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aom av1 5900HX

AMD Ryzen 9 5900HX testing with a ASUS G513QY v1.0 (G513QY.311 BIOS) and ASUS AMD Cezanne 512MB on Pop 22.04 via the Phoronix Test Suite.

Automated Executive Summary

A had the most wins, coming in first place for 64% of the tests.

Based on the geometric mean of all complete results, the fastest (A) was 1.008x the speed of the slowest (C). B was 0.992x the speed of A and C was 1x the speed of B.

Test Systems:

A

B

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C

Processor: AMD Ryzen 9 5900HX @ 3.30GHz (8 Cores / 16 Threads), Motherboard: ASUS G513QY v1.0 (G513QY.311 BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 512GB SAMSUNG MZVLQ512HBLU-00B00, Graphics: ASUS AMD Cezanne 512MB (2500/1000MHz), Audio: AMD Navi 21 HDMI Audio, Monitor: LQ156M1JW25, Network: Realtek RTL8111/8168/8411 + MEDIATEK MT7921 802.11ax PCI

OS: Pop 22.04, Kernel: 5.17.5-76051705-generic (x86_64), Desktop: GNOME Shell 42.1, Display Server: X Server 1.21.1.3, OpenGL: 4.6 Mesa 22.0.1 (LLVM 13.0.1 DRM 3.44), Vulkan: 1.3.204, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

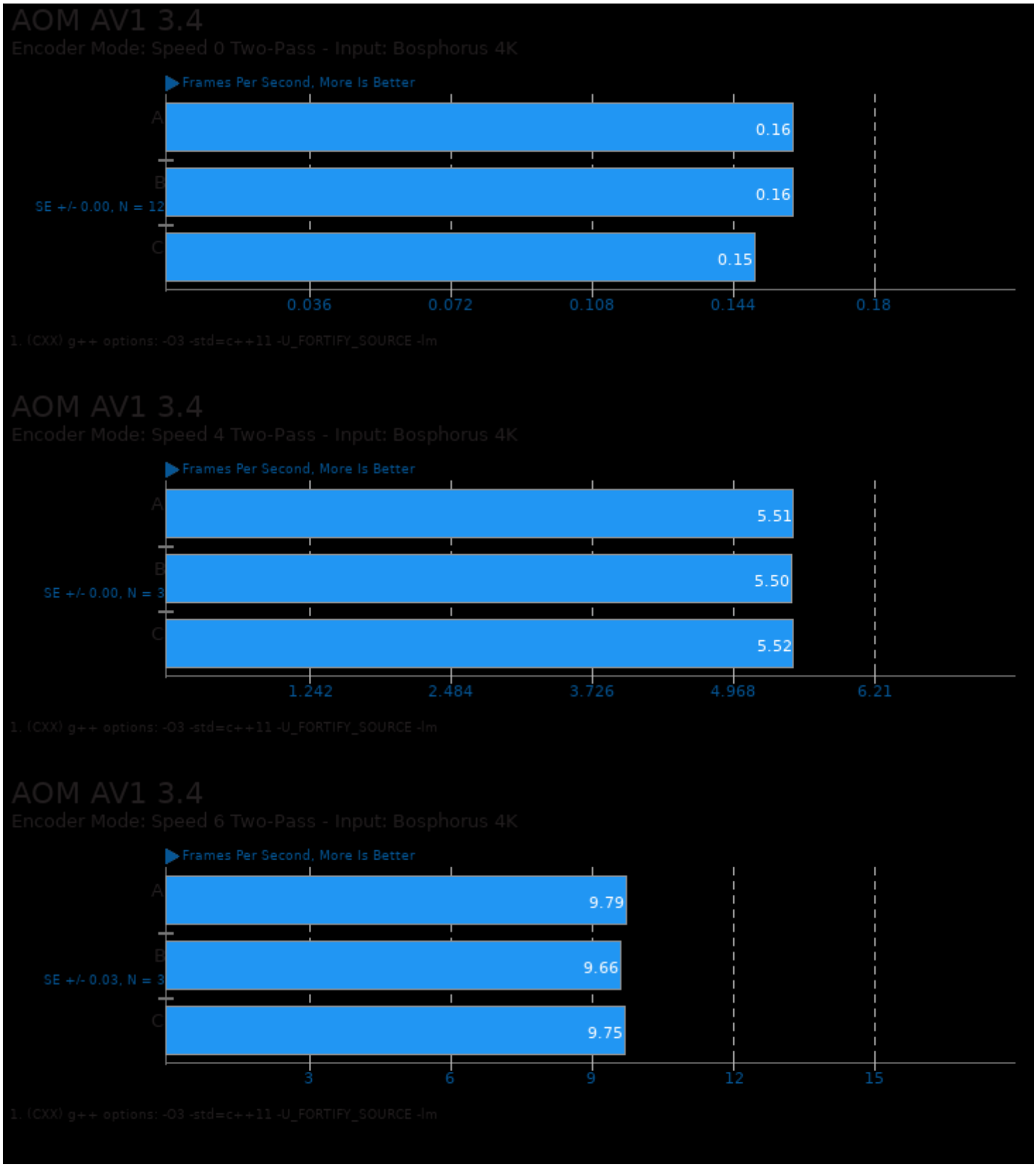
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --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 schedutil (Boost: Enabled) - Platform Profile: balanced - CPU Microcode: 0xa50000c - ACPI Profile: balanced
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

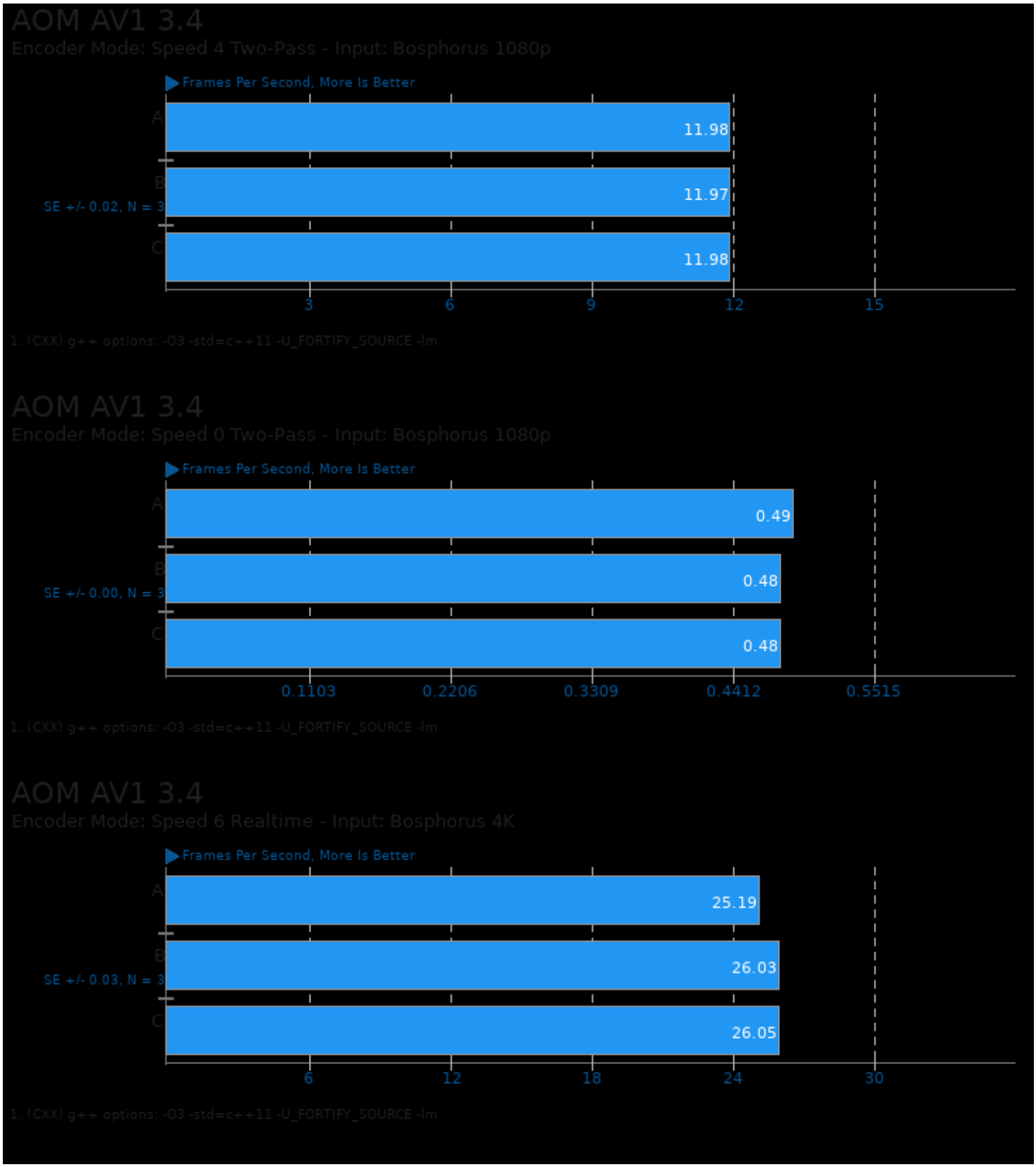
	A	B	C
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	**0.16**	**0.16**	**0.15**
Normalized	100%	100%	93.75%
Standard Deviation		2.9%	
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	5.51	**5.50**	**5.52**
Normalized	99.82%	99.64%	100%
Standard Deviation		0.1%	
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	**9.79**	**9.66**	9.75
Normalized	100%	98.67%	99.59%
Standard Deviation		0.5%	
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	**11.98**	**11.97**	**11.98**
Normalized	100%	99.92%	100%
Standard Deviation		0.3%	
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	**0.49**	**0.48**	**0.48**
Normalized	100%	97.96%	97.96%
Standard Deviation		1.2%	
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	**25.19**	26.03	**26.05**
Normalized	96.7%	99.92%	100%
Standard Deviation		0.2%	
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	**30.44**	30.22	**30.2**
Normalized	100%	99.28%	99.21%
Standard Deviation		0.3%	

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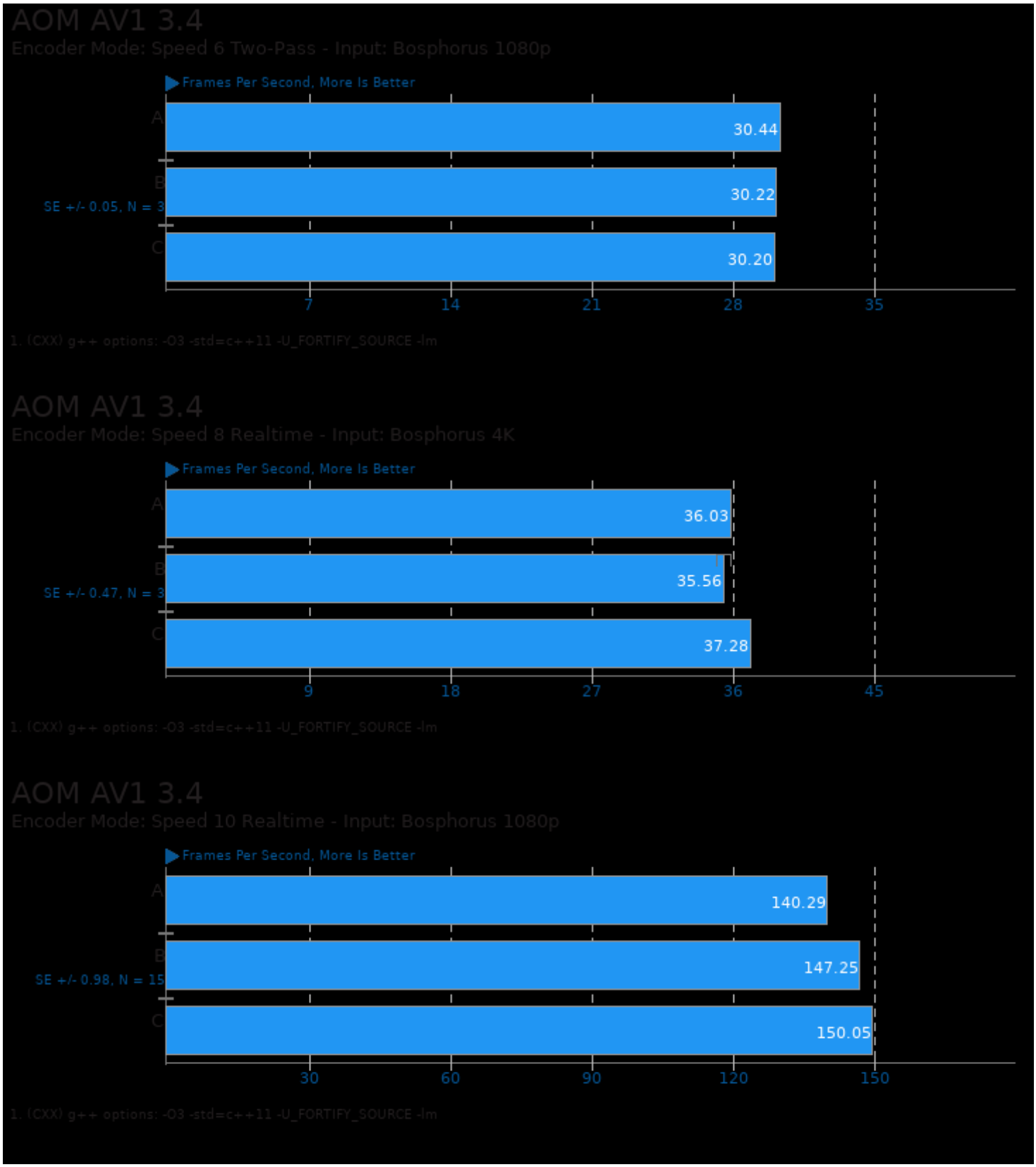
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	36.03	**35.56**	**37.28**
Normalized	96.65%	95.39%	100%
Standard Deviation		2.3%	
AOM AV1 - Speed 10 Realtime - Bosphorus 1080p (FPS)	**140.29**	147.25	**150.05**
Normalized	93.5%	98.13%	100%
Standard Deviation		2.6%	
AOM AV1 - Speed 10 Realtime - Bosphorus 4K (FPS)	**48.43**	46.59	**45.92**
Normalized	100%	96.2%	94.82%
Standard Deviation		0.9%	
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**48.89**	**46.45**	46.7
Normalized	100%	95.01%	95.52%
Standard Deviation		0.5%	
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	49.42	**49.43**	**48.89**
Normalized	99.98%	100%	98.91%
Standard Deviation		2.1%	
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	**149.73**	**144.41**	144.49
Normalized	100%	96.45%	96.5%
Standard Deviation		2.5%	
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	**122.85**	**121.31**	121.49
Normalized	100%	98.75%	98.89%
Standard Deviation		2.1%	

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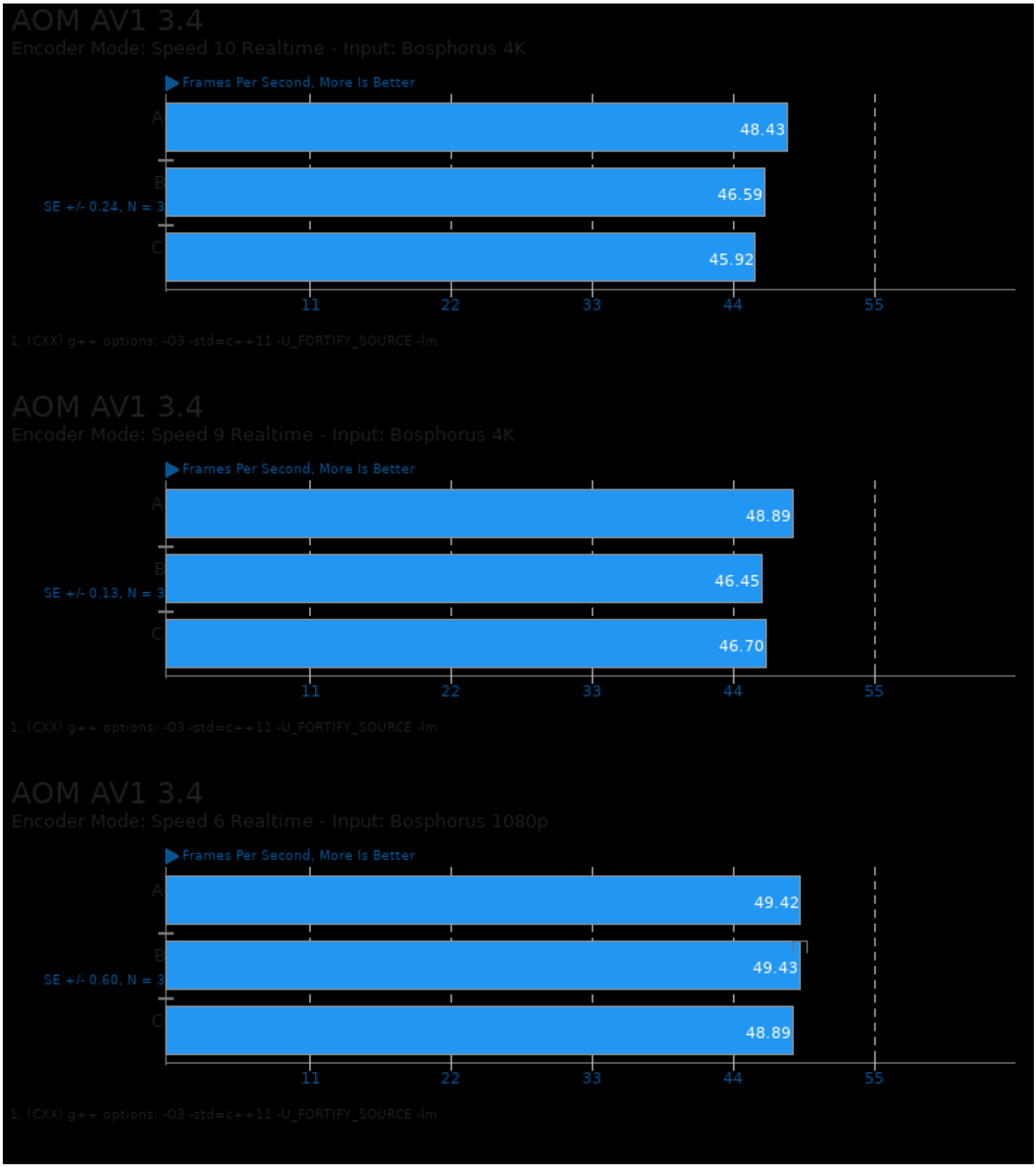



AOM AV1 3.4
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
11.98
11.97
11.98
SE +/- 0.02, N = 3
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
0.49
0.48
0.48
SE +/- 0.00, N = 3
0.1103
0.2206
0.3309
0.4412
0.5515
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
25.19
26.03
26.05
SE +/- 0.03, N = 3
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

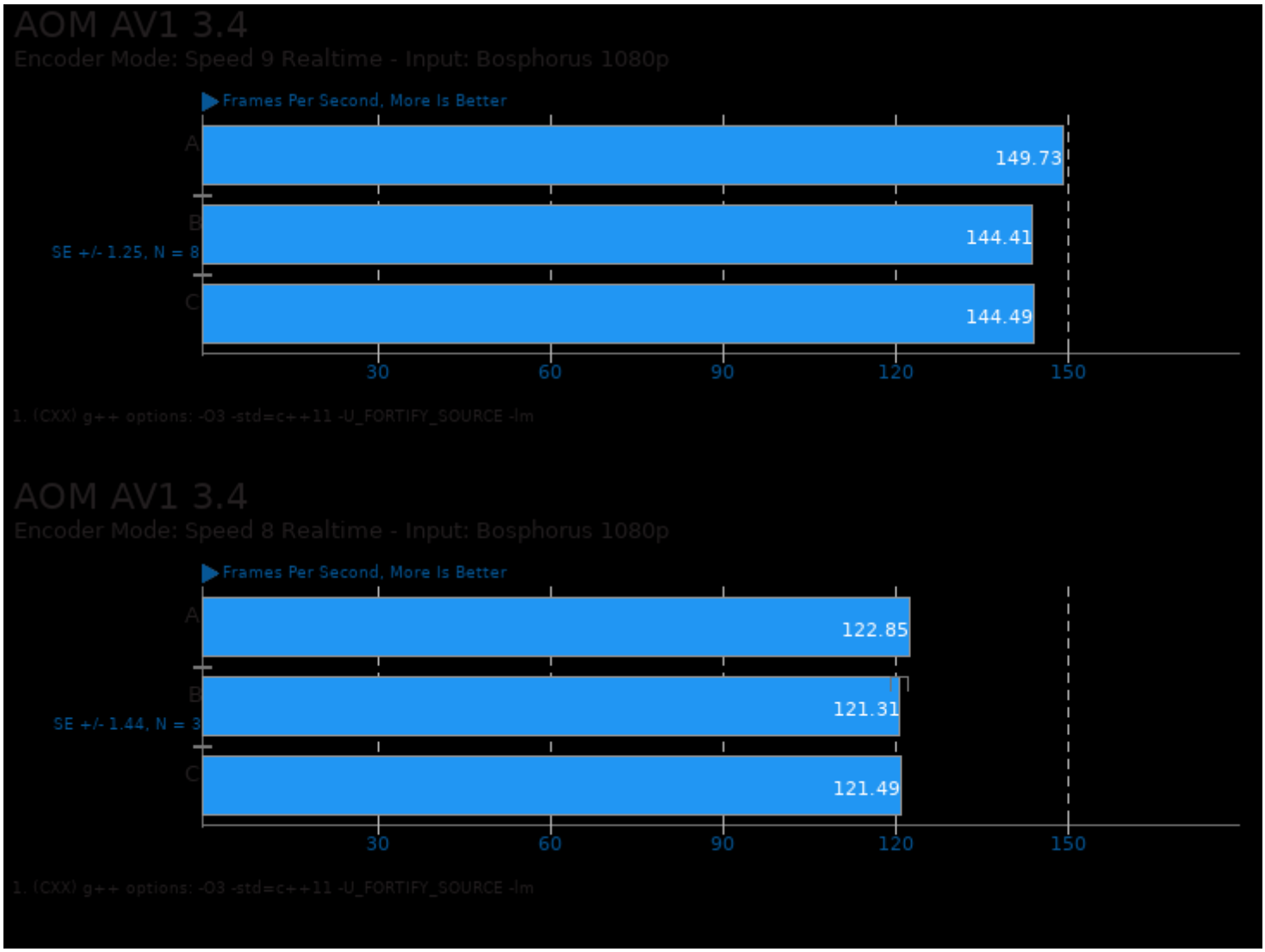
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