



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MD4ARR-4-L55-840-A-DIM-UNV BOTH 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 AMBIENT & READING (RIGHT) 4' MEDICAL ASYM TROFFER

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

[MORE] ACRYLIC LENS

[LUMCAT] MD4ARRG-L55-840-A-DIM-UNV BOTH ON

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6532
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	92
Total Luminaire Watts	71.1
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	23690	21118	15115
55	22659	20110	12772
65	15185	17078	9649
75	5251	8416	5296
85	133	362	250

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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	2592.069	2592.069	2592.069	2592.069	2592.069	2592.069	2592.069	2592.069	2592.069	2592.069
5	2791.725	2823.590	2794.657	2762.114	2637.108	2445.201	2320.637	2250.120	2366.816	2252.515
10	2707.409	2758.862	2836.047	2824.138	2610.686	2296.182	2113.810	2043.417	2147.121	2054.524
15	2802.957	2786.890	2725.159	2818.404	2560.819	2168.353	1953.248	1845.118	1956.247	1854.701
20	2874.463	2847.400	2758.861	2706.022	2481.686	2027.420	1758.088	1642.095	1736.906	1649.572
25	2901.822	2877.967	2748.642	2545.168	2366.301	1881.982	1595.798	1475.062	1531.635	1481.015
30	2890.428	2865.557	2708.559	2457.562	2223.824	1734.802	1450.565	1324.061	1352.159	1326.239
35	2835.767	2810.100	2623.830	2329.498	2048.019	1566.966	1278.689	1166.074	1182.817	1165.203
40	2734.056	2703.439	2484.108	2170.697	1858.809	1404.646	1115.789	1026.602	1029.226	1018.182
45	2572.879	2544.933	2293.542	1986.549	1641.598	1223.129	962.690	904.997	890.939	892.438
50	2336.571	2332.708	2052.468	1757.174	1392.830	1022.265	810.435	783.912	768.555	769.684
55	1996.149	2059.104	1771.621	1470.970	1125.148	826.776	657.696	663.073	659.806	647.973
60	1524.193	1682.814	1468.893	1160.643	868.757	621.103	523.617	535.267	539.567	521.910
65	985.660	1170.742	1108.536	887.832	626.342	419.513	385.625	388.488	391.893	381.519
70	539.155	669.933	707.018	609.535	402.644	270.067	247.792	251.252	260.194	243.412
75	208.727	283.605	334.537	310.087	210.515	154.026	129.323	136.709	147.272	129.232
80	47.718	66.620	86.353	88.359	70.568	52.279	49.445	37.703	37.463	34.415
85	1.779	5.447	4.845	2.990	3.349	4.525	3.753	2.697	4.685	2.472
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	2592.069	2592.069	2592.069	2592.069	2592.069	2592.069	2592.069
5	2321.435	2449.702	2633.987	2733.512	2759.449	2792.157	2791.725
10	2124.771	2300.102	2606.621	2779.928	2742.328	2709.062	2707.409
15	1960.508	2168.135	2554.504	2735.864	2710.931	2776.146	2802.957
20	1756.927	2023.136	2474.935	2600.688	2746.811	2838.253	2874.463
25	1590.716	1876.247	2362.308	2522.447	2738.261	2870.200	2901.822
30	1443.233	1727.252	2218.452	2448.270	2700.429	2858.733	2890.428
35	1269.397	1563.989	2050.196	2323.909	2619.184	2805.164	2835.767
40	1105.335	1395.935	1864.690	2166.995	2481.567	2699.498	2734.056
45	957.318	1213.329	1656.770	1983.646	2290.253	2541.202	2572.879
50	801.796	1019.361	1411.124	1755.867	2049.920	2329.753	2336.571
55	651.670	826.340	1153.314	1471.463	1770.300	2056.106	1996.149
60	519.044	625.169	905.563	1162.356	1468.407	1679.677	1524.193

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65	383.375	427.136	665.978	890.620	1108.405	1167.540	985.660
70	247.501	280.963	441.540	613.448	706.938	666.782	539.155
75	131.973	166.134	240.431	314.472	333.855	281.616	208.727
80	54.446	63.654	87.991	91.408	86.229	65.321	47.718
85	4.660	10.841	8.896	4.210	4.968	4.932	1.779
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	919.52	N.A.	14.10
0-30	1939.89	N.A.	29.70
0-40	3176.55	N.A.	48.60
0-60	5554.91	N.A.	85.00
0-80	6511.76	N.A.	99.70
0-90	6531.64	N.A.	100.00
10-90	6289.29	N.A.	96.30
20-40	2257.02	N.A.	34.60
20-50	3533.77	N.A.	54.10
40-70	3085.09	N.A.	47.20
60-80	956.85	N.A.	14.60
70-80	250.12	N.A.	3.80
80-90	19.88	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	6531.64	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	242.35
10-20	677.17
20-30	1020.37
30-40	1236.65
40-50	1276.75
50-60	1101.61
60-70	706.74
70-80	250.12
80-90	19.88
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

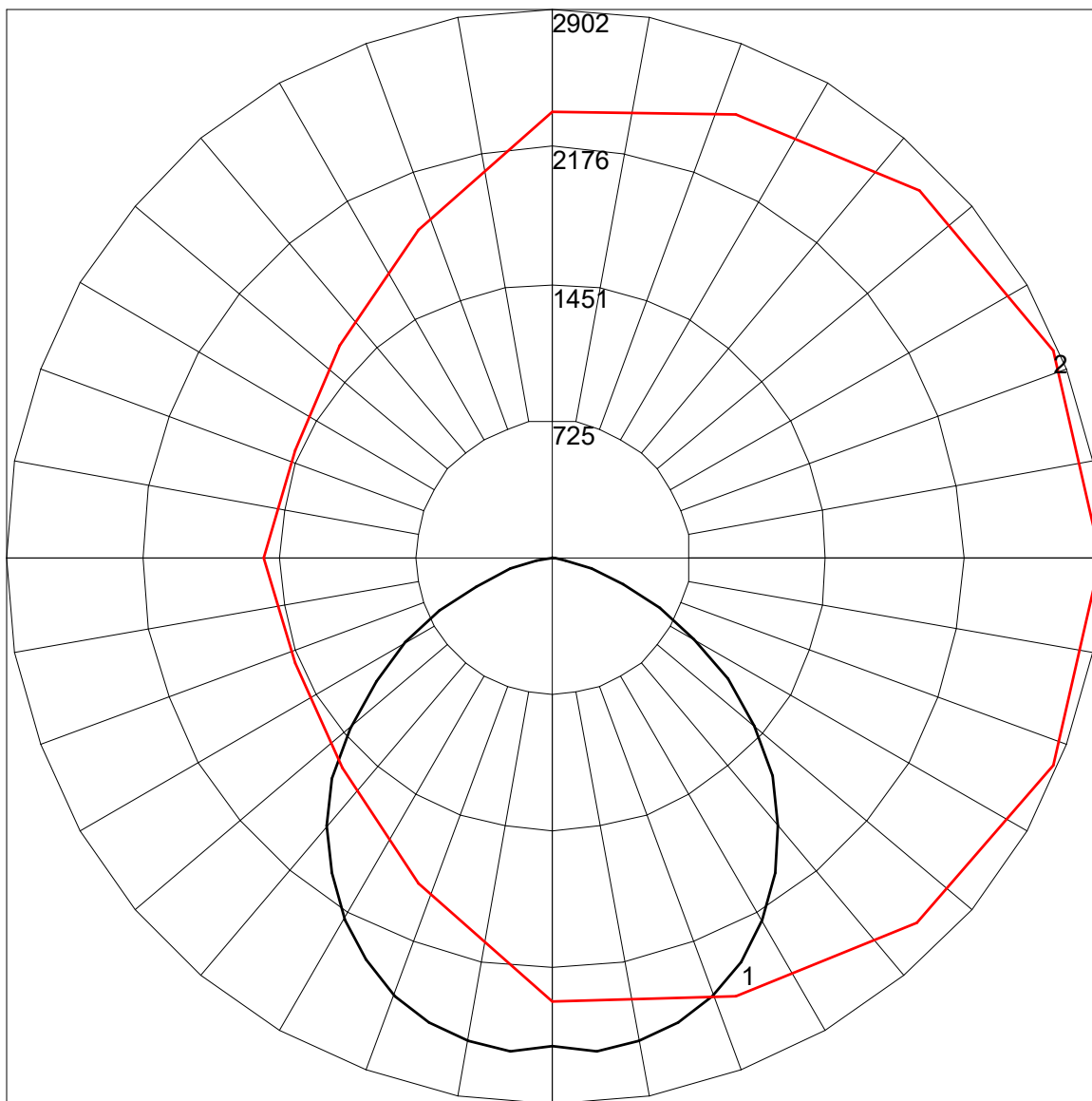
X=2H	Y=2H	24.9	26.5	25.3	26.8	27.1	20.9	22.5	21.3	22.8	23.1
	3H	25.7	27.1	26.1	27.5	27.8	22.0	23.5	22.4	23.8	24.2
	4H	25.8	27.1	26.2	27.5	27.9	22.3	23.6	22.7	24.0	24.3
	6H	25.8	27.0	26.2	27.4	27.8	22.4	23.6	22.8	23.9	24.3
	8H	25.7	26.9	26.2	27.3	27.7	22.3	23.5	22.8	23.9	24.3
	12H	25.7	26.8	26.2	27.2	27.6	22.3	23.4	22.7	23.8	24.2

UGR Viewed Endwise

4H	2H	25.3	26.6	25.7	27.0	27.3	21.7	23.0	22.1	23.4	23.7
	3H	26.3	27.4	26.7	27.8	28.2	23.0	24.1	23.4	24.5	24.9
	4H	26.4	27.4	26.8	27.8	28.2	23.3	24.2	23.7	24.7	25.1
	6H	26.4	27.2	26.9	27.7	28.1	23.4	24.2	23.8	24.7	25.1
	8H	26.4	27.2	26.8	27.6	28.1	23.3	24.1	23.8	24.6	25.0
	12H	26.3	27.0	26.8	27.5	28.0	23.3	24.0	23.8	24.5	25.0
8H	4H	26.4	27.2	26.9	27.7	28.1	23.4	24.2	23.8	24.6	25.1
	6H	26.4	27.1	26.9	27.6	28.1	23.5	24.1	24.0	24.6	25.1
	8H	26.4	27.0	26.9	27.5	28.0	23.5	24.1	24.0	24.6	25.0
	12H	26.4	26.9	26.9	27.4	27.9	23.4	24.0	24.0	24.5	25.0
12H	4H	26.4	27.1	26.9	27.6	28.1	23.4	24.1	23.8	24.5	25.0
	6H	26.4	27.0	26.9	27.5	28.0	23.5	24.0	24.0	24.5	25.0
	8H	26.4	26.9	26.9	27.4	28.0	23.5	24.0	24.0	24.5	25.0

Maximum UGR = 28.2

POLAR GRAPH



Maximum Candela = 2901.822 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.)