

## HEATING VENTILATING AIR CONDITIONING GUIDE 1939

TABLE 1. PROPERTIES OF AMMONIA

| SAT. TEMP.<br>F | ABS. PRESS.<br>LB PER<br>SQ IN. | VOLUME  |       | HEAT CONTENT AND ENTROPY TAKEN FROM -40 F |       |         |        |                 |         |                 |         |
|-----------------|---------------------------------|---------|-------|-------------------------------------------|-------|---------|--------|-----------------|---------|-----------------|---------|
|                 |                                 | Liquid  | Vapor | Heat Content                              |       | Entropy |        | 100 F Superheat |         | 200 F Superheat |         |
|                 |                                 |         |       | Liquid                                    | Vapor | Liquid  | Vapor  | Ht. Ct.         | Entropy | Ht. Ct.         | Entropy |
| 0               | 30.42                           | 0.02419 | 9.116 | 42.9                                      | 611.8 | 0.0975  | 1.3352 | 666.8           | 1.4439  | 720.3           | 1.5317  |
| 2               | 31.92                           | 0.02424 | 8.714 | 45.1                                      | 612.4 | 0.1022  | 1.3312 | 667.6           | 1.4400  | 721.2           | 1.5277  |
| 4               | 33.47                           | 0.02430 | 8.333 | 47.2                                      | 613.0 | 0.1069  | 1.3273 | 668.4           | 1.4360  | 722.2           | 1.5236  |
| 5               | 34.27                           | 0.02432 | 8.150 | 48.3                                      | 613.3 | 0.1092  | 1.3253 | 668.8           | 1.4340  | 722.6           | 1.5216  |
| 6               | 35.09                           | 0.02435 | 7.971 | 49.4                                      | 613.6 | 0.1115  | 1.3234 | 669.3           | 1.4321  | 723.1           | 1.5196  |
| 8               | 36.77                           | 0.02440 | 7.629 | 51.6                                      | 614.3 | 0.1162  | 1.3195 | 670.1           | 1.4281  | 724.1           | 1.5155  |
| 10              | 38.51                           | 0.02446 | 7.304 | 53.8                                      | 614.9 | 0.1208  | 1.3157 | 670.9           | 1.4242  | 725.0           | 1.5115  |
| 12              | 40.31                           | 0.02451 | 6.996 | 56.0                                      | 615.5 | 0.1254  | 1.3118 | 671.7           | 1.4205  | 725.9           | 1.5077  |
| 14              | 42.18                           | 0.02457 | 6.703 | 58.2                                      | 616.1 | 0.1300  | 1.3081 | 672.5           | 1.4168  | 726.8           | 1.5039  |
| 16              | 44.12                           | 0.02462 | 6.425 | 60.3                                      | 616.6 | 0.1346  | 1.3043 | 673.4           | 1.4130  | 727.8           | 1.5001  |
| 18              | 46.13                           | 0.02468 | 6.161 | 62.5                                      | 617.2 | 0.1392  | 1.3006 | 674.2           | 1.4093  | 728.7           | 1.4963  |
| 20              | 48.21                           | 0.02474 | 5.910 | 64.7                                      | 617.8 | 0.1437  | 1.2969 | 675.0           | 1.4056  | 729.6           | 1.4925  |
| 22              | 50.36                           | 0.02479 | 5.671 | 66.9                                      | 618.3 | 0.1483  | 1.2933 | 675.8           | 1.4021  | 730.5           | 1.4889  |
| 24              | 52.59                           | 0.02485 | 5.443 | 69.1                                      | 618.9 | 0.1528  | 1.2897 | 676.6           | 1.3985  | 731.4           | 1.4853  |
| 26              | 54.90                           | 0.02491 | 5.227 | 71.3                                      | 619.4 | 0.1573  | 1.2861 | 677.3           | 1.3950  | 732.4           | 1.4816  |
| 28              | 57.28                           | 0.02497 | 5.021 | 73.5                                      | 619.9 | 0.1618  | 1.2825 | 678.1           | 1.3914  | 733.3           | 1.4780  |
| 30              | 59.74                           | 0.02503 | 4.825 | 75.7                                      | 620.5 | 0.1663  | 1.2790 | 678.9           | 1.3879  | 734.2           | 1.4744  |
| 32              | 62.29                           | 0.02508 | 4.637 | 77.9                                      | 621.0 | 0.1708  | 1.2755 | 679.7           | 1.3846  | 735.1           | 1.4710  |
| 34              | 64.91                           | 0.02514 | 4.459 | 80.1                                      | 621.5 | 0.1753  | 1.2721 | 680.4           | 1.3812  | 736.0           | 1.4676  |
| 36              | 67.63                           | 0.02521 | 4.289 | 82.3                                      | 622.0 | 0.1797  | 1.2686 | 681.2           | 1.3779  | 736.8           | 1.4643  |
| 38              | 70.43                           | 0.02527 | 4.126 | 84.6                                      | 622.5 | 0.1841  | 1.2652 | 681.9           | 1.3745  | 737.7           | 1.4609  |
| 39              | 71.87                           | 0.02530 | 4.048 | 85.7                                      | 622.7 | 0.1863  | 1.2635 | 682.3           | 1.3729  | 738.2           | 1.4592  |
| 40              | 73.32                           | 0.02533 | 3.971 | 86.8                                      | 623.0 | 0.1885  | 1.2618 | 682.7           | 1.3712  | 738.7           | 1.4575  |
| 41              | 74.80                           | 0.02536 | 3.897 | 87.9                                      | 623.2 | 0.1908  | 1.2602 | 683.1           | 1.3696  | 739.0           | 1.4559  |
| 42              | 76.31                           | 0.02539 | 3.823 | 89.0                                      | 623.4 | 0.1930  | 1.2585 | 683.4           | 1.3680  | 739.5           | 1.4542  |
| 44              | 79.38                           | 0.02545 | 3.682 | 91.2                                      | 623.9 | 0.1974  | 1.2552 | 684.2           | 1.3648  | 740.4           | 1.4510  |
| 46              | 82.55                           | 0.02551 | 3.547 | 93.5                                      | 624.4 | 0.2018  | 1.2519 | 684.9           | 1.3616  | 741.3           | 1.4477  |
| 48              | 85.82                           | 0.02558 | 3.418 | 95.7                                      | 624.8 | 0.2062  | 1.2486 | 685.6           | 1.3584  | 742.2           | 1.4445  |
| 50              | 89.19                           | 0.02564 | 3.294 | 97.9                                      | 625.2 | 0.2105  | 1.2453 | 686.4           | 1.3552  | 743.1           | 1.4412  |
| 52              | 92.66                           | 0.02571 | 3.176 | 100.2                                     | 625.7 | 0.2149  | 1.2421 | 687.1           | 1.3521  | 744.0           | 1.4382  |
| 54              | 96.23                           | 0.02577 | 3.063 | 102.4                                     | 626.1 | 0.2192  | 1.2389 | 687.8           | 1.3491  | 744.8           | 1.4351  |
| 56              | 99.91                           | 0.02584 | 2.954 | 104.7                                     | 626.5 | 0.2236  | 1.2357 | 688.5           | 1.3460  | 745.7           | 1.4321  |
| 58              | 103.7                           | 0.02590 | 2.851 | 106.9                                     | 626.9 | 0.2279  | 1.2325 | 689.2           | 1.3430  | 746.5           | 1.4290  |
| 60              | 107.6                           | 0.02597 | 2.751 | 109.2                                     | 627.3 | 0.2322  | 1.2294 | 689.9           | 1.3399  | 747.4           | 1.4260  |
| 62              | 111.6                           | 0.02604 | 2.656 | 111.5                                     | 627.7 | 0.2365  | 1.2262 | 690.6           | 1.3370  | 748.2           | 1.4231  |
| 64              | 115.7                           | 0.02611 | 2.565 | 113.7                                     | 628.0 | 0.2408  | 1.2231 | 691.3           | 1.3341  | 749.1           | 1.4202  |
| 66              | 120.0                           | 0.02618 | 2.477 | 116.0                                     | 628.4 | 0.2451  | 1.2201 | 691.9           | 1.3312  | 749.9           | 1.4172  |
| 68              | 124.3                           | 0.02625 | 2.393 | 118.3                                     | 628.8 | 0.2494  | 1.2170 | 692.6           | 1.3283  | 750.8           | 1.4143  |
| 70              | 128.8                           | 0.02632 | 2.312 | 120.5                                     | 629.1 | 0.2537  | 1.2140 | 693.3           | 1.3254  | 751.6           | 1.4114  |
| 72              | 133.4                           | 0.02639 | 2.235 | 122.8                                     | 629.4 | 0.2579  | 1.2110 | 694.0           | 1.3226  | 752.4           | 1.4086  |
| 74              | 138.1                           | 0.02646 | 2.161 | 125.1                                     | 629.8 | 0.2622  | 1.2080 | 694.6           | 1.3199  | 753.3           | 1.4059  |
| 76              | 143.0                           | 0.02653 | 2.089 | 127.4                                     | 630.1 | 0.2664  | 1.2050 | 695.3           | 1.3171  | 754.1           | 1.4031  |
| 78              | 147.9                           | 0.02661 | 2.021 | 129.7                                     | 630.4 | 0.2706  | 1.2020 | 695.9           | 1.3144  | 755.0           | 1.4004  |
| 80              | 153.0                           | 0.02668 | 1.955 | 132.0                                     | 630.7 | 0.2749  | 1.1991 | 696.6           | 1.3116  | 755.8           | 1.3976  |
| 82              | 158.3                           | 0.02675 | 1.892 | 134.3                                     | 631.0 | 0.2791  | 1.1962 | 697.2           | 1.3089  | 756.6           | 1.3949  |
| 84              | 163.7                           | 0.02684 | 1.831 | 136.6                                     | 631.3 | 0.2833  | 1.1933 | 697.8           | 1.3063  | 757.4           | 1.3923  |
| 86              | 169.2                           | 0.02691 | 1.772 | 138.9                                     | 631.5 | 0.2875  | 1.1904 | 698.5           | 1.3040  | 758.2           | 1.3896  |
| 88              | 174.8                           | 0.02699 | 1.716 | 141.2                                     | 631.8 | 0.2917  | 1.1875 | 699.1           | 1.3010  | 759.1           | 1.3870  |
| 90              | 180.6                           | 0.02707 | 1.661 | 143.5                                     | 632.0 | 0.2958  | 1.1846 | 699.7           | 1.2983  | 759.9           | 1.3843  |
| 92              | 186.6                           | 0.02715 | 1.609 | 145.8                                     | 632.2 | 0.3000  | 1.1818 | 700.3           | 1.2957  | 760.7           | 1.3818  |
| 94              | 192.7                           | 0.02723 | 1.559 | 148.2                                     | 632.5 | 0.3041  | 1.1789 | 700.9           | 1.2932  | 761.5           | 1.3793  |
| 96              | 198.9                           | 0.02731 | 1.510 | 150.5                                     | 632.6 | 0.3083  | 1.1761 | 701.5           | 1.2906  | 762.2           | 1.3768  |
| 98              | 205.3                           | 0.02739 | 1.464 | 152.9                                     | 632.9 | 0.3125  | 1.1733 | 702.1           | 1.2881  | 763.0           | 1.3743  |
| 100             | 211.9                           | 0.02747 | 1.419 | 155.2                                     | 633.0 | 0.3166  | 1.1705 | 702.7           | 1.2855  | 763.8           | 1.3718  |
| 102             | 218.6                           | 0.02756 | 1.375 | 157.6                                     | 633.2 | 0.3207  | 1.1677 | 703.3           | 1.2830  | 764.6           | 1.3693  |
| 104             | 225.4                           | 0.02764 | 1.334 | 159.9                                     | 633.4 | 0.3248  | 1.1649 | 703.8           | 1.2805  | 765.3           | 1.3668  |
| 106             | 232.5                           | 0.02773 | 1.293 | 162.3                                     | 633.5 | 0.3289  | 1.1621 | 704.3           | 1.2780  | 766.1           | 1.3643  |
| 108             | 239.7                           | 0.02782 | 1.254 | 164.6                                     | 633.6 | 0.3330  | 1.1593 | 705.0           | 1.2755  | 766.9           | 1.3619  |
| 110             | 247.0                           | 0.02790 | 1.217 | 167.0                                     | 633.7 | 0.3372  | 1.1566 | 705.5           | 1.2731  | 767.6           | 1.3596  |
| 112             | 254.5                           | 0.02799 | 1.180 | 169.4                                     | 633.8 | 0.3413  | 1.1538 | 706.1           | 1.2708  | 768.3           | 1.3573  |
| 114             | 262.2                           | 0.02808 | 1.145 | 171.8                                     | 633.9 | 0.3453  | 1.1510 | 706.6           | 1.2684  | 769.1           | 1.3550  |
| 116             | 270.1                           | 0.02817 | 1.112 | 174.2                                     | 634.0 | 0.3495  | 1.1483 | 707.2           | 1.2661  | 769.8           | 1.3527  |
| 118             | 278.2                           | 0.02827 | 1.079 | 176.6                                     | 634.0 | 0.3535  | 1.1455 | 707.7           | 1.2636  | 770.5           | 1.3503  |
| 120             | 286.4                           | 0.02836 | 1.047 | 179.0                                     | 634.0 | 0.3576  | 1.1427 | 708.2           | 1.2612  | 771.3           | 1.3479  |
| 122             | 294.8                           | 0.02846 | 1.017 | 181.4                                     | 634.0 | 0.3618  | 1.1400 | 708.6           | 1.2587  | 772.0           | 1.3455  |
| 124             | 303.4                           | 0.02855 | 0.987 | 183.9                                     | 634.0 | 0.3659  | 1.1372 | 709.1           | 1.2563  | 772.8           | 1.3431  |
| 126             | 312.2                           | 0.02865 | 0.958 | 186.3                                     | 633.9 | 0.3700  | 1.1344 | 709.6           | 1.2538  | 773.5           | 1.3407  |
| 128             | 321.2                           | 0.02875 | 0.931 | 188.8                                     | 633.9 | 0.3741  | 1.1316 | 710.0           | 1.2513  | 774.2           | 1.3383  |

## CHAPTER 2. REFRIGERANTS AND AIR DRYING AGENTS

TABLE 2. PROPERTIES OF DICHLORODIFLUOROMETHANE (F12)

| SAT.<br>TEMP.<br>F | ABS.<br>PRESS.<br>LB PER<br>SQ IN. | VOLUME |       | HEAT CONTENT AND ENTROPY TAKEN FROM -40 F |       |         |         |                |         |                |         |
|--------------------|------------------------------------|--------|-------|-------------------------------------------|-------|---------|---------|----------------|---------|----------------|---------|
|                    |                                    |        |       | Heat Content                              |       | Entropy |         | 25 F Superheat |         | 50 F Superheat |         |
|                    |                                    | Liquid | Vapor | Liquid                                    | Vapor | Liquid  | Vapor   | Ht. Ct.        | Entropy | Ht. Ct.        | Entropy |
| 0                  | 23.87                              | 0.0110 | 1.637 | 8.25                                      | 78.21 | 0.01869 | 0.17091 | 81.71          | 0.17829 | 85.26          | 0.18547 |
| 2                  | 24.89                              | 0.0110 | 1.574 | 8.67                                      | 78.44 | 0.01961 | 0.17075 | 81.94          | 0.17812 | 85.51          | 0.18529 |
| 4                  | 25.96                              | 0.0111 | 1.514 | 9.10                                      | 78.67 | 0.02052 | 0.17060 | 82.17          | 0.17795 | 85.76          | 0.18511 |
| 5                  | 26.51                              | 0.0111 | 1.485 | 9.32                                      | 78.79 | 0.02097 | 0.17052 | 82.29          | 0.17786 | 85.89          | 0.18502 |
| 6                  | 27.05                              | 0.0111 | 1.457 | 9.53                                      | 78.90 | 0.02143 | 0.17045 | 82.41          | 0.17778 | 86.01          | 0.18494 |
| 8                  | 28.18                              | 0.0111 | 1.403 | 9.96                                      | 79.13 | 0.02235 | 0.17030 | 82.66          | 0.17763 | 86.26          | 0.18477 |
| 10                 | 29.35                              | 0.0112 | 1.351 | 10.39                                     | 79.36 | 0.02328 | 0.17015 | 82.90          | 0.17747 | 86.51          | 0.18460 |
| 12                 | 30.56                              | 0.0112 | 1.301 | 10.82                                     | 79.59 | 0.02419 | 0.17001 | 83.14          | 0.17733 | 86.76          | 0.18444 |
| 14                 | 31.80                              | 0.0112 | 1.253 | 11.26                                     | 79.82 | 0.02510 | 0.16987 | 83.38          | 0.17720 | 87.01          | 0.18429 |
| 16                 | 33.08                              | 0.0112 | 1.207 | 11.70                                     | 80.05 | 0.02601 | 0.16974 | 83.61          | 0.17706 | 87.26          | 0.18413 |
| 18                 | 34.40                              | 0.0113 | 1.163 | 12.12                                     | 80.27 | 0.02692 | 0.16961 | 83.85          | 0.17693 | 87.51          | 0.18397 |
| 20                 | 35.75                              | 0.0113 | 1.121 | 12.55                                     | 80.49 | 0.02783 | 0.16949 | 84.09          | 0.17679 | 87.76          | 0.18382 |
| 22                 | 37.15                              | 0.0113 | 1.081 | 13.00                                     | 80.72 | 0.02873 | 0.16938 | 84.32          | 0.17666 | 88.00          | 0.18369 |
| 24                 | 38.58                              | 0.0113 | 1.043 | 13.44                                     | 80.95 | 0.02963 | 0.16926 | 84.55          | 0.17652 | 88.24          | 0.18355 |
| 26                 | 40.07                              | 0.0114 | 1.007 | 13.88                                     | 81.17 | 0.03053 | 0.16913 | 84.79          | 0.17639 | 88.49          | 0.18342 |
| 28                 | 41.59                              | 0.0114 | 0.973 | 14.32                                     | 81.39 | 0.03143 | 0.16900 | 85.02          | 0.17625 | 88.73          | 0.18328 |
| 30                 | 43.16                              | 0.0115 | 0.939 | 14.76                                     | 81.61 | 0.03233 | 0.16887 | 85.25          | 0.17612 | 88.97          | 0.18315 |
| 32                 | 44.77                              | 0.0115 | 0.908 | 15.21                                     | 81.83 | 0.03323 | 0.16876 | 85.48          | 0.17600 | 89.21          | 0.18303 |
| 34                 | 46.42                              | 0.0116 | 0.879 | 15.65                                     | 82.05 | 0.03413 | 0.16865 | 85.71          | 0.17589 | 89.45          | 0.18291 |
| 36                 | 48.13                              | 0.0116 | 0.848 | 16.10                                     | 82.27 | 0.03502 | 0.16854 | 85.95          | 0.17577 | 89.68          | 0.18280 |
| 38                 | 49.88                              | 0.0116 | 0.819 | 16.55                                     | 82.49 | 0.03591 | 0.16843 | 86.18          | 0.17566 | 89.92          | 0.18268 |
| 39                 | 50.78                              | 0.0116 | 0.806 | 16.77                                     | 82.60 | 0.03635 | 0.16838 | 86.29          | 0.17560 | 90.04          | 0.18262 |
| 40                 | 51.68                              | 0.0116 | 0.792 | 17.02                                     | 82.71 | 0.03680 | 0.16833 | 86.41          | 0.17554 | 90.16          | 0.18256 |
| 41                 | 52.70                              | 0.0116 | 0.779 | 17.23                                     | 82.82 | 0.03722 | 0.16828 | 86.52          | 0.17549 | 90.28          | 0.18251 |
| 42                 | 53.51                              | 0.0116 | 0.767 | 17.46                                     | 82.93 | 0.03770 | 0.16823 | 86.64          | 0.17544 | 90.40          | 0.18245 |
| 44                 | 55.40                              | 0.0117 | 0.742 | 17.91                                     | 83.15 | 0.03859 | 0.16813 | 86.86          | 0.17534 | 90.65          | 0.18235 |
| 46                 | 57.35                              | 0.0117 | 0.718 | 18.36                                     | 83.36 | 0.03948 | 0.16803 | 87.09          | 0.17525 | 90.89          | 0.18224 |
| 48                 | 59.35                              | 0.0117 | 0.695 | 18.82                                     | 83.57 | 0.04037 | 0.16794 | 87.31          | 0.17515 | 91.14          | 0.18214 |
| 50                 | 61.39                              | 0.0118 | 0.673 | 19.27                                     | 83.78 | 0.04126 | 0.16785 | 87.54          | 0.17505 | 91.38          | 0.18203 |
| 52                 | 63.49                              | 0.0118 | 0.652 | 19.72                                     | 83.99 | 0.04215 | 0.16776 | 87.76          | 0.17496 | 91.61          | 0.18193 |
| 54                 | 65.63                              | 0.0118 | 0.632 | 20.18                                     | 84.20 | 0.04304 | 0.16767 | 87.98          | 0.17486 | 91.83          | 0.18184 |
| 56                 | 67.84                              | 0.0119 | 0.612 | 20.64                                     | 84.41 | 0.04392 | 0.16758 | 88.20          | 0.17477 | 92.06          | 0.18174 |
| 58                 | 70.10                              | 0.0119 | 0.593 | 21.11                                     | 84.62 | 0.04480 | 0.16749 | 88.42          | 0.17467 | 92.28          | 0.18165 |
| 60                 | 72.41                              | 0.0119 | 0.575 | 21.57                                     | 84.82 | 0.04568 | 0.16741 | 88.64          | 0.17458 | 92.51          | 0.18155 |
| 62                 | 74.77                              | 0.0120 | 0.557 | 22.03                                     | 85.02 | 0.04657 | 0.16733 | 88.86          | 0.17450 | 92.74          | 0.18147 |
| 64                 | 77.20                              | 0.0120 | 0.540 | 22.49                                     | 85.22 | 0.04745 | 0.16725 | 89.07          | 0.17442 | 92.97          | 0.18139 |
| 66                 | 79.67                              | 0.0120 | 0.524 | 22.95                                     | 85.42 | 0.04833 | 0.16717 | 89.29          | 0.17433 | 93.20          | 0.18130 |
| 68                 | 82.24                              | 0.0121 | 0.508 | 23.42                                     | 85.62 | 0.04921 | 0.16709 | 89.50          | 0.17425 | 93.43          | 0.18122 |
| 70                 | 84.82                              | 0.0121 | 0.493 | 23.90                                     | 85.82 | 0.05009 | 0.16701 | 89.72          | 0.17417 | 93.66          | 0.18114 |
| 72                 | 87.50                              | 0.0121 | 0.479 | 24.37                                     | 86.02 | 0.05097 | 0.16693 | 89.93          | 0.17409 | 93.99          | 0.18106 |
| 74                 | 90.20                              | 0.0122 | 0.464 | 24.84                                     | 86.22 | 0.05185 | 0.16685 | 90.14          | 0.17402 | 94.12          | 0.18098 |
| 76                 | 93.00                              | 0.0122 | 0.451 | 25.32                                     | 86.42 | 0.05272 | 0.16677 | 90.36          | 0.17394 | 94.34          | 0.18091 |
| 78                 | 95.85                              | 0.0123 | 0.438 | 25.80                                     | 86.61 | 0.05359 | 0.16669 | 90.57          | 0.17387 | 94.57          | 0.18083 |
| 80                 | 98.76                              | 0.0123 | 0.425 | 26.28                                     | 86.80 | 0.05446 | 0.16662 | 90.78          | 0.17379 | 94.80          | 0.18075 |
| 82                 | 101.70                             | 0.0123 | 0.413 | 26.76                                     | 86.99 | 0.05534 | 0.16655 | 90.98          | 0.17372 | 95.01          | 0.18068 |
| 84                 | 104.8                              | 0.0124 | 0.401 | 27.24                                     | 87.18 | 0.05621 | 0.16648 | 91.18          | 0.17365 | 95.22          | 0.18061 |
| 86                 | 107.9                              | 0.0124 | 0.389 | 27.72                                     | 87.37 | 0.05708 | 0.16640 | 91.37          | 0.17358 | 95.44          | 0.18054 |
| 88                 | 111.1                              | 0.0124 | 0.378 | 28.21                                     | 87.56 | 0.05795 | 0.16632 | 91.57          | 0.17351 | 95.65          | 0.18047 |
| 90                 | 114.3                              | 0.0125 | 0.368 | 28.70                                     | 87.74 | 0.05882 | 0.16624 | 91.77          | 0.17344 | 95.86          | 0.18040 |
| 92                 | 117.7                              | 0.0125 | 0.357 | 29.19                                     | 87.92 | 0.05969 | 0.16616 | 91.97          | 0.17337 | 96.07          | 0.18033 |
| 94                 | 121.0                              | 0.0126 | 0.347 | 29.68                                     | 88.10 | 0.06056 | 0.16608 | 92.16          | 0.17330 | 96.28          | 0.18026 |
| 96                 | 124.5                              | 0.0126 | 0.338 | 30.18                                     | 88.28 | 0.06143 | 0.16600 | 92.36          | 0.17322 | 96.50          | 0.18018 |
| 98                 | 128.0                              | 0.0126 | 0.328 | 30.67                                     | 88.45 | 0.06230 | 0.16592 | 92.55          | 0.17315 | 96.71          | 0.18011 |
| 100                | 131.6                              | 0.0127 | 0.319 | 31.16                                     | 88.62 | 0.06316 | 0.16584 | 92.75          | 0.17308 | 96.92          | 0.18004 |
| 102                | 135.3                              | 0.0127 | 0.310 | 31.65                                     | 88.79 | 0.06403 | 0.16576 | 92.93          | 0.17301 | 97.12          | 0.17998 |
| 104                | 139.0                              | 0.0128 | 0.302 | 32.15                                     | 88.95 | 0.06490 | 0.16568 | 93.11          | 0.17294 | 97.32          | 0.17993 |
| 106                | 142.8                              | 0.0128 | 0.293 | 32.65                                     | 89.11 | 0.06577 | 0.16560 | 93.30          | 0.17288 | 97.53          | 0.17987 |
| 108                | 146.8                              | 0.0129 | 0.285 | 33.15                                     | 89.27 | 0.06663 | 0.16551 | 93.48          | 0.17281 | 97.73          | 0.17982 |
| 110                | 150.7                              | 0.0129 | 0.277 | 33.65                                     | 89.43 | 0.06749 | 0.16542 | 93.66          | 0.17274 | 97.93          | 0.17976 |
| 112                | 154.8                              | 0.0130 | 0.269 | 34.15                                     | 89.58 | 0.06836 | 0.16533 | 93.82          | 0.17266 | 98.11          | 0.17969 |
| 114                | 158.9                              | 0.0130 | 0.262 | 34.65                                     | 89.73 | 0.06922 | 0.16524 | 93.98          | 0.17258 | 98.29          | 0.17961 |
| 116                | 163.1                              | 0.0131 | 0.254 | 35.15                                     | 89.87 | 0.07008 | 0.16515 | 94.15          | 0.17249 | 98.48          | 0.17954 |
| 118                | 167.4                              | 0.0131 | 0.247 | 35.65                                     | 89.99 | 0.07094 | 0.16506 | 94.31          | 0.17241 | 98.66          | 0.17946 |
| 120                | 171.8                              | 0.0132 | 0.240 | 36.16                                     | 90.15 | 0.07180 | 0.16495 | 94.47          | 0.17233 | 98.84          | 0.17939 |
| 122                | 176.2                              | 0.0132 | 0.233 | 36.66                                     | 90.28 | 0.07266 | 0.16484 | 94.63          | 0.17224 | 99.01          | 0.17931 |
| 124                | 180.8                              | 0.0133 | 0.227 | 37.16                                     | 90.40 | 0.07352 | 0.16473 | 94.78          | 0.17215 | 99.18          | 0.17922 |
| 126                | 185.4                              | 0.0133 | 0.220 | 37.67                                     | 90.52 | 0.07437 | 0.16462 | 94.94          | 0.17206 | 99.35          | 0.17914 |
| 128                | 190.1                              | 0.0134 | 0.214 | 38.18                                     | 90.64 | 0.07523 | 0.16450 | 95.09          | 0.17196 | 99.53          | 0.17906 |
| 130                | 194.9                              | 0.0134 | 0.208 | 38.69                                     | 90.76 | 0.07607 | 0.16438 | 95.25          | 0.17186 | 99.70          | 0.17897 |
| 132                | 199.8                              | 0.0135 | 0.202 | 39.19                                     | 90.86 | 0.07691 | 0.16425 | 95.41          | 0.17176 | 99.87          | 0.17889 |
| 134                | 204.8                              | 0.0136 | 0.196 | 39.70                                     | 90.96 | 0.07775 | 0.16411 | 95.56          | 0.17166 | 100.04         | 0.17881 |
| 136                | 209.9                              | 0.0136 | 0.191 | 40.21                                     | 91.06 | 0.07858 | 0.16396 | 95.72          | 0.17156 | 100.22         | 0.17873 |
| 138                | 215.0                              | 0.0137 | 0.185 | 40.72                                     | 91.15 | 0.07941 | 0.16380 | 95.87          | 0.17145 | 100.39         | 0.17864 |
| 140                | 220.2                              | 0.0138 | 0.180 | 41.24                                     | 91.24 | 0.08024 | 0.16363 | 96.03          | 0.17134 | 100.56         | 0.17856 |