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3970X m

AMD Ryzen Threadripper 3970X 32-Core testing with a ASUS ROG ZENITH II EXTREME (1201 BIOS) and AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 45% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.005x the speed of the slowest (3). 2 was 0.996x the speed of 1 and 3 was 0.999x the speed of 2.

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

AOM AV1 (Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p) at 1.05x
AOM AV1 (Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p) at 1.042x
AOM AV1 (Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K) at 1.029x
Stockfish (Total Time) at 1.028x
AOM AV1 (Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p) at 1.018x
AOM AV1 (Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K) at 1.016x
AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K) at 1.015x
AOM AV1 (Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K) at 1.014x
AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p) at 1.013x

OpenSCAD (Render: Projector Mount Swivel) at 1.012x.

Test Systems:

1

2

3

Processor: AMD Ryzen Threadripper 3970X 32-Core @ 4.55GHz (32 Cores / 64 Threads), Motherboard: ASUS ROG ZENITH II EXTREME (1201 BIOS), Chipset: AMD Starship/Matisse, Memory: 64GB, Disk: Samsung SSD 980 PRO 500GB, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (1750/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Aquantia AQC107 NBase-T/IEEE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.11.0-rc6-phx (x86_64) 20210203, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/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 schedutil (Boost: Enabled) - CPU Microcode: 0x8301039
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

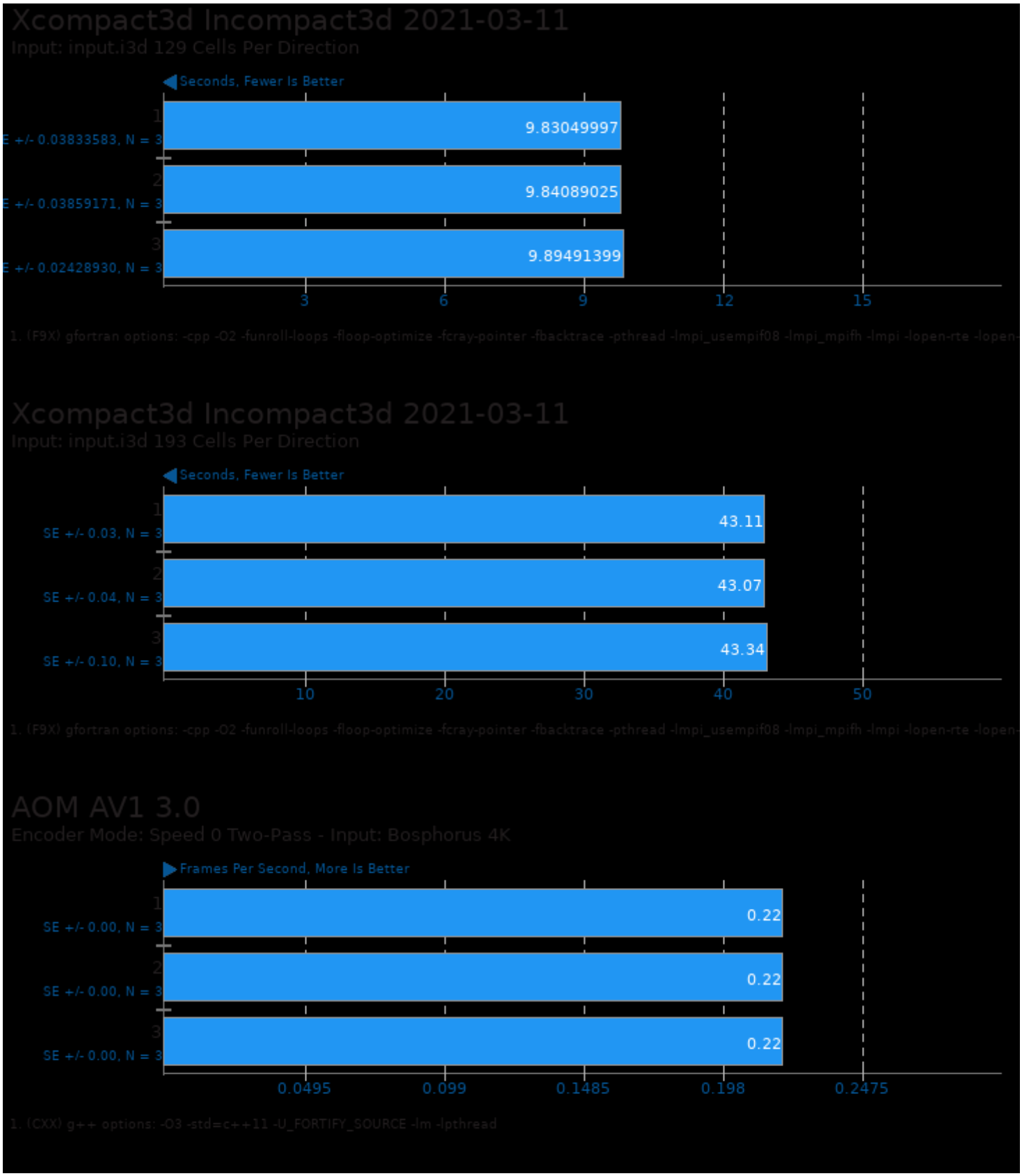
	1	2	3
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	**9.83049997**	9.84089025	**9.89491399**
Normalized	100%	99.89%	99.35%
Standard Deviation	0.7%	0.7%	0.4%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	43.1117083	**43.0667089**	**43.3446337**
Normalized	99.9%	100%	99.36%
Standard Deviation	0.1%	0.2%	0.4%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.22	0.22	0.22
Standard Deviation	0%	0%	0%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	4.33	**4.35**	**4.28**
Normalized	99.54%	100%	98.39%
Standard Deviation	0.7%	2%	0.8%

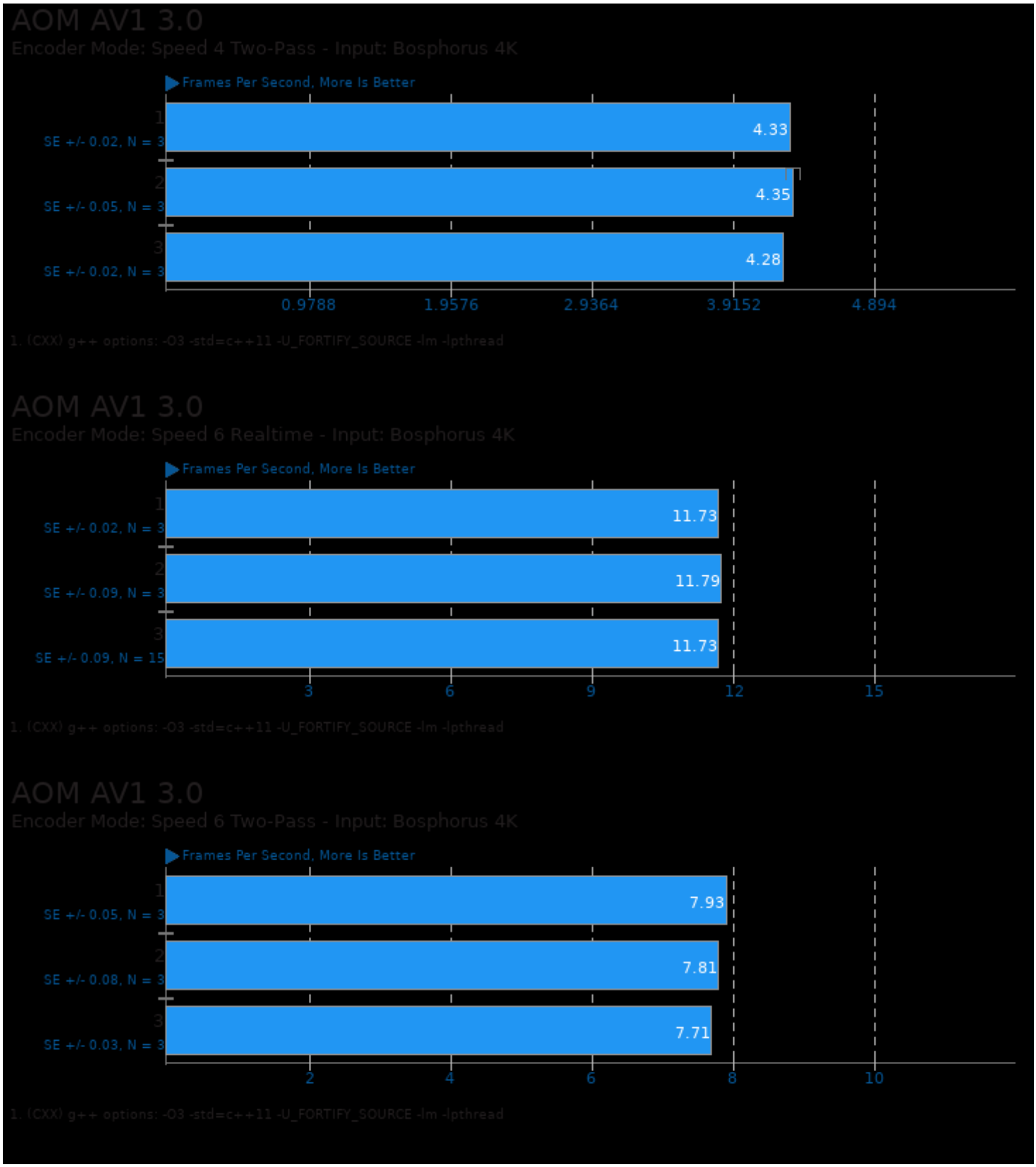
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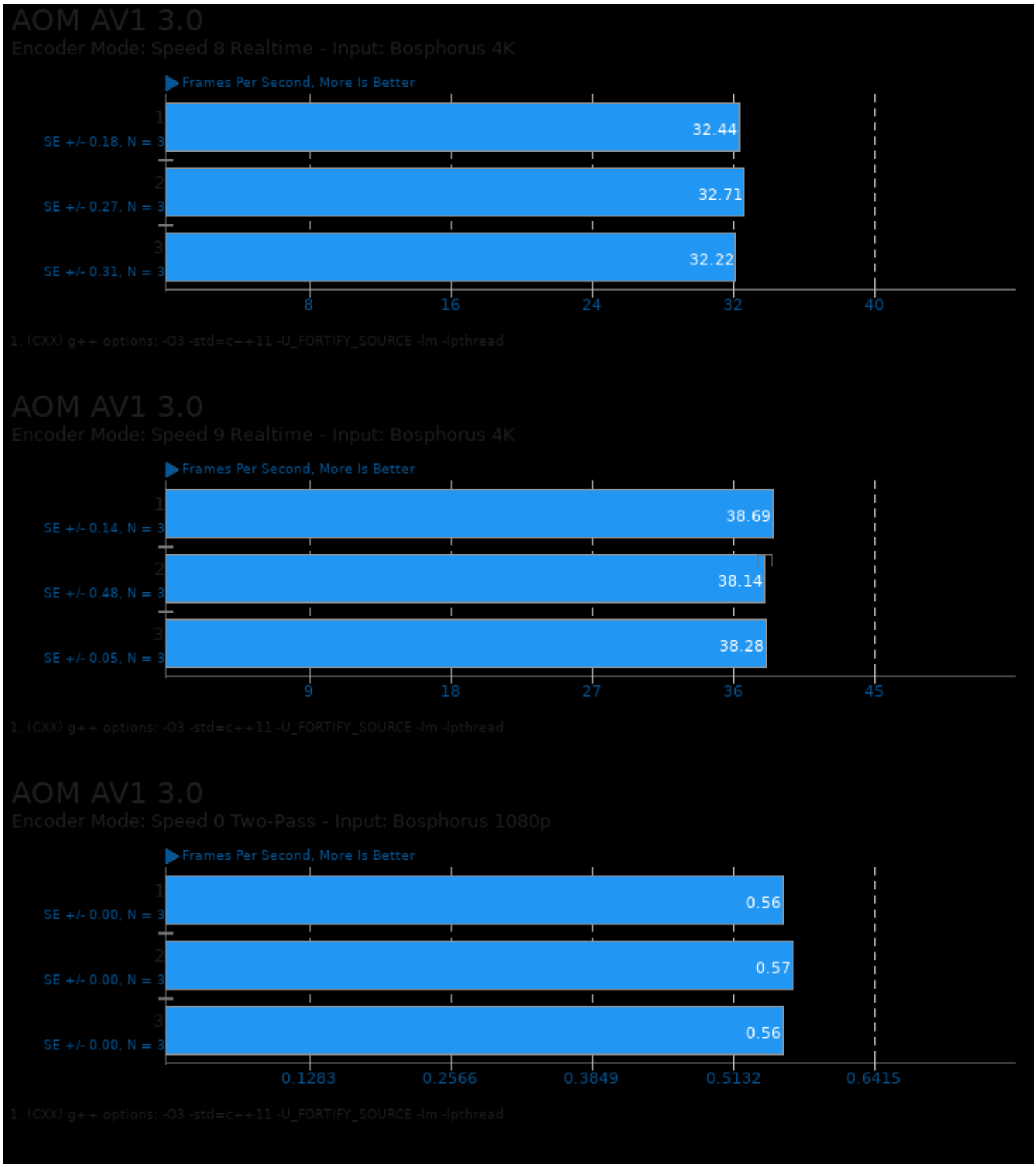
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	**11.73**	**11.79**	**11.73**
Normalized	99.49%	100%	99.49%
Standard Deviation	0.3%	1.4%	3.1%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	**7.93**	7.81	**7.71**
Normalized	100%	98.49%	97.23%
Standard Deviation	1.2%	1.7%	0.8%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	32.44	**32.71**	**32.22**
Normalized	99.17%	100%	98.5%
Standard Deviation	0.9%	1.4%	1.7%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**38.69**	**38.14**	38.28
Normalized	100%	98.58%	98.94%
Standard Deviation	0.6%	2.2%	0.2%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	**0.56**	**0.57**	**0.56**
Normalized	98.25%	100%	98.25%
Standard Deviation	1%	0%	0%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	**6.94**	6.73	**6.66**
Normalized	100%	96.97%	95.97%
Standard Deviation	1.9%	1.9%	0.8%
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	**23.11**	**21.93**	22.59
Normalized	100%	94.89%	97.75%
Standard Deviation	7%	4.7%	4.2%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	18.14	**17.95**	**18.84**
Normalized	96.28%	95.28%	100%
Standard Deviation	3%	3%	2.4%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	89.02	**89.25**	**88.10**
Normalized	99.74%	100%	98.71%
Standard Deviation	2.7%	0.3%	2.8%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	**103.80**	**104.91**	104.30
Normalized	98.94%	100%	99.42%
Standard Deviation	1.4%	1%	1%
Stockfish - Total Time (Nodes/s)	103749260	**102203263**	**105061149**
Normalized	98.75%	97.28%	100%
Standard Deviation	3.3%	1.1%	3.9%
OpenSCAD - Pistol (sec)	112.779	**111.872**	**113.189**
Normalized	99.2%	100%	98.84%
Standard Deviation	0.2%	1%	0.5%
OpenSCAD - Retro Car (sec)	19.946	**19.845**	**20.034**
Normalized	99.49%	100%	99.06%
Standard Deviation	0%	0%	0.3%
OpenSCAD - Mini-ITX Case (sec)	**48.239**	47.879	**47.840**
Normalized	99.17%	99.92%	100%
Standard Deviation	0.6%	0.6%	0.5%
OpenSCAD - P.M.S (sec)	**99.428**	100.331	**100.667**
Normalized	100%	99.1%	98.77%

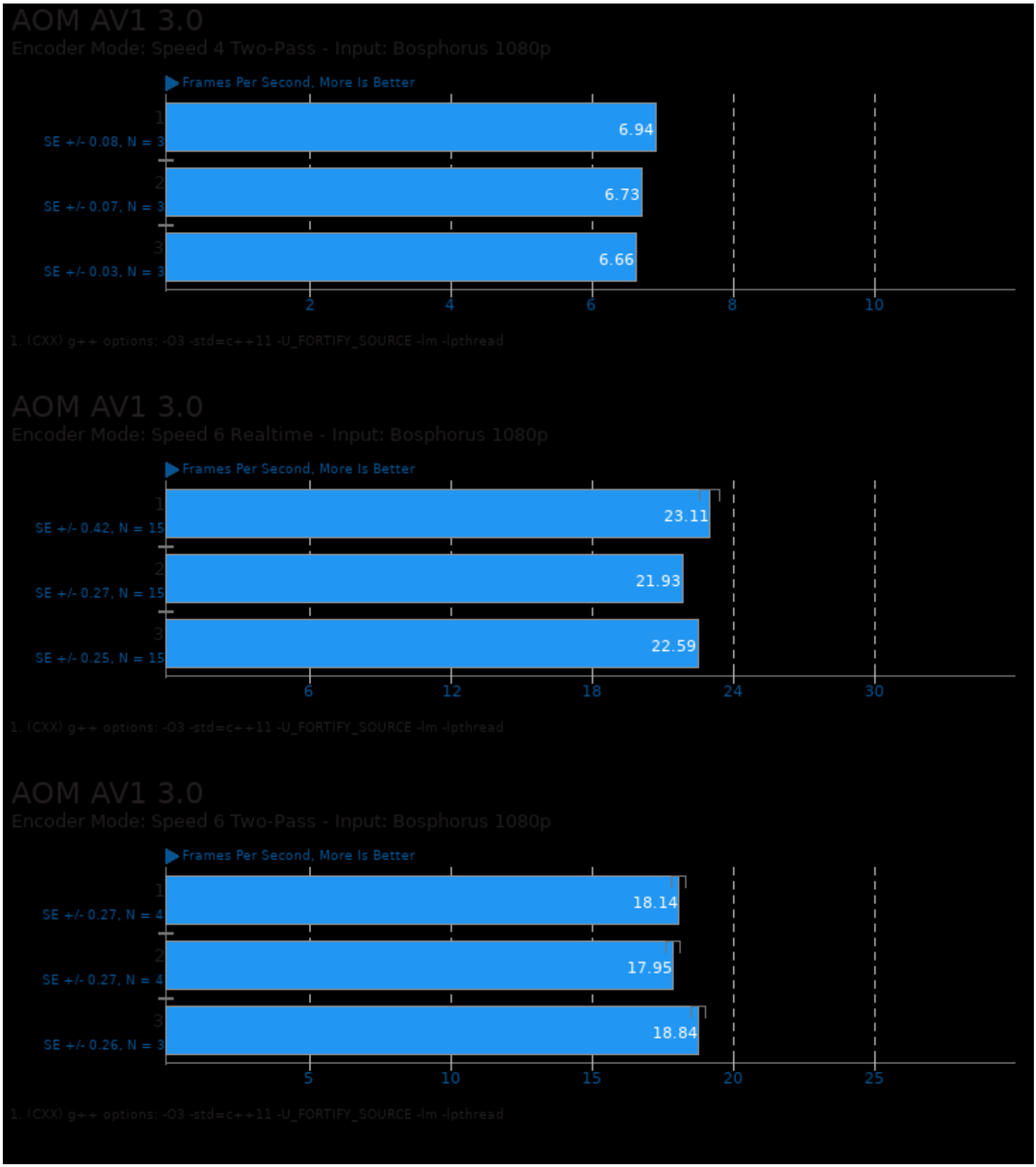
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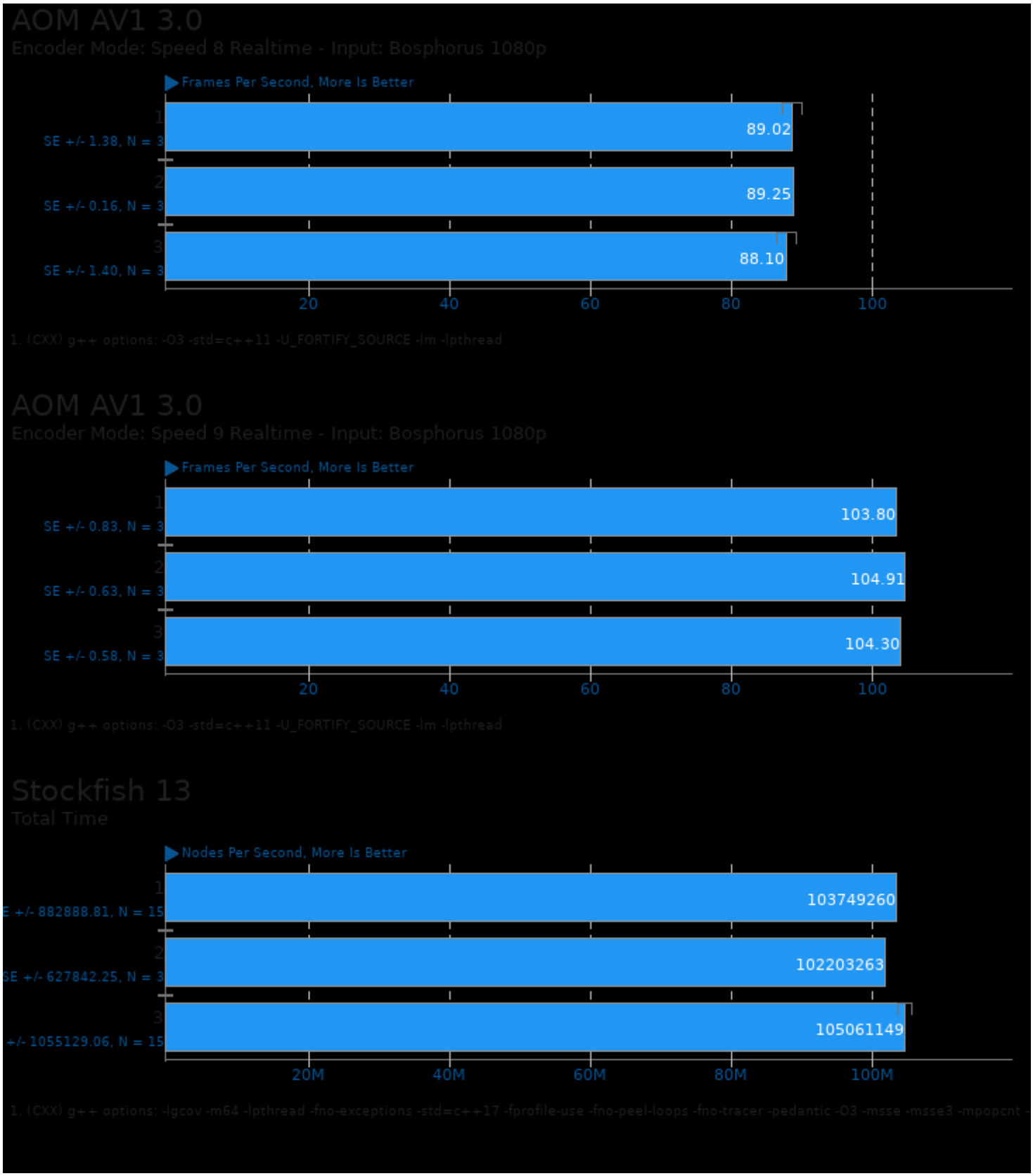
Standard Deviation	0.2%	0.1%	1.1%
OpenSCAD - L.P.C.S (sec)	**19.276**	19.340	**19.384**
Normalized	100%	99.67%	99.44%
Standard Deviation	1.2%	0.2%	0.6%

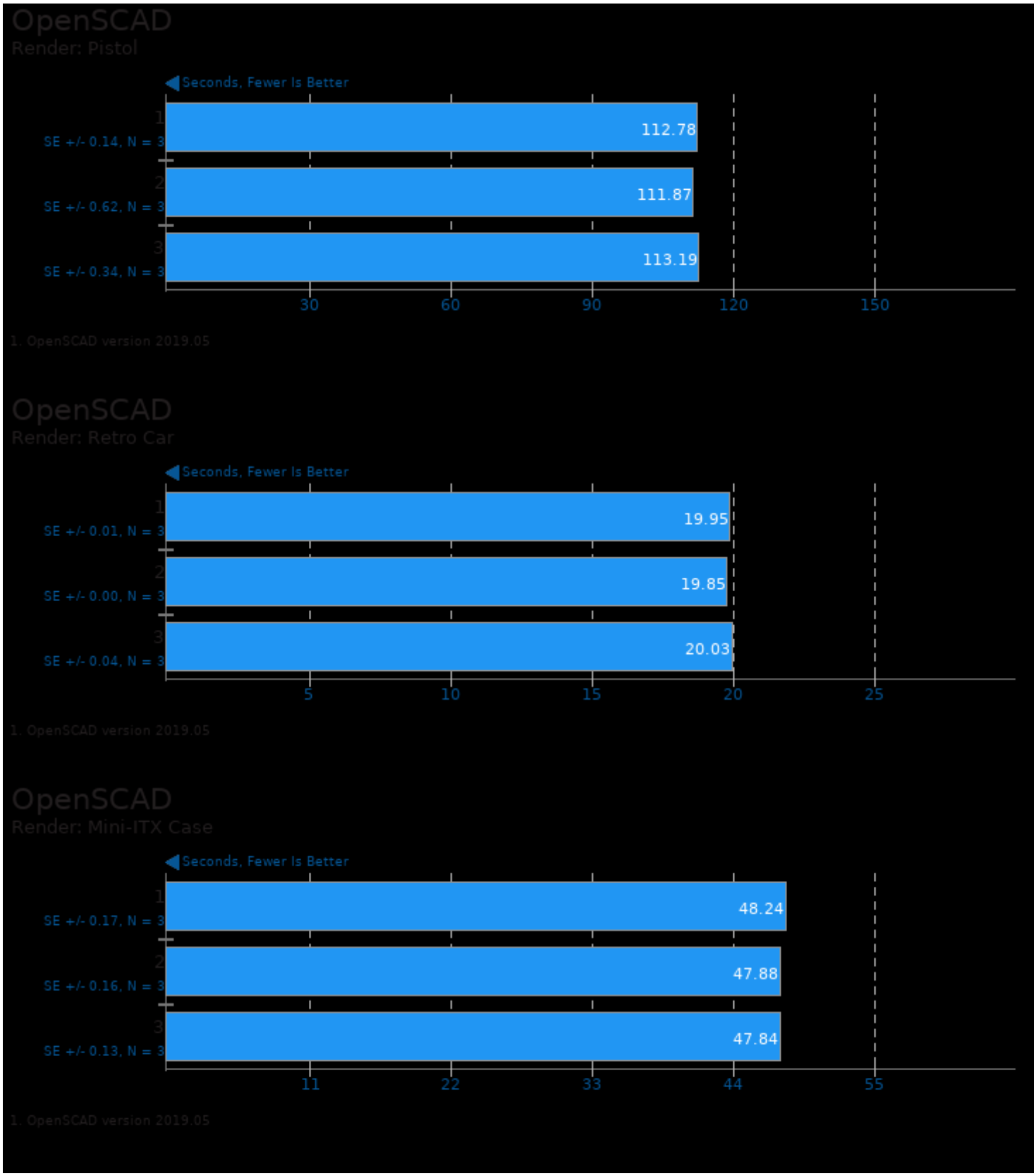

Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 129 Cells Per Direction
Seconds, Fewer Is Better
1
E +/- 0.03833583, N = 3
9.83049997
2
E +/- 0.03859171, N = 3
9.84089025
3
E +/- 0.02428930, N = 3
9.89491399
3
6
9
12
15
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-
Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 193 Cells Per Direction
Seconds, Fewer Is Better
1
SE +/- 0.03, N = 3
43.11
2
SE +/- 0.04, N = 3
43.07
3
SE +/- 0.10, N = 3
43.34
10
20
30
40
50
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-
AOM AV1 3.0
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.00, N = 3
0.22
2
SE +/- 0.00, N = 3
0.22
3
SE +/- 0.00, N = 3
0.22
0.0495
0.099
0.1485
0.198
0.2475
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

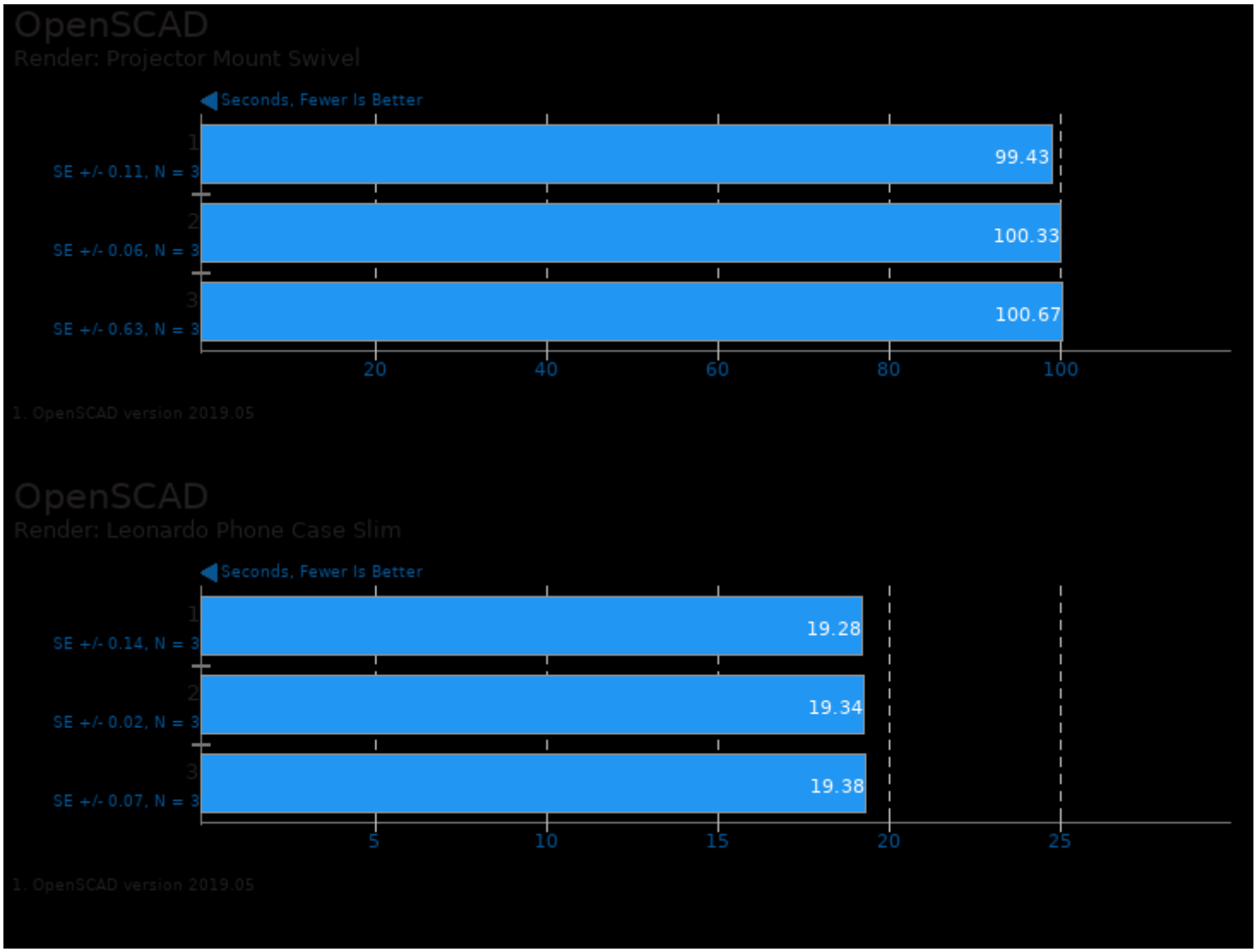

AOM AV1 3.0
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.02, N = 3
4.33
2
SE +/- 0.05, N = 3
4.35
3
SE +/- 0.02, N = 3
4.28
0.9788
1.9576
2.9364
3.9152
4.894
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.0
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.02, N = 3
11.73
2
SE +/- 0.09, N = 3
11.79
3
SE +/- 0.09, N = 15
11.73
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.0
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.05, N = 3
7.93
2
SE +/- 0.08, N = 3
7.81
3
SE +/- 0.03, N = 3
7.71
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


AOM AV1 3.0
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.18, N = 3
32.44
2
SE +/- 0.27, N = 3
32.71
3
SE +/- 0.31, N = 3
32.22
8
16
24
32
40
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.0
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.14, N = 3
38.69
2
SE +/- 0.48, N = 3
38.14
3
SE +/- 0.05, N = 3
38.28
9
18
27
36
45
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.0
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 0.00, N = 3
0.56
2
SE +/- 0.00, N = 3
0.57
3
SE +/- 0.00, N = 3
0.56
0.1283
0.2566
0.3849
0.5132
0.6415
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


AOM AV1 3.0
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 0.08, N = 3
6.94
2
SE +/- 0.07, N = 3
6.73
3
SE +/- 0.03, N = 3
6.66
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.0
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 0.42, N = 15
23.11
2
SE +/- 0.27, N = 15
21.93
3
SE +/- 0.25, N = 15
22.59
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.0
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 0.27, N = 4
18.14
2
SE +/- 0.27, N = 4
17.95
3
SE +/- 0.26, N = 3
18.84
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

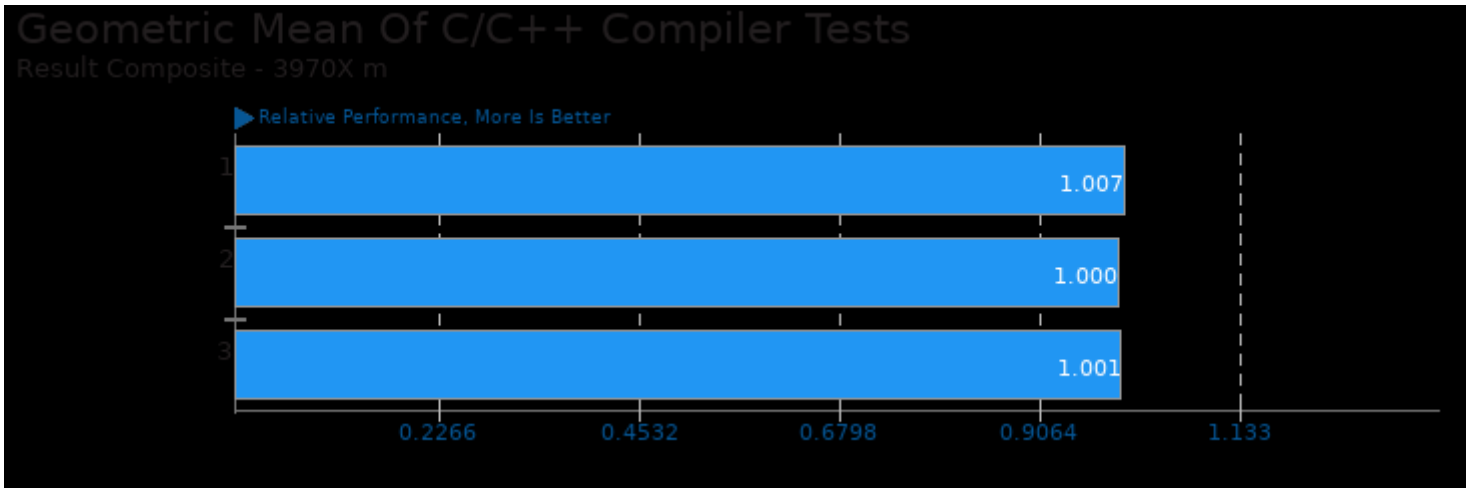

AOM AV1 3.0
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 1.38, N = 3
89.02
2
SE +/- 0.16, N = 3
89.25
3
SE +/- 1.40, N = 3
88.10
20
40
60
80
100
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.0
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 0.83, N = 3
103.80
2
SE +/- 0.63, N = 3
104.91
3
SE +/- 0.58, N = 3
104.30
20
40
60
80
100
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
Stockfish 13
Total Time
Nodes Per Second, More Is Better
1
E +/- 882888.81, N = 15
103749260
2
SE +/- 627842.25, N = 3
102203263
3
+/- 1055129.06, N = 15
105061149
20M
40M
60M
80M
100M
1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt


OpenSCAD
Render: Pistol
Seconds, Fewer Is Better
1
SE +/- 0.14, N = 3
112.78
2
SE +/- 0.62, N = 3
111.87
3
SE +/- 0.34, N = 3
113.19
30
60
90
120
150
1. OpenSCAD version 2019.05
OpenSCAD
Render: Retro Car
Seconds, Fewer Is Better
1
SE +/- 0.01, N = 3
19.95
2
SE +/- 0.00, N = 3
19.85
3
SE +/- 0.04, N = 3
20.03
5
10
15
20
25
1. OpenSCAD version 2019.05
OpenSCAD
Render: Mini-ITX Case
Seconds, Fewer Is Better
1
SE +/- 0.17, N = 3
48.24
2
SE +/- 0.16, N = 3
47.88
3
SE +/- 0.13, N = 3
47.84
11
22
33
44
55
1. OpenSCAD version 2019.05


OpenSCAD
Render: Projector Mount Swivel
Seconds, Fewer Is Better
1
SE +/- 0.11, N = 3
99.43
2
SE +/- 0.06, N = 3
100.33
3
SE +/- 0.63, N = 3
100.67
20
40
60
80
100
1. OpenSCAD version 2019.05

OpenSCAD
Render: Leonardo Phone Case Slim
Seconds, Fewer Is Better
1
SE +/- 0.14, N = 3
19.28
2
SE +/- 0.02, N = 3
19.34
3
SE +/- 0.07, N = 3
19.38
5
10
15
20
25
1. OpenSCAD version 2019.05

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



Geometric mean based upon tests: pts/stockfish and pts/aom-av1



Geometric mean based upon tests: pts/aom-av1 and system/openscad



Geometric mean based upon tests: pts/stockfish and pts/aom-av1

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 08:24.