

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: P199499

Luminaire Tested: **S124-DIW-U2-LO-40-0048-1D-UDD-1-5-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199499  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P28062 P28062)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124-DIW-U2-LO-40-0048-1D-UDD-1-5-W  
Description: DEFINE 4-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LL2-4000K, SATIN WHITE DIFFUSER  
DOWNLIGHT LLO-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

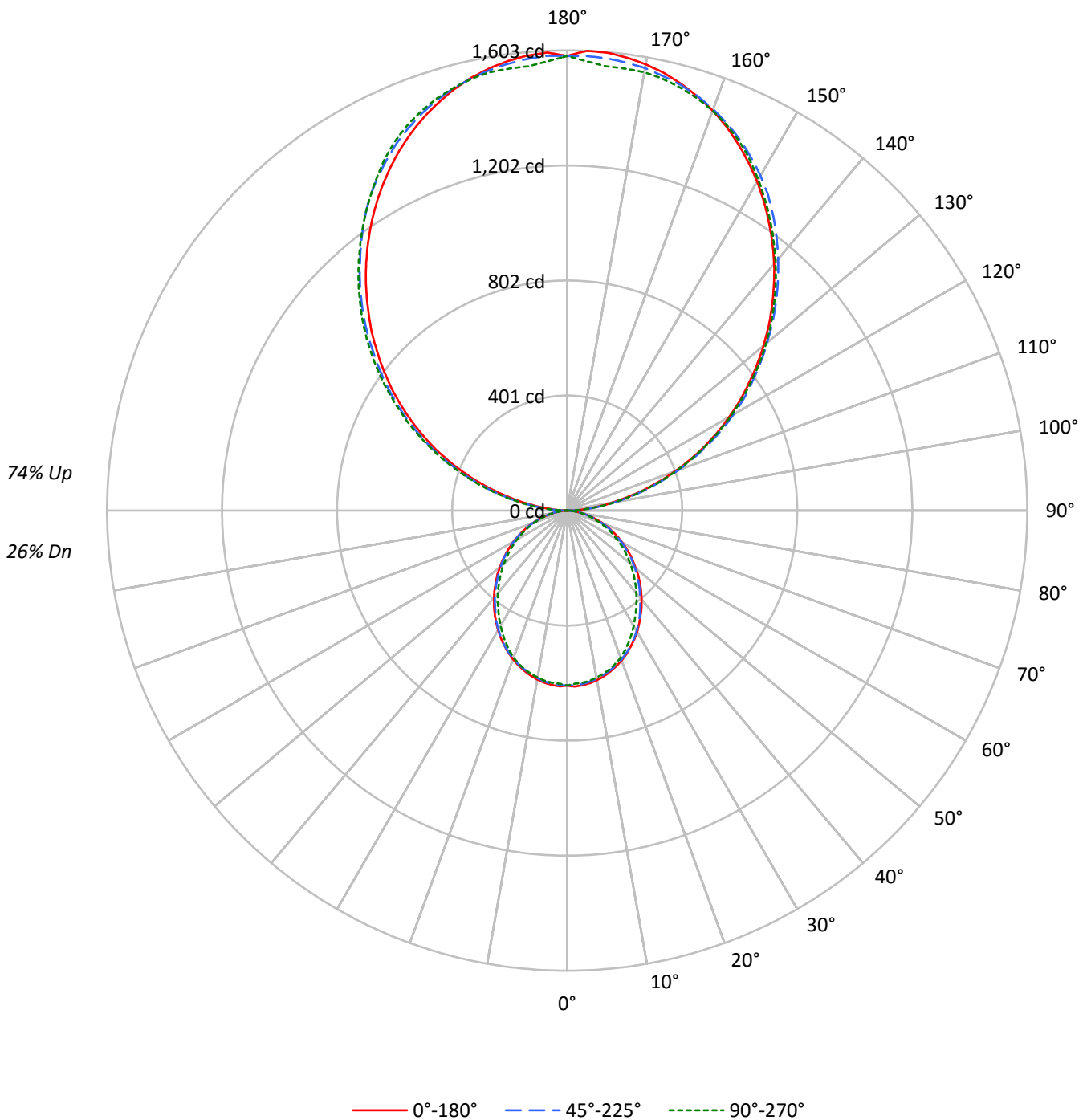
Lumens per Lamp: N/A  
Luminaire Lumens: 5882.0 lumens  
Efficiency: N/A  
Efficacy: 112.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.14 / 1.28  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Indirect

Input Watts (W): 52.3  
Input Voltage (V): NR  
Input Current (Ain): 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: P199499

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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 | 42 | 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  | 47  | 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  | 48  | 40  | 34  | 52 | 43 | 36 | 31 | 34 | 29 | 25 | 25 | 22 | 19 | 17 | 15 | 14 | 10 |
| 7   | 54  | 43  | 35  | 30  | 48 | 38 | 32 | 27 | 30 | 26 | 22 | 23 | 19 | 17 | 16 | 14 | 12 | 9  |
| 8   | 50  | 39  | 31  | 26  | 45 | 35 | 28 | 24 | 28 | 23 | 19 | 21 | 17 | 15 | 14 | 12 | 11 | 8  |
| 9   | 47  | 35  | 28  | 23  | 42 | 32 | 25 | 21 | 25 | 21 | 17 | 19 | 16 | 13 | 13 | 11 | 10 | 7  |
| 10  | 44  | 32  | 25  | 21  | 39 | 29 | 23 | 19 | 23 | 19 | 15 | 17 | 14 | 12 | 12 | 10 | 9  | 7  |

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

|     | 0°   | 90°  | 180° |
|-----|------|------|------|
| 0°  | 4819 | 4819 | 4819 |
| 5°  | 4810 | 4354 | 4802 |
| 10° | 4743 | 3955 | 4722 |
| 15° | 4639 | 3600 | 4616 |
| 20° | 4521 | 3251 | 4489 |
| 25° | 4378 | 2899 | 4338 |
| 30° | 4227 | 2568 | 4173 |
| 35° | 4047 | 2262 | 3990 |
| 40° | 3867 | 1992 | 3799 |
| 45° | 3672 | 1743 | 3601 |
| 50° | 3452 | 1508 | 3391 |
| 55° | 3256 | 1290 | 3170 |
| 60° | 3012 | 1081 | 2926 |
| 65° | 2770 | 877  | 2661 |
| 70° | 2463 | 675  | 2347 |
| 75° | 2071 | 474  | 1921 |
| 80° | 1554 | 289  | 1455 |
| 85° | 912  | 128  | 863  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 57.4   | 1.0       |
| 10°-20°   | 161.7  | 2.7       |
| 20°-30°   | 236.9  | 4.0       |
| 30°-40°   | 271.6  | 4.6       |
| 40°-50°   | 267.7  | 4.6       |
| 50°-60°   | 230.8  | 3.9       |
| 60°-70°   | 168.3  | 2.9       |
| 70°-80°   | 91.8   | 1.6       |
| 80°-90°   | 24.1   | 0.4       |
| 90°-100°  | 81.2   | 1.4       |
| 100°-110° | 295.2  | 5.0       |
| 110°-120° | 522.7  | 8.9       |
| 120°-130° | 694.8  | 11.8      |
| 130°-140° | 781.4  | 13.3      |
| 140°-150° | 768.3  | 13.1      |
| 150°-160° | 648.4  | 11.0      |
| 160°-170° | 430.1  | 7.3       |
| 170°-180° | 149.9  | 2.5       |
| 0°-30°    | 456.0  | 7.8       |
| 0°-40°    | 727.6  | 12.4      |
| 0°-60°    | 1226.1 | 20.8      |
| 0°-90°    | 1510.2 | 25.7      |
| 90°-120°  | 899.0  | 15.3      |
| 90°-150°  | 3143.5 | 53.4      |
| 90°-180°  | 4372.0 | 74.3      |
| 0°-180°   | 5882.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|------|------|------|------|------|------|------|
| 0°   | 609  | 609  | 609  | 609  | 609  |      |
| 5°   | 611  | 606  | 602  | 606  | 610  | 58   |
| 15°  | 581  | 576  | 572  | 573  | 578  | 164  |
| 25°  | 523  | 522  | 507  | 517  | 518  | 241  |
| 35°  | 446  | 441  | 419  | 435  | 440  | 279  |
| 45°  | 358  | 351  | 331  | 345  | 352  | 277  |
| 55°  | 267  | 263  | 244  | 257  | 260  | 238  |
| 65°  | 177  | 173  | 160  | 169  | 170  | 175  |
| 75°  | 91   | 88   | 81   | 84   | 84   | 97   |
| 85°  | 21   | 21   | 20   | 20   | 20   | 23   |
| 90°  | 1    | 2    | 1    | 2    | 1    | 6    |
| 95°  | 68   | 75   | 73   | 69   | 53   | 74   |
| 105° | 274  | 287  | 283  | 277  | 255  | 290  |
| 115° | 528  | 541  | 532  | 524  | 505  | 521  |
| 125° | 772  | 790  | 782  | 771  | 748  | 691  |
| 135° | 1010 | 1029 | 1020 | 1011 | 980  | 779  |
| 145° | 1225 | 1252 | 1234 | 1232 | 1196 | 767  |
| 155° | 1409 | 1424 | 1419 | 1409 | 1383 | 649  |
| 165° | 1538 | 1534 | 1525 | 1524 | 1520 | 434  |
| 175° | 1601 | 1582 | 1554 | 1579 | 1591 | 152  |
| 180° | 1584 | 1584 | 1584 | 1584 | 1584 |      |



TEST NUMBER: P199499

CATALOG NUMBER: S124-DIW-U2-LO-40-0048-1D-UDD-1-5-W

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  |
|--------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0°     | 609.4 | 609.4 | 609.4 | 609.4 | 609.4 | 609.4  | 609.4 | 609.4  | 609.4 |
| 2.5°   | 613.8 | 606.8 | 609.0 | 607.5 | 603.5 | 607.5  | 608.6 | 606.4  | 613.1 |
| 5°     | 610.8 | 604.2 | 606.4 | 604.2 | 602.4 | 603.8  | 605.7 | 603.1  | 609.7 |
| 7.5°   | 606.4 | 599.4 | 601.3 | 599.4 | 597.6 | 599.1  | 600.2 | 597.9  | 604.9 |
| 10°    | 600.2 | 592.8 | 594.6 | 592.4 | 590.2 | 591.7  | 592.8 | 590.6  | 597.6 |
| 12.5°  | 591.3 | 584.3 | 585.8 | 584.3 | 582.5 | 582.8  | 583.6 | 581.4  | 588.7 |
| 15°    | 580.6 | 573.6 | 576.2 | 574.7 | 572.2 | 573.6  | 573.3 | 570.7  | 577.7 |
| 17.5°  | 568.5 | 561.8 | 564.8 | 563.3 | 559.6 | 561.8  | 561.8 | 557.8  | 565.2 |
| 20°    | 555.2 | 548.2 | 552.3 | 548.6 | 544.5 | 546.7  | 548.6 | 543.8  | 551.2 |
| 22.5°  | 540.5 | 533.1 | 537.9 | 531.3 | 526.8 | 529.4  | 533.8 | 528.7  | 535.3 |
| 25°    | 523.2 | 517.3 | 521.7 | 512.5 | 506.6 | 510.3  | 517.3 | 512.1  | 518.4 |
| 27.5°  | 506.2 | 500.3 | 504.0 | 493.7 | 485.6 | 490.4  | 499.2 | 494.8  | 500.3 |
| 30°    | 487.4 | 482.6 | 484.5 | 472.3 | 463.8 | 469.0  | 479.3 | 476.7  | 481.2 |
| 32.5°  | 466.8 | 463.1 | 463.1 | 450.2 | 441.4 | 447.3  | 458.3 | 457.6  | 460.5 |
| 35°    | 446.2 | 443.9 | 441.4 | 427.4 | 418.9 | 424.4  | 435.1 | 438.1  | 439.9 |
| 37.5°  | 425.2 | 423.7 | 418.9 | 405.3 | 397.2 | 403.1  | 413.0 | 417.4  | 418.5 |
| 40°    | 403.4 | 402.7 | 396.1 | 383.2 | 375.1 | 380.9  | 391.3 | 396.8  | 396.4 |
| 42.5°  | 381.3 | 382.1 | 373.9 | 361.4 | 353.3 | 359.2  | 368.8 | 376.2  | 374.3 |
| 45°    | 358.5 | 360.7 | 351.1 | 339.7 | 331.2 | 337.5  | 345.2 | 354.4  | 351.5 |
| 47.5°  | 336.4 | 338.9 | 329.0 | 317.2 | 309.1 | 315.7  | 323.5 | 333.4  | 329.0 |
| 50°    | 311.3 | 316.5 | 306.9 | 295.1 | 287.0 | 293.3  | 302.5 | 310.9  | 305.8 |
| 52.5°  | 289.6 | 293.3 | 284.8 | 273.4 | 265.6 | 270.8  | 280.0 | 288.5  | 282.9 |
| 55°    | 267.1 | 271.2 | 262.7 | 251.3 | 243.9 | 249.1  | 257.2 | 265.6  | 260.1 |
| 57.5°  | 243.5 | 247.6 | 239.8 | 229.5 | 222.5 | 228.1  | 236.5 | 242.4  | 237.3 |
| 60°    | 220.7 | 225.8 | 217.4 | 207.4 | 201.5 | 205.9  | 212.6 | 219.6  | 214.4 |
| 62.5°  | 198.6 | 203.4 | 195.3 | 186.1 | 180.5 | 184.6  | 191.6 | 197.1  | 192.3 |
| 65°    | 177.2 | 180.2 | 173.2 | 164.7 | 159.9 | 162.5  | 168.7 | 175.0  | 170.2 |
| 67.5°  | 155.5 | 158.4 | 151.4 | 144.1 | 139.3 | 141.8  | 147.0 | 152.9  | 148.5 |
| 70°    | 133.4 | 135.9 | 130.1 | 123.4 | 119.4 | 121.9  | 126.7 | 131.2  | 127.1 |
| 72.5°  | 112.4 | 114.2 | 108.7 | 103.5 | 100.6 | 102.4  | 105.7 | 109.8  | 107.9 |
| 75°    | 91.0  | 93.2  | 87.7  | 83.3  | 80.7  | 81.4   | 84.0  | 87.3   | 84.4  |
| 77.5°  | 70.7  | 72.9  | 68.5  | 65.2  | 63.7  | 64.1   | 65.9  | 68.5   | 64.8  |
| 80°    | 51.9  | 53.8  | 51.2  | 48.3  | 46.8  | 47.5   | 48.6  | 50.1   | 48.6  |
| 82.5°  | 35.0  | 36.8  | 35.0  | 33.2  | 32.1  | 32.8   | 33.2  | 33.9   | 32.8  |
| 85°    | 20.6  | 22.1  | 21.0  | 19.9  | 19.5  | 19.5   | 19.9  | 20.6   | 19.5  |
| 87.5°  | 9.2   | 10.3  | 9.6   | 8.8   | 7.7   | 8.1    | 8.5   | 9.2    | 8.5   |
| 90°    | 0.7   | 1.8   | 1.5   | 1.1   | 1.1   | 1.1    | 1.5   | 1.8    | 0.7   |
| 92.5°  | 31.0  | 35.1  | 36.1  | 33.0  | 33.0  | 32.0   | 29.9  | 28.9   | 18.6  |
| 95°    | 68.1  | 74.3  | 75.4  | 75.4  | 73.3  | 71.2   | 69.2  | 64.0   | 52.6  |
| 97.5°  | 110.5 | 117.7 | 119.7 | 117.7 | 118.7 | 116.6  | 111.5 | 106.3  | 95.0  |
| 100°   | 159.0 | 168.3 | 170.3 | 168.3 | 169.3 | 164.1  | 162.1 | 156.9  | 143.5 |
| 102.5° | 212.6 | 224.0 | 225.0 | 223.0 | 223.0 | 218.8  | 216.8 | 210.6  | 197.2 |
| 105°   | 273.6 | 285.9 | 287.0 | 282.8 | 282.8 | 278.7  | 276.7 | 270.5  | 255.0 |
| 107.5° | 335.5 | 347.9 | 347.9 | 343.7 | 343.7 | 340.7  | 336.5 | 332.4  | 316.9 |
| 110°   | 399.5 | 409.8 | 411.9 | 406.7 | 405.7 | 402.6  | 398.5 | 392.3  | 378.8 |



TEST NUMBER: P199499

CATALOG NUMBER: S124-DIW-U2-LO-40-0048-1D-UDD-1-5-W

**CANDELA DISTRIBUTION (continued):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 112.5° | 463.5  | 473.8  | 475.9  | 469.7  | 468.7  | 462.5  | 461.4  | 454.2  | 440.8  |
| 115°   | 527.5  | 537.8  | 540.9  | 533.7  | 531.6  | 524.4  | 524.4  | 517.2  | 504.8  |
| 117.5° | 589.4  | 601.8  | 604.9  | 596.7  | 595.6  | 589.4  | 585.3  | 579.1  | 565.7  |
| 120°   | 651.4  | 666.9  | 668.9  | 659.6  | 658.6  | 651.4  | 649.3  | 641.0  | 627.6  |
| 122.5° | 713.3  | 728.8  | 731.9  | 723.6  | 720.5  | 711.2  | 710.2  | 703.0  | 688.5  |
| 125°   | 772.1  | 789.7  | 789.7  | 785.6  | 782.5  | 775.2  | 771.1  | 762.9  | 748.4  |
| 127.5° | 833.0  | 851.6  | 850.6  | 847.5  | 844.4  | 834.1  | 831.0  | 822.7  | 807.2  |
| 130°   | 892.9  | 909.4  | 909.4  | 907.4  | 905.3  | 896.0  | 890.9  | 882.6  | 865.0  |
| 132.5° | 951.8  | 968.3  | 970.3  | 965.2  | 963.1  | 950.7  | 951.8  | 941.4  | 923.9  |
| 135°   | 1009.6 | 1024.0 | 1029.2 | 1020.9 | 1019.9 | 1006.5 | 1010.6 | 997.2  | 979.6  |
| 137.5° | 1066.3 | 1077.7 | 1087.0 | 1076.7 | 1075.6 | 1062.2 | 1068.4 | 1050.9 | 1035.4 |
| 140°   | 1122.1 | 1131.4 | 1143.8 | 1131.4 | 1129.3 | 1116.9 | 1123.1 | 1104.5 | 1091.1 |
| 142.5° | 1174.7 | 1183.0 | 1198.5 | 1185.1 | 1182.0 | 1170.6 | 1177.8 | 1156.2 | 1143.8 |
| 145°   | 1225.3 | 1231.5 | 1252.2 | 1237.7 | 1233.6 | 1223.3 | 1232.5 | 1205.7 | 1196.4 |
| 147.5° | 1275.9 | 1279.0 | 1302.7 | 1289.3 | 1283.1 | 1274.9 | 1284.2 | 1254.2 | 1247.0 |
| 150°   | 1323.4 | 1323.4 | 1347.1 | 1336.8 | 1331.6 | 1322.3 | 1328.5 | 1299.6 | 1294.5 |
| 152.5° | 1367.8 | 1365.7 | 1387.4 | 1381.2 | 1378.1 | 1367.8 | 1369.8 | 1343.0 | 1339.9 |
| 155°   | 1409.1 | 1404.9 | 1424.5 | 1421.4 | 1419.4 | 1409.1 | 1409.1 | 1382.2 | 1383.3 |
| 157.5° | 1448.3 | 1440.0 | 1458.6 | 1457.6 | 1453.4 | 1445.2 | 1443.1 | 1419.4 | 1422.5 |
| 160°   | 1482.4 | 1475.1 | 1487.5 | 1485.4 | 1482.4 | 1474.1 | 1474.1 | 1453.4 | 1458.6 |
| 162.5° | 1512.3 | 1503.0 | 1513.3 | 1507.1 | 1506.1 | 1496.8 | 1500.9 | 1483.4 | 1490.6 |
| 165°   | 1538.1 | 1528.8 | 1534.0 | 1525.7 | 1524.7 | 1516.4 | 1523.6 | 1511.3 | 1519.5 |
| 167.5° | 1560.8 | 1550.5 | 1549.5 | 1542.2 | 1540.2 | 1534.0 | 1542.2 | 1535.0 | 1544.3 |
| 170°   | 1578.4 | 1568.0 | 1564.9 | 1552.5 | 1550.5 | 1545.3 | 1557.7 | 1555.6 | 1563.9 |
| 172.5° | 1591.8 | 1581.5 | 1574.2 | 1559.8 | 1552.5 | 1553.6 | 1570.1 | 1570.1 | 1579.4 |
| 175°   | 1601.1 | 1589.7 | 1581.5 | 1567.0 | 1553.6 | 1561.8 | 1579.4 | 1580.4 | 1590.7 |
| 177.5° | 1603.1 | 1591.8 | 1584.5 | 1571.1 | 1566.0 | 1567.0 | 1585.6 | 1585.6 | 1596.9 |
| 180°   | 1583.5 | 1583.5 | 1583.5 | 1583.5 | 1583.5 | 1583.5 | 1583.5 | 1583.5 | 1583.5 |

(END OF REPORT)