



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 192\_168\_37\_234-10\_46\_35-MERGED.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.04 & #12326812.09

[TESTLAB]

[ISSUE DATE] 25-FEB-2021

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.

[LUMCAT] 8CRDI-TL-P29-8TWU-P29-8TWD-xxx-PoE PR-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	4871
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	50
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	9184	9184	9184
55	6724	6724	6724
65	5479	5479	5479
75	4459	4459	4459
85	2933	2933	2933

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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>	5785.573	5785.573	5785.573	5785.573	5785.573	5785.573	5785.573	5785.573	5785.573	5785.573
<b>2.5</b>	5724.223	5724.223	5724.223	5724.223	5724.223	5724.223	5724.223	5724.223	5724.223	5724.223
<b>5.0</b>	5558.845	5558.845	5558.845	5558.845	5558.845	5558.845	5558.845	5558.845	5558.845	5558.845
<b>7.5</b>	5286.771	5286.771	5286.771	5286.771	5286.771	5286.771	5286.771	5286.771	5286.771	5286.771
<b>10.0</b>	4882.661	4882.661	4882.661	4882.661	4882.661	4882.661	4882.661	4882.661	4882.661	4882.661
<b>12.5</b>	4330.511	4330.511	4330.511	4330.511	4330.511	4330.511	4330.511	4330.511	4330.511	4330.511
<b>15.0</b>	3638.323	3638.323	3638.323	3638.323	3638.323	3638.323	3638.323	3638.323	3638.323	3638.323
<b>17.5</b>	2895.454	2895.454	2895.454	2895.454	2895.454	2895.454	2895.454	2895.454	2895.454	2895.454
<b>20.0</b>	2184.594	2184.594	2184.594	2184.594	2184.594	2184.594	2184.594	2184.594	2184.594	2184.594
<b>22.5</b>	1592.433	1592.433	1592.433	1592.433	1592.433	1592.433	1592.433	1592.433	1592.433	1592.433
<b>25.0</b>	1129.641	1129.641	1129.641	1129.641	1129.641	1129.641	1129.641	1129.641	1129.641	1129.641
<b>27.5</b>	796.750	796.750	796.750	796.750	796.750	796.750	796.750	796.750	796.750	796.750
<b>30.0</b>	566.154	566.154	566.154	566.154	566.154	566.154	566.154	566.154	566.154	566.154
<b>32.5</b>	406.377	406.377	406.377	406.377	406.377	406.377	406.377	406.377	406.377	406.377
<b>35.0</b>	295.414	295.414	295.414	295.414	295.414	295.414	295.414	295.414	295.414	295.414
<b>37.5</b>	220.593	220.593	220.593	220.593	220.593	220.593	220.593	220.593	220.593	220.593
<b>40.0</b>	172.314	172.314	172.314	172.314	172.314	172.314	172.314	172.314	172.314	172.314
<b>42.5</b>	140.572	140.572	140.572	140.572	140.572	140.572	140.572	140.572	140.572	140.572
<b>45.0</b>	118.566	118.566	118.566	118.566	118.566	118.566	118.566	118.566	118.566	118.566
<b>47.5</b>	102.428	102.428	102.428	102.428	102.428	102.428	102.428	102.428	102.428	102.428
<b>50.0</b>	89.891	89.891	89.891	89.891	89.891	89.891	89.891	89.891	89.891	89.891
<b>52.5</b>	79.488	79.488	79.488	79.488	79.488	79.488	79.488	79.488	79.488	79.488
<b>55.0</b>	70.419	70.419	70.419	70.419	70.419	70.419	70.419	70.419	70.419	70.419
<b>57.5</b>	62.284	62.284	62.284	62.284	62.284	62.284	62.284	62.284	62.284	62.284
<b>60.0</b>	55.215	55.215	55.215	55.215	55.215	55.215	55.215	55.215	55.215	55.215
<b>62.5</b>	48.547	48.547	48.547	48.547	48.547	48.547	48.547	48.547	48.547	48.547
<b>65.0</b>	42.278	42.278	42.278	42.278	42.278	42.278	42.278	42.278	42.278	42.278
<b>67.5</b>	36.410	36.410	36.410	36.410	36.410	36.410	36.410	36.410	36.410	36.410
<b>70.0</b>	30.942	30.942	30.942	30.942	30.942	30.942	30.942	30.942	30.942	30.942
<b>72.5</b>	25.874	25.874	25.874	25.874	25.874	25.874	25.874	25.874	25.874	25.874
<b>75.0</b>	21.072	21.072	21.072	21.072	21.072	21.072	21.072	21.072	21.072	21.072
<b>77.5</b>	16.538	16.538	16.538	16.538	16.538	16.538	16.538	16.538	16.538	16.538
<b>80.0</b>	12.270	12.270	12.270	12.270	12.270	12.270	12.270	12.270	12.270	12.270
<b>82.5</b>	8.269	8.269	8.269	8.269	8.269	8.269	8.269	8.269	8.269	8.269
<b>85.0</b>	4.668	4.668	4.668	4.668	4.668	4.668	4.668	4.668	4.668	4.668
<b>87.5</b>	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867
<b>90.0</b>	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521
<b>92.5</b>	0.242	0.242	0.242	0.242	0.242	0.242	0.242	0.242	0.242	0.242
<b>95.0</b>	0.363	0.363	0.363	0.363	0.363	0.363	0.363	0.363	0.363	0.363
<b>97.5</b>	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484
<b>100.0</b>	0.727	0.727	0.727	0.727	0.727	0.727	0.727	0.727	0.727	0.727
<b>102.5</b>	0.969	0.969	0.969	0.969	0.969	0.969	0.969	0.969	0.969	0.969
<b>105.0</b>	1.332	1.332	1.332	1.332	1.332	1.332	1.332	1.332	1.332	1.332
<b>107.5</b>	1.938	1.938	1.938	1.938	1.938	1.938	1.938	1.938	1.938	1.938
<b>110.0</b>	2.664	2.664	2.664	2.664	2.664	2.664	2.664	2.664	2.664	2.664
<b>112.5</b>	3.512	3.512	3.512	3.512	3.512	3.512	3.512	3.512	3.512	3.512
<b>115.0</b>	4.844	4.844	4.844	4.844	4.844	4.844	4.844	4.844	4.844	4.844
<b>117.5</b>	6.539	6.539	6.539	6.539	6.539	6.539	6.539	6.539	6.539	6.539
<b>120.0</b>	8.840	8.840	8.840	8.840	8.840	8.840	8.840	8.840	8.840	8.840
<b>122.5</b>	12.110	12.110	12.110	12.110	12.110	12.110	12.110	12.110	12.110	12.110
<b>125.0</b>	16.712	16.712	16.712	16.712	16.712	16.712	16.712	16.712	16.712	16.712
<b>127.5</b>	23.493	23.493	23.493	23.493	23.493	23.493	23.493	23.493	23.493	23.493
<b>130.0</b>	32.455	32.455	32.455	32.455	32.455	32.455	32.455	32.455	32.455	32.455
<b>132.5</b>	43.353	43.353	43.353	43.353	43.353	43.353	43.353	43.353	43.353	43.353

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**CANDELA TABULATION - (Cont.)**

135.0	55.947	55.947	55.947	55.947	55.947	55.947	55.947	55.947	55.947	55.947
137.5	79.077	79.077	79.077	79.077	79.077	79.077	79.077	79.077	79.077	79.077
140.0	140.232	140.232	140.232	140.232	140.232	140.232	140.232	140.232	140.232	140.232
142.5	208.895	208.895	208.895	208.895	208.895	208.895	208.895	208.895	208.895	208.895
145.0	478.944	478.944	478.944	478.944	478.944	478.944	478.944	478.944	478.944	478.944
147.5	861.250	861.250	861.250	861.250	861.250	861.250	861.250	861.250	861.250	861.250
150.0	1214.614	1214.614	1214.614	1214.614	1214.614	1214.614	1214.614	1214.614	1214.614	1214.614
152.5	1425.325	1425.325	1425.325	1425.325	1425.325	1425.325	1425.325	1425.325	1425.325	1425.325
155.0	1709.906	1709.906	1709.906	1709.906	1709.906	1709.906	1709.906	1709.906	1709.906	1709.906
157.5	2029.605	2029.605	2029.605	2029.605	2029.605	2029.605	2029.605	2029.605	2029.605	2029.605
160.0	2315.396	2315.396	2315.396	2315.396	2315.396	2315.396	2315.396	2315.396	2315.396	2315.396
162.5	2550.327	2550.327	2550.327	2550.327	2550.327	2550.327	2550.327	2550.327	2550.327	2550.327
165.0	2815.532	2815.532	2815.532	2815.532	2815.532	2815.532	2815.532	2815.532	2815.532	2815.532
167.5	3153.395	3153.395	3153.395	3153.395	3153.395	3153.395	3153.395	3153.395	3153.395	3153.395
170.0	3624.467	3624.467	3624.467	3624.467	3624.467	3624.467	3624.467	3624.467	3624.467	3624.467
172.5	4325.627	4325.627	4325.627	4325.627	4325.627	4325.627	4325.627	4325.627	4325.627	4325.627
175.0	4810.019	4810.019	4810.019	4810.019	4810.019	4810.019	4810.019	4810.019	4810.019	4810.019
177.5	4919.006	4919.006	4919.006	4919.006	4919.006	4919.006	4919.006	4919.006	4919.006	4919.006
180.0	4858.548	4858.548	4858.548	4858.548	4858.548	4858.548	4858.548	4858.548	4858.548	4858.548

**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	5785.573	5785.573	5785.573	5785.573	5785.573	5785.573	5785.573
2.5	5724.223	5724.223	5724.223	5724.223	5724.223	5724.223	5724.223
5.0	5558.845	5558.845	5558.845	5558.845	5558.845	5558.845	5558.845
7.5	5286.771	5286.771	5286.771	5286.771	5286.771	5286.771	5286.771
10.0	4882.661	4882.661	4882.661	4882.661	4882.661	4882.661	4882.661
12.5	4330.511	4330.511	4330.511	4330.511	4330.511	4330.511	4330.511
15.0	3638.323	3638.323	3638.323	3638.323	3638.323	3638.323	3638.323
17.5	2895.454	2895.454	2895.454	2895.454	2895.454	2895.454	2895.454
20.0	2184.594	2184.594	2184.594	2184.594	2184.594	2184.594	2184.594
22.5	1592.433	1592.433	1592.433	1592.433	1592.433	1592.433	1592.433
25.0	1129.641	1129.641	1129.641	1129.641	1129.641	1129.641	1129.641
27.5	796.750	796.750	796.750	796.750	796.750	796.750	796.750
30.0	566.154	566.154	566.154	566.154	566.154	566.154	566.154
32.5	406.377	406.377	406.377	406.377	406.377	406.377	406.377
35.0	295.414	295.414	295.414	295.414	295.414	295.414	295.414
37.5	220.593	220.593	220.593	220.593	220.593	220.593	220.593
40.0	172.314	172.314	172.314	172.314	172.314	172.314	172.314
42.5	140.572	140.572	140.572	140.572	140.572	140.572	140.572
45.0	118.566	118.566	118.566	118.566	118.566	118.566	118.566
47.5	102.428	102.428	102.428	102.428	102.428	102.428	102.428
50.0	89.891	89.891	89.891	89.891	89.891	89.891	89.891
52.5	79.488	79.488	79.488	79.488	79.488	79.488	79.488
55.0	70.419	70.419	70.419	70.419	70.419	70.419	70.419
57.5	62.284	62.284	62.284	62.284	62.284	62.284	62.284
60.0	55.215	55.215	55.215	55.215	55.215	55.215	55.215
62.5	48.547	48.547	48.547	48.547	48.547	48.547	48.547
65.0	42.278	42.278	42.278	42.278	42.278	42.278	42.278
67.5	36.410	36.410	36.410	36.410	36.410	36.410	36.410
70.0	30.942	30.942	30.942	30.942	30.942	30.942	30.942
72.5	25.874	25.874	25.874	25.874	25.874	25.874	25.874
75.0	21.072	21.072	21.072	21.072	21.072	21.072	21.072
77.5	16.538	16.538	16.538	16.538	16.538	16.538	16.538
80.0	12.270	12.270	12.270	12.270	12.270	12.270	12.270

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**CANDELA TABULATION - (Cont.)**

<b>82.5</b>	8.269	8.269	8.269	8.269	8.269	8.269	8.269
<b>85.0</b>	4.668	4.668	4.668	4.668	4.668	4.668	4.668
<b>87.5</b>	1.867	1.867	1.867	1.867	1.867	1.867	1.867
<b>90.0</b>	0.521	0.521	0.521	0.521	0.521	0.521	0.521
<b>92.5</b>	0.242	0.242	0.242	0.242	0.242	0.242	0.242
<b>95.0</b>	0.363	0.363	0.363	0.363	0.363	0.363	0.363
<b>97.5</b>	0.484	0.484	0.484	0.484	0.484	0.484	0.484
<b>100.0</b>	0.727	0.727	0.727	0.727	0.727	0.727	0.727
<b>102.5</b>	0.969	0.969	0.969	0.969	0.969	0.969	0.969
<b>105.0</b>	1.332	1.332	1.332	1.332	1.332	1.332	1.332
<b>107.5</b>	1.938	1.938	1.938	1.938	1.938	1.938	1.938
<b>110.0</b>	2.664	2.664	2.664	2.664	2.664	2.664	2.664
<b>112.5</b>	3.512	3.512	3.512	3.512	3.512	3.512	3.512
<b>115.0</b>	4.844	4.844	4.844	4.844	4.844	4.844	4.844
<b>117.5</b>	6.539	6.539	6.539	6.539	6.539	6.539	6.539
<b>120.0</b>	8.840	8.840	8.840	8.840	8.840	8.840	8.840
<b>122.5</b>	12.110	12.110	12.110	12.110	12.110	12.110	12.110
<b>125.0</b>	16.712	16.712	16.712	16.712	16.712	16.712	16.712
<b>127.5</b>	23.493	23.493	23.493	23.493	23.493	23.493	23.493
<b>130.0</b>	32.455	32.455	32.455	32.455	32.455	32.455	32.455
<b>132.5</b>	43.353	43.353	43.353	43.353	43.353	43.353	43.353
<b>135.0</b>	55.947	55.947	55.947	55.947	55.947	55.947	55.947
<b>137.5</b>	79.077	79.077	79.077	79.077	79.077	79.077	79.077
<b>140.0</b>	140.232	140.232	140.232	140.232	140.232	140.232	140.232
<b>142.5</b>	208.895	208.895	208.895	208.895	208.895	208.895	208.895
<b>145.0</b>	478.944	478.944	478.944	478.944	478.944	478.944	478.944
<b>147.5</b>	861.250	861.250	861.250	861.250	861.250	861.250	861.250
<b>150.0</b>	1214.614	1214.614	1214.614	1214.614	1214.614	1214.614	1214.614
<b>152.5</b>	1425.325	1425.325	1425.325	1425.325	1425.325	1425.325	1425.325
<b>155.0</b>	1709.906	1709.906	1709.906	1709.906	1709.906	1709.906	1709.906
<b>157.5</b>	2029.605	2029.605	2029.605	2029.605	2029.605	2029.605	2029.605
<b>160.0</b>	2315.396	2315.396	2315.396	2315.396	2315.396	2315.396	2315.396
<b>162.5</b>	2550.327	2550.327	2550.327	2550.327	2550.327	2550.327	2550.327
<b>165.0</b>	2815.532	2815.532	2815.532	2815.532	2815.532	2815.532	2815.532
<b>167.5</b>	3153.395	3153.395	3153.395	3153.395	3153.395	3153.395	3153.395
<b>170.0</b>	3624.467	3624.467	3624.467	3624.467	3624.467	3624.467	3624.467
<b>172.5</b>	4325.627	4325.627	4325.627	4325.627	4325.627	4325.627	4325.627
<b>175.0</b>	4810.019	4810.019	4810.019	4810.019	4810.019	4810.019	4810.019
<b>177.5</b>	4919.006	4919.006	4919.006	4919.006	4919.006	4919.006	4919.006
<b>180.0</b>	4858.548	4858.548	4858.548	4858.548	4858.548	4858.548	4858.548

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1489.85	N.A.	30.60
0-30	2034.39	N.A.	41.80
0-40	2232.52	N.A.	45.80
0-60	2390.63	N.A.	49.10
0-80	2455.17	N.A.	50.40
0-90	2460.94	N.A.	50.50
10-90	1951.49	N.A.	40.10
20-40	742.67	N.A.	15.20
20-50	837.21	N.A.	17.20
40-70	200.22	N.A.	4.10
60-80	64.54	N.A.	1.30
70-80	22.43	N.A.	0.50
80-90	5.77	N.A.	0.10
90-110	2.03	N.A.	0.00
90-120	7.11	N.A.	0.10
90-130	23.28	N.A.	0.50
90-150	408.91	N.A.	8.40
90-180	2409.74	N.A.	49.50
110-180	2407.71	N.A.	49.40
0-180	4870.67	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	509.45
10-20	980.41
20-30	544.54
30-40	198.13
40-50	94.54
50-60	63.57
60-70	42.11
70-80	22.43
80-90	5.77
90-100	0.47
100-110	1.56
110-120	5.08
120-130	16.16
130-140	50.26
140-150	335.37
150-160	786.40
160-170	795.89
170-180	418.54

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : 192\_168\_37\_234-10\_46\_35-MERGED.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	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	41	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**  
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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	7.7	8.3	8.7	9.3	10.6	UGR Viewed Endwise			
	3H	9.0	9.6	10.0	10.6	11.9	7.7	8.3	8.7	9.3
	4H	9.5	10.1	10.6	11.1	12.4	9.0	9.6	10.0	10.6
	6H	9.9	10.4	10.9	11.4	12.7	9.5	10.1	10.6	11.1
	8H	10.0	10.5	11.0	11.5	12.8	9.9	10.4	10.9	11.4
	12H	10.0	10.5	11.0	11.5	12.8	10.0	10.5	11.0	11.5

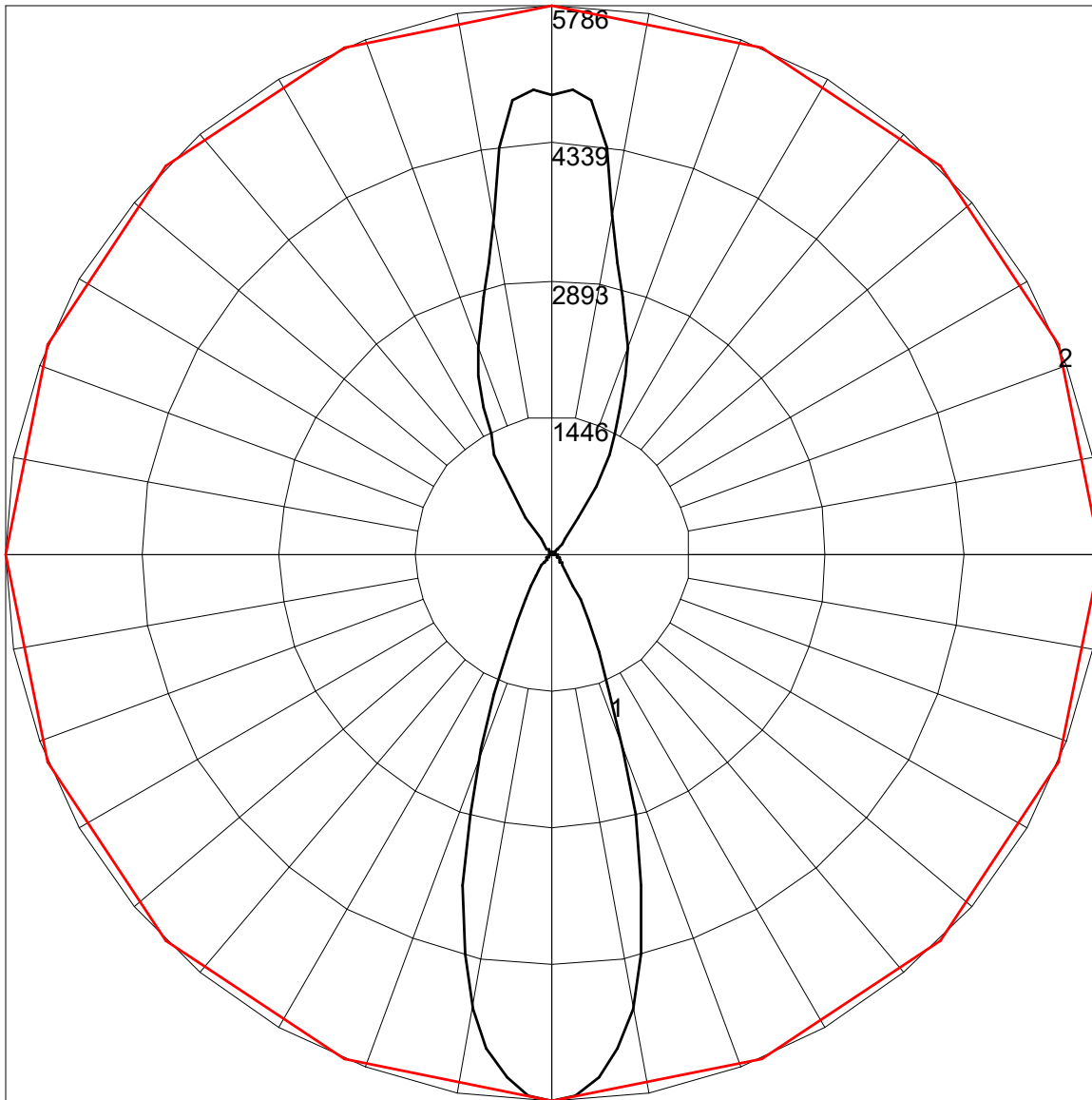
4H	2H	8.1	8.6	9.1	9.6	10.9	8.1	8.6	9.1	9.6
	3H	9.6	10.1	10.7	11.1	12.5	8.6	9.1	9.6	10.9
	4H	10.3	10.7	11.3	11.7	13.1	9.6	10.1	10.7	11.1
	6H	10.7	11.1	11.8	12.1	13.5	10.3	10.7	11.3	11.7
	8H	10.9	11.2	11.9	12.2	13.6	10.7	11.1	11.8	12.1
	12H	10.9	11.2	12.0	12.3	13.6	10.9	11.2	11.9	12.2

8H	4H	10.4	10.8	11.5	11.8	13.2	10.4	10.8	11.5	11.8
	6H	11.0	11.3	12.1	12.4	13.7	10.8	11.5	11.8	13.2
	8H	11.2	11.5	12.3	12.5	13.9	11.0	11.3	12.1	12.4
	12H	11.3	11.5	12.4	12.6	14.0	11.2	11.5	12.3	12.5

12H	4H	10.4	10.7	11.5	11.8	13.1	11.5	11.8	13.2	13.7
	6H	11.0	11.3	12.1	12.3	13.7	11.8	12.1	12.4	13.1
	8H	11.3	11.5	12.3	12.5	13.9	11.3	11.5	12.3	12.5

Maximum UGR = 14.0

POLAR GRAPH



Maximum Candela = 5785.573 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.)