



IES INDOOR REPORT

PHOTOMETRIC FILENAME : WMA-2-L20-835-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] 03-20-2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836
 [LUMINAIRE] 2' DIRECT/INDIRECT WALL MOUNT LUMINAIRE
 [MORE] WITH FROSTED ACRYLIC LENS ON TOP & BOTTOM
 [LUMCAT] WMA-2-L20-835-AF-DIM-UNV
 [LAMPCAT] HLM 80 CRI, 3500K CCT
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] Indoor, Corridor, Healthcare, Direct-Indirect
 [_SEARCH_MOUNTING] Wall

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2069
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	130
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	4369	4076	4450
55	3576	3258	3633
65	2891	2583	2870
75	2288	1825	1881
85	2357	1736	654

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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	370.596	370.596	370.596	370.596	370.596	370.596	370.596	370.596	370.596
5	404.519	400.039	391.718	380.197	368.356	361.635	351.074	343.393	339.873
10	426.921	419.240	403.559	381.157	356.194	338.273	318.111	304.989	300.189
15	439.722	431.402	409.640	378.277	344.033	316.511	289.948	272.666	266.266
20	465.645	451.244	420.201	375.716	326.752	286.428	252.184	229.462	222.101
25	453.484	439.722	404.519	355.554	302.429	258.585	221.461	199.059	190.098
30	452.844	435.882	395.238	337.633	275.547	224.982	183.698	160.335	151.695
35	448.043	430.442	384.357	321.951	256.025	203.540	161.936	136.653	128.652
40	428.201	409.320	359.715	293.468	224.022	169.936	128.652	104.970	96.969
45	417.320	395.878	342.113	269.146	196.819	141.454	101.770	79.688	72.327
50	383.077	362.275	308.190	238.743	168.976	115.851	78.408	57.606	51.845
55	351.074	330.272	276.187	208.020	140.814	90.249	56.005	37.764	32.003
60	312.030	292.508	243.544	179.217	115.851	69.127	39.044	22.402	17.602
65	282.907	263.065	214.421	151.375	92.169	49.285	21.442	8.641	5.761
70	244.504	226.582	180.817	123.532	68.807	30.403	7.361	1.600	1.600
75	216.341	194.579	143.694	93.129	46.084	14.401	1.600	2.880	2.880
80	210.900	187.858	130.893	68.807	27.203	1.600	2.880	2.880	3.840
85	208.340	184.338	125.132	54.085	10.561	1.600	5.441	9.281	10.561
90	190.098	168.976	114.571	48.965	0.000	5.441	9.921	13.441	14.721
95	207.060	184.978	126.092	54.085	11.201	1.920	7.681	11.201	12.481
100	209.620	187.858	131.533	69.127	28.163	1.600	2.880	4.160	5.120
105	215.061	194.579	145.614	93.769	46.725	12.161	1.600	2.880	2.880
110	244.184	227.862	183.058	123.852	68.807	27.523	5.761	1.600	2.560
115	280.987	264.025	215.701	152.975	92.489	47.045	20.482	7.041	5.120
120	309.470	291.868	244.184	180.177	116.491	68.167	37.444	21.442	16.962
125	348.194	329.312	278.107	209.620	143.374	90.249	56.965	37.764	32.003
130	377.956	360.355	308.190	239.703	171.217	115.851	78.408	57.606	51.845
135	411.880	393.958	342.113	270.106	198.419	141.454	101.770	79.048	72.327
140	424.681	408.359	360.675	294.748	227.222	170.896	129.613	105.930	98.249
145	444.203	428.201	384.357	322.591	260.505	204.500	162.896	137.933	129.613
150	448.043	434.282	395.238	338.593	279.067	226.262	185.618	161.616	152.975
155	449.963	438.122	403.879	356.194	306.270	258.585	222.421	199.379	191.058
160	460.204	449.323	418.920	375.716	330.592	287.388	252.504	231.702	223.702
165	438.442	431.402	409.960	379.237	349.154	316.831	290.588	273.626	267.546
170	423.401	417.960	402.599	381.157	361.635	338.273	318.751	306.270	301.469
175	403.879	400.999	392.358	382.437	374.436	363.235	352.994	345.313	342.113
180	371.556	371.556	371.556	371.556	371.556	371.556	371.556	371.556	371.556

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	133.63	N.A.	6.50
0-30	277.89	N.A.	13.40
0-40	446.95	N.A.	21.60
0-60	766.22	N.A.	37.00
0-80	965.86	N.A.	46.70
0-90	1033.81	N.A.	50.00
10-90	998.77	N.A.	48.30
20-40	313.32	N.A.	15.10
20-50	483.36	N.A.	23.40
40-70	436.23	N.A.	21.10
60-80	199.64	N.A.	9.60
70-80	82.68	N.A.	4.00
80-90	67.94	N.A.	3.30
90-110	151.33	N.A.	7.30
90-120	268.06	N.A.	13.00
90-130	417.41	N.A.	20.20
90-150	756.91	N.A.	36.60
90-180	1035.31	N.A.	50.00
110-180	883.98	N.A.	42.70
0-180	2069.11	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	35.04
10-20	98.59
20-30	144.25
30-40	169.07
40-50	170.04
50-60	149.23
60-70	116.96
70-80	82.68
80-90	67.94
90-100	68.53
100-110	82.80
110-120	116.73
120-130	149.36
130-140	170.02
140-150	169.48
150-160	144.44
160-170	98.79
170-180	35.17

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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

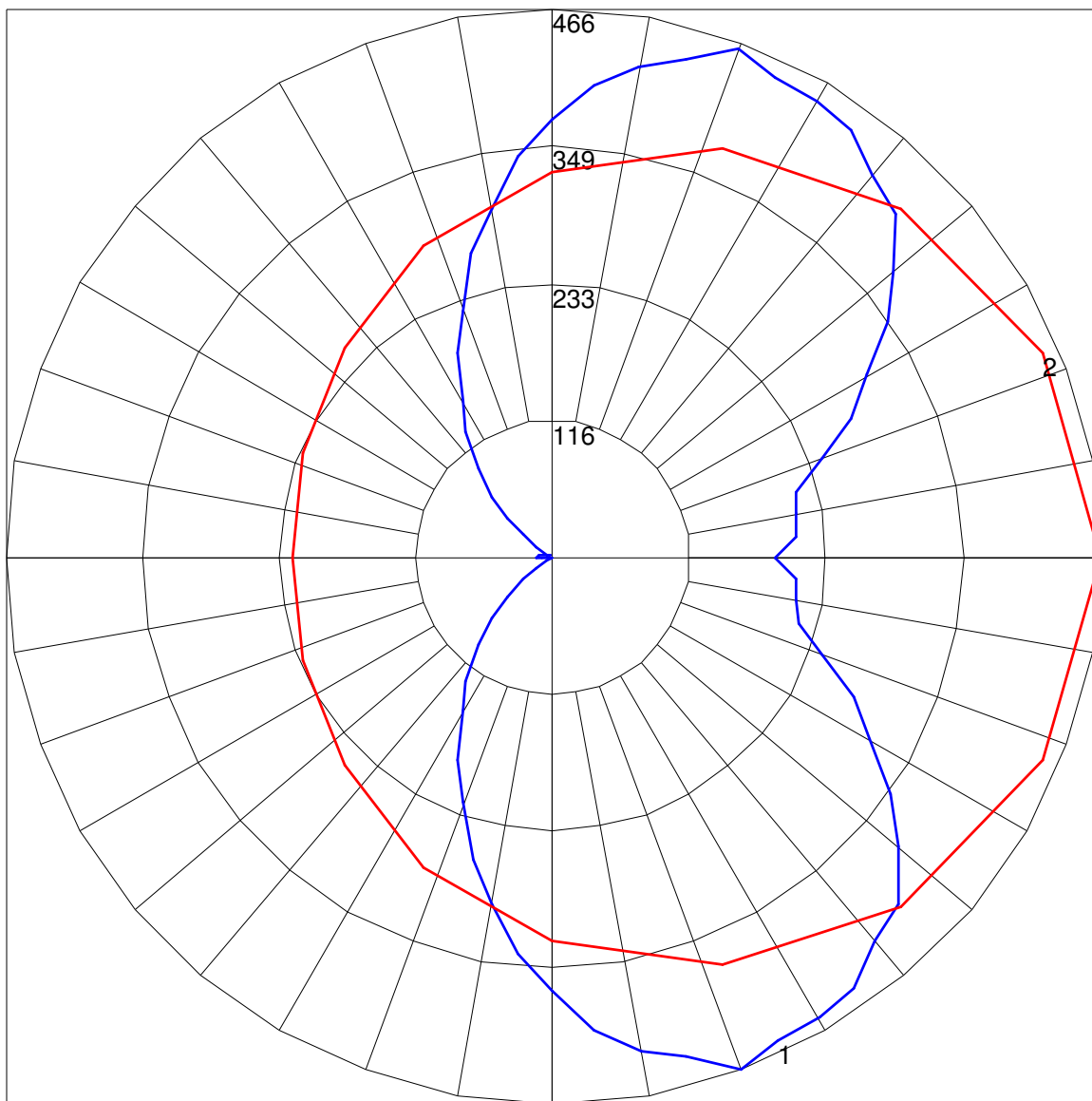
Reflectances

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	16.3	17.1	17.2	18.1	19.4	9.0	9.9	10.0	10.9	12.1
	3H	18.6	19.4	19.6	20.4	21.7	10.1	10.9	11.1	11.9	13.2
	4H	19.7	20.5	20.7	21.5	22.8	10.4	11.2	11.4	12.2	13.5
	6H	21.0	21.7	22.0	22.7	24.0	10.5	11.2	11.5	12.2	13.6
	8H	21.7	22.4	22.7	23.4	24.7	10.6	11.2	11.6	12.2	13.5
	12H	22.5	23.2	23.5	24.2	25.5	10.5	11.2	11.5	12.2	13.5
4H	2H	16.4	17.2	17.4	18.1	19.4	10.2	10.9	11.2	11.9	13.2
	3H	18.9	19.6	19.9	20.6	21.9	11.5	12.1	12.5	13.1	14.5
	4H	20.2	20.8	21.2	21.8	23.1	11.9	12.5	12.9	13.5	14.8
	6H	21.7	22.2	22.7	23.2	24.6	12.1	12.6	13.1	13.7	15.0
	8H	22.5	23.0	23.5	24.0	25.4	12.1	12.6	13.2	13.7	15.0
	12H	23.5	23.9	24.5	24.9	26.3	12.1	12.6	13.2	13.6	15.0
8H	4H	20.2	20.7	21.2	21.7	23.1	12.7	13.2	13.7	14.2	15.6
	6H	21.9	22.3	22.9	23.3	24.7	13.1	13.5	14.2	14.6	15.9
	8H	22.9	23.2	23.9	24.3	25.6	13.3	13.6	14.3	14.7	16.0
	12H	24.0	24.3	25.0	25.3	26.7	13.3	13.6	14.4	14.7	16.1
12H	4H	20.2	20.6	21.2	21.7	23.0	13.0	13.4	14.0	14.5	15.8
	6H	21.9	22.2	22.9	23.3	24.7	13.6	13.9	14.6	15.0	16.4
	8H	22.9	23.2	23.9	24.3	25.7	13.8	14.1	14.8	15.2	16.6

Maximum UGR = 26.7

POLAR GRAPH



Maximum Candela = 465.645 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.)