



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RM-WHD-WM 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.05

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 24-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 8CRDI-TL-L20-8TWU-L20-8TWD-xxx-DALI-UNV-ON-CSU-RM-WHD-WM 4000k

[LUMINAIRE] White formed aluminum housing, specular reflector, clear glass cover

[MORE]

[LAMP] Two white LEDs

[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	4061
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	85
Total Luminaire Watts	48
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	6793	6793	6793
55	4568	4568	4568
65	3399	3399	3399
75	2347	2347	2347
85	1961	1961	1961

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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	4983.426	4983.426	4983.426	4983.426	4983.426	4983.426	4983.426	4983.426	4983.426	4983.426
2.5	4926.809	4926.809	4926.809	4926.809	4926.809	4926.809	4926.809	4926.809	4926.809	4926.809
5.0	4773.135	4773.135	4773.135	4773.135	4773.135	4773.135	4773.135	4773.135	4773.135	4773.135
7.5	4527.026	4527.026	4527.026	4527.026	4527.026	4527.026	4527.026	4527.026	4527.026	4527.026
10.0	4167.683	4167.683	4167.683	4167.683	4167.683	4167.683	4167.683	4167.683	4167.683	4167.683
12.5	3681.241	3681.241	3681.241	3681.241	3681.241	3681.241	3681.241	3681.241	3681.241	3681.241
15.0	3083.877	3083.877	3083.877	3083.877	3083.877	3083.877	3083.877	3083.877	3083.877	3083.877
17.5	2449.539	2449.539	2449.539	2449.539	2449.539	2449.539	2449.539	2449.539	2449.539	2449.539
20.0	1854.486	1854.486	1854.486	1854.486	1854.486	1854.486	1854.486	1854.486	1854.486	1854.486
22.5	1358.801	1358.801	1358.801	1358.801	1358.801	1358.801	1358.801	1358.801	1358.801	1358.801
25.0	977.967	977.967	977.967	977.967	977.967	977.967	977.967	977.967	977.967	977.967
27.5	701.470	701.470	701.470	701.470	701.470	701.470	701.470	701.470	701.470	701.470
30.0	504.004	504.004	504.004	504.004	504.004	504.004	504.004	504.004	504.004	504.004
32.5	362.000	362.000	362.000	362.000	362.000	362.000	362.000	362.000	362.000	362.000
35.0	259.397	259.397	259.397	259.397	259.397	259.397	259.397	259.397	259.397	259.397
37.5	187.413	187.413	187.413	187.413	187.413	187.413	187.413	187.413	187.413	187.413
40.0	139.346	139.346	139.346	139.346	139.346	139.346	139.346	139.346	139.346	139.346
42.5	108.381	108.381	108.381	108.381	108.381	108.381	108.381	108.381	108.381	108.381
45.0	87.698	87.698	87.698	87.698	87.698	87.698	87.698	87.698	87.698	87.698
47.5	73.371	73.371	73.371	73.371	73.371	73.371	73.371	73.371	73.371	73.371
50.0	62.856	62.856	62.856	62.856	62.856	62.856	62.856	62.856	62.856	62.856
52.5	54.653	54.653	54.653	54.653	54.653	54.653	54.653	54.653	54.653	54.653
55.0	47.835	47.835	47.835	47.835	47.835	47.835	47.835	47.835	47.835	47.835
57.5	41.827	41.827	41.827	41.827	41.827	41.827	41.827	41.827	41.827	41.827
60.0	36.281	36.281	36.281	36.281	36.281	36.281	36.281	36.281	36.281	36.281
62.5	31.081	31.081	31.081	31.081	31.081	31.081	31.081	31.081	31.081	31.081
65.0	26.229	26.229	26.229	26.229	26.229	26.229	26.229	26.229	26.229	26.229
67.5	21.722	21.722	21.722	21.722	21.722	21.722	21.722	21.722	21.722	21.722
70.0	17.563	17.563	17.563	17.563	17.563	17.563	17.563	17.563	17.563	17.563
72.5	13.865	13.865	13.865	13.865	13.865	13.865	13.865	13.865	13.865	13.865
75.0	11.092	11.092	11.092	11.092	11.092	11.092	11.092	11.092	11.092	11.092
77.5	8.781	8.781	8.781	8.781	8.781	8.781	8.781	8.781	8.781	8.781
80.0	6.817	6.817	6.817	6.817	6.817	6.817	6.817	6.817	6.817	6.817
82.5	4.968	4.968	4.968	4.968	4.968	4.968	4.968	4.968	4.968	4.968
85.0	3.120	3.120	3.120	3.120	3.120	3.120	3.120	3.120	3.120	3.120
87.5	1.502	1.502	1.502	1.502	1.502	1.502	1.502	1.502	1.502	1.502
90.0	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462
92.5	0.000	0.000	0.000	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	0.000	0.000	0.000
97.5	0.000	0.000	0.000	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	0.000	0.000	0.000
102.5	0.000	0.000	0.000	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	0.000	0.000	0.000
107.5	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966
110.0	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966
112.5	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966
115.0	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966
117.5	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931
120.0	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931
122.5	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897
125.0	3.863	3.863	3.863	3.863	3.863	3.863	3.863	3.863	3.863	3.863
127.5	4.829	4.829	4.829	4.829	4.829	4.829	4.829	4.829	4.829	4.829
130.0	7.726	7.726	7.726	7.726	7.726	7.726	7.726	7.726	7.726	7.726
132.5	9.657	9.657	9.657	9.657	9.657	9.657	9.657	9.657	9.657	9.657

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CANDELA TABULATION - (Cont.)

135.0	12.555	12.555	12.555	12.555	12.555	12.555	12.555	12.555	12.555	12.555
137.5	16.418	16.418	16.418	16.418	16.418	16.418	16.418	16.418	16.418	16.418
140.0	20.281	20.281	20.281	20.281	20.281	20.281	20.281	20.281	20.281	20.281
142.5	36.698	36.698	36.698	36.698	36.698	36.698	36.698	36.698	36.698	36.698
145.0	233.709	233.709	233.709	233.709	233.709	233.709	233.709	233.709	233.709	233.709
147.5	523.432	523.432	523.432	523.432	523.432	523.432	523.432	523.432	523.432	523.432
150.0	729.134	729.134	729.134	729.134	729.134	729.134	729.134	729.134	729.134	729.134
152.5	794.805	794.805	794.805	794.805	794.805	794.805	794.805	794.805	794.805	794.805
155.0	986.021	986.021	986.021	986.021	986.021	986.021	986.021	986.021	986.021	986.021
157.5	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812
160.0	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624
162.5	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978
165.0	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385
167.5	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393
170.0	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202
172.5	5341.520	5341.520	5341.520	5341.520	5341.520	5341.519	5341.519	5341.519	5341.519	5341.519
175.0	9493.251	9493.251	9493.251	9493.251	9493.251	9493.249	9493.249	9493.249	9493.249	9493.249
177.5	16736.303	16736.303	16736.303	16736.303	16736.302	16736.302	16736.301	16736.301	16736.301	16736.301
180.0	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298

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	4983.426	4983.426	4983.426	4983.426	4983.426	4983.426	4983.426
2.5	4926.809	4926.809	4926.809	4926.809	4926.809	4926.809	4926.809
5.0	4773.135	4773.135	4773.135	4773.135	4773.135	4773.135	4773.135
7.5	4527.026	4527.026	4527.026	4527.026	4527.026	4527.026	4527.026
10.0	4167.683	4167.683	4167.683	4167.683	4167.683	4167.683	4167.683
12.5	3681.241	3681.241	3681.241	3681.241	3681.241	3681.241	3681.241
15.0	3083.877	3083.877	3083.877	3083.877	3083.877	3083.877	3083.877
17.5	2449.539	2449.539	2449.539	2449.539	2449.539	2449.539	2449.539
20.0	1854.486	1854.486	1854.486	1854.486	1854.486	1854.486	1854.486
22.5	1358.801	1358.801	1358.801	1358.801	1358.801	1358.801	1358.801
25.0	977.967	977.967	977.967	977.967	977.967	977.967	977.967
27.5	701.470	701.470	701.470	701.470	701.470	701.470	701.470
30.0	504.004	504.004	504.004	504.004	504.004	504.004	504.004
32.5	362.000	362.000	362.000	362.000	362.000	362.000	362.000
35.0	259.397	259.397	259.397	259.397	259.397	259.397	259.397
37.5	187.413	187.413	187.413	187.413	187.413	187.413	187.413
40.0	139.346	139.346	139.346	139.346	139.346	139.346	139.346
42.5	108.381	108.381	108.381	108.381	108.381	108.381	108.381
45.0	87.698	87.698	87.698	87.698	87.698	87.698	87.698
47.5	73.371	73.371	73.371	73.371	73.371	73.371	73.371
50.0	62.856	62.856	62.856	62.856	62.856	62.856	62.856
52.5	54.653	54.653	54.653	54.653	54.653	54.653	54.653
55.0	47.835	47.835	47.835	47.835	47.835	47.835	47.835
57.5	41.827	41.827	41.827	41.827	41.827	41.827	41.827
60.0	36.281	36.281	36.281	36.281	36.281	36.281	36.281
62.5	31.081	31.081	31.081	31.081	31.081	31.081	31.081
65.0	26.229	26.229	26.229	26.229	26.229	26.229	26.229
67.5	21.722	21.722	21.722	21.722	21.722	21.722	21.722
70.0	17.563	17.563	17.563	17.563	17.563	17.563	17.563
72.5	13.865	13.865	13.865	13.865	13.865	13.865	13.865
75.0	11.092	11.092	11.092	11.092	11.092	11.092	11.092
77.5	8.781	8.781	8.781	8.781	8.781	8.781	8.781
80.0	6.817	6.817	6.817	6.817	6.817	6.817	6.817

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82.5	4.968	4.968	4.968	4.968	4.968	4.968	4.968
85.0	3.120	3.120	3.120	3.120	3.120	3.120	3.120
87.5	1.502	1.502	1.502	1.502	1.502	1.502	1.502
90.0	0.462	0.462	0.462	0.462	0.462	0.462	0.462
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	0.966	0.966	0.966	0.966	0.966	0.966	0.966
110.0	0.966	0.966	0.966	0.966	0.966	0.966	0.966
112.5	0.966	0.966	0.966	0.966	0.966	0.966	0.966
115.0	0.966	0.966	0.966	0.966	0.966	0.966	0.966
117.5	1.931	1.931	1.931	1.931	1.931	1.931	1.931
120.0	1.931	1.931	1.931	1.931	1.931	1.931	1.931
122.5	2.897	2.897	2.897	2.897	2.897	2.897	2.897
125.0	3.863	3.863	3.863	3.863	3.863	3.863	3.863
127.5	4.829	4.829	4.829	4.829	4.829	4.829	4.829
130.0	7.726	7.726	7.726	7.726	7.726	7.726	7.726
132.5	9.657	9.657	9.657	9.657	9.657	9.657	9.657
135.0	12.555	12.555	12.555	12.555	12.555	12.555	12.555
137.5	16.418	16.418	16.418	16.418	16.418	16.418	16.418
140.0	20.281	20.281	20.281	20.281	20.281	20.281	20.281
142.5	36.698	36.698	36.698	36.698	36.698	36.698	36.698
145.0	233.709	233.709	233.709	233.709	233.709	233.709	233.709
147.5	523.432	523.432	523.432	523.432	523.432	523.432	523.432
150.0	729.134	729.134	729.134	729.134	729.134	729.134	729.134
152.5	794.805	794.805	794.805	794.805	794.805	794.805	794.805
155.0	986.021	986.021	986.021	986.021	986.021	986.021	986.021
157.5	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812
160.0	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624
162.5	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978
165.0	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385
167.5	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393
170.0	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202
172.5	5341.519	5341.519	5341.520	5341.520	5341.520	5341.520	5341.520
175.0	9493.249	9493.249	9493.251	9493.251	9493.251	9493.251	9493.251
177.5	16736.301	16736.302	16736.302	16736.302	16736.303	16736.303	16736.303
180.0	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RM-WHD-WM 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1268.81	N.A.	31.20
0-30	1738.72	N.A.	42.80
0-40	1911.87	N.A.	47.10
0-60	2026.09	N.A.	49.90
0-80	2064.37	N.A.	50.80
0-90	2067.97	N.A.	50.90
10-90	1631.31	N.A.	40.20
20-40	643.06	N.A.	15.80
20-50	714.02	N.A.	17.60
40-70	140.40	N.A.	3.50
60-80	38.28	N.A.	0.90
70-80	12.11	N.A.	0.30
80-90	3.60	N.A.	0.10
90-110	0.44	N.A.	0.00
90-120	1.75	N.A.	0.00
90-130	5.39	N.A.	0.10
90-150	188.97	N.A.	4.70
90-180	1993.44	N.A.	49.10
110-180	1993.00	N.A.	49.10
0-180	4061.42	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	436.66
10-20	832.15
20-30	469.91
30-40	173.15
40-50	70.96
50-60	43.26
60-70	26.17
70-80	12.11
80-90	3.60
90-100	0.06
100-110	0.38
110-120	1.31
120-130	3.64
130-140	10.05
140-150	173.53
150-160	471.21
160-170	580.81
170-180	752.45

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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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	101	97	94	92	93	90	88	86	77	76	74	65	64	63	54	54	53	48
2	94	89	84	80	87	83	79	76	72	69	67	61	59	58	52	51	50	45
3	88	81	76	71	82	76	71	68	67	63	60	58	55	53	49	48	47	43
4	83	75	69	64	77	70	65	61	62	58	55	54	52	50	47	45	44	41
5	78	69	63	59	73	66	60	56	58	54	51	51	49	46	45	43	42	39
6	74	65	58	54	69	61	56	52	55	51	48	49	46	44	43	41	40	37
7	70	60	54	50	66	57	52	48	52	48	45	46	43	41	41	39	38	35
8	66	57	51	46	62	54	49	45	49	45	42	44	41	39	40	38	36	34
9	63	53	48	44	60	51	46	42	46	42	40	42	39	37	38	36	34	33
10	60	51	45	41	57	48	43	40	44	40	38	40	37	35	37	35	33	31

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RM-WHD-WM 4000K_.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	5.6	6.2	6.6	7.2	8.5	5.6	6.2	6.6	7.2	8.5
	3H	6.6	7.2	7.7	8.2	9.5	6.6	7.2	7.7	8.2	9.5
	4H	7.0	7.5	8.0	8.5	9.8	7.0	7.5	8.0	8.5	9.8
	6H	7.2	7.7	8.2	8.7	10.0	7.2	7.7	8.2	8.7	10.0
	8H	7.3	7.7	8.3	8.8	10.1	7.3	7.7	8.3	8.8	10.1
	12H	7.3	7.8	8.3	8.8	10.1	7.3	7.8	8.3	8.8	10.1

UGR Viewed Endwise

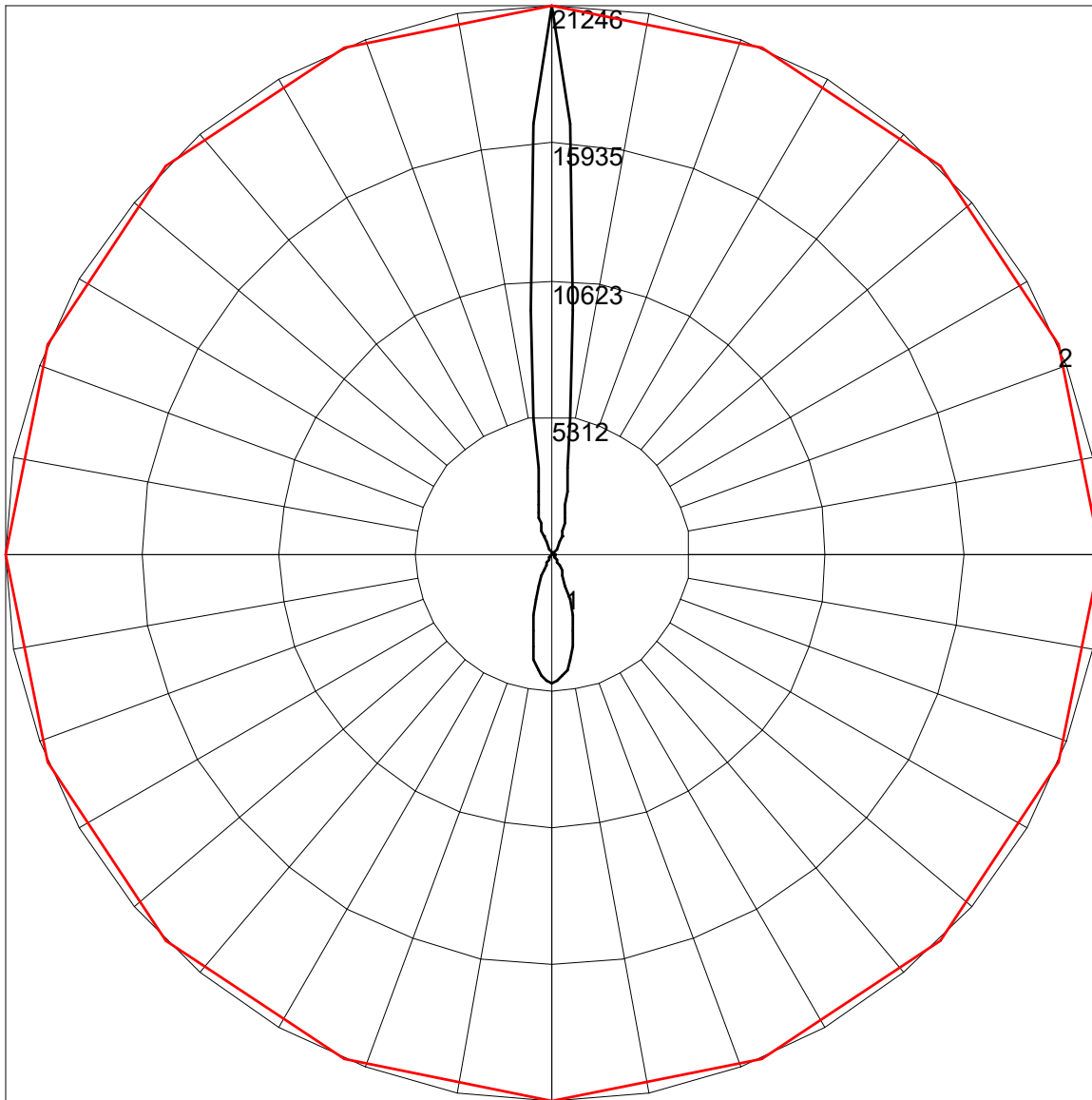
4H	2H	5.9	6.4	6.9	7.4	8.7	5.9	6.4	6.9	7.4	8.7
	3H	7.1	7.6	8.1	8.6	9.9	7.1	7.6	8.1	8.6	9.9
	4H	7.5	8.0	8.6	9.0	10.3	7.5	8.0	8.6	9.0	10.3
	6H	7.9	8.2	8.9	9.3	10.6	7.9	8.2	8.9	9.3	10.6
	8H	8.0	8.3	9.0	9.4	10.7	8.0	8.3	9.0	9.4	10.7
	12H	8.1	8.4	9.1	9.4	10.8	8.1	8.4	9.1	9.4	10.8
8H	4H	7.6	8.0	8.7	9.0	10.3	7.6	8.0	8.7	9.0	10.3
	6H	8.1	8.4	9.1	9.4	10.8	8.1	8.4	9.1	9.4	10.8
	8H	8.3	8.5	9.4	9.6	10.9	8.3	8.5	9.4	9.6	10.9
	12H	8.4	8.6	9.5	9.7	11.1	8.4	8.6	9.5	9.7	11.1
12H	4H	7.6	7.9	8.7	8.9	10.3	7.6	7.9	8.7	8.9	10.3
	6H	8.1	8.3	9.2	9.4	10.8	8.1	8.3	9.2	9.4	10.8
	8H	8.3	8.5	9.4	9.6	11.0	8.3	8.5	9.4	9.6	11.0

Maximum UGR = 11.1

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RM-WHD-WM 4000K_.IES

POLAR GRAPH



Maximum Candela = 21246.298 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.)