



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AHTG-24-L120-835-A-(L100)-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TESTLAB] Intertek
 [ISSUEDATE] 04-28-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] AHT-24-L120-835-A-(L100)-DIM-UNV
 [LUMINAIRE] Recessed 2 x 4 three compartment troffer
 [LAMP]LED
 [LAMPCAT] HLM 80 CRI 3500K CCT
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] INDOOR
 [_SEARCH_MOUNTING] RECESSED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	10012
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	121
Total Luminaire Watts	83
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.22
Spacing Criterion (Diagonal)	1.30
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.92 ft
Luminous Width (90-270)	1.92 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4884	4889	4770
55	4514	4464	4143
65	3306	3957	3475
75	2148	2932	2824
85	1658	2058	2297

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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	4070.932	4070.932	4070.932	4070.932	4070.932	4070.932	4070.932	4070.932	4070.932	4070.932
2.5	4111.290	4091.911	4064.409	4045.157	4030.767	4037.994	4054.815	4080.526	4100.609	4080.526
5.0	4097.091	4078.671	4051.873	4032.430	4015.992	4018.871	4032.813	4056.286	4076.305	4056.286
7.5	4071.060	4053.024	4027.889	4010.364	3990.665	3989.322	3999.235	4019.766	4039.785	4019.766
10.0	4031.598	4014.266	3992.328	3977.362	3955.808	3948.773	3954.529	3971.158	3990.857	3971.158
12.5	3980.048	3963.995	3943.912	3933.614	3910.142	3897.478	3898.054	3910.334	3929.137	3910.334
15.0	3913.148	3900.420	3886.989	3879.122	3853.603	3835.503	3830.514	3837.166	3854.115	3837.166
17.5	3834.671	3824.310	3817.019	3813.373	3786.703	3762.974	3752.741	3753.125	3768.667	3753.125
20.0	3744.426	3736.176	3735.344	3737.583	3708.866	3679.637	3664.479	3657.891	3670.683	3657.891
22.5	3644.268	3637.233	3642.669	3650.920	3620.540	3586.002	3565.472	3552.424	3563.041	3552.424
25.0	3530.806	3528.120	3539.697	3552.232	3520.957	3482.326	3457.127	3438.259	3447.917	3438.259
27.5	3408.519	3409.350	3427.002	3442.352	3410.245	3368.033	3339.252	3316.355	3324.350	3316.355
30.0	3277.021	3282.521	3304.778	3322.495	3287.062	3242.036	3212.871	3188.183	3193.364	3188.183
32.5	3141.238	3148.529	3173.089	3192.852	3152.750	3106.700	3078.879	3054.447	3057.453	3054.447
35.0	3000.658	3008.589	3033.212	3051.377	3010.571	2963.178	2937.979	2915.977	2918.152	2915.977
37.5	2857.903	2864.427	2887.516	2899.924	2859.694	2812.109	2791.259	2773.095	2773.031	2773.095
40.0	2710.672	2718.027	2736.383	2743.035	2699.223	2655.092	2639.167	2628.358	2628.038	2628.358
42.5	2563.632	2569.772	2580.005	2580.453	2531.845	2490.848	2484.068	2481.894	2484.388	2481.894
45.0	2416.848	2421.709	2419.279	2413.203	2360.693	2322.126	2326.092	2337.860	2340.546	2337.860
47.5	2273.198	2274.350	2258.872	2241.347	2187.047	2153.021	2169.267	2194.914	2196.065	2194.914
50.0	2127.822	2129.804	2100.959	2068.533	2011.866	1984.875	2014.488	2051.264	2047.362	2051.264
52.5	1976.369	1983.149	1945.157	1897.892	1836.301	1816.921	1863.675	1900.962	1887.467	1900.962
55.0	1812.189	1826.195	1791.850	1730.962	1663.038	1651.270	1714.908	1739.596	1705.762	1739.596
57.5	1612.383	1656.195	1643.083	1567.293	1493.997	1490.160	1567.485	1555.141	1490.735	1555.141
60.0	1390.897	1451.977	1492.974	1406.950	1331.863	1336.980	1416.672	1348.620	1279.929	1348.620
62.5	1176.445	1246.095	1338.067	1253.770	1175.933	1190.260	1258.056	1149.966	1081.339	1149.966
65.0	977.919	1047.186	1170.433	1109.161	1027.934	1049.680	1085.177	966.087	890.872	966.087
67.5	800.499	868.807	992.054	972.803	887.227	916.967	914.857	788.603	718.185	788.603
70.0	639.005	700.789	824.228	843.351	754.066	791.098	756.240	627.045	566.669	627.045
72.5	501.815	551.702	671.176	716.459	629.539	666.699	606.259	482.500	438.113	482.500
75.0	389.121	427.688	531.108	588.862	511.537	537.312	463.696	370.509	337.635	370.509
77.5	300.155	325.611	403.320	464.400	405.942	410.099	344.222	278.857	256.280	278.857
80.0	226.604	241.826	293.760	345.757	306.935	297.341	244.832	202.875	187.717	202.875
82.5	161.174	170.192	202.044	238.372	218.673	197.183	161.942	136.295	127.149	136.295
85.0	101.118	107.066	125.550	144.673	140.132	112.438	92.100	76.494	71.697	76.494
87.5	43.492	48.096	59.673	68.755	69.395	46.561	36.392	30.892	30.188	30.892
90.0	17.077	16.437	14.007	10.553	8.570	2.430	2.239	2.047	1.919	2.047
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	4070.932	4070.932	4070.932	4070.932	4070.932	4070.932	4070.932
2.5	4054.815	4037.994	4030.767	4045.157	4064.409	4091.911	4111.290
5.0	4032.813	4018.871	4015.992	4032.430	4051.873	4078.671	4097.091
7.5	3999.235	3989.322	3990.665	4010.364	4027.889	4053.024	4071.060
10.0	3954.529	3948.773	3955.808	3977.362	3992.328	4014.266	4031.598
12.5	3898.054	3897.478	3910.142	3933.614	3943.912	3963.995	3980.048
15.0	3830.514	3835.503	3853.603	3879.122	3886.989	3900.420	3913.148
17.5	3752.741	3762.974	3786.703	3813.373	3817.019	3824.310	3834.671
20.0	3664.479	3679.637	3708.866	3737.583	3735.344	3736.176	3744.426
22.5	3565.472	3586.002	3620.540	3650.920	3642.669	3637.233	3644.268
25.0	3457.127	3482.326	3520.957	3552.232	3539.697	3528.120	3530.806
27.5	3339.252	3368.033	3410.245	3442.352	3427.002	3409.350	3408.519
30.0	3212.871	3242.036	3287.062	3322.495	3304.778	3282.521	3277.021
32.5	3078.879	3106.700	3152.750	3192.852	3173.089	3148.529	3141.238
35.0	2937.979	2963.178	3010.571	3051.377	3033.212	3008.589	3000.658
37.5	2791.259	2812.109	2859.694	2899.924	2887.516	2864.427	2857.903
40.0	2639.167	2655.092	2699.223	2743.035	2736.383	2718.027	2710.672
42.5	2484.068	2490.848	2531.845	2580.453	2580.005	2569.772	2563.632
45.0	2326.092	2322.126	2360.693	2413.203	2419.279	2421.709	2416.848
47.5	2169.267	2153.021	2187.047	2241.347	2258.872	2274.350	2273.198
50.0	2014.488	1984.875	2011.866	2068.533	2100.959	2129.804	2127.822
52.5	1863.675	1816.921	1836.301	1897.892	1945.157	1983.149	1976.369
55.0	1714.908	1651.270	1663.038	1730.962	1791.850	1826.195	1812.189
57.5	1567.485	1490.160	1493.997	1567.293	1643.083	1656.195	1612.383
60.0	1416.672	1336.980	1331.863	1406.950	1492.974	1451.977	1390.897
62.5	1258.056	1190.260	1175.933	1253.770	1338.067	1246.095	1176.445
65.0	1085.177	1049.680	1027.934	1109.161	1170.433	1047.186	977.919
67.5	914.857	916.967	887.227	972.803	992.054	868.807	800.499
70.0	756.240	791.098	754.066	843.351	824.228	700.789	639.005
72.5	606.259	666.699	629.539	716.459	671.176	551.702	501.815
75.0	463.696	537.312	511.537	588.862	531.108	427.688	389.121
77.5	344.222	410.099	405.942	464.400	403.320	325.611	300.155
80.0	244.832	297.341	306.935	345.757	293.760	241.826	226.604

IES INDOOR REPORT
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CANDELA TABULATION - (Cont.)

82.5	161.942	197.183	218.673	238.372	202.044	170.192	161.174
85.0	92.100	112.438	140.132	144.673	125.550	107.066	101.118
87.5	36.392	46.561	69.395	68.755	59.673	48.096	43.492
90.0	2.239	2.430	8.570	10.553	14.007	16.437	17.077
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	1472.89	N.A.	14.70
0-30	3083.97	N.A.	30.80
0-40	4949.21	N.A.	49.40
0-60	8326.04	N.A.	83.20
0-80	9879.79	N.A.	98.70
0-90	10010.83	N.A.	100.00
10-90	9626.71	N.A.	96.20
20-40	3476.33	N.A.	34.70
20-50	5306.67	N.A.	53.00
40-70	4419.34	N.A.	44.10
60-80	1553.75	N.A.	15.50
70-80	511.23	N.A.	5.10
80-90	131.04	N.A.	1.30
90-110	1.13	N.A.	0.00
90-120	1.13	N.A.	0.00
90-130	1.13	N.A.	0.00
90-150	1.13	N.A.	0.00
90-180	1.13	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	10011.95	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	384.11
10-20	1088.78
20-30	1611.08
30-40	1865.25
40-50	1830.34
50-60	1546.48
60-70	1042.52
70-80	511.23
80-90	131.04
90-100	1.13
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	105	101	97	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	86	81	98	90	85	80	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62
4	84	73	64	58	82	71	64	57	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41
7	67	54	45	39	65	53	45	39	51	44	39	50	43	38	49	43	38	36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	35	45	39	34	32
9	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	28	38	33	28	27

IES INDOOR REPORT

PHOTOMETRIC FILENAME : AHTG-24-L120-835-A-(L100)-DIM-UNV_.IES

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

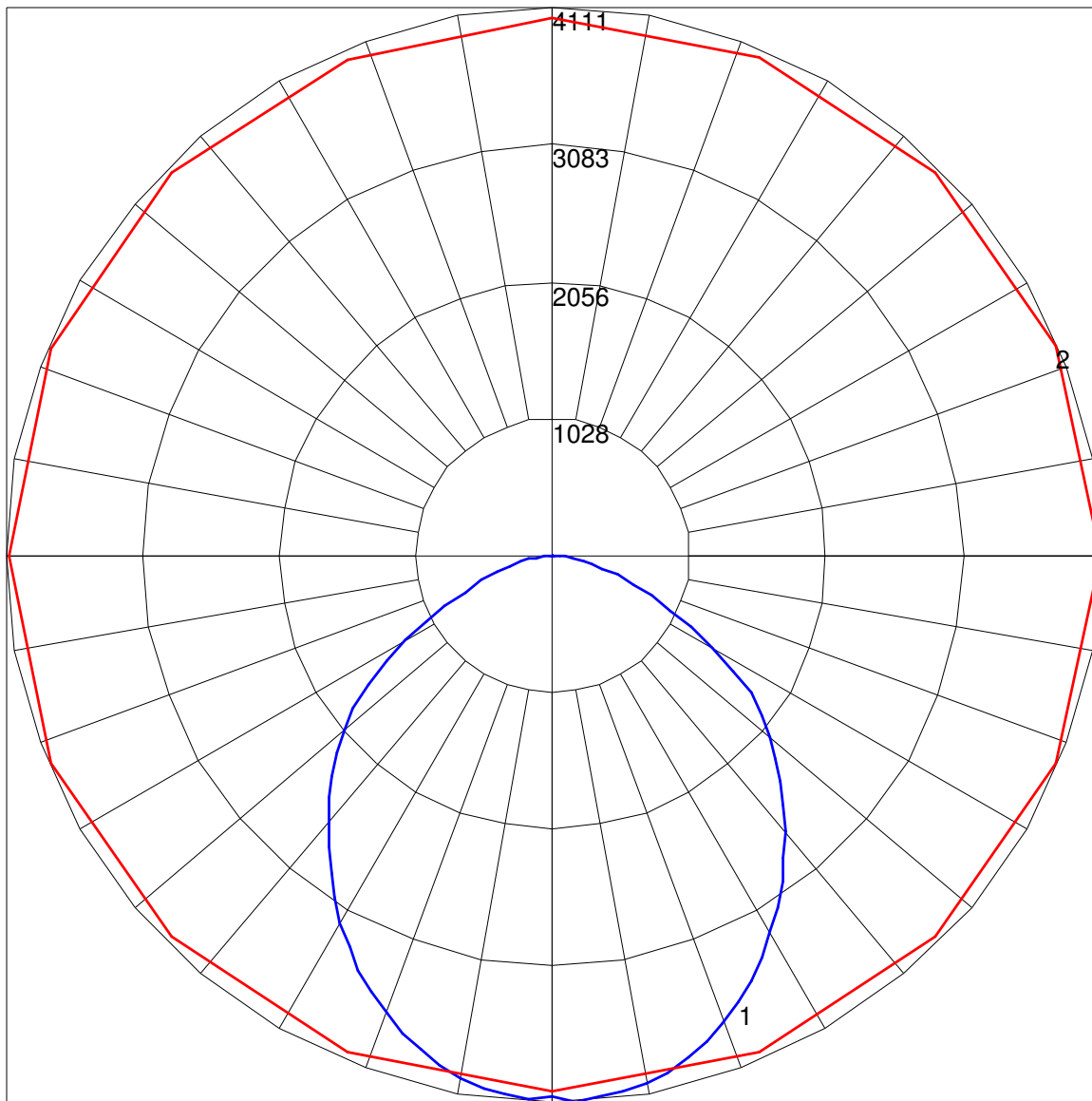
X=2H	Y=2H	17.3	18.9	17.7	19.2	19.5	16.8	18.4	17.2	18.7	19.0
	3H	18.4	19.8	18.8	20.2	20.5	18.4	19.8	18.7	20.1	20.5
	4H	18.7	20.1	19.1	20.4	20.8	18.9	20.2	19.3	20.6	21.0
	6H	18.9	20.2	19.4	20.6	20.9	19.3	20.5	19.7	20.9	21.3
	8H	19.0	20.2	19.4	20.6	21.0	19.4	20.6	19.9	21.0	21.4
	12H	19.1	20.2	19.5	20.6	21.0	19.5	20.6	19.9	21.0	21.5

UGR Viewed Endwise

4H	2H	17.9	19.2	18.3	19.6	20.0	17.4	18.8	17.8	19.1	19.5
	3H	19.2	20.3	19.6	20.7	21.1	19.2	20.3	19.6	20.7	21.1
	4H	19.6	20.6	20.0	21.0	21.5	19.9	20.9	20.3	21.3	21.7
	6H	19.9	20.8	20.4	21.2	21.7	20.4	21.3	20.9	21.7	22.2
	8H	20.0	20.8	20.5	21.3	21.7	20.6	21.4	21.0	21.8	22.3
	12H	20.1	20.8	20.6	21.3	21.8	20.7	21.4	21.2	21.9	22.4
8H	4H	19.9	20.7	20.3	21.1	21.6	20.1	20.9	20.6	21.3	21.8
	6H	20.3	20.9	20.8	21.4	21.9	20.7	21.4	21.2	21.9	22.4
	8H	20.4	21.0	20.9	21.5	22.0	21.0	21.6	21.5	22.1	22.6
	12H	20.5	21.1	21.0	21.6	22.1	21.1	21.7	21.6	22.2	22.7
12H	4H	19.9	20.6	20.4	21.1	21.6	20.1	20.8	20.6	21.3	21.8
	6H	20.3	20.9	20.9	21.4	21.9	20.8	21.4	21.3	21.8	22.4
	8H	20.5	21.0	21.0	21.5	22.1	21.0	21.5	21.5	22.0	22.6

Maximum UGR = 22.7

POLAR GRAPH



Maximum Candela = 4111.29 Located At Horizontal Angle = 0, Vertical Angle = 2.5

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

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