



IES INDOOR REPORT

PHOTOMETRIC FILENAME : DIG-S22-L32-840-AD-(L29)-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN FROM DI 22 3800
[TESTLAB] Intertek
[ISSUE DATE] 10/20/2022
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
[LUMCAT] DIG-S22-L32-840-AD-(L29)-DIM-UNV
[LUMINAIRE] RECESSED DIRECT INDIRECT LED LUMINAIRE
[LAMP] HLM 80 CRI 4000K 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	3006
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	137
Total Luminaire Watts	22
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	3108	2839	2550
55	3188	2760	2331
65	3474	2752	2106
75	2426	2552	1876
85	2036	1824	1602

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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	1047.207	1047.207	1047.207	1047.207	1047.207	1047.207	1047.207	1047.207	1047.207	1047.207
2.5	1048.663	1047.854	1045.185	1044.862	1044.458	1043.892	1044.134	1047.126	1048.582	1047.126
5.0	1046.237	1045.347	1042.517	1041.546	1040.333	1039.444	1040.495	1044.053	1046.156	1044.053
7.5	1041.304	1040.414	1037.098	1034.996	1032.974	1031.761	1034.106	1039.120	1041.789	1039.120
10.0	1034.025	1032.731	1028.930	1025.372	1022.703	1021.328	1025.129	1032.003	1035.562	1032.003
12.5	1025.048	1023.108	1017.689	1015.910	1011.866	1011.058	1013.565	1022.784	1027.232	1022.784
15.0	1013.969	1011.300	1006.610	998.361	992.538	992.862	1001.030	1010.977	1016.961	1010.977
17.5	1001.677	998.118	991.082	980.165	973.695	973.614	985.745	997.552	1004.669	997.552
20.0	987.847	982.914	971.350	960.351	952.507	952.992	964.961	981.620	990.840	981.620
22.5	972.239	965.689	951.293	937.060	927.517	928.488	944.015	964.395	974.989	964.395
25.0	954.771	947.493	929.620	911.909	900.587	902.123	922.099	945.632	957.278	945.632
27.5	935.604	926.951	904.954	884.170	871.231	874.304	897.271	924.929	938.031	924.929
30.0	914.416	904.064	878.832	854.005	839.933	844.058	870.826	902.204	917.004	902.204
32.5	891.368	878.913	850.689	822.061	806.857	811.952	842.440	877.134	893.228	877.134
35.0	866.944	852.630	820.928	788.499	771.920	778.228	812.437	849.557	867.672	849.557
37.5	840.580	824.487	789.550	754.371	734.962	742.806	780.654	820.847	840.742	820.847
40.0	812.437	794.807	756.716	716.846	696.386	705.039	747.901	791.168	813.003	791.168
42.5	783.242	764.156	722.427	680.373	657.244	666.949	714.259	761.083	784.293	761.083
45.0	753.400	732.131	688.056	642.121	618.021	629.262	678.352	730.433	755.341	730.433
47.5	722.184	700.187	651.907	603.141	578.394	590.606	642.849	697.518	725.338	697.518
50.0	690.482	666.463	615.272	563.837	538.039	551.545	606.942	664.927	693.151	664.927
52.5	658.134	632.093	578.879	524.453	497.927	512.484	571.197	631.850	661.530	631.850
55.0	626.755	598.289	542.649	485.230	458.300	473.504	535.694	599.016	631.365	599.016
57.5	596.429	565.131	506.418	446.492	418.915	435.170	500.272	567.072	603.060	567.072
60.0	567.234	532.863	470.026	408.321	380.097	397.484	464.931	536.179	576.534	536.179
62.5	536.907	500.838	434.038	370.877	342.168	360.688	429.995	506.176	547.259	506.176
65.0	503.345	466.306	398.697	333.919	305.048	325.023	395.543	472.129	513.939	472.129
67.5	450.698	425.870	363.356	298.093	268.656	289.763	360.769	430.723	457.734	430.723
70.0	357.695	363.033	325.913	262.914	233.477	255.474	322.678	365.216	363.761	365.216
72.5	264.208	274.559	281.838	228.139	199.430	221.022	277.552	275.530	262.995	275.530
75.0	215.280	213.986	226.441	193.445	166.434	186.490	221.103	207.031	209.458	207.031
77.5	168.051	170.477	169.345	158.023	134.651	151.230	162.067	162.795	161.015	162.795
80.0	125.836	125.675	128.829	121.308	103.920	115.000	122.116	119.043	120.014	119.043
82.5	92.436	89.848	90.010	85.562	75.049	80.629	84.268	84.511	87.018	84.511
85.0	60.815	57.500	54.508	52.647	47.876	51.596	53.780	55.721	58.389	55.721
87.5	30.893	29.114	26.283	25.879	23.857	24.828	25.070	26.769	27.658	26.769
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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PHOTOMETRIC FILENAME : DIG-S22-L32-840-AD-(L29)-DIM-UNV_.IES

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	1047.207	1047.207	1047.207	1047.207	1047.207	1047.207	1047.207
2.5	1044.134	1043.892	1044.458	1044.862	1045.185	1047.854	1048.663
5.0	1040.495	1039.444	1040.333	1041.546	1042.517	1045.347	1046.237
7.5	1034.106	1031.761	1032.974	1034.996	1037.098	1040.414	1041.304
10.0	1025.129	1021.328	1022.703	1025.372	1028.930	1032.731	1034.025
12.5	1013.565	1011.058	1011.866	1015.910	1017.689	1023.108	1025.048
15.0	1001.030	992.862	992.538	998.361	1006.610	1011.300	1013.969
17.5	985.745	973.614	973.695	980.165	991.082	998.118	1001.677
20.0	964.961	952.992	952.507	960.351	971.350	982.914	987.847
22.5	944.015	928.488	927.517	937.060	951.293	965.689	972.239
25.0	922.099	902.123	900.587	911.909	929.620	947.493	954.771
27.5	897.271	874.304	871.231	884.170	904.954	926.951	935.604
30.0	870.826	844.058	839.933	854.005	878.832	904.064	914.416
32.5	842.440	811.952	806.857	822.061	850.689	878.913	891.368
35.0	812.437	778.228	771.920	788.499	820.928	852.630	866.944
37.5	780.654	742.806	734.962	754.371	789.550	824.487	840.580
40.0	747.901	705.039	696.386	716.846	756.716	794.807	812.437
42.5	714.259	666.949	657.244	680.373	722.427	764.156	783.242
45.0	678.352	629.262	618.021	642.121	688.056	732.131	753.400
47.5	642.849	590.606	578.394	603.141	651.907	700.187	722.184
50.0	606.942	551.545	538.039	563.837	615.272	666.463	690.482
52.5	571.197	512.484	497.927	524.453	578.879	632.093	658.134
55.0	535.694	473.504	458.300	485.230	542.649	598.289	626.755
57.5	500.272	435.170	418.915	446.492	506.418	565.131	596.429
60.0	464.931	397.484	380.097	408.321	470.026	532.863	567.234
62.5	429.995	360.688	342.168	370.877	434.038	500.838	536.907
65.0	395.543	325.023	305.048	333.919	398.697	466.306	503.345
67.5	360.769	289.763	268.656	298.093	363.356	425.870	450.698
70.0	322.678	255.474	233.477	262.914	325.913	363.033	357.695
72.5	277.552	221.022	199.430	228.139	281.838	274.559	264.208
75.0	221.103	186.490	166.434	193.445	226.441	213.986	215.280
77.5	162.067	151.230	134.651	158.023	169.345	170.477	168.051
80.0	122.116	115.000	103.920	121.308	128.829	125.675	125.836

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PHOTOMETRIC FILENAME : DIG-S22-L32-840-AD-(L29)-DIM-UNV_.IES

CANDELA TABULATION - (Cont.)

82.5	84.268	80.629	75.049	85.562	90.010	89.848	92.436
85.0	53.780	51.596	47.876	52.647	54.508	57.500	60.815
87.5	25.070	24.828	23.857	25.879	26.283	29.114	30.893
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	382.23	N.A.	12.70
0-30	809.28	N.A.	26.90
0-40	1320.69	N.A.	43.90
0-60	2332.34	N.A.	77.60
0-80	2944.58	N.A.	98.00
0-90	3005.9	N.A.	100.00
10-90	2906.86	N.A.	96.70
20-40	938.46	N.A.	31.20
20-50	1466.3	N.A.	48.80
40-70	1404.9	N.A.	46.70
60-80	612.24	N.A.	20.40
70-80	218.99	N.A.	7.30
80-90	61.33	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	3005.9	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	99.05
10-20	283.18
20-30	427.05
30-40	511.41
40-50	527.84
50-60	483.81
60-70	393.25
70-80	218.99
80-90	61.33
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

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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	18.2	16.9	18.5	18.8	14.7	16.3	15.0	16.6	17.0
	3H	18.8	20.3	19.2	20.6	21.0	16.4	17.9	16.8	18.3	18.6
	4H	19.3	20.7	19.7	21.1	21.5	17.1	18.5	17.5	18.9	19.3
	6H	19.7	21.0	20.1	21.4	21.8	17.6	19.0	18.1	19.3	19.7
	8H	19.9	21.1	20.3	21.5	21.9	17.8	19.1	18.2	19.5	19.9
	12H	19.9	21.1	20.4	21.5	22.0	17.9	19.1	18.4	19.5	19.9

UGR Viewed Endwise

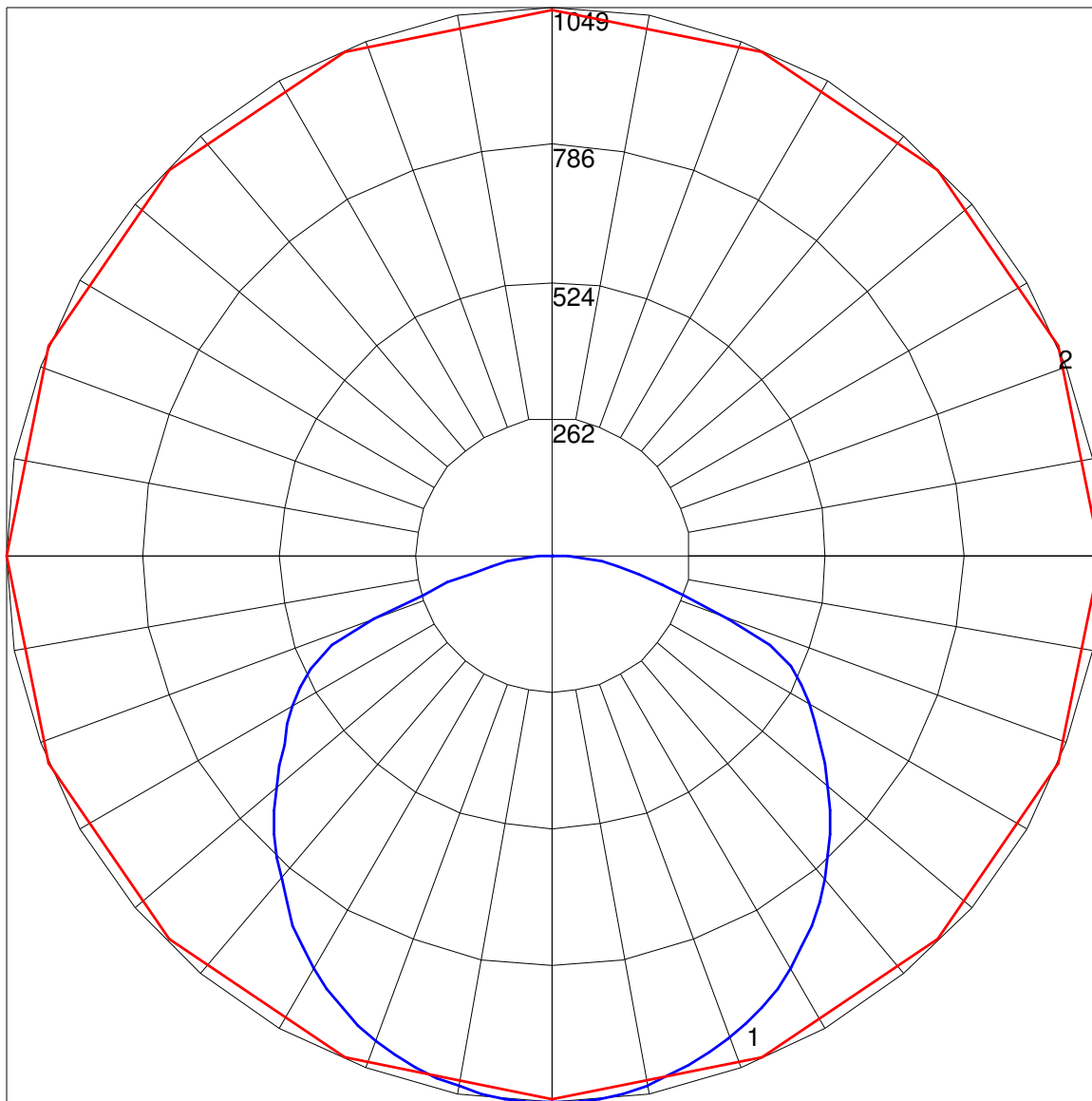
4H	2H	17.1	18.5	17.5	18.9	19.2	15.7	17.1	16.1	17.4	17.8
	3H	19.5	20.7	19.9	21.1	21.5	17.7	18.8	18.1	19.2	19.6
	4H	20.2	21.3	20.6	21.7	22.1	18.4	19.5	18.9	19.9	20.4
	6H	20.7	21.6	21.1	22.1	22.5	19.1	20.0	19.5	20.5	20.9
	8H	20.9	21.8	21.4	22.2	22.7	19.3	20.2	19.8	20.6	21.1
	12H	21.0	21.8	21.5	22.3	22.8	19.5	20.2	19.9	20.7	21.2

8H	4H	20.5	21.3	20.9	21.8	22.2	18.9	19.8	19.4	20.2	20.7
	6H	21.1	21.8	21.6	22.3	22.8	19.7	20.4	20.2	20.9	21.4
	8H	21.3	22.0	21.8	22.5	23.0	20.0	20.6	20.5	21.1	21.6
	12H	21.5	22.1	22.0	22.6	23.2	20.2	20.8	20.7	21.3	21.8

12H	4H	20.5	21.3	21.0	21.7	22.2	19.0	19.8	19.5	20.2	20.7
	6H	21.1	21.8	21.6	22.3	22.8	19.8	20.4	20.3	20.9	21.4
	8H	21.4	22.0	21.9	22.5	23.1	20.1	20.7	20.6	21.2	21.7

Maximum UGR = 23.2

POLAR GRAPH



Maximum Candela = 1048.663 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.)