



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13255206.01 and #13257153.07

[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-RM-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 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	2162
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	63
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	57719	57719	57719
55	42293	42293	42293
65	30964	30964	30964
75	15276	15276	15276
85	9074	9074	9074

**IES INDOOR REPORT**

**PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-RM-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>
<b>0.0</b>	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550
<b>2.5</b>	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742
<b>5.0</b>	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990
<b>7.5</b>	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160
<b>10.0</b>	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028
<b>12.5</b>	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430
<b>15.0</b>	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144
<b>17.5</b>	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636
<b>20.0</b>	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577
<b>22.5</b>	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517
<b>25.0</b>	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868
<b>27.5</b>	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832
<b>30.0</b>	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630
<b>32.5</b>	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663
<b>35.0</b>	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283
<b>37.5</b>	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120
<b>40.0</b>	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197
<b>42.5</b>	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531
<b>45.0</b>	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960
<b>47.5</b>	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162
<b>50.0</b>	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138
<b>52.5</b>	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129
<b>55.0</b>	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651
<b>57.5</b>	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140
<b>60.0</b>	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193
<b>62.5</b>	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569
<b>65.0</b>	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348
<b>67.5</b>	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610
<b>70.0</b>	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195
<b>72.5</b>	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183
<b>75.0</b>	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493
<b>77.5</b>	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818
<b>80.0</b>	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803
<b>82.5</b>	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030
<b>85.0</b>	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499
<b>87.5</b>	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048
<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	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550
2.5	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742
5.0	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990
7.5	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160
10.0	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028
12.5	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430
15.0	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144
17.5	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636
20.0	754.577	754.577	754.577	754.577	754.577	754.577	754.577
22.5	574.517	574.517	574.517	574.517	574.517	574.517	574.517
25.0	465.868	465.868	465.868	465.868	465.868	465.868	465.868
27.5	385.832	385.832	385.832	385.832	385.832	385.832	385.832
30.0	315.630	315.630	315.630	315.630	315.630	315.630	315.630
32.5	255.663	255.663	255.663	255.663	255.663	255.663	255.663
35.0	215.283	215.283	215.283	215.283	215.283	215.283	215.283
37.5	188.120	188.120	188.120	188.120	188.120	188.120	188.120
40.0	166.197	166.197	166.197	166.197	166.197	166.197	166.197
42.5	146.531	146.531	146.531	146.531	146.531	146.531	146.531
45.0	128.960	128.960	128.960	128.960	128.960	128.960	128.960
47.5	113.162	113.162	113.162	113.162	113.162	113.162	113.162
50.0	99.138	99.138	99.138	99.138	99.138	99.138	99.138
52.5	87.129	87.129	87.129	87.129	87.129	87.129	87.129
55.0	76.651	76.651	76.651	76.651	76.651	76.651	76.651
57.5	67.140	67.140	67.140	67.140	67.140	67.140	67.140
60.0	58.193	58.193	58.193	58.193	58.193	58.193	58.193
62.5	49.569	49.569	49.569	49.569	49.569	49.569	49.569
65.0	41.348	41.348	41.348	41.348	41.348	41.348	41.348
67.5	33.610	33.610	33.610	33.610	33.610	33.610	33.610
70.0	26.195	26.195	26.195	26.195	26.195	26.195	26.195
72.5	19.183	19.183	19.183	19.183	19.183	19.183	19.183
75.0	12.493	12.493	12.493	12.493	12.493	12.493	12.493
77.5	7.818	7.818	7.818	7.818	7.818	7.818	7.818
80.0	5.803	5.803	5.803	5.803	5.803	5.803	5.803

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

82.5	4.030	4.030	4.030	4.030	4.030	4.030	4.030
85.0	2.499	2.499	2.499	2.499	2.499	2.499	2.499
87.5	1.048	1.048	1.048	1.048	1.048	1.048	1.048
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						
180.0	17079.00017079.00017079.00017079.00017079.00017079.00017079.000						

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

Zone	Lumens	%Lamp	%Fixt
0-20	666.03	N.A.	30.80
0-30	887.37	N.A.	41.00
0-40	1026.95	N.A.	47.50
0-60	1196.26	N.A.	55.30
0-80	1252.03	N.A.	57.90
0-90	1254.88	N.A.	58.00
10-90	991.44	N.A.	45.90
20-40	360.92	N.A.	16.70
20-50	461.14	N.A.	21.30
40-70	210.49	N.A.	9.70
60-80	55.76	N.A.	2.60
70-80	14.59	N.A.	0.70
80-90	2.85	N.A.	0.10
90-110	0.11	N.A.	0.00
90-120	1.02	N.A.	0.00
90-130	3.29	N.A.	0.20
90-150	24.95	N.A.	1.20
90-180	907.47	N.A.	42.00
110-180	907.36	N.A.	42.00
0-180	2162.34	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	263.44
10-20	402.59
20-30	221.34
30-40	139.58
40-50	100.23
50-60	69.09
60-70	41.17
70-80	14.59
80-90	2.85
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

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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	102	102	102	102	88	88	88	75	75	75	64	64	64	58
1	102	99	96	93	95	92	90	88	81	79	77	70	69	68	60	59	59	54
2	95	90	85	81	89	84	80	77	74	71	69	65	63	61	56	55	54	50
3	89	82	76	72	84	77	72	68	69	65	62	61	58	56	53	51	50	46
4	84	75	69	64	79	71	66	62	64	60	56	57	54	51	50	48	46	43
5	79	70	63	58	74	66	60	56	60	55	52	53	50	48	48	45	44	41
6	74	65	58	53	70	62	56	52	56	51	48	50	47	44	45	43	41	39
7	70	60	54	49	66	58	52	48	53	48	45	48	44	42	43	41	39	37
8	67	57	50	46	63	54	49	45	50	45	42	45	42	39	41	39	37	35
9	63	53	47	43	60	51	46	42	47	43	40	43	40	37	40	37	35	33
10	60	50	44	41	57	48	43	40	45	40	38	41	38	36	38	35	34	32

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-RM-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	17.3	18.0	18.2	18.9	20.1	17.3	18.0	18.2	18.9	20.1
	3H	18.3	18.9	19.2	19.9	21.0	18.3	18.9	19.2	19.9	21.0
	4H	18.4	19.0	19.4	20.0	21.2	18.4	19.0	19.4	20.0	21.2
	6H	18.4	19.0	19.4	19.9	21.1	18.4	19.0	19.4	19.9	21.1
	8H	18.4	19.0	19.4	19.9	21.1	18.4	19.0	19.4	19.9	21.1
	12H	18.4	18.9	19.3	19.8	21.1	18.4	18.9	19.3	19.8	21.1

### UGR Viewed Endwise

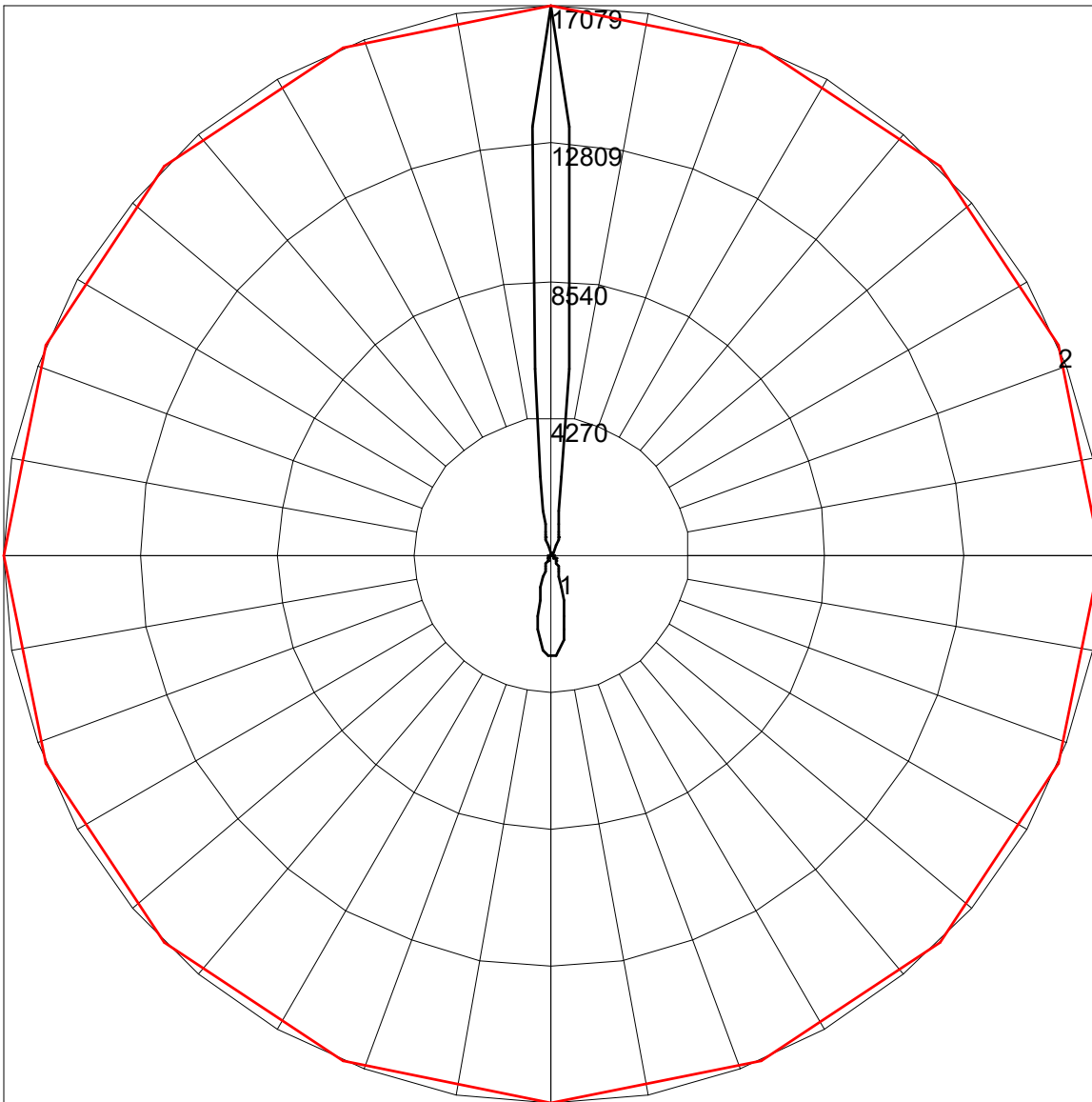
4H	2H	17.6	18.2	18.5	19.1	20.3	17.6	18.2	18.5	19.1	20.3
	3H	18.7	19.2	19.6	20.2	21.4	18.7	19.2	19.6	20.2	21.4
	4H	18.9	19.4	19.9	20.3	21.6	18.9	19.4	19.9	20.3	21.6
	6H	18.9	19.3	19.9	20.3	21.6	18.9	19.3	19.9	20.3	21.6
	8H	18.9	19.3	19.9	20.3	21.5	18.9	19.3	19.9	20.3	21.5
	12H	18.9	19.3	19.9	20.2	21.5	18.9	19.3	19.9	20.2	21.5
8H	4H	18.9	19.3	19.8	20.2	21.5	18.9	19.3	19.8	20.2	21.5
	6H	19.0	19.3	20.0	20.3	21.5	19.0	19.3	20.0	20.3	21.5
	8H	19.0	19.3	20.0	20.3	21.5	19.0	19.3	20.0	20.3	21.5
	12H	19.0	19.2	20.0	20.2	21.5	19.0	19.2	20.0	20.2	21.5
12H	4H	18.8	19.2	19.8	20.1	21.4	18.8	19.2	19.8	20.1	21.4
	6H	18.9	19.2	19.9	20.2	21.5	18.9	19.2	19.9	20.2	21.5
	8H	19.0	19.2	20.0	20.2	21.5	19.0	19.2	20.0	20.2	21.5

Maximum UGR = 21.6

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-RM-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.)