



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13255206.01 and #13131414.01

[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-OW-CSD-WM

[MORE]

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

[MORE] wide distrib anodized alum open reflector 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	2176
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	34375	34375	34375
55	9784	9784	9784
65	4439	4439	4439
75	1374	1374	1374
85	370	370	370

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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	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621
2.5	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154
5.0	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863
7.5	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770
10.0	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100
12.5	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144
15.0	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457
17.5	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748
20.0	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440
22.5	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626
25.0	949.949	949.949	949.949	949.949	949.949	949.949	949.949	949.949	949.949	949.949
27.5	870.233	870.233	870.233	870.233	870.233	870.233	870.233	870.233	870.233	870.233
30.0	774.676	774.676	774.676	774.676	774.676	774.676	774.676	774.676	774.676	774.676
32.5	669.921	669.921	669.921	669.921	669.921	669.921	669.921	669.921	669.921	669.921
35.0	556.479	556.479	556.479	556.479	556.479	556.479	556.479	556.479	556.479	556.479
37.5	421.268	421.268	421.268	421.268	421.268	421.268	421.268	421.268	421.268	421.268
40.0	266.589	266.589	266.589	266.589	266.589	266.589	266.589	266.589	266.589	266.589
42.5	146.555	146.555	146.555	146.555	146.555	146.555	146.555	146.555	146.555	146.555
45.0	76.803	76.803	76.803	76.803	76.803	76.803	76.803	76.803	76.803	76.803
47.5	47.830	47.830	47.830	47.830	47.830	47.830	47.830	47.830	47.830	47.830
50.0	33.419	33.419	33.419	33.419	33.419	33.419	33.419	33.419	33.419	33.419
52.5	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375
55.0	17.732	17.732	17.732	17.732	17.732	17.732	17.732	17.732	17.732	17.732
57.5	13.439	13.439	13.439	13.439	13.439	13.439	13.439	13.439	13.439	13.439
60.0	10.475	10.475	10.475	10.475	10.475	10.475	10.475	10.475	10.475	10.475
62.5	8.023	8.023	8.023	8.023	8.023	8.023	8.023	8.023	8.023	8.023
65.0	5.928	5.928	5.928	5.928	5.928	5.928	5.928	5.928	5.928	5.928
67.5	4.139	4.139	4.139	4.139	4.139	4.139	4.139	4.139	4.139	4.139
70.0	2.759	2.759	2.759	2.759	2.759	2.759	2.759	2.759	2.759	2.759
72.5	1.788	1.788	1.788	1.788	1.788	1.788	1.788	1.788	1.788	1.788
75.0	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124
77.5	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
80.0	0.409	0.409	0.409	0.409	0.409	0.409	0.409	0.409	0.409	0.409
82.5	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204
85.0	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
87.5	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.000	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	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621
2.5	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154
5.0	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863
7.5	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770
10.0	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100
12.5	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144
15.0	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457
17.5	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748
20.0	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440
22.5	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626
25.0	949.949	949.949	949.949	949.949	949.949	949.949	949.949
27.5	870.233	870.233	870.233	870.233	870.233	870.233	870.233
30.0	774.676	774.676	774.676	774.676	774.676	774.676	774.676
32.5	669.921	669.921	669.921	669.921	669.921	669.921	669.921
35.0	556.479	556.479	556.479	556.479	556.479	556.479	556.479
37.5	421.268	421.268	421.268	421.268	421.268	421.268	421.268
40.0	266.589	266.589	266.589	266.589	266.589	266.589	266.589
42.5	146.555	146.555	146.555	146.555	146.555	146.555	146.555
45.0	76.803	76.803	76.803	76.803	76.803	76.803	76.803
47.5	47.830	47.830	47.830	47.830	47.830	47.830	47.830
50.0	33.419	33.419	33.419	33.419	33.419	33.419	33.419
52.5	24.375	24.375	24.375	24.375	24.375	24.375	24.375
55.0	17.732	17.732	17.732	17.732	17.732	17.732	17.732
57.5	13.439	13.439	13.439	13.439	13.439	13.439	13.439
60.0	10.475	10.475	10.475	10.475	10.475	10.475	10.475
62.5	8.023	8.023	8.023	8.023	8.023	8.023	8.023
65.0	5.928	5.928	5.928	5.928	5.928	5.928	5.928
67.5	4.139	4.139	4.139	4.139	4.139	4.139	4.139
70.0	2.759	2.759	2.759	2.759	2.759	2.759	2.759
72.5	1.788	1.788	1.788	1.788	1.788	1.788	1.788
75.0	1.124	1.124	1.124	1.124	1.124	1.124	1.124
77.5	0.664	0.664	0.664	0.664	0.664	0.664	0.664
80.0	0.409	0.409	0.409	0.409	0.409	0.409	0.409

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CANDELA TABULATION - (Cont.)

82.5	0.204	0.204	0.204	0.204	0.204	0.204	0.204
85.0	0.102	0.102	0.102	0.102	0.102	0.102	0.102
87.5	0.051	0.051	0.051	0.051	0.051	0.051	0.051
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-OW-CSD-WM_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	401.55	N.A.	18.50
0-30	829.93	N.A.	38.10
0-40	1164.3	N.A.	53.50
0-60	1260.71	N.A.	57.90
0-80	1268.15	N.A.	58.30
0-90	1268.3	N.A.	58.30
10-90	1167.89	N.A.	53.70
20-40	762.75	N.A.	35.10
20-50	841.98	N.A.	38.70
40-70	102.49	N.A.	4.70
60-80	7.44	N.A.	0.30
70-80	1.36	N.A.	0.10
80-90	0.15	N.A.	0.00
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.	1.10
90-180	907.47	N.A.	41.70
110-180	907.36	N.A.	41.70
0-180	2175.77	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	100.41
10-20	301.14
20-30	428.38
30-40	334.37
40-50	79.22
50-60	17.19
60-70	6.08
70-80	1.36
80-90	0.15
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-OW-CSD-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	75	75	75	64	64	64	58
1	102	99	96	93	95	93	90	88	81	79	77	70	69	68	60	60	59	54
2	95	90	85	81	89	84	80	77	74	71	69	65	63	61	57	55	54	50
3	89	82	76	71	83	77	72	68	68	65	62	61	58	56	53	51	50	46
4	83	75	68	63	78	71	65	61	63	59	56	56	53	51	50	48	46	43
5	78	68	62	57	73	65	59	55	58	54	50	52	49	46	47	44	42	40
6	73	63	56	51	69	60	54	50	54	50	46	49	45	43	44	41	39	37
7	69	58	51	47	65	55	49	45	50	46	42	46	42	39	41	38	36	34
8	64	54	47	43	61	51	46	41	47	42	39	43	39	36	39	36	34	32
9	61	50	44	39	57	48	42	38	44	39	36	40	36	34	36	33	31	30
10	57	47	40	36	54	45	39	35	41	36	33	38	34	31	34	31	29	28

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-OW-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	6.1	6.8	7.1	7.7	8.9	6.1	6.8	7.1	7.7	8.9
	3H	6.4	7.0	7.3	7.9	9.1	6.4	7.0	7.3	7.9	9.1
	4H	6.3	6.9	7.3	7.8	9.0	6.3	6.9	7.3	7.8	9.0
	6H	6.2	6.8	7.2	7.7	8.9	6.2	6.8	7.2	7.7	8.9
	8H	6.2	6.7	7.2	7.6	8.8	6.2	6.7	7.2	7.6	8.8
	12H	6.1	6.6	7.1	7.5	8.8	6.1	6.6	7.1	7.5	8.8

UGR Viewed Endwise

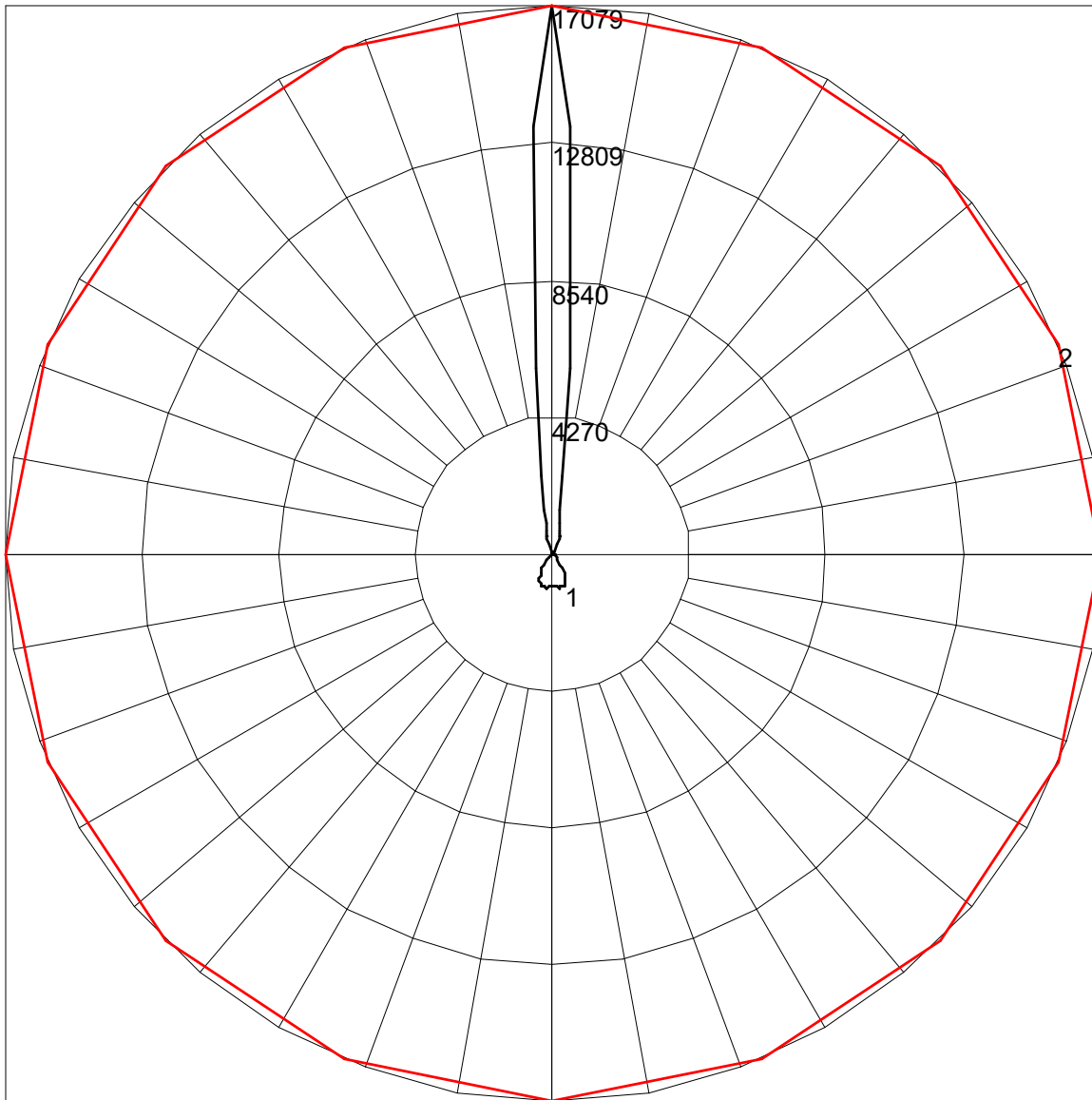
4H	2H	6.2	6.7	7.1	7.7	8.9	6.2	6.7	7.1	7.7	8.9
	3H	6.5	6.9	7.4	7.9	9.1	6.5	6.9	7.4	7.9	9.1
	4H	6.4	6.9	7.4	7.8	9.1	6.4	6.9	7.4	7.8	9.1
	6H	6.4	6.7	7.3	7.7	8.9	6.4	6.7	7.3	7.7	8.9
	8H	6.3	6.6	7.3	7.6	8.9	6.3	6.6	7.3	7.6	8.9
	12H	6.2	6.5	7.2	7.5	8.8	6.2	6.5	7.2	7.5	8.8
8H	4H	6.3	6.6	7.3	7.6	8.9	6.3	6.6	7.3	7.6	8.9
	6H	6.2	6.5	7.2	7.5	8.8	6.2	6.5	7.2	7.5	8.8
	8H	6.2	6.4	7.2	7.4	8.7	6.2	6.4	7.2	7.4	8.7
	12H	6.1	6.3	7.1	7.3	8.6	6.1	6.3	7.1	7.3	8.6
12H	4H	6.2	6.5	7.2	7.5	8.8	6.2	6.5	7.2	7.5	8.8
	6H	6.2	6.4	7.2	7.4	8.7	6.2	6.4	7.2	7.4	8.7
	8H	6.1	6.3	7.1	7.3	8.6	6.1	6.3	7.1	7.3	8.6

Maximum UGR = 9.1

IES INDOOR REPORT

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