



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L12-835U-L12-835D-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] MX4U-4'00-L12/835U/L12/835D-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	9153
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	104
Total Luminaire Watts	87.6
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	11677	13961	14819
55	11101	13557	14465
65	10331	12949	13888
75	8931	12086	13183
85	6504	11182	12995

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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	1622.741	1622.741	1622.741	1622.741	1622.741	1622.741	1622.741	1622.741	1622.741	1622.741
2.5	1624.159	1640.471	1638.344	1646.145	1648.982	1646.145	1638.344	1640.471	1624.159	1614.230
5.0	1617.776	1646.855	1653.947	1668.841	1672.387	1668.841	1653.947	1646.855	1617.776	1594.371
7.5	1607.137	1648.273	1664.586	1685.863	1692.955	1685.863	1664.586	1648.273	1607.137	1571.675
10.0	1592.243	1644.727	1670.969	1697.920	1708.559	1697.920	1670.969	1644.727	1592.243	1546.143
12.5	1573.094	1637.635	1671.678	1705.722	1717.069	1705.722	1671.678	1637.635	1573.094	1517.773
15.0	1550.398	1625.577	1668.132	1707.140	1718.488	1707.140	1668.132	1625.577	1550.398	1486.567
17.5	1524.156	1609.265	1658.202	1700.757	1714.942	1700.757	1658.202	1609.265	1524.156	1451.814
20.0	1494.368	1587.279	1643.308	1690.827	1707.140	1690.827	1643.308	1587.279	1494.368	1414.224
22.5	1461.034	1561.037	1623.450	1675.934	1692.246	1675.934	1623.450	1561.037	1461.034	1374.507
25.0	1423.444	1529.830	1598.626	1654.656	1671.678	1654.656	1598.626	1529.830	1423.444	1331.952
27.5	1382.308	1493.659	1568.129	1626.996	1645.436	1626.996	1568.129	1493.659	1382.308	1287.979
30.0	1336.917	1452.523	1532.667	1592.952	1611.393	1592.952	1532.667	1452.523	1336.917	1241.170
32.5	1289.398	1407.841	1489.403	1551.816	1570.966	1551.816	1489.403	1407.841	1289.398	1191.523
35.0	1240.460	1358.903	1441.175	1505.716	1524.865	1505.716	1441.175	1358.903	1240.460	1139.748
37.5	1189.395	1306.420	1391.528	1455.360	1473.091	1455.360	1391.528	1306.420	1189.395	1085.846
40.0	1135.493	1253.936	1339.045	1401.458	1417.770	1401.458	1339.045	1253.936	1135.493	1031.235
42.5	1079.463	1199.324	1281.596	1342.591	1360.322	1342.591	1281.596	1199.324	1079.463	975.914
45.0	1022.724	1142.585	1222.729	1280.887	1297.909	1280.887	1222.729	1142.585	1022.724	919.884
47.5	965.984	1082.300	1161.735	1217.765	1233.368	1217.765	1161.735	1082.300	965.984	864.563
50.0	909.245	1019.887	1097.903	1153.224	1168.118	1153.224	1097.903	1019.887	909.245	810.661
52.5	850.378	956.764	1031.944	1085.846	1100.031	1085.846	1031.944	956.764	850.378	755.340
55.0	788.675	892.933	963.148	1016.341	1027.688	1016.341	963.148	892.933	788.675	699.098
57.5	726.971	826.974	893.642	943.289	954.637	943.289	893.642	826.974	726.971	642.784
60.0	665.267	759.596	822.009	868.819	879.457	868.819	822.009	759.596	665.267	585.123
62.5	602.854	690.941	750.376	792.930	802.859	792.930	750.376	690.941	602.854	528.242
65.0	540.795	621.649	677.820	717.041	726.971	717.041	677.820	621.649	540.795	470.864
67.5	477.602	552.214	604.201	641.507	650.231	641.507	604.201	552.214	477.602	412.919
70.0	412.707	485.120	532.355	564.342	573.066	564.342	532.355	485.120	412.707	354.478
72.5	348.946	415.331	460.368	490.510	498.666	490.510	460.368	415.331	348.946	296.533
75.0	286.320	345.967	387.458	415.189	422.636	415.189	387.458	345.967	286.320	240.503
77.5	225.467	278.447	316.321	341.357	347.598	341.357	316.321	278.447	225.467	187.665
80.0	167.593	214.261	247.312	269.582	275.681	269.582	247.312	214.261	167.593	137.876
82.5	115.535	153.763	181.565	200.502	206.460	200.502	181.565	153.763	115.535	92.343
85.0	70.215	98.655	120.713	135.536	140.288	135.536	120.713	98.655	70.215	52.129
87.5	31.987	50.640	65.817	76.385	80.144	76.385	65.817	50.640	31.987	18.015
90.0	6.631	18.885	36.182	48.579	54.346	48.579	36.182	18.885	6.631	1.010
92.5	33.027	52.287	67.957	78.869	82.751	78.869	67.957	52.287	33.027	18.601
95.0	72.497	101.864	124.638	139.943	144.850	139.943	124.638	101.864	72.497	53.825
97.5	119.292	158.764	187.470	207.022	213.173	207.022	187.470	158.764	119.292	95.347
100.0	173.043	221.229	255.355	278.349	284.647	278.349	255.355	221.229	173.043	142.359
102.5	232.799	287.503	326.608	352.458	358.902	352.458	326.608	287.503	232.799	193.768
105.0	295.631	357.218	400.058	428.692	436.381	428.692	400.058	357.218	295.631	248.324
107.5	360.294	428.837	475.339	506.462	514.884	506.462	475.339	428.837	360.294	306.176
110.0	426.127	500.895	549.667	582.694	591.702	582.694	549.667	500.895	426.127	366.006
112.5	493.134	570.171	623.850	662.369	671.377	662.369	623.850	570.171	493.134	426.348
115.0	558.383	641.865	699.864	740.359	750.611	740.359	699.864	641.865	558.383	486.177
117.5	622.458	713.410	774.777	818.717	828.969	818.717	774.777	713.410	622.458	545.421
120.0	686.902	784.298	848.740	897.073	908.058	897.073	848.740	784.298	686.902	604.151
122.5	750.611	853.867	922.703	973.964	985.682	973.964	922.703	853.867	750.611	663.688
125.0	814.322	921.971	994.470	1049.392	1061.108	1049.392	994.470	921.971	814.322	721.832
127.5	878.033	987.878	1065.503	1121.157	1135.804	1121.157	1065.503	987.878	878.033	779.904
130.0	938.814	1053.053	1133.607	1190.727	1206.105	1190.727	1133.607	1053.053	938.814	837.024
132.5	997.399	1117.496	1199.515	1257.367	1273.478	1257.367	1199.515	1117.496	997.399	892.678

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CANDELA TABULATION - (Cont.)

135.0	1055.982	1179.742	1262.493	1322.542	1340.117	1322.542	1262.493	1179.742	1055.982	949.799
137.5	1114.567	1238.327	1323.274	1386.252	1404.560	1386.252	1323.274	1238.327	1114.567	1007.651
140.0	1172.419	1294.713	1382.590	1447.034	1463.876	1447.034	1382.590	1294.713	1172.419	1064.770
142.5	1228.074	1348.905	1436.780	1502.688	1520.995	1502.688	1436.780	1348.905	1228.074	1121.157
145.0	1280.800	1403.095	1488.042	1554.682	1574.454	1554.682	1488.042	1403.095	1280.800	1176.812
147.5	1331.330	1453.624	1537.839	1602.281	1622.054	1602.281	1537.839	1453.624	1331.330	1230.271
150.0	1380.394	1499.758	1582.509	1644.755	1663.795	1644.755	1582.509	1499.758	1380.394	1281.532
152.5	1427.261	1542.232	1619.125	1679.906	1698.946	1679.906	1619.125	1542.232	1427.261	1329.864
155.0	1469.735	1579.580	1650.614	1708.466	1726.041	1708.466	1650.614	1579.580	1469.735	1375.268
157.5	1508.547	1611.802	1676.244	1730.435	1747.277	1730.435	1676.244	1611.802	1508.547	1419.205
160.0	1542.965	1638.897	1696.750	1745.814	1762.656	1745.814	1696.750	1638.897	1542.965	1460.215
162.5	1573.721	1661.598	1712.128	1756.066	1770.711	1756.066	1712.128	1661.598	1573.721	1499.027
165.0	1600.817	1678.441	1722.380	1762.656	1774.373	1762.656	1722.380	1678.441	1600.817	1534.910
167.5	1624.251	1690.891	1726.041	1761.192	1772.909	1761.192	1726.041	1690.891	1624.251	1567.131
170.0	1644.024	1698.214	1725.309	1753.136	1764.121	1753.136	1725.309	1698.214	1644.024	1596.424
172.5	1659.402	1701.876	1718.718	1740.687	1748.010	1740.687	1718.718	1701.876	1659.402	1622.787
175.0	1670.387	1700.410	1707.733	1723.111	1726.773	1723.111	1707.733	1700.410	1670.387	1646.220
177.5	1676.977	1693.820	1691.622	1699.677	1702.607	1699.677	1691.622	1693.820	1676.977	1666.724
180.0	1674.764	1674.764	1674.764	1674.764	1674.764	1674.764	1674.764	1674.764	1674.764	1674.764

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	1622.741	1622.741	1622.741	1622.741	1622.741	1622.741	1622.741
2.5	1592.243	1588.697	1590.115	1588.697	1592.243	1614.230	1624.159
5.0	1563.164	1555.363	1553.944	1555.363	1563.164	1594.371	1617.776
7.5	1532.667	1518.482	1515.645	1518.482	1532.667	1571.675	1607.137
10.0	1500.042	1480.183	1474.509	1480.183	1500.042	1546.143	1592.243
12.5	1465.289	1439.757	1431.955	1439.757	1465.289	1517.773	1573.094
15.0	1426.990	1396.493	1387.982	1396.493	1426.990	1486.567	1550.398
17.5	1385.854	1353.229	1341.882	1353.229	1385.854	1451.814	1524.156
20.0	1342.591	1306.420	1294.363	1306.420	1342.591	1414.224	1494.368
22.5	1298.618	1257.482	1245.425	1257.482	1298.618	1374.507	1461.034
25.0	1253.227	1209.963	1195.778	1209.963	1253.227	1331.952	1423.444
27.5	1207.126	1161.735	1146.131	1161.735	1207.126	1287.979	1382.308
30.0	1158.188	1113.506	1097.903	1113.506	1158.188	1241.170	1336.917
32.5	1106.414	1062.441	1048.966	1062.441	1106.414	1191.523	1289.398
35.0	1053.930	1008.539	995.773	1008.539	1053.930	1139.748	1240.460
37.5	1000.737	953.927	939.033	953.927	1000.737	1085.846	1189.395
40.0	946.126	898.607	882.294	898.607	946.126	1031.235	1135.493
42.5	892.224	844.705	829.101	844.705	892.224	975.914	1079.463
45.0	839.031	794.349	780.873	794.349	839.031	919.884	1022.724
47.5	787.256	745.411	731.935	745.411	787.256	864.563	965.984
50.0	735.482	695.126	682.572	695.126	735.482	810.661	909.245
52.5	683.778	644.770	632.074	644.770	683.778	755.340	850.378
55.0	631.436	593.988	581.647	593.988	631.436	699.098	788.675
57.5	578.669	543.136	532.781	543.136	578.669	642.784	726.971
60.0	528.525	495.262	485.191	495.262	528.525	585.123	665.267
62.5	475.545	446.325	436.466	446.325	475.545	528.242	602.854
65.0	422.636	396.962	388.167	396.962	422.636	470.864	540.795
67.5	371.145	348.095	339.868	348.095	371.145	412.919	477.602
70.0	319.229	300.008	292.774	300.008	319.229	354.478	412.707
72.5	268.305	252.773	246.319	252.773	268.305	296.533	348.946
75.0	218.517	206.460	200.786	206.460	218.517	240.503	286.320
77.5	171.423	162.061	157.806	162.061	171.423	187.665	225.467
80.0	126.670	119.507	116.315	119.507	126.670	137.876	167.593

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82.5	85.180	79.577	77.165	79.577	85.180	92.343	115.535
85.0	46.952	42.767	40.781	42.767	46.952	52.129	70.215
87.5	13.334	10.355	9.291	10.355	13.334	18.015	31.987
90.0	0.865	0.865	0.721	0.865	0.865	1.010	6.631
92.5	13.767	10.691	9.594	10.691	13.767	18.601	33.027
95.0	48.478	44.157	42.108	44.157	48.478	53.825	72.497
97.5	87.950	82.165	79.675	82.165	87.950	95.347	119.292
100.0	130.790	123.393	120.097	123.393	130.790	142.359	173.043
102.5	176.997	167.331	162.938	167.331	176.997	193.768	232.799
105.0	225.624	213.173	207.316	213.173	225.624	248.324	295.631
107.5	277.031	260.993	254.329	260.993	277.031	306.176	360.294
110.0	329.610	309.765	302.295	309.765	329.610	366.006	426.127
112.5	383.214	359.414	350.920	359.414	383.214	426.348	493.134
115.0	436.381	409.871	400.790	409.871	436.381	486.177	558.383
117.5	491.010	460.839	450.660	460.839	491.010	545.421	622.458
120.0	545.713	511.369	500.970	511.369	545.713	604.151	686.902
122.5	597.487	560.799	550.108	560.799	597.487	663.688	750.611
125.0	651.970	613.305	600.563	613.305	651.970	721.832	814.322
127.5	706.015	665.738	652.630	665.738	706.015	779.904	878.033
130.0	759.399	717.731	704.769	717.731	759.399	837.024	938.814
132.5	812.858	769.651	755.739	769.651	812.858	892.678	997.399
135.0	866.315	820.181	806.267	820.181	866.315	949.799	1055.982
137.5	921.239	872.174	856.063	872.174	921.239	1007.651	1114.567
140.0	976.893	927.829	910.986	927.829	976.893	1064.770	1172.419
142.5	1033.281	984.949	969.571	984.949	1033.281	1121.157	1228.074
145.0	1088.204	1041.337	1028.155	1041.337	1088.204	1176.812	1280.800
147.5	1142.394	1096.992	1083.078	1096.992	1142.394	1230.271	1331.330
150.0	1195.853	1149.718	1133.607	1149.718	1195.853	1281.532	1380.394
152.5	1246.382	1199.515	1183.404	1199.515	1246.382	1329.864	1427.261
155.0	1293.982	1249.311	1234.664	1249.311	1293.982	1375.268	1469.735
157.5	1340.849	1298.375	1285.927	1298.375	1340.849	1419.205	1508.547
160.0	1386.252	1348.905	1336.456	1348.905	1386.252	1460.215	1542.965
162.5	1430.923	1397.236	1385.520	1397.236	1430.923	1499.027	1573.721
165.0	1473.395	1441.906	1433.120	1441.906	1473.395	1534.910	1600.817
167.5	1512.940	1486.577	1478.523	1486.577	1512.940	1567.131	1624.251
170.0	1548.824	1528.320	1522.461	1528.320	1548.824	1596.424	1644.024
172.5	1582.509	1567.864	1564.935	1567.864	1582.509	1622.787	1659.402
175.0	1613.999	1605.943	1604.479	1605.943	1613.999	1646.220	1670.387
177.5	1644.024	1640.362	1641.825	1640.362	1644.024	1666.724	1676.977
180.0	1674.764	1674.764	1674.764	1674.764	1674.764	1674.764	1674.764

IES INDOOR REPORT**PHOTOMETRIC FILENAME : MX4UD-4-00-L12-835U-L12-835D-ASYUD-DIM-UNV_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	591.03	N.A.	6.50
0-30	1249.48	N.A.	13.70
0-40	2031.76	N.A.	22.20
0-60	3542.78	N.A.	38.70
0-80	4407.23	N.A.	48.10
0-90	4503.44	N.A.	49.20
10-90	4350.11	N.A.	47.50
20-40	1440.73	N.A.	15.70
20-50	2237.74	N.A.	24.40
40-70	2055.96	N.A.	22.50
60-80	864.45	N.A.	9.40
70-80	319.51	N.A.	3.50
80-90	96.21	N.A.	1.10
90-110	429.16	N.A.	4.70
90-120	991.83	N.A.	10.80
90-130	1729.05	N.A.	18.90
90-150	3359.7	N.A.	36.70
90-180	4649.81	N.A.	50.80
110-180	4220.65	N.A.	46.10
0-180	9153.26	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	153.33
10-20	437.71
20-30	658.44
30-40	782.28
40-50	797.01
50-60	714.00
60-70	544.94
70-80	319.51
80-90	96.21
90-100	99.27
100-110	329.90
110-120	562.67
120-130	737.22
130-140	822.93
140-150	807.72
150-160	679.86
160-170	451.94
170-180	158.31

IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4UD-4-00-L12-835U-L12-835D-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	70	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	39	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

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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	16.6	17.5	17.6	18.5	19.7	18.3	19.2	19.3	20.2	21.5
	3H	18.4	19.1	19.3	20.1	21.4	20.2	21.0	21.2	22.0	23.3
	4H	19.0	19.7	20.0	20.7	22.0	21.0	21.7	22.0	22.7	24.0
	6H	19.4	20.1	20.4	21.1	22.4	21.6	22.3	22.6	23.3	24.6
	8H	19.5	20.2	20.5	21.2	22.5	21.8	22.5	22.8	23.5	24.8
	12H	19.6	20.2	20.6	21.2	22.6	22.0	22.6	23.0	23.6	24.9

UGR Viewed Endwise

4H	2H	17.2	17.9	18.2	18.9	20.3	18.9	19.6	19.8	20.6	21.9
	3H	19.2	19.8	20.2	20.8	22.1	21.0	21.6	22.0	22.6	23.9
	4H	19.9	20.5	20.9	21.5	22.9	21.9	22.4	22.9	23.5	24.8
	6H	20.5	21.0	21.5	22.0	23.4	22.6	23.1	23.6	24.1	25.5
	8H	20.7	21.1	21.7	22.1	23.5	22.9	23.4	23.9	24.4	25.8
	12H	20.7	21.2	21.8	22.2	23.6	23.1	23.5	24.2	24.6	25.9

8H	4H	20.2	20.7	21.3	21.7	23.1	22.1	22.6	23.1	23.6	25.0
	6H	20.9	21.3	22.0	22.4	23.7	23.0	23.4	24.1	24.5	25.8
	8H	21.2	21.5	22.2	22.6	24.0	23.4	23.7	24.5	24.8	26.2
	12H	21.4	21.7	22.4	22.7	24.1	23.7	24.0	24.8	25.1	26.5

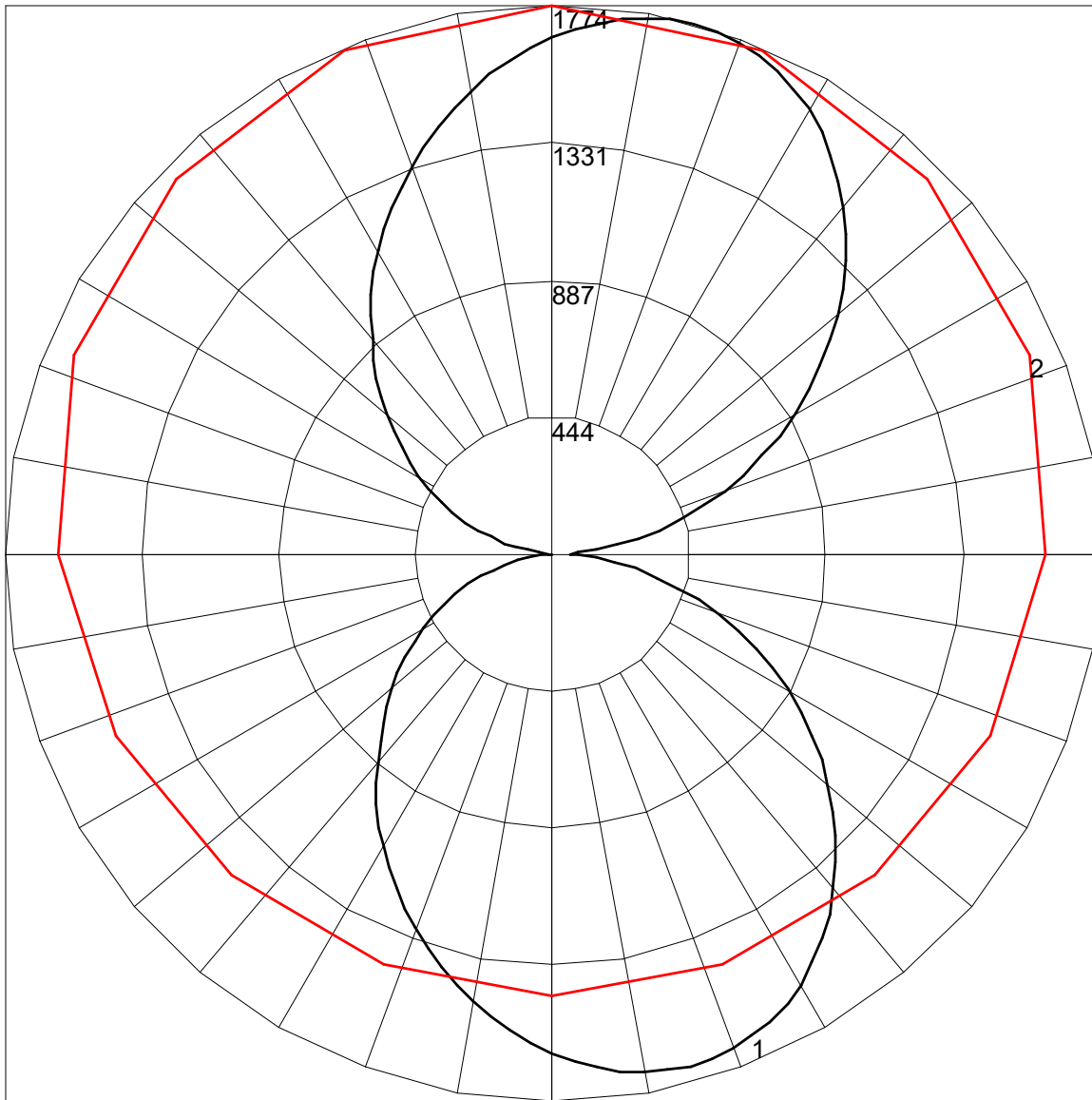
12H	4H	20.2	20.7	21.3	21.7	23.1	22.1	22.5	23.2	23.6	24.9
	6H	21.0	21.3	22.1	22.4	23.8	23.1	23.4	24.1	24.5	25.9
	8H	21.3	21.6	22.4	22.6	24.1	23.5	23.8	24.6	24.8	26.3

Maximum UGR = 26.5

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POLAR GRAPH



Maximum Candela = 1774.373 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.)