

www.phoronix-test-suite.com

3700X Dec

AMD Ryzen 7 3700X 8-Core testing with a Gigabyte A320M-S2H-CF (F52a BIOS) and HIS AMD Radeon HD 7750/8740 / R7 250E 1GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

AMD Ryzen 7 3700X 8-Core had the most wins, coming in first place for 48% of the tests.

Based on the geometric mean of all complete results, the fastest (AMD Ryzen 7 3700X 8-Core) was 1.008x the speed of the slowest (A). AMD was 0.996x the speed of AMD Ryzen 7 3700X 8-Core and A was 0.996x the speed of AMD.

The results with the greatest spread from best to worst included:

Apache CouchDB (Bulk Size: 100 - Inserts: 1000 - Rounds: 24) at 1.098x
Blender (Blend File: BMW27 - Compute: CPU-Only) at 1.081x
Stargate Digital Audio Workstation (Sample Rate: 192000 - Buffer Size: 512) at 1.057x
rav1e (Speed: 1) at 1.051x
rav1e (Speed: 5) at 1.042x
Blender (Blend File: Classroom - Compute: CPU-Only) at 1.039x
Stargate Digital Audio Workstation (Sample Rate: 96000 - Buffer Size: 512) at 1.039x
Stargate Digital Audio Workstation (Sample Rate: 44100 - Buffer Size: 512) at 1.039x
Stargate Digital Audio Workstation (Sample Rate: 480000 - Buffer Size: 512) at 1.035x

7-Zip Compression (Test: Decompression Rating) at 1.03x.

Test Systems:

A

AMD Ryzen 7 3700X 8-Core

AMD

Processor: AMD Ryzen 7 3700X 8-Core @ 3.60GHz (8 Cores / 16 Threads), Motherboard: Gigabyte A320M-S2H-CF (F52a BIOS), Chipset: AMD Starship/Matisse, Memory: 8GB, Disk: 240GB TOSHIBA RC100, Graphics: HIS AMD Radeon HD 7750/8740 / R7 250E 1GB, Audio: AMD Oland/Hainan/Cape, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.9, OpenGL: 4.5 Mesa 20.0.8 (LLVM 10.0.0), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand (Boost: Enabled) - CPU Microcode: 0x8701021
Python Notes: Python 3.8.10
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

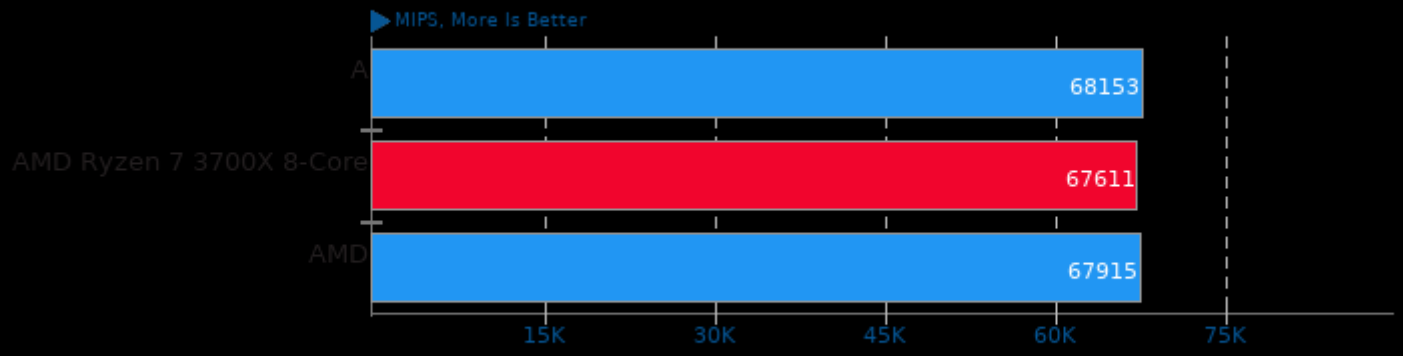
	A	AMD Ryzen 7 3700X 8-Core	AMD
7-Zip Compression - Compression Rating (MIPS)	**68153**	**67611**	67915
Normalized	100%	99.2%	99.65%
7-Zip Compression - D.R (MIPS)	**60606**	60176	**58813**
Normalized	100%	99.29%	97.04%
Apache CouchDB - 100 - 1000 - 24 (sec)	**89.576**	82.711	**81.566**
Normalized	91.06%	98.62%	100%
BLAKE2 (Cycles/Byte)	**8.17**	8.21	**8.26**
Normalized	100%	99.51%	98.91%
Blender - BMW27 - CPU-Only (sec)	**165.81**	**153.38**	153.44
Normalized	92.5%	100%	99.96%
Blender - Classroom - CPU-Only (sec)	**420.79**	**404.88**	407.74
Normalized	96.22%	100%	99.3%
Blender - Fishy Cat - CPU-Only (sec)	205.54	**204.3**	**206.08**

3700X Dec

Normalized	99.4%	100%	99.14%
CP2K Molecular Dynamics - Fayalite-FIST	395.413	402.727	404.609
Normalized	100%	98.18%	97.73%
JPEG XL libjxl - PNG - 5 (MP/s)	35.64	36.01	35.67
Normalized	98.97%	100%	99.06%
JPEG XL libjxl - PNG - 7 (MP/s)	9.29	9.5	9.4
Normalized	97.79%	100%	98.95%
JPEG XL libjxl - PNG - 8 (MP/s)	0.86	0.84	0.84
Normalized	100%	97.67%	97.67%
JPEG XL libjxl - JPEG - 5 (MP/s)	70.97	72.84	72.54
Normalized	97.43%	100%	99.59%
JPEG XL libjxl - JPEG - 7 (MP/s)	71.6	71.1	72.31
Normalized	99.02%	98.33%	100%
JPEG XL libjxl - JPEG - 8 (MP/s)	26.09	26.19	26.14
Normalized	99.62%	100%	99.81%
Primesieve - 1.P.N.G (sec)	23.072	22.898	23.045
Normalized	99.25%	100%	99.36%
rav1e - 1 (FPS)	0.435	0.457	0.44
Normalized	95.19%	100%	96.28%
rav1e - 5 (FPS)	2.429	2.403	2.332
Normalized	100%	98.93%	96.01%
rav1e - 6 (FPS)	3.252	3.22	3.171
Normalized	100%	99.02%	97.51%
rav1e - 10 (FPS)	8.158	8.064	8.084
Normalized	100%	98.85%	99.09%
Stargate Digital Audio Workstation - 44100 - 512 (Render Ratio)	2.817008	2.920715	2.81242
Normalized	96.45%	100%	96.29%
Stargate Digital Audio Workstation - 96000 - 512 (Render Ratio)	2.090866	2.104829	2.17142
Normalized	96.29%	96.93%	100%
Stargate Digital Audio Workstation - 192000 - 512 (Render Ratio)	1.421237	1.34442	1.36848
Normalized	100%	94.6%	96.29%
Stargate Digital Audio Workstation - 44100 - 1024 (Render Ratio)	2.92906	2.862858	2.946398
Normalized	99.41%	97.16%	100%
Stargate Digital Audio Workstation - 480000 - 512 (Render Ratio)	2.67597	2.728097	2.769403
Normalized	96.63%	98.51%	100%
Stargate Digital Audio Workstation - 96000 - 1024 (Render Ratio)	2.189155	2.230968	2.185707
Normalized	98.13%	100%	97.97%
Stargate Digital Audio Workstation - 192000 - 1024 (Render Ratio)	1.562017	1.566223	1.564051
Normalized	99.73%	100%	99.86%
Stargate Digital Audio Workstation - 480000 - 1024 (Render Ratio)	2.816013	2.819157	2.776751
Normalized	99.89%	100%	98.5%

7-Zip Compression 21.06

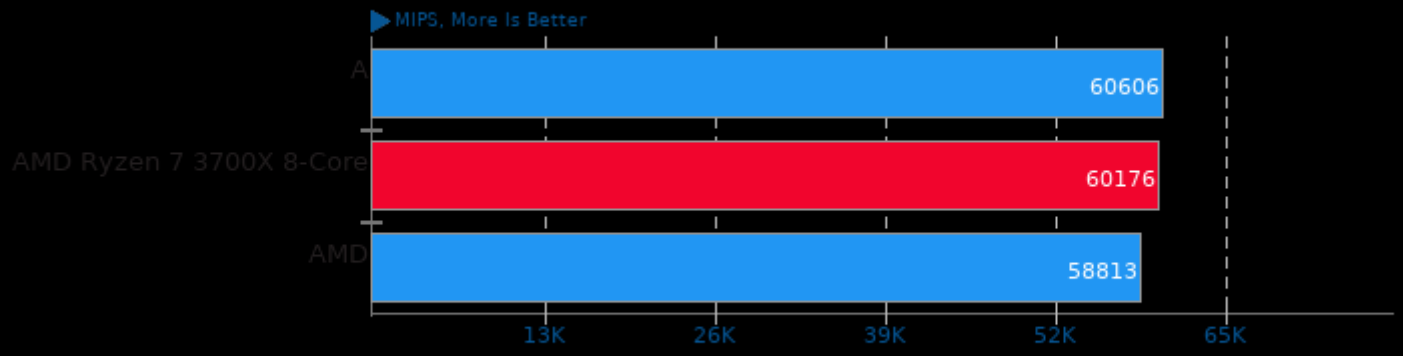
Test: Compression Rating



1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

7-Zip Compression 21.06

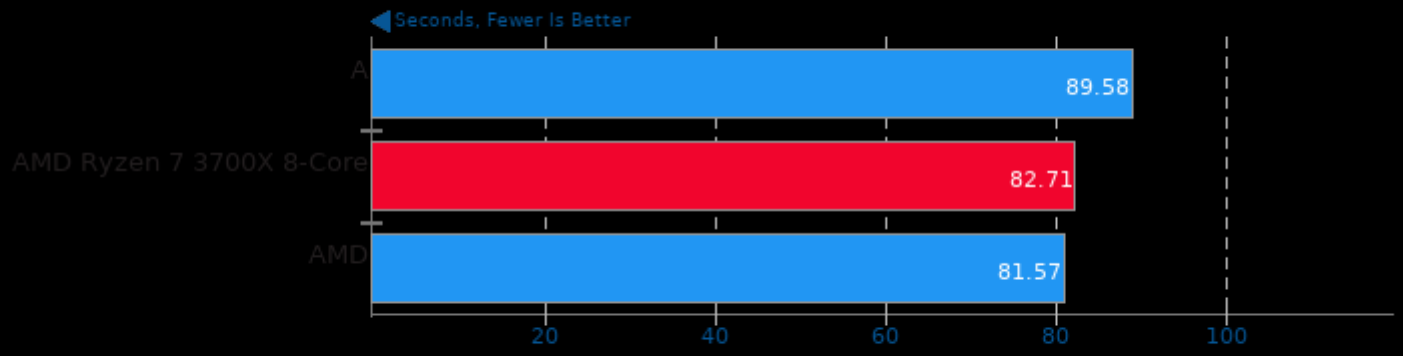
Test: Decompression Rating



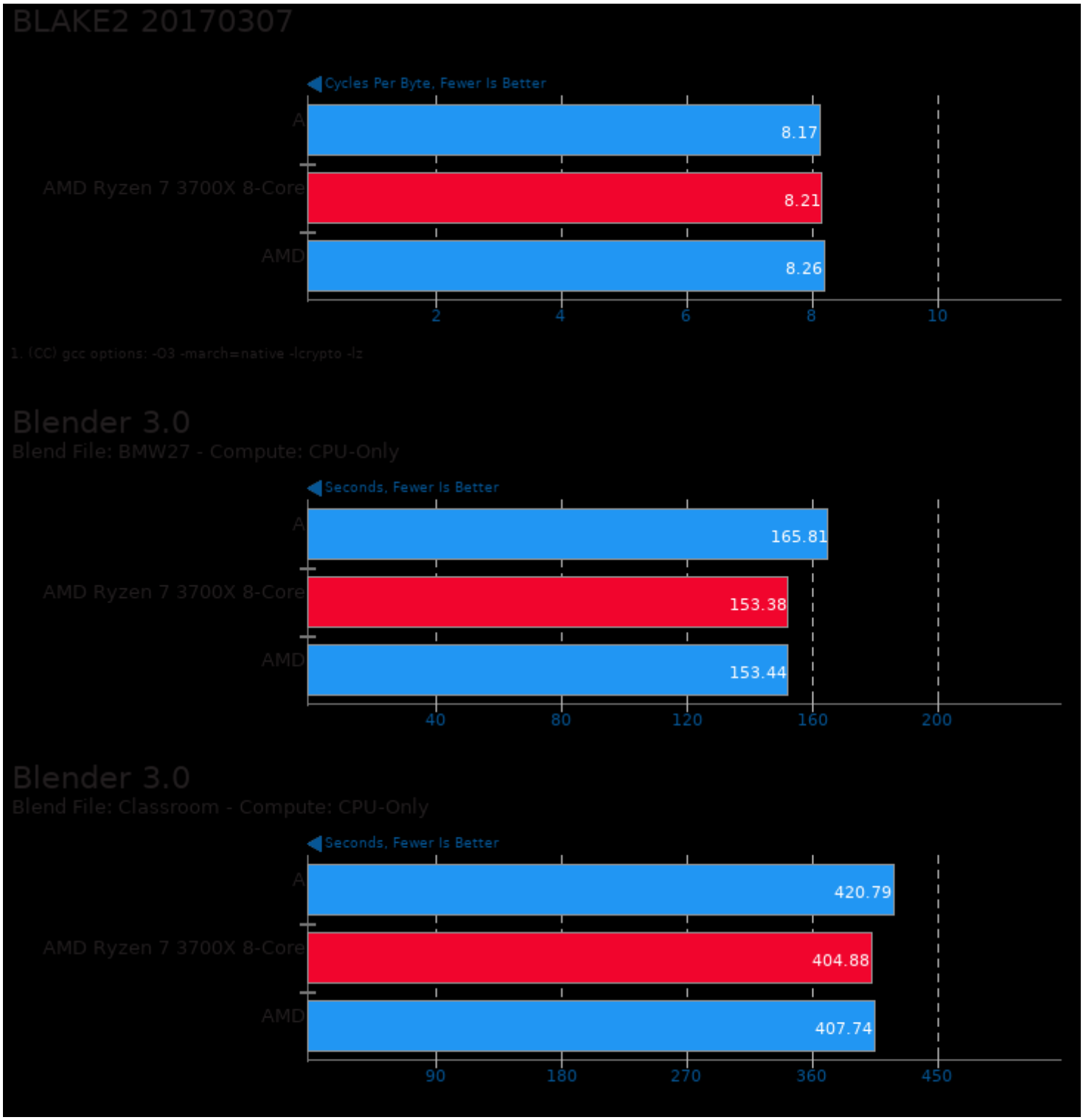
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

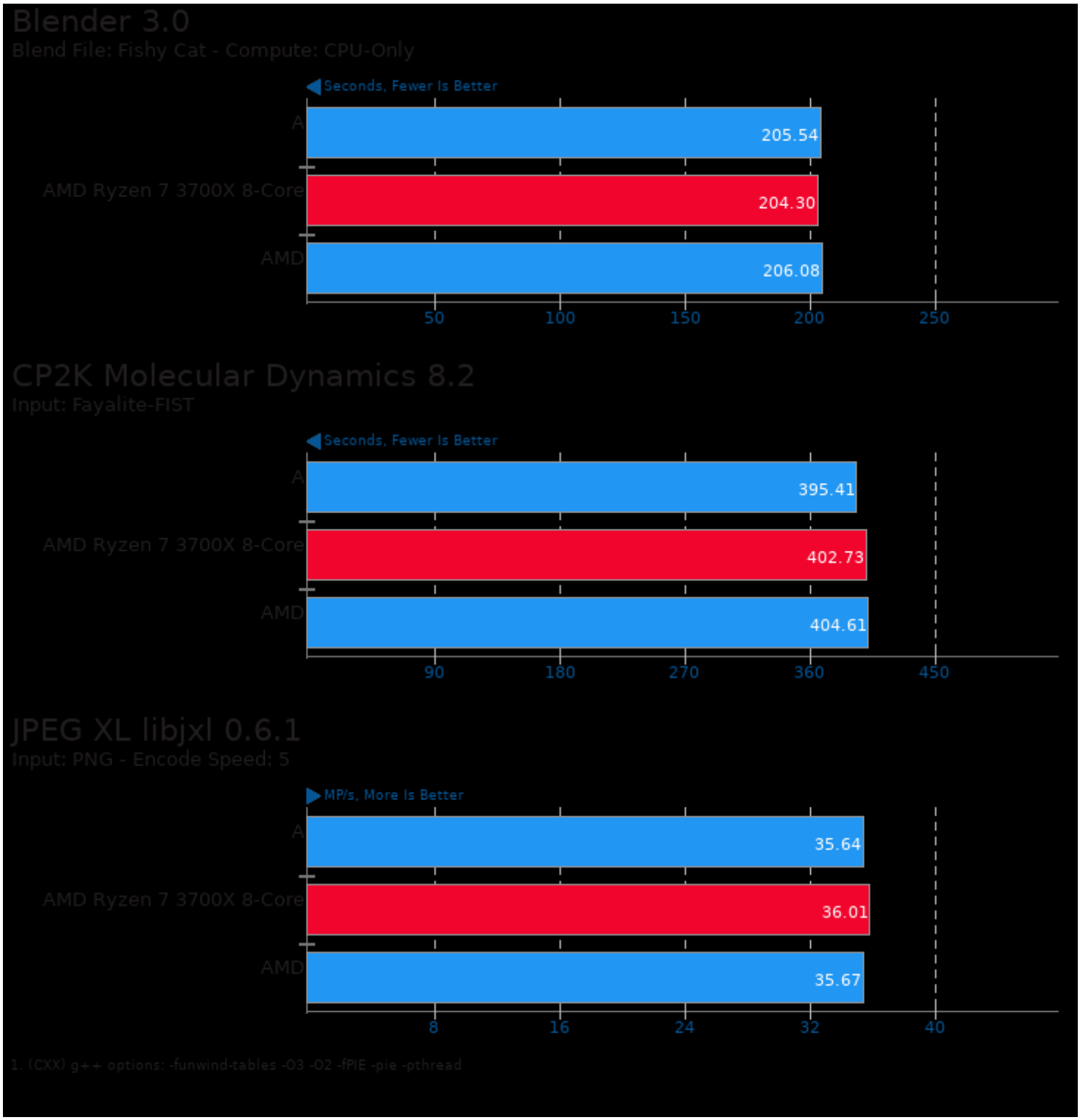
Apache CouchDB 3.2.1

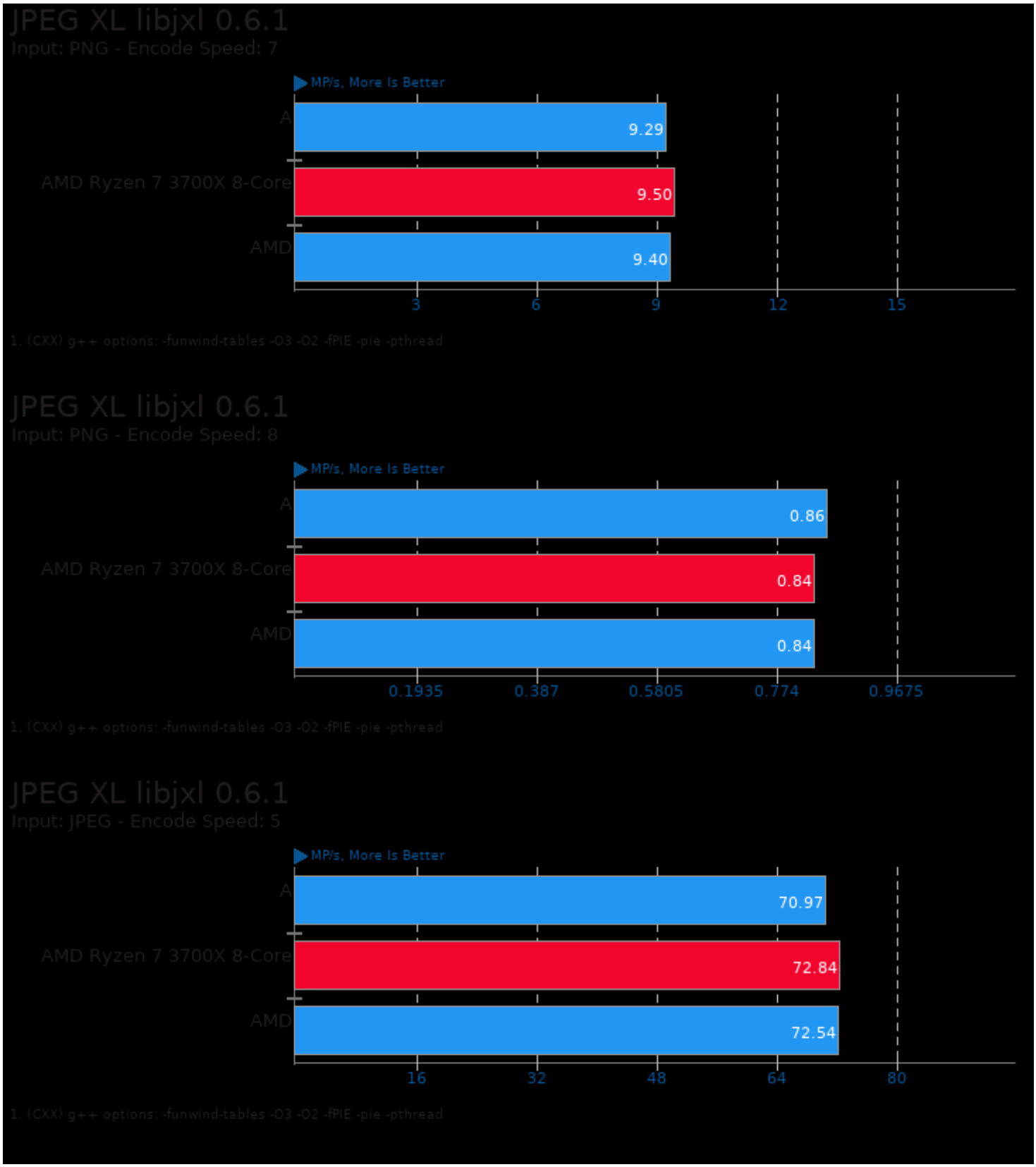
Bulk Size: 100 - Inserts: 1000 - Rounds: 24



1. (CXX) g++ options: -std=c++14 -lmozjs-68 -lm -lei -fPIC -MMD

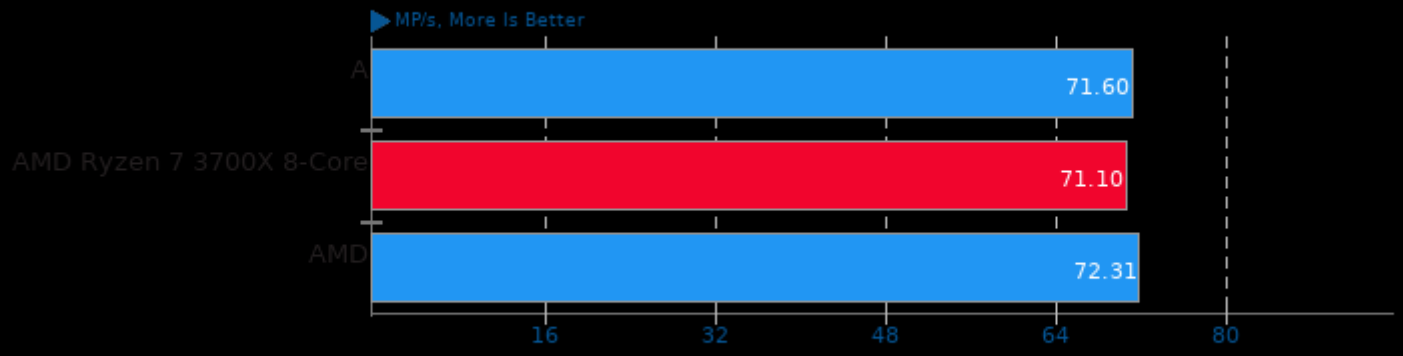

BLAKE2 20170307
Cycles Per Byte, Fewer Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
8.17
8.21
8.26
2
4
6
8
10
1. (CC) gcc options: -O3 -march=native -lcrypto -lz
Blender 3.0
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
165.81
153.38
153.44
40
80
120
160
200
Blender 3.0
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
420.79
404.88
407.74
90
180
270
360
450


Blender 3.0
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
A
205.54
AMD Ryzen 7 3700X 8-Core
204.30
AMD
206.08
50
100
150
200
250
CP2K Molecular Dynamics 8.2
Input: Fayalite-FIST
Seconds, Fewer Is Better
A
395.41
AMD Ryzen 7 3700X 8-Core
402.73
AMD
404.61
90
180
270
360
450
JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 5
MP/s, More Is Better
A
35.64
AMD Ryzen 7 3700X 8-Core
36.01
AMD
35.67
8
16
24
32
40
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread


JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 7
MP/s, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
9.29
9.50
9.40
3
6
9
12
15
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread
JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 8
MP/s, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
0.86
0.84
0.84
0.1935
0.387
0.5805
0.774
0.9675
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread
JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
70.97
72.84
72.54
16
32
48
64
80
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

JPEG XL libjxl 0.6.1

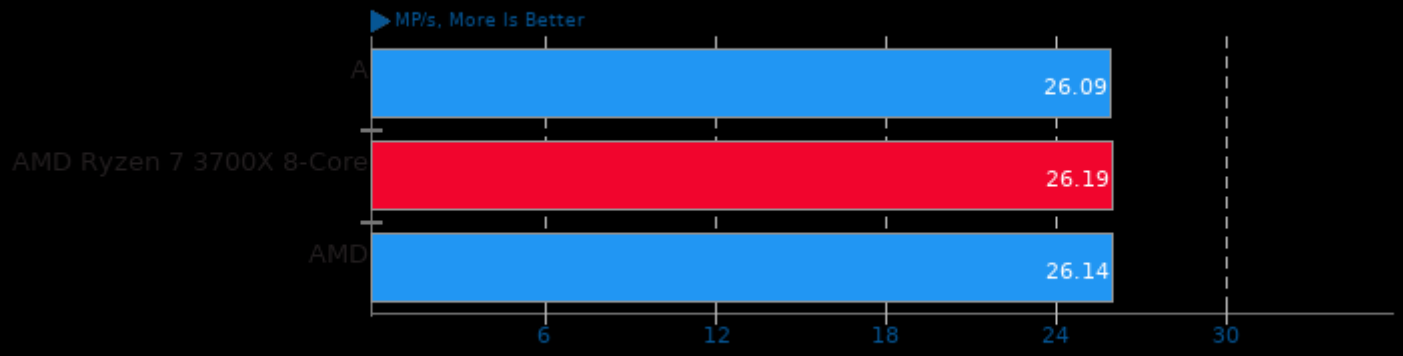
Input: JPEG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

JPEG XL libjxl 0.6.1

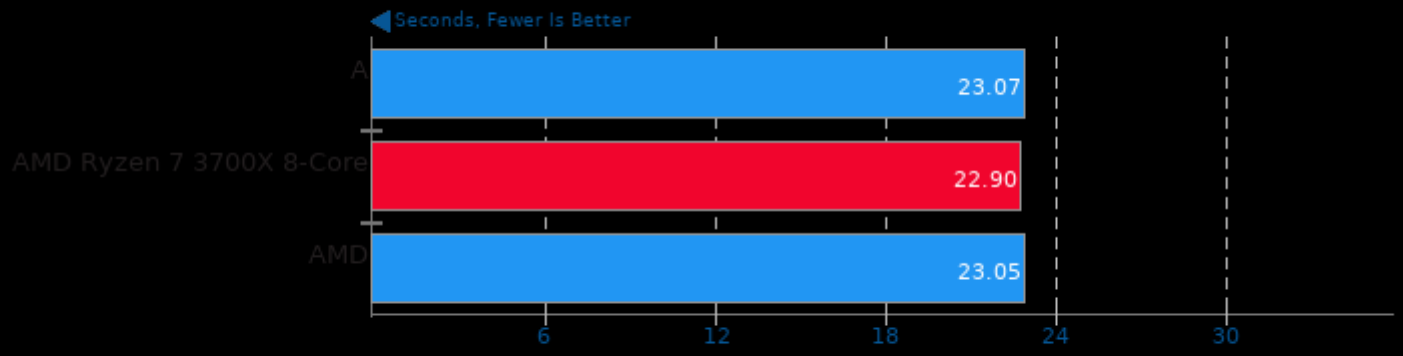
Input: JPEG - Encode Speed: 8



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

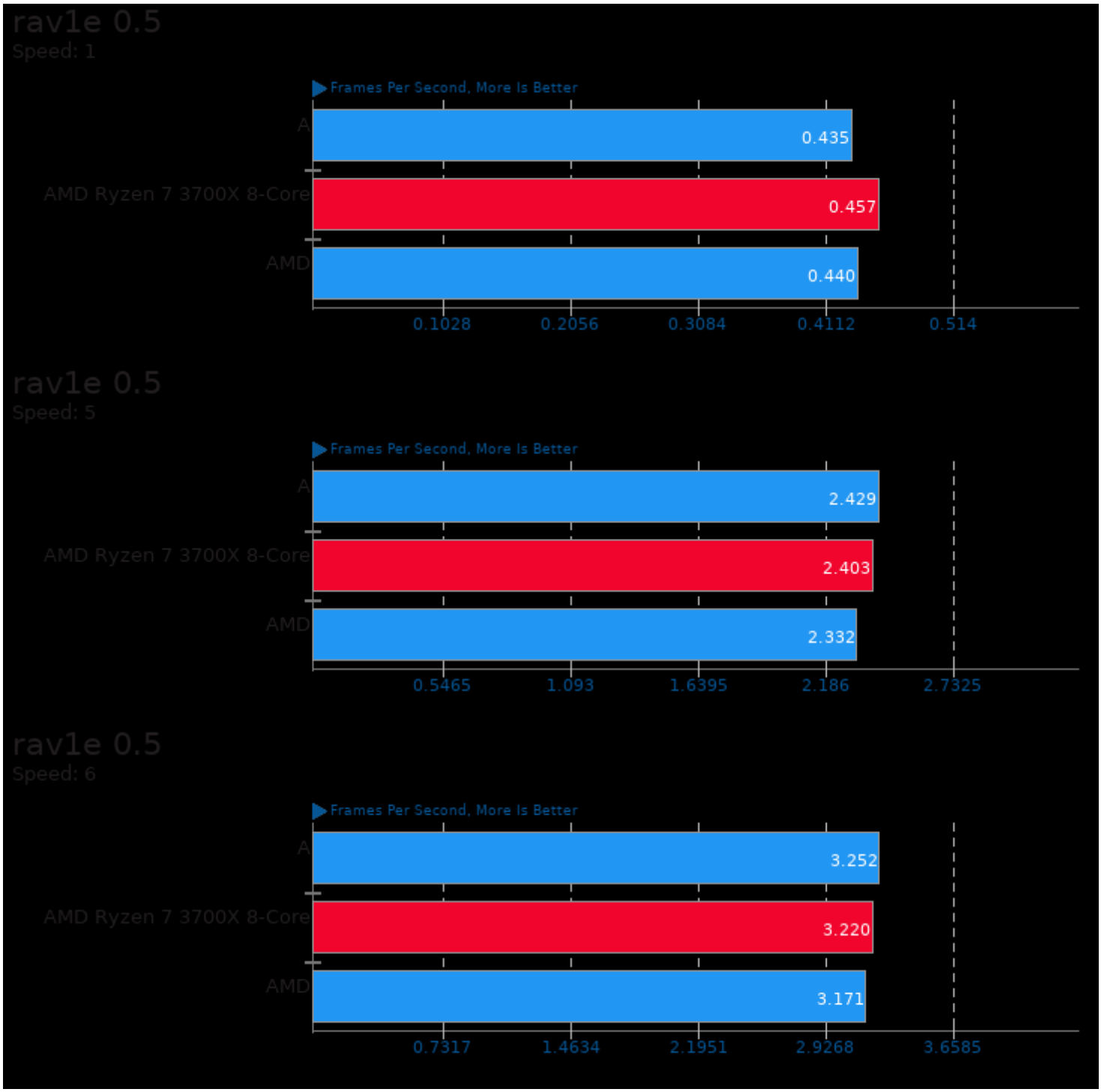
Primesieve 7.7

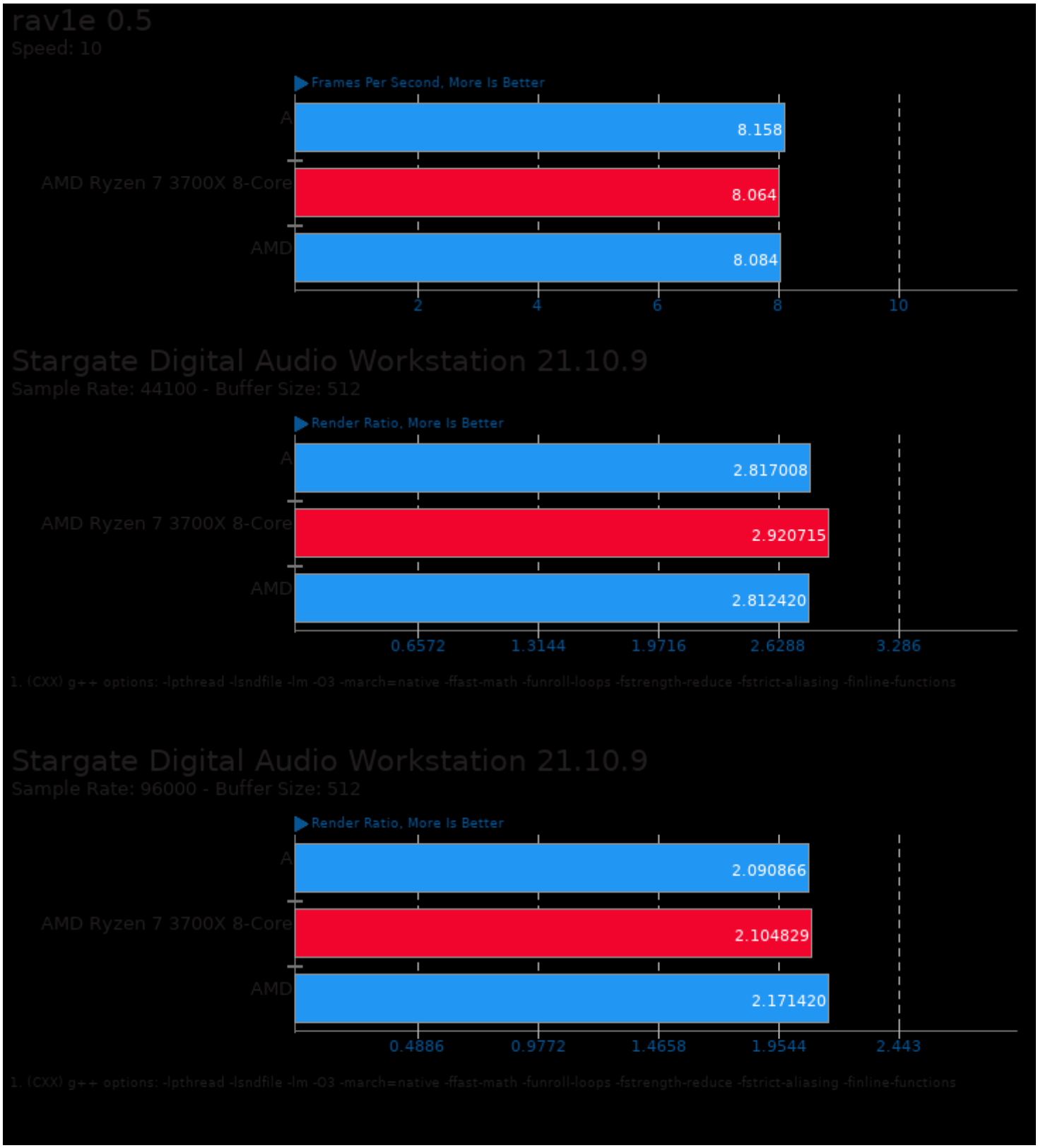
1e12 Prime Number Generation

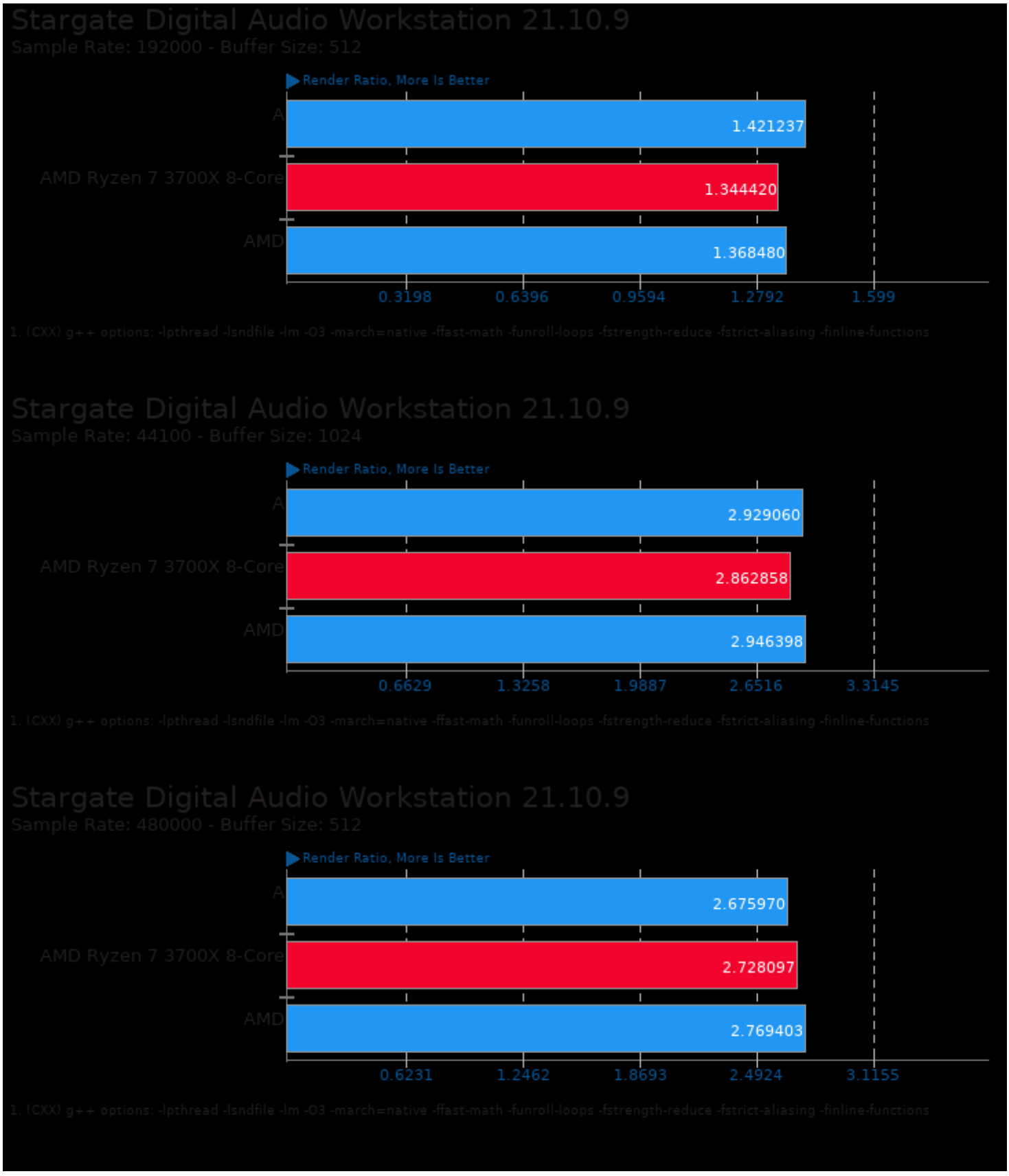


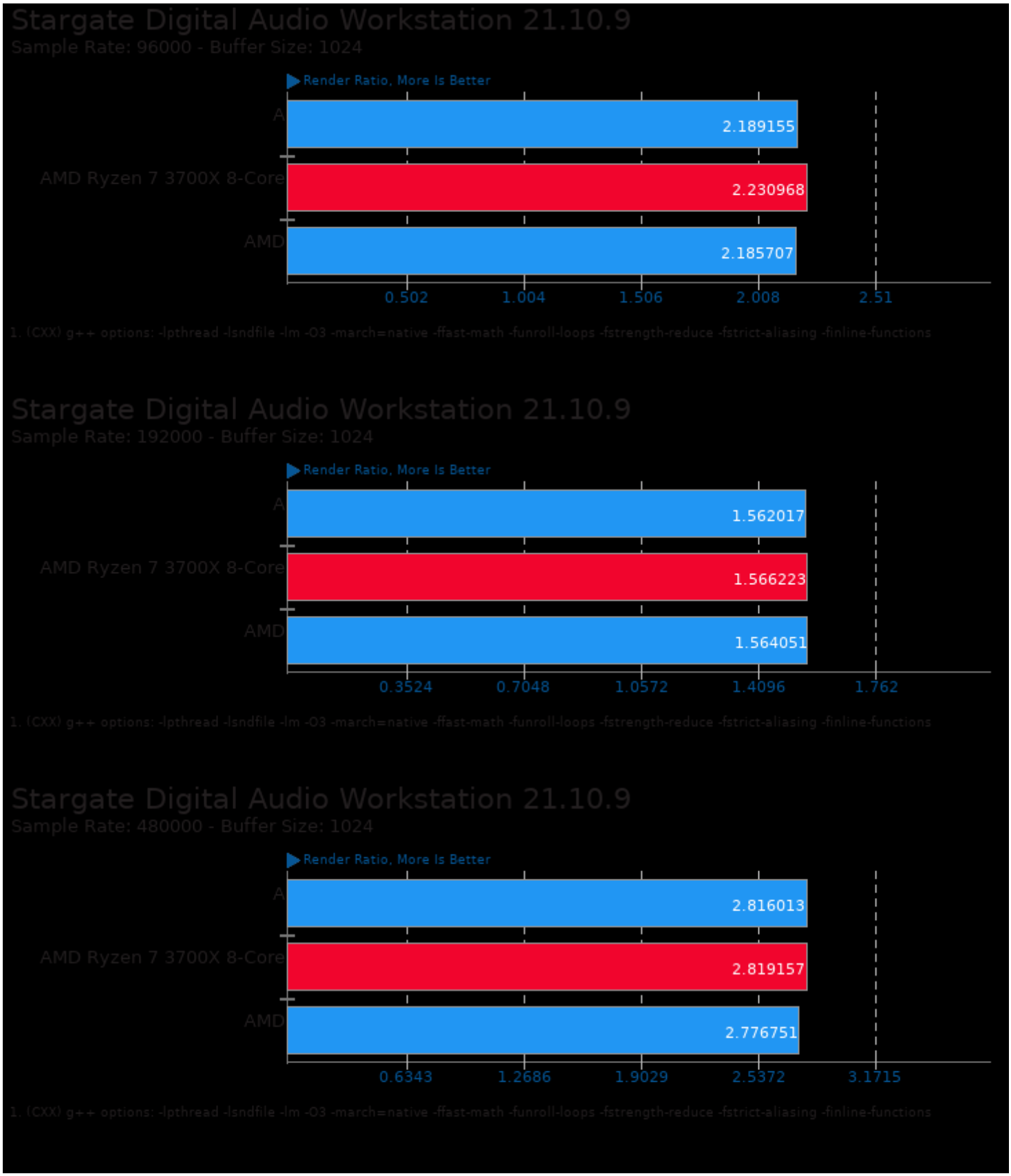
1. (CXX) g++ options: -O3 -lpthread

3700X Dec


rav1e 0.5
Speed: 1
Frames Per Second, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
0.435
0.457
0.440
0.1028
0.2056
0.3084
0.4112
0.514
rav1e 0.5
Speed: 5
Frames Per Second, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
2.429
2.403
2.332
0.5465
1.093
1.6395
2.186
2.7325
rav1e 0.5
Speed: 6
Frames Per Second, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
3.252
3.220
3.171
0.7317
1.4634
2.1951
2.9268
3.6585

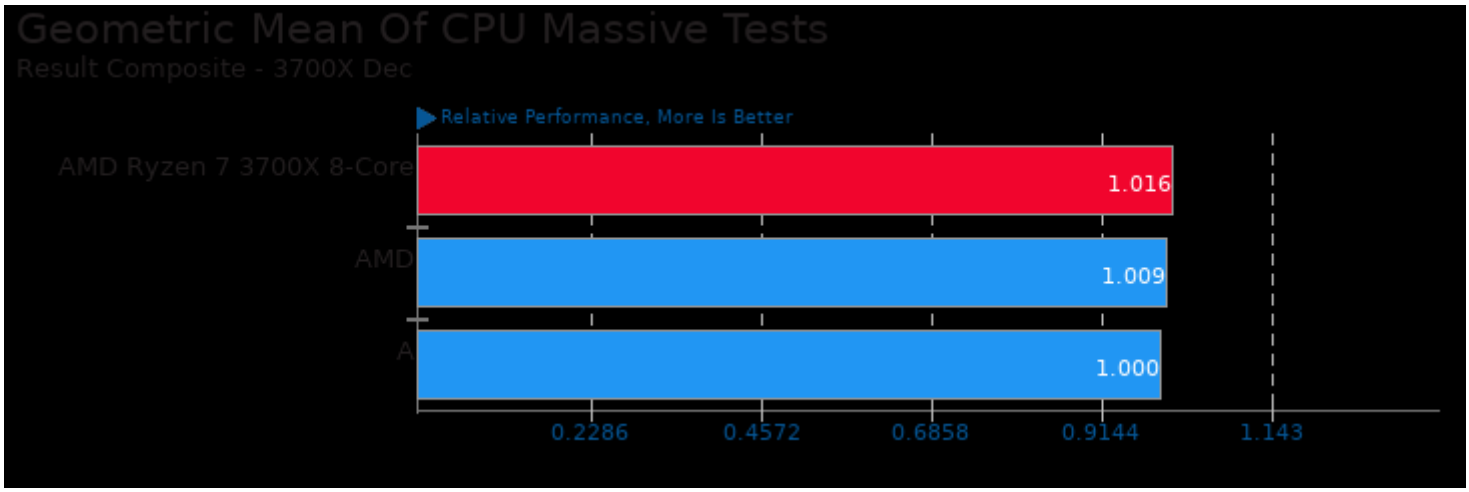

rav1e 0.5
Speed: 10
Frames Per Second, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
8.158
8.064
8.084
2
4
6
8
10
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 44100 - Buffer Size: 512
Render Ratio, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
2.817008
2.920715
2.812420
0.6572
1.3144
1.9716
2.6288
3.286
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 512
Render Ratio, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
2.090866
2.104829
2.171420
0.4886
0.9772
1.4658
1.9544
2.443
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions


Stargate Digital Audio Workstation 21.10.9
Sample Rate: 192000 - Buffer Size: 512
Render Ratio, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
1.421237
1.344420
1.368480
0.3198
0.6396
0.9594
1.2792
1.599
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 44100 - Buffer Size: 1024
Render Ratio, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
2.929060
2.862858
2.946398
0.6629
1.3258
1.9887
2.6516
3.3145
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 480000 - Buffer Size: 512
Render Ratio, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
2.675970
2.728097
2.769403
0.6231
1.2462
1.8693
2.4924
3.1155
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

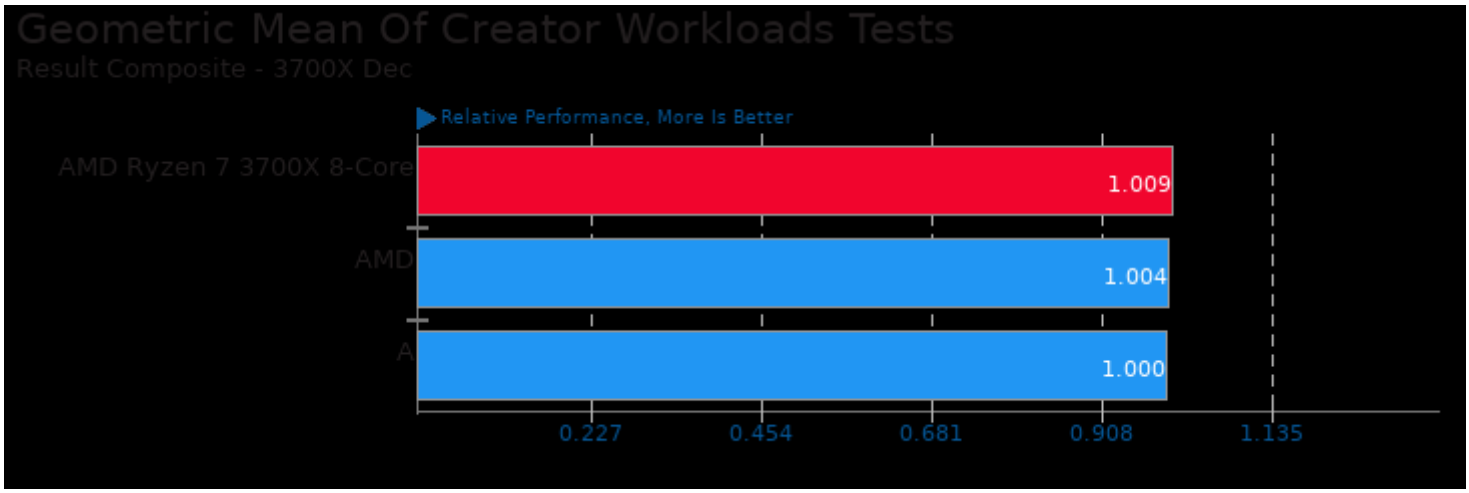

Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 1024
Render Ratio, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
2.189155
2.230968
2.185707
0.502
1.004
1.506
2.008
2.51
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 192000 - Buffer Size: 1024
Render Ratio, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
1.562017
1.566223
1.564051
0.3524
0.7048
1.0572
1.4096
1.762
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 480000 - Buffer Size: 1024
Render Ratio, More Is Better
A
AMD Ryzen 7 3700X 8-Core
AMD
2.816013
2.819157
2.776751
0.6343
1.2686
1.9029
2.5372
3.1715
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

3700X Dec

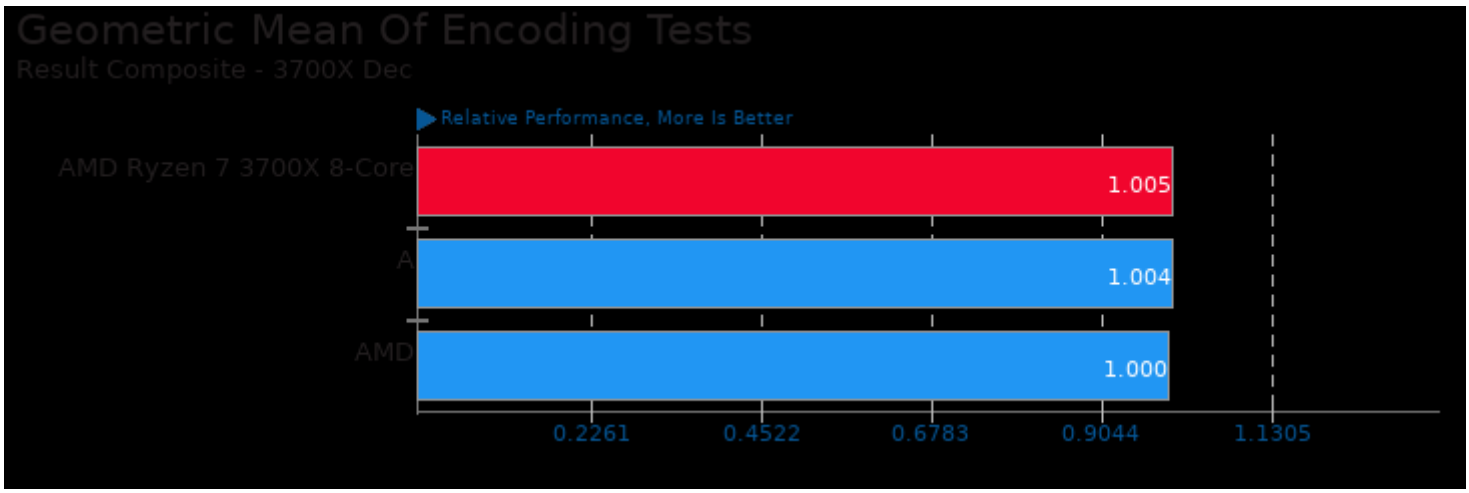
These geometric means are based upon test groupings / test suites for this result file.



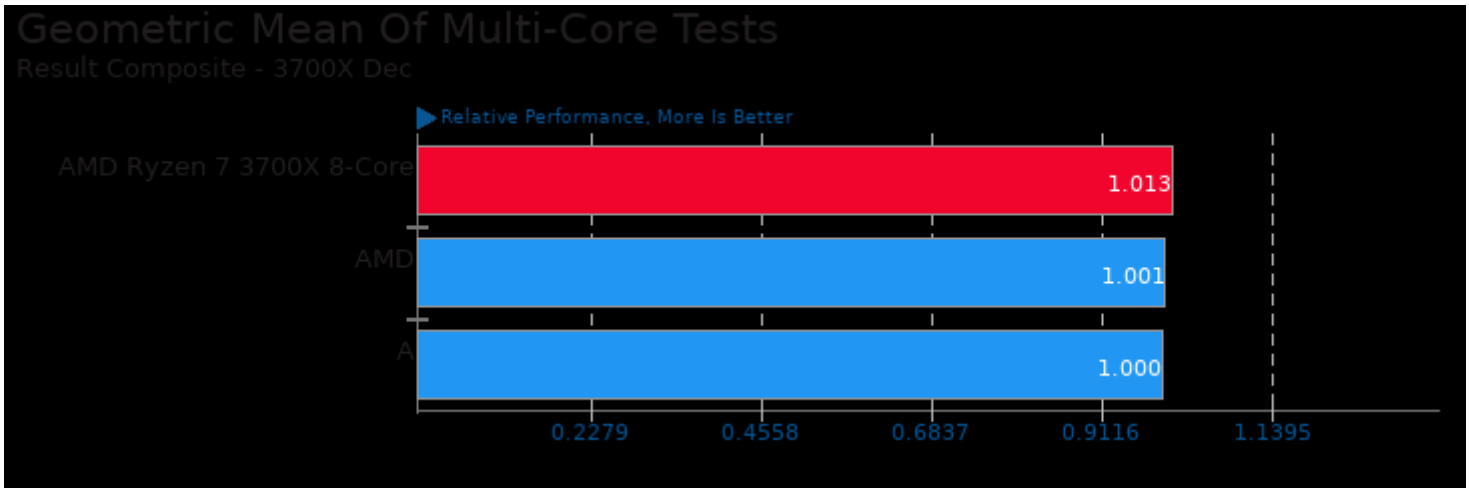
Geometric mean based upon tests: pts/blake2, pts/compress-7zip, pts/primesieve and pts/blender



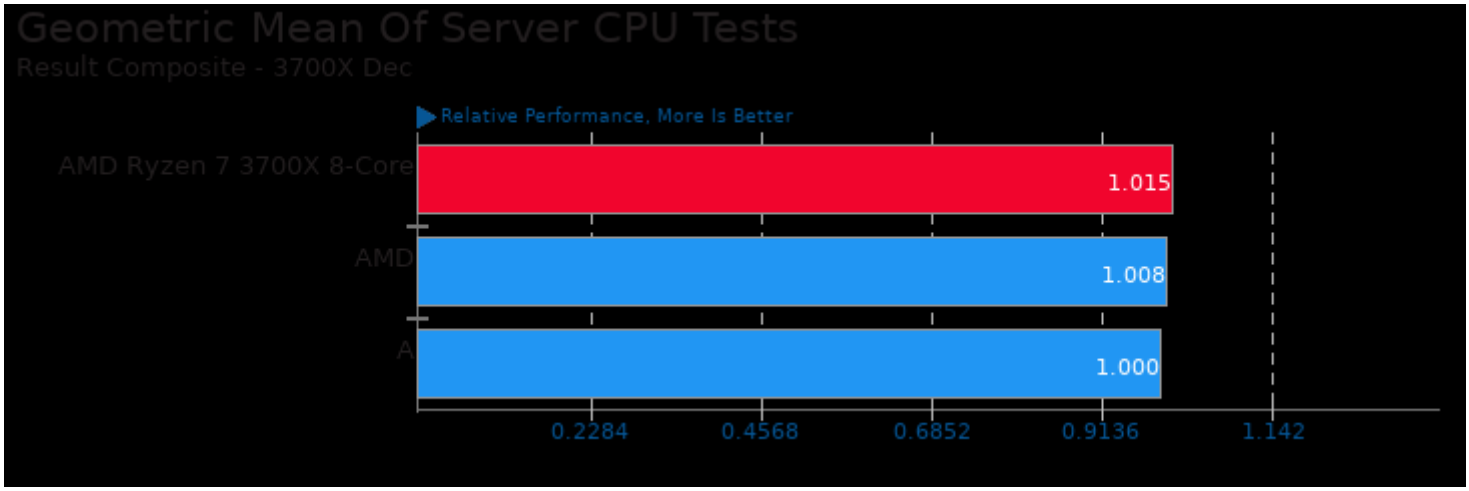
Geometric mean based upon tests: pts/blender, pts/rav1e, pts/stargate and pts/jpegxl



Geometric mean based upon tests: pts/stargate and pts/rav1e



Geometric mean based upon tests: pts/blender, pts/rav1e, pts/primesieve and pts/compress-7zip



Geometric mean based upon tests: pts/cp2k, pts/compress-7zip and pts/blender

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 22:37.