



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.04 and #12326812.15

[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-RN-WHD-WM

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

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

[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	3637
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	96
Total Luminaire Watts	37.987
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	5445	5445	5445
55	3562	3562	3562
65	2423	2423	2423
75	1566	1566	1566
85	1257	1257	1257

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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	6729.000	6729.000	6729.000	6729.000	6729.000	6729.000	6729.000	6729.000	6729.000	6729.000
2.5	6565.000	6565.000	6565.000	6565.000	6565.000	6565.000	6565.000	6565.000	6565.000	6565.000
5.0	6100.000	6100.000	6100.000	6100.000	6100.000	6100.000	6100.000	6100.000	6100.000	6100.000
7.5	5392.000	5392.000	5392.000	5392.000	5392.000	5392.000	5392.000	5392.000	5392.000	5392.000
10.0	4509.000	4509.000	4509.000	4509.000	4509.000	4509.000	4509.000	4509.000	4509.000	4509.000
12.5	3560.000	3560.000	3560.000	3560.000	3560.000	3560.000	3560.000	3560.000	3560.000	3560.000
15.0	2662.000	2662.000	2662.000	2662.000	2662.000	2662.000	2662.000	2662.000	2662.000	2662.000
17.5	1920.000	1920.000	1920.000	1920.000	1920.000	1920.000	1920.000	1920.000	1920.000	1920.000
20.0	1358.000	1358.000	1358.000	1358.000	1358.000	1358.000	1358.000	1358.000	1358.000	1358.000
22.5	946.600	946.600	946.600	946.600	946.600	946.600	946.600	946.600	946.600	946.600
25.0	653.800	653.800	653.800	653.800	653.800	653.800	653.800	653.800	653.800	653.800
27.5	452.700	452.700	452.700	452.700	452.700	452.700	452.700	452.700	452.700	452.700
30.0	319.300	319.300	319.300	319.300	319.300	319.300	319.300	319.300	319.300	319.300
32.5	231.300	231.300	231.300	231.300	231.300	231.300	231.300	231.300	231.300	231.300
35.0	172.200	172.200	172.200	172.200	172.200	172.200	172.200	172.200	172.200	172.200
37.5	131.800	131.800	131.800	131.800	131.800	131.800	131.800	131.800	131.800	131.800
40.0	104.100	104.100	104.100	104.100	104.100	104.100	104.100	104.100	104.100	104.100
42.5	84.600	84.600	84.600	84.600	84.600	84.600	84.600	84.600	84.600	84.600
45.0	70.300	70.300	70.300	70.300	70.300	70.300	70.300	70.300	70.300	70.300
47.5	59.200	59.200	59.200	59.200	59.200	59.200	59.200	59.200	59.200	59.200
50.0	50.400	50.400	50.400	50.400	50.400	50.400	50.400	50.400	50.400	50.400
52.5	43.200	43.200	43.200	43.200	43.200	43.200	43.200	43.200	43.200	43.200
55.0	37.300	37.300	37.300	37.300	37.300	37.300	37.300	37.300	37.300	37.300
57.5	32.100	32.100	32.100	32.100	32.100	32.100	32.100	32.100	32.100	32.100
60.0	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400	27.400
62.5	22.900	22.900	22.900	22.900	22.900	22.900	22.900	22.900	22.900	22.900
65.0	18.700	18.700	18.700	18.700	18.700	18.700	18.700	18.700	18.700	18.700
67.5	15.100	15.100	15.100	15.100	15.100	15.100	15.100	15.100	15.100	15.100
70.0	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000
72.5	9.400	9.400	9.400	9.400	9.400	9.400	9.400	9.400	9.400	9.400
75.0	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400
77.5	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800
80.0	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500
82.5	3.200	3.200	3.200	3.200	3.200	3.200	3.200	3.200	3.200	3.200
85.0	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
87.5	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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	6729.000	6729.000	6729.000	6729.000	6729.000	6729.000	6729.000
2.5	6565.000	6565.000	6565.000	6565.000	6565.000	6565.000	6565.000
5.0	6100.000	6100.000	6100.000	6100.000	6100.000	6100.000	6100.000
7.5	5392.000	5392.000	5392.000	5392.000	5392.000	5392.000	5392.000
10.0	4509.000	4509.000	4509.000	4509.000	4509.000	4509.000	4509.000
12.5	3560.000	3560.000	3560.000	3560.000	3560.000	3560.000	3560.000
15.0	2662.000	2662.000	2662.000	2662.000	2662.000	2662.000	2662.000
17.5	1920.000	1920.000	1920.000	1920.000	1920.000	1920.000	1920.000
20.0	1358.000	1358.000	1358.000	1358.000	1358.000	1358.000	1358.000
22.5	946.600	946.600	946.600	946.600	946.600	946.600	946.600
25.0	653.800	653.800	653.800	653.800	653.800	653.800	653.800
27.5	452.700	452.700	452.700	452.700	452.700	452.700	452.700
30.0	319.300	319.300	319.300	319.300	319.300	319.300	319.300
32.5	231.300	231.300	231.300	231.300	231.300	231.300	231.300
35.0	172.200	172.200	172.200	172.200	172.200	172.200	172.200
37.5	131.800	131.800	131.800	131.800	131.800	131.800	131.800
40.0	104.100	104.100	104.100	104.100	104.100	104.100	104.100
42.5	84.600	84.600	84.600	84.600	84.600	84.600	84.600
45.0	70.300	70.300	70.300	70.300	70.300	70.300	70.300
47.5	59.200	59.200	59.200	59.200	59.200	59.200	59.200
50.0	50.400	50.400	50.400	50.400	50.400	50.400	50.400
52.5	43.200	43.200	43.200	43.200	43.200	43.200	43.200
55.0	37.300	37.300	37.300	37.300	37.300	37.300	37.300
57.5	32.100	32.100	32.100	32.100	32.100	32.100	32.100
60.0	27.400	27.400	27.400	27.400	27.400	27.400	27.400
62.5	22.900	22.900	22.900	22.900	22.900	22.900	22.900
65.0	18.700	18.700	18.700	18.700	18.700	18.700	18.700
67.5	15.100	15.100	15.100	15.100	15.100	15.100	15.100
70.0	12.000	12.000	12.000	12.000	12.000	12.000	12.000
72.5	9.400	9.400	9.400	9.400	9.400	9.400	9.400
75.0	7.400	7.400	7.400	7.400	7.400	7.400	7.400
77.5	5.800	5.800	5.800	5.800	5.800	5.800	5.800
80.0	4.500	4.500	4.500	4.500	4.500	4.500	4.500

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82.5	3.200	3.200	3.200	3.200	3.200	3.200	3.200
85.0	2.000	2.000	2.000	2.000	2.000	2.000	2.000
87.5	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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

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

Zone	Lumens	%Lamp	%Fixt
0-20	1269.86	N.A.	34.90
0-30	1590.67	N.A.	43.70
0-40	1705.43	N.A.	46.90
0-60	1795.07	N.A.	49.40
0-80	1822.06	N.A.	50.10
0-90	1824.41	N.A.	50.20
10-90	1293.19	N.A.	35.60
20-40	435.57	N.A.	12.00
20-50	491.42	N.A.	13.50
40-70	108.50	N.A.	3.00
60-80	26.99	N.A.	0.70
70-80	8.13	N.A.	0.20
80-90	2.35	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.	8.50
90-180	1812.8	N.A.	49.80
110-180	1811.28	N.A.	49.80
0-180	3637.21	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	531.22
10-20	738.64
20-30	320.81
30-40	114.76
40-50	55.85
50-60	33.79
60-70	18.86
70-80	8.13
80-90	2.35
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	83	83	83	69	69	69	56	56	56	50
1	101	97	94	92	93	90	88	86	77	76	74	65	64	63	54	53	53	48
2	94	89	84	81	87	83	79	76	72	69	67	61	60	58	52	51	50	46
3	89	82	76	72	82	77	72	68	67	64	61	58	56	54	50	48	47	43
4	84	76	70	65	78	71	66	62	63	59	56	55	52	50	48	46	45	42
5	79	70	64	60	74	67	61	57	59	55	52	52	50	48	46	44	43	40
6	75	66	60	55	70	62	57	53	56	52	49	50	47	45	44	42	41	38
7	71	62	56	52	67	59	54	50	53	49	46	48	45	43	43	41	39	37
8	68	58	52	48	64	56	50	47	50	47	44	46	43	41	41	39	38	36
9	65	55	50	46	61	53	48	44	48	44	42	44	41	39	40	38	36	35
10	62	52	47	43	58	50	45	42	46	42	40	42	39	37	38	36	35	33

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-OM-CSU-RN-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	4.5	4.7	5.1	5.7	7.0	4.5	4.7	5.1	5.7	7.0
	3H	4.9	5.5	6.0	6.5	7.8	4.9	5.5	6.0	6.5	7.8
	4H	5.2	5.7	6.2	6.7	8.0	5.2	5.7	6.2	6.7	8.0
	6H	5.3	5.8	6.4	6.8	8.2	5.3	5.8	6.4	6.8	8.2
	8H	5.4	5.9	6.4	6.9	8.2	5.4	5.9	6.4	6.9	8.2
	12H	5.4	5.9	6.4	6.9	8.2	5.4	5.9	6.4	6.9	8.2

### UGR Viewed Endwise

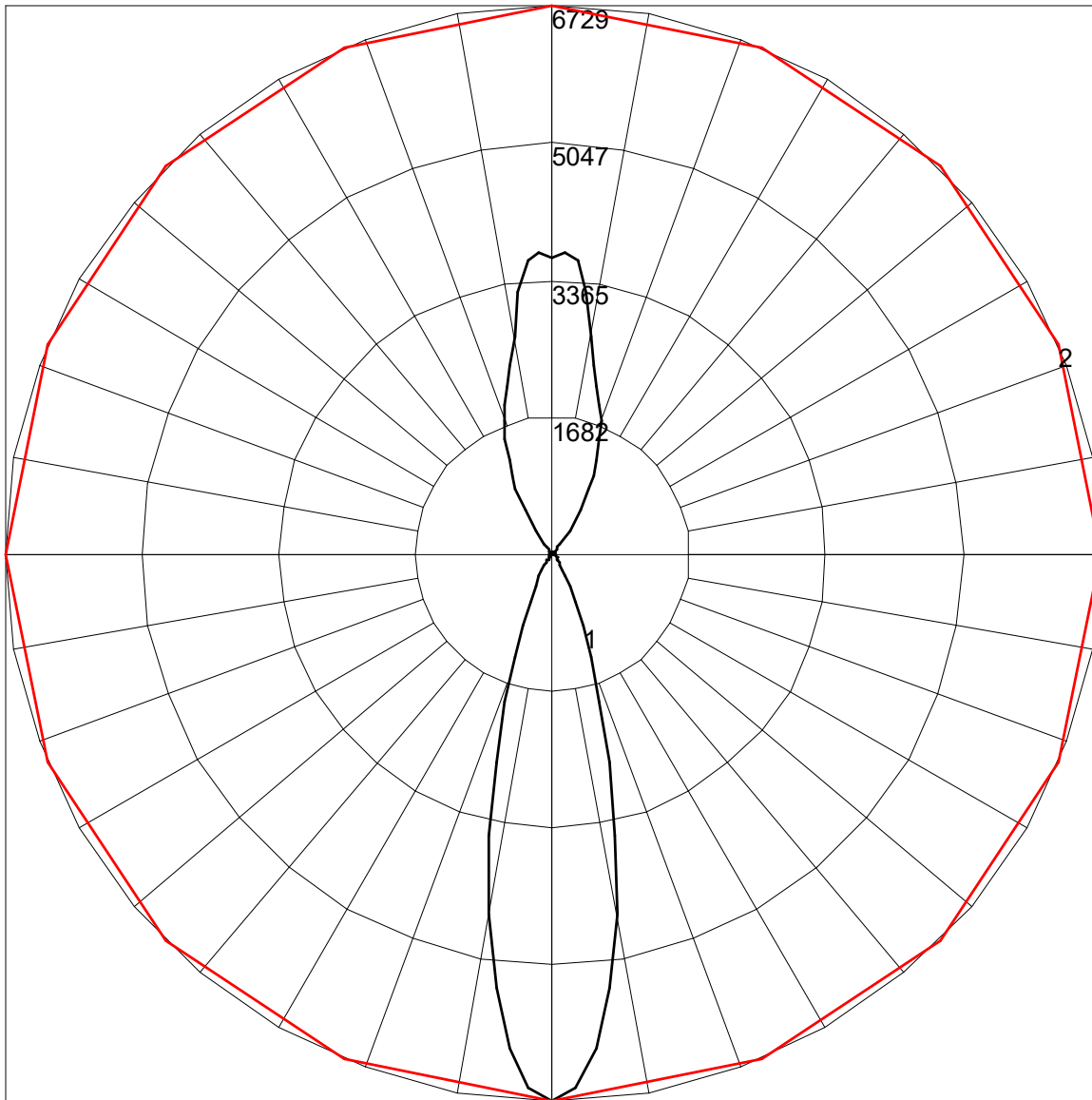
4H	2H	4.5	4.9	5.3	5.9	7.2	4.5	4.9	5.3	5.9	7.2
	3H	5.3	5.8	6.4	6.8	8.1	5.3	5.8	6.4	6.8	8.1
	4H	5.7	6.1	6.7	7.1	8.4	5.7	6.1	6.7	7.1	8.4
	6H	5.9	6.3	7.0	7.3	8.7	5.9	6.3	7.0	7.3	8.7
	8H	6.0	6.3	7.1	7.4	8.7	6.0	6.3	7.1	7.4	8.7
	12H	6.0	6.3	7.1	7.4	8.8	6.0	6.3	7.1	7.4	8.8
8H	4H	5.7	6.0	6.8	7.1	8.4	5.7	6.0	6.8	7.1	8.4
	6H	6.1	6.3	7.2	7.4	8.8	6.1	6.3	7.2	7.4	8.8
	8H	6.2	6.5	7.3	7.5	8.9	6.2	6.5	7.3	7.5	8.9
	12H	6.3	6.5	7.4	7.6	9.0	6.3	6.5	7.4	7.6	9.0
12H	4H	5.7	6.0	6.7	7.0	8.4	5.7	6.0	6.7	7.0	8.4
	6H	6.1	6.3	7.1	7.4	8.8	6.1	6.3	7.1	7.4	8.8
	8H	6.3	6.5	7.3	7.5	8.9	6.3	6.5	7.3	7.5	8.9

Maximum UGR = 9.0

# IES INDOOR REPORT

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

## POLAR GRAPH



Maximum Candela = 6729 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.)