



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.06 and #13131414.09

[TESTLAB]

[ISSUE DATE] 11-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

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

[MORE]

[LUMINAIRE] White formed aluminum housing, medium 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	2018
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	71
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	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533	1.533
92.5	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042
95.0	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042
97.5	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084	0.084
100.0	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
102.5	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
105.0	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251
107.5	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376
110.0	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502	0.502
112.5	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669
115.0	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
117.5	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296
120.0	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
122.5	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508	2.508
125.0	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762	3.762
127.5	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518	5.518
130.0	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235
132.5	11.411	11.411	11.411	11.411	11.411	11.411	11.411	11.411	11.411	11.411

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CANDELA TABULATION - (Cont.)

135.0	15.424	15.424	15.424	15.424	15.424	15.424	15.424	15.424	15.424	15.424
137.5	19.939	19.939	19.939	19.939	19.939	19.939	19.939	19.939	19.939	19.939
140.0	25.707	25.707	25.707	25.707	25.707	25.707	25.707	25.707	25.707	25.707
142.5	34.485	34.485	34.485	34.485	34.485	34.485	34.485	34.485	34.485	34.485
145.0	51.665	51.665	51.665	51.665	51.665	51.665	51.665	51.665	51.665	51.665
147.5	105.545	105.545	105.545	105.545	105.545	105.545	105.545	105.545	105.545	105.545
150.0	233.077	233.077	233.077	233.077	233.077	233.077	233.077	233.077	233.077	233.077
152.5	442.662	442.662	442.662	442.662	442.662	442.662	442.662	442.662	442.662	442.662
155.0	700.150	700.150	700.150	700.150	700.150	700.150	700.150	700.150	700.150	700.150
157.5	944.680	944.680	944.680	944.680	944.680	944.680	944.680	944.680	944.680	944.680
160.0	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024
162.5	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304
165.0	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420
167.5	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986
170.0	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478
172.5	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932
175.0	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834
177.5	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110
180.0	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000

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	1.533	1.533	1.533	1.533	1.533	1.533	1.533
92.5	0.042	0.042	0.042	0.042	0.042	0.042	0.042
95.0	0.042	0.042	0.042	0.042	0.042	0.042	0.042
97.5	0.084	0.084	0.084	0.084	0.084	0.084	0.084
100.0	0.125	0.125	0.125	0.125	0.125	0.125	0.125
102.5	0.167	0.167	0.167	0.167	0.167	0.167	0.167
105.0	0.251	0.251	0.251	0.251	0.251	0.251	0.251
107.5	0.376	0.376	0.376	0.376	0.376	0.376	0.376
110.0	0.502	0.502	0.502	0.502	0.502	0.502	0.502
112.5	0.669	0.669	0.669	0.669	0.669	0.669	0.669
115.0	0.920	0.920	0.920	0.920	0.920	0.920	0.920
117.5	1.296	1.296	1.296	1.296	1.296	1.296	1.296
120.0	1.756	1.756	1.756	1.756	1.756	1.756	1.756
122.5	2.508	2.508	2.508	2.508	2.508	2.508	2.508
125.0	3.762	3.762	3.762	3.762	3.762	3.762	3.762
127.5	5.518	5.518	5.518	5.518	5.518	5.518	5.518
130.0	8.235	8.235	8.235	8.235	8.235	8.235	8.235
132.5	11.411	11.411	11.411	11.411	11.411	11.411	11.411
135.0	15.424	15.424	15.424	15.424	15.424	15.424	15.424
137.5	19.939	19.939	19.939	19.939	19.939	19.939	19.939
140.0	25.707	25.707	25.707	25.707	25.707	25.707	25.707
142.5	34.485	34.485	34.485	34.485	34.485	34.485	34.485
145.0	51.665	51.665	51.665	51.665	51.665	51.665	51.665
147.5	105.545	105.545	105.545	105.545	105.545	105.545	105.545
150.0	233.077	233.077	233.077	233.077	233.077	233.077	233.077
152.5	442.662	442.662	442.662	442.662	442.662	442.662	442.662
155.0	700.150	700.150	700.150	700.150	700.150	700.150	700.150
157.5	944.680	944.680	944.680	944.680	944.680	944.680	944.680
160.0	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024	1157.024
162.5	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304	1349.304
165.0	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420	1542.420
167.5	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986	1745.986
170.0	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478	1952.478
172.5	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932	2120.932
175.0	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834	2220.834
177.5	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110	2255.110
180.0	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000	2259.000

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

Zone	Lumens	%Lamp	%Fixt
0-20	752.84	N.A.	37.30
0-30	961.63	N.A.	47.70
0-40	994.33	N.A.	49.30
0-60	1006.06	N.A.	49.90
0-80	1010.76	N.A.	50.10
0-90	1012.64	N.A.	50.20
10-90	617.55	N.A.	30.60
20-40	241.50	N.A.	12.00
20-50	249.36	N.A.	12.40
40-70	14.26	N.A.	0.70
60-80	4.69	N.A.	0.20
70-80	2.16	N.A.	0.10
80-90	1.88	N.A.	0.10
90-110	0.56	N.A.	0.00
90-120	1.55	N.A.	0.10
90-130	5.26	N.A.	0.30
90-150	65.62	N.A.	3.30
90-180	1005.37	N.A.	49.80
110-180	1004.81	N.A.	49.80
0-180	2018.01	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	1.88
90-100	0.27
100-110	0.29
110-120	0.99
120-130	3.71
130-140	12.16
140-150	48.20
150-160	309.04
160-170	427.37
170-180	203.35

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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	101	98	95	92	93	91	88	86	78	76	75	66	65	64	54	54	53	48
2	95	90	85	82	88	84	80	77	73	70	68	62	61	59	53	52	51	47
3	90	83	78	74	83	78	74	70	68	65	63	59	57	56	51	50	49	45
4	85	77	72	67	79	73	68	64	64	61	58	57	54	52	49	48	47	44
5	81	72	67	62	75	68	63	60	61	57	55	54	52	50	48	46	45	42
6	77	68	62	58	72	65	60	56	58	54	52	52	49	48	46	45	43	41
7	73	64	58	54	69	61	56	53	55	52	49	50	47	45	45	43	42	40
8	70	61	55	51	66	58	53	50	53	49	47	48	46	44	44	42	41	39
9	67	58	52	49	63	56	51	47	51	47	45	47	44	42	42	41	39	38
10	64	55	50	47	61	53	48	45	49	45	43	45	42	41	41	40	38	37

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-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	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	3H	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	4H	2.5	2.5	2.5	2.5	2.8	2.5	2.5	2.5	2.8
	6H	2.5	2.5	2.5	3.0	4.3	2.5	2.5	2.5	4.3
	8H	2.5	2.6	3.1	3.6	4.9	2.5	2.6	3.1	4.9
	12H	2.8	3.2	3.8	4.2	5.6	2.8	3.2	3.8	5.6

UGR Viewed Endwise

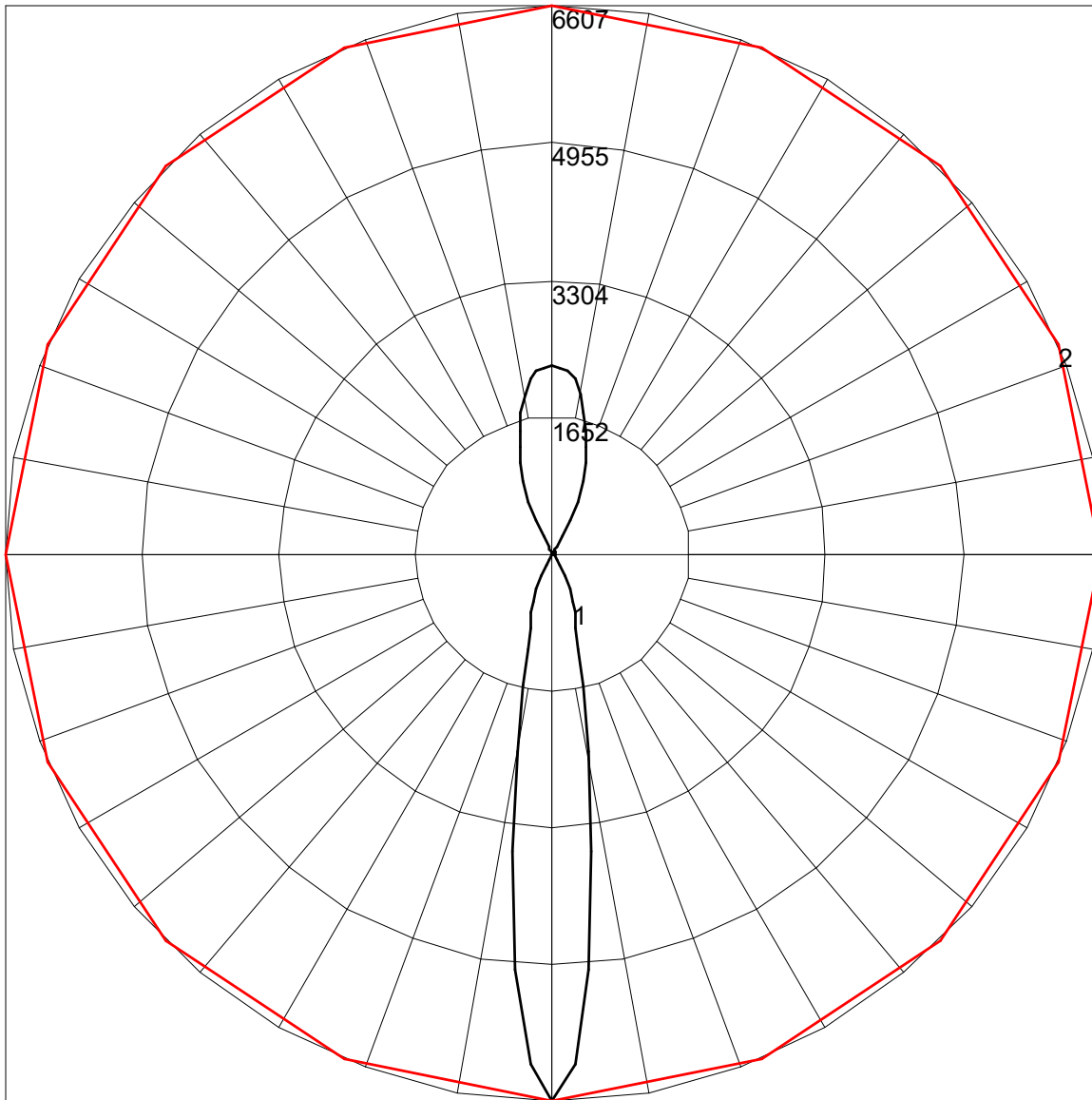
4H	2H	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	3H	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	4H	2.5	2.5	2.5	2.5	3.7	2.5	2.5	2.5	3.7
	6H	2.7	3.1	3.8	4.1	5.5	2.7	3.1	3.8	5.5
	8H	3.5	3.8	4.5	4.8	6.2	3.5	3.8	4.5	6.2
	12H	4.3	4.6	5.4	5.6	7.0	4.3	4.6	5.4	7.0
8H	4H	2.5	2.5	2.6	2.9	4.2	2.5	2.5	2.6	4.2
	6H	3.6	3.8	4.7	4.9	6.3	3.6	3.8	4.7	6.3
	8H	4.4	4.7	5.5	5.7	7.1	4.4	4.7	5.5	7.1
	12H	5.5	5.7	6.6	6.7	8.2	5.5	5.7	6.6	8.2
12H	4H	2.5	2.5	2.7	3.0	4.4	2.5	2.5	2.7	4.4
	6H	3.8	4.0	4.9	5.1	6.5	3.8	4.0	4.9	6.5
	8H	4.8	4.9	5.8	6.0	7.4	4.8	4.9	5.8	7.4

Maximum UGR = 8.2

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-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.)