



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-CSU-RM-WHD-WM\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13571228.02 and UL #13257153.07

[TESTLAB]

[ISSUE DATE] 15-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

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

[MORE]

[LUMINAIRE] White formed aluminum housing, wide 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	2293
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 w/ Sides
Luminous Length (0-180)	0.31 ft (Diameter)
Luminous Width (90-270)	0.31 ft (Diameter)
Luminous Height	1.44 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3721	3721	3721
55	1997	1997	1997
65	1010	1010	1010
75	295	295	295
85	59	59	59

**IES INDOOR REPORT**

**PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-CSU-RM-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>
<b>0.0</b>	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550	3163.550
<b>2.5</b>	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742	3108.742
<b>5.0</b>	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990	2953.990
<b>7.5</b>	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160	2708.160
<b>10.0</b>	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028	2368.028
<b>12.5</b>	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430	1938.430
<b>15.0</b>	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144	1470.144
<b>17.5</b>	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636	1052.636
<b>20.0</b>	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577	754.577
<b>22.5</b>	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517	574.517
<b>25.0</b>	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868	465.868
<b>27.5</b>	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832	385.832
<b>30.0</b>	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630	315.630
<b>32.5</b>	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663	255.663
<b>35.0</b>	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283	215.283
<b>37.5</b>	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120	188.120
<b>40.0</b>	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197	166.197
<b>42.5</b>	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531	146.531
<b>45.0</b>	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960	128.960
<b>47.5</b>	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162	113.162
<b>50.0</b>	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138	99.138
<b>52.5</b>	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129	87.129
<b>55.0</b>	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651	76.651
<b>57.5</b>	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140	67.140
<b>60.0</b>	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193	58.193
<b>62.5</b>	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569	49.569
<b>65.0</b>	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348	41.348
<b>67.5</b>	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610	33.610
<b>70.0</b>	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195	26.195
<b>72.5</b>	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183	19.183
<b>75.0</b>	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.493
<b>77.5</b>	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818	7.818
<b>80.0</b>	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803	5.803
<b>82.5</b>	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030	4.030
<b>85.0</b>	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499	2.499
<b>87.5</b>	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048	1.048
<b>90.0</b>	2.272	2.272	2.272	2.272	2.272	2.272	2.272	2.272	2.272	2.272
<b>92.5</b>	2.517	2.517	2.517	2.517	2.517	2.517	2.517	2.517	2.517	2.517
<b>95.0</b>	2.886	2.886	2.886	2.886	2.886	2.886	2.886	2.886	2.886	2.886
<b>97.5</b>	3.438	3.438	3.438	3.438	3.438	3.438	3.438	3.438	3.438	3.438
<b>100.0</b>	4.175	4.175	4.175	4.175	4.175	4.175	4.175	4.175	4.175	4.175
<b>102.5</b>	4.973	4.973	4.973	4.973	4.973	4.973	4.973	4.973	4.973	4.973
<b>105.0</b>	5.956	5.956	5.956	5.956	5.956	5.956	5.956	5.956	5.956	5.956
<b>107.5</b>	7.184	7.184	7.184	7.184	7.184	7.184	7.184	7.184	7.184	7.184
<b>110.0</b>	8.719	8.719	8.719	8.719	8.719	8.719	8.719	8.719	8.719	8.719
<b>112.5</b>	10.622	10.622	10.622	10.622	10.622	10.622	10.622	10.622	10.622	10.622
<b>115.0</b>	13.078	13.078	13.078	13.078	13.078	13.078	13.078	13.078	13.078	13.078
<b>117.5</b>	16.148	16.148	16.148	16.148	16.148	16.148	16.148	16.148	16.148	16.148
<b>120.0</b>	20.016	20.016	20.016	20.016	20.016	20.016	20.016	20.016	20.016	20.016
<b>122.5</b>	24.806	24.806	24.806	24.806	24.806	24.806	24.806	24.806	24.806	24.806
<b>125.0</b>	30.761	30.761	30.761	30.761	30.761	30.761	30.761	30.761	30.761	30.761
<b>127.5</b>	38.559	38.559	38.559	38.559	38.559	38.559	38.559	38.559	38.559	38.559
<b>130.0</b>	47.769	47.769	47.769	47.769	47.769	47.769	47.769	47.769	47.769	47.769
<b>132.5</b>	59.251	59.251	59.251	59.251	59.251	59.251	59.251	59.251	59.251	59.251

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**CANDELA TABULATION - (Cont.)**

135.0	78.039	78.039	78.039	78.039	78.039	78.039	78.039	78.039	78.039	78.039
137.5	117.581	117.581	117.581	117.581	117.581	117.581	117.581	117.581	117.581	117.581
140.0	189.603	189.603	189.603	189.603	189.603	189.603	189.603	189.603	189.603	189.603
142.5	285.571	285.571	285.571	285.571	285.571	285.571	285.571	285.571	285.571	285.571
145.0	376.136	376.136	376.136	376.136	376.136	376.136	376.136	376.136	376.136	376.136
147.5	459.211	459.211	459.211	459.211	459.211	459.211	459.211	459.211	459.211	459.211
150.0	564.819	564.819	564.819	564.819	564.819	564.819	564.819	564.819	564.819	564.819
152.5	679.698	679.698	679.698	679.698	679.698	679.698	679.698	679.698	679.698	679.698
155.0	786.534	786.534	786.534	786.534	786.534	786.534	786.534	786.534	786.534	786.534
157.5	838.110	838.110	838.110	838.110	838.110	838.110	838.110	838.110	838.110	838.110
160.0	861.442	861.442	861.442	861.442	861.442	861.442	861.442	861.442	861.442	861.442
162.5	873.108	873.108	873.108	873.108	873.108	873.108	873.108	873.108	873.108	873.108
165.0	898.282	898.282	898.282	898.282	898.282	898.282	898.282	898.282	898.282	898.282
167.5	922.842	922.842	922.842	922.842	922.842	922.842	922.842	922.842	922.842	922.842
170.0	930.210	930.210	930.210	930.210	930.210	930.210	930.210	930.210	930.210	930.210
172.5	910.562	910.562	910.562	910.562	910.562	910.562	910.562	910.562	910.562	910.562
175.0	882.318	882.318	882.318	882.318	882.318	882.318	882.318	882.318	882.318	882.318
177.5	852.846	852.846	852.846	852.846	852.846	852.846	852.846	852.846	852.846	852.846
180.0	840.000	840.000	840.000	840.000	840.000	840.000	840.000	840.000	840.000	840.000

**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	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	2.272	2.272	2.272	2.272	2.272	2.272	2.272
92.5	2.517	2.517	2.517	2.517	2.517	2.517	2.517
95.0	2.886	2.886	2.886	2.886	2.886	2.886	2.886
97.5	3.438	3.438	3.438	3.438	3.438	3.438	3.438
100.0	4.175	4.175	4.175	4.175	4.175	4.175	4.175
102.5	4.973	4.973	4.973	4.973	4.973	4.973	4.973
105.0	5.956	5.956	5.956	5.956	5.956	5.956	5.956
107.5	7.184	7.184	7.184	7.184	7.184	7.184	7.184
110.0	8.719	8.719	8.719	8.719	8.719	8.719	8.719
112.5	10.622	10.622	10.622	10.622	10.622	10.622	10.622
115.0	13.078	13.078	13.078	13.078	13.078	13.078	13.078
117.5	16.148	16.148	16.148	16.148	16.148	16.148	16.148
120.0	20.016	20.016	20.016	20.016	20.016	20.016	20.016
122.5	24.806	24.806	24.806	24.806	24.806	24.806	24.806
125.0	30.761	30.761	30.761	30.761	30.761	30.761	30.761
127.5	38.559	38.559	38.559	38.559	38.559	38.559	38.559
130.0	47.769	47.769	47.769	47.769	47.769	47.769	47.769
132.5	59.251	59.251	59.251	59.251	59.251	59.251	59.251
135.0	78.039	78.039	78.039	78.039	78.039	78.039	78.039
137.5	117.581	117.581	117.581	117.581	117.581	117.581	117.581
140.0	189.603	189.603	189.603	189.603	189.603	189.603	189.603
142.5	285.571	285.571	285.571	285.571	285.571	285.571	285.571
145.0	376.136	376.136	376.136	376.136	376.136	376.136	376.136
147.5	459.211	459.211	459.211	459.211	459.211	459.211	459.211
150.0	564.819	564.819	564.819	564.819	564.819	564.819	564.819
152.5	679.698	679.698	679.698	679.698	679.698	679.698	679.698
155.0	786.534	786.534	786.534	786.534	786.534	786.534	786.534
157.5	838.110	838.110	838.110	838.110	838.110	838.110	838.110
160.0	861.442	861.442	861.442	861.442	861.442	861.442	861.442
162.5	873.108	873.108	873.108	873.108	873.108	873.108	873.108
165.0	898.282	898.282	898.282	898.282	898.282	898.282	898.282
167.5	922.842	922.842	922.842	922.842	922.842	922.842	922.842
170.0	930.210	930.210	930.210	930.210	930.210	930.210	930.210
172.5	910.562	910.562	910.562	910.562	910.562	910.562	910.562
175.0	882.318	882.318	882.318	882.318	882.318	882.318	882.318
177.5	852.846	852.846	852.846	852.846	852.846	852.846	852.846
180.0	840.000	840.000	840.000	840.000	840.000	840.000	840.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-CSU-RM-WHD-WM\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	666.03	N.A.	29.10
0-30	887.37	N.A.	38.70
0-40	1026.95	N.A.	44.80
0-60	1196.26	N.A.	52.20
0-80	1252.03	N.A.	54.60
0-90	1255.19	N.A.	54.70
10-90	991.75	N.A.	43.30
20-40	360.92	N.A.	15.70
20-50	461.14	N.A.	20.10
40-70	210.49	N.A.	9.20
60-80	55.76	N.A.	2.40
70-80	14.59	N.A.	0.60
80-90	3.16	N.A.	0.10
90-110	9.77	N.A.	0.40
90-120	23.15	N.A.	1.00
90-130	51.62	N.A.	2.30
90-150	353.37	N.A.	15.40
90-180	1037.43	N.A.	45.30
110-180	1027.66	N.A.	44.80
0-180	2292.61	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	3.16
90-100	3.29
100-110	6.48
110-120	13.38
120-130	28.48
130-140	70.93
140-150	230.82
150-160	345.05
160-170	253.25
170-180	85.75

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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	100	100	100	100	86	86	86	73	73	73	60	60	60	55
1	101	98	95	92	94	91	89	86	79	77	75	68	66	65	57	56	56	51
2	94	89	84	80	88	83	79	75	72	69	67	63	61	59	54	52	51	47
3	88	81	75	70	82	76	71	67	67	63	60	58	56	54	51	49	47	44
4	83	74	68	63	77	70	64	60	62	58	55	55	52	49	48	46	44	41
5	78	68	62	57	73	65	59	55	58	53	50	51	48	46	45	43	41	39
6	73	63	57	52	69	60	54	50	54	50	46	48	45	43	43	41	39	36
7	69	59	53	48	65	56	51	46	51	46	43	46	42	40	41	39	37	35
8	65	55	49	45	62	53	47	43	48	44	40	43	40	38	39	37	35	33
9	62	52	46	42	59	50	44	41	45	41	38	41	38	36	38	35	33	31
10	59	49	43	39	56	47	42	38	43	39	36	40	36	34	36	34	32	30

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-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	6.1	6.8	7.0	7.8	9.0	6.1	6.8	7.0	7.8	9.0
	3H	6.7	7.4	7.7	8.3	9.6	6.7	7.4	7.7	8.3	9.6
	4H	6.8	7.4	7.8	8.4	9.6	6.8	7.4	7.8	8.4	9.6
	6H	6.7	7.3	7.7	8.3	9.5	6.7	7.3	7.7	8.3	9.5
	8H	6.7	7.2	7.7	8.2	9.5	6.7	7.2	7.7	8.2	9.5
	12H	6.6	7.1	7.6	8.1	9.4	6.6	7.1	7.6	8.1	9.4

### UGR Viewed Endwise

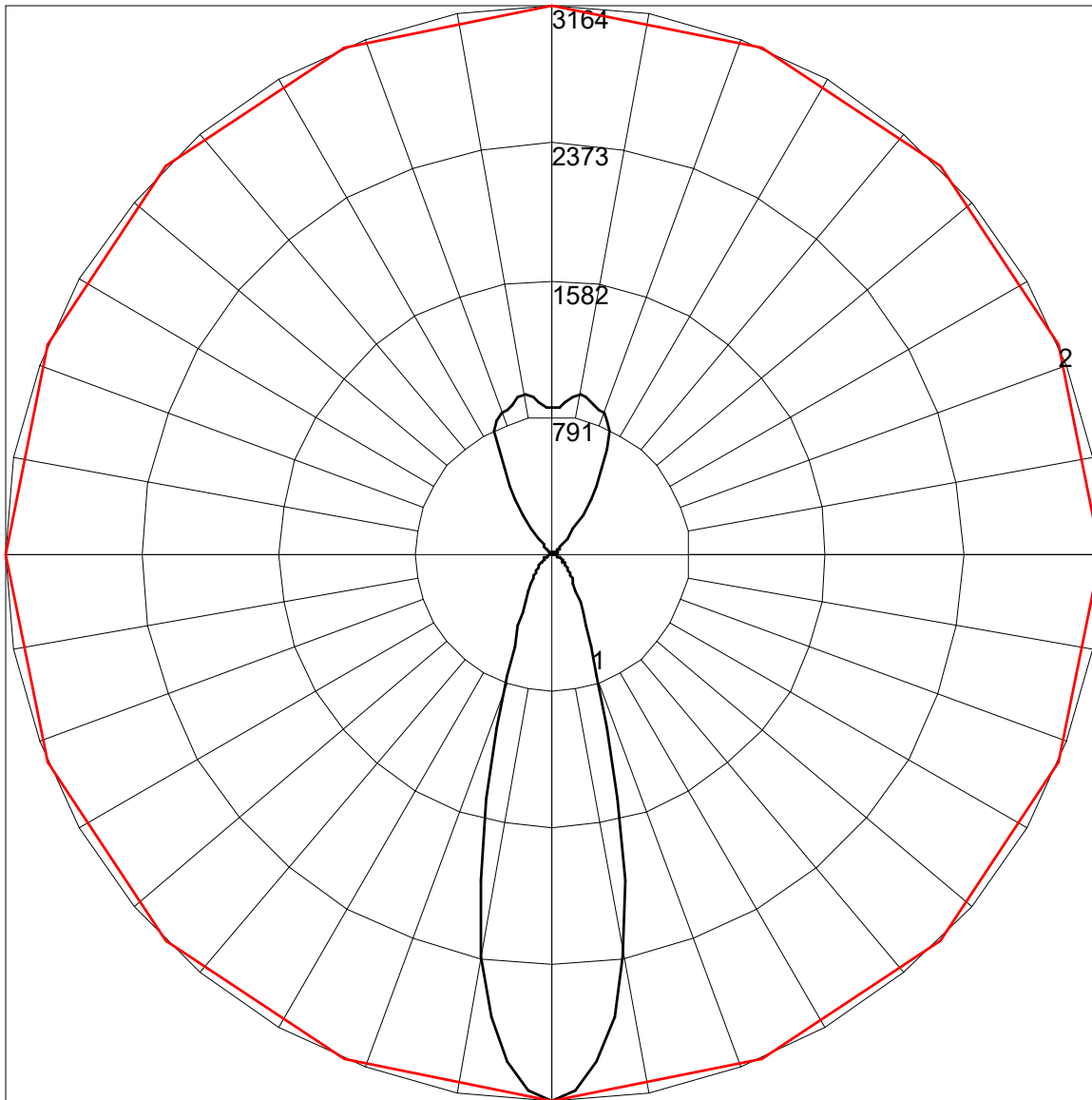
4H	2H	6.2	6.8	7.2	7.8	9.0	6.2	6.8	7.2	7.8	9.0
	3H	7.0	7.5	7.9	8.4	9.7	7.0	7.5	7.9	8.4	9.7
	4H	7.0	7.5	8.0	8.5	9.8	7.0	7.5	8.0	8.5	9.8
	6H	7.0	7.4	8.0	8.4	9.7	7.0	7.4	8.0	8.4	9.7
	8H	6.9	7.3	7.9	8.3	9.6	6.9	7.3	7.9	8.3	9.6
	12H	6.9	7.2	7.9	8.2	9.5	6.9	7.2	7.9	8.2	9.5
8H	4H	6.9	7.3	7.9	8.3	9.6	6.9	7.3	7.9	8.3	9.6
	6H	6.9	7.2	7.9	8.2	9.5	6.9	7.2	7.9	8.2	9.5
	8H	6.9	7.1	7.9	8.2	9.5	6.9	7.1	7.9	8.2	9.5
	12H	6.8	7.1	7.9	8.1	9.4	6.8	7.1	7.9	8.1	9.4
12H	4H	6.9	7.2	7.9	8.2	9.5	6.9	7.2	7.9	8.2	9.5
	6H	6.8	7.1	7.9	8.1	9.5	6.8	7.1	7.9	8.1	9.5
	8H	6.8	7.1	7.9	8.1	9.4	6.8	7.1	7.9	8.1	9.4

Maximum UGR = 9.8

# IES INDOOR REPORT

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