



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-LW-CSU-LW-WHD-WM\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.10 and #13257153.01

[TESTLAB]

[ISSUE DATE] 10-FEB-2021

[MANUFAC] WILLIAMS INDOOR

[MORE] H E Williams Inc. - Carthage, MO

[LUMCAT] 4CRDI-L12-835U-L12-835D-xxx-DIM1-UNV-LW-CSU-LW-WHD-WM

[MORE]

[LUMINAIRE] White formed aluminum housing, wide distrib white painted flush prismatic lens trim up,

[MORE] wide distrib white painted flush prismatic lens trim down

[LAMP] Two white LEDs (one up/one down)

[\_SEARCH\_SOURCETYPE] LED

[\_SEARCH\_APPLICATION] INDOOR, DIRECT, INDIRECT

[\_SEARCH\_MOUNTING] WALL

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2724
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	96
Total Luminaire Watts	28.5
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	Circular w/ Sides
Luminous Length (0-180)	0.31 ft (Diameter)
Luminous Width (90-270)	0.31 ft (Diameter)
Luminous Height	1.44 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3530	3530	3530
55	2258	2258	2258
65	1332	1332	1332
75	638	638	638
85	120	120	120

**IES INDOOR REPORT**

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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>
<b>0.0</b>	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387
<b>2.5</b>	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545
<b>5.0</b>	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405
<b>7.5</b>	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809
<b>10.0</b>	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336
<b>12.5</b>	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951
<b>15.0</b>	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426
<b>17.5</b>	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691
<b>20.0</b>	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255
<b>22.5</b>	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469
<b>25.0</b>	832.824	832.824	832.824	832.824	832.824	832.824	832.824	832.824	832.824	832.824
<b>27.5</b>	638.337	638.337	638.337	638.337	638.337	638.337	638.337	638.337	638.337	638.337
<b>30.0</b>	463.944	463.944	463.944	463.944	463.944	463.944	463.944	463.944	463.944	463.944
<b>32.5</b>	330.386	330.386	330.386	330.386	330.386	330.386	330.386	330.386	330.386	330.386
<b>35.0</b>	241.212	241.212	241.212	241.212	241.212	241.212	241.212	241.212	241.212	241.212
<b>37.5</b>	186.820	186.820	186.820	186.820	186.820	186.820	186.820	186.820	186.820	186.820
<b>40.0</b>	154.944	154.944	154.944	154.944	154.944	154.944	154.944	154.944	154.944	154.944
<b>42.5</b>	135.415	135.415	135.415	135.415	135.415	135.415	135.415	135.415	135.415	135.415
<b>45.0</b>	122.341	122.341	122.341	122.341	122.341	122.341	122.341	122.341	122.341	122.341
<b>47.5</b>	112.173	112.173	112.173	112.173	112.173	112.173	112.173	112.173	112.173	112.173
<b>50.0</b>	103.135	103.135	103.135	103.135	103.135	103.135	103.135	103.135	103.135	103.135
<b>52.5</b>	94.742	94.742	94.742	94.742	94.742	94.742	94.742	94.742	94.742	94.742
<b>55.0</b>	86.672	86.672	86.672	86.672	86.672	86.672	86.672	86.672	86.672	86.672
<b>57.5</b>	78.682	78.682	78.682	78.682	78.682	78.682	78.682	78.682	78.682	78.682
<b>60.0</b>	70.612	70.612	70.612	70.612	70.612	70.612	70.612	70.612	70.612	70.612
<b>62.5</b>	62.542	62.542	62.542	62.542	62.542	62.542	62.542	62.542	62.542	62.542
<b>65.0</b>	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553
<b>67.5</b>	47.129	47.129	47.129	47.129	47.129	47.129	47.129	47.129	47.129	47.129
<b>70.0</b>	40.108	40.108	40.108	40.108	40.108	40.108	40.108	40.108	40.108	40.108
<b>72.5</b>	33.410	33.410	33.410	33.410	33.410	33.410	33.410	33.410	33.410	33.410
<b>75.0</b>	26.954	26.954	26.954	26.954	26.954	26.954	26.954	26.954	26.954	26.954
<b>77.5</b>	20.982	20.982	20.982	20.982	20.982	20.982	20.982	20.982	20.982	20.982
<b>80.0</b>	15.414	15.414	15.414	15.414	15.414	15.414	15.414	15.414	15.414	15.414
<b>82.5</b>	10.087	10.087	10.087	10.087	10.087	10.087	10.087	10.087	10.087	10.087
<b>85.0</b>	5.084	5.084	5.084	5.084	5.084	5.084	5.084	5.084	5.084	5.084
<b>87.5</b>	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968
<b>90.0</b>	2.395	2.395	2.395	2.395	2.395	2.395	2.395	2.395	2.395	2.395
<b>92.5</b>	2.824	2.824	2.824	2.824	2.824	2.824	2.824	2.824	2.824	2.824
<b>95.0</b>	4.789	4.789	4.789	4.789	4.789	4.789	4.789	4.789	4.789	4.789
<b>97.5</b>	7.798	7.798	7.798	7.798	7.798	7.798	7.798	7.798	7.798	7.798
<b>100.0</b>	11.850	11.850	11.850	11.850	11.850	11.850	11.850	11.850	11.850	11.850
<b>102.5</b>	16.332	16.332	16.332	16.332	16.332	16.332	16.332	16.332	16.332	16.332
<b>105.0</b>	21.244	21.244	21.244	21.244	21.244	21.244	21.244	21.244	21.244	21.244
<b>107.5</b>	26.525	26.525	26.525	26.525	26.525	26.525	26.525	26.525	26.525	26.525
<b>110.0</b>	32.296	32.296	32.296	32.296	32.296	32.296	32.296	32.296	32.296	32.296
<b>112.5</b>	38.498	38.498	38.498	38.498	38.498	38.498	38.498	38.498	38.498	38.498
<b>115.0</b>	45.129	45.129	45.129	45.129	45.129	45.129	45.129	45.129	45.129	45.129
<b>117.5</b>	52.129	52.129	52.129	52.129	52.129	52.129	52.129	52.129	52.129	52.129
<b>120.0</b>	59.128	59.128	59.128	59.128	59.128	59.128	59.128	59.128	59.128	59.128
<b>122.5</b>	65.882	65.882	65.882	65.882	65.882	65.882	65.882	65.882	65.882	65.882
<b>125.0</b>	72.145	72.145	72.145	72.145	72.145	72.145	72.145	72.145	72.145	72.145
<b>127.5</b>	78.285	78.285	78.285	78.285	78.285	78.285	78.285	78.285	78.285	78.285
<b>130.0</b>	84.978	84.978	84.978	84.978	84.978	84.978	84.978	84.978	84.978	84.978
<b>132.5</b>	93.267	93.267	93.267	93.267	93.267	93.267	93.267	93.267	93.267	93.267

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## CANDELA TABULATION - (Cont.)

135.0	104.564	104.564	104.564	104.564	104.564	104.564	104.564	104.564	104.564	104.564
137.5	120.160	120.160	120.160	120.160	120.160	120.160	120.160	120.160	120.160	120.160
140.0	141.957	141.957	141.957	141.957	141.957	141.957	141.957	141.957	141.957	141.957
142.5	173.087	173.087	173.087	173.087	173.087	173.087	173.087	173.087	173.087	173.087
145.0	217.417	217.417	217.417	217.417	217.417	217.417	217.417	217.417	217.417	217.417
147.5	282.194	282.194	282.194	282.194	282.194	282.194	282.194	282.194	282.194	282.194
150.0	381.908	381.908	381.908	381.908	381.908	381.908	381.908	381.908	381.908	381.908
152.5	528.286	528.286	528.286	528.286	528.286	528.286	528.286	528.286	528.286	528.286
155.0	728.818	728.818	728.818	728.818	728.818	728.818	728.818	728.818	728.818	728.818
157.5	979.330	979.330	979.330	979.330	979.330	979.330	979.330	979.330	979.330	979.330
160.0	1254.402	1254.402	1254.402	1254.402	1254.402	1254.402	1254.402	1254.402	1254.402	1254.402
162.5	1523.334	1523.334	1523.334	1523.334	1523.334	1523.334	1523.334	1523.334	1523.334	1523.334
165.0	1762.794	1762.794	1762.794	1762.794	1762.794	1762.794	1762.794	1762.794	1762.794	1762.794
167.5	1956.204	1956.204	1956.204	1956.204	1956.204	1956.204	1956.204	1956.204	1956.204	1956.204
170.0	2094.968	2094.968	2094.968	2094.968	2094.968	2094.968	2094.968	2094.968	2094.968	2094.968
172.5	2183.998	2183.998	2183.998	2183.998	2183.998	2183.998	2183.998	2183.998	2183.998	2183.998
175.0	2230.662	2230.662	2230.662	2230.662	2230.662	2230.662	2230.662	2230.662	2230.662	2230.662
177.5	2246.012	2246.012	2246.012	2246.012	2246.012	2246.012	2246.012	2246.012	2246.012	2246.012
180.0	2249.000	2249.000	2249.000	2249.000	2249.000	2249.000	2249.000	2249.000	2249.000	2249.000

## 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	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387
2.5	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545
5.0	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405
7.5	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809
10.0	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336
12.5	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951
15.0	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426
17.5	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691
20.0	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255
22.5	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469
25.0	832.824	832.824	832.824	832.824	832.824	832.824	832.824
27.5	638.337	638.337	638.337	638.337	638.337	638.337	638.337
30.0	463.944	463.944	463.944	463.944	463.944	463.944	463.944
32.5	330.386	330.386	330.386	330.386	330.386	330.386	330.386
35.0	241.212	241.212	241.212	241.212	241.212	241.212	241.212
37.5	186.820	186.820	186.820	186.820	186.820	186.820	186.820
40.0	154.944	154.944	154.944	154.944	154.944	154.944	154.944
42.5	135.415	135.415	135.415	135.415	135.415	135.415	135.415
45.0	122.341	122.341	122.341	122.341	122.341	122.341	122.341
47.5	112.173	112.173	112.173	112.173	112.173	112.173	112.173
50.0	103.135	103.135	103.135	103.135	103.135	103.135	103.135
52.5	94.742	94.742	94.742	94.742	94.742	94.742	94.742
55.0	86.672	86.672	86.672	86.672	86.672	86.672	86.672
57.5	78.682	78.682	78.682	78.682	78.682	78.682	78.682
60.0	70.612	70.612	70.612	70.612	70.612	70.612	70.612
62.5	62.542	62.542	62.542	62.542	62.542	62.542	62.542
65.0	54.553	54.553	54.553	54.553	54.553	54.553	54.553
67.5	47.129	47.129	47.129	47.129	47.129	47.129	47.129
70.0	40.108	40.108	40.108	40.108	40.108	40.108	40.108
72.5	33.410	33.410	33.410	33.410	33.410	33.410	33.410
75.0	26.954	26.954	26.954	26.954	26.954	26.954	26.954
77.5	20.982	20.982	20.982	20.982	20.982	20.982	20.982
80.0	15.414	15.414	15.414	15.414	15.414	15.414	15.414

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-LW-CSU-LW-WHD-WM\_.IES****CANDELA TABULATION - (Cont.)**

82.5	10.087	10.087	10.087	10.087	10.087	10.087	10.087
85.0	5.084	5.084	5.084	5.084	5.084	5.084	5.084
87.5	0.968	0.968	0.968	0.968	0.968	0.968	0.968
90.0	2.395	2.395	2.395	2.395	2.395	2.395	2.395
92.5	2.824	2.824	2.824	2.824	2.824	2.824	2.824
95.0	4.789	4.789	4.789	4.789	4.789	4.789	4.789
97.5	7.798	7.798	7.798	7.798	7.798	7.798	7.798
100.0	11.850	11.850	11.850	11.850	11.850	11.850	11.850
102.5	16.332	16.332	16.332	16.332	16.332	16.332	16.332
105.0	21.244	21.244	21.244	21.244	21.244	21.244	21.244
107.5	26.525	26.525	26.525	26.525	26.525	26.525	26.525
110.0	32.296	32.296	32.296	32.296	32.296	32.296	32.296
112.5	38.498	38.498	38.498	38.498	38.498	38.498	38.498
115.0	45.129	45.129	45.129	45.129	45.129	45.129	45.129
117.5	52.129	52.129	52.129	52.129	52.129	52.129	52.129
120.0	59.128	59.128	59.128	59.128	59.128	59.128	59.128
122.5	65.882	65.882	65.882	65.882	65.882	65.882	65.882
125.0	72.145	72.145	72.145	72.145	72.145	72.145	72.145
127.5	78.285	78.285	78.285	78.285	78.285	78.285	78.285
130.0	84.978	84.978	84.978	84.978	84.978	84.978	84.978
132.5	93.267	93.267	93.267	93.267	93.267	93.267	93.267
135.0	104.564	104.564	104.564	104.564	104.564	104.564	104.564
137.5	120.160	120.160	120.160	120.160	120.160	120.160	120.160
140.0	141.957	141.957	141.957	141.957	141.957	141.957	141.957
142.5	173.087	173.087	173.087	173.087	173.087	173.087	173.087
145.0	217.417	217.417	217.417	217.417	217.417	217.417	217.417
147.5	282.194	282.194	282.194	282.194	282.194	282.194	282.194
150.0	381.908	381.908	381.908	381.908	381.908	381.908	381.908
152.5	528.286	528.286	528.286	528.286	528.286	528.286	528.286
155.0	728.818	728.818	728.818	728.818	728.818	728.818	728.818
157.5	979.330	979.330	979.330	979.330	979.330	979.330	979.330
160.0	1254.402	1254.402	1254.402	1254.402	1254.402	1254.402	1254.402
162.5	1523.334	1523.334	1523.334	1523.334	1523.334	1523.334	1523.334
165.0	1762.794	1762.794	1762.794	1762.794	1762.794	1762.794	1762.794
167.5	1956.204	1956.204	1956.204	1956.204	1956.204	1956.204	1956.204
170.0	2094.968	2094.968	2094.968	2094.968	2094.968	2094.968	2094.968
172.5	2183.998	2183.998	2183.998	2183.998	2183.998	2183.998	2183.998
175.0	2230.662	2230.662	2230.662	2230.662	2230.662	2230.662	2230.662
177.5	2246.012	2246.012	2246.012	2246.012	2246.012	2246.012	2246.012
180.0	2249.000	2249.000	2249.000	2249.000	2249.000	2249.000	2249.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-LW-CSU-LW-WHD-WM\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	529.26	N.A.	19.40
0-30	903.06	N.A.	33.20
0-40	1067.08	N.A.	39.20
0-60	1240.71	N.A.	45.60
0-80	1323.77	N.A.	48.60
0-90	1330.58	N.A.	48.90
10-90	1184.74	N.A.	43.50
20-40	537.82	N.A.	19.70
20-50	633.90	N.A.	23.30
40-70	227.92	N.A.	8.40
60-80	83.06	N.A.	3.00
70-80	28.76	N.A.	1.10
80-90	6.81	N.A.	0.30
90-110	28.85	N.A.	1.10
90-120	73.71	N.A.	2.70
90-130	138.17	N.A.	5.10
90-150	365.06	N.A.	13.40
90-180	1393.12	N.A.	51.10
110-180	1364.28	N.A.	50.10
0-180	2723.7	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	145.84
10-20	383.42
20-30	373.80
30-40	164.02
40-50	96.08
50-60	77.54
60-70	54.30
70-80	28.76
80-90	6.81
90-100	6.13
100-110	22.71
110-120	44.86
120-130	64.46
130-140	82.95
140-150	143.95
150-160	341.48
160-170	477.91
170-180	208.67

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-LW-CSU-LW-WHD-WM\_.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	98	98	98	98	83	83	83	68	68	68	55	55	55	49
1	99	96	92	89	91	88	86	83	75	73	71	63	61	60	51	51	50	45
2	92	86	81	76	85	80	75	72	68	65	62	58	55	54	48	46	45	41
3	85	78	71	66	79	72	67	63	62	58	55	53	50	48	44	43	41	37
4	80	70	64	59	74	66	60	56	57	53	49	49	46	44	42	40	38	34
5	74	64	57	52	69	60	54	50	53	48	45	46	42	40	39	37	35	32
6	69	59	52	47	64	56	49	45	49	44	41	43	39	37	37	34	32	30
7	65	55	48	43	61	51	45	41	45	41	37	40	36	34	35	32	30	28
8	61	51	44	39	57	48	42	38	42	38	35	37	34	31	33	30	28	26
9	58	47	41	36	54	45	39	35	40	35	32	35	32	29	31	28	27	25
10	55	44	38	33	51	42	36	32	37	33	30	33	30	27	29	27	25	23

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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	6.4	7.2	7.4	8.1	9.4	6.4	7.2	7.4	8.1	9.4
	3H	7.5	8.1	8.5	9.1	10.4	7.5	8.1	8.5	9.1	10.4
	4H	7.7	8.3	8.8	9.3	10.7	7.7	8.3	8.8	9.3	10.7
	6H	7.9	8.4	8.9	9.4	10.8	7.9	8.4	8.9	9.4	10.8
	8H	7.8	8.4	8.9	9.4	10.7	7.8	8.4	8.9	9.4	10.7
	12H	7.8	8.3	8.9	9.3	10.7	7.8	8.3	8.9	9.3	10.7

### UGR Viewed Endwise

4H	2H	6.7	7.3	7.7	8.3	9.6	6.7	7.3	7.7	8.3	9.6
	3H	7.8	8.3	8.9	9.4	10.7	7.8	8.3	8.9	9.4	10.7
	4H	8.2	8.6	9.2	9.7	11.0	8.2	8.6	9.2	9.7	11.0
	6H	8.4	8.7	9.4	9.8	11.2	8.4	8.7	9.4	9.8	11.2
	8H	8.4	8.7	9.4	9.8	11.1	8.4	8.7	9.4	9.8	11.1
	12H	8.3	8.7	9.4	9.7	11.1	8.3	8.7	9.4	9.7	11.1

8H	4H	8.2	8.6	9.3	9.6	11.0	8.2	8.6	9.3	9.6	11.0
	6H	8.4	8.7	9.5	9.8	11.2	8.4	8.7	9.5	9.8	11.2
	8H	8.5	8.7	9.6	9.8	11.2	8.5	8.7	9.6	9.8	11.2
	12H	8.4	8.7	9.5	9.7	11.2	8.4	8.7	9.5	9.7	11.2

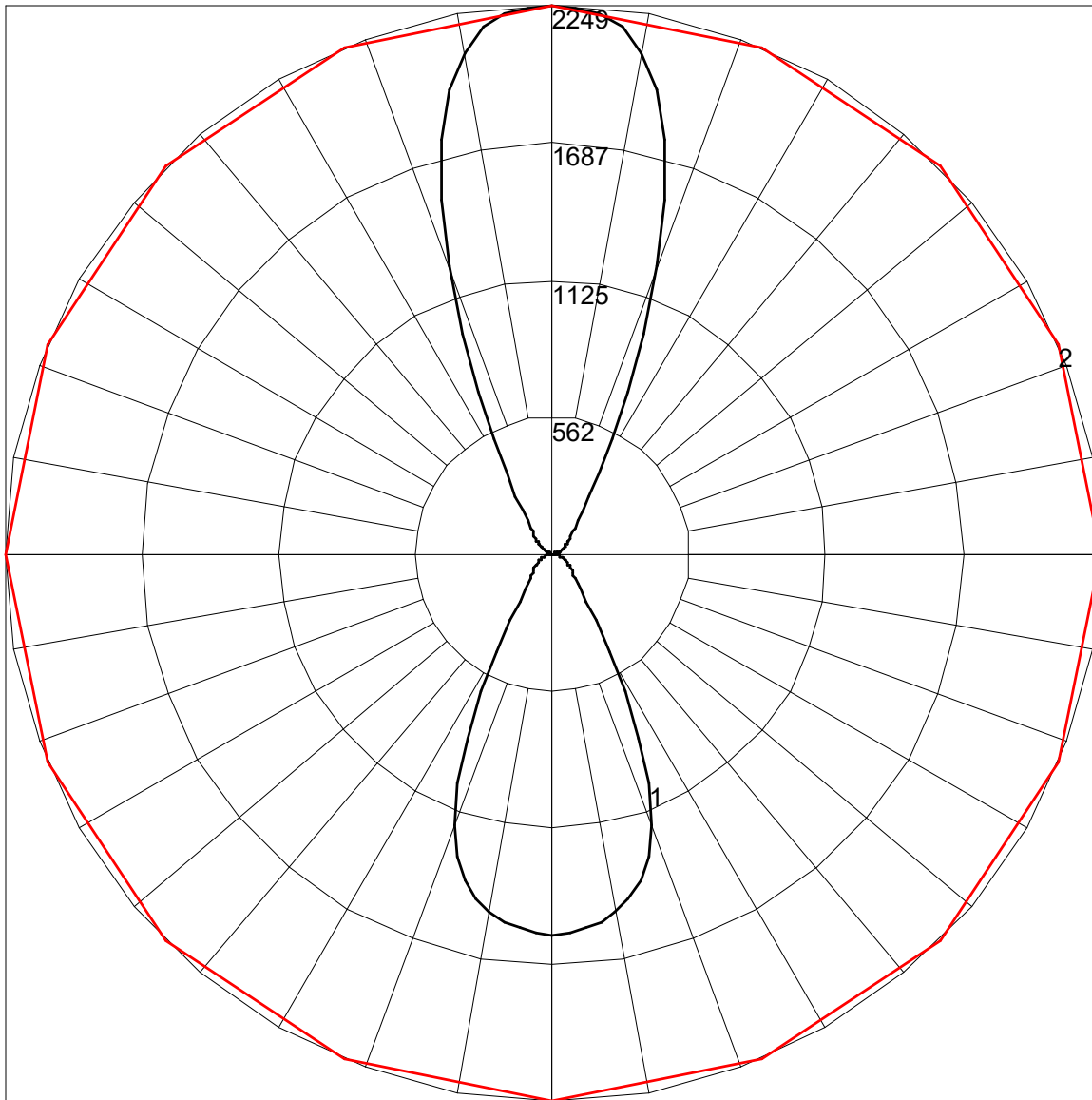
12H	4H	8.2	8.5	9.2	9.5	10.9	8.2	8.5	9.2	9.5	10.9
	6H	8.4	8.6	9.5	9.7	11.1	8.4	8.6	9.5	9.7	11.1
	8H	8.4	8.7	9.5	9.7	11.2	8.4	8.7	9.5	9.7	11.2

Maximum UGR = 11.2

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## POLAR GRAPH



Maximum Candela = 2249 Located At Horizontal Angle = 0, Vertical Angle = 180

# 1 - Vertical Plane Through Horizontal Angles (90 - 270)

# 2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)