



IES INDOOR REPORT
PHOTOMETRIC FILENAME : HETG-AR14-L69-835-A-DIM-UNV.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]GEN FROM ORIGINAL TEST
[TESTLAB]Intertek
[ISSUE DATE] 03/18/2019
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
[LUMCAT]HETG-AR14-L69-835-A-DIM-UNV
[LUMINAIRE]1X4 RECESSED GRID LUMINAIRE
[MORE] WITH FROSTED ACRYLIC LENS
[LAMP]LED
[LAMPCAT] HLM 80 CRI 3500K CCT
[_SEARCH_APPLICATION] INDOOR
[_SEARCH_SOURCETYPE] LED
[_SEARCH_MOUNTING] RECESSED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6999
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	131
Total Luminaire Watts	53.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.22
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.92 ft
Luminous Width (90-270)	0.92 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7231	7311	7189
55	6126	6446	5903
65	4850	5368	3665
75	3719	3684	1923
85	2606	1276	601

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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>
0.0	2930.772	2930.772	2930.772	2930.772	2930.772	2930.772	2930.772	2930.772	2930.772	2930.772
2.5	2882.912	2895.818	2924.319	2960.528	2989.746	2959.811	2920.554	2892.412	2879.685	2892.412
5.0	2874.128	2888.468	2921.271	2957.660	2985.264	2952.282	2914.818	2883.449	2867.854	2883.449
7.5	2858.533	2875.741	2909.262	2941.885	2965.009	2932.385	2900.120	2868.751	2850.825	2868.751
10.0	2838.457	2856.920	2886.497	2911.413	2929.159	2897.789	2873.053	2847.061	2825.909	2847.061
12.5	2811.928	2830.211	2849.212	2868.930	2885.600	2853.156	2833.976	2815.692	2793.823	2815.692
15.0	2775.719	2795.795	2806.012	2825.192	2837.202	2805.295	2785.040	2776.257	2753.671	2776.257
17.5	2731.264	2751.520	2757.077	2770.879	2777.153	2745.604	2733.774	2729.113	2708.141	2729.113
20.0	2679.819	2698.820	2701.688	2704.556	2707.961	2675.875	2675.338	2673.904	2655.082	2673.904
22.5	2623.175	2637.695	2635.006	2632.496	2637.515	2601.486	2605.250	2609.014	2592.702	2609.014
25.0	2557.569	2568.862	2558.465	2562.230	2570.296	2531.040	2526.558	2536.059	2524.228	2536.059
27.5	2481.387	2492.500	2476.189	2488.557	2488.736	2453.961	2442.668	2456.112	2447.329	2456.112
30.0	2394.987	2408.969	2391.940	2400.544	2397.676	2363.618	2357.344	2368.996	2360.392	2368.996
32.5	2299.087	2313.965	2304.465	2304.106	2294.068	2265.926	2267.360	2272.379	2262.699	2272.379
35.0	2194.942	2209.820	2205.339	2197.989	2183.828	2158.375	2165.365	2165.903	2156.582	2165.903
37.5	2084.702	2098.325	2096.712	2085.419	2071.617	2045.804	2054.588	2052.078	2045.266	2052.078
40.0	1966.754	1979.302	1980.915	1969.981	1954.923	1931.083	1937.715	1931.441	1925.526	1931.441
42.5	1842.532	1856.335	1859.024	1852.212	1832.673	1812.776	1815.824	1807.937	1803.814	1807.937
45.0	1714.726	1729.783	1733.726	1728.349	1704.687	1690.706	1690.347	1682.639	1674.932	1682.639
47.5	1583.155	1602.514	1607.712	1603.589	1573.116	1562.899	1562.361	1551.248	1538.342	1551.248
50.0	1452.480	1474.349	1484.566	1478.292	1443.338	1435.809	1436.347	1417.705	1402.827	1417.705
52.5	1314.993	1342.240	1362.137	1349.051	1295.455	1306.927	1315.531	1285.775	1267.850	1285.775
55.0	1178.403	1212.820	1239.887	1208.159	1135.562	1162.988	1195.612	1156.893	1132.873	1156.893
57.5	1046.295	1087.522	1121.222	1058.663	979.792	1014.925	1078.560	1033.568	1001.123	1033.568
60.0	920.101	967.603	1004.887	913.648	814.342	866.325	961.688	915.978	874.930	915.978
62.5	800.181	853.419	881.203	759.312	659.110	715.754	838.004	806.455	756.802	806.455
65.0	687.432	747.123	760.746	613.580	519.473	575.041	721.848	704.282	647.100	704.282
67.5	582.390	648.534	642.619	482.726	399.732	449.564	603.900	609.816	547.077	609.816
70.0	487.207	556.578	527.180	370.693	300.964	341.117	490.254	521.086	455.121	521.086
72.5	401.166	470.537	419.450	276.227	223.707	251.670	385.213	437.734	371.948	437.734
75.0	322.833	385.034	319.786	200.225	166.884	182.120	289.313	354.561	296.483	354.561
77.5	251.311	303.653	229.084	142.326	127.986	135.335	203.630	277.124	229.263	277.124
80.0	186.243	226.575	148.241	101.636	89.985	96.258	133.901	203.272	168.855	203.272
82.5	124.759	152.902	85.145	60.229	47.502	53.955	76.182	136.590	117.589	136.590
85.0	76.182	81.560	37.284	22.048	17.567	18.821	31.011	70.446	70.625	70.446
87.5	36.388	24.020	9.859	8.066	6.453	6.812	8.425	17.387	32.982	17.387
90.0	4.840	0.538	0.000	0.000	0.000	0.000	0.000	0.000	2.689	0.000
92.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
117.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
122.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
127.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
132.5	0.000	0.000	0.000	0.000	0.000	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	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
152.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
157.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
162.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
167.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	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>
0.0	2930.772	2930.772	2930.772	2930.772	2930.772	2930.772	2930.772
2.5	2920.554	2959.811	2989.746	2960.528	2924.319	2895.818	2882.912
5.0	2914.818	2952.282	2985.264	2957.660	2921.271	2888.468	2874.128
7.5	2900.120	2932.385	2965.009	2941.885	2909.262	2875.741	2858.533
10.0	2873.053	2897.789	2929.159	2911.413	2886.497	2856.920	2838.457
12.5	2833.976	2853.156	2885.600	2868.930	2849.212	2830.211	2811.928
15.0	2785.040	2805.295	2837.202	2825.192	2806.012	2795.795	2775.719
17.5	2733.774	2745.604	2777.153	2770.879	2757.077	2751.520	2731.264
20.0	2675.338	2675.875	2707.961	2704.556	2701.688	2698.820	2679.819
22.5	2605.250	2601.486	2637.515	2632.496	2635.006	2637.695	2623.175
25.0	2526.558	2531.040	2570.296	2562.230	2558.465	2568.862	2557.569
27.5	2442.668	2453.961	2488.736	2488.557	2476.189	2492.500	2481.387
30.0	2357.344	2363.618	2397.676	2400.544	2391.940	2408.969	2394.987
32.5	2267.360	2265.926	2294.068	2304.106	2304.465	2313.965	2299.087
35.0	2165.365	2158.375	2183.828	2197.989	2205.339	2209.820	2194.942
37.5	2054.588	2045.804	2071.617	2085.419	2096.712	2098.325	2084.702
40.0	1937.715	1931.083	1954.923	1969.981	1980.915	1979.302	1966.754
42.5	1815.824	1812.776	1832.673	1852.212	1859.024	1856.335	1842.532
45.0	1690.347	1690.706	1704.687	1728.349	1733.726	1729.783	1714.726
47.5	1562.361	1562.899	1573.116	1603.589	1607.712	1602.514	1583.155
50.0	1436.347	1435.809	1443.338	1478.292	1484.566	1474.349	1452.480
52.5	1315.531	1306.927	1295.455	1349.051	1362.137	1342.240	1314.993
55.0	1195.612	1162.988	1135.562	1208.159	1239.887	1212.820	1178.403
57.5	1078.560	1014.925	979.792	1058.663	1121.222	1087.522	1046.295
60.0	961.688	866.325	814.342	913.648	1004.887	967.603	920.101
62.5	838.004	715.754	659.110	759.312	881.203	853.419	800.181
65.0	721.848	575.041	519.473	613.580	760.746	747.123	687.432
67.5	603.900	449.564	399.732	482.726	642.619	648.534	582.390
70.0	490.254	341.117	300.964	370.693	527.180	556.578	487.207
72.5	385.213	251.670	223.707	276.227	419.450	470.537	401.166
75.0	289.313	182.120	166.884	200.225	319.786	385.034	322.833
77.5	203.630	135.335	127.986	142.326	229.084	303.653	251.311
80.0	133.901	96.258	89.985	101.636	148.241	226.575	186.243

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CANDELA TABULATION - (Cont.)

82.5	76.182	53.955	47.502	60.229	85.145	152.902	124.759
85.0	31.011	18.821	17.567	22.048	37.284	81.560	76.182
87.5	8.425	6.812	6.453	8.066	9.859	24.020	36.388
90.0	0.000	0.000	0.000	0.000	0.000	0.538	4.840
92.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
117.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
122.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
127.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
132.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
152.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
157.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
162.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
167.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	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	1066.65	N.A.	15.20
0-30	2240.11	N.A.	32.00
0-40	3602.82	N.A.	51.50
0-60	5975.31	N.A.	85.40
0-80	6937.66	N.A.	99.10
0-90	6998.57	N.A.	100.00
10-90	6721.02	N.A.	96.00
20-40	2536.17	N.A.	36.20
20-50	3851.1	N.A.	55.00
40-70	3035.28	N.A.	43.40
60-80	962.35	N.A.	13.80
70-80	299.56	N.A.	4.30
80-90	60.91	N.A.	0.90
90-110	0.07	N.A.	0.00
90-120	0.07	N.A.	0.00
90-130	0.07	N.A.	0.00
90-150	0.07	N.A.	0.00
90-180	0.07	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	6998.64	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	277.55
10-20	789.10
20-30	1173.45
30-40	1362.71
40-50	1314.94
50-60	1057.55
60-70	662.79
70-80	299.56
80-90	60.91
90-100	0.07
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

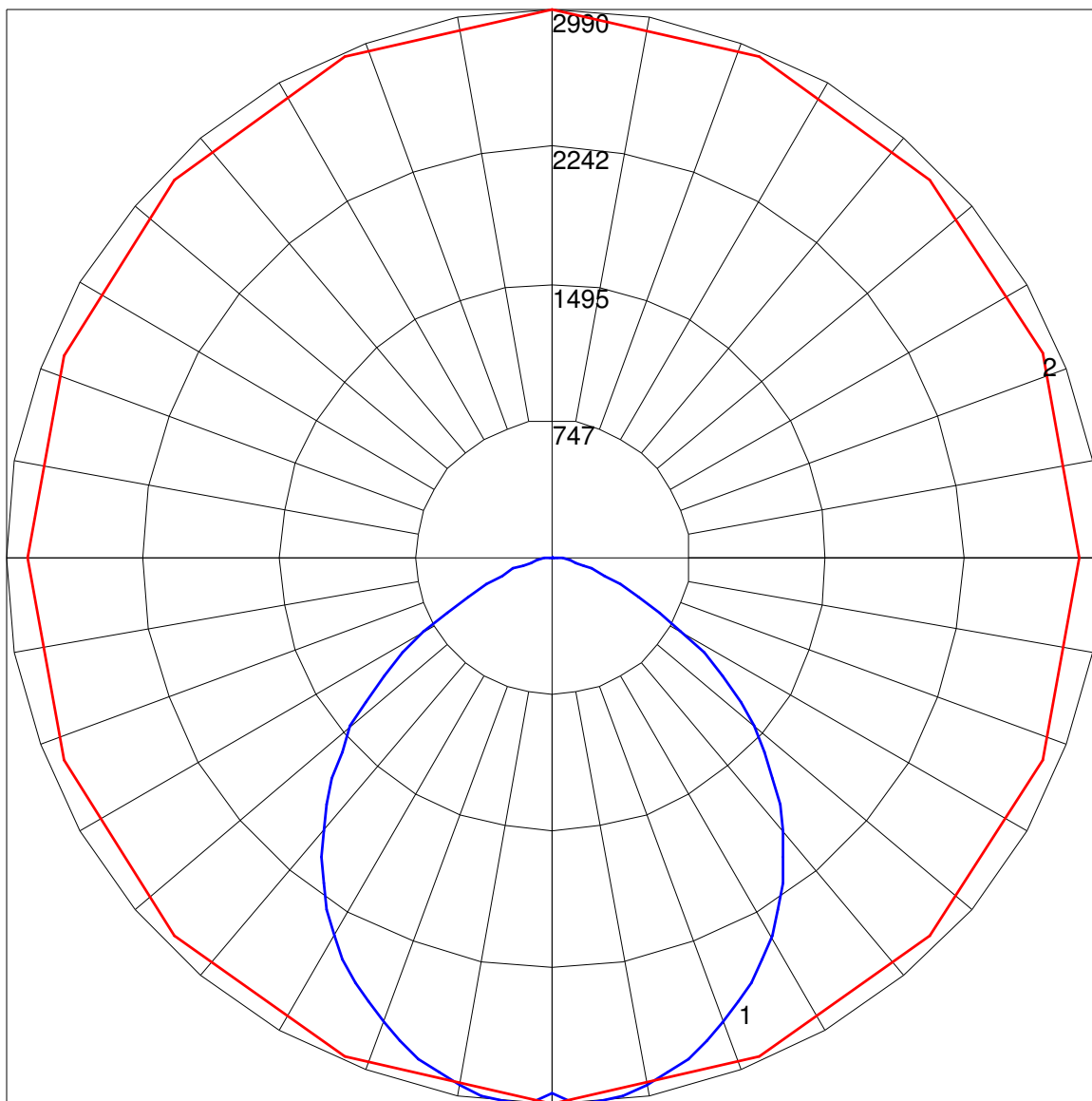
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	76	73
3	93	83	75	69	90	81	74	69	78	72	67	76	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	55
5	79	66	58	52	76	65	57	51	63	56	51	61	55	50	59	54	50	48
6	73	60	52	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42
7	68	55	46	40	66	54	46	40	52	45	40	51	44	40	50	44	39	37
8	63	50	42	36	61	49	42	36	48	41	36	47	40	36	46	40	35	34
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	33	29	28

POLAR GRAPH



Maximum Candela = 2989.746 Located At Horizontal Angle = 90, Vertical Angle = 2.5
1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)