



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MD4ERLG-4-L80-840-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

[ISSUE DATE] 21-JUL-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] LED EXAM & READING (LEFT) 4' MEDICAL ASYM TROFFER

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

[MORE] ACRYLIC LENS WITH LEFT READING LIGHT

[LUMCAT] MD4ERLG-L80-840-A-DIM-UNV BOTH ON

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	8998
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	109
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	32634	29091	20822
55	31213	27702	17593
65	20918	23525	13292
75	7233	11593	7295
85	183	499	345

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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	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643
5	3845.674	3889.570	3849.713	3804.885	3632.686	3368.329	3196.738	3099.599	3260.351	3102.899
10	3729.528	3800.405	3906.729	3890.324	3596.289	3163.051	2911.828	2814.860	2957.716	2830.160
15	3861.147	3839.014	3753.978	3882.425	3527.596	2986.963	2690.651	2541.699	2694.782	2554.899
20	3959.648	3922.368	3800.404	3727.616	3418.588	2792.824	2421.813	2262.028	2392.633	2272.328
25	3997.336	3964.475	3786.327	3506.036	3259.641	2592.480	2198.254	2031.937	2109.867	2040.137
30	3981.641	3947.380	3731.112	3385.356	3063.376	2389.736	1998.191	1823.929	1862.635	1826.929
35	3906.343	3870.987	3614.394	3208.945	2821.199	2158.536	1761.428	1606.297	1629.362	1605.097
40	3766.234	3724.059	3421.924	2990.192	2560.559	1934.937	1537.028	1414.172	1417.786	1402.572
45	3544.208	3505.712	3159.414	2736.524	2261.345	1684.892	1326.130	1246.657	1227.292	1229.357
50	3218.688	3213.366	2827.329	2420.553	1918.660	1408.196	1116.396	1079.860	1058.705	1060.260
55	2749.748	2836.470	2440.455	2026.300	1549.921	1138.905	905.993	913.400	908.900	892.600
60	2099.615	2318.120	2023.439	1598.816	1196.736	855.586	721.296	737.344	743.267	718.944
65	1357.773	1612.727	1527.037	1223.012	862.802	577.890	531.209	535.152	539.843	525.552
70	742.700	922.850	973.936	839.650	554.653	372.024	341.339	346.106	358.424	335.306
75	287.527	390.674	460.834	427.153	289.990	212.174	178.146	188.321	202.871	178.021
80	65.733	91.771	118.953	121.717	97.210	72.016	68.111	51.937	51.606	47.407
85	2.450	7.504	6.674	4.119	4.614	6.234	5.169	3.715	6.454	3.405
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	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643
5	3197.838	3374.529	3628.386	3765.485	3801.213	3846.270	3845.674
10	2926.928	3168.451	3590.689	3829.424	3777.629	3731.805	3729.528
15	2700.651	2986.663	3518.896	3768.725	3734.378	3824.214	3861.147
20	2420.213	2786.924	3409.288	3582.516	3783.804	3909.768	3959.648
25	2191.254	2584.580	3254.141	3474.736	3772.027	3953.775	3997.336
30	1988.091	2379.336	3055.976	3372.556	3719.912	3937.980	3981.641
35	1748.628	2154.436	2824.199	3201.245	3607.994	3864.187	3906.343
40	1522.628	1922.937	2568.659	2985.092	3418.424	3718.629	3766.234
45	1318.730	1671.392	2282.245	2732.524	3154.884	3500.572	3544.208
50	1104.496	1404.196	1943.860	2418.753	2823.819	3209.296	3218.688
55	897.693	1138.305	1588.721	2026.980	2438.635	2832.340	2749.748
60	714.996	861.186	1247.436	1601.176	2022.769	2313.800	2099.615

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CANDELA TABULATION - (Cont.)

65	528.109	588.390	917.402	1226.852	1526.857	1608.317	1357.773
70	340.939	387.034	608.233	845.040	973.826	918.510	742.700
75	181.796	228.854	331.200	433.193	459.894	387.934	287.527
80	75.001	87.686	121.210	125.917	118.783	89.981	65.733
85	6.419	14.934	12.254	5.799	6.844	6.794	2.450
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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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1266.67	N.A.	14.10
0-30	2672.25	N.A.	29.70
0-40	4375.78	N.A.	48.60
0-60	7652.03	N.A.	85.00
0-80	8970.12	N.A.	99.70
0-90	8997.51	N.A.	100.00
10-90	8663.66	N.A.	96.30
20-40	3109.11	N.A.	34.60
20-50	4867.86	N.A.	54.10
40-70	4249.8	N.A.	47.20
60-80	1318.09	N.A.	14.60
70-80	344.55	N.A.	3.80
80-90	27.39	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	8997.51	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	333.85
10-20	932.82
20-30	1405.58
30-40	1703.52
40-50	1758.76
50-60	1517.49
60-70	973.55
70-80	344.55
80-90	27.39
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

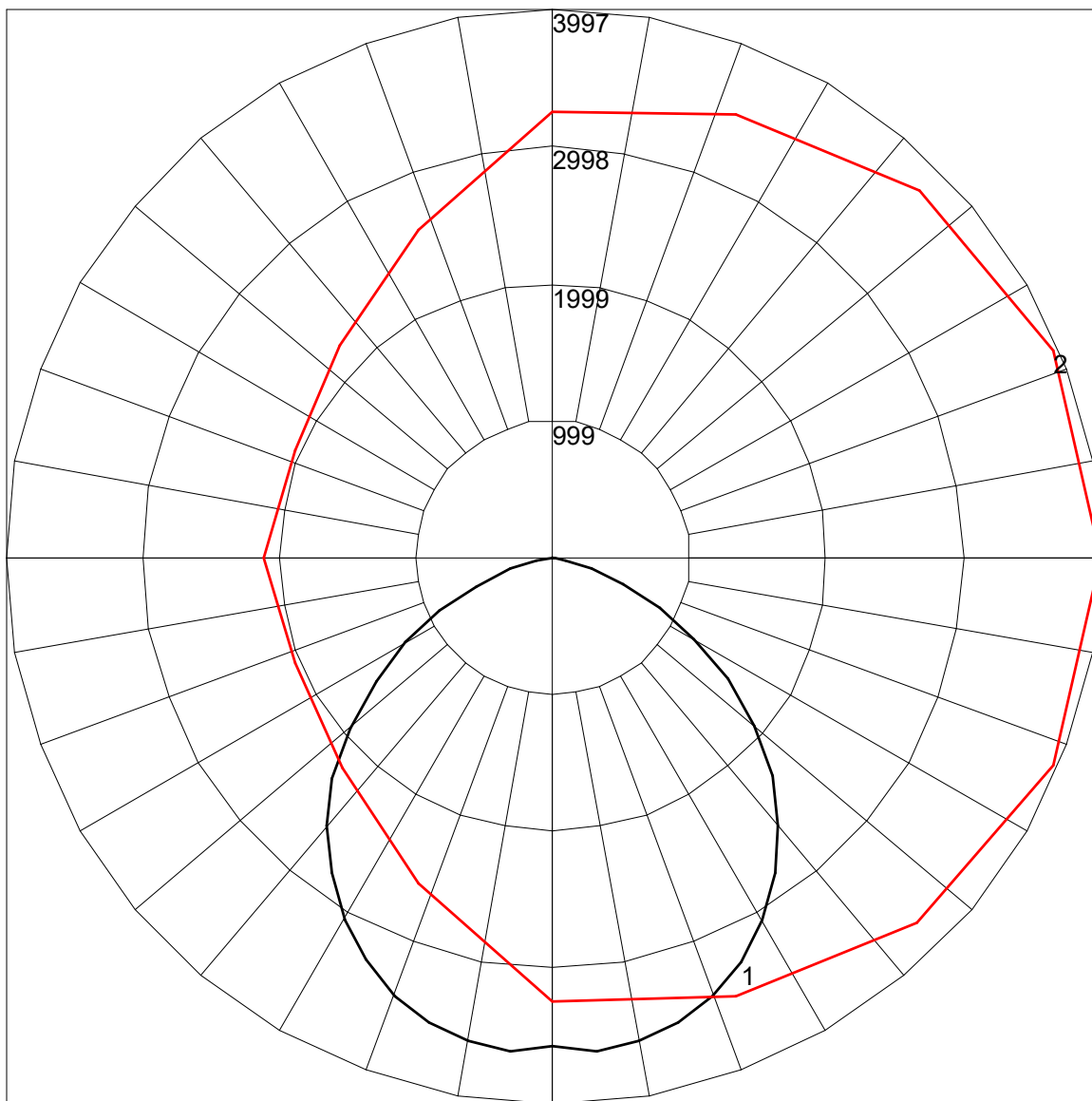
X=2H	Y=2H	26.0	27.6	26.4	27.9	28.2	22.0	23.6	22.4	23.9	24.2
	3H	26.8	28.2	27.2	28.6	28.9	23.1	24.6	23.5	24.9	25.2
	4H	26.9	28.2	27.3	28.6	29.0	23.4	24.7	23.8	25.1	25.4
	6H	26.9	28.1	27.3	28.5	28.9	23.5	24.7	23.9	25.0	25.4
	8H	26.8	28.0	27.3	28.4	28.8	23.4	24.6	23.9	25.0	25.4
	12H	26.8	27.9	27.3	28.3	28.7	23.4	24.5	23.8	24.9	25.3

UGR Viewed Endwise

4H	2H	26.4	27.7	26.8	28.1	28.4	22.8	24.1	23.2	24.5	24.8
	3H	27.4	28.5	27.8	28.9	29.3	24.1	25.2	24.5	25.6	26.0
	4H	27.5	28.5	27.9	28.9	29.3	24.4	25.3	24.8	25.8	26.2
	6H	27.5	28.3	28.0	28.8	29.2	24.5	25.3	24.9	25.8	26.2
	8H	27.5	28.3	27.9	28.7	29.2	24.4	25.2	24.9	25.7	26.1
	12H	27.4	28.1	27.9	28.6	29.1	24.4	25.1	24.9	25.6	26.1
8H	4H	27.5	28.3	28.0	28.8	29.2	24.5	25.3	24.9	25.7	26.2
	6H	27.5	28.2	28.0	28.7	29.2	24.6	25.2	25.1	25.7	26.2
	8H	27.5	28.1	28.0	28.6	29.1	24.6	25.2	25.1	25.7	26.1
	12H	27.5	28.0	28.0	28.5	29.0	24.5	25.1	25.1	25.6	26.1
12H	4H	27.5	28.2	28.0	28.7	29.2	24.5	25.2	24.9	25.6	26.1
	6H	27.5	28.1	28.0	28.6	29.1	24.6	25.1	25.1	25.6	26.1
	8H	27.5	28.0	28.0	28.5	29.1	24.6	25.1	25.1	25.6	26.1

Maximum UGR = 29.3

POLAR GRAPH



Maximum Candela = 3997.336 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.)