



IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-2-L20-940-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] 2' DIRECT/INDIRECT WALL MOUNT LUMINAIRE

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

[LUMCAT] WMA-2-L20-940-AF-DIM-UNV

[LAMPCAT] HLM 90 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1779
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	112
Total Luminaire Watts	15.9
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	3757	3505	3826
55	3075	2802	3124
65	2486	2221	2467
75	1967	1569	1617
85	2027	1493	563

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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	318.651	318.651	318.651	318.651	318.651	318.651	318.651	318.651	318.651
5	347.820	343.967	336.813	326.907	316.725	310.947	301.866	295.262	292.235
10	367.082	360.478	346.994	327.732	306.269	290.859	273.523	262.241	258.113
15	378.089	370.935	352.223	325.256	295.812	272.147	249.308	234.448	228.945
20	400.378	387.995	361.303	323.054	280.953	246.281	216.837	197.300	190.971
25	389.922	378.089	347.820	305.718	260.039	222.341	190.420	171.158	163.453
30	389.371	374.787	339.840	290.309	236.925	193.447	157.950	137.862	130.432
35	385.244	370.109	330.484	276.825	220.139	175.011	139.238	117.499	110.620
40	368.183	351.948	309.296	252.335	192.622	146.117	110.620	90.257	83.378
45	358.827	340.390	294.161	231.421	169.232	121.627	87.505	68.518	62.189
50	329.383	311.497	264.993	205.280	145.292	99.613	67.418	49.531	44.578
55	301.866	283.980	237.475	178.863	121.077	77.599	48.155	32.471	27.517
60	268.295	251.509	209.407	154.097	99.613	59.438	33.571	19.262	15.135
65	243.254	226.193	184.367	130.157	79.250	42.377	18.437	7.430	4.953
70	210.233	194.823	155.473	106.217	59.162	26.142	6.329	1.376	1.376
75	186.018	167.306	123.553	80.076	39.625	12.383	1.376	2.477	2.477
80	181.340	161.527	112.546	59.162	23.390	1.376	2.477	2.477	3.302
85	179.138	158.500	107.593	46.504	9.081	1.376	4.678	7.980	9.081
90	163.453	145.292	98.512	42.102	0.000	4.678	8.530	11.557	12.658
95	178.038	159.051	108.419	46.504	9.631	1.651	6.604	9.631	10.732
100	180.239	161.527	113.097	59.438	24.215	1.376	2.477	3.577	4.403
105	184.917	167.306	125.204	80.626	40.175	10.457	1.376	2.477	2.477
110	209.958	195.924	157.400	106.492	59.162	23.665	4.953	1.376	2.201
115	241.603	227.019	185.467	131.533	79.525	40.451	17.611	6.054	4.403
120	266.093	250.959	209.958	154.923	100.163	58.612	32.195	18.437	14.584
125	299.389	283.154	239.126	180.239	123.278	77.599	48.981	32.471	27.517
130	324.980	309.846	264.993	206.105	147.218	99.613	67.418	49.531	44.578
135	354.149	338.739	294.161	232.247	170.608	121.627	87.505	67.968	62.189
140	365.156	351.122	310.121	253.435	195.374	146.943	111.445	91.083	84.478
145	381.942	368.183	330.484	277.375	223.992	175.836	140.064	118.600	111.445
150	385.244	373.411	339.840	291.134	239.952	194.548	159.601	138.963	131.533
155	386.895	376.713	347.270	306.269	263.342	222.341	191.246	171.433	164.279
160	395.700	386.344	360.203	323.054	284.255	247.106	217.112	199.226	192.347
165	376.988	370.935	352.498	326.081	300.215	272.422	249.858	235.274	230.045
170	364.055	359.377	346.169	327.732	310.947	290.859	274.073	263.342	259.214
175	347.270	344.793	337.363	328.833	321.954	312.322	303.517	296.913	294.161
180	319.477	319.477	319.477	319.477	319.477	319.477	319.477	319.477	319.477

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	114.90	N.A.	6.50
0-30	238.94	N.A.	13.40
0-40	384.30	N.A.	21.60
0-60	658.82	N.A.	37.00
0-80	830.48	N.A.	46.70
0-90	888.90	N.A.	50.00
10-90	858.77	N.A.	48.30
20-40	269.40	N.A.	15.10
20-50	415.61	N.A.	23.40
40-70	375.09	N.A.	21.10
60-80	171.66	N.A.	9.60
70-80	71.09	N.A.	4.00
80-90	58.42	N.A.	3.30
90-110	130.12	N.A.	7.30
90-120	230.49	N.A.	13.00
90-130	358.91	N.A.	20.20
90-150	650.82	N.A.	36.60
90-180	890.19	N.A.	50.00
110-180	760.08	N.A.	42.70
0-180	1779.1	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	30.13
10-20	84.77
20-30	124.04
30-40	145.37
40-50	146.20
50-60	128.32
60-70	100.57
70-80	71.09
80-90	58.42
90-100	58.93
100-110	71.19
110-120	100.37
120-130	128.42
130-140	146.19
140-150	145.73
150-160	124.19
160-170	84.94
170-180	30.24

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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

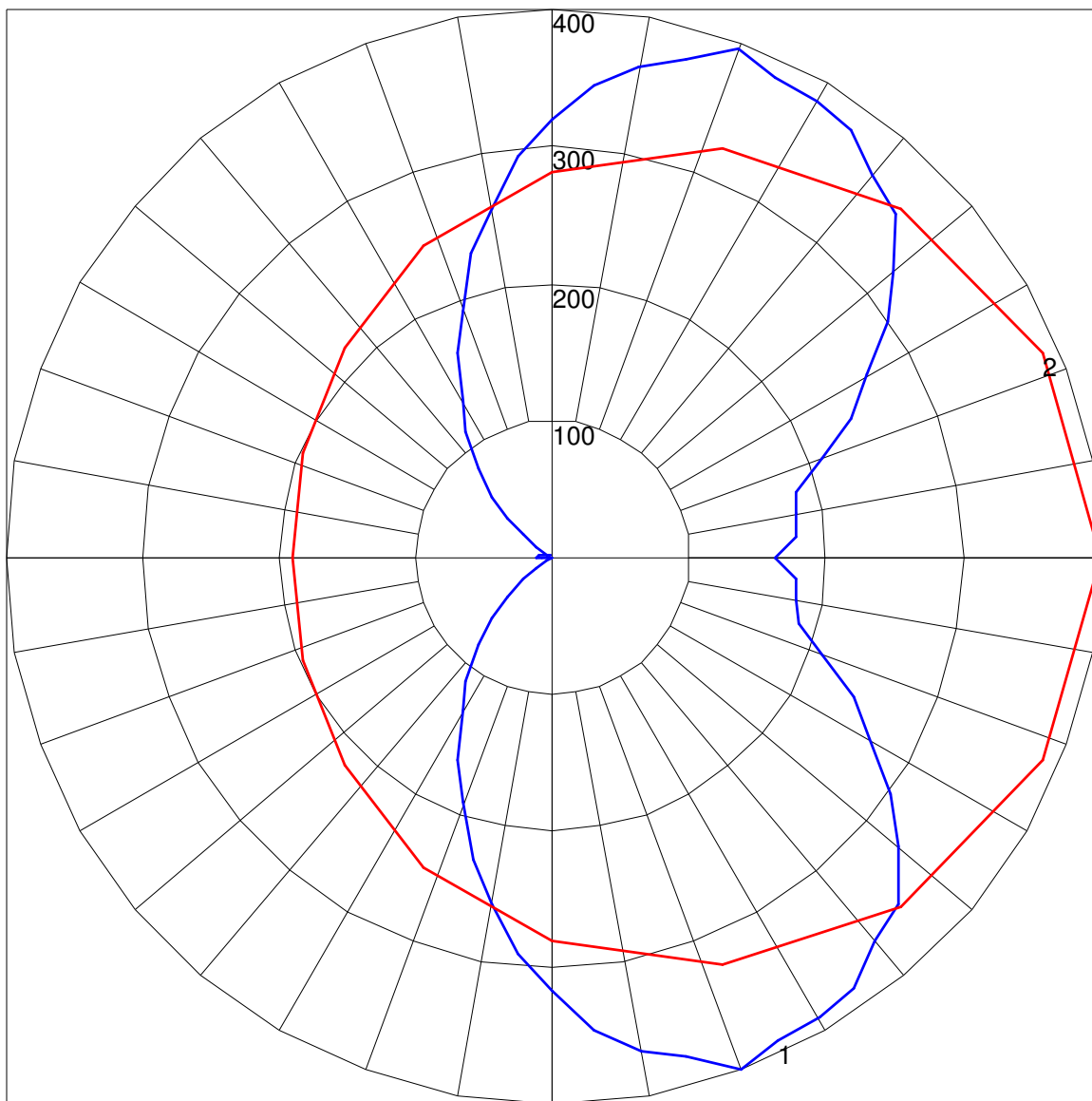
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	15.8	16.6	16.7	17.6	18.9	8.5	9.4	9.5	10.4	11.6
	3H	18.1	18.9	19.1	19.9	21.2	9.6	10.4	10.6	11.4	12.7
	4H	19.2	20.0	20.2	21.0	22.3	9.9	10.7	10.9	11.7	13.0
	6H	20.5	21.2	21.5	22.2	23.5	10.0	10.7	11.0	11.7	13.1
	8H	21.2	21.9	22.2	22.9	24.2	10.1	10.7	11.1	11.7	13.0
	12H	22.0	22.7	23.0	23.7	25.0	10.0	10.7	11.0	11.7	13.0
4H	2H	15.9	16.7	16.9	17.6	18.9	9.7	10.4	10.7	11.4	12.7
	3H	18.4	19.1	19.4	20.1	21.4	11.0	11.6	12.0	12.6	14.0
	4H	19.7	20.3	20.7	21.3	22.6	11.4	12.0	12.4	13.0	14.3
	6H	21.2	21.7	22.2	22.7	24.1	11.6	12.1	12.6	13.2	14.5
	8H	22.0	22.5	23.0	23.5	24.9	11.6	12.1	12.7	13.2	14.5
	12H	23.0	23.4	24.0	24.4	25.8	11.6	12.1	12.7	13.1	14.5
8H	4H	19.7	20.2	20.7	21.2	22.6	12.2	12.7	13.2	13.7	15.1
	6H	21.4	21.8	22.4	22.8	24.2	12.6	13.0	13.7	14.1	15.4
	8H	22.4	22.7	23.4	23.8	25.1	12.8	13.1	13.8	14.2	15.5
	12H	23.5	23.8	24.5	24.8	26.2	12.8	13.1	13.9	14.2	15.6
12H	4H	19.7	20.1	20.7	21.2	22.5	12.5	12.9	13.5	14.0	15.3
	6H	21.4	21.7	22.4	22.8	24.2	13.1	13.4	14.1	14.5	15.9
	8H	22.4	22.7	23.4	23.8	25.2	13.3	13.6	14.3	14.7	16.1

Maximum UGR = 26.2

POLAR GRAPH



Maximum Candela = 400.378 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.)