



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.05 and #12326812.14

[TESTLAB]

[ISSUE DATE] 17-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

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

[LUMINAIRE] White formed aluminum housing, narrow distr specular reflector, cover glass up,

[MORE] medium distrib 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	3831
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	101
Total Luminaire Watts	37.9904
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	5879	5879	5879
55	3953	3953	3953
65	2942	2942	2942
75	2031	2031	2031
85	1697	1697	1697

**IES INDOOR REPORT**

**PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-RM-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>
<b>0.0</b>	4313.000	4313.000	4313.000	4313.000	4313.000	4313.000	4313.000	4313.000	4313.000	4313.000
<b>2.5</b>	4264.000	4264.000	4264.000	4264.000	4264.000	4264.000	4264.000	4264.000	4264.000	4264.000
<b>5.0</b>	4131.000	4131.000	4131.000	4131.000	4131.000	4131.000	4131.000	4131.000	4131.000	4131.000
<b>7.5</b>	3918.000	3918.000	3918.000	3918.000	3918.000	3918.000	3918.000	3918.000	3918.000	3918.000
<b>10.0</b>	3607.000	3607.000	3607.000	3607.000	3607.000	3607.000	3607.000	3607.000	3607.000	3607.000
<b>12.5</b>	3186.000	3186.000	3186.000	3186.000	3186.000	3186.000	3186.000	3186.000	3186.000	3186.000
<b>15.0</b>	2669.000	2669.000	2669.000	2669.000	2669.000	2669.000	2669.000	2669.000	2669.000	2669.000
<b>17.5</b>	2120.000	2120.000	2120.000	2120.000	2120.000	2120.000	2120.000	2120.000	2120.000	2120.000
<b>20.0</b>	1605.000	1605.000	1605.000	1605.000	1605.000	1605.000	1605.000	1605.000	1605.000	1605.000
<b>22.5</b>	1176.000	1176.000	1176.000	1176.000	1176.000	1176.000	1176.000	1176.000	1176.000	1176.000
<b>25.0</b>	846.400	846.400	846.400	846.400	846.400	846.400	846.400	846.400	846.400	846.400
<b>27.5</b>	607.100	607.100	607.100	607.100	607.100	607.100	607.100	607.100	607.100	607.100
<b>30.0</b>	436.200	436.200	436.200	436.200	436.200	436.200	436.200	436.200	436.200	436.200
<b>32.5</b>	313.300	313.300	313.300	313.300	313.300	313.300	313.300	313.300	313.300	313.300
<b>35.0</b>	224.500	224.500	224.500	224.500	224.500	224.500	224.500	224.500	224.500	224.500
<b>37.5</b>	162.200	162.200	162.200	162.200	162.200	162.200	162.200	162.200	162.200	162.200
<b>40.0</b>	120.600	120.600	120.600	120.600	120.600	120.600	120.600	120.600	120.600	120.600
<b>42.5</b>	93.800	93.800	93.800	93.800	93.800	93.800	93.800	93.800	93.800	93.800
<b>45.0</b>	75.900	75.900	75.900	75.900	75.900	75.900	75.900	75.900	75.900	75.900
<b>47.5</b>	63.500	63.500	63.500	63.500	63.500	63.500	63.500	63.500	63.500	63.500
<b>50.0</b>	54.400	54.400	54.400	54.400	54.400	54.400	54.400	54.400	54.400	54.400
<b>52.5</b>	47.300	47.300	47.300	47.300	47.300	47.300	47.300	47.300	47.300	47.300
<b>55.0</b>	41.400	41.400	41.400	41.400	41.400	41.400	41.400	41.400	41.400	41.400
<b>57.5</b>	36.200	36.200	36.200	36.200	36.200	36.200	36.200	36.200	36.200	36.200
<b>60.0</b>	31.400	31.400	31.400	31.400	31.400	31.400	31.400	31.400	31.400	31.400
<b>62.5</b>	26.900	26.900	26.900	26.900	26.900	26.900	26.900	26.900	26.900	26.900
<b>65.0</b>	22.700	22.700	22.700	22.700	22.700	22.700	22.700	22.700	22.700	22.700
<b>67.5</b>	18.800	18.800	18.800	18.800	18.800	18.800	18.800	18.800	18.800	18.800
<b>70.0</b>	15.200	15.200	15.200	15.200	15.200	15.200	15.200	15.200	15.200	15.200
<b>72.5</b>	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000
<b>75.0</b>	9.600	9.600	9.600	9.600	9.600	9.600	9.600	9.600	9.600	9.600
<b>77.5</b>	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600	7.600
<b>80.0</b>	5.900	5.900	5.900	5.900	5.900	5.900	5.900	5.900	5.900	5.900
<b>82.5</b>	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300
<b>85.0</b>	2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700
<b>87.5</b>	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300
<b>90.0</b>	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
<b>92.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>95.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>97.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>100.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>102.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>105.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>107.5</b>	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
<b>110.0</b>	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
<b>112.5</b>	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
<b>115.0</b>	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
<b>117.5</b>	1.978	1.978	1.978	1.978	1.978	1.978	1.978	1.978	1.978	1.978
<b>120.0</b>	1.978	1.978	1.978	1.978	1.978	1.978	1.978	1.978	1.978	1.978
<b>122.5</b>	2.967	2.967	2.967	2.967	2.967	2.967	2.967	2.967	2.967	2.967
<b>125.0</b>	3.956	3.956	3.956	3.956	3.956	3.956	3.956	3.956	3.956	3.956
<b>127.5</b>	4.945	4.945	4.945	4.945	4.945	4.945	4.945	4.945	4.945	4.945
<b>130.0</b>	7.912	7.912	7.912	7.912	7.912	7.912	7.912	7.912	7.912	7.912
<b>132.5</b>	9.890	9.890	9.890	9.890	9.890	9.890	9.890	9.890	9.890	9.890

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-RM-WHD-WM\_IES

## CANDELA TABULATION - (Cont.)

135.0	12.857	12.857	12.857	12.857	12.857	12.857	12.857	12.857	12.857	12.857
137.5	16.813	16.813	16.813	16.813	16.813	16.813	16.813	16.813	16.813	16.813
140.0	20.769	20.769	20.769	20.769	20.769	20.769	20.769	20.769	20.769	20.769
142.5	37.582	37.582	37.582	37.582	37.582	37.582	37.582	37.582	37.582	37.582
145.0	239.338	239.338	239.338	239.338	239.338	239.338	239.338	239.338	239.338	239.338
147.5	536.038	536.038	536.038	536.038	536.038	536.038	536.038	536.038	536.038	536.038
150.0	746.695	746.695	746.695	746.695	746.695	746.695	746.695	746.695	746.695	746.695
152.5	813.947	813.947	813.947	813.947	813.947	813.947	813.947	813.947	813.947	813.947
155.0	1009.769	1009.769	1009.769	1009.769	1009.769	1009.769	1009.769	1009.769	1009.769	1009.769
157.5	1304.491	1304.491	1304.491	1304.491	1304.491	1304.491	1304.491	1304.491	1304.491	1304.491
160.0	1540.862	1540.862	1540.862	1540.862	1540.862	1540.862	1540.862	1540.862	1540.862	1540.862
162.5	1732.728	1732.728	1732.728	1732.728	1732.728	1732.728	1732.728	1732.728	1732.728	1732.728
165.0	2009.648	2009.648	2009.648	2009.648	2009.648	2009.648	2009.648	2009.648	2009.648	2009.648
167.5	2500.192	2500.192	2500.192	2500.192	2500.192	2500.192	2500.192	2500.192	2500.192	2500.192
170.0	3487.214	3487.214	3487.214	3487.214	3487.214	3487.214	3487.214	3487.214	3487.214	3487.214
172.5	5470.167	5470.167	5470.167	5470.167	5470.167	5470.166	5470.166	5470.166	5470.166	5470.166
175.0	9721.889	9721.889	9721.889	9721.889	9721.889	9721.887	9721.887	9721.887	9721.887	9721.887
177.5	17139.385	17139.385	17139.385	17139.385	17139.384	17139.384	17139.384	17139.383	17139.383	17139.383
180.0	21758.000	21758.000	21758.000	21758.000	21758.000	21758.000	21758.000	21758.000	21758.000	21758.000

## 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	4313.000	4313.000	4313.000	4313.000	4313.000	4313.000	4313.000
2.5	4264.000	4264.000	4264.000	4264.000	4264.000	4264.000	4264.000
5.0	4131.000	4131.000	4131.000	4131.000	4131.000	4131.000	4131.000
7.5	3918.000	3918.000	3918.000	3918.000	3918.000	3918.000	3918.000
10.0	3607.000	3607.000	3607.000	3607.000	3607.000	3607.000	3607.000
12.5	3186.000	3186.000	3186.000	3186.000	3186.000	3186.000	3186.000
15.0	2669.000	2669.000	2669.000	2669.000	2669.000	2669.000	2669.000
17.5	2120.000	2120.000	2120.000	2120.000	2120.000	2120.000	2120.000
20.0	1605.000	1605.000	1605.000	1605.000	1605.000	1605.000	1605.000
22.5	1176.000	1176.000	1176.000	1176.000	1176.000	1176.000	1176.000
25.0	846.400	846.400	846.400	846.400	846.400	846.400	846.400
27.5	607.100	607.100	607.100	607.100	607.100	607.100	607.100
30.0	436.200	436.200	436.200	436.200	436.200	436.200	436.200
32.5	313.300	313.300	313.300	313.300	313.300	313.300	313.300
35.0	224.500	224.500	224.500	224.500	224.500	224.500	224.500
37.5	162.200	162.200	162.200	162.200	162.200	162.200	162.200
40.0	120.600	120.600	120.600	120.600	120.600	120.600	120.600
42.5	93.800	93.800	93.800	93.800	93.800	93.800	93.800
45.0	75.900	75.900	75.900	75.900	75.900	75.900	75.900
47.5	63.500	63.500	63.500	63.500	63.500	63.500	63.500
50.0	54.400	54.400	54.400	54.400	54.400	54.400	54.400
52.5	47.300	47.300	47.300	47.300	47.300	47.300	47.300
55.0	41.400	41.400	41.400	41.400	41.400	41.400	41.400
57.5	36.200	36.200	36.200	36.200	36.200	36.200	36.200
60.0	31.400	31.400	31.400	31.400	31.400	31.400	31.400
62.5	26.900	26.900	26.900	26.900	26.900	26.900	26.900
65.0	22.700	22.700	22.700	22.700	22.700	22.700	22.700
67.5	18.800	18.800	18.800	18.800	18.800	18.800	18.800
70.0	15.200	15.200	15.200	15.200	15.200	15.200	15.200
72.5	12.000	12.000	12.000	12.000	12.000	12.000	12.000
75.0	9.600	9.600	9.600	9.600	9.600	9.600	9.600
77.5	7.600	7.600	7.600	7.600	7.600	7.600	7.600
80.0	5.900	5.900	5.900	5.900	5.900	5.900	5.900

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

82.5	4.300	4.300	4.300	4.300	4.300	4.300	4.300
85.0	2.700	2.700	2.700	2.700	2.700	2.700	2.700
87.5	1.300	1.300	1.300	1.300	1.300	1.300	1.300
90.0	0.400	0.400	0.400	0.400	0.400	0.400	0.400
92.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107.5	0.989	0.989	0.989	0.989	0.989	0.989	0.989
110.0	0.989	0.989	0.989	0.989	0.989	0.989	0.989
112.5	0.989	0.989	0.989	0.989	0.989	0.989	0.989
115.0	0.989	0.989	0.989	0.989	0.989	0.989	0.989
117.5	1.978	1.978	1.978	1.978	1.978	1.978	1.978
120.0	1.978	1.978	1.978	1.978	1.978	1.978	1.978
122.5	2.967	2.967	2.967	2.967	2.967	2.967	2.967
125.0	3.956	3.956	3.956	3.956	3.956	3.956	3.956
127.5	4.945	4.945	4.945	4.945	4.945	4.945	4.945
130.0	7.912	7.912	7.912	7.912	7.912	7.912	7.912
132.5	9.890	9.890	9.890	9.890	9.890	9.890	9.890
135.0	12.857	12.857	12.857	12.857	12.857	12.857	12.857
137.5	16.813	16.813	16.813	16.813	16.813	16.813	16.813
140.0	20.769	20.769	20.769	20.769	20.769	20.769	20.769
142.5	37.582	37.582	37.582	37.582	37.582	37.582	37.582
145.0	239.338	239.338	239.338	239.338	239.338	239.338	239.338
147.5	536.038	536.038	536.038	536.038	536.038	536.038	536.038
150.0	746.695	746.695	746.695	746.695	746.695	746.695	746.695
152.5	813.947	813.947	813.947	813.947	813.947	813.947	813.947
155.0	1009.769	1009.769	1009.769	1009.769	1009.769	1009.769	1009.769
157.5	1304.491	1304.491	1304.491	1304.491	1304.491	1304.491	1304.491
160.0	1540.862	1540.862	1540.862	1540.862	1540.862	1540.862	1540.862
162.5	1732.728	1732.728	1732.728	1732.728	1732.728	1732.728	1732.728
165.0	2009.648	2009.648	2009.648	2009.648	2009.648	2009.648	2009.648
167.5	2500.192	2500.192	2500.192	2500.192	2500.192	2500.192	2500.192
170.0	3487.214	3487.214	3487.214	3487.214	3487.214	3487.214	3487.214
172.5	5470.166	5470.166	5470.167	5470.167	5470.167	5470.167	5470.167
175.0	9721.887	9721.887	9721.889	9721.889	9721.889	9721.889	9721.889
177.5	17139.383	17139.384	17139.384	17139.384	17139.385	17139.385	17139.385
180.0	21758.000	21758.000	21758.000	21758.000	21758.000	21758.000	21758.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-RM-WHD-WM\_IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1098.12	N.A.	28.70
0-30	1504.81	N.A.	39.30
0-40	1654.66	N.A.	43.20
0-60	1753.52	N.A.	45.80
0-80	1786.65	N.A.	46.60
0-90	1789.76	N.A.	46.70
10-90	1411.85	N.A.	36.90
20-40	556.55	N.A.	14.50
20-50	617.96	N.A.	16.10
40-70	121.51	N.A.	3.20
60-80	33.13	N.A.	0.90
70-80	10.48	N.A.	0.30
80-90	3.12	N.A.	0.10
90-110	0.44	N.A.	0.00
90-120	1.78	N.A.	0.00
90-130	5.51	N.A.	0.10
90-150	193.51	N.A.	5.10
90-180	2041.44	N.A.	53.30
110-180	2041.00	N.A.	53.30
0-180	3831.21	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	377.92
10-20	720.20
20-30	406.70
30-40	149.85
40-50	61.41
50-60	37.44
60-70	22.65
70-80	10.48
80-90	3.12
90-100	0.05
100-110	0.39
110-120	1.34
120-130	3.73
130-140	10.30
140-150	177.71
150-160	482.56
160-170	594.80
170-180	770.58

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-RM-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	98	98	98	98	82	82	82	67	67	67	53	53	53	47
1	99	96	93	90	91	89	86	84	75	73	72	62	61	60	51	50	49	44
2	93	87	83	79	86	81	77	74	69	66	64	58	56	55	48	47	46	42
3	87	80	74	70	80	74	70	66	64	61	58	55	52	51	46	44	43	39
4	82	73	67	63	76	69	63	59	60	56	53	51	49	47	44	42	41	37
5	77	68	61	57	71	64	58	54	56	52	49	49	46	44	42	40	39	36
6	72	63	57	52	67	59	54	50	52	48	45	46	43	41	40	38	37	34
7	68	59	52	48	64	55	50	46	49	45	42	44	41	39	38	36	35	32
8	65	55	49	45	61	52	47	43	47	43	40	42	39	36	37	35	33	31
9	62	52	46	42	58	49	44	40	44	40	37	40	37	35	35	33	32	30
10	59	49	43	39	55	46	41	38	42	38	35	38	35	33	34	32	30	29

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-RM-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	4.8	5.3	5.7	6.3	7.7	4.8	5.3	5.7	6.3	7.7
	3H	5.8	6.3	6.8	7.4	8.7	5.8	6.3	6.8	7.4	8.7
	4H	6.1	6.6	7.1	7.6	9.0	6.1	6.6	7.1	7.6	9.0
	6H	6.3	6.8	7.4	7.8	9.2	6.3	6.8	7.4	7.8	9.2
	8H	6.4	6.9	7.4	7.9	9.3	6.4	6.9	7.4	7.9	9.3
	12H	6.4	6.9	7.5	7.9	9.3	6.4	6.9	7.5	7.9	9.3

### UGR Viewed Endwise

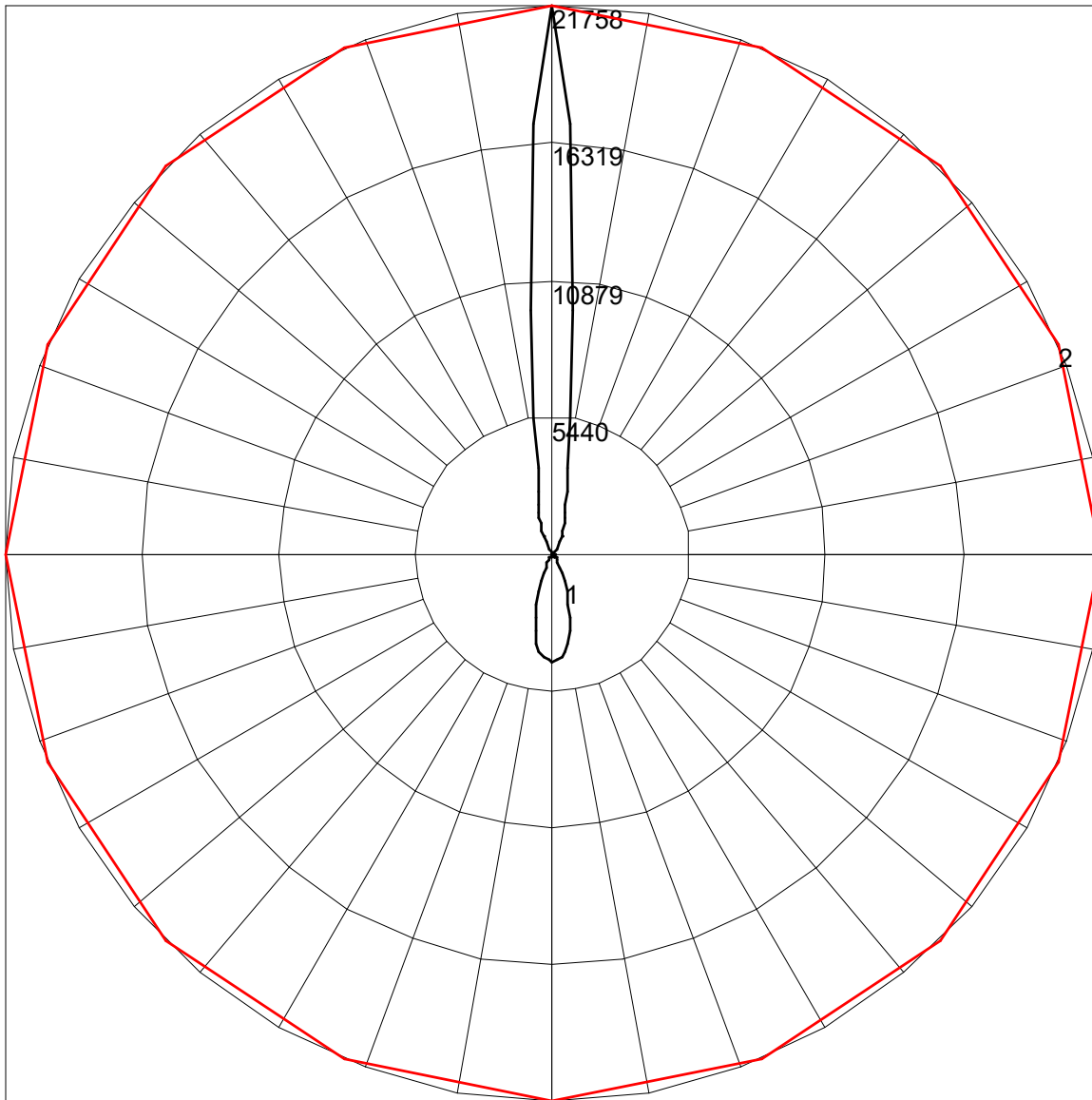
4H	2H	5.0	5.5	6.1	6.6	7.9	5.0	5.5	6.1	6.6	7.9
	3H	6.2	6.7	7.3	7.7	9.1	6.2	6.7	7.3	7.7	9.1
	4H	6.7	7.1	7.7	8.1	9.5	6.7	7.1	7.7	8.1	9.5
	6H	7.0	7.3	8.1	8.4	9.8	7.0	7.3	8.1	8.4	9.8
	8H	7.1	7.4	8.2	8.5	9.9	7.1	7.4	8.2	8.5	9.9
	12H	7.2	7.5	8.3	8.5	9.9	7.2	7.5	8.3	8.5	9.9
8H	4H	6.8	7.1	7.8	8.1	9.5	6.8	7.1	7.8	8.1	9.5
	6H	7.2	7.5	8.3	8.6	10.0	7.2	7.5	8.3	8.6	10.0
	8H	7.4	7.6	8.5	8.7	10.1	7.4	7.6	8.5	8.7	10.1
	12H	7.5	7.7	8.6	8.8	10.3	7.5	7.7	8.6	8.8	10.3
12H	4H	6.7	7.0	7.8	8.1	9.5	6.7	7.0	7.8	8.1	9.5
	6H	7.2	7.4	8.3	8.5	10.0	7.2	7.4	8.3	8.5	10.0
	8H	7.4	7.6	8.5	8.7	10.2	7.4	7.6	8.5	8.7	10.2

Maximum UGR = 10.3

# IES INDOOR REPORT

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

## POLAR GRAPH



Maximum Candela = 21758 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.)