



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN from UL #12326812.04
 [TESTLAB]
 [ISSUE DATE] 23-FEB-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 8CRDI-TL-L20-8TWU-L20-8TWD-xxx-DIM1-UNV-OM-CSU-RN-WHD-WM 4000k
 [LUMINAIRE] White formed aluminum housing, specular reflector, cover glass
 [MORE]
 [LAMP] One white LED
 [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	4171
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	87
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

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-RN-WHD-WM 4000K_IES

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	0.448	0.448	0.448	0.448	0.448	0.448	0.448	0.448	0.448	0.448
92.5	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209
95.0	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314
97.5	0.418	0.418	0.418	0.418	0.418	0.418	0.418	0.418	0.418	0.418
100.0	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628
102.5	0.837	0.837	0.837	0.837	0.837	0.837	0.837	0.837	0.837	0.837
105.0	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151
107.5	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674
110.0	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301
112.5	3.034	3.034	3.034	3.034	3.034	3.034	3.034	3.034	3.034	3.034
115.0	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185
117.5	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649
120.0	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637
122.5	10.462	10.462	10.462	10.462	10.462	10.462	10.462	10.462	10.462	10.462
125.0	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437
127.5	20.295	20.295	20.295	20.295	20.295	20.295	20.295	20.295	20.295	20.295
130.0	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038
132.5	37.453	37.453	37.453	37.453	37.453	37.453	37.453	37.453	37.453	37.453

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-RN-WHD-WM 4000K_IES

CANDELA TABULATION - (Cont.)

135.0	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333
137.5	68.314	68.314	68.314	68.314	68.314	68.314	68.314	68.314	68.314	68.314
140.0	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147
142.5	180.464	180.464	180.464	180.464	180.464	180.464	180.464	180.464	180.464	180.464
145.0	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760
147.5	744.034	744.034	744.034	744.034	744.034	744.034	744.034	744.034	744.034	744.034
150.0	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306
152.5	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340
155.0	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189
157.5	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377
160.0	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273
162.5	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229
165.0	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340
167.5	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221
170.0	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180
172.5	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912
175.0	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380
177.5	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534
180.0	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303

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

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-RN-WHD-WM 4000K_.IES****CANDELA TABULATION - (Cont.)**

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	0.448	0.448	0.448	0.448	0.448	0.448	0.448
92.5	0.209	0.209	0.209	0.209	0.209	0.209	0.209
95.0	0.314	0.314	0.314	0.314	0.314	0.314	0.314
97.5	0.418	0.418	0.418	0.418	0.418	0.418	0.418
100.0	0.628	0.628	0.628	0.628	0.628	0.628	0.628
102.5	0.837	0.837	0.837	0.837	0.837	0.837	0.837
105.0	1.151	1.151	1.151	1.151	1.151	1.151	1.151
107.5	1.674	1.674	1.674	1.674	1.674	1.674	1.674
110.0	2.301	2.301	2.301	2.301	2.301	2.301	2.301
112.5	3.034	3.034	3.034	3.034	3.034	3.034	3.034
115.0	4.185	4.185	4.185	4.185	4.185	4.185	4.185
117.5	5.649	5.649	5.649	5.649	5.649	5.649	5.649
120.0	7.637	7.637	7.637	7.637	7.637	7.637	7.637
122.5	10.462	10.462	10.462	10.462	10.462	10.462	10.462
125.0	14.437	14.437	14.437	14.437	14.437	14.437	14.437
127.5	20.295	20.295	20.295	20.295	20.295	20.295	20.295
130.0	28.038	28.038	28.038	28.038	28.038	28.038	28.038
132.5	37.453	37.453	37.453	37.453	37.453	37.453	37.453
135.0	48.333	48.333	48.333	48.333	48.333	48.333	48.333
137.5	68.314	68.314	68.314	68.314	68.314	68.314	68.314
140.0	121.147	121.147	121.147	121.147	121.147	121.147	121.147
142.5	180.464	180.464	180.464	180.464	180.464	180.464	180.464
145.0	413.760	413.760	413.760	413.760	413.760	413.760	413.760
147.5	744.034	744.034	744.034	744.034	744.034	744.034	744.034
150.0	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306
152.5	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340
155.0	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189
157.5	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377
160.0	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273
162.5	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229
165.0	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340
167.5	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221
170.0	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180
172.5	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912
175.0	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380
177.5	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534
180.0	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303

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

Zone	Lumens	%Lamp	%Fixt
0-20	1454.17	N.A.	34.90
0-30	1821.55	N.A.	43.70
0-40	1952.96	N.A.	46.80
0-60	2055.61	N.A.	49.30
0-80	2086.52	N.A.	50.00
0-90	2089.21	N.A.	50.10
10-90	1480.89	N.A.	35.50
20-40	498.79	N.A.	12.00
20-50	562.75	N.A.	13.50
40-70	124.25	N.A.	3.00
60-80	30.91	N.A.	0.70
70-80	9.31	N.A.	0.20
80-90	2.69	N.A.	0.10
90-110	1.75	N.A.	0.00
90-120	6.15	N.A.	0.10
90-130	20.11	N.A.	0.50
90-150	353.25	N.A.	8.50
90-180	2081.77	N.A.	49.90
110-180	2080.02	N.A.	49.90
0-180	4170.98	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	2.69
90-100	0.40
100-110	1.35
110-120	4.39
120-130	13.96
130-140	43.42
140-150	289.72
150-160	679.37
160-170	687.57
170-180	361.58

IES INDOOR REPORT

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

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	45
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	66	61	57	59	55	52	52	50	47	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	42	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	49	46	61	53	48	44	48	44	42	44	41	39	40	38	36	34
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-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-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	5.2	5.6	6.2	7.5	5.0	5.2	5.6	6.2	7.5
	3H	5.4	6.0	6.4	7.0	8.3	5.4	6.0	6.4	7.0	8.3
	4H	5.7	6.2	6.7	7.2	8.5	5.7	6.2	6.7	7.2	8.5
	6H	5.8	6.3	6.9	7.3	8.7	5.8	6.3	6.9	7.3	8.7
	8H	5.9	6.4	6.9	7.4	8.7	5.9	6.4	6.9	7.4	8.7
	12H	5.9	6.3	6.9	7.4	8.7	5.9	6.3	6.9	7.4	8.7

UGR Viewed Endwise

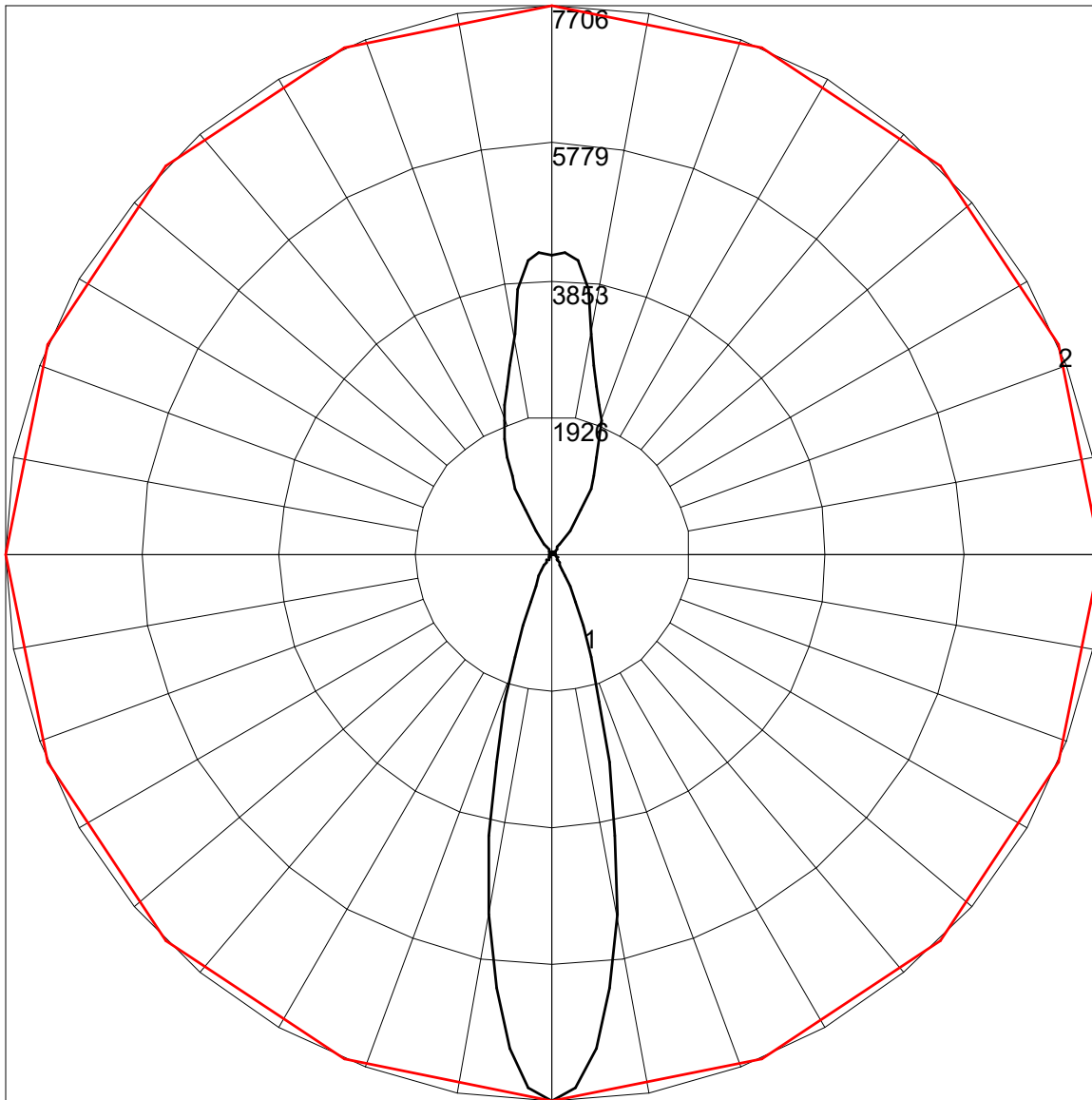
4H	2H	5.0	5.3	5.8	6.3	7.7	5.0	5.3	5.8	6.3	7.7
	3H	5.8	6.3	6.9	7.3	8.6	5.8	6.3	6.9	7.3	8.6
	4H	6.1	6.6	7.2	7.6	8.9	6.1	6.6	7.2	7.6	8.9
	6H	6.4	6.8	7.5	7.8	9.2	6.4	6.8	7.5	7.8	9.2
	8H	6.5	6.8	7.6	7.9	9.2	6.5	6.8	7.6	7.9	9.2
	12H	6.5	6.8	7.6	7.9	9.2	6.5	6.8	7.6	7.9	9.2
8H	4H	6.2	6.5	7.3	7.6	8.9	6.2	6.5	7.3	7.6	8.9
	6H	6.6	6.8	7.6	7.9	9.3	6.6	6.8	7.6	7.9	9.3
	8H	6.7	6.9	7.8	8.0	9.4	6.7	6.9	7.8	8.0	9.4
	12H	6.8	7.0	7.9	8.1	9.5	6.8	7.0	7.9	8.1	9.5
12H	4H	6.2	6.5	7.2	7.5	8.9	6.2	6.5	7.2	7.5	8.9
	6H	6.6	6.8	7.6	7.8	9.2	6.6	6.8	7.6	7.8	9.2
	8H	6.7	6.9	7.8	8.0	9.4	6.7	6.9	7.8	8.0	9.4

Maximum UGR = 9.5

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 7705.667 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.)