



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RW-WHD-WM\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.04 and #12326812.12

[TESTLAB]

[ISSUE DATE] 16-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 8CRDI-TL-L20-835U-L20-835D-xxx-DIM1-UNV-OM-CSU-RW-WHD-WM

[LUMINAIRE] White formed aluminum housing, medium distrib. specular reflector, cover glass upright,

[MORE] white painted wide distrib. regressed prismatic lens downlight

[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	3260
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
Total Luminaire Watts	37.985
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)	0.50 ft (Diameter)
Luminous Width (90-270)	0.50 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	17908	17908	17908
55	14934	14934	14934
65	10536	10536	10536
75	6454	6454	6454
85	5090	5090	5090

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RW-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>
0.0	1069.000	1069.000	1069.000	1069.000	1069.000	1069.000	1069.000	1069.000	1069.000	1069.000
2.5	1061.000	1061.000	1061.000	1061.000	1061.000	1061.000	1061.000	1061.000	1061.000	1061.000
5.0	1043.000	1043.000	1043.000	1043.000	1043.000	1043.000	1043.000	1043.000	1043.000	1043.000
7.5	1023.000	1023.000	1023.000	1023.000	1023.000	1023.000	1023.000	1023.000	1023.000	1023.000
10.0	1001.000	1001.000	1001.000	1001.000	1001.000	1001.000	1001.000	1001.000	1001.000	1001.000
12.5	977.000	977.000	977.000	977.000	977.000	977.000	977.000	977.000	977.000	977.000
15.0	953.000	953.000	953.000	953.000	953.000	953.000	953.000	953.000	953.000	953.000
17.5	931.300	931.300	931.300	931.300	931.300	931.300	931.300	931.300	931.300	931.300
20.0	911.800	911.800	911.800	911.800	911.800	911.800	911.800	911.800	911.800	911.800
22.5	883.700	883.700	883.700	883.700	883.700	883.700	883.700	883.700	883.700	883.700
25.0	836.400	836.400	836.400	836.400	836.400	836.400	836.400	836.400	836.400	836.400
27.5	762.000	762.000	762.000	762.000	762.000	762.000	762.000	762.000	762.000	762.000
30.0	654.800	654.800	654.800	654.800	654.800	654.800	654.800	654.800	654.800	654.800
32.5	519.200	519.200	519.200	519.200	519.200	519.200	519.200	519.200	519.200	519.200
35.0	394.200	394.200	394.200	394.200	394.200	394.200	394.200	394.200	394.200	394.200
37.5	315.600	315.600	315.600	315.600	315.600	315.600	315.600	315.600	315.600	315.600
40.0	274.900	274.900	274.900	274.900	274.900	274.900	274.900	274.900	274.900	274.900
42.5	250.000	250.000	250.000	250.000	250.000	250.000	250.000	250.000	250.000	250.000
45.0	231.200	231.200	231.200	231.200	231.200	231.200	231.200	231.200	231.200	231.200
47.5	213.900	213.900	213.900	213.900	213.900	213.900	213.900	213.900	213.900	213.900
50.0	196.100	196.100	196.100	196.100	196.100	196.100	196.100	196.100	196.100	196.100
52.5	176.600	176.600	176.600	176.600	176.600	176.600	176.600	176.600	176.600	176.600
55.0	156.400	156.400	156.400	156.400	156.400	156.400	156.400	156.400	156.400	156.400
57.5	135.800	135.800	135.800	135.800	135.800	135.800	135.800	135.800	135.800	135.800
60.0	116.400	116.400	116.400	116.400	116.400	116.400	116.400	116.400	116.400	116.400
62.5	98.200	98.200	98.200	98.200	98.200	98.200	98.200	98.200	98.200	98.200
65.0	81.300	81.300	81.300	81.300	81.300	81.300	81.300	81.300	81.300	81.300
67.5	65.800	65.800	65.800	65.800	65.800	65.800	65.800	65.800	65.800	65.800
70.0	51.900	51.900	51.900	51.900	51.900	51.900	51.900	51.900	51.900	51.900
72.5	39.800	39.800	39.800	39.800	39.800	39.800	39.800	39.800	39.800	39.800
75.0	30.500	30.500	30.500	30.500	30.500	30.500	30.500	30.500	30.500	30.500
77.5	23.800	23.800	23.800	23.800	23.800	23.800	23.800	23.800	23.800	23.800
80.0	18.100	18.100	18.100	18.100	18.100	18.100	18.100	18.100	18.100	18.100
82.5	12.800	12.800	12.800	12.800	12.800	12.800	12.800	12.800	12.800	12.800
85.0	8.100	8.100	8.100	8.100	8.100	8.100	8.100	8.100	8.100	8.100
87.5	3.700	3.700	3.700	3.700	3.700	3.700	3.700	3.700	3.700	3.700
90.0	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091
92.5	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
95.0	0.273	0.273	0.273	0.273	0.273	0.273	0.273	0.273	0.273	0.273
97.5	0.364	0.364	0.364	0.364	0.364	0.364	0.364	0.364	0.364	0.364
100.0	0.547	0.547	0.547	0.547	0.547	0.547	0.547	0.547	0.547	0.547
102.5	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729
105.0	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002
107.5	1.458	1.458	1.458	1.458	1.458	1.458	1.458	1.458	1.458	1.458
110.0	2.004	2.004	2.004	2.004	2.004	2.004	2.004	2.004	2.004	2.004
112.5	2.642	2.642	2.642	2.642	2.642	2.642	2.642	2.642	2.642	2.642
115.0	3.644	3.644	3.644	3.644	3.644	3.644	3.644	3.644	3.644	3.644
117.5	4.919	4.919	4.919	4.919	4.919	4.919	4.919	4.919	4.919	4.919
120.0	6.650	6.650	6.650	6.650	6.650	6.650	6.650	6.650	6.650	6.650
122.5	9.110	9.110	9.110	9.110	9.110	9.110	9.110	9.110	9.110	9.110
125.0	12.572	12.572	12.572	12.572	12.572	12.572	12.572	12.572	12.572	12.572
127.5	17.673	17.673	17.673	17.673	17.673	17.673	17.673	17.673	17.673	17.673
130.0	24.415	24.415	24.415	24.415	24.415	24.415	24.415	24.415	24.415	24.415
132.5	32.614	32.614	32.614	32.614	32.614	32.614	32.614	32.614	32.614	32.614

**IES INDOOR REPORT**

**PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RW-WHD-WM\_IES**

**CANDELA TABULATION - (Cont.)**

135.0	42.088	42.088	42.088	42.088	42.088	42.088	42.088	42.088	42.088	42.088
137.5	59.488	59.488	59.488	59.488	59.488	59.488	59.488	59.488	59.488	59.488
140.0	105.494	105.494	105.494	105.494	105.494	105.494	105.494	105.494	105.494	105.494
142.5	157.148	157.148	157.148	157.148	157.148	157.148	157.148	157.148	157.148	157.148
145.0	360.301	360.301	360.301	360.301	360.301	360.301	360.301	360.301	360.301	360.301
147.5	647.903	647.903	647.903	647.903	647.903	647.903	647.903	647.903	647.903	647.903
150.0	913.733	913.733	913.733	913.733	913.733	913.733	913.733	913.733	913.733	913.733
152.5	1072.247	1072.247	1072.247	1072.247	1072.247	1072.247	1072.247	1072.247	1072.247	1072.247
155.0	1286.332	1286.332	1286.332	1286.332	1286.332	1286.332	1286.332	1286.332	1286.332	1286.332
157.5	1526.836	1526.836	1526.836	1526.836	1526.836	1526.836	1526.836	1526.836	1526.836	1526.836
160.0	1741.832	1741.832	1741.832	1741.832	1741.832	1741.832	1741.832	1741.832	1741.832	1741.832
162.5	1918.566	1918.566	1918.566	1918.566	1918.566	1918.566	1918.566	1918.566	1918.566	1918.566
165.0	2118.075	2118.075	2118.075	2118.075	2118.075	2118.075	2118.075	2118.075	2118.075	2118.075
167.5	2372.244	2372.244	2372.244	2372.244	2372.244	2372.244	2372.244	2372.244	2372.244	2372.244
170.0	2726.623	2726.623	2726.623	2726.623	2726.623	2726.623	2726.623	2726.623	2726.623	2726.623
172.5	3254.093	3254.093	3254.093	3254.093	3254.093	3254.093	3254.093	3254.093	3254.093	3254.093
175.0	3618.493	3618.493	3618.493	3618.493	3618.493	3618.493	3618.493	3618.493	3618.493	3618.493
177.5	3700.482	3700.482	3700.482	3700.482	3700.482	3700.482	3700.482	3700.482	3700.482	3700.482
180.0	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000

**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	1069.000	1069.000	1069.000	1069.000	1069.000	1069.000	1069.000
2.5	1061.000	1061.000	1061.000	1061.000	1061.000	1061.000	1061.000
5.0	1043.000	1043.000	1043.000	1043.000	1043.000	1043.000	1043.000
7.5	1023.000	1023.000	1023.000	1023.000	1023.000	1023.000	1023.000
10.0	1001.000	1001.000	1001.000	1001.000	1001.000	1001.000	1001.000
12.5	977.000	977.000	977.000	977.000	977.000	977.000	977.000
15.0	953.000	953.000	953.000	953.000	953.000	953.000	953.000
17.5	931.300	931.300	931.300	931.300	931.300	931.300	931.300
20.0	911.800	911.800	911.800	911.800	911.800	911.800	911.800
22.5	883.700	883.700	883.700	883.700	883.700	883.700	883.700
25.0	836.400	836.400	836.400	836.400	836.400	836.400	836.400
27.5	762.000	762.000	762.000	762.000	762.000	762.000	762.000
30.0	654.800	654.800	654.800	654.800	654.800	654.800	654.800
32.5	519.200	519.200	519.200	519.200	519.200	519.200	519.200
35.0	394.200	394.200	394.200	394.200	394.200	394.200	394.200
37.5	315.600	315.600	315.600	315.600	315.600	315.600	315.600
40.0	274.900	274.900	274.900	274.900	274.900	274.900	274.900
42.5	250.000	250.000	250.000	250.000	250.000	250.000	250.000
45.0	231.200	231.200	231.200	231.200	231.200	231.200	231.200
47.5	213.900	213.900	213.900	213.900	213.900	213.900	213.900
50.0	196.100	196.100	196.100	196.100	196.100	196.100	196.100
52.5	176.600	176.600	176.600	176.600	176.600	176.600	176.600
55.0	156.400	156.400	156.400	156.400	156.400	156.400	156.400
57.5	135.800	135.800	135.800	135.800	135.800	135.800	135.800
60.0	116.400	116.400	116.400	116.400	116.400	116.400	116.400
62.5	98.200	98.200	98.200	98.200	98.200	98.200	98.200
65.0	81.300	81.300	81.300	81.300	81.300	81.300	81.300
67.5	65.800	65.800	65.800	65.800	65.800	65.800	65.800
70.0	51.900	51.900	51.900	51.900	51.900	51.900	51.900
72.5	39.800	39.800	39.800	39.800	39.800	39.800	39.800
75.0	30.500	30.500	30.500	30.500	30.500	30.500	30.500
77.5	23.800	23.800	23.800	23.800	23.800	23.800	23.800
80.0	18.100	18.100	18.100	18.100	18.100	18.100	18.100

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RW-WHD-WM\_.IES****CANDELA TABULATION - (Cont.)**

<b>82.5</b>	12.800	12.800	12.800	12.800	12.800	12.800	12.800
<b>85.0</b>	8.100	8.100	8.100	8.100	8.100	8.100	8.100
<b>87.5</b>	3.700	3.700	3.700	3.700	3.700	3.700	3.700
<b>90.0</b>	1.091	1.091	1.091	1.091	1.091	1.091	1.091
<b>92.5</b>	0.182	0.182	0.182	0.182	0.182	0.182	0.182
<b>95.0</b>	0.273	0.273	0.273	0.273	0.273	0.273	0.273
<b>97.5</b>	0.364	0.364	0.364	0.364	0.364	0.364	0.364
<b>100.0</b>	0.547	0.547	0.547	0.547	0.547	0.547	0.547
<b>102.5</b>	0.729	0.729	0.729	0.729	0.729	0.729	0.729
<b>105.0</b>	1.002	1.002	1.002	1.002	1.002	1.002	1.002
<b>107.5</b>	1.458	1.458	1.458	1.458	1.458	1.458	1.458
<b>110.0</b>	2.004	2.004	2.004	2.004	2.004	2.004	2.004
<b>112.5</b>	2.642	2.642	2.642	2.642	2.642	2.642	2.642
<b>115.0</b>	3.644	3.644	3.644	3.644	3.644	3.644	3.644
<b>117.5</b>	4.919	4.919	4.919	4.919	4.919	4.919	4.919
<b>120.0</b>	6.650	6.650	6.650	6.650	6.650	6.650	6.650
<b>122.5</b>	9.110	9.110	9.110	9.110	9.110	9.110	9.110
<b>125.0</b>	12.572	12.572	12.572	12.572	12.572	12.572	12.572
<b>127.5</b>	17.673	17.673	17.673	17.673	17.673	17.673	17.673
<b>130.0</b>	24.415	24.415	24.415	24.415	24.415	24.415	24.415
<b>132.5</b>	32.614	32.614	32.614	32.614	32.614	32.614	32.614
<b>135.0</b>	42.088	42.088	42.088	42.088	42.088	42.088	42.088
<b>137.5</b>	59.488	59.488	59.488	59.488	59.488	59.488	59.488
<b>140.0</b>	105.494	105.494	105.494	105.494	105.494	105.494	105.494
<b>142.5</b>	157.148	157.148	157.148	157.148	157.148	157.148	157.148
<b>145.0</b>	360.301	360.301	360.301	360.301	360.301	360.301	360.301
<b>147.5</b>	647.903	647.903	647.903	647.903	647.903	647.903	647.903
<b>150.0</b>	913.733	913.733	913.733	913.733	913.733	913.733	913.733
<b>152.5</b>	1072.247	1072.247	1072.247	1072.247	1072.247	1072.247	1072.247
<b>155.0</b>	1286.332	1286.332	1286.332	1286.332	1286.332	1286.332	1286.332
<b>157.5</b>	1526.836	1526.836	1526.836	1526.836	1526.836	1526.836	1526.836
<b>160.0</b>	1741.832	1741.832	1741.832	1741.832	1741.832	1741.832	1741.832
<b>162.5</b>	1918.566	1918.566	1918.566	1918.566	1918.566	1918.566	1918.566
<b>165.0</b>	2118.075	2118.075	2118.075	2118.075	2118.075	2118.075	2118.075
<b>167.5</b>	2372.244	2372.244	2372.244	2372.244	2372.244	2372.244	2372.244
<b>170.0</b>	2726.623	2726.623	2726.623	2726.623	2726.623	2726.623	2726.623
<b>172.5</b>	3254.093	3254.093	3254.093	3254.093	3254.093	3254.093	3254.093
<b>175.0</b>	3618.493	3618.493	3618.493	3618.493	3618.493	3618.493	3618.493
<b>177.5</b>	3700.482	3700.482	3700.482	3700.482	3700.482	3700.482	3700.482
<b>180.0</b>	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RW-WHD-WM\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	367.51	N.A.	11.30
0-30	741.97	N.A.	22.80
0-40	1003.19	N.A.	30.80
0-60	1322.07	N.A.	40.60
0-80	1437.43	N.A.	44.10
0-90	1446.73	N.A.	44.40
10-90	1348.47	N.A.	41.40
20-40	635.68	N.A.	19.50
20-50	815.05	N.A.	25.00
40-70	400.22	N.A.	12.30
60-80	115.36	N.A.	3.50
70-80	34.02	N.A.	1.00
80-90	9.30	N.A.	0.30
90-110	1.62	N.A.	0.00
90-120	5.45	N.A.	0.20
90-130	17.61	N.A.	0.50
90-150	307.71	N.A.	9.40
90-180	1812.9	N.A.	55.60
110-180	1811.28	N.A.	55.60
0-180	3259.63	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	98.26
10-20	269.25
20-30	374.46
30-40	261.22
40-50	179.37
50-60	139.50
60-70	81.35
70-80	34.02
80-90	9.30
90-100	0.45
100-110	1.18
110-120	3.83
120-130	12.16
130-140	37.81
140-150	252.29
150-160	591.59
160-170	598.73
170-180	314.86

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RW-WHD-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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44
1	98	94	90	87	89	86	83	81	72	70	68	59	58	56	47	46	45	40
2	90	83	78	73	82	77	72	68	65	61	58	53	51	49	43	41	40	35
3	83	74	68	63	76	69	63	59	58	54	51	48	45	43	39	37	36	31
4	77	67	60	54	70	62	56	51	53	48	44	44	41	38	36	34	32	28
5	71	60	53	48	65	56	50	45	48	43	39	40	37	34	33	31	29	26
6	66	55	47	42	60	51	44	40	44	39	35	37	33	31	31	28	26	23
7	61	50	43	38	56	47	40	36	40	35	32	34	30	28	28	26	24	21
8	57	46	39	34	53	43	36	32	37	32	29	32	28	25	27	24	22	20
9	53	42	35	31	49	39	33	29	34	29	26	29	26	23	25	22	20	18
10	50	39	32	28	46	37	31	27	32	27	24	27	24	21	23	21	19	17

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RW-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	14.2	14.9	15.2	16.0	17.3	14.2	14.9	15.2	16.0	17.3
	3H	15.1	15.8	16.2	16.8	18.2	15.1	15.8	16.2	16.8	18.2
	4H	15.4	16.0	16.4	17.0	18.4	15.4	16.0	16.4	17.0	18.4
	6H	15.5	16.1	16.6	17.1	18.5	15.5	16.1	16.6	17.1	18.5
	8H	15.5	16.1	16.6	17.1	18.5	15.5	16.1	16.6	17.1	18.5
	12H	15.6	16.1	16.6	17.1	18.5	15.6	16.1	16.6	17.1	18.5

### UGR Viewed Endwise

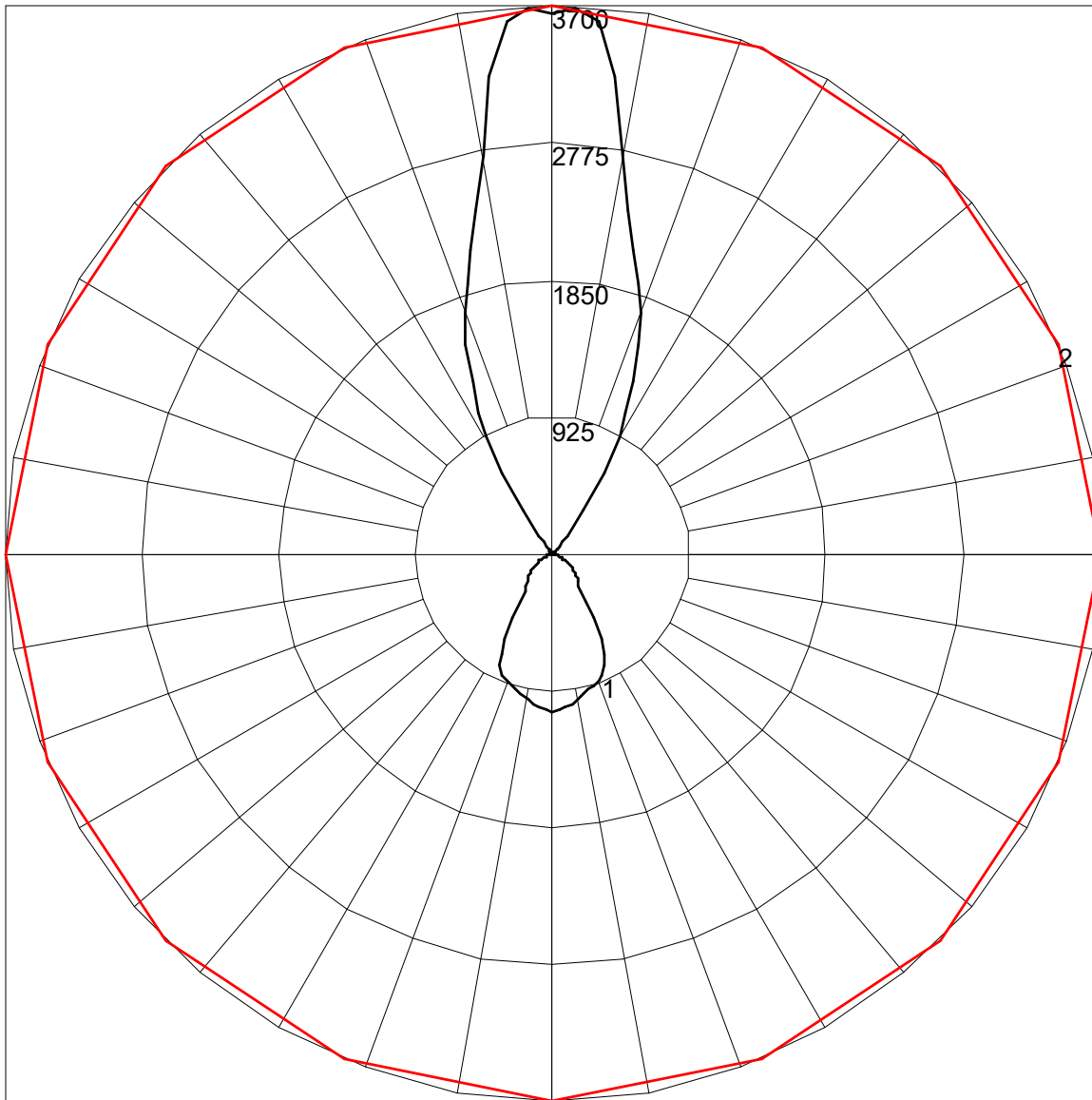
4H	2H	14.5	15.1	15.5	16.1	17.5	14.5	15.1	15.5	16.1	17.5
	3H	15.6	16.1	16.6	17.1	18.5	15.6	16.1	16.6	17.1	18.5
	4H	15.9	16.3	16.9	17.4	18.8	15.9	16.3	16.9	17.4	18.8
	6H	16.1	16.5	17.2	17.6	19.0	16.1	16.5	17.2	17.6	19.0
	8H	16.2	16.6	17.3	17.6	19.1	16.2	16.6	17.3	17.6	19.1
	12H	16.2	16.6	17.3	17.6	19.1	16.2	16.6	17.3	17.6	19.1
8H	4H	15.9	16.3	17.0	17.4	18.8	15.9	16.3	17.0	17.4	18.8
	6H	16.3	16.6	17.4	17.7	19.1	16.3	16.6	17.4	17.7	19.1
	8H	16.4	16.7	17.5	17.7	19.2	16.4	16.7	17.5	17.7	19.2
	12H	16.5	16.7	17.6	17.8	19.3	16.5	16.7	17.6	17.8	19.3
12H	4H	15.9	16.2	17.0	17.3	18.7	15.9	16.2	17.0	17.3	18.7
	6H	16.2	16.5	17.3	17.6	19.1	16.2	16.5	17.3	17.6	19.1
	8H	16.4	16.6	17.5	17.7	19.2	16.4	16.6	17.5	17.7	19.2

Maximum UGR = 19.3

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RW-WHD-WM\_.IES

## POLAR GRAPH



Maximum Candela = 3700.482 Located At Horizontal Angle = 0, Vertical Angle = 177.5

# 1 - Vertical Plane Through Horizontal Angles (90 - 270)

# 2 - Horizontal Cone Through Vertical Angle (177.5) (Through Max. Cd.)