

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: METALUX

Report Number: P894695

Luminaire Tested: 8TMB-16HL-FLTU-UNV-L840

Issue Date: 11/11/2024

**Test Information**

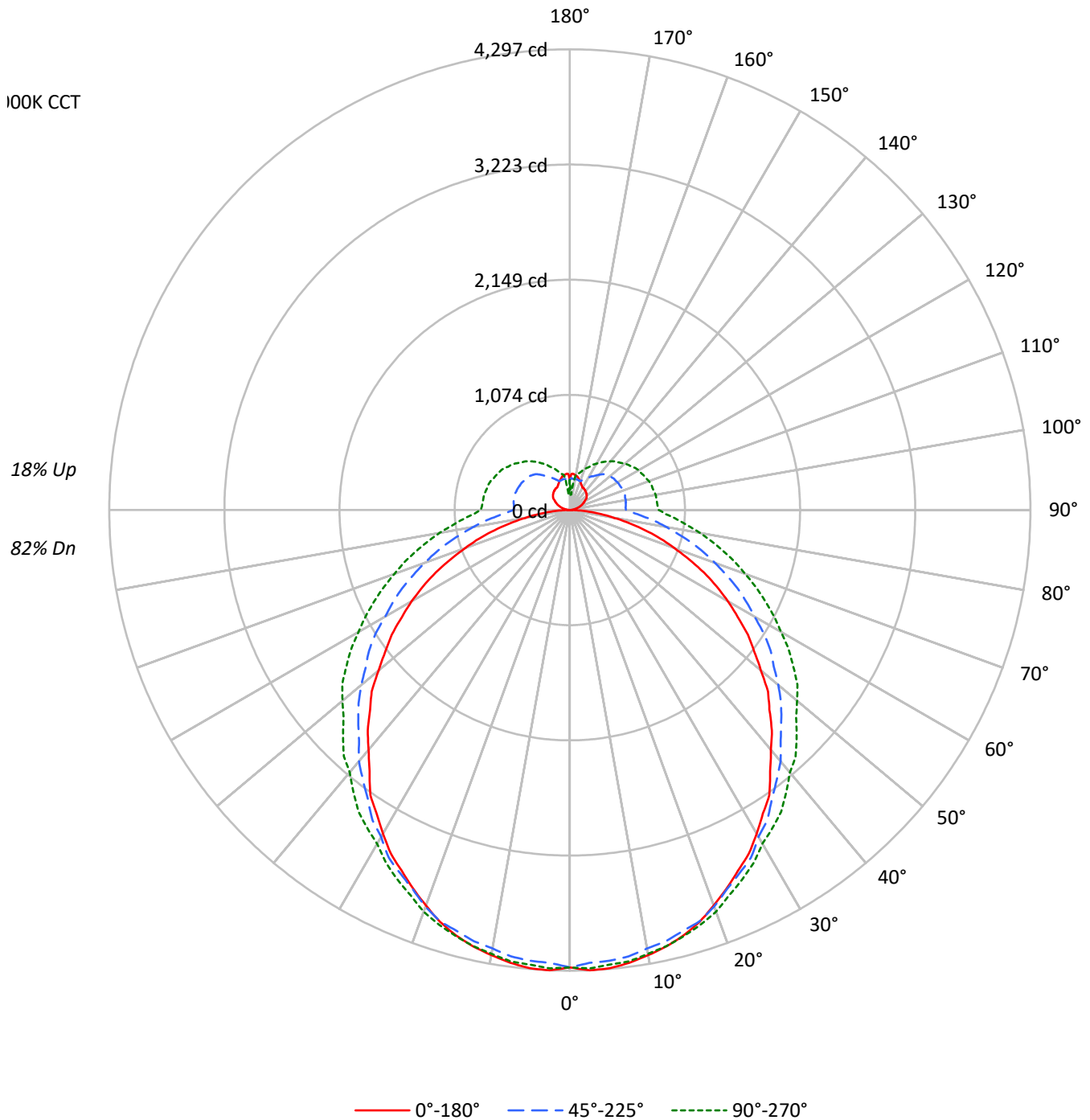
Test Method: LM-79-2019  
Report Number: P894695  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 8TMB-16HL-FLTU-UNV-L840  
Description: 16000 Lumen 8FT MICROBAY LINEAR BAY with FLAT FROSTED LENS WITH UPLIGHT, 80CRI, 40  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16037.0 lumens  
Efficiency: N/A  
Efficacy: 138.5 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.26 / 1.36  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 7.98' x H: 0.21')  
CIE Type: Semi-Direct  
  
Input Watts (W): 115.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.999  
Total Harmonic Distortion (THDi): 4.23  
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 |    | 0  |    |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |
| 0   | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 110 | 101 | 101 | 101 | 93 | 93 | 93 | 86 | 86 | 86 | 86 | 82 |    |
| 1   | 103 | 98  | 93  | 89  | 99  | 94  | 90  | 86  | 87  | 83  | 80  | 80 | 77 | 74 | 73 | 71 | 69 | 69 | 66 |    |
| 2   | 93  | 85  | 77  | 71  | 89  | 81  | 75  | 69  | 75  | 70  | 65  | 69 | 65 | 61 | 63 | 60 | 57 | 57 | 54 |    |
| 3   | 85  | 74  | 66  | 59  | 81  | 71  | 63  | 57  | 66  | 59  | 54  | 60 | 55 | 51 | 56 | 51 | 48 | 48 | 45 |    |
| 4   | 78  | 65  | 56  | 49  | 74  | 63  | 55  | 48  | 58  | 51  | 46  | 54 | 48 | 43 | 50 | 45 | 41 | 41 | 38 |    |
| 5   | 71  | 58  | 49  | 42  | 68  | 56  | 48  | 41  | 52  | 45  | 39  | 48 | 42 | 37 | 44 | 39 | 35 | 35 | 33 |    |
| 6   | 66  | 52  | 43  | 37  | 63  | 50  | 42  | 36  | 47  | 40  | 34  | 43 | 37 | 33 | 40 | 35 | 31 | 31 | 28 |    |
| 7   | 61  | 47  | 38  | 32  | 58  | 46  | 37  | 32  | 42  | 35  | 30  | 39 | 33 | 29 | 37 | 31 | 27 | 27 | 25 |    |
| 8   | 56  | 43  | 34  | 29  | 54  | 42  | 34  | 28  | 39  | 32  | 27  | 36 | 30 | 26 | 34 | 28 | 24 | 24 | 22 |    |
| 9   | 53  | 39  | 31  | 26  | 50  | 38  | 30  | 25  | 36  | 29  | 24  | 33 | 27 | 23 | 31 | 26 | 22 | 22 | 20 |    |
| 10  | 49  | 36  | 28  | 23  | 47  | 35  | 28  | 23  | 33  | 26  | 22  | 31 | 25 | 21 | 29 | 24 | 20 | 20 | 18 |    |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 15135 | 15135 | 15135 |
| 5°  | 15247 | 14516 | 14467 |
| 10° | 15119 | 13961 | 13806 |
| 15° | 14981 | 13471 | 13177 |
| 20° | 14683 | 12952 | 12551 |
| 25° | 14360 | 12311 | 11859 |
| 30° | 14070 | 11683 | 11189 |
| 35° | 13806 | 11085 | 10756 |
| 40° | 13232 | 10572 | 10133 |
| 45° | 12880 | 9958  | 9699  |
| 50° | 12462 | 9444  | 9242  |
| 55° | 12098 | 8956  | 8833  |
| 60° | 11572 | 8283  | 8285  |
| 65° | 10974 | 7742  | 7769  |
| 70° | 10048 | 7070  | 7208  |
| 75° | 9089  | 6400  | 6674  |
| 80° | 7462  | 5666  | 6134  |
| 85° | 5615  | 4958  | 5628  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12880 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 404.1   | 2.5       |
| 10°-20°   | 1153.8  | 7.2       |
| 20°-30°   | 1733.2  | 10.8      |
| 30°-40°   | 2077.3  | 13.0      |
| 40°-50°   | 2177.9  | 13.6      |
| 50°-60°   | 2043.0  | 12.7      |
| 60°-70°   | 1696.9  | 10.6      |
| 70°-80°   | 1213.3  | 7.6       |
| 80°-90°   | 719.6   | 4.5       |
| 90°-100°  | 527.9   | 3.3       |
| 100°-110° | 520.0   | 3.2       |
| 110°-120° | 485.1   | 3.0       |
| 120°-130° | 425.7   | 2.7       |
| 130°-140° | 342.8   | 2.1       |
| 140°-150° | 246.0   | 1.5       |
| 150°-160° | 156.4   | 1.0       |
| 160°-170° | 86.7    | 0.5       |
| 170°-180° | 27.3    | 0.2       |
| 0°-30°    | 3291.1  | 20.5      |
| 0°-40°    | 5368.4  | 33.5      |
| 0°-60°    | 9589.3  | 59.8      |
| 0°-90°    | 13219.1 | 82.4      |
| 90°-120°  | 1533.0  | 9.6       |
| 90°-150°  | 2547.6  | 15.9      |
| 90°-180°  | 2818.0  | 17.6      |
| 0°-180°   | 16037.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 4266 | 4266  | 4266 | 4266  | 4266 |      |
| 5°   | 4291 | 4282  | 4220 | 4241  | 4257 | 407  |
| 15°  | 4107 | 4082  | 4066 | 4096  | 4114 | 1156 |
| 25°  | 3713 | 3747  | 3740 | 3783  | 3803 | 1713 |
| 35°  | 3246 | 3257  | 3286 | 3382  | 3436 | 2015 |
| 45°  | 2634 | 2709  | 2790 | 2974  | 2992 | 2037 |
| 55°  | 2029 | 2094  | 2287 | 2473  | 2545 | 1805 |
| 65°  | 1380 | 1485  | 1725 | 1956  | 2013 | 1360 |
| 75°  | 728  | 895   | 1174 | 1417  | 1482 | 769  |
| 85°  | 179  | 392   | 687  | 918   | 1004 | 197  |
| 90°  | 7    | 238   | 524  | 748   | 830  | 15   |
| 95°  | 20   | 249   | 524  | 739   | 816  | 21   |
| 105° | 72   | 274   | 533  | 730   | 798  | 77   |
| 115° | 132  | 297   | 521  | 694   | 762  | 130  |
| 125° | 188  | 306   | 505  | 644   | 703  | 165  |
| 135° | 218  | 295   | 469  | 582   | 630  | 169  |
| 145° | 236  | 272   | 385  | 512   | 548  | 148  |
| 155° | 258  | 272   | 315  | 397   | 449  | 120  |
| 165° | 308  | 299   | 290  | 288   | 360  | 87   |
| 175° | 340  | 326   | 292  | 242   | 147  | 32   |
| 180° | 281  | 281   | 281  | 281   | 281  |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 4265.7 | 4265.7 | 4265.7 | 4265.7 | 4265.7 |
| 2.5°   | 4297.4 | 4263.4 | 4227.2 | 4281.6 | 4279.3 |
| 5°     | 4290.6 | 4281.6 | 4220.4 | 4240.8 | 4256.6 |
| 7.5°   | 4258.9 | 4236.2 | 4200.0 | 4249.8 | 4245.3 |
| 10°    | 4215.8 | 4188.6 | 4152.4 | 4181.8 | 4202.2 |
| 12.5°  | 4168.2 | 4145.6 | 4120.6 | 4152.4 | 4166.0 |
| 15°    | 4107.0 | 4082.1 | 4066.2 | 4095.7 | 4113.8 |
| 17.5°  | 4027.7 | 4020.9 | 4023.2 | 4025.4 | 4054.9 |
| 20°    | 3925.7 | 3930.2 | 3937.0 | 3977.8 | 3986.9 |
| 22.5°  | 3821.5 | 3846.4 | 3828.3 | 3891.7 | 3887.2 |
| 25°    | 3712.7 | 3746.7 | 3739.9 | 3782.9 | 3803.3 |
| 27.5°  | 3615.2 | 3617.5 | 3658.3 | 3719.5 | 3712.7 |
| 30°    | 3486.0 | 3524.5 | 3520.0 | 3594.8 | 3594.8 |
| 32.5°  | 3354.5 | 3411.2 | 3429.3 | 3495.1 | 3517.7 |
| 35°    | 3245.7 | 3257.1 | 3286.5 | 3381.7 | 3436.1 |
| 37.5°  | 3068.9 | 3123.3 | 3170.9 | 3295.6 | 3316.0 |
| 40°    | 2919.4 | 2973.8 | 3059.9 | 3204.9 | 3193.6 |
| 42.5°  | 2790.2 | 2846.8 | 2910.3 | 3078.0 | 3118.8 |
| 45°    | 2633.8 | 2708.6 | 2790.2 | 2973.8 | 2991.9 |
| 47.5°  | 2506.8 | 2565.8 | 2672.3 | 2840.0 | 2862.7 |
| 50°    | 2327.8 | 2423.0 | 2538.6 | 2733.5 | 2767.5 |
| 52.5°  | 2169.1 | 2250.7 | 2398.0 | 2599.8 | 2676.8 |
| 55°    | 2028.6 | 2094.3 | 2287.0 | 2472.8 | 2545.4 |
| 57.5°  | 1856.3 | 1947.0 | 2148.7 | 2355.0 | 2420.7 |
| 60°    | 1704.5 | 1792.9 | 1987.8 | 2223.5 | 2275.6 |
| 62.5°  | 1543.5 | 1647.8 | 1858.6 | 2087.5 | 2146.4 |
| 65°    | 1380.3 | 1484.6 | 1724.9 | 1956.1 | 2012.7 |
| 67.5°  | 1203.6 | 1332.7 | 1577.5 | 1817.8 | 1876.7 |
| 70°    | 1038.1 | 1178.6 | 1441.5 | 1681.8 | 1740.7 |
| 72.5°  | 888.5  | 1040.4 | 1307.8 | 1554.9 | 1618.3 |
| 75°    | 727.6  | 895.3  | 1174.1 | 1416.6 | 1482.3 |
| 77.5°  | 571.2  | 752.5  | 1035.8 | 1280.6 | 1357.7 |
| 80°    | 419.3  | 618.8  | 915.7  | 1151.4 | 1233.0 |
| 82.5°  | 294.7  | 498.6  | 804.6  | 1035.8 | 1110.6 |
| 85°    | 179.1  | 392.1  | 686.8  | 918.0  | 1004.1 |
| 87.5°  | 79.3   | 303.7  | 593.8  | 822.8  | 899.8  |
| 90°    | 6.8    | 238.0  | 523.6  | 748.0  | 829.6  |
| 92.5°  | 13.6   | 242.5  | 521.3  | 738.9  | 820.5  |
| 95°    | 20.4   | 249.3  | 523.6  | 738.9  | 816.0  |
| 97.5°  | 29.5   | 258.4  | 528.1  | 738.9  | 813.7  |
| 100°   | 43.1   | 262.9  | 530.4  | 738.9  | 813.7  |
| 102.5° | 56.7   | 269.7  | 528.1  | 727.6  | 804.6  |
| 105°   | 72.5   | 274.3  | 532.6  | 729.8  | 797.8  |
| 107.5° | 88.4   | 278.8  | 532.6  | 718.5  | 795.6  |
| 110°   | 104.3  | 285.6  | 528.1  | 711.7  | 786.5  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 117.9 | 292.4 | 525.8 | 698.1 | 770.6 |
| 115°   | 131.5 | 296.9 | 521.3 | 693.6 | 761.6 |
| 117.5° | 145.1 | 299.2 | 519.0 | 682.2 | 748.0 |
| 120°   | 156.4 | 303.7 | 514.5 | 668.6 | 741.2 |
| 122.5° | 170.0 | 306.0 | 507.7 | 655.0 | 727.6 |
| 125°   | 188.1 | 306.0 | 505.4 | 643.7 | 702.6 |
| 127.5° | 197.2 | 308.3 | 496.4 | 630.1 | 691.3 |
| 130°   | 206.3 | 301.5 | 491.8 | 614.2 | 673.2 |
| 132.5° | 213.1 | 299.2 | 480.5 | 598.4 | 650.5 |
| 135°   | 217.6 | 294.7 | 469.2 | 582.5 | 630.1 |
| 137.5° | 224.4 | 287.9 | 453.3 | 571.2 | 616.5 |
| 140°   | 228.9 | 283.3 | 430.6 | 548.5 | 593.8 |
| 142.5° | 233.5 | 276.5 | 408.0 | 528.1 | 571.2 |
| 145°   | 235.7 | 272.0 | 385.3 | 512.2 | 548.5 |
| 147.5° | 242.5 | 265.2 | 371.7 | 491.8 | 523.6 |
| 150°   | 240.3 | 260.7 | 351.3 | 466.9 | 498.6 |
| 152.5° | 247.1 | 267.5 | 333.2 | 432.9 | 478.2 |
| 155°   | 258.4 | 272.0 | 315.1 | 396.7 | 448.8 |
| 157.5° | 269.7 | 281.1 | 301.5 | 364.9 | 426.1 |
| 160°   | 285.6 | 285.6 | 285.6 | 340.0 | 408.0 |
| 162.5° | 294.7 | 294.7 | 287.9 | 310.5 | 383.1 |
| 165°   | 308.3 | 299.2 | 290.1 | 287.9 | 360.4 |
| 167.5° | 321.9 | 303.7 | 294.7 | 278.8 | 344.5 |
| 170°   | 324.1 | 310.5 | 292.4 | 262.9 | 333.2 |
| 172.5° | 333.2 | 317.3 | 290.1 | 249.3 | 258.4 |
| 175°   | 340.0 | 326.4 | 292.4 | 242.5 | 147.3 |
| 177.5° | 337.7 | 326.4 | 299.2 | 242.5 | 142.8 |
| 180°   | 281.1 | 281.1 | 281.1 | 281.1 | 281.1 |



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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 | 17.19            | 18.51 | 17.80 | 19.14 | 19.86 | 19.78          | 21.10 | 20.39 | 21.73 | 22.45 |
|                 | 3H   | 18.62            | 19.82 | 19.24 | 20.46 | 21.21 | 22.18          | 23.38 | 22.80 | 24.02 | 24.77 |
|                 | 4H   | 19.08            | 20.23 | 19.73 | 20.88 | 21.64 | 23.32          | 24.46 | 23.96 | 25.11 | 25.87 |
|                 | 6H   | 19.35            | 20.41 | 20.01 | 21.07 | 21.85 | 24.48          | 25.54 | 25.13 | 26.20 | 26.98 |
|                 | 8H   | 19.40            | 20.42 | 20.07 | 21.10 | 21.88 | 25.06          | 26.07 | 25.73 | 26.76 | 27.54 |
|                 | 12H  | 19.42            | 20.39 | 20.09 | 21.07 | 21.88 | 25.69          | 26.66 | 26.37 | 27.34 | 28.15 |
| 4H              | 2H   | 18.07            | 19.22 | 18.72 | 19.87 | 20.63 | 20.12          | 21.26 | 20.77 | 21.91 | 22.67 |
|                 | 3H   | 19.73            | 20.70 | 20.39 | 21.38 | 22.17 | 22.73          | 23.70 | 23.39 | 24.39 | 25.17 |
|                 | 4H   | 20.31            | 21.20 | 20.98 | 21.89 | 22.70 | 24.03          | 24.92 | 24.71 | 25.61 | 26.42 |
|                 | 6H   | 20.68            | 21.46 | 21.38 | 22.18 | 23.00 | 25.36          | 26.14 | 26.05 | 26.86 | 27.68 |
|                 | 8H   | 20.77            | 21.51 | 21.47 | 22.22 | 23.06 | 26.04          | 26.77 | 26.73 | 27.48 | 28.32 |
|                 | 12H  | 20.81            | 21.48 | 21.54 | 22.22 | 23.06 | 26.78          | 27.44 | 27.50 | 28.18 | 29.02 |
| 8H              | 4H   | 20.95            | 21.68 | 21.65 | 22.39 | 23.23 | 24.18          | 24.92 | 24.88 | 25.63 | 26.46 |
|                 | 6H   | 21.48            | 22.10 | 22.21 | 22.86 | 23.69 | 25.65          | 26.27 | 26.38 | 27.03 | 27.87 |
|                 | 8H   | 21.65            | 22.21 | 22.39 | 22.96 | 23.82 | 26.45          | 27.01 | 27.19 | 27.77 | 28.62 |
|                 | 12H  | 21.75            | 22.25 | 22.50 | 23.00 | 23.91 | 27.35          | 27.85 | 28.09 | 28.59 | 29.51 |
| 12H             | 4H   | 21.11            | 21.78 | 21.83 | 22.51 | 23.35 | 24.17          | 24.84 | 24.89 | 25.58 | 26.42 |
|                 | 6H   | 21.73            | 22.29 | 22.47 | 23.05 | 23.90 | 25.67          | 26.23 | 26.41 | 26.99 | 27.84 |
|                 | 8H   | 21.98            | 22.48 | 22.72 | 23.23 | 24.14 | 26.52          | 27.02 | 27.26 | 27.77 | 28.68 |