



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.06 and #13257153.03

[TESTLAB]

[ISSUE DATE] 11-FEB-2021

[MANUFAC] H E Williams Inc

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

[MORE]

[LUMINAIRE] White formed aluminum housing, medium distrib anodized aluminum reflector trim w/clear cover glass up,

[MORE] wide distrib white painted regressed 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	2321
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	81
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
Luminous Length (0-180)	0.21 ft (Diameter)
Luminous Width (90-270)	0.21 ft (Diameter)
Luminous Height	0.00 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	47099	47099	47099
55	37270	37270	37270
65	27860	27860	27860
75	14506	14506	14506
85	8791	8791	8791

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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>	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580
<b>2.5</b>	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352
<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>	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581
<b>10.0</b>	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494
<b>12.5</b>	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302
<b>15.0</b>	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584
<b>17.5</b>	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112
<b>20.0</b>	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430
<b>22.5</b>	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696
<b>25.0</b>	913.524	913.524	913.524	913.524	913.524	913.524	913.524	913.524	913.524	913.524
<b>27.5</b>	737.114	737.114	737.114	737.114	737.114	737.114	737.114	737.114	737.114	737.114
<b>30.0</b>	556.426	556.426	556.426	556.426	556.426	556.426	556.426	556.426	556.426	556.426
<b>32.5</b>	387.602	387.602	387.602	387.602	387.602	387.602	387.602	387.602	387.602	387.602
<b>35.0</b>	264.212	264.212	264.212	264.212	264.212	264.212	264.212	264.212	264.212	264.212
<b>37.5</b>	187.063	187.063	187.063	187.063	187.063	187.063	187.063	187.063	187.063	187.063
<b>40.0</b>	143.162	143.162	143.162	143.162	143.162	143.162	143.162	143.162	143.162	143.162
<b>42.5</b>	119.436	119.436	119.436	119.436	119.436	119.436	119.436	119.436	119.436	119.436
<b>45.0</b>	105.233	105.233	105.233	105.233	105.233	105.233	105.233	105.233	105.233	105.233
<b>47.5</b>	94.500	94.500	94.500	94.500	94.500	94.500	94.500	94.500	94.500	94.500
<b>50.0</b>	84.816	84.816	84.816	84.816	84.816	84.816	84.816	84.816	84.816	84.816
<b>52.5</b>	75.939	75.939	75.939	75.939	75.939	75.939	75.939	75.939	75.939	75.939
<b>55.0</b>	67.546	67.546	67.546	67.546	67.546	67.546	67.546	67.546	67.546	67.546
<b>57.5</b>	59.557	59.557	59.557	59.557	59.557	59.557	59.557	59.557	59.557	59.557
<b>60.0</b>	51.890	51.890	51.890	51.890	51.890	51.890	51.890	51.890	51.890	51.890
<b>62.5</b>	44.385	44.385	44.385	44.385	44.385	44.385	44.385	44.385	44.385	44.385
<b>65.0</b>	37.203	37.203	37.203	37.203	37.203	37.203	37.203	37.203	37.203	37.203
<b>67.5</b>	30.424	30.424	30.424	30.424	30.424	30.424	30.424	30.424	30.424	30.424
<b>70.0</b>	23.968	23.968	23.968	23.968	23.968	23.968	23.968	23.968	23.968	23.968
<b>72.5</b>	17.754	17.754	17.754	17.754	17.754	17.754	17.754	17.754	17.754	17.754
<b>75.0</b>	11.863	11.863	11.863	11.863	11.863	11.863	11.863	11.863	11.863	11.863
<b>77.5</b>	7.586	7.586	7.586	7.586	7.586	7.586	7.586	7.586	7.586	7.586
<b>80.0</b>	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649
<b>82.5</b>	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954
<b>85.0</b>	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421
<b>87.5</b>	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
<b>90.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>92.5</b>	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042
<b>95.0</b>	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042
<b>97.5</b>	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084
<b>100.0</b>	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
<b>102.5</b>	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
<b>105.0</b>	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251
<b>107.5</b>	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376
<b>110.0</b>	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502
<b>112.5</b>	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669
<b>115.0</b>	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
<b>117.5</b>	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296
<b>120.0</b>	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
<b>122.5</b>	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508
<b>125.0</b>	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762
<b>127.5</b>	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518
<b>130.0</b>	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235
<b>132.5</b>	11.411	11.411	11.411	11.411	11.411	11.411	11.411	11.411	11.411	11.411

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## CANDELA TABULATION - (Cont.)

135.0	15.424	15.424	15.424	15.424	15.424	15.424	15.424	15.424	15.424	15.424
137.5	19.939	19.939	19.939	19.939	19.939	19.939	19.939	19.939	19.939	19.939
140.0	25.707	25.707	25.707	25.707	25.707	25.707	25.707	25.707	25.707	25.707
142.5	34.485	34.485	34.485	34.485	34.485	34.485	34.485	34.485	34.485	34.485
145.0	51.665	51.665	51.665	51.665	51.665	51.665	51.665	51.665	51.665	51.665
147.5	105.545	105.545	105.545	105.545	105.545	105.545	105.545	105.545	105.545	105.545
150.0	233.077	233.077	233.077	233.077	233.077	233.077	233.077	233.077	233.077	233.077
152.5	442.662	442.662	442.662	442.662	442.662	442.662	442.662	442.662	442.662	442.662
155.0	700.150	700.150	700.150	700.150	700.150	700.150	700.150	700.150	700.150	700.150
157.5	944.680	944.680	944.680	944.680	944.680	944.680	944.680	944.680	944.680	944.680
160.0	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024
162.5	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304
165.0	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420
167.5	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986
170.0	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478
172.5	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932
175.0	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834
177.5	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110
180.0	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000

## 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	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580
2.5	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352
5.0	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405
7.5	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581
10.0	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494
12.5	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302
15.0	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584
17.5	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112
20.0	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430
22.5	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696
25.0	913.524	913.524	913.524	913.524	913.524	913.524	913.524
27.5	737.114	737.114	737.114	737.114	737.114	737.114	737.114
30.0	556.426	556.426	556.426	556.426	556.426	556.426	556.426
32.5	387.602	387.602	387.602	387.602	387.602	387.602	387.602
35.0	264.212	264.212	264.212	264.212	264.212	264.212	264.212
37.5	187.063	187.063	187.063	187.063	187.063	187.063	187.063
40.0	143.162	143.162	143.162	143.162	143.162	143.162	143.162
42.5	119.436	119.436	119.436	119.436	119.436	119.436	119.436
45.0	105.233	105.233	105.233	105.233	105.233	105.233	105.233
47.5	94.500	94.500	94.500	94.500	94.500	94.500	94.500
50.0	84.816	84.816	84.816	84.816	84.816	84.816	84.816
52.5	75.939	75.939	75.939	75.939	75.939	75.939	75.939
55.0	67.546	67.546	67.546	67.546	67.546	67.546	67.546
57.5	59.557	59.557	59.557	59.557	59.557	59.557	59.557
60.0	51.890	51.890	51.890	51.890	51.890	51.890	51.890
62.5	44.385	44.385	44.385	44.385	44.385	44.385	44.385
65.0	37.203	37.203	37.203	37.203	37.203	37.203	37.203
67.5	30.424	30.424	30.424	30.424	30.424	30.424	30.424
70.0	23.968	23.968	23.968	23.968	23.968	23.968	23.968
72.5	17.754	17.754	17.754	17.754	17.754	17.754	17.754
75.0	11.863	11.863	11.863	11.863	11.863	11.863	11.863
77.5	7.586	7.586	7.586	7.586	7.586	7.586	7.586
80.0	5.649	5.649	5.649	5.649	5.649	5.649	5.649

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

<b>82.5</b>	3.954	3.954	3.954	3.954	3.954	3.954	3.954
<b>85.0</b>	2.421	2.421	2.421	2.421	2.421	2.421	2.421
<b>87.5</b>	1.049	1.049	1.049	1.049	1.049	1.049	1.049
<b>90.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>92.5</b>	0.042	0.042	0.042	0.042	0.042	0.042	0.042
<b>95.0</b>	0.042	0.042	0.042	0.042	0.042	0.042	0.042
<b>97.5</b>	0.084	0.084	0.084	0.084	0.084	0.084	0.084
<b>100.0</b>	0.125	0.125	0.125	0.125	0.125	0.125	0.125
<b>102.5</b>	0.167	0.167	0.167	0.167	0.167	0.167	0.167
<b>105.0</b>	0.251	0.251	0.251	0.251	0.251	0.251	0.251
<b>107.5</b>	0.376	0.376	0.376	0.376	0.376	0.376	0.376
<b>110.0</b>	0.502	0.502	0.502	0.502	0.502	0.502	0.502
<b>112.5</b>	0.669	0.669	0.669	0.669	0.669	0.669	0.669
<b>115.0</b>	0.920	0.920	0.920	0.920	0.920	0.920	0.920
<b>117.5</b>	1.296	1.296	1.296	1.296	1.296	1.296	1.296
<b>120.0</b>	1.756	1.756	1.756	1.756	1.756	1.756	1.756
<b>122.5</b>	2.508	2.508	2.508	2.508	2.508	2.508	2.508
<b>125.0</b>	3.762	3.762	3.762	3.762	3.762	3.762	3.762
<b>127.5</b>	5.518	5.518	5.518	5.518	5.518	5.518	5.518
<b>130.0</b>	8.235	8.235	8.235	8.235	8.235	8.235	8.235
<b>132.5</b>	11.411	11.411	11.411	11.411	11.411	11.411	11.411
<b>135.0</b>	15.424	15.424	15.424	15.424	15.424	15.424	15.424
<b>137.5</b>	19.939	19.939	19.939	19.939	19.939	19.939	19.939
<b>140.0</b>	25.707	25.707	25.707	25.707	25.707	25.707	25.707
<b>142.5</b>	34.485	34.485	34.485	34.485	34.485	34.485	34.485
<b>145.0</b>	51.665	51.665	51.665	51.665	51.665	51.665	51.665
<b>147.5</b>	105.545	105.545	105.545	105.545	105.545	105.545	105.545
<b>150.0</b>	233.077	233.077	233.077	233.077	233.077	233.077	233.077
<b>152.5</b>	442.662	442.662	442.662	442.662	442.662	442.662	442.662
<b>155.0</b>	700.150	700.150	700.150	700.150	700.150	700.150	700.150
<b>157.5</b>	944.680	944.680	944.680	944.680	944.680	944.680	944.680
<b>160.0</b>	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024
<b>162.5</b>	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304
<b>165.0</b>	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420
<b>167.5</b>	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986
<b>170.0</b>	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478
<b>172.5</b>	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932
<b>175.0</b>	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834
<b>177.5</b>	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110
<b>180.0</b>	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000

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Zone	Lumens	%Lamp	%Fixt
0-20	529.33	N.A.	22.80
0-30	937.24	N.A.	40.40
0-40	1118.91	N.A.	48.20
0-60	1262.78	N.A.	54.40
0-80	1313.5	N.A.	56.60
0-90	1316.29	N.A.	56.70
10-90	1170.66	N.A.	50.40
20-40	589.58	N.A.	25.40
20-50	672.86	N.A.	29.00
40-70	180.90	N.A.	7.80
60-80	50.71	N.A.	2.20
70-80	13.68	N.A.	0.60
80-90	2.79	N.A.	0.10
90-110	0.35	N.A.	0.00
90-120	1.34	N.A.	0.10
90-130	5.05	N.A.	0.20
90-150	65.41	N.A.	2.80
90-180	1005.16	N.A.	43.30
110-180	1004.81	N.A.	43.30
0-180	2321.45	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	145.63
10-20	383.70
20-30	407.91
30-40	181.67
40-50	83.28
50-60	60.59
60-70	37.03
70-80	13.68
80-90	2.79
90-100	0.06
100-110	0.29
110-120	0.99
120-130	3.71
130-140	12.16
140-150	48.20
150-160	309.04
160-170	427.37
170-180	203.35

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-CSU-RW-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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	102	98	95	92	95	92	89	87	80	78	76	69	68	66	59	58	57	52
2	95	89	84	80	88	83	79	76	73	70	67	64	62	60	55	54	52	48
3	88	81	75	70	83	76	71	67	67	63	60	59	56	54	51	50	48	45
4	83	74	67	63	77	70	64	60	62	58	55	55	52	49	48	46	44	41
5	77	68	61	56	73	64	58	54	58	53	50	51	48	45	45	43	41	38
6	73	63	56	51	68	60	54	49	54	49	46	48	45	42	43	40	38	36
7	68	58	51	47	64	55	49	45	50	45	42	45	42	39	41	38	36	34
8	64	54	48	43	61	52	46	42	47	42	39	43	39	36	38	36	34	32
9	61	50	44	40	57	48	43	39	44	39	36	40	37	34	36	34	32	30
10	58	47	41	37	55	45	40	36	42	37	34	38	34	32	35	32	30	28

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-CSU-RW-WHD-WM\_.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	16.3	17.0	17.2	17.9	19.1	16.3	17.0	17.2	17.9	19.1
	3H	17.3	17.9	18.2	18.9	20.1	17.3	17.9	18.2	18.9	20.1
	4H	17.5	18.1	18.4	19.0	20.2	17.5	18.1	18.4	19.0	20.2
	6H	17.5	18.0	18.5	19.0	20.2	17.5	18.0	18.5	19.0	20.2
	8H	17.5	18.0	18.5	19.0	20.2	17.5	18.0	18.5	19.0	20.2
	12H	17.5	18.0	18.4	18.9	20.2	17.5	18.0	18.4	18.9	20.2

### UGR Viewed Endwise

4H	2H	16.6	17.2	17.6	18.1	19.3	16.6	17.2	17.6	18.1	19.3
	3H	17.7	18.2	18.7	19.2	20.4	17.7	18.2	18.7	19.2	20.4
	4H	18.0	18.4	19.0	19.4	20.7	18.0	18.4	19.0	19.4	20.7
	6H	18.0	18.4	19.0	19.4	20.7	18.0	18.4	19.0	19.4	20.7
	8H	18.1	18.4	19.0	19.4	20.7	18.1	18.4	19.0	19.4	20.7
	12H	18.0	18.4	19.0	19.3	20.6	18.0	18.4	19.0	19.3	20.6

8H	4H	18.0	18.3	19.0	19.3	20.6	18.0	18.3	19.0	19.3	20.6
	6H	18.1	18.4	19.1	19.4	20.7	18.1	18.4	19.1	19.4	20.7
	8H	18.1	18.4	19.2	19.4	20.7	18.1	18.4	19.2	19.4	20.7
	12H	18.1	18.4	19.2	19.4	20.7	18.1	18.4	19.2	19.4	20.7

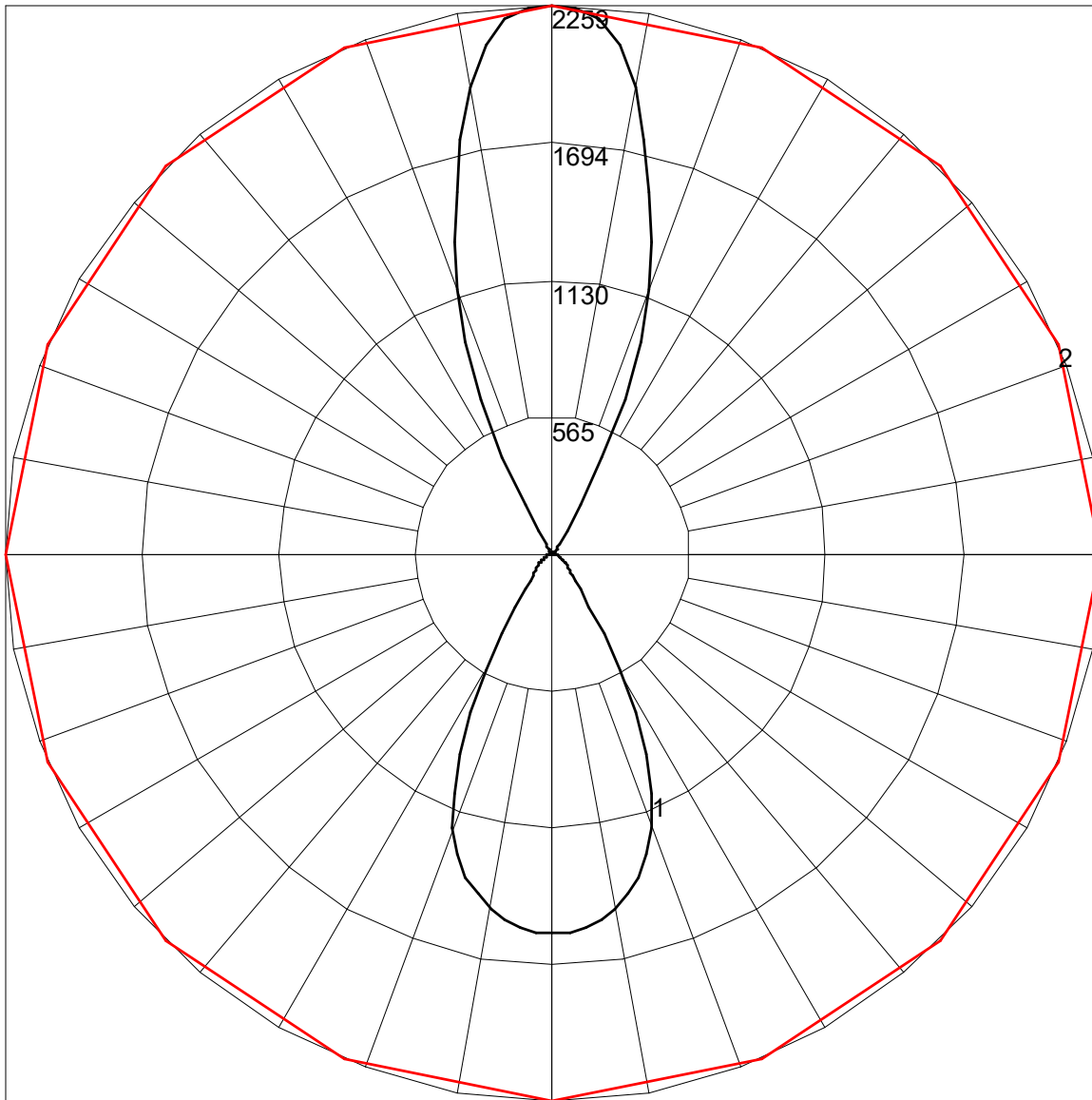
12H	4H	17.9	18.2	18.9	19.2	20.5	17.9	18.2	18.9	19.2	20.5
	6H	18.1	18.3	19.1	19.3	20.6	18.1	18.3	19.1	19.3	20.6
	8H	18.1	18.3	19.1	19.3	20.7	18.1	18.3	19.1	19.3	20.7

Maximum UGR = 20.7

# IES INDOOR REPORT

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

## POLAR GRAPH



Maximum Candela = 2259 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.)