



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CSDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-CSU-LM-WHD-WM_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13257153.18 and #13257153.19

[TESTLAB]

[ISSUE DATE] 8-FEB-2021

[MANUFAC] H E Williams Inc

[LUMCAT] 4CSDI-L12-835U-L12-835D-xxx-DIM1-UNV-OM-CSU-LM-WHD-WM

[MORE]

[LUMINAIRE] White formed aluminum housing, medium distrib anodized aluminum reflector trim w/clear cover glass up,

[MORE] medium distrib white painted flush prismatic lens trim down

[LAMP] Two white LEDs (one up/one down)

[BALLAST] (2) ERP PHB30W-0700-42 Drivers

[OTHER]

[OTHER] This test was performed using the calibrated photodetector met

[MORE] hod of absolute photometry.

[CONVERT] Photometric web converted from original test data

[CONVERT] Luminaire test position and photometric web converted from original test data

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 2397 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 85 |
| Total Luminaire Watts | 28.2 |
| 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 | Rectangular |
| Luminous Length (0-180) | 0.21 ft |
| Luminous Width (90-270) | 0.21 ft |
| Luminous Height | 0.00 ft |

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CSDI-L12-835U-L12-835D-XXX-DIM1-UNV-OM-CSU-LM-WHD-WM_.IES****LUMINANCE DATA (cd/sq.m)**

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 37541 | 42272 | 37711 |
| 55 | 27209 | 29829 | 27768 |
| 65 | 22897 | 23039 | 22897 |
| 75 | 17494 | 17107 | 17881 |
| 85 | 10344 | 9195 | 11034 |

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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> |
|-------|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 0.0 | 3196.596 | 3196.596 | 3196.596 | 3196.596 | 3196.596 | 3196.596 | 3196.596 | 3196.596 | 3196.596 |
| 2.5 | 3156.296 | 3144.206 | 3146.624 | 3155.490 | 3159.520 | 3155.490 | 3146.624 | 3144.206 | 3156.296 |
| 5.0 | 3028.948 | 3019.276 | 3024.918 | 3031.366 | 3034.590 | 3031.366 | 3024.918 | 3019.276 | 3028.948 |
| 7.5 | 2848.404 | 2837.926 | 2841.956 | 2843.568 | 2842.762 | 2843.568 | 2841.956 | 2837.926 | 2848.404 |
| 10.0 | 2580.006 | 2574.364 | 2581.618 | 2571.946 | 2559.856 | 2571.946 | 2581.618 | 2574.364 | 2580.006 |
| 12.5 | 2163.304 | 2175.394 | 2196.350 | 2172.170 | 2146.378 | 2172.170 | 2196.350 | 2175.394 | 2163.304 |
| 15.0 | 1636.986 | 1668.420 | 1713.556 | 1682.122 | 1644.240 | 1682.122 | 1713.556 | 1668.420 | 1636.986 |
| 17.5 | 1134.042 | 1179.984 | 1243.658 | 1209.000 | 1163.864 | 1209.000 | 1243.658 | 1179.984 | 1134.042 |
| 20.0 | 767.715 | 817.284 | 886.600 | 846.300 | 799.713 | 846.300 | 886.600 | 817.284 | 767.715 |
| 22.5 | 554.206 | 596.601 | 660.114 | 613.608 | 570.406 | 613.608 | 660.114 | 596.601 | 554.206 |
| 25.0 | 428.631 | 464.981 | 524.787 | 471.913 | 431.371 | 471.913 | 524.787 | 464.981 | 428.631 |
| 27.5 | 337.553 | 373.097 | 431.774 | 375.515 | 335.860 | 375.515 | 431.774 | 373.097 | 337.553 |
| 30.0 | 266.705 | 298.865 | 356.494 | 300.477 | 268.479 | 300.477 | 356.494 | 298.865 | 266.705 |
| 32.5 | 218.829 | 240.349 | 289.112 | 244.218 | 222.456 | 244.218 | 289.112 | 240.349 | 218.829 |
| 35.0 | 186.992 | 200.372 | 232.370 | 204.402 | 189.007 | 204.402 | 232.370 | 200.372 | 186.992 |
| 37.5 | 163.779 | 172.484 | 190.458 | 175.063 | 163.779 | 175.063 | 190.458 | 172.484 | 163.779 |
| 40.0 | 143.146 | 150.722 | 160.716 | 151.931 | 143.146 | 151.931 | 160.716 | 150.722 | 143.146 |
| 42.5 | 123.802 | 131.862 | 138.148 | 132.668 | 124.043 | 132.668 | 138.148 | 131.862 | 123.802 |
| 45.0 | 106.795 | 114.855 | 120.255 | 115.742 | 107.279 | 115.742 | 120.255 | 114.855 | 106.795 |
| 47.5 | 92.206 | 99.460 | 104.861 | 100.589 | 93.093 | 100.589 | 104.861 | 99.460 | 92.206 |
| 50.0 | 80.036 | 86.161 | 90.917 | 87.451 | 81.245 | 87.451 | 90.917 | 86.161 | 80.036 |
| 52.5 | 70.444 | 75.200 | 78.988 | 76.731 | 71.815 | 76.731 | 78.988 | 75.200 | 70.444 |
| 55.0 | 62.787 | 66.414 | 68.832 | 67.785 | 64.077 | 67.785 | 68.832 | 66.414 | 62.787 |
| 57.5 | 56.501 | 58.838 | 60.128 | 60.047 | 57.548 | 60.047 | 60.128 | 58.838 | 56.501 |
| 60.0 | 50.939 | 52.229 | 52.551 | 53.115 | 51.100 | 53.115 | 52.551 | 52.229 | 50.939 |
| 62.5 | 44.894 | 46.023 | 45.620 | 46.426 | 44.894 | 46.426 | 45.620 | 46.023 | 44.894 |
| 65.0 | 38.930 | 39.736 | 39.172 | 39.897 | 38.930 | 39.897 | 39.172 | 39.736 | 38.930 |
| 67.5 | 33.288 | 33.610 | 33.127 | 34.013 | 33.368 | 34.013 | 33.127 | 33.610 | 33.288 |
| 70.0 | 27.968 | 28.049 | 27.565 | 28.532 | 28.129 | 28.532 | 27.565 | 28.049 | 27.968 |
| 72.5 | 22.890 | 22.890 | 22.407 | 23.374 | 23.213 | 23.374 | 22.407 | 22.890 | 22.890 |
| 75.0 | 18.216 | 18.216 | 17.813 | 18.538 | 18.619 | 18.538 | 17.813 | 18.216 | 18.216 |
| 77.5 | 13.944 | 13.863 | 13.541 | 14.105 | 14.266 | 14.105 | 13.541 | 13.863 | 13.944 |
| 80.0 | 10.075 | 9.914 | 9.672 | 10.156 | 10.478 | 10.156 | 9.672 | 9.914 | 10.075 |
| 82.5 | 6.609 | 6.367 | 6.206 | 6.609 | 6.932 | 6.609 | 6.206 | 6.367 | 6.609 |
| 85.0 | 3.627 | 3.385 | 3.224 | 3.546 | 3.869 | 3.546 | 3.224 | 3.385 | 3.627 |
| 87.5 | 0.645 | 0.887 | 0.967 | 1.048 | 1.128 | 1.048 | 0.967 | 0.887 | 0.645 |
| 90.0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 92.5 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| 95.0 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| 97.5 | 0.199 | 0.199 | 0.199 | 0.199 | 0.199 | 0.199 | 0.199 | 0.199 | 0.199 |
| 100.0 | 0.199 | 0.199 | 0.199 | 0.199 | 0.299 | 0.199 | 0.199 | 0.199 | 0.199 |
| 102.5 | 0.299 | 0.299 | 0.299 | 0.299 | 0.398 | 0.299 | 0.299 | 0.299 | 0.299 |
| 105.0 | 0.498 | 0.498 | 0.498 | 0.498 | 0.498 | 0.498 | 0.498 | 0.498 | 0.498 |
| 107.5 | 0.597 | 0.597 | 0.597 | 0.597 | 0.697 | 0.597 | 0.597 | 0.597 | 0.597 |
| 110.0 | 0.896 | 0.796 | 1.095 | 0.896 | 0.896 | 0.896 | 1.095 | 0.796 | 0.896 |
| 112.5 | 1.194 | 1.095 | 3.682 | 1.194 | 1.294 | 1.194 | 3.682 | 1.095 | 1.194 |
| 115.0 | 1.592 | 4.975 | 11.642 | 5.373 | 1.692 | 5.373 | 11.642 | 4.975 | 1.592 |
| 117.5 | 11.144 | 19.701 | 23.681 | 20.000 | 10.348 | 20.000 | 23.681 | 19.701 | 11.144 |
| 120.0 | 29.950 | 37.014 | 37.213 | 38.407 | 30.149 | 38.407 | 37.213 | 37.014 | 29.950 |
| 122.5 | 49.153 | 53.233 | 51.740 | 55.720 | 51.044 | 55.720 | 51.740 | 53.233 | 49.153 |
| 125.0 | 68.854 | 69.750 | 66.964 | 73.232 | 71.740 | 73.232 | 66.964 | 69.750 | 68.854 |
| 127.5 | 90.147 | 86.963 | 82.784 | 91.341 | 93.829 | 91.341 | 82.784 | 86.963 | 90.147 |
| 130.0 | 111.938 | 105.868 | 99.600 | 110.744 | 116.813 | 110.744 | 99.600 | 105.868 | 111.938 |
| 132.5 | 134.126 | 126.863 | 118.803 | 132.236 | 140.594 | 132.236 | 118.803 | 126.863 | 134.126 |

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| | | | | | | | | | |
|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 135.0 | 157.509 | 150.444 | 141.887 | 156.016 | 165.170 | 156.016 | 141.887 | 150.444 | 157.509 |
| 137.5 | 183.478 | 178.006 | 171.837 | 183.777 | 191.836 | 183.777 | 171.837 | 178.006 | 183.478 |
| 140.0 | 214.821 | 212.134 | 211.836 | 217.408 | 222.880 | 217.408 | 211.836 | 212.134 | 214.821 |
| 142.5 | 253.228 | 254.919 | 263.476 | 258.999 | 260.193 | 258.999 | 263.476 | 254.919 | 253.228 |
| 145.0 | 300.888 | 308.550 | 324.967 | 310.938 | 306.560 | 310.938 | 324.967 | 308.550 | 300.888 |
| 147.5 | 362.280 | 376.409 | 395.115 | 377.006 | 366.558 | 377.006 | 395.115 | 376.409 | 362.280 |
| 150.0 | 441.084 | 459.491 | 473.322 | 458.098 | 443.074 | 458.098 | 473.322 | 459.491 | 441.084 |
| 152.5 | 536.504 | 552.225 | 557.897 | 549.539 | 534.614 | 549.539 | 557.897 | 552.225 | 536.504 |
| 155.0 | 638.094 | 647.646 | 649.636 | 645.059 | 633.915 | 645.059 | 649.636 | 647.646 | 638.094 |
| 157.5 | 735.206 | 742.867 | 745.255 | 740.877 | 731.027 | 740.877 | 745.255 | 742.867 | 735.206 |
| 160.0 | 831.223 | 839.084 | 843.263 | 838.288 | 829.532 | 838.288 | 843.263 | 839.084 | 831.223 |
| 162.5 | 930.126 | 937.489 | 943.260 | 936.793 | 930.226 | 936.793 | 943.260 | 937.489 | 930.126 |
| 165.0 | 1028.830 | 1033.805 | 1040.770 | 1033.805 | 1027.835 | 1033.805 | 1040.770 | 1033.805 | 1028.830 |
| 167.5 | 1122.360 | 1125.345 | 1129.325 | 1124.350 | 1121.365 | 1124.350 | 1129.325 | 1125.345 | 1122.360 |
| 170.0 | 1206.935 | 1207.930 | 1206.935 | 1206.935 | 1205.940 | 1206.935 | 1206.935 | 1207.930 | 1206.935 |
| 172.5 | 1276.585 | 1276.585 | 1274.595 | 1274.595 | 1275.590 | 1274.595 | 1274.595 | 1276.585 | 1276.585 |
| 175.0 | 1330.315 | 1331.310 | 1329.320 | 1329.320 | 1330.315 | 1329.320 | 1329.320 | 1331.310 | 1330.315 |
| 177.5 | 1368.125 | 1368.125 | 1365.140 | 1366.135 | 1367.130 | 1366.135 | 1365.140 | 1368.125 | 1368.125 |
| 180.0 | 1379.000 | 1379.000 | 1379.000 | 1379.000 | 1379.000 | 1379.000 | 1379.000 | 1379.000 | 1379.000 |

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| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 726.87 | N.A. | 30.30 |
| 0-30 | 955.00 | N.A. | 39.80 |
| 0-40 | 1088.06 | N.A. | 45.40 |
| 0-60 | 1237.66 | N.A. | 51.60 |
| 0-80 | 1296.45 | N.A. | 54.10 |
| 0-90 | 1300.77 | N.A. | 54.30 |
| 10-90 | 1025.89 | N.A. | 42.80 |
| 20-40 | 361.19 | N.A. | 15.10 |
| 20-50 | 450.43 | N.A. | 18.80 |
| 40-70 | 188.86 | N.A. | 7.90 |
| 60-80 | 58.79 | N.A. | 2.50 |
| 70-80 | 19.53 | N.A. | 0.80 |
| 80-90 | 4.33 | N.A. | 0.20 |
| 90-110 | 0.66 | N.A. | 0.00 |
| 90-120 | 11.49 | N.A. | 0.50 |
| 90-130 | 74.28 | N.A. | 3.10 |
| 90-150 | 392.69 | N.A. | 16.40 |
| 90-180 | 1095.83 | N.A. | 45.70 |
| 110-180 | 1095.17 | N.A. | 45.70 |
| 0-180 | 2396.61 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 274.89 |
| 10-20 | 451.98 |
| 20-30 | 228.13 |
| 30-40 | 133.06 |
| 40-50 | 89.24 |
| 50-60 | 60.36 |
| 60-70 | 39.26 |
| 70-80 | 19.53 |
| 80-90 | 4.33 |
| 90-100 | 0.14 |
| 100-110 | 0.52 |
| 110-120 | 10.83 |
| 120-130 | 62.79 |
| 130-140 | 119.48 |
| 140-150 | 198.92 |
| 150-160 | 293.61 |
| 160-170 | 286.51 |
| 170-180 | 123.03 |

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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 | 108 | 108 | 108 | 108 | 100 | 100 | 100 | 100 | 86 | 86 | 86 | 72 | 72 | 72 | 60 | 60 | 60 | 54 |
| 1 | 101 | 98 | 95 | 92 | 94 | 91 | 88 | 86 | 79 | 77 | 75 | 67 | 66 | 65 | 57 | 56 | 55 | 50 |
| 2 | 94 | 89 | 84 | 80 | 88 | 83 | 79 | 75 | 72 | 69 | 67 | 63 | 61 | 59 | 53 | 52 | 51 | 47 |
| 3 | 88 | 81 | 75 | 71 | 82 | 76 | 71 | 67 | 67 | 63 | 60 | 58 | 56 | 54 | 50 | 49 | 47 | 44 |
| 4 | 83 | 74 | 68 | 63 | 77 | 70 | 65 | 60 | 62 | 58 | 55 | 55 | 52 | 50 | 48 | 46 | 44 | 41 |
| 5 | 78 | 69 | 62 | 57 | 73 | 65 | 59 | 55 | 58 | 54 | 50 | 52 | 48 | 46 | 45 | 43 | 42 | 39 |
| 6 | 73 | 64 | 57 | 53 | 69 | 61 | 55 | 51 | 54 | 50 | 47 | 49 | 45 | 43 | 43 | 41 | 39 | 37 |
| 7 | 69 | 60 | 53 | 49 | 65 | 57 | 51 | 47 | 51 | 47 | 44 | 46 | 43 | 40 | 41 | 39 | 37 | 35 |
| 8 | 66 | 56 | 50 | 45 | 62 | 53 | 48 | 44 | 48 | 44 | 41 | 44 | 41 | 38 | 40 | 37 | 35 | 33 |
| 9 | 63 | 53 | 46 | 42 | 59 | 50 | 45 | 41 | 46 | 42 | 39 | 42 | 39 | 36 | 38 | 36 | 34 | 32 |
| 10 | 60 | 50 | 44 | 40 | 56 | 48 | 42 | 39 | 44 | 39 | 37 | 40 | 37 | 34 | 36 | 34 | 32 | 31 |

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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 | 15.9 | 16.7 | 16.9 | 17.6 | 18.8 | 16.1 | 16.8 | 17.0 | 17.7 | 19.0 |
| | 3H | 17.3 | 17.9 | 18.2 | 18.9 | 20.1 | 17.4 | 18.0 | 18.3 | 19.0 | 20.2 |
| | 4H | 17.7 | 18.3 | 18.7 | 19.3 | 20.5 | 17.8 | 18.4 | 18.8 | 19.4 | 20.6 |
| | 6H | 18.0 | 18.5 | 18.9 | 19.5 | 20.7 | 18.1 | 18.6 | 19.1 | 19.6 | 20.9 |
| | 8H | 18.0 | 18.5 | 19.0 | 19.5 | 20.8 | 18.1 | 18.7 | 19.1 | 19.7 | 20.9 |
| | 12H | 18.0 | 18.5 | 19.0 | 19.5 | 20.8 | 18.2 | 18.7 | 19.2 | 19.6 | 20.9 |

UGR Viewed Endwise

| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H | 2H | 16.3 | 16.9 | 17.3 | 17.9 | 19.1 | 16.4 | 17.0 | 17.4 | 18.0 | 19.3 |
| | 3H | 17.8 | 18.3 | 18.8 | 19.3 | 20.6 | 17.9 | 18.4 | 18.9 | 19.4 | 20.7 |
| | 4H | 18.4 | 18.8 | 19.4 | 19.8 | 21.1 | 18.5 | 18.9 | 19.5 | 19.9 | 21.2 |
| | 6H | 18.7 | 19.1 | 19.7 | 20.1 | 21.4 | 18.9 | 19.3 | 19.9 | 20.3 | 21.5 |
| | 8H | 18.8 | 19.2 | 19.8 | 20.2 | 21.5 | 19.0 | 19.3 | 20.0 | 20.3 | 21.6 |
| | 12H | 18.9 | 19.2 | 19.9 | 20.2 | 21.5 | 19.0 | 19.3 | 20.0 | 20.3 | 21.6 |

| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 8H | 4H | 18.5 | 18.9 | 19.5 | 19.9 | 21.2 | 18.6 | 19.0 | 19.6 | 20.0 | 21.3 |
| | 6H | 19.0 | 19.3 | 20.0 | 20.3 | 21.6 | 19.1 | 19.4 | 20.1 | 20.4 | 21.7 |
| | 8H | 19.1 | 19.4 | 20.2 | 20.4 | 21.7 | 19.2 | 19.5 | 20.3 | 20.5 | 21.8 |
| | 12H | 19.2 | 19.4 | 20.2 | 20.4 | 21.8 | 19.3 | 19.5 | 20.4 | 20.6 | 21.9 |

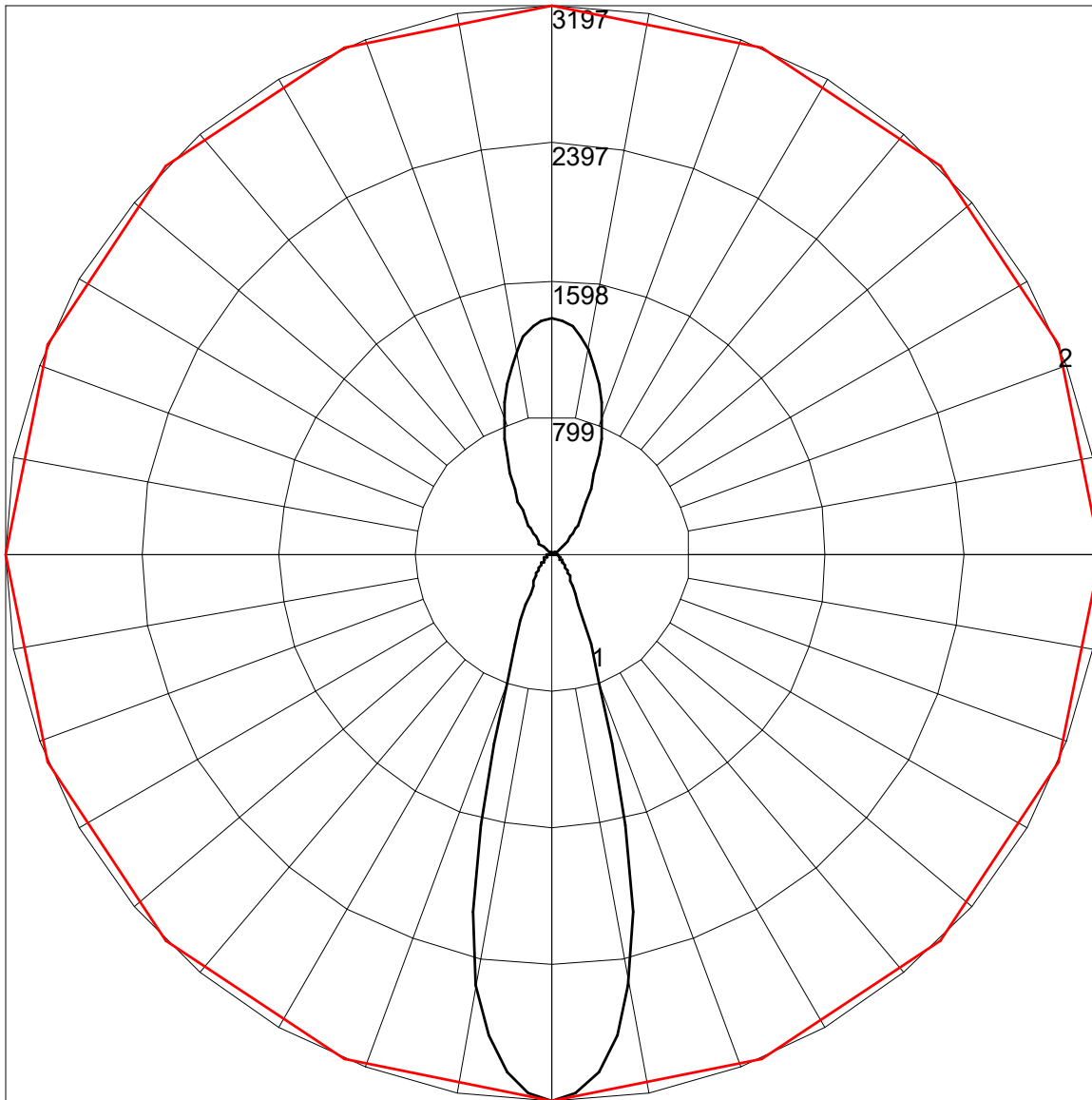
| | | | | | | | | | | | |
|-----|----|------|------|------|------|------|------|------|------|------|------|
| 12H | 4H | 18.5 | 18.8 | 19.5 | 19.8 | 21.1 | 18.6 | 18.9 | 19.6 | 19.9 | 21.2 |
| | 6H | 19.0 | 19.2 | 20.0 | 20.3 | 21.6 | 19.1 | 19.3 | 20.1 | 20.4 | 21.7 |
| | 8H | 19.1 | 19.4 | 20.2 | 20.4 | 21.8 | 19.3 | 19.5 | 20.3 | 20.5 | 21.9 |

Maximum UGR = 21.9

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POLAR GRAPH



Maximum Candela = 3196.596 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.)