



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13131414.06 and UL #13257153.09

[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-RN-WHD-WM

[MORE]

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

[MORE] narrow 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	2278
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	58838	58838	58838
55	40431	40431	40431
65	28464	28464	28464
75	14210	14210	14210
85	8791	8791	8791

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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	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111
2.5	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834
5.0	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739
7.5	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140
10.0	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683
12.5	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593
15.0	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324
17.5	882.051	882.051	882.051	882.051	882.051	882.051	882.051	882.051	882.051	882.051
20.0	672.392	672.392	672.392	672.392	672.392	672.392	672.392	672.392	672.392	672.392
22.5	550.051	550.051	550.051	550.051	550.051	550.051	550.051	550.051	550.051	550.051
25.0	464.832	464.832	464.832	464.832	464.832	464.832	464.832	464.832	464.832	464.832
27.5	390.991	390.991	390.991	390.991	390.991	390.991	390.991	390.991	390.991	390.991
30.0	321.509	321.509	321.509	321.509	321.509	321.509	321.509	321.509	321.509	321.509
32.5	262.275	262.275	262.275	262.275	262.275	262.275	262.275	262.275	262.275	262.275
35.0	224.104	224.104	224.104	224.104	224.104	224.104	224.104	224.104	224.104	224.104
37.5	197.876	197.876	197.876	197.876	197.876	197.876	197.876	197.876	197.876	197.876
40.0	174.877	174.877	174.877	174.877	174.877	174.877	174.877	174.877	174.877	174.877
42.5	152.362	152.362	152.362	152.362	152.362	152.362	152.362	152.362	152.362	152.362
45.0	131.460	131.460	131.460	131.460	131.460	131.460	131.460	131.460	131.460	131.460
47.5	112.899	112.899	112.899	112.899	112.899	112.899	112.899	112.899	112.899	112.899
50.0	97.082	97.082	97.082	97.082	97.082	97.082	97.082	97.082	97.082	97.082
52.5	84.089	84.089	84.089	84.089	84.089	84.089	84.089	84.089	84.089	84.089
55.0	73.276	73.276	73.276	73.276	73.276	73.276	73.276	73.276	73.276	73.276
57.5	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511
60.0	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553	54.553
62.5	46.080	46.080	46.080	46.080	46.080	46.080	46.080	46.080	46.080	46.080
65.0	38.010	38.010	38.010	38.010	38.010	38.010	38.010	38.010	38.010	38.010
67.5	30.585	30.585	30.585	30.585	30.585	30.585	30.585	30.585	30.585	30.585
70.0	23.726	23.726	23.726	23.726	23.726	23.726	23.726	23.726	23.726	23.726
72.5	17.431	17.431	17.431	17.431	17.431	17.431	17.431	17.431	17.431	17.431
75.0	11.621	11.621	11.621	11.621	11.621	11.621	11.621	11.621	11.621	11.621
77.5	7.424	7.424	7.424	7.424	7.424	7.424	7.424	7.424	7.424	7.424
80.0	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649
82.5	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954	3.954
85.0	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421	2.421
87.5	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
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	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111	4578.111
2.5	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834	4407.834
5.0	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739	3935.739
7.5	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140	3244.140
10.0	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683	2476.683
12.5	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593	1774.593
15.0	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324	1236.324
17.5	882.051	882.051	882.051	882.051	882.051	882.051	882.051
20.0	672.392	672.392	672.392	672.392	672.392	672.392	672.392
22.5	550.051	550.051	550.051	550.051	550.051	550.051	550.051
25.0	464.832	464.832	464.832	464.832	464.832	464.832	464.832
27.5	390.991	390.991	390.991	390.991	390.991	390.991	390.991
30.0	321.509	321.509	321.509	321.509	321.509	321.509	321.509
32.5	262.275	262.275	262.275	262.275	262.275	262.275	262.275
35.0	224.104	224.104	224.104	224.104	224.104	224.104	224.104
37.5	197.876	197.876	197.876	197.876	197.876	197.876	197.876
40.0	174.877	174.877	174.877	174.877	174.877	174.877	174.877
42.5	152.362	152.362	152.362	152.362	152.362	152.362	152.362
45.0	131.460	131.460	131.460	131.460	131.460	131.460	131.460
47.5	112.899	112.899	112.899	112.899	112.899	112.899	112.899
50.0	97.082	97.082	97.082	97.082	97.082	97.082	97.082
52.5	84.089	84.089	84.089	84.089	84.089	84.089	84.089
55.0	73.276	73.276	73.276	73.276	73.276	73.276	73.276
57.5	63.511	63.511	63.511	63.511	63.511	63.511	63.511
60.0	54.553	54.553	54.553	54.553	54.553	54.553	54.553
62.5	46.080	46.080	46.080	46.080	46.080	46.080	46.080
65.0	38.010	38.010	38.010	38.010	38.010	38.010	38.010
67.5	30.585	30.585	30.585	30.585	30.585	30.585	30.585
70.0	23.726	23.726	23.726	23.726	23.726	23.726	23.726
72.5	17.431	17.431	17.431	17.431	17.431	17.431	17.431
75.0	11.621	11.621	11.621	11.621	11.621	11.621	11.621
77.5	7.424	7.424	7.424	7.424	7.424	7.424	7.424
80.0	5.649	5.649	5.649	5.649	5.649	5.649	5.649

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82.5	3.954	3.954	3.954	3.954	3.954	3.954	3.954
85.0	2.421	2.421	2.421	2.421	2.421	2.421	2.421
87.5	1.049	1.049	1.049	1.049	1.049	1.049	1.049
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-RN-WHD-WM_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	689.60	N.A.	30.30
0-30	905.21	N.A.	39.70
0-40	1049.94	N.A.	46.10
0-60	1218.43	N.A.	53.50
0-80	1269.87	N.A.	55.70
0-90	1272.66	N.A.	55.90
10-90	944.57	N.A.	41.50
20-40	360.34	N.A.	15.80
20-50	462.65	N.A.	20.30
40-70	206.47	N.A.	9.10
60-80	51.43	N.A.	2.30
70-80	13.46	N.A.	0.60
80-90	2.79	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.	44.10
110-180	1004.81	N.A.	44.10
0-180	2277.82	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	328.09
10-20	361.51
20-30	215.61
30-40	144.73
40-50	102.31
50-60	66.19
60-70	37.97
70-80	13.46
80-90	2.79
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	74	74	74	62	62	62	56
1	102	98	95	93	95	92	89	87	80	78	76	68	67	66	58	57	57	52
2	95	89	84	81	89	84	80	76	73	70	68	64	62	60	55	54	52	48
3	89	82	76	71	83	77	72	68	68	64	61	60	57	55	52	50	49	45
4	83	75	69	64	78	71	65	61	63	59	56	56	53	51	49	47	46	42
5	79	69	63	58	74	66	60	56	59	55	51	53	50	47	47	45	43	40
6	74	65	58	53	70	61	56	52	55	51	48	50	47	44	45	42	40	38
7	70	60	54	49	66	58	52	48	52	48	45	47	44	41	43	40	38	36
8	67	57	50	46	63	54	49	45	49	45	42	45	42	39	41	38	37	35
9	63	53	47	43	60	51	46	42	47	43	40	43	40	37	39	37	35	33
10	60	51	45	41	57	49	43	40	45	41	38	41	38	36	38	35	34	32

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-CSU-RN-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	16.7	17.4	17.6	18.4	19.5	UGR Viewed Endwise	16.7	17.4	17.6	18.4	19.5
	3H	17.6	18.2	18.5	19.2	20.4		17.6	18.2	18.5	19.2	20.4
	4H	17.7	18.4	18.7	19.3	20.5		17.7	18.4	18.7	19.3	20.5
	6H	17.7	18.3	18.7	19.3	20.5		17.7	18.3	18.7	19.3	20.5
	8H	17.7	18.3	18.7	19.2	20.5		17.7	18.3	18.7	19.2	20.5
	12H	17.7	18.2	18.7	19.2	20.4		17.7	18.2	18.7	19.2	20.4

4H	2H	17.0	17.6	17.9	18.5	19.7	17.0	17.6	17.9	18.5	19.7
	3H	18.0	18.5	19.0	19.5	20.7	18.0	18.5	19.0	19.5	20.7
	4H	18.2	18.6	19.2	19.6	20.9	18.2	18.6	19.2	19.6	20.9
	6H	18.2	18.6	19.2	19.6	20.9	18.2	18.6	19.2	19.6	20.9
	8H	18.2	18.6	19.2	19.6	20.9	18.2	18.6	19.2	19.6	20.9
	12H	18.2	18.6	19.2	19.6	20.8	18.2	18.6	19.2	19.6	20.8

8H	4H	18.2	18.5	19.2	19.5	20.8	18.2	18.5	19.2	19.5	20.8
	6H	18.3	18.6	19.3	19.6	20.9	18.3	18.6	19.3	19.6	20.9
	8H	18.3	18.6	19.3	19.6	20.9	18.3	18.6	19.3	19.6	20.9
	12H	18.3	18.5	19.3	19.6	20.9	18.3	18.5	19.3	19.6	20.9

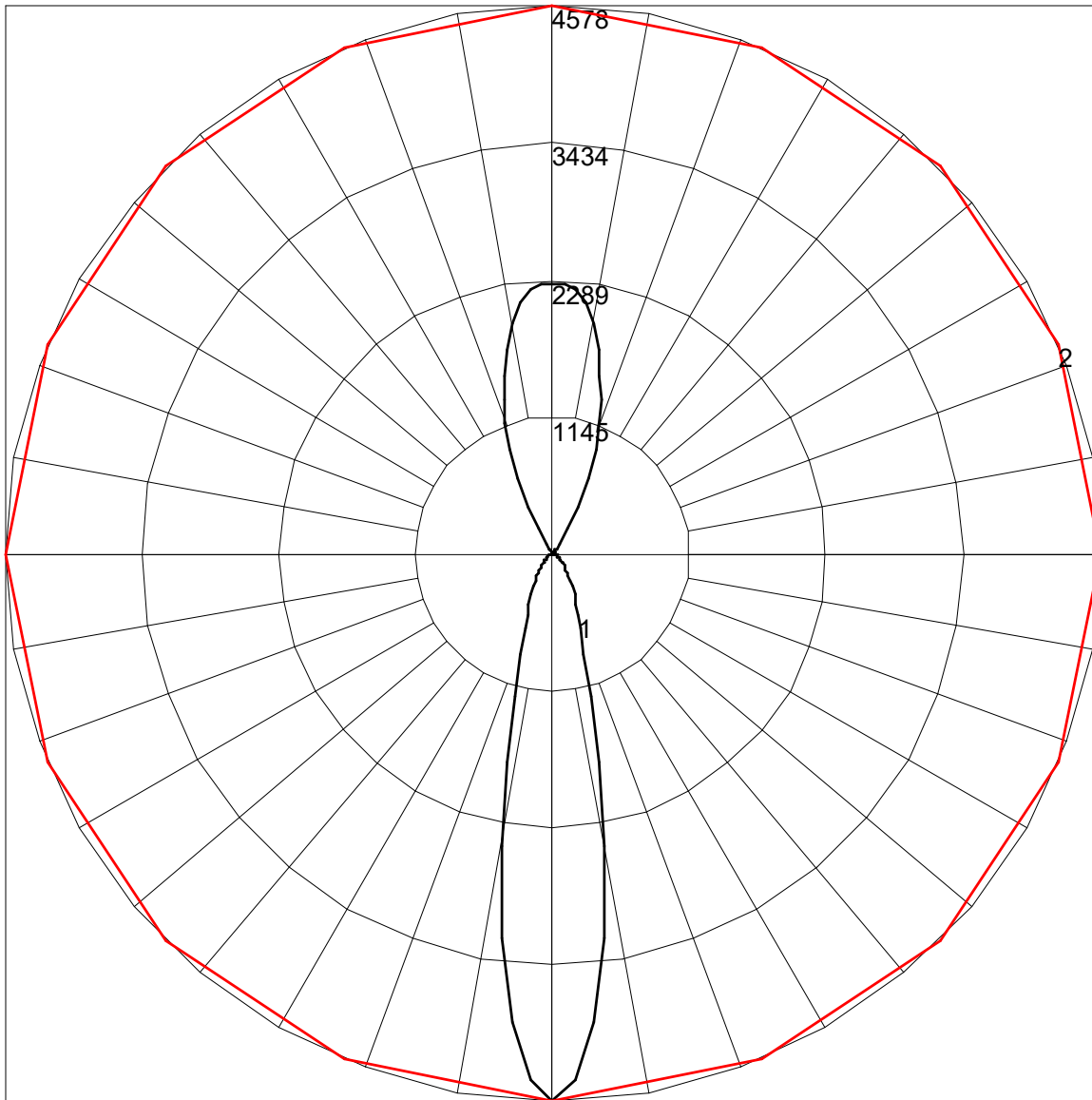
12H	4H	18.1	18.4	19.1	19.4	20.7	18.1	18.4	19.1	19.4	20.7
	6H	18.2	18.5	19.3	19.5	20.8	18.2	18.5	19.3	19.5	20.8
	8H	18.3	18.5	19.3	19.5	20.9	18.3	18.5	19.3	19.5	20.9

Maximum UGR = 20.9

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 4578.111 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.)