



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-ON-CSD-WM_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13255206.01 and #13131414.09

[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-ON-CSD-WM

[MORE]

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

[MORE] narrow distrib anodized alum open reflector 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	1920
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	56
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	4345	4345	4345
55	2256	2256	2256
65	1913	1913	1913
75	2499	2499	2499
85	5567	5567	5567

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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	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230
2.5	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880
5.0	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658
7.5	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853
10.0	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404
12.5	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997
15.0	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718
17.5	929.509	929.509	929.509	929.509	929.509	929.509	929.509	929.509	929.509	929.509
20.0	759.857	759.857	759.857	759.857	759.857	759.857	759.857	759.857	759.857	759.857
22.5	622.398	622.398	622.398	622.398	622.398	622.398	622.398	622.398	622.398	622.398
25.0	473.186	473.186	473.186	473.186	473.186	473.186	473.186	473.186	473.186	473.186
27.5	313.754	313.754	313.754	313.754	313.754	313.754	313.754	313.754	313.754	313.754
30.0	170.674	170.674	170.674	170.674	170.674	170.674	170.674	170.674	170.674	170.674
32.5	74.606	74.606	74.606	74.606	74.606	74.606	74.606	74.606	74.606	74.606
35.0	31.171	31.171	31.171	31.171	31.171	31.171	31.171	31.171	31.171	31.171
37.5	19.929	19.929	19.929	19.929	19.929	19.929	19.929	19.929	19.929	19.929
40.0	15.841	15.841	15.841	15.841	15.841	15.841	15.841	15.841	15.841	15.841
42.5	12.775	12.775	12.775	12.775	12.775	12.775	12.775	12.775	12.775	12.775
45.0	9.709	9.709	9.709	9.709	9.709	9.709	9.709	9.709	9.709	9.709
47.5	7.665	7.665	7.665	7.665	7.665	7.665	7.665	7.665	7.665	7.665
50.0	6.132	6.132	6.132	6.132	6.132	6.132	6.132	6.132	6.132	6.132
52.5	5.110	5.110	5.110	5.110	5.110	5.110	5.110	5.110	5.110	5.110
55.0	4.088	4.088	4.088	4.088	4.088	4.088	4.088	4.088	4.088	4.088
57.5	3.577	3.577	3.577	3.577	3.577	3.577	3.577	3.577	3.577	3.577
60.0	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066
62.5	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555
65.0	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555
67.5	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555
70.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
72.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
75.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
77.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
80.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
82.5	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533
85.0	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533
87.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
90.0	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533
92.5	0.000	0.000	0.000	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	0.000	0.000	0.000
97.5	0.000	0.000	0.000	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	0.000	0.000	0.000
102.5	0.000	0.000	0.000	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	0.000	0.000	0.000
107.5	0.000	0.000	0.000	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	0.818	0.818	0.818
112.5	0.818	0.818	0.818	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	0.818	0.818	0.818
117.5	0.818	0.818	0.818	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	1.636	1.636	1.636
122.5	1.636	1.636	1.636	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	2.454	2.454	2.454
127.5	3.272	3.272	3.272	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	4.090	4.090	4.090
132.5	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	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230
2.5	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880
5.0	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658
7.5	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853
10.0	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404
12.5	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997
15.0	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718
17.5	929.509	929.509	929.509	929.509	929.509	929.509	929.509
20.0	759.857	759.857	759.857	759.857	759.857	759.857	759.857
22.5	622.398	622.398	622.398	622.398	622.398	622.398	622.398
25.0	473.186	473.186	473.186	473.186	473.186	473.186	473.186
27.5	313.754	313.754	313.754	313.754	313.754	313.754	313.754
30.0	170.674	170.674	170.674	170.674	170.674	170.674	170.674
32.5	74.606	74.606	74.606	74.606	74.606	74.606	74.606
35.0	31.171	31.171	31.171	31.171	31.171	31.171	31.171
37.5	19.929	19.929	19.929	19.929	19.929	19.929	19.929
40.0	15.841	15.841	15.841	15.841	15.841	15.841	15.841
42.5	12.775	12.775	12.775	12.775	12.775	12.775	12.775
45.0	9.709	9.709	9.709	9.709	9.709	9.709	9.709
47.5	7.665	7.665	7.665	7.665	7.665	7.665	7.665
50.0	6.132	6.132	6.132	6.132	6.132	6.132	6.132
52.5	5.110	5.110	5.110	5.110	5.110	5.110	5.110
55.0	4.088	4.088	4.088	4.088	4.088	4.088	4.088
57.5	3.577	3.577	3.577	3.577	3.577	3.577	3.577
60.0	3.066	3.066	3.066	3.066	3.066	3.066	3.066
62.5	2.555	2.555	2.555	2.555	2.555	2.555	2.555
65.0	2.555	2.555	2.555	2.555	2.555	2.555	2.555
67.5	2.555	2.555	2.555	2.555	2.555	2.555	2.555
70.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044
72.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044
75.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044
77.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044
80.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-ON-CSD-WM_.IES****CANDELA TABULATION - (Cont.)**

82.5	1.533	1.533	1.533	1.533	1.533	1.533	1.533
85.0	1.533	1.533	1.533	1.533	1.533	1.533	1.533
87.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044
90.0	1.533	1.533	1.533	1.533	1.533	1.533	1.533
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-ON-CSD-WM_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	752.84	N.A.	39.20
0-30	961.63	N.A.	50.10
0-40	994.33	N.A.	51.80
0-60	1006.06	N.A.	52.40
0-80	1010.76	N.A.	52.60
0-90	1012.64	N.A.	52.70
10-90	617.55	N.A.	32.20
20-40	241.50	N.A.	12.60
20-50	249.36	N.A.	13.00
40-70	14.26	N.A.	0.70
60-80	4.69	N.A.	0.20
70-80	2.16	N.A.	0.10
80-90	1.88	N.A.	0.10
90-110	0.32	N.A.	0.00
90-120	1.23	N.A.	0.10
90-130	3.50	N.A.	0.20
90-150	25.16	N.A.	1.30
90-180	907.68	N.A.	47.30
110-180	907.36	N.A.	47.30
0-180	1920.32	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	395.09
10-20	357.74
20-30	208.79
30-40	32.71
40-50	7.86
50-60	3.87
60-70	2.53
70-80	2.16
80-90	1.88
90-100	0.21
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

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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53
1	102	99	96	93	94	92	89	87	79	78	76	67	67	66	57	56	56	51
2	96	91	86	83	89	85	81	78	74	72	70	64	63	61	55	54	53	49
3	91	84	79	75	85	79	75	71	70	67	64	61	59	57	53	52	51	47
4	86	78	73	69	80	74	69	66	66	63	60	58	56	54	51	50	49	46
5	82	73	68	64	77	70	65	61	63	59	56	56	54	52	50	48	47	44
6	78	69	63	59	73	66	61	57	60	56	53	54	51	49	48	47	45	43
7	74	65	60	56	70	63	58	54	57	53	51	52	49	47	47	45	44	42
8	71	62	57	53	67	60	55	51	55	51	48	50	47	45	46	44	43	41
9	68	59	54	50	65	57	52	49	53	49	46	48	46	44	44	43	41	40
10	65	57	51	48	62	55	50	47	51	47	45	47	44	42	43	41	40	39

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-ON-CSD-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	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	3H	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	4H	2.5	2.5	2.5	2.5	3.1	2.5	2.5	2.5	3.1
	6H	2.5	2.5	2.8	3.3	4.6	2.5	2.5	2.8	3.3
	8H	2.5	2.9	3.4	3.9	5.2	2.5	2.9	3.4	3.9
	12H	3.1	3.6	4.1	4.6	5.9	3.1	3.6	4.1	4.6

UGR Viewed Endwise

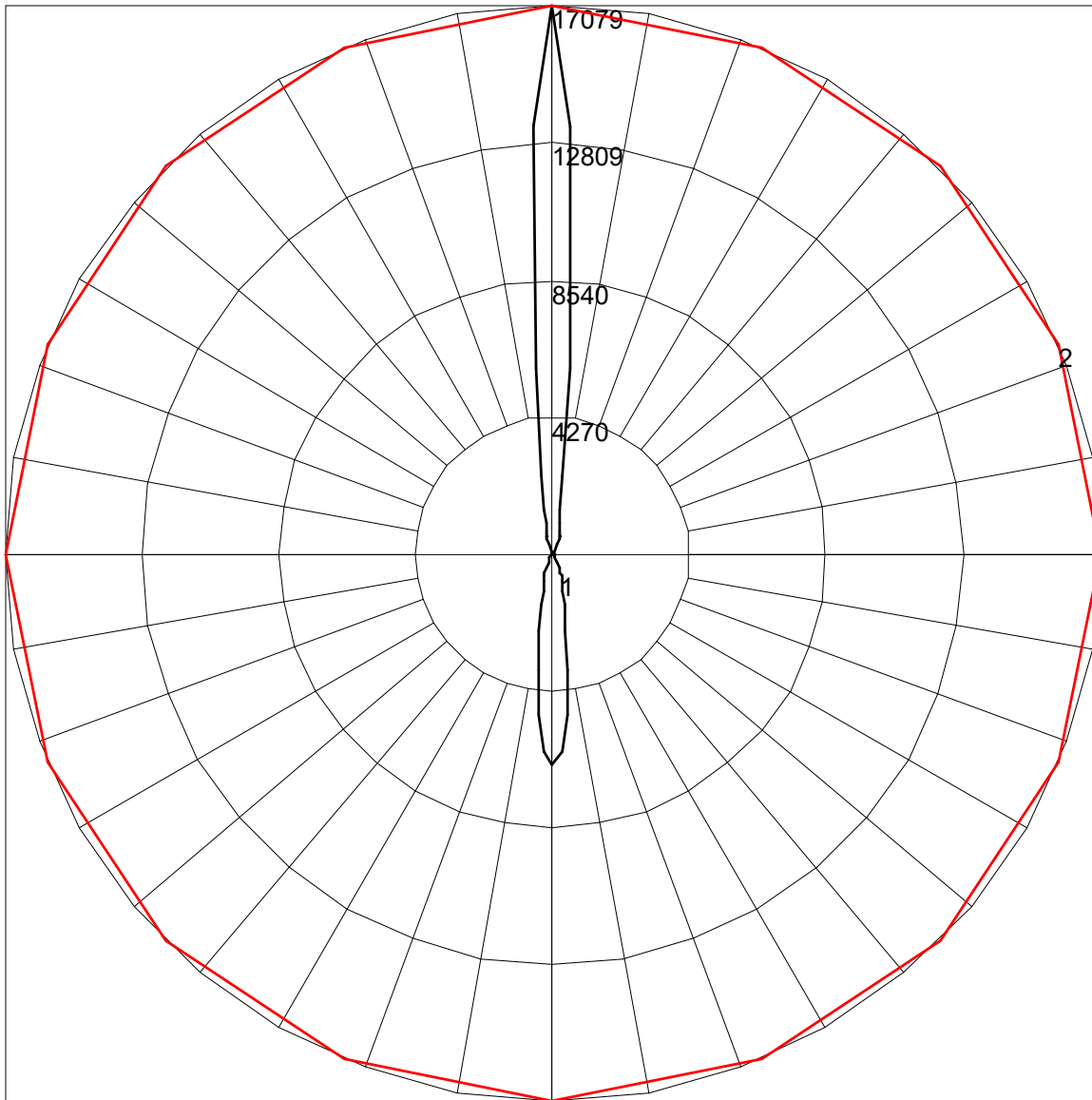
4H	2H	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	3H	2.5	2.5	2.5	2.5	2.7	2.5	2.5	2.5	2.7
	4H	2.5	2.5	2.5	2.7	4.0	2.5	2.5	2.5	2.7
	6H	3.1	3.4	4.1	4.5	5.8	3.1	3.4	4.1	4.5
	8H	3.8	4.1	4.8	5.1	6.5	3.8	4.1	4.8	5.1
	12H	4.6	4.9	5.7	6.0	7.3	4.6	4.9	5.7	6.0
8H	4H	2.5	2.5	2.9	3.2	4.5	2.5	2.5	2.9	3.2
	6H	3.9	4.2	5.0	5.2	6.6	3.9	4.2	5.0	5.2
	8H	4.8	5.0	5.8	6.1	7.4	4.8	5.0	5.8	6.1
	12H	5.8	6.0	6.9	7.1	8.5	5.8	6.0	6.9	7.1
12H	4H	2.5	2.5	3.0	3.3	4.6	2.5	2.5	3.0	3.3
	6H	4.1	4.4	5.2	5.4	6.7	4.1	4.4	5.2	5.4
	8H	5.1	5.3	6.2	6.3	7.7	5.1	5.3	6.2	6.3

Maximum UGR = 8.5

IES INDOOR REPORT

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