

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P735869

Luminaire Tested: S122DRP-S290D940-X4F0-XX-UDD-W-W

Issue Date: 1/24/2024

Test Information

Test Method: LM-79-2024
Report Number: P735869
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2308-143-1)
Test Lab: INNOVATION CENTER
Issue Date: 1/24/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-S290D940-X4F0-XX-UDD-W-W
Description: DEFINE 2 DIRECT RECESSED WITH WALL WASH OPTIC
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

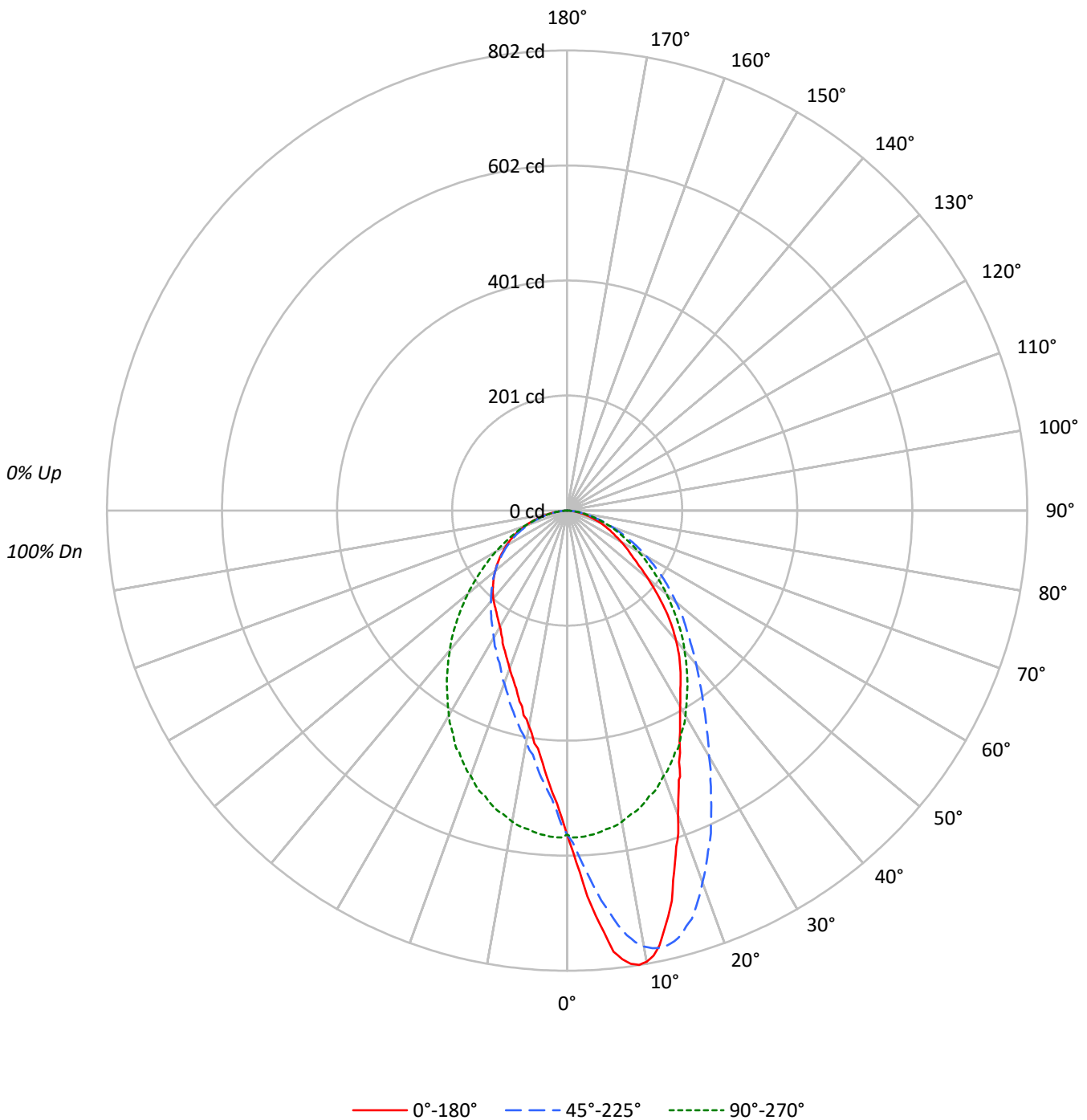
Lumens per Lamp: N/A
Luminaire Lumens: 1149.0 lumens
Efficiency: N/A
Efficacy: 91.9 lumens/watt
Spacing Criteria (0/90/45): 0.9 / 1.11 / 1.12
Luminous Opening: Rectangular (W 4' x L: 0.14' x H: 0')
CIE Type: Direct

Input Watts (W): 12.5
Input Voltage (V): 120
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

TEST NUMBER: P735869

CATALOG NUMBER: S122DRP-S290D940-X4F0-XX-UDD-W-W

Luminous Intensity Polar Plot



TEST NUMBER: P735869

CATALOG NUMBER: S122DRP-S290D940-X4F0-XX-UDD-W-W

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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | 100 |
| 1 | 110 | 106 | 102 | 98 | 107 | 103 | 100 | 97 | 99 | 96 | 94 | 95 | 93 | 91 | 92 | 90 | 88 | 86 | | | | 86 |
| 2 | 101 | 94 | 87 | 82 | 98 | 92 | 86 | 81 | 88 | 83 | 79 | 85 | 81 | 78 | 82 | 79 | 76 | 74 | | | | 74 |
| 3 | 93 | 83 | 76 | 70 | 91 | 82 | 75 | 69 | 79 | 73 | 68 | 76 | 71 | 67 | 74 | 69 | 66 | 64 | | | | 64 |
| 4 | 86 | 75 | 67 | 60 | 83 | 73 | 66 | 60 | 71 | 64 | 59 | 69 | 63 | 58 | 67 | 62 | 58 | 56 | | | | 56 |
| 5 | 79 | 67 | 59 | 53 | 77 | 66 | 58 | 53 | 64 | 57 | 52 | 62 | 56 | 52 | 61 | 55 | 51 | 49 | | | | 49 |
| 6 | 74 | 61 | 53 | 47 | 72 | 60 | 52 | 47 | 59 | 52 | 46 | 57 | 51 | 46 | 55 | 50 | 46 | 44 | | | | 44 |
| 7 | 69 | 56 | 48 | 42 | 67 | 55 | 47 | 42 | 54 | 47 | 42 | 52 | 46 | 41 | 51 | 45 | 41 | 39 | | | | 39 |
| 8 | 64 | 51 | 43 | 38 | 63 | 51 | 43 | 38 | 50 | 43 | 38 | 48 | 42 | 37 | 47 | 41 | 37 | 35 | | | | 35 |
| 9 | 60 | 48 | 40 | 35 | 59 | 47 | 40 | 34 | 46 | 39 | 34 | 45 | 39 | 34 | 44 | 38 | 34 | 32 | | | | 32 |
| 10 | 57 | 44 | 37 | 32 | 55 | 44 | 36 | 32 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 30 | | | | 30 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° | 135° | 180° |
|-----|-------|-------|-------|-------|-------|
| 0° | 10854 | 10854 | 10854 | 10854 | 10854 |
| 5° | 14236 | 13157 | 10911 | 9151 | 8731 |
| 10° | 15583 | 15060 | 10748 | 8000 | 7454 |
| 15° | 14017 | 15253 | 10457 | 7221 | 6611 |
| 20° | 11567 | 14108 | 10058 | 6550 | 5993 |
| 25° | 9885 | 12585 | 9705 | 6059 | 5557 |
| 30° | 8743 | 10991 | 9149 | 5677 | 5202 |
| 35° | 8086 | 9736 | 8579 | 5409 | 5054 |
| 40° | 7402 | 8785 | 7987 | 5181 | 5026 |
| 45° | 6521 | 8019 | 7386 | 5021 | 4958 |
| 50° | 5490 | 7392 | 6767 | 4886 | 4898 |
| 55° | 4618 | 6803 | 6112 | 4722 | 4812 |
| 60° | 4163 | 6147 | 5551 | 4582 | 4713 |
| 65° | 3780 | 5403 | 4944 | 4362 | 4625 |
| 70° | 3400 | 4670 | 4451 | 4035 | 4384 |
| 75° | 2971 | 3951 | 3802 | 3661 | 4003 |
| 80° | 2491 | 3088 | 3088 | 3177 | 3354 |
| 85° | 1875 | 2227 | 2316 | 2492 | 2404 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 11773 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 55.6 | 4.8 |
| 10°-20° | 152.5 | 13.3 |
| 20°-30° | 200.0 | 17.4 |
| 30°-40° | 211.4 | 18.4 |
| 40°-50° | 196.3 | 17.1 |
| 50°-60° | 157.1 | 13.7 |
| 60°-70° | 107.5 | 9.4 |
| 70°-80° | 55.4 | 4.8 |
| 80°-90° | 13.2 | 1.1 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 408.1 | 35.5 |
| 0°-40° | 619.5 | 53.9 |
| 0°-60° | 972.9 | 84.7 |
| 0°-90° | 1149.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1149.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0° | 565 | 565 | 565 | 565 | 565 | |
| 5° | 738 | 682 | 566 | 474 | 452 | 73 |
| 15° | 704 | 766 | 526 | 363 | 332 | 193 |
| 25° | 466 | 593 | 458 | 286 | 262 | 215 |
| 35° | 345 | 415 | 366 | 230 | 215 | 215 |
| 45° | 240 | 295 | 272 | 185 | 182 | 184 |
| 55° | 138 | 203 | 182 | 141 | 144 | 126 |
| 65° | 83 | 119 | 109 | 96 | 102 | 82 |
| 75° | 40 | 53 | 51 | 49 | 54 | 43 |
| 85° | 8 | 10 | 10 | 11 | 11 | 10 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P735869

CATALOG NUMBER: S122DRP-S290D940-X4F0-XX-UDD-W-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0° | 564.7 | 564.7 | 564.7 | 564.7 | 564.7 | 564.7 | 564.7 | 564.7 | 564.7 |
| 1° | 595.8 | 592.7 | 579.1 | 579.8 | 569.8 | 558.5 | 548.0 | 541.4 | 536.0 |
| 2° | 630.7 | 624.5 | 603.1 | 592.7 | 569.8 | 545.7 | 524.0 | 518.1 | 510.8 |
| 3° | 673.0 | 658.2 | 628.7 | 603.9 | 569.0 | 534.0 | 504.2 | 493.7 | 492.5 |
| 4° | 707.1 | 694.0 | 654.8 | 615.6 | 567.0 | 522.8 | 489.0 | 477.8 | 472.3 |
| 5° | 737.8 | 729.3 | 681.9 | 630.3 | 565.5 | 511.9 | 474.3 | 458.8 | 452.5 |
| 6° | 773.1 | 755.7 | 703.7 | 645.1 | 562.8 | 501.4 | 461.1 | 442.5 | 433.9 |
| 7° | 787.5 | 776.6 | 728.1 | 654.8 | 559.3 | 489.4 | 444.4 | 424.2 | 418.0 |
| 8° | 797.6 | 793.3 | 747.5 | 670.7 | 557.7 | 478.2 | 429.6 | 417.2 | 409.9 |
| 9° | 801.8 | 798.4 | 761.5 | 677.3 | 555.0 | 472.3 | 422.3 | 401.7 | 393.6 |
| 10° | 798.4 | 799.9 | 771.6 | 687.4 | 550.7 | 460.3 | 409.9 | 392.0 | 381.9 |
| 11° | 790.2 | 794.1 | 777.0 | 699.0 | 545.3 | 450.6 | 398.6 | 380.4 | 370.7 |
| 12° | 774.7 | 783.2 | 779.3 | 707.1 | 540.3 | 442.1 | 390.8 | 373.4 | 364.8 |
| 13° | 750.6 | 769.6 | 777.8 | 710.6 | 537.2 | 432.4 | 381.1 | 360.9 | 350.1 |
| 14° | 728.9 | 748.7 | 773.5 | 718.4 | 531.7 | 421.5 | 372.2 | 352.0 | 342.7 |
| 15° | 704.4 | 727.3 | 766.5 | 720.7 | 525.5 | 412.6 | 362.9 | 340.8 | 332.2 |
| 16° | 670.3 | 700.9 | 753.7 | 723.5 | 518.1 | 402.5 | 354.4 | 333.4 | 322.1 |
| 17° | 641.9 | 674.9 | 744.0 | 725.0 | 514.3 | 394.7 | 347.0 | 322.1 | 314.8 |
| 18° | 615.9 | 653.2 | 726.6 | 723.8 | 508.0 | 385.8 | 336.1 | 314.0 | 307.0 |
| 19° | 595.4 | 625.6 | 709.1 | 721.1 | 499.5 | 377.2 | 328.0 | 308.2 | 300.0 |
| 20° | 565.5 | 600.4 | 689.7 | 720.0 | 491.7 | 369.5 | 320.2 | 300.0 | 293.0 |
| 21° | 540.6 | 576.4 | 671.8 | 716.1 | 486.3 | 362.1 | 314.4 | 292.3 | 286.0 |
| 22.5° | 508.0 | 539.5 | 641.9 | 708.7 | 474.3 | 349.7 | 301.6 | 284.9 | 276.3 |
| 23° | 504.2 | 530.9 | 634.2 | 706.4 | 470.8 | 347.0 | 297.3 | 280.6 | 273.6 |
| 24° | 479.7 | 508.0 | 615.9 | 699.0 | 461.9 | 338.4 | 290.3 | 275.6 | 267.4 |
| 25° | 466.1 | 489.4 | 593.4 | 692.0 | 457.6 | 330.7 | 285.7 | 269.0 | 262.0 |
| 26° | 447.1 | 473.9 | 573.2 | 681.9 | 448.3 | 323.7 | 278.3 | 263.1 | 256.5 |
| 27° | 433.1 | 455.6 | 552.3 | 674.5 | 437.4 | 316.3 | 272.5 | 257.3 | 249.2 |
| 28° | 419.6 | 441.3 | 532.1 | 662.5 | 429.6 | 308.2 | 268.2 | 252.3 | 244.5 |
| 29° | 405.6 | 424.6 | 515.8 | 653.2 | 422.3 | 301.2 | 261.6 | 245.7 | 238.3 |
| 30° | 393.9 | 411.4 | 495.2 | 640.8 | 412.2 | 293.0 | 255.8 | 241.0 | 234.4 |
| 32.5° | 367.2 | 381.9 | 453.3 | 611.3 | 388.1 | 276.7 | 241.8 | 228.2 | 224.3 |
| 35° | 344.6 | 354.4 | 414.9 | 578.3 | 365.6 | 259.3 | 230.5 | 217.3 | 215.4 |
| 37.5° | 321.0 | 330.3 | 380.0 | 543.8 | 341.9 | 243.3 | 217.7 | 209.2 | 207.6 |
| 40° | 295.0 | 307.4 | 350.1 | 509.6 | 318.3 | 227.8 | 206.5 | 199.9 | 200.3 |
| 42.5° | 269.0 | 283.3 | 321.0 | 469.6 | 296.1 | 213.1 | 195.6 | 191.0 | 191.7 |
| 45° | 239.9 | 258.1 | 295.0 | 433.1 | 271.7 | 199.1 | 184.7 | 182.4 | 182.4 |
| 47.5° | 209.6 | 232.9 | 272.5 | 395.5 | 248.4 | 185.1 | 174.3 | 172.7 | 173.5 |
| 50° | 183.6 | 204.5 | 247.2 | 359.0 | 226.3 | 172.3 | 163.4 | 163.0 | 163.8 |
| 52.5° | 158.0 | 178.9 | 225.1 | 324.9 | 203.8 | 160.7 | 152.9 | 152.9 | 153.7 |
| 55° | 137.8 | 154.1 | 203.0 | 289.1 | 182.4 | 147.1 | 140.9 | 142.1 | 143.6 |
| 57.5° | 123.8 | 134.7 | 181.3 | 255.0 | 162.6 | 133.9 | 130.0 | 130.8 | 132.7 |
| 60° | 108.3 | 116.8 | 159.9 | 223.6 | 144.4 | 121.1 | 119.2 | 120.7 | 122.6 |
| 62.5° | 94.3 | 101.7 | 139.7 | 195.2 | 124.6 | 108.7 | 107.9 | 110.2 | 112.2 |
| 65° | 83.1 | 88.1 | 118.8 | 166.5 | 108.7 | 96.3 | 95.9 | 99.4 | 101.7 |



TEST NUMBER: P735869

CATALOG NUMBER: S122DRP-S290D940-X4F0-XX-UDD-W-W

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|------|-------|-------|-------|------|--------|------|--------|------|
| 67.5° | 71.4 | 75.3 | 100.5 | 139.3 | 92.8 | 83.8 | 83.8 | 87.7 | 89.7 |
| 70° | 60.5 | 63.7 | 83.1 | 114.9 | 79.2 | 71.4 | 71.8 | 76.5 | 78.0 |
| 72.5° | 49.3 | 52.0 | 67.5 | 92.4 | 64.0 | 59.8 | 60.9 | 64.8 | 66.4 |
| 75° | 40.0 | 41.9 | 53.2 | 73.0 | 51.2 | 47.7 | 49.3 | 52.8 | 53.9 |
| 77.5° | 30.7 | 32.2 | 39.2 | 53.6 | 39.2 | 37.3 | 38.8 | 41.9 | 41.9 |
| 80° | 22.5 | 22.9 | 27.9 | 37.6 | 27.9 | 26.8 | 28.7 | 30.3 | 30.3 |
| 82.5° | 14.7 | 15.5 | 18.2 | 24.1 | 18.6 | 18.2 | 19.0 | 20.2 | 20.2 |
| 85° | 8.5 | 8.9 | 10.1 | 13.2 | 10.5 | 10.5 | 11.3 | 11.3 | 10.9 |
| 87.5° | 3.5 | 3.9 | 4.3 | 5.0 | 4.7 | 5.0 | 5.0 | 4.3 | 4.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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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 | 17.51 | 19.03 | 17.87 | 19.34 | 19.66 | 17.08 | 18.60 | 17.44 | 18.91 | 19.23 |
| | 3H | 18.71 | 20.07 | 19.08 | 20.40 | 20.76 | 18.59 | 19.96 | 18.97 | 20.29 | 20.65 |
| | 4H | 19.10 | 20.39 | 19.50 | 20.74 | 21.11 | 19.12 | 20.40 | 19.52 | 20.75 | 21.13 |
| | 6H | 19.36 | 20.54 | 19.77 | 20.91 | 21.30 | 19.47 | 20.66 | 19.88 | 21.02 | 21.41 |
| | 8H | 19.42 | 20.55 | 19.85 | 20.94 | 21.34 | 19.57 | 20.70 | 19.99 | 21.09 | 21.49 |
| | 12H | 19.45 | 20.53 | 19.88 | 20.91 | 21.34 | 19.62 | 20.70 | 20.05 | 21.08 | 21.51 |
| 4H | 2H | 18.56 | 19.84 | 18.96 | 20.19 | 20.57 | 18.15 | 19.43 | 18.55 | 19.78 | 20.16 |
| | 3H | 19.92 | 20.99 | 20.33 | 21.39 | 21.79 | 19.78 | 20.84 | 20.19 | 21.24 | 21.64 |
| | 4H | 20.38 | 21.34 | 20.82 | 21.76 | 22.20 | 20.36 | 21.32 | 20.79 | 21.73 | 22.17 |
| | 6H | 20.70 | 21.53 | 21.15 | 21.97 | 22.43 | 20.78 | 21.61 | 21.23 | 22.05 | 22.51 |
| | 8H | 20.78 | 21.55 | 21.24 | 22.00 | 22.47 | 20.89 | 21.67 | 21.36 | 22.12 | 22.58 |
| | 12H | 20.82 | 21.52 | 21.31 | 22.00 | 22.47 | 20.97 | 21.67 | 21.45 | 22.14 | 22.61 |
| 8H | 4H | 20.74 | 21.52 | 21.20 | 21.96 | 22.43 | 20.70 | 21.48 | 21.16 | 21.92 | 22.39 |
| | 6H | 21.14 | 21.79 | 21.64 | 22.28 | 22.75 | 21.22 | 21.86 | 21.71 | 22.35 | 22.83 |
| | 8H | 21.26 | 21.84 | 21.78 | 22.35 | 22.84 | 21.38 | 21.96 | 21.90 | 22.47 | 22.96 |
| | 12H | 21.35 | 21.86 | 21.86 | 22.35 | 22.92 | 21.51 | 22.02 | 22.02 | 22.51 | 23.07 |
| 12H | 4H | 20.76 | 21.46 | 21.25 | 21.94 | 22.41 | 20.71 | 21.41 | 21.20 | 21.89 | 22.36 |
| | 6H | 21.19 | 21.77 | 21.70 | 22.28 | 22.76 | 21.26 | 21.84 | 21.77 | 22.35 | 22.83 |
| | 8H | 21.36 | 21.87 | 21.87 | 22.36 | 22.92 | 21.48 | 21.99 | 21.99 | 22.48 | 23.04 |