



IES INDOOR REPORT

PHOTOMETRIC FILENAME : DIG-S22-L48-835-AD-(L40)-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM DI 22 3800
 [TESTLAB] Intertek
 [ISSUE DATE] 19 MARCH 2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] DIG-S22-L48-835-AD-(L40)-DIM-UNV
 [LUMINAIRE] RECESSED DIRECT INDIRECT LED LUMINAIRE
 [LAMP] HLM 80 CRI 3500K CCT
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] INDOOR, CLASSROOM, OFFICE
 [_SEARCH_MOUNTING] RECESSED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3930
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	119
Total Luminaire Watts	33
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.36
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.92 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	4064	3711	3333
55	4167	3608	3047
65	4542	3598	2753
75	3172	3337	2453
85	2661	2385	2095

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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	1369.103	1369.103	1369.103	1369.103	1369.103	1369.103	1369.103	1369.103	1369.103	1369.103
2.5	1371.006	1369.949	1366.460	1366.037	1365.508	1364.768	1365.085	1368.997	1370.900	1368.997
5.0	1367.834	1366.671	1362.971	1361.702	1360.116	1358.953	1360.327	1364.979	1367.728	1364.979
7.5	1361.385	1360.222	1355.887	1353.138	1350.494	1348.908	1351.975	1358.530	1362.019	1358.530
10.0	1351.869	1350.177	1345.208	1340.556	1337.067	1335.269	1340.239	1349.226	1353.878	1349.226
12.5	1340.133	1337.595	1330.511	1328.185	1322.899	1321.841	1325.119	1337.172	1342.988	1337.172
15.0	1325.648	1322.159	1316.026	1305.242	1297.629	1298.052	1308.731	1321.736	1329.560	1321.736
17.5	1309.577	1304.925	1295.726	1281.452	1272.994	1272.888	1288.748	1304.185	1313.489	1304.185
20.0	1291.497	1285.047	1269.928	1255.549	1245.293	1245.927	1261.575	1283.356	1295.409	1283.356
22.5	1271.091	1262.527	1243.707	1225.098	1212.622	1213.891	1234.191	1260.835	1274.686	1260.835
25.0	1248.253	1238.737	1215.371	1192.216	1177.414	1179.423	1205.538	1236.306	1251.531	1236.306
27.5	1223.195	1211.882	1183.123	1155.950	1139.034	1143.051	1173.079	1209.239	1226.367	1209.239
30.0	1195.494	1181.960	1148.972	1116.513	1098.116	1103.508	1138.505	1179.528	1198.877	1179.528
32.5	1165.360	1149.078	1112.178	1074.750	1054.872	1061.533	1101.394	1146.752	1167.792	1146.752
35.0	1133.430	1114.716	1073.269	1030.871	1009.197	1017.444	1062.168	1110.698	1134.381	1110.698
37.5	1098.962	1077.921	1032.246	986.253	960.878	971.134	1020.616	1073.164	1099.173	1073.164
40.0	1062.168	1039.118	989.319	937.194	910.444	921.758	977.795	1034.361	1062.908	1034.361
42.5	1023.999	999.047	944.490	889.510	859.271	871.959	933.811	995.029	1025.373	995.029
45.0	984.984	957.177	899.554	839.499	807.992	822.688	886.867	954.957	987.522	954.957
47.5	944.172	915.414	852.293	788.537	756.184	772.149	840.451	911.925	948.296	911.925
50.0	902.726	871.324	804.397	737.152	703.424	721.081	793.507	869.315	906.215	869.315
52.5	860.434	826.389	756.818	685.662	650.982	670.014	746.774	826.072	864.875	826.072
55.0	819.411	782.194	709.451	634.382	599.174	619.052	700.358	783.145	825.437	783.145
57.5	779.762	738.844	662.084	583.738	547.683	568.935	654.048	741.382	788.432	741.382
60.0	741.593	696.658	614.505	533.833	496.933	519.665	607.844	700.993	753.752	700.993
62.5	701.944	654.788	567.455	484.880	447.345	471.558	562.169	661.767	715.478	661.767
65.0	658.066	609.642	521.251	436.561	398.815	424.930	517.127	617.254	671.917	617.254
67.5	589.236	556.776	475.047	389.722	351.236	378.832	471.663	563.120	598.434	563.120
70.0	467.646	474.624	426.094	343.730	305.244	334.002	421.864	477.478	475.575	477.478
72.5	345.421	358.955	368.470	298.265	260.731	288.961	362.867	360.223	343.835	360.223
75.0	281.454	279.763	296.045	252.907	217.593	243.814	289.067	270.670	273.842	270.670
77.5	219.708	222.880	221.399	206.597	176.041	197.716	211.884	212.835	210.509	212.835
80.0	164.517	164.305	168.429	158.596	135.864	150.349	159.653	155.635	156.904	155.635
82.5	120.850	117.466	117.678	111.863	98.118	105.413	110.171	110.488	113.766	110.488
85.0	79.509	75.174	71.262	68.830	62.592	67.456	70.311	72.848	76.337	72.848
87.5	40.389	38.063	34.362	33.834	31.190	32.459	32.776	34.997	36.160	34.997
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	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	1369.103	1369.103	1369.103	1369.103	1369.103	1369.103	1369.103
2.5	1365.085	1364.768	1365.508	1366.037	1366.460	1369.949	1371.006
5.0	1360.327	1358.953	1360.116	1361.702	1362.971	1366.671	1367.834
7.5	1351.975	1348.908	1350.494	1353.138	1355.887	1360.222	1361.385
10.0	1340.239	1335.269	1337.067	1340.556	1345.208	1350.177	1351.869
12.5	1325.119	1321.841	1322.899	1328.185	1330.511	1337.595	1340.133
15.0	1308.731	1298.052	1297.629	1305.242	1316.026	1322.159	1325.648
17.5	1288.748	1272.888	1272.994	1281.452	1295.726	1304.925	1309.577
20.0	1261.575	1245.927	1245.293	1255.549	1269.928	1285.047	1291.497
22.5	1234.191	1213.891	1212.622	1225.098	1243.707	1262.527	1271.091
25.0	1205.538	1179.423	1177.414	1192.216	1215.371	1238.737	1248.253
27.5	1173.079	1143.051	1139.034	1155.950	1183.123	1211.882	1223.195
30.0	1138.505	1103.508	1098.116	1116.513	1148.972	1181.960	1195.494
32.5	1101.394	1061.533	1054.872	1074.750	1112.178	1149.078	1165.360
35.0	1062.168	1017.444	1009.197	1030.871	1073.269	1114.716	1133.430
37.5	1020.616	971.134	960.878	986.253	1032.246	1077.921	1098.962
40.0	977.795	921.758	910.444	937.194	989.319	1039.118	1062.168
42.5	933.811	871.959	859.271	889.510	944.490	999.047	1023.999
45.0	886.867	822.688	807.992	839.499	899.554	957.177	984.984
47.5	840.451	772.149	756.184	788.537	852.293	915.414	944.172
50.0	793.507	721.081	703.424	737.152	804.397	871.324	902.726
52.5	746.774	670.014	650.982	685.662	756.818	826.389	860.434
55.0	700.358	619.052	599.174	634.382	709.451	782.194	819.411
57.5	654.048	568.935	547.683	583.738	662.084	738.844	779.762
60.0	607.844	519.665	496.933	533.833	614.505	696.658	741.593
62.5	562.169	471.558	447.345	484.880	567.455	654.788	701.944
65.0	517.127	424.930	398.815	436.561	521.251	609.642	658.066
67.5	471.663	378.832	351.236	389.722	475.047	556.776	589.236
70.0	421.864	334.002	305.244	343.730	426.094	474.624	467.646
72.5	362.867	288.961	260.731	298.265	368.470	358.955	345.421
75.0	289.067	243.814	217.593	252.907	296.045	279.763	281.454
77.5	211.884	197.716	176.041	206.597	221.399	222.880	219.708
80.0	159.653	150.349	135.864	158.596	168.429	164.305	164.517

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CANDELA TABULATION - (Cont.)

82.5	110.171	105.413	98.118	111.863	117.678	117.466	120.850
85.0	70.311	67.456	62.592	68.830	71.262	75.174	79.509
87.5	32.776	32.459	31.190	33.834	34.362	38.063	40.389
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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	499.72	N.A.	12.70
0-30	1058.04	N.A.	26.90
0-40	1726.65	N.A.	43.90
0-60	3049.26	N.A.	77.60
0-80	3849.69	N.A.	98.00
0-90	3929.88	N.A.	100.00
10-90	3800.38	N.A.	96.70
20-40	1226.93	N.A.	31.20
20-50	1917.02	N.A.	48.80
40-70	1836.75	N.A.	46.70
60-80	800.43	N.A.	20.40
70-80	286.30	N.A.	7.30
80-90	80.18	N.A.	2.00
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	3929.88	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	129.49
10-20	370.23
20-30	558.32
30-40	668.61
40-50	690.09
50-60	632.52
60-70	514.14
70-80	286.30
80-90	80.18
90-100	0.00
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	109	104	99	95	106	101	97	94	97	94	91	93	90	88	90	87	85	83
2	98	90	83	77	96	88	82	76	85	79	75	81	77	73	78	75	71	69
3	90	79	71	64	87	77	70	63	74	68	62	72	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	64	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	33	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

IES INDOOR REPORT

PHOTOMETRIC FILENAME : DIG-S22-L48-835-AD-(L40)-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	17.6	19.2	17.9	19.5	19.8	15.7	17.3	16.0	17.6	18.0
	3H	19.8	21.3	20.2	21.6	22.0	17.4	18.9	17.8	19.3	19.6
	4H	20.3	21.7	20.7	22.1	22.5	18.1	19.5	18.5	19.9	20.3
	6H	20.7	22.0	21.1	22.4	22.8	18.6	20.0	19.1	20.3	20.7
	8H	20.9	22.1	21.3	22.5	22.9	18.8	20.1	19.2	20.5	20.9
	12H	20.9	22.1	21.4	22.5	23.0	18.9	20.1	19.4	20.5	20.9

UGR Viewed Endwise

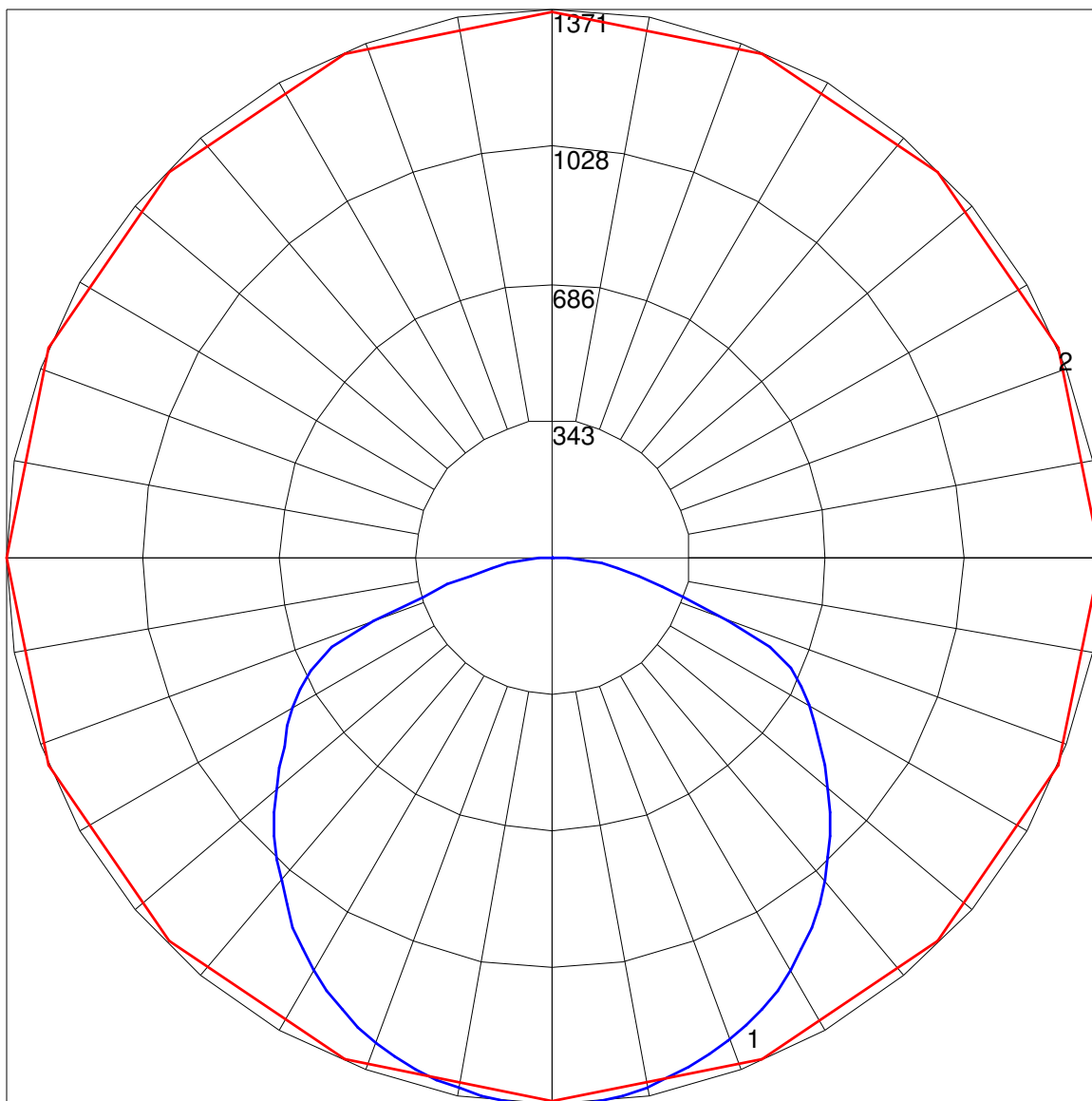
4H	2H	18.1	19.5	18.5	19.9	20.2	16.7	18.1	17.1	18.4	18.8
	3H	20.5	21.7	20.9	22.1	22.5	18.7	19.8	19.1	20.2	20.6
	4H	21.2	22.3	21.6	22.7	23.1	19.4	20.5	19.9	20.9	21.4
	6H	21.7	22.6	22.1	23.1	23.5	20.1	21.0	20.5	21.5	21.9
	8H	21.9	22.8	22.4	23.2	23.7	20.3	21.2	20.8	21.6	22.1
	12H	22.0	22.8	22.5	23.3	23.8	20.5	21.2	20.9	21.7	22.2

8H	4H	21.5	22.3	21.9	22.8	23.2	19.9	20.8	20.4	21.2	21.7
	6H	22.1	22.8	22.6	23.3	23.8	20.7	21.4	21.2	21.9	22.4
	8H	22.3	23.0	22.8	23.5	24.0	21.0	21.6	21.5	22.1	22.6
	12H	22.5	23.1	23.0	23.6	24.2	21.2	21.8	21.7	22.3	22.8

12H	4H	21.5	22.3	22.0	22.7	23.2	20.0	20.8	20.5	21.2	21.7
	6H	22.1	22.8	22.6	23.3	23.8	20.8	21.4	21.3	21.9	22.4
	8H	22.4	23.0	22.9	23.5	24.1	21.1	21.7	21.6	22.2	22.7

Maximum UGR = 24.2

POLAR GRAPH



Maximum Candela = 1371.006 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.)