



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RN-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-RN-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	4083
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	6235	6235	6235
55	4079	4079	4079
65	2775	2775	2775
75	1793	1793	1793
85	1439	1439	1439

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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	7705.667	7705.667	7705.667	7705.667	7705.667	7705.667	7705.667	7705.667	7705.667	7705.667
2.5	7517.864	7517.864	7517.864	7517.864	7517.864	7517.864	7517.864	7517.864	7517.864	7517.864
5.0	6985.372	6985.372	6985.372	6985.372	6985.372	6985.372	6985.372	6985.372	6985.372	6985.372
7.5	6174.611	6174.611	6174.611	6174.611	6174.611	6174.611	6174.611	6174.611	6174.611	6174.611
10.0	5163.450	5163.450	5163.450	5163.450	5163.450	5163.450	5163.450	5163.450	5163.450	5163.450
12.5	4076.709	4076.709	4076.709	4076.709	4076.709	4076.709	4076.709	4076.709	4076.709	4076.709
15.0	3048.371	3048.371	3048.371	3048.371	3048.371	3048.371	3048.371	3048.371	3048.371	3048.371
17.5	2198.675	2198.675	2198.675	2198.675	2198.675	2198.675	2198.675	2198.675	2198.675	2198.675
20.0	1555.104	1555.104	1555.104	1555.104	1555.104	1555.104	1555.104	1555.104	1555.104	1555.104
22.5	1083.992	1083.992	1083.992	1083.992	1083.992	1083.992	1083.992	1083.992	1083.992	1083.992
25.0	748.694	748.694	748.694	748.694	748.694	748.694	748.694	748.694	748.694	748.694
27.5	518.406	518.406	518.406	518.406	518.406	518.406	518.406	518.406	518.406	518.406
30.0	365.644	365.644	365.644	365.644	365.644	365.644	365.644	365.644	365.644	365.644
32.5	264.872	264.872	264.872	264.872	264.872	264.872	264.872	264.872	264.872	264.872
35.0	197.194	197.194	197.194	197.194	197.194	197.194	197.194	197.194	197.194	197.194
37.5	150.930	150.930	150.930	150.930	150.930	150.930	150.930	150.930	150.930	150.930
40.0	119.209	119.209	119.209	119.209	119.209	119.209	119.209	119.209	119.209	119.209
42.5	96.879	96.879	96.879	96.879	96.879	96.879	96.879	96.879	96.879	96.879
45.0	80.504	80.504	80.504	80.504	80.504	80.504	80.504	80.504	80.504	80.504
47.5	67.793	67.793	67.793	67.793	67.793	67.793	67.793	67.793	67.793	67.793
50.0	57.715	57.715	57.715	57.715	57.715	57.715	57.715	57.715	57.715	57.715
52.5	49.470	49.470	49.470	49.470	49.470	49.470	49.470	49.470	49.470	49.470
55.0	42.714	42.714	42.714	42.714	42.714	42.714	42.714	42.714	42.714	42.714
57.5	36.759	36.759	36.759	36.759	36.759	36.759	36.759	36.759	36.759	36.759
60.0	31.377	31.377	31.377	31.377	31.377	31.377	31.377	31.377	31.377	31.377
62.5	26.224	26.224	26.224	26.224	26.224	26.224	26.224	26.224	26.224	26.224
65.0	21.414	21.414	21.414	21.414	21.414	21.414	21.414	21.414	21.414	21.414
67.5	17.292	17.292	17.292	17.292	17.292	17.292	17.292	17.292	17.292	17.292
70.0	13.742	13.742	13.742	13.742	13.742	13.742	13.742	13.742	13.742	13.742
72.5	10.764	10.764	10.764	10.764	10.764	10.764	10.764	10.764	10.764	10.764
75.0	8.474	8.474	8.474	8.474	8.474	8.474	8.474	8.474	8.474	8.474
77.5	6.642	6.642	6.642	6.642	6.642	6.642	6.642	6.642	6.642	6.642
80.0	5.153	5.153	5.153	5.153	5.153	5.153	5.153	5.153	5.153	5.153
82.5	3.664	3.664	3.664	3.664	3.664	3.664	3.664	3.664	3.664	3.664
85.0	2.290	2.290	2.290	2.290	2.290	2.290	2.290	2.290	2.290	2.290
87.5	1.145	1.145	1.145	1.145	1.145	1.145	1.145	1.145	1.145	1.145
90.0	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
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	7705.667	7705.667	7705.667	7705.667	7705.667	7705.667	7705.667
2.5	7517.864	7517.864	7517.864	7517.864	7517.864	7517.864	7517.864
5.0	6985.372	6985.372	6985.372	6985.372	6985.372	6985.372	6985.372
7.5	6174.611	6174.611	6174.611	6174.611	6174.611	6174.611	6174.611
10.0	5163.450	5163.450	5163.450	5163.450	5163.450	5163.450	5163.450
12.5	4076.709	4076.709	4076.709	4076.709	4076.709	4076.709	4076.709
15.0	3048.371	3048.371	3048.371	3048.371	3048.371	3048.371	3048.371
17.5	2198.675	2198.675	2198.675	2198.675	2198.675	2198.675	2198.675
20.0	1555.104	1555.104	1555.104	1555.104	1555.104	1555.104	1555.104
22.5	1083.992	1083.992	1083.992	1083.992	1083.992	1083.992	1083.992
25.0	748.694	748.694	748.694	748.694	748.694	748.694	748.694
27.5	518.406	518.406	518.406	518.406	518.406	518.406	518.406
30.0	365.644	365.644	365.644	365.644	365.644	365.644	365.644
32.5	264.872	264.872	264.872	264.872	264.872	264.872	264.872
35.0	197.194	197.194	197.194	197.194	197.194	197.194	197.194
37.5	150.930	150.930	150.930	150.930	150.930	150.930	150.930
40.0	119.209	119.209	119.209	119.209	119.209	119.209	119.209
42.5	96.879	96.879	96.879	96.879	96.879	96.879	96.879
45.0	80.504	80.504	80.504	80.504	80.504	80.504	80.504
47.5	67.793	67.793	67.793	67.793	67.793	67.793	67.793
50.0	57.715	57.715	57.715	57.715	57.715	57.715	57.715
52.5	49.470	49.470	49.470	49.470	49.470	49.470	49.470
55.0	42.714	42.714	42.714	42.714	42.714	42.714	42.714
57.5	36.759	36.759	36.759	36.759	36.759	36.759	36.759
60.0	31.377	31.377	31.377	31.377	31.377	31.377	31.377
62.5	26.224	26.224	26.224	26.224	26.224	26.224	26.224
65.0	21.414	21.414	21.414	21.414	21.414	21.414	21.414
67.5	17.292	17.292	17.292	17.292	17.292	17.292	17.292
70.0	13.742	13.742	13.742	13.742	13.742	13.742	13.742
72.5	10.764	10.764	10.764	10.764	10.764	10.764	10.764
75.0	8.474	8.474	8.474	8.474	8.474	8.474	8.474
77.5	6.642	6.642	6.642	6.642	6.642	6.642	6.642
80.0	5.153	5.153	5.153	5.153	5.153	5.153	5.153

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82.5	3.664	3.664	3.664	3.664	3.664	3.664	3.664
85.0	2.290	2.290	2.290	2.290	2.290	2.290	2.290
87.5	1.145	1.145	1.145	1.145	1.145	1.145	1.145
90.0	0.344	0.344	0.344	0.344	0.344	0.344	0.344
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

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Zone	Lumens	%Lamp	%Fixt
0-20	1454.17	N.A.	35.60
0-30	1821.55	N.A.	44.60
0-40	1952.96	N.A.	47.80
0-60	2055.61	N.A.	50.40
0-80	2086.52	N.A.	51.10
0-90	2089.2	N.A.	51.20
10-90	1480.88	N.A.	36.30
20-40	498.79	N.A.	12.20
20-50	562.75	N.A.	13.80
40-70	124.25	N.A.	3.00
60-80	30.91	N.A.	0.80
70-80	9.31	N.A.	0.20
80-90	2.68	N.A.	0.10
90-110	0.43	N.A.	0.00
90-120	1.73	N.A.	0.00
90-130	5.37	N.A.	0.10
90-150	188.95	N.A.	4.60
90-180	1993.43	N.A.	48.80
110-180	1993.00	N.A.	48.80
0-180	4082.62	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	608.32
10-20	845.85
20-30	367.38
30-40	131.41
40-50	63.96
50-60	38.69
60-70	21.60
70-80	9.31
80-90	2.68
90-100	0.05
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 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	70	70	70	57	57	57	51
1	101	98	95	92	93	91	88	86	78	76	75	66	65	64	55	54	54	49
2	95	89	85	81	88	83	80	76	72	70	67	62	60	59	53	52	51	46
3	89	82	77	73	83	77	73	69	68	64	62	59	57	55	50	49	48	44
4	84	76	70	66	78	72	67	63	63	60	57	56	53	51	48	47	46	42
5	79	71	65	60	74	67	62	58	60	56	53	53	50	48	47	45	43	41
6	75	66	60	56	71	63	58	54	56	53	50	50	48	46	45	43	42	39
7	72	62	56	52	67	59	54	50	54	50	47	48	45	43	43	41	40	38
8	68	59	53	49	64	56	51	47	51	47	44	46	43	41	42	40	38	36
9	65	56	50	46	61	53	48	45	49	45	42	44	42	40	40	38	37	35
10	62	53	47	44	59	51	46	43	47	43	40	43	40	38	39	37	36	34

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RN-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	5.0	5.3	5.7	6.3	7.6	5.0	5.3	5.7	6.3	7.6
	3H	5.5	6.1	6.5	7.1	8.4	5.5	6.1	6.5	7.1	8.4
	4H	5.8	6.3	6.8	7.3	8.6	5.8	6.3	6.8	7.3	8.6
	6H	5.9	6.4	7.0	7.4	8.7	5.9	6.4	7.0	7.4	8.7
	8H	6.0	6.5	7.0	7.5	8.8	6.0	6.5	7.0	7.5	8.8
	12H	6.0	6.5	7.0	7.5	8.8	6.0	6.5	7.0	7.5	8.8

UGR Viewed Endwise

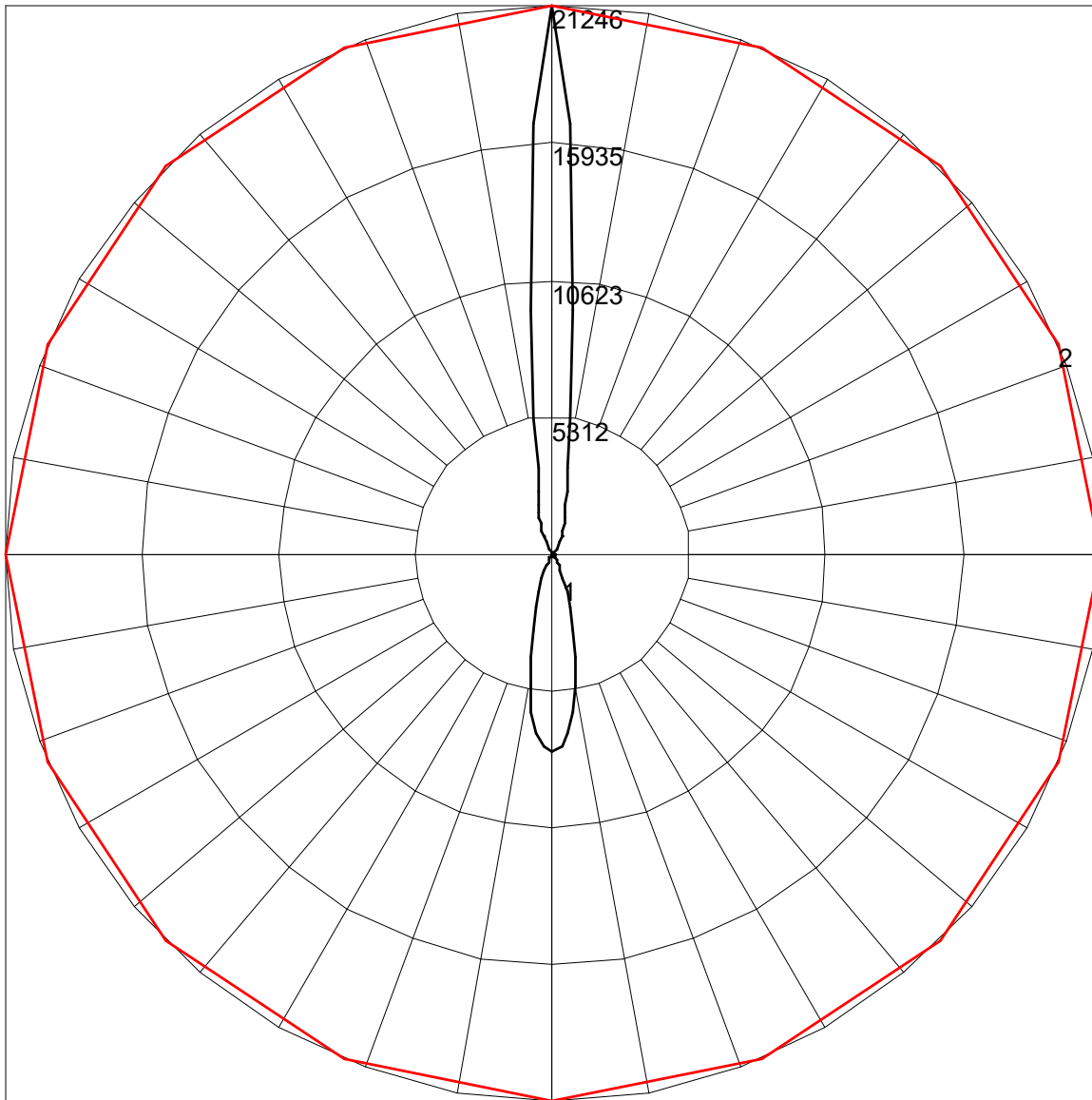
4H	2H	5.0	5.5	5.9	6.4	7.7	5.0	5.5	5.9	6.4	7.7
	3H	5.9	6.4	7.0	7.4	8.7	5.9	6.4	7.0	7.4	8.7
	4H	6.2	6.7	7.3	7.7	9.0	6.2	6.7	7.3	7.7	9.0
	6H	6.5	6.9	7.6	7.9	9.2	6.5	6.9	7.6	7.9	9.2
	8H	6.6	6.9	7.7	8.0	9.3	6.6	6.9	7.7	8.0	9.3
	12H	6.6	6.9	7.7	8.0	9.3	6.6	6.9	7.7	8.0	9.3
8H	4H	6.3	6.6	7.4	7.7	9.0	6.3	6.6	7.4	7.7	9.0
	6H	6.7	6.9	7.7	8.0	9.4	6.7	6.9	7.7	8.0	9.4
	8H	6.8	7.1	7.9	8.1	9.5	6.8	7.1	7.9	8.1	9.5
	12H	6.9	7.1	8.0	8.2	9.6	6.9	7.1	8.0	8.2	9.6
12H	4H	6.3	6.6	7.3	7.6	9.0	6.3	6.6	7.3	7.6	9.0
	6H	6.7	6.9	7.7	7.9	9.3	6.7	6.9	7.7	7.9	9.3
	8H	6.9	7.0	7.9	8.1	9.5	6.9	7.0	7.9	8.1	9.5

Maximum UGR = 9.6

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RN-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.)