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5850U PRO AOM AV1 3.4

AMD Ryzen 7 PRO 5850U testing with a HP 8A78 (F.04 BIOS) and 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 57% of the tests.

Based on the geometric mean of all complete results, the fastest (B) was 1.005x the speed of the slowest (C). A was 0.996x the speed of B and C was 0.999x the speed of A.

Test Systems:

A

B

5850U PRO AOM AV1 3.4

C

Processor: AMD Ryzen 7 PRO 5850U @ 1.90GHz (8 Cores / 16 Threads), Motherboard: HP 8A78 (F.04 BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 1024GB SK hynix PC711 HFS001TDE9X073N, Graphics: AMD Cezanne 512MB (2000/400MHz), Audio: AMD Renoir Radeon HD Audio, Network: Realtek RTL8822CE 802.11ac PCIe

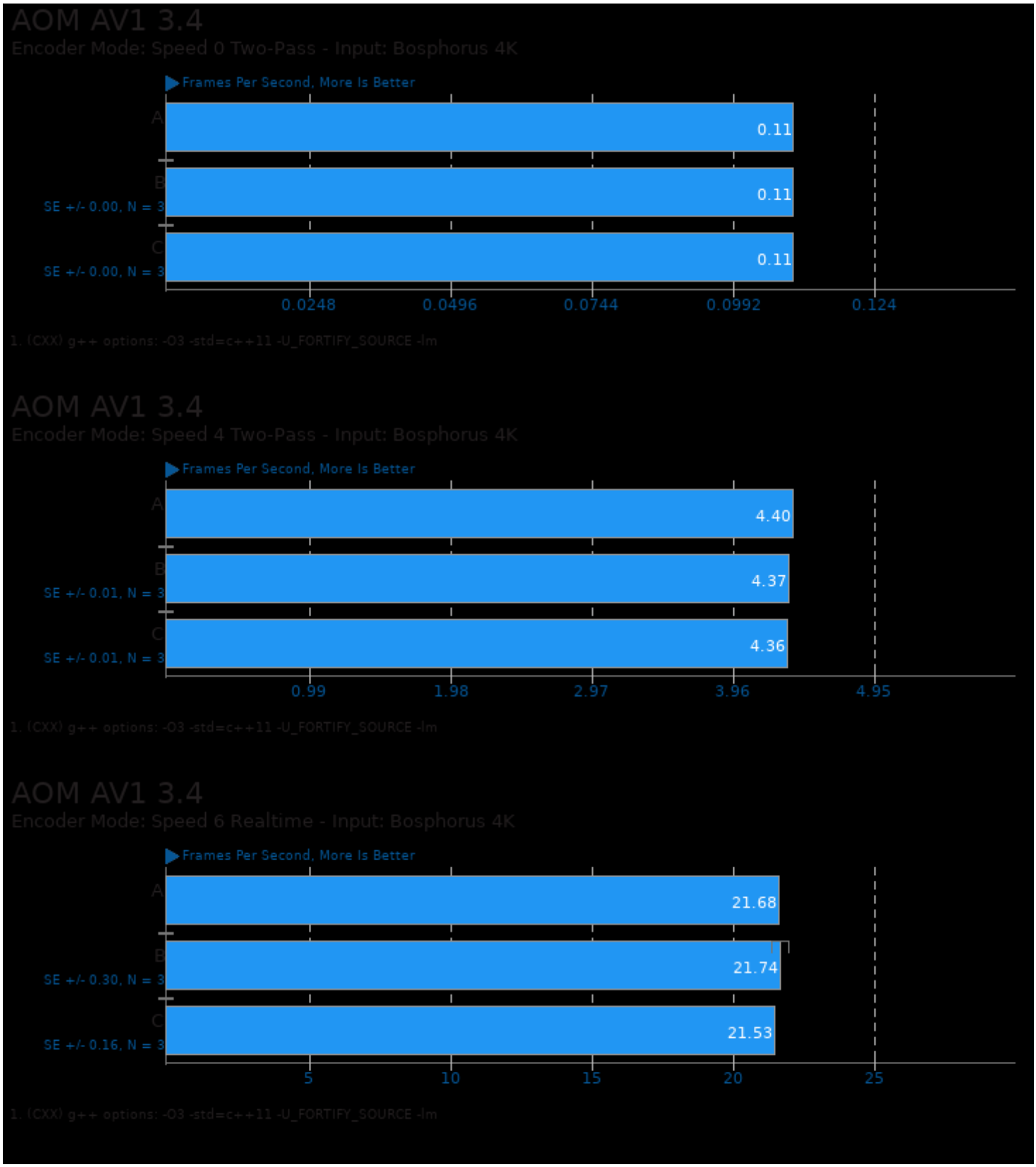
OS: Pop 22.04, Kernel: 5.17.5-76051705-generic (x86_64), Desktop: GNOME Shell 42.1, Display Server: X Server 1.21.1.3, OpenGL: 4.6 Mesa 22.0.1 (LLVM 13.0.1 DRM 3.44), Vulkan: 1.2.204, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

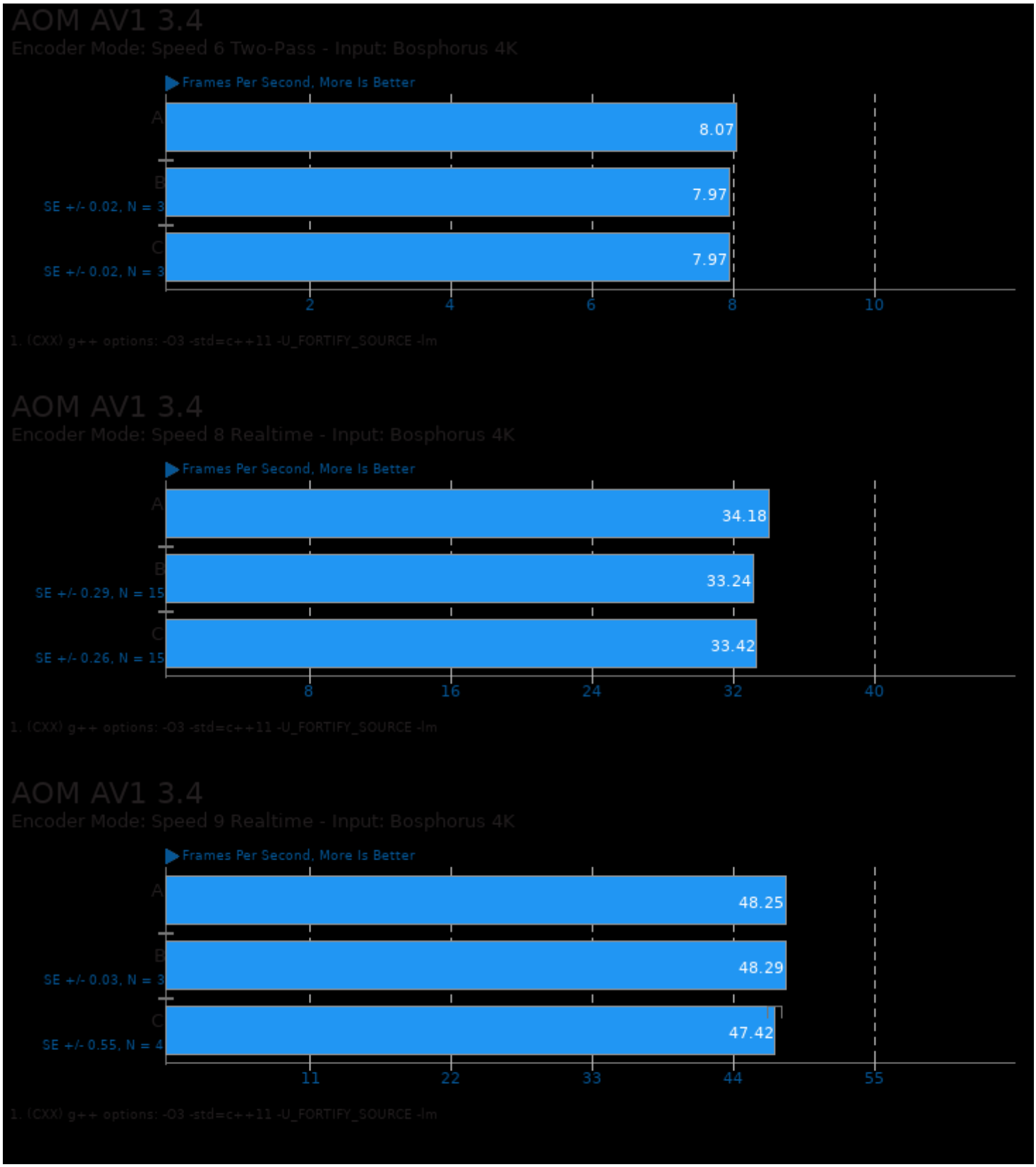
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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) - CPU Microcode: 0xa50000c
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

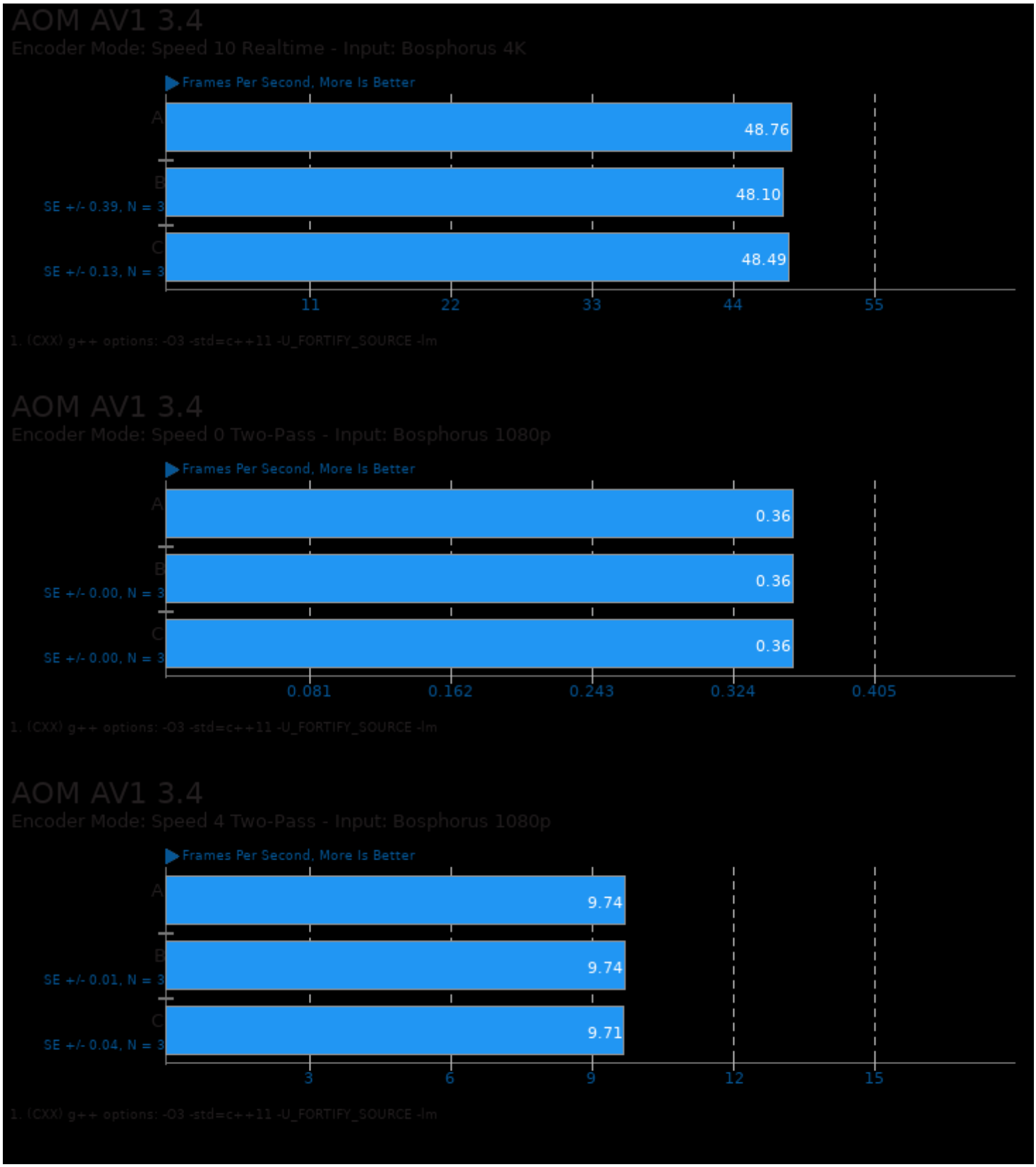
	A	B	C
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.11	0.11	0.11
Standard Deviation		0%	0%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	**4.4**	4.37	**4.36**
Normalized	100%	99.32%	99.09%
Standard Deviation		0.3%	0.3%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	21.68	**21.74**	**21.53**
Normalized	99.72%	100%	99.03%
Standard Deviation		2.4%	1.3%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	**8.07**	**7.97**	**7.97**
Normalized	100%	98.76%	98.76%
Standard Deviation		0.4%	0.4%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	**34.18**	**33.24**	33.42
Normalized	100%	97.25%	97.78%
Standard Deviation		3.4%	3%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	48.25	**48.29**	**47.42**
Normalized	99.92%	100%	98.2%
Standard Deviation		0.1%	2.3%
AOM AV1 - Speed 10 Realtime - Bosphorus 4K (FPS)	**48.76**	**48.10**	48.49
Normalized	100%	98.65%	99.45%
Standard Deviation		1.4%	0.5%

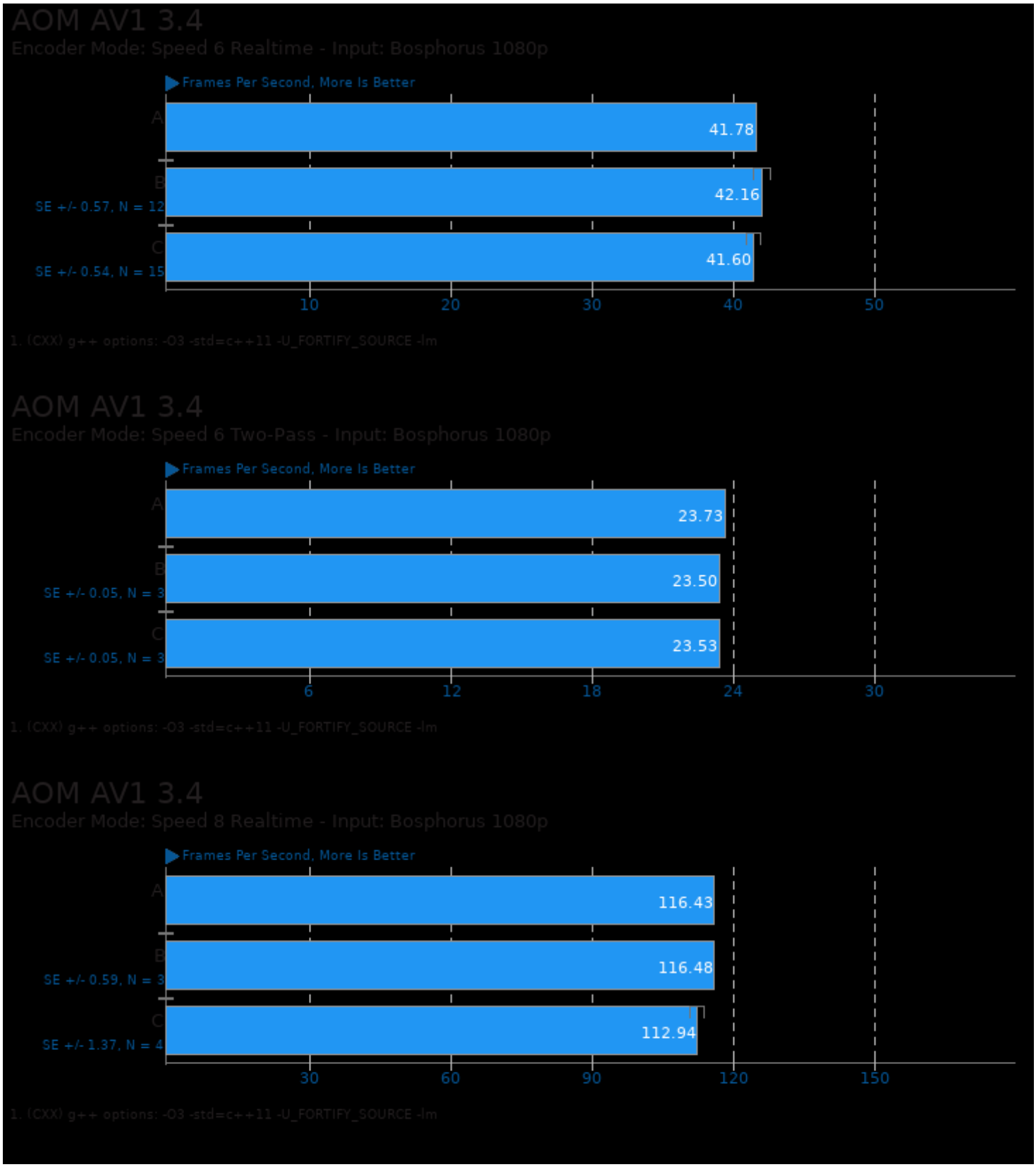
5850U PRO AOM AV1 3.4

AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	0.36	0.36	0.36
Standard Deviation		0%	0%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	**9.74**	**9.74**	**9.71**
Normalized	100%	100%	99.69%
Standard Deviation		0.2%	0.6%
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	41.78	**42.16**	**41.60**
Normalized	99.1%	100%	98.67%
Standard Deviation		4.7%	5%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	**23.73**	**23.50**	23.53
Normalized	100%	99.03%	99.16%
Standard Deviation		0.3%	0.4%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	116.43	**116.48**	**112.94**
Normalized	99.96%	100%	96.96%
Standard Deviation		0.9%	2.4%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	**133.33**	144.42	**144.97**
Normalized	91.97%	99.62%	100%
Standard Deviation		2.8%	1.1%
AOM AV1 - Speed 10 Realtime - Bosphorus 1080p (FPS)	**145.29**	**150.17**	147.93
Normalized	96.75%	100%	98.51%
Standard Deviation		2.4%	3.4%

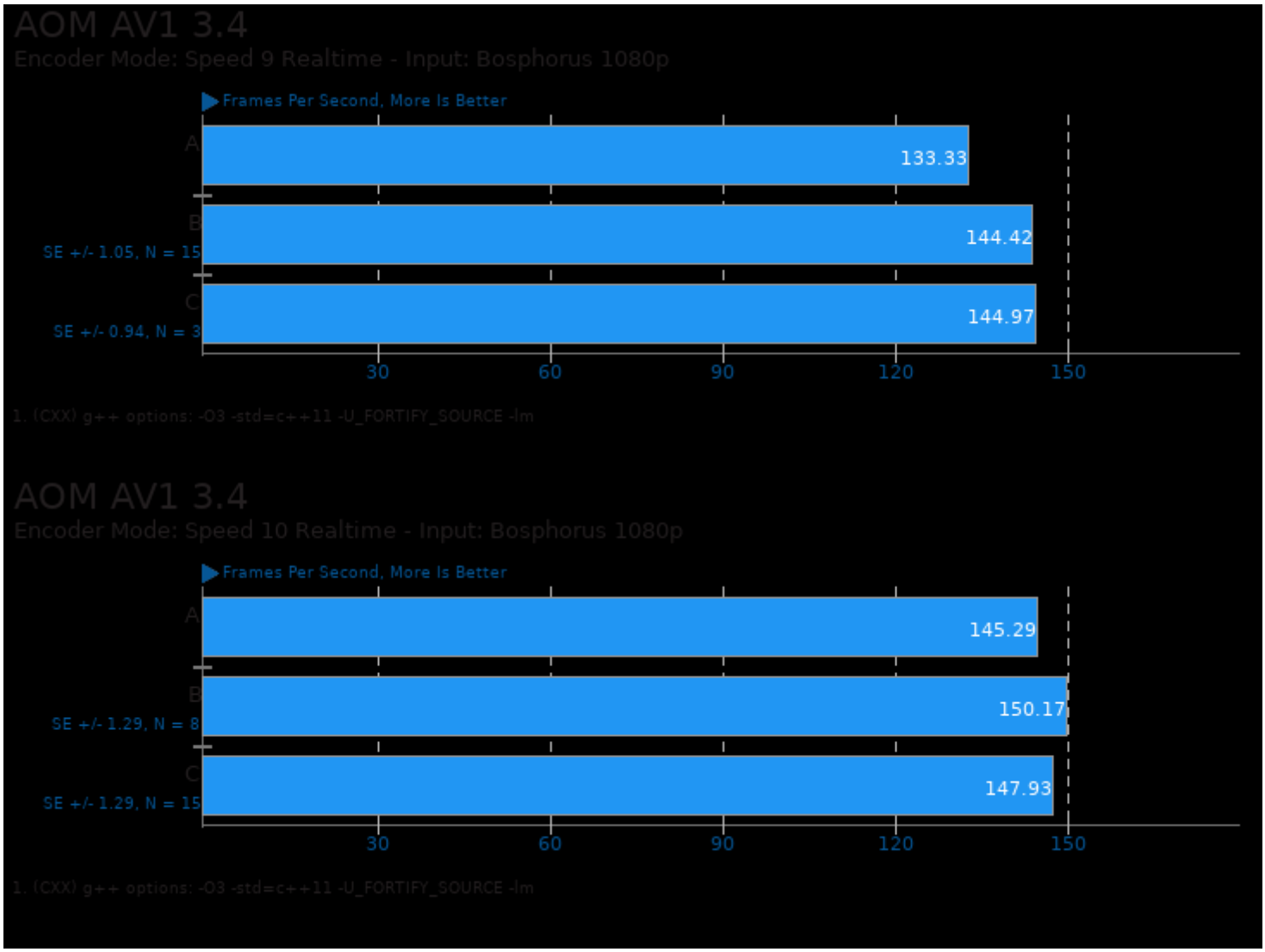

AOM AV1 3.4
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
0.11
B
0.11
SE +/- 0.00, N = 3
C
0.11
SE +/- 0.00, N = 3
0.0248
0.0496
0.0744
0.0992
0.124
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
4.40
B
4.37
SE +/- 0.01, N = 3
C
4.36
SE +/- 0.01, N = 3
0.99
1.98
2.97
3.96
4.95
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
21.68
B
21.74
SE +/- 0.30, N = 3
C
21.53
SE +/- 0.16, N = 3
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.4
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
8.07
B
7.97
SE +/- 0.02, N = 3
C
7.97
SE +/- 0.02, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
34.18
B
33.24
SE +/- 0.29, N = 15
C
33.42
SE +/- 0.26, N = 15
8
16
24
32
40
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
48.25
B
48.29
SE +/- 0.03, N = 3
C
47.42
SE +/- 0.55, N = 4
11
22
33
44
55
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.4
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
48.76
B
48.10
SE +/- 0.39, N = 3
C
48.49
SE +/- 0.13, N = 3
11
22
33
44
55
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
0.36
B
0.36
SE +/- 0.00, N = 3
C
0.36
SE +/- 0.00, N = 3
0.081
0.162
0.243
0.324
0.405
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
9.74
B
9.74
SE +/- 0.01, N = 3
C
9.71
SE +/- 0.04, 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 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
41.78
B
42.16
SE +/- 0.57, N = 12
C
41.60
SE +/- 0.54, N = 15
10
20
30
40
50
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
23.73
B
23.50
SE +/- 0.05, N = 3
C
23.53
SE +/- 0.05, N = 3
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
116.43
B
116.48
SE +/- 0.59, N = 3
C
112.94
SE +/- 1.37, N = 4
30
60
90
120
150
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

5850U PRO AOM AV1 3.4



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