



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13255206.01 and #13257153.09

[TESTLAB]

[ISSUE DATE] 15-FEB2021

[MANUFAC] WILLIAMS INDOOR

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

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

[MORE]

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

[MORE] narrow 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	2180
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	58838	58838	58838
55	40431	40431	40431
65	28464	28464	28464
75	14210	14210	14210
85	8791	8791	8791

**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>
0.0	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111
2.5	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834
5.0	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739
7.5	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140
10.0	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683
12.5	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593
15.0	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324
17.5	882.051	882.051	882.051	882.051	882.051	882.051	882.051	882.051	882.051	882.051
20.0	672.392	672.392	672.392	672.392	672.392	672.392	672.392	672.392	672.392	672.392
22.5	550.051	550.051	550.051	550.051	550.051	550.051	550.051	550.051	550.051	550.051
25.0	464.832	464.832	464.832	464.832	464.832	464.832	464.832	464.832	464.832	464.832
27.5	390.991	390.991	390.991	390.991	390.991	390.991	390.991	390.991	390.991	390.991
30.0	321.509	321.509	321.509	321.509	321.509	321.509	321.509	321.509	321.509	321.509
32.5	262.275	262.275	262.275	262.275	262.275	262.275	262.275	262.275	262.275	262.275
35.0	224.104	224.104	224.104	224.104	224.104	224.104	224.104	224.104	224.104	224.104
37.5	197.876	197.876	197.876	197.876	197.876	197.876	197.876	197.876	197.876	197.876
40.0	174.877	174.877	174.877	174.877	174.877	174.877	174.877	174.877	174.877	174.877
42.5	152.362	152.362	152.362	152.362	152.362	152.362	152.362	152.362	152.362	152.362
45.0	131.460	131.460	131.460	131.460	131.460	131.460	131.460	131.460	131.460	131.460
47.5	112.899	112.899	112.899	112.899	112.899	112.899	112.899	112.899	112.899	112.899
50.0	97.082	97.082	97.082	97.082	97.082	97.082	97.082	97.082	97.082	97.082
52.5	84.089	84.089	84.089	84.089	84.089	84.089	84.089	84.089	84.089	84.089
55.0	73.276	73.276	73.276	73.276	73.276	73.276	73.276	73.276	73.276	73.276
57.5	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511
60.0	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553
62.5	46.080	46.080	46.080	46.080	46.080	46.080	46.080	46.080	46.080	46.080
65.0	38.010	38.010	38.010	38.010	38.010	38.010	38.010	38.010	38.010	38.010
67.5	30.585	30.585	30.585	30.585	30.585	30.585	30.585	30.585	30.585	30.585
70.0	23.726	23.726	23.726	23.726	23.726	23.726	23.726	23.726	23.726	23.726
72.5	17.431	17.431	17.431	17.431	17.431	17.431	17.431	17.431	17.431	17.431
75.0	11.621	11.621	11.621	11.621	11.621	11.621	11.621	11.621	11.621	11.621
77.5	7.424	7.424	7.424	7.424	7.424	7.424	7.424	7.424	7.424	7.424
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	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111
2.5	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834
5.0	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739
7.5	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140
10.0	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683
12.5	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593
15.0	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324
17.5	882.051	882.051	882.051	882.051	882.051	882.051	882.051
20.0	672.392	672.392	672.392	672.392	672.392	672.392	672.392
22.5	550.051	550.051	550.051	550.051	550.051	550.051	550.051
25.0	464.832	464.832	464.832	464.832	464.832	464.832	464.832
27.5	390.991	390.991	390.991	390.991	390.991	390.991	390.991
30.0	321.509	321.509	321.509	321.509	321.509	321.509	321.509
32.5	262.275	262.275	262.275	262.275	262.275	262.275	262.275
35.0	224.104	224.104	224.104	224.104	224.104	224.104	224.104
37.5	197.876	197.876	197.876	197.876	197.876	197.876	197.876
40.0	174.877	174.877	174.877	174.877	174.877	174.877	174.877
42.5	152.362	152.362	152.362	152.362	152.362	152.362	152.362
45.0	131.460	131.460	131.460	131.460	131.460	131.460	131.460
47.5	112.899	112.899	112.899	112.899	112.899	112.899	112.899
50.0	97.082	97.082	97.082	97.082	97.082	97.082	97.082
52.5	84.089	84.089	84.089	84.089	84.089	84.089	84.089
55.0	73.276	73.276	73.276	73.276	73.276	73.276	73.276
57.5	63.511	63.511	63.511	63.511	63.511	63.511	63.511
60.0	54.553	54.553	54.553	54.553	54.553	54.553	54.553
62.5	46.080	46.080	46.080	46.080	46.080	46.080	46.080
65.0	38.010	38.010	38.010	38.010	38.010	38.010	38.010
67.5	30.585	30.585	30.585	30.585	30.585	30.585	30.585
70.0	23.726	23.726	23.726	23.726	23.726	23.726	23.726
72.5	17.431	17.431	17.431	17.431	17.431	17.431	17.431
75.0	11.621	11.621	11.621	11.621	11.621	11.621	11.621
77.5	7.424	7.424	7.424	7.424	7.424	7.424	7.424
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-RN-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-RN-WHD-WM\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	689.60	N.A.	31.60
0-30	905.21	N.A.	41.50
0-40	1049.94	N.A.	48.20
0-60	1218.43	N.A.	55.90
0-80	1269.87	N.A.	58.20
0-90	1272.66	N.A.	58.40
10-90	944.57	N.A.	43.30
20-40	360.34	N.A.	16.50
20-50	462.65	N.A.	21.20
40-70	206.47	N.A.	9.50
60-80	51.43	N.A.	2.40
70-80	13.46	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.	0.20
90-150	24.95	N.A.	1.10
90-180	907.47	N.A.	41.60
110-180	907.36	N.A.	41.60
0-180	2180.12	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	328.09
10-20	361.51
20-30	215.61
30-40	144.73
40-50	102.31
50-60	66.19
60-70	37.97
70-80	13.46
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	75	75	75	64	64	64	58
1	102	99	96	93	95	93	90	88	81	79	78	70	69	68	60	60	59	54
2	96	90	85	81	90	85	81	77	75	72	69	66	64	62	57	56	55	51
3	90	82	77	72	84	78	73	69	69	66	63	61	59	57	54	52	51	47
4	84	76	70	65	79	72	67	62	64	60	57	58	55	52	51	49	47	44
5	79	70	64	59	75	67	61	57	60	56	53	54	51	49	49	46	45	42
6	75	65	59	54	71	62	57	53	57	52	49	51	48	46	46	44	42	40
7	71	61	55	51	67	59	53	49	54	49	46	49	45	43	44	42	40	38
8	67	58	51	47	64	55	50	46	51	46	43	46	43	41	42	40	38	36
9	64	54	48	44	61	52	47	43	48	44	41	44	41	39	41	38	36	35
10	61	52	46	42	58	50	44	41	46	42	39	43	39	37	39	37	35	33

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OS-CSU-RN-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	17.0	17.7	17.9	18.6	19.8	17.0	17.7	17.9	18.6	19.8
	3H	17.9	18.5	18.8	19.5	20.6	17.9	18.5	18.8	19.5	20.6
	4H	18.0	18.7	19.0	19.6	20.8	18.0	18.7	19.0	19.6	20.8
	6H	18.0	18.6	19.0	19.5	20.7	18.0	18.6	19.0	19.5	20.7
	8H	18.0	18.6	19.0	19.5	20.7	18.0	18.6	19.0	19.5	20.7
	12H	18.0	18.5	19.0	19.4	20.7	18.0	18.5	19.0	19.4	20.7

### UGR Viewed Endwise

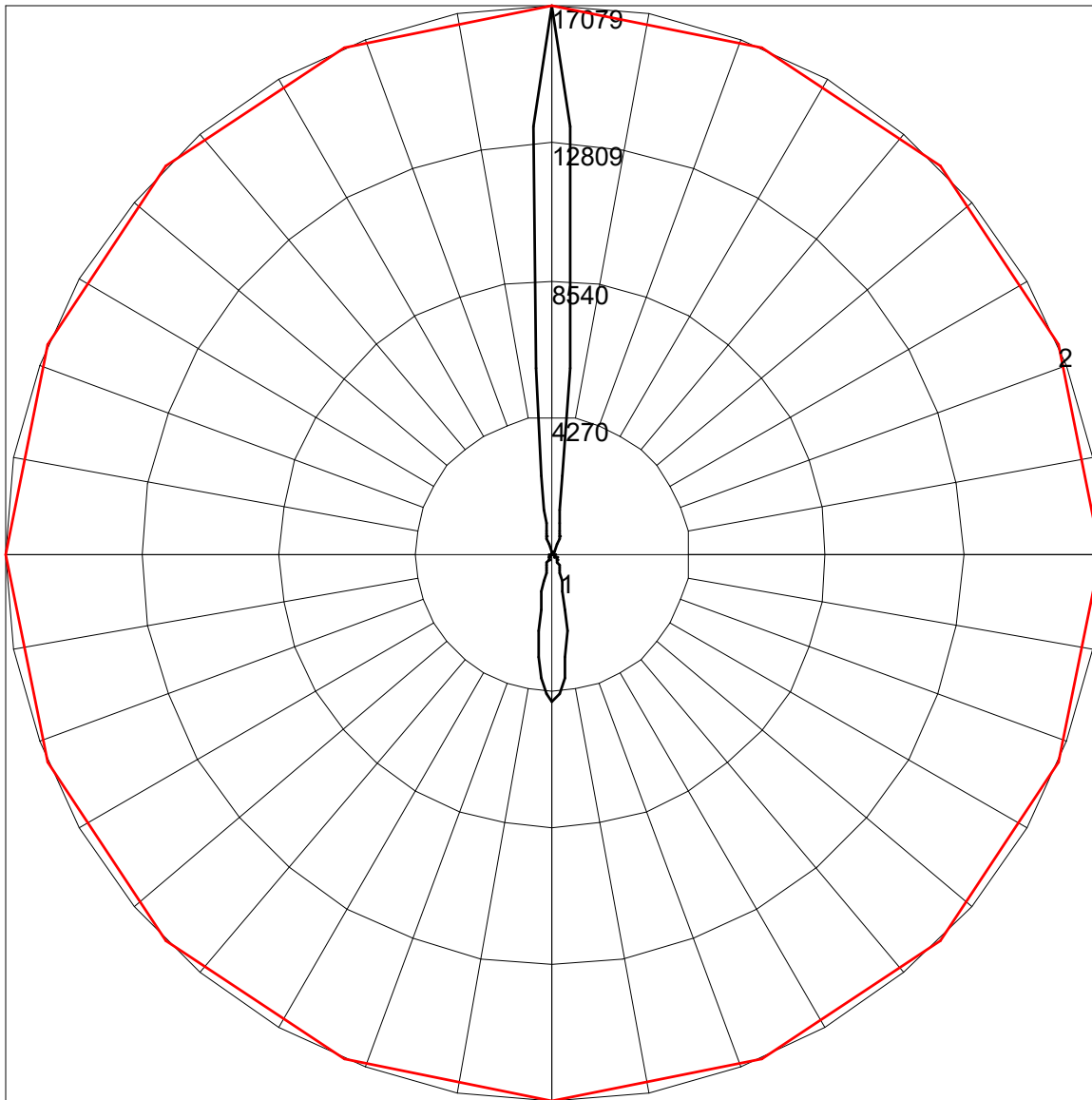
4H	2H	17.2	17.9	18.2	18.8	20.0	17.2	17.9	18.2	18.8	20.0
	3H	18.3	18.8	19.2	19.8	20.9	18.3	18.8	19.2	19.8	20.9
	4H	18.5	18.9	19.4	19.9	21.1	18.5	18.9	19.4	19.9	21.1
	6H	18.5	18.9	19.5	19.9	21.1	18.5	18.9	19.5	19.9	21.1
	8H	18.5	18.9	19.5	19.9	21.1	18.5	18.9	19.5	19.9	21.1
	12H	18.5	18.8	19.5	19.8	21.1	18.5	18.8	19.5	19.8	21.1
8H	4H	18.5	18.8	19.4	19.8	21.0	18.5	18.8	19.4	19.8	21.0
	6H	18.5	18.9	19.5	19.9	21.1	18.5	18.9	19.5	19.9	21.1
	8H	18.6	18.9	19.6	19.9	21.1	18.6	18.9	19.6	19.9	21.1
	12H	18.6	18.8	19.6	19.8	21.1	18.6	18.8	19.6	19.8	21.1
12H	4H	18.4	18.7	19.4	19.7	21.0	18.4	18.7	19.4	19.7	21.0
	6H	18.5	18.8	19.5	19.8	21.0	18.5	18.8	19.5	19.8	21.0
	8H	18.6	18.8	19.6	19.8	21.1	18.6	18.8	19.6	19.8	21.1

Maximum UGR = 21.1

# IES INDOOR REPORT

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