



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13257153.18 and #13257153.14

[TESTLAB]

[ISSUE DATE] 8-FEB-2021

[MANUFAC] H E Williams Inc

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

[MORE]

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

[MORE] wide 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 | 2389 |
| 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-LW-WHD-WM_.IES****LUMINANCE DATA (cd/sq.m)**

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 30911 | 38051 | 31449 |
| 55 | 25009 | 27070 | 25428 |
| 65 | 21854 | 22186 | 22091 |
| 75 | 17184 | 16875 | 17803 |
| 85 | 10344 | 8964 | 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 | 1492.712 | 1492.712 | 1492.712 | 1492.712 | 1492.712 | 1492.712 | 1492.712 | 1492.712 | 1492.712 |
| 2.5 | 1519.310 | 1497.548 | 1484.652 | 1480.622 | 1479.010 | 1480.622 | 1484.652 | 1497.548 | 1519.310 |
| 5.0 | 1506.414 | 1484.652 | 1472.562 | 1468.532 | 1466.920 | 1468.532 | 1472.562 | 1484.652 | 1506.414 |
| 7.5 | 1484.652 | 1462.890 | 1452.412 | 1449.188 | 1450.800 | 1449.188 | 1452.412 | 1462.890 | 1484.652 |
| 10.0 | 1456.442 | 1435.486 | 1427.426 | 1425.008 | 1424.202 | 1425.008 | 1427.426 | 1435.486 | 1456.442 |
| 12.5 | 1416.948 | 1398.410 | 1391.962 | 1390.350 | 1387.932 | 1390.350 | 1391.962 | 1398.410 | 1416.948 |
| 15.0 | 1362.140 | 1346.020 | 1343.602 | 1340.378 | 1335.542 | 1340.378 | 1343.602 | 1346.020 | 1362.140 |
| 17.5 | 1288.794 | 1275.898 | 1275.092 | 1270.256 | 1261.390 | 1270.256 | 1275.092 | 1275.898 | 1288.794 |
| 20.0 | 1185.626 | 1182.402 | 1188.850 | 1177.566 | 1155.804 | 1177.566 | 1188.850 | 1182.402 | 1185.626 |
| 22.5 | 1039.740 | 1057.472 | 1079.234 | 1051.830 | 1011.530 | 1051.830 | 1079.234 | 1057.472 | 1039.740 |
| 25.0 | 858.390 | 897.884 | 947.856 | 895.466 | 836.628 | 895.466 | 947.856 | 897.884 | 858.390 |
| 27.5 | 658.744 | 717.018 | 793.104 | 717.904 | 650.764 | 717.904 | 793.104 | 717.018 | 658.744 |
| 30.0 | 471.510 | 538.086 | 627.310 | 544.695 | 473.525 | 544.695 | 627.310 | 538.086 | 471.510 |
| 32.5 | 319.821 | 380.996 | 469.817 | 392.038 | 328.364 | 392.038 | 469.817 | 380.996 | 319.821 |
| 35.0 | 217.056 | 264.126 | 337.714 | 276.136 | 227.534 | 276.136 | 337.714 | 264.126 | 217.056 |
| 37.5 | 155.719 | 187.314 | 240.672 | 196.986 | 164.505 | 196.986 | 240.672 | 187.314 | 155.719 |
| 40.0 | 120.981 | 140.405 | 175.144 | 147.256 | 126.864 | 147.256 | 175.144 | 140.405 | 120.981 |
| 42.5 | 100.831 | 112.759 | 133.796 | 117.434 | 103.974 | 117.434 | 133.796 | 112.759 | 100.831 |
| 45.0 | 87.935 | 96.075 | 108.246 | 98.735 | 89.466 | 98.735 | 108.246 | 96.075 | 87.935 |
| 47.5 | 78.182 | 84.388 | 91.481 | 85.839 | 78.988 | 85.839 | 91.481 | 84.388 | 78.182 |
| 50.0 | 70.203 | 75.200 | 79.552 | 76.006 | 70.928 | 76.006 | 79.552 | 75.200 | 70.203 |
| 52.5 | 63.432 | 67.543 | 70.122 | 68.429 | 64.399 | 68.429 | 70.122 | 67.543 | 63.432 |
| 55.0 | 57.710 | 61.014 | 62.465 | 61.901 | 58.677 | 61.901 | 62.465 | 61.014 | 57.710 |
| 57.5 | 52.632 | 55.130 | 55.614 | 55.856 | 53.518 | 55.856 | 55.614 | 55.130 | 52.632 |
| 60.0 | 47.876 | 49.488 | 49.408 | 50.133 | 48.360 | 50.133 | 49.408 | 49.488 | 47.876 |
| 62.5 | 42.718 | 44.169 | 43.524 | 44.330 | 42.879 | 44.330 | 43.524 | 44.169 | 42.718 |
| 65.0 | 37.157 | 38.527 | 37.721 | 38.607 | 37.560 | 38.607 | 37.721 | 38.527 | 37.157 |
| 67.5 | 32.079 | 32.965 | 32.159 | 33.207 | 32.562 | 33.207 | 32.159 | 32.965 | 32.079 |
| 70.0 | 27.162 | 27.726 | 27.001 | 28.049 | 27.726 | 28.049 | 27.001 | 27.726 | 27.162 |
| 72.5 | 22.407 | 22.729 | 22.165 | 23.052 | 23.052 | 23.052 | 22.165 | 22.729 | 22.407 |
| 75.0 | 17.893 | 18.135 | 17.571 | 18.377 | 18.538 | 18.377 | 17.571 | 18.135 | 17.893 |
| 77.5 | 13.783 | 13.863 | 13.380 | 14.024 | 14.347 | 14.024 | 13.380 | 13.863 | 13.783 |
| 80.0 | 9.994 | 9.994 | 9.591 | 10.075 | 10.478 | 10.075 | 9.591 | 9.994 | 9.994 |
| 82.5 | 6.609 | 6.448 | 6.126 | 6.529 | 7.012 | 6.529 | 6.126 | 6.448 | 6.609 |
| 85.0 | 3.627 | 3.385 | 3.143 | 3.466 | 3.869 | 3.466 | 3.143 | 3.385 | 3.627 |
| 87.5 | 0.564 | 0.725 | 0.725 | 0.564 | 0.564 | 0.564 | 0.725 | 0.725 | 0.564 |
| 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 | 513.07 | N.A. | 21.50 |
| 0-30 | 913.28 | N.A. | 38.20 |
| 0-40 | 1098.34 | N.A. | 46.00 |
| 0-60 | 1231.98 | N.A. | 51.60 |
| 0-80 | 1289.1 | N.A. | 54.00 |
| 0-90 | 1293.33 | N.A. | 54.10 |
| 10-90 | 1153.72 | N.A. | 48.30 |
| 20-40 | 585.26 | N.A. | 24.50 |
| 20-50 | 664.04 | N.A. | 27.80 |
| 40-70 | 171.44 | N.A. | 7.20 |
| 60-80 | 57.12 | N.A. | 2.40 |
| 70-80 | 19.33 | N.A. | 0.80 |
| 80-90 | 4.23 | 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. | 45.90 |
| 110-180 | 1095.17 | N.A. | 45.80 |
| 0-180 | 2389.16 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 139.61 |
| 10-20 | 373.46 |
| 20-30 | 400.21 |
| 30-40 | 185.06 |
| 40-50 | 78.78 |
| 50-60 | 54.87 |
| 60-70 | 37.79 |
| 70-80 | 19.33 |
| 80-90 | 4.23 |
| 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 | 97 | 94 | 91 | 94 | 91 | 88 | 86 | 78 | 76 | 75 | 67 | 66 | 64 | 56 | 55 | 55 | 50 |
| 2 | 94 | 88 | 83 | 79 | 87 | 82 | 78 | 74 | 72 | 69 | 66 | 62 | 60 | 58 | 53 | 51 | 50 | 46 |
| 3 | 88 | 80 | 74 | 69 | 81 | 75 | 70 | 66 | 66 | 62 | 59 | 57 | 54 | 52 | 49 | 47 | 46 | 42 |
| 4 | 82 | 73 | 66 | 61 | 76 | 69 | 63 | 59 | 61 | 56 | 53 | 53 | 50 | 48 | 46 | 44 | 42 | 39 |
| 5 | 76 | 67 | 60 | 55 | 71 | 63 | 57 | 53 | 56 | 52 | 48 | 50 | 46 | 44 | 43 | 41 | 39 | 36 |
| 6 | 72 | 62 | 55 | 50 | 67 | 58 | 52 | 48 | 52 | 48 | 44 | 46 | 43 | 40 | 41 | 38 | 37 | 34 |
| 7 | 67 | 57 | 50 | 46 | 63 | 54 | 48 | 44 | 49 | 44 | 41 | 44 | 40 | 37 | 39 | 36 | 34 | 32 |
| 8 | 63 | 53 | 46 | 42 | 60 | 50 | 45 | 40 | 46 | 41 | 38 | 41 | 37 | 35 | 37 | 34 | 32 | 30 |
| 9 | 60 | 49 | 43 | 39 | 56 | 47 | 41 | 37 | 43 | 38 | 35 | 39 | 35 | 33 | 35 | 32 | 30 | 28 |
| 10 | 57 | 46 | 40 | 36 | 53 | 44 | 39 | 35 | 40 | 36 | 33 | 37 | 33 | 31 | 33 | 30 | 28 | 27 |

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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 | 15.4 | 16.2 | 16.4 | 17.1 | 18.3 | UGR Viewed Endwise | 15.5 | 16.3 | 16.5 | 17.2 | 18.4 |
|------|------|------|------|------|------|------|--------------------|------|------|------|------|------|
| | 3H | 16.9 | 17.5 | 17.8 | 18.5 | 19.7 | | 17.0 | 17.6 | 17.9 | 18.6 | 19.8 |
| | 4H | 17.3 | 17.9 | 18.3 | 18.9 | 20.2 | | 17.5 | 18.1 | 18.4 | 19.0 | 20.3 |
| | 6H | 17.6 | 18.2 | 18.6 | 19.2 | 20.4 | | 17.8 | 18.3 | 18.8 | 19.3 | 20.5 |
| | 8H | 17.7 | 18.2 | 18.7 | 19.2 | 20.5 | | 17.8 | 18.4 | 18.8 | 19.3 | 20.6 |
| | 12H | 17.7 | 18.2 | 18.7 | 19.2 | 20.5 | | 17.9 | 18.3 | 18.9 | 19.3 | 20.6 |

| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H | 2H | 15.9 | 16.5 | 16.9 | 17.4 | 18.7 | 15.9 | 16.5 | 16.9 | 17.5 | 18.8 |
| | 3H | 17.5 | 18.0 | 18.5 | 19.0 | 20.2 | 17.6 | 18.1 | 18.5 | 19.1 | 20.3 |
| | 4H | 18.1 | 18.5 | 19.1 | 19.5 | 20.8 | 18.2 | 18.6 | 19.2 | 19.6 | 20.9 |
| | 6H | 18.5 | 18.9 | 19.5 | 19.9 | 21.2 | 18.6 | 19.0 | 19.6 | 20.0 | 21.3 |
| | 8H | 18.6 | 18.9 | 19.6 | 19.9 | 21.2 | 18.7 | 19.0 | 19.7 | 20.0 | 21.3 |
| | 12H | 18.6 | 18.9 | 19.6 | 19.9 | 21.2 | 18.7 | 19.0 | 19.7 | 20.1 | 21.4 |

| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 8H | 4H | 18.2 | 18.6 | 19.2 | 19.6 | 20.9 | 18.3 | 18.7 | 19.3 | 19.7 | 21.0 |
| | 6H | 18.7 | 19.0 | 19.8 | 20.1 | 21.4 | 18.8 | 19.1 | 19.8 | 20.1 | 21.4 |
| | 8H | 18.9 | 19.1 | 19.9 | 20.2 | 21.5 | 19.0 | 19.2 | 20.0 | 20.3 | 21.6 |
| | 12H | 19.0 | 19.2 | 20.0 | 20.2 | 21.6 | 19.1 | 19.3 | 20.1 | 20.3 | 21.7 |

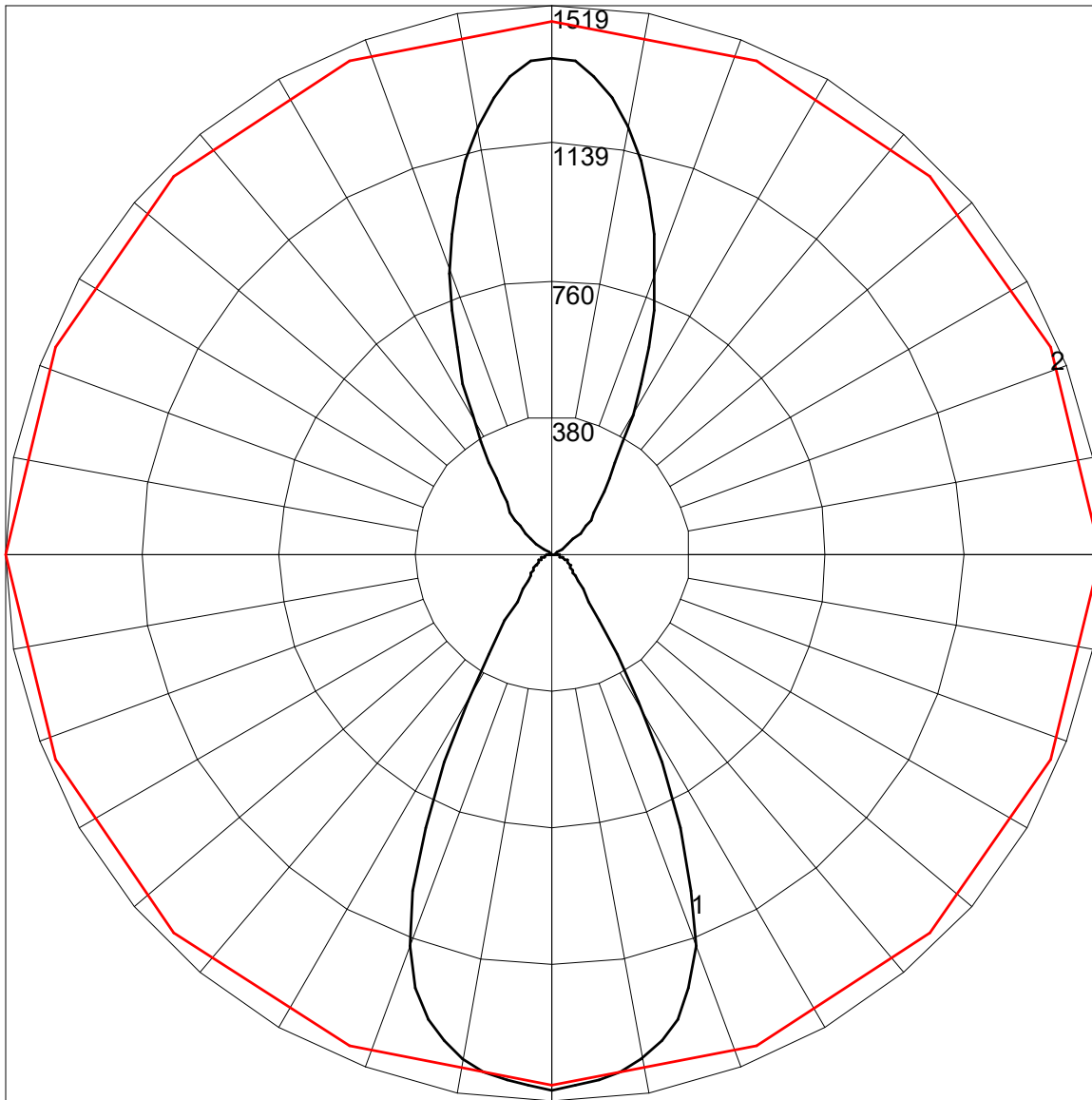
| | | | | | | | | | | | |
|-----|----|------|------|------|------|------|------|------|------|------|------|
| 12H | 4H | 18.2 | 18.5 | 19.2 | 19.5 | 20.8 | 18.3 | 18.6 | 19.3 | 19.6 | 20.9 |
| | 6H | 18.7 | 19.0 | 19.7 | 20.0 | 21.3 | 18.8 | 19.1 | 19.8 | 20.1 | 21.4 |
| | 8H | 18.9 | 19.1 | 19.9 | 20.1 | 21.5 | 19.0 | 19.2 | 20.0 | 20.2 | 21.6 |

Maximum UGR = 21.7

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POLAR GRAPH



Maximum Candela = 1519.31 Located At Horizontal Angle = 0, Vertical Angle = 2.5

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

2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)