

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: P199436

Luminaire Tested: **S122-DIP-ULO-LO-40-X-X0048-1D-UDD-1-5-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199436  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P27883 P27883)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122-DIP-ULO-LO-40-X-X0048-1D-UDD-1-5-W  
Description: DEFINE 2-INCH DIRECT/INDIRECT PENDANT LED LUMINAIRE  
UPLIGHT LLO-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: 2773.2 lumens  
Efficiency: N/A  
Efficacy: 103.1 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: General Diffuse

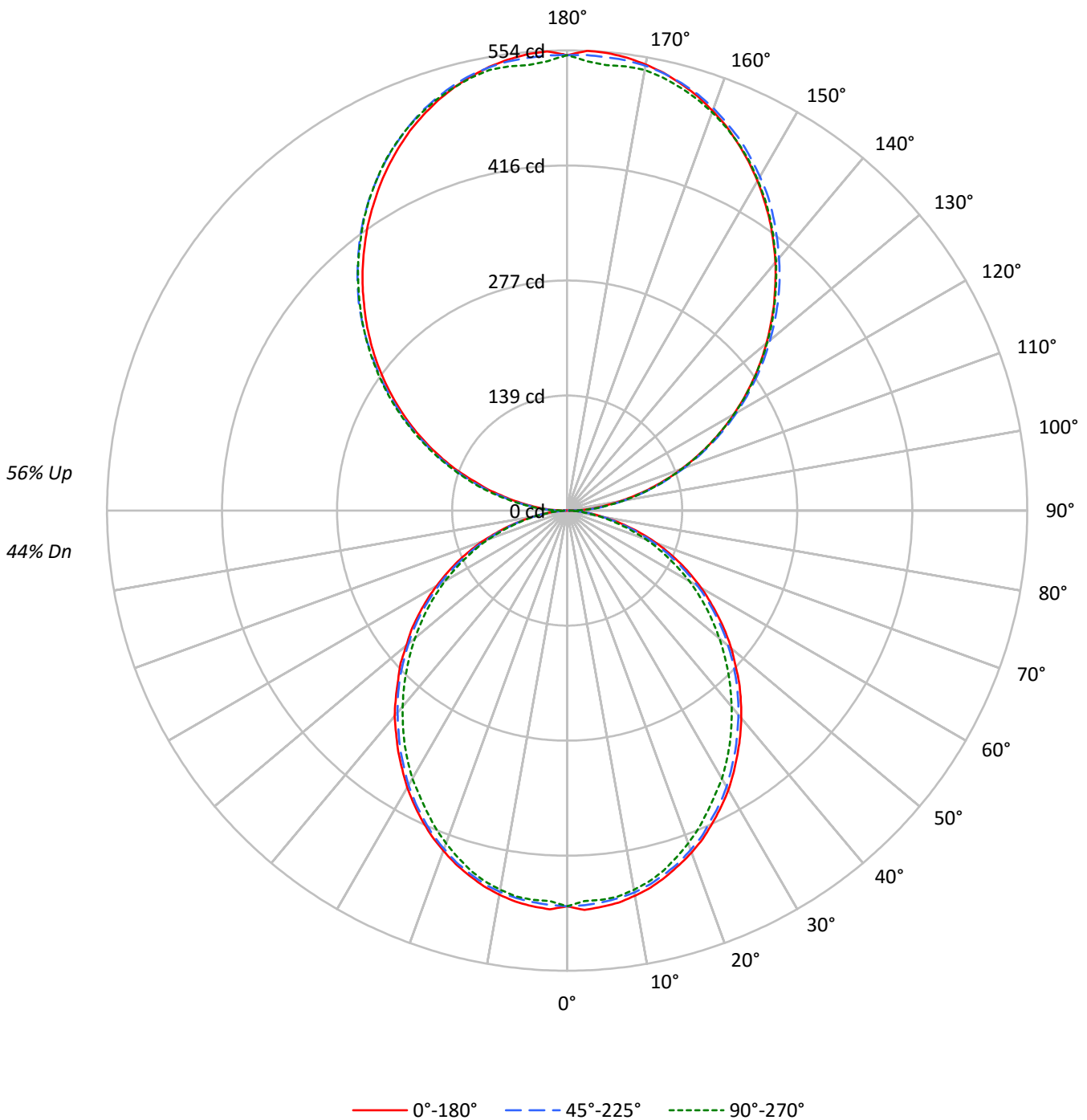
Input Watts (W): 26.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P199436

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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   | 106 | 106 | 106 | 106 | 97 | 97 | 97 | 97 | 80 | 80 | 80 | 65 | 65 | 65 | 51 | 51 | 51 | 44 |
| 1   | 97  | 92  | 88  | 85  | 88 | 85 | 81 | 78 | 70 | 68 | 66 | 57 | 56 | 54 | 45 | 44 | 43 | 37 |
| 2   | 88  | 81  | 75  | 69  | 80 | 74 | 69 | 64 | 62 | 58 | 55 | 50 | 47 | 45 | 40 | 38 | 36 | 31 |
| 3   | 80  | 71  | 64  | 58  | 73 | 65 | 59 | 54 | 54 | 50 | 46 | 44 | 41 | 38 | 35 | 33 | 31 | 27 |
| 4   | 73  | 63  | 55  | 49  | 67 | 58 | 51 | 46 | 48 | 43 | 39 | 39 | 36 | 33 | 31 | 29 | 27 | 23 |
| 5   | 67  | 56  | 48  | 42  | 61 | 51 | 44 | 39 | 43 | 38 | 34 | 35 | 31 | 28 | 28 | 25 | 23 | 20 |
| 6   | 62  | 50  | 42  | 36  | 57 | 46 | 39 | 34 | 39 | 33 | 29 | 32 | 28 | 25 | 26 | 23 | 20 | 17 |
| 7   | 57  | 45  | 37  | 32  | 52 | 42 | 35 | 30 | 35 | 30 | 26 | 29 | 25 | 22 | 23 | 20 | 18 | 15 |
| 8   | 53  | 41  | 33  | 28  | 49 | 38 | 31 | 26 | 32 | 27 | 23 | 27 | 22 | 19 | 21 | 18 | 16 | 14 |
| 9   | 49  | 37  | 30  | 25  | 45 | 35 | 28 | 23 | 29 | 24 | 20 | 24 | 20 | 17 | 20 | 17 | 15 | 12 |
| 10  | 46  | 34  | 27  | 22  | 42 | 32 | 25 | 21 | 27 | 22 | 18 | 23 | 19 | 16 | 18 | 15 | 13 | 11 |

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

|     | 0°   | 90°  | 180° |
|-----|------|------|------|
| 0°  | 7535 | 7535 | 7535 |
| 5°  | 7543 | 6241 | 7532 |
| 10° | 7441 | 5329 | 7423 |
| 15° | 7300 | 4584 | 7271 |
| 20° | 7135 | 3945 | 7098 |
| 25° | 6936 | 3404 | 6900 |
| 30° | 6734 | 2959 | 6677 |
| 35° | 6489 | 2560 | 6429 |
| 40° | 6251 | 2202 | 6194 |
| 45° | 6000 | 1884 | 5894 |
| 50° | 5720 | 1598 | 5598 |
| 55° | 5407 | 1338 | 5317 |
| 60° | 5087 | 1097 | 4956 |
| 65° | 4699 | 862  | 4540 |
| 70° | 4217 | 648  | 4014 |
| 75° | 3523 | 436  | 3286 |
| 80° | 2623 | 254  | 2384 |
| 85° | 1629 | 100  | 1372 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 44.9   | 1.6       |
| 10°-20°   | 127.1  | 4.6       |
| 20°-30°   | 187.5  | 6.8       |
| 30°-40°   | 218.7  | 7.9       |
| 40°-50°   | 219.1  | 7.9       |
| 50°-60°   | 191.7  | 6.9       |
| 60°-70°   | 141.0  | 5.1       |
| 70°-80°   | 76.5   | 2.8       |
| 80°-90°   | 19.6   | 0.7       |
| 90°-100°  | 38.0   | 1.4       |
| 100°-110° | 111.6  | 4.0       |
| 110°-120° | 187.6  | 6.8       |
| 120°-130° | 244.7  | 8.8       |
| 130°-140° | 272.8  | 9.8       |
| 140°-150° | 266.8  | 9.6       |
| 150°-160° | 224.4  | 8.1       |
| 160°-170° | 149.2  | 5.4       |
| 170°-180° | 51.9   | 1.9       |
| 0°-30°    | 359.6  | 13.0      |
| 0°-40°    | 578.3  | 20.9      |
| 0°-60°    | 989.1  | 35.7      |
| 0°-90°    | 1226.2 | 44.2      |
| 90°-120°  | 337.2  | 12.2      |
| 90°-150°  | 1121.5 | 40.4      |
| 90°-180°  | 1547.0 | 55.8      |
| 0°-180°   | 2773.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 45° | 90° | 135° | 180° | Flux |
|------|-----|-----|-----|------|------|------|
| 0°   | 476 | 476 | 476 | 476  | 476  |      |
| 5°   | 479 | 473 | 470 | 473  | 478  | 45   |
| 15°  | 457 | 453 | 449 | 452  | 455  | 129  |
| 25°  | 414 | 410 | 400 | 409  | 412  | 191  |
| 35°  | 358 | 353 | 342 | 350  | 354  | 224  |
| 45°  | 293 | 288 | 274 | 285  | 288  | 226  |
| 55°  | 222 | 218 | 204 | 214  | 218  | 199  |
| 65°  | 150 | 144 | 134 | 140  | 145  | 149  |
| 75°  | 77  | 74  | 67  | 69   | 72   | 82   |
| 85°  | 18  | 17  | 15  | 15   | 16   | 21   |
| 90°  | 1   | 2   | 3   | 2    | 0    | 4    |
| 95°  | 32  | 36  | 36  | 34   | 30   | 33   |
| 105° | 105 | 109 | 108 | 104  | 98   | 110  |
| 115° | 190 | 193 | 190 | 187  | 183  | 187  |
| 125° | 273 | 277 | 274 | 272  | 267  | 244  |
| 135° | 352 | 359 | 353 | 355  | 345  | 272  |
| 145° | 426 | 432 | 427 | 428  | 418  | 266  |
| 155° | 487 | 493 | 488 | 487  | 481  | 225  |
| 165° | 532 | 533 | 527 | 530  | 527  | 150  |
| 175° | 553 | 548 | 538 | 547  | 552  | 53   |
| 180° | 548 | 548 | 548 | 548  | 548  |      |



TEST NUMBER: P199436

CATALOG NUMBER: S122-DIP-ULO-LO-40-X-X0048-1D-UDD-1-5-W

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  |
|--------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0°     | 476.4 | 476.4 | 476.4 | 476.4 | 476.4 | 476.4  | 476.4 | 476.4  | 476.4 |
| 2.5°   | 481.2 | 474.5 | 475.6 | 474.2 | 470.5 | 473.8  | 475.3 | 474.2  | 480.4 |
| 5°     | 478.9 | 472.3 | 473.4 | 471.6 | 470.5 | 471.6  | 473.1 | 471.6  | 478.2 |
| 7.5°   | 476.0 | 468.6 | 470.8 | 469.7 | 468.6 | 469.4  | 470.5 | 467.9  | 474.9 |
| 10°    | 470.8 | 463.5 | 466.8 | 464.6 | 463.5 | 464.2  | 466.1 | 462.4  | 469.7 |
| 12.5°  | 464.9 | 457.6 | 460.9 | 458.3 | 457.2 | 457.2  | 460.5 | 456.5  | 463.1 |
| 15°    | 456.8 | 450.9 | 453.2 | 450.6 | 448.7 | 449.8  | 452.4 | 449.5  | 455.0 |
| 17.5°  | 447.6 | 442.5 | 445.1 | 441.0 | 437.7 | 440.3  | 443.9 | 440.6  | 446.2 |
| 20°    | 438.1 | 432.2 | 434.7 | 429.2 | 426.3 | 428.5  | 433.3 | 430.7  | 435.8 |
| 22.5°  | 427.4 | 421.8 | 424.1 | 416.7 | 413.7 | 415.6  | 422.6 | 420.0  | 424.8 |
| 25°    | 414.5 | 410.1 | 410.4 | 403.1 | 399.7 | 401.9  | 409.3 | 407.8  | 412.3 |
| 27.5°  | 401.9 | 397.5 | 397.9 | 389.4 | 385.7 | 388.7  | 396.1 | 394.9  | 399.0 |
| 30°    | 388.3 | 384.3 | 383.9 | 375.4 | 372.5 | 374.3  | 381.7 | 381.7  | 385.0 |
| 32.5°  | 373.2 | 369.9 | 368.1 | 360.3 | 357.4 | 359.6  | 365.8 | 366.9  | 369.5 |
| 35°    | 357.7 | 355.5 | 352.9 | 345.6 | 341.5 | 344.5  | 350.4 | 351.8  | 354.4 |
| 37.5°  | 342.3 | 339.7 | 336.7 | 329.4 | 324.9 | 328.6  | 333.8 | 336.4  | 338.2 |
| 40°    | 326.1 | 324.2 | 320.9 | 313.5 | 308.0 | 311.7  | 317.6 | 320.5  | 323.1 |
| 42.5°  | 309.5 | 308.4 | 304.3 | 296.6 | 291.1 | 295.1  | 301.4 | 303.9  | 305.1 |
| 45°    | 292.9 | 291.4 | 287.7 | 279.6 | 273.7 | 278.2  | 284.8 | 287.4  | 287.7 |
| 47.5°  | 274.5 | 274.8 | 270.4 | 262.3 | 256.4 | 260.8  | 266.7 | 270.4  | 271.9 |
| 50°    | 257.9 | 258.3 | 253.1 | 245.0 | 239.1 | 242.4  | 249.4 | 253.1  | 252.4 |
| 52.5°  | 240.2 | 241.3 | 235.8 | 227.7 | 221.8 | 225.1  | 232.1 | 236.2  | 236.5 |
| 55°    | 221.8 | 223.6 | 217.7 | 209.6 | 204.5 | 207.8  | 213.7 | 218.5  | 218.1 |
| 57.5°  | 204.1 | 205.6 | 199.7 | 192.3 | 187.2 | 190.1  | 195.3 | 201.5  | 200.1 |
| 60°    | 186.4 | 187.9 | 181.6 | 174.3 | 169.8 | 171.3  | 177.2 | 182.4  | 181.6 |
| 62.5°  | 168.4 | 169.8 | 163.2 | 156.6 | 151.4 | 153.6  | 158.8 | 165.1  | 163.2 |
| 65°    | 150.3 | 151.4 | 144.4 | 138.5 | 134.1 | 136.3  | 140.0 | 146.6  | 145.2 |
| 67.5°  | 132.3 | 133.0 | 126.7 | 121.2 | 117.5 | 118.6  | 121.9 | 127.5  | 126.7 |
| 70°    | 114.2 | 114.9 | 109.1 | 103.9 | 100.6 | 101.7  | 104.3 | 109.4  | 108.7 |
| 72.5°  | 95.8  | 96.9  | 91.0  | 86.2  | 82.9  | 84.0   | 85.8  | 90.6   | 89.5  |
| 75°    | 77.4  | 78.1  | 73.7  | 70.0  | 67.1  | 67.4   | 68.9  | 72.6   | 72.2  |
| 77.5°  | 60.4  | 62.3  | 57.5  | 54.2  | 51.9  | 52.3   | 54.2  | 56.0   | 55.3  |
| 80°    | 43.8  | 46.1  | 42.7  | 40.2  | 38.3  | 37.9   | 39.4  | 40.9   | 39.8  |
| 82.5°  | 30.9  | 31.3  | 29.1  | 27.3  | 25.4  | 25.4   | 26.5  | 27.6   | 26.5  |
| 85°    | 18.4  | 19.2  | 17.3  | 15.8  | 14.7  | 14.4   | 15.1  | 16.2   | 15.5  |
| 87.5°  | 8.8   | 9.2   | 7.4   | 6.6   | 5.5   | 5.2    | 5.5   | 6.3    | 6.3   |
| 90°    | 0.7   | 1.8   | 1.8   | 2.2   | 2.6   | 2.6    | 2.2   | 2.2    | 0.4   |
| 92.5°  | 19.9  | 22.1  | 23.2  | 22.5  | 22.1  | 21.0   | 21.0  | 19.9   | 17.7  |
| 95°    | 31.7  | 35.0  | 36.5  | 36.1  | 36.1  | 34.6   | 34.3  | 33.2   | 29.8  |
| 97.5°  | 46.8  | 50.5  | 51.6  | 51.9  | 51.6  | 49.7   | 48.6  | 47.5   | 43.8  |
| 100°   | 64.1  | 67.8  | 68.9  | 68.9  | 68.5  | 66.7   | 65.2  | 63.7   | 59.7  |
| 102.5° | 83.3  | 86.9  | 88.1  | 87.3  | 87.3  | 84.7   | 83.3  | 82.2   | 77.7  |
| 105°   | 104.6 | 108.3 | 109.1 | 107.9 | 107.6 | 105.0  | 103.9 | 102.4  | 98.4  |
| 107.5° | 125.3 | 128.9 | 128.6 | 128.2 | 126.7 | 124.9  | 124.2 | 121.9  | 116.8 |
| 110°   | 146.6 | 151.4 | 149.6 | 148.8 | 147.4 | 145.5  | 144.8 | 144.1  | 140.0 |



TEST NUMBER: P199436

CATALOG NUMBER: S122-DIP-ULO-LO-40-X-X0048-1D-UDD-1-5-W

**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  |
|--------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 112.5° | 168.0 | 173.2 | 170.9 | 170.2 | 168.4 | 166.2  | 166.2 | 165.8  | 161.7 |
| 115°   | 189.7 | 194.9 | 192.7 | 191.2 | 189.7 | 187.5  | 187.2 | 187.5  | 183.1 |
| 117.5° | 210.7 | 216.6 | 214.1 | 212.2 | 210.7 | 208.2  | 208.5 | 209.3  | 204.5 |
| 120°   | 231.7 | 238.4 | 235.4 | 233.2 | 232.1 | 229.2  | 229.5 | 231.0  | 225.5 |
| 122.5° | 252.4 | 259.0 | 256.4 | 254.2 | 253.1 | 249.8  | 250.5 | 251.3  | 246.1 |
| 125°   | 273.0 | 279.6 | 277.4 | 274.8 | 273.7 | 271.5  | 271.9 | 271.9  | 266.7 |
| 127.5° | 293.3 | 299.9 | 298.4 | 295.5 | 294.0 | 291.1  | 292.5 | 291.4  | 287.0 |
| 130°   | 313.2 | 319.4 | 318.7 | 315.4 | 314.3 | 312.4  | 313.5 | 310.2  | 306.9 |
| 132.5° | 332.7 | 338.9 | 339.3 | 335.6 | 334.2 | 332.3  | 334.5 | 330.8  | 326.4 |
| 135°   | 352.2 | 357.7 | 359.2 | 355.2 | 353.3 | 351.8  | 354.8 | 348.9  | 345.2 |
| 137.5° | 371.0 | 375.4 | 378.7 | 373.9 | 372.5 | 369.9  | 373.6 | 367.7  | 364.4 |
| 140°   | 390.2 | 393.8 | 396.8 | 393.1 | 391.3 | 389.1  | 392.0 | 386.1  | 382.8 |
| 142.5° | 407.8 | 411.9 | 414.8 | 411.2 | 408.9 | 407.1  | 410.1 | 403.8  | 400.8 |
| 145°   | 425.5 | 428.8 | 432.5 | 429.2 | 427.0 | 425.2  | 427.7 | 421.5  | 418.5 |
| 147.5° | 442.1 | 445.1 | 449.5 | 445.8 | 443.6 | 442.1  | 443.9 | 437.7  | 435.1 |
| 150°   | 458.3 | 459.8 | 464.2 | 462.0 | 459.1 | 457.6  | 459.1 | 453.5  | 451.3 |
| 152.5° | 473.4 | 474.5 | 478.6 | 476.0 | 474.5 | 471.9  | 473.8 | 468.3  | 466.8 |
| 155°   | 487.4 | 487.8 | 492.6 | 489.6 | 487.8 | 485.9  | 487.4 | 483.0  | 481.2 |
| 157.5° | 500.7 | 500.7 | 504.0 | 502.5 | 499.6 | 498.8  | 499.9 | 495.2  | 494.8 |
| 160°   | 512.1 | 511.4 | 515.4 | 512.8 | 510.3 | 509.5  | 511.4 | 506.9  | 506.6 |
| 162.5° | 522.8 | 521.3 | 525.0 | 521.7 | 519.5 | 518.7  | 521.3 | 517.3  | 517.6 |
| 165°   | 531.6 | 529.8 | 532.7 | 529.4 | 527.2 | 526.8  | 529.8 | 525.7  | 527.2 |
| 167.5° | 539.4 | 536.4 | 539.0 | 535.7 | 533.8 | 533.5  | 536.8 | 533.1  | 535.3 |
| 170°   | 545.3 | 541.6 | 543.8 | 539.4 | 538.6 | 537.9  | 541.9 | 538.6  | 542.3 |
| 172.5° | 550.1 | 546.0 | 546.7 | 541.9 | 539.4 | 540.8  | 545.3 | 543.4  | 547.5 |
| 175°   | 553.0 | 548.6 | 547.8 | 542.7 | 538.3 | 541.6  | 547.1 | 546.7  | 551.5 |
| 177.5° | 554.1 | 550.1 | 548.9 | 543.1 | 541.6 | 542.3  | 548.6 | 548.9  | 553.4 |
| 180°   | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2  | 548.2 | 548.2  | 548.2 |

(END OF REPORT)