

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: P998481

Luminaire Tested: SA2XXDIP-B485D330UB40-4F0-XX-W2A-D1

Issue Date: 5/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998481  
REPORT IS A COMBINATION OF REPORTS P984224 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B485D330UB40-4F0-XX-W2A-D1  
Description: Define 2 Direct/Indirect Pendant with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

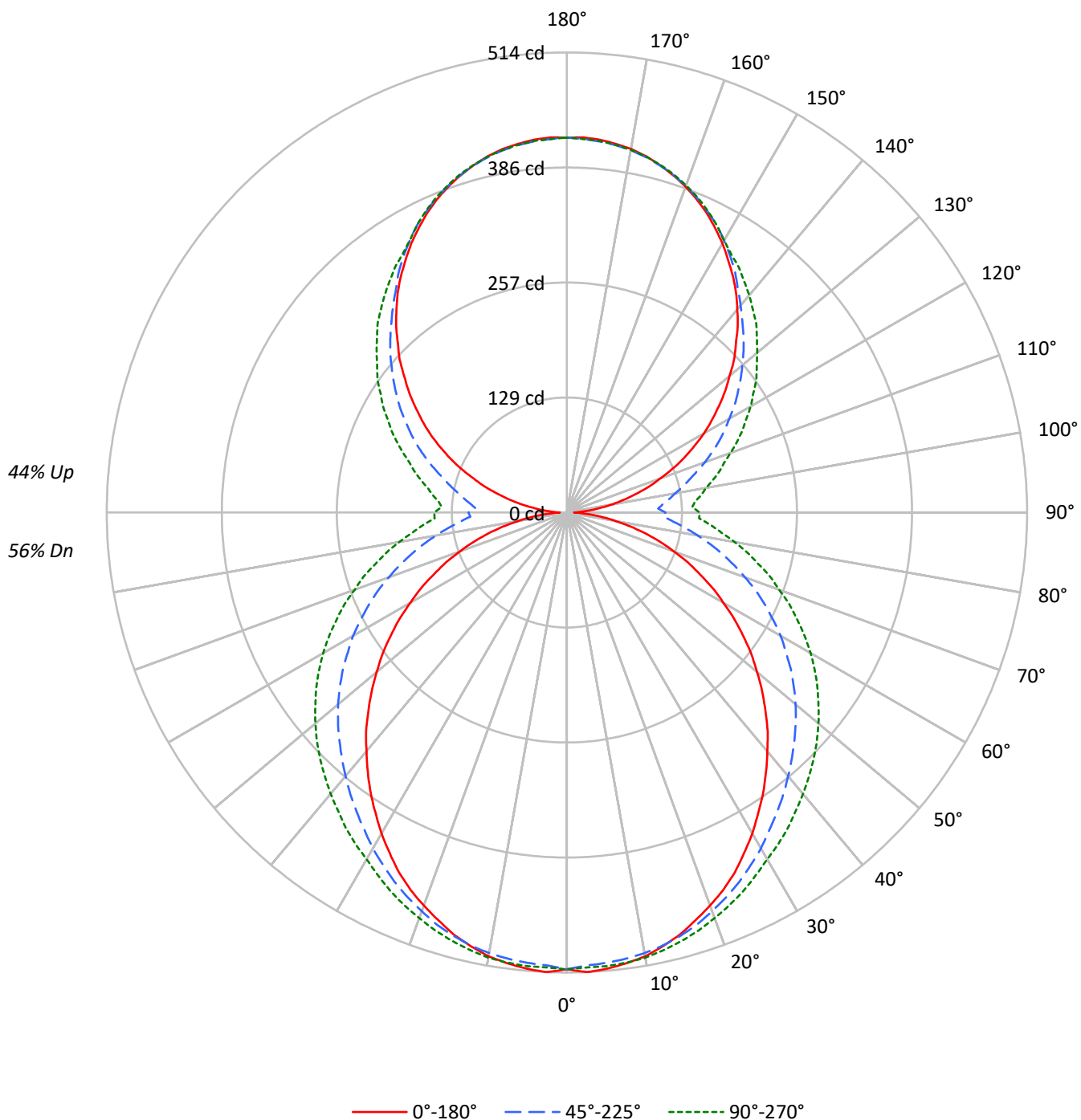
Lumens per Lamp: N/A  
Luminaire Lumens: 3119.0 lumens  
Efficiency: N/A  
Efficacy: 93.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 33.3  
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

TEST NUMBER: P998481

CATALOG NUMBER: SA2XXDIP-B485D330UB40-4F0-XX-W2A-D1

### 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   | 108 | 108 | 108 | 108 | 101 | 101 | 101 | 101 | 86 | 86 | 86 | 73 | 73 | 73 | 61 | 61 | 61 |
| 1   | 97  | 92  | 88  | 84  | 90  | 86  | 82  | 78  | 73 | 70 | 68 | 62 | 60 | 58 | 51 | 50 | 48 |
| 2   | 88  | 80  | 73  | 67  | 81  | 74  | 68  | 63  | 63 | 59 | 55 | 53 | 50 | 47 | 44 | 42 | 39 |
| 3   | 80  | 69  | 61  | 55  | 74  | 65  | 57  | 52  | 55 | 50 | 45 | 47 | 42 | 39 | 39 | 36 | 33 |
| 4   | 73  | 61  | 53  | 46  | 67  | 57  | 49  | 43  | 49 | 43 | 38 | 41 | 37 | 33 | 34 | 31 | 28 |
| 5   | 67  | 54  | 46  | 39  | 61  | 51  | 43  | 37  | 43 | 37 | 33 | 37 | 32 | 28 | 31 | 27 | 24 |
| 6   | 61  | 49  | 40  | 34  | 57  | 45  | 38  | 32  | 39 | 33 | 28 | 33 | 28 | 25 | 28 | 24 | 21 |
| 7   | 57  | 44  | 35  | 29  | 52  | 41  | 33  | 28  | 35 | 29 | 25 | 30 | 25 | 22 | 25 | 21 | 18 |
| 8   | 53  | 40  | 32  | 26  | 49  | 37  | 30  | 25  | 32 | 26 | 22 | 28 | 23 | 19 | 23 | 19 | 16 |
| 9   | 49  | 36  | 28  | 23  | 45  | 34  | 27  | 22  | 29 | 24 | 19 | 25 | 21 | 17 | 21 | 18 | 15 |
| 10  | 46  | 33  | 26  | 21  | 42  | 31  | 24  | 20  | 27 | 21 | 17 | 23 | 19 | 15 | 20 | 16 | 13 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 8078 | 8078 | 8078 |
| 5°  | 8113 | 7733 | 7689 |
| 10° | 8059 | 7464 | 7356 |
| 15° | 7946 | 7188 | 7014 |
| 20° | 7802 | 6896 | 6690 |
| 25° | 7660 | 6618 | 6395 |
| 30° | 7461 | 6336 | 6104 |
| 35° | 7260 | 6063 | 5891 |
| 40° | 7049 | 5826 | 5678 |
| 45° | 6849 | 5612 | 5493 |
| 50° | 6631 | 5415 | 5310 |
| 55° | 6403 | 5205 | 5125 |
| 60° | 6127 | 4986 | 4929 |
| 65° | 5837 | 4736 | 4704 |
| 70° | 5509 | 4467 | 4462 |
| 75° | 5091 | 4198 | 4232 |
| 80° | 4431 | 3916 | 3996 |
| 85° | 3757 | 3653 | 3791 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
Vertical Angle: 45°  
Luminance: 6849 cd/sqm

TEST NUMBER: P998481

CATALOG NUMBER: SA2XXDIP-B485D330UB40-4F0-XX-W2A-D1

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 48.4   | 1.6       |
| 10°-20°   | 138.7  | 4.4       |
| 20°-30°   | 210.2  | 6.7       |
| 30°-40°   | 256.0  | 8.2       |
| 40°-50°   | 275.4  | 8.8       |
| 50°-60°   | 267.5  | 8.6       |
| 60°-70°   | 233.6  | 7.5       |
| 70°-80°   | 179.8  | 5.8       |
| 80°-90°   | 121.6  | 3.9       |
| 90°-100°  | 109.0  | 3.5       |
| 100°-110° | 143.0  | 4.6       |
| 110°-120° | 181.0  | 5.8       |
| 120°-130° | 207.6  | 6.7       |
| 130°-140° | 217.4  | 7.0       |
| 140°-150° | 205.6  | 6.6       |
| 150°-160° | 171.1  | 5.5       |
| 160°-170° | 113.5  | 3.6       |
| 170°-180° | 39.7   | 1.3       |
| 0°-30°    | 397.3  | 12.7      |
| 0°-40°    | 653.3  | 20.9      |
| 0°-60°    | 1196.2 | 38.4      |
| 0°-90°    | 1731.1 | 55.5      |
| 90°-120°  | 433.0  | 13.9      |
| 90°-150°  | 1063.6 | 34.1      |
| 90°-180°  | 1388.0 | 44.5      |
| 0°-180°   | 3119.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 510 | 510   | 510 | 510   | 510 |      |
| 5°   | 512 | 510   | 505 | 510   | 509 | 49   |
| 15°  | 488 | 490   | 490 | 496   | 496 | 137  |
| 25°  | 444 | 449   | 456 | 464   | 467 | 204  |
| 35°  | 382 | 395   | 409 | 425   | 430 | 239  |
| 45°  | 314 | 334   | 359 | 382   | 390 | 242  |
| 55°  | 240 | 267   | 305 | 332   | 342 | 215  |
| 65°  | 164 | 200   | 244 | 274   | 284 | 163  |
| 75°  | 91  | 132   | 180 | 212   | 221 | 96   |
| 85°  | 27  | 72    | 120 | 151   | 161 | 28   |
| 90°  | 8   | 55    | 110 | 139   | 148 | 6    |
| 95°  | 24  | 63    | 108 | 136   | 144 | 25   |
| 105° | 80  | 102   | 141 | 168   | 176 | 84   |
| 115° | 144 | 155   | 187 | 209   | 216 | 143  |
| 125° | 207 | 210   | 233 | 252   | 258 | 185  |
| 135° | 267 | 271   | 279 | 294   | 299 | 206  |
| 145° | 323 | 326   | 328 | 332   | 335 | 202  |
| 155° | 369 | 370   | 371 | 373   | 372 | 170  |
| 165° | 402 | 402   | 402 | 404   | 402 | 113  |
| 175° | 418 | 417   | 416 | 419   | 417 | 40   |
| 180° | 419 | 419   | 419 | 419   | 419 |      |

TEST NUMBER: P998481

CATALOG NUMBER: SA2XXDIP-B485D330UB40-4F0-XX-W2A-D1

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 510.3 | 510.3 | 510.3 | 510.3 | 510.3 |
| 2.5°   | 514.0 | 511.7 | 506.6 | 510.3 | 508.8 |
| 5°     | 511.7 | 509.5 | 505.1 | 509.5 | 508.8 |
| 7.5°   | 508.0 | 506.6 | 502.9 | 508.0 | 507.3 |
| 10°    | 503.6 | 502.1 | 499.9 | 505.8 | 505.1 |
| 12.5°  | 496.2 | 497.0 | 495.5 | 501.4 | 500.7 |
| 15°    | 488.1 | 489.6 | 489.6 | 496.2 | 495.5 |
| 17.5°  | 477.7 | 480.7 | 482.9 | 489.6 | 489.6 |
| 20°    | 467.4 | 471.1 | 474.0 | 482.2 | 482.2 |
| 22.5°  | 456.3 | 460.7 | 465.2 | 473.3 | 474.8 |
| 25°    | 443.7 | 448.9 | 455.5 | 464.4 | 466.6 |
| 27.5°  | 428.9 | 437.1 | 444.4 | 455.5 | 457.0 |
| 30°    | 414.1 | 423.7 | 433.4 | 445.2 | 447.4 |
| 32.5°  | 397.9 | 409.0 | 420.8 | 434.8 | 439.3 |
| 35°    | 382.3 | 394.9 | 409.0 | 425.2 | 430.4 |
| 37.5°  | 365.3 | 379.4 | 397.1 | 414.9 | 420.0 |
| 40°    | 348.3 | 364.6 | 384.5 | 403.8 | 410.4 |
| 42.5°  | 332.0 | 348.3 | 372.0 | 393.4 | 400.1 |
| 45°    | 313.6 | 333.5 | 359.4 | 382.3 | 389.7 |
| 47.5°  | 295.8 | 317.3 | 346.8 | 370.5 | 378.6 |
| 50°    | 277.3 | 300.2 | 333.5 | 358.7 | 366.8 |
| 52.5°  | 259.6 | 284.0 | 319.5 | 345.4 | 354.2 |
| 55°    | 240.3 | 267.0 | 305.4 | 332.0 | 341.7 |
| 57.5°  | 221.9 | 251.4 | 289.9 | 318.7 | 328.3 |
| 60°    | 201.9 | 233.7 | 275.8 | 303.9 | 314.3 |
| 62.5°  | 184.1 | 217.4 | 259.6 | 289.9 | 299.5 |
| 65°    | 164.2 | 200.4 | 244.0 | 274.4 | 284.0 |
| 67.5°  | 146.4 | 184.1 | 228.5 | 258.8 | 269.2 |
| 70°    | 127.2 | 165.7 | 211.5 | 243.3 | 252.2 |
| 72.5°  | 109.4 | 149.4 | 196.0 | 227.0 | 238.1 |
| 75°    | 91.0  | 132.4 | 179.7 | 211.5 | 221.1 |
| 77.5°  | 73.2  | 116.1 | 164.2 | 196.0 | 206.3 |
| 80°    | 55.5  | 100.6 | 148.6 | 179.7 | 190.1 |
| 82.5°  | 40.7  | 85.0  | 133.9 | 164.9 | 174.5 |
| 85°    | 26.6  | 72.5  | 119.8 | 150.9 | 161.2 |
| 87.5°  | 16.3  | 60.6  | 108.0 | 138.3 | 147.9 |
| 90°    | 7.8   | 54.9  | 110.0 | 138.9 | 148.1 |
| 92.5°  | 14.5  | 56.5  | 102.0 | 131.1 | 140.0 |
| 95°    | 24.3  | 62.6  | 107.6 | 135.7 | 143.9 |
| 97.5°  | 35.9  | 70.9  | 115.2 | 142.5 | 151.4 |
| 100°   | 50.1  | 80.2  | 122.8 | 150.1 | 157.8 |
| 102.5° | 64.1  | 90.6  | 132.1 | 159.0 | 166.8 |
| 105°   | 79.7  | 102.1 | 141.3 | 168.0 | 176.1 |
| 107.5° | 95.9  | 115.0 | 152.0 | 177.6 | 183.9 |
| 110°   | 110.8 | 127.6 | 163.9 | 187.5 | 194.6 |



TEST NUMBER: P998481

CATALOG NUMBER: SA2XXDIP-B485D330UB40-4F0-XX-W2A-D1

**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 127.7 | 141.7 | 175.3 | 198.0 | 205.3 |
| 115°   | 144.4 | 154.6 | 187.2 | 209.0 | 216.1 |
| 117.5° | 160.2 | 168.9 | 198.2 | 219.4 | 225.7 |
| 120°   | 176.8 | 182.6 | 209.4 | 230.1 | 237.1 |
| 122.5° | 192.0 | 196.3 | 221.8 | 240.8 | 246.7 |
| 125°   | 207.2 | 210.4 | 232.9 | 251.8 | 258.2 |
| 127.5° | 222.7 | 225.8 | 244.4 | 261.5 | 267.1 |
| 130°   | 237.2 | 241.0 | 255.9 | 272.9 | 277.4 |
| 132.5° | 253.5 | 256.2 | 267.7 | 282.9 | 287.8 |
| 135°   | 266.8 | 270.7 | 278.8 | 294.0 | 298.9 |
| 137.5° | 282.4 | 285.5 | 289.9 | 303.7 | 307.5 |
| 140°   | 296.1 | 298.6 | 301.9 | 313.7 | 316.7 |
| 142.5° | 310.3 | 312.8 | 313.8 | 323.1 | 325.4 |
| 145°   | 323.0 | 325.5 | 327.6 | 332.4 | 334.6 |
| 147.5° | 335.0 | 338.2 | 339.6 | 341.0 | 341.9 |
| 150°   | 347.4 | 349.5 | 350.9 | 352.0 | 350.9 |
| 152.5° | 358.3 | 360.5 | 362.2 | 363.6 | 362.2 |
| 155°   | 369.3 | 370.4 | 371.4 | 373.2 | 372.1 |
| 157.5° | 378.8 | 379.5 | 380.3 | 382.7 | 381.0 |
| 160°   | 387.3 | 388.0 | 388.4 | 390.5 | 389.1 |
| 162.5° | 395.1 | 395.1 | 395.4 | 397.9 | 396.2 |
| 165°   | 401.8 | 401.5 | 401.5 | 403.9 | 402.2 |
| 167.5° | 407.8 | 406.8 | 406.8 | 409.2 | 407.5 |
| 170°   | 412.4 | 411.4 | 411.0 | 413.5 | 411.4 |
| 172.5° | 415.6 | 414.5 | 414.2 | 416.7 | 414.5 |
| 175°   | 418.1 | 417.0 | 416.3 | 418.8 | 416.7 |
| 177.5° | 419.5 | 418.4 | 417.7 | 419.8 | 417.7 |
| 180°   | 418.8 | 418.8 | 418.8 | 418.8 | 418.8 |

TEST NUMBER: P998481

CATALOG NUMBER: SA2XXDIP-B485D330UB40-4F0-XX-W2A-D1

**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 | 12.95            | 13.92 | 13.85 | 14.85 | 16.03 | 16.03          | 16.99 | 16.92 | 17.92 | 19.11 |
|                 | 3H   | 14.42            | 15.30 | 15.32 | 16.23 | 17.44 | 18.62          | 19.50 | 19.53 | 20.43 | 21.64 |
|                 | 4H   | 14.90            | 15.73 | 15.82 | 16.67 | 17.89 | 19.88          | 20.71 | 20.80 | 21.65 | 22.87 |
|                 | 6H   | 15.19            | 15.96 | 16.12 | 16.91 | 18.14 | 21.18          | 21.96 | 22.11 | 22.90 | 24.13 |
|                 | 8H   | 15.25            | 15.99 | 16.19 | 16.95 | 18.18 | 21.84          | 22.58 | 22.78 | 23.55 | 24.78 |
|                 | 12H  | 15.27            | 15.98 | 16.22 | 16.93 | 18.19 | 22.57          | 23.28 | 23.52 | 24.24 | 25.49 |
| 4H              | 2H   | 14.01            | 14.85 | 14.94 | 15.79 | 17.00 | 16.37          | 17.20 | 17.29 | 18.14 | 19.36 |
|                 | 3H   | 15.73            | 16.44 | 16.66 | 17.41 | 18.64 | 19.17          | 19.87 | 20.10 | 20.84 | 22.08 |
|                 | 4H   | 16.35            | 17.01 | 17.30 | 17.97 | 19.23 | 20.59          | 21.24 | 21.53 | 22.20 | 23.46 |
|                 | 6H   | 16.77            | 17.35 | 17.73 | 18.33 | 19.59 | 22.06          | 22.63 | 23.02 | 23.62 | 24.87 |
|                 | 8H   | 16.89            | 17.42 | 17.85 | 18.40 | 19.67 | 22.82          | 23.36 | 23.78 | 24.34 | 25.61 |
|                 | 12H  | 16.94            | 17.42 | 17.92 | 18.42 | 19.70 | 23.65          | 24.14 | 24.64 | 25.14 | 26.42 |
| 8H              | 4H   | 17.15            | 17.69 | 18.11 | 18.67 | 19.94 | 20.74          | 21.27 | 21.70 | 22.26 | 23.53 |
|                 | 6H   | 17.79            | 18.24 | 18.78 | 19.26 | 20.53 | 22.37          | 22.82 | 23.36 | 23.85 | 25.11 |
|                 | 8H   | 18.01            | 18.42 | 19.01 | 19.42 | 20.71 | 23.26          | 23.67 | 24.26 | 24.67 | 25.96 |
|                 | 12H  | 18.15            | 18.51 | 19.15 | 19.51 | 20.84 | 24.26          | 24.62 | 25.26 | 25.62 | 26.96 |
| 12H             | 4H   | 17.36            | 17.84 | 18.34 | 18.84 | 20.12 | 20.72          | 21.21 | 21.70 | 22.20 | 23.48 |
|                 | 6H   | 18.13            | 18.53 | 19.12 | 19.54 | 20.82 | 22.40          | 22.80 | 23.39 | 23.81 | 25.10 |
|                 | 8H   | 18.43            | 18.79 | 19.44 | 19.80 | 21.13 | 23.33          | 23.69 | 24.33 | 24.69 | 26.02 |