H.E. WILLIAMS, INC.

IES INDOOR REPORT
PHOTOMETRIC FILENAME : MD4AG-4-L45-8TW-A-DALI-UNV 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN FROM BALLABS TEST NO. 20051.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIE, INC
[ISSUEDATE] 28-JUL-2020
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
[LUMINAIRE] 2-56 LED (AMBIENT) 4' MEDICAL ASYM TROFFER
[MORE] WHITE REFL w/FROSTED ACRYLIC RIBBED LENS IN DOOR & CLEAR
[MORE] ACRYLIC LENS
[LUMCAT] MD4AG-L45-8TW-A-DALI-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4552
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
Total Luminaire Watts	52.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.02
Spacing Criterion (90-270)	1.24
Spacing Criterion (Diagonal)	1.20
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	8313	10895	12067
55	6569	8668	9210
65	3707	6005	6556
75	1401	2451	3902
85	0	297	891

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CANDELA TABULATION

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0	2362.506	2362.506	2362.506	2362.506	2362.506	2362.506	2362.506	2362.506	2362.506
5	2322.733	2346.596	2364.494	2396.312	2398.301	2362.506	2348.585	2338.642	2328.699
10	2249.153	2294.892	2324.721	2372.449	2376.426	2334.665	2294.892	2271.028	2255.119
15	2133.812	2195.460	2253.130	2318.755	2324.721	2275.005	2209.380	2171.596	2157.676
20	1948.868	2024.437	2133.812	2213.357	2227.278	2165.630	2094.039	2024.437	1998.584
25	1742.050	1805.686	1990.630	2086.084	2100.005	2030.402	1930.970	1821.595	1779.834
30	1521.310	1578.981	1811.652	1930.970	1964.777	1867.334	1710.231	1586.936	1541.197
35	1290.628	1368.185	1620.742	1748.015	1775.856	1662.504	1471.594	1312.503	1274.719
40	1095.741	1167.332	1407.958	1553.129	1553.129	1433.810	1221.026	1055.968	1022.161
45	902.843	980.400	1183.241	1352.276	1310.514	1201.139	970.457	839.207	795.456
50	737.786	803.411	952.559	1139.491	1055.968	962.502	729.831	636.365	594.604
55	578.695	636.365	763.638	916.764	811.366	737.786	515.058	441.478	419.603
60	397.728	459.376	586.649	707.956	604.547	526.990	348.012	274.432	256.535
65	240.626	302.273	389.774	481.251	425.569	340.058	214.773	145.171	129.262
70	129.262	173.012	208.807	306.251	278.410	182.955	93.466	55.682	47.727
75	55.682	81.534	97.443	143.182	155.114	63.637	29.830	25.852	23.864
80	21.875	27.841	29.830	31.818	57.671	11.932	7.955	9.943	7.955
85	0.000	1.989	3.977	7.955	11.932	1.989	1.989	1.989	1.989
90	0.000	0.000	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	851.71	N.A.	18.70
0-30	1743.05	N.A.	38.30
0-40	2699.04	N.A.	59.30
0-60	4134.83	N.A.	90.80
0-80	4543.18	N.A.	99.80
0-90	4551.93	N.A.	100.00
10-90	4328.23	N.A.	95.10
20-40	1847.33	N.A.	40.60
20-50	2685.12	N.A.	59.00
40-70	1750.32	N.A.	38.50
60-80	408.35	N.A.	9.00
70-80	93.81	N.A.	2.10
80-90	8.76	N.A.	0.20
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	4551.93	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	223.71
10-20	628.01
20-30	891.34
30-40	955.99
40-50	837.79
50-60	598.00
60-70	314.53
70-80	93.81
80-90	8.76
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	97	97	97	97	95	95	95	95	90	90	90	87	87	87	83	83	83	81
1	90	87	85	82	88	85	83	81	82	80	78	79	77	76	76	75	74	72
2	84	78	73	70	82	77	72	69	74	70	67	71	68	66	69	66	64	63
3	77	70	64	60	75	69	64	59	66	62	58	64	61	57	62	59	56	55
4	72	63	57	52	70	62	56	52	60	55	51	58	54	50	57	53	50	48
5	66	57	51	46	65	56	50	46	55	49	45	53	48	45	52	48	44	43
6	62	52	46	41	60	51	45	41	50	44	40	49	44	40	47	43	40	38
7	58	48	41	37	56	47	41	37	46	40	36	45	40	36	44	39	36	34
8	54	44	37	33	53	43	37	33	42	37	33	41	36	33	40	36	32	31
9	50	40	34	30	49	40	34	30	39	34	30	38	33	30	37	33	30	28
10	47	38	32	28	46	37	31	28	36	31	27	36	31	27	35	30	27	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					UGR Viewed Endwise				
X=2H	Y=2H	18.5	19.9	18.8	20.2	20.5	20.5	22.0	20.9	22.3	22.6
	3H	19.1	20.3	19.5	20.7	21.0	21.5	22.7	21.9	23.1	23.4
	4H	19.1	20.3	19.5	20.7	21.1	21.7	22.9	22.1	23.2	23.6
	6H	19.1	20.2	19.5	20.6	21.0	21.7	22.8	22.1	23.2	23.6
	8H	19.1	20.1	19.5	20.5	20.9	21.7	22.7	22.1	23.1	23.5
	12H	19.0	20.0	19.5	20.4	20.8	21.7	22.7	22.1	23.1	23.5
4H	2H	19.1	20.3	19.5	20.6	21.0	20.7	21.9	21.1	22.2	22.6
	3H	19.8	20.8	20.2	21.2	21.6	21.7	22.7	22.1	23.1	23.5
	4H	19.9	20.8	20.3	21.2	21.6	21.9	22.8	22.4	23.2	23.7
	6H	19.9	20.7	20.4	21.1	21.6	22.0	22.8	22.5	23.2	23.7
	8H	19.9	20.6	20.3	21.0	21.5	22.0	22.7	22.5	23.1	23.6
	12H	19.8	20.5	20.3	20.9	21.4	22.0	22.6	22.5	23.1	23.5
8H	4H	20.0	20.7	20.4	21.1	21.6	21.9	22.6	22.3	23.0	23.5
	6H	20.0	20.6	20.5	21.1	21.5	21.9	22.5	22.4	23.0	23.5
	8H	20.0	20.5	20.5	21.0	21.5	21.9	22.4	22.4	22.9	23.4
	12H	19.9	20.4	20.4	20.9	21.4	21.9	22.3	22.4	22.8	23.4
12H	4H	20.0	20.6	20.4	21.1	21.5	21.8	22.5	22.3	22.9	23.4
	6H	20.0	20.5	20.5	20.9	21.5	21.9	22.4	22.4	22.9	23.4
	8H	19.9	20.4	20.5	20.9	21.5	21.9	22.3	22.4	22.8	23.4

Maximum UGR = 23.7

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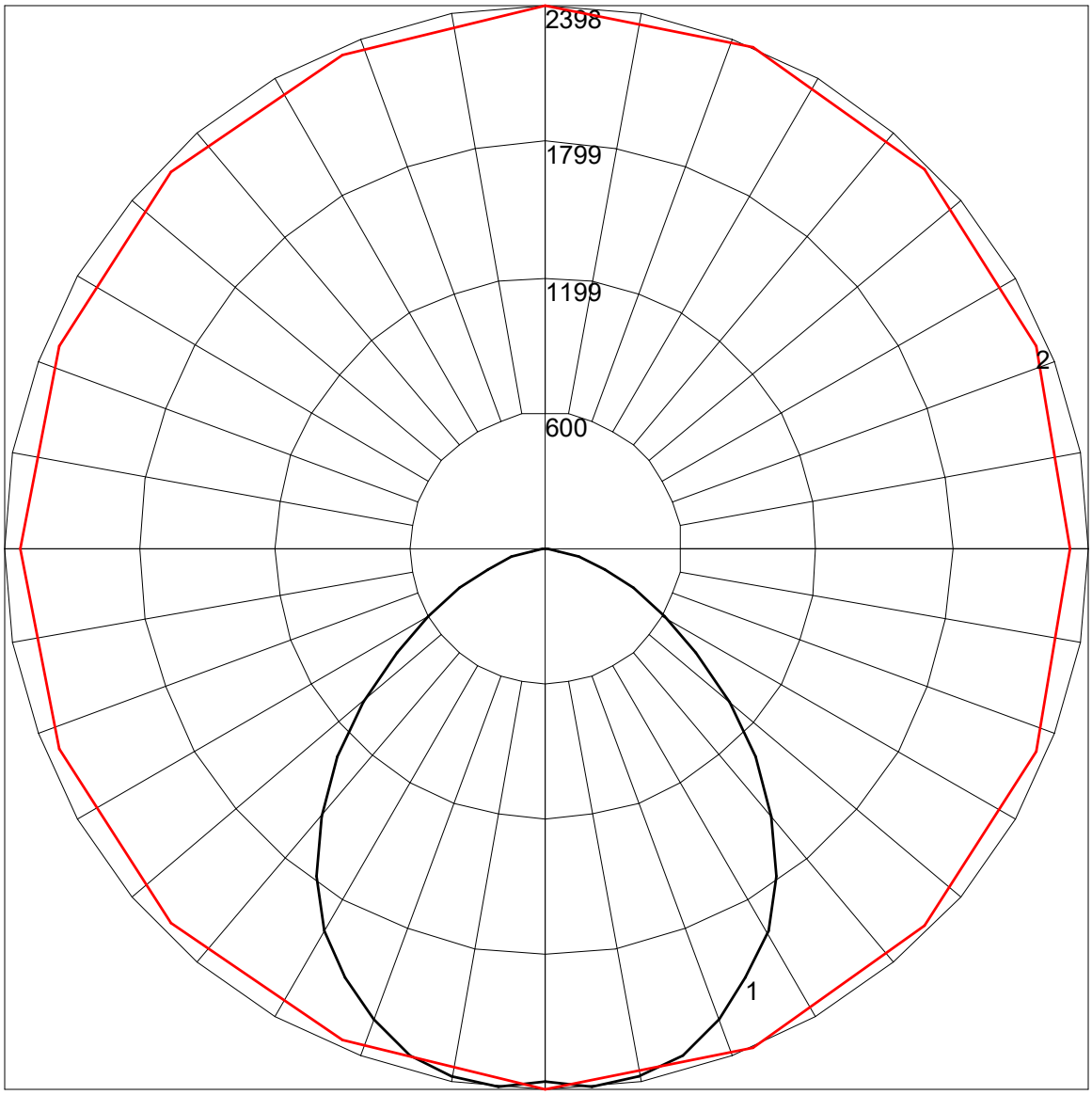
POLAR GRAPH



Maximum Candela = 2398.301 Located At Horizontal Angle = 90, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

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