

IES INDOOR REPORT

PHOTOMETRIC FILENAME : DIS-22-L32-835-AD-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]GEN FROM 101511920CHI-006
[TESTLAB]Intertek
[ISSUE DATE] 08-22-2023
[MANUFACTURER]WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO. 64836
[LUMINAIRE] 2x2' SURFACE LUMINAIRE
[MORE] FROST ACRYLIC LINEAR RIBBED DIFFUSER
[LUMCAT] DIS-22-L32-835-AD-DIM-UNV
[LAMPCAT] HLM 80 CRI, 3500K CCT
[SEARCH_SOURCETYPE]LED
[SEARCH_APPLICATION]INDOOR,ARCHITECTURAL,DIRECT-INDIRECT
[SEARCH_MOUNTING]SURFACE

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3257
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	149
Total Luminaire Watts	21.83
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)	1.88 ft
Luminous Height	0.00 ft



LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3423	3149	2866
55	3479	3059	2615
65	3805	3030	2355
75	2828	2960	2092
85	2437	2096	1742

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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	1147.922	1147.922	1147.922	1147.922	1147.922	1147.922	1147.922	1147.922	1147.922	1147.922
2.5	1150.115	1149.187	1145.982	1145.307	1144.885	1143.788	1144.801	1148.344	1149.946	1148.344
5.0	1147.584	1146.403	1143.451	1141.342	1139.992	1138.811	1139.824	1144.379	1146.572	1144.379
7.5	1141.932	1140.751	1137.040	1134.172	1131.641	1130.460	1132.316	1137.883	1140.667	1137.883
10.0	1133.412	1132.063	1127.592	1123.880	1120.253	1118.566	1121.940	1128.520	1132.316	1128.520
12.5	1122.277	1120.422	1114.685	1110.383	1105.322	1103.803	1108.359	1116.626	1121.181	1116.626
15.0	1108.696	1105.828	1099.586	1093.681	1087.776	1086.173	1092.331	1102.285	1107.852	1102.285
17.5	1093.765	1089.885	1082.039	1074.194	1066.771	1065.084	1073.519	1085.414	1092.584	1085.414
20.0	1077.062	1072.001	1061.372	1052.177	1043.151	1041.464	1052.093	1066.855	1075.038	1066.855
22.5	1058.673	1052.177	1038.427	1027.376	1017.001	1015.567	1028.220	1045.766	1056.311	1045.766
25.0	1037.921	1030.329	1013.626	999.623	988.319	986.464	1002.154	1023.918	1035.728	1023.918
27.5	1015.820	1006.540	986.632	969.171	956.939	955.505	974.738	999.792	1013.289	999.792
30.0	991.272	980.643	957.529	936.272	922.775	922.859	944.370	973.388	988.151	973.388
32.5	965.965	952.805	925.980	901.685	886.670	887.429	912.989	944.960	960.819	944.960
35.0	938.380	923.702	893.165	864.990	848.710	850.144	879.247	914.508	932.391	914.508
37.5	909.446	892.406	858.748	826.861	808.725	811.087	844.323	882.199	901.854	882.199
40.0	877.644	859.676	822.897	786.708	767.137	770.933	807.544	849.553	871.233	849.553
42.5	846.348	825.849	785.780	745.879	723.440	729.008	770.258	815.895	839.684	815.895
45.0	812.521	791.010	747.313	705.219	680.334	686.492	730.695	781.140	806.700	781.140
47.5	777.513	754.990	709.353	662.366	636.132	643.892	691.638	745.795	772.198	745.795
50.0	741.493	718.970	669.621	619.007	591.844	601.039	652.412	708.172	736.684	708.172
52.5	706.147	681.431	629.299	575.901	547.642	558.102	613.102	671.139	700.242	671.139
55.0	669.874	643.302	588.892	533.048	503.523	515.249	573.623	634.023	665.403	634.023
57.5	635.288	605.763	548.485	490.448	459.827	472.480	533.807	597.159	631.576	597.159
60.0	602.726	569.574	508.332	448.270	416.889	430.302	494.244	561.223	599.099	561.223
62.5	572.527	534.904	468.600	406.513	374.964	389.473	455.440	526.300	564.429	526.300
65.0	539.712	500.740	429.880	365.769	334.051	349.910	417.311	488.086	527.481	488.086
67.5	501.330	464.213	392.089	326.544	294.151	311.359	379.013	442.702	466.913	442.702
70.0	424.566	413.262	354.128	288.161	255.431	272.977	337.172	371.337	361.720	371.337
72.5	303.936	323.929	311.359	250.032	217.893	234.848	287.402	273.905	276.183	273.905
75.0	245.646	242.018	257.118	212.072	181.704	196.803	226.581	221.520	225.400	221.520
77.5	194.610	194.610	189.971	172.931	146.864	158.168	168.375	168.797	167.026	168.797
80.0	143.322	143.490	144.081	133.367	112.953	118.774	126.366	122.654	123.920	122.654
82.5	104.939	102.156	101.312	94.142	81.320	81.826	84.947	85.537	88.405	85.537
85.0	71.281	65.714	61.327	56.941	50.951	50.614	52.048	53.988	58.122	53.988
87.5	37.707	34.755	30.115	27.078	24.210	21.511	21.427	22.186	23.451	22.186
90.0	3.627	4.133	4.387	3.796	2.699	1.350	0.844	0.337	0.337	0.337
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	0.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.084	0.084	0.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000
132.5	0.169	0.169	0.169	0.084	0.084	0.000	0.000	0.000	0.000	0.000

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CANDELA TABULATION - (Cont.)

135.0	0.253	0.253	0.169	0.169	0.084	0.000	0.000	0.000	0.000	0.000
137.5	0.253	0.253	0.253	0.169	0.084	0.000	0.000	0.000	0.000	0.000
140.0	0.337	0.337	0.253	0.253	0.169	0.000	0.000	0.000	0.000	0.000
142.5	0.337	0.337	0.337	0.253	0.169	0.000	0.000	0.000	0.000	0.000
145.0	0.337	0.337	0.337	0.253	0.169	0.000	0.000	0.000	0.000	0.000
147.5	0.337	0.337	0.337	0.253	0.169	0.000	0.000	0.000	0.000	0.000
150.0	0.253	0.253	0.253	0.253	0.169	0.000	0.000	0.000	0.000	0.000
152.5	0.253	0.253	0.253	0.253	0.169	0.000	0.000	0.000	0.000	0.000
155.0	0.253	0.253	0.253	0.253	0.169	0.000	0.000	0.000	0.000	0.000
157.5	0.253	0.253	0.253	0.253	0.169	0.000	0.000	0.000	0.000	0.000
160.0	0.253	0.253	0.253	0.253	0.169	0.000	0.000	0.000	0.000	0.000
162.5	0.253	0.253	0.253	0.253	0.169	0.000	0.000	0.000	0.000	0.000
165.0	0.253	0.253	0.253	0.253	0.169	0.084	0.084	0.084	0.084	0.084
167.5	0.337	0.253	0.253	0.253	0.169	0.084	0.084	0.084	0.084	0.084
170.0	0.253	0.253	0.253	0.253	0.169	0.084	0.084	0.084	0.084	0.084
172.5	0.253	0.253	0.253	0.253	0.169	0.084	0.084	0.084	0.169	0.084
175.0	0.253	0.253	0.253	0.253	0.253	0.169	0.169	0.169	0.169	0.169
177.5	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.169
180.0	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.169

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	1147.922	1147.922	1147.922	1147.922	1147.922	1147.922	1147.922
2.5	1144.801	1143.788	1144.885	1145.307	1145.982	1149.187	1150.115
5.0	1139.824	1138.811	1139.992	1141.342	1143.451	1146.403	1147.584
7.5	1132.316	1130.460	1131.641	1134.172	1137.040	1140.751	1141.932
10.0	1121.940	1118.566	1120.253	1123.880	1127.592	1132.063	1133.412
12.5	1108.359	1103.803	1105.322	1110.383	1114.685	1120.422	1122.277
15.0	1092.331	1086.173	1087.776	1093.681	1099.586	1105.828	1108.696
17.5	1073.519	1065.084	1066.771	1074.194	1082.039	1089.885	1093.765
20.0	1052.093	1041.464	1043.151	1052.177	1061.372	1072.001	1077.062
22.5	1028.220	1015.567	1017.001	1027.376	1038.427	1052.177	1058.673
25.0	1002.154	986.464	988.319	999.623	1013.626	1030.329	1037.921
27.5	974.738	955.505	956.939	969.171	986.632	1006.540	1015.820
30.0	944.370	922.859	922.775	936.272	957.529	980.643	991.272
32.5	912.989	887.429	886.670	901.685	925.980	952.805	965.965
35.0	879.247	850.144	848.710	864.990	893.165	923.702	938.380
37.5	844.323	811.087	808.725	826.861	858.748	892.406	909.446
40.0	807.544	770.933	767.137	786.708	822.897	859.676	877.644
42.5	770.258	729.008	723.440	745.879	785.780	825.849	846.348
45.0	730.695	686.492	680.334	705.219	747.313	791.010	812.521
47.5	691.638	643.892	636.132	662.366	709.353	754.990	777.513
50.0	652.412	601.039	591.844	619.007	669.621	718.970	741.493
52.5	613.102	558.102	547.642	575.901	629.299	681.431	706.147
55.0	573.623	515.249	503.523	533.048	588.892	643.302	669.874
57.5	533.807	472.480	459.827	490.448	548.485	605.763	635.288
60.0	494.244	430.302	416.889	448.270	508.332	569.574	602.726
62.5	455.440	389.473	374.964	406.513	468.600	534.904	572.527
65.0	417.311	349.910	334.051	365.769	429.880	500.740	539.712
67.5	379.013	311.359	294.151	326.544	392.089	464.213	501.330
70.0	337.172	272.977	255.431	288.161	354.128	413.262	424.566
72.5	287.402	234.848	217.893	250.032	311.359	323.929	303.936
75.0	226.581	196.803	181.704	212.072	257.118	242.018	245.646
77.5	168.375	158.168	146.864	172.931	189.971	194.610	194.610
80.0	126.366	118.774	112.953	133.367	144.081	143.490	143.322

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CANDELA TABULATION - (Cont.)

82.5	84.947	81.826	81.320	94.142	101.312	102.156	104.939
85.0	52.048	50.614	50.951	56.941	61.327	65.714	71.281
87.5	21.427	21.511	24.210	27.078	30.115	34.755	37.707
90.0	0.844	1.350	2.699	3.796	4.387	4.133	3.627
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	0.084
130.0	0.000	0.000	0.000	0.000	0.084	0.084	0.084
132.5	0.000	0.000	0.084	0.084	0.169	0.169	0.169
135.0	0.000	0.000	0.084	0.169	0.169	0.253	0.253
137.5	0.000	0.000	0.084	0.169	0.253	0.253	0.253
140.0	0.000	0.000	0.169	0.253	0.253	0.337	0.337
142.5	0.000	0.000	0.169	0.253	0.337	0.337	0.337
145.0	0.000	0.000	0.169	0.253	0.337	0.337	0.337
147.5	0.000	0.000	0.169	0.253	0.337	0.337	0.337
150.0	0.000	0.000	0.169	0.253	0.253	0.253	0.253
152.5	0.000	0.000	0.169	0.253	0.253	0.253	0.253
155.0	0.000	0.000	0.169	0.253	0.253	0.253	0.253
157.5	0.000	0.000	0.169	0.253	0.253	0.253	0.253
160.0	0.000	0.000	0.169	0.253	0.253	0.253	0.253
162.5	0.000	0.000	0.169	0.253	0.253	0.253	0.253
165.0	0.084	0.084	0.169	0.253	0.253	0.253	0.253
167.5	0.084	0.084	0.169	0.253	0.253	0.253	0.337
170.0	0.084	0.084	0.169	0.253	0.253	0.253	0.253
172.5	0.084	0.084	0.169	0.253	0.253	0.253	0.253
175.0	0.169	0.169	0.253	0.253	0.253	0.253	0.253
177.5	0.169	0.169	0.169	0.169	0.169	0.169	0.169
180.0	0.169	0.169	0.169	0.169	0.169	0.169	0.169

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	417.98	N.A.	12.80
0-30	883.38	N.A.	27.10
0-40	1439.22	N.A.	44.20
0-60	2532.77	N.A.	77.80
0-80	3190.84	N.A.	98.00
0-90	3256.25	N.A.	100.00
10-90	3147.72	N.A.	96.60
20-40	1021.24	N.A.	31.40
20-50	1593.41	N.A.	48.90
40-70	1514.25	N.A.	46.50
60-80	658.06	N.A.	20.20
70-80	237.36	N.A.	7.30
80-90	65.41	N.A.	2.00
90-110	0.33	N.A.	0.00
90-120	0.33	N.A.	0.00
90-130	0.34	N.A.	0.00
90-150	0.51	N.A.	0.00
90-180	0.63	N.A.	0.00
110-180	0.29	N.A.	0.00
0-180	3256.88	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	108.53
10-20	309.44
20-30	465.40
30-40	555.84
40-50	572.17
50-60	521.39
60-70	420.70
70-80	237.36
80-90	65.41
90-100	0.33
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.07
140-150	0.10
150-160	0.06
160-170	0.04
170-180	0.02

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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	91	88	90	87	85	83
2	99	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	64	74	68	62	72	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	62	56	52	49
5	75	62	53	47	73	61	53	46	59	52	46	57	51	45	55	49	45	43
6	70	56	47	41	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	65	51	42	36	63	50	42	36	49	41	35	47	40	35	46	40	35	33
8	60	46	38	32	59	46	38	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	29	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	16.8	18.5	17.2	18.8	19.1	15.1	16.8	15.5	17.1	17.4
	3H	19.3	20.7	19.6	21.1	21.4	16.9	18.4	17.2	18.7	19.0
	4H	19.8	21.2	20.2	21.6	22.0	17.5	18.9	17.9	19.3	19.7
	6H	20.3	21.6	20.7	21.9	22.3	18.0	19.4	18.5	19.7	20.1
	8H	20.4	21.6	20.8	22.0	22.4	18.2	19.5	18.7	19.9	20.3
	12H	20.5	21.7	20.9	22.1	22.5	18.3	19.5	18.8	19.9	20.3

UGR Viewed Endwise

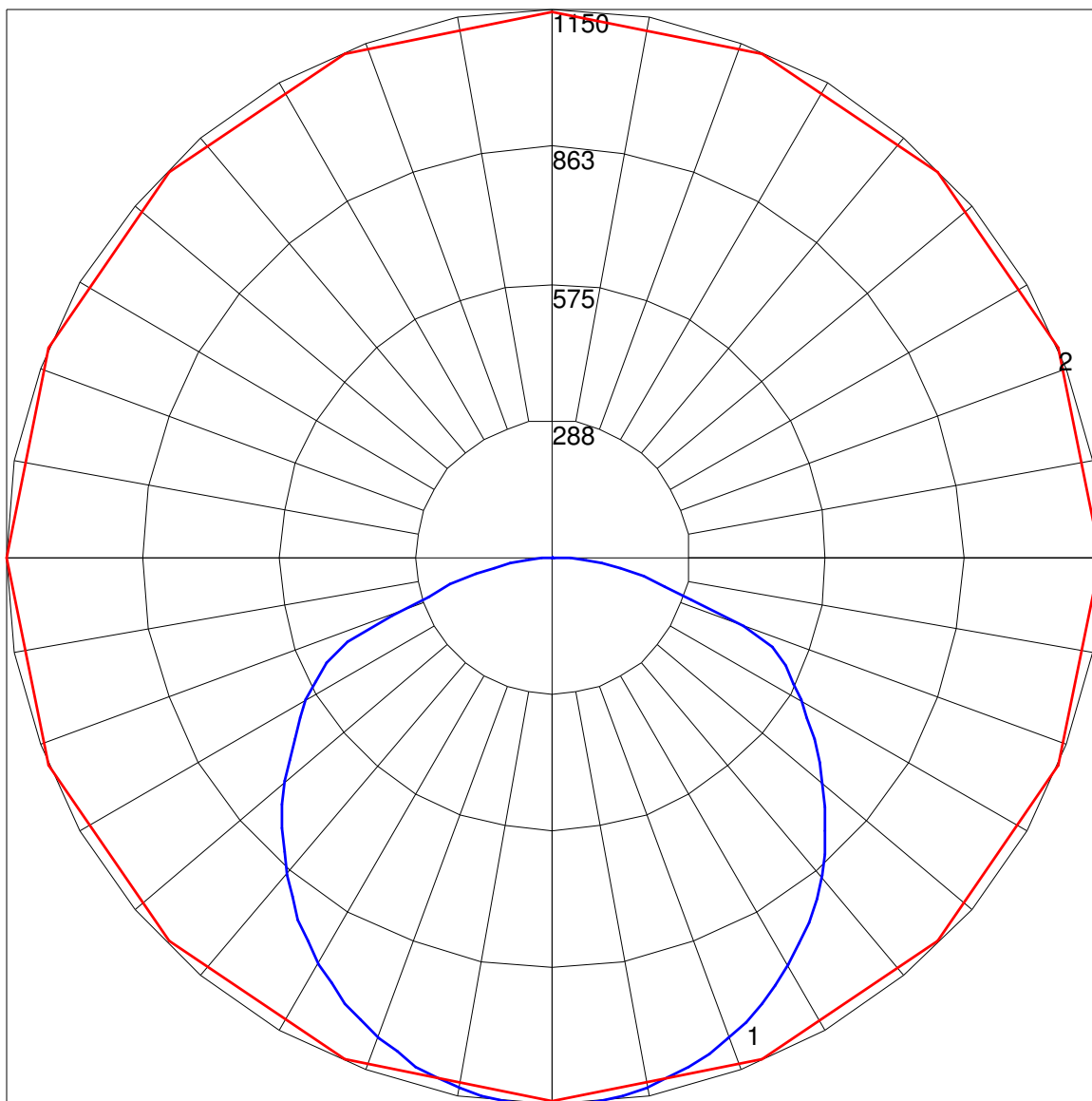
4H	2H	17.4	18.8	17.8	19.2	19.5	16.0	17.5	16.4	17.8	18.2
	3H	20.0	21.2	20.4	21.6	22.0	18.0	19.2	18.4	19.6	20.0
	4H	20.7	21.8	21.2	22.2	22.6	18.8	19.9	19.2	20.3	20.7
	6H	21.3	22.2	21.7	22.6	23.1	19.4	20.4	19.9	20.8	21.3
	8H	21.5	22.3	21.9	22.8	23.2	19.7	20.5	20.1	21.0	21.4
	12H	21.6	22.4	22.1	22.9	23.4	19.8	20.6	20.3	21.1	21.5

8H	4H	21.0	21.9	21.5	22.3	22.8	19.3	20.2	19.8	20.6	21.1
	6H	21.7	22.4	22.2	22.9	23.3	20.1	20.8	20.5	21.3	21.7
	8H	21.9	22.6	22.4	23.1	23.6	20.3	21.0	20.8	21.5	22.0
	12H	22.1	22.7	22.6	23.2	23.8	20.6	21.1	21.1	21.6	22.2

12H	4H	21.0	21.8	21.5	22.3	22.7	19.3	20.1	19.8	20.6	21.1
	6H	21.7	22.4	22.2	22.8	23.4	20.1	20.8	20.7	21.3	21.8
	8H	22.0	22.6	22.5	23.1	23.6	20.5	21.0	21.0	21.5	22.1

Maximum UGR = 23.8

POLAR GRAPH



Maximum Candela = 1150.115 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.)