



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.09 and #13257153.06

[TESTLAB]

[ISSUE DATE] 12-FEB-2021

[MANUFAC] WILLIAMS INDOOR

[MORE] H.E. WILLIAMS, INC. - CARTHAGE, MO

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

[MORE]

[LUMINAIRE] White formed aluminum housing, narrow 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	2141
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	75
Total Luminaire Watts	28.5
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	0.50
Spacing Criterion (90-270)	0.50
Spacing Criterion (Diagonal)	0.48
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

**IES INDOOR REPORT**

**PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-LM-WHD-WM\_IES**

**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	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254
92.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
95.0	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254
97.5	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254
100.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
102.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
105.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
107.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
110.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
112.5	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090
115.0	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090
117.5	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090
120.0	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508
122.5	2.926	2.926	2.926	2.926	2.926	2.926	2.926	2.926	2.926	2.926
125.0	3.344	3.344	3.344	3.344	3.344	3.344	3.344	3.344	3.344	3.344
127.5	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
130.0	5.016	5.016	5.016	5.016	5.016	5.016	5.016	5.016	5.016	5.016
132.5	6.270	6.270	6.270	6.270	6.270	6.270	6.270	6.270	6.270	6.270

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

## CANDELA TABULATION - (Cont.)

135.0	7.942	7.942	7.942	7.942	7.942	7.942	7.942	7.942	7.942	7.942
137.5	10.450	10.450	10.450	10.450	10.450	10.450	10.450	10.450	10.450	10.450
140.0	12.958	12.958	12.958	12.958	12.958	12.958	12.958	12.958	12.958	12.958
142.5	16.302	16.302	16.302	16.302	16.302	16.302	16.302	16.302	16.302	16.302
145.0	25.498	25.498	25.498	25.498	25.498	25.498	25.498	25.498	25.498	25.498
147.5	61.028	61.028	61.028	61.028	61.028	61.028	61.028	61.028	61.028	61.028
150.0	139.612	139.612	139.612	139.612	139.612	139.612	139.612	139.612	139.612	139.612
152.5	256.652	256.652	256.652	256.652	256.652	256.652	256.652	256.652	256.652	256.652
155.0	387.068	387.068	387.068	387.068	387.068	387.068	387.068	387.068	387.068	387.068
157.5	509.124	509.124	509.124	509.124	509.124	509.124	509.124	509.124	509.124	509.124
160.0	621.566	621.566	621.566	621.566	621.566	621.566	621.566	621.566	621.566	621.566
162.5	760.342	760.342	760.342	760.342	760.342	760.342	760.342	760.342	760.342	760.342
165.0	977.284	977.284	977.284	977.284	977.284	977.284	977.284	977.284	977.284	977.284
167.5	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886
170.0	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352
172.5	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417
175.0	4129.007	4129.007	4129.007	4129.007	4129.007	4129.006	4129.006	4129.006	4129.006	4129.006
177.5	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441
180.0	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000

## 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-ON-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>	1.254	1.254	1.254	1.254	1.254	1.254	1.254
<b>92.5</b>	1.672	1.672	1.672	1.672	1.672	1.672	1.672
<b>95.0</b>	1.254	1.254	1.254	1.254	1.254	1.254	1.254
<b>97.5</b>	1.254	1.254	1.254	1.254	1.254	1.254	1.254
<b>100.0</b>	1.672	1.672	1.672	1.672	1.672	1.672	1.672
<b>102.5</b>	1.672	1.672	1.672	1.672	1.672	1.672	1.672
<b>105.0</b>	1.672	1.672	1.672	1.672	1.672	1.672	1.672
<b>107.5</b>	1.672	1.672	1.672	1.672	1.672	1.672	1.672
<b>110.0</b>	1.672	1.672	1.672	1.672	1.672	1.672	1.672
<b>112.5</b>	2.090	2.090	2.090	2.090	2.090	2.090	2.090
<b>115.0</b>	2.090	2.090	2.090	2.090	2.090	2.090	2.090
<b>117.5</b>	2.090	2.090	2.090	2.090	2.090	2.090	2.090
<b>120.0</b>	2.508	2.508	2.508	2.508	2.508	2.508	2.508
<b>122.5</b>	2.926	2.926	2.926	2.926	2.926	2.926	2.926
<b>125.0</b>	3.344	3.344	3.344	3.344	3.344	3.344	3.344
<b>127.5</b>	4.180	4.180	4.180	4.180	4.180	4.180	4.180
<b>130.0</b>	5.016	5.016	5.016	5.016	5.016	5.016	5.016
<b>132.5</b>	6.270	6.270	6.270	6.270	6.270	6.270	6.270
<b>135.0</b>	7.942	7.942	7.942	7.942	7.942	7.942	7.942
<b>137.5</b>	10.450	10.450	10.450	10.450	10.450	10.450	10.450
<b>140.0</b>	12.958	12.958	12.958	12.958	12.958	12.958	12.958
<b>142.5</b>	16.302	16.302	16.302	16.302	16.302	16.302	16.302
<b>145.0</b>	25.498	25.498	25.498	25.498	25.498	25.498	25.498
<b>147.5</b>	61.028	61.028	61.028	61.028	61.028	61.028	61.028
<b>150.0</b>	139.612	139.612	139.612	139.612	139.612	139.612	139.612
<b>152.5</b>	256.652	256.652	256.652	256.652	256.652	256.652	256.652
<b>155.0</b>	387.068	387.068	387.068	387.068	387.068	387.068	387.068
<b>157.5</b>	509.124	509.124	509.124	509.124	509.124	509.124	509.124
<b>160.0</b>	621.566	621.566	621.566	621.566	621.566	621.566	621.566
<b>162.5</b>	760.342	760.342	760.342	760.342	760.342	760.342	760.342
<b>165.0</b>	977.284	977.284	977.284	977.284	977.284	977.284	977.284
<b>167.5</b>	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886
<b>170.0</b>	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352
<b>172.5</b>	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417
<b>175.0</b>	4129.006	4129.006	4129.007	4129.007	4129.007	4129.007	4129.007
<b>177.5</b>	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441
<b>180.0</b>	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000

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

Zone	Lumens	%Lamp	%Fixt
0-20	684.22	N.A.	32.00
0-30	896.86	N.A.	41.90
0-40	1034.1	N.A.	48.30
0-60	1222.75	N.A.	57.10
0-80	1306.18	N.A.	61.00
0-90	1312.75	N.A.	61.30
10-90	1043.36	N.A.	48.70
20-40	349.88	N.A.	16.30
20-50	457.00	N.A.	21.30
40-70	243.55	N.A.	11.40
60-80	83.42	N.A.	3.90
70-80	28.53	N.A.	1.30
80-90	6.58	N.A.	0.30
90-110	3.31	N.A.	0.20
90-120	5.38	N.A.	0.30
90-130	8.55	N.A.	0.40
90-150	41.73	N.A.	1.90
90-180	828.34	N.A.	38.70
110-180	825.03	N.A.	38.50
0-180	2141.09	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	6.58
90-100	1.54
100-110	1.77
110-120	2.07
120-130	3.17
130-140	6.43
140-150	26.75
150-160	170.79
160-170	292.64
170-180	323.18

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## COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	61
1	103	99	96	93	96	93	91	88	82	80	78	72	71	69	62	62	61	56
2	96	90	85	81	90	85	81	77	75	72	70	67	64	62	58	57	56	52
3	90	82	76	72	84	78	73	69	70	66	63	62	59	57	55	53	51	48
4	84	75	69	64	79	72	66	62	65	60	57	58	55	52	52	50	48	45
5	79	70	63	58	75	67	61	56	60	56	52	55	51	48	49	47	45	42
6	75	65	58	54	71	62	56	52	57	52	49	51	48	45	47	44	42	40
7	71	61	54	50	67	58	52	48	53	49	45	49	45	42	45	42	40	38
8	67	57	51	46	64	55	49	45	50	46	43	46	43	40	43	40	38	36
9	64	54	47	43	61	52	46	42	48	43	40	44	41	38	41	38	36	34
10	61	51	45	41	58	49	44	40	46	41	38	42	39	36	39	36	34	33

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-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	18.7	19.5	19.6	20.4	21.5	18.7	19.5	19.6	20.4	21.5
	3H	20.1	20.8	21.0	21.7	22.9	20.1	20.8	21.0	21.7	22.9
	4H	20.6	21.3	21.5	22.2	23.3	20.6	21.3	21.5	22.2	23.3
	6H	20.9	21.5	21.9	22.4	23.6	20.9	21.5	21.9	22.4	23.6
	8H	21.0	21.6	21.9	22.5	23.7	21.0	21.6	21.9	22.5	23.7
	12H	21.0	21.6	21.9	22.5	23.7	21.0	21.6	21.9	22.5	23.7

### UGR Viewed Endwise

4H	2H	19.2	19.8	20.1	20.7	21.9	19.2	19.8	20.1	20.7	21.9
	3H	20.7	21.3	21.7	22.2	23.4	20.7	21.3	21.7	22.2	23.4
	4H	21.3	21.8	22.3	22.8	24.0	21.3	21.8	22.3	22.8	24.0
	6H	21.8	22.2	22.7	23.1	24.3	21.8	22.2	22.7	23.1	24.3
	8H	21.9	22.3	22.8	23.2	24.4	21.9	22.3	22.8	23.2	24.4
	12H	21.9	22.3	22.9	23.2	24.4	21.9	22.3	22.9	23.2	24.4

8H	4H	21.5	21.9	22.4	22.8	24.0	21.5	21.9	22.4	22.8	24.0
	6H	22.0	22.4	23.0	23.3	24.5	22.0	22.4	23.0	23.3	24.5
	8H	22.2	22.5	23.2	23.5	24.7	22.2	22.5	23.2	23.5	24.7
	12H	22.3	22.5	23.3	23.5	24.8	22.3	22.5	23.3	23.5	24.8

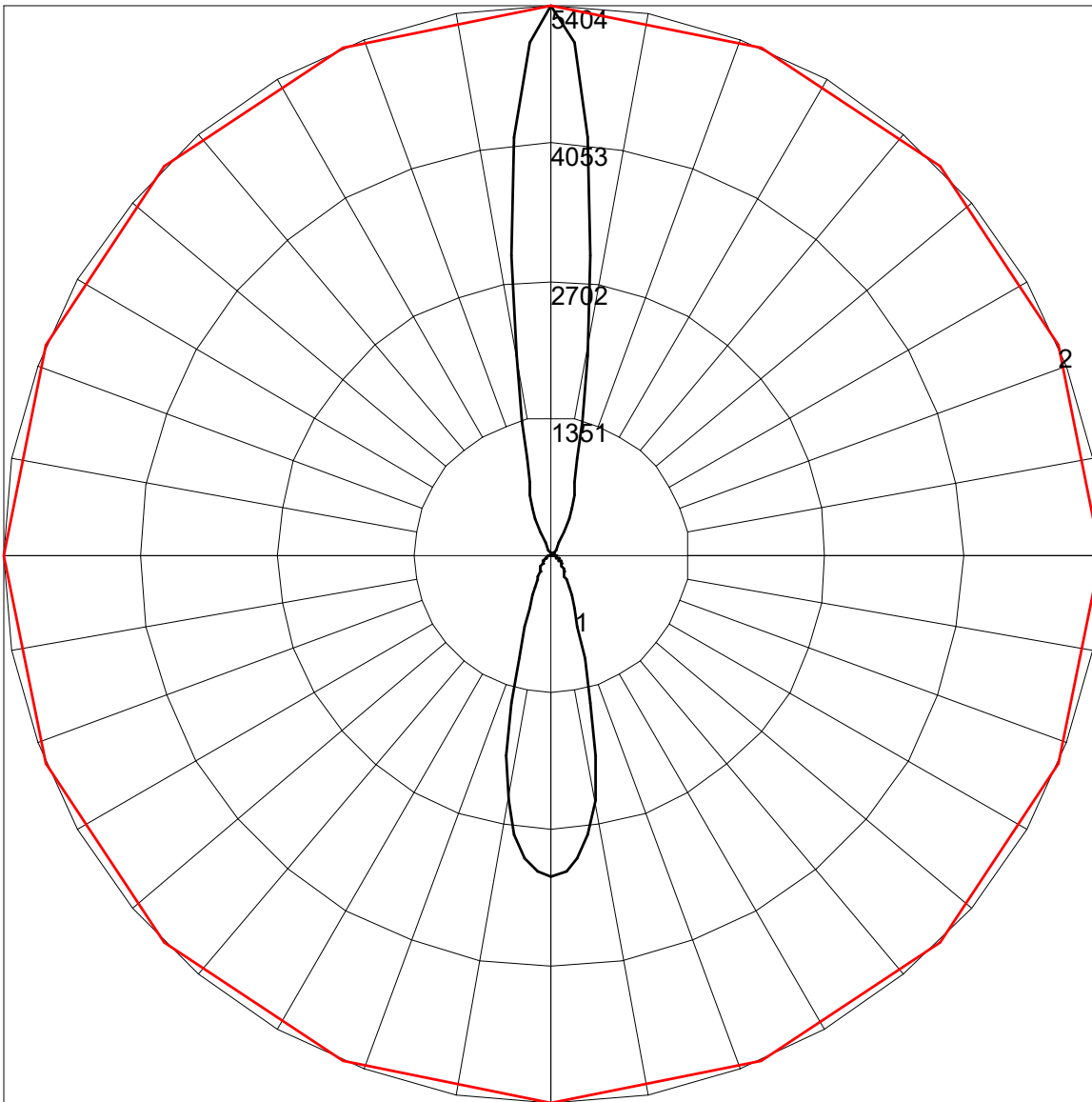
12H	4H	21.5	21.8	22.4	22.8	24.0	21.5	21.8	22.4	22.8	24.0
	6H	22.0	22.3	23.0	23.3	24.5	22.0	22.3	23.0	23.3	24.5
	8H	22.2	22.5	23.2	23.5	24.7	22.2	22.5	23.2	23.5	24.7

Maximum UGR = 24.8

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 5404 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.)