

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: P998168

Luminaire Tested: SA2XXDIP-B290D330UB30-4F0-XX-W2A-F

Issue Date: 5/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998168  
REPORT IS A COMBINATION OF REPORTS P983908 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B290D330UB30-4F0-XX-W2A-F  
Description: Define 2 Direct/Indirect Pendant with 3000K BioUP LEDs {m-DER=0.589} {m-EER=0.647}  
Light Source: -  
Ballast/Driver: -

**Summary**

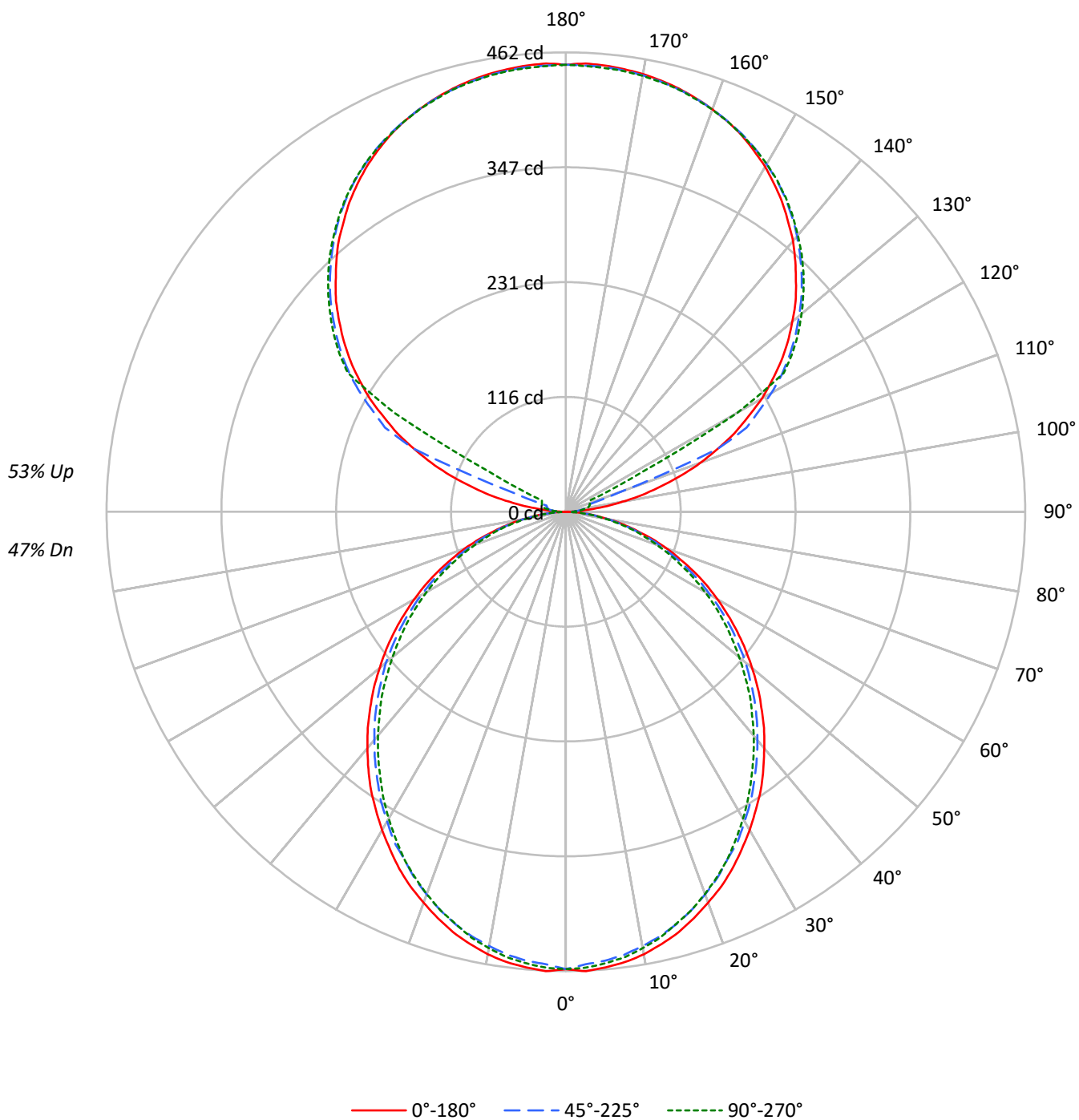
Lumens per Lamp: N/A  
Luminaire Lumens: 2489.0 lumens  
Efficiency: N/A  
Efficacy: 111.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 22.3  
Input Voltage (V):  
Input Current (A<sub>in</sub>): 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   | 106 | 106 | 106 | 106 | 98 | 98 | 98 | 98 | 82 | 82 | 82 | 67 | 67 | 67 | 53 | 53 | 53 |
| 1   | 97  | 93  | 89  | 85  | 89 | 85 | 82 | 79 | 72 | 69 | 67 | 59 | 57 | 56 | 47 | 46 | 45 |
| 2   | 88  | 81  | 75  | 70  | 81 | 75 | 69 | 65 | 63 | 59 | 56 | 52 | 49 | 47 | 42 | 40 | 38 |
| 3   | 81  | 71  | 64  | 58  | 74 | 66 | 59 | 54 | 55 | 51 | 47 | 46 | 42 | 39 | 37 | 34 | 32 |
| 4   | 74  | 63  | 55  | 49  | 68 | 58 | 51 | 46 | 49 | 44 | 40 | 41 | 37 | 34 | 33 | 30 | 28 |
| 5   | 68  | 56  | 48  | 42  | 62 | 52 | 45 | 39 | 44 | 38 | 34 | 37 | 32 | 29 | 30 | 27 | 24 |
| 6   | 62  | 50  | 42  | 36  | 57 | 47 | 39 | 34 | 40 | 34 | 30 | 33 | 29 | 26 | 27 | 24 | 21 |
| 7   | 58  | 45  | 38  | 32  | 53 | 42 | 35 | 30 | 36 | 30 | 26 | 30 | 26 | 23 | 25 | 21 | 19 |
| 8   | 53  | 41  | 34  | 28  | 49 | 38 | 31 | 27 | 33 | 27 | 23 | 27 | 23 | 20 | 23 | 19 | 17 |
| 9   | 50  | 38  | 30  | 25  | 46 | 35 | 28 | 24 | 30 | 25 | 21 | 25 | 21 | 18 | 21 | 18 | 15 |
| 10  | 46  | 34  | 27  | 23  | 43 | 32 | 26 | 21 | 28 | 22 | 19 | 23 | 19 | 16 | 19 | 16 | 14 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 7280 | 7280 | 7280 |
| 5°  | 7292 | 6938 | 6890 |
| 10° | 7232 | 6622 | 6491 |
| 15° | 7127 | 6304 | 6072 |
| 20° | 6983 | 5958 | 5675 |
| 25° | 6840 | 5595 | 5278 |
| 30° | 6661 | 5255 | 4863 |
| 35° | 6491 | 4896 | 4455 |
| 40° | 6282 | 4542 | 4069 |
| 45° | 6074 | 4191 | 3690 |
| 50° | 5847 | 3833 | 3296 |
| 55° | 5609 | 3451 | 2925 |
| 60° | 5341 | 3037 | 2537 |
| 65° | 5044 | 2618 | 2132 |
| 70° | 4673 | 2156 | 1721 |
| 75° | 4156 | 1663 | 1328 |
| 80° | 3529 | 1131 | 856  |
| 85° | 2557 | 524  | 364  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6074 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 43.3   | 1.7       |
| 10°-20°   | 121.8  | 4.9       |
| 20°-30°   | 179.0  | 7.2       |
| 30°-40°   | 207.9  | 8.4       |
| 40°-50°   | 207.6  | 8.3       |
| 50°-60°   | 181.0  | 7.3       |
| 60°-70°   | 133.8  | 5.4       |
| 70°-80°   | 75.7   | 3.0       |
| 80°-90°   | 20.8   | 0.8       |
| 90°-100°  | 14.8   | 0.6       |
| 100°-110° | 55.3   | 2.2       |
| 110°-120° | 146.6  | 5.9       |
| 120°-130° | 243.1  | 9.8       |
| 130°-140° | 258.3  | 10.4      |
| 140°-150° | 240.0  | 9.6       |
| 150°-160° | 193.0  | 7.8       |
| 160°-170° | 124.3  | 5.0       |
| 170°-180° | 42.8   | 1.7       |
| 0°-30°    | 344.0  | 13.8      |
| 0°-40°    | 551.9  | 22.2      |
| 0°-60°    | 940.5  | 37.8      |
| 0°-90°    | 1170.8 | 47.0      |
| 90°-120°  | 216.7  | 8.7       |
| 90°-150°  | 958.1  | 38.5      |
| 90°-180°  | 1318.0 | 53.0      |
| 0°-180°   | 2489.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 460 | 460   | 460 | 460   | 460 |      |
| 5°   | 460 | 458   | 453 | 457   | 456 | 44   |
| 15°  | 438 | 435   | 429 | 431   | 429 | 123  |
| 25°  | 396 | 393   | 385 | 386   | 385 | 182  |
| 35°  | 342 | 337   | 330 | 328   | 326 | 213  |
| 45°  | 278 | 275   | 268 | 264   | 262 | 215  |
| 55°  | 210 | 208   | 202 | 197   | 195 | 188  |
| 65°  | 142 | 139   | 135 | 131   | 129 | 140  |
| 75°  | 74  | 73    | 71  | 68    | 69  | 79   |
| 85°  | 18  | 18    | 17  | 16    | 16  | 20   |
| 90°  | 0   | 4     | 6   | 8     | 9   | 2    |
| 95°  | 21  | 10    | 13  | 14    | 14  | 25   |
| 105° | 99  | 109   | 20  | 23    | 25  | 106  |
| 115° | 187 | 193   | 201 | 50    | 27  | 184  |
| 125° | 264 | 269   | 275 | 277   | 278 | 236  |
| 135° | 327 | 332   | 335 | 339   | 338 | 253  |
| 145° | 380 | 379   | 385 | 387   | 386 | 237  |
| 155° | 418 | 415   | 419 | 421   | 418 | 193  |
| 165° | 440 | 439   | 440 | 442   | 440 | 124  |
| 175° | 451 | 448   | 449 | 451   | 448 | 43   |
| 180° | 450 | 450   | 450 | 450   | 450 |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 459.9 | 459.9 | 459.9 | 459.9 | 459.9 |
| 2.5°   | 462.5 | 460.3 | 455.5 | 459.9 | 459.0 |
| 5°     | 459.9 | 458.1 | 453.2 | 456.8 | 455.9 |
| 7.5°   | 456.8 | 454.1 | 449.3 | 452.8 | 451.9 |
| 10°    | 451.9 | 448.8 | 443.5 | 447.1 | 445.7 |
| 12.5°  | 445.3 | 442.6 | 437.3 | 439.5 | 438.7 |
| 15°    | 437.8 | 435.1 | 429.4 | 431.1 | 428.9 |
| 17.5°  | 428.5 | 425.8 | 420.1 | 422.3 | 420.1 |
| 20°    | 418.3 | 415.7 | 409.5 | 410.8 | 409.0 |
| 22.5°  | 408.1 | 404.2 | 398.4 | 398.4 | 397.5 |
| 25°    | 396.2 | 392.7 | 385.1 | 386.0 | 385.1 |
| 27.5°  | 382.9 | 379.8 | 374.1 | 372.8 | 370.6 |
| 30°    | 369.7 | 366.1 | 359.5 | 358.2 | 356.4 |
| 32.5°  | 355.5 | 352.9 | 345.8 | 343.1 | 341.4 |
| 35°    | 341.8 | 337.4 | 330.3 | 327.7 | 325.5 |
| 37.5°  | 326.3 | 322.4 | 315.3 | 312.2 | 310.0 |
| 40°    | 310.4 | 306.9 | 299.8 | 295.8 | 294.1 |
| 42.5°  | 294.9 | 291.4 | 284.3 | 279.9 | 277.3 |
| 45°    | 278.1 | 275.0 | 268.4 | 263.5 | 261.8 |
| 47.5°  | 261.8 | 258.7 | 251.6 | 246.7 | 244.1 |
| 50°    | 244.5 | 242.3 | 236.1 | 229.9 | 227.7 |
| 52.5°  | 227.7 | 224.6 | 218.9 | 214.0 | 210.9 |
| 55°    | 210.5 | 207.8 | 202.5 | 197.2 | 195.0 |
| 57.5°  | 193.2 | 191.0 | 185.3 | 180.0 | 178.2 |
| 60°    | 176.0 | 174.2 | 168.0 | 163.2 | 161.8 |
| 62.5°  | 159.2 | 156.1 | 151.7 | 147.2 | 145.5 |
| 65°    | 141.9 | 139.3 | 134.9 | 130.9 | 128.7 |
| 67.5°  | 124.3 | 122.0 | 118.1 | 115.0 | 113.2 |
| 70°    | 107.9 | 106.1 | 102.1 | 99.1  | 97.3  |
| 72.5°  | 91.1  | 89.3  | 87.1  | 84.0  | 82.7  |
| 75°    | 74.3  | 73.4  | 71.2  | 68.5  | 69.4  |
| 77.5°  | 59.3  | 57.5  | 56.6  | 55.3  | 53.9  |
| 80°    | 44.2  | 43.8  | 42.9  | 41.6  | 40.7  |
| 82.5°  | 30.1  | 30.1  | 29.6  | 27.9  | 27.9  |
| 85°    | 18.1  | 17.7  | 17.2  | 15.9  | 15.5  |
| 87.5°  | 8.0   | 7.1   | 6.2   | 4.9   | 4.4   |
| 90°    | 0.3   | 3.9   | 6.5   | 8.1   | 8.8   |
| 92.5°  | 8.1   | 6.8   | 7.8   | 8.5   | 8.8   |
| 95°    | 21.1  | 10.4  | 12.7  | 14.3  | 14.0  |
| 97.5°  | 38.1  | 11.4  | 16.6  | 17.6  | 17.9  |
| 100°   | 57.6  | 13.0  | 18.5  | 21.1  | 21.8  |
| 102.5° | 79.1  | 78.4  | 19.2  | 22.8  | 23.8  |
| 105°   | 98.9  | 108.7 | 19.8  | 23.4  | 24.7  |
| 107.5° | 122.0 | 130.1 | 20.5  | 24.1  | 25.4  |
| 110°   | 144.1 | 151.0 | 56.9  | 24.4  | 25.7  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 165.0 | 170.8 | 165.3 | 25.1  | 26.0  |
| 115°   | 187.1 | 192.6 | 200.7 | 50.1  | 26.7  |
| 117.5° | 206.3 | 212.8 | 218.3 | 171.8 | 86.5  |
| 120°   | 227.8 | 232.6 | 238.5 | 242.4 | 198.5 |
| 122.5° | 246.0 | 251.2 | 257.7 | 259.6 | 260.0 |
| 125°   | 264.5 | 268.7 | 274.9 | 277.2 | 278.2 |
| 127.5° | 281.4 | 286.0 | 290.9 | 294.1 | 294.5 |
| 130°   | 297.4 | 302.6 | 306.2 | 309.7 | 309.4 |
| 132.5° | 313.6 | 317.9 | 321.5 | 324.4 | 324.1 |
| 135°   | 327.3 | 332.5 | 335.4 | 338.7 | 338.0 |
| 137.5° | 341.6 | 345.5 | 348.8 | 352.0 | 351.1 |
| 140°   | 355.6 | 358.2 | 361.8 | 364.7 | 363.1 |
| 142.5° | 367.3 | 369.6 | 373.8 | 376.4 | 374.8 |
| 145°   | 379.7 | 379.4 | 384.9 | 387.2 | 385.6 |
| 147.5° | 390.4 | 389.5 | 395.0 | 396.6 | 395.3 |
| 150°   | 400.8 | 398.6 | 403.8 | 405.7 | 404.1 |
| 152.5° | 409.6 | 407.0 | 411.9 | 413.9 | 411.6 |
| 155°   | 418.1 | 415.2 | 419.1 | 421.0 | 418.4 |
| 157.5° | 424.9 | 422.3 | 425.2 | 427.5 | 424.9 |
| 160°   | 430.8 | 428.8 | 430.8 | 432.7 | 430.5 |
| 162.5° | 436.0 | 434.0 | 435.7 | 437.9 | 435.0 |
| 165°   | 440.5 | 438.6 | 439.6 | 441.8 | 439.6 |
| 167.5° | 444.1 | 442.2 | 443.1 | 445.4 | 442.5 |
| 170°   | 447.0 | 445.1 | 445.7 | 448.0 | 445.1 |
| 172.5° | 449.0 | 447.0 | 447.7 | 450.0 | 447.0 |
| 175°   | 450.6 | 448.3 | 449.0 | 451.3 | 448.0 |
| 177.5° | 451.3 | 449.0 | 449.3 | 451.6 | 448.7 |
| 180°   | 449.6 | 449.6 | 449.6 | 449.6 | 449.6 |

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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 | 11.85            | 12.69 | 12.83 | 13.68 | 15.00 | 12.64          | 13.47 | 13.62 | 14.47 | 15.78 |
|                 | 3H   | 13.19            | 13.94 | 14.18 | 14.94 | 16.27 | 14.26          | 15.01 | 15.25 | 16.01 | 17.35 |
|                 | 4H   | 13.59            | 14.30 | 14.60 | 15.31 | 16.65 | 14.85          | 15.56 | 15.86 | 16.57 | 17.91 |
|                 | 6H   | 13.81            | 14.46 | 14.83 | 15.48 | 16.83 | 15.25          | 15.91 | 16.27 | 16.92 | 18.27 |
|                 | 8H   | 13.84            | 14.46 | 14.86 | 15.49 | 16.84 | 15.36          | 15.98 | 16.38 | 17.01 | 18.36 |
|                 | 12H  | 13.83            | 14.42 | 14.86 | 15.44 | 16.82 | 15.40          | 16.00 | 16.43 | 17.02 | 18.39 |
| 4H              | 2H   | 12.32            | 13.03 | 13.33 | 14.03 | 15.38 | 12.96          | 13.67 | 13.98 | 14.68 | 16.02 |
|                 | 3H   | 13.83            | 14.42 | 14.85 | 15.46 | 16.82 | 14.74          | 15.33 | 15.76 | 16.37 | 17.72 |
|                 | 4H   | 14.34            | 14.88 | 15.37 | 15.91 | 17.29 | 15.42          | 15.96 | 16.45 | 16.99 | 18.37 |
|                 | 6H   | 14.64            | 15.11 | 15.68 | 16.16 | 17.53 | 15.91          | 16.38 | 16.95 | 17.43 | 18.81 |
|                 | 8H   | 14.70            | 15.13 | 15.74 | 16.18 | 17.57 | 16.06          | 16.49 | 17.10 | 17.54 | 18.93 |
|                 | 12H  | 14.69            | 15.09 | 15.75 | 16.15 | 17.54 | 16.12          | 16.51 | 17.18 | 17.57 | 18.97 |
| 8H              | 4H   | 14.51            | 14.95 | 15.55 | 15.99 | 17.38 | 15.50          | 15.94 | 16.54 | 16.98 | 18.37 |
|                 | 6H   | 14.89            | 15.25 | 15.96 | 16.34 | 17.73 | 16.07          | 16.43 | 17.14 | 17.52 | 18.91 |
|                 | 8H   | 15.00            | 15.31 | 16.07 | 16.38 | 17.79 | 16.26          | 16.58 | 17.33 | 17.65 | 19.05 |
|                 | 12H  | 15.03            | 15.31 | 16.10 | 16.37 | 17.82 | 16.36          | 16.64 | 17.43 | 17.70 | 19.15 |
| 12H             | 4H   | 14.49            | 14.89 | 15.55 | 15.95 | 17.34 | 15.47          | 15.86 | 16.52 | 16.92 | 18.31 |
|                 | 6H   | 14.91            | 15.23 | 15.98 | 16.30 | 17.71 | 16.06          | 16.38 | 17.13 | 17.45 | 18.86 |
|                 | 8H   | 15.02            | 15.30 | 16.10 | 16.37 | 17.82 | 16.26          | 16.54 | 17.33 | 17.60 | 19.05 |

END OF REPORT