

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P199399

Luminaire Tested: **S122-DIW-U1-LO-35-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199399  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P27883 P27986)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122-DIW-U1-LO-35-0048-1D-UDD-1-NA-W  
Description: DEFINE 2-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LL1-3500K, NO LENS  
DOWNLIGHT LLO-3500K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

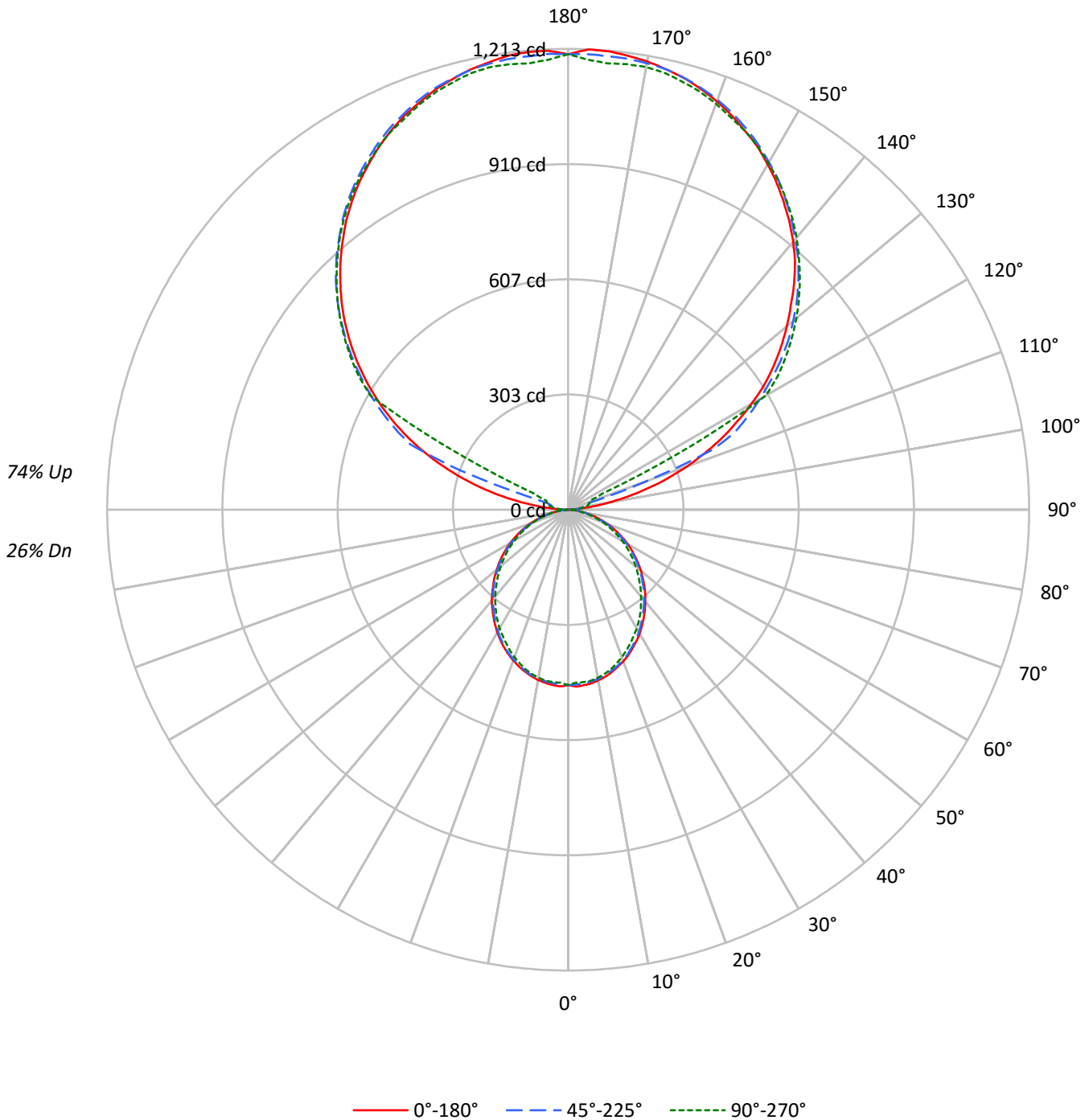
Lumens per Lamp: N/A  
Luminaire Lumens: 4589.5 lumens  
Efficiency: N/A  
Efficacy: 118.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.17 / 1.31  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Indirect

Input Watts (W): 38.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

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### Luminous Intensity Polar Plot





TEST NUMBER: P199399

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RF  | 20  |     |     |     | 20 |    |    |    | 20 |    |    |    | 20 |    |    |    | 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  |
| RCR |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0   | 101 | 101 | 101 | 101 | 90 | 90 | 90 | 90 | 70 | 70 | 70 | 51 | 51 | 51 | 34 | 34 | 34 | 26 |
| 1   | 92  | 88  | 85  | 81  | 82 | 79 | 76 | 73 | 61 | 59 | 57 | 45 | 44 | 43 | 30 | 29 | 29 | 22 |
| 2   | 84  | 77  | 71  | 66  | 75 | 69 | 64 | 60 | 54 | 50 | 47 | 39 | 37 | 35 | 26 | 25 | 24 | 18 |
| 3   | 77  | 68  | 61  | 55  | 68 | 61 | 55 | 50 | 47 | 43 | 40 | 35 | 32 | 30 | 23 | 22 | 21 | 16 |
| 4   | 70  | 60  | 52  | 46  | 62 | 54 | 47 | 42 | 42 | 37 | 34 | 31 | 28 | 26 | 21 | 19 | 18 | 13 |
| 5   | 64  | 53  | 45  | 40  | 57 | 48 | 41 | 36 | 37 | 33 | 29 | 28 | 25 | 22 | 19 | 17 | 15 | 12 |
| 6   | 59  | 47  | 40  | 34  | 52 | 43 | 36 | 31 | 33 | 29 | 25 | 25 | 22 | 19 | 17 | 15 | 13 | 10 |
| 7   | 54  | 43  | 35  | 30  | 48 | 38 | 32 | 27 | 30 | 25 | 22 | 23 | 19 | 17 | 15 | 13 | 12 | 9  |
| 8   | 50  | 39  | 31  | 26  | 45 | 35 | 28 | 24 | 27 | 23 | 19 | 21 | 17 | 15 | 14 | 12 | 11 | 8  |
| 9   | 47  | 35  | 28  | 23  | 42 | 32 | 25 | 21 | 25 | 20 | 17 | 19 | 16 | 13 | 13 | 11 | 10 | 7  |
| 10  | 44  | 32  | 25  | 20  | 39 | 29 | 23 | 19 | 23 | 18 | 15 | 17 | 14 | 12 | 12 | 10 | 9  | 7  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 90°  | 180° |
|-----|------|------|------|
| 0°  | 7299 | 7299 | 7299 |
| 5°  | 7308 | 6046 | 7297 |
| 10° | 7208 | 5163 | 7191 |
| 15° | 7073 | 4441 | 7044 |
| 20° | 6912 | 3821 | 6876 |
| 25° | 6719 | 3297 | 6684 |
| 30° | 6525 | 2866 | 6469 |
| 35° | 6286 | 2480 | 6228 |
| 40° | 6056 | 2133 | 6000 |
| 45° | 5812 | 1825 | 5709 |
| 50° | 5540 | 1548 | 5423 |
| 55° | 5239 | 1296 | 5151 |
| 60° | 4929 | 1063 | 4803 |
| 65° | 4552 | 835  | 4396 |
| 70° | 4084 | 627  | 3888 |
| 75° | 3409 | 423  | 3186 |
| 80° | 2545 | 246  | 2306 |
| 85° | 1576 | 97   | 1328 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 43.5   | 0.9       |
| 10°-20°   | 123.2  | 2.7       |
| 20°-30°   | 181.7  | 4.0       |
| 30°-40°   | 211.8  | 4.6       |
| 40°-50°   | 212.3  | 4.6       |
| 50°-60°   | 185.7  | 4.0       |
| 60°-70°   | 136.6  | 3.0       |
| 70°-80°   | 74.1   | 1.6       |
| 80°-90°   | 19.0   | 0.4       |
| 90°-100°  | 29.5   | 0.6       |
| 100°-110° | 134.6  | 2.9       |
| 110°-120° | 391.3  | 8.5       |
| 120°-130° | 611.5  | 13.3      |
| 130°-140° | 659.2  | 14.4      |
| 140°-150° | 623.0  | 13.6      |
| 150°-160° | 508.0  | 11.1      |
| 160°-170° | 330.6  | 7.2       |
| 170°-180° | 113.9  | 2.5       |
| 0°-30°    | 348.3  | 7.6       |
| 0°-40°    | 560.2  | 12.2      |
| 0°-60°    | 958.2  | 20.9      |
| 0°-90°    | 1187.8 | 25.9      |
| 90°-120°  | 555.4  | 12.1      |
| 90°-150°  | 2449.1 | 53.4      |
| 90°-180°  | 3402.0 | 74.1      |
| 0°-180°   | 4589.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|------|------|------|------|------|------|------|
| 0°   | 462  | 462  | 462  | 462  | 462  |      |
| 5°   | 464  | 459  | 456  | 458  | 463  | 44   |
| 15°  | 443  | 439  | 435  | 438  | 441  | 125  |
| 25°  | 402  | 398  | 387  | 396  | 399  | 185  |
| 35°  | 346  | 342  | 331  | 339  | 343  | 217  |
| 45°  | 284  | 279  | 265  | 276  | 279  | 219  |
| 55°  | 215  | 211  | 198  | 207  | 211  | 192  |
| 65°  | 146  | 140  | 130  | 136  | 141  | 144  |
| 75°  | 75   | 71   | 65   | 67   | 70   | 80   |
| 85°  | 18   | 17   | 14   | 15   | 15   | 20   |
| 90°  | 1    | 2    | 2    | 2    | 0    | 2    |
| 95°  | 29   | 24   | 27   | 28   | 51   | 41   |
| 105° | 216  | 46   | 56   | 47   | 254  | 230  |
| 115° | 447  | 485  | 99   | 501  | 478  | 440  |
| 125° | 660  | 681  | 698  | 692  | 677  | 589  |
| 135° | 840  | 857  | 862  | 865  | 848  | 648  |
| 145° | 988  | 997  | 999  | 1004 | 992  | 619  |
| 155° | 1101 | 1108 | 1100 | 1109 | 1102 | 508  |
| 165° | 1177 | 1177 | 1166 | 1175 | 1174 | 332  |
| 175° | 1211 | 1198 | 1179 | 1198 | 1209 | 115  |
| 180° | 1199 | 1199 | 1199 | 1199 | 1199 |      |



TEST NUMBER: P199399

CATALOG NUMBER: S122-DIW-U1-LO-35-0048-1D-UDD-1-NA-W

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  |
|--------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0°     | 461.5 | 461.5 | 461.5 | 461.5 | 461.5 | 461.5  | 461.5 | 461.5  | 461.5 |
| 2.5°   | 466.1 | 459.7 | 460.8 | 459.3 | 455.8 | 459.0  | 460.4 | 459.3  | 465.4 |
| 5°     | 464.0 | 457.5 | 458.6 | 456.8 | 455.8 | 456.8  | 458.3 | 456.8  | 463.3 |
| 7.5°   | 461.1 | 454.0 | 456.1 | 455.0 | 454.0 | 454.7  | 455.8 | 453.3  | 460.0 |
| 10°    | 456.1 | 449.0 | 452.2 | 450.1 | 449.0 | 449.7  | 451.5 | 447.9  | 455.0 |
| 12.5°  | 450.4 | 443.3 | 446.5 | 444.0 | 442.9 | 442.9  | 446.1 | 442.2  | 448.6 |
| 15°    | 442.6 | 436.8 | 439.0 | 436.5 | 434.7 | 435.8  | 438.3 | 435.4  | 440.8 |
| 17.5°  | 433.6 | 428.6 | 431.1 | 427.2 | 424.0 | 426.5  | 430.1 | 426.9  | 432.2 |
| 20°    | 424.4 | 418.6 | 421.1 | 415.8 | 412.9 | 415.1  | 419.7 | 417.2  | 422.2 |
| 22.5°  | 414.0 | 408.7 | 410.8 | 403.7 | 400.8 | 402.6  | 409.4 | 406.9  | 411.5 |
| 25°    | 401.5 | 397.2 | 397.6 | 390.4 | 387.2 | 389.4  | 396.5 | 395.1  | 399.4 |
| 27.5°  | 389.4 | 385.1 | 385.5 | 377.2 | 373.7 | 376.5  | 383.7 | 382.6  | 386.5 |
| 30°    | 376.2 | 372.2 | 371.9 | 363.7 | 360.8 | 362.6  | 369.7 | 369.7  | 373.0 |
| 32.5°  | 361.5 | 358.3 | 356.5 | 349.0 | 346.2 | 348.3  | 354.4 | 355.5  | 358.0 |
| 35°    | 346.5 | 344.4 | 341.9 | 334.8 | 330.8 | 333.7  | 339.4 | 340.8  | 343.3 |
| 37.5°  | 331.6 | 329.1 | 326.2 | 319.1 | 314.8 | 318.4  | 323.4 | 325.8  | 327.6 |
| 40°    | 315.9 | 314.1 | 310.9 | 303.7 | 298.4 | 301.9  | 307.6 | 310.5  | 313.0 |
| 42.5°  | 299.8 | 298.7 | 294.8 | 287.3 | 282.0 | 285.9  | 291.9 | 294.4  | 295.5 |
| 45°    | 283.7 | 282.3 | 278.7 | 270.9 | 265.2 | 269.5  | 275.9 | 278.4  | 278.7 |
| 47.5°  | 265.9 | 266.2 | 262.0 | 254.1 | 248.4 | 252.7  | 258.4 | 262.0  | 263.4 |
| 50°    | 249.8 | 250.2 | 245.2 | 237.3 | 231.6 | 234.8  | 241.6 | 245.2  | 244.5 |
| 52.5°  | 232.7 | 233.8 | 228.4 | 220.6 | 214.9 | 218.1  | 224.8 | 228.8  | 229.1 |
| 55°    | 214.9 | 216.6 | 210.9 | 203.1 | 198.1 | 201.3  | 207.0 | 211.6  | 211.3 |
| 57.5°  | 197.7 | 199.2 | 193.4 | 186.3 | 181.3 | 184.2  | 189.2 | 195.2  | 193.8 |
| 60°    | 180.6 | 182.0 | 176.0 | 168.8 | 164.5 | 166.0  | 171.7 | 176.7  | 176.0 |
| 62.5°  | 163.1 | 164.5 | 158.1 | 151.7 | 146.7 | 148.8  | 153.8 | 159.9  | 158.1 |
| 65°    | 145.6 | 146.7 | 139.9 | 134.2 | 129.9 | 132.1  | 135.6 | 142.0  | 140.6 |
| 67.5°  | 128.1 | 128.8 | 122.8 | 117.4 | 113.9 | 114.9  | 118.1 | 123.5  | 122.8 |
| 70°    | 110.6 | 111.4 | 105.6 | 100.6 | 97.4  | 98.5   | 101.0 | 106.0  | 105.3 |
| 72.5°  | 92.8  | 93.9  | 88.2  | 83.5  | 80.3  | 81.4   | 83.2  | 87.8   | 86.7  |
| 75°    | 74.9  | 75.7  | 71.4  | 67.8  | 65.0  | 65.3   | 66.7  | 70.3   | 70.0  |
| 77.5°  | 58.5  | 60.3  | 55.7  | 52.5  | 50.3  | 50.7   | 52.5  | 54.2   | 53.5  |
| 80°    | 42.5  | 44.6  | 41.4  | 38.9  | 37.1  | 36.8   | 38.2  | 39.6   | 38.5  |
| 82.5°  | 30.0  | 30.3  | 28.2  | 26.4  | 24.6  | 24.6   | 25.7  | 26.8   | 25.7  |
| 85°    | 17.8  | 18.6  | 16.8  | 15.3  | 14.3  | 13.9   | 14.6  | 15.7   | 15.0  |
| 87.5°  | 8.6   | 8.9   | 7.1   | 6.4   | 5.4   | 5.0    | 5.4   | 6.1    | 6.1   |
| 90°    | 0.7   | 1.8   | 1.8   | 2.1   | 2.5   | 2.5    | 2.1   | 2.1    | 0.4   |
| 92.5°  | 4.2   | 9.7   | 9.7   | 11.8  | 12.5  | 14.6   | 16.7  | 17.4   | 18.8  |
| 95°    | 29.2  | 20.8  | 23.6  | 25.7  | 27.1  | 29.2   | 27.8  | 25.7   | 50.7  |
| 97.5°  | 65.3  | 26.4  | 33.3  | 34.7  | 36.8  | 37.5   | 37.5  | 29.2   | 92.4  |
| 100°   | 109.0 | 30.6  | 39.6  | 45.1  | 46.5  | 46.5   | 42.4  | 65.3   | 142.4 |
| 102.5° | 160.4 | 136.1 | 43.1  | 50.0  | 52.8  | 50.7   | 45.1  | 221.6  | 198.0 |
| 105°   | 216.0 | 245.2 | 45.8  | 52.8  | 55.6  | 54.2   | 47.2  | 273.0  | 254.2 |
| 107.5° | 274.4 | 297.3 | 48.6  | 55.6  | 58.3  | 56.3   | 57.6  | 325.8  | 310.5 |
| 110°   | 332.7 | 352.1 | 218.1 | 57.6  | 60.4  | 57.6   | 302.1 | 379.2  | 366.7 |



TEST NUMBER: P199399

CATALOG NUMBER: S122-DIW-U1-LO-35-0048-1D-UDD-1-NA-W

**CANDELA DISTRIBUTION (continued):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 112.5° | 388.3  | 408.4  | 409.8  | 61.1   | 61.8   | 66.0   | 449.4  | 433.4  | 423.0  |
| 115°   | 446.6  | 463.3  | 484.8  | 282.0  | 98.6   | 310.5  | 500.8  | 486.9  | 477.9  |
| 117.5° | 500.1  | 516.1  | 532.7  | 495.9  | 377.8  | 539.7  | 550.1  | 539.7  | 530.6  |
| 120°   | 556.3  | 572.3  | 582.7  | 599.4  | 600.8  | 600.8  | 598.7  | 590.4  | 580.7  |
| 122.5° | 611.9  | 622.3  | 630.7  | 647.3  | 652.9  | 646.6  | 645.3  | 637.6  | 630.0  |
| 125°   | 660.5  | 670.3  | 681.4  | 692.5  | 698.0  | 691.8  | 692.5  | 682.8  | 677.2  |
| 127.5° | 706.4  | 714.7  | 729.3  | 736.2  | 741.8  | 734.9  | 737.6  | 727.2  | 723.0  |
| 130°   | 750.8  | 756.4  | 773.1  | 778.6  | 783.5  | 779.3  | 781.4  | 770.3  | 766.8  |
| 132.5° | 794.6  | 802.2  | 816.1  | 818.2  | 823.8  | 817.5  | 825.1  | 809.9  | 808.5  |
| 135°   | 840.4  | 846.7  | 857.1  | 857.8  | 862.0  | 858.5  | 864.7  | 852.2  | 848.1  |
| 137.5° | 883.5  | 886.3  | 895.3  | 892.5  | 898.8  | 893.2  | 902.2  | 889.7  | 887.0  |
| 140°   | 921.0  | 923.1  | 929.3  | 930.7  | 934.9  | 930.0  | 937.0  | 924.5  | 923.1  |
| 142.5° | 955.7  | 958.5  | 964.1  | 963.4  | 968.2  | 963.4  | 971.7  | 960.6  | 959.2  |
| 145°   | 988.4  | 992.5  | 997.4  | 995.3  | 998.8  | 996.0  | 1004.3 | 992.5  | 991.8  |
| 147.5° | 1021.0 | 1022.4 | 1029.3 | 1025.9 | 1028.0 | 1024.5 | 1033.5 | 1023.8 | 1022.4 |
| 150°   | 1049.5 | 1052.3 | 1056.4 | 1052.3 | 1053.0 | 1050.9 | 1059.9 | 1051.6 | 1050.2 |
| 152.5° | 1078.0 | 1077.3 | 1083.5 | 1075.2 | 1078.7 | 1075.2 | 1085.6 | 1077.3 | 1077.3 |
| 155°   | 1100.9 | 1100.2 | 1107.8 | 1098.8 | 1100.2 | 1097.4 | 1109.2 | 1099.5 | 1101.6 |
| 157.5° | 1123.8 | 1120.3 | 1129.4 | 1120.3 | 1117.6 | 1119.6 | 1128.7 | 1119.6 | 1123.8 |
| 160°   | 1143.9 | 1140.5 | 1148.8 | 1139.1 | 1137.0 | 1138.4 | 1148.1 | 1139.8 | 1141.2 |
| 162.5° | 1161.3 | 1156.5 | 1164.1 | 1153.7 | 1153.7 | 1151.6 | 1164.1 | 1155.8 | 1159.9 |
| 165°   | 1176.6 | 1171.0 | 1177.3 | 1166.9 | 1165.5 | 1164.1 | 1175.2 | 1169.6 | 1173.8 |
| 167.5° | 1187.7 | 1182.2 | 1187.7 | 1175.9 | 1177.3 | 1174.5 | 1185.6 | 1182.2 | 1187.0 |
| 170°   | 1198.1 | 1191.2 | 1193.3 | 1182.8 | 1182.8 | 1180.8 | 1192.6 | 1189.1 | 1196.0 |
| 172.5° | 1205.1 | 1197.4 | 1197.4 | 1185.6 | 1182.8 | 1184.2 | 1196.7 | 1196.0 | 1205.8 |
| 175°   | 1211.3 | 1200.9 | 1198.1 | 1187.0 | 1179.4 | 1186.3 | 1198.1 | 1200.2 | 1209.2 |
| 177.5° | 1212.7 | 1203.0 | 1200.2 | 1187.7 | 1185.6 | 1186.3 | 1200.9 | 1201.6 | 1209.2 |
| 180°   | 1198.8 | 1198.8 | 1198.8 | 1198.8 | 1198.8 | 1198.8 | 1198.8 | 1198.8 | 1198.8 |

(END OF REPORT)