

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: P905605

Luminaire Tested: DFN2DIP-PN2F0-030D040US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905605
REPORT IS A COMBINATION OF REPORTS P901003 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D040US835-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

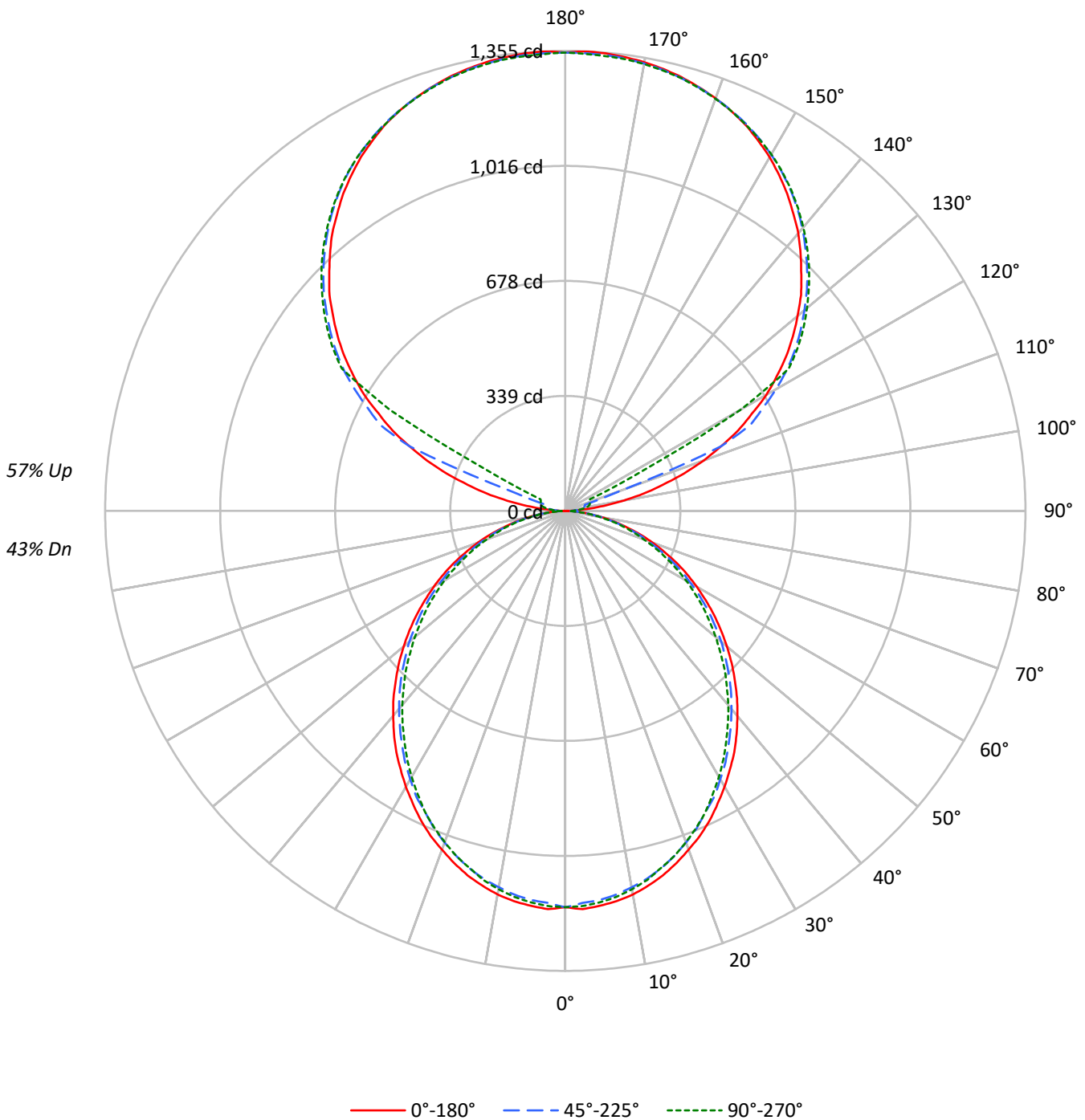
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6930.0 lumens
Efficiency: N/A
Efficacy: 117.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 58.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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 | | | | 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 | 105 | 105 | 105 | 105 | 96 | 96 | 96 | 96 | 79 | 79 | 79 | 64 | 64 | 64 | 50 | 50 | 50 | 43 | | | | 43 |
| 1 | 96 | 92 | 88 | 85 | 88 | 84 | 81 | 78 | 70 | 67 | 65 | 56 | 55 | 53 | 44 | 43 | 42 | 36 | | | | 36 |
| 2 | 88 | 80 | 74 | 69 | 80 | 74 | 68 | 64 | 61 | 57 | 54 | 49 | 47 | 44 | 39 | 37 | 35 | 30 | | | | 30 |
| 3 | 80 | 71 | 63 | 58 | 73 | 65 | 58 | 53 | 54 | 49 | 45 | 44 | 40 | 38 | 34 | 32 | 30 | 26 | | | | 26 |
| 4 | 73 | 62 | 55 | 49 | 66 | 57 | 50 | 45 | 48 | 43 | 39 | 39 | 35 | 32 | 31 | 28 | 26 | 22 | | | | 22 |
| 5 | 67 | 56 | 48 | 42 | 61 | 51 | 44 | 39 | 43 | 37 | 33 | 35 | 31 | 28 | 28 | 25 | 23 | 19 | | | | 19 |
| 6 | 62 | 50 | 42 | 36 | 56 | 46 | 39 | 34 | 38 | 33 | 29 | 31 | 27 | 24 | 25 | 22 | 20 | 17 | | | | 17 |
| 7 | 57 | 45 | 37 | 32 | 52 | 41 | 34 | 29 | 35 | 29 | 25 | 29 | 25 | 22 | 23 | 20 | 18 | 15 | | | | 15 |
| 8 | 53 | 41 | 33 | 28 | 48 | 38 | 31 | 26 | 32 | 26 | 23 | 26 | 22 | 19 | 21 | 18 | 16 | 13 | | | | 13 |
| 9 | 49 | 37 | 30 | 25 | 45 | 34 | 28 | 23 | 29 | 24 | 20 | 24 | 20 | 17 | 19 | 16 | 14 | 12 | | | | 12 |
| 10 | 46 | 34 | 27 | 22 | 42 | 31 | 25 | 21 | 27 | 22 | 18 | 22 | 18 | 16 | 18 | 15 | 13 | 11 | | | | 11 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2528 | 2528 | 2528 |
| 5° | 2528 | 2488 | 2506 |
| 10° | 2504 | 2449 | 2468 |
| 15° | 2463 | 2403 | 2412 |
| 20° | 2409 | 2342 | 2354 |
| 25° | 2355 | 2269 | 2287 |
| 30° | 2289 | 2202 | 2204 |
| 35° | 2226 | 2123 | 2116 |
| 40° | 2149 | 2043 | 2032 |
| 45° | 2072 | 1962 | 1946 |
| 50° | 1988 | 1878 | 1847 |
| 55° | 1899 | 1780 | 1754 |
| 60° | 1799 | 1665 | 1649 |
| 65° | 1689 | 1545 | 1524 |
| 70° | 1548 | 1398 | 1389 |
| 75° | 1356 | 1223 | 1259 |
| 80° | 1122 | 998 | 1022 |
| 85° | 762 | 631 | 640 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2072 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 109.9 | 1.6 |
| 10°-20° | 309.1 | 4.5 |
| 20°-30° | 454.3 | 6.6 |
| 30°-40° | 527.6 | 7.6 |
| 40°-50° | 527.0 | 7.6 |
| 50°-60° | 459.5 | 6.6 |
| 60°-70° | 339.7 | 4.9 |
| 70°-80° | 192.2 | 2.8 |
| 80°-90° | 53.1 | 0.8 |
| 90°-100° | 44.5 | 0.6 |
| 100°-110° | 165.9 | 2.4 |
| 110°-120° | 440.1 | 6.4 |
| 120°-130° | 729.9 | 10.5 |
| 130°-140° | 775.4 | 11.2 |
| 140°-150° | 720.6 | 10.4 |
| 150°-160° | 579.4 | 8.4 |
| 160°-170° | 373.3 | 5.4 |
| 170°-180° | 128.5 | 1.9 |
| 0°-30° | 873.3 | 12.6 |
| 0°-40° | 1400.9 | 20.2 |
| 0°-60° | 2387.4 | 34.5 |
| 0°-90° | 2972.4 | 42.9 |
| 90°-120° | 650.5 | 9.4 |
| 90°-150° | 2876.4 | 41.5 |
| 90°-180° | 3958.0 | 57.1 |
| 0°-180° | 6930.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1167 | 1167 | 1167 | 1167 | 1167 | |
| 5° | 1167 | 1163 | 1150 | 1160 | 1157 | 111 |
| 15° | 1111 | 1105 | 1090 | 1094 | 1089 | 313 |
| 25° | 1006 | 997 | 978 | 980 | 978 | 463 |
| 35° | 868 | 856 | 838 | 832 | 826 | 542 |
| 45° | 706 | 698 | 681 | 669 | 664 | 545 |
| 55° | 534 | 528 | 514 | 501 | 495 | 478 |
| 65° | 360 | 354 | 342 | 332 | 327 | 356 |
| 75° | 188 | 186 | 181 | 174 | 176 | 201 |
| 85° | 46 | 45 | 44 | 40 | 39 | 51 |
| 90° | 1 | 12 | 20 | 24 | 26 | 6 |
| 95° | 63 | 31 | 38 | 43 | 42 | 75 |
| 105° | 297 | 326 | 60 | 70 | 74 | 317 |
| 115° | 562 | 578 | 603 | 150 | 80 | 553 |
| 125° | 794 | 807 | 825 | 832 | 835 | 708 |
| 135° | 983 | 998 | 1007 | 1017 | 1015 | 759 |
| 145° | 1140 | 1139 | 1156 | 1162 | 1158 | 713 |
| 155° | 1255 | 1246 | 1258 | 1264 | 1256 | 578 |
| 165° | 1323 | 1317 | 1320 | 1326 | 1320 | 374 |
| 175° | 1353 | 1346 | 1348 | 1355 | 1345 | 129 |
| 180° | 1350 | 1350 | 1350 | 1350 | 1350 | |



TEST NUMBER: P905605

CATALOG NUMBER: DFN2DIP-PN2F0-030D040US835-FLLONL

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1167.3 | 1167.3 | 1167.3 | 1167.3 | 1167.3 |
| 2.5° | 1174.1 | 1168.5 | 1156.1 | 1167.3 | 1165.2 |
| 5° | 1167.3 | 1162.9 | 1150.5 | 1159.5 | 1157.3 |
| 7.5° | 1159.5 | 1152.8 | 1140.4 | 1149.5 | 1147.2 |
| 10° | 1147.2 | 1139.3 | 1125.9 | 1134.8 | 1131.5 |
| 12.5° | 1130.3 | 1123.6 | 1110.2 | 1115.7 | 1113.5 |
| 15° | 1111.2 | 1104.6 | 1089.9 | 1094.4 | 1088.8 |
| 17.5° | 1087.6 | 1081.0 | 1066.3 | 1071.9 | 1066.3 |
| 20° | 1061.8 | 1055.1 | 1039.4 | 1042.7 | 1038.3 |
| 22.5° | 1036.1 | 1026.0 | 1011.3 | 1011.3 | 1009.0 |
| 25° | 1005.7 | 996.8 | 977.7 | 979.9 | 977.7 |
| 27.5° | 972.0 | 964.1 | 949.6 | 946.3 | 940.7 |
| 30° | 938.4 | 929.4 | 912.6 | 909.2 | 904.7 |
| 32.5° | 902.5 | 895.8 | 877.8 | 871.0 | 866.5 |
| 35° | 867.7 | 856.5 | 838.5 | 831.7 | 826.1 |
| 37.5° | 828.4 | 818.3 | 800.3 | 792.4 | 786.8 |
| 40° | 788.0 | 779.0 | 761.0 | 751.0 | 746.5 |
| 42.5° | 748.7 | 739.7 | 721.8 | 710.5 | 703.8 |
| 45° | 706.1 | 698.2 | 681.3 | 669.0 | 664.5 |
| 47.5° | 664.5 | 656.7 | 638.7 | 626.3 | 619.6 |
| 50° | 620.7 | 615.1 | 599.4 | 583.7 | 578.1 |
| 52.5° | 578.1 | 570.2 | 555.7 | 543.3 | 535.4 |
| 55° | 534.4 | 527.6 | 514.1 | 500.7 | 495.1 |
| 57.5° | 490.5 | 484.9 | 470.3 | 456.8 | 452.3 |
| 60° | 446.7 | 442.3 | 426.6 | 414.2 | 410.9 |
| 62.5° | 404.1 | 396.2 | 385.0 | 373.8 | 369.3 |
| 65° | 360.4 | 353.6 | 342.4 | 332.3 | 326.7 |
| 67.5° | 315.5 | 309.8 | 299.7 | 291.9 | 287.4 |
| 70° | 273.9 | 269.4 | 259.3 | 251.4 | 247.0 |
| 72.5° | 231.3 | 226.7 | 221.1 | 213.3 | 210.0 |
| 75° | 188.5 | 186.4 | 180.7 | 174.0 | 176.3 |
| 77.5° | 150.4 | 145.9 | 143.6 | 140.3 | 137.0 |
| 80° | 112.3 | 111.1 | 108.8 | 105.5 | 103.3 |
| 82.5° | 76.3 | 76.3 | 75.3 | 70.7 | 70.7 |
| 85° | 46.0 | 44.9 | 43.8 | 40.4 | 39.3 |
| 87.5° | 20.2 | 18.0 | 15.7 | 12.4 | 11.2 |
| 90° | 0.9 | 11.7 | 19.5 | 24.5 | 26.3 |
| 92.5° | 24.5 | 20.5 | 23.4 | 25.4 | 26.3 |
| 95° | 63.4 | 31.2 | 38.0 | 43.0 | 42.0 |
| 97.5° | 114.3 | 34.2 | 49.8 | 52.8 | 53.7 |
| 100° | 172.9 | 39.1 | 55.7 | 63.4 | 65.4 |
| 102.5° | 237.3 | 235.5 | 57.6 | 68.3 | 71.3 |
| 105° | 296.9 | 326.3 | 59.6 | 70.3 | 74.2 |
| 107.5° | 366.3 | 390.7 | 61.6 | 72.3 | 76.2 |
| 110° | 432.8 | 453.2 | 171.0 | 73.3 | 77.1 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 495.3 | 512.8 | 496.2 | 75.2 | 78.2 |
| 115° | 561.6 | 578.2 | 602.7 | 150.4 | 80.2 |
| 117.5° | 619.3 | 638.8 | 655.5 | 515.7 | 259.8 |
| 120° | 683.8 | 698.4 | 716.0 | 727.8 | 595.9 |
| 122.5° | 738.4 | 754.1 | 773.7 | 779.5 | 780.5 |
| 125° | 794.1 | 806.9 | 825.4 | 832.3 | 835.2 |
| 127.5° | 844.9 | 858.6 | 873.3 | 883.1 | 884.0 |
| 130° | 892.8 | 908.5 | 919.1 | 929.9 | 929.0 |
| 132.5° | 941.6 | 954.4 | 965.1 | 973.9 | 973.0 |
| 135° | 982.7 | 998.4 | 1007.1 | 1016.9 | 1015.0 |
| 137.5° | 1025.6 | 1037.3 | 1047.2 | 1056.9 | 1054.0 |
| 140° | 1067.6 | 1075.5 | 1086.2 | 1095.0 | 1090.1 |
| 142.5° | 1102.9 | 1109.7 | 1122.4 | 1130.1 | 1125.3 |
| 145° | 1140.0 | 1139.0 | 1155.5 | 1162.4 | 1157.5 |
| 147.5° | 1172.1 | 1169.2 | 1185.8 | 1190.7 | 1186.9 |
| 150° | 1203.4 | 1196.6 | 1212.3 | 1218.1 | 1213.2 |
| 152.5° | 1229.8 | 1222.0 | 1236.6 | 1242.5 | 1235.7 |
| 155° | 1255.2 | 1246.5 | 1258.2 | 1264.0 | 1256.2 |
| 157.5° | 1275.7 | 1267.9 | 1276.8 | 1283.6 | 1275.7 |
| 160° | 1293.3 | 1287.4 | 1293.3 | 1299.1 | 1292.3 |
| 162.5° | 1308.9 | 1303.1 | 1308.0 | 1314.8 | 1306.0 |
| 165° | 1322.6 | 1316.8 | 1319.7 | 1326.5 | 1319.7 |
| 167.5° | 1333.4 | 1327.4 | 1330.5 | 1337.3 | 1328.5 |
| 170° | 1342.2 | 1336.3 | 1338.2 | 1345.1 | 1336.3 |
| 172.5° | 1348.0 | 1342.2 | 1344.2 | 1351.0 | 1342.2 |
| 175° | 1352.8 | 1346.0 | 1348.0 | 1354.8 | 1345.1 |
| 177.5° | 1354.8 | 1348.0 | 1349.0 | 1355.9 | 1347.1 |
| 180° | 1350.0 | 1350.0 | 1350.0 | 1350.0 | 1350.0 |



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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 | 9.68 | 10.48 | 10.70 | 11.51 | 12.88 | 9.25 | 10.05 | 10.26 | 11.07 | 12.44 |
| | 3H | 11.32 | 12.04 | 12.34 | 13.07 | 14.46 | 10.84 | 11.56 | 11.86 | 12.59 | 13.98 |
| | 4H | 11.89 | 12.57 | 12.93 | 13.61 | 15.00 | 11.41 | 12.09 | 12.45 | 13.12 | 14.52 |
| | 6H | 12.27 | 12.90 | 13.32 | 13.94 | 15.35 | 11.79 | 12.41 | 12.83 | 13.45 | 14.86 |
| | 8H | 12.37 | 12.96 | 13.42 | 14.02 | 15.42 | 11.88 | 12.48 | 12.93 | 13.53 | 14.94 |
| | 12H | 12.40 | 12.97 | 13.46 | 14.02 | 15.45 | 11.91 | 12.48 | 12.97 | 13.53 | 14.96 |
| 4H | 2H | 10.13 | 10.81 | 11.17 | 11.84 | 13.24 | 9.78 | 10.46 | 10.82 | 11.49 | 12.89 |
| | 3H | 11.96 | 12.53 | 13.02 | 13.60 | 15.01 | 11.56 | 12.13 | 12.62 | 13.20 | 14.61 |
| | 4H | 12.66 | 13.18 | 13.72 | 14.24 | 15.67 | 12.25 | 12.77 | 13.30 | 13.82 | 15.25 |
| | 6H | 13.15 | 13.60 | 14.22 | 14.68 | 16.10 | 12.73 | 13.18 | 13.80 | 14.26 | 15.68 |
| | 8H | 13.29 | 13.71 | 14.36 | 14.78 | 16.22 | 12.87 | 13.28 | 13.94 | 14.36 | 15.80 |
| | 12H | 13.35 | 13.73 | 14.44 | 14.81 | 16.26 | 12.92 | 13.30 | 14.00 | 14.38 | 15.83 |
| 8H | 4H | 12.84 | 13.26 | 13.91 | 14.33 | 15.77 | 12.47 | 12.89 | 13.54 | 13.96 | 15.40 |
| | 6H | 13.44 | 13.79 | 14.54 | 14.90 | 16.34 | 13.07 | 13.42 | 14.16 | 14.53 | 15.97 |
| | 8H | 13.65 | 13.95 | 14.75 | 15.05 | 16.51 | 13.27 | 13.57 | 14.37 | 14.67 | 16.13 |
| | 12H | 13.77 | 14.03 | 14.87 | 15.12 | 16.62 | 13.37 | 13.64 | 14.47 | 14.73 | 16.23 |
| 12H | 4H | 12.82 | 13.20 | 13.91 | 14.28 | 15.73 | 12.46 | 12.84 | 13.55 | 13.92 | 15.37 |
| | 6H | 13.47 | 13.77 | 14.57 | 14.87 | 16.33 | 13.11 | 13.41 | 14.21 | 14.51 | 15.96 |
| | 8H | 13.69 | 13.96 | 14.80 | 15.05 | 16.55 | 13.32 | 13.59 | 14.43 | 14.68 | 16.18 |