



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.09 and #13131414.09

[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-ON-CSD-WM

[MORE]

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

[MORE] narrow distrib anodized alum open reflector 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	1841
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	65
Total Luminaire Watts	28.5
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	4345	4345	4345
55	2256	2256	2256
65	1913	1913	1913
75	2499	2499	2499
85	5567	5567	5567

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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	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230
2.5	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880
5.0	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658
7.5	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853
10.0	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404
12.5	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997
15.0	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718
17.5	929.509	929.509	929.509	929.509	929.509	929.509	929.509	929.509	929.509	929.509
20.0	759.857	759.857	759.857	759.857	759.857	759.857	759.857	759.857	759.857	759.857
22.5	622.398	622.398	622.398	622.398	622.398	622.398	622.398	622.398	622.398	622.398
25.0	473.186	473.186	473.186	473.186	473.186	473.186	473.186	473.186	473.186	473.186
27.5	313.754	313.754	313.754	313.754	313.754	313.754	313.754	313.754	313.754	313.754
30.0	170.674	170.674	170.674	170.674	170.674	170.674	170.674	170.674	170.674	170.674
32.5	74.606	74.606	74.606	74.606	74.606	74.606	74.606	74.606	74.606	74.606
35.0	31.171	31.171	31.171	31.171	31.171	31.171	31.171	31.171	31.171	31.171
37.5	19.929	19.929	19.929	19.929	19.929	19.929	19.929	19.929	19.929	19.929
40.0	15.841	15.841	15.841	15.841	15.841	15.841	15.841	15.841	15.841	15.841
42.5	12.775	12.775	12.775	12.775	12.775	12.775	12.775	12.775	12.775	12.775
45.0	9.709	9.709	9.709	9.709	9.709	9.709	9.709	9.709	9.709	9.709
47.5	7.665	7.665	7.665	7.665	7.665	7.665	7.665	7.665	7.665	7.665
50.0	6.132	6.132	6.132	6.132	6.132	6.132	6.132	6.132	6.132	6.132
52.5	5.110	5.110	5.110	5.110	5.110	5.110	5.110	5.110	5.110	5.110
55.0	4.088	4.088	4.088	4.088	4.088	4.088	4.088	4.088	4.088	4.088
57.5	3.577	3.577	3.577	3.577	3.577	3.577	3.577	3.577	3.577	3.577
60.0	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066
62.5	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555
65.0	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555
67.5	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555	2.555
70.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
72.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
75.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
77.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
80.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
82.5	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533
85.0	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533
87.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044	2.044
90.0	2.787	2.787	2.787	2.787	2.787	2.787	2.787	2.787	2.787	2.787
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	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230	6607.230
2.5	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880	6172.880
5.0	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658	5047.658
7.5	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853	3639.853
10.0	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404	2434.404
12.5	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997	1648.997
15.0	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718	1194.718
17.5	929.509	929.509	929.509	929.509	929.509	929.509	929.509
20.0	759.857	759.857	759.857	759.857	759.857	759.857	759.857
22.5	622.398	622.398	622.398	622.398	622.398	622.398	622.398
25.0	473.186	473.186	473.186	473.186	473.186	473.186	473.186
27.5	313.754	313.754	313.754	313.754	313.754	313.754	313.754
30.0	170.674	170.674	170.674	170.674	170.674	170.674	170.674
32.5	74.606	74.606	74.606	74.606	74.606	74.606	74.606
35.0	31.171	31.171	31.171	31.171	31.171	31.171	31.171
37.5	19.929	19.929	19.929	19.929	19.929	19.929	19.929
40.0	15.841	15.841	15.841	15.841	15.841	15.841	15.841
42.5	12.775	12.775	12.775	12.775	12.775	12.775	12.775
45.0	9.709	9.709	9.709	9.709	9.709	9.709	9.709
47.5	7.665	7.665	7.665	7.665	7.665	7.665	7.665
50.0	6.132	6.132	6.132	6.132	6.132	6.132	6.132
52.5	5.110	5.110	5.110	5.110	5.110	5.110	5.110
55.0	4.088	4.088	4.088	4.088	4.088	4.088	4.088
57.5	3.577	3.577	3.577	3.577	3.577	3.577	3.577
60.0	3.066	3.066	3.066	3.066	3.066	3.066	3.066
62.5	2.555	2.555	2.555	2.555	2.555	2.555	2.555
65.0	2.555	2.555	2.555	2.555	2.555	2.555	2.555
67.5	2.555	2.555	2.555	2.555	2.555	2.555	2.555
70.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044
72.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044
75.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044
77.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044
80.0	2.044	2.044	2.044	2.044	2.044	2.044	2.044

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82.5	1.533	1.533	1.533	1.533	1.533	1.533	1.533
85.0	1.533	1.533	1.533	1.533	1.533	1.533	1.533
87.5	2.044	2.044	2.044	2.044	2.044	2.044	2.044
90.0	2.787	2.787	2.787	2.787	2.787	2.787	2.787
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

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Zone	Lumens	%Lamp	%Fixt
0-20	752.84	N.A.	40.90
0-30	961.63	N.A.	52.20
0-40	994.33	N.A.	54.00
0-60	1006.06	N.A.	54.60
0-80	1010.76	N.A.	54.90
0-90	1012.81	N.A.	55.00
10-90	617.72	N.A.	33.50
20-40	241.50	N.A.	13.10
20-50	249.36	N.A.	13.50
40-70	14.26	N.A.	0.80
60-80	4.69	N.A.	0.30
70-80	2.16	N.A.	0.10
80-90	2.05	N.A.	0.10
90-110	3.52	N.A.	0.20
90-120	5.59	N.A.	0.30
90-130	8.76	N.A.	0.50
90-150	41.94	N.A.	2.30
90-180	828.55	N.A.	45.00
110-180	825.03	N.A.	44.80
0-180	1841.36	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	395.09
10-20	357.74
20-30	208.79
30-40	32.71
40-50	7.86
50-60	3.87
60-70	2.53
70-80	2.16
80-90	2.05
90-100	1.75
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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	102	99	97	94	95	93	90	88	80	79	78	69	68	67	59	58	58	53
2	97	92	87	84	90	86	82	79	75	73	71	66	64	63	57	56	55	51
3	91	85	80	76	86	80	76	72	71	68	66	63	61	59	55	54	53	49
4	87	79	74	70	81	75	71	67	67	64	61	60	58	56	53	52	51	48
5	83	74	69	65	78	71	66	62	64	61	58	58	55	53	52	50	49	46
6	79	70	65	61	74	67	62	59	61	57	55	56	53	51	50	49	47	45
7	75	67	61	57	71	64	59	55	58	55	52	54	51	49	49	47	46	44
8	72	63	58	54	68	61	56	53	56	52	50	52	49	47	48	46	44	42
9	69	60	55	52	66	58	53	50	54	50	48	50	47	45	46	44	43	41
10	66	58	53	49	63	56	51	48	52	48	46	48	46	44	45	43	42	40

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-ON-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	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	3H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	4H	2.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	3.2
	6H	2.2	2.5	3.0	3.4	4.7	2.2	2.5	3.0	4.7
	8H	2.6	3.1	3.6	4.0	5.3	2.6	3.1	3.6	5.3
	12H	3.3	3.7	4.3	4.7	6.0	3.3	3.7	4.3	6.0

UGR Viewed Endwise

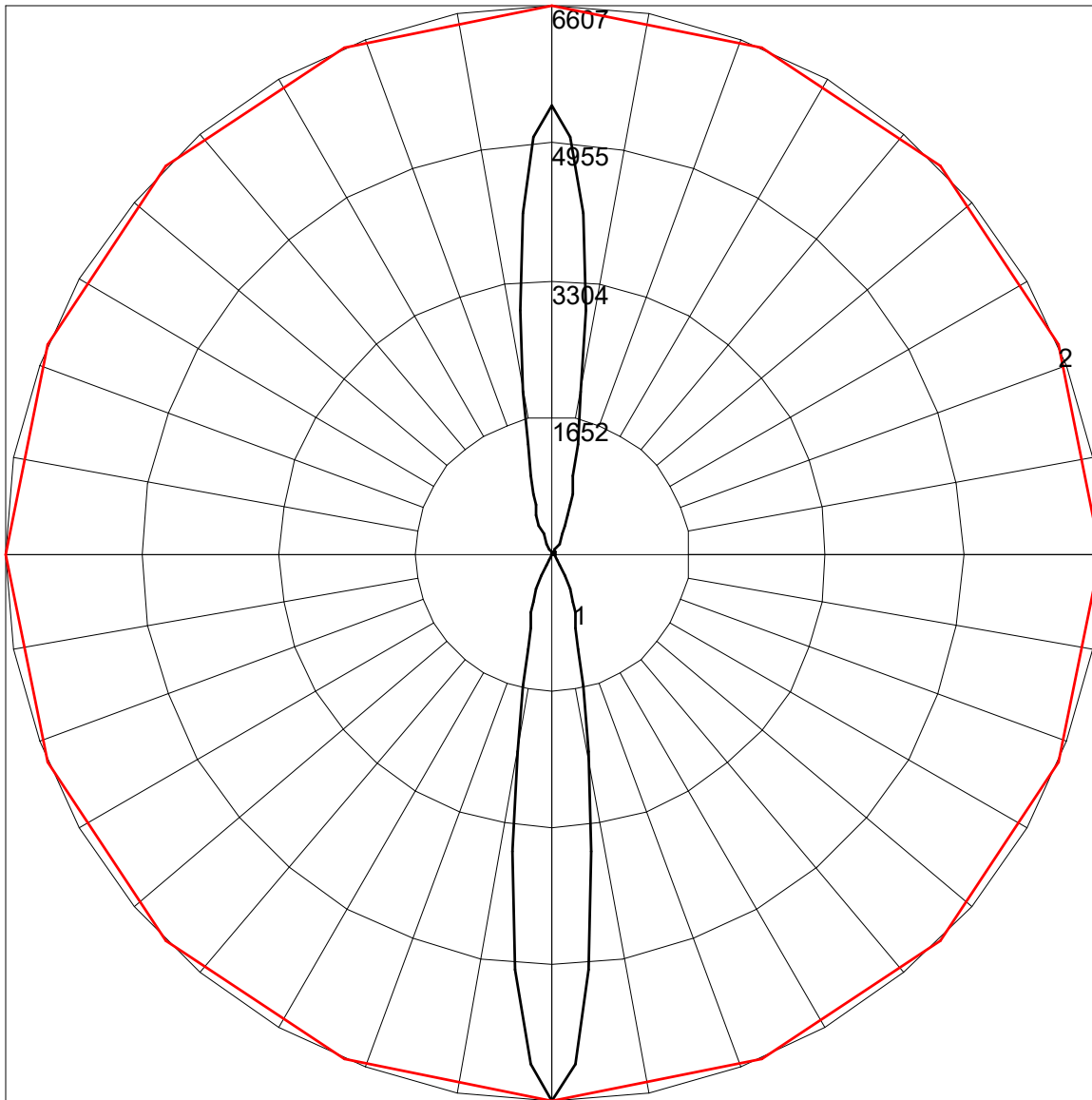
4H	2H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	3H	2.2	2.2	2.2	2.2	2.8	2.2	2.2	2.2	2.8
	4H	2.2	2.2	2.5	2.8	4.1	2.2	2.2	2.5	4.1
	6H	3.2	3.6	4.3	4.6	5.9	3.2	3.6	4.3	5.9
	8H	4.0	4.3	5.0	5.3	6.6	4.0	4.3	5.0	6.6
	12H	4.8	5.1	5.8	6.1	7.4	4.8	5.1	5.8	7.4
8H	4H	2.2	2.3	3.0	3.3	4.6	2.2	2.3	3.0	4.6
	6H	4.1	4.3	5.1	5.4	6.7	4.1	4.3	5.1	6.7
	8H	4.9	5.2	6.0	6.2	7.5	4.9	5.2	6.0	7.5
	12H	6.0	6.2	7.0	7.2	8.6	6.0	6.2	7.0	8.6
12H	4H	2.2	2.4	3.2	3.4	4.7	2.2	2.4	3.2	4.7
	6H	4.3	4.5	5.3	5.5	6.8	4.3	4.5	5.3	6.8
	8H	5.2	5.4	6.3	6.5	7.8	5.2	5.4	6.3	7.8

Maximum UGR = 8.6

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 6607.23 Located At Horizontal Angle = 0, Vertical Angle = 0

1 - Vertical Plane Through Horizontal Angles (90 - 270)

2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)