



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-LM-WHD-WM_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.04 and #12326812.09

[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-LM-WHD-WM

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

[MORE] medium distrib 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	3658
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	96
Total Luminaire Watts	38.0105
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	6886	6886	6886
55	5042	5042	5042
65	4108	4108	4108
75	3343	3343	3343
85	2199	2199	2199

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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	4338.000	4338.000	4338.000	4338.000	4338.000	4338.000	4338.000	4338.000	4338.000	4338.000
2.5	4292.000	4292.000	4292.000	4292.000	4292.000	4292.000	4292.000	4292.000	4292.000	4292.000
5.0	4168.000	4168.000	4168.000	4168.000	4168.000	4168.000	4168.000	4168.000	4168.000	4168.000
7.5	3964.000	3964.000	3964.000	3964.000	3964.000	3964.000	3964.000	3964.000	3964.000	3964.000
10.0	3661.000	3661.000	3661.000	3661.000	3661.000	3661.000	3661.000	3661.000	3661.000	3661.000
12.5	3247.000	3247.000	3247.000	3247.000	3247.000	3247.000	3247.000	3247.000	3247.000	3247.000
15.0	2728.000	2728.000	2728.000	2728.000	2728.000	2728.000	2728.000	2728.000	2728.000	2728.000
17.5	2171.000	2171.000	2171.000	2171.000	2171.000	2171.000	2171.000	2171.000	2171.000	2171.000
20.0	1638.000	1638.000	1638.000	1638.000	1638.000	1638.000	1638.000	1638.000	1638.000	1638.000
22.5	1194.000	1194.000	1194.000	1194.000	1194.000	1194.000	1194.000	1194.000	1194.000	1194.000
25.0	847.000	847.000	847.000	847.000	847.000	847.000	847.000	847.000	847.000	847.000
27.5	597.400	597.400	597.400	597.400	597.400	597.400	597.400	597.400	597.400	597.400
30.0	424.500	424.500	424.500	424.500	424.500	424.500	424.500	424.500	424.500	424.500
32.5	304.700	304.700	304.700	304.700	304.700	304.700	304.700	304.700	304.700	304.700
35.0	221.500	221.500	221.500	221.500	221.500	221.500	221.500	221.500	221.500	221.500
37.5	165.400	165.400	165.400	165.400	165.400	165.400	165.400	165.400	165.400	165.400
40.0	129.200	129.200	129.200	129.200	129.200	129.200	129.200	129.200	129.200	129.200
42.5	105.400	105.400	105.400	105.400	105.400	105.400	105.400	105.400	105.400	105.400
45.0	88.900	88.900	88.900	88.900	88.900	88.900	88.900	88.900	88.900	88.900
47.5	76.800	76.800	76.800	76.800	76.800	76.800	76.800	76.800	76.800	76.800
50.0	67.400	67.400	67.400	67.400	67.400	67.400	67.400	67.400	67.400	67.400
52.5	59.600	59.600	59.600	59.600	59.600	59.600	59.600	59.600	59.600	59.600
55.0	52.800	52.800	52.800	52.800	52.800	52.800	52.800	52.800	52.800	52.800
57.5	46.700	46.700	46.700	46.700	46.700	46.700	46.700	46.700	46.700	46.700
60.0	41.400	41.400	41.400	41.400	41.400	41.400	41.400	41.400	41.400	41.400
62.5	36.400	36.400	36.400	36.400	36.400	36.400	36.400	36.400	36.400	36.400
65.0	31.700	31.700	31.700	31.700	31.700	31.700	31.700	31.700	31.700	31.700
67.5	27.300	27.300	27.300	27.300	27.300	27.300	27.300	27.300	27.300	27.300
70.0	23.200	23.200	23.200	23.200	23.200	23.200	23.200	23.200	23.200	23.200
72.5	19.400	19.400	19.400	19.400	19.400	19.400	19.400	19.400	19.400	19.400
75.0	15.800	15.800	15.800	15.800	15.800	15.800	15.800	15.800	15.800	15.800
77.5	12.400	12.400	12.400	12.400	12.400	12.400	12.400	12.400	12.400	12.400
80.0	9.200	9.200	9.200	9.200	9.200	9.200	9.200	9.200	9.200	9.200
82.5	6.200	6.200	6.200	6.200	6.200	6.200	6.200	6.200	6.200	6.200
85.0	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
87.5	1.400	1.400	1.400	1.400	1.400	1.400	1.400	1.400	1.400	1.400
90.0	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391
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

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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. 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	4338.000	4338.000	4338.000	4338.000	4338.000	4338.000	4338.000
2.5	4292.000	4292.000	4292.000	4292.000	4292.000	4292.000	4292.000
5.0	4168.000	4168.000	4168.000	4168.000	4168.000	4168.000	4168.000
7.5	3964.000	3964.000	3964.000	3964.000	3964.000	3964.000	3964.000
10.0	3661.000	3661.000	3661.000	3661.000	3661.000	3661.000	3661.000
12.5	3247.000	3247.000	3247.000	3247.000	3247.000	3247.000	3247.000
15.0	2728.000	2728.000	2728.000	2728.000	2728.000	2728.000	2728.000
17.5	2171.000	2171.000	2171.000	2171.000	2171.000	2171.000	2171.000
20.0	1638.000	1638.000	1638.000	1638.000	1638.000	1638.000	1638.000
22.5	1194.000	1194.000	1194.000	1194.000	1194.000	1194.000	1194.000
25.0	847.000	847.000	847.000	847.000	847.000	847.000	847.000
27.5	597.400	597.400	597.400	597.400	597.400	597.400	597.400
30.0	424.500	424.500	424.500	424.500	424.500	424.500	424.500
32.5	304.700	304.700	304.700	304.700	304.700	304.700	304.700
35.0	221.500	221.500	221.500	221.500	221.500	221.500	221.500
37.5	165.400	165.400	165.400	165.400	165.400	165.400	165.400
40.0	129.200	129.200	129.200	129.200	129.200	129.200	129.200
42.5	105.400	105.400	105.400	105.400	105.400	105.400	105.400
45.0	88.900	88.900	88.900	88.900	88.900	88.900	88.900
47.5	76.800	76.800	76.800	76.800	76.800	76.800	76.800
50.0	67.400	67.400	67.400	67.400	67.400	67.400	67.400
52.5	59.600	59.600	59.600	59.600	59.600	59.600	59.600
55.0	52.800	52.800	52.800	52.800	52.800	52.800	52.800
57.5	46.700	46.700	46.700	46.700	46.700	46.700	46.700
60.0	41.400	41.400	41.400	41.400	41.400	41.400	41.400
62.5	36.400	36.400	36.400	36.400	36.400	36.400	36.400
65.0	31.700	31.700	31.700	31.700	31.700	31.700	31.700
67.5	27.300	27.300	27.300	27.300	27.300	27.300	27.300
70.0	23.200	23.200	23.200	23.200	23.200	23.200	23.200
72.5	19.400	19.400	19.400	19.400	19.400	19.400	19.400
75.0	15.800	15.800	15.800	15.800	15.800	15.800	15.800
77.5	12.400	12.400	12.400	12.400	12.400	12.400	12.400
80.0	9.200	9.200	9.200	9.200	9.200	9.200	9.200

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82.5	6.200	6.200	6.200	6.200	6.200	6.200	6.200
85.0	3.500	3.500	3.500	3.500	3.500	3.500	3.500
87.5	1.400	1.400	1.400	1.400	1.400	1.400	1.400
90.0	0.391	0.391	0.391	0.391	0.391	0.391	0.391
92.5	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
97.5	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
102.5	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
107.5	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
112.5	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
117.5	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
122.5	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
127.5	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
132.5	32.614	32.614	32.614	32.614	32.614	32.614	32.614
135.0	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
140.0	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
145.0	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
150.0	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
155.0	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
160.0	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
165.0	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
170.0	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
175.0	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
180.0	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000	3655.000

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Zone	Lumens	%Lamp	%Fixt
0-20	1117.08	N.A.	30.50
0-30	1525.38	N.A.	41.70
0-40	1673.93	N.A.	45.80
0-60	1792.48	N.A.	49.00
0-80	1840.88	N.A.	50.30
0-90	1845.2	N.A.	50.40
10-90	1463.22	N.A.	40.00
20-40	556.85	N.A.	15.20
20-50	627.73	N.A.	17.20
40-70	150.12	N.A.	4.10
60-80	48.39	N.A.	1.30
70-80	16.82	N.A.	0.50
80-90	4.32	N.A.	0.10
90-110	1.53	N.A.	0.00
90-120	5.35	N.A.	0.10
90-130	17.51	N.A.	0.50
90-150	307.61	N.A.	8.40
90-180	1812.8	N.A.	49.60
110-180	1811.28	N.A.	49.50
0-180	3658.00	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	381.98
10-20	735.10
20-30	408.29
30-40	148.55
40-50	70.88
50-60	47.66
60-70	31.57
70-80	16.82
80-90	4.32
90-100	0.35
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

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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	107	107	107	107	99	99	99	99	84	84	84	69	69	69	57	57	57	50
1	100	97	94	91	93	90	88	85	77	75	74	65	64	63	54	53	53	47
2	94	88	84	80	87	82	78	75	71	68	66	61	59	57	51	50	49	45
3	88	81	75	71	82	76	71	67	66	63	60	57	55	53	49	47	46	42
4	83	74	68	64	77	70	65	61	61	58	55	54	51	49	46	45	43	40
5	78	69	63	58	73	65	59	55	58	53	50	51	48	46	44	42	41	38
6	73	64	58	53	69	61	55	51	54	50	47	48	45	43	42	40	39	36
7	69	60	54	49	65	57	51	47	51	47	44	46	43	40	41	38	37	35
8	66	56	50	46	62	53	48	44	48	44	41	43	40	38	39	37	35	33
9	63	53	47	43	59	50	45	41	46	42	39	41	38	36	37	35	34	32
10	60	50	44	40	56	48	43	39	44	40	37	40	37	34	36	34	32	31

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-LM-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	6.7	7.4	7.7	8.4	9.7	6.7	7.4	7.7	8.4	9.7
	3H	8.1	8.7	9.1	9.7	11.0	8.1	8.7	9.1	9.7	11.0
	4H	8.6	9.2	9.7	10.2	11.5	8.6	9.2	9.7	10.2	11.5
	6H	9.0	9.5	10.0	10.5	11.8	9.0	9.5	10.0	10.5	11.8
	8H	9.1	9.5	10.1	10.6	11.9	9.1	9.5	10.1	10.6	11.9
	12H	9.1	9.6	10.1	10.6	11.9	9.1	9.6	10.1	10.6	11.9

UGR Viewed Endwise

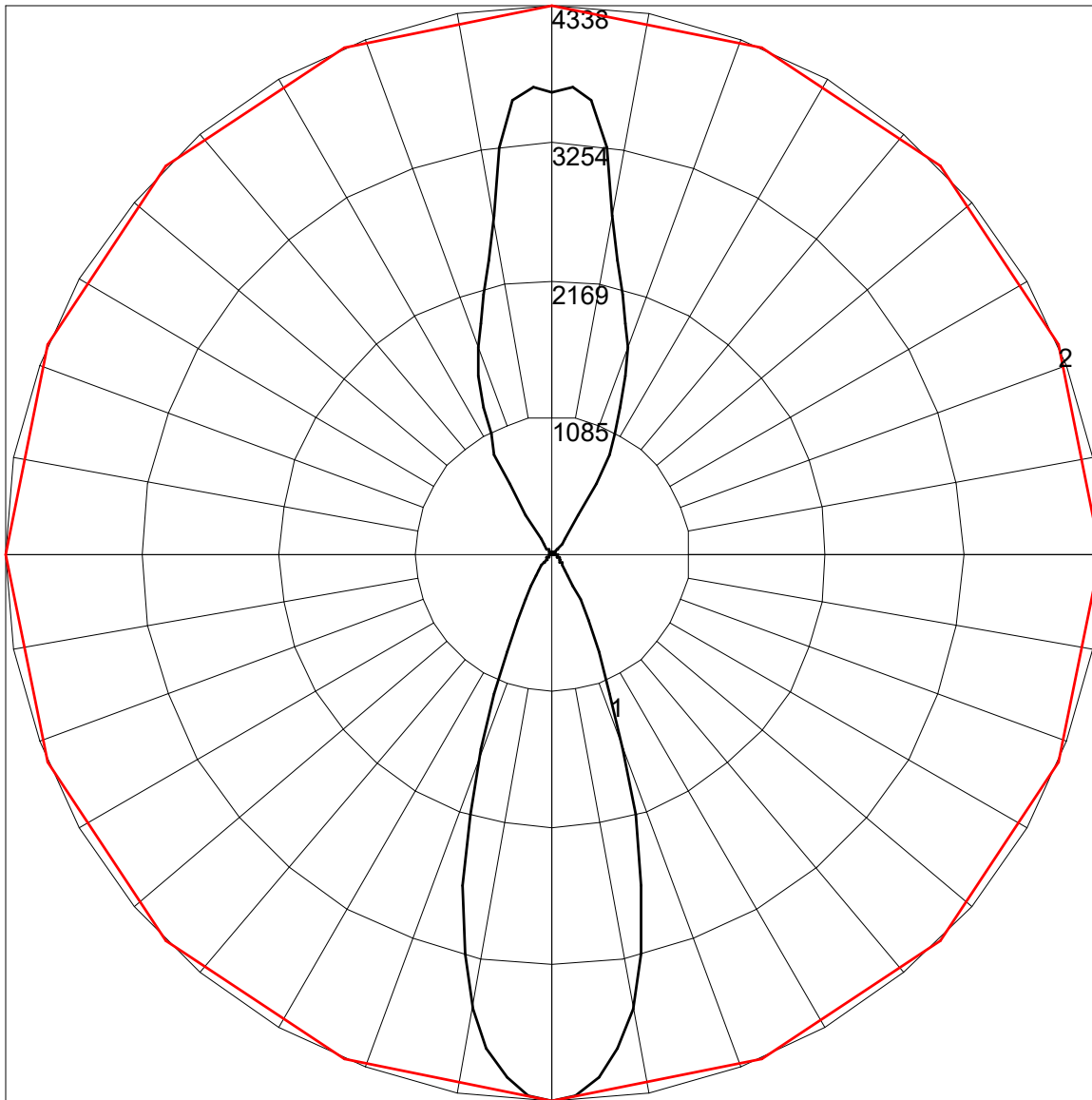
4H	2H	7.1	7.7	8.2	8.7	10.0	7.1	7.7	8.2	8.7	10.0
	3H	8.7	9.2	9.8	10.2	11.6	8.7	9.2	9.8	10.2	11.6
	4H	9.4	9.8	10.4	10.8	12.1	9.4	9.8	10.4	10.8	12.1
	6H	9.8	10.2	10.9	11.2	12.6	9.8	10.2	10.9	11.2	12.6
	8H	9.9	10.3	11.0	11.3	12.7	9.9	10.3	11.0	11.3	12.7
	12H	10.0	10.3	11.0	11.3	12.7	10.0	10.3	11.0	11.3	12.7
8H	4H	9.5	9.9	10.6	10.9	12.3	9.5	9.9	10.6	10.9	12.3
	6H	10.1	10.4	11.2	11.5	12.8	10.1	10.4	11.2	11.5	12.8
	8H	10.3	10.5	11.4	11.6	13.0	10.3	10.5	11.4	11.6	13.0
	12H	10.4	10.6	11.5	11.7	13.1	10.4	10.6	11.5	11.7	13.1
12H	4H	9.5	9.8	10.6	10.9	12.2	9.5	9.8	10.6	10.9	12.2
	6H	10.1	10.4	11.2	11.4	12.8	10.1	10.4	11.2	11.4	12.8
	8H	10.3	10.6	11.4	11.6	13.0	10.3	10.6	11.4	11.6	13.0

Maximum UGR = 13.1

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-LM-WHD-WM_.IES

POLAR GRAPH



Maximum Candela = 4338 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.)