

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: P915358

Luminaire Tested: DFN2DIP-TR3F0-060D050US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915358
REPORT IS A COMBINATION OF REPORTS P900305 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-060D050US927-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

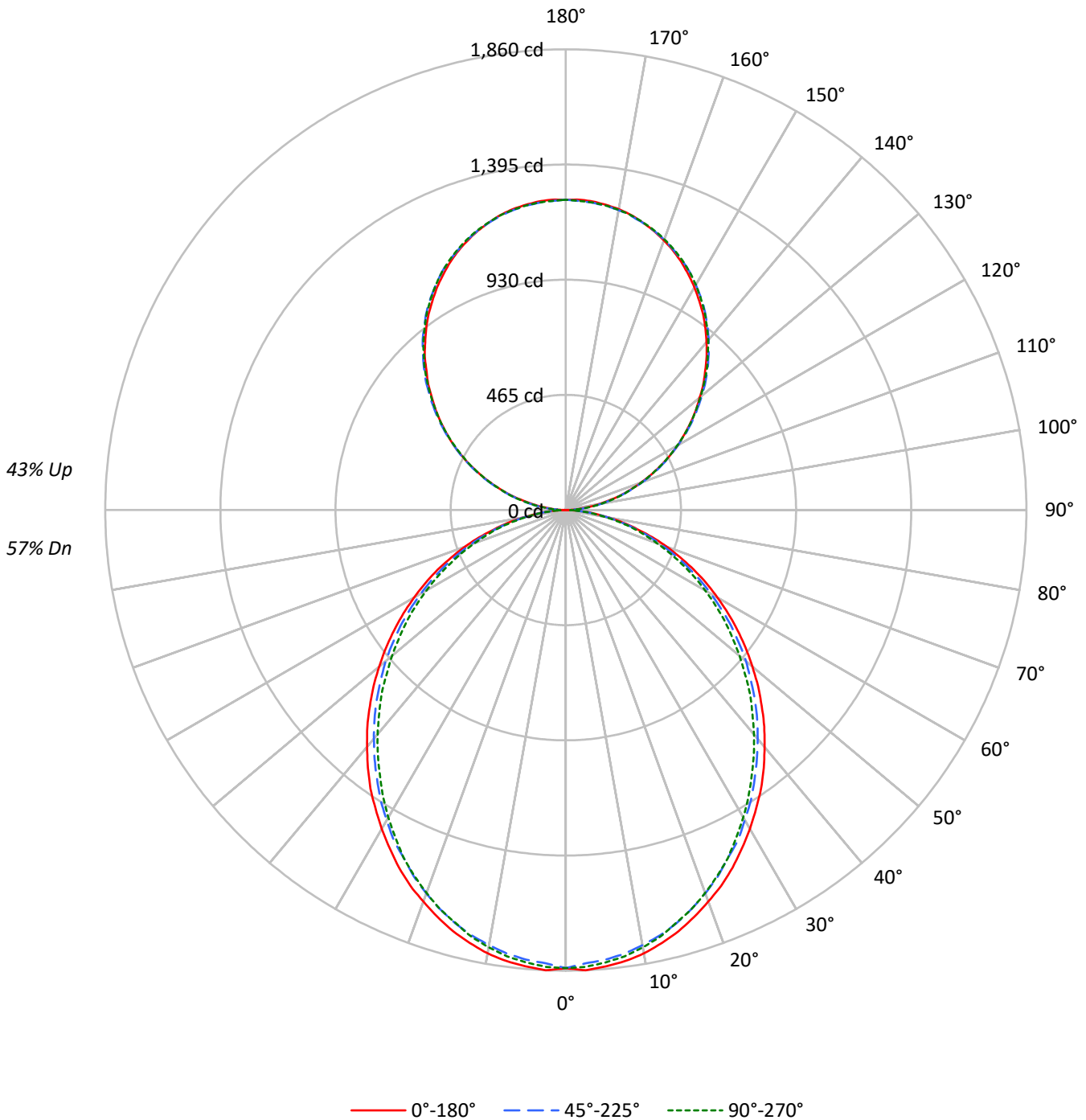
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8211.0 lumens
Efficiency: N/A
Efficacy: 86.9 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): 94.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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





TEST NUMBER: P915358

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RF | 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 | 109 | 109 | 109 | 109 | 101 | 101 | 101 | 101 | 87 | 87 | 87 | 75 | 75 | 75 | 63 | 63 | 63 | 57 | 57 | 57 | 57 |
| 1 | 99 | 95 | 91 | 88 | 92 | 89 | 85 | 82 | 77 | 74 | 72 | 66 | 64 | 62 | 56 | 54 | 53 | 48 | 48 | 48 | 48 |
| 2 | 91 | 83 | 77 | 72 | 84 | 78 | 72 | 67 | 67 | 63 | 60 | 58 | 55 | 52 | 49 | 47 | 45 | 40 | 40 | 40 | 40 |
| 3 | 83 | 73 | 66 | 60 | 77 | 68 | 62 | 56 | 59 | 54 | 50 | 51 | 47 | 44 | 43 | 41 | 38 | 34 | 34 | 34 | 34 |
| 4 | 76 | 65 | 57 | 51 | 70 | 61 | 53 | 48 | 53 | 47 | 43 | 46 | 41 | 38 | 39 | 36 | 33 | 29 | 29 | 29 | 29 |
| 5 | 69 | 58 | 49 | 43 | 64 | 54 | 47 | 41 | 47 | 41 | 37 | 41 | 36 | 33 | 35 | 31 | 29 | 26 | 26 | 26 | 26 |
| 6 | 64 | 52 | 44 | 38 | 59 | 49 | 41 | 36 | 43 | 37 | 32 | 37 | 32 | 29 | 32 | 28 | 25 | 22 | 22 | 22 | 22 |
| 7 | 59 | 47 | 39 | 33 | 55 | 44 | 37 | 32 | 39 | 33 | 28 | 34 | 29 | 25 | 29 | 25 | 22 | 20 | 20 | 20 | 20 |
| 8 | 55 | 43 | 35 | 29 | 51 | 40 | 33 | 28 | 35 | 29 | 25 | 31 | 26 | 23 | 27 | 23 | 20 | 18 | 18 | 18 | 18 |
| 9 | 51 | 39 | 31 | 26 | 48 | 37 | 30 | 25 | 32 | 27 | 23 | 28 | 24 | 20 | 25 | 21 | 18 | 16 | 16 | 16 | 16 |
| 10 | 48 | 36 | 28 | 24 | 45 | 34 | 27 | 23 | 30 | 24 | 21 | 26 | 22 | 19 | 23 | 19 | 17 | 15 | 15 | 15 | 15 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2305 | 2305 | 2305 |
| 5° | 2307 | 2270 | 2286 |
| 10° | 2287 | 2238 | 2254 |
| 15° | 2252 | 2199 | 2204 |
| 20° | 2205 | 2146 | 2153 |
| 25° | 2159 | 2083 | 2094 |
| 30° | 2101 | 2024 | 2020 |
| 35° | 2046 | 1955 | 1941 |
| 40° | 1978 | 1885 | 1866 |
| 45° | 1911 | 1815 | 1790 |
| 50° | 1837 | 1741 | 1701 |
| 55° | 1760 | 1655 | 1619 |
| 60° | 1672 | 1555 | 1526 |
| 65° | 1576 | 1450 | 1415 |
| 70° | 1455 | 1321 | 1296 |
| 75° | 1286 | 1168 | 1183 |
| 80° | 1082 | 972 | 972 |
| 85° | 764 | 640 | 628 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1911 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 174.1 | 2.1 |
| 10°-20° | 489.8 | 6.0 |
| 20°-30° | 719.8 | 8.8 |
| 30°-40° | 836.0 | 10.2 |
| 40°-50° | 834.9 | 10.2 |
| 50°-60° | 728.0 | 8.9 |
| 60°-70° | 538.2 | 6.6 |
| 70°-80° | 304.5 | 3.7 |
| 80°-90° | 83.9 | 1.0 |
| 90°-100° | 77.5 | 0.9 |
| 100°-110° | 246.3 | 3.0 |
| 110°-120° | 421.5 | 5.1 |
| 120°-130° | 554.3 | 6.8 |
| 130°-140° | 622.2 | 7.6 |
| 140°-150° | 610.1 | 7.4 |
| 150°-160° | 511.8 | 6.2 |
| 160°-170° | 339.4 | 4.1 |
| 170°-180° | 118.6 | 1.4 |
| 0°-30° | 1383.6 | 16.9 |
| 0°-40° | 2219.6 | 27.0 |
| 0°-60° | 3782.5 | 46.1 |
| 0°-90° | 4709.1 | 57.4 |
| 90°-120° | 745.3 | 9.1 |
| 90°-150° | 2532.0 | 30.8 |
| 90°-180° | 3502.0 | 42.7 |
| 0°-180° | 8211.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1849 | 1849 | 1849 | 1849 | 1849 | |
| 5° | 1849 | 1842 | 1823 | 1837 | 1834 | 176 |
| 15° | 1760 | 1750 | 1727 | 1734 | 1725 | 496 |
| 25° | 1593 | 1579 | 1549 | 1552 | 1549 | 733 |
| 35° | 1375 | 1357 | 1328 | 1318 | 1309 | 858 |
| 45° | 1119 | 1106 | 1079 | 1060 | 1053 | 863 |
| 55° | 847 | 836 | 814 | 793 | 784 | 757 |
| 65° | 571 | 560 | 542 | 526 | 518 | 564 |
| 75° | 299 | 295 | 286 | 276 | 279 | 319 |
| 85° | 73 | 71 | 69 | 64 | 62 | 81 |
| 90° | 1 | 14 | 37 | 35 | 36 | 8 |
| 95° | 55 | 66 | 68 | 68 | 66 | 61 |
| 105° | 227 | 230 | 233 | 234 | 234 | 240 |
| 115° | 423 | 429 | 427 | 426 | 423 | 418 |
| 125° | 615 | 625 | 622 | 618 | 617 | 550 |
| 135° | 796 | 807 | 810 | 809 | 806 | 615 |
| 145° | 966 | 974 | 980 | 981 | 977 | 604 |
| 155° | 1105 | 1108 | 1111 | 1116 | 1113 | 508 |
| 165° | 1202 | 1201 | 1201 | 1208 | 1203 | 339 |
| 175° | 1250 | 1247 | 1245 | 1253 | 1246 | 119 |
| 180° | 1253 | 1253 | 1253 | 1253 | 1253 | |



TEST NUMBER: P915358

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1849.4 | 1849.4 | 1849.4 | 1849.4 | 1849.4 |
| 2.5° | 1860.2 | 1851.3 | 1831.7 | 1849.4 | 1846.0 |
| 5° | 1849.4 | 1842.5 | 1822.8 | 1837.0 | 1833.6 |
| 7.5° | 1837.0 | 1826.5 | 1806.8 | 1821.1 | 1817.6 |
| 10° | 1817.6 | 1805.1 | 1783.8 | 1797.9 | 1792.6 |
| 12.5° | 1790.8 | 1780.2 | 1758.9 | 1767.8 | 1764.2 |
| 15° | 1760.5 | 1750.0 | 1726.8 | 1734.0 | 1725.1 |
| 17.5° | 1723.2 | 1712.7 | 1689.5 | 1698.3 | 1689.5 |
| 20° | 1682.3 | 1671.7 | 1646.8 | 1652.1 | 1645.1 |
| 22.5° | 1641.6 | 1625.5 | 1602.3 | 1602.3 | 1598.7 |
| 25° | 1593.4 | 1579.3 | 1549.0 | 1552.4 | 1549.0 |
| 27.5° | 1540.0 | 1527.6 | 1504.5 | 1499.3 | 1490.4 |
| 30° | 1486.8 | 1472.4 | 1445.9 | 1440.6 | 1433.4 |
| 32.5° | 1429.8 | 1419.3 | 1390.8 | 1380.0 | 1372.8 |
| 35° | 1374.8 | 1357.0 | 1328.5 | 1317.7 | 1308.8 |
| 37.5° | 1312.5 | 1296.4 | 1268.0 | 1255.4 | 1246.6 |
| 40° | 1248.5 | 1234.1 | 1205.7 | 1189.9 | 1182.6 |
| 42.5° | 1186.2 | 1171.9 | 1143.6 | 1125.7 | 1115.1 |
| 45° | 1118.7 | 1106.2 | 1079.4 | 1060.0 | 1052.8 |
| 47.5° | 1052.8 | 1040.4 | 1011.9 | 992.3 | 981.7 |
| 50° | 983.4 | 974.5 | 949.7 | 924.7 | 915.8 |
| 52.5° | 915.8 | 903.4 | 880.4 | 860.8 | 848.3 |
| 55° | 846.6 | 835.8 | 814.5 | 793.2 | 784.3 |
| 57.5° | 777.2 | 768.3 | 745.1 | 723.8 | 716.6 |
| 60° | 707.7 | 700.8 | 675.9 | 656.2 | 650.9 |
| 62.5° | 640.2 | 627.7 | 610.0 | 592.2 | 585.1 |
| 65° | 570.9 | 560.2 | 542.5 | 526.4 | 517.5 |
| 67.5° | 499.8 | 490.8 | 474.9 | 462.5 | 455.3 |
| 70° | 434.0 | 426.8 | 410.7 | 398.3 | 391.3 |
| 72.5° | 366.4 | 359.3 | 350.4 | 337.9 | 332.6 |
| 75° | 298.7 | 295.3 | 286.2 | 275.7 | 279.2 |
| 77.5° | 238.3 | 231.2 | 227.5 | 222.3 | 217.0 |
| 80° | 177.9 | 176.0 | 172.5 | 167.2 | 163.6 |
| 82.5° | 121.0 | 121.0 | 119.2 | 112.1 | 112.1 |
| 85° | 72.8 | 71.1 | 69.4 | 63.9 | 62.3 |
| 87.5° | 32.1 | 28.5 | 24.9 | 19.6 | 17.7 |
| 90° | 1.1 | 13.6 | 37.0 | 34.8 | 35.9 |
| 92.5° | 23.4 | 31.7 | 32.9 | 34.0 | 34.0 |
| 95° | 55.1 | 65.8 | 67.6 | 67.6 | 65.8 |
| 97.5° | 91.7 | 101.6 | 105.8 | 105.8 | 105.8 |
| 100° | 134.0 | 142.8 | 145.8 | 145.8 | 144.7 |
| 102.5° | 178.6 | 185.1 | 189.2 | 190.4 | 189.2 |
| 105° | 227.4 | 230.4 | 232.7 | 234.5 | 234.5 |
| 107.5° | 275.7 | 280.2 | 280.2 | 281.0 | 275.7 |
| 110° | 322.5 | 328.6 | 328.6 | 328.6 | 325.5 |



TEST NUMBER: P915358

CATALOG NUMBER: DFN2DIP-TR3F0-060D050US927-FLLFLL

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 373.1 | 379.5 | 378.4 | 375.4 | 373.1 |
| 115° | 422.9 | 429.0 | 427.1 | 426.0 | 422.9 |
| 117.5° | 472.5 | 480.8 | 475.5 | 472.5 | 469.4 |
| 120° | 522.3 | 530.6 | 522.3 | 522.3 | 518.9 |
| 122.5° | 567.6 | 578.2 | 572.9 | 569.9 | 567.6 |
| 125° | 615.2 | 624.6 | 621.6 | 618.2 | 617.1 |
| 127.5° | 661.6 | 673.4 | 669.2 | 664.6 | 661.6 |
| 130° | 705.1 | 718.7 | 716.8 | 714.5 | 710.3 |
| 132.5° | 753.8 | 764.4 | 765.2 | 759.9 | 756.8 |
| 135° | 795.7 | 807.4 | 809.7 | 808.6 | 805.6 |
| 137.5° | 842.6 | 852.0 | 853.9 | 853.1 | 848.6 |
| 140° | 883.7 | 893.2 | 898.4 | 898.4 | 894.3 |
| 142.5° | 926.0 | 935.5 | 938.5 | 939.6 | 935.5 |
| 145° | 966.1 | 973.6 | 979.6 | 980.8 | 976.6 |
| 147.5° | 1002.0 | 1011.4 | 1015.9 | 1017.8 | 1013.6 |
| 150° | 1038.9 | 1045.4 | 1049.5 | 1052.9 | 1049.5 |
| 152.5° | 1071.8 | 1078.2 | 1083.5 | 1087.7 | 1083.5 |
| 155° | 1104.6 | 1107.6 | 1111.0 | 1116.3 | 1112.9 |
| 157.5° | 1133.0 | 1135.2 | 1137.1 | 1144.7 | 1139.4 |
| 160° | 1158.2 | 1160.5 | 1161.7 | 1168.1 | 1163.6 |
| 162.5° | 1181.7 | 1181.7 | 1182.8 | 1190.0 | 1184.7 |
| 165° | 1201.7 | 1200.6 | 1200.6 | 1208.2 | 1202.8 |
| 167.5° | 1219.8 | 1216.4 | 1216.4 | 1224.0 | 1218.7 |
| 170° | 1233.4 | 1230.4 | 1229.3 | 1236.8 | 1230.4 |
| 172.5° | 1242.9 | 1239.8 | 1238.7 | 1246.3 | 1239.8 |
| 175° | 1250.5 | 1247.4 | 1245.2 | 1252.7 | 1246.3 |
| 177.5° | 1254.6 | 1251.6 | 1249.3 | 1255.7 | 1249.3 |
| 180° | 1252.7 | 1252.7 | 1252.7 | 1252.7 | 1252.7 |



TEST NUMBER: P915358
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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 | 10.77 | 11.70 | 11.66 | 12.62 | 13.78 | 10.34 | 11.28 | 11.24 | 12.19 | 13.35 |
| | 3H | 12.43 | 13.26 | 13.33 | 14.19 | 15.37 | 11.96 | 12.80 | 12.86 | 13.72 | 14.90 |
| | 4H | 13.01 | 13.80 | 13.93 | 14.73 | 15.93 | 12.55 | 13.34 | 13.46 | 14.26 | 15.46 |
| | 6H | 13.41 | 14.14 | 14.34 | 15.07 | 16.28 | 12.94 | 13.67 | 13.87 | 14.60 | 15.81 |
| | 8H | 13.51 | 14.21 | 14.45 | 15.16 | 16.36 | 13.04 | 13.74 | 13.98 | 14.69 | 15.90 |
| | 12H | 13.56 | 14.22 | 14.50 | 15.16 | 16.40 | 13.09 | 13.75 | 14.03 | 14.69 | 15.92 |
| 4H | 2H | 11.24 | 12.03 | 12.16 | 12.96 | 14.15 | 10.90 | 11.69 | 11.82 | 12.61 | 13.81 |
| | 3H | 13.10 | 13.76 | 14.03 | 14.72 | 15.93 | 12.71 | 13.37 | 13.65 | 14.33 | 15.54 |
| | 4H | 13.81 | 14.41 | 14.76 | 15.36 | 16.60 | 13.41 | 14.01 | 14.35 | 14.96 | 16.20 |
| | 6H | 14.32 | 14.84 | 15.28 | 15.82 | 17.05 | 13.92 | 14.44 | 14.87 | 15.41 | 16.65 |
| | 8H | 14.47 | 14.95 | 15.43 | 15.92 | 17.17 | 14.06 | 14.55 | 15.02 | 15.52 | 16.77 |
| | 12H | 14.54 | 14.98 | 15.52 | 15.96 | 17.22 | 14.12 | 14.56 | 15.10 | 15.55 | 16.80 |
| 8H | 4H | 14.01 | 14.49 | 14.97 | 15.46 | 16.71 | 13.65 | 14.14 | 14.61 | 15.11 | 16.36 |
| | 6H | 14.63 | 15.03 | 15.62 | 16.04 | 17.29 | 14.27 | 14.68 | 15.26 | 15.69 | 16.94 |
| | 8H | 14.85 | 15.20 | 15.84 | 16.20 | 17.47 | 14.48 | 14.84 | 15.48 | 15.84 | 17.10 |
| | 12H | 14.98 | 15.29 | 15.97 | 16.28 | 17.59 | 14.60 | 14.91 | 15.60 | 15.90 | 17.22 |
| 12H | 4H | 14.00 | 14.44 | 14.98 | 15.42 | 16.68 | 13.65 | 14.09 | 14.63 | 15.07 | 16.33 |
| | 6H | 14.66 | 15.02 | 15.65 | 16.02 | 17.28 | 14.31 | 14.67 | 15.31 | 15.67 | 16.93 |
| | 8H | 14.90 | 15.21 | 15.90 | 16.20 | 17.52 | 14.55 | 14.86 | 15.54 | 15.85 | 17.17 |