

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: P998196

Luminaire Tested: SA2XXDIP-B290D330UB50-4F0-XX-W2A-F1

Issue Date: 5/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998196  
REPORT IS A COMBINATION OF REPORTS P983936 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B290D330UB50-4F0-XX-W2A-F1  
Description: Define 2 Direct/Indirect Pendant with 5000K BioUP LEDs {m-DER=1.015} {m-EER=1.115}  
Light Source: -  
Ballast/Driver: -

**Summary**

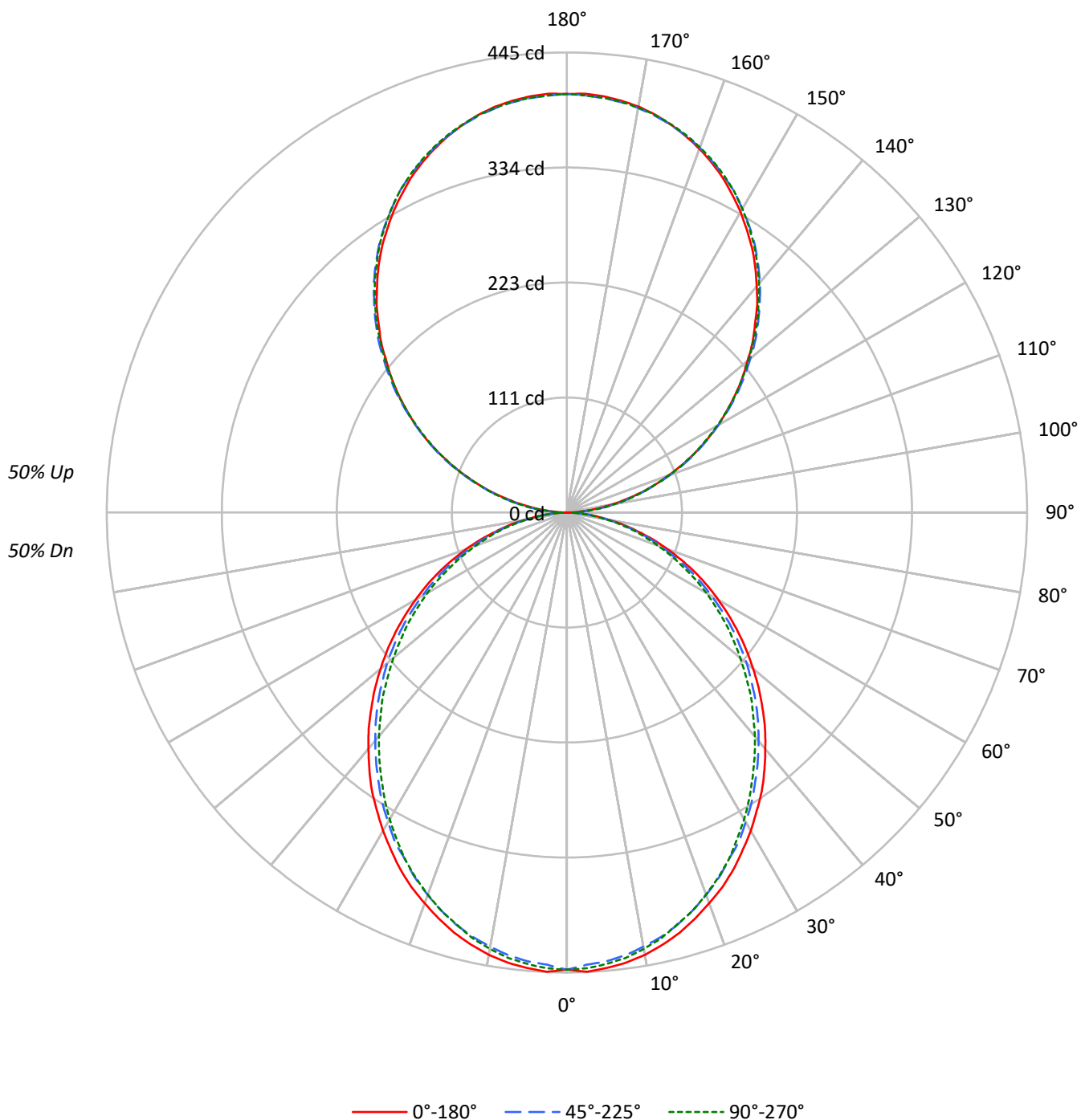
Lumens per Lamp: N/A  
Luminaire Lumens: 2258.0 lumens  
Efficiency: N/A  
Efficacy: 101.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 22.3  
Input Voltage (V):  
Input Current (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   | 107 | 107 | 107 | 107 | 99 | 99 | 99 | 99 | 83 | 83 | 83 | 69 | 69 | 69 | 56 | 56 | 56 |
| 1   | 98  | 93  | 90  | 86  | 90 | 86 | 83 | 80 | 73 | 71 | 68 | 61 | 59 | 58 | 49 | 48 | 47 |
| 2   | 89  | 82  | 75  | 70  | 82 | 75 | 70 | 66 | 64 | 60 | 57 | 53 | 51 | 48 | 44 | 42 | 40 |
| 3   | 81  | 72  | 64  | 59  | 75 | 66 | 60 | 55 | 56 | 52 | 48 | 47 | 44 | 41 | 39 | 36 | 34 |
| 4   | 74  | 63  | 56  | 50  | 68 | 59 | 52 | 46 | 50 | 45 | 41 | 42 | 38 | 35 | 35 | 32 | 29 |
| 5   | 68  | 57  | 48  | 42  | 63 | 53 | 45 | 40 | 45 | 39 | 35 | 38 | 34 | 30 | 31 | 28 | 25 |
| 6   | 63  | 51  | 43  | 37  | 58 | 47 | 40 | 35 | 40 | 35 | 31 | 34 | 30 | 26 | 28 | 25 | 22 |
| 7   | 58  | 46  | 38  | 32  | 53 | 43 | 36 | 30 | 37 | 31 | 27 | 31 | 27 | 23 | 26 | 22 | 20 |
| 8   | 54  | 42  | 34  | 29  | 50 | 39 | 32 | 27 | 33 | 28 | 24 | 28 | 24 | 21 | 24 | 20 | 18 |
| 9   | 50  | 38  | 30  | 25  | 46 | 35 | 29 | 24 | 31 | 25 | 21 | 26 | 22 | 19 | 22 | 19 | 16 |
| 10  | 47  | 35  | 28  | 23  | 43 | 33 | 26 | 22 | 28 | 23 | 19 | 24 | 20 | 17 | 20 | 17 | 15 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 7000 | 7000 | 7000 |
| 5°  | 7011 | 6672 | 6625 |
| 10° | 6953 | 6368 | 6242 |
| 15° | 6852 | 6062 | 5838 |
| 20° | 6714 | 5728 | 5457 |
| 25° | 6578 | 5380 | 5075 |
| 30° | 6405 | 5054 | 4676 |
| 35° | 6243 | 4708 | 4283 |
| 40° | 6041 | 4368 | 3911 |
| 45° | 5840 | 4030 | 3548 |
| 50° | 5622 | 3686 | 3170 |
| 55° | 5393 | 3318 | 2812 |
| 60° | 5134 | 2922 | 2440 |
| 65° | 4852 | 2517 | 2049 |
| 70° | 4491 | 2074 | 1654 |
| 75° | 3994 | 1600 | 1279 |
| 80° | 3393 | 1086 | 822  |
| 85° | 2458 | 506  | 350  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
Vertical Angle: 45°  
Luminance: 5840 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 41.6   | 1.8       |
| 10°-20°   | 117.1  | 5.2       |
| 20°-30°   | 172.1  | 7.6       |
| 30°-40°   | 199.9  | 8.9       |
| 40°-50°   | 199.6  | 8.8       |
| 50°-60°   | 174.1  | 7.7       |
| 60°-70°   | 128.7  | 5.7       |
| 70°-80°   | 72.8   | 3.2       |
| 80°-90°   | 20.4   | 0.9       |
| 90°-100°  | 25.0   | 1.1       |
| 100°-110° | 79.6   | 3.5       |
| 110°-120° | 136.2  | 6.0       |
| 120°-130° | 179.2  | 7.9       |
| 130°-140° | 201.1  | 8.9       |
| 140°-150° | 197.2  | 8.7       |
| 150°-160° | 165.4  | 7.3       |
| 160°-170° | 109.7  | 4.9       |
| 170°-180° | 38.3   | 1.7       |
| 0°-30°    | 330.8  | 14.6      |
| 0°-40°    | 530.7  | 23.5      |
| 0°-60°    | 904.3  | 40.1      |
| 0°-90°    | 1126.2 | 49.9      |
| 90°-120°  | 240.9  | 10.7      |
| 90°-150°  | 818.4  | 36.2      |
| 90°-180°  | 1132.0 | 50.1      |
| 0°-180°   | 2258.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 442 | 442   | 442 | 442   | 442 |      |
| 5°   | 442 | 440   | 436 | 439   | 438 | 42   |
| 15°  | 421 | 418   | 413 | 415   | 412 | 119  |
| 25°  | 381 | 378   | 370 | 371   | 370 | 175  |
| 35°  | 329 | 324   | 318 | 315   | 313 | 205  |
| 45°  | 267 | 264   | 258 | 253   | 252 | 206  |
| 55°  | 202 | 200   | 195 | 190   | 188 | 181  |
| 65°  | 136 | 134   | 130 | 126   | 124 | 135  |
| 75°  | 71  | 71    | 68  | 66    | 67  | 76   |
| 85°  | 17  | 17    | 17  | 15    | 15  | 19   |
| 90°  | 0   | 4     | 12  | 11    | 12  | 2    |
| 95°  | 18  | 21    | 22  | 22    | 21  | 20   |
| 105° | 74  | 74    | 75  | 76    | 76  | 78   |
| 115° | 137 | 139   | 138 | 138   | 137 | 135  |
| 125° | 199 | 202   | 201 | 200   | 200 | 178  |
| 135° | 257 | 261   | 262 | 261   | 260 | 199  |
| 145° | 312 | 315   | 317 | 317   | 316 | 195  |
| 155° | 357 | 358   | 359 | 361   | 360 | 164  |
| 165° | 388 | 388   | 388 | 390   | 389 | 110  |
| 175° | 404 | 403   | 402 | 405   | 403 | 38   |
| 180° | 405 | 405   | 405 | 405   | 405 |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 442.2 | 442.2 | 442.2 | 442.2 | 442.2 |
| 2.5°   | 444.7 | 442.6 | 437.9 | 442.2 | 441.3 |
| 5°     | 442.2 | 440.5 | 435.8 | 439.2 | 438.4 |
| 7.5°   | 439.2 | 436.7 | 432.0 | 435.4 | 434.5 |
| 10°    | 434.5 | 431.6 | 426.5 | 429.9 | 428.6 |
| 12.5°  | 428.2 | 425.6 | 420.5 | 422.6 | 421.8 |
| 15°    | 420.9 | 418.4 | 412.9 | 414.6 | 412.4 |
| 17.5°  | 412.0 | 409.5 | 403.9 | 406.0 | 403.9 |
| 20°    | 402.2 | 399.7 | 393.7 | 395.0 | 393.3 |
| 22.5°  | 392.4 | 388.6 | 383.1 | 383.1 | 382.2 |
| 25°    | 381.0 | 377.6 | 370.3 | 371.2 | 370.3 |
| 27.5°  | 368.2 | 365.2 | 359.7 | 358.4 | 356.3 |
| 30°    | 355.5 | 352.1 | 345.7 | 344.4 | 342.7 |
| 32.5°  | 341.8 | 339.3 | 332.5 | 329.9 | 328.2 |
| 35°    | 328.7 | 324.4 | 317.6 | 315.1 | 312.9 |
| 37.5°  | 313.8 | 310.0 | 303.2 | 300.2 | 298.1 |
| 40°    | 298.5 | 295.1 | 288.3 | 284.4 | 282.7 |
| 42.5°  | 283.6 | 280.2 | 273.4 | 269.1 | 266.6 |
| 45°    | 267.4 | 264.5 | 258.1 | 253.4 | 251.7 |
| 47.5°  | 251.7 | 248.7 | 241.9 | 237.3 | 234.7 |
| 50°    | 235.1 | 233.0 | 227.0 | 221.1 | 219.0 |
| 52.5°  | 219.0 | 216.0 | 210.5 | 205.8 | 202.8 |
| 55°    | 202.4 | 199.8 | 194.7 | 189.6 | 187.5 |
| 57.5°  | 185.8 | 183.7 | 178.2 | 173.0 | 171.3 |
| 60°    | 169.2 | 167.5 | 161.6 | 156.9 | 155.6 |
| 62.5°  | 153.1 | 150.1 | 145.8 | 141.6 | 139.9 |
| 65°    | 136.5 | 133.9 | 129.7 | 125.9 | 123.7 |
| 67.5°  | 119.5 | 117.4 | 113.5 | 110.5 | 108.8 |
| 70°    | 103.7 | 102.0 | 98.2  | 95.2  | 93.5  |
| 72.5°  | 87.6  | 85.9  | 83.8  | 80.8  | 79.5  |
| 75°    | 71.4  | 70.6  | 68.5  | 65.9  | 66.8  |
| 77.5°  | 57.0  | 55.3  | 54.4  | 53.1  | 51.9  |
| 80°    | 42.5  | 42.1  | 41.2  | 40.0  | 39.1  |
| 82.5°  | 28.9  | 28.9  | 28.5  | 26.8  | 26.8  |
| 85°    | 17.4  | 17.0  | 16.6  | 15.3  | 14.9  |
| 87.5°  | 7.7   | 6.8   | 6.0   | 4.7   | 4.3   |
| 90°    | 0.3   | 4.4   | 12.0  | 11.3  | 11.6  |
| 92.5°  | 7.5   | 10.2  | 10.6  | 10.9  | 10.9  |
| 95°    | 17.8  | 21.2  | 21.9  | 21.9  | 21.2  |
| 97.5°  | 29.7  | 32.8  | 34.2  | 34.2  | 34.2  |
| 100°   | 43.4  | 46.1  | 47.1  | 47.1  | 46.8  |
| 102.5° | 57.7  | 59.8  | 61.2  | 61.5  | 61.2  |
| 105°   | 73.5  | 74.5  | 75.2  | 75.8  | 75.8  |
| 107.5° | 89.2  | 90.5  | 90.5  | 90.9  | 89.2  |
| 110°   | 104.2 | 106.2 | 106.2 | 106.2 | 105.2 |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 120.6 | 122.6 | 122.3 | 121.3 | 120.6 |
| 115°   | 136.7 | 138.7 | 138.0 | 137.7 | 136.7 |
| 117.5° | 152.7 | 155.4 | 153.7 | 152.7 | 151.7 |
| 120°   | 168.8 | 171.5 | 168.8 | 168.8 | 167.7 |
| 122.5° | 183.5 | 186.9 | 185.2 | 184.1 | 183.5 |
| 125°   | 198.8 | 201.9 | 200.9 | 199.9 | 199.5 |
| 127.5° | 213.9 | 217.6 | 216.3 | 214.9 | 213.9 |
| 130°   | 227.9 | 232.3 | 231.6 | 230.9 | 229.6 |
| 132.5° | 243.6 | 247.0 | 247.3 | 245.6 | 244.6 |
| 135°   | 257.3 | 261.0 | 261.7 | 261.4 | 260.3 |
| 137.5° | 272.3 | 275.4 | 276.0 | 275.7 | 274.3 |
| 140°   | 285.6 | 288.7 | 290.4 | 290.4 | 289.0 |
| 142.5° | 299.3 | 302.3 | 303.4 | 303.7 | 302.3 |
| 145°   | 312.3 | 314.6 | 316.7 | 317.0 | 315.7 |
| 147.5° | 323.9 | 326.9 | 328.3 | 329.0 | 327.6 |
| 150°   | 335.8 | 337.9 | 339.2 | 340.3 | 339.2 |
| 152.5° | 346.4 | 348.5 | 350.2 | 351.5 | 350.2 |
| 155°   | 357.0 | 358.0 | 359.1 | 360.8 | 359.7 |
| 157.5° | 366.2 | 366.9 | 367.6 | 370.0 | 368.3 |
| 160°   | 374.4 | 375.1 | 375.5 | 377.5 | 376.1 |
| 162.5° | 381.9 | 381.9 | 382.3 | 384.7 | 383.0 |
| 165°   | 388.4 | 388.1 | 388.1 | 390.5 | 388.8 |
| 167.5° | 394.2 | 393.2 | 393.2 | 395.6 | 393.9 |
| 170°   | 398.7 | 397.7 | 397.3 | 399.7 | 397.7 |
| 172.5° | 401.8 | 400.7 | 400.4 | 402.8 | 400.7 |
| 175°   | 404.2 | 403.1 | 402.4 | 404.8 | 402.8 |
| 177.5° | 405.5 | 404.5 | 403.8 | 405.9 | 403.8 |
| 180°   | 404.8 | 404.8 | 404.8 | 404.8 | 404.8 |

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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 | 11.98            | 12.84 | 12.94 | 13.82 | 15.09 | 12.76          | 13.62 | 13.72 | 14.60 | 15.87 |
|                 | 3H   | 13.32            | 14.09 | 14.29 | 15.08 | 16.37 | 14.39          | 15.16 | 15.36 | 16.14 | 17.44 |
|                 | 4H   | 13.73            | 14.46 | 14.71 | 15.44 | 16.75 | 14.98          | 15.71 | 15.96 | 16.70 | 18.00 |
|                 | 6H   | 13.95            | 14.62 | 14.94 | 15.61 | 16.93 | 15.39          | 16.06 | 16.38 | 17.05 | 18.37 |
|                 | 8H   | 13.98            | 14.62 | 14.98 | 15.62 | 16.94 | 15.49          | 16.13 | 16.49 | 17.14 | 18.46 |
|                 | 12H  | 13.97            | 14.58 | 14.97 | 15.58 | 16.92 | 15.54          | 16.15 | 16.54 | 17.15 | 18.49 |
| 4H              | 2H   | 12.45            | 13.18 | 13.44 | 14.17 | 15.47 | 13.09          | 13.83 | 14.08 | 14.81 | 16.12 |
|                 | 3H   | 13.97            | 14.58 | 14.97 | 15.59 | 16.91 | 14.87          | 15.48 | 15.87 | 16.50 | 17.82 |
|                 | 4H   | 14.48            | 15.03 | 15.48 | 16.04 | 17.38 | 15.56          | 16.11 | 16.56 | 17.12 | 18.46 |
|                 | 6H   | 14.78            | 15.26 | 15.80 | 16.29 | 17.63 | 16.05          | 16.53 | 17.07 | 17.56 | 18.90 |
|                 | 8H   | 14.84            | 15.28 | 15.85 | 16.31 | 17.66 | 16.20          | 16.64 | 17.21 | 17.67 | 19.02 |
|                 | 12H  | 14.84            | 15.24 | 15.87 | 16.28 | 17.64 | 16.26          | 16.66 | 17.29 | 17.70 | 19.06 |
| 8H              | 4H   | 14.65            | 15.10 | 15.67 | 16.12 | 17.48 | 15.64          | 16.09 | 16.66 | 17.12 | 18.47 |
|                 | 6H   | 15.03            | 15.41 | 16.08 | 16.47 | 17.82 | 16.21          | 16.58 | 17.25 | 17.65 | 19.00 |
|                 | 8H   | 15.14            | 15.46 | 16.19 | 16.52 | 17.89 | 16.40          | 16.73 | 17.45 | 17.78 | 19.15 |
|                 | 12H  | 15.17            | 15.46 | 16.22 | 16.50 | 17.92 | 16.50          | 16.79 | 17.55 | 17.83 | 19.24 |
| 12H             | 4H   | 14.63            | 15.04 | 15.67 | 16.08 | 17.44 | 15.61          | 16.01 | 16.64 | 17.05 | 18.41 |
|                 | 6H   | 15.05            | 15.38 | 16.10 | 16.43 | 17.80 | 16.20          | 16.53 | 17.25 | 17.58 | 18.95 |
|                 | 8H   | 15.17            | 15.45 | 16.22 | 16.50 | 17.91 | 16.40          | 16.69 | 17.45 | 17.73 | 19.15 |

END OF REPORT