



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-LM-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-LM-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	4208
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	88
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	7935	7935	7935
55	5810	5810	5810
65	4734	4734	4734
75	3853	3853	3853
85	2535	2535	2535

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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	4999.207	4999.207	4999.207	4999.207	4999.207	4999.207	4999.207	4999.207	4999.207	4999.207
2.5	4946.195	4946.195	4946.195	4946.195	4946.195	4946.195	4946.195	4946.195	4946.195	4946.195
5.0	4803.295	4803.295	4803.295	4803.295	4803.295	4803.295	4803.295	4803.295	4803.295	4803.295
7.5	4568.201	4568.201	4568.201	4568.201	4568.201	4568.201	4568.201	4568.201	4568.201	4568.201
10.0	4219.017	4219.017	4219.017	4219.017	4219.017	4219.017	4219.017	4219.017	4219.017	4219.017
12.5	3741.914	3741.914	3741.914	3741.914	3741.914	3741.914	3741.914	3741.914	3741.914	3741.914
15.0	3143.807	3143.807	3143.807	3143.807	3143.807	3143.807	3143.807	3143.807	3143.807	3143.807
17.5	2501.908	2501.908	2501.908	2501.908	2501.908	2501.908	2501.908	2501.908	2501.908	2501.908
20.0	1887.667	1887.667	1887.667	1887.667	1887.667	1887.667	1887.667	1887.667	1887.667	1887.667
22.5	1375.992	1375.992	1375.992	1375.992	1375.992	1375.992	1375.992	1375.992	1375.992	1375.992
25.0	976.101	976.101	976.101	976.101	976.101	976.101	976.101	976.101	976.101	976.101
27.5	688.457	688.457	688.457	688.457	688.457	688.457	688.457	688.457	688.457	688.457
30.0	489.203	489.203	489.203	489.203	489.203	489.203	489.203	489.203	489.203	489.203
32.5	351.143	351.143	351.143	351.143	351.143	351.143	351.143	351.143	351.143	351.143
35.0	255.262	255.262	255.262	255.262	255.262	255.262	255.262	255.262	255.262	255.262
37.5	190.611	190.611	190.611	190.611	190.611	190.611	190.611	190.611	190.611	190.611
40.0	148.893	148.893	148.893	148.893	148.893	148.893	148.893	148.893	148.893	148.893
42.5	121.465	121.465	121.465	121.465	121.465	121.465	121.465	121.465	121.465	121.465
45.0	102.450	102.450	102.450	102.450	102.450	102.450	102.450	102.450	102.450	102.450
47.5	88.506	88.506	88.506	88.506	88.506	88.506	88.506	88.506	88.506	88.506
50.0	77.673	77.673	77.673	77.673	77.673	77.673	77.673	77.673	77.673	77.673
52.5	68.684	68.684	68.684	68.684	68.684	68.684	68.684	68.684	68.684	68.684
55.0	60.848	60.848	60.848	60.848	60.848	60.848	60.848	60.848	60.848	60.848
57.5	53.818	53.818	53.818	53.818	53.818	53.818	53.818	53.818	53.818	53.818
60.0	47.710	47.710	47.710	47.710	47.710	47.710	47.710	47.710	47.710	47.710
62.5	41.948	41.948	41.948	41.948	41.948	41.948	41.948	41.948	41.948	41.948
65.0	36.532	36.532	36.532	36.532	36.532	36.532	36.532	36.532	36.532	36.532
67.5	31.461	31.461	31.461	31.461	31.461	31.461	31.461	31.461	31.461	31.461
70.0	26.736	26.736	26.736	26.736	26.736	26.736	26.736	26.736	26.736	26.736
72.5	22.357	22.357	22.357	22.357	22.357	22.357	22.357	22.357	22.357	22.357
75.0	18.208	18.208	18.208	18.208	18.208	18.208	18.208	18.208	18.208	18.208
77.5	14.290	14.290	14.290	14.290	14.290	14.290	14.290	14.290	14.290	14.290
80.0	10.602	10.602	10.602	10.602	10.602	10.602	10.602	10.602	10.602	10.602
82.5	7.145	7.145	7.145	7.145	7.145	7.145	7.145	7.145	7.145	7.145
85.0	4.034	4.034	4.034	4.034	4.034	4.034	4.034	4.034	4.034	4.034
87.5	1.613	1.613	1.613	1.613	1.613	1.613	1.613	1.613	1.613	1.613
90.0	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450
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

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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	4999.207	4999.207	4999.207	4999.207	4999.207	4999.207	4999.207
2.5	4946.195	4946.195	4946.195	4946.195	4946.195	4946.195	4946.195
5.0	4803.295	4803.295	4803.295	4803.295	4803.295	4803.295	4803.295
7.5	4568.201	4568.201	4568.201	4568.201	4568.201	4568.201	4568.201
10.0	4219.017	4219.017	4219.017	4219.017	4219.017	4219.017	4219.017
12.5	3741.914	3741.914	3741.914	3741.914	3741.914	3741.914	3741.914
15.0	3143.807	3143.807	3143.807	3143.807	3143.807	3143.807	3143.807
17.5	2501.908	2501.908	2501.908	2501.908	2501.908	2501.908	2501.908
20.0	1887.667	1887.667	1887.667	1887.667	1887.667	1887.667	1887.667
22.5	1375.992	1375.992	1375.992	1375.992	1375.992	1375.992	1375.992
25.0	976.101	976.101	976.101	976.101	976.101	976.101	976.101
27.5	688.457	688.457	688.457	688.457	688.457	688.457	688.457
30.0	489.203	489.203	489.203	489.203	489.203	489.203	489.203
32.5	351.143	351.143	351.143	351.143	351.143	351.143	351.143
35.0	255.262	255.262	255.262	255.262	255.262	255.262	255.262
37.5	190.611	190.611	190.611	190.611	190.611	190.611	190.611
40.0	148.893	148.893	148.893	148.893	148.893	148.893	148.893
42.5	121.465	121.465	121.465	121.465	121.465	121.465	121.465
45.0	102.450	102.450	102.450	102.450	102.450	102.450	102.450
47.5	88.506	88.506	88.506	88.506	88.506	88.506	88.506
50.0	77.673	77.673	77.673	77.673	77.673	77.673	77.673
52.5	68.684	68.684	68.684	68.684	68.684	68.684	68.684
55.0	60.848	60.848	60.848	60.848	60.848	60.848	60.848
57.5	53.818	53.818	53.818	53.818	53.818	53.818	53.818
60.0	47.710	47.710	47.710	47.710	47.710	47.710	47.710
62.5	41.948	41.948	41.948	41.948	41.948	41.948	41.948
65.0	36.532	36.532	36.532	36.532	36.532	36.532	36.532
67.5	31.461	31.461	31.461	31.461	31.461	31.461	31.461
70.0	26.736	26.736	26.736	26.736	26.736	26.736	26.736
72.5	22.357	22.357	22.357	22.357	22.357	22.357	22.357
75.0	18.208	18.208	18.208	18.208	18.208	18.208	18.208
77.5	14.290	14.290	14.290	14.290	14.290	14.290	14.290
80.0	10.602	10.602	10.602	10.602	10.602	10.602	10.602

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82.5	7.145	7.145	7.145	7.145	7.145	7.145	7.145
85.0	4.034	4.034	4.034	4.034	4.034	4.034	4.034
87.5	1.613	1.613	1.613	1.613	1.613	1.613	1.613
90.0	0.450	0.450	0.450	0.450	0.450	0.450	0.450
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

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Zone	Lumens	%Lamp	%Fixt
0-20	1287.35	N.A.	30.60
0-30	1757.88	N.A.	41.80
0-40	1929.08	N.A.	45.80
0-60	2065.7	N.A.	49.10
0-80	2121.46	N.A.	50.40
0-90	2126.45	N.A.	50.50
10-90	1686.24	N.A.	40.10
20-40	641.72	N.A.	15.20
20-50	723.41	N.A.	17.20
40-70	173.00	N.A.	4.10
60-80	55.77	N.A.	1.30
70-80	19.38	N.A.	0.50
80-90	4.98	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.	8.40
90-180	2081.77	N.A.	49.50
110-180	2080.02	N.A.	49.40
0-180	4208.22	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	440.20
10-20	847.15
20-30	470.53
30-40	171.20
40-50	81.69
50-60	54.93
60-70	36.39
70-80	19.38
80-90	4.98
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

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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	100	97	94	91	93	90	88	85	77	75	74	65	64	63	54	53	53	48
2	94	88	84	80	87	82	78	75	71	68	66	61	59	57	51	50	49	45
3	88	81	75	71	82	76	71	67	66	63	60	57	55	53	49	47	46	42
4	83	74	68	64	77	70	65	61	61	58	55	54	51	49	46	45	43	40
5	78	69	63	58	73	65	59	55	58	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	41	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	50	45	42	46	42	39	42	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-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-LM-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	7.2	7.8	8.2	8.8	10.1	7.2	7.8	8.2	8.8	10.1
	3H	8.5	9.2	9.6	10.1	11.4	8.5	9.2	9.6	10.1	11.4
	4H	9.0	9.6	10.1	10.6	11.9	9.0	9.6	10.1	10.6	11.9
	6H	9.4	9.9	10.4	10.9	12.2	9.4	9.9	10.4	10.9	12.2
	8H	9.5	10.0	10.5	11.0	12.3	9.5	10.0	10.5	11.0	12.3
	12H	9.5	10.0	10.5	11.0	12.3	9.5	10.0	10.5	11.0	12.3

UGR Viewed Endwise

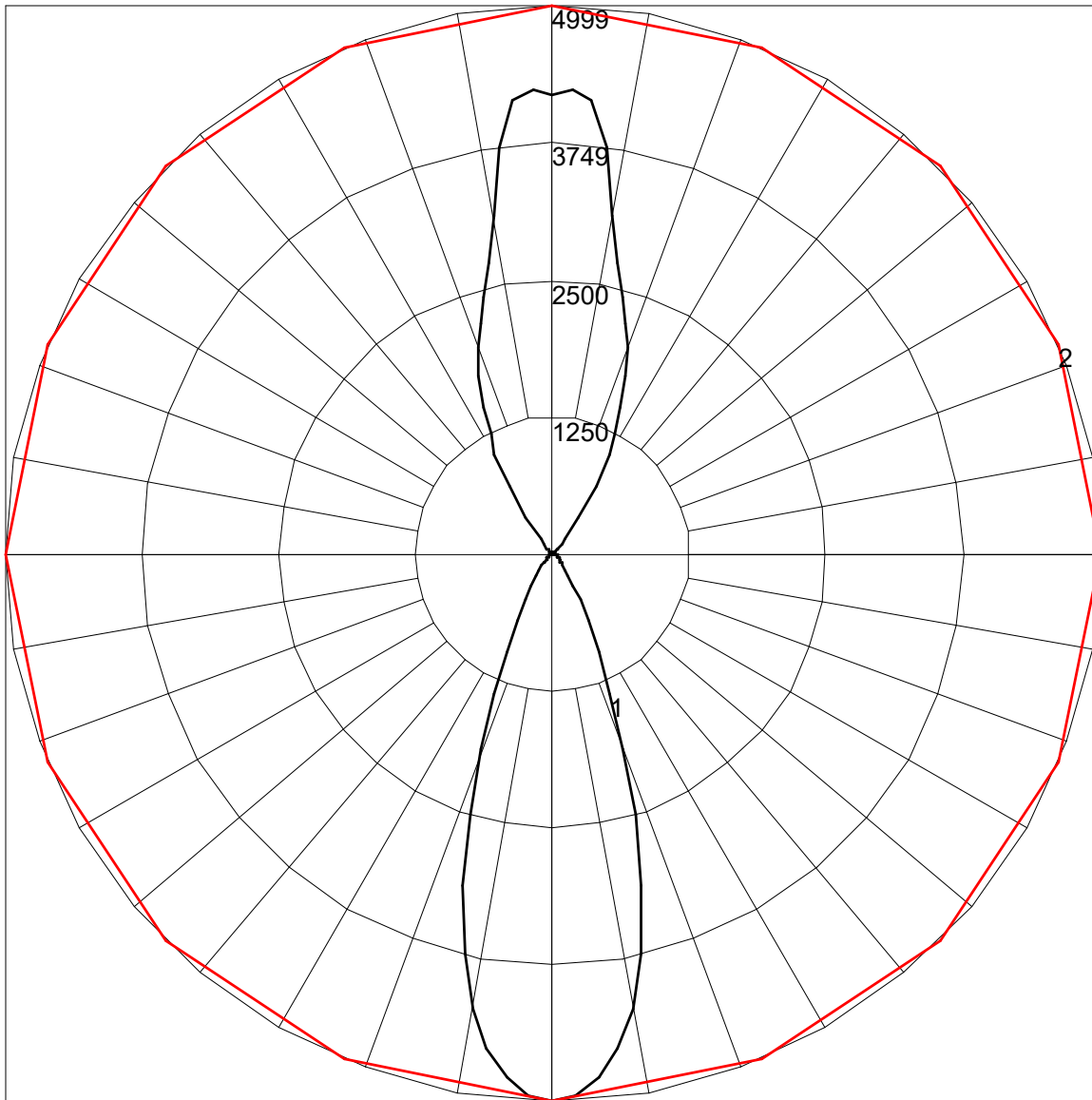
4H	2H	7.6	8.1	8.6	9.1	10.4	7.6	8.1	8.6	9.1	10.4
	3H	9.2	9.6	10.2	10.6	12.0	9.2	9.6	10.2	10.6	12.0
	4H	9.8	10.2	10.8	11.2	12.6	9.8	10.2	10.8	11.2	12.6
	6H	10.2	10.6	11.3	11.6	13.0	10.2	10.6	11.3	11.6	13.0
	8H	10.4	10.7	11.4	11.7	13.1	10.4	10.7	11.4	11.7	13.1
	12H	10.4	10.7	11.5	11.8	13.1	10.4	10.7	11.5	11.8	13.1
8H	4H	9.9	10.3	11.0	11.3	12.7	9.9	10.3	11.0	11.3	12.7
	6H	10.5	10.8	11.6	11.9	13.2	10.5	10.8	11.6	11.9	13.2
	8H	10.7	11.0	11.8	12.0	13.4	10.7	11.0	11.8	12.0	13.4
	12H	10.8	11.0	11.9	12.1	13.5	10.8	11.0	11.9	12.1	13.5
12H	4H	9.9	10.2	11.0	11.3	12.6	9.9	10.2	11.0	11.3	12.6
	6H	10.5	10.8	11.6	11.8	13.2	10.5	10.8	11.6	11.8	13.2
	8H	10.8	11.0	11.8	12.0	13.4	10.8	11.0	11.8	12.0	13.4

Maximum UGR = 13.5

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 4999.207 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.)