



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.06 and #13257153.06

[TESTLAB]

[ISSUE DATE] 11-FEB-2021

[MANUFAC] H E Williams Inc

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

[MORE]

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

[MORE] medium 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	2318
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	61655	61655	61655
55	50138	50138	50138
65	41215	41215	41215
75	32663	32663	32663
85	18167	18167	18167

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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	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089
2.5	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125
5.0	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198
7.5	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150
10.0	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157
12.5	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500
15.0	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160
17.5	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503
20.0	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078
22.5	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626
25.0	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496
27.5	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048
30.0	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327
32.5	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296
35.0	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581
37.5	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855
40.0	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165
42.5	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411
45.0	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755
47.5	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955
50.0	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608
52.5	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714
55.0	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868
57.5	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426
60.0	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388
62.5	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511
65.0	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037
67.5	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290
70.0	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027
72.5	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168
75.0	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712
77.5	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740
80.0	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172
82.5	10.007	10.007	10.007	10.007	10.007	10.007	10.007	10.007	10.007	10.007
85.0	5.003	5.003	5.003	5.003	5.003	5.003	5.003	5.003	5.003	5.003
87.5	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042
95.0	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042
97.5	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084
100.0	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
102.5	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
105.0	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251
107.5	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376
110.0	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502
112.5	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669
115.0	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
117.5	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296
120.0	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
122.5	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508
125.0	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762
127.5	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518
130.0	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235
132.5	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	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089
2.5	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125
5.0	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198
7.5	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150
10.0	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157
12.5	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500
15.0	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160
17.5	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503
20.0	756.078	756.078	756.078	756.078	756.078	756.078	756.078
22.5	565.626	565.626	565.626	565.626	565.626	565.626	565.626
25.0	444.496	444.496	444.496	444.496	444.496	444.496	444.496
27.5	356.048	356.048	356.048	356.048	356.048	356.048	356.048
30.0	291.327	291.327	291.327	291.327	291.327	291.327	291.327
32.5	246.296	246.296	246.296	246.296	246.296	246.296	246.296
35.0	214.581	214.581	214.581	214.581	214.581	214.581	214.581
37.5	190.855	190.855	190.855	190.855	190.855	190.855	190.855
40.0	171.165	171.165	171.165	171.165	171.165	171.165	171.165
42.5	153.411	153.411	153.411	153.411	153.411	153.411	153.411
45.0	137.755	137.755	137.755	137.755	137.755	137.755	137.755
47.5	123.955	123.955	123.955	123.955	123.955	123.955	123.955
50.0	111.608	111.608	111.608	111.608	111.608	111.608	111.608
52.5	100.714	100.714	100.714	100.714	100.714	100.714	100.714
55.0	90.868	90.868	90.868	90.868	90.868	90.868	90.868
57.5	81.426	81.426	81.426	81.426	81.426	81.426	81.426
60.0	72.388	72.388	72.388	72.388	72.388	72.388	72.388
62.5	63.511	63.511	63.511	63.511	63.511	63.511	63.511
65.0	55.037	55.037	55.037	55.037	55.037	55.037	55.037
67.5	47.290	47.290	47.290	47.290	47.290	47.290	47.290
70.0	40.027	40.027	40.027	40.027	40.027	40.027	40.027
72.5	33.168	33.168	33.168	33.168	33.168	33.168	33.168
75.0	26.712	26.712	26.712	26.712	26.712	26.712	26.712
77.5	20.740	20.740	20.740	20.740	20.740	20.740	20.740
80.0	15.172	15.172	15.172	15.172	15.172	15.172	15.172

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

<b>82.5</b>	10.007	10.007	10.007	10.007	10.007	10.007	10.007
<b>85.0</b>	5.003	5.003	5.003	5.003	5.003	5.003	5.003
<b>87.5</b>	0.968	0.968	0.968	0.968	0.968	0.968	0.968
<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

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

Zone	Lumens	%Lamp	%Fixt
0-20	684.22	N.A.	29.50
0-30	896.86	N.A.	38.70
0-40	1034.1	N.A.	44.60
0-60	1222.75	N.A.	52.80
0-80	1306.18	N.A.	56.40
0-90	1312.58	N.A.	56.60
10-90	1043.19	N.A.	45.00
20-40	349.88	N.A.	15.10
20-50	457.00	N.A.	19.70
40-70	243.55	N.A.	10.50
60-80	83.42	N.A.	3.60
70-80	28.53	N.A.	1.20
80-90	6.41	N.A.	0.30
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.	43.40
110-180	1004.81	N.A.	43.40
0-180	2317.74	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	269.39
10-20	414.84
20-30	212.63
30-40	137.24
40-50	107.12
50-60	81.53
60-70	54.90
70-80	28.53
80-90	6.41
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

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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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	101	98	95	92	94	92	89	86	80	78	76	68	67	66	58	58	57	52
2	95	89	84	80	88	83	79	75	73	70	67	63	61	59	55	53	52	48
3	88	81	75	70	82	76	71	67	67	63	60	59	56	54	51	49	48	44
4	83	74	68	63	77	70	64	60	62	58	55	55	52	49	48	46	44	41
5	78	68	62	57	73	65	59	54	58	53	50	52	48	46	46	43	42	39
6	73	63	57	52	69	60	54	50	54	50	46	49	45	43	44	41	39	37
7	69	59	52	48	65	56	50	46	51	46	43	46	43	40	41	39	37	35
8	65	55	49	44	62	53	47	43	48	44	40	44	40	38	40	37	35	33
9	62	52	46	42	59	50	44	40	46	41	38	42	38	36	38	35	33	32
10	59	49	43	39	56	47	42	38	43	39	36	40	36	34	36	34	32	30

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-CSU-LM-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	18.4	19.1	19.3	20.1	21.3
	3H	19.8	20.4	20.7	21.4	22.6
	4H	20.2	20.9	21.2	21.8	23.0
	6H	20.5	21.1	21.5	22.1	23.3
	8H	20.6	21.2	21.6	22.1	23.4
	12H	20.7	21.2	21.6	22.1	23.4

### UGR Viewed Endwise

18.4	19.1	19.3	20.1	21.3
19.8	20.4	20.7	21.4	22.6
20.2	20.9	21.2	21.8	23.0
20.5	21.1	21.5	22.1	23.3
20.6	21.2	21.6	22.1	23.4
20.7	21.2	21.6	22.1	23.4

4H	2H	18.8	19.4	19.8	20.4	21.6	18.8	19.4	19.8	20.4	21.6
	3H	20.4	20.9	21.4	21.9	23.1	20.4	20.9	21.4	21.9	23.1
	4H	21.0	21.5	22.0	22.4	23.7	21.0	21.5	22.0	22.4	23.7
	6H	21.4	21.8	22.4	22.8	24.1	21.4	21.8	22.4	22.8	24.1
	8H	21.5	21.9	22.5	22.9	24.1	21.5	21.9	22.5	22.9	24.1
	12H	21.5	21.9	22.5	22.9	24.2	21.5	21.9	22.5	22.9	24.2

8H	4H	21.1	21.5	22.1	22.5	23.8	21.1	21.5	22.1	22.5	23.8
	6H	21.7	22.0	22.7	23.0	24.3	21.7	22.0	22.7	23.0	24.3
	8H	21.8	22.1	22.9	23.1	24.4	21.8	22.1	22.9	23.1	24.4
	12H	21.9	22.2	22.9	23.2	24.5	21.9	22.2	22.9	23.2	24.5

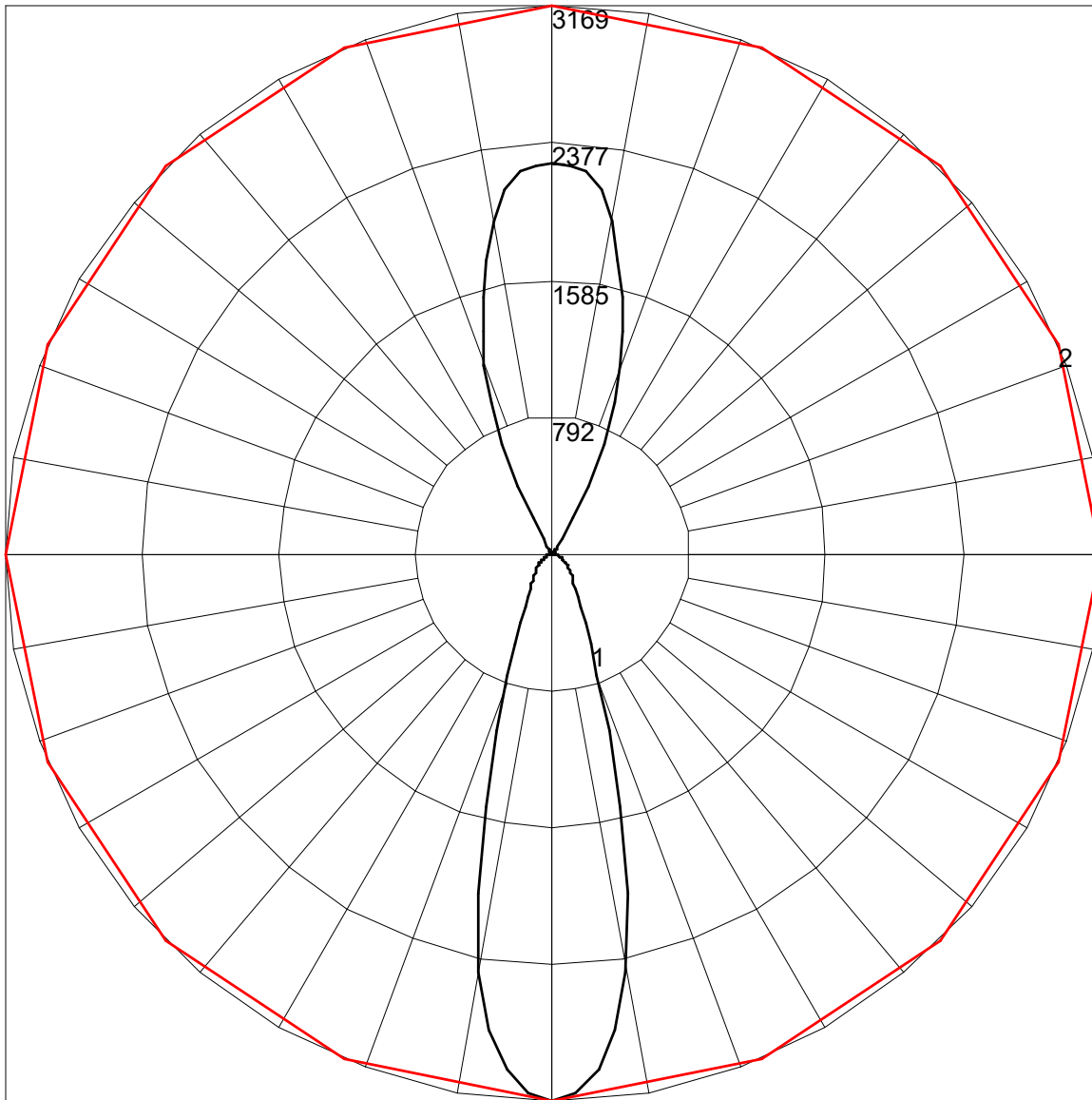
12H	4H	21.1	21.5	22.1	22.5	23.7	21.1	21.5	22.1	22.5	23.7
	6H	21.7	21.9	22.7	23.0	24.3	21.7	21.9	22.7	23.0	24.3
	8H	21.9	22.1	22.9	23.1	24.5	21.9	22.1	22.9	23.1	24.5

Maximum UGR = 24.5

# IES INDOOR REPORT

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

## POLAR GRAPH



Maximum Candela = 3169.089 Located At Horizontal Angle = 0, Vertical Angle = 0

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

# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)