



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.04 and #12326812.14

[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-RM-WHD-WM

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

[MORE] white painted medium 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	3603
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	95
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

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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	4313.000	4313.000	4313.000	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	4264.000	4264.000	4264.000
5.0	4131.000	4131.000	4131.000	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	3918.000	3918.000	3918.000
10.0	3607.000	3607.000	3607.000	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	3186.000	3186.000	3186.000
15.0	2669.000	2669.000	2669.000	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	2120.000	2120.000	2120.000
20.0	1605.000	1605.000	1605.000	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	1176.000	1176.000	1176.000
25.0	846.400	846.400	846.400	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	607.100	607.100	607.100
30.0	436.200	436.200	436.200	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	313.300	313.300	313.300
35.0	224.500	224.500	224.500	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	162.200	162.200	162.200
40.0	120.600	120.600	120.600	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	93.800	93.800	93.800
45.0	75.900	75.900	75.900	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	63.500	63.500	63.500
50.0	54.400	54.400	54.400	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	47.300	47.300	47.300
55.0	41.400	41.400	41.400	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	36.200	36.200	36.200
60.0	31.400	31.400	31.400	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	26.900	26.900	26.900
65.0	22.700	22.700	22.700	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	18.800	18.800	18.800
70.0	15.200	15.200	15.200	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	12.000	12.000	12.000
75.0	9.600	9.600	9.600	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	7.600	7.600	7.600
80.0	5.900	5.900	5.900	5.900	5.900	5.900	5.900	5.900	5.900	5.900
82.5	4.300	4.300	4.300	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	2.700	2.700	2.700
87.5	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300
90.0	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491
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. 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	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

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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	0.491	0.491	0.491	0.491	0.491	0.491	0.491
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	1098.12	N.A.	30.50
0-30	1504.81	N.A.	41.80
0-40	1654.66	N.A.	45.90
0-60	1753.52	N.A.	48.70
0-80	1786.65	N.A.	49.60
0-90	1789.78	N.A.	49.70
10-90	1411.86	N.A.	39.20
20-40	556.55	N.A.	15.40
20-50	617.96	N.A.	17.20
40-70	121.51	N.A.	3.40
60-80	33.13	N.A.	0.90
70-80	10.48	N.A.	0.30
80-90	3.13	N.A.	0.10
90-110	1.54	N.A.	0.00
90-120	5.36	N.A.	0.10
90-130	17.52	N.A.	0.50
90-150	307.63	N.A.	8.50
90-180	1812.82	N.A.	50.30
110-180	1811.28	N.A.	50.30
0-180	3602.59	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	3.13
90-100	0.36
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	83	83	83	69	69	69	56	56	56	50
1	100	97	94	91	93	90	87	85	77	75	73	64	63	62	53	53	52	47
2	94	88	84	80	87	82	78	75	71	68	66	60	59	57	51	50	49	44
3	88	81	75	71	82	76	71	67	66	62	60	57	54	53	48	47	46	42
4	83	74	68	64	77	70	65	61	61	58	55	53	51	49	46	44	43	40
5	78	69	63	58	73	65	60	55	57	54	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	70	60	54	49	65	57	51	47	51	47	44	46	43	40	40	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	51	45	42	46	42	39	41	38	36	37	35	34	32
10	60	50	44	40	56	48	43	39	44	40	37	40	37	35	36	34	32	31

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-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

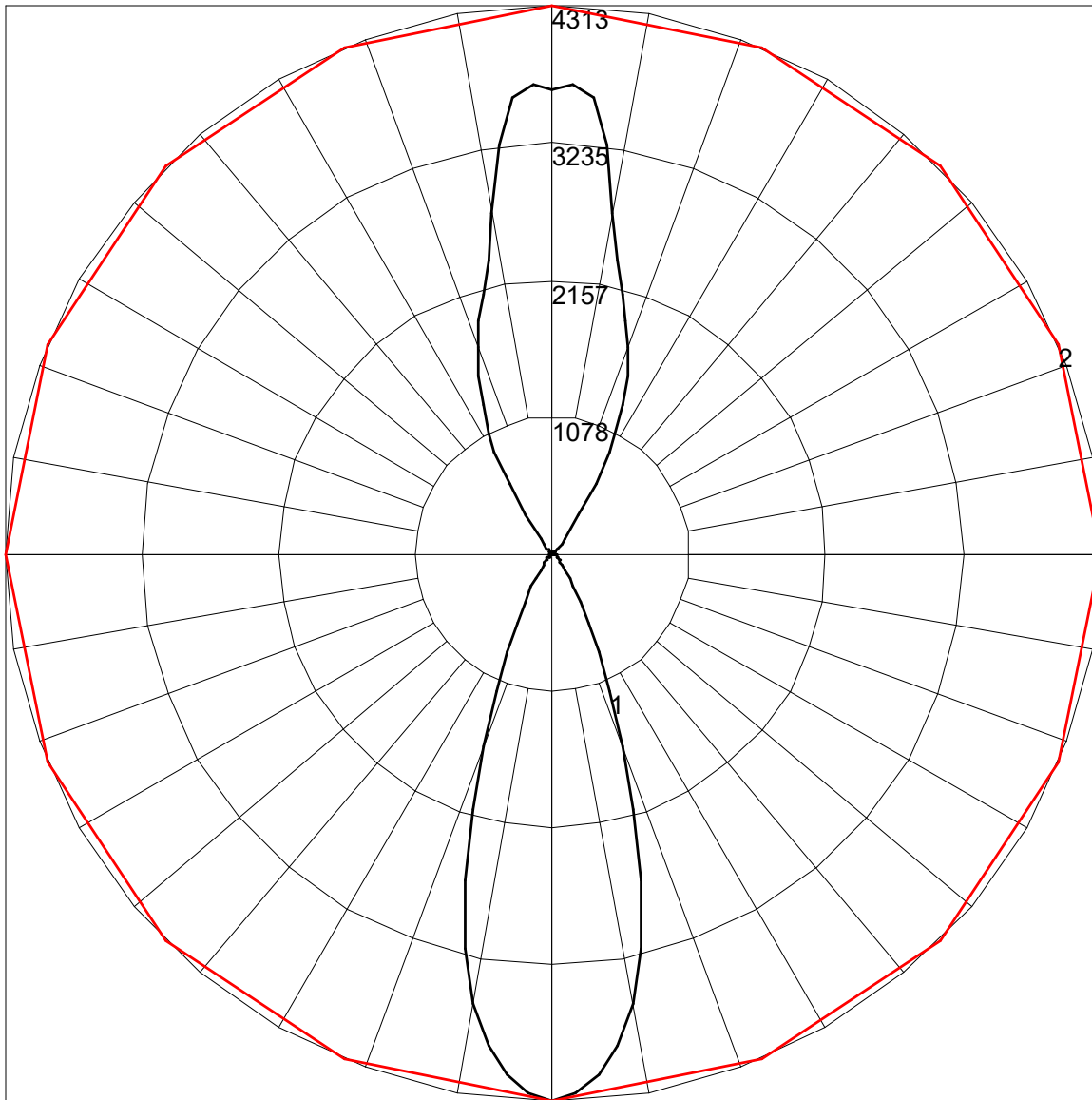
X=2H	Y=2H	4.9	5.6	6.0	6.6	7.9	UGR Viewed Endwise				
	3H	6.0	6.6	7.0	7.6	8.9	4.9	5.6	6.0	6.6	7.9
	4H	6.3	6.9	7.4	7.9	9.2	6.0	6.6	7.0	7.6	8.9
	6H	6.6	7.1	7.6	8.1	9.4	6.3	6.9	7.4	7.9	9.2
	8H	6.6	7.1	7.7	8.1	9.5	6.6	7.1	7.6	8.1	9.4
	12H	6.7	7.1	7.7	8.1	9.5	6.6	7.1	7.7	8.1	9.5
4H	2H	5.3	5.8	6.3	6.8	8.1	6.7	7.1	7.7	8.1	9.5
	3H	6.5	7.0	7.5	8.0	9.3	5.3	5.8	6.3	6.8	8.1
	4H	6.9	7.3	8.0	8.4	9.7	6.5	7.0	7.5	8.0	9.3
	6H	7.3	7.6	8.3	8.7	10.0	6.9	7.3	8.0	8.4	9.7
	8H	7.4	7.7	8.4	8.7	10.1	7.3	7.6	8.3	8.7	10.0
	12H	7.4	7.7	8.5	8.8	10.2	7.4	7.7	8.4	8.7	10.1
8H	4H	7.0	7.3	8.1	8.4	9.7	7.4	7.7	8.5	8.8	10.2
	6H	7.5	7.7	8.5	8.8	10.2	7.0	7.3	8.1	8.4	9.7
	8H	7.7	7.9	8.7	9.0	10.3	7.5	7.7	8.5	8.8	10.2
	12H	7.8	8.0	8.9	9.1	10.5	7.7	7.9	8.7	9.0	10.3
12H	4H	7.0	7.3	8.0	8.3	9.7	7.8	8.0	8.9	9.1	10.5
	6H	7.5	7.7	8.5	8.8	10.2	7.0	7.3	8.0	8.3	9.7
	8H	7.7	7.9	8.8	9.0	10.4	7.5	7.7	8.5	8.8	10.2

Maximum UGR = 10.5

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 4313 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.)