



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.09 and #13257153.09

[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-ON-CSU-RN-WHD-WM

[MORE]

[LUMINAIRE] White formed aluminum housing, narrow 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	2101
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	74
Total Luminaire Watts	28.5
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	0.38
Spacing Criterion (90-270)	0.38
Spacing Criterion (Diagonal)	0.38
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

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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	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254
92.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
95.0	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254
97.5	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254
100.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
102.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
105.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
107.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
110.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
112.5	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090
115.0	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090
117.5	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090	2.090
120.0	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508
122.5	2.926	2.926	2.926	2.926	2.926	2.926	2.926	2.926	2.926	2.926
125.0	3.344	3.344	3.344	3.344	3.344	3.344	3.344	3.344	3.344	3.344
127.5	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
130.0	5.016	5.016	5.016	5.016	5.016	5.016	5.016	5.016	5.016	5.016
132.5	6.270	6.270	6.270	6.270	6.270	6.270	6.270	6.270	6.270	6.270

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CANDELA TABULATION - (Cont.)

135.0	7.942	7.942	7.942	7.942	7.942	7.942	7.942	7.942	7.942	7.942
137.5	10.450	10.450	10.450	10.450	10.450	10.450	10.450	10.450	10.450	10.450
140.0	12.958	12.958	12.958	12.958	12.958	12.958	12.958	12.958	12.958	12.958
142.5	16.302	16.302	16.302	16.302	16.302	16.302	16.302	16.302	16.302	16.302
145.0	25.498	25.498	25.498	25.498	25.498	25.498	25.498	25.498	25.498	25.498
147.5	61.028	61.028	61.028	61.028	61.028	61.028	61.028	61.028	61.028	61.028
150.0	139.612	139.612	139.612	139.612	139.612	139.612	139.612	139.612	139.612	139.612
152.5	256.652	256.652	256.652	256.652	256.652	256.652	256.652	256.652	256.652	256.652
155.0	387.068	387.068	387.068	387.068	387.068	387.068	387.068	387.068	387.068	387.068
157.5	509.124	509.124	509.124	509.124	509.124	509.124	509.124	509.124	509.124	509.124
160.0	621.566	621.566	621.566	621.566	621.566	621.566	621.566	621.566	621.566	621.566
162.5	760.342	760.342	760.342	760.342	760.342	760.342	760.342	760.342	760.342	760.342
165.0	977.284	977.284	977.284	977.284	977.284	977.284	977.284	977.284	977.284	977.284
167.5	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886
170.0	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352
172.5	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417
175.0	4129.007	4129.007	4129.007	4129.007	4129.007	4129.006	4129.006	4129.006	4129.006	4129.006
177.5	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441
180.0	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000

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

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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	1.254	1.254	1.254	1.254	1.254	1.254	1.254
92.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672
95.0	1.254	1.254	1.254	1.254	1.254	1.254	1.254
97.5	1.254	1.254	1.254	1.254	1.254	1.254	1.254
100.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672
102.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672
105.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672
107.5	1.672	1.672	1.672	1.672	1.672	1.672	1.672
110.0	1.672	1.672	1.672	1.672	1.672	1.672	1.672
112.5	2.090	2.090	2.090	2.090	2.090	2.090	2.090
115.0	2.090	2.090	2.090	2.090	2.090	2.090	2.090
117.5	2.090	2.090	2.090	2.090	2.090	2.090	2.090
120.0	2.508	2.508	2.508	2.508	2.508	2.508	2.508
122.5	2.926	2.926	2.926	2.926	2.926	2.926	2.926
125.0	3.344	3.344	3.344	3.344	3.344	3.344	3.344
127.5	4.180	4.180	4.180	4.180	4.180	4.180	4.180
130.0	5.016	5.016	5.016	5.016	5.016	5.016	5.016
132.5	6.270	6.270	6.270	6.270	6.270	6.270	6.270
135.0	7.942	7.942	7.942	7.942	7.942	7.942	7.942
137.5	10.450	10.450	10.450	10.450	10.450	10.450	10.450
140.0	12.958	12.958	12.958	12.958	12.958	12.958	12.958
142.5	16.302	16.302	16.302	16.302	16.302	16.302	16.302
145.0	25.498	25.498	25.498	25.498	25.498	25.498	25.498
147.5	61.028	61.028	61.028	61.028	61.028	61.028	61.028
150.0	139.612	139.612	139.612	139.612	139.612	139.612	139.612
152.5	256.652	256.652	256.652	256.652	256.652	256.652	256.652
155.0	387.068	387.068	387.068	387.068	387.068	387.068	387.068
157.5	509.124	509.124	509.124	509.124	509.124	509.124	509.124
160.0	621.566	621.566	621.566	621.566	621.566	621.566	621.566
162.5	760.342	760.342	760.342	760.342	760.342	760.342	760.342
165.0	977.284	977.284	977.284	977.284	977.284	977.284	977.284
167.5	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886	1348.886
170.0	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352	1991.352
172.5	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417	2977.417
175.0	4129.006	4129.006	4129.007	4129.007	4129.007	4129.007	4129.007
177.5	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441	5049.441
180.0	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000	5404.000

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

Zone	Lumens	%Lamp	%Fixt
0-20	689.60	N.A.	32.80
0-30	905.21	N.A.	43.10
0-40	1049.94	N.A.	50.00
0-60	1218.43	N.A.	58.00
0-80	1269.87	N.A.	60.40
0-90	1272.83	N.A.	60.60
10-90	944.74	N.A.	45.00
20-40	360.34	N.A.	17.10
20-50	462.65	N.A.	22.00
40-70	206.47	N.A.	9.80
60-80	51.43	N.A.	2.40
70-80	13.46	N.A.	0.60
80-90	2.96	N.A.	0.10
90-110	3.31	N.A.	0.20
90-120	5.38	N.A.	0.30
90-130	8.55	N.A.	0.40
90-150	41.73	N.A.	2.00
90-180	828.34	N.A.	39.40
110-180	825.03	N.A.	39.30
0-180	2101.17	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	2.96
90-100	1.54
100-110	1.77
110-120	2.07
120-130	3.17
130-140	6.43
140-150	26.75
150-160	170.79
160-170	292.64
170-180	323.18

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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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	103	100	97	94	96	94	91	89	82	80	79	72	71	70	62	62	61	56
2	96	91	86	82	90	86	82	78	76	73	71	67	65	63	59	58	56	53
3	90	83	77	73	85	79	74	70	70	67	64	63	60	58	56	54	52	49
4	85	77	71	66	80	73	67	63	66	62	58	59	56	54	53	51	49	46
5	80	71	65	60	76	68	62	58	62	57	54	56	52	50	50	48	46	43
6	76	66	60	55	72	63	58	54	58	53	50	53	49	47	48	45	44	41
7	72	62	56	51	68	60	54	50	55	50	47	50	47	44	46	43	41	39
8	68	58	52	48	65	56	51	47	52	47	44	48	44	42	44	41	39	37
9	65	55	49	45	62	53	48	44	49	45	42	46	42	40	42	40	38	36
10	62	52	47	43	59	51	45	42	47	43	40	44	40	38	41	38	36	35

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-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	17.2	17.9	18.1	18.8	19.9	17.2	17.9	18.1	18.8	19.9
	3H	18.1	18.7	19.0	19.6	20.8	18.1	18.7	19.0	19.6	20.8
	4H	18.2	18.8	19.1	19.7	20.9	18.2	18.8	19.1	19.7	20.9
	6H	18.2	18.8	19.1	19.7	20.9	18.2	18.8	19.1	19.7	20.9
	8H	18.2	18.8	19.1	19.7	20.9	18.2	18.8	19.1	19.7	20.9
	12H	18.2	18.7	19.1	19.6	20.8	18.2	18.7	19.1	19.6	20.8

UGR Viewed Endwise

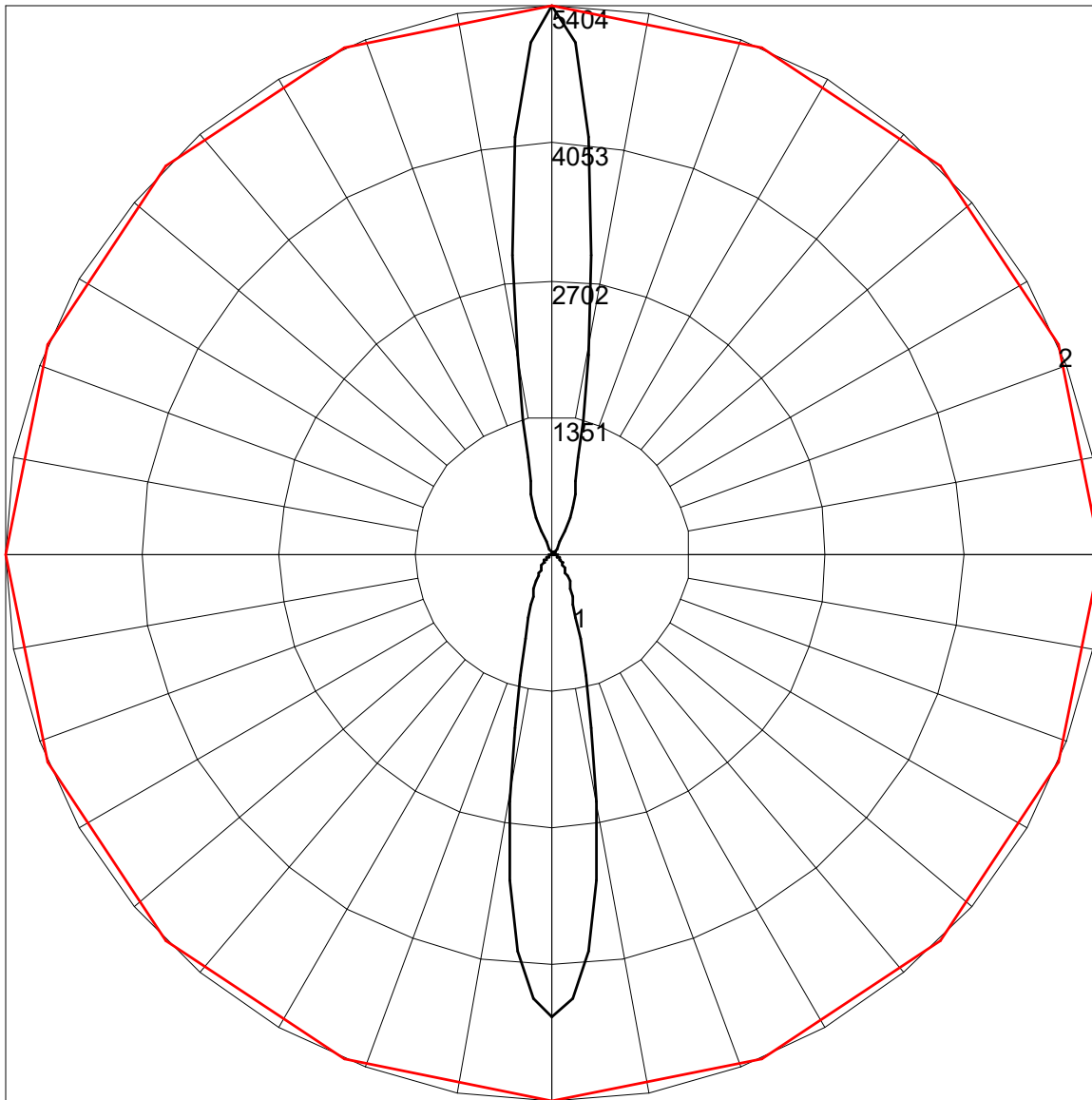
4H	2H	17.4	18.1	18.4	19.0	20.1	17.4	18.1	18.4	19.0	20.1
	3H	18.5	19.0	19.4	19.9	21.1	18.5	19.0	19.4	19.9	21.1
	4H	18.7	19.1	19.6	20.1	21.3	18.7	19.1	19.6	20.1	21.3
	6H	18.7	19.1	19.7	20.1	21.3	18.7	19.1	19.7	20.1	21.3
	8H	18.7	19.1	19.7	20.0	21.3	18.7	19.1	19.7	20.0	21.3
	12H	18.7	19.0	19.7	20.0	21.2	18.7	19.0	19.7	20.0	21.2
8H	4H	18.6	19.0	19.6	20.0	21.2	18.6	19.0	19.6	20.0	21.2
	6H	18.7	19.1	19.7	20.0	21.3	18.7	19.1	19.7	20.0	21.3
	8H	18.8	19.1	19.8	20.0	21.3	18.8	19.1	19.8	20.0	21.3
	12H	18.8	19.0	19.8	20.0	21.3	18.8	19.0	19.8	20.0	21.3
12H	4H	18.6	18.9	19.6	19.9	21.1	18.6	18.9	19.6	19.9	21.1
	6H	18.7	19.0	19.7	19.9	21.2	18.7	19.0	19.7	19.9	21.2
	8H	18.8	19.0	19.8	20.0	21.2	18.8	19.0	19.8	20.0	21.2

Maximum UGR = 21.3

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 5404 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.)