



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : AHTG-22-L60-835-A-DIM-UNV\_.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TESTLAB] Generated From Intertek  
[ISSUEDATE] 17-NOV-2020  
[MANUFAC] WILLIAMS INDOOR  
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.64836  
[LUMINAIRE] 2'x2' LED TROFFER  
[MORE] FROSTED ACRYLIC DIFFUSER  
[LUMCAT] AHT-22-L60-835-A-DIM-UNV  
[LAMPCAT] HLM 80 CRI, 3500K CCT  
[SEARCH\_SOURCETYPE] LED  
[SEARCH\_APPLICATION] INDOOR, DIRECT, OFFICE, EDUCATION  
[SEARCH\_MOUNTING] RECESSED

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6083
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	116
Total Luminaire Watts	52.6
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.18
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.26
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	2.00 ft
Luminous Width (90-270)	2.00 ft
Luminous Height	0.00 ft

**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	5477	5472	5676
55	4546	4898	5078
65	3543	4076	3360
75	2634	2625	1950
85	1692	1291	1042

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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>
<b>0.0</b>	2651.351	2651.351	2651.351	2651.351	2651.351
<b>2.5</b>	2649.712	2644.794	2642.524	2648.325	2651.477
<b>5.0</b>	2642.398	2636.093	2631.302	2632.815	2635.841
<b>7.5</b>	2626.384	2617.179	2610.621	2608.856	2605.451
<b>10.0</b>	2601.290	2590.698	2578.340	2573.675	2569.765
<b>12.5</b>	2567.244	2556.147	2539.880	2529.540	2521.344
<b>15.0</b>	2522.605	2510.751	2490.702	2476.200	2465.986
<b>17.5</b>	2469.265	2454.385	2432.192	2415.799	2404.072
<b>20.0</b>	2406.089	2390.201	2364.981	2347.201	2333.709
<b>22.5</b>	2334.213	2316.433	2290.457	2273.055	2260.319
<b>25.0</b>	2256.158	2235.352	2206.980	2191.848	2180.499
<b>27.5</b>	2172.807	2149.352	2120.854	2109.884	2101.561
<b>30.0</b>	2085.925	2061.462	2034.098	2025.902	2020.606
<b>32.5</b>	1993.494	1968.779	1943.812	1941.163	1937.633
<b>35.0</b>	1893.750	1870.800	1849.616	1854.786	1854.281
<b>37.5</b>	1787.323	1767.147	1751.259	1761.977	1765.634
<b>40.0</b>	1677.113	1659.333	1649.245	1667.277	1675.347
<b>42.5</b>	1560.598	1547.357	1544.835	1571.442	1586.196
<b>45.0</b>	1440.425	1431.725	1439.291	1475.103	1492.756
<b>47.5</b>	1320.632	1319.749	1334.250	1379.646	1399.696
<b>50.0</b>	1200.964	1208.908	1234.380	1286.207	1299.195
<b>52.5</b>	1084.071	1100.085	1138.419	1188.480	1195.416
<b>55.0</b>	969.951	994.288	1044.980	1081.927	1083.314
<b>57.5</b>	859.867	890.509	951.667	965.790	934.896
<b>60.0</b>	753.061	789.756	853.688	822.037	794.170
<b>62.5</b>	651.048	693.291	753.314	695.813	656.596
<b>65.0</b>	556.978	604.013	640.708	571.984	528.227
<b>67.5</b>	469.844	519.401	528.984	453.955	416.756
<b>70.0</b>	391.032	441.093	429.240	353.959	323.065
<b>72.5</b>	318.525	364.930	335.423	269.599	246.775
<b>75.0</b>	253.584	289.144	252.702	202.893	187.761
<b>77.5</b>	194.318	217.016	182.465	150.310	141.231
<b>80.0</b>	141.861	153.714	126.099	107.814	102.770
<b>82.5</b>	95.457	97.348	79.820	70.363	66.202
<b>85.0</b>	54.853	50.692	41.865	36.821	33.794
<b>87.5</b>	19.293	16.015	14.627	14.880	14.754
<b>90.0</b>	0.000	0.000	0.000	0.000	0.000
<b>92.5</b>	0.000	0.000	0.000	0.000	0.000
<b>95.0</b>	0.000	0.000	0.000	0.000	0.000
<b>97.5</b>	0.000	0.000	0.000	0.000	0.000
<b>100.0</b>	0.000	0.000	0.000	0.000	0.000
<b>102.5</b>	0.000	0.000	0.000	0.000	0.000
<b>105.0</b>	0.000	0.000	0.000	0.000	0.000
<b>107.5</b>	0.000	0.000	0.000	0.000	0.000
<b>110.0</b>	0.000	0.000	0.000	0.000	0.000
<b>112.5</b>	0.000	0.000	0.000	0.000	0.000
<b>115.0</b>	0.000	0.000	0.000	0.000	0.000
<b>117.5</b>	0.000	0.000	0.000	0.000	0.000
<b>120.0</b>	0.000	0.000	0.000	0.000	0.000
<b>122.5</b>	0.000	0.000	0.000	0.000	0.000
<b>125.0</b>	0.000	0.000	0.000	0.000	0.000
<b>127.5</b>	0.000	0.000	0.000	0.000	0.000
<b>130.0</b>	0.000	0.000	0.000	0.000	0.000
<b>132.5</b>	0.000	0.000	0.000	0.000	0.000

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CANDELA TABULATION - (Cont.)

135.0	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.126	0.000	0.126
152.5	0.000	0.000	0.126	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000
157.5	0.252	0.126	0.000	0.504	0.126
160.0	0.126	0.000	0.378	0.252	0.126
162.5	0.504	0.126	0.126	0.126	0.378
165.0	0.126	0.126	0.378	0.252	0.504
167.5	0.504	0.126	0.252	0.252	0.126
170.0	0.126	0.126	0.378	0.252	0.252
172.5	0.000	0.126	0.504	0.630	0.000
175.0	0.378	0.000	0.252	0.378	0.504
177.5	0.378	0.252	0.378	0.378	0.126
180.0	0.378	0.378	0.378	0.378	0.378

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	951.52	N.A.	15.60
0-30	1970.33	N.A.	32.40
0-40	3133.29	N.A.	51.50
0-60	5177.8	N.A.	85.10
0-80	6027.42	N.A.	99.10
0-90	6083.14	N.A.	100.00
10-90	5833.31	N.A.	95.90
20-40	2181.77	N.A.	35.90
20-50	3303.16	N.A.	54.30
40-70	2631.94	N.A.	43.30
60-80	849.62	N.A.	14.00
70-80	262.20	N.A.	4.30
80-90	55.71	N.A.	0.90
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	0.13	N.A.	0.00
110-180	0.13	N.A.	0.00
0-180	6083.27	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	249.82
10-20	701.69
20-30	1018.81
30-40	1162.96
40-50	1121.39
50-60	923.13
60-70	587.43
70-80	262.20
80-90	55.71
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	0.04
160-170	0.06
170-180	0.03

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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	177	177	177	177	173	173	173	173	165	165	165	158	158	158	152	152	152	149
1	164	157	152	146	160	154	149	144	148	143	140	142	138	135	137	134	131	128
2	150	139	130	122	146	136	128	120	131	124	118	126	120	115	122	117	112	109
3	138	123	112	103	134	121	110	102	116	108	100	112	105	98	109	102	97	94
4	127	110	98	88	123	108	97	88	104	94	87	101	92	85	98	90	84	81
5	117	99	86	77	114	97	85	76	94	84	76	91	82	75	89	81	74	71
6	108	89	77	68	106	88	76	67	85	75	67	83	73	66	81	72	66	63
7	101	81	69	60	98	80	68	60	78	67	60	76	66	59	74	65	59	56
8	94	75	62	54	92	74	62	54	72	61	54	70	60	53	68	59	53	50
9	88	69	57	49	86	68	57	49	66	56	49	65	55	48	63	54	48	45
10	83	64	52	45	81	63	52	44	61	51	44	60	51	44	59	50	44	41

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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	15.6	17.2	16.0	17.5	17.8	UGR Viewed Endwise			
	3H	17.0	18.4	17.4	18.7	19.0	16.2	17.7	16.5	18.0
	4H	17.4	18.7	17.8	19.1	19.4	17.0	18.4	17.4	18.7
	6H	17.7	18.9	18.1	19.3	19.7	17.3	18.6	17.7	18.9
	8H	17.8	18.9	18.2	19.3	19.7	17.4	18.6	17.8	18.9
	12H	17.8	18.9	18.2	19.3	19.7	17.4	18.5	17.8	18.9

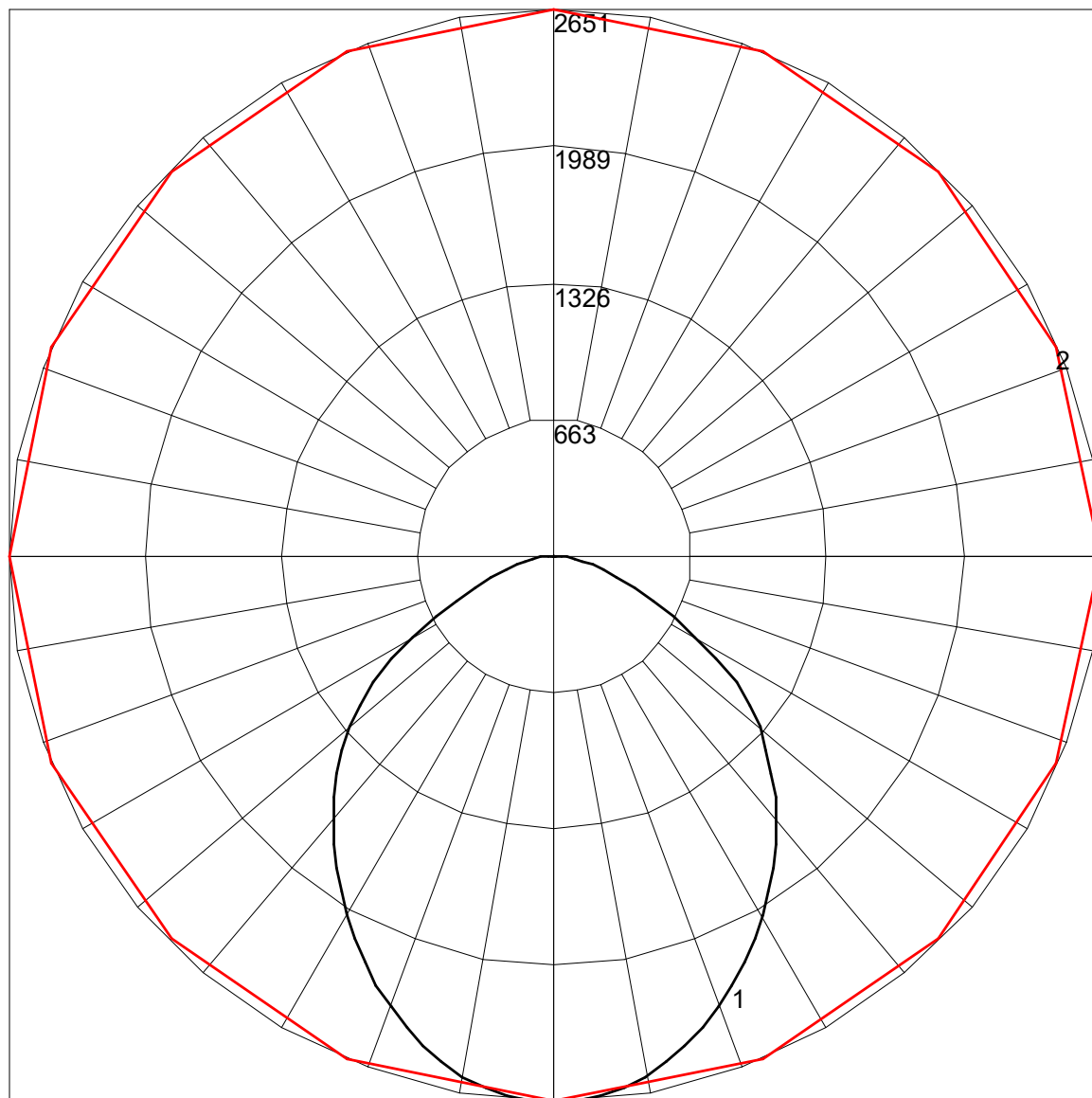
4H	2H	16.2	17.5	16.6	17.9	18.3	16.7	18.0	17.1	18.3
	3H	17.8	18.9	18.2	19.3	19.7	17.7	18.8	18.1	19.2
	4H	18.3	19.3	18.8	19.7	20.2	18.0	19.0	18.4	19.4
	6H	18.7	19.6	19.2	20.0	20.5	18.2	19.0	18.6	19.5
	8H	18.8	19.6	19.3	20.1	20.5	18.2	19.0	18.7	19.5
	12H	18.9	19.6	19.4	20.1	20.5	18.3	19.0	18.7	19.4

8H	4H	18.5	19.3	19.0	19.7	20.2	18.2	19.0	18.6	19.4
	6H	19.0	19.6	19.4	20.1	20.6	18.4	19.1	18.9	19.6
	8H	19.1	19.7	19.6	20.2	20.7	18.5	19.1	19.0	19.6
	12H	19.2	19.7	19.7	20.2	20.8	18.6	19.1	19.1	19.6

12H	4H	18.5	19.2	19.0	19.7	20.1	18.2	18.9	18.7	19.4
	6H	19.0	19.6	19.5	20.0	20.6	18.5	19.0	19.0	19.5
	8H	19.1	19.7	19.7	20.2	20.7	18.6	19.1	19.1	19.6

Maximum UGR = 20.8

POLAR GRAPH



Maximum Candela = 2651.477 Located At Horizontal Angle = 90, Vertical Angle = 2.5

# 1 - Vertical Plane Through Horizontal Angles (90 - 270)

# 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)