



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-LW-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-LW-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	4047
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	84
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	27386	27386	27386
55	22800	22800	22800
65	17321	17321	17321
75	12561	12561	12561
85	8186	8186	8186

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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>
<b>0.0</b>	1248.938	1248.938	1248.938	1248.938	1248.938	1248.938	1248.938	1248.938	1248.938	1248.938
<b>2.5</b>	1241.771	1241.771	1241.771	1241.771	1241.771	1241.771	1241.771	1241.771	1241.771	1241.771
<b>5.0</b>	1229.197	1229.197	1229.197	1229.197	1229.197	1229.197	1229.197	1229.197	1229.197	1229.197
<b>7.5</b>	1220.773	1220.773	1220.773	1220.773	1220.773	1220.773	1220.773	1220.773	1220.773	1220.773
<b>10.0</b>	1213.606	1213.606	1213.606	1213.606	1213.606	1213.606	1213.606	1213.606	1213.606	1213.606
<b>12.5</b>	1209.457	1209.457	1209.457	1209.457	1209.457	1209.457	1209.457	1209.457	1209.457	1209.457
<b>15.0</b>	1199.901	1199.901	1199.901	1199.901	1199.901	1199.901	1199.901	1199.901	1199.901	1199.901
<b>17.5</b>	1183.681	1183.681	1183.681	1183.681	1183.681	1183.681	1183.681	1183.681	1183.681	1183.681
<b>20.0</b>	1160.168	1160.168	1160.168	1160.168	1160.168	1160.168	1160.168	1160.168	1160.168	1160.168
<b>22.5</b>	1113.646	1113.646	1113.646	1113.646	1113.646	1113.646	1113.646	1113.646	1113.646	1113.646
<b>25.0</b>	1034.683	1034.683	1034.683	1034.683	1034.683	1034.683	1034.683	1034.683	1034.683	1034.683
<b>27.5</b>	927.430	927.430	927.430	927.430	927.430	927.430	927.430	927.430	927.430	927.430
<b>30.0</b>	792.138	792.138	792.138	792.138	792.138	792.138	792.138	792.138	792.138	792.138
<b>32.5</b>	644.147	644.147	644.147	644.147	644.147	644.147	644.147	644.147	644.147	644.147
<b>35.0</b>	528.595	528.595	528.595	528.595	528.595	528.595	528.595	528.595	528.595	528.595
<b>37.5</b>	458.434	458.434	458.434	458.434	458.434	458.434	458.434	458.434	458.434	458.434
<b>40.0</b>	414.552	414.552	414.552	414.552	414.552	414.552	414.552	414.552	414.552	414.552
<b>42.5</b>	382.112	382.112	382.112	382.112	382.112	382.112	382.112	382.112	382.112	382.112
<b>45.0</b>	353.570	353.570	353.570	353.570	353.570	353.570	353.570	353.570	353.570	353.570
<b>47.5</b>	325.908	325.908	325.908	325.908	325.908	325.908	325.908	325.908	325.908	325.908
<b>50.0</b>	297.366	297.366	297.366	297.366	297.366	297.366	297.366	297.366	297.366	297.366
<b>52.5</b>	268.070	268.070	268.070	268.070	268.070	268.070	268.070	268.070	268.070	268.070
<b>55.0</b>	238.773	238.773	238.773	238.773	238.773	238.773	238.773	238.773	238.773	238.773
<b>57.5</b>	210.105	210.105	210.105	210.105	210.105	210.105	210.105	210.105	210.105	210.105
<b>60.0</b>	182.317	182.317	182.317	182.317	182.317	182.317	182.317	182.317	182.317	182.317
<b>62.5</b>	156.919	156.919	156.919	156.919	156.919	156.919	156.919	156.919	156.919	156.919
<b>65.0</b>	133.658	133.658	133.658	133.658	133.658	133.658	133.658	133.658	133.658	133.658
<b>67.5</b>	112.119	112.119	112.119	112.119	112.119	112.119	112.119	112.119	112.119	112.119
<b>70.0</b>	92.139	92.139	92.139	92.139	92.139	92.139	92.139	92.139	92.139	92.139
<b>72.5</b>	74.587	74.587	74.587	74.587	74.587	74.587	74.587	74.587	74.587	74.587
<b>75.0</b>	59.360	59.360	59.360	59.360	59.360	59.360	59.360	59.360	59.360	59.360
<b>77.5</b>	45.894	45.894	45.894	45.894	45.894	45.894	45.894	45.894	45.894	45.894
<b>80.0</b>	33.924	33.924	33.924	33.924	33.924	33.924	33.924	33.924	33.924	33.924
<b>82.5</b>	23.047	23.047	23.047	23.047	23.047	23.047	23.047	23.047	23.047	23.047
<b>85.0</b>	13.026	13.026	13.026	13.026	13.026	13.026	13.026	13.026	13.026	13.026
<b>87.5</b>	4.539	4.539	4.539	4.539	4.539	4.539	4.539	4.539	4.539	4.539
<b>90.0</b>	0.809	0.809	0.809	0.809	0.809	0.809	0.809	0.809	0.809	0.809
<b>92.5</b>	0.209	0.209	0.209	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	0.314	0.314	0.314
<b>97.5</b>	0.418	0.418	0.418	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	0.628	0.628	0.628
<b>102.5</b>	0.837	0.837	0.837	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	1.151	1.151	1.151
<b>107.5</b>	1.674	1.674	1.674	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	2.301	2.301	2.301
<b>112.5</b>	3.034	3.034	3.034	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	4.185	4.185	4.185
<b>117.5</b>	5.649	5.649	5.649	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	7.637	7.637	7.637
<b>122.5</b>	10.462	10.462	10.462	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	14.437	14.437	14.437
<b>127.5</b>	20.295	20.295	20.295	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	28.038	28.038	28.038
<b>132.5</b>	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. Angles

## 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	1248.938	1248.938	1248.938	1248.938	1248.938	1248.938	1248.938
2.5	1241.771	1241.771	1241.771	1241.771	1241.771	1241.771	1241.771
5.0	1229.197	1229.197	1229.197	1229.197	1229.197	1229.197	1229.197
7.5	1220.773	1220.773	1220.773	1220.773	1220.773	1220.773	1220.773
10.0	1213.606	1213.606	1213.606	1213.606	1213.606	1213.606	1213.606
12.5	1209.457	1209.457	1209.457	1209.457	1209.457	1209.457	1209.457
15.0	1199.901	1199.901	1199.901	1199.901	1199.901	1199.901	1199.901
17.5	1183.681	1183.681	1183.681	1183.681	1183.681	1183.681	1183.681
20.0	1160.168	1160.168	1160.168	1160.168	1160.168	1160.168	1160.168
22.5	1113.646	1113.646	1113.646	1113.646	1113.646	1113.646	1113.646
25.0	1034.683	1034.683	1034.683	1034.683	1034.683	1034.683	1034.683
27.5	927.430	927.430	927.430	927.430	927.430	927.430	927.430
30.0	792.138	792.138	792.138	792.138	792.138	792.138	792.138
32.5	644.147	644.147	644.147	644.147	644.147	644.147	644.147
35.0	528.595	528.595	528.595	528.595	528.595	528.595	528.595
37.5	458.434	458.434	458.434	458.434	458.434	458.434	458.434
40.0	414.552	414.552	414.552	414.552	414.552	414.552	414.552
42.5	382.112	382.112	382.112	382.112	382.112	382.112	382.112
45.0	353.570	353.570	353.570	353.570	353.570	353.570	353.570
47.5	325.908	325.908	325.908	325.908	325.908	325.908	325.908
50.0	297.366	297.366	297.366	297.366	297.366	297.366	297.366
52.5	268.070	268.070	268.070	268.070	268.070	268.070	268.070
55.0	238.773	238.773	238.773	238.773	238.773	238.773	238.773
57.5	210.105	210.105	210.105	210.105	210.105	210.105	210.105
60.0	182.317	182.317	182.317	182.317	182.317	182.317	182.317
62.5	156.919	156.919	156.919	156.919	156.919	156.919	156.919
65.0	133.658	133.658	133.658	133.658	133.658	133.658	133.658
67.5	112.119	112.119	112.119	112.119	112.119	112.119	112.119
70.0	92.139	92.139	92.139	92.139	92.139	92.139	92.139
72.5	74.587	74.587	74.587	74.587	74.587	74.587	74.587
75.0	59.360	59.360	59.360	59.360	59.360	59.360	59.360
77.5	45.894	45.894	45.894	45.894	45.894	45.894	45.894
80.0	33.924	33.924	33.924	33.924	33.924	33.924	33.924

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82.5	23.047	23.047	23.047	23.047	23.047	23.047	23.047
85.0	13.026	13.026	13.026	13.026	13.026	13.026	13.026
87.5	4.539	4.539	4.539	4.539	4.539	4.539	4.539
90.0	0.809	0.809	0.809	0.809	0.809	0.809	0.809
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	454.89	N.A.	11.20
0-30	918.77	N.A.	22.70
0-40	1265.09	N.A.	31.30
0-60	1751.94	N.A.	43.30
0-80	1949.36	N.A.	48.20
0-90	1965.13	N.A.	48.60
10-90	1848.21	N.A.	45.70
20-40	810.20	N.A.	20.00
20-50	1083.43	N.A.	26.80
40-70	620.26	N.A.	15.30
60-80	197.43	N.A.	4.90
70-80	64.01	N.A.	1.60
80-90	15.77	N.A.	0.40
90-110	1.80	N.A.	0.00
90-120	6.19	N.A.	0.20
90-130	20.16	N.A.	0.50
90-150	353.30	N.A.	8.70
90-180	2081.82	N.A.	51.40
110-180	2080.02	N.A.	51.40
0-180	4046.96	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	116.92
10-20	337.98
20-30	463.87
30-40	346.33
40-50	273.24
50-60	213.61
60-70	133.42
70-80	64.01
80-90	15.77
90-100	0.45
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-LW-WHD-WM 4000K\_.IES

## 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	98	98	98	98	83	83	83	68	68	68	55	55	55	49
1	98	95	91	88	91	87	84	82	74	72	70	61	60	59	50	49	48	43
2	91	84	78	74	83	78	73	69	66	62	59	55	53	51	45	44	42	38
3	83	75	68	63	77	69	63	59	59	55	51	50	47	44	41	39	37	33
4	77	67	60	54	71	62	56	51	53	49	45	45	42	39	38	35	33	30
5	71	60	53	47	66	56	50	45	48	43	40	41	38	35	35	32	30	27
6	66	55	47	42	61	51	44	40	44	39	35	38	34	31	32	29	27	24
7	61	50	42	37	57	47	40	35	41	35	32	35	31	28	30	27	25	22
8	57	46	38	33	53	43	36	32	37	32	29	32	28	26	27	25	22	20
9	53	42	35	30	50	39	33	29	35	30	26	30	26	23	26	23	21	19
10	50	39	32	27	47	36	30	26	32	27	24	28	24	21	24	21	19	17

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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	16.6	17.4	17.6	18.4	19.7	16.6	17.4	17.6	18.4	19.7
	3H	17.8	18.5	18.8	19.5	20.8	17.8	18.5	18.8	19.5	20.8
	4H	18.2	18.8	19.2	19.8	21.1	18.2	18.8	19.2	19.8	21.1
	6H	18.4	19.0	19.4	20.0	21.3	18.4	19.0	19.4	20.0	21.3
	8H	18.5	19.0	19.5	20.0	21.4	18.5	19.0	19.5	20.0	21.4
	12H	18.5	19.0	19.5	20.0	21.4	18.5	19.0	19.5	20.0	21.4

### UGR Viewed Endwise

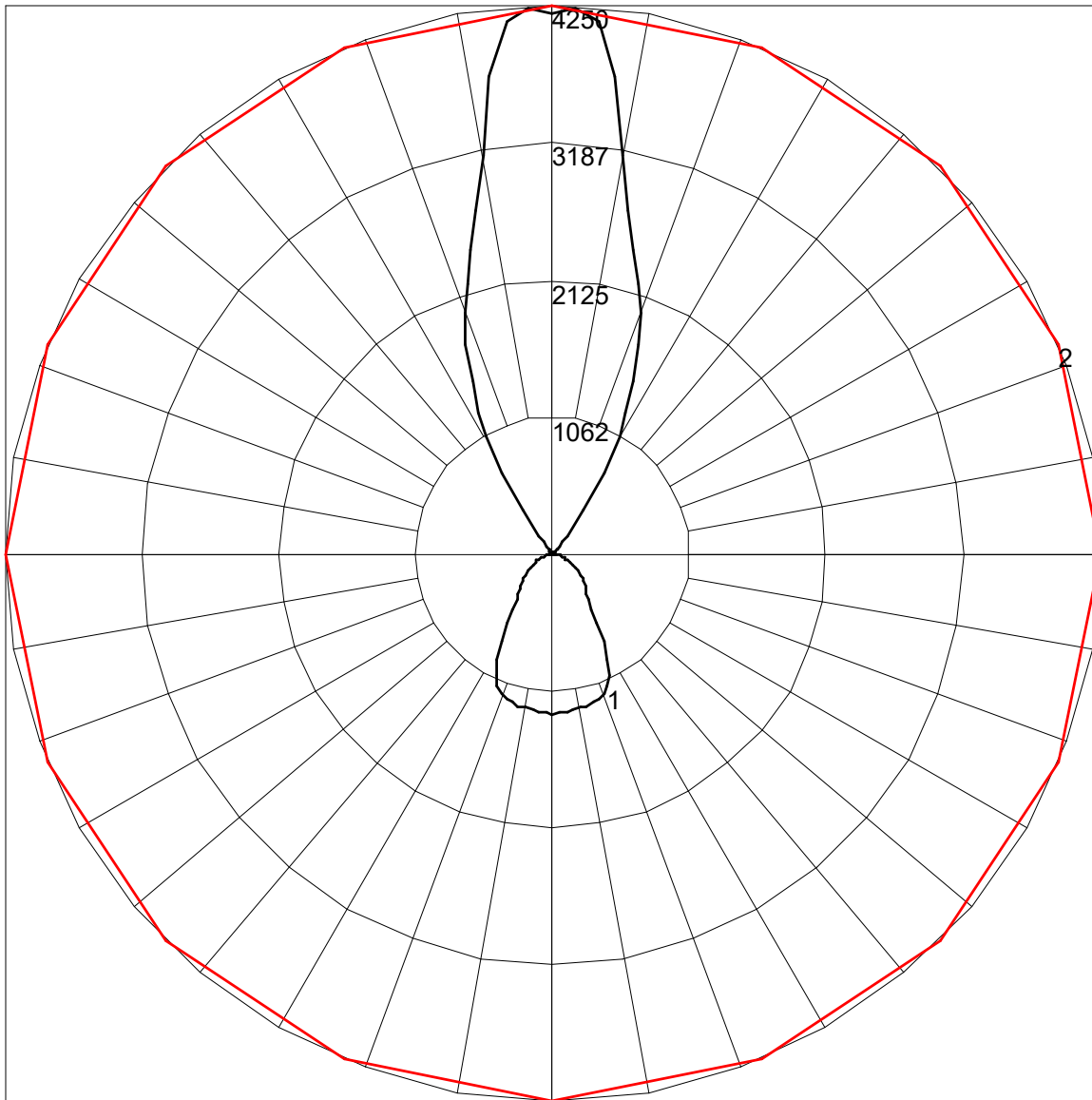
4H	2H	17.0	17.6	18.0	18.6	20.0	17.0	17.6	18.0	18.6	20.0
	3H	18.3	18.9	19.3	19.9	21.2	18.3	18.9	19.3	19.9	21.2
	4H	18.8	19.3	19.8	20.3	21.7	18.8	19.3	19.8	20.3	21.7
	6H	19.1	19.6	20.2	20.6	22.0	19.1	19.6	20.2	20.6	22.0
	8H	19.2	19.6	20.3	20.7	22.1	19.2	19.6	20.3	20.7	22.1
	12H	19.3	19.6	20.3	20.7	22.1	19.3	19.6	20.3	20.7	22.1
8H	4H	18.9	19.3	20.0	20.4	21.7	18.9	19.3	20.0	20.4	21.7
	6H	19.4	19.7	20.4	20.8	22.1	19.4	19.7	20.4	20.8	22.1
	8H	19.5	19.8	20.6	20.9	22.3	19.5	19.8	20.6	20.9	22.3
	12H	19.6	19.9	20.7	20.9	22.4	19.6	19.9	20.7	20.9	22.4
12H	4H	18.9	19.2	20.0	20.3	21.7	18.9	19.2	20.0	20.3	21.7
	6H	19.4	19.7	20.4	20.7	22.1	19.4	19.7	20.4	20.7	22.1
	8H	19.6	19.8	20.6	20.9	22.3	19.6	19.8	20.6	20.9	22.3

Maximum UGR = 22.4

# IES INDOOR REPORT

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## POLAR GRAPH



Maximum Candela = 4249.534 Located At Horizontal Angle = 0, Vertical Angle = 177.5

# 1 - Vertical Plane Through Horizontal Angles (90 - 270)

# 2 - Horizontal Cone Through Vertical Angle (177.5) (Through Max. Cd.)