

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: P998220

Luminaire Tested: SA2XXDIP-B290D530UB2750-4F0-XX-W2A-F\_4000K

Issue Date: 5/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998220  
REPORT IS A COMBINATION OF REPORTS P983960 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B290D530UB2750-4F0-XX-W2A-F\_4000K  
Description: Define 2 Direct/Indirect Pendant with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

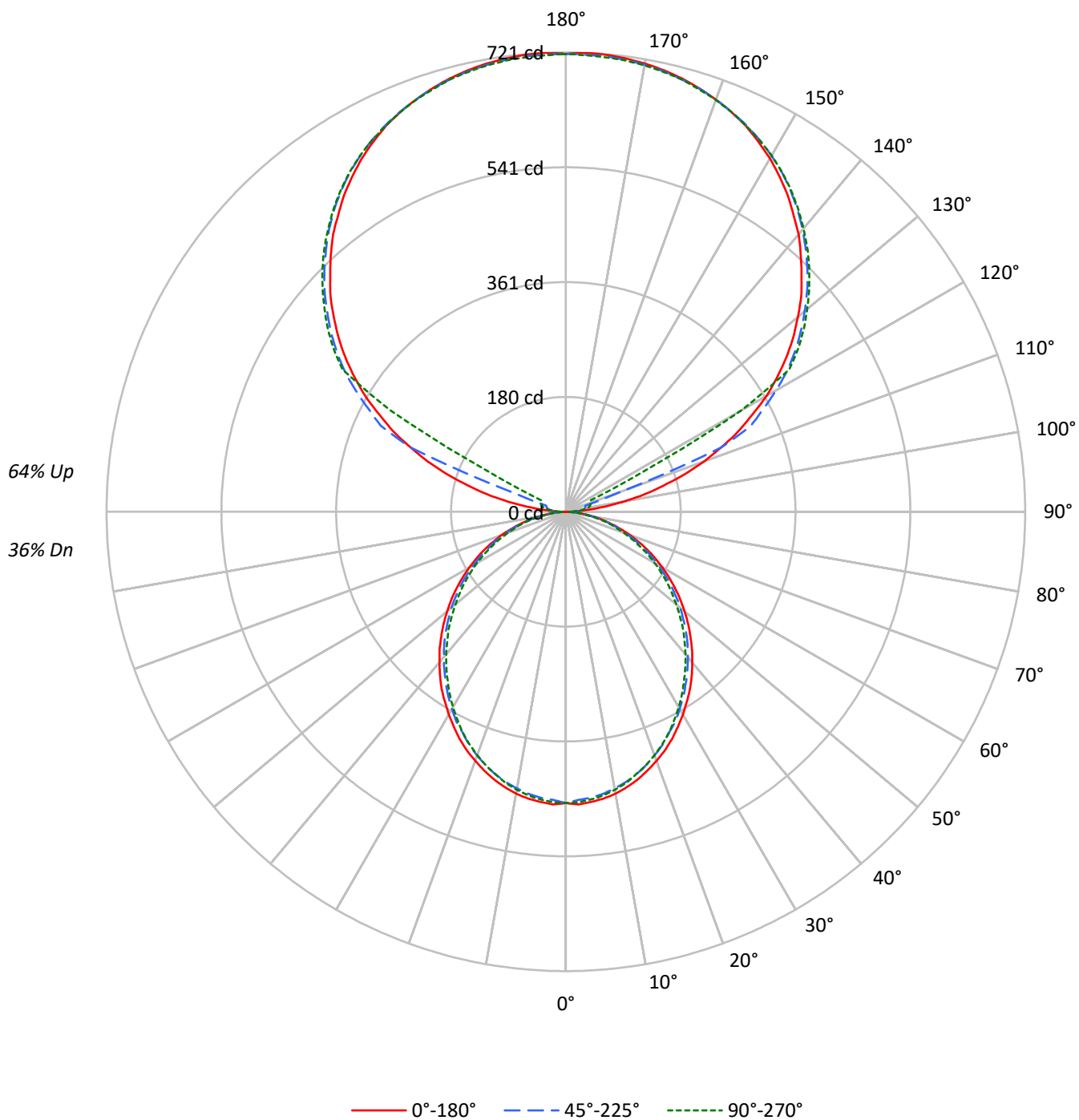
Lumens per Lamp: N/A  
Luminaire Lumens: 3271.0 lumens  
Efficiency: N/A  
Efficacy: 115.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: Semi-Indirect

Input Watts (W): 28.4  
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 |    |    |    | 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 | 50 | 30 | 10 | 0  |
| RCR |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0   | 104 | 104 | 104 | 104 | 94 | 94 | 94 | 94 | 75 | 75 | 75 | 58 | 58 | 58 | 43 | 43 | 43 | 36 |    |    |    |
| 1   | 95  | 90  | 87  | 83  | 85 | 82 | 79 | 76 | 66 | 64 | 62 | 51 | 50 | 49 | 38 | 37 | 36 | 30 |    |    |    |
| 2   | 86  | 79  | 73  | 68  | 78 | 72 | 66 | 62 | 58 | 54 | 51 | 45 | 43 | 41 | 33 | 32 | 30 | 25 |    |    |    |
| 3   | 78  | 69  | 62  | 56  | 71 | 63 | 57 | 52 | 51 | 47 | 43 | 40 | 37 | 34 | 30 | 28 | 26 | 21 |    |    |    |
| 4   | 72  | 61  | 54  | 48  | 65 | 56 | 49 | 44 | 45 | 40 | 36 | 35 | 32 | 29 | 26 | 24 | 22 | 18 |    |    |    |
| 5   | 66  | 54  | 47  | 41  | 59 | 50 | 43 | 38 | 40 | 35 | 31 | 32 | 28 | 25 | 24 | 21 | 19 | 16 |    |    |    |
| 6   | 61  | 49  | 41  | 35  | 55 | 44 | 38 | 33 | 36 | 31 | 27 | 29 | 25 | 22 | 22 | 19 | 17 | 14 |    |    |    |
| 7   | 56  | 44  | 36  | 31  | 50 | 40 | 33 | 28 | 33 | 28 | 24 | 26 | 22 | 20 | 20 | 17 | 15 | 12 |    |    |    |
| 8   | 52  | 40  | 32  | 27  | 47 | 36 | 30 | 25 | 30 | 25 | 21 | 24 | 20 | 17 | 18 | 15 | 14 | 11 |    |    |    |
| 9   | 48  | 36  | 29  | 24  | 44 | 33 | 27 | 22 | 27 | 22 | 19 | 22 | 18 | 16 | 17 | 14 | 12 | 10 |    |    |    |
| 10  | 45  | 33  | 26  | 21  | 41 | 30 | 24 | 20 | 25 | 20 | 17 | 20 | 17 | 14 | 15 | 13 | 11 | 9  |    |    |    |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 7236 | 7236 | 7236 |
| 5°  | 7247 | 6897 | 6849 |
| 10° | 7189 | 6583 | 6453 |
| 15° | 7083 | 6266 | 6036 |
| 20° | 6941 | 5921 | 5641 |
| 25° | 6799 | 5561 | 5247 |
| 30° | 6622 | 5223 | 4834 |
| 35° | 6453 | 4866 | 4428 |
| 40° | 6246 | 4515 | 4044 |
| 45° | 6039 | 4166 | 3667 |
| 50° | 5813 | 3811 | 3278 |
| 55° | 5574 | 3431 | 2907 |
| 60° | 5307 | 3019 | 2523 |
| 65° | 5016 | 2603 | 2118 |
| 70° | 4643 | 2144 | 1711 |
| 75° | 4128 | 1654 | 1321 |
| 80° | 3513 | 1123 | 849  |
| 85° | 2543 | 521  | 362  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6039 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 43.0   | 1.3       |
| 10°-20°   | 121.1  | 3.7       |
| 20°-30°   | 177.9  | 5.4       |
| 30°-40°   | 206.6  | 6.3       |
| 40°-50°   | 206.4  | 6.3       |
| 50°-60°   | 179.9  | 5.5       |
| 60°-70°   | 133.0  | 4.1       |
| 70°-80°   | 75.3   | 2.3       |
| 80°-90°   | 21.1   | 0.6       |
| 90°-100°  | 23.7   | 0.7       |
| 100°-110° | 88.3   | 2.7       |
| 110°-120° | 234.3  | 7.2       |
| 120°-130° | 388.6  | 11.9      |
| 130°-140° | 412.7  | 12.6      |
| 140°-150° | 383.6  | 11.7      |
| 150°-160° | 308.4  | 9.4       |
| 160°-170° | 198.7  | 6.1       |
| 170°-180° | 68.4   | 2.1       |
| 0°-30°    | 342.0  | 10.5      |
| 0°-40°    | 548.6  | 16.8      |
| 0°-60°    | 934.9  | 28.6      |
| 0°-90°    | 1164.3 | 35.6      |
| 90°-120°  | 346.3  | 10.6      |
| 90°-150°  | 1531.2 | 46.8      |
| 90°-180°  | 2107.0 | 64.4      |
| 0°-180°   | 3271.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 457 | 457   | 457 | 457   | 457 |      |
| 5°   | 457 | 455   | 450 | 454   | 453 | 43   |
| 15°  | 435 | 432   | 427 | 429   | 426 | 123  |
| 25°  | 394 | 390   | 383 | 384   | 383 | 181  |
| 35°  | 340 | 335   | 328 | 326   | 324 | 212  |
| 45°  | 276 | 273   | 267 | 262   | 260 | 213  |
| 55°  | 209 | 207   | 201 | 196   | 194 | 187  |
| 65°  | 141 | 138   | 134 | 130   | 128 | 139  |
| 75°  | 74  | 73    | 71  | 68    | 69  | 79   |
| 85°  | 18  | 18    | 17  | 16    | 15  | 20   |
| 90°  | 0   | 6     | 10  | 13    | 14  | 3    |
| 95°  | 34  | 17    | 20  | 23    | 22  | 40   |
| 105° | 158 | 174   | 32  | 37    | 40  | 169  |
| 115° | 299 | 308   | 321 | 80    | 43  | 294  |
| 125° | 423 | 430   | 439 | 443   | 445 | 377  |
| 135° | 523 | 531   | 536 | 541   | 540 | 404  |
| 145° | 607 | 606   | 615 | 619   | 616 | 380  |
| 155° | 668 | 664   | 670 | 673   | 669 | 308  |
| 165° | 704 | 701   | 702 | 706   | 702 | 199  |
| 175° | 720 | 716   | 718 | 721   | 716 | 69   |
| 180° | 719 | 719   | 719 | 719   | 719 |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 457.1 | 457.1 | 457.1 | 457.1 | 457.1 |
| 2.5°   | 459.8 | 457.6 | 452.7 | 457.1 | 456.2 |
| 5°     | 457.1 | 455.4 | 450.5 | 454.0 | 453.2 |
| 7.5°   | 454.0 | 451.4 | 446.6 | 450.1 | 449.2 |
| 10°    | 449.2 | 446.1 | 440.9 | 444.4 | 443.1 |
| 12.5°  | 442.6 | 440.0 | 434.7 | 436.9 | 436.0 |
| 15°    | 435.1 | 432.5 | 426.8 | 428.6 | 426.4 |
| 17.5°  | 425.9 | 423.3 | 417.6 | 419.8 | 417.6 |
| 20°    | 415.8 | 413.2 | 407.0 | 408.3 | 406.6 |
| 22.5°  | 405.7 | 401.7 | 396.0 | 396.0 | 395.1 |
| 25°    | 393.8 | 390.3 | 382.8 | 383.7 | 382.8 |
| 27.5°  | 380.6 | 377.6 | 371.9 | 370.5 | 368.3 |
| 30°    | 367.5 | 363.9 | 357.3 | 356.0 | 354.3 |
| 32.5°  | 353.4 | 350.8 | 343.7 | 341.1 | 339.3 |
| 35°    | 339.8 | 335.4 | 328.3 | 325.7 | 323.5 |
| 37.5°  | 324.4 | 320.4 | 313.4 | 310.3 | 308.1 |
| 40°    | 308.6 | 305.0 | 298.0 | 294.1 | 292.3 |
| 42.5°  | 293.2 | 289.7 | 282.6 | 278.2 | 275.6 |
| 45°    | 276.5 | 273.4 | 266.8 | 262.0 | 260.2 |
| 47.5°  | 260.2 | 257.1 | 250.1 | 245.3 | 242.6 |
| 50°    | 243.1 | 240.9 | 234.7 | 228.6 | 226.4 |
| 52.5°  | 226.4 | 223.3 | 217.6 | 212.7 | 209.7 |
| 55°    | 209.2 | 206.6 | 201.3 | 196.0 | 193.8 |
| 57.5°  | 192.1 | 189.9 | 184.2 | 178.9 | 177.1 |
| 60°    | 174.9 | 173.2 | 167.0 | 162.2 | 160.9 |
| 62.5°  | 158.2 | 155.2 | 150.8 | 146.4 | 144.6 |
| 65°    | 141.1 | 138.5 | 134.1 | 130.1 | 127.9 |
| 67.5°  | 123.5 | 121.3 | 117.4 | 114.3 | 112.5 |
| 70°    | 107.2 | 105.5 | 101.5 | 98.5  | 96.7  |
| 72.5°  | 90.5  | 88.8  | 86.6  | 83.5  | 82.2  |
| 75°    | 73.8  | 73.0  | 70.8  | 68.1  | 69.0  |
| 77.5°  | 58.9  | 57.1  | 56.3  | 54.9  | 53.6  |
| 80°    | 44.0  | 43.5  | 42.6  | 41.3  | 40.4  |
| 82.5°  | 29.9  | 29.9  | 29.4  | 27.7  | 27.7  |
| 85°    | 18.0  | 17.6  | 17.1  | 15.8  | 15.4  |
| 87.5°  | 7.9   | 7.0   | 6.2   | 4.8   | 4.4   |
| 90°    | 0.5   | 6.2   | 10.4  | 13.0  | 14.0  |
| 92.5°  | 13.0  | 10.9  | 12.5  | 13.5  | 14.0  |
| 95°    | 33.8  | 16.6  | 20.3  | 22.9  | 22.4  |
| 97.5°  | 60.8  | 18.2  | 26.5  | 28.1  | 28.6  |
| 100°   | 92.0  | 20.8  | 29.6  | 33.8  | 34.8  |
| 102.5° | 126.4 | 125.3 | 30.7  | 36.4  | 38.0  |
| 105°   | 158.1 | 173.7 | 31.7  | 37.4  | 39.5  |
| 107.5° | 195.0 | 208.0 | 32.8  | 38.5  | 40.6  |
| 110°   | 230.4 | 241.3 | 91.0  | 39.0  | 41.1  |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 263.6 | 273.0 | 264.2 | 40.0  | 41.6  |
| 115°   | 299.0 | 307.8 | 320.8 | 80.1  | 42.6  |
| 117.5° | 329.7 | 340.1 | 348.9 | 274.6 | 138.3 |
| 120°   | 364.0 | 371.8 | 381.1 | 387.4 | 317.2 |
| 122.5° | 393.1 | 401.4 | 411.8 | 414.9 | 415.5 |
| 125°   | 422.7 | 429.5 | 439.4 | 443.0 | 444.6 |
| 127.5° | 449.8 | 457.1 | 464.9 | 470.1 | 470.6 |
| 130°   | 475.3 | 483.6 | 489.3 | 495.0 | 494.5 |
| 132.5° | 501.3 | 508.0 | 513.7 | 518.4 | 517.9 |
| 135°   | 523.1 | 531.4 | 536.1 | 541.3 | 540.3 |
| 137.5° | 546.0 | 552.2 | 557.4 | 562.6 | 561.1 |
| 140°   | 568.3 | 572.5 | 578.2 | 582.9 | 580.3 |
| 142.5° | 587.1 | 590.7 | 597.5 | 601.6 | 599.0 |
| 145°   | 606.8 | 606.3 | 615.1 | 618.8 | 616.2 |
| 147.5° | 624.0 | 622.4 | 631.3 | 633.9 | 631.8 |
| 150°   | 640.6 | 637.0 | 645.3 | 648.4 | 645.8 |
| 152.5° | 654.7 | 650.5 | 658.3 | 661.4 | 657.8 |
| 155°   | 668.2 | 663.5 | 669.7 | 672.9 | 668.7 |
| 157.5° | 679.1 | 674.9 | 679.6 | 683.3 | 679.1 |
| 160°   | 688.5 | 685.3 | 688.5 | 691.6 | 687.9 |
| 162.5° | 696.8 | 693.7 | 696.3 | 699.9 | 695.2 |
| 165°   | 704.1 | 700.9 | 702.5 | 706.1 | 702.5 |
| 167.5° | 709.8 | 706.7 | 708.2 | 711.9 | 707.2 |
| 170°   | 714.5 | 711.3 | 712.4 | 716.0 | 711.3 |
| 172.5° | 717.6 | 714.5 | 715.5 | 719.1 | 714.5 |
| 175°   | 720.2 | 716.5 | 717.6 | 721.2 | 716.0 |
| 177.5° | 721.2 | 717.6 | 718.1 | 721.7 | 717.1 |
| 180°   | 718.6 | 718.6 | 718.6 | 718.6 | 718.6 |

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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 | 10.61            | 11.36 | 11.68 | 12.43 | 13.89 | 11.39          | 12.14 | 12.46 | 13.21 | 14.67 |
|                 | 3H   | 11.94            | 12.61 | 13.02 | 13.69 | 15.17 | 13.01          | 13.68 | 14.09 | 14.76 | 16.24 |
|                 | 4H   | 12.34            | 12.97 | 13.43 | 14.06 | 15.54 | 13.60          | 14.23 | 14.69 | 15.31 | 16.80 |
|                 | 6H   | 12.55            | 13.13 | 13.65 | 14.22 | 15.72 | 13.99          | 14.58 | 15.09 | 15.66 | 17.16 |
|                 | 8H   | 12.58            | 13.13 | 13.68 | 14.24 | 15.73 | 14.10          | 14.65 | 15.20 | 15.75 | 17.25 |
|                 | 12H  | 12.57            | 13.09 | 13.68 | 14.19 | 15.71 | 14.14          | 14.67 | 15.25 | 15.76 | 17.28 |
| 4H              | 2H   | 11.07            | 11.70 | 12.16 | 12.78 | 14.27 | 11.71          | 12.34 | 12.81 | 13.43 | 14.91 |
|                 | 3H   | 12.57            | 13.10 | 13.68 | 14.21 | 15.71 | 13.48          | 14.01 | 14.58 | 15.12 | 16.62 |
|                 | 4H   | 13.07            | 13.56 | 14.18 | 14.66 | 16.18 | 14.15          | 14.64 | 15.26 | 15.74 | 17.26 |
|                 | 6H   | 13.37            | 13.79 | 14.49 | 14.91 | 16.42 | 14.64          | 15.06 | 15.76 | 16.18 | 17.70 |
|                 | 8H   | 13.42            | 13.81 | 14.54 | 14.93 | 16.46 | 14.78          | 15.17 | 15.90 | 16.29 | 17.82 |
|                 | 12H  | 13.42            | 13.77 | 14.55 | 14.90 | 16.43 | 14.84          | 15.19 | 15.97 | 16.32 | 17.85 |
| 8H              | 4H   | 13.24            | 13.63 | 14.36 | 14.74 | 16.27 | 14.23          | 14.62 | 15.35 | 15.73 | 17.26 |
|                 | 6H   | 13.62            | 13.94 | 14.76 | 15.10 | 16.62 | 14.79          | 15.11 | 15.93 | 16.27 | 17.80 |
|                 | 8H   | 13.72            | 14.00 | 14.86 | 15.14 | 16.68 | 14.98          | 15.26 | 16.13 | 16.40 | 17.95 |
|                 | 12H  | 13.75            | 13.99 | 14.89 | 15.13 | 16.71 | 15.07          | 15.32 | 16.22 | 16.46 | 18.04 |
| 12H             | 4H   | 13.22            | 13.57 | 14.35 | 14.70 | 16.23 | 14.19          | 14.54 | 15.32 | 15.67 | 17.20 |
|                 | 6H   | 13.63            | 13.92 | 14.78 | 15.05 | 16.60 | 14.78          | 15.07 | 15.93 | 16.20 | 17.75 |
|                 | 8H   | 13.74            | 13.99 | 14.89 | 15.12 | 16.70 | 14.98          | 15.22 | 16.12 | 16.36 | 17.94 |