



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.06 and #13257153.07

[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-RM-WHD-WM

[MORE]

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

[MORE] medium 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	2260
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	79
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	57719	57719	57719
55	42293	42293	42293
65	30964	30964	30964
75	15276	15276	15276
85	9074	9074	9074

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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	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550
2.5	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742
5.0	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990
7.5	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160
10.0	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028
12.5	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430
15.0	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144
17.5	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636
20.0	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577
22.5	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517
25.0	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868
27.5	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832
30.0	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630
32.5	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663
35.0	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283
37.5	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120
40.0	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197
42.5	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531
45.0	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960
47.5	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162
50.0	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138
52.5	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129
55.0	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651
57.5	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140
60.0	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193
62.5	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569
65.0	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348
67.5	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610
70.0	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195
72.5	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183
75.0	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493
77.5	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818
80.0	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803
82.5	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030
85.0	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499
87.5	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048
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. 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	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550
2.5	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742
5.0	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990
7.5	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160
10.0	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028
12.5	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430
15.0	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144
17.5	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636
20.0	754.577	754.577	754.577	754.577	754.577	754.577	754.577
22.5	574.517	574.517	574.517	574.517	574.517	574.517	574.517
25.0	465.868	465.868	465.868	465.868	465.868	465.868	465.868
27.5	385.832	385.832	385.832	385.832	385.832	385.832	385.832
30.0	315.630	315.630	315.630	315.630	315.630	315.630	315.630
32.5	255.663	255.663	255.663	255.663	255.663	255.663	255.663
35.0	215.283	215.283	215.283	215.283	215.283	215.283	215.283
37.5	188.120	188.120	188.120	188.120	188.120	188.120	188.120
40.0	166.197	166.197	166.197	166.197	166.197	166.197	166.197
42.5	146.531	146.531	146.531	146.531	146.531	146.531	146.531
45.0	128.960	128.960	128.960	128.960	128.960	128.960	128.960
47.5	113.162	113.162	113.162	113.162	113.162	113.162	113.162
50.0	99.138	99.138	99.138	99.138	99.138	99.138	99.138
52.5	87.129	87.129	87.129	87.129	87.129	87.129	87.129
55.0	76.651	76.651	76.651	76.651	76.651	76.651	76.651
57.5	67.140	67.140	67.140	67.140	67.140	67.140	67.140
60.0	58.193	58.193	58.193	58.193	58.193	58.193	58.193
62.5	49.569	49.569	49.569	49.569	49.569	49.569	49.569
65.0	41.348	41.348	41.348	41.348	41.348	41.348	41.348
67.5	33.610	33.610	33.610	33.610	33.610	33.610	33.610
70.0	26.195	26.195	26.195	26.195	26.195	26.195	26.195
72.5	19.183	19.183	19.183	19.183	19.183	19.183	19.183
75.0	12.493	12.493	12.493	12.493	12.493	12.493	12.493
77.5	7.818	7.818	7.818	7.818	7.818	7.818	7.818
80.0	5.803	5.803	5.803	5.803	5.803	5.803	5.803

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82.5	4.030	4.030	4.030	4.030	4.030	4.030	4.030
85.0	2.499	2.499	2.499	2.499	2.499	2.499	2.499
87.5	1.048	1.048	1.048	1.048	1.048	1.048	1.048
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-RM-WHD-WM_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	666.03	N.A.	29.50
0-30	887.37	N.A.	39.30
0-40	1026.95	N.A.	45.40
0-60	1196.26	N.A.	52.90
0-80	1252.03	N.A.	55.40
0-90	1254.88	N.A.	55.50
10-90	991.44	N.A.	43.90
20-40	360.92	N.A.	16.00
20-50	461.14	N.A.	20.40
40-70	210.49	N.A.	9.30
60-80	55.76	N.A.	2.50
70-80	14.59	N.A.	0.60
80-90	2.85	N.A.	0.10
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.	44.50
110-180	1004.81	N.A.	44.50
0-180	2260.04	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	263.44
10-20	402.59
20-30	221.34
30-40	139.58
40-50	100.23
50-60	69.09
60-70	41.17
70-80	14.59
80-90	2.85
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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	56
1	101	98	95	92	94	91	89	87	79	77	76	68	67	66	58	57	56	52
2	95	89	84	80	88	83	79	76	73	70	67	63	61	59	54	53	52	48
3	89	81	75	71	83	76	71	67	67	64	61	59	56	54	51	49	48	44
4	83	74	68	63	78	70	65	61	62	58	55	55	52	50	48	46	45	42
5	78	69	62	57	73	65	59	55	58	54	51	52	49	46	46	44	42	39
6	73	64	57	52	69	61	55	51	55	50	47	49	46	43	44	41	39	37
7	69	59	53	48	65	57	51	47	51	47	44	46	43	40	42	39	37	35
8	66	56	49	45	62	53	48	44	48	44	41	44	41	38	40	37	35	33
9	62	52	46	42	59	50	45	41	46	42	38	42	38	36	38	36	34	32
10	59	49	44	40	56	47	42	38	44	39	36	40	37	34	37	34	32	31

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-CSU-RM-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	17.1	17.8	18.0	18.8	20.0	17.1	17.8	18.0	18.8	20.0
	3H	18.1	18.7	19.0	19.7	20.9	18.1	18.7	19.0	19.7	20.9
	4H	18.2	18.8	19.2	19.8	21.0	18.2	18.8	19.2	19.8	21.0
	6H	18.2	18.8	19.2	19.8	21.0	18.2	18.8	19.2	19.8	21.0
	8H	18.2	18.8	19.2	19.7	21.0	18.2	18.8	19.2	19.7	21.0
	12H	18.2	18.7	19.2	19.7	20.9	18.2	18.7	19.2	19.7	20.9

UGR Viewed Endwise

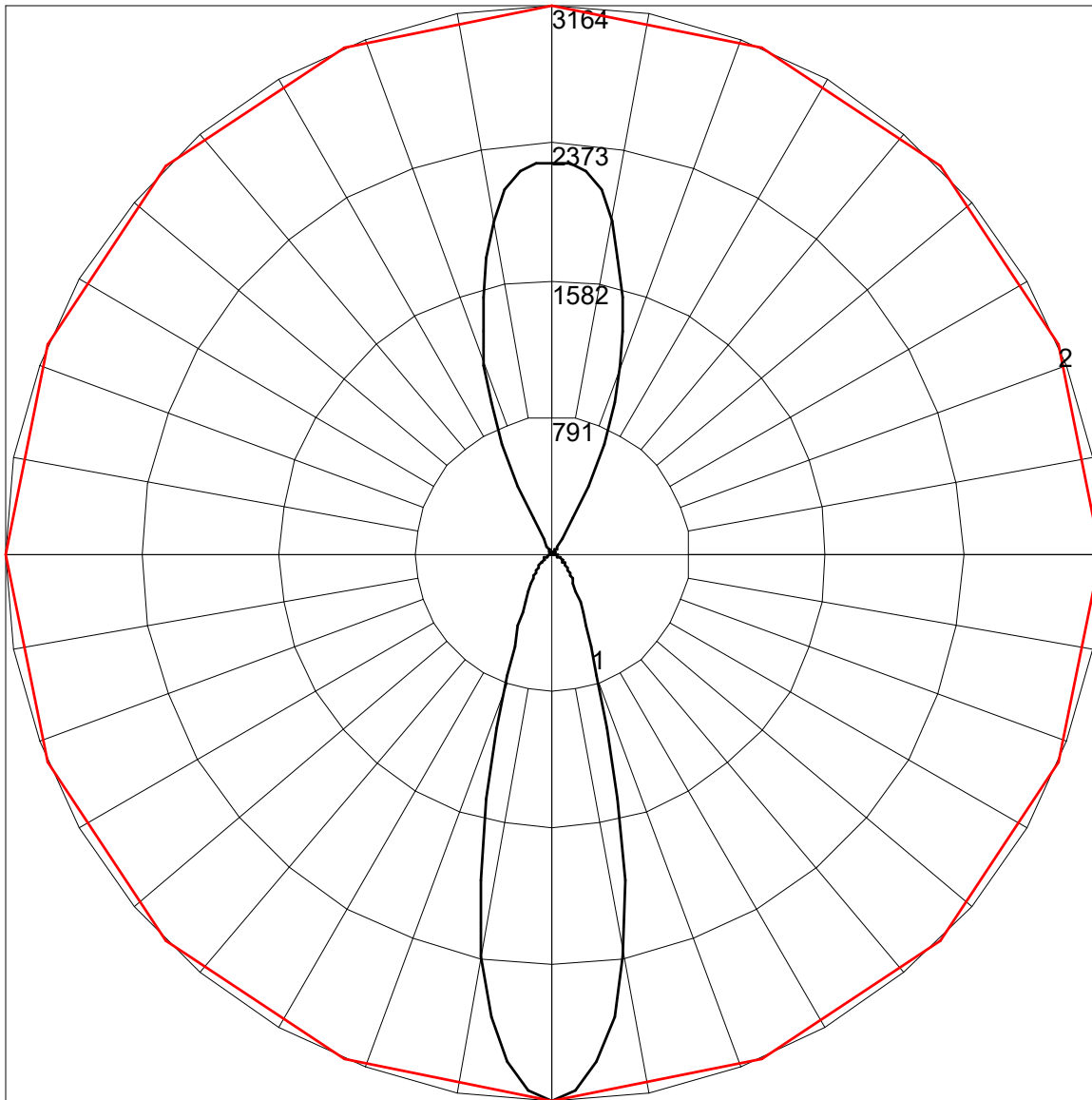
4H	2H	17.4	18.0	18.4	19.0	20.2	17.4	18.0	18.4	19.0	20.2
	3H	18.5	19.0	19.5	20.0	21.2	18.5	19.0	19.5	20.0	21.2
	4H	18.7	19.2	19.7	20.1	21.4	18.7	19.2	19.7	20.1	21.4
	6H	18.8	19.2	19.7	20.1	21.4	18.8	19.2	19.7	20.1	21.4
	8H	18.8	19.1	19.8	20.1	21.4	18.8	19.1	19.8	20.1	21.4
	12H	18.7	19.1	19.7	20.1	21.4	18.7	19.1	19.7	20.1	21.4
8H	4H	18.7	19.1	19.7	20.0	21.3	18.7	19.1	19.7	20.0	21.3
	6H	18.8	19.1	19.8	20.1	21.4	18.8	19.1	19.8	20.1	21.4
	8H	18.8	19.1	19.8	20.1	21.4	18.8	19.1	19.8	20.1	21.4
	12H	18.8	19.0	19.8	20.1	21.4	18.8	19.0	19.8	20.1	21.4
12H	4H	18.6	19.0	19.6	20.0	21.3	18.6	19.0	19.6	20.0	21.3
	6H	18.7	19.0	19.8	20.0	21.3	18.7	19.0	19.8	20.0	21.3
	8H	18.8	19.0	19.8	20.0	21.4	18.8	19.0	19.8	20.0	21.4

Maximum UGR = 21.4

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 3163.55 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.)