**Cryptographic System for E-Commerce Transaction using** **Memristive Associative Memory Engine Simulation Data Sets**

**Computational Overhead**

|  |  |  |
| --- | --- | --- |
| Cryptographic KeyLength | CA\_CIAT\_Key-Scattering\_AES CBC-mode techniques.Computational\_Overhead | CA\_CIAT\_Cryptographic\_Analytics (Proposed). Computational Overhead |
| 0 | 3.39E-07 | 1.18E-06 |
| 36 | 1.09E-05 | 3.88E-06 |
| 72 | 7.37E-06 | 3.02E-06 |
| 108 | 8.91E-06 | 2.78E-06 |
| 144 | 8.36E-06 | 2.55E-06 |
| 180 | 7.98E-06 | 2.38E-06 |
| 216 | 6.88E-06 | 2.23E-06 |
| 252 | 6.02E-06 | 1.95E-06 |
| 288 | 6.75E-06 | 1.81E-06 |
| 324 | 6.07E-06 | 1.63E-06 |
| 360 | 6.06E-06 | 1.51E-06 |
| 396 | 6.08E-06 | 1.41E-06 |
| 432 | 5.61E-06 | 1.3E-06 |
| 468 | 6.1E-06 | 1.26E-06 |
| 504 | 6.57E-06 | 1.22E-06 |
| 540 | 6.16E-06 | 1.15E-06 |
| 576 | 6.51E-06 | 1.12E-06 |
| 612 | 6.15E-06 | 1.06E-06 |
| 648 | 6.45E-06 | 1.03E-06 |
| 684 | 7.34E-06 | 1.05E-06 |
| 720 | 6.99E-06 | 9.97E-07 |
| 756 | 7.25E-06 | 9.82E-07 |
| 792 | 7.23E-06 | 9.55E-07 |
| 828 | 6.93E-06 | 9.15E-07 |
| 864 | 7.13E-06 | 9.06E-07 |
| 900 | 6.86E-06 | 8.71E-07 |
| 936 | 6.61E-06 | 8.38E-07 |
| 972 | 6.85E-06 | 8.34E-07 |
| 1008 | 6.84E-06 | 8.18E-07 |
| 1044 | 6.83E-06 | 8.02E-07 |
| 1080 | 6.61E-06 | 7.76E-07 |
| 1116 | 6.6E-06 | 7.63E-07 |
| 1152 | 6.57E-06 | 7.5E-07 |
| 1188 | 6.57E-06 | 7.38E-07 |
| 1224 | 6.54E-06 | 7.26E-07 |
| 1260 | 6.51E-06 | 7.15E-07 |
| 1296 | 6.48E-06 | 7.04E-07 |
| 1332 | 6.31E-06 | 6.85E-07 |
| 1368 | 6.15E-06 | 6.68E-07 |
| 1404 | 6.14E-06 | 6.59E-07 |
| 1440 | 5.99E-06 | 6.43E-07 |
| 1476 | 6.02E-06 | 6.36E-07 |
| 1512 | 5.88E-06 | 6.21E-07 |
| 1548 | 5.89E-06 | 6.15E-07 |
| 1584 | 6.02E-06 | 6.16E-07 |
| 1620 | 6.01E-06 | 6.09E-07 |
| 1656 | 5.88E-06 | 5.96E-07 |
| 1692 | 5.88E-06 | 5.9E-07 |
| 1728 | 5.88E-06 | 5.85E-07 |
| 1764 | 5.76E-06 | 5.73E-07 |
| 1800 | 5.65E-06 | 5.62E-07 |
| 1836 | 5.66E-06 | 5.57E-07 |
| 1872 | 5.55E-06 | 5.46E-07 |
| 1908 | 5.45E-06 | 5.36E-07 |
| 1944 | 5.47E-06 | 5.33E-07 |
| 1980 | 5.37E-06 | 5.24E-07 |
| 2016 | 5.27E-06 | 5.14E-07 |
| 2052 | 5.29E-06 | 5.12E-07 |
| 2088 | 5.2E-06 | 5.03E-07 |
| 2124 | 5.12E-06 | 4.95E-07 |
| 2160 | 5.26E-06 | 4.98E-07 |
| 2196 | 5.25E-06 | 4.95E-07 |
| 2232 | 5.17E-06 | 4.87E-07 |
| 2268 | 5.09E-06 | 4.8E-07 |
| 2304 | 5.01E-06 | 4.72E-07 |
| 2340 | 4.93E-06 | 4.65E-07 |
| 2376 | 4.86E-06 | 4.58E-07 |
| 2412 | 4.79E-06 | 4.52E-07 |
| 2448 | 4.72E-06 | 4.45E-07 |
| 2484 | 4.81E-06 | 4.48E-07 |
| 2520 | 4.74E-06 | 4.42E-07 |
| 2556 | 4.75E-06 | 4.4E-07 |
| 2592 | 4.68E-06 | 4.34E-07 |
| 2628 | 4.7E-06 | 4.33E-07 |
| 2664 | 4.71E-06 | 4.31E-07 |
| 2700 | 4.72E-06 | 4.29E-07 |
| 2736 | 4.66E-06 | 4.24E-07 |
| 2772 | 4.6E-06 | 4.18E-07 |
| 2808 | 4.54E-06 | 4.13E-07 |
| 2844 | 4.49E-06 | 4.08E-07 |
| 2880 | 4.43E-06 | 4.03E-07 |
| 2916 | 4.46E-06 | 4.03E-07 |
| 2952 | 4.41E-06 | 3.98E-07 |
| 2988 | 4.36E-06 | 3.93E-07 |
| 3024 | 4.43E-06 | 3.96E-07 |
| 3060 | 4.61E-06 | 4.03E-07 |
| 3096 | 4.55E-06 | 3.99E-07 |
| 3132 | 4.71E-06 | 4.05E-07 |
| 3168 | 4.72E-06 | 4.04E-07 |
| 3204 | 4.67E-06 | 4E-07 |
| 3240 | 4.62E-06 | 3.96E-07 |
| 3276 | 4.57E-06 | 3.91E-07 |
| 3312 | 4.52E-06 | 3.87E-07 |
| 3348 | 4.55E-06 | 3.87E-07 |
| 3384 | 4.5E-06 | 3.83E-07 |
| 3420 | 4.45E-06 | 3.79E-07 |
| 3456 | 4.53E-06 | 3.82E-07 |
| 3492 | 4.62E-06 | 3.85E-07 |
| 3528 | 4.57E-06 | 3.81E-07 |
| 3564 | 4.59E-06 | 3.81E-07 |
| 3600 | 4.59E-06 | 3.81E-07 |

**Cryptographic Throughput (Bps)**

|  |  |  |
| --- | --- | --- |
| Key\_length at Simulation Time t (Sec) | CA\_CIAT\_Key-Scattering\_AES CBC-mode techniques\_Implemented-DES-1: HTTP.Page Throughput hits(BPS) | CA\_CIAT\_Cryptographic Analytics\_Implemented-DES-1: HTTP.Page Throughput hits(BPS) |
| 0 | 0 | 0 |
| 22.7172 | 0 | 0 |
| 23.15503 | 0.019797254 | 0 |
| 32.60954 | 0.019797254 | 0 |
| 40.60801 | 0.019797254 | 28.79435859 |
| 43.80044 | 0.853766246 | 28.79435859 |
| 536.6421 | 18.03784117 | 28.79435859 |
| 705.0772 | 23.59998015 | 28.79435859 |
| 972.2554 | 32.67072374 | 28.79435859 |
| 981.909 | 33.14755945 | 28.79435859 |
| 987.0094 | 33.14755945 | 236.6176077 |
| 1174.026 | 39.30057959 | 236.6176077 |
| 1395.761 | 46.85855186 | 236.6176077 |
| 1634.613 | 46.85855186 | 354.8468217 |
| 1802.211 | 46.85855186 | 382.9835793 |
| 1884.237 | 72.87284398 | 382.9835793 |
| 2134.406 | 72.87284398 | 401.5686194 |
| 2548.812 | 72.87284398 | 445.2841171 |
| 2839.614 | 115.9629088 | 445.2841171 |
| 2859.812 | 115.9629088 | 476.0794282 |
| 2924.207 | 115.9629088 | 488.2553324 |
| 2931.008 | 115.9629088 | 488.7790513 |
| 2999.209 | 115.9629088 | 494.3113615 |
| 3002.264 | 121.6151331 | 494.3113615 |
| 3104.325 | 125.0786068 | 494.3113615 |
| 3245.967 | 129.6913937 | 494.3113615 |
| 3600 | 141.5509818 | 538.4249399 |
| 3600 | 141.5509818 | 538.4249399 |

**Execution Timeframe**

|  |  |
| --- | --- |
| CA\_CIAT  \_Key-Scattering\_AES CBC-mode techniques | CA\_CIAT\_Cryptographic\_Analytics (Proposed) |
| 0.00008224 | 0.0000848 |
| 0.000180682 | 0.000176178 |
| 0.000271714 | 0.000263538 |
| 0.000605761 | 0.000335247 |
| 0.000696961 | 0.000426447 |
| 0.001038801 | 0.000499087 |
| 0.001130001 | 0.000590287 |
| 0.001130001 | 0.000590287 |
| 0.001130001 | 0.000590287 |
| 0.001130001 | 0.000590287 |
| 0.001130001 | 0.000590287 |
| 0.001130001 | 0.000590287 |
| 0.001130001 | 0.000590287 |
| 0.001918734 | 0.000654687 |
| 0.001918734 | 0.000654687 |
| 0.001918734 | 0.000654687 |
| 0.001990734 | 0.000654687 |
| 0.001990734 | 0.000654687 |
| 0.001990734 | 0.000654687 |
| 0.001990734 | 0.000654687 |
| 0.001990734 | 0.000654687 |
| 0.002062734 | 0.000654687 |
| 0.002062734 | 0.000654687 |
| 0.002062734 | 0.000654687 |
| 0.002062734 | 0.000654687 |
| 0.002062734 | 0.000654687 |
| 0.002062734 | 0.000654687 |
| 0.002134734 | 0.000654687 |
| 0.002206734 | 0.000654687 |
| 0.002206734 | 0.000654687 |
| 0.002206734 | 0.000654687 |
| 0.002206734 | 0.000654687 |
| 0.002954589 | 0.000719373 |
| 0.002954589 | 0.000719373 |
| 0.002954589 | 0.000719373 |
| 0.002954589 | 0.000719373 |
| 0.002954589 | 0.000719373 |
| 0.002954589 | 0.000719373 |
| 0.002954589 | 0.000719373 |
| 0.003026589 | 0.000719373 |
| 0.003026589 | 0.000719373 |
| 0.003026589 | 0.000719373 |
| 0.003026589 | 0.000719373 |
| 0.003098589 | 0.000719373 |
| 0.003170589 | 0.000719373 |
| 0.003242589 | 0.000719373 |
| 0.003242589 | 0.000719373 |
| 0.004003898 | 0.000784058 |
| 0.004768407 | 0.000848744 |
| 0.004768407 | 0.000848744 |
| 0.004768407 | 0.000848744 |
| 0.004768407 | 0.000848744 |
| 0.004768407 | 0.000848744 |
| 0.004768407 | 0.000848744 |
| 0.004840407 | 0.000848744 |
| 0.004840407 | 0.000848744 |
| 0.004840407 | 0.000848744 |
| 0.004912407 | 0.000848744 |
| 0.004912407 | 0.000848744 |
| 0.004984407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005056407 | 0.000848744 |
| 0.005128407 | 0.000848744 |
| 0.005200407 | 0.000848744 |
| 0.005200407 | 0.000848744 |
| 0.005200407 | 0.000848744 |
| 0.005272407 | 0.000848744 |
| 0.005344407 | 0.000848744 |
| 0.005344407 | 0.000848744 |
| 0.005344407 | 0.000848744 |
| 0.005344407 | 0.000848744 |
| 0.005344407 | 0.000848744 |
| 0.005416407 | 0.000848744 |
| 0.005416407 | 0.000848744 |
| 0.005488407 | 0.000848744 |
| 0.005488407 | 0.000848744 |
| 0.005488407 | 0.000848744 |
| 0.005560407 | 0.000848744 |
| 0.006259673 | 0.00091343 |
| 0.006259673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.006331673 | 0.00091343 |
| 0.00706454 | 0.000978115 |
| 0.00713654 | 0.000978115 |
| 0.00713654 | 0.000978115 |
| 0.00713654 | 0.000978115 |
| 0.00713654 | 0.000978115 |

**CA-CIAT e-transaction vulnerability Weight index**

|  |  |  |
| --- | --- | --- |
| Cryptographic KeyLength | CA\_CIAT\_Key-Scattering\_AES CBC-mode techniques\_Without\_PayStackPIXFirewall | CA\_CIAT\_Cryptographic\_Analytics (Proposed)\_With\_PayStackPIXFirewall |
| 0 | 39.26391329 | 0.111614853 |
| 36 | 94.29712579 | 1.349841681 |
| 72 | 94.16286094 | 1.349841681 |
| 108 | 93.88128122 | 1.334585492 |
| 144 | 94.12499328 | 1.334585492 |
| 180 | 94.51973361 | 1.330886586 |
| 216 | 94.03144155 | 1.334686241 |
| 252 | 90.24325999 | 1.334686241 |
| 288 | 93.97355059 | 1.334686241 |
| 324 | 96.58488244 | 1.325359816 |
| 360 | 95.00081725 | 1.335261946 |
| 396 | 93.22313058 | 1.325417386 |
| 432 | 92.44827125 | 2.672251007 |
| 468 | 95.0138475 | 2.669113414 |
| 504 | 93.11874403 | 0.031678181 |
| 540 | 93.18097124 | 0.031678181 |
| 576 | 93.1814198 | 1.340587219 |
| 612 | 93.97676436 | 1.340587219 |
| 648 | 93.05790238 | 2.669012666 |
| 684 | 95.06796373 | 0.027633851 |
| 720 | 93.13620569 | 1.329994243 |
| 756 | 92.81452639 | 2.671531376 |
| 792 | 93.86772423 | 1.329548071 |
| 828 | 93.81130179 | 1.337276914 |
| 864 | 95.16707733 | 5.338716177 |
| 900 | 95.12521378 | 2.653123201 |
| 936 | 95.63987201 | 1.325647668 |
| 972 | 93.66445573 | 1.391335636 |
| 1008 | 95.90365743 | 2.649150835 |
| 1044 | 93.86008148 | 2.666364421 |
| 1080 | 94.6128678 | 2.666364421 |
| 1116 | 94.50731433 | 1.33511802 |
| 1152 | 96.42105676 | 1.366565918 |
| 1188 | 93.58078283 | 1.366565918 |
| 1224 | 93.86183624 | 1.366565918 |
| 1260 | 94.59677301 | 1.33107369 |
| 1296 | 93.12746702 | 0.025791595 |
| 1332 | 92.19525991 | 0.025791595 |
| 1368 | 93.31291955 | 1.356548647 |
| 1404 | 93.01733307 | 1.329749568 |
| 1440 | 91.79635459 | 1.329749568 |
| 1476 | 93.86264074 | 4.008448474 |
| 1512 | 93.06084293 | 1.403000791 |
| 1548 | 94.12261066 | 1.261363055 |
| 1584 | 95.0732193 | 4.002576281 |
| 1620 | 93.02538053 | 2.664622913 |
| 1656 | 94.00461725 | 1.337737478 |
| 1692 | 91.95065525 | 1.333246978 |
| 1728 | 90.79225875 | 1.325043178 |
| 1764 | 93.1782182 | 1.33244099 |
| 1800 | 94.56859694 | 2.693451353 |
| 1836 | 96.63053605 | 2.667918826 |
| 1872 | 96.00379287 | 1.353914796 |
| 1908 | 93.90334439 | 4.003598158 |
| 1944 | 95.89139658 | 3.997869891 |
| 1980 | 94.30694708 | 2.666594704 |
| 2016 | 93.4738953 | 2.666594704 |
| 2052 | 93.61191872 | 1.323042602 |
| 2088 | 94.21227154 | 1.331706966 |
| 2124 | 95.36286712 | 1.331951641 |
| 2160 | 94.86616358 | 2.664752447 |
| 2196 | 94.68742999 | 2.676194588 |
| 2232 | 94.16017149 | 2.676194588 |
| 2268 | 94.05133862 | 1.325028785 |
| 2304 | 91.98728002 | 1.331303972 |
| 2340 | 94.53435961 | 1.33210996 |
| 2376 | 93.78708889 | 2.672351756 |
| 2412 | 95.42599322 | 1.333578008 |
| 2448 | 93.91222195 | 1.333578008 |
| 2484 | 92.74205258 | 1.335521013 |
| 2520 | 95.48690532 | 1.331635003 |
| 2556 | 93.14585094 | 1.32084053 |
| 2592 | 95.93969197 | 2.662492804 |
| 2628 | 93.12796702 | 3.973891767 |
| 2664 | 93.62329436 | 3.973891767 |
| 2700 | 93.81550832 | 2.665083477 |
| 2736 | 91.35923992 | 1.33107369 |
| 2772 | 91.85694828 | 1.33107369 |
| 2808 | 94.45346811 | 1.363212435 |
| 2844 | 95.85828855 | 5.316681059 |
| 2880 | 92.84218735 | 1.325849165 |
| 2916 | 93.36324787 | 2.66564479 |
| 2952 | 93.21257887 | 1.325993092 |
| 2988 | 93.17344 | 0.468759146 |
| 3024 | 92.79713287 | 3.556845345 |
| 3060 | 94.61354314 | 5.30689407 |
| 3096 | 96.82419743 | 5.348244099 |
| 3132 | 96.79459868 | 5.315846287 |
| 3168 | 93.59423602 | 5.315846287 |
| 3204 | 94.56606944 | 2.668005181 |
| 3240 | 94.64259864 | 1.367084053 |
| 3276 | 93.77315705 | 1.367084053 |
| 3312 | 93.35422516 | 1.367084053 |
| 3348 | 91.921661 | 5.315774324 |
| 3384 | 92.8153854 | 1.330339666 |
| 3420 | 94.10006381 | 1.330339666 |
| 3456 | 92.3608991 | 1.33019574 |
| 3492 | 95.03824174 | 2.650791595 |
| 3528 | 96.43296041 | 6.644847438 |
| 3564 | 94.40220518 | 5.331735751 |
| 3600 | 94.40220518 | 5.331735751 |

**Authentication Query Response**

|  |  |  |
| --- | --- | --- |
| Cryptographic KeyLength | CA\_CIAT\_Key-Scattering\_AES CBC-mode techniques\_ Without PayStackPIXFirewall | CA\_CIAT\_Cryptographic\_Analytics (Proposed) with PayStackPIXFirewall |
| 0 | 2.842684 | 0.595359321 |
| 62.81262 | 2.842684 | 0.595359321 |
| 68.94724 | 2.842684 | 0.595359321 |
| 127.4891 | 2.610993 | 0.595359321 |
| 129.5729 | 2.610993 | 0.590547887 |
| 212.6828 | 2.610993 | 0.596985625 |
| 213.2277 | 2.678014 | 0.596985625 |
| 219.2114 | 2.678014 | 0.602520891 |
| 220.4159 | 2.790302 | 0.602520891 |
| 343.4217 | 2.790302 | 0.589308004 |
| 344.9462 | 2.795094 | 0.589308004 |
| 366.1506 | 2.795094 | 0.590659338 |
| 376.3637 | 2.562371 | 0.590659338 |
| 422.3655 | 2.562371 | 0.594941376 |
| 428.2477 | 2.885392 | 0.594941376 |
| 460.125 | 2.885392 | 0.740391835 |
| 460.4582 | 2.885392 | 0.700782682 |
| 463.4961 | 2.665989 | 0.700782682 |
| 469.218 | 4.345877 | 0.700782682 |
| 478.7905 | 2.499509 | 0.700782682 |
| 483.489 | 2.499509 | 0.593893582 |
| 485.2086 | 2.499509 | 0.590729438 |
| 570.1887 | 2.693939 | 0.590729438 |
| 586.8285 | 2.693939 | 0.599799672 |
| 590.1692 | 2.526579 | 0.599799672 |
| 654.0061 | 2.526579 | 0.60249768 |
| 655.8607 | 2.7368 | 0.60249768 |
| 681.493 | 2.7368 | 0.595629225 |
| 684.0659 | 2.615919 | 0.595629225 |
| 727.8674 | 2.603675 | 0.595629225 |
| 751.4663 | 2.603675 | 0.596773407 |
| 780.1022 | 2.527645 | 0.596773407 |
| 780.3166 | 2.527645 | 0.598694586 |
| 783.9652 | 2.527645 | 0.599714204 |
| 817.6818 | 2.527645 | 0.59004397 |
| 853.3526 | 2.527645 | 0.602703648 |
| 858.809 | 2.658185 | 0.602703648 |
| 864.3351 | 4.363737 | 0.602703648 |
| 893.1009 | 4.363737 | 0.590079945 |
| 894.9023 | 4.363737 | 0.592683315 |
| 895.8312 | 2.859501 | 0.592683315 |
| 896.7579 | 2.859501 | 0.595965045 |
| 898.9208 | 2.859501 | 0.597170929 |
| 901.8236 | 6.945567 | 0.597170929 |
| 904.3957 | 8.300161 | 0.597170929 |
| 909.585 | 10.24192 | 0.597170929 |
| 911.3031 | 10.24192 | 0.589731409 |
| 919.711 | 7.693613 | 0.589731409 |
| 931.9232 | 7.693613 | 0.600229407 |
| 936.5767 | 2.59995 | 0.600229407 |
| 938.2939 | 2.59995 | 0.586235072 |
| 941.5468 | 4.871003 | 0.586235072 |
| 947.8096 | 5.77628 | 0.586235072 |
| 987.7084 | 5.77628 | 0.592235467 |
| 992.2654 | 2.560526 | 0.592235467 |
| 1017.461 | 2.70616 | 0.592235467 |
| 1022.454 | 2.70616 | 0.58982907 |
| 1030.5 | 2.70616 | 0.585761859 |
| 1031.492 | 2.571239 | 0.585761859 |
| 1048.18 | 2.571239 | 0.596017294 |
| 1056.347 | 2.597414 | 0.596017294 |
| 1059.97 | 2.597414 | 0.592425478 |
| 1063 | 2.922935 | 0.592425478 |
| 1086.266 | 2.6474 | 0.592425478 |
| 1137.212 | 2.6474 | 0.590741708 |
| 1143.365 | 2.670714 | 0.590741708 |
| 1149.789 | 3.269861 | 0.590741708 |
| 1153.738 | 3.269861 | 0.597238546 |
| 1155.153 | 5.517983 | 0.597238546 |
| 1261.568 | 5.517983 | 0.600219298 |
| 1268.928 | 2.649067 | 0.600219298 |
| 1395.172 | 2.558767 | 0.600219298 |
| 1395.721 | 2.558767 | 0.595815858 |
| 1426.105 | 2.558767 | 0.598533524 |
| 1434.984 | 2.713673 | 0.598533524 |
| 1480.578 | 2.557962 | 0.598533524 |
| 1483.906 | 2.557962 | 0.593553646 |
| 1485.334 | 2.557962 | 0.591923229 |
| 1498.028 | 2.557962 | 0.605822923 |
| 1502.864 | 2.70437 | 0.605822923 |
| 1507.018 | 5.194892 | 0.605822923 |
| 1526.99 | 5.194892 | 0.59438888 |
| 1534.337 | 2.571708 | 0.59438888 |
| 1548.459 | 2.571708 | 0.592894802 |
| 1552.158 | 2.540944 | 0.592894802 |
| 1594.145 | 2.733044 | 0.592894802 |
| 1596.734 | 2.733044 | 0.604544318 |
| 1605.953 | 2.698511 | 0.604544318 |
| 1606.261 | 2.698511 | 0.599139785 |
| 1619.072 | 2.698511 | 0.595190789 |
| 1622.887 | 2.517528 | 0.595190789 |
| 1639.564 | 2.517528 | 0.58772019 |
| 1651.225 | 2.517528 | 0.592784644 |
| 1684.349 | 2.517528 | 0.597680262 |
| 1689.259 | 2.556746 | 0.597680262 |
| 1698.574 | 2.556746 | 0.597217539 |
| 1760.806 | 2.556746 | 0.592207389 |
| 1764.33 | 2.763504 | 0.592207389 |
| 1786.372 | 2.763504 | 0.602083288 |
| 1793.428 | 2.678436 | 0.602083288 |
| 1798.561 | 5.100645 | 0.602083288 |
| 1827.239 | 5.100645 | 0.602786662 |
| 1832.146 | 2.72272 | 0.602786662 |
| 1832.442 | 2.72272 | 0.596918094 |
| 1853.212 | 2.72272 | 0.588916502 |
| 1855.8 | 2.651743 | 0.588916502 |
| 1860.124 | 2.651743 | 0.597186262 |
| 1866.086 | 2.612983 | 0.597186262 |
| 1877.457 | 2.692507 | 0.597186262 |
| 1897.724 | 2.692507 | 0.598888756 |
| 1904.048 | 2.645835 | 0.598888756 |
| 1911.379 | 2.645835 | 0.604773908 |
| 1920.018 | 2.657715 | 0.604773908 |
| 1921.807 | 2.657715 | 0.601788455 |
| 1928.202 | 4.527735 | 0.601788455 |
| 1930.013 | 5.932585 | 0.601788455 |
| 1939.893 | 5.932585 | 0.592505246 |
| 1948.986 | 2.590257 | 0.592505246 |
| 1961.58 | 2.590257 | 0.592039782 |
| 1970.793 | 2.590257 | 0.600763152 |
| 1975.05 | 2.590257 | 0.5935736 |
| 1979.498 | 2.603652 | 0.5935736 |
| 1985.86 | 5.922457 | 0.5935736 |
| 1987.919 | 7.238574 | 0.5935736 |
| 2003.856 | 7.238574 | 0.591075815 |
| 2005.027 | 2.638398 | 0.591075815 |
| 2012.798 | 2.738707 | 0.591075815 |
| 2015.584 | 2.738707 | 0.603221281 |
| 2043.533 | 2.712637 | 0.603221281 |
| 2059.442 | 2.602542 | 0.603221281 |
| 2071.512 | 2.762109 | 0.603221281 |
| 2071.627 | 2.762109 | 0.593159578 |
| 2104.229 | 2.762109 | 0.595298408 |
| 2106.981 | 2.554928 | 0.595298408 |
| 2123.237 | 2.4713 | 0.595298408 |
| 2127.325 | 2.4713 | 0.593694836 |
| 2141.76 | 2.621459 | 0.593694836 |
| 2171.414 | 2.621459 | 0.602716603 |
| 2171.903 | 3.12519 | 0.602716603 |
| 2175.783 | 5.787044 | 0.602716603 |
| 2189.393 | 5.787044 | 0.601188385 |
| 2209.804 | 5.787044 | 0.596307771 |
| 2211.931 | 2.637337 | 0.596307771 |
| 2231.793 | 2.637337 | 0.601215429 |
| 2239.55 | 2.769719 | 0.601215429 |
| 2298.267 | 2.587703 | 0.601215429 |
| 2299.515 | 2.587703 | 0.588843426 |
| 2305.336 | 2.587703 | 0.603807312 |
| 2309.522 | 2.653313 | 0.603807312 |
| 2364.645 | 2.569135 | 0.603807312 |
| 2367.957 | 2.569135 | 0.590287043 |
| 2380.752 | 2.711814 | 0.590287043 |
| 2395.392 | 2.711814 | 0.593844229 |
| 2399.204 | 2.711814 | 0.589139155 |
| 2401.776 | 2.50209 | 0.589139155 |
| 2416.456 | 2.659469 | 0.589139155 |
| 2432.223 | 2.659469 | 0.588893122 |
| 2455.349 | 2.614018 | 0.588893122 |
| 2519.024 | 2.614018 | 0.599177497 |
| 2520.126 | 2.600448 | 0.599177497 |
| 2521.134 | 2.600448 | 0.588487393 |
| 2534.743 | 2.789984 | 0.588487393 |
| 2556.192 | 2.652755 | 0.588487393 |
| 2556.952 | 2.652755 | 0.586802515 |
| 2600.614 | 2.787146 | 0.586802515 |
| 2601.446 | 2.787146 | 0.591811004 |
| 2622.227 | 2.787146 | 0.590911601 |
| 2624.773 | 2.616062 | 0.590911601 |
| 2634.772 | 2.616062 | 0.582133057 |
| 2639.372 | 2.658256 | 0.582133057 |
| 2642.714 | 2.658256 | 0.588081891 |
| 2645.376 | 3.694458 | 0.588081891 |
| 2662.265 | 3.694458 | 0.594315282 |
| 2665.438 | 2.689849 | 0.594315282 |
| 2706.638 | 2.542942 | 0.594315282 |
| 2708.954 | 2.542942 | 0.588609883 |
| 2729.586 | 4.049703 | 0.588609883 |
| 2731.37 | 5.591137 | 0.588609883 |
| 2732.108 | 5.591137 | 0.60386871 |
| 2752.951 | 5.591137 | 0.598581946 |
| 2761.004 | 2.653654 | 0.598581946 |
| 2809.792 | 2.653654 | 0.590325343 |
| 2843.204 | 2.603117 | 0.590325343 |
| 2846.423 | 2.603117 | 0.590179416 |
| 2859.159 | 2.71642 | 0.590179416 |
| 2860.281 | 2.71642 | 0.59758581 |
| 2864.671 | 5.5956 | 0.59758581 |
| 2866.397 | 5.5956 | 0.592281767 |
| 2869.237 | 7.245846 | 0.592281767 |
| 2876.082 | 7.245846 | 0.595114236 |
| 2909.453 | 7.245846 | 0.601258745 |
| 2916.916 | 7.245846 | 0.592084283 |
| 2922.678 | 2.682882 | 0.592084283 |
| 2939.208 | 2.682882 | 0.603904261 |
| 2948.042 | 2.743195 | 0.603904261 |
| 2956.711 | 2.743195 | 0.598681706 |
| 2964.506 | 2.682824 | 0.598681706 |
| 2970.285 | 4.337433 | 0.598681706 |
| 3020.86 | 2.602512 | 0.598681706 |
| 3024.333 | 2.602512 | 0.598555583 |
| 3026.027 | 2.602512 | 0.592023795 |
| 3032.864 | 2.600282 | 0.592023795 |
| 3040.159 | 2.600282 | 0.596951164 |
| 3048.241 | 2.601939 | 0.596951164 |
| 3059.236 | 2.776286 | 0.596951164 |
| 3061.386 | 2.776286 | 0.601371816 |
| 3065.932 | 3.833701 | 0.601371816 |
| 3069.813 | 3.833701 | 0.592930026 |
| 3073.286 | 3.538329 | 0.592930026 |
| 3088.37 | 3.538329 | 0.587012473 |
| 3089.926 | 3.538329 | 0.589726488 |
| 3101.366 | 3.538329 | 0.595358658 |
| 3103.041 | 3.538329 | 0.603684784 |
| 3105.995 | 3.538329 | 0.603765673 |
| 3108.352 | 2.832222 | 0.603765673 |
| 3110.308 | 2.832222 | 0.595129142 |
| 3133.117 | 2.832222 | 0.598699284 |
| 3139.121 | 2.534358 | 0.598699284 |
| 3140.392 | 2.534358 | 0.592186131 |
| 3144.678 | 4.255879 | 0.592186131 |
| 3148.881 | 4.255879 | 0.596019306 |
| 3152.149 | 4.255879 | 0.601961156 |
| 3155.98 | 2.665788 | 0.601961156 |
| 3181.641 | 2.777594 | 0.601961156 |
| 3219.711 | 2.689697 | 0.601961156 |
| 3224.763 | 2.689697 | 0.593618012 |
| 3225.293 | 5.403109 | 0.593618012 |
| 3225.409 | 5.403109 | 0.603200717 |
| 3268.947 | 5.403109 | 0.595975558 |
| 3358.885 | 2.770529 | 0.595975558 |
| 3358.963 | 2.770529 | 0.604166044 |
| 3361.27 | 2.770529 | 0.598363165 |
| 3371.896 | 2.770529 | 0.600087851 |
| 3373.146 | 2.650225 | 0.600087851 |
| 3376.828 | 2.650225 | 0.585255585 |
| 3407.373 | 2.650225 | 0.601840171 |
| 3488.44 | 2.650225 | 0.598474182 |
| 3509.304 | 2.650225 | 0.593400106 |
| 3513.86 | 2.543158 | 0.593400106 |
| 3520.45 | 2.963037 | 0.593400106 |
| 3521.301 | 2.963037 | 0.585177281 |
| 3534.325 | 2.963037 | 0.593850275 |
| 3535.968 | 2.77608 | 0.593850275 |
| 3548.937 | 2.77608 | 0.601782043 |
| 3551.883 | 2.77608 | 0.593505486 |
| 3554.18 | 2.581107 | 0.593505486 |
| 3558.506 | 2.581107 | 0.601142471 |
| 3559.77 | 4.760598 | 0.601142471 |
| 3560.962 | 4.760598 | 0.592499028 |
| 3570.122 | 2.429806 | 0.592499028 |
| 3576.591 | 2.429806 | 0.595583936 |
| 3583.572 | 2.429806 | 0.594498629 |
| 3590.886 | 2.626844 | 0.594498629 |
| 3595.478 | 2.626844 | 0.633684718 |
| 3595.915 | 2.626844 | 0.646989425 |
| 3596.662 | 4.38795 | 0.646989425 |
| 3600 | 4.38795 | 0.646989425 |