



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13571228.02 and #13257153.06

[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-LM-WHD-WM

[MORE]

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

[MORE] medium distrib white painted flush 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	2350
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	82
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	3975	3975	3975
55	2367	2367	2367
65	1344	1344	1344
75	632	632	632
85	118	118	118

**IES INDOOR REPORT**

**PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-CSU-LM-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>
<b>0.0</b>	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089
<b>2.5</b>	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125
<b>5.0</b>	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198
<b>7.5</b>	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150
<b>10.0</b>	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157
<b>12.5</b>	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500
<b>15.0</b>	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160
<b>17.5</b>	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503
<b>20.0</b>	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078	756.078
<b>22.5</b>	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626	565.626
<b>25.0</b>	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496	444.496
<b>27.5</b>	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048	356.048
<b>30.0</b>	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327	291.327
<b>32.5</b>	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296	246.296
<b>35.0</b>	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581	214.581
<b>37.5</b>	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855	190.855
<b>40.0</b>	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165	171.165
<b>42.5</b>	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411	153.411
<b>45.0</b>	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755	137.755
<b>47.5</b>	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955	123.955
<b>50.0</b>	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608	111.608
<b>52.5</b>	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714	100.714
<b>55.0</b>	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868	90.868
<b>57.5</b>	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426	81.426
<b>60.0</b>	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388	72.388
<b>62.5</b>	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511	63.511
<b>65.0</b>	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037	55.037
<b>67.5</b>	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290	47.290
<b>70.0</b>	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027	40.027
<b>72.5</b>	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168	33.168
<b>75.0</b>	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712	26.712
<b>77.5</b>	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740	20.740
<b>80.0</b>	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172	15.172
<b>82.5</b>	10.007	10.007	10.007	10.007	10.007	10.007	10.007	10.007	10.007	10.007
<b>85.0</b>	5.003	5.003	5.003	5.003	5.003	5.003	5.003	5.003	5.003	5.003
<b>87.5</b>	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968
<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

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-CSU-LM-CSD-WM\_IES

## 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. 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	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089	3169.089
2.5	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125	3127.125
5.0	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198	2997.198
7.5	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150	2784.150
10.0	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157	2462.157
12.5	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500	2017.500
15.0	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160	1517.160
17.5	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503	1072.503
20.0	756.078	756.078	756.078	756.078	756.078	756.078	756.078
22.5	565.626	565.626	565.626	565.626	565.626	565.626	565.626
25.0	444.496	444.496	444.496	444.496	444.496	444.496	444.496
27.5	356.048	356.048	356.048	356.048	356.048	356.048	356.048
30.0	291.327	291.327	291.327	291.327	291.327	291.327	291.327
32.5	246.296	246.296	246.296	246.296	246.296	246.296	246.296
35.0	214.581	214.581	214.581	214.581	214.581	214.581	214.581
37.5	190.855	190.855	190.855	190.855	190.855	190.855	190.855
40.0	171.165	171.165	171.165	171.165	171.165	171.165	171.165
42.5	153.411	153.411	153.411	153.411	153.411	153.411	153.411
45.0	137.755	137.755	137.755	137.755	137.755	137.755	137.755
47.5	123.955	123.955	123.955	123.955	123.955	123.955	123.955
50.0	111.608	111.608	111.608	111.608	111.608	111.608	111.608
52.5	100.714	100.714	100.714	100.714	100.714	100.714	100.714
55.0	90.868	90.868	90.868	90.868	90.868	90.868	90.868
57.5	81.426	81.426	81.426	81.426	81.426	81.426	81.426
60.0	72.388	72.388	72.388	72.388	72.388	72.388	72.388
62.5	63.511	63.511	63.511	63.511	63.511	63.511	63.511
65.0	55.037	55.037	55.037	55.037	55.037	55.037	55.037
67.5	47.290	47.290	47.290	47.290	47.290	47.290	47.290
70.0	40.027	40.027	40.027	40.027	40.027	40.027	40.027
72.5	33.168	33.168	33.168	33.168	33.168	33.168	33.168
75.0	26.712	26.712	26.712	26.712	26.712	26.712	26.712
77.5	20.740	20.740	20.740	20.740	20.740	20.740	20.740
80.0	15.172	15.172	15.172	15.172	15.172	15.172	15.172

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-CSU-LM-CSD-WM\_.IES****CANDELA TABULATION - (Cont.)**

<b>82.5</b>	10.007	10.007	10.007	10.007	10.007	10.007	10.007
<b>85.0</b>	5.003	5.003	5.003	5.003	5.003	5.003	5.003
<b>87.5</b>	0.968	0.968	0.968	0.968	0.968	0.968	0.968
<b>90.0</b>	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
<b>95.0</b>	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
<b>100.0</b>	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
<b>105.0</b>	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
<b>110.0</b>	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
<b>115.0</b>	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
<b>120.0</b>	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
<b>125.0</b>	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
<b>130.0</b>	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
<b>135.0</b>	78.039	78.039	78.039	78.039	78.039	78.039	78.039
<b>137.5</b>	117.581	117.581	117.581	117.581	117.581	117.581	117.581
<b>140.0</b>	189.603	189.603	189.603	189.603	189.603	189.603	189.603
<b>142.5</b>	285.571	285.571	285.571	285.571	285.571	285.571	285.571
<b>145.0</b>	376.136	376.136	376.136	376.136	376.136	376.136	376.136
<b>147.5</b>	459.211	459.211	459.211	459.211	459.211	459.211	459.211
<b>150.0</b>	564.819	564.819	564.819	564.819	564.819	564.819	564.819
<b>152.5</b>	679.698	679.698	679.698	679.698	679.698	679.698	679.698
<b>155.0</b>	786.534	786.534	786.534	786.534	786.534	786.534	786.534
<b>157.5</b>	838.110	838.110	838.110	838.110	838.110	838.110	838.110
<b>160.0</b>	861.442	861.442	861.442	861.442	861.442	861.442	861.442
<b>162.5</b>	873.108	873.108	873.108	873.108	873.108	873.108	873.108
<b>165.0</b>	898.282	898.282	898.282	898.282	898.282	898.282	898.282
<b>167.5</b>	922.842	922.842	922.842	922.842	922.842	922.842	922.842
<b>170.0</b>	930.210	930.210	930.210	930.210	930.210	930.210	930.210
<b>172.5</b>	910.562	910.562	910.562	910.562	910.562	910.562	910.562
<b>175.0</b>	882.318	882.318	882.318	882.318	882.318	882.318	882.318
<b>177.5</b>	852.846	852.846	852.846	852.846	852.846	852.846	852.846
<b>180.0</b>	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-LM-CSD-WM\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	684.22	N.A.	29.10
0-30	896.86	N.A.	38.20
0-40	1034.1	N.A.	44.00
0-60	1222.75	N.A.	52.00
0-80	1306.18	N.A.	55.60
0-90	1312.89	N.A.	55.90
10-90	1043.5	N.A.	44.40
20-40	349.88	N.A.	14.90
20-50	457.00	N.A.	19.40
40-70	243.55	N.A.	10.40
60-80	83.42	N.A.	3.50
70-80	28.53	N.A.	1.20
80-90	6.72	N.A.	0.30
90-110	9.77	N.A.	0.40
90-120	23.15	N.A.	1.00
90-130	51.62	N.A.	2.20
90-150	353.37	N.A.	15.00
90-180	1037.43	N.A.	44.10
110-180	1027.66	N.A.	43.70
0-180	2350.32	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	269.39
10-20	414.84
20-30	212.63
30-40	137.24
40-50	107.12
50-60	81.53
60-70	54.90
70-80	28.53
80-90	6.72
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

# IES INDOOR REPORT

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

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

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CRDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-CSU-LM-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	7.4	8.1	8.3	9.1	10.3
	3H	8.4	9.0	9.3	10.0	11.2
	4H	8.6	9.2	9.6	10.2	11.4
	6H	8.7	9.3	9.7	10.2	11.5
	8H	8.7	9.2	9.7	10.2	11.4
	12H	8.6	9.2	9.6	10.1	11.4

### UGR Viewed Endwise

7.4	8.1	8.3	9.1	10.3
8.4	9.0	9.3	10.0	11.2
8.6	9.2	9.6	10.2	11.4
8.7	9.3	9.7	10.2	11.5
8.7	9.2	9.7	10.2	11.4
8.6	9.2	9.6	10.1	11.4

4H	2H	7.6	8.2	8.6	9.2	10.4
	3H	8.7	9.2	9.7	10.2	11.4
	4H	9.0	9.5	10.0	10.5	11.7
	6H	9.2	9.6	10.2	10.6	11.9
	8H	9.2	9.6	10.2	10.5	11.8
	12H	9.1	9.5	10.2	10.5	11.8

7.6	8.2	8.6	9.2	10.4
8.7	9.2	9.7	10.2	11.4
9.0	9.5	10.0	10.5	11.7
9.2	9.6	10.2	10.6	11.9
9.2	9.6	10.2	10.5	11.8
9.1	9.5	10.2	10.5	11.8

8H	4H	9.0	9.4	10.0	10.4	11.7
	6H	9.2	9.5	10.3	10.6	11.9
	8H	9.3	9.5	10.3	10.6	11.9
	12H	9.3	9.5	10.3	10.5	11.8

9.0	9.4	10.0	10.4	11.7
9.2	9.5	10.3	10.6	11.9
9.3	9.5	10.3	10.6	11.9
9.3	9.5	10.3	10.5	11.8

12H	4H	9.0	9.3	10.0	10.3	11.6
	6H	9.2	9.5	10.2	10.5	11.8
	8H	9.2	9.5	10.3	10.5	11.8

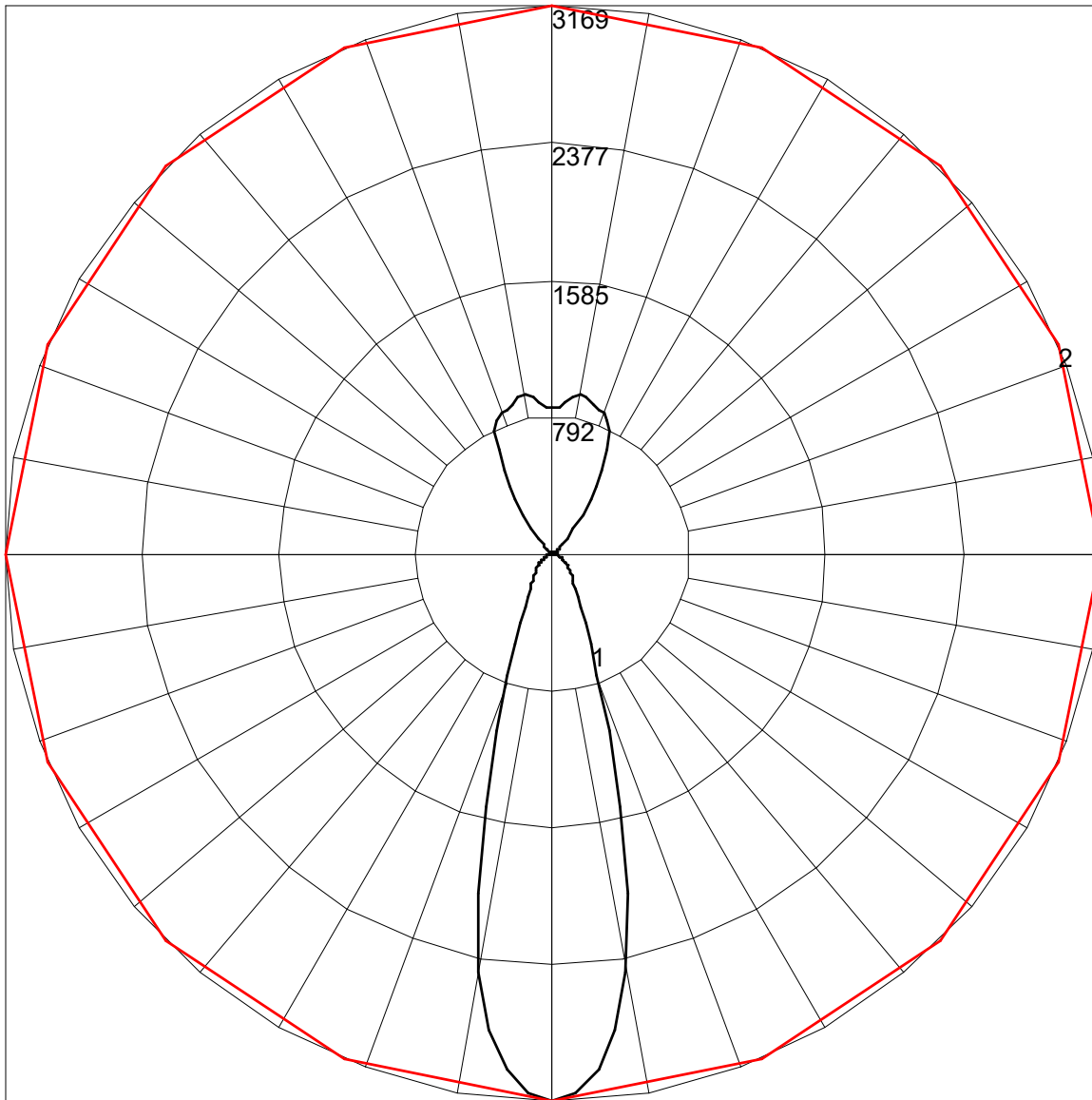
9.0	9.3	10.0	10.3	11.6
9.2	9.5	10.2	10.5	11.8
9.2	9.5	10.3	10.5	11.8

Maximum UGR = 11.9

# IES INDOOR REPORT

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

## POLAR GRAPH



Maximum Candela = 3169.089 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.)