

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: P907234

Luminaire Tested: DFN2DIP-TR3F0-080D070US835-FLLFLL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P907234  
REPORT IS A COMBINATION OF REPORTS P900337 AND P897195  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR3F0-080D070US835-FLLFLL  
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

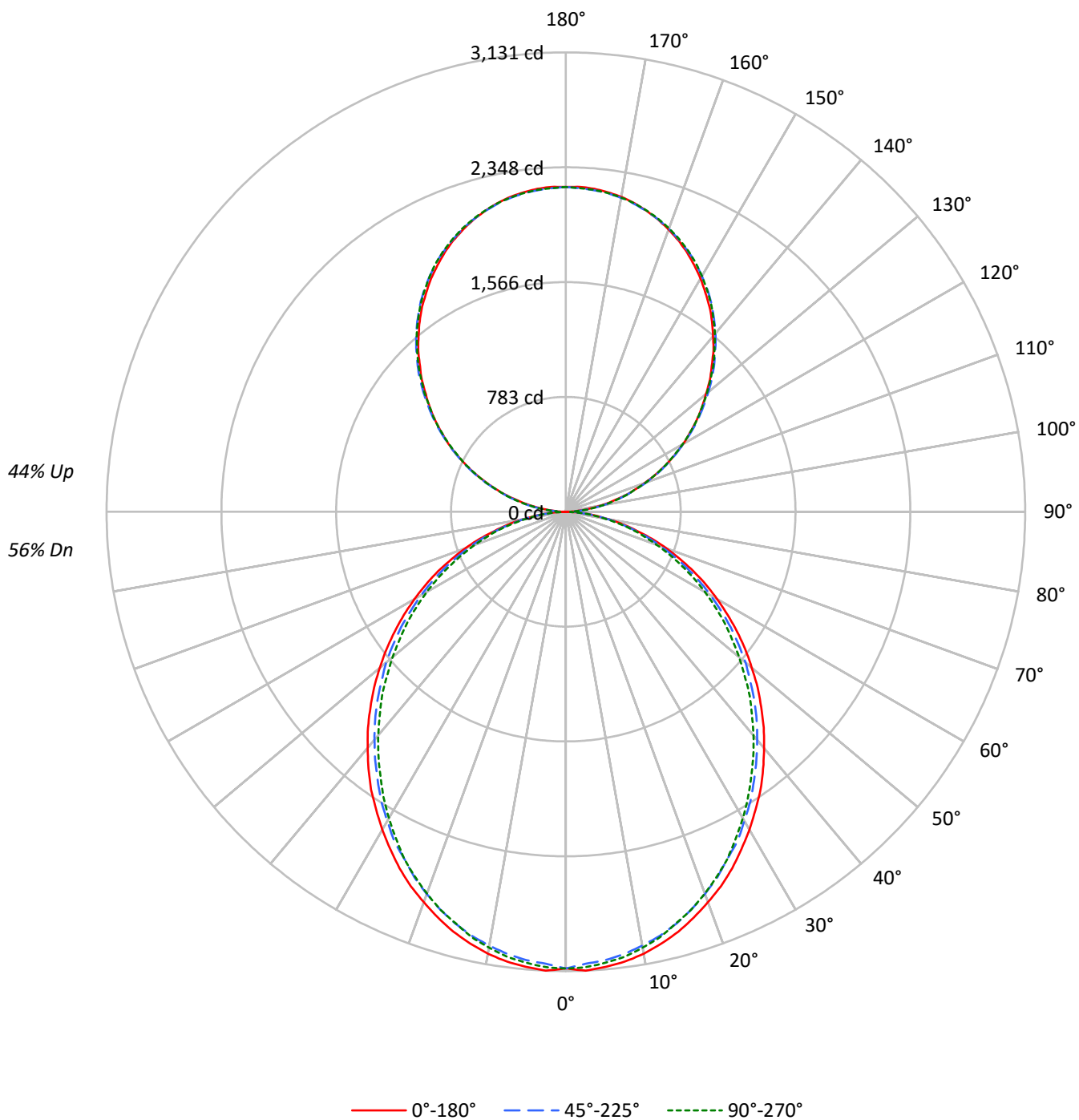
Lumens per Lamp: N/A  
Luminaire Lumens: 14115.0 lumens  
Efficiency: N/A  
Efficacy: 105.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 134.1  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9968  
Total Harmonic Distortion (THDi): 0.064  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P907234

CATALOG NUMBER: DFN2DIP-TR3F0-080D070US835-FLLFLL

### Luminous Intensity Polar Plot



TEST NUMBER: P907234

CATALOG NUMBER: DFN2DIP-TR3F0-080D070US835-FLLFL

**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   | 109 | 109 | 109 | 109 | 101 | 101 | 101 | 101 | 87 | 87 | 87 | 74 | 74 | 74 | 62 | 62 | 62 |
| 1   | 99  | 95  | 91  | 87  | 92  | 88  | 85  | 82  | 76 | 74 | 71 | 65 | 63 | 61 | 55 | 53 | 52 |
| 2   | 90  | 83  | 77  | 71  | 84  | 77  | 72  | 67  | 67 | 63 | 59 | 57 | 54 | 51 | 48 | 46 | 44 |
| 3   | 82  | 73  | 65  | 59  | 76  | 68  | 61  | 56  | 59 | 54 | 50 | 50 | 47 | 43 | 43 | 40 | 37 |
| 4   | 75  | 64  | 56  | 50  | 70  | 60  | 53  | 48  | 52 | 47 | 42 | 45 | 41 | 37 | 38 | 35 | 32 |
| 5   | 69  | 57  | 49  | 43  | 64  | 54  | 46  | 41  | 47 | 41 | 37 | 40 | 36 | 32 | 34 | 31 | 28 |
| 6   | 64  | 52  | 43  | 38  | 59  | 48  | 41  | 36  | 42 | 36 | 32 | 37 | 32 | 28 | 31 | 28 | 25 |
| 7   | 59  | 47  | 39  | 33  | 55  | 44  | 37  | 31  | 38 | 32 | 28 | 33 | 29 | 25 | 28 | 25 | 22 |
| 8   | 55  | 42  | 35  | 29  | 51  | 40  | 33  | 28  | 35 | 29 | 25 | 30 | 26 | 22 | 26 | 23 | 20 |
| 9   | 51  | 39  | 31  | 26  | 47  | 36  | 30  | 25  | 32 | 26 | 23 | 28 | 23 | 20 | 24 | 21 | 18 |
| 10  | 48  | 36  | 28  | 23  | 44  | 34  | 27  | 22  | 30 | 24 | 20 | 26 | 21 | 18 | 22 | 19 | 16 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3879 | 3879 | 3879 |
| 5°  | 3883 | 3822 | 3848 |
| 10° | 3849 | 3767 | 3793 |
| 15° | 3791 | 3702 | 3709 |
| 20° | 3712 | 3612 | 3624 |
| 25° | 3634 | 3506 | 3525 |
| 30° | 3536 | 3407 | 3400 |
| 35° | 3443 | 3290 | 3268 |
| 40° | 3330 | 3173 | 3142 |
| 45° | 3216 | 3054 | 3013 |
| 50° | 3092 | 2930 | 2864 |
| 55° | 2962 | 2787 | 2726 |
| 60° | 2814 | 2616 | 2568 |
| 65° | 2653 | 2440 | 2382 |
| 70° | 2448 | 2224 | 2180 |
| 75° | 2165 | 1966 | 1991 |
| 80° | 1822 | 1636 | 1636 |
| 85° | 1287 | 1077 | 1057 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3216 cd/sqm

TEST NUMBER: P907234

CATALOG NUMBER: DFN2DIP-TR3F0-080D070US835-FLLFLL

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 293.0   | 2.1       |
| 10°-20°   | 824.3   | 5.8       |
| 20°-30°   | 1211.5  | 8.6       |
| 30°-40°   | 1407.0  | 10.0      |
| 40°-50°   | 1405.3  | 10.0      |
| 50°-60°   | 1225.4  | 8.7       |
| 60°-70°   | 905.8   | 6.4       |
| 70°-80°   | 512.5   | 3.6       |
| 80°-90°   | 141.6   | 1.0       |
| 90°-100°  | 137.0   | 1.0       |
| 100°-110° | 435.3   | 3.1       |
| 110°-120° | 744.9   | 5.3       |
| 120°-130° | 979.6   | 6.9       |
| 130°-140° | 1099.6  | 7.8       |
| 140°-150° | 1078.3  | 7.6       |
| 150°-160° | 904.5   | 6.4       |
| 160°-170° | 599.9   | 4.2       |
| 170°-180° | 209.7   | 1.5       |
| 0°-30°    | 2328.8  | 16.5      |
| 0°-40°    | 3735.8  | 26.5      |
| 0°-60°    | 6366.4  | 45.1      |
| 0°-90°    | 7926.3  | 56.2      |
| 90°-120°  | 1317.2  | 9.3       |
| 90°-150°  | 4474.7  | 31.7      |
| 90°-180°  | 6189.0  | 43.8      |
| 0°-180°   | 14115.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 3113 | 3113  | 3113 | 3113  | 3113 |      |
| 5°   | 3113 | 3101  | 3068 | 3092  | 3086 | 295  |
| 15°  | 2963 | 2946  | 2906 | 2918  | 2904 | 835  |
| 25°  | 2682 | 2658  | 2607 | 2613  | 2607 | 1234 |
| 35°  | 2314 | 2284  | 2236 | 2218  | 2203 | 1445 |
| 45°  | 1883 | 1862  | 1817 | 1784  | 1772 | 1453 |
| 55°  | 1425 | 1407  | 1371 | 1335  | 1320 | 1274 |
| 65°  | 961  | 943   | 913  | 886   | 871  | 950  |
| 75°  | 503  | 497   | 482  | 464   | 470  | 537  |
| 85°  | 123  | 120   | 117  | 108   | 105  | 137  |
| 90°  | 2    | 24    | 65   | 61    | 63   | 14   |
| 95°  | 97   | 116   | 120  | 120   | 116  | 108  |
| 105° | 402  | 407   | 411  | 414   | 414  | 424  |
| 115° | 748  | 758   | 755  | 753   | 748  | 739  |
| 125° | 1087 | 1104  | 1099 | 1093  | 1091 | 972  |
| 135° | 1406 | 1427  | 1431 | 1429  | 1424 | 1087 |
| 145° | 1707 | 1721  | 1731 | 1733  | 1726 | 1067 |
| 155° | 1952 | 1958  | 1964 | 1973  | 1967 | 899  |
| 165° | 2124 | 2122  | 2122 | 2135  | 2126 | 599  |
| 175° | 2210 | 2204  | 2200 | 2214  | 2202 | 210  |
| 180° | 2214 | 2214  | 2214 | 2214  | 2214 |      |

TEST NUMBER: P907234

CATALOG NUMBER: DFN2DIP-TR3F0-080D070US835-FLLFLL

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 3112.8 | 3112.8 | 3112.8 | 3112.8 | 3112.8 |
| 2.5°   | 3130.9 | 3116.0 | 3083.0 | 3112.8 | 3107.1 |
| 5°     | 3112.8 | 3101.1 | 3068.1 | 3091.9 | 3086.2 |
| 7.5°   | 3091.9 | 3074.1 | 3041.1 | 3065.2 | 3059.2 |
| 10°    | 3059.2 | 3038.2 | 3002.3 | 3026.1 | 3017.3 |
| 12.5°  | 3014.1 | 2996.3 | 2960.4 | 2975.3 | 2969.3 |
| 15°    | 2963.3 | 2945.5 | 2906.4 | 2918.5 | 2903.6 |
| 17.5°  | 2900.4 | 2882.6 | 2843.5 | 2858.5 | 2843.5 |
| 20°    | 2831.5 | 2813.7 | 2771.8 | 2780.7 | 2768.9 |
| 22.5°  | 2762.9 | 2735.9 | 2696.8 | 2696.8 | 2690.8 |
| 25°    | 2681.9 | 2658.1 | 2607.3 | 2613.0 | 2607.3 |
| 27.5°  | 2592.0 | 2571.1 | 2532.3 | 2523.4 | 2508.5 |
| 30°    | 2502.5 | 2478.3 | 2433.6 | 2424.7 | 2412.6 |
| 32.5°  | 2406.6 | 2388.8 | 2340.8 | 2322.7 | 2310.7 |
| 35°    | 2313.8 | 2284.0 | 2236.0 | 2217.9 | 2203.0 |
| 37.5°  | 2209.0 | 2182.0 | 2134.1 | 2113.1 | 2098.2 |
| 40°    | 2101.4 | 2077.2 | 2029.3 | 2002.6 | 1990.5 |
| 42.5°  | 1996.6 | 1972.4 | 1924.8 | 1894.6 | 1876.9 |
| 45°    | 1882.9 | 1861.9 | 1816.8 | 1784.1 | 1772.1 |
| 47.5°  | 1772.1 | 1751.1 | 1703.1 | 1670.1 | 1652.3 |
| 50°    | 1655.2 | 1640.3 | 1598.3 | 1556.4 | 1541.5 |
| 52.5°  | 1541.5 | 1520.5 | 1481.8 | 1448.8 | 1427.8 |
| 55°    | 1424.9 | 1406.8 | 1371.0 | 1335.1 | 1320.1 |
| 57.5°  | 1308.1 | 1293.2 | 1254.1 | 1218.2 | 1206.1 |
| 60°    | 1191.2 | 1179.5 | 1137.5 | 1104.5 | 1095.6 |
| 62.5°  | 1077.5 | 1056.6 | 1026.7 | 996.9  | 984.8  |
| 65°    | 961.0  | 942.9  | 913.0  | 886.0  | 871.1  |
| 67.5°  | 841.2  | 826.0  | 799.3  | 778.4  | 766.3  |
| 70°    | 730.4  | 718.3  | 691.4  | 670.4  | 658.6  |
| 72.5°  | 616.7  | 604.7  | 589.7  | 568.8  | 559.9  |
| 75°    | 502.7  | 497.0  | 481.8  | 464.0  | 470.0  |
| 77.5°  | 401.1  | 389.0  | 383.0  | 374.1  | 365.2  |
| 80°    | 299.5  | 296.3  | 290.3  | 281.4  | 275.3  |
| 82.5°  | 203.6  | 203.6  | 200.7  | 188.6  | 188.6  |
| 85°    | 122.6  | 119.7  | 116.9  | 107.7  | 104.8  |
| 87.5°  | 54.0   | 48.0   | 41.9   | 33.0   | 29.9   |
| 90°    | 2.0    | 24.0   | 65.4   | 61.4   | 63.4   |
| 92.5°  | 41.4   | 56.1   | 58.1   | 60.1   | 60.1   |
| 95°    | 97.4   | 116.1  | 119.5  | 119.5  | 116.1  |
| 97.5°  | 162.2  | 179.5  | 186.9  | 186.9  | 186.9  |
| 100°   | 236.9  | 252.3  | 257.6  | 257.6  | 255.6  |
| 102.5° | 315.7  | 327.0  | 334.4  | 336.4  | 334.4  |
| 105°   | 401.8  | 407.1  | 411.1  | 414.5  | 414.5  |
| 107.5° | 487.2  | 495.2  | 495.2  | 496.6  | 487.2  |
| 110°   | 570.0  | 580.7  | 580.7  | 580.7  | 575.3  |

TEST NUMBER: P907234

CATALOG NUMBER: DFN2DIP-TR3F0-080D070US835-FLLFLL

**CANDELA DISTRIBUTION (continued):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 659.4  | 670.8  | 668.8  | 663.4  | 659.4  |
| 115°   | 747.5  | 758.2  | 754.9  | 752.9  | 747.5  |
| 117.5° | 834.9  | 849.6  | 840.3  | 834.9  | 829.6  |
| 120°   | 923.0  | 937.7  | 923.0  | 923.0  | 917.0  |
| 122.5° | 1003.1 | 1021.8 | 1012.5 | 1007.1 | 1003.1 |
| 125°   | 1087.2 | 1103.9 | 1098.6 | 1092.6 | 1090.6 |
| 127.5° | 1169.3 | 1190.0 | 1182.7 | 1174.7 | 1169.3 |
| 130°   | 1246.1 | 1270.1 | 1266.8 | 1262.8 | 1255.4 |
| 132.5° | 1332.2 | 1350.9 | 1352.2 | 1342.9 | 1337.5 |
| 135°   | 1406.3 | 1426.9 | 1431.0 | 1428.9 | 1423.6 |
| 137.5° | 1489.0 | 1505.7 | 1509.0 | 1507.7 | 1499.7 |
| 140°   | 1561.8 | 1578.5 | 1587.8 | 1587.8 | 1580.5 |
| 142.5° | 1636.5 | 1653.2 | 1658.5 | 1660.5 | 1653.2 |
| 145°   | 1707.3 | 1720.6 | 1731.3 | 1733.3 | 1726.0 |
| 147.5° | 1770.7 | 1787.4 | 1795.4 | 1798.7 | 1791.4 |
| 150°   | 1836.1 | 1847.4 | 1854.8 | 1860.8 | 1854.8 |
| 152.5° | 1894.1 | 1905.5 | 1914.8 | 1922.2 | 1914.8 |
| 155°   | 1952.2 | 1957.5 | 1963.6 | 1972.9 | 1966.9 |
| 157.5° | 2002.3 | 2006.3 | 2009.6 | 2023.0 | 2013.6 |
| 160°   | 2047.0 | 2051.0 | 2053.0 | 2064.3 | 2056.3 |
| 162.5° | 2088.4 | 2088.4 | 2090.4 | 2103.0 | 2093.7 |
| 165°   | 2123.7 | 2121.7 | 2121.7 | 2135.1 | 2125.7 |
| 167.5° | 2155.8 | 2149.8 | 2149.8 | 2163.1 | 2153.8 |
| 170°   | 2179.8 | 2174.5 | 2172.5 | 2185.8 | 2174.5 |
| 172.5° | 2196.5 | 2191.1 | 2189.1 | 2202.5 | 2191.1 |
| 175°   | 2209.8 | 2204.5 | 2200.5 | 2213.8 | 2202.5 |
| 177.5° | 2217.2 | 2211.8 | 2207.8 | 2219.2 | 2207.8 |
| 180°   | 2213.8 | 2213.8 | 2213.8 | 2213.8 | 2213.8 |

TEST NUMBER: P907234

CATALOG NUMBER: DFN2DIP-TR3F0-080D070US835-FLLFL

**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 | 12.48            | 13.40 | 13.38 | 14.32 | 15.50 | 12.05          | 12.97 | 12.95 | 13.89 | 15.07 |
|                 | 3H   | 14.13            | 14.96 | 15.05 | 15.89 | 17.10 | 13.67          | 14.49 | 14.58 | 15.42 | 16.63 |
|                 | 4H   | 14.72            | 15.50 | 15.65 | 16.43 | 17.65 | 14.25          | 15.03 | 15.18 | 15.97 | 17.18 |
|                 | 6H   | 15.11            | 15.83 | 16.05 | 16.78 | 18.00 | 14.64          | 15.36 | 15.59 | 16.31 | 17.53 |
|                 | 8H   | 15.22            | 15.90 | 16.16 | 16.86 | 18.09 | 14.75          | 15.43 | 15.70 | 16.39 | 17.62 |
|                 | 12H  | 15.26            | 15.92 | 16.22 | 16.87 | 18.12 | 14.79          | 15.44 | 15.74 | 16.40 | 17.65 |
| 4H              | 2H   | 12.94            | 13.72 | 13.88 | 14.66 | 15.88 | 12.60          | 13.38 | 13.54 | 14.32 | 15.53 |
|                 | 3H   | 14.80            | 15.46 | 15.75 | 16.42 | 17.65 | 14.41          | 15.07 | 15.36 | 16.03 | 17.26 |
|                 | 4H   | 15.51            | 16.11 | 16.47 | 17.07 | 18.32 | 15.11          | 15.71 | 16.07 | 16.67 | 17.92 |
|                 | 6H   | 16.02            | 16.54 | 16.99 | 17.52 | 18.77 | 15.62          | 16.13 | 16.59 | 17.12 | 18.37 |
|                 | 8H   | 16.17            | 16.65 | 17.14 | 17.63 | 18.89 | 15.76          | 16.24 | 16.73 | 17.22 | 18.49 |
|                 | 12H  | 16.24            | 16.67 | 17.23 | 17.67 | 18.94 | 15.83          | 16.26 | 16.81 | 17.25 | 18.53 |
| 8H              | 4H   | 15.71            | 16.19 | 16.68 | 17.17 | 18.44 | 15.35          | 15.83 | 16.32 | 16.81 | 18.08 |
|                 | 6H   | 16.33            | 16.73 | 17.33 | 17.75 | 19.02 | 15.98          | 16.37 | 16.97 | 17.39 | 18.66 |
|                 | 8H   | 16.55            | 16.90 | 17.55 | 17.91 | 19.19 | 16.18          | 16.54 | 17.19 | 17.54 | 18.83 |
|                 | 12H  | 16.68            | 16.99 | 17.68 | 17.99 | 19.32 | 16.30          | 16.61 | 17.31 | 17.61 | 18.94 |
| 12H             | 4H   | 15.70            | 16.13 | 16.69 | 17.13 | 18.40 | 15.35          | 15.78 | 16.34 | 16.78 | 18.05 |
|                 | 6H   | 16.36            | 16.71 | 17.37 | 17.72 | 19.01 | 16.01          | 16.37 | 17.02 | 17.37 | 18.66 |
|                 | 8H   | 16.60            | 16.91 | 17.61 | 17.91 | 19.24 | 16.25          | 16.56 | 17.25 | 17.56 | 18.89 |