



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MD4AERRG-4-L22-L52-840-A-DIM-UNV ALL ON_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20050.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 21-JUL-2020

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] LED EXAM, AMBIENT, & READING (RIGHT) 4' MEDICAL ASYM TROFFER

[MORE] WHITE REFL w/FROSTED ACRYLIC RIBBED LENS IN DOOR & CLEAR

[MORE] ACRYLIC LENS

[LUMCAT] MD4AERRG-L22-L52-840-A-DIM-UNV ALL ON

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	8552
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	104
Total Luminaire Watts	82.4957
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.62
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.44 ft
Luminous Width (90-270)	3.77 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	31016	27649	19790
55	29666	26329	16721
65	19881	22359	12633
75	6874	11018	6933
85	174	474	328

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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>	<u>202.5</u>
0	3393.658	3393.658	3393.658	3393.658	3393.658	3393.658	3393.658	3393.658	3393.658	3393.658
5	3655.057	3696.777	3658.896	3616.289	3452.626	3201.372	3038.286	2945.962	3098.746	2949.099
10	3544.667	3612.031	3713.085	3697.494	3418.033	3006.269	2767.499	2675.337	2811.112	2689.879
15	3669.763	3648.727	3567.906	3689.986	3352.745	2838.909	2557.285	2415.716	2561.211	2428.261
20	3763.381	3727.950	3612.030	3542.850	3249.140	2654.393	2301.772	2149.907	2274.038	2159.697
25	3799.202	3767.970	3598.651	3332.254	3098.072	2463.979	2089.294	1931.221	2005.288	1939.014
30	3784.284	3751.721	3546.173	3217.555	2911.534	2271.284	1899.148	1733.523	1770.310	1736.374
35	3712.719	3679.115	3435.241	3049.889	2681.362	2051.545	1674.120	1526.679	1548.600	1525.538
40	3579.554	3539.470	3252.311	2841.978	2433.641	1839.029	1460.843	1344.076	1347.511	1333.051
45	3368.534	3331.945	3002.813	2600.884	2149.257	1601.378	1260.399	1184.864	1166.459	1168.422
50	3059.148	3054.091	2687.188	2300.575	1823.559	1338.397	1061.060	1026.335	1006.228	1007.706
55	2613.452	2695.876	2319.490	1925.863	1473.096	1082.453	861.086	868.126	863.849	848.357
60	1995.544	2203.218	1923.144	1519.568	1137.418	813.178	685.544	700.797	706.426	683.309
65	1290.473	1532.790	1451.347	1162.391	820.036	549.246	504.878	508.627	513.085	499.502
70	705.887	877.108	925.661	798.032	527.161	353.584	324.420	328.951	340.659	318.686
75	273.275	371.309	437.992	405.981	275.616	201.658	169.316	178.986	192.816	169.197
80	62.475	87.223	113.057	115.684	92.391	68.446	64.735	49.363	49.048	45.058
85	2.329	7.132	6.343	3.915	4.385	5.925	4.913	3.530	6.134	3.236
90	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Vert. Angles **Horizontal Angles**

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0	3393.658	3393.658	3393.658	3393.658	3393.658	3393.658	3393.658
5	3039.332	3207.265	3448.539	3578.842	3612.800	3655.623	3655.057
10	2781.850	3011.401	3412.711	3639.612	3590.384	3546.832	3544.667
15	2566.789	2838.624	3344.476	3581.922	3549.278	3634.661	3669.763
20	2300.251	2648.785	3240.301	3404.943	3596.253	3715.974	3763.381
25	2082.641	2456.471	3092.845	3302.505	3585.060	3757.800	3799.202
30	1889.548	2261.400	2904.501	3205.390	3535.528	3742.787	3784.284
35	1661.954	2047.648	2684.213	3042.570	3429.158	3672.652	3712.719
40	1447.157	1827.624	2441.339	2837.131	3248.984	3534.309	3579.554
45	1253.365	1588.547	2169.121	2597.082	2998.507	3327.060	3368.534
50	1049.749	1334.595	1847.510	2298.864	2683.852	3050.222	3059.148
55	853.197	1081.883	1509.973	1926.509	2317.760	2691.951	2613.452
60	679.556	818.500	1185.605	1521.811	1922.507	2199.113	1995.544

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65	501.932	559.226	871.930	1166.041	1451.176	1528.599	1290.473
70	324.040	367.850	578.085	803.155	925.557	872.983	705.887
75	172.785	217.511	314.784	411.721	437.098	368.705	273.275
80	71.284	83.339	115.202	119.676	112.896	85.521	62.475
85	6.101	14.194	11.646	5.512	6.505	6.457	2.329
90	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	1203.89	N.A.	14.10
0-30	2539.8	N.A.	29.70
0-40	4158.88	N.A.	48.60
0-60	7272.74	N.A.	85.00
0-80	8525.5	N.A.	99.70
0-90	8551.53	N.A.	100.00
10-90	8234.23	N.A.	96.30
20-40	2955.00	N.A.	34.60
20-50	4626.58	N.A.	54.10
40-70	4039.15	N.A.	47.20
60-80	1252.76	N.A.	14.60
70-80	327.47	N.A.	3.80
80-90	26.03	N.A.	0.30
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	8551.53	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	317.30
10-20	886.58
20-30	1335.91
30-40	1619.09
40-50	1671.58
50-60	1442.28
60-70	925.29
70-80	327.47
80-90	26.03
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	107	104	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	81	98	91	85	81	88	83	79	84	80	77	81	78	75	73
3	92	82	75	68	90	81	74	68	78	72	67	75	70	65	72	68	64	62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	54
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	43	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	28	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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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

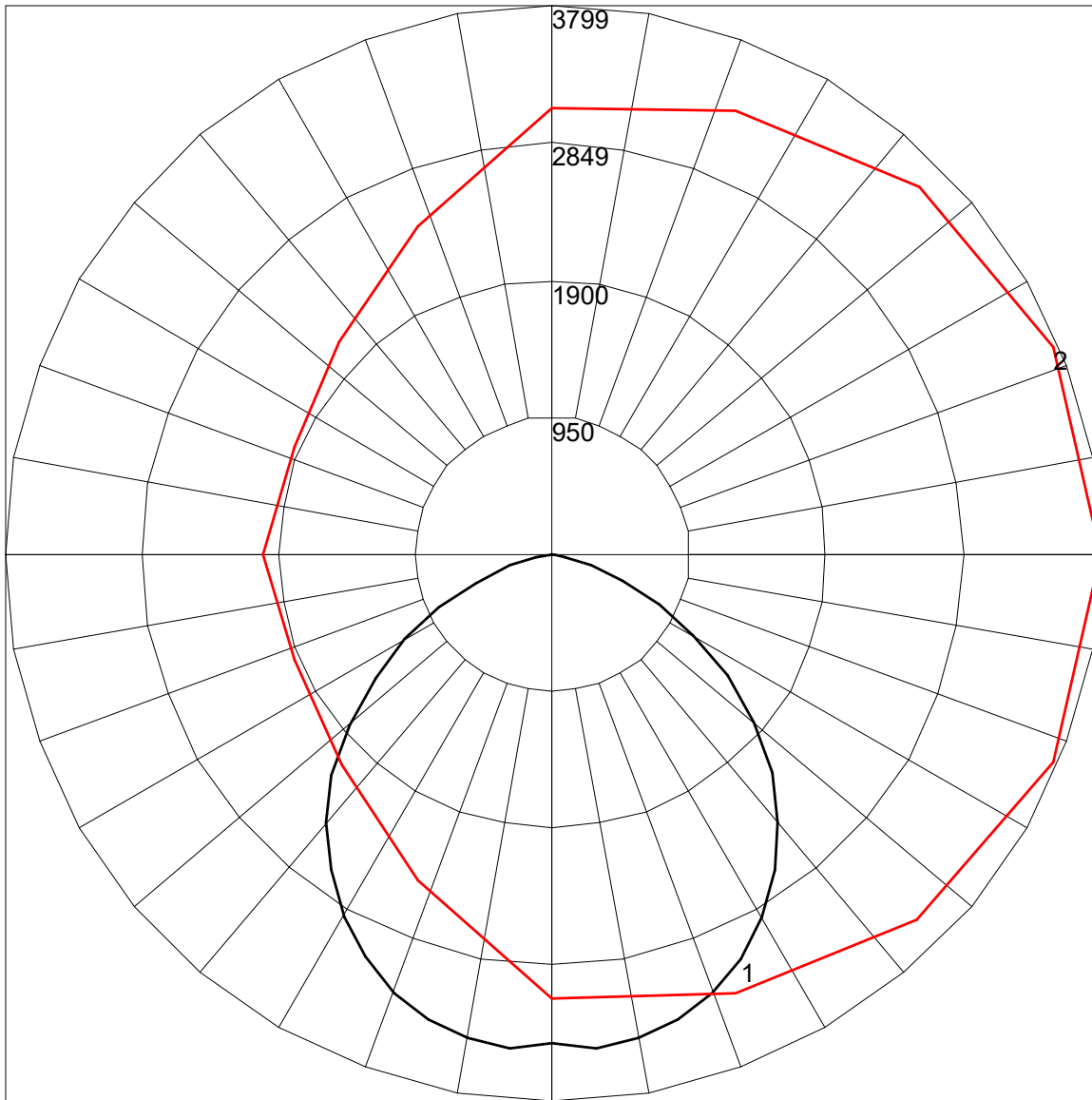
X=2H	Y=2H	25.9	27.5	26.3	27.8	28.1	21.9	23.5	22.3	23.8	24.1
	3H	26.7	28.1	27.1	28.5	28.8	23.0	24.5	23.4	24.8	25.1
	4H	26.8	28.1	27.2	28.5	28.9	23.3	24.6	23.7	25.0	25.3
	6H	26.8	28.0	27.2	28.4	28.8	23.4	24.6	23.8	24.9	25.3
	8H	26.7	27.9	27.2	28.3	28.7	23.3	24.5	23.8	24.9	25.3
	12H	26.7	27.8	27.2	28.2	28.6	23.3	24.4	23.7	24.8	25.2

UGR Viewed Endwise

4H	2H	26.3	27.6	26.7	28.0	28.3	22.7	24.0	23.1	24.4	24.7
	3H	27.3	28.4	27.7	28.8	29.2	24.0	25.1	24.4	25.5	25.9
	4H	27.4	28.4	27.8	28.8	29.2	24.3	25.2	24.7	25.7	26.1
	6H	27.4	28.2	27.9	28.7	29.1	24.4	25.2	24.8	25.7	26.1
	8H	27.4	28.2	27.8	28.6	29.1	24.3	25.1	24.8	25.6	26.0
	12H	27.3	28.0	27.8	28.5	29.0	24.3	25.0	24.8	25.5	26.0
8H	4H	27.4	28.2	27.9	28.7	29.1	24.4	25.2	24.8	25.6	26.1
	6H	27.4	28.1	27.9	28.6	29.1	24.5	25.1	25.0	25.6	26.1
	8H	27.4	28.0	27.9	28.5	29.0	24.5	25.1	25.0	25.6	26.0
	12H	27.4	27.9	27.9	28.4	28.9	24.4	25.0	25.0	25.5	26.0
12H	4H	27.4	28.1	27.9	28.6	29.1	24.4	25.1	24.8	25.5	26.0
	6H	27.4	28.0	27.9	28.5	29.0	24.5	25.0	25.0	25.5	26.0
	8H	27.4	27.9	27.9	28.4	29.0	24.5	25.0	25.0	25.5	26.0

Maximum UGR = 29.2

POLAR GRAPH



Maximum Candela = 3799.202 Located At Horizontal Angle = 0, Vertical Angle = 25
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (25) (Through Max. Cd.)