



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-LN-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-LN-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	4225
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	6718	6718	6718
55	4916	4916	4916
65	3997	3997	3997
75	3263	3263	3263
85	2113	2113	2113

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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	7962.877	7962.877	7962.877	7962.877	7962.877	7962.877	7962.877	7962.877	7962.877	7962.877
2.5	7765.747	7765.747	7765.747	7765.747	7765.747	7765.747	7765.747	7765.747	7765.747	7765.747
5.0	7206.827	7206.827	7206.827	7206.827	7206.827	7206.827	7206.827	7206.827	7206.827	7206.827
7.5	6356.850	6356.850	6356.850	6356.850	6356.850	6356.850	6356.850	6356.850	6356.850	6356.850
10.0	5300.468	5300.468	5300.468	5300.468	5300.468	5300.468	5300.468	5300.468	5300.468	5300.468
12.5	4166.392	4166.392	4166.392	4166.392	4166.392	4166.392	4166.392	4166.392	4166.392	4166.392
15.0	3094.935	3094.935	3094.935	3094.935	3094.935	3094.935	3094.935	3094.935	3094.935	3094.935
17.5	2215.969	2215.969	2215.969	2215.969	2215.969	2215.969	2215.969	2215.969	2215.969	2215.969
20.0	1558.484	1558.484	1558.484	1558.484	1558.484	1558.484	1558.484	1558.484	1558.484	1558.484
22.5	1076.908	1076.908	1076.908	1076.908	1076.908	1076.908	1076.908	1076.908	1076.908	1076.908
25.0	735.641	735.641	735.641	735.641	735.641	735.641	735.641	735.641	735.641	735.641
27.5	503.956	503.956	503.956	503.956	503.956	503.956	503.956	503.956	503.956	503.956
30.0	352.746	352.746	352.746	352.746	352.746	352.746	352.746	352.746	352.746	352.746
32.5	254.877	254.877	254.877	254.877	254.877	254.877	254.877	254.877	254.877	254.877
35.0	190.868	190.868	190.868	190.868	190.868	190.868	190.868	190.868	190.868	190.868
37.5	148.775	148.775	148.775	148.775	148.775	148.775	148.775	148.775	148.775	148.775
40.0	120.597	120.597	120.597	120.597	120.597	120.597	120.597	120.597	120.597	120.597
42.5	101.116	101.116	101.116	101.116	101.116	101.116	101.116	101.116	101.116	101.116
45.0	86.737	86.737	86.737	86.737	86.737	86.737	86.737	86.737	86.737	86.737
47.5	75.489	75.489	75.489	75.489	75.489	75.489	75.489	75.489	75.489	75.489
50.0	66.096	66.096	66.096	66.096	66.096	66.096	66.096	66.096	66.096	66.096
52.5	58.211	58.211	58.211	58.211	58.211	58.211	58.211	58.211	58.211	58.211
55.0	51.486	51.486	51.486	51.486	51.486	51.486	51.486	51.486	51.486	51.486
57.5	45.572	45.572	45.572	45.572	45.572	45.572	45.572	45.572	45.572	45.572
60.0	40.238	40.238	40.238	40.238	40.238	40.238	40.238	40.238	40.238	40.238
62.5	35.367	35.367	35.367	35.367	35.367	35.367	35.367	35.367	35.367	35.367
65.0	30.845	30.845	30.845	30.845	30.845	30.845	30.845	30.845	30.845	30.845
67.5	26.555	26.555	26.555	26.555	26.555	26.555	26.555	26.555	26.555	26.555
70.0	22.496	22.496	22.496	22.496	22.496	22.496	22.496	22.496	22.496	22.496
72.5	18.785	18.785	18.785	18.785	18.785	18.785	18.785	18.785	18.785	18.785
75.0	15.422	15.422	15.422	15.422	15.422	15.422	15.422	15.422	15.422	15.422
77.5	12.060	12.060	12.060	12.060	12.060	12.060	12.060	12.060	12.060	12.060
80.0	9.045	9.045	9.045	9.045	9.045	9.045	9.045	9.045	9.045	9.045
82.5	6.146	6.146	6.146	6.146	6.146	6.146	6.146	6.146	6.146	6.146
85.0	3.363	3.363	3.363	3.363	3.363	3.363	3.363	3.363	3.363	3.363
87.5	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276
90.0	0.336	0.336	0.336	0.336	0.336	0.336	0.336	0.336	0.336	0.336
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	7962.877	7962.877	7962.877	7962.877	7962.877	7962.877	7962.877
2.5	7765.747	7765.747	7765.747	7765.747	7765.747	7765.747	7765.747
5.0	7206.827	7206.827	7206.827	7206.827	7206.827	7206.827	7206.827
7.5	6356.850	6356.850	6356.850	6356.850	6356.850	6356.850	6356.850
10.0	5300.468	5300.468	5300.468	5300.468	5300.468	5300.468	5300.468
12.5	4166.392	4166.392	4166.392	4166.392	4166.392	4166.392	4166.392
15.0	3094.935	3094.935	3094.935	3094.935	3094.935	3094.935	3094.935
17.5	2215.969	2215.969	2215.969	2215.969	2215.969	2215.969	2215.969
20.0	1558.484	1558.484	1558.484	1558.484	1558.484	1558.484	1558.484
22.5	1076.908	1076.908	1076.908	1076.908	1076.908	1076.908	1076.908
25.0	735.641	735.641	735.641	735.641	735.641	735.641	735.641
27.5	503.956	503.956	503.956	503.956	503.956	503.956	503.956
30.0	352.746	352.746	352.746	352.746	352.746	352.746	352.746
32.5	254.877	254.877	254.877	254.877	254.877	254.877	254.877
35.0	190.868	190.868	190.868	190.868	190.868	190.868	190.868
37.5	148.775	148.775	148.775	148.775	148.775	148.775	148.775
40.0	120.597	120.597	120.597	120.597	120.597	120.597	120.597
42.5	101.116	101.116	101.116	101.116	101.116	101.116	101.116
45.0	86.737	86.737	86.737	86.737	86.737	86.737	86.737
47.5	75.489	75.489	75.489	75.489	75.489	75.489	75.489
50.0	66.096	66.096	66.096	66.096	66.096	66.096	66.096
52.5	58.211	58.211	58.211	58.211	58.211	58.211	58.211
55.0	51.486	51.486	51.486	51.486	51.486	51.486	51.486
57.5	45.572	45.572	45.572	45.572	45.572	45.572	45.572
60.0	40.238	40.238	40.238	40.238	40.238	40.238	40.238
62.5	35.367	35.367	35.367	35.367	35.367	35.367	35.367
65.0	30.845	30.845	30.845	30.845	30.845	30.845	30.845
67.5	26.555	26.555	26.555	26.555	26.555	26.555	26.555
70.0	22.496	22.496	22.496	22.496	22.496	22.496	22.496
72.5	18.785	18.785	18.785	18.785	18.785	18.785	18.785
75.0	15.422	15.422	15.422	15.422	15.422	15.422	15.422
77.5	12.060	12.060	12.060	12.060	12.060	12.060	12.060
80.0	9.045	9.045	9.045	9.045	9.045	9.045	9.045

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<b>82.5</b>	6.146	6.146	6.146	6.146	6.146	6.146	6.146
<b>85.0</b>	3.363	3.363	3.363	3.363	3.363	3.363	3.363
<b>87.5</b>	1.276	1.276	1.276	1.276	1.276	1.276	1.276
<b>90.0</b>	0.336	0.336	0.336	0.336	0.336	0.336	0.336
<b>92.5</b>	0.209	0.209	0.209	0.209	0.209	0.209	0.209
<b>95.0</b>	0.314	0.314	0.314	0.314	0.314	0.314	0.314
<b>97.5</b>	0.418	0.418	0.418	0.418	0.418	0.418	0.418
<b>100.0</b>	0.628	0.628	0.628	0.628	0.628	0.628	0.628
<b>102.5</b>	0.837	0.837	0.837	0.837	0.837	0.837	0.837
<b>105.0</b>	1.151	1.151	1.151	1.151	1.151	1.151	1.151
<b>107.5</b>	1.674	1.674	1.674	1.674	1.674	1.674	1.674
<b>110.0</b>	2.301	2.301	2.301	2.301	2.301	2.301	2.301
<b>112.5</b>	3.034	3.034	3.034	3.034	3.034	3.034	3.034
<b>115.0</b>	4.185	4.185	4.185	4.185	4.185	4.185	4.185
<b>117.5</b>	5.649	5.649	5.649	5.649	5.649	5.649	5.649
<b>120.0</b>	7.637	7.637	7.637	7.637	7.637	7.637	7.637
<b>122.5</b>	10.462	10.462	10.462	10.462	10.462	10.462	10.462
<b>125.0</b>	14.437	14.437	14.437	14.437	14.437	14.437	14.437
<b>127.5</b>	20.295	20.295	20.295	20.295	20.295	20.295	20.295
<b>130.0</b>	28.038	28.038	28.038	28.038	28.038	28.038	28.038
<b>132.5</b>	37.453	37.453	37.453	37.453	37.453	37.453	37.453
<b>135.0</b>	48.333	48.333	48.333	48.333	48.333	48.333	48.333
<b>137.5</b>	68.314	68.314	68.314	68.314	68.314	68.314	68.314
<b>140.0</b>	121.147	121.147	121.147	121.147	121.147	121.147	121.147
<b>142.5</b>	180.464	180.464	180.464	180.464	180.464	180.464	180.464
<b>145.0</b>	413.760	413.760	413.760	413.760	413.760	413.760	413.760
<b>147.5</b>	744.034	744.034	744.034	744.034	744.034	744.034	744.034
<b>150.0</b>	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306
<b>152.5</b>	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340
<b>155.0</b>	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189
<b>157.5</b>	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377
<b>160.0</b>	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273
<b>162.5</b>	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229
<b>165.0</b>	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340
<b>167.5</b>	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221
<b>170.0</b>	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180
<b>172.5</b>	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912
<b>175.0</b>	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380
<b>177.5</b>	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534
<b>180.0</b>	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303

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Zone	Lumens	%Lamp	%Fixt
0-20	1486.43	N.A.	35.20
0-30	1849.04	N.A.	43.80
0-40	1976.83	N.A.	46.80
0-60	2091.86	N.A.	49.50
0-80	2138.9	N.A.	50.60
0-90	2143.11	N.A.	50.70
10-90	1516.39	N.A.	35.90
20-40	490.40	N.A.	11.60
20-50	558.89	N.A.	13.20
40-70	145.72	N.A.	3.40
60-80	47.05	N.A.	1.10
70-80	16.36	N.A.	0.40
80-90	4.21	N.A.	0.10
90-110	1.74	N.A.	0.00
90-120	6.13	N.A.	0.10
90-130	20.09	N.A.	0.50
90-150	353.24	N.A.	8.40
90-180	2081.76	N.A.	49.30
110-180	2080.02	N.A.	49.20
0-180	4224.87	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	626.72
10-20	859.71
20-30	362.61
30-40	127.79
40-50	68.50
50-60	46.53
60-70	30.69
70-80	16.36
80-90	4.21
90-100	0.39
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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PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-LN-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	84	84	84	70	70	70	57	57	57	51
1	101	97	95	92	93	90	88	86	77	76	74	65	64	63	54	54	53	48
2	94	89	84	81	88	83	79	76	72	69	67	62	60	58	52	51	50	46
3	89	82	76	72	83	77	72	68	67	64	61	58	56	54	50	48	47	44
4	84	76	70	65	78	71	66	62	63	59	56	55	53	51	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	39
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	51	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	53	47	43	58	50	45	42	46	42	40	42	39	37	39	37	35	34

# IES INDOOR REPORT

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## 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	6.1	6.8	7.1	7.7	9.0	6.1	6.8	7.1	7.7	9.0
	3H	7.5	8.1	8.5	9.1	10.4	7.5	8.1	8.5	9.1	10.4
	4H	8.0	8.5	9.0	9.5	10.8	8.0	8.5	9.0	9.5	10.8
	6H	8.3	8.8	9.3	9.8	11.1	8.3	8.8	9.3	9.8	11.1
	8H	8.4	8.9	9.4	9.9	11.2	8.4	8.9	9.4	9.9	11.2
	12H	8.4	8.9	9.5	9.9	11.2	8.4	8.9	9.5	9.9	11.2

### UGR Viewed Endwise

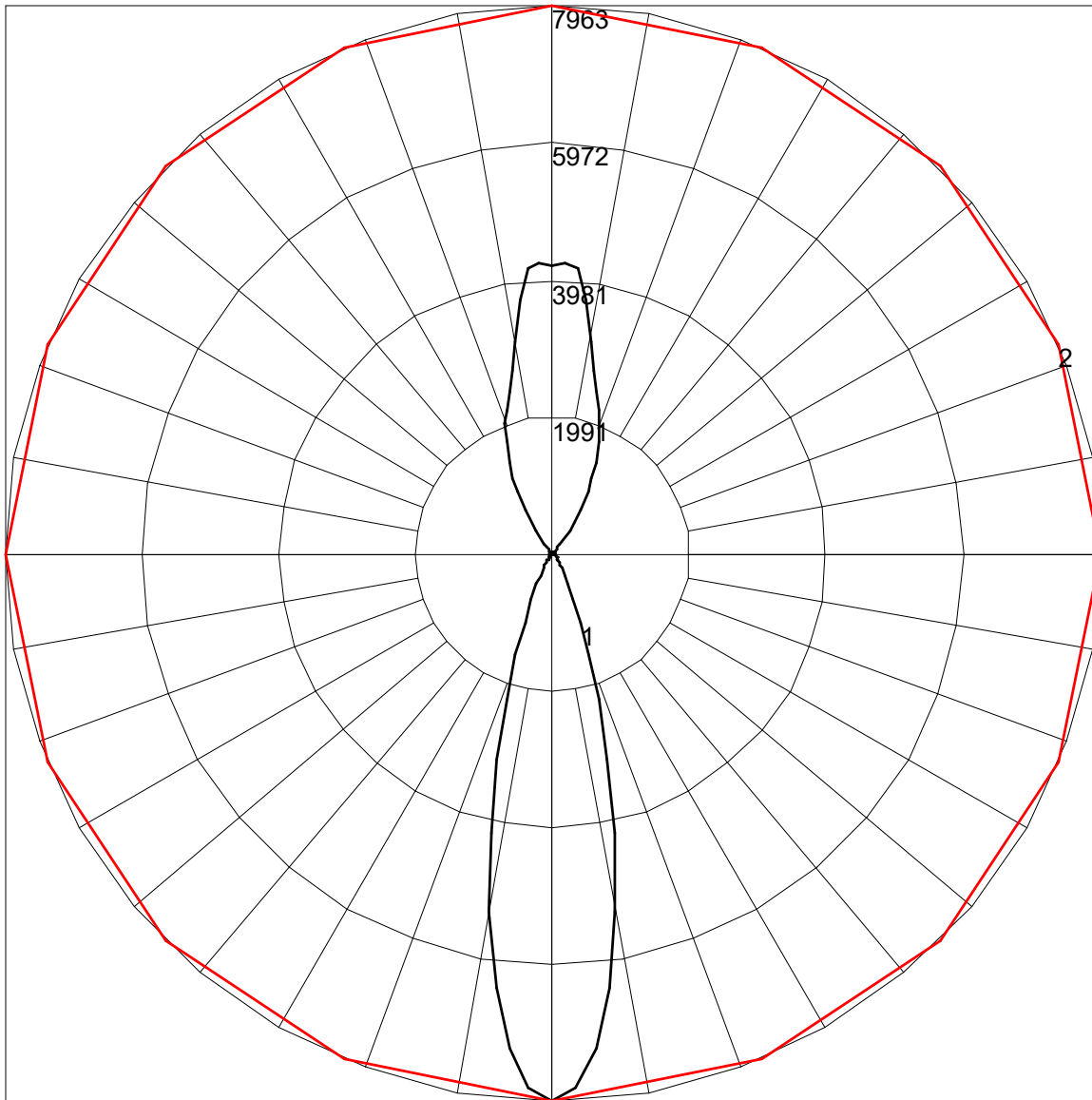
4H	2H	6.5	7.1	7.5	8.0	9.3	6.5	7.1	7.5	8.0	9.3
	3H	8.1	8.5	9.1	9.6	10.9	8.1	8.5	9.1	9.6	10.9
	4H	8.7	9.1	9.7	10.1	11.5	8.7	9.1	9.7	10.1	11.5
	6H	9.1	9.5	10.2	10.5	11.9	9.1	9.5	10.2	10.5	11.9
	8H	9.3	9.6	10.3	10.7	12.0	9.3	9.6	10.3	10.7	12.0
	12H	9.3	9.6	10.4	10.7	12.0	9.3	9.6	10.4	10.7	12.0
8H	4H	8.9	9.2	9.9	10.2	11.6	8.9	9.2	9.9	10.2	11.6
	6H	9.4	9.7	10.5	10.8	12.1	9.4	9.7	10.5	10.8	12.1
	8H	9.7	9.9	10.7	10.9	12.3	9.7	9.9	10.7	10.9	12.3
	12H	9.8	10.0	10.8	11.0	12.4	9.8	10.0	10.8	11.0	12.4
12H	4H	8.8	9.1	9.9	10.2	11.5	8.8	9.1	9.9	10.2	11.5
	6H	9.5	9.7	10.5	10.7	12.1	9.5	9.7	10.5	10.7	12.1
	8H	9.7	9.9	10.8	11.0	12.4	9.7	9.9	10.8	11.0	12.4

Maximum UGR = 12.4

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## POLAR GRAPH



Maximum Candela = 7962.877 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.)