



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.09 and #13257153.01

[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-LW-WHD-WM

[MORE]

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

[MORE] wide distrib white painted flush prismatic lens trim down

[LAMP] Two white LEDs (one up/one down)

[_SEARCH_SOURCE TYPE] LED

[_SEARCH_APPLICATION] INDOOR, DIRECT, INDIRECT

[_SEARCH_MOUNTING] WALL

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2159
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	76
Total Luminaire Watts	28.5
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	0.86
Spacing Criterion (90-270)	0.86
Spacing Criterion (Diagonal)	0.78
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	54756	54756	54756
55	47823	47823	47823
65	40852	40852	40852
75	32959	32959	32959
85	18461	18461	18461

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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	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387
2.5	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545
5.0	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405
7.5	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809
10.0	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336
12.5	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951
15.0	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426
17.5	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691
20.0	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255
22.5	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469
25.0	832.824	832.824	832.824	832.824	832.824	832.824	832.824	832.824	832.824	832.824
27.5	638.337	638.337	638.337	638.337	638.337	638.337	638.337	638.337	638.337	638.337
30.0	463.944	463.944	463.944	463.944	463.944	463.944	463.944	463.944	463.944	463.944
32.5	330.386	330.386	330.386	330.386	330.386	330.386	330.386	330.386	330.386	330.386
35.0	241.212	241.212	241.212	241.212	241.212	241.212	241.212	241.212	241.212	241.212
37.5	186.820	186.820	186.820	186.820	186.820	186.820	186.820	186.820	186.820	186.820
40.0	154.944	154.944	154.944	154.944	154.944	154.944	154.944	154.944	154.944	154.944
42.5	135.415	135.415	135.415	135.415	135.415	135.415	135.415	135.415	135.415	135.415
45.0	122.341	122.341	122.341	122.341	122.341	122.341	122.341	122.341	122.341	122.341
47.5	112.173	112.173	112.173	112.173	112.173	112.173	112.173	112.173	112.173	112.173
50.0	103.135	103.135	103.135	103.135	103.135	103.135	103.135	103.135	103.135	103.135
52.5	94.742	94.742	94.742	94.742	94.742	94.742	94.742	94.742	94.742	94.742
55.0	86.672	86.672	86.672	86.672	86.672	86.672	86.672	86.672	86.672	86.672
57.5	78.682	78.682	78.682	78.682	78.682	78.682	78.682	78.682	78.682	78.682
60.0	70.612	70.612	70.612	70.612	70.612	70.612	70.612	70.612	70.612	70.612
62.5	62.542	62.542	62.542	62.542	62.542	62.542	62.542	62.542	62.542	62.542
65.0	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553
67.5	47.129	47.129	47.129	47.129	47.129	47.129	47.129	47.129	47.129	47.129
70.0	40.108	40.108	40.108	40.108	40.108	40.108	40.108	40.108	40.108	40.108
72.5	33.410	33.410	33.410	33.410	33.410	33.410	33.410	33.410	33.410	33.410
75.0	26.954	26.954	26.954	26.954	26.954	26.954	26.954	26.954	26.954	26.954
77.5	20.982	20.982	20.982	20.982	20.982	20.982	20.982	20.982	20.982	20.982
80.0	15.414	15.414	15.414	15.414	15.414	15.414	15.414	15.414	15.414	15.414
82.5	10.087	10.087	10.087	10.087	10.087	10.087	10.087	10.087	10.087	10.087
85.0	5.084	5.084	5.084	5.084	5.084	5.084	5.084	5.084	5.084	5.084
87.5	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968
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

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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	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387	1566.387
2.5	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545	1561.545
5.0	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405	1545.405
7.5	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809	1522.809
10.0	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336	1491.336
12.5	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951	1446.951
15.0	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426	1386.426
17.5	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691	1301.691
20.0	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255	1182.255
22.5	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469	1022.469
25.0	832.824	832.824	832.824	832.824	832.824	832.824	832.824
27.5	638.337	638.337	638.337	638.337	638.337	638.337	638.337
30.0	463.944	463.944	463.944	463.944	463.944	463.944	463.944
32.5	330.386	330.386	330.386	330.386	330.386	330.386	330.386
35.0	241.212	241.212	241.212	241.212	241.212	241.212	241.212
37.5	186.820	186.820	186.820	186.820	186.820	186.820	186.820
40.0	154.944	154.944	154.944	154.944	154.944	154.944	154.944
42.5	135.415	135.415	135.415	135.415	135.415	135.415	135.415
45.0	122.341	122.341	122.341	122.341	122.341	122.341	122.341
47.5	112.173	112.173	112.173	112.173	112.173	112.173	112.173
50.0	103.135	103.135	103.135	103.135	103.135	103.135	103.135
52.5	94.742	94.742	94.742	94.742	94.742	94.742	94.742
55.0	86.672	86.672	86.672	86.672	86.672	86.672	86.672
57.5	78.682	78.682	78.682	78.682	78.682	78.682	78.682
60.0	70.612	70.612	70.612	70.612	70.612	70.612	70.612
62.5	62.542	62.542	62.542	62.542	62.542	62.542	62.542
65.0	54.553	54.553	54.553	54.553	54.553	54.553	54.553
67.5	47.129	47.129	47.129	47.129	47.129	47.129	47.129
70.0	40.108	40.108	40.108	40.108	40.108	40.108	40.108
72.5	33.410	33.410	33.410	33.410	33.410	33.410	33.410
75.0	26.954	26.954	26.954	26.954	26.954	26.954	26.954
77.5	20.982	20.982	20.982	20.982	20.982	20.982	20.982
80.0	15.414	15.414	15.414	15.414	15.414	15.414	15.414

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82.5	10.087	10.087	10.087	10.087	10.087	10.087	10.087
85.0	5.084	5.084	5.084	5.084	5.084	5.084	5.084
87.5	0.968	0.968	0.968	0.968	0.968	0.968	0.968
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-LW-WHD-WM_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	529.26	N.A.	24.50
0-30	903.06	N.A.	41.80
0-40	1067.08	N.A.	49.40
0-60	1240.71	N.A.	57.50
0-80	1323.77	N.A.	61.30
0-90	1330.42	N.A.	61.60
10-90	1184.58	N.A.	54.90
20-40	537.82	N.A.	24.90
20-50	633.90	N.A.	29.40
40-70	227.92	N.A.	10.60
60-80	83.06	N.A.	3.80
70-80	28.76	N.A.	1.30
80-90	6.65	N.A.	0.30
90-110	3.31	N.A.	0.20
90-120	5.38	N.A.	0.20
90-130	8.55	N.A.	0.40
90-150	41.73	N.A.	1.90
90-180	828.34	N.A.	38.40
110-180	825.03	N.A.	38.20
0-180	2158.76	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	145.84
10-20	383.42
20-30	373.80
30-40	164.02
40-50	96.08
50-60	77.54
60-70	54.30
70-80	28.76
80-90	6.65
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

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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	103	99	96	93	96	93	90	88	82	80	78	72	70	69	62	61	61	56
2	96	89	84	80	90	84	80	76	75	72	69	66	64	62	58	57	55	51
3	89	81	75	71	84	77	72	67	69	65	62	61	58	56	54	52	50	47
4	83	74	68	63	78	71	65	60	64	59	56	57	54	51	51	48	46	43
5	78	68	62	57	74	65	59	55	59	54	51	53	50	47	48	45	43	40
6	73	63	56	51	69	60	54	50	55	50	46	50	46	43	45	42	40	38
7	69	59	52	47	65	56	50	46	51	46	43	47	43	40	42	40	37	35
8	65	55	48	43	62	52	46	42	48	43	40	44	40	37	40	37	35	33
9	62	51	45	40	58	49	43	39	45	40	37	42	38	35	38	35	33	31
10	58	48	42	38	55	46	40	37	43	38	35	39	36	33	36	33	31	29

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-LW-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	18.5	19.3	19.4	20.2	21.3
	3H	20.0	20.7	20.9	21.6	22.7
	4H	20.5	21.2	21.4	22.1	23.2
	6H	20.8	21.4	21.7	22.3	23.5
	8H	20.9	21.5	21.8	22.4	23.6
	12H	20.9	21.5	21.9	22.4	23.6

UGR Viewed Endwise

18.5	19.3	19.4	20.2	21.3
20.0	20.7	20.9	21.6	22.7
20.5	21.2	21.4	22.1	23.2
20.8	21.4	21.7	22.3	23.5
20.9	21.5	21.8	22.4	23.6
20.9	21.5	21.9	22.4	23.6

4H	2H	19.0	19.6	19.9	20.5	21.7
	3H	20.6	21.2	21.6	22.1	23.3
	4H	21.3	21.8	22.2	22.7	23.9
	6H	21.7	22.1	22.6	23.1	24.3
	8H	21.8	22.2	22.8	23.2	24.3
	12H	21.9	22.2	22.8	23.2	24.4

19.0	19.6	19.9	20.5	21.7
20.6	21.2	21.6	22.1	23.3
21.3	21.8	22.2	22.7	23.9
21.7	22.1	22.6	23.1	24.3
21.8	22.2	22.8	23.2	24.3
21.9	22.2	22.8	23.2	24.4

8H	4H	21.4	21.8	22.4	22.8	24.0
	6H	22.0	22.3	23.0	23.3	24.5
	8H	22.2	22.5	23.2	23.4	24.6
	12H	22.3	22.5	23.2	23.5	24.7

21.4	21.8	22.4	22.8	24.0
22.0	22.3	23.0	23.3	24.5
22.2	22.5	23.2	23.4	24.6
22.3	22.5	23.2	23.5	24.7

12H	4H	21.4	21.8	22.4	22.7	23.9
	6H	22.0	22.3	23.0	23.3	24.5
	8H	22.2	22.5	23.2	23.4	24.7

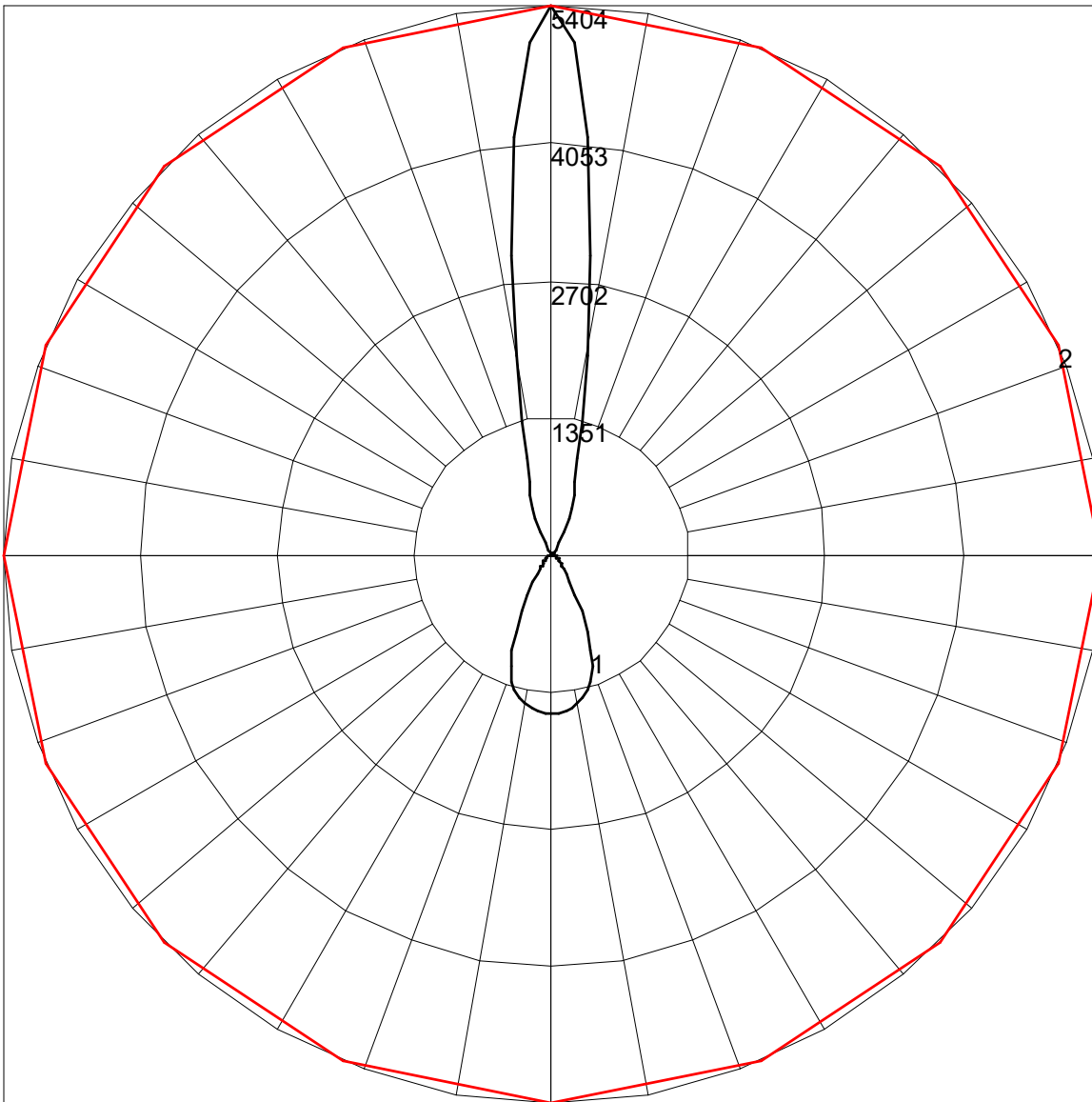
21.4	21.8	22.4	22.7	23.9
22.0	22.3	23.0	23.3	24.5
22.2	22.5	23.2	23.4	24.7

Maximum UGR = 24.7

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-ON-CSU-LW-WHD-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.)