

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: P199515

Luminaire Tested: **S124-DIW-ULO-LO-35-0048-1D-UDD-1-5-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P199515
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-ULO-LO-35-0048-1D-UDD-1-5-W
Description: DEFINE 4-INCH DIRECT/INDIRECT WALL LED LUMINAIRE
UPLIGHT LLO-3500K, SATIN WHITE DIFFUSER
DOWNLIGHT LLO-3500K, SATIN WHITE DIFFUSER
Light Source: -
757G
Ballast/Driver: ELECTRONIC DRIVERS

Summary

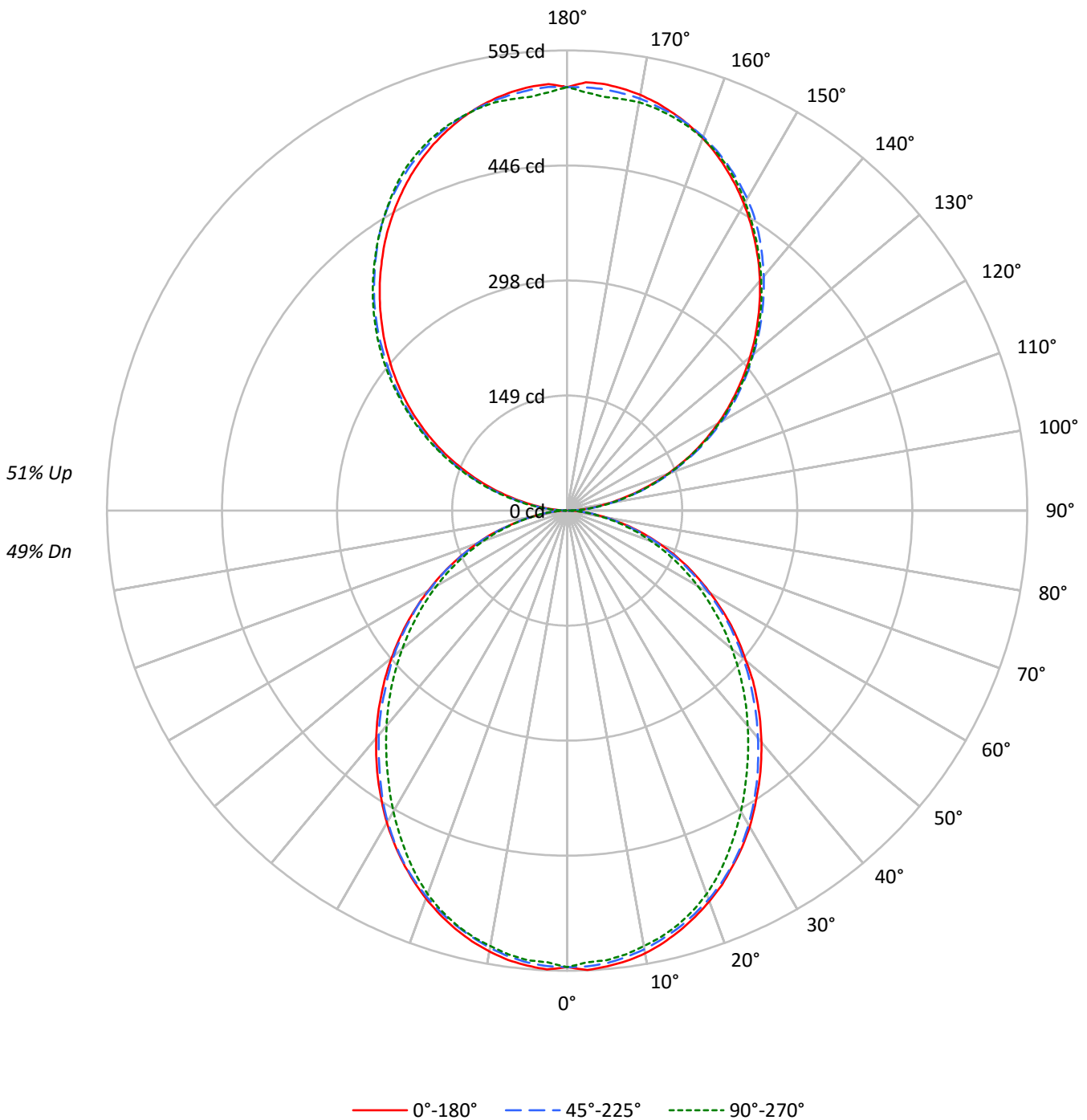
Lumens per Lamp: N/A
Luminaire Lumens: 2974.6 lumens
Efficiency: N/A
Efficacy: 110.6 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.14 / 1.28
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4.08' x H: 0.38')
CIE Type: General Diffuse

Input Watts (W): 26.9
Input Voltage (V): NR
Input Current (A_{in}): 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

TEST NUMBER: P199515

CATALOG NUMBER: S124-DIW-ULO-LO-35-0048-1D-UDD-1-5-W

Luminous Intensity Polar Plot





TEST NUMBER: P199515

CATALOG NUMBER: S124-DIW-ULO-LO-35-0048-1D-UDD-1-5-W

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 | 107 | 107 | 107 | 107 | 99 | 99 | 99 | 99 | 83 | 83 | 83 | 69 | 69 | 69 | 55 | 55 | 55 | 49 |
| 1 | 98 | 93 | 90 | 86 | 90 | 86 | 83 | 80 | 73 | 70 | 68 | 60 | 59 | 57 | 49 | 48 | 47 | 42 |
| 2 | 89 | 82 | 76 | 70 | 82 | 75 | 70 | 66 | 64 | 60 | 57 | 53 | 50 | 48 | 43 | 41 | 40 | 35 |
| 3 | 81 | 72 | 65 | 59 | 75 | 66 | 60 | 55 | 56 | 52 | 48 | 47 | 44 | 41 | 38 | 36 | 34 | 30 |
| 4 | 74 | 64 | 56 | 50 | 68 | 59 | 52 | 47 | 50 | 45 | 41 | 42 | 38 | 35 | 34 | 32 | 29 | 26 |
| 5 | 68 | 57 | 49 | 43 | 63 | 53 | 45 | 40 | 45 | 39 | 35 | 38 | 34 | 30 | 31 | 28 | 26 | 22 |
| 6 | 63 | 51 | 43 | 37 | 58 | 47 | 40 | 35 | 40 | 35 | 31 | 34 | 30 | 27 | 28 | 25 | 23 | 20 |
| 7 | 58 | 46 | 38 | 32 | 54 | 43 | 36 | 31 | 37 | 31 | 27 | 31 | 27 | 24 | 26 | 23 | 20 | 17 |
| 8 | 54 | 42 | 34 | 29 | 50 | 39 | 32 | 27 | 34 | 28 | 24 | 28 | 24 | 21 | 24 | 20 | 18 | 16 |
| 9 | 50 | 38 | 31 | 26 | 46 | 36 | 29 | 24 | 31 | 25 | 22 | 26 | 22 | 19 | 22 | 19 | 16 | 14 |
| 10 | 47 | 35 | 28 | 23 | 43 | 33 | 26 | 22 | 28 | 23 | 19 | 24 | 20 | 17 | 20 | 17 | 15 | 13 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|------|------|------|
| 0° | 4668 | 4668 | 4668 |
| 5° | 4660 | 4217 | 4652 |
| 10° | 4594 | 3832 | 4575 |
| 15° | 4495 | 3487 | 4472 |
| 20° | 4380 | 3150 | 4348 |
| 25° | 4241 | 2808 | 4202 |
| 30° | 4095 | 2487 | 4042 |
| 35° | 3920 | 2191 | 3865 |
| 40° | 3746 | 1929 | 3681 |
| 45° | 3557 | 1689 | 3488 |
| 50° | 3345 | 1461 | 3285 |
| 55° | 3155 | 1250 | 3072 |
| 60° | 2918 | 1047 | 2834 |
| 65° | 2684 | 849 | 2578 |
| 70° | 2385 | 653 | 2273 |
| 75° | 2007 | 460 | 1859 |
| 80° | 1506 | 280 | 1410 |
| 85° | 885 | 124 | 837 |



TEST NUMBER: P199515

CATALOG NUMBER: S124-DIW-ULO-LO-35-0048-1D-UDD-1-5-W

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 55.6 | 1.9 |
| 10°-20° | 156.7 | 5.3 |
| 20°-30° | 229.5 | 7.7 |
| 30°-40° | 263.1 | 8.8 |
| 40°-50° | 259.3 | 8.7 |
| 50°-60° | 223.5 | 7.5 |
| 60°-70° | 163.0 | 5.5 |
| 70°-80° | 88.9 | 3.0 |
| 80°-90° | 23.3 | 0.8 |
| 90°-100° | 28.2 | 0.9 |
| 100°-110° | 102.1 | 3.4 |
| 110°-120° | 180.7 | 6.1 |
| 120°-130° | 240.2 | 8.1 |
| 130°-140° | 270.1 | 9.1 |
| 140°-150° | 265.6 | 8.9 |
| 150°-160° | 224.2 | 7.5 |
| 160°-170° | 148.7 | 5.0 |
| 170°-180° | 51.8 | 1.7 |
| 0°-30° | 441.8 | 14.9 |
| 0°-40° | 704.8 | 23.7 |
| 0°-60° | 1187.7 | 39.9 |
| 0°-90° | 1463.0 | 49.2 |
| 90°-120° | 310.9 | 10.5 |
| 90°-150° | 1086.9 | 36.5 |
| 90°-180° | 1512.0 | 50.8 |
| 0°-180° | 2974.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|------|-----|-----|-----|------|------|------|
| 0° | 590 | 590 | 590 | 590 | 590 | |
| 5° | 592 | 588 | 584 | 587 | 591 | 56 |
| 15° | 562 | 558 | 554 | 555 | 560 | 159 |
| 25° | 507 | 505 | 491 | 501 | 502 | 234 |
| 35° | 432 | 428 | 406 | 422 | 426 | 270 |
| 45° | 347 | 340 | 321 | 334 | 340 | 268 |
| 55° | 259 | 254 | 236 | 249 | 252 | 231 |
| 65° | 172 | 168 | 155 | 164 | 165 | 170 |
| 75° | 88 | 85 | 78 | 81 | 82 | 94 |
| 85° | 20 | 20 | 19 | 19 | 19 | 23 |
| 90° | 1 | 1 | 1 | 1 | 1 | 3 |
| 95° | 24 | 26 | 25 | 24 | 18 | 26 |
| 105° | 95 | 99 | 98 | 96 | 88 | 100 |
| 115° | 182 | 187 | 184 | 181 | 174 | 180 |
| 125° | 267 | 273 | 270 | 267 | 259 | 239 |
| 135° | 349 | 356 | 353 | 349 | 339 | 269 |
| 145° | 424 | 433 | 426 | 426 | 414 | 265 |
| 155° | 487 | 492 | 491 | 487 | 478 | 224 |
| 165° | 532 | 530 | 527 | 527 | 525 | 150 |
| 175° | 554 | 547 | 537 | 546 | 550 | 53 |
| 180° | 548 | 548 | 548 | 548 | 548 | |



TEST NUMBER: P199515

CATALOG NUMBER: S124-DIW-ULO-LO-35-0048-1D-UDD-1-5-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|--------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0° | 590.3 | 590.3 | 590.3 | 590.3 | 590.3 | 590.3 | 590.3 | 590.3 | 590.3 |
| 2.5° | 594.6 | 587.8 | 590.0 | 588.5 | 584.6 | 588.5 | 589.6 | 587.5 | 593.9 |
| 5° | 591.7 | 585.3 | 587.5 | 585.3 | 583.5 | 585.0 | 586.7 | 584.2 | 590.7 |
| 7.5° | 587.5 | 580.7 | 582.5 | 580.7 | 578.9 | 580.3 | 581.4 | 579.2 | 586.0 |
| 10° | 581.4 | 574.3 | 576.0 | 573.9 | 571.8 | 573.2 | 574.3 | 572.1 | 578.9 |
| 12.5° | 572.8 | 566.0 | 567.5 | 566.0 | 564.3 | 564.6 | 565.3 | 563.2 | 570.3 |
| 15° | 562.5 | 555.7 | 558.2 | 556.8 | 554.3 | 555.7 | 555.3 | 552.8 | 559.6 |
| 17.5° | 550.7 | 544.3 | 547.1 | 545.7 | 542.1 | 544.3 | 544.3 | 540.3 | 547.5 |
| 20° | 537.8 | 531.1 | 535.0 | 531.4 | 527.5 | 529.6 | 531.4 | 526.8 | 533.9 |
| 22.5° | 523.6 | 516.4 | 521.1 | 514.6 | 510.4 | 512.9 | 517.1 | 512.2 | 518.6 |
| 25° | 506.8 | 501.1 | 505.4 | 496.4 | 490.7 | 494.3 | 501.1 | 496.1 | 502.2 |
| 27.5° | 490.4 | 484.7 | 488.2 | 478.2 | 470.4 | 475.0 | 483.6 | 479.3 | 484.7 |
| 30° | 472.2 | 467.5 | 469.3 | 457.5 | 449.3 | 454.3 | 464.3 | 461.8 | 466.1 |
| 32.5° | 452.2 | 448.6 | 448.6 | 436.1 | 427.6 | 433.3 | 444.0 | 443.3 | 446.1 |
| 35° | 432.2 | 430.1 | 427.6 | 414.0 | 405.8 | 411.1 | 421.5 | 424.4 | 426.1 |
| 37.5° | 411.9 | 410.4 | 405.8 | 392.6 | 384.7 | 390.4 | 400.1 | 404.4 | 405.4 |
| 40° | 390.8 | 390.1 | 383.7 | 371.2 | 363.3 | 369.0 | 379.0 | 384.4 | 384.0 |
| 42.5° | 369.4 | 370.1 | 362.3 | 350.1 | 342.3 | 348.0 | 357.3 | 364.4 | 362.6 |
| 45° | 347.3 | 349.4 | 340.1 | 329.1 | 320.9 | 326.9 | 334.4 | 343.3 | 340.5 |
| 47.5° | 325.8 | 328.3 | 318.7 | 307.3 | 299.4 | 305.9 | 313.4 | 323.0 | 318.7 |
| 50° | 301.6 | 306.6 | 297.3 | 285.9 | 278.0 | 284.1 | 293.0 | 301.2 | 296.2 |
| 52.5° | 280.5 | 284.1 | 275.9 | 264.8 | 257.3 | 262.3 | 271.2 | 279.5 | 274.1 |
| 55° | 258.8 | 262.7 | 254.5 | 243.4 | 236.3 | 241.3 | 249.1 | 257.3 | 252.0 |
| 57.5° | 235.9 | 239.8 | 232.3 | 222.3 | 215.6 | 220.9 | 229.1 | 234.8 | 229.8 |
| 60° | 213.8 | 218.8 | 210.6 | 200.9 | 195.2 | 199.5 | 205.9 | 212.7 | 207.7 |
| 62.5° | 192.4 | 197.0 | 189.2 | 180.2 | 174.9 | 178.8 | 185.6 | 190.9 | 186.3 |
| 65° | 171.7 | 174.5 | 167.7 | 159.5 | 154.9 | 157.4 | 163.5 | 169.5 | 164.9 |
| 67.5° | 150.6 | 153.5 | 146.7 | 139.5 | 134.9 | 137.4 | 142.4 | 148.1 | 143.8 |
| 70° | 129.2 | 131.7 | 126.0 | 119.6 | 115.6 | 118.1 | 122.8 | 127.1 | 123.1 |
| 72.5° | 108.9 | 110.6 | 105.3 | 100.3 | 97.4 | 99.2 | 102.4 | 106.4 | 104.6 |
| 75° | 88.2 | 90.3 | 84.9 | 80.7 | 78.2 | 78.9 | 81.4 | 84.6 | 81.7 |
| 77.5° | 68.5 | 70.7 | 66.4 | 63.2 | 61.7 | 62.1 | 63.9 | 66.4 | 62.8 |
| 80° | 50.3 | 52.1 | 49.6 | 46.8 | 45.3 | 46.0 | 47.1 | 48.5 | 47.1 |
| 82.5° | 33.9 | 35.7 | 33.9 | 32.1 | 31.1 | 31.8 | 32.1 | 32.8 | 31.8 |
| 85° | 20.0 | 21.4 | 20.3 | 19.3 | 18.9 | 18.9 | 19.3 | 20.0 | 18.9 |
| 87.5° | 8.9 | 10.0 | 9.3 | 8.6 | 7.5 | 7.9 | 8.2 | 8.9 | 8.2 |
| 90° | 0.7 | 1.8 | 1.4 | 1.1 | 1.1 | 1.1 | 1.4 | 1.8 | 0.7 |
| 92.5° | 10.7 | 12.1 | 12.5 | 11.4 | 11.4 | 11.1 | 10.4 | 10.0 | 6.4 |
| 95° | 23.6 | 25.7 | 26.1 | 26.1 | 25.3 | 24.6 | 23.9 | 22.1 | 18.2 |
| 97.5° | 38.2 | 40.7 | 41.4 | 40.7 | 41.0 | 40.3 | 38.5 | 36.8 | 32.8 |
| 100° | 55.0 | 58.2 | 58.9 | 58.2 | 58.5 | 56.7 | 56.0 | 54.2 | 49.6 |
| 102.5° | 73.5 | 77.4 | 77.8 | 77.1 | 77.1 | 75.7 | 74.9 | 72.8 | 68.2 |
| 105° | 94.6 | 98.9 | 99.2 | 97.8 | 97.8 | 96.4 | 95.6 | 93.5 | 88.2 |
| 107.5° | 116.0 | 120.3 | 120.3 | 118.8 | 118.8 | 117.8 | 116.3 | 114.9 | 109.6 |
| 110° | 138.1 | 141.7 | 142.4 | 140.6 | 140.3 | 139.2 | 137.8 | 135.6 | 131.0 |



TEST NUMBER: P199515

CATALOG NUMBER: S124-DIW-ULO-LO-35-0048-1D-UDD-1-5-W

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|--------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 112.5° | 160.2 | 163.8 | 164.5 | 162.4 | 162.0 | 159.9 | 159.5 | 157.0 | 152.4 |
| 115° | 182.4 | 185.9 | 187.0 | 184.5 | 183.8 | 181.3 | 181.3 | 178.8 | 174.5 |
| 117.5° | 203.8 | 208.1 | 209.1 | 206.3 | 205.9 | 203.8 | 202.4 | 200.2 | 195.6 |
| 120° | 225.2 | 230.6 | 231.3 | 228.1 | 227.7 | 225.2 | 224.5 | 221.6 | 217.0 |
| 122.5° | 246.6 | 252.0 | 253.0 | 250.2 | 249.1 | 245.9 | 245.5 | 243.0 | 238.1 |
| 125° | 267.0 | 273.0 | 273.0 | 271.6 | 270.5 | 268.0 | 266.6 | 263.7 | 258.8 |
| 127.5° | 288.0 | 294.4 | 294.1 | 293.0 | 291.9 | 288.4 | 287.3 | 284.4 | 279.1 |
| 130° | 308.7 | 314.4 | 314.4 | 313.7 | 313.0 | 309.8 | 308.0 | 305.1 | 299.1 |
| 132.5° | 329.1 | 334.8 | 335.5 | 333.7 | 333.0 | 328.7 | 329.1 | 325.5 | 319.4 |
| 135° | 349.0 | 354.0 | 355.8 | 353.0 | 352.6 | 348.0 | 349.4 | 344.8 | 338.7 |
| 137.5° | 368.7 | 372.6 | 375.8 | 372.2 | 371.9 | 367.2 | 369.4 | 363.3 | 358.0 |
| 140° | 388.0 | 391.2 | 395.4 | 391.2 | 390.4 | 386.2 | 388.3 | 381.9 | 377.2 |
| 142.5° | 406.2 | 409.0 | 414.4 | 409.7 | 408.7 | 404.7 | 407.2 | 399.7 | 395.4 |
| 145° | 423.6 | 425.8 | 432.9 | 427.9 | 426.5 | 422.9 | 426.1 | 416.9 | 413.6 |
| 147.5° | 441.1 | 442.2 | 450.4 | 445.8 | 443.6 | 440.8 | 444.0 | 433.6 | 431.1 |
| 150° | 457.5 | 457.5 | 465.8 | 462.2 | 460.4 | 457.2 | 459.3 | 449.3 | 447.6 |
| 152.5° | 472.9 | 472.2 | 479.7 | 477.5 | 476.5 | 472.9 | 473.6 | 464.3 | 463.3 |
| 155° | 487.2 | 485.7 | 492.5 | 491.5 | 490.7 | 487.2 | 487.2 | 477.9 | 478.2 |
| 157.5° | 500.7 | 497.9 | 504.3 | 503.9 | 502.5 | 499.7 | 498.9 | 490.7 | 491.8 |
| 160° | 512.5 | 510.0 | 514.3 | 513.6 | 512.5 | 509.7 | 509.7 | 502.5 | 504.3 |
| 162.5° | 522.9 | 519.6 | 523.2 | 521.1 | 520.7 | 517.5 | 518.9 | 512.9 | 515.4 |
| 165° | 531.8 | 528.6 | 530.4 | 527.5 | 527.1 | 524.3 | 526.8 | 522.5 | 525.4 |
| 167.5° | 539.6 | 536.1 | 535.7 | 533.2 | 532.5 | 530.4 | 533.2 | 530.7 | 533.9 |
| 170° | 545.7 | 542.1 | 541.1 | 536.8 | 536.1 | 534.3 | 538.6 | 537.8 | 540.7 |
| 172.5° | 550.3 | 546.8 | 544.3 | 539.3 | 536.8 | 537.1 | 542.8 | 542.8 | 546.1 |
| 175° | 553.6 | 549.6 | 546.8 | 541.8 | 537.1 | 540.0 | 546.1 | 546.4 | 550.0 |
| 177.5° | 554.3 | 550.3 | 547.8 | 543.2 | 541.4 | 541.8 | 548.2 | 548.2 | 552.1 |
| 180° | 547.5 | 547.5 | 547.5 | 547.5 | 547.5 | 547.5 | 547.5 | 547.5 | 547.5 |

(END OF REPORT)