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9400F EO March

Intel Core i5-9400F testing with a MSI B360M GAMING PLUS (MS-7B19) v1.0 (1.10 BIOS) and MSI NVIDIA NV106 1GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 57% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.001x the speed of the slowest (2). 3 was 1x the speed of 1 and 2 was 0.999x the speed of 3.

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

AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p) at 1.021x
ViennaCL (Test: CPU BLAS - sDOT) at 1.015x
Stockfish (Total Time) at 1.013x
OpenSCAD (Render: Projector Mount Swivel) at 1.01x
OpenSCAD (Render: Retro Car) at 1.009x
ViennaCL (Test: CPU BLAS - sAXPY) at 1.007x
AOM AV1 (Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K) at 1.006x
ViennaCL (Test: CPU BLAS - dCOPY) at 1.005x
ViennaCL (Test: CPU BLAS - sCOPY) at 1.005x

AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K) at 1.005x.

Test Systems:

1

2

3

Processor: Intel Core i5-9400F @ 4.10GHz (6 Cores), Motherboard: MSI B360M GAMING PLUS (MS-7B19) v1.0 (1.10 BIOS), Chipset: Intel Cannon Lake PCH, Memory: 16GB, Disk: 256GB SAMSUNG MZVPW256HEGL-000H7, Graphics: MSI NVIDIA NV106 1GB, Audio: Realtek ALC887-VD, Monitor: G237HL, Network: Intel I219-V

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc7daily20200928-generic (x86_64) 20200927, Desktop: GNOME Shell 3.36.0, Display Server: X Server 1.20.7, Display Driver: nouveau, OpenGL: 4.3 Mesa 20.0.2, 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,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: intel_pstate powersave - CPU Microcode: 0xca - Thermald 1.9.1
Python Notes: Python 3.8.2
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT disabled + mds: Mitigation of Clear buffers; SMT disabled + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + srbds: Vulnerable: No microcode + tsx_async_abort: Not affected

	1	2	3
GNU GMP GMPbench - Total Time (GMPbench Score)	**5093**	5093	**5089**
Normalized	100%	99.99%	99.93%
Botan - KASUMI (MiB/s)	**91.738**	**91.680**	91.718
Normalized	100%	99.94%	99.98%
Standard Deviation	0.1%	0%	
Botan - KASUMI - Decrypt (MiB/s)	**88.177**	88.194	**88.195**
Normalized	99.98%	100%	100%
Standard Deviation	0%	0%	
Botan - AES-256 (MiB/s)	**3904**	**3909**	3906
Normalized	99.88%	100%	99.92%
Standard Deviation	0.1%	0.1%	
Botan - AES-256 - Decrypt (MiB/s)	**3905**	**3908**	3905
Normalized	99.92%	100%	99.93%
Standard Deviation	0%	0.1%	

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Botan - Twofish (MiB/s)	355.313	**354.923**	**355.868**
Normalized	99.84%	99.73%	100%
Standard Deviation	0.1%	0.2%	
Botan - Twofish - Decrypt (MiB/s)	357.314	**356.665**	**357.679**
Normalized	99.9%	99.72%	100%
Standard Deviation	0.1%	0.3%	
Botan - Blowfish (MiB/s)	**442.750**	443.029	**443.032**
Normalized	99.94%	100%	100%
Standard Deviation	0.1%	0.1%	
Botan - Blowfish - Decrypt (MiB/s)	439.263	**439.342**	**437.47**
Normalized	99.98%	100%	99.57%
Standard Deviation	0.1%	0.1%	
Botan - CAST-256 (MiB/s)	**140.135**	140.138	**140.149**
Normalized	99.99%	99.99%	100%
Standard Deviation	0.2%	0%	
Botan - CAST-256 - Decrypt (MiB/s)	**140.336**	**140.212**	140.282
Normalized	100%	99.91%	99.96%
Standard Deviation	0.1%	0.1%	
Botan - ChaCha20Poly1305 (MiB/s)	**741.362**	741.930	**744.161**
Normalized	99.62%	99.7%	100%
Standard Deviation	0.3%	0.2%	
Botan - ChaCha20Poly1305 - Decrypt (MiB/s)	**735.792**	736.432	**738.431**
Normalized	99.64%	99.73%	100%
Standard Deviation	0.2%	0%	
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.09	0.09	0.09
Standard Deviation	0%	0%	
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	2.26	2.26	2.26
Standard Deviation	0%	0.3%	
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	8.64	**8.62**	**8.65**
Normalized	99.88%	99.65%	100%
Standard Deviation	0.1%	0.2%	
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	**4.21**	**4.21**	**4.22**
Normalized	99.76%	99.76%	100%
Standard Deviation	0.1%	0.1%	
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	**24.55**	24.66	**24.67**
Normalized	99.51%	99.96%	100%
Standard Deviation	1.7%	0.2%	
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**31.56**	31.44	**31.38**
Normalized	100%	99.62%	99.43%
Standard Deviation	0.1%	0.1%	
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	0.26	0.26	0.26
Standard Deviation	0%	0%	
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	4.79	4.79	4.79
Standard Deviation	0%	0.1%	

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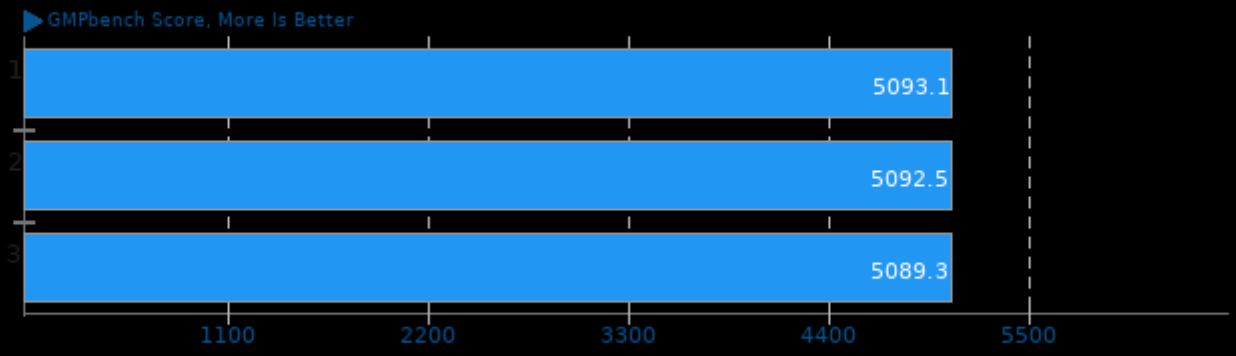
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	**16.44**	**16.39**	**16.44**
Normalized	100%	99.7%	100%
Standard Deviation	0.1%	0.1%	
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	13.42	**13.40**	**13.43**
Normalized	99.93%	99.78%	100%
Standard Deviation	0.2%	0.1%	
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	**83.56**	82.58	**81.84**
Normalized	100%	98.83%	97.94%
Standard Deviation	2.9%	0.5%	
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	**90.49**	**90.17**	90.37
Normalized	100%	99.65%	99.87%
Standard Deviation	0.2%	0.2%	
Stockfish - Total Time (Nodes/s)	12522486	**12470409**	**12631184**
Normalized	99.14%	98.73%	100%
Standard Deviation	1.4%	2.2%	
ViennaCL - CPU BLAS - sCOPY (GB/s)	**19.1**	**19.1**	**19**
Normalized	100%	100%	99.48%
Standard Deviation	0.3%	0.3%	
ViennaCL - CPU BLAS - sAXPY (GB/s)	**28.4**	28.5	**28.6**
Normalized	99.3%	99.65%	100%
Standard Deviation	0.8%	0.7%	
ViennaCL - CPU BLAS - sDOT (GB/s)	**33.1**	**33.1**	**33.6**
Normalized	98.51%	98.51%	100%
Standard Deviation	1.1%	1.2%	
ViennaCL - CPU BLAS - dCOPY (GB/s)	**18.5**	**18.5**	**18.4**
Normalized	100%	100%	99.46%
Standard Deviation	0.3%	1.3%	
ViennaCL - CPU BLAS - dAXPY (GB/s)	**27.8**	**27.9**	**27.8**
Normalized	99.64%	100%	99.64%
Standard Deviation	0.6%	0%	
ViennaCL - CPU BLAS - dDOT (GB/s)	34.7	34.7	34.7
Standard Deviation	0.2%	0.2%	
ViennaCL - CPU BLAS - dGEMV-N (GB/s)	35.3	35.3	35.3
Standard Deviation	0.2%	0%	
ViennaCL - CPU BLAS - dGEMV-T (GB/s)	33.4	33.4	33.4
Standard Deviation	0%	0.2%	
ViennaCL - CPU BLAS - dGEMM-NN (GFLOPs/s)	14.8	14.8	14.8
Standard Deviation	0%	0%	
ViennaCL - CPU BLAS - dGEMM-NT (GFLOPs/s)	14.3	14.3	14.3
Standard Deviation	0%	0%	
ViennaCL - CPU BLAS - dGEMM-TN (GFLOPs/s)	15.2	15.2	15.2
Standard Deviation	0%	0%	
OpenSCAD - Pistol (sec)	**122.124**	121.919	**121.671**
Normalized	99.63%	99.8%	100%
Standard Deviation	0.1%	0.1%	
OpenSCAD - Retro Car (sec)	21.173	**21.361**	**21.161**
Normalized	99.94%	99.06%	100%

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Standard Deviation	0.2%	1.6%	
OpenSCAD - Mini-ITX Case (sec)	**50.836**	**50.925**	50.881
Normalized	100%	99.83%	99.91%
Standard Deviation	0.2%	0.2%	
OpenSCAD - P.M.S (sec)	**115.411**	115.552	**116.561**
Normalized	100%	99.88%	99.01%
Standard Deviation	0.9%	0.4%	
OpenSCAD - L.P.C.S (sec)	**20.542**	**20.624**	20.61
Normalized	100%	99.6%	99.67%
Standard Deviation	0.2%	0.1%	
Systemd Total Boot Time - Total (ms)	29330	29330	29330
Systemd Total Boot Time - Kernel (ms)	3006	3006	3006
Systemd Total Boot Time - Loader (ms)	3476	3476	3476
Systemd Total Boot Time - Firmware (ms)	13987	13987	13987
Systemd Total Boot Time - Userspace (ms)	26324	26324	26324

GNU GMP GMPbench 6.2.1

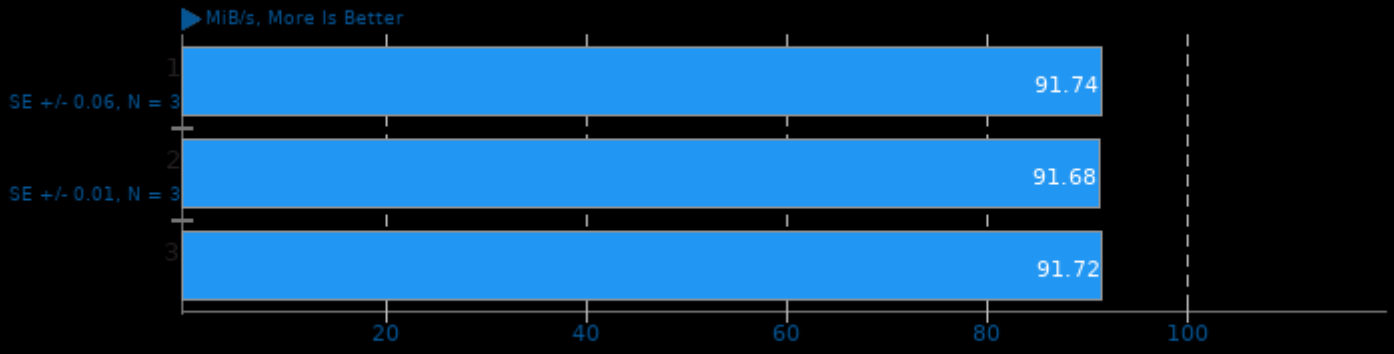
Total Time



1. (CC) gcc options: -O3 -fomit-frame-pointer -lm

Botan 2.17.3

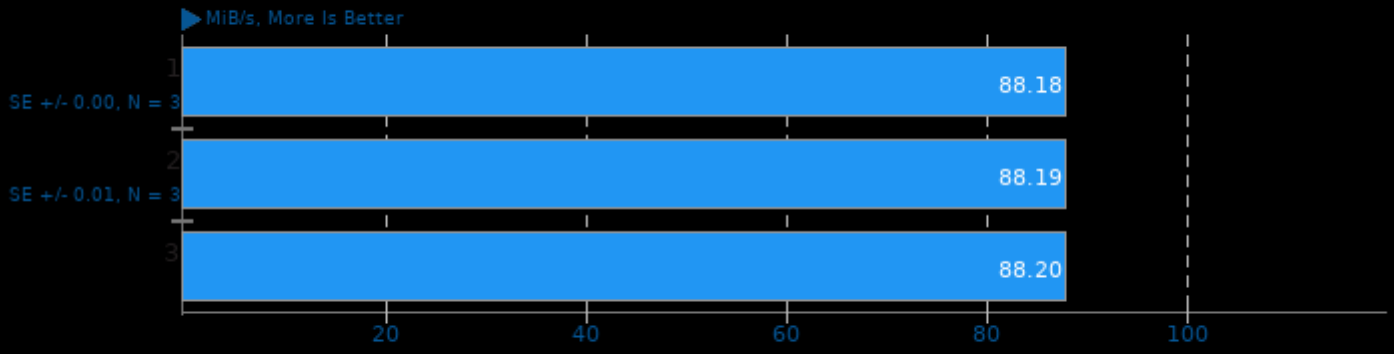
Test: KASUMI



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

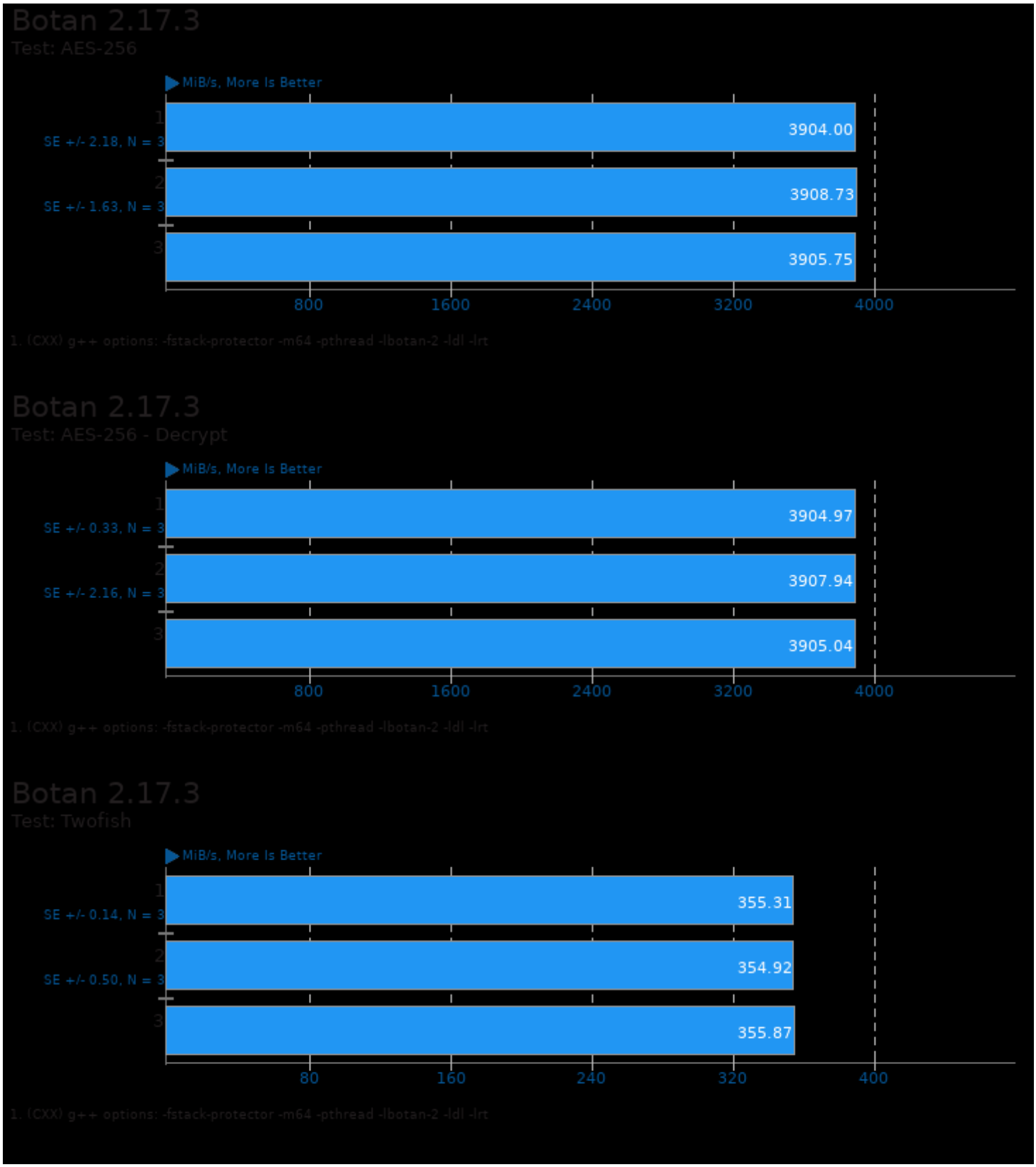
Botan 2.17.3

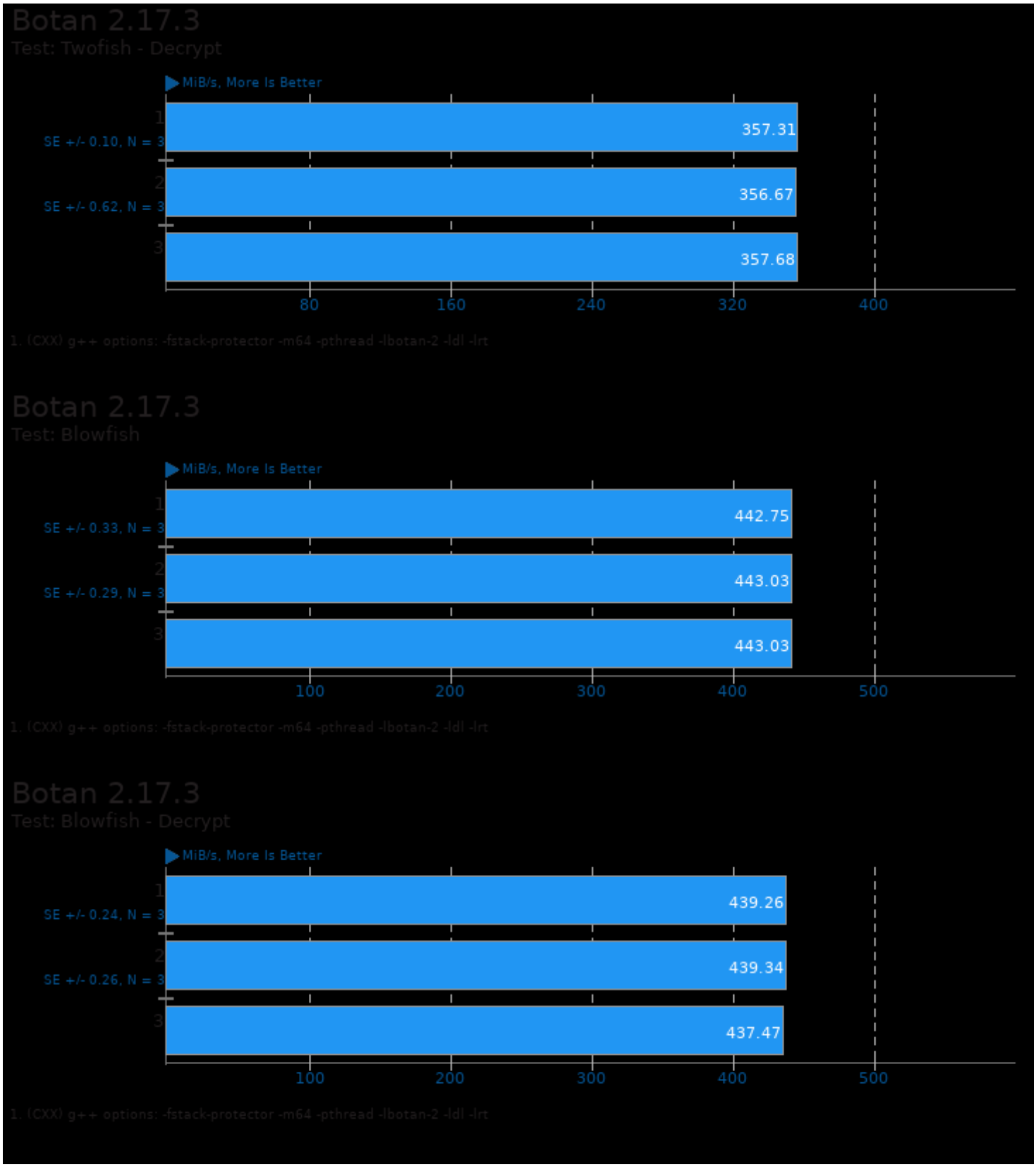
Test: KASUMI - Decrypt

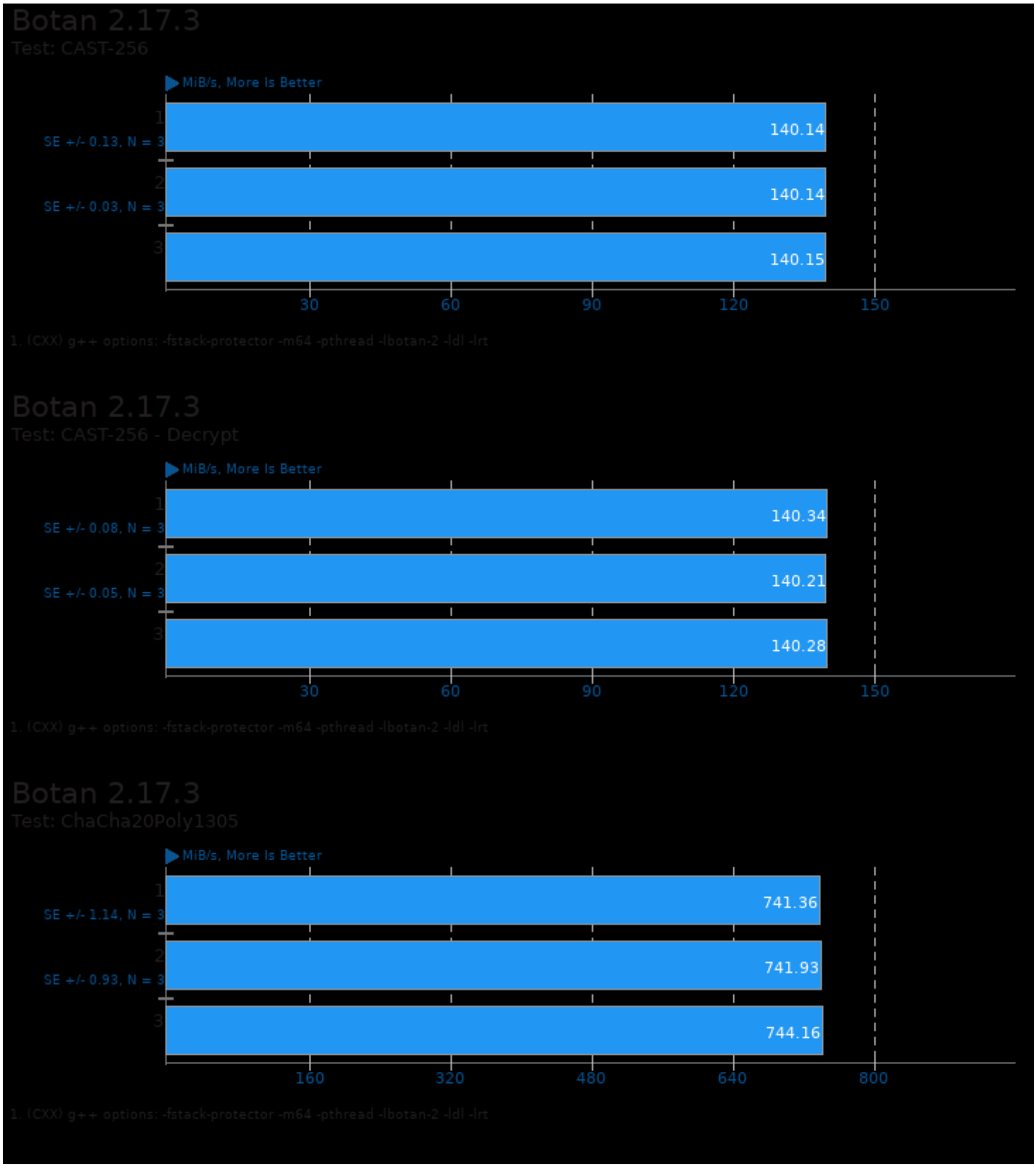


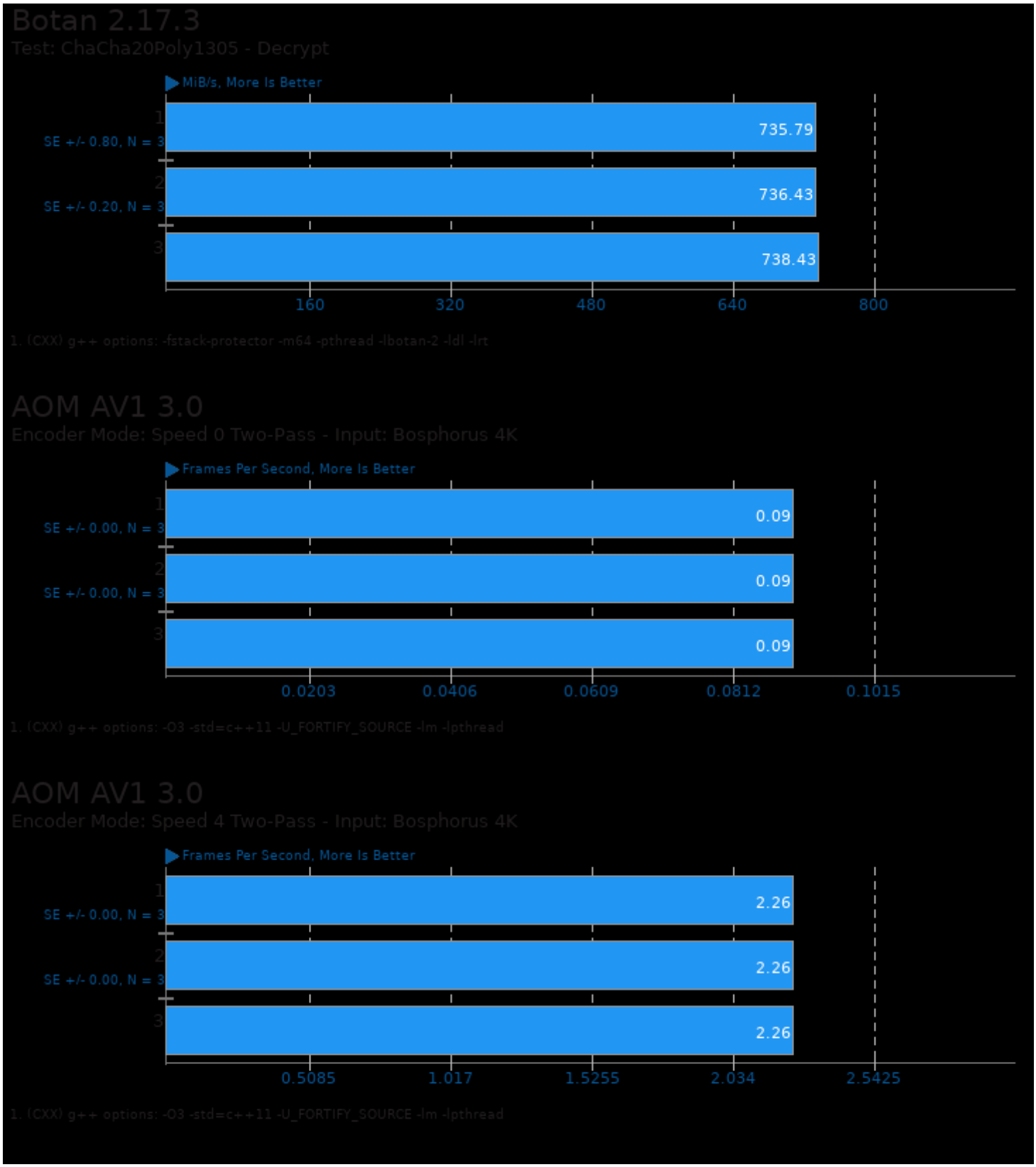
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

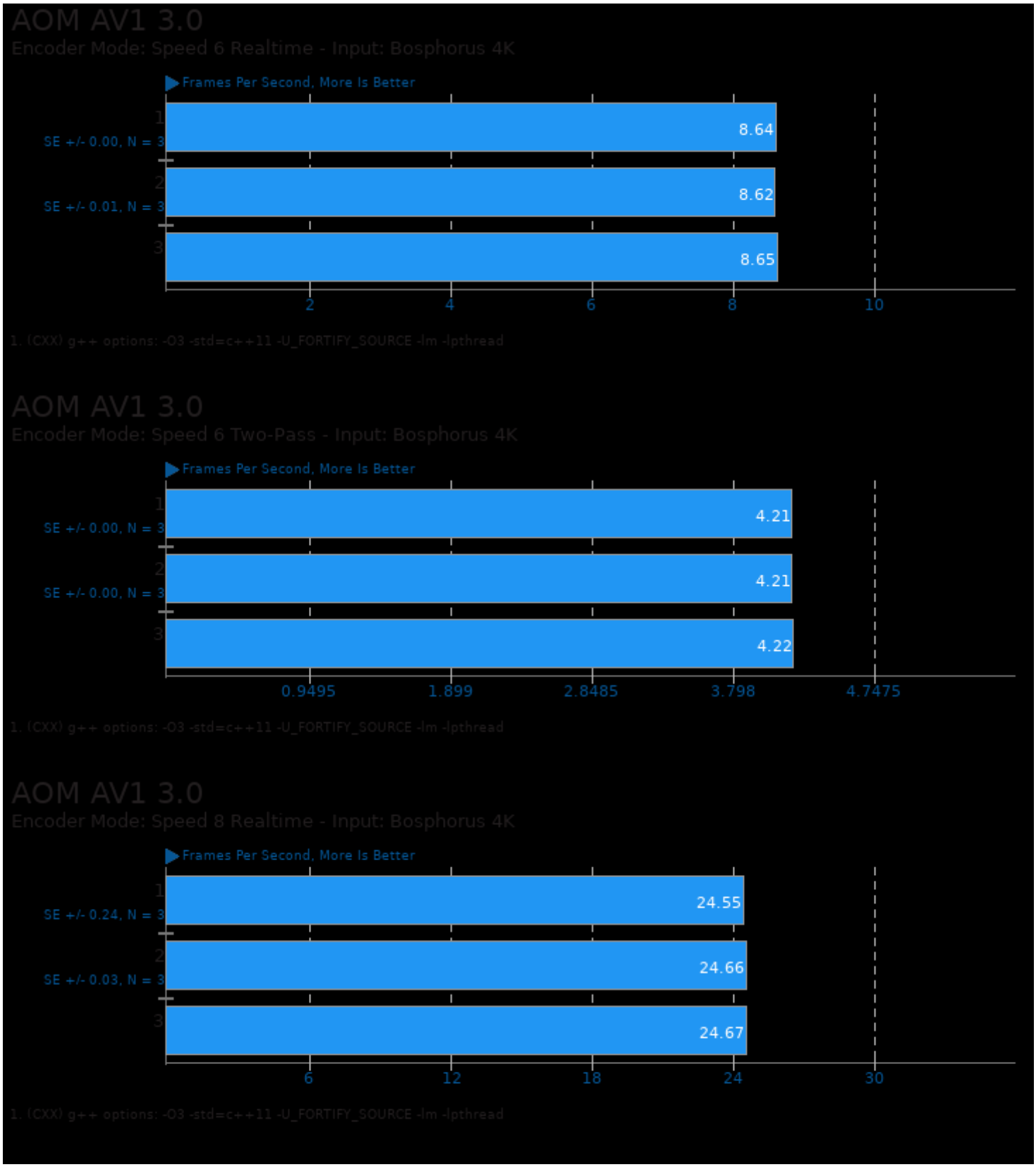
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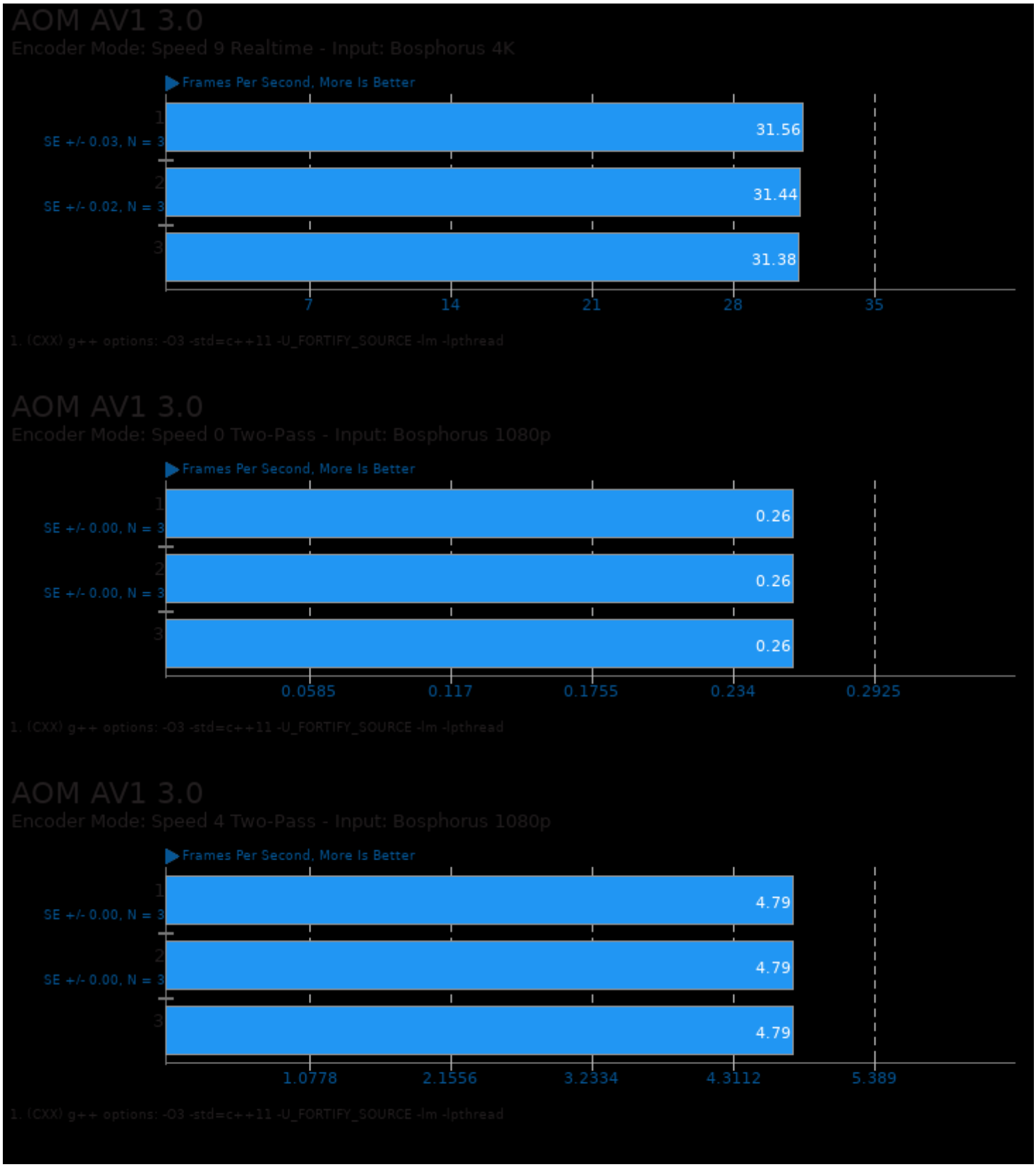


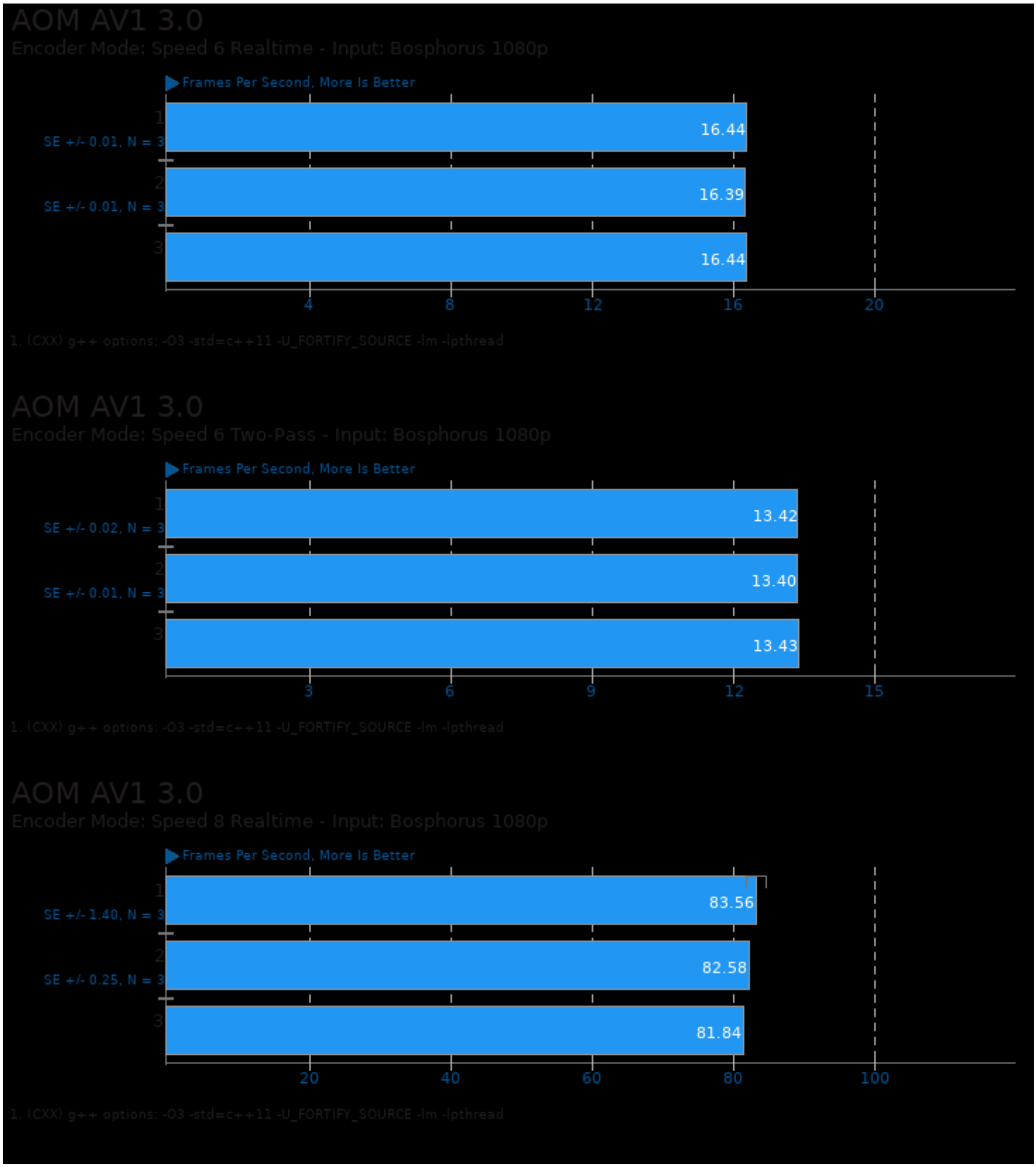

Botan 2.17.3
Test: Twofish - Decrypt
MiB/s, More Is Better
1
SE +/- 0.10, N = 3
357.31
2
SE +/- 0.62, N = 3
356.67
3
357.68
80
160
240
320
400
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: Blowfish
MiB/s, More Is Better
1
SE +/- 0.33, N = 3
442.75
2
SE +/- 0.29, N = 3
443.03
3
443.03
100
200
300
400
500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: Blowfish - Decrypt
MiB/s, More Is Better
1
SE +/- 0.24, N = 3
439.26
2
SE +/- 0.26, N = 3
439.34
3
437.47
100
200
300
400
500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.17.3
Test: CAST-256
MiB/s, More Is Better
1
SE +/- 0.13, N = 3
140.14
2
SE +/- 0.03, N = 3
140.14
3
140.15
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: CAST-256 - Decrypt
MiB/s, More Is Better
1
SE +/- 0.08, N = 3
140.34
2
SE +/- 0.05, N = 3
140.21
3
140.28
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: ChaCha20Poly1305
MiB/s, More Is Better
1
SE +/- 1.14, N = 3
741.36
2
SE +/- 0.93, N = 3
741.93
3
744.16
160
320
480
640
800
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

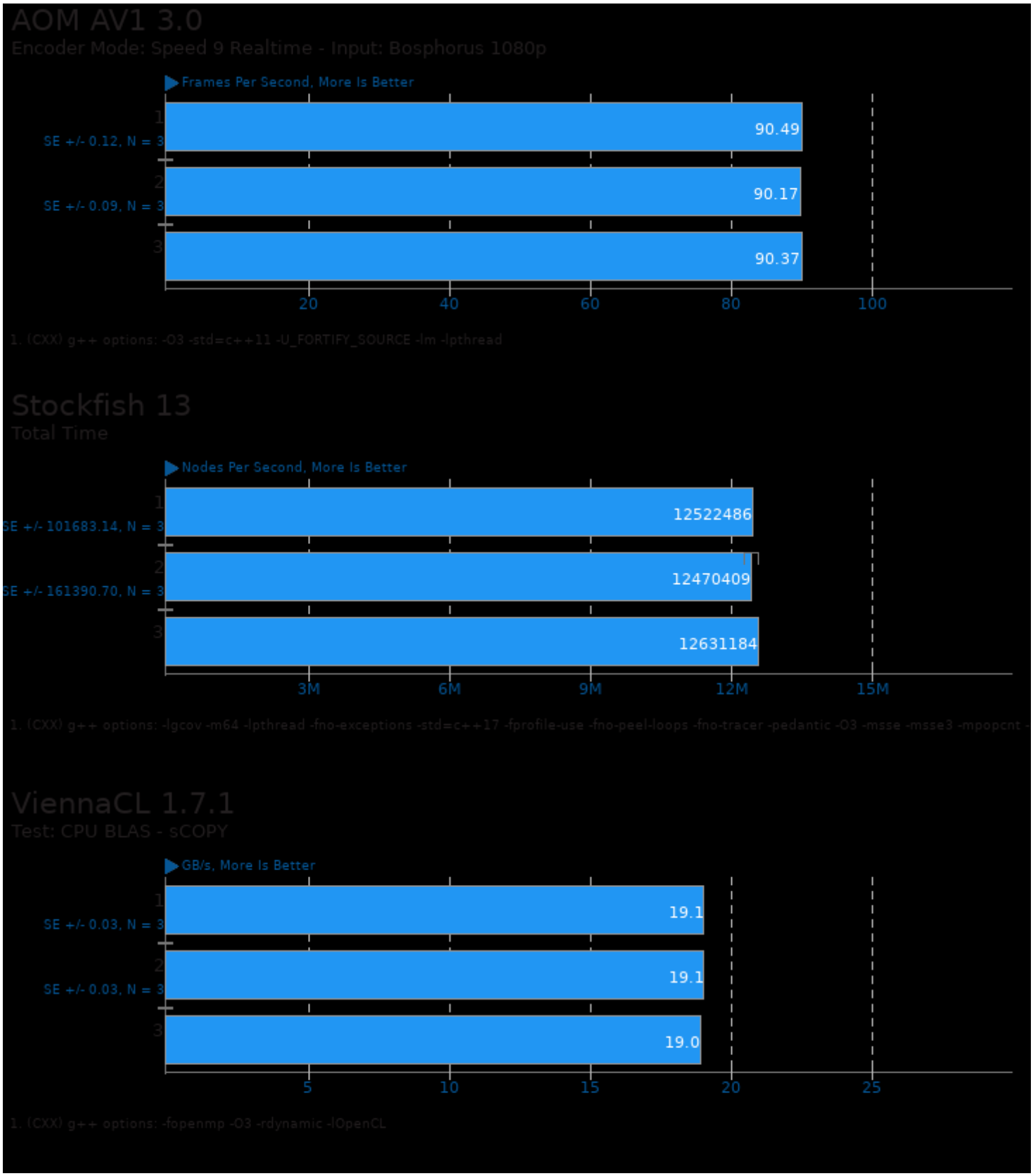

Botan 2.17.3
Test: ChaCha20Poly1305 - Decrypt
MiB/s, More Is Better
1
SE +/- 0.80, N = 3
735.79
2
SE +/- 0.20, N = 3
736.43
3
738.43
160
320
480
640
800
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
AOM AV1 3.0
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.00, N = 3
0.09
2
SE +/- 0.00, N = 3
0.09
3
0.09
0.0203
0.0406
0.0609
0.0812
0.1015
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 +/- 0.00, N = 3
2.26
2
SE +/- 0.00, N = 3
2.26
3
2.26
0.5085
1.017
1.5255
2.034
2.5425
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 +/- 0.00, N = 3
8.64
2
SE +/- 0.01, N = 3
8.62
3
8.65
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 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.00, N = 3
4.21
2
SE +/- 0.00, N = 3
4.21
3
4.22
0.9495
1.899
2.8485
3.798
4.7475
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 +/- 0.24, N = 3
24.55
2
SE +/- 0.03, N = 3
24.66
3
24.67
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

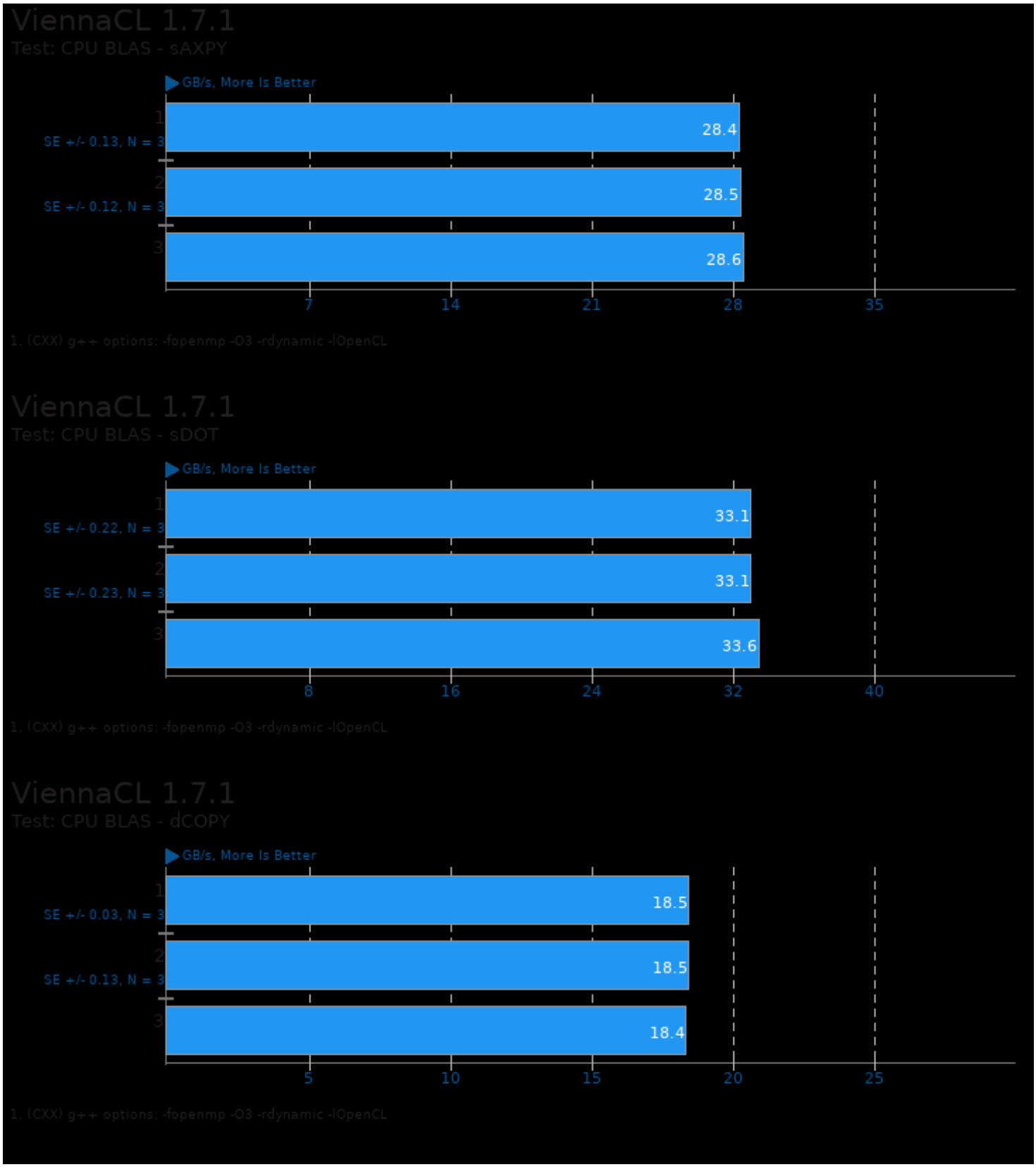

AOM AV1 3.0
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.03, N = 3
31.56
2
SE +/- 0.02, N = 3
31.44
3
31.38
7
14
21
28
35
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.0
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 0.00, N = 3
0.26
2
SE +/- 0.00, N = 3
0.26
3
0.26
0.0585
0.117
0.1755
0.234
0.2925
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 +/- 0.00, N = 3
4.79
2
SE +/- 0.00, N = 3
4.79
3
4.79
1.0778
2.1556
3.2334
4.3112
5.389
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 +/- 0.01, N = 3
16.44
2
SE +/- 0.01, N = 3
16.39
3
16.44
4
8
12
16
20
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 +/- 0.02, N = 3
13.42
2
SE +/- 0.01, N = 3
13.40
3
13.43
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 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 1.40, N = 3
83.56
2
SE +/- 0.25, N = 3
82.58
3
81.84
20
40
60
80
100
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

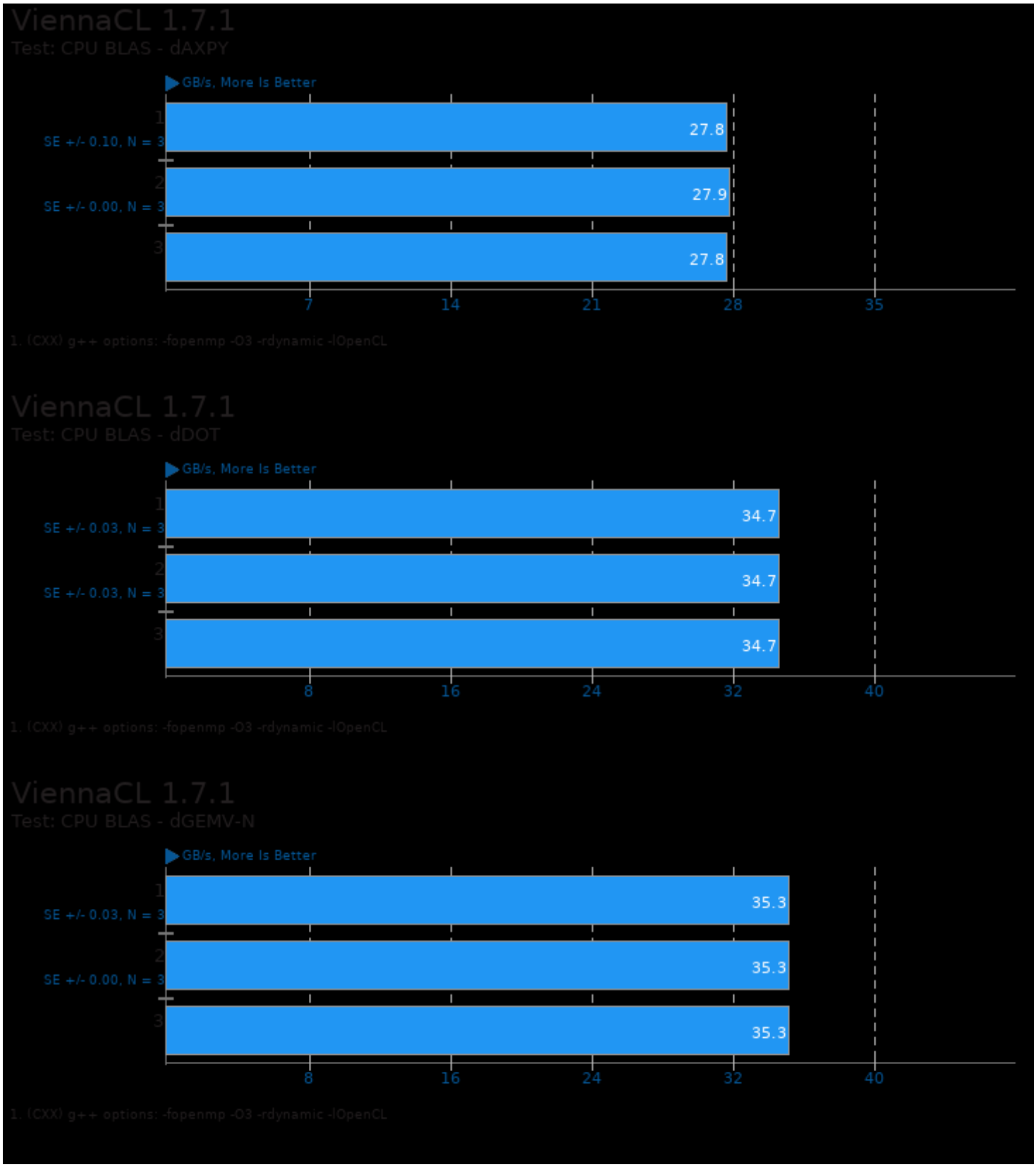
9400F EO March

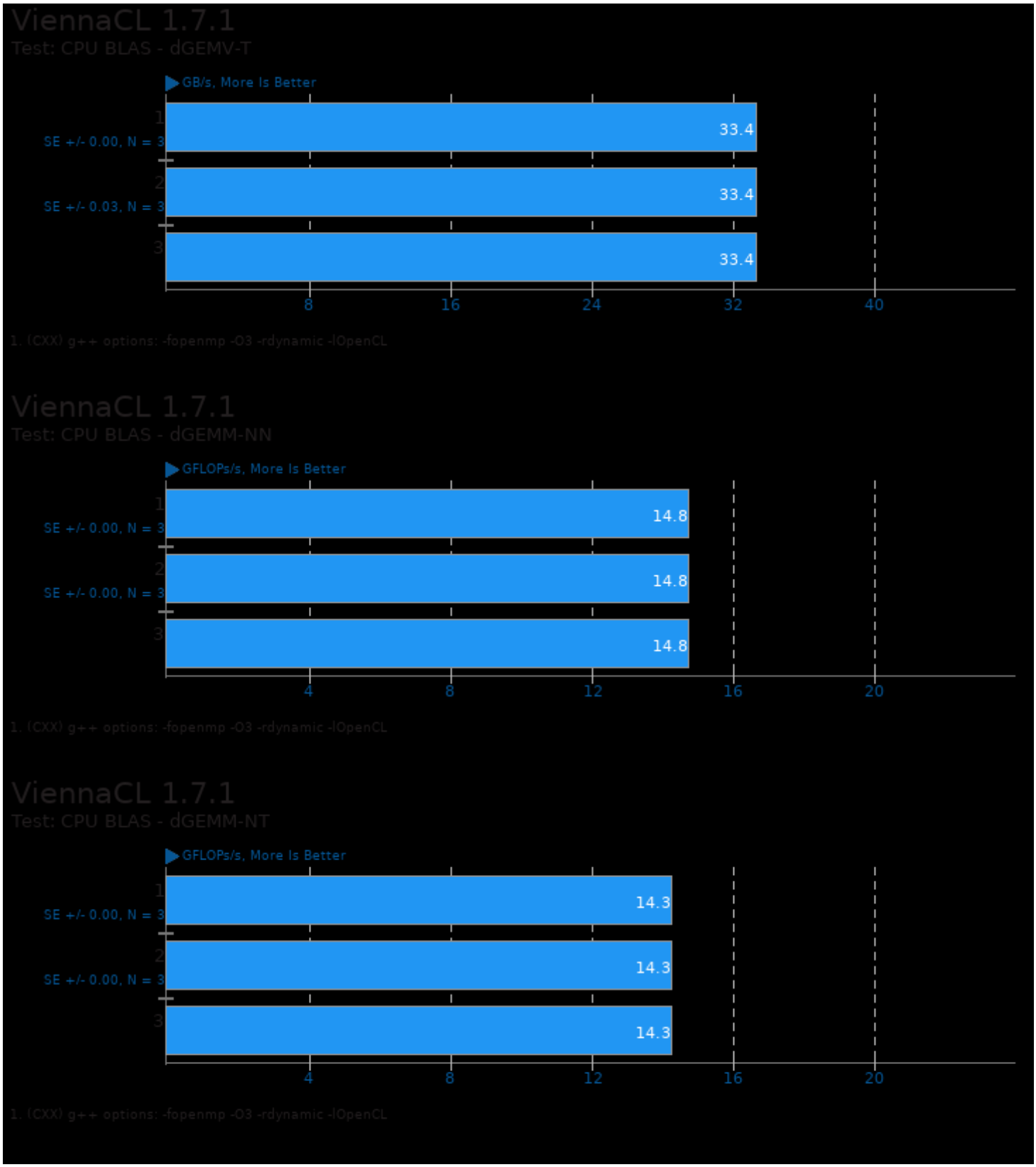


9400F EO March



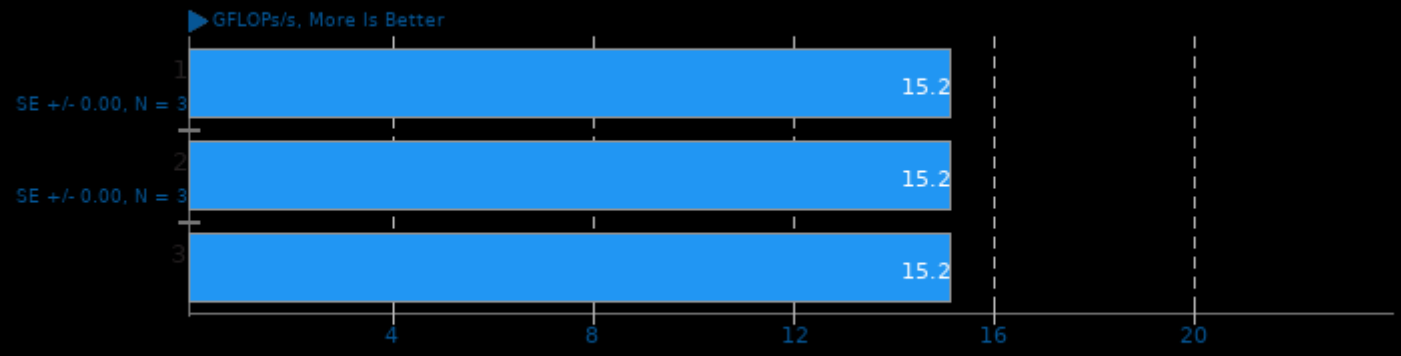
9400F EO March




ViennaCL 1.7.1
Test: CPU BLAS - dGEMV-T
GB/s, More Is Better
1
SE +/- 0.00, N = 3
33.4
2
SE +/- 0.03, N = 3
33.4
3
33.4
8
16
24
32
40
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL
ViennaCL 1.7.1
Test: CPU BLAS - dGEMM-NN
GFLOPs/s, More Is Better
1
SE +/- 0.00, N = 3
14.8
2
SE +/- 0.00, N = 3
14.8
3
14.8
4
8
12
16
20
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL
ViennaCL 1.7.1
Test: CPU BLAS - dGEMM-NT
GFLOPs/s, More Is Better
1
SE +/- 0.00, N = 3
14.3
2
SE +/- 0.00, N = 3
14.3
3
14.3
4
8
12
16
20
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

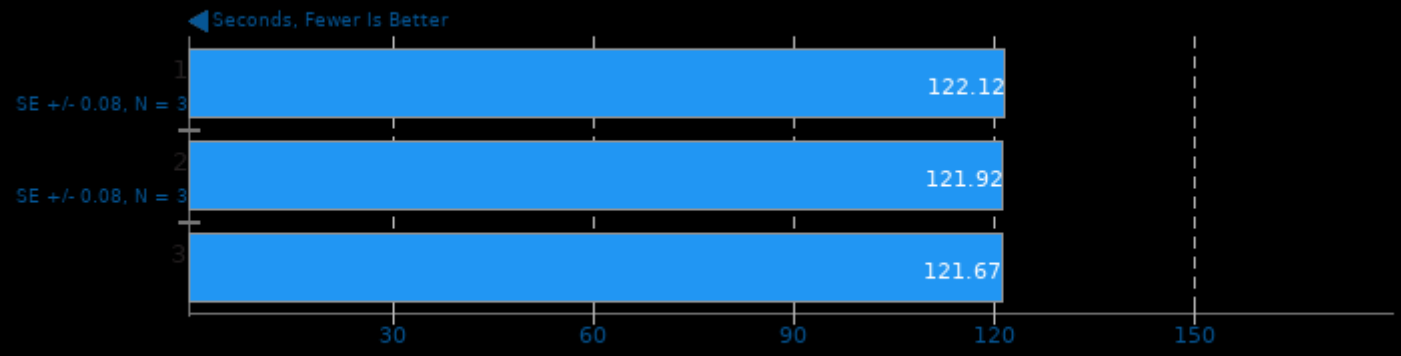
Test: CPU BLAS - dGEMM-TN



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

OpenSCAD

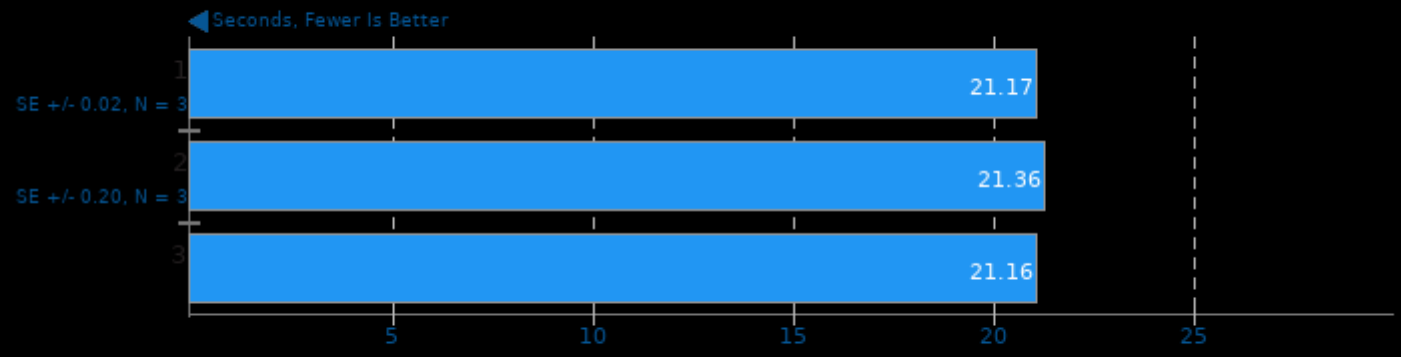
Render: Pistol



1. OpenSCAD version 2019.05

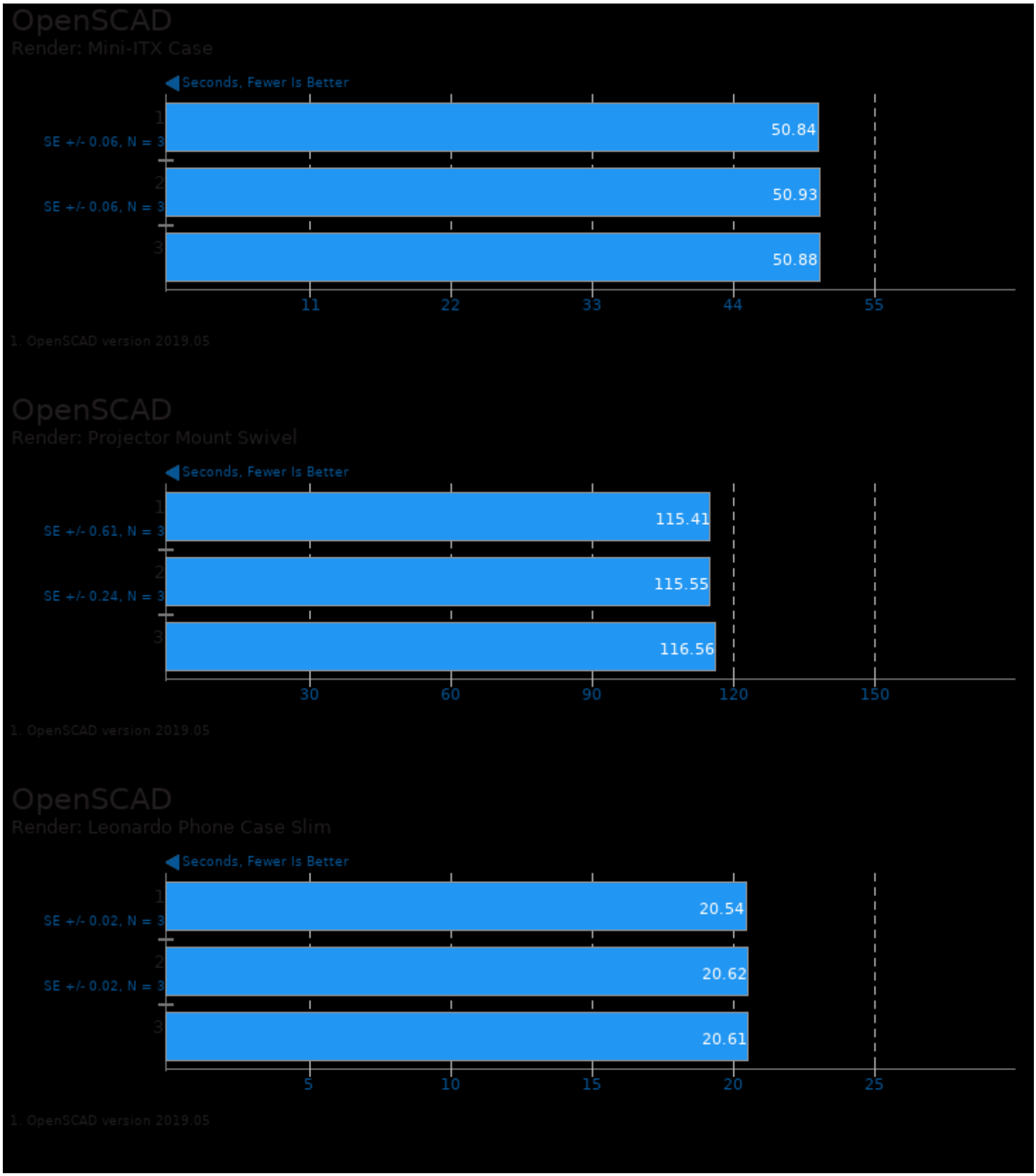
OpenSCAD

Render: Retro Car

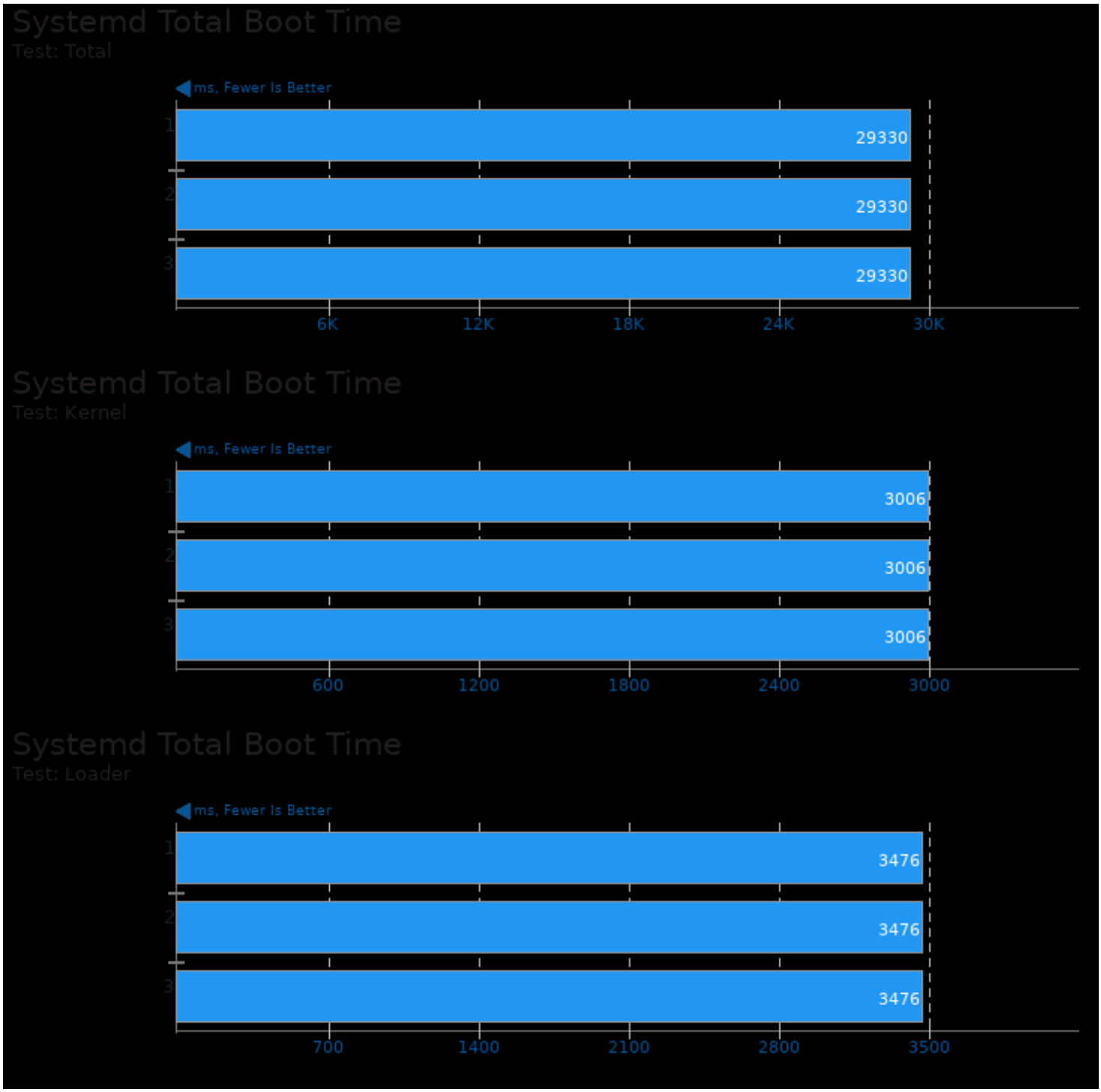


1. OpenSCAD version 2019.05

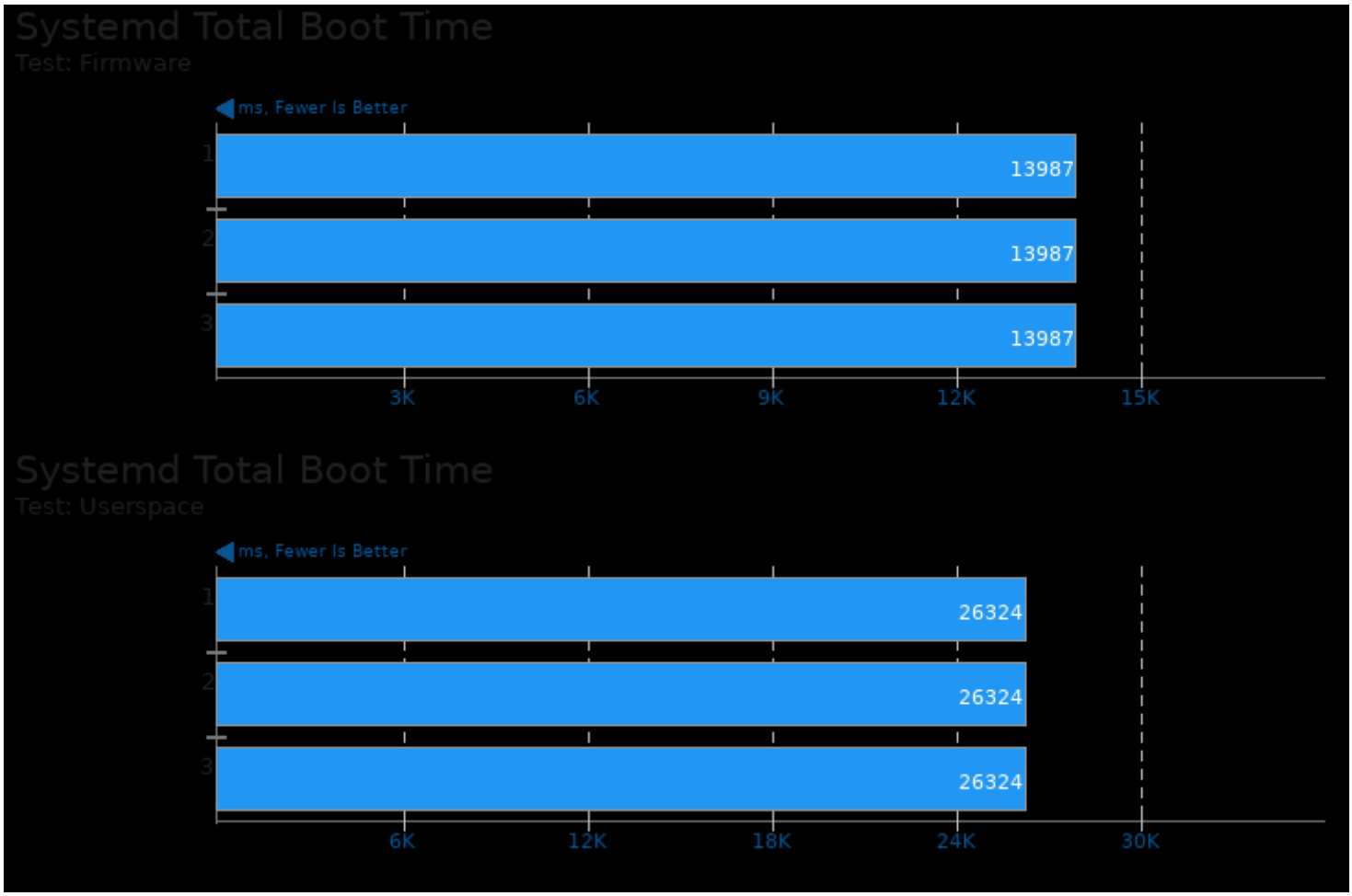
9400F EO March



9400F EO March

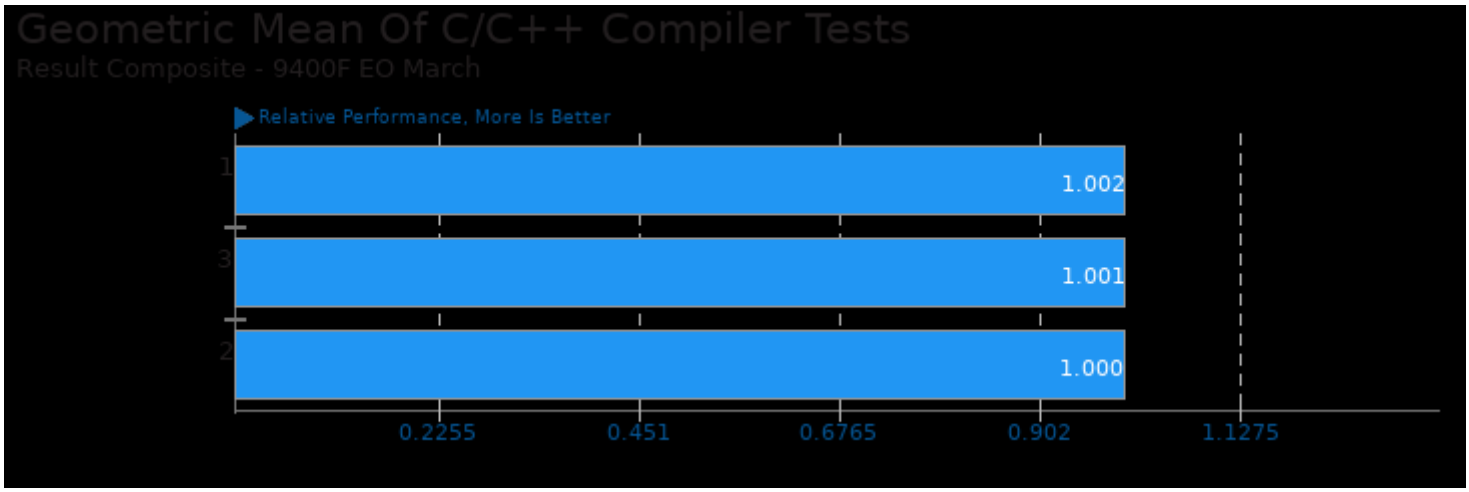


9400F EO March



9400F EO March

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/stockfish and pts/botan

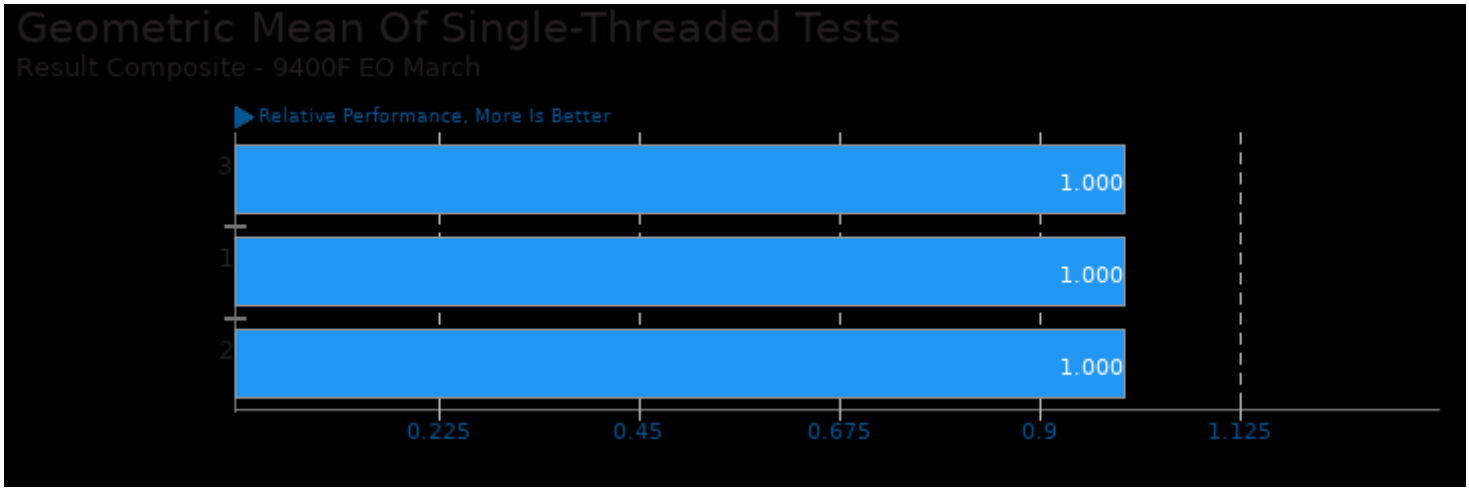


Geometric mean based upon tests: pts/aom-av1 and system/openscad

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



Geometric mean based upon tests: pts/gmpbench and pts/botan

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 14:44.