



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.09 and #13257153.08

[TESTLAB]

[ISSUE DATE] 12-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

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

[MORE]

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

[MORE] narrow distrib white painted flush 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	2132
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	75
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)	0.40
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	61470	61470	61470
55	47408	47408	47408
65	37181	37181	37181
75	27892	27892	27892
85	15218	15218	15218

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-LN-WHD-WM_IES

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	4492.644	4492.644	4492.644	4492.644	4492.644	4492.644	4492.644	4492.644	4492.644	4492.644
2.5	4327.414	4327.414	4327.414	4327.414	4327.414	4327.414	4327.414	4327.414	4327.414	4327.414
5.0	3880.890	3880.890	3880.890	3880.890	3880.890	3880.890	3880.890	3880.890	3880.890	3880.890
7.5	3224.000	3224.000	3224.000	3224.000	3224.000	3224.000	3224.000	3224.000	3224.000	3224.000
10.0	2485.704	2485.704	2485.704	2485.704	2485.704	2485.704	2485.704	2485.704	2485.704	2485.704
12.5	1801.410	1801.410	1801.410	1801.410	1801.410	1801.410	1801.410	1801.410	1801.410	1801.410
15.0	1263.808	1263.808	1263.808	1263.808	1263.808	1263.808	1263.808	1263.808	1263.808	1263.808
17.5	900.302	900.302	900.302	900.302	900.302	900.302	900.302	900.302	900.302	900.302
20.0	678.813	678.813	678.813	678.813	678.813	678.813	678.813	678.813	678.813	678.813
22.5	541.793	541.793	541.793	541.793	541.793	541.793	541.793	541.793	541.793	541.793
25.0	440.882	440.882	440.882	440.882	440.882	440.882	440.882	440.882	440.882	440.882
27.5	358.186	358.186	358.186	358.186	358.186	358.186	358.186	358.186	358.186	358.186
30.0	295.721	295.721	295.721	295.721	295.721	295.721	295.721	295.721	295.721	295.721
32.5	252.520	252.520	252.520	252.520	252.520	252.520	252.520	252.520	252.520	252.520
35.0	221.731	221.731	221.731	221.731	221.731	221.731	221.731	221.731	221.731	221.731
37.5	197.631	197.631	197.631	197.631	197.631	197.631	197.631	197.631	197.631	197.631
40.0	175.950	175.950	175.950	175.950	175.950	175.950	175.950	175.950	175.950	175.950
42.5	155.558	155.558	155.558	155.558	155.558	155.558	155.558	155.558	155.558	155.558
45.0	137.342	137.342	137.342	137.342	137.342	137.342	137.342	137.342	137.342	137.342
47.5	121.545	121.545	121.545	121.545	121.545	121.545	121.545	121.545	121.545	121.545
50.0	107.843	107.843	107.843	107.843	107.843	107.843	107.843	107.843	107.843	107.843
52.5	96.236	96.236	96.236	96.236	96.236	96.236	96.236	96.236	96.236	96.236
55.0	85.920	85.920	85.920	85.920	85.920	85.920	85.920	85.920	85.920	85.920
57.5	76.167	76.167	76.167	76.167	76.167	76.167	76.167	76.167	76.167	76.167
60.0	66.898	66.898	66.898	66.898	66.898	66.898	66.898	66.898	66.898	66.898
62.5	58.032	58.032	58.032	58.032	58.032	58.032	58.032	58.032	58.032	58.032
65.0	49.650	49.650	49.650	49.650	49.650	49.650	49.650	49.650	49.650	49.650
67.5	41.993	41.993	41.993	41.993	41.993	41.993	41.993	41.993	41.993	41.993
70.0	34.980	34.980	34.980	34.980	34.980	34.980	34.980	34.980	34.980	34.980
72.5	28.613	28.613	28.613	28.613	28.613	28.613	28.613	28.613	28.613	28.613
75.0	22.810	22.810	22.810	22.810	22.810	22.810	22.810	22.810	22.810	22.810
77.5	17.490	17.490	17.490	17.490	17.490	17.490	17.490	17.490	17.490	17.490
80.0	12.654	12.654	12.654	12.654	12.654	12.654	12.654	12.654	12.654	12.654
82.5	8.221	8.221	8.221	8.221	8.221	8.221	8.221	8.221	8.221	8.221
85.0	4.191	4.191	4.191	4.191	4.191	4.191	4.191	4.191	4.191	4.191
87.5	0.806	0.806	0.806	0.806	0.806	0.806	0.806	0.806	0.806	0.806
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

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-LN-WHD-WM_IES

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	4492.644	4492.644	4492.644	4492.644	4492.644	4492.644	4492.644
2.5	4327.414	4327.414	4327.414	4327.414	4327.414	4327.414	4327.414
5.0	3880.890	3880.890	3880.890	3880.890	3880.890	3880.890	3880.890
7.5	3224.000	3224.000	3224.000	3224.000	3224.000	3224.000	3224.000
10.0	2485.704	2485.704	2485.704	2485.704	2485.704	2485.704	2485.704
12.5	1801.410	1801.410	1801.410	1801.410	1801.410	1801.410	1801.410
15.0	1263.808	1263.808	1263.808	1263.808	1263.808	1263.808	1263.808
17.5	900.302	900.302	900.302	900.302	900.302	900.302	900.302
20.0	678.813	678.813	678.813	678.813	678.813	678.813	678.813
22.5	541.793	541.793	541.793	541.793	541.793	541.793	541.793
25.0	440.882	440.882	440.882	440.882	440.882	440.882	440.882
27.5	358.186	358.186	358.186	358.186	358.186	358.186	358.186
30.0	295.721	295.721	295.721	295.721	295.721	295.721	295.721
32.5	252.520	252.520	252.520	252.520	252.520	252.520	252.520
35.0	221.731	221.731	221.731	221.731	221.731	221.731	221.731
37.5	197.631	197.631	197.631	197.631	197.631	197.631	197.631
40.0	175.950	175.950	175.950	175.950	175.950	175.950	175.950
42.5	155.558	155.558	155.558	155.558	155.558	155.558	155.558
45.0	137.342	137.342	137.342	137.342	137.342	137.342	137.342
47.5	121.545	121.545	121.545	121.545	121.545	121.545	121.545
50.0	107.843	107.843	107.843	107.843	107.843	107.843	107.843
52.5	96.236	96.236	96.236	96.236	96.236	96.236	96.236
55.0	85.920	85.920	85.920	85.920	85.920	85.920	85.920
57.5	76.167	76.167	76.167	76.167	76.167	76.167	76.167
60.0	66.898	66.898	66.898	66.898	66.898	66.898	66.898
62.5	58.032	58.032	58.032	58.032	58.032	58.032	58.032
65.0	49.650	49.650	49.650	49.650	49.650	49.650	49.650
67.5	41.993	41.993	41.993	41.993	41.993	41.993	41.993
70.0	34.980	34.980	34.980	34.980	34.980	34.980	34.980
72.5	28.613	28.613	28.613	28.613	28.613	28.613	28.613
75.0	22.810	22.810	22.810	22.810	22.810	22.810	22.810
77.5	17.490	17.490	17.490	17.490	17.490	17.490	17.490
80.0	12.654	12.654	12.654	12.654	12.654	12.654	12.654

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

82.5	8.221	8.221	8.221	8.221	8.221	8.221	8.221
85.0	4.191	4.191	4.191	4.191	4.191	4.191	4.191
87.5	0.806	0.806	0.806	0.806	0.806	0.806	0.806
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-LN-WHD-WM_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	692.11	N.A.	32.50
0-30	898.55	N.A.	42.20
0-40	1039.68	N.A.	48.80
0-60	1223.87	N.A.	57.40
0-80	1297.89	N.A.	60.90
0-90	1303.37	N.A.	61.10
10-90	978.34	N.A.	45.90
20-40	347.57	N.A.	16.30
20-50	454.57	N.A.	21.30
40-70	233.76	N.A.	11.00
60-80	74.02	N.A.	3.50
70-80	24.44	N.A.	1.10
80-90	5.48	N.A.	0.30
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.	38.90
110-180	825.03	N.A.	38.70
0-180	2131.71	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	325.03
10-20	367.08
20-30	206.44
30-40	141.14
40-50	106.99
50-60	77.19
60-70	49.58
70-80	24.44
80-90	5.48
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

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-LN-WHD-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	110	110	110	110	103	103	103	103	90	90	90	77	77	77	66	66	66	61
1	103	99	96	94	96	93	91	88	82	80	79	72	71	70	62	62	61	56
2	96	90	85	81	90	85	81	78	76	73	70	67	65	63	59	57	56	52
3	90	83	77	72	85	78	73	69	70	66	63	62	60	57	55	53	52	49
4	85	76	70	65	80	72	67	63	65	61	58	59	55	53	52	50	48	45
5	80	70	64	59	75	67	61	57	61	57	53	55	52	49	50	47	45	43
6	75	66	59	54	71	63	57	53	57	53	49	52	49	46	47	45	43	41
7	71	61	55	51	68	59	53	49	54	50	46	50	46	43	45	43	41	39
8	68	58	52	47	64	56	50	46	51	47	44	47	44	41	43	41	39	37
9	65	55	49	44	61	53	47	43	49	44	41	45	42	39	42	39	37	35
10	62	52	46	42	59	50	45	41	47	42	39	43	40	37	40	37	36	34

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-LN-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	18.3	19.1	19.2	20.0	21.1	18.3	19.1	19.2	20.0	21.1
	3H	19.6	20.3	20.5	21.2	22.3	19.6	20.3	20.5	21.2	22.3
	4H	20.0	20.7	20.9	21.6	22.7	20.0	20.7	20.9	21.6	22.7
	6H	20.3	20.9	21.2	21.8	22.9	20.3	20.9	21.2	21.8	22.9
	8H	20.3	20.9	21.2	21.8	22.9	20.3	20.9	21.2	21.8	22.9
	12H	20.3	20.9	21.2	21.8	22.9	20.3	20.9	21.2	21.8	22.9

UGR Viewed Endwise

4H	2H	18.7	19.4	19.6	20.3	21.4	18.7	19.4	19.6	20.3	21.4
	3H	20.1	20.7	21.1	21.6	22.8	20.1	20.7	21.1	21.6	22.8
	4H	20.7	21.2	21.6	22.1	23.3	20.7	21.2	21.6	22.1	23.3
	6H	21.0	21.4	22.0	22.4	23.6	21.0	21.4	22.0	22.4	23.6
	8H	21.1	21.5	22.0	22.4	23.6	21.1	21.5	22.0	22.4	23.6
	12H	21.1	21.5	22.1	22.4	23.6	21.1	21.5	22.1	22.4	23.6

8H	4H	20.8	21.2	21.7	22.1	23.3	20.8	21.2	21.7	22.1	23.3
	6H	21.2	21.6	22.2	22.6	23.7	21.2	21.6	22.2	22.6	23.7
	8H	21.4	21.7	22.4	22.7	23.9	21.4	21.7	22.4	22.7	23.9
	12H	21.5	21.7	22.4	22.7	23.9	21.5	21.7	22.4	22.7	23.9

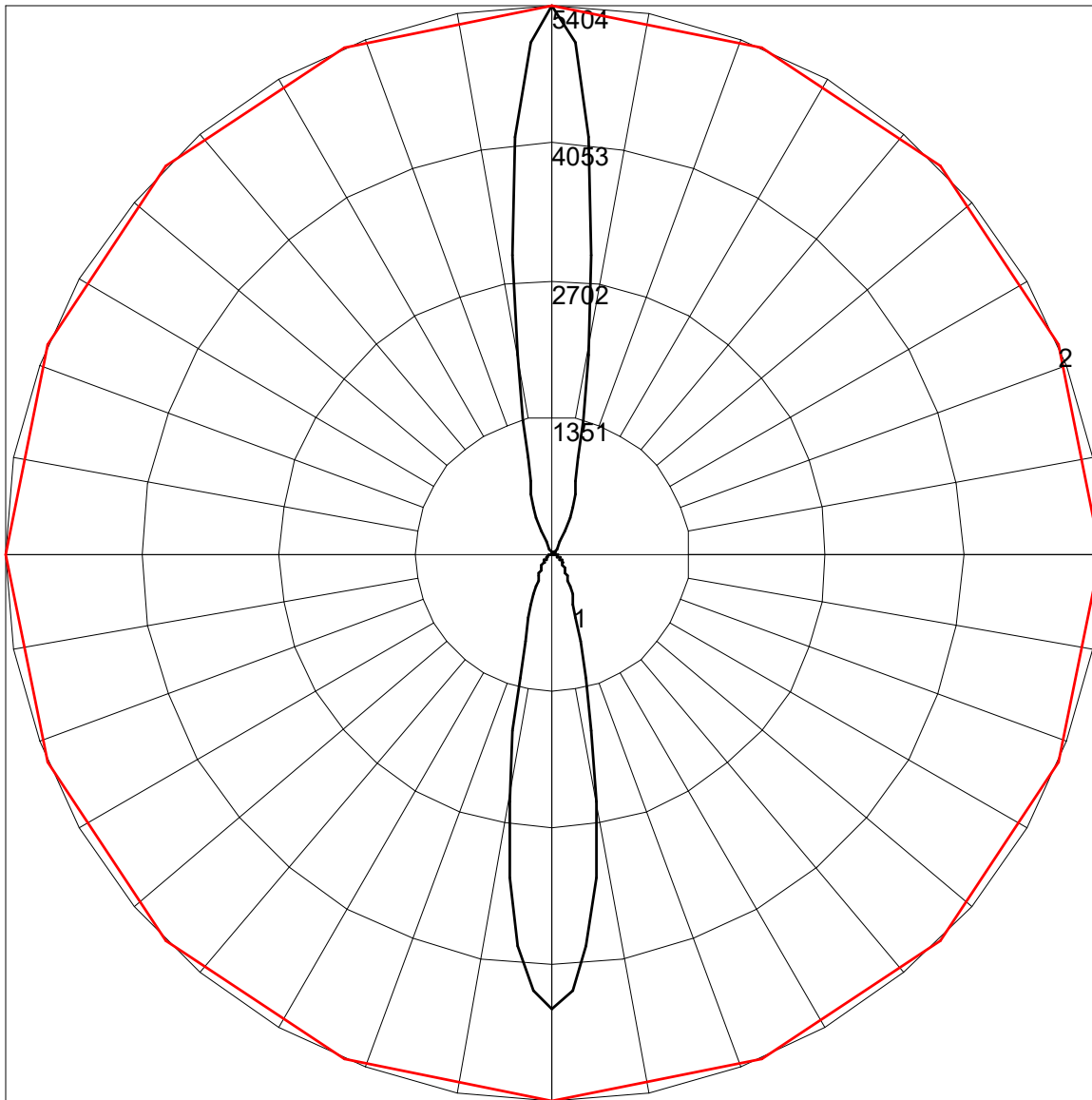
12H	4H	20.8	21.1	21.7	22.1	23.3	20.8	21.1	21.7	22.1	23.3
	6H	21.3	21.5	22.2	22.5	23.7	21.3	21.5	22.2	22.5	23.7
	8H	21.4	21.7	22.4	22.6	23.9	21.4	21.7	22.4	22.6	23.9

Maximum UGR = 23.9

IES INDOOR REPORT

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