



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L8-835U-L8-835D-ASYUD-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM ul #13323616.01

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 26-AUG-2020

[MANUFAC] H E Williams Inc

[LUMCAT] MX4UD-4'00-L8/835U/L8/835D-ASYUD-DIM-UNV

[LUMINAIRE] White aluminum housing, frosted lens enclosure

[OTHER] This test was performed using the calibrated photodetector met

[MORE] hod of absolute photometry.

[\_CONVERT] Luminaire test position and photometric web converted from original test data

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6501
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	111
Total Luminaire Watts	58.4
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	4.00 ft
Luminous Width (90-270)	0.33 ft
Luminous Height	0.00 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8293	9915	10525
55	7884	9628	10274
65	7337	9196	9863
75	6343	8584	9363
85	4619	7942	9230

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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>
<b>0.0</b>	1152.515	1152.515	1152.515	1152.515	1152.515	1152.515	1152.515	1152.515	1152.515	1152.515
<b>2.5</b>	1153.522	1165.108	1163.596	1169.137	1171.152	1169.137	1163.596	1165.108	1153.522	1146.470
<b>5.0</b>	1148.988	1169.641	1174.678	1185.256	1187.775	1185.256	1174.678	1169.641	1148.988	1132.366
<b>7.5</b>	1141.433	1170.649	1182.234	1197.346	1202.383	1197.346	1182.234	1170.649	1141.433	1116.247
<b>10.0</b>	1130.854	1168.130	1186.768	1205.909	1213.465	1205.909	1186.768	1168.130	1130.854	1098.113
<b>12.5</b>	1117.254	1163.093	1187.271	1211.450	1219.509	1211.450	1187.271	1163.093	1117.254	1077.964
<b>15.0</b>	1101.135	1154.529	1184.753	1212.457	1220.517	1212.457	1184.753	1154.529	1101.135	1055.800
<b>17.5</b>	1082.497	1142.944	1177.701	1207.924	1217.998	1207.924	1177.701	1142.944	1082.497	1031.118
<b>20.0</b>	1061.341	1127.329	1167.122	1200.872	1212.457	1200.872	1167.122	1127.329	1061.341	1004.420
<b>22.5</b>	1037.666	1108.691	1153.018	1190.294	1201.879	1190.294	1153.018	1108.691	1037.666	976.212
<b>25.0</b>	1010.969	1086.527	1135.388	1175.182	1187.271	1175.182	1135.388	1086.527	1010.969	945.989
<b>27.5</b>	981.753	1060.837	1113.728	1155.537	1168.634	1155.537	1113.728	1060.837	981.753	914.758
<b>30.0</b>	949.515	1031.621	1088.542	1131.358	1144.455	1131.358	1088.542	1031.621	949.515	881.513
<b>32.5</b>	915.765	999.887	1057.815	1102.142	1115.743	1102.142	1057.815	999.887	915.765	846.252
<b>35.0</b>	881.009	965.130	1023.562	1069.400	1083.001	1069.400	1023.562	965.130	881.009	809.480
<b>37.5</b>	844.741	927.855	988.301	1033.636	1046.229	1033.636	988.301	927.855	844.741	771.197
<b>40.0</b>	806.458	890.579	951.026	995.354	1006.939	995.354	951.026	890.579	806.458	732.411
<b>42.5</b>	766.664	851.793	910.225	953.545	966.138	953.545	910.225	851.793	766.664	693.121
<b>45.0</b>	726.366	811.495	868.416	909.721	921.810	909.721	868.416	811.495	726.366	653.327
<b>47.5</b>	686.068	768.679	825.096	864.890	875.971	864.890	825.096	768.679	686.068	614.036
<b>50.0</b>	645.771	724.351	779.761	819.051	829.629	819.051	779.761	724.351	645.771	575.754
<b>52.5</b>	603.962	679.520	732.915	771.197	781.272	771.197	732.915	679.520	603.962	536.463
<b>55.0</b>	560.138	634.185	684.054	721.833	729.892	721.833	684.054	634.185	560.138	496.518
<b>57.5</b>	516.314	587.339	634.689	669.949	678.009	669.949	634.689	587.339	516.314	456.523
<b>60.0</b>	472.491	539.486	583.813	617.059	624.615	617.059	583.813	539.486	472.491	415.570
<b>62.5</b>	428.163	490.725	532.937	563.160	570.213	563.160	532.937	490.725	428.163	375.172
<b>65.0</b>	384.088	441.512	481.406	509.262	516.314	509.262	481.406	441.512	384.088	334.421
<b>67.5</b>	339.206	392.197	429.120	455.616	461.812	455.616	429.120	392.197	339.206	293.267
<b>70.0</b>	293.115	344.545	378.093	400.811	407.007	400.811	378.093	344.545	293.115	251.760
<b>72.5</b>	247.831	294.979	326.966	348.374	354.166	348.374	326.966	294.979	247.831	210.606
<b>75.0</b>	203.352	245.715	275.183	294.878	300.168	294.878	275.183	245.715	203.352	170.812
<b>77.5</b>	160.133	197.761	224.660	242.441	246.874	242.441	224.660	197.761	160.133	133.285
<b>80.0</b>	119.029	152.174	175.648	191.464	195.797	191.464	175.648	152.174	119.029	97.923
<b>82.5</b>	82.056	109.207	128.953	142.402	146.633	142.402	128.953	109.207	82.056	65.585
<b>85.0</b>	49.868	70.068	85.733	96.261	99.636	96.261	85.733	70.068	49.868	37.023
<b>87.5</b>	22.718	35.966	46.745	54.251	56.920	54.251	46.745	35.966	22.718	12.794
<b>90.0</b>	4.710	13.412	25.698	34.502	38.598	34.502	25.698	13.412	4.710	0.717
<b>92.5</b>	23.457	37.136	48.265	56.015	58.772	56.015	48.265	37.136	23.457	13.211
<b>95.0</b>	51.490	72.347	88.521	99.391	102.876	99.391	88.521	72.347	51.490	38.228
<b>97.5</b>	84.725	112.758	133.147	147.033	151.401	147.033	133.147	112.758	84.725	67.718
<b>100.0</b>	122.900	157.123	181.360	197.691	202.164	197.691	181.360	157.123	122.900	101.108
<b>102.5</b>	165.340	204.192	231.966	250.325	254.902	250.325	231.966	204.192	165.340	137.619
<b>105.0</b>	209.965	253.706	284.132	304.469	309.930	304.469	284.132	253.706	209.965	176.367
<b>107.5</b>	255.891	304.572	337.599	359.703	365.685	359.703	337.599	304.572	255.891	217.455
<b>110.0</b>	302.647	355.750	390.389	413.845	420.243	413.845	390.389	355.750	302.647	259.947
<b>112.5</b>	350.237	404.951	443.075	470.433	476.830	470.433	443.075	404.951	350.237	302.804
<b>115.0</b>	396.579	455.870	497.062	525.823	533.105	525.823	497.062	455.870	396.579	345.296
<b>117.5</b>	442.087	506.683	550.268	581.475	588.756	581.475	550.268	506.683	442.087	387.373
<b>120.0</b>	487.856	557.030	602.799	637.126	644.928	637.126	602.799	557.030	487.856	429.084
<b>122.5</b>	533.105	606.439	655.329	691.736	700.058	691.736	655.329	606.439	533.105	471.369
<b>125.0</b>	578.354	654.809	706.299	745.307	753.628	745.307	706.299	654.809	578.354	512.665
<b>127.5</b>	623.603	701.618	756.749	796.276	806.679	796.276	756.749	701.618	623.603	553.909
<b>130.0</b>	666.771	747.907	805.119	845.687	856.609	845.687	805.119	747.907	666.771	594.477
<b>132.5</b>	708.380	793.676	851.928	893.016	904.459	893.016	851.928	793.676	708.380	634.005

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## CANDELA TABULATION - (Cont.)

135.0	749.987	837.885	896.657	939.305	951.787	939.305	896.657	837.885	749.987	674.573
137.5	791.596	879.493	939.826	984.554	997.557	984.554	939.826	879.493	791.596	715.661
140.0	832.684	919.541	981.953	1027.723	1039.685	1027.723	981.953	919.541	832.684	756.229
142.5	872.212	958.029	1020.441	1067.250	1080.252	1067.250	1020.441	958.029	872.212	796.276
145.0	909.659	996.516	1056.848	1104.178	1118.220	1104.178	1056.848	996.516	909.659	835.804
147.5	945.547	1032.403	1092.215	1137.984	1152.027	1137.984	1092.215	1032.403	945.547	873.772
150.0	980.393	1065.169	1123.941	1168.150	1181.673	1168.150	1123.941	1065.169	980.393	910.179
152.5	1013.680	1095.335	1149.946	1193.115	1206.638	1193.115	1149.946	1095.335	1013.680	944.506
155.0	1043.846	1121.861	1172.311	1213.399	1225.881	1213.399	1172.311	1121.861	1043.846	976.753
157.5	1071.411	1144.746	1190.514	1229.002	1240.964	1229.002	1190.514	1144.746	1071.411	1007.958
160.0	1095.856	1163.990	1205.078	1239.924	1251.886	1239.924	1205.078	1163.990	1095.856	1037.085
162.5	1117.700	1180.112	1216.000	1247.206	1257.607	1247.206	1216.000	1180.112	1117.700	1064.650
165.0	1136.944	1192.074	1223.281	1251.886	1260.208	1251.886	1223.281	1192.074	1136.944	1090.135
167.5	1153.587	1200.917	1225.881	1250.846	1259.168	1250.846	1225.881	1200.917	1153.587	1113.019
170.0	1167.630	1206.118	1225.362	1245.125	1252.927	1245.125	1225.362	1206.118	1167.630	1133.824
172.5	1178.552	1208.718	1220.680	1236.284	1241.485	1236.284	1220.680	1208.718	1178.552	1152.547
175.0	1186.354	1207.678	1212.879	1223.801	1226.401	1223.801	1212.879	1207.678	1186.354	1169.190
177.5	1191.034	1202.997	1201.436	1207.157	1209.238	1207.157	1201.436	1202.997	1191.034	1183.753
180.0	1189.463	1189.463	1189.463	1189.463	1189.463	1189.463	1189.463	1189.463	1189.463	1189.463

## Vert. 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	1152.515	1152.515	1152.515	1152.515	1152.515	1152.515	1152.515
2.5	1130.854	1128.336	1129.343	1128.336	1130.854	1146.470	1153.522
5.0	1110.202	1104.661	1103.654	1104.661	1110.202	1132.366	1148.988
7.5	1088.542	1078.467	1076.453	1078.467	1088.542	1116.247	1141.433
10.0	1065.371	1051.267	1047.237	1051.267	1065.371	1098.113	1130.854
12.5	1040.688	1022.554	1017.014	1022.554	1040.688	1077.964	1117.254
15.0	1013.487	991.827	985.783	991.827	1013.487	1055.800	1101.135
17.5	984.272	961.100	953.041	961.100	984.272	1031.118	1082.497
20.0	953.545	927.855	919.292	927.855	953.545	1004.420	1061.341
22.5	922.314	893.098	884.535	893.098	922.314	976.212	1037.666
25.0	890.076	859.349	849.274	859.349	890.076	945.989	1010.969
27.5	857.334	825.096	814.014	825.096	857.334	914.758	981.753
30.0	822.577	790.843	779.761	790.843	822.577	881.513	949.515
32.5	785.805	754.575	745.004	754.575	785.805	846.252	915.765
35.0	748.530	716.292	707.225	716.292	748.530	809.480	881.009
37.5	710.751	677.505	666.927	677.505	710.751	771.197	844.741
40.0	671.964	638.215	626.629	638.215	671.964	732.411	806.458
42.5	633.682	599.932	588.850	599.932	633.682	693.121	766.664
45.0	595.902	564.168	554.597	564.168	595.902	653.327	726.366
47.5	559.131	529.411	519.841	529.411	559.131	614.036	686.068
50.0	522.359	493.697	484.781	493.697	522.359	575.754	645.771
52.5	485.638	457.933	448.916	457.933	485.638	536.463	603.962
55.0	448.463	421.867	413.102	421.867	448.463	496.518	560.138
57.5	410.986	385.750	378.396	385.750	410.986	456.523	516.314
60.0	375.373	351.749	344.596	351.749	375.373	415.570	472.491
62.5	337.745	316.992	309.990	316.992	337.745	375.172	428.163
65.0	300.168	281.933	275.687	281.933	300.168	334.421	384.088
67.5	263.597	247.226	241.383	247.226	263.597	293.267	339.206
70.0	226.725	213.074	207.936	213.074	226.725	251.760	293.115
72.5	190.558	179.526	174.942	179.526	190.558	210.606	247.831
75.0	155.197	146.633	142.603	146.633	155.197	170.812	203.352
77.5	121.749	115.100	112.078	115.100	121.749	133.285	160.133
80.0	89.965	84.877	82.610	84.877	89.965	97.923	119.029

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**CANDELA TABULATION - (Cont.)**

82.5	60.497	56.517	54.805	56.517	60.497	65.585	82.056
85.0	33.346	30.374	28.964	30.374	33.346	37.023	49.868
87.5	9.470	7.354	6.599	7.354	9.470	12.794	22.718
90.0	0.614	0.614	0.512	0.614	0.614	0.717	4.710
92.5	9.778	7.593	6.814	7.593	9.778	13.211	23.457
95.0	34.430	31.362	29.906	31.362	34.430	38.228	51.490
97.5	62.464	58.356	56.587	58.356	62.464	67.718	84.725
100.0	92.891	87.637	85.296	87.637	92.891	101.108	122.900
102.5	125.708	118.843	115.723	118.843	125.708	137.619	165.340
105.0	160.244	151.401	147.242	151.401	160.244	176.367	209.965
107.5	196.755	185.364	180.631	185.364	196.755	217.455	255.891
110.0	234.098	220.003	214.698	220.003	234.098	259.947	302.647
112.5	272.169	255.266	249.233	255.266	272.169	302.804	350.237
115.0	309.930	291.101	284.652	291.101	309.930	345.296	396.579
117.5	348.728	327.301	320.071	327.301	348.728	387.373	442.087
120.0	387.580	363.188	355.802	363.188	387.580	429.084	487.856
122.5	424.351	398.295	390.701	398.295	424.351	471.369	533.105
125.0	463.047	435.586	426.536	435.586	463.047	512.665	578.354
127.5	501.431	472.825	463.516	472.825	501.431	553.909	623.603
130.0	539.346	509.752	500.546	509.752	539.346	594.477	666.771
132.5	577.314	546.627	536.746	546.627	577.314	634.005	708.380
135.0	615.281	582.515	572.633	582.515	615.281	674.573	749.987
137.5	654.289	619.442	607.999	619.442	654.289	715.661	791.596
140.0	693.816	658.970	647.007	658.970	693.816	756.229	832.684
142.5	733.865	699.538	688.615	699.538	733.865	796.276	872.212
145.0	772.872	739.586	730.224	739.586	772.872	835.804	909.659
147.5	811.359	779.114	769.231	779.114	811.359	873.772	945.547
150.0	849.327	816.561	805.119	816.561	849.327	910.179	980.393
152.5	885.215	851.928	840.486	851.928	885.215	944.506	1013.680
155.0	919.021	887.295	876.892	887.295	919.021	976.753	1043.846
157.5	952.308	922.141	913.300	922.141	952.308	1007.958	1071.411
160.0	984.554	958.029	949.187	958.029	984.554	1037.085	1095.856
162.5	1016.280	992.355	984.034	992.355	1016.280	1064.650	1117.700
165.0	1046.446	1024.081	1017.841	1024.081	1046.446	1090.135	1136.944
167.5	1074.531	1055.807	1050.087	1055.807	1074.531	1113.019	1153.587
170.0	1100.017	1085.454	1081.293	1085.454	1100.017	1133.824	1167.630
172.5	1123.941	1113.540	1111.459	1113.540	1123.941	1152.547	1178.552
175.0	1146.306	1140.585	1139.545	1140.585	1146.306	1169.190	1186.354
177.5	1167.630	1165.030	1166.069	1165.030	1167.630	1183.753	1191.034
180.0	1189.463	1189.463	1189.463	1189.463	1189.463	1189.463	1189.463

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : MX4UD-4-00-L8-835U-L8-835D-ASYUD-DIM-UNV\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	419.77	N.A.	6.50
0-30	887.41	N.A.	13.70
0-40	1443.01	N.A.	22.20
0-60	2516.18	N.A.	38.70
0-80	3130.13	N.A.	48.10
0-90	3198.47	N.A.	49.20
10-90	3089.57	N.A.	47.50
20-40	1023.24	N.A.	15.70
20-50	1589.31	N.A.	24.40
40-70	1460.2	N.A.	22.50
60-80	613.96	N.A.	9.40
70-80	226.92	N.A.	3.50
80-90	68.33	N.A.	1.10
90-110	304.80	N.A.	4.70
90-120	704.42	N.A.	10.80
90-130	1228.02	N.A.	18.90
90-150	2386.15	N.A.	36.70
90-180	3302.42	N.A.	50.80
110-180	2997.62	N.A.	46.10
0-180	6500.89	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	108.90
10-20	310.87
20-30	467.64
30-40	555.60
40-50	566.06
50-60	507.10
60-70	387.03
70-80	226.92
80-90	68.33
90-100	70.50
100-110	234.30
110-120	399.62
120-130	523.59
130-140	584.47
140-150	573.67
150-160	482.85
160-170	320.98
170-180	112.44

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L8-835U-L8-835D-ASYUD-DIM-UNV\_.IES

## 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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49
1	97	93	89	86	90	86	82	79	72	70	68	60	58	57	49	48	46	41
2	89	81	75	70	81	75	69	65	63	59	56	53	50	47	43	41	39	34
3	81	71	64	58	74	66	59	54	56	51	47	46	43	40	38	35	33	29
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	34	31	28	25
5	68	56	48	42	62	52	45	39	44	38	34	37	33	29	30	27	25	21
6	62	50	42	36	57	47	39	34	40	34	30	33	29	26	27	24	22	19
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	25	22	19	16
8	53	41	33	28	49	38	31	26	33	27	23	28	23	20	23	20	17	15
9	50	37	30	25	46	35	28	23	30	25	21	25	21	18	21	18	15	13
10	46	34	27	22	43	32	25	21	28	22	19	23	19	16	20	16	14	12

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L8-835U-L8-835D-ASYUD-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	15.4	16.3	16.4	17.3	18.5	17.1	18.0	18.1	19.0	20.3
	3H	17.2	17.9	18.1	18.9	20.2	19.0	19.8	20.0	20.8	22.1
	4H	17.8	18.5	18.8	19.5	20.8	19.8	20.5	20.8	21.5	22.8
	6H	18.2	18.9	19.2	19.9	21.2	20.4	21.1	21.4	22.1	23.4
	8H	18.3	19.0	19.3	20.0	21.3	20.6	21.3	21.6	22.3	23.6
	12H	18.4	19.0	19.4	20.0	21.4	20.8	21.4	21.8	22.4	23.7

### UGR Viewed Endwise

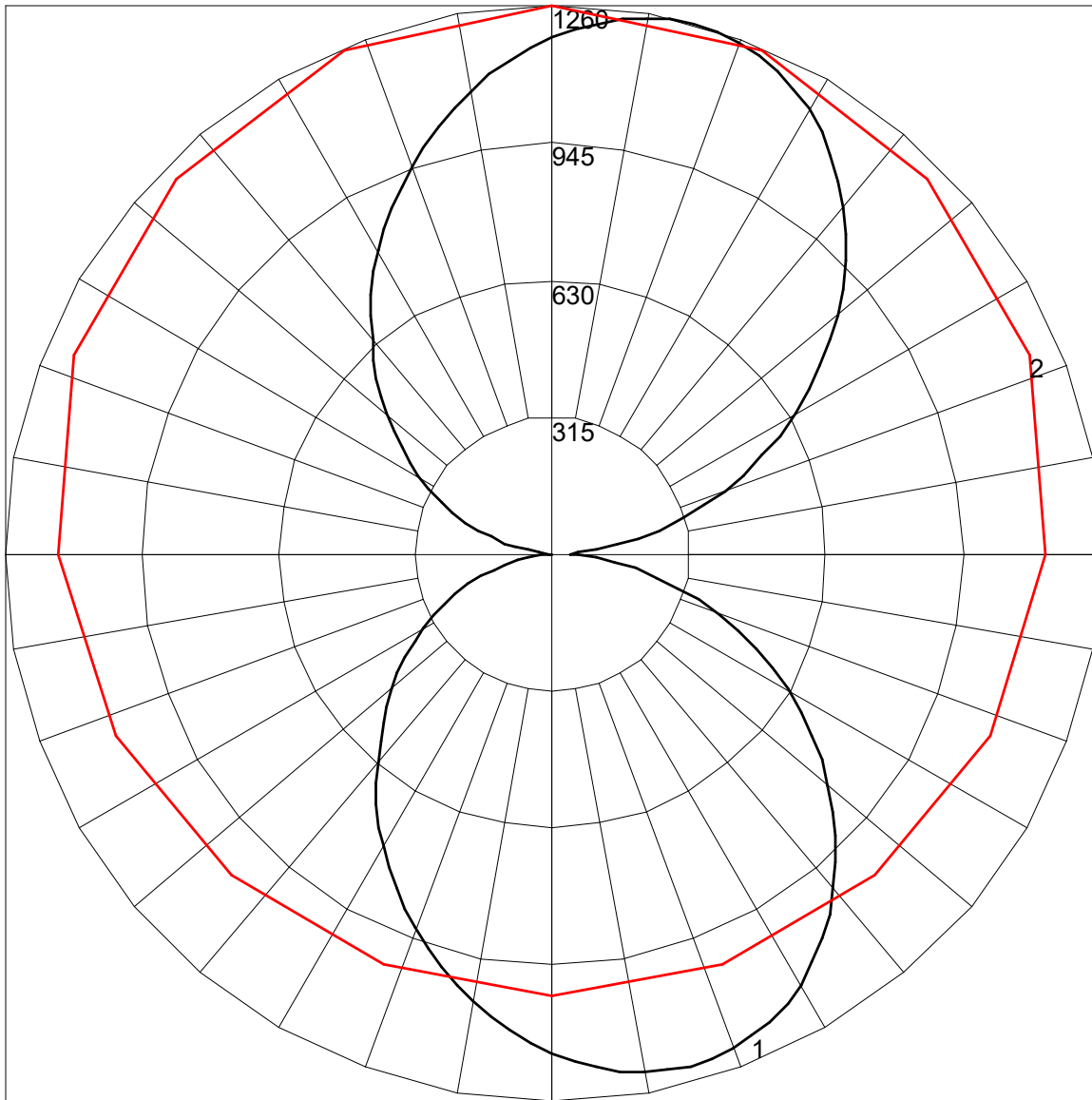
4H	2H	16.0	16.7	17.0	17.7	19.1	17.7	18.4	18.6	19.4	20.7
	3H	18.0	18.6	19.0	19.6	20.9	19.8	20.4	20.8	21.4	22.7
	4H	18.7	19.3	19.7	20.3	21.7	20.7	21.2	21.7	22.3	23.6
	6H	19.3	19.8	20.3	20.8	22.2	21.4	21.9	22.4	22.9	24.3
	8H	19.5	19.9	20.5	20.9	22.3	21.7	22.2	22.7	23.2	24.6
	12H	19.5	20.0	20.6	21.0	22.4	21.9	22.3	23.0	23.4	24.7

8H	4H	19.0	19.5	20.1	20.5	21.9	20.9	21.4	21.9	22.4	23.8
	6H	19.7	20.1	20.8	21.2	22.5	21.8	22.2	22.9	23.3	24.6
	8H	20.0	20.3	21.0	21.4	22.8	22.2	22.5	23.3	23.6	25.0
	12H	20.2	20.5	21.2	21.5	22.9	22.5	22.8	23.6	23.9	25.3

12H	4H	19.0	19.5	20.1	20.5	21.9	20.9	21.3	22.0	22.4	23.7
	6H	19.8	20.1	20.9	21.2	22.6	21.9	22.2	22.9	23.3	24.7
	8H	20.1	20.4	21.2	21.4	22.9	22.3	22.6	23.4	23.6	25.1

Maximum UGR = 25.3

POLAR GRAPH



Maximum Candela = 1260.208 Located At Horizontal Angle = 90, Vertical Angle = 165  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270)  
# 2 - Horizontal Cone Through Vertical Angle (165) (Through Max. Cd.)