



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13255206.01 and #13257153.03

[TESTLAB] UL Verification Services Inc.

[TESTLAB]

[ISSUEDATE] 15-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

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

[MORE]

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

[MORE] wide distrib white painted regressed prismatic lens trim down

[LAMP] Two white LEDs (one up/one down)

[_SEARCH_SOURCE] LED

[_SEARCH_APPLICATION] INDOOR, DIRECT, INDIRECT

[_SEARCH_MOUNTING] WALL

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2224
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	47099	47099	47099
55	37270	37270	37270
65	27860	27860	27860
75	14506	14506	14506
85	8791	8791	8791

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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	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580
2.5	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352
5.0	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405
7.5	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581
10.0	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494
12.5	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302
15.0	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584
17.5	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112
20.0	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430
22.5	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696
25.0	913.524	913.524	913.524	913.524	913.524	913.524	913.524	913.524	913.524	913.524
27.5	737.114	737.114	737.114	737.114	737.114	737.114	737.114	737.114	737.114	737.114
30.0	556.426	556.426	556.426	556.426	556.426	556.426	556.426	556.426	556.426	556.426
32.5	387.602	387.602	387.602	387.602	387.602	387.602	387.602	387.602	387.602	387.602
35.0	264.212	264.212	264.212	264.212	264.212	264.212	264.212	264.212	264.212	264.212
37.5	187.063	187.063	187.063	187.063	187.063	187.063	187.063	187.063	187.063	187.063
40.0	143.162	143.162	143.162	143.162	143.162	143.162	143.162	143.162	143.162	143.162
42.5	119.436	119.436	119.436	119.436	119.436	119.436	119.436	119.436	119.436	119.436
45.0	105.233	105.233	105.233	105.233	105.233	105.233	105.233	105.233	105.233	105.233
47.5	94.500	94.500	94.500	94.500	94.500	94.500	94.500	94.500	94.500	94.500
50.0	84.816	84.816	84.816	84.816	84.816	84.816	84.816	84.816	84.816	84.816
52.5	75.939	75.939	75.939	75.939	75.939	75.939	75.939	75.939	75.939	75.939
55.0	67.546	67.546	67.546	67.546	67.546	67.546	67.546	67.546	67.546	67.546
57.5	59.557	59.557	59.557	59.557	59.557	59.557	59.557	59.557	59.557	59.557
60.0	51.890	51.890	51.890	51.890	51.890	51.890	51.890	51.890	51.890	51.890
62.5	44.385	44.385	44.385	44.385	44.385	44.385	44.385	44.385	44.385	44.385
65.0	37.203	37.203	37.203	37.203	37.203	37.203	37.203	37.203	37.203	37.203
67.5	30.424	30.424	30.424	30.424	30.424	30.424	30.424	30.424	30.424	30.424
70.0	23.968	23.968	23.968	23.968	23.968	23.968	23.968	23.968	23.968	23.968
72.5	17.754	17.754	17.754	17.754	17.754	17.754	17.754	17.754	17.754	17.754
75.0	11.863	11.863	11.863	11.863	11.863	11.863	11.863	11.863	11.863	11.863
77.5	7.586	7.586	7.586	7.586	7.586	7.586	7.586	7.586	7.586	7.586
80.0	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649
82.5	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954
85.0	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421
87.5	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
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	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580	1565.580
2.5	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352	1562.352
5.0	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405
7.5	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581	1519.581
10.0	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494	1486.494
12.5	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302	1441.302
15.0	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584	1381.584
17.5	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112	1304.112
20.0	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430	1202.430
22.5	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696	1071.696
25.0	913.524	913.524	913.524	913.524	913.524	913.524	913.524
27.5	737.114	737.114	737.114	737.114	737.114	737.114	737.114
30.0	556.426	556.426	556.426	556.426	556.426	556.426	556.426
32.5	387.602	387.602	387.602	387.602	387.602	387.602	387.602
35.0	264.212	264.212	264.212	264.212	264.212	264.212	264.212
37.5	187.063	187.063	187.063	187.063	187.063	187.063	187.063
40.0	143.162	143.162	143.162	143.162	143.162	143.162	143.162
42.5	119.436	119.436	119.436	119.436	119.436	119.436	119.436
45.0	105.233	105.233	105.233	105.233	105.233	105.233	105.233
47.5	94.500	94.500	94.500	94.500	94.500	94.500	94.500
50.0	84.816	84.816	84.816	84.816	84.816	84.816	84.816
52.5	75.939	75.939	75.939	75.939	75.939	75.939	75.939
55.0	67.546	67.546	67.546	67.546	67.546	67.546	67.546
57.5	59.557	59.557	59.557	59.557	59.557	59.557	59.557
60.0	51.890	51.890	51.890	51.890	51.890	51.890	51.890
62.5	44.385	44.385	44.385	44.385	44.385	44.385	44.385
65.0	37.203	37.203	37.203	37.203	37.203	37.203	37.203
67.5	30.424	30.424	30.424	30.424	30.424	30.424	30.424
70.0	23.968	23.968	23.968	23.968	23.968	23.968	23.968
72.5	17.754	17.754	17.754	17.754	17.754	17.754	17.754
75.0	11.863	11.863	11.863	11.863	11.863	11.863	11.863
77.5	7.586	7.586	7.586	7.586	7.586	7.586	7.586
80.0	5.649	5.649	5.649	5.649	5.649	5.649	5.649

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

82.5	3.954	3.954	3.954	3.954	3.954	3.954	3.954
85.0	2.421	2.421	2.421	2.421	2.421	2.421	2.421
87.5	1.049	1.049	1.049	1.049	1.049	1.049	1.049
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	13308.8751	13308.8761	13308.8761	13308.8761	13308.8771	13308.8771	13308.877
180.0	17079.0001	17079.0001	17079.0001	17079.0001	17079.0001	17079.0001	17079.000

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

Zone	Lumens	%Lamp	%Fixt
0-20	529.33	N.A.	23.80
0-30	937.24	N.A.	42.10
0-40	1118.91	N.A.	50.30
0-60	1262.78	N.A.	56.80
0-80	1313.5	N.A.	59.10
0-90	1316.29	N.A.	59.20
10-90	1170.66	N.A.	52.60
20-40	589.58	N.A.	26.50
20-50	672.86	N.A.	30.30
40-70	180.90	N.A.	8.10
60-80	50.71	N.A.	2.30
70-80	13.68	N.A.	0.60
80-90	2.79	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.	0.10
90-150	24.95	N.A.	1.10
90-180	907.47	N.A.	40.80
110-180	907.36	N.A.	40.80
0-180	2223.75	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	145.63
10-20	383.70
20-30	407.91
30-40	181.67
40-50	83.28
50-60	60.59
60-70	37.03
70-80	13.68
80-90	2.79
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

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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	76	76	76	65	65	65	59
1	102	99	96	93	96	93	90	88	81	79	78	71	69	68	61	60	59	55
2	95	90	85	81	89	84	80	77	74	71	69	65	63	61	57	56	54	50
3	89	82	76	71	84	77	72	68	69	65	62	61	58	56	53	52	50	46
4	83	75	68	63	78	71	65	61	63	59	56	57	53	51	50	48	46	43
5	78	69	62	57	74	65	59	55	59	54	51	53	49	47	47	45	43	40
6	73	63	57	52	69	60	55	50	55	50	47	50	46	43	45	42	40	37
7	69	59	52	48	65	56	50	46	51	47	43	47	43	40	42	39	37	35
8	65	55	48	44	62	53	47	43	48	43	40	44	40	37	40	37	35	33
9	62	51	45	41	58	49	43	40	45	41	37	41	38	35	38	35	33	31
10	58	48	42	38	55	46	41	37	43	38	35	39	36	33	36	33	31	29

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-RW-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	16.5	17.2	17.4	18.1	19.2
	3H	17.5	18.1	18.4	19.0	20.2
	4H	17.6	18.3	18.6	19.2	20.4
	6H	17.7	18.2	18.6	19.2	20.4
	8H	17.7	18.2	18.6	19.1	20.3
	12H	17.6	18.2	18.6	19.1	20.3

UGR Viewed Endwise

16.5	17.2	17.4	18.1	19.2
17.5	18.1	18.4	19.0	20.2
17.6	18.3	18.6	19.2	20.4
17.7	18.2	18.6	19.2	20.4
17.7	18.2	18.6	19.1	20.3
17.6	18.2	18.6	19.1	20.3

4H	2H	16.8	17.4	17.7	18.3	19.5	16.8	17.4	17.7	18.3	19.5
	3H	17.9	18.4	18.9	19.4	20.6	17.9	18.4	18.9	19.4	20.6
	4H	18.1	18.6	19.1	19.6	20.8	18.1	18.6	19.1	19.6	20.8
	6H	18.2	18.6	19.2	19.6	20.8	18.2	18.6	19.2	19.6	20.8
	8H	18.2	18.6	19.2	19.6	20.8	18.2	18.6	19.2	19.6	20.8
	12H	18.2	18.5	19.2	19.5	20.8	18.2	18.5	19.2	19.5	20.8

8H	4H	18.1	18.5	19.1	19.5	20.7	18.1	18.5	19.1	19.5	20.7
	6H	18.3	18.6	19.3	19.6	20.8	18.3	18.6	19.3	19.6	20.8
	8H	18.3	18.6	19.3	19.6	20.8	18.3	18.6	19.3	19.6	20.8
	12H	18.3	18.6	19.3	19.5	20.8	18.3	18.6	19.3	19.5	20.8

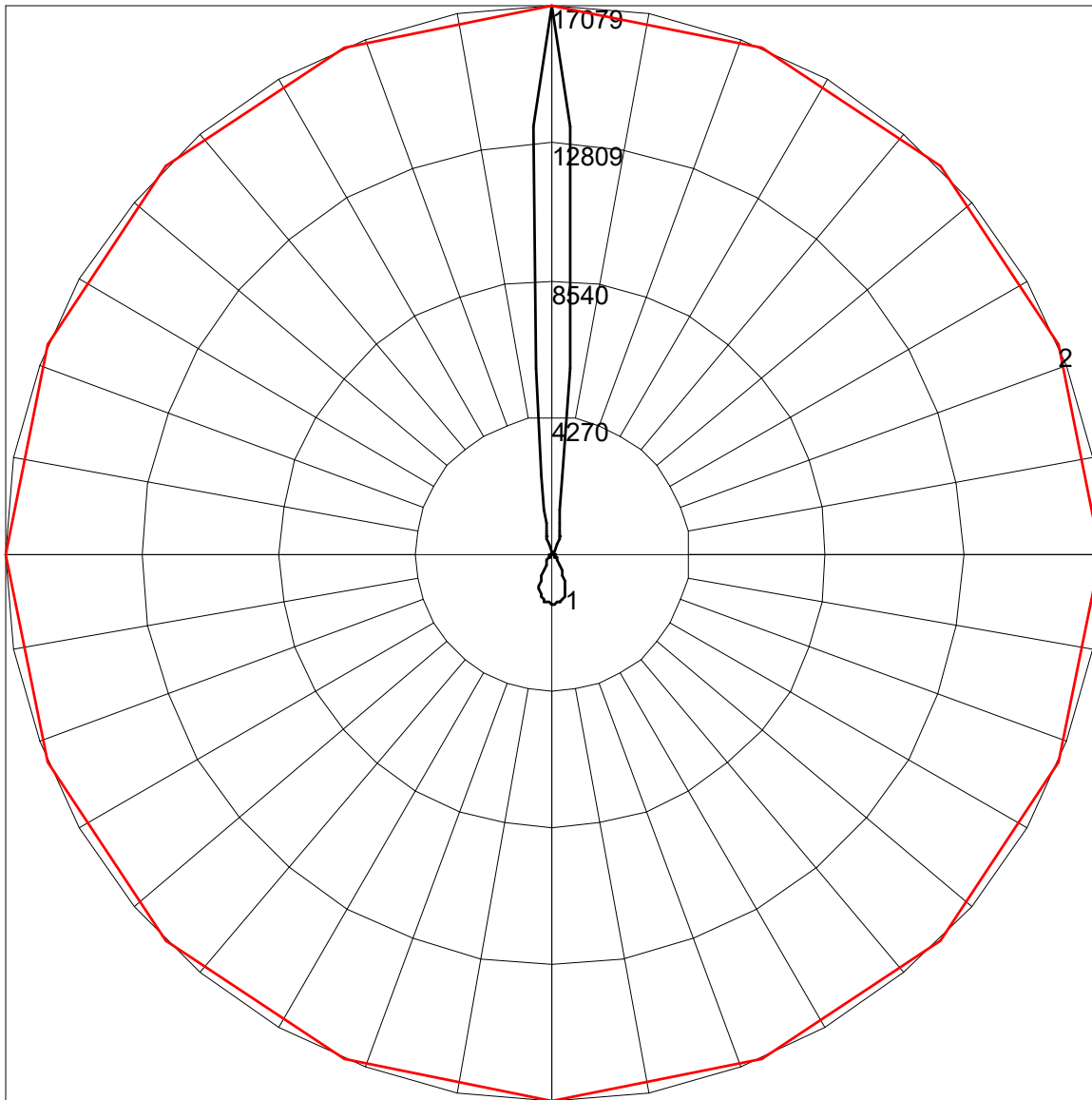
12H	4H	18.1	18.4	19.1	19.4	20.6	18.1	18.4	19.1	19.4	20.6
	6H	18.2	18.5	19.2	19.5	20.7	18.2	18.5	19.2	19.5	20.7
	8H	18.3	18.5	19.3	19.5	20.8	18.3	18.5	19.3	19.5	20.8

Maximum UGR = 20.8

IES INDOOR REPORT

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