



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.09 and #13131414.06

[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-OM-CSD-WM

[MORE]

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

[MORE] medium 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	2057
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	72
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	8439	8439	8439
55	2538	2538	2538
65	842	842	842
75	375	375	375
85	185	185	185

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-OM-CSD-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>
0.0	2761.955	2761.955	2761.955	2761.955	2761.955	2761.955	2761.955	2761.955	2761.955	2761.955
2.5	2756.845	2756.845	2756.845	2756.845	2756.845	2756.845	2756.845	2756.845	2756.845	2756.845
5.0	2714.943	2714.943	2714.943	2714.943	2714.943	2714.943	2714.943	2714.943	2714.943	2714.943
7.5	2592.814	2592.814	2592.814	2592.814	2592.814	2592.814	2592.814	2592.814	2592.814	2592.814
10.0	2386.881	2386.881	2386.881	2386.881	2386.881	2386.881	2386.881	2386.881	2386.881	2386.881
12.5	2134.447	2134.447	2134.447	2134.447	2134.447	2134.447	2134.447	2134.447	2134.447	2134.447
15.0	1885.590	1885.590	1885.590	1885.590	1885.590	1885.590	1885.590	1885.590	1885.590	1885.590
17.5	1649.508	1649.508	1649.508	1649.508	1649.508	1649.508	1649.508	1649.508	1649.508	1649.508
20.0	1414.448	1414.448	1414.448	1414.448	1414.448	1414.448	1414.448	1414.448	1414.448	1414.448
22.5	1154.860	1154.860	1154.860	1154.860	1154.860	1154.860	1154.860	1154.860	1154.860	1154.860
25.0	855.925	855.925	855.925	855.925	855.925	855.925	855.925	855.925	855.925	855.925
27.5	541.149	541.149	541.149	541.149	541.149	541.149	541.149	541.149	541.149	541.149
30.0	284.934	284.934	284.934	284.934	284.934	284.934	284.934	284.934	284.934	284.934
32.5	129.027	129.027	129.027	129.027	129.027	129.027	129.027	129.027	129.027	129.027
35.0	63.160	63.160	63.160	63.160	63.160	63.160	63.160	63.160	63.160	63.160
37.5	42.157	42.157	42.157	42.157	42.157	42.157	42.157	42.157	42.157	42.157
40.0	31.426	31.426	31.426	31.426	31.426	31.426	31.426	31.426	31.426	31.426
42.5	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375	24.375
45.0	18.856	18.856	18.856	18.856	18.856	18.856	18.856	18.856	18.856	18.856
47.5	13.950	13.950	13.950	13.950	13.950	13.950	13.950	13.950	13.950	13.950
50.0	10.067	10.067	10.067	10.067	10.067	10.067	10.067	10.067	10.067	10.067
52.5	6.745	6.745	6.745	6.745	6.745	6.745	6.745	6.745	6.745	6.745
55.0	4.599	4.599	4.599	4.599	4.599	4.599	4.599	4.599	4.599	4.599
57.5	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066	3.066
60.0	2.146	2.146	2.146	2.146	2.146	2.146	2.146	2.146	2.146	2.146
62.5	1.584	1.584	1.584	1.584	1.584	1.584	1.584	1.584	1.584	1.584
65.0	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124	1.124
67.5	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818
70.0	0.613	0.613	0.613	0.613	0.613	0.613	0.613	0.613	0.613	0.613
72.5	0.460	0.460	0.460	0.460	0.460	0.460	0.460	0.460	0.460	0.460
75.0	0.307	0.307	0.307	0.307	0.307	0.307	0.307	0.307	0.307	0.307
77.5	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204
80.0	0.153	0.153	0.153	0.153	0.153	0.153	0.153	0.153	0.153	0.153
82.5	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
85.0	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051
87.5	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051
90.0	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254	1.254
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

IES INDOOR REPORT

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

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	2761.955	2761.955	2761.955	2761.955	2761.955	2761.955	2761.955
2.5	2756.845	2756.845	2756.845	2756.845	2756.845	2756.845	2756.845
5.0	2714.943	2714.943	2714.943	2714.943	2714.943	2714.943	2714.943
7.5	2592.814	2592.814	2592.814	2592.814	2592.814	2592.814	2592.814
10.0	2386.881	2386.881	2386.881	2386.881	2386.881	2386.881	2386.881
12.5	2134.447	2134.447	2134.447	2134.447	2134.447	2134.447	2134.447
15.0	1885.590	1885.590	1885.590	1885.590	1885.590	1885.590	1885.590
17.5	1649.508	1649.508	1649.508	1649.508	1649.508	1649.508	1649.508
20.0	1414.448	1414.448	1414.448	1414.448	1414.448	1414.448	1414.448
22.5	1154.860	1154.860	1154.860	1154.860	1154.860	1154.860	1154.860
25.0	855.925	855.925	855.925	855.925	855.925	855.925	855.925
27.5	541.149	541.149	541.149	541.149	541.149	541.149	541.149
30.0	284.934	284.934	284.934	284.934	284.934	284.934	284.934
32.5	129.027	129.027	129.027	129.027	129.027	129.027	129.027
35.0	63.160	63.160	63.160	63.160	63.160	63.160	63.160
37.5	42.157	42.157	42.157	42.157	42.157	42.157	42.157
40.0	31.426	31.426	31.426	31.426	31.426	31.426	31.426
42.5	24.375	24.375	24.375	24.375	24.375	24.375	24.375
45.0	18.856	18.856	18.856	18.856	18.856	18.856	18.856
47.5	13.950	13.950	13.950	13.950	13.950	13.950	13.950
50.0	10.067	10.067	10.067	10.067	10.067	10.067	10.067
52.5	6.745	6.745	6.745	6.745	6.745	6.745	6.745
55.0	4.599	4.599	4.599	4.599	4.599	4.599	4.599
57.5	3.066	3.066	3.066	3.066	3.066	3.066	3.066
60.0	2.146	2.146	2.146	2.146	2.146	2.146	2.146
62.5	1.584	1.584	1.584	1.584	1.584	1.584	1.584
65.0	1.124	1.124	1.124	1.124	1.124	1.124	1.124
67.5	0.818	0.818	0.818	0.818	0.818	0.818	0.818
70.0	0.613	0.613	0.613	0.613	0.613	0.613	0.613
72.5	0.460	0.460	0.460	0.460	0.460	0.460	0.460
75.0	0.307	0.307	0.307	0.307	0.307	0.307	0.307
77.5	0.204	0.204	0.204	0.204	0.204	0.204	0.204
80.0	0.153	0.153	0.153	0.153	0.153	0.153	0.153

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-OM-CSD-WM_.IES****CANDELA TABULATION - (Cont.)**

82.5	0.102	0.102	0.102	0.102	0.102	0.102	0.102
85.0	0.051	0.051	0.051	0.051	0.051	0.051	0.051
87.5	0.051	0.051	0.051	0.051	0.051	0.051	0.051
90.0	1.254	1.254	1.254	1.254	1.254	1.254	1.254
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

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

Zone	Lumens	%Lamp	%Fixt
0-20	771.04	N.A.	37.50
0-30	1148.84	N.A.	55.80
0-40	1207.76	N.A.	58.70
0-60	1227.16	N.A.	59.60
0-80	1228.72	N.A.	59.70
0-90	1228.97	N.A.	59.70
10-90	980.38	N.A.	47.70
20-40	436.72	N.A.	21.20
20-50	451.58	N.A.	21.90
40-70	20.61	N.A.	1.00
60-80	1.56	N.A.	0.10
70-80	0.36	N.A.	0.00
80-90	0.25	N.A.	0.00
90-110	3.31	N.A.	0.20
90-120	5.38	N.A.	0.30
90-130	8.55	N.A.	0.40
90-150	41.73	N.A.	2.00
90-180	828.34	N.A.	40.30
110-180	825.03	N.A.	40.10
0-180	2057.31	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	248.59
10-20	522.45
20-30	377.80
30-40	58.92
40-50	14.86
50-60	4.54
60-70	1.21
70-80	0.36
80-90	0.25
90-100	1.54
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

IES INDOOR REPORT

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

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	109	109	109	109	102	102	102	102	89	89	89	76	76	76	65	65	65	60
1	103	100	98	95	97	94	92	90	83	81	80	72	71	70	63	62	61	57
2	97	92	88	85	91	87	84	80	77	75	73	69	67	65	60	59	58	54
3	92	85	80	76	87	81	77	73	73	70	67	65	63	61	58	56	55	52
4	87	80	74	70	82	76	71	67	69	65	62	62	59	57	56	54	52	50
5	83	74	69	64	78	71	66	62	65	61	58	59	56	54	53	51	50	47
6	78	70	64	60	74	67	62	58	61	57	54	56	53	51	51	49	48	45
7	75	66	60	56	71	63	58	54	58	54	51	54	51	48	49	47	45	43
8	71	62	56	52	68	60	55	51	55	51	49	51	48	46	47	45	44	42
9	68	59	53	49	65	57	52	48	53	49	46	49	46	44	46	43	42	40
10	65	56	50	47	62	54	49	46	50	47	44	47	44	42	44	42	40	39

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-OM-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	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	3H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	4H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	6H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	8H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	12H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6

UGR Viewed Endwise

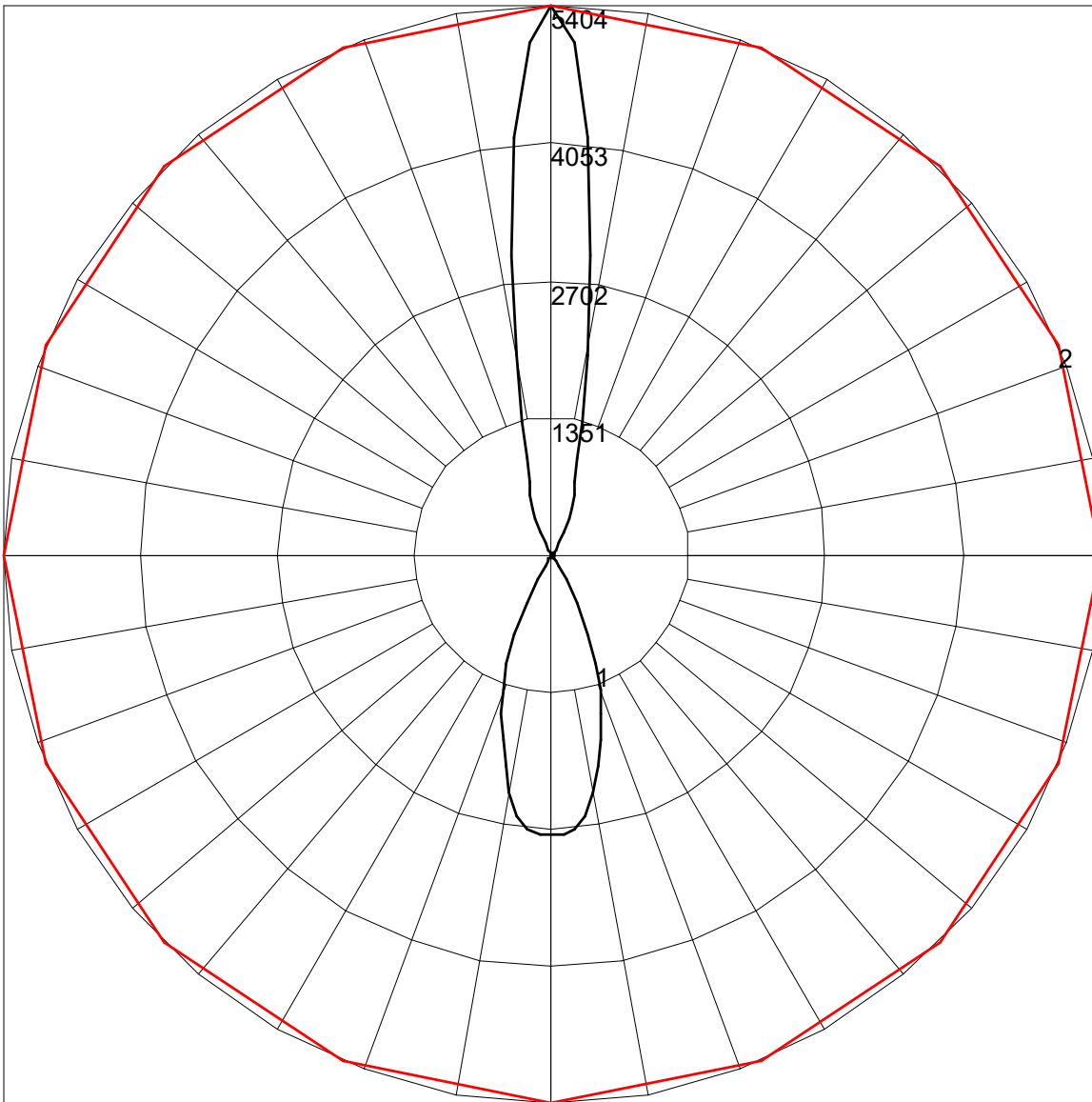
4H	2H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	3H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	4H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	6H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	8H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	12H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
8H	4H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	6H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	8H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	12H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
12H	4H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	6H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	8H	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6

Maximum UGR = 2.6

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 5404 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.)