

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: P998415

Luminaire Tested: SA2XXDIP-B485D1080UB35-4F0-XX-W2A-D1

Issue Date: 5/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998415  
REPORT IS A COMBINATION OF REPORTS P984155 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B485D1080UB35-4F0-XX-W2A-D1  
Description: Define 2 Direct/Indirect Pendant with 3500K BioUP LEDs {m-DER=0.721} {m-EER=0.792}  
Light Source: -  
Ballast/Driver: -

**Summary**

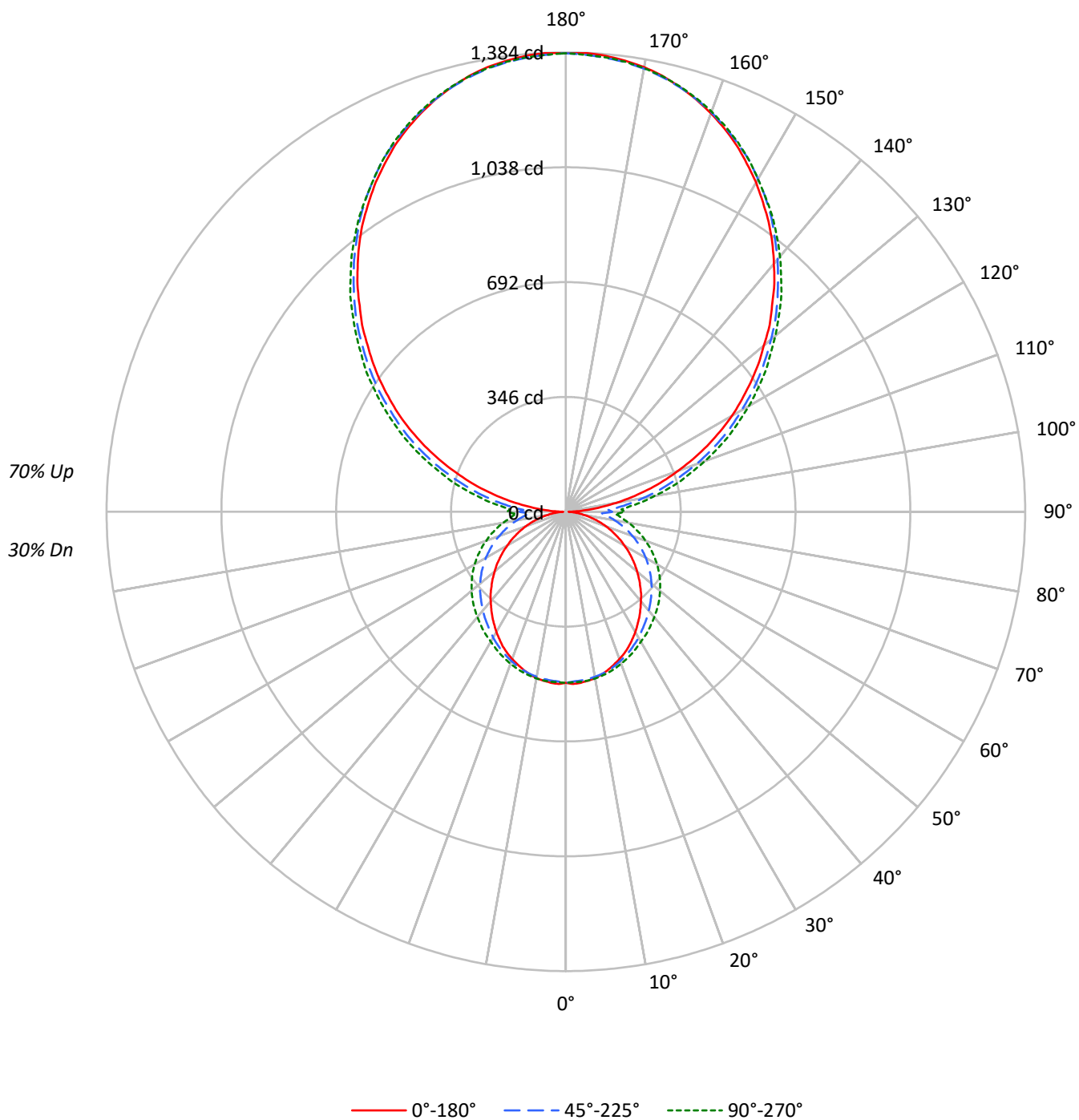
Lumens per Lamp: N/A  
Luminaire Lumens: 5833.0 lumens  
Efficiency: N/A  
Efficacy: 98.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: Semi-Indirect

Input Watts (W): 59  
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   | 102 | 102 | 102 | 102 | 92 | 92 | 92 | 92 | 72 | 72 | 72 | 54 | 54 | 54 | 38 | 38 | 38 |
| 1   | 92  | 88  | 84  | 80  | 83 | 79 | 75 | 72 | 62 | 59 | 57 | 46 | 45 | 43 | 32 | 31 | 30 |
| 2   | 84  | 76  | 70  | 65  | 75 | 68 | 63 | 58 | 54 | 50 | 47 | 40 | 38 | 35 | 28 | 26 | 25 |
| 3   | 76  | 67  | 59  | 53  | 68 | 60 | 53 | 48 | 47 | 42 | 39 | 35 | 32 | 29 | 24 | 22 | 21 |
| 4   | 69  | 59  | 51  | 45  | 62 | 53 | 46 | 41 | 41 | 37 | 33 | 31 | 28 | 25 | 21 | 19 | 17 |
| 5   | 64  | 52  | 44  | 38  | 57 | 47 | 40 | 34 | 37 | 32 | 28 | 28 | 24 | 21 | 19 | 17 | 15 |
| 6   | 58  | 46  | 38  | 33  | 52 | 42 | 35 | 30 | 33 | 28 | 24 | 25 | 21 | 18 | 17 | 15 | 13 |
| 7   | 54  | 42  | 34  | 28  | 48 | 38 | 31 | 26 | 30 | 25 | 21 | 23 | 19 | 16 | 16 | 13 | 11 |
| 8   | 50  | 38  | 30  | 25  | 44 | 34 | 27 | 23 | 27 | 22 | 18 | 20 | 17 | 14 | 14 | 12 | 10 |
| 9   | 46  | 34  | 27  | 22  | 41 | 31 | 24 | 20 | 25 | 20 | 16 | 19 | 15 | 13 | 13 | 11 | 9  |
| 10  | 43  | 31  | 24  | 19  | 39 | 28 | 22 | 18 | 23 | 18 | 15 | 17 | 14 | 11 | 12 | 10 | 8  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 8160 | 8160 | 8160 |
| 5°  | 8197 | 7812 | 7768 |
| 10° | 8142 | 7541 | 7431 |
| 15° | 8027 | 7262 | 7087 |
| 20° | 7883 | 6968 | 6758 |
| 25° | 7740 | 6686 | 6461 |
| 30° | 7539 | 6400 | 6167 |
| 35° | 7336 | 6125 | 5951 |
| 40° | 7122 | 5886 | 5736 |
| 45° | 6919 | 5670 | 5549 |
| 50° | 6701 | 5470 | 5365 |
| 55° | 6470 | 5260 | 5177 |
| 60° | 6190 | 5039 | 4979 |
| 65° | 5898 | 4784 | 4752 |
| 70° | 5565 | 4513 | 4508 |
| 75° | 5141 | 4240 | 4276 |
| 80° | 4471 | 3958 | 4036 |
| 85° | 3800 | 3690 | 3831 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6919 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 48.9   | 0.8       |
| 10°-20°   | 140.2  | 2.4       |
| 20°-30°   | 212.4  | 3.6       |
| 30°-40°   | 258.6  | 4.4       |
| 40°-50°   | 278.2  | 4.8       |
| 50°-60°   | 270.2  | 4.6       |
| 60°-70°   | 236.0  | 4.0       |
| 70°-80°   | 181.6  | 3.1       |
| 80°-90°   | 125.6  | 2.2       |
| 90°-100°  | 169.4  | 2.9       |
| 100°-110° | 332.9  | 5.7       |
| 110°-120° | 505.3  | 8.7       |
| 120°-130° | 633.8  | 10.9      |
| 130°-140° | 695.7  | 11.9      |
| 140°-150° | 674.5  | 11.6      |
| 150°-160° | 564.5  | 9.7       |
| 160°-170° | 374.4  | 6.4       |
| 170°-180° | 130.8  | 2.2       |
| 0°-30°    | 401.4  | 6.9       |
| 0°-40°    | 660.0  | 11.3      |
| 0°-60°    | 1208.5 | 20.7      |
| 0°-90°    | 1751.7 | 30.0      |
| 90°-120°  | 1007.6 | 17.3      |
| 90°-150°  | 3011.7 | 51.6      |
| 90°-180°  | 4081.0 | 70.0      |
| 0°-180°   | 5833.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 516  | 516   | 516  | 516   | 516  |      |
| 5°   | 517  | 515   | 510  | 515   | 514  | 49   |
| 15°  | 493  | 495   | 495  | 501   | 501  | 139  |
| 25°  | 448  | 454   | 460  | 469   | 471  | 206  |
| 35°  | 386  | 399   | 413  | 430   | 435  | 241  |
| 45°  | 317  | 337   | 363  | 386   | 394  | 245  |
| 55°  | 243  | 270   | 309  | 336   | 345  | 217  |
| 65°  | 166  | 202   | 246  | 277   | 287  | 165  |
| 75°  | 92   | 134   | 182  | 214   | 223  | 97   |
| 85°  | 27   | 73    | 121  | 152   | 163  | 28   |
| 90°  | 9    | 66    | 139  | 167   | 177  | 9    |
| 95°  | 67   | 113   | 160  | 189   | 196  | 72   |
| 105° | 254  | 280   | 321  | 349   | 357  | 269  |
| 115° | 469  | 484   | 516  | 537   | 542  | 464  |
| 125° | 680  | 690   | 711  | 728   | 733  | 608  |
| 135° | 878  | 891   | 901  | 916   | 918  | 679  |
| 145° | 1066 | 1074  | 1081 | 1086  | 1085 | 666  |
| 155° | 1218 | 1222  | 1225 | 1231  | 1228 | 561  |
| 165° | 1325 | 1324  | 1324 | 1332  | 1327 | 374  |
| 175° | 1379 | 1376  | 1373 | 1381  | 1374 | 131  |
| 180° | 1381 | 1381  | 1381 | 1381  | 1381 |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 515.5 | 515.5 | 515.5 | 515.5 | 515.5 |
| 2.5°   | 519.2 | 517.0 | 511.8 | 515.5 | 514.0 |
| 5°     | 517.0 | 514.8 | 510.3 | 514.8 | 514.0 |
| 7.5°   | 513.3 | 511.8 | 508.0 | 513.3 | 512.5 |
| 10°    | 508.8 | 507.3 | 505.0 | 511.0 | 510.3 |
| 12.5°  | 501.3 | 502.1 | 500.6 | 506.5 | 505.8 |
| 15°    | 493.1 | 494.6 | 494.6 | 501.3 | 500.6 |
| 17.5°  | 482.6 | 485.6 | 487.9 | 494.6 | 494.6 |
| 20°    | 472.2 | 475.9 | 478.9 | 487.1 | 487.1 |
| 22.5°  | 461.0 | 465.5 | 469.9 | 478.2 | 479.6 |
| 25°    | 448.3 | 453.5 | 460.2 | 469.2 | 471.4 |
| 27.5°  | 433.3 | 441.5 | 449.0 | 460.2 | 461.7 |
| 30°    | 418.4 | 428.1 | 437.8 | 449.8 | 452.0 |
| 32.5°  | 401.9 | 413.2 | 425.1 | 439.3 | 443.8 |
| 35°    | 386.3 | 399.0 | 413.2 | 429.6 | 434.8 |
| 37.5°  | 369.1 | 383.3 | 401.2 | 419.1 | 424.4 |
| 40°    | 351.9 | 368.3 | 388.5 | 407.9 | 414.6 |
| 42.5°  | 335.5 | 351.9 | 375.8 | 397.5 | 404.2 |
| 45°    | 316.8 | 336.9 | 363.1 | 386.3 | 393.7 |
| 47.5°  | 298.8 | 320.5 | 350.4 | 374.3 | 382.5 |
| 50°    | 280.2 | 303.3 | 336.9 | 362.4 | 370.6 |
| 52.5°  | 262.2 | 286.9 | 322.8 | 348.9 | 357.9 |
| 55°    | 242.8 | 269.7 | 308.6 | 335.5 | 345.2 |
| 57.5°  | 224.1 | 254.0 | 292.9 | 322.0 | 331.7 |
| 60°    | 204.0 | 236.1 | 278.7 | 307.1 | 317.5 |
| 62.5°  | 186.0 | 219.7 | 262.2 | 292.9 | 302.6 |
| 65°    | 165.9 | 202.5 | 246.5 | 277.2 | 286.9 |
| 67.5°  | 147.9 | 186.0 | 230.9 | 261.5 | 271.9 |
| 70°    | 128.5 | 167.4 | 213.7 | 245.8 | 254.8 |
| 72.5°  | 110.6 | 150.9 | 198.0 | 229.4 | 240.6 |
| 75°    | 91.9  | 133.7 | 181.5 | 213.7 | 223.4 |
| 77.5°  | 74.0  | 117.3 | 165.9 | 198.0 | 208.4 |
| 80°    | 56.0  | 101.6 | 150.2 | 181.5 | 192.0 |
| 82.5°  | 41.1  | 85.9  | 135.2 | 166.6 | 176.3 |
| 85°    | 26.9  | 73.2  | 121.0 | 152.4 | 162.9 |
| 87.5°  | 16.4  | 61.3  | 109.1 | 139.7 | 149.4 |
| 90°    | 8.7   | 66.0  | 139.4 | 167.0 | 177.1 |
| 92.5°  | 32.3  | 81.3  | 128.0 | 158.3 | 167.3 |
| 95°    | 66.6  | 113.4 | 160.5 | 188.9 | 195.6 |
| 97.5°  | 106.6 | 149.3 | 197.3 | 224.9 | 233.9 |
| 100°   | 153.2 | 190.3 | 235.6 | 263.3 | 270.3 |
| 102.5° | 201.5 | 233.1 | 278.2 | 306.2 | 313.3 |
| 105°   | 254.3 | 279.5 | 320.8 | 349.2 | 357.4 |
| 107.5° | 308.0 | 330.6 | 367.9 | 394.5 | 396.9 |
| 110°   | 358.5 | 380.4 | 417.0 | 440.9 | 445.7 |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 414.5  | 433.4  | 466.6  | 487.0  | 492.9  |
| 115°   | 469.3  | 484.5  | 515.8  | 537.0  | 541.8  |
| 117.5° | 523.3  | 538.6  | 564.2  | 583.1  | 587.1  |
| 120°   | 578.1  | 590.4  | 611.0  | 631.9  | 636.7  |
| 122.5° | 628.2  | 640.6  | 662.4  | 679.1  | 683.5  |
| 125°   | 679.9  | 690.4  | 710.8  | 727.5  | 733.1  |
| 127.5° | 731.2  | 743.3  | 758.8  | 772.8  | 776.0  |
| 130°   | 779.0  | 793.4  | 806.8  | 822.4  | 823.7  |
| 132.5° | 832.7  | 843.5  | 856.0  | 867.3  | 869.8  |
| 135°   | 878.5  | 891.3  | 901.1  | 915.7  | 918.2  |
| 137.5° | 929.8  | 940.3  | 946.4  | 959.4  | 960.0  |
| 140°   | 975.2  | 985.0  | 992.4  | 1004.3 | 1004.1 |
| 142.5° | 1021.9 | 1031.7 | 1035.2 | 1045.3 | 1044.4 |
| 145°   | 1065.5 | 1073.6 | 1080.6 | 1086.3 | 1085.3 |
| 147.5° | 1105.1 | 1115.6 | 1120.3 | 1123.3 | 1120.9 |
| 150°   | 1145.9 | 1152.9 | 1157.6 | 1161.1 | 1157.6 |
| 152.5° | 1182.0 | 1189.0 | 1194.9 | 1199.5 | 1194.9 |
| 155°   | 1218.2 | 1221.7 | 1225.2 | 1231.0 | 1227.5 |
| 157.5° | 1249.7 | 1252.0 | 1254.3 | 1262.5 | 1256.6 |
| 160°   | 1277.6 | 1280.0 | 1281.1 | 1288.1 | 1283.5 |
| 162.5° | 1303.3 | 1303.3 | 1304.4 | 1312.6 | 1306.8 |
| 165°   | 1325.4 | 1324.3 | 1324.3 | 1332.4 | 1326.6 |
| 167.5° | 1345.2 | 1341.7 | 1341.7 | 1349.9 | 1344.1 |
| 170°   | 1360.4 | 1356.9 | 1355.7 | 1363.9 | 1356.9 |
| 172.5° | 1370.9 | 1367.4 | 1366.2 | 1374.4 | 1367.4 |
| 175°   | 1379.0 | 1375.5 | 1373.2 | 1381.4 | 1374.4 |
| 177.5° | 1383.7 | 1380.2 | 1377.9 | 1384.9 | 1377.9 |
| 180°   | 1381.4 | 1381.4 | 1381.4 | 1381.4 | 1381.4 |

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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 | 10.32            | 11.05 | 11.42 | 12.16 | 13.68 | 13.39          | 14.13 | 14.50 | 15.23 | 16.76 |
|                 | 3H   | 11.77            | 12.43 | 12.88 | 13.54 | 15.09 | 15.97          | 16.63 | 17.09 | 17.75 | 19.29 |
|                 | 4H   | 12.24            | 12.87 | 13.36 | 13.98 | 15.53 | 17.22          | 17.85 | 18.34 | 18.97 | 20.51 |
|                 | 6H   | 12.52            | 13.10 | 13.65 | 14.22 | 15.78 | 18.51          | 19.09 | 19.64 | 20.21 | 21.77 |
|                 | 8H   | 12.57            | 13.13 | 13.71 | 14.26 | 15.81 | 19.17          | 19.72 | 20.30 | 20.85 | 22.41 |
|                 | 12H  | 12.59            | 13.11 | 13.72 | 14.24 | 15.82 | 19.89          | 20.42 | 21.03 | 21.54 | 23.12 |
| 4H              | 2H   | 11.35            | 11.98 | 12.48 | 13.10 | 14.65 | 13.71          | 14.34 | 14.84 | 15.45 | 17.00 |
|                 | 3H   | 13.05            | 13.58 | 14.19 | 14.72 | 16.28 | 16.49          | 17.02 | 17.63 | 18.16 | 19.72 |
|                 | 4H   | 13.67            | 14.16 | 14.81 | 15.29 | 16.87 | 17.90          | 18.39 | 19.04 | 19.52 | 21.10 |
|                 | 6H   | 14.08            | 14.50 | 15.22 | 15.65 | 17.22 | 19.36          | 19.79 | 20.51 | 20.94 | 22.51 |
|                 | 8H   | 14.18            | 14.58 | 15.33 | 15.72 | 17.31 | 20.12          | 20.51 | 21.26 | 21.66 | 23.25 |
|                 | 12H  | 14.22            | 14.58 | 15.38 | 15.74 | 17.33 | 20.94          | 21.30 | 22.10 | 22.46 | 24.05 |
| 8H              | 4H   | 14.45            | 14.85 | 15.59 | 15.99 | 17.58 | 18.04          | 18.43 | 19.18 | 19.58 | 21.17 |
|                 | 6H   | 15.08            | 15.41 | 16.24 | 16.59 | 18.18 | 19.66          | 19.99 | 20.82 | 21.18 | 22.76 |
|                 | 8H   | 15.30            | 15.59 | 16.47 | 16.75 | 18.36 | 20.55          | 20.84 | 21.72 | 22.00 | 23.61 |
|                 | 12H  | 15.43            | 15.68 | 16.60 | 16.84 | 18.48 | 21.54          | 21.79 | 22.71 | 22.96 | 24.59 |
| 12H             | 4H   | 14.64            | 15.00 | 15.80 | 16.16 | 17.75 | 18.00          | 18.37 | 19.17 | 19.52 | 21.12 |
|                 | 6H   | 15.41            | 15.70 | 16.58 | 16.87 | 18.47 | 19.68          | 19.98 | 20.85 | 21.14 | 22.74 |
|                 | 8H   | 15.71            | 15.96 | 16.88 | 17.13 | 18.76 | 20.61          | 20.86 | 21.78 | 22.03 | 23.66 |