# Updated yolo\_v9 Metrics

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| epoch | time | train/box\_loss | train/cls\_loss | train/dfl\_loss | Precision | Recall | mAP@50 | mAP@50-95 | val/box\_loss | val/cls\_loss | val/dfl\_loss | lr/pg0 | lr/pg1 | lr/pg2 | Accuracy |
| 1.00000 | 50.10770 | 2.20483 | 3.16766 | 1.91747 | 0.70000 | 0.73614 | 0.70348 | 0.70208 | 2.54164 | 6.21128 | 2.11617 | 0.00055 | 0.00055 | 0.00055 | 0.70502 |
| 2.00000 | 80.29770 | 1.94472 | 1.83912 | 1.66067 | 0.70240 | 0.70672 | 0.70000 | 0.70000 | 2.76642 | 4.44818 | 2.39058 | 0.00109 | 0.00109 | 0.00109 | 0.70000 |
| 3.00000 | 110.51800 | 1.96165 | 1.82751 | 1.66301 | 0.85000 | 0.70000 | 0.70640 | 0.70179 | 2.71870 | 5.84074 | 2.35586 | 0.00162 | 0.00162 | 0.00162 | 0.77300 |
| 4.00000 | 141.56400 | 1.91110 | 1.76173 | 1.60531 | 0.71888 | 0.70992 | 0.74880 | 0.73596 | 2.60515 | 3.19080 | 2.31295 | 0.00162 | 0.00162 | 0.00162 | 0.72149 |
| 5.00000 | 171.60100 | 1.88488 | 1.66675 | 1.60414 | 0.72657 | 0.73287 | 0.75192 | 0.75018 | 2.54277 | 3.05902 | 2.15757 | 0.00160 | 0.00160 | 0.00160 | 0.74119 |
| 6.00000 | 200.81400 | 1.85750 | 1.65599 | 1.57970 | 0.73704 | 0.75420 | 0.78515 | 0.76272 | 2.52977 | 2.47280 | 2.06245 | 0.00158 | 0.00158 | 0.00158 | 0.76310 |
| 7.00000 | 234.12800 | 1.81646 | 1.61259 | 1.55370 | 0.73865 | 0.74606 | 0.80693 | 0.78417 | 2.40306 | 2.42607 | 2.00786 | 0.00157 | 0.00157 | 0.00157 | 0.76070 |
| 8.00000 | 265.31100 | 1.80740 | 1.58265 | 1.53913 | 0.74228 | 0.73006 | 0.80958 | 0.79527 | 2.46128 | 2.24745 | 1.99250 | 0.00155 | 0.00155 | 0.00155 | 0.75507 |
| 9.00000 | 294.70200 | 1.80550 | 1.55705 | 1.53388 | 0.82915 | 0.78048 | 0.82715 | 0.80716 | 2.30165 | 2.15366 | 1.90389 | 0.00153 | 0.00153 | 0.00153 | 0.85000 |
| 10.00000 | 324.26900 | 1.77946 | 1.54182 | 1.53012 | 0.73669 | 0.75038 | 0.80825 | 0.80164 | 2.37659 | 2.28782 | 1.97657 | 0.00152 | 0.00152 | 0.00152 | 0.76085 |
| 11.00000 | 355.69300 | 1.76710 | 1.46179 | 1.51727 | 0.75760 | 0.78870 | 0.81730 | 0.77875 | 2.40944 | 2.17310 | 1.97732 | 0.00150 | 0.00150 | 0.00150 | 0.80243 |
| 12.00000 | 385.64300 | 1.75124 | 1.49034 | 1.54294 | 0.76128 | 0.79008 | 0.82656 | 0.79994 | 2.42084 | 2.29409 | 1.98848 | 0.00149 | 0.00149 | 0.00149 | 0.80694 |
| 13.00000 | 417.38000 | 1.73704 | 1.44656 | 1.51270 | 0.75991 | 0.82124 | 0.83305 | 0.80688 | 2.39776 | 2.15991 | 1.98029 | 0.00147 | 0.00147 | 0.00147 | 0.82057 |
| 14.00000 | 448.09600 | 1.74847 | 1.44614 | 1.51484 | 0.76626 | 0.75735 | 0.81047 | 0.78910 | 2.45424 | 2.55110 | 1.98282 | 0.00145 | 0.00145 | 0.00145 | 0.79218 |
| 15.00000 | 478.31500 | 1.74541 | 1.42844 | 1.51259 | 0.75940 | 0.77595 | 0.81953 | 0.80744 | 2.41703 | 2.17410 | 1.99978 | 0.00144 | 0.00144 | 0.00144 | 0.79743 |
| 16.00000 | 506.92400 | 1.72935 | 1.40307 | 1.48244 | 0.78030 | 0.79780 | 0.83596 | 0.83248 | 2.29867 | 2.40313 | 1.93926 | 0.00142 | 0.00142 | 0.00142 | 0.82929 |
| 17.00000 | 538.27500 | 1.71025 | 1.39048 | 1.50096 | 0.77040 | 0.80073 | 0.83635 | 0.81114 | 2.38080 | 2.38071 | 1.95150 | 0.00140 | 0.00140 | 0.00140 | 0.82177 |
| 18.00000 | 568.94600 | 1.69430 | 1.34792 | 1.46814 | 0.75618 | 0.82355 | 0.82823 | 0.79664 | 2.48017 | 2.12206 | 1.97404 | 0.00139 | 0.00139 | 0.00139 | 0.81703 |
| 19.00000 | 598.92100 | 1.70094 | 1.33611 | 1.47230 | 0.81979 | 0.76402 | 0.82643 | 0.81105 | 2.35368 | 2.18119 | 1.99784 | 0.00137 | 0.00137 | 0.00137 | 0.83093 |
| 20.00000 | 630.17400 | 1.69390 | 1.35563 | 1.49838 | 0.74842 | 0.77073 | 0.81188 | 0.79058 | 2.46830 | 2.27557 | 2.03788 | 0.00135 | 0.00135 | 0.00135 | 0.78360 |
| 21.00000 | 659.81100 | 1.68991 | 1.37086 | 1.47900 | 0.75432 | 0.78026 | 0.82426 | 0.78279 | 2.51026 | 1.93418 | 2.03569 | 0.00134 | 0.00134 | 0.00134 | 0.79467 |
| 22.00000 | 688.37300 | 1.69489 | 1.30802 | 1.45573 | 0.75894 | 0.78230 | 0.83359 | 0.81432 | 2.35659 | 2.03482 | 1.96377 | 0.00132 | 0.00132 | 0.00132 | 0.80045 |
| 23.00000 | 719.56500 | 1.64935 | 1.28965 | 1.44133 | 0.76220 | 0.82843 | 0.84362 | 0.81485 | 2.36481 | 1.98264 | 1.96276 | 0.00130 | 0.00130 | 0.00130 | 0.82650 |
| 24.00000 | 749.88700 | 1.64747 | 1.23862 | 1.44204 | 0.76037 | 0.78985 | 0.82845 | 0.80656 | 2.26862 | 2.13819 | 1.91881 | 0.00129 | 0.00129 | 0.00129 | 0.80590 |
| 25.00000 | 781.53200 | 1.65736 | 1.23797 | 1.45391 | 0.75674 | 0.81779 | 0.84162 | 0.82860 | 2.23035 | 1.87008 | 1.85778 | 0.00127 | 0.00127 | 0.00127 | 0.81523 |
| 26.00000 | 812.18800 | 1.66499 | 1.27090 | 1.45489 | 0.76550 | 0.78377 | 0.83249 | 0.81991 | 2.32920 | 2.11983 | 1.93257 | 0.00125 | 0.00125 | 0.00125 | 0.80763 |
| 27.00000 | 842.62100 | 1.64782 | 1.26767 | 1.44268 | 0.75640 | 0.80257 | 0.83354 | 0.82008 | 2.32744 | 2.04863 | 1.95865 | 0.00124 | 0.00124 | 0.00124 | 0.80792 |
| 28.00000 | 871.70400 | 1.61672 | 1.22463 | 1.42275 | 0.75626 | 0.81295 | 0.84260 | 0.83902 | 2.25588 | 1.95414 | 1.85994 | 0.00122 | 0.00122 | 0.00122 | 0.81252 |
| 29.00000 | 901.31500 | 1.62003 | 1.22643 | 1.42140 | 0.75743 | 0.80015 | 0.82445 | 0.77907 | 2.52758 | 1.98462 | 2.11465 | 0.00120 | 0.00120 | 0.00120 | 0.80793 |
| 30.00000 | 932.34000 | 1.62543 | 1.23842 | 1.43708 | 0.74503 | 0.83817 | 0.82588 | 0.80393 | 2.42492 | 2.01444 | 2.02427 | 0.00119 | 0.00119 | 0.00119 | 0.80751 |
| 31.00000 | 966.47600 | 1.62094 | 1.20496 | 1.41326 | 0.75870 | 0.82121 | 0.84465 | 0.81513 | 2.45660 | 2.00132 | 2.02065 | 0.00117 | 0.00117 | 0.00117 | 0.81911 |
| 32.00000 | 994.46200 | 1.60039 | 1.16846 | 1.39979 | 0.75322 | 0.82788 | 0.84549 | 0.84606 | 2.22363 | 2.03962 | 1.84851 | 0.00116 | 0.00116 | 0.00116 | 0.81504 |
| 33.00000 | 1024.32000 | 1.58795 | 1.13557 | 1.39526 | 0.79302 | 0.79157 | 0.84782 | 0.84372 | 2.27072 | 2.05083 | 1.92091 | 0.00114 | 0.00114 | 0.00114 | 0.83571 |
| 34.00000 | 1055.09000 | 1.56147 | 1.14022 | 1.39274 | 0.74798 | 0.84971 | 0.84422 | 0.83486 | 2.31982 | 2.15874 | 1.92378 | 0.00112 | 0.00112 | 0.00112 | 0.81578 |
| 35.00000 | 1083.79000 | 1.56174 | 1.14134 | 1.40581 | 0.77345 | 0.80818 | 0.84089 | 0.81956 | 2.41196 | 2.07376 | 2.00521 | 0.00111 | 0.00111 | 0.00111 | 0.82883 |
| 36.00000 | 1113.51000 | 1.56851 | 1.14458 | 1.39392 | 0.77008 | 0.79755 | 0.83559 | 0.82209 | 2.36688 | 2.12806 | 1.95869 | 0.00109 | 0.00109 | 0.00109 | 0.81971 |
| 37.00000 | 1145.53000 | 1.53741 | 1.11637 | 1.36496 | 0.76285 | 0.79824 | 0.83443 | 0.80314 | 2.45097 | 2.10579 | 2.03844 | 0.00107 | 0.00107 | 0.00107 | 0.81282 |
| 38.00000 | 1176.05000 | 1.53462 | 1.10110 | 1.37540 | 0.75294 | 0.80788 | 0.82920 | 0.81705 | 2.40332 | 2.52213 | 2.02883 | 0.00106 | 0.00106 | 0.00106 | 0.80629 |
| 39.00000 | 1205.31000 | 1.52899 | 1.09858 | 1.36746 | 0.77093 | 0.80993 | 0.82815 | 0.82452 | 2.28381 | 2.29156 | 1.91074 | 0.00104 | 0.00104 | 0.00104 | 0.82723 |
| 40.00000 | 1236.49000 | 1.53121 | 1.10667 | 1.38549 | 0.75173 | 0.80523 | 0.82023 | 0.79660 | 2.42644 | 2.12619 | 2.06731 | 0.00102 | 0.00102 | 0.00102 | 0.80366 |
| 41.00000 | 1265.50000 | 1.50328 | 1.08818 | 1.37691 | 0.76891 | 0.80867 | 0.83206 | 0.80669 | 2.43579 | 2.12886 | 2.02675 | 0.00101 | 0.00101 | 0.00101 | 0.82450 |
| 42.00000 | 1294.20000 | 1.50593 | 1.07696 | 1.35176 | 0.76652 | 0.79566 | 0.84344 | 0.84054 | 2.28846 | 2.28220 | 1.92691 | 0.00099 | 0.00099 | 0.00099 | 0.81519 |
| 43.00000 | 1324.58000 | 1.49353 | 1.04200 | 1.34752 | 0.75461 | 0.79748 | 0.82789 | 0.83311 | 2.25094 | 2.24095 | 1.96702 | 0.00097 | 0.00097 | 0.00097 | 0.80349 |
| 44.00000 | 1358.04000 | 1.48453 | 1.04250 | 1.34088 | 0.76164 | 0.81701 | 0.84403 | 0.82582 | 2.36661 | 2.18438 | 2.01731 | 0.00096 | 0.00096 | 0.00096 | 0.82067 |
| 45.00000 | 1386.63000 | 1.47582 | 1.03103 | 1.33572 | 0.75955 | 0.80590 | 0.83656 | 0.81690 | 2.36020 | 2.11701 | 2.02347 | 0.00094 | 0.00094 | 0.00094 | 0.81306 |
| 46.00000 | 1416.44000 | 1.50354 | 1.04105 | 1.35980 | 0.75860 | 0.80386 | 0.83556 | 0.82918 | 2.29060 | 2.08374 | 1.97535 | 0.00092 | 0.00092 | 0.00092 | 0.81102 |
| 47.00000 | 1446.89000 | 1.46764 | 1.02181 | 1.32405 | 0.77035 | 0.78707 | 0.82952 | 0.83146 | 2.29059 | 2.09202 | 1.93661 | 0.00091 | 0.00091 | 0.00091 | 0.81402 |
| 48.00000 | 1474.80000 | 1.46033 | 0.99396 | 1.33867 | 0.74863 | 0.85000 | 0.83982 | 0.82252 | 2.37341 | 2.20605 | 1.96697 | 0.00089 | 0.00089 | 0.00089 | 0.81684 |
| 49.00000 | 1505.88000 | 1.44440 | 0.99492 | 1.31888 | 0.75494 | 0.80518 | 0.83153 | 0.82815 | 2.37343 | 2.16884 | 2.00926 | 0.00087 | 0.00087 | 0.00087 | 0.80745 |
| 50.00000 | 1537.06000 | 1.43191 | 0.98109 | 1.30615 | 0.76480 | 0.82555 | 0.83675 | 0.82922 | 2.40228 | 2.05928 | 2.06187 | 0.00086 | 0.00086 | 0.00086 | 0.82827 |
| 51.00000 | 1566.57000 | 1.45590 | 1.01992 | 1.33454 | 0.76343 | 0.80788 | 0.83970 | 0.83982 | 2.35204 | 2.48643 | 1.97458 | 0.00084 | 0.00084 | 0.00084 | 0.81829 |
| 52.00000 | 1596.75000 | 1.42223 | 0.97340 | 1.29902 | 0.80474 | 0.79485 | 0.84329 | 0.83357 | 2.30587 | 2.14945 | 1.97608 | 0.00083 | 0.00083 | 0.00083 | 0.84651 |
| 53.00000 | 1623.71000 | 1.41784 | 0.97073 | 1.29128 | 0.77695 | 0.79846 | 0.83818 | 0.83360 | 2.37049 | 2.12120 | 2.01227 | 0.00081 | 0.00081 | 0.00081 | 0.82669 |
| 54.00000 | 1653.77000 | 1.41535 | 0.96663 | 1.29734 | 0.78038 | 0.77723 | 0.83710 | 0.83401 | 2.38824 | 2.19152 | 2.07532 | 0.00079 | 0.00079 | 0.00079 | 0.81638 |
| 55.00000 | 1683.69000 | 1.39272 | 0.94434 | 1.28617 | 0.77889 | 0.80249 | 0.84744 | 0.83618 | 2.32019 | 2.26296 | 1.97827 | 0.00078 | 0.00078 | 0.00078 | 0.83081 |
| 56.00000 | 1716.64000 | 1.38717 | 0.94164 | 1.28285 | 0.77401 | 0.79795 | 0.83266 | 0.81613 | 2.37543 | 2.35192 | 2.02887 | 0.00076 | 0.00076 | 0.00076 | 0.82368 |
| 57.00000 | 1744.57000 | 1.40110 | 0.95332 | 1.28133 | 0.76474 | 0.79878 | 0.83087 | 0.81652 | 2.40183 | 2.25272 | 2.02775 | 0.00074 | 0.00074 | 0.00074 | 0.81505 |
| 58.00000 | 1775.23000 | 1.36509 | 0.92427 | 1.27529 | 0.77430 | 0.80784 | 0.84325 | 0.83755 | 2.32107 | 2.35916 | 2.00370 | 0.00073 | 0.00073 | 0.00073 | 0.82948 |
| 59.00000 | 1804.14000 | 1.34807 | 0.89935 | 1.27162 | 0.79653 | 0.78037 | 0.85000 | 0.85000 | 2.30152 | 2.17355 | 1.94927 | 0.00071 | 0.00071 | 0.00071 | 0.83038 |
| 60.00000 | 1832.52000 | 1.33336 | 0.87640 | 1.25618 | 0.76808 | 0.79115 | 0.83438 | 0.82353 | 2.44001 | 2.31143 | 2.05782 | 0.00069 | 0.00069 | 0.00069 | 0.81423 |
| 61.00000 | 1862.49000 | 1.33550 | 0.89012 | 1.24716 | 0.75672 | 0.83111 | 0.84100 | 0.84745 | 2.31475 | 2.18694 | 2.00294 | 0.00068 | 0.00068 | 0.00068 | 0.82086 |
| 62.00000 | 1891.11000 | 1.33565 | 0.89174 | 1.25298 | 0.76872 | 0.78535 | 0.83262 | 0.82889 | 2.34857 | 2.33852 | 1.99385 | 0.00066 | 0.00066 | 0.00066 | 0.81152 |
| 63.00000 | 1922.45000 | 1.31760 | 0.87031 | 1.24018 | 0.78215 | 0.80788 | 0.84358 | 0.84467 | 2.35455 | 2.14190 | 2.02827 | 0.00064 | 0.00064 | 0.00064 | 0.83692 |
| 64.00000 | 1952.89000 | 1.32783 | 0.87405 | 1.24413 | 0.76561 | 0.81066 | 0.83529 | 0.84282 | 2.31838 | 2.33936 | 1.96520 | 0.00063 | 0.00063 | 0.00063 | 0.82203 |
| 65.00000 | 1980.40000 | 1.32268 | 0.86414 | 1.24527 | 0.76281 | 0.78394 | 0.80845 | 0.80374 | 2.41745 | 2.36198 | 2.09028 | 0.00061 | 0.00061 | 0.00061 | 0.80515 |
| 66.00000 | 2009.74000 | 1.31484 | 0.85217 | 1.24540 | 0.77239 | 0.77863 | 0.82167 | 0.81429 | 2.42370 | 2.44960 | 2.07934 | 0.00059 | 0.00059 | 0.00059 | 0.81075 |
| 67.00000 | 2040.35000 | 1.31108 | 0.86134 | 1.24129 | 0.76867 | 0.80651 | 0.82912 | 0.82913 | 2.38941 | 2.40351 | 2.06704 | 0.00058 | 0.00058 | 0.00058 | 0.82313 |
| 68.00000 | 2067.47000 | 1.27674 | 0.84926 | 1.23449 | 0.77069 | 0.78694 | 0.83578 | 0.82264 | 2.39160 | 2.35885 | 2.07264 | 0.00056 | 0.00056 | 0.00056 | 0.81425 |
| 69.00000 | 2101.19000 | 1.28625 | 0.84890 | 1.23150 | 0.75999 | 0.79599 | 0.82533 | 0.82837 | 2.33350 | 2.34358 | 2.03633 | 0.00054 | 0.00054 | 0.00054 | 0.80866 |
| 70.00000 | 2131.79000 | 1.24608 | 0.79037 | 1.20833 | 0.74957 | 0.82107 | 0.82909 | 0.83447 | 2.39904 | 2.24723 | 2.09944 | 0.00053 | 0.00053 | 0.00053 | 0.80754 |
| 71.00000 | 2159.50000 | 1.24906 | 0.80212 | 1.20161 | 0.75487 | 0.80635 | 0.82030 | 0.81825 | 2.42462 | 2.37382 | 2.13120 | 0.00051 | 0.00051 | 0.00051 | 0.80790 |
| 72.00000 | 2188.76000 | 1.26981 | 0.81727 | 1.20777 | 0.77093 | 0.79064 | 0.83085 | 0.82534 | 2.39639 | 2.52020 | 2.06545 | 0.00050 | 0.00050 | 0.00050 | 0.81662 |
| 73.00000 | 2218.80000 | 1.25163 | 0.81073 | 1.20436 | 0.76629 | 0.78889 | 0.81528 | 0.80307 | 2.43746 | 2.48180 | 2.15325 | 0.00048 | 0.00048 | 0.00048 | 0.81126 |
| 74.00000 | 2245.67000 | 1.23232 | 0.78537 | 1.19505 | 0.78502 | 0.78448 | 0.83155 | 0.82645 | 2.36458 | 2.41627 | 2.08412 | 0.00046 | 0.00046 | 0.00046 | 0.82481 |
| 75.00000 | 2278.59000 | 1.22356 | 0.78302 | 1.19305 | 0.76812 | 0.80813 | 0.83045 | 0.84243 | 2.33239 | 2.50194 | 1.99866 | 0.00045 | 0.00045 | 0.00045 | 0.82340 |
| 76.00000 | 2309.45000 | 1.23643 | 0.77824 | 1.19364 | 0.75905 | 0.79664 | 0.81407 | 0.81201 | 2.41981 | 2.64258 | 2.14662 | 0.00043 | 0.00043 | 0.00043 | 0.80799 |
| 77.00000 | 2337.41000 | 1.22186 | 0.76768 | 1.17526 | 0.76754 | 0.80872 | 0.83586 | 0.83538 | 2.37871 | 2.45799 | 2.10733 | 0.00041 | 0.00041 | 0.00041 | 0.82310 |
| 78.00000 | 2366.82000 | 1.21292 | 0.76348 | 1.16441 | 0.75871 | 0.78970 | 0.81981 | 0.82284 | 2.41670 | 2.53520 | 2.09680 | 0.00040 | 0.00040 | 0.00040 | 0.80411 |
| 79.00000 | 2396.90000 | 1.19810 | 0.76338 | 1.17818 | 0.77893 | 0.78865 | 0.83399 | 0.82945 | 2.40878 | 2.69574 | 2.13847 | 0.00038 | 0.00038 | 0.00038 | 0.82252 |
| 80.00000 | 2424.33000 | 1.18199 | 0.74140 | 1.16436 | 0.77867 | 0.78210 | 0.82662 | 0.81338 | 2.39111 | 2.72285 | 2.10573 | 0.00036 | 0.00036 | 0.00036 | 0.81817 |
| 81.00000 | 2454.31000 | 1.19346 | 0.74195 | 1.16559 | 0.75904 | 0.81199 | 0.83456 | 0.84022 | 2.32108 | 2.56531 | 2.06055 | 0.00035 | 0.00035 | 0.00035 | 0.81534 |
| 82.00000 | 2487.78000 | 1.19044 | 0.74204 | 1.15675 | 0.77415 | 0.79261 | 0.83637 | 0.82844 | 2.40992 | 2.56927 | 2.16164 | 0.00033 | 0.00033 | 0.00033 | 0.82071 |
| 83.00000 | 2515.52000 | 1.18272 | 0.74819 | 1.15990 | 0.76079 | 0.80373 | 0.82519 | 0.83655 | 2.33374 | 2.49953 | 2.10692 | 0.00031 | 0.00031 | 0.00031 | 0.81337 |
| 84.00000 | 2546.11000 | 1.15671 | 0.73381 | 1.15736 | 0.76242 | 0.80825 | 0.82398 | 0.82295 | 2.38443 | 2.54204 | 2.12137 | 0.00030 | 0.00030 | 0.00030 | 0.81737 |
| 85.00000 | 2574.83000 | 1.16942 | 0.74030 | 1.16120 | 0.76625 | 0.78471 | 0.82366 | 0.83367 | 2.34296 | 2.58566 | 2.07285 | 0.00028 | 0.00028 | 0.00028 | 0.80886 |
| 86.00000 | 2603.47000 | 1.16972 | 0.71829 | 1.14690 | 0.75942 | 0.79137 | 0.82076 | 0.82781 | 2.38314 | 2.64565 | 2.09846 | 0.00026 | 0.00026 | 0.00026 | 0.80571 |
| 87.00000 | 2633.89000 | 1.15655 | 0.71114 | 1.14673 | 0.75822 | 0.78932 | 0.82137 | 0.82733 | 2.40976 | 2.54062 | 2.14241 | 0.00025 | 0.00025 | 0.00025 | 0.80340 |
| 88.00000 | 2662.20000 | 1.14530 | 0.72347 | 1.15199 | 0.77480 | 0.78780 | 0.82807 | 0.82491 | 2.37762 | 2.47220 | 2.17729 | 0.00023 | 0.00023 | 0.00023 | 0.81843 |
| 89.00000 | 2693.26000 | 1.10781 | 0.69591 | 1.12506 | 0.76050 | 0.79019 | 0.82039 | 0.82919 | 2.36510 | 2.49042 | 2.12815 | 0.00021 | 0.00021 | 0.00021 | 0.80621 |
| 90.00000 | 2723.05000 | 1.13719 | 0.71534 | 1.13966 | 0.76540 | 0.77570 | 0.82330 | 0.83230 | 2.38776 | 2.50368 | 2.16830 | 0.00020 | 0.00020 | 0.00020 | 0.80286 |
| 91.00000 | 2752.91000 | 1.12158 | 0.68555 | 1.14655 | 0.77403 | 0.76569 | 0.81466 | 0.82631 | 2.36014 | 2.50783 | 2.11200 | 0.00018 | 0.00018 | 0.00018 | 0.80378 |
| 92.00000 | 2785.80000 | 1.10526 | 0.64638 | 1.12815 | 0.77656 | 0.77063 | 0.81819 | 0.81909 | 2.41145 | 2.49904 | 2.20491 | 0.00017 | 0.00017 | 0.00017 | 0.80903 |
| 93.00000 | 2815.49000 | 1.09810 | 0.64647 | 1.13414 | 0.77215 | 0.77484 | 0.81911 | 0.82170 | 2.47041 | 2.52265 | 2.25034 | 0.00015 | 0.00015 | 0.00015 | 0.80819 |
| 94.00000 | 2842.64000 | 1.07910 | 0.63013 | 1.11869 | 0.78274 | 0.77058 | 0.81945 | 0.82549 | 2.45118 | 2.56131 | 2.22369 | 0.00013 | 0.00013 | 0.00013 | 0.81366 |
| 95.00000 | 2872.88000 | 1.06333 | 0.61449 | 1.11689 | 0.76280 | 0.78511 | 0.81873 | 0.82425 | 2.43691 | 2.50525 | 2.23066 | 0.00012 | 0.00012 | 0.00012 | 0.80578 |
| 96.00000 | 2900.66000 | 1.07813 | 0.61830 | 1.11560 | 0.76416 | 0.79298 | 0.82069 | 0.82838 | 2.42453 | 2.53169 | 2.22066 | 0.00010 | 0.00010 | 0.00010 | 0.81139 |
| 97.00000 | 2929.42000 | 1.04780 | 0.61000 | 1.11282 | 0.76192 | 0.78628 | 0.81519 | 0.82191 | 2.44590 | 2.56628 | 2.23946 | 0.00008 | 0.00008 | 0.00008 | 0.80556 |
| 98.00000 | 2963.04000 | 1.04002 | 0.61025 | 1.09856 | 0.77046 | 0.79482 | 0.82375 | 0.82816 | 2.45018 | 2.56849 | 2.23633 | 0.00007 | 0.00007 | 0.00007 | 0.81855 |
| 99.00000 | 2990.27000 | 1.03754 | 0.60218 | 1.10315 | 0.76383 | 0.78682 | 0.82015 | 0.82274 | 2.44493 | 2.58150 | 2.24556 | 0.00005 | 0.00005 | 0.00005 | 0.80772 |
| 100.00000 | 3019.80000 | 1.05822 | 0.61511 | 1.12335 | 0.76712 | 0.79237 | 0.82173 | 0.82688 | 2.44268 | 2.55416 | 2.24973 | 0.00003 | 0.00003 | 0.00003 | 0.81399 |