39	33	39	33	29	33	28	25	27	24	21	18
7	57	45	37	31	53	42	34	29	36	30	26	30	25	22	25	21	19	16
8	53	41	33	27	49	38	31	26	32	27	23	27	23	20	23	19	17	14
9	49	37	29	24	45	35	28	23	30	24	20	25	21	18	21	18	15	13
10	46	34	27	22	43	32	25	21	27	22	18	23	19	16	19	16	14	12

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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

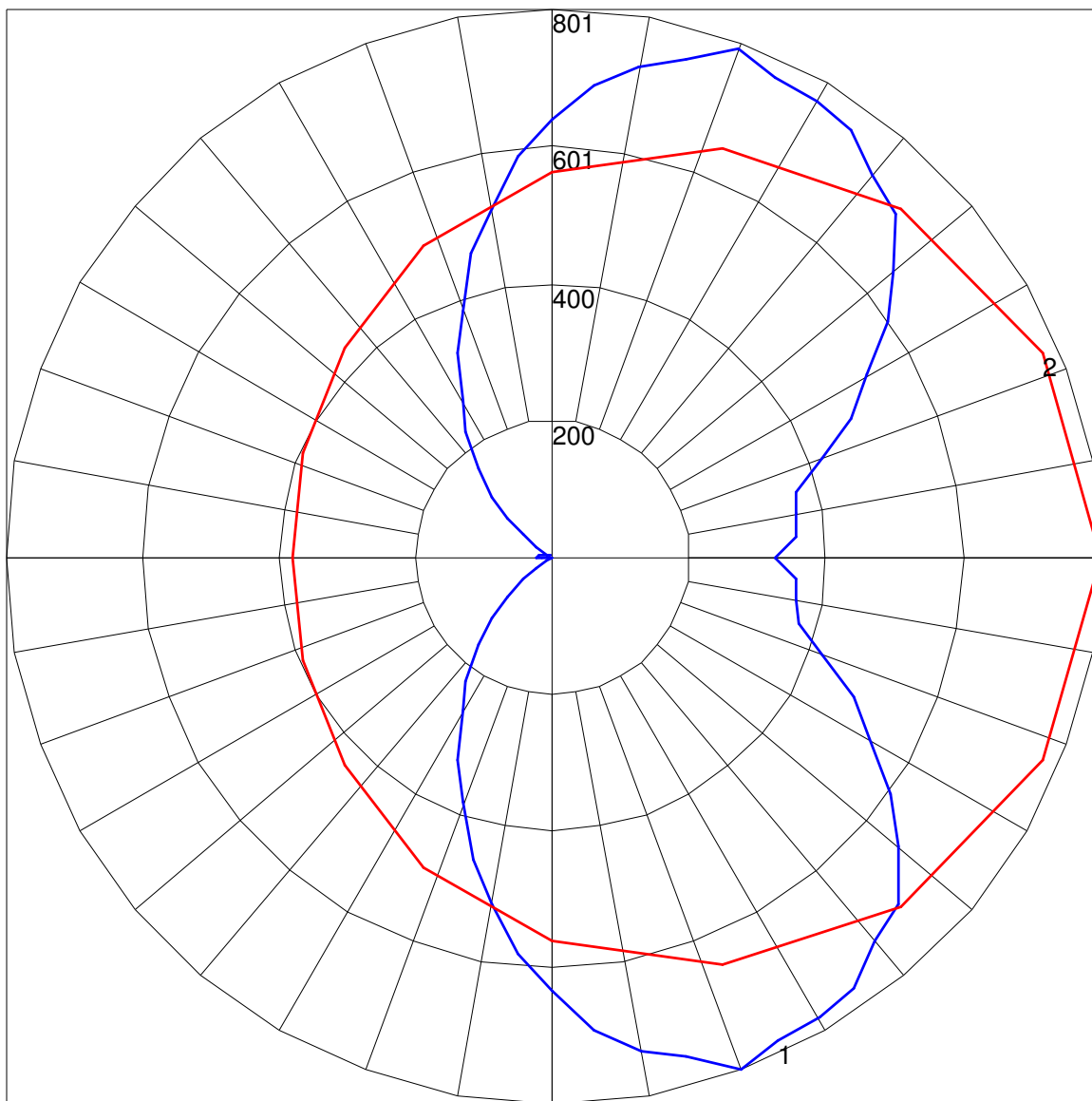
X=2H	Y=2H	16.0	16.9	17.0	17.9	19.2	8.5	9.4	9.5	10.4	11.7
	3H	18.5	19.3	19.4	20.2	21.5	9.6	10.4	10.6	11.4	12.7
	4H	19.6	20.4	20.6	21.4	22.7	9.9	10.7	10.9	11.7	13.0
	6H	21.0	21.7	22.0	22.7	24.0	10.1	10.8	11.1	11.8	13.1
	8H	21.8	22.5	22.8	23.5	24.8	10.1	10.7	11.1	11.8	13.1
	12H	22.7	23.4	23.7	24.4	25.7	10.1	10.7	11.1	11.7	13.0

UGR Viewed Endwise

4H	2H	16.1	16.9	17.1	17.9	19.2	9.7	10.5	10.7	11.5	12.8
	3H	18.7	19.4	19.7	20.4	21.7	11.0	11.7	12.0	12.7	14.0
	4H	20.1	20.6	21.1	21.7	23.0	11.4	12.0	12.4	13.0	14.4
	6H	21.7	22.2	22.7	23.2	24.5	11.7	12.2	12.7	13.2	14.5
	8H	22.6	23.1	23.6	24.1	25.4	11.7	12.2	12.7	13.2	14.6
	12H	23.6	24.1	24.6	25.1	26.4	11.7	12.1	12.7	13.2	14.5
8H	4H	20.1	20.6	21.1	21.6	22.9	12.3	12.8	13.3	13.8	15.1
	6H	21.8	22.2	22.9	23.3	24.6	12.7	13.1	13.8	14.2	15.5
	8H	22.9	23.2	23.9	24.3	25.7	12.9	13.2	13.9	14.3	15.6
	12H	24.1	24.4	25.1	25.5	26.9	12.9	13.2	14.0	14.3	15.7
12H	4H	20.0	20.5	21.1	21.5	22.9	12.6	13.0	13.6	14.1	15.4
	6H	21.8	22.2	22.9	23.2	24.6	13.2	13.5	14.2	14.6	16.0
	8H	22.9	23.2	24.0	24.3	25.7	13.4	13.7	14.4	14.8	16.2

Maximum UGR = 26.9

POLAR GRAPH



Maximum Candela = 800.981 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.)