



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4WUD-4-00-P7-8TWU-P7-8TWD-ASYUD-POE 4000K_.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] MX4WUD-4'00-P7/8TWU/P7/8TWD-ASYUD-PoE 4000k

[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	5708
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	130
Total Luminaire Watts	44
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	7282	8706	9241
55	6923	8454	9020
65	6442	8075	8660
75	5569	7537	8221
85	4056	6973	8104

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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	1011.929	1011.929	1011.929	1011.929	1011.929	1011.929	1011.929	1011.929	1011.929	1011.929
2.5	1012.814	1022.986	1021.659	1026.524	1028.294	1026.524	1021.659	1022.986	1012.814	1006.622
5.0	1008.833	1026.967	1031.389	1040.677	1042.889	1040.677	1031.389	1026.967	1008.833	994.238
7.5	1002.199	1027.851	1038.024	1051.292	1055.715	1051.292	1038.024	1027.851	1002.199	980.085
10.0	992.911	1025.640	1042.004	1058.811	1065.445	1058.811	1042.004	1025.640	992.911	964.163
12.5	980.970	1021.217	1042.446	1063.676	1070.752	1063.676	1042.446	1021.217	980.970	946.472
15.0	966.817	1013.698	1040.235	1064.560	1071.637	1064.560	1040.235	1013.698	966.817	927.012
17.5	950.453	1003.526	1034.043	1060.580	1069.425	1060.580	1034.043	1003.526	950.453	905.341
20.0	931.877	989.815	1024.755	1054.388	1064.560	1054.388	1024.755	989.815	931.877	881.900
22.5	911.090	973.451	1012.372	1045.100	1055.272	1045.100	1012.372	973.451	911.090	857.132
25.0	887.649	953.991	996.892	1031.832	1042.446	1031.832	996.892	953.991	887.649	830.596
27.5	861.997	931.435	977.874	1014.583	1026.082	1014.583	977.874	931.435	861.997	803.175
30.0	833.692	905.783	955.760	993.354	1004.853	993.354	955.760	905.783	833.692	773.984
32.5	804.059	877.919	928.781	967.702	979.643	967.702	928.781	877.919	804.059	743.025
35.0	773.542	847.402	898.706	938.954	950.895	938.954	898.706	847.402	773.542	710.739
37.5	741.698	814.674	867.747	907.552	918.609	907.552	867.747	814.674	741.698	677.126
40.0	708.085	781.945	835.019	873.939	884.111	873.939	835.019	781.945	708.085	643.070
42.5	673.145	747.890	799.194	837.230	848.287	837.230	799.194	747.890	673.145	608.573
45.0	637.763	712.508	762.485	798.752	809.367	798.752	762.485	712.508	637.763	573.633
47.5	602.381	674.914	724.449	759.389	769.119	759.389	724.449	674.914	602.381	539.135
50.0	566.999	635.994	684.644	719.142	728.430	719.142	684.644	635.994	566.999	505.522
52.5	530.290	596.631	643.513	677.126	685.971	677.126	643.513	596.631	530.290	471.025
55.0	491.812	556.826	600.612	633.783	640.859	633.783	600.612	556.826	491.812	435.952
57.5	453.334	515.695	557.269	588.228	595.305	588.228	557.269	515.695	453.334	400.835
60.0	414.856	473.678	512.599	541.789	548.423	541.789	512.599	473.678	414.856	364.878
62.5	375.935	430.866	467.929	494.465	500.657	494.465	467.929	430.866	375.935	329.408
65.0	337.236	387.656	422.684	447.142	453.334	447.142	422.684	387.656	337.236	293.628
67.5	297.829	344.357	376.776	400.039	405.479	400.039	376.776	344.357	297.829	257.494
70.0	257.361	302.517	331.973	351.920	357.360	351.920	331.973	302.517	257.361	221.050
72.5	217.600	258.997	287.082	305.879	310.965	305.879	287.082	258.997	217.600	184.916
75.0	178.547	215.743	241.616	258.909	263.553	258.909	241.616	215.743	178.547	149.976
77.5	140.600	173.638	197.255	212.868	216.760	212.868	197.255	173.638	140.600	117.026
80.0	104.510	133.612	154.222	168.109	171.913	168.109	154.222	133.612	104.510	85.979
82.5	72.047	95.886	113.223	125.032	128.747	125.032	113.223	95.886	72.047	57.584
85.0	43.785	61.521	75.276	84.519	87.482	84.519	75.276	61.521	43.785	32.507
87.5	19.947	31.579	41.043	47.633	49.977	47.633	41.043	31.579	19.947	11.234
90.0	4.135	11.776	22.563	30.294	33.890	30.294	22.563	11.776	4.135	0.630
92.5	20.596	32.606	42.378	49.182	51.603	49.182	42.378	32.606	20.596	11.600
95.0	45.209	63.522	77.723	87.268	90.327	87.268	77.723	63.522	45.209	33.565
97.5	74.390	99.004	116.905	129.098	132.933	129.098	116.905	99.004	74.390	59.457
100.0	107.908	137.957	159.238	173.577	177.504	173.577	159.238	137.957	107.908	88.774
102.5	145.172	179.285	203.670	219.790	223.809	219.790	203.670	179.285	145.172	120.832
105.0	184.353	222.758	249.473	267.329	272.124	267.329	249.473	222.758	184.353	154.853
107.5	224.677	267.420	296.418	315.826	321.078	315.826	296.418	267.420	224.677	190.929
110.0	265.730	312.355	342.768	363.364	368.981	363.364	342.768	312.355	265.730	228.238
112.5	307.515	355.555	389.028	413.049	418.666	413.049	389.028	355.555	307.515	265.868
115.0	348.203	400.262	436.430	461.683	468.076	461.683	436.430	400.262	348.203	303.177
117.5	388.161	444.877	483.146	510.546	516.939	510.546	483.146	444.877	388.161	340.120
120.0	428.347	489.083	529.268	559.408	566.258	559.408	529.268	489.083	428.347	376.744
122.5	468.076	532.465	575.391	607.357	614.664	607.357	575.391	532.465	468.076	413.871
125.0	507.805	574.934	620.144	654.393	661.700	654.393	620.144	574.934	507.805	450.129
127.5	547.535	616.034	664.440	699.145	708.279	699.145	664.440	616.034	547.535	486.342
130.0	585.438	656.676	706.909	742.529	752.118	742.529	706.909	656.676	585.438	521.962
132.5	621.971	696.863	748.009	784.085	794.132	784.085	748.009	696.863	621.971	556.668

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CANDELA TABULATION - (Cont.)

135.0	658.503	735.679	787.282	824.727	835.687	824.727	787.282	735.679	658.503	592.288
137.5	695.036	772.212	825.184	864.457	875.874	864.457	825.184	772.212	695.036	628.364
140.0	731.112	807.374	862.173	902.360	912.863	902.360	862.173	807.374	731.112	663.983
142.5	765.818	841.167	895.966	937.065	948.482	937.065	895.966	841.167	765.818	699.145
145.0	798.698	874.960	927.932	969.489	981.818	969.489	927.932	874.960	798.698	733.852
147.5	830.208	906.469	958.985	999.171	1011.501	999.171	958.985	906.469	830.208	767.188
150.0	860.804	935.239	986.842	1025.657	1037.531	1025.657	986.842	935.239	860.804	799.154
152.5	890.030	961.725	1009.674	1047.577	1059.451	1047.577	1009.674	961.725	890.030	829.294
155.0	916.516	985.015	1029.311	1065.387	1076.347	1065.387	1029.311	985.015	916.516	857.607
157.5	940.719	1005.108	1045.294	1079.087	1089.590	1079.087	1045.294	1005.108	940.719	885.006
160.0	962.182	1022.005	1058.081	1088.677	1099.179	1088.677	1058.081	1022.005	962.182	910.580
162.5	981.361	1036.161	1067.671	1095.070	1104.203	1095.070	1067.671	1036.161	981.361	934.783
165.0	998.258	1046.664	1074.064	1099.179	1106.486	1099.179	1074.064	1046.664	998.258	957.159
167.5	1012.871	1054.427	1076.347	1098.267	1105.573	1098.267	1076.347	1054.427	1012.871	977.252
170.0	1025.201	1058.994	1075.890	1093.243	1100.093	1093.243	1075.890	1058.994	1025.201	995.518
172.5	1034.791	1061.277	1071.780	1085.480	1090.047	1085.480	1071.780	1061.277	1034.791	1011.958
175.0	1041.641	1060.364	1064.930	1074.520	1076.803	1074.520	1064.930	1060.364	1041.641	1026.571
177.5	1045.751	1056.254	1054.883	1059.907	1061.733	1059.907	1054.883	1056.254	1045.751	1039.357
180.0	1044.371	1044.371	1044.371	1044.371	1044.371	1044.371	1044.371	1044.371	1044.371	1044.371

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	1011.929	1011.929	1011.929	1011.929	1011.929	1011.929	1011.929
2.5	992.911	990.700	991.585	990.700	992.911	1006.622	1012.814
5.0	974.778	969.913	969.028	969.913	974.778	994.238	1008.833
7.5	955.760	946.915	945.145	946.915	955.760	980.085	1002.199
10.0	935.415	923.032	919.493	923.032	935.415	964.163	992.911
12.5	913.744	897.822	892.957	897.822	913.744	946.472	980.970
15.0	889.861	870.843	865.536	870.843	889.861	927.012	966.817
17.5	864.209	843.864	836.788	843.864	864.209	905.341	950.453
20.0	837.230	814.674	807.155	814.674	837.230	881.900	931.877
22.5	809.809	784.157	776.638	784.157	809.809	857.132	911.090
25.0	781.503	754.524	745.679	754.524	781.503	830.596	887.649
27.5	752.755	724.449	714.719	724.449	752.755	803.175	861.997
30.0	722.238	694.375	684.644	694.375	722.238	773.984	833.692
32.5	689.952	662.531	654.127	662.531	689.952	743.025	804.059
35.0	657.223	628.918	620.957	628.918	657.223	710.739	773.542
37.5	624.053	594.862	585.574	594.862	624.053	677.126	741.698
40.0	589.997	560.365	550.192	560.365	589.997	643.070	708.085
42.5	556.384	526.752	517.022	526.752	556.384	608.573	673.145
45.0	523.213	495.350	486.947	495.350	523.213	573.633	637.763
47.5	490.927	464.833	456.430	464.833	490.927	539.135	602.381
50.0	458.641	433.475	425.647	433.475	458.641	505.522	566.999
52.5	426.399	402.074	394.157	402.074	426.399	471.025	530.290
55.0	393.759	370.407	362.711	370.407	393.759	435.952	491.812
57.5	360.854	338.696	332.238	338.696	360.854	400.835	453.334
60.0	329.585	308.842	302.562	308.842	329.585	364.878	414.856
62.5	296.547	278.325	272.177	278.325	296.547	329.408	375.935
65.0	263.553	247.542	242.058	247.542	263.553	293.628	337.236
67.5	231.443	217.069	211.939	217.069	231.443	257.494	297.829
70.0	199.069	187.083	182.572	187.083	199.069	221.050	257.361
72.5	167.313	157.627	153.603	157.627	167.313	184.916	217.600
75.0	136.266	128.747	125.209	128.747	136.266	149.976	178.547
77.5	106.898	101.060	98.407	101.060	106.898	117.026	140.600
80.0	78.991	74.524	72.533	74.524	78.991	85.979	104.510

IES INDOOR REPORT**PHOTOMETRIC FILENAME : MX4WUD-4-00-P7-8TWU-P7-8TWD-ASYUD-POE 4000K_.IES****CANDELA TABULATION - (Cont.)**

82.5	53.117	49.623	48.120	49.623	53.117	57.584	72.047
85.0	29.279	26.669	25.431	26.669	29.279	32.507	43.785
87.5	8.315	6.457	5.794	6.457	8.315	11.234	19.947
90.0	0.539	0.539	0.450	0.539	0.539	0.630	4.135
92.5	8.585	6.667	5.982	6.667	8.585	11.600	20.596
95.0	30.231	27.536	26.258	27.536	30.231	33.565	45.209
97.5	54.845	51.238	49.685	51.238	54.845	59.457	74.390
100.0	81.560	76.947	74.892	76.947	81.560	88.774	107.908
102.5	110.374	104.346	101.607	104.346	110.374	120.832	145.172
105.0	140.697	132.933	129.281	132.933	140.697	154.853	184.353
107.5	172.754	162.753	158.597	162.753	172.754	190.929	224.677
110.0	205.543	193.167	188.509	193.167	205.543	228.238	265.730
112.5	238.970	224.128	218.831	224.128	238.970	265.868	307.515
115.0	272.124	255.593	249.930	255.593	272.124	303.177	348.203
117.5	306.190	287.376	281.028	287.376	306.190	340.120	388.161
120.0	340.303	318.886	312.401	318.886	340.303	376.744	428.347
122.5	372.588	349.710	343.043	349.710	372.588	413.871	468.076
125.0	406.564	382.453	374.507	382.453	406.564	450.129	507.805
127.5	440.266	415.149	406.976	415.149	440.266	486.342	547.535
130.0	473.556	447.572	439.489	447.572	473.556	521.962	585.438
132.5	506.892	479.949	471.273	479.949	506.892	556.668	621.971
135.0	540.228	511.459	502.782	511.459	540.228	592.288	658.503
137.5	574.478	543.881	533.835	543.881	574.478	628.364	695.036
140.0	609.184	578.588	568.084	578.588	609.184	663.983	731.112
142.5	644.347	614.207	604.617	614.207	644.347	699.145	765.818
145.0	678.596	649.370	641.150	649.370	678.596	733.852	798.698
147.5	712.389	684.076	675.400	684.076	712.389	767.188	830.208
150.0	745.725	716.956	706.909	716.956	745.725	799.154	860.804
152.5	777.235	748.009	737.962	748.009	777.235	829.294	890.030
155.0	806.918	779.062	769.928	779.062	806.918	857.607	916.516
157.5	836.144	809.657	801.895	809.657	836.144	885.006	940.719
160.0	864.457	841.167	833.404	841.167	864.457	910.580	962.182
162.5	892.313	871.306	864.000	871.306	892.313	934.783	981.361
165.0	918.799	899.162	893.683	899.162	918.799	957.159	998.258
167.5	943.458	927.019	921.996	927.019	943.458	977.252	1012.871
170.0	965.835	953.049	949.396	953.049	965.835	995.518	1025.201
172.5	986.842	977.709	975.882	977.709	986.842	1011.958	1034.791
175.0	1006.478	1001.455	1000.542	1001.455	1006.478	1026.571	1041.641
177.5	1025.201	1022.918	1023.831	1022.918	1025.201	1039.357	1045.751
180.0	1044.371	1044.371	1044.371	1044.371	1044.371	1044.371	1044.371

IES INDOOR REPORT**PHOTOMETRIC FILENAME : MX4WUD-4-00-P7-8TWU-P7-8TWD-ASYUD-POE 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	368.57	N.A.	6.50
0-30	779.17	N.A.	13.70
0-40	1266.99	N.A.	22.20
0-60	2209.25	N.A.	38.70
0-80	2748.32	N.A.	48.10
0-90	2808.31	N.A.	49.20
10-90	2712.7	N.A.	47.50
20-40	898.43	N.A.	15.70
20-50	1395.44	N.A.	24.40
40-70	1282.08	N.A.	22.50
60-80	539.07	N.A.	9.40
70-80	199.24	N.A.	3.50
80-90	60.00	N.A.	1.10
90-110	267.62	N.A.	4.70
90-120	618.50	N.A.	10.80
90-130	1078.22	N.A.	18.90
90-150	2095.09	N.A.	36.70
90-180	2899.59	N.A.	50.80
110-180	2631.97	N.A.	46.10
0-180	5707.91	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	95.62
10-20	272.95
20-30	410.60
30-40	487.83
40-50	497.01
50-60	445.24
60-70	339.82
70-80	199.24
80-90	60.00
90-100	61.90
100-110	205.72
110-120	350.87
120-130	459.72
130-140	513.18
140-150	503.69
150-160	423.95
160-170	281.83
170-180	98.72

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	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 : MX4WUD-4-00-P7-8TWU-P7-8TWD-ASYUD-POE 4000K_.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	15.0	15.9	16.0	16.9	18.1	16.7	17.6	17.7	18.6	19.9
	3H	16.8	17.5	17.7	18.5	19.8	18.6	19.4	19.6	20.4	21.7
	4H	17.4	18.1	18.4	19.1	20.4	19.4	20.1	20.4	21.1	22.4
	6H	17.8	18.5	18.8	19.5	20.8	20.0	20.7	21.0	21.7	23.0
	8H	17.9	18.6	18.9	19.6	20.9	20.2	20.9	21.2	21.9	23.2
	12H	18.0	18.6	19.0	19.6	21.0	20.4	21.0	21.4	22.0	23.3

UGR Viewed Endwise

4H	2H	15.6	16.4	16.6	17.3	18.7	17.3	18.0	18.2	19.0	20.3
	3H	17.6	18.2	18.6	19.2	20.5	19.4	20.0	20.4	21.0	22.3
	4H	18.3	18.9	19.3	19.9	21.3	20.3	20.8	21.3	21.9	23.2
	6H	18.9	19.4	19.9	20.4	21.8	21.0	21.5	22.0	22.5	23.9
	8H	19.1	19.5	20.1	20.5	21.9	21.3	21.8	22.3	22.8	24.2
	12H	19.1	19.6	20.2	20.6	22.0	21.5	21.9	22.6	23.0	24.3

8H	4H	18.6	19.1	19.7	20.1	21.5	20.5	21.0	21.5	22.0	23.4
	6H	19.3	19.7	20.4	20.8	22.1	21.4	21.8	22.5	22.9	24.2
	8H	19.6	19.9	20.6	21.0	22.4	21.8	22.1	22.9	23.2	24.6
	12H	19.8	20.1	20.8	21.1	22.5	22.1	22.4	23.2	23.5	24.9

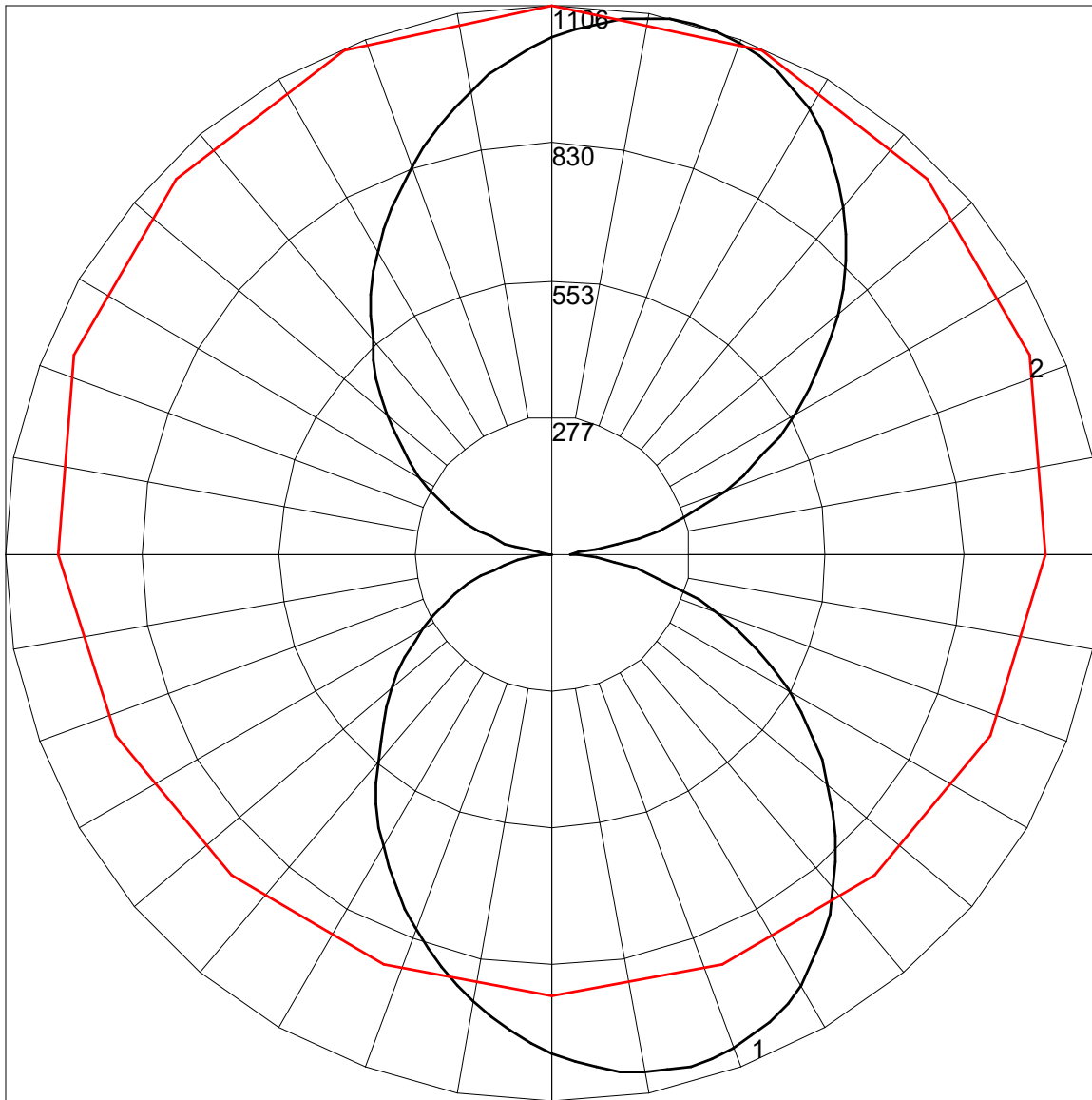
12H	4H	18.6	19.1	19.7	20.1	21.5	20.5	20.9	21.6	22.0	23.3
	6H	19.4	19.7	20.5	20.8	22.2	21.5	21.8	22.5	22.9	24.3
	8H	19.7	20.0	20.8	21.0	22.5	21.9	22.2	23.0	23.2	24.7

Maximum UGR = 24.9

IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4WUD-4-00-P7-8TWU-P7-8TWD-ASYUD-POE 4000K_.IES

POLAR GRAPH



Maximum Candela = 1106.486 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.)