



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13255206.01 and #13257153.06

[TESTLAB]

[ISSUE DATE] 15-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

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

[MORE]

[LUMINAIRE] White formed aluminum housing, narrow spot 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\_SOURCE TYPE] LED

[\_SEARCH\_APPLICATION] INDOOR, DIRECT, INDIRECT

[\_SEARCH\_MOUNTING] WALL

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2220
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	64
Total Luminaire Watts	34.5
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

**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>	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089
<b>2.5</b>	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125
<b>5.0</b>	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198
<b>7.5</b>	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150
<b>10.0</b>	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157
<b>12.5</b>	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500
<b>15.0</b>	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160
<b>17.5</b>	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503
<b>20.0</b>	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078
<b>22.5</b>	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626
<b>25.0</b>	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496
<b>27.5</b>	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048
<b>30.0</b>	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327
<b>32.5</b>	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296
<b>35.0</b>	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581
<b>37.5</b>	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855
<b>40.0</b>	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165
<b>42.5</b>	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411
<b>45.0</b>	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755
<b>47.5</b>	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955
<b>50.0</b>	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608
<b>52.5</b>	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714
<b>55.0</b>	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868
<b>57.5</b>	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426
<b>60.0</b>	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388
<b>62.5</b>	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511
<b>65.0</b>	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037
<b>67.5</b>	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290
<b>70.0</b>	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027
<b>72.5</b>	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168
<b>75.0</b>	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712
<b>77.5</b>	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740
<b>80.0</b>	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172
<b>82.5</b>	10.007	10.007	10.007	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	5.003	5.003	5.003
<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>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>92.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>95.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>97.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>100.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>102.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>105.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>107.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>110.0</b>	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818
<b>112.5</b>	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818
<b>115.0</b>	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818
<b>117.5</b>	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818
<b>120.0</b>	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636
<b>122.5</b>	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636
<b>125.0</b>	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454
<b>127.5</b>	3.272	3.272	3.272	3.272	3.272	3.272	3.272	3.272	3.272	3.272
<b>130.0</b>	4.090	4.090	4.090	4.090	4.090	4.090	4.090	4.090	4.090	4.090
<b>132.5</b>	5.726	5.726	5.726	5.726	5.726	5.726	5.726	5.726	5.726	5.726

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## CANDELA TABULATION - (Cont.)

135.0	8.180	8.180	8.180	8.180	8.180	8.180	8.180	8.180	8.180	8.180
137.5	9.816	9.816	9.816	9.816	9.816	9.816	9.816	9.816	9.816	9.816
140.0	12.270	12.270	12.270	12.270	12.270	12.270	12.270	12.270	12.270	12.270
142.5	15.542	15.542	15.542	15.542	15.542	15.542	15.542	15.542	15.542	15.542
145.0	18.814	18.814	18.814	18.814	18.814	18.814	18.814	18.814	18.814	18.814
147.5	25.358	25.358	25.358	25.358	25.358	25.358	25.358	25.358	25.358	25.358
150.0	73.620	73.620	73.620	73.620	73.620	73.620	73.620	73.620	73.620	73.620
152.5	292.844	292.844	292.844	292.844	292.844	292.844	292.844	292.844	292.844	292.844
155.0	505.524	505.524	505.524	505.524	505.524	505.524	505.524	505.524	505.524	505.524
157.5	561.148	561.148	561.148	561.148	561.148	561.148	561.148	561.148	561.148	561.148
160.0	593.868	593.868	593.868	593.868	593.868	593.868	593.868	593.868	593.868	593.868
162.5	652.764	652.764	652.764	652.764	652.764	652.764	652.764	652.764	652.764	652.764
165.0	765.648	765.648	765.648	765.648	765.648	765.648	765.648	765.648	765.648	765.648
167.5	971.784	971.784	971.784	971.784	971.784	971.784	971.784	971.784	971.784	971.784
170.0	1376.694	1376.694	1376.694	1376.694	1376.694	1376.694	1376.694	1376.694	1376.694	1376.694
172.5	2437.645	2437.645	2437.645	2437.645	2437.645	2437.645	2437.645	2437.645	2437.645	2437.645
175.0	5814.360	5814.360	5814.360	5814.360	5814.360	5814.359	5814.359	5814.359	5814.359	5814.359
177.5	13308.877	13308.877	13308.877	13308.877	13308.876	13308.876	13308.876	13308.875	13308.875	13308.875
180.0	17079.000	17079.000	17079.000	17079.000	17079.000	17079.000	17079.000	17079.000	17079.000	17079.000

## 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

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82.5	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
87.5	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
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	0.818	0.818	0.818	0.818	0.818	0.818	0.818
112.5	0.818	0.818	0.818	0.818	0.818	0.818	0.818
115.0	0.818	0.818	0.818	0.818	0.818	0.818	0.818
117.5	0.818	0.818	0.818	0.818	0.818	0.818	0.818
120.0	1.636	1.636	1.636	1.636	1.636	1.636	1.636
122.5	1.636	1.636	1.636	1.636	1.636	1.636	1.636
125.0	2.454	2.454	2.454	2.454	2.454	2.454	2.454
127.5	3.272	3.272	3.272	3.272	3.272	3.272	3.272
130.0	4.090	4.090	4.090	4.090	4.090	4.090	4.090
132.5	5.726	5.726	5.726	5.726	5.726	5.726	5.726
135.0	8.180	8.180	8.180	8.180	8.180	8.180	8.180
137.5	9.816	9.816	9.816	9.816	9.816	9.816	9.816
140.0	12.270	12.270	12.270	12.270	12.270	12.270	12.270
142.5	15.542	15.542	15.542	15.542	15.542	15.542	15.542
145.0	18.814	18.814	18.814	18.814	18.814	18.814	18.814
147.5	25.358	25.358	25.358	25.358	25.358	25.358	25.358
150.0	73.620	73.620	73.620	73.620	73.620	73.620	73.620
152.5	292.844	292.844	292.844	292.844	292.844	292.844	292.844
155.0	505.524	505.524	505.524	505.524	505.524	505.524	505.524
157.5	561.148	561.148	561.148	561.148	561.148	561.148	561.148
160.0	593.868	593.868	593.868	593.868	593.868	593.868	593.868
162.5	652.764	652.764	652.764	652.764	652.764	652.764	652.764
165.0	765.648	765.648	765.648	765.648	765.648	765.648	765.648
167.5	971.784	971.784	971.784	971.784	971.784	971.784	971.784
170.0	1376.694	1376.694	1376.694	1376.694	1376.694	1376.694	1376.694
172.5	2437.645	2437.645	2437.645	2437.645	2437.645	2437.645	2437.645
175.0	5814.359	5814.359	5814.360	5814.360	5814.360	5814.360	5814.360
177.5	13308.87513308.87613308.87613308.87613308.87713308.87713308.877	13308.87513308.87613308.87613308.87613308.87713308.87713308.877	13308.87513308.87613308.87613308.87613308.87713308.87713308.877	13308.87513308.87613308.87613308.87613308.87713308.87713308.877	13308.87513308.87613308.87613308.87613308.87713308.87713308.877	13308.87513308.87613308.87613308.87613308.87713308.87713308.877	13308.87513308.87613308.87613308.87613308.87713308.87713308.877
180.0	17079.00017079.00017079.00017079.00017079.00017079.00017079.000	17079.00017079.00017079.00017079.00017079.00017079.00017079.000	17079.00017079.00017079.00017079.00017079.00017079.00017079.000	17079.00017079.00017079.00017079.00017079.00017079.00017079.000	17079.00017079.00017079.00017079.00017079.00017079.00017079.000	17079.00017079.00017079.00017079.00017079.00017079.00017079.000	17079.00017079.00017079.00017079.00017079.00017079.00017079.000

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

Zone	Lumens	%Lamp	%Fixt
0-20	684.22	N.A.	30.80
0-30	896.86	N.A.	40.40
0-40	1034.1	N.A.	46.60
0-60	1222.75	N.A.	55.10
0-80	1306.18	N.A.	58.80
0-90	1312.58	N.A.	59.10
10-90	1043.19	N.A.	47.00
20-40	349.88	N.A.	15.80
20-50	457.00	N.A.	20.60
40-70	243.55	N.A.	11.00
60-80	83.42	N.A.	3.80
70-80	28.53	N.A.	1.30
80-90	6.41	N.A.	0.30
90-110	0.11	N.A.	0.00
90-120	1.02	N.A.	0.00
90-130	3.29	N.A.	0.10
90-150	24.95	N.A.	1.10
90-180	907.47	N.A.	40.90
110-180	907.36	N.A.	40.90
0-180	2220.05	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	0.00
100-110	0.11
110-120	0.91
120-130	2.27
130-140	6.09
140-150	15.57
150-160	188.82
160-170	228.73
170-180	464.97

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-LM-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	102	102	102	102	88	88	88	76	76	76	65	65	65	59
1	102	99	96	93	95	92	90	87	81	79	77	70	69	68	61	60	59	54
2	95	89	84	80	89	84	80	76	74	71	68	65	63	61	57	55	54	50
3	89	81	76	71	83	77	72	68	68	65	61	61	58	55	53	51	50	46
4	83	75	68	64	78	71	65	61	63	59	56	57	53	51	50	48	46	43
5	78	69	62	58	74	66	60	55	59	55	51	53	50	47	48	45	43	41
6	74	64	58	53	70	61	55	51	55	51	47	50	47	44	45	43	41	38
7	70	60	53	49	66	57	51	47	52	48	44	48	44	41	43	40	38	36
8	66	56	50	45	63	54	48	44	49	45	42	45	42	39	41	38	36	35
9	63	53	47	43	60	51	45	41	47	42	39	43	39	37	39	37	35	33
10	60	50	44	40	57	48	43	39	45	40	37	41	38	35	38	35	33	32

# IES INDOOR REPORT

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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	18.6	19.3	19.5	20.2	21.4	18.6	19.3	19.5	20.2	21.4
	3H	20.0	20.6	20.9	21.6	22.7	20.0	20.6	20.9	21.6	22.7
	4H	20.4	21.1	21.4	22.0	23.2	20.4	21.1	21.4	22.0	23.2
	6H	20.7	21.3	21.7	22.3	23.4	20.7	21.3	21.7	22.3	23.4
	8H	20.8	21.4	21.8	22.3	23.5	20.8	21.4	21.8	22.3	23.5
	12H	20.8	21.4	21.8	22.3	23.5	20.8	21.4	21.8	22.3	23.5

### UGR Viewed Endwise

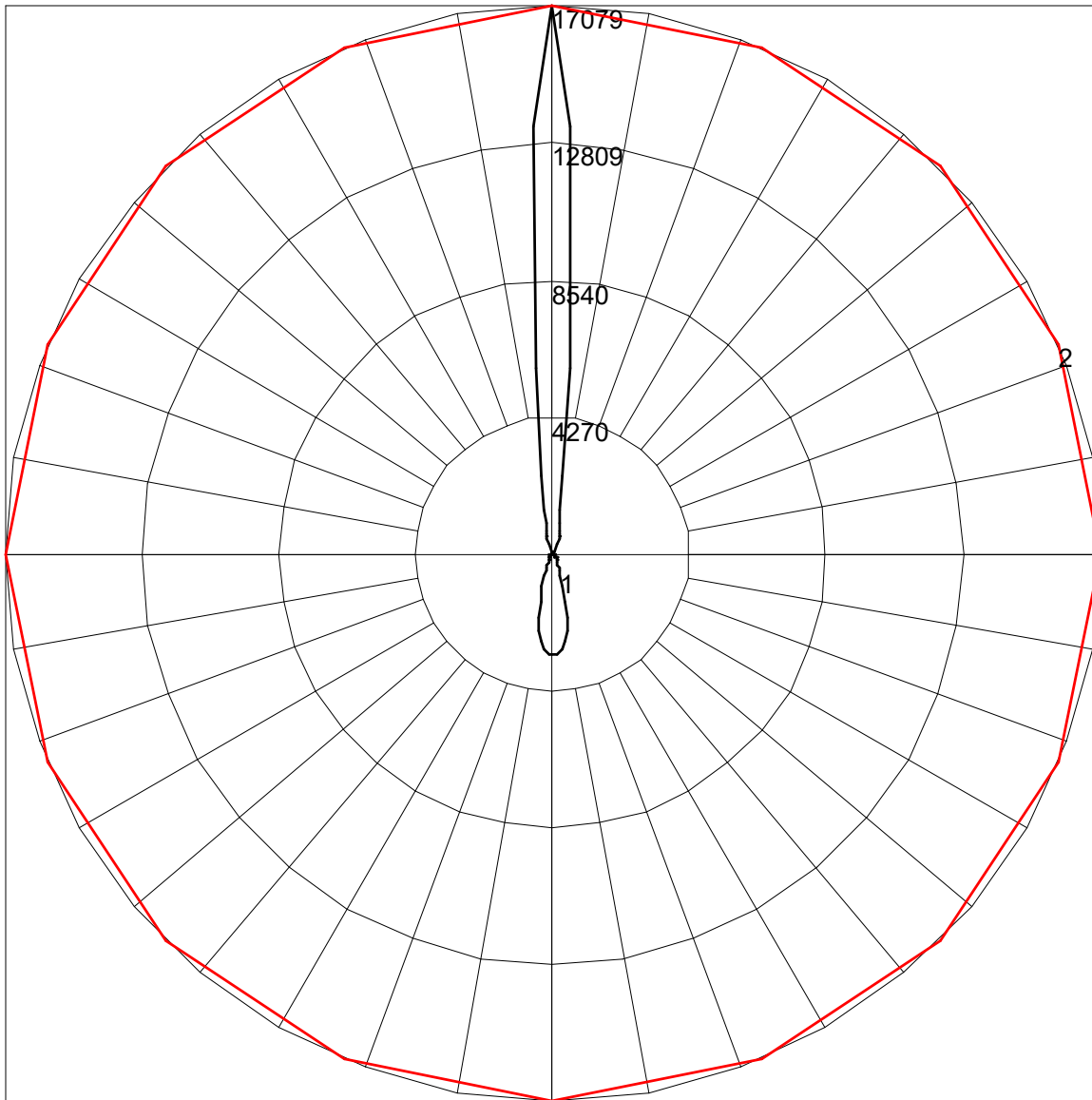
4H	2H	19.0	19.6	19.9	20.5	21.7	19.0	19.6	19.9	20.5	21.7
	3H	20.6	21.1	21.5	22.0	23.2	20.6	21.1	21.5	22.0	23.2
	4H	21.1	21.6	22.1	22.6	23.8	21.1	21.6	22.1	22.6	23.8
	6H	21.6	22.0	22.5	23.0	24.2	21.6	22.0	22.5	23.0	24.2
	8H	21.7	22.1	22.7	23.0	24.3	21.7	22.1	22.7	23.0	24.3
	12H	21.7	22.1	22.7	23.0	24.3	21.7	22.1	22.7	23.0	24.3
8H	4H	21.3	21.7	22.3	22.7	23.9	21.3	21.7	22.3	22.7	23.9
	6H	21.8	22.2	22.8	23.2	24.4	21.8	22.2	22.8	23.2	24.4
	8H	22.0	22.3	23.0	23.3	24.5	22.0	22.3	23.0	23.3	24.5
	12H	22.1	22.3	23.1	23.3	24.6	22.1	22.3	23.1	23.3	24.6
12H	4H	21.3	21.6	22.3	22.6	23.9	21.3	21.6	22.3	22.6	23.9
	6H	21.9	22.1	22.9	23.1	24.4	21.9	22.1	22.9	23.1	24.4
	8H	22.1	22.3	23.1	23.3	24.6	22.1	22.3	23.1	23.3	24.6

Maximum UGR = 24.6

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 17079 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.)