



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.06 and #13131414.01

[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-OW-CSD-WM

[MORE]

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

[MORE] wide 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	2273
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	80
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	34375	34375	34375
55	9784	9784	9784
65	4439	4439	4439
75	1374	1374	1374
85	370	370	370

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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	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621
2.5	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154
5.0	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863
7.5	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770
10.0	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100
12.5	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144
15.0	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457
17.5	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748
20.0	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440
22.5	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626
25.0	949.949	949.949	949.949	949.949	949.949	949.949	949.949	949.949	949.949	949.949
27.5	870.233	870.233	870.233	870.233	870.233	870.233	870.233	870.233	870.233	870.233
30.0	774.676	774.676	774.676	774.676	774.676	774.676	774.676	774.676	774.676	774.676
32.5	669.921	669.921	669.921	669.921	669.921	669.921	669.921	669.921	669.921	669.921
35.0	556.479	556.479	556.479	556.479	556.479	556.479	556.479	556.479	556.479	556.479
37.5	421.268	421.268	421.268	421.268	421.268	421.268	421.268	421.268	421.268	421.268
40.0	266.589	266.589	266.589	266.589	266.589	266.589	266.589	266.589	266.589	266.589
42.5	146.555	146.555	146.555	146.555	146.555	146.555	146.555	146.555	146.555	146.555
45.0	76.803	76.803	76.803	76.803	76.803	76.803	76.803	76.803	76.803	76.803
47.5	47.830	47.830	47.830	47.830	47.830	47.830	47.830	47.830	47.830	47.830
50.0	33.419	33.419	33.419	33.419	33.419	33.419	33.419	33.419	33.419	33.419
52.5	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375
55.0	17.732	17.732	17.732	17.732	17.732	17.732	17.732	17.732	17.732	17.732
57.5	13.439	13.439	13.439	13.439	13.439	13.439	13.439	13.439	13.439	13.439
60.0	10.475	10.475	10.475	10.475	10.475	10.475	10.475	10.475	10.475	10.475
62.5	8.023	8.023	8.023	8.023	8.023	8.023	8.023	8.023	8.023	8.023
65.0	5.928	5.928	5.928	5.928	5.928	5.928	5.928	5.928	5.928	5.928
67.5	4.139	4.139	4.139	4.139	4.139	4.139	4.139	4.139	4.139	4.139
70.0	2.759	2.759	2.759	2.759	2.759	2.759	2.759	2.759	2.759	2.759
72.5	1.788	1.788	1.788	1.788	1.788	1.788	1.788	1.788	1.788	1.788
75.0	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124
77.5	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
80.0	0.409	0.409	0.409	0.409	0.409	0.409	0.409	0.409	0.409	0.409
82.5	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204
85.0	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
87.5	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.042	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. Angles 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	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621	1027.621
2.5	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154	1029.154
5.0	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863	1038.863
7.5	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770	1057.770
10.0	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100	1073.100
12.5	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144	1075.144
15.0	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457	1066.457
17.5	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748	1056.748
20.0	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440	1042.440
22.5	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626	1004.626
25.0	949.949	949.949	949.949	949.949	949.949	949.949	949.949
27.5	870.233	870.233	870.233	870.233	870.233	870.233	870.233
30.0	774.676	774.676	774.676	774.676	774.676	774.676	774.676
32.5	669.921	669.921	669.921	669.921	669.921	669.921	669.921
35.0	556.479	556.479	556.479	556.479	556.479	556.479	556.479
37.5	421.268	421.268	421.268	421.268	421.268	421.268	421.268
40.0	266.589	266.589	266.589	266.589	266.589	266.589	266.589
42.5	146.555	146.555	146.555	146.555	146.555	146.555	146.555
45.0	76.803	76.803	76.803	76.803	76.803	76.803	76.803
47.5	47.830	47.830	47.830	47.830	47.830	47.830	47.830
50.0	33.419	33.419	33.419	33.419	33.419	33.419	33.419
52.5	24.375	24.375	24.375	24.375	24.375	24.375	24.375
55.0	17.732	17.732	17.732	17.732	17.732	17.732	17.732
57.5	13.439	13.439	13.439	13.439	13.439	13.439	13.439
60.0	10.475	10.475	10.475	10.475	10.475	10.475	10.475
62.5	8.023	8.023	8.023	8.023	8.023	8.023	8.023
65.0	5.928	5.928	5.928	5.928	5.928	5.928	5.928
67.5	4.139	4.139	4.139	4.139	4.139	4.139	4.139
70.0	2.759	2.759	2.759	2.759	2.759	2.759	2.759
72.5	1.788	1.788	1.788	1.788	1.788	1.788	1.788
75.0	1.124	1.124	1.124	1.124	1.124	1.124	1.124
77.5	0.664	0.664	0.664	0.664	0.664	0.664	0.664
80.0	0.409	0.409	0.409	0.409	0.409	0.409	0.409

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82.5	0.204	0.204	0.204	0.204	0.204	0.204	0.204
85.0	0.102	0.102	0.102	0.102	0.102	0.102	0.102
87.5	0.051	0.051	0.051	0.051	0.051	0.051	0.051
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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-OW-CSD-WM_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	401.55	N.A.	17.70
0-30	829.93	N.A.	36.50
0-40	1164.3	N.A.	51.20
0-60	1260.71	N.A.	55.50
0-80	1268.15	N.A.	55.80
0-90	1268.3	N.A.	55.80
10-90	1167.89	N.A.	51.40
20-40	762.75	N.A.	33.60
20-50	841.98	N.A.	37.00
40-70	102.49	N.A.	4.50
60-80	7.44	N.A.	0.30
70-80	1.36	N.A.	0.10
80-90	0.15	N.A.	0.00
90-110	0.35	N.A.	0.00
90-120	1.34	N.A.	0.10
90-130	5.05	N.A.	0.20
90-150	65.41	N.A.	2.90
90-180	1005.16	N.A.	44.20
110-180	1004.81	N.A.	44.20
0-180	2273.46	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	100.41
10-20	301.14
20-30	428.38
30-40	334.37
40-50	79.22
50-60	17.19
60-70	6.08
70-80	1.36
80-90	0.15
90-100	0.06
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	109	109	109	109	101	101	101	101	87	87	87	73	73	73	61	61	61	56
1	102	98	95	92	94	92	89	87	80	78	76	68	67	66	58	57	57	52
2	95	89	84	80	88	83	79	76	73	70	68	63	61	60	55	53	52	48
3	88	81	75	70	83	76	71	67	67	63	60	59	56	54	51	49	48	44
4	83	74	67	63	77	70	64	60	62	58	54	55	52	49	48	46	44	41
5	77	68	61	56	72	64	58	54	57	53	49	51	48	45	45	43	41	38
6	72	62	55	51	68	59	53	49	53	48	45	47	44	41	42	40	38	35
7	68	57	51	46	64	55	49	44	49	45	41	44	41	38	40	37	35	33
8	64	53	46	42	60	51	45	41	46	41	38	41	38	35	37	34	32	30
9	60	49	43	38	56	47	41	37	43	38	35	39	35	32	35	32	30	28
10	56	46	40	35	53	44	38	34	40	35	32	36	33	30	33	30	28	26

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-CSU-OW-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	5.9	6.6	6.9	7.6	8.8
	3H	6.2	6.8	7.2	7.7	9.0
	4H	6.2	6.7	7.1	7.7	8.9
	6H	6.1	6.6	7.0	7.5	8.8
	8H	6.0	6.5	7.0	7.5	8.7
	12H	5.9	6.4	6.9	7.4	8.6

UGR Viewed Endwise

5.9	6.6	6.9	7.6	8.8
6.2	6.8	7.2	7.7	9.0
6.2	6.7	7.1	7.7	8.9
6.1	6.6	7.0	7.5	8.8
6.0	6.5	7.0	7.5	8.7
5.9	6.4	6.9	7.4	8.6

4H	2H	6.0	6.5	7.0	7.5	8.7
	3H	6.3	6.7	7.3	7.7	9.0
	4H	6.2	6.7	7.2	7.6	8.9
	6H	6.2	6.5	7.2	7.5	8.8
	8H	6.1	6.4	7.1	7.4	8.7
	12H	6.0	6.3	7.1	7.3	8.6

8H	4H	6.1	6.4	7.1	7.4	8.7
	6H	6.0	6.3	7.1	7.3	8.6
	8H	6.0	6.2	7.0	7.2	8.6
	12H	5.9	6.1	7.0	7.1	8.5

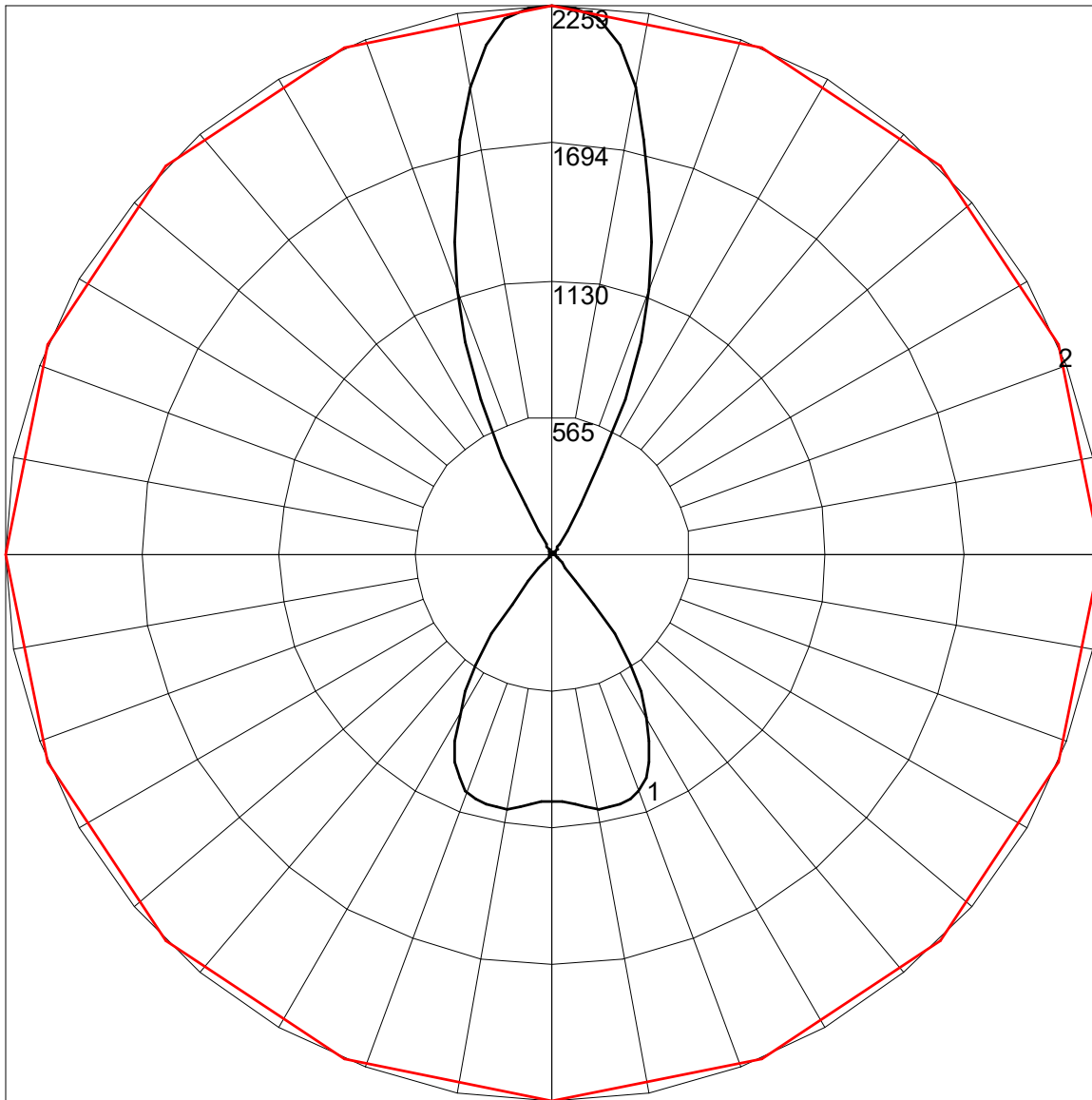
12H	4H	6.0	6.3	7.1	7.3	8.6
	6H	6.0	6.2	7.0	7.2	8.5
	8H	5.9	6.1	7.0	7.1	8.5

Maximum UGR = 9.0

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 2259 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.)