

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P998777

Luminaire Tested: SA2XXDIP-B675D330UB40-4F0-XX-W2A-D

Issue Date: 5/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998777  
REPORT IS A COMBINATION OF REPORTS P984523 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B675D330UB40-4F0-XX-W2A-D  
Description: Define 2 Direct/Indirect Pendant with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

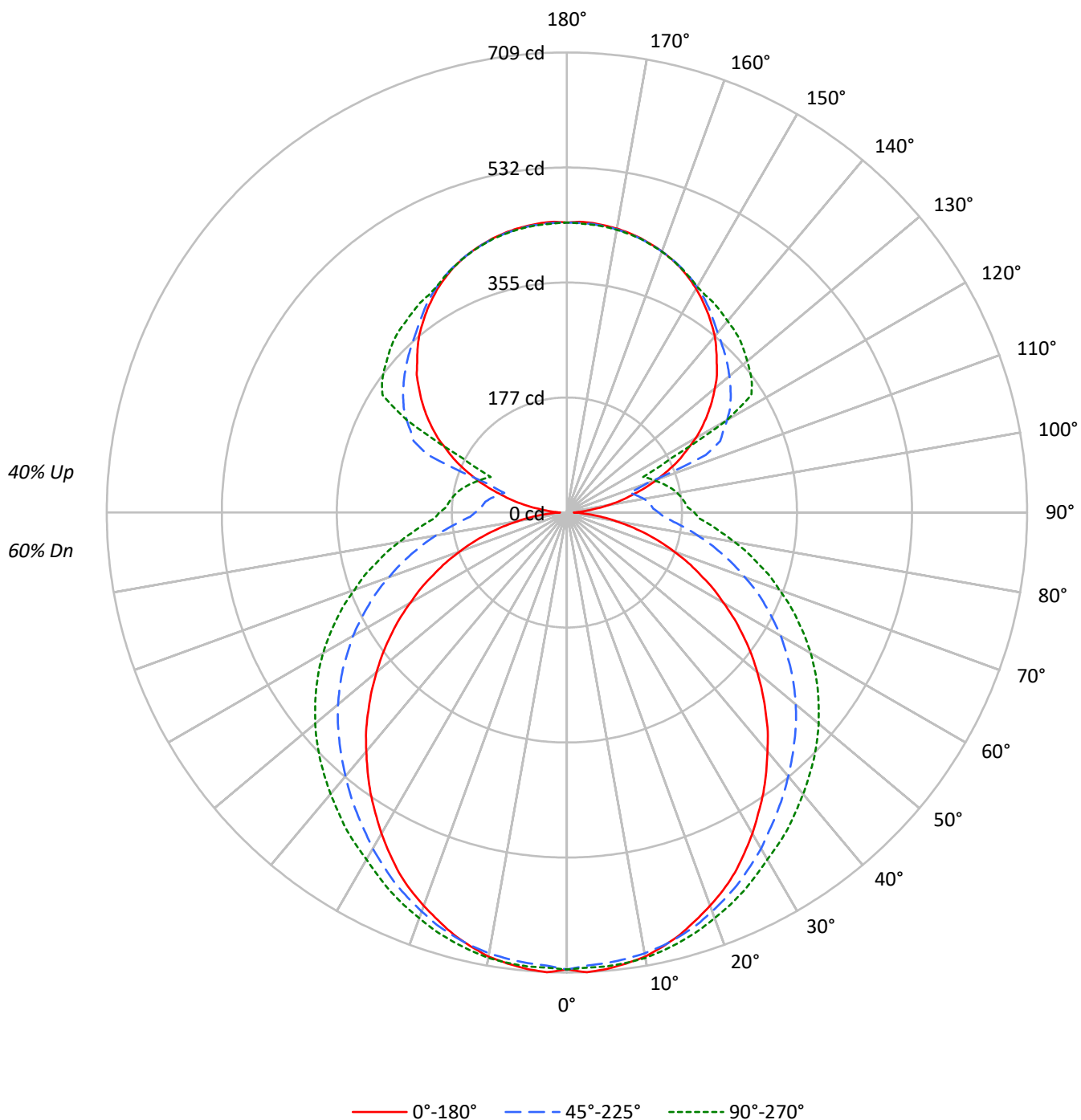
Lumens per Lamp: N/A  
Luminaire Lumens: 3997.9 lumens  
Efficiency: N/A  
Efficacy: 88.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 45.2  
Input Voltage (V):  
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: 24 FT

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### Luminous Intensity Polar Plot



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

|     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20 |    |    |    | 20 |    |    |    | 20 |
| RC  | 80  |     |     |     | 70  |     |     |     | 50 |    |    |    | 30 |    |    |    | 10 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |
| 0   | 109 | 109 | 109 | 109 | 102 | 102 | 102 | 102 | 89 | 89 | 89 | 76 | 76 | 76 | 65 | 65 | 65 |
| 1   | 98  | 93  | 88  | 84  | 91  | 87  | 83  | 79  | 75 | 72 | 69 | 65 | 62 | 60 | 55 | 53 | 51 |
| 2   | 89  | 80  | 73  | 67  | 82  | 75  | 69  | 63  | 65 | 60 | 56 | 56 | 52 | 49 | 47 | 44 | 42 |
| 3   | 80  | 70  | 62  | 55  | 75  | 65  | 58  | 52  | 57 | 51 | 46 | 49 | 44 | 40 | 41 | 38 | 35 |
| 4   | 73  | 62  | 53  | 46  | 68  | 58  | 50  | 44  | 50 | 44 | 39 | 43 | 38 | 34 | 36 | 33 | 30 |
| 5   | 67  | 55  | 46  | 39  | 62  | 51  | 43  | 37  | 45 | 38 | 33 | 38 | 33 | 29 | 33 | 29 | 25 |
| 6   | 62  | 49  | 40  | 34  | 57  | 46  | 38  | 32  | 40 | 34 | 29 | 35 | 29 | 26 | 30 | 25 | 22 |
| 7   | 57  | 44  | 36  | 30  | 53  | 41  | 34  | 28  | 36 | 30 | 25 | 31 | 26 | 22 | 27 | 23 | 20 |
| 8   | 53  | 40  | 32  | 26  | 49  | 38  | 30  | 25  | 33 | 27 | 22 | 29 | 24 | 20 | 25 | 21 | 17 |
| 9   | 49  | 36  | 29  | 23  | 46  | 34  | 27  | 22  | 30 | 24 | 20 | 26 | 21 | 18 | 23 | 19 | 16 |
| 10  | 46  | 33  | 26  | 21  | 43  | 32  | 25  | 20  | 28 | 22 | 18 | 24 | 20 | 16 | 21 | 17 | 14 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 11147 | 11147 | 11147 |
| 5°  | 11197 | 10672 | 10612 |
| 10° | 11122 | 10301 | 10152 |
| 15° | 10965 | 9919  | 9680  |
| 20° | 10767 | 9518  | 9232  |
| 25° | 10573 | 9134  | 8827  |
| 30° | 10297 | 8743  | 8425  |
| 35° | 10020 | 8366  | 8130  |
| 40° | 9729  | 8041  | 7836  |
| 45° | 9450  | 7745  | 7580  |
| 50° | 9152  | 7473  | 7328  |
| 55° | 8839  | 7184  | 7072  |
| 60° | 8454  | 6883  | 6801  |
| 65° | 8055  | 6537  | 6491  |
| 70° | 7600  | 6165  | 6156  |
| 75° | 7021  | 5793  | 5842  |
| 80° | 6108  | 5405  | 5514  |
| 85° | 5184  | 5040  | 5232  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9450 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 66.8   | 1.7       |
| 10°-20°   | 191.5  | 4.8       |
| 20°-30°   | 290.1  | 7.3       |
| 30°-40°   | 353.3  | 8.8       |
| 40°-50°   | 380.1  | 9.5       |
| 50°-60°   | 369.1  | 9.2       |
| 60°-70°   | 322.4  | 8.1       |
| 70°-80°   | 248.1  | 6.2       |
| 80°-90°   | 166.9  | 4.2       |
| 90°-100°  | 129.4  | 3.2       |
| 100°-110° | 138.7  | 3.5       |
| 110°-120° | 201.0  | 5.0       |
| 120°-130° | 272.4  | 6.8       |
| 130°-140° | 269.6  | 6.7       |
| 140°-150° | 240.7  | 6.0       |
| 150°-160° | 191.8  | 4.8       |
| 160°-170° | 123.6  | 3.1       |
| 170°-180° | 42.5   | 1.1       |
| 0°-30°    | 548.3  | 13.7      |
| 0°-40°    | 901.6  | 22.6      |
| 0°-60°    | 1650.8 | 41.3      |
| 0°-90°    | 2388.2 | 59.7      |
| 90°-120°  | 469.0  | 11.7      |
| 90°-150°  | 1251.8 | 31.3      |
| 90°-180°  | 1610.0 | 40.3      |
| 0°-180°   | 3997.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 704 | 704   | 704 | 704   | 704 |      |
| 5°   | 706 | 703   | 697 | 703   | 702 | 67   |
| 15°  | 674 | 676   | 676 | 685   | 684 | 190  |
| 25°  | 612 | 620   | 629 | 641   | 644 | 282  |
| 35°  | 528 | 545   | 564 | 587   | 594 | 330  |
| 45°  | 433 | 460   | 496 | 528   | 538 | 334  |
| 55°  | 332 | 368   | 422 | 458   | 472 | 297  |
| 65°  | 227 | 277   | 337 | 379   | 392 | 225  |
| 75°  | 126 | 183   | 248 | 292   | 305 | 133  |
| 85°  | 37  | 100   | 165 | 208   | 222 | 39   |
| 90°  | 10  | 73    | 141 | 184   | 196 | 8    |
| 95°  | 29  | 66    | 130 | 170   | 182 | 31   |
| 105° | 103 | 143   | 108 | 147   | 159 | 111  |
| 115° | 190 | 207   | 261 | 142   | 130 | 187  |
| 125° | 265 | 269   | 308 | 338   | 348 | 237  |
| 135° | 326 | 332   | 345 | 369   | 377 | 252  |
| 145° | 377 | 377   | 383 | 391   | 394 | 236  |
| 155° | 416 | 413   | 416 | 418   | 416 | 191  |
| 165° | 438 | 436   | 437 | 439   | 437 | 124  |
| 175° | 448 | 446   | 446 | 448   | 445 | 43   |
| 180° | 447 | 447   | 447 | 447   | 447 |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 704.2 | 704.2 | 704.2 | 704.2 | 704.2 |
| 2.5°   | 709.3 | 706.2 | 699.1 | 704.2 | 702.2 |
| 5°     | 706.2 | 703.2 | 697.1 | 703.2 | 702.2 |
| 7.5°   | 701.1 | 699.1 | 694.0 | 701.1 | 700.1 |
| 10°    | 695.0 | 693.0 | 689.9 | 698.1 | 697.1 |
| 12.5°  | 684.8 | 685.8 | 683.8 | 692.0 | 690.9 |
| 15°    | 673.6 | 675.6 | 675.6 | 684.8 | 683.8 |
| 17.5°  | 659.3 | 663.4 | 666.4 | 675.6 | 675.6 |
| 20°    | 645.0 | 650.1 | 654.2 | 665.4 | 665.4 |
| 22.5°  | 629.7 | 635.8 | 641.9 | 653.2 | 655.2 |
| 25°    | 612.4 | 619.5 | 628.7 | 640.9 | 644.0 |
| 27.5°  | 591.9 | 603.2 | 613.4 | 628.7 | 630.7 |
| 30°    | 571.5 | 584.8 | 598.1 | 614.4 | 617.5 |
| 32.5°  | 549.1 | 564.4 | 580.7 | 600.1 | 606.2 |
| 35°    | 527.6 | 545.0 | 564.4 | 586.8 | 594.0 |
| 37.5°  | 504.2 | 523.6 | 548.1 | 572.5 | 579.7 |
| 40°    | 480.7 | 503.1 | 530.7 | 557.2 | 566.4 |
| 42.5°  | 458.2 | 480.7 | 513.4 | 543.0 | 552.1 |
| 45°    | 432.7 | 460.3 | 496.0 | 527.6 | 537.8 |
| 47.5°  | 408.2 | 437.8 | 478.7 | 511.3 | 522.5 |
| 50°    | 382.7 | 414.4 | 460.3 | 495.0 | 506.2 |
| 52.5°  | 358.2 | 391.9 | 440.9 | 476.6 | 488.9 |
| 55°    | 331.7 | 368.4 | 421.5 | 458.2 | 471.5 |
| 57.5°  | 306.2 | 347.0 | 400.1 | 439.9 | 453.1 |
| 60°    | 278.6 | 322.5 | 380.7 | 419.5 | 433.7 |
| 62.5°  | 254.1 | 300.1 | 358.2 | 400.1 | 413.3 |
| 65°    | 226.6 | 276.6 | 336.8 | 378.6 | 391.9 |
| 67.5°  | 202.1 | 254.1 | 315.4 | 357.2 | 371.5 |
| 70°    | 175.5 | 228.6 | 291.9 | 335.8 | 348.0 |
| 72.5°  | 151.0 | 206.2 | 270.5 | 313.3 | 328.6 |
| 75°    | 125.5 | 182.7 | 248.0 | 291.9 | 305.2 |
| 77.5°  | 101.0 | 160.2 | 226.6 | 270.5 | 284.7 |
| 80°    | 76.5  | 138.8 | 205.1 | 248.0 | 262.3 |
| 82.5°  | 56.1  | 117.4 | 184.7 | 227.6 | 240.9 |
| 85°    | 36.7  | 100.0 | 165.3 | 208.2 | 222.5 |
| 87.5°  | 22.5  | 83.7  | 149.0 | 190.8 | 204.1 |
| 90°    | 10.5  | 73.3  | 141.2 | 183.6 | 196.5 |
| 92.5°  | 17.3  | 70.1  | 133.3 | 173.7 | 186.3 |
| 95°    | 29.2  | 66.4  | 130.0 | 170.3 | 182.3 |
| 97.5°  | 44.9  | 62.3  | 126.7 | 165.5 | 178.0 |
| 100°   | 64.3  | 57.8  | 120.5 | 160.8 | 172.7 |
| 102.5° | 84.7  | 117.7 | 114.0 | 154.3 | 166.5 |
| 105°   | 103.4 | 142.7 | 107.5 | 146.8 | 159.3 |
| 107.5° | 126.4 | 159.0 | 101.0 | 139.2 | 151.8 |
| 110°   | 147.4 | 174.6 | 131.1 | 131.5 | 143.9 |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 168.1 | 190.2 | 231.7 | 124.9 | 137.1 |
| 115°   | 190.0 | 206.7 | 260.7 | 141.7 | 129.6 |
| 117.5° | 208.1 | 222.7 | 271.1 | 255.4 | 180.9 |
| 120°   | 229.5 | 238.3 | 285.0 | 317.4 | 285.1 |
| 122.5° | 247.6 | 253.8 | 297.9 | 327.5 | 337.0 |
| 125°   | 264.9 | 269.1 | 308.0 | 337.8 | 347.9 |
| 127.5° | 281.7 | 285.3 | 317.7 | 346.4 | 356.0 |
| 130°   | 297.6 | 301.7 | 326.8 | 354.8 | 362.6 |
| 132.5° | 313.7 | 316.9 | 335.8 | 362.2 | 370.1 |
| 135°   | 326.3 | 331.5 | 344.6 | 369.3 | 376.8 |
| 137.5° | 340.6 | 344.4 | 352.8 | 375.4 | 381.6 |
| 140°   | 354.5 | 356.0 | 361.6 | 380.9 | 385.4 |
| 142.5° | 366.1 | 367.4 | 371.6 | 386.4 | 389.8 |
| 145°   | 377.4 | 377.1 | 382.6 | 390.9 | 394.4 |
| 147.5° | 388.1 | 387.1 | 392.6 | 395.2 | 397.0 |
| 150°   | 398.4 | 396.1 | 401.3 | 403.3 | 401.6 |
| 152.5° | 407.1 | 404.6 | 409.4 | 411.3 | 409.1 |
| 155°   | 415.6 | 412.6 | 416.5 | 418.5 | 415.9 |
| 157.5° | 422.3 | 419.8 | 422.7 | 424.9 | 422.3 |
| 160°   | 428.2 | 426.2 | 428.2 | 430.1 | 427.8 |
| 162.5° | 433.3 | 431.4 | 433.0 | 435.3 | 432.4 |
| 165°   | 437.9 | 435.9 | 436.9 | 439.2 | 436.9 |
| 167.5° | 441.4 | 439.5 | 440.5 | 442.7 | 439.8 |
| 170°   | 444.3 | 442.4 | 443.0 | 445.3 | 442.4 |
| 172.5° | 446.3 | 444.3 | 445.0 | 447.2 | 444.3 |
| 175°   | 447.9 | 445.6 | 446.3 | 448.5 | 445.3 |
| 177.5° | 448.5 | 446.3 | 446.6 | 448.9 | 446.0 |
| 180°   | 446.9 | 446.9 | 446.9 | 446.9 | 446.9 |

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**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 14.42            | 15.44 | 15.28 | 16.33 | 17.45 | 17.50          | 18.52 | 18.35 | 19.40 | 20.53 |
|                 | 3H   | 15.89            | 16.82 | 16.76 | 17.71 | 18.86 | 20.10          | 21.02 | 20.96 | 21.92 | 23.06 |
|                 | 4H   | 16.37            | 17.25 | 17.26 | 18.16 | 19.31 | 21.36          | 22.23 | 22.24 | 23.14 | 24.29 |
|                 | 6H   | 16.67            | 17.48 | 17.56 | 18.39 | 19.56 | 22.66          | 23.47 | 23.56 | 24.38 | 25.55 |
|                 | 8H   | 16.73            | 17.51 | 17.63 | 18.44 | 19.60 | 23.32          | 24.10 | 24.23 | 25.03 | 26.20 |
|                 | 12H  | 16.75            | 17.49 | 17.66 | 18.42 | 19.61 | 24.05          | 24.80 | 24.96 | 25.72 | 26.92 |
| 4H              | 2H   | 15.49            | 16.37 | 16.38 | 17.27 | 18.42 | 17.84          | 18.72 | 18.73 | 19.62 | 20.78 |
|                 | 3H   | 17.21            | 17.95 | 18.11 | 18.89 | 20.06 | 20.65          | 21.39 | 21.55 | 22.33 | 23.50 |
|                 | 4H   | 17.84            | 18.52 | 18.75 | 19.45 | 20.65 | 22.07          | 22.76 | 22.98 | 23.68 | 24.88 |
|                 | 6H   | 18.26            | 18.86 | 19.18 | 19.81 | 21.01 | 23.54          | 24.15 | 24.47 | 25.10 | 26.29 |
|                 | 8H   | 18.37            | 18.94 | 19.30 | 19.88 | 21.09 | 24.31          | 24.87 | 25.23 | 25.82 | 27.03 |
|                 | 12H  | 18.42            | 18.94 | 19.37 | 19.90 | 21.12 | 25.14          | 25.66 | 26.09 | 26.62 | 27.84 |
| 8H              | 4H   | 18.64            | 19.20 | 19.56 | 20.15 | 21.36 | 22.23          | 22.79 | 23.15 | 23.74 | 24.95 |
|                 | 6H   | 19.28            | 19.75 | 20.23 | 20.74 | 21.95 | 23.86          | 24.34 | 24.81 | 25.32 | 26.53 |
|                 | 8H   | 19.50            | 19.93 | 20.46 | 20.90 | 22.13 | 24.75          | 25.18 | 25.71 | 26.16 | 27.38 |
|                 | 12H  | 19.64            | 20.02 | 20.61 | 20.99 | 22.26 | 25.76          | 26.13 | 26.72 | 27.10 | 28.38 |
| 12H             | 4H   | 18.84            | 19.36 | 19.79 | 20.32 | 21.54 | 22.21          | 22.72 | 23.15 | 23.69 | 24.90 |
|                 | 6H   | 19.61            | 20.04 | 20.57 | 21.02 | 22.24 | 23.89          | 24.31 | 24.85 | 25.29 | 26.52 |
|                 | 8H   | 19.93            | 20.30 | 20.89 | 21.28 | 22.55 | 24.83          | 25.20 | 25.79 | 26.17 | 27.45 |

END OF REPORT