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Ampere Altra Q80-33 2P

Ampere Altra ARMv8 Neoverse-N1 testing with a WIWYNN Mt.Jade (1.1.20201019 BIOS) and ASPEED on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

Altra Q80-33 2P had the most wins, coming in first place for 43% of the tests.

Based on the geometric mean of all complete results, the fastest (Altra Q80-33 2P) was 1.037x the speed of the slowest (Alra). Ampere was 0.979x the speed of Altra Q80-33 2P and Alra was 0.985x the speed of Ampere.

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

Zstd Compression (Compression Level: 8 - Compression Speed) at 1.443x
Zstd Compression (Compression Level: 3, Long Mode - Compression Speed) at 1.303x
NAS Parallel Benchmarks (Test / Class: IS.D) at 1.284x
Zstd Compression (Compression Level: 19 - Compression Speed) at 1.156x
Zstd Compression (Compression Level: 8, Long Mode - Compression Speed) at 1.06x
NAS Parallel Benchmarks (Test / Class: CG.C) at 1.057x
SVT-AV1 (Encoder Mode: Preset 4 - Input: Bosphorus 4K) at 1.051x
SVT-AV1 (Encoder Mode: Preset 8 - Input: Bosphorus 1080p) at 1.038x
Zstd Compression (Compression Level: 8, Long Mode - Decompression Speed) at 1.03x

NAS Parallel Benchmarks (Test / Class: EP.C) at 1.025x.

Test Systems:

Altra Q80-33 2P

Alra

Ampere

Processor: Ampere Altra ARMv8 Neoverse-N1 @ 3.30GHz (160 Cores), Motherboard: WIWYNN Mt.Jade (1.1.20201019 BIOS), Chipset: Ampere Computing LLC Device e100, Memory: 16 x 32 GB DDR4-3200MT/s Samsung M393A4K40DB3-CWE, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP + 960GB SAMSUNG MZ1LB960HAJQ-00007, Graphics: ASPEED, Monitor: VE228, Network: Mellanox MT28908 + Intel I210

OS: Ubuntu 20.04, Kernel: 5.11.0-051100-generic-64k (aarch64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.9, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-target-system-zlib=auto -v
Processor Notes: Scaling Governor: cppc_cpufreq performance (Boost: Enabled)
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 __user pointer sanitization + spectre_v2: Not affected + srbds: Not affected + tsx_async_abort: Not affected

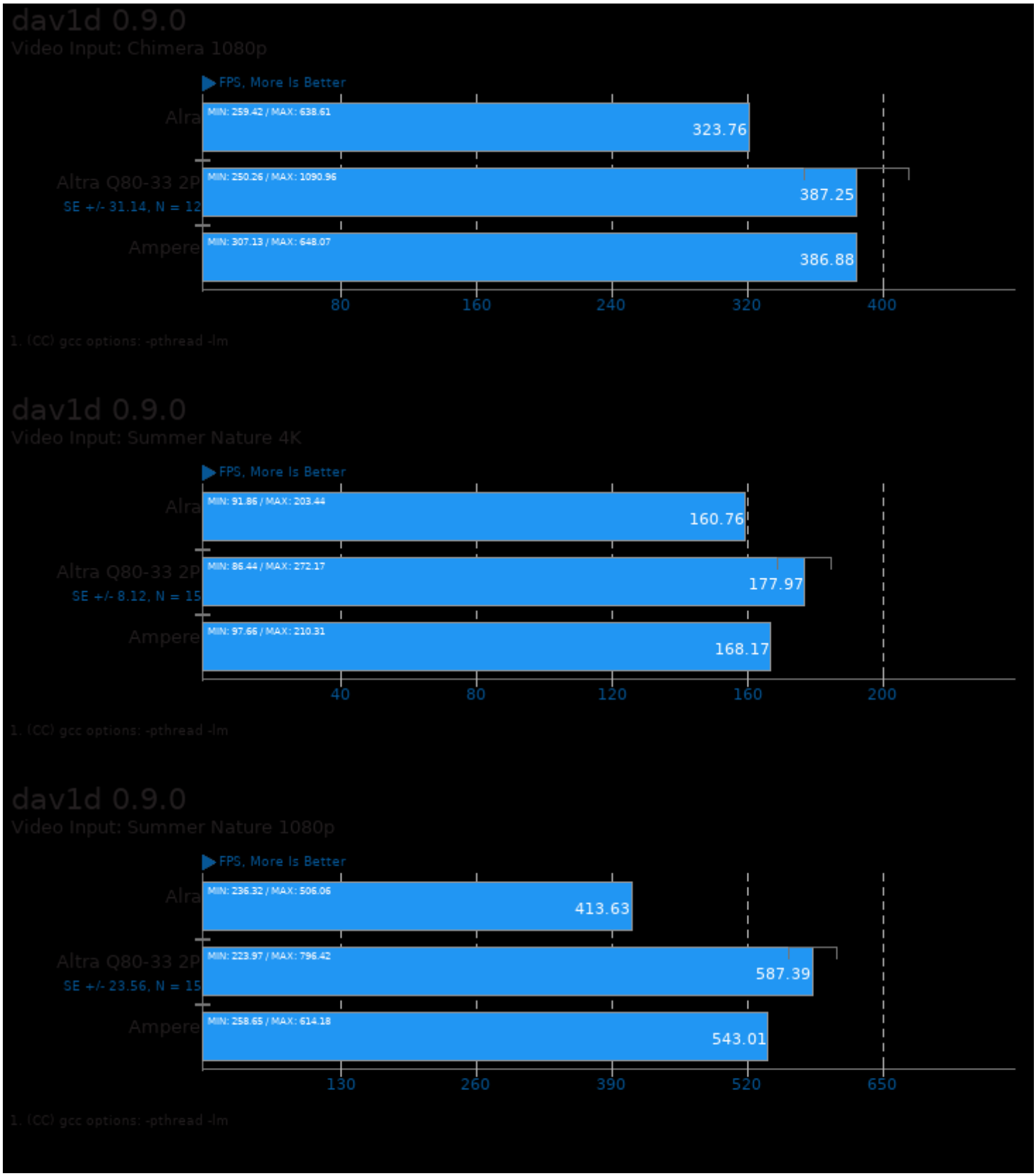
	Altra Q80-33 2P	Alra	Ampere
dav1d - Chimera 1080p (FPS)	**387.25**	**323.76**	386.88
Normalized	100%	83.6%	99.9%
Standard Deviation	27.9%		
dav1d - Summer Nature 4K (FPS)	**177.97**	**160.76**	168.17
Normalized	100%	90.33%	94.49%
Standard Deviation	17.7%		
dav1d - S.N.1 (FPS)	**587.39**	**413.63**	543.01
Normalized	100%	70.42%	92.44%
Standard Deviation	15.5%		
dav1d - C.1.1.b (FPS)	**276.17**	271.79	**243.56**
Normalized	100%	98.41%	88.19%
Standard Deviation	13%		
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	**45.120**	45.606	**45.615**
Normalized	98.91%	99.98%	100%
Standard Deviation	2.2%		

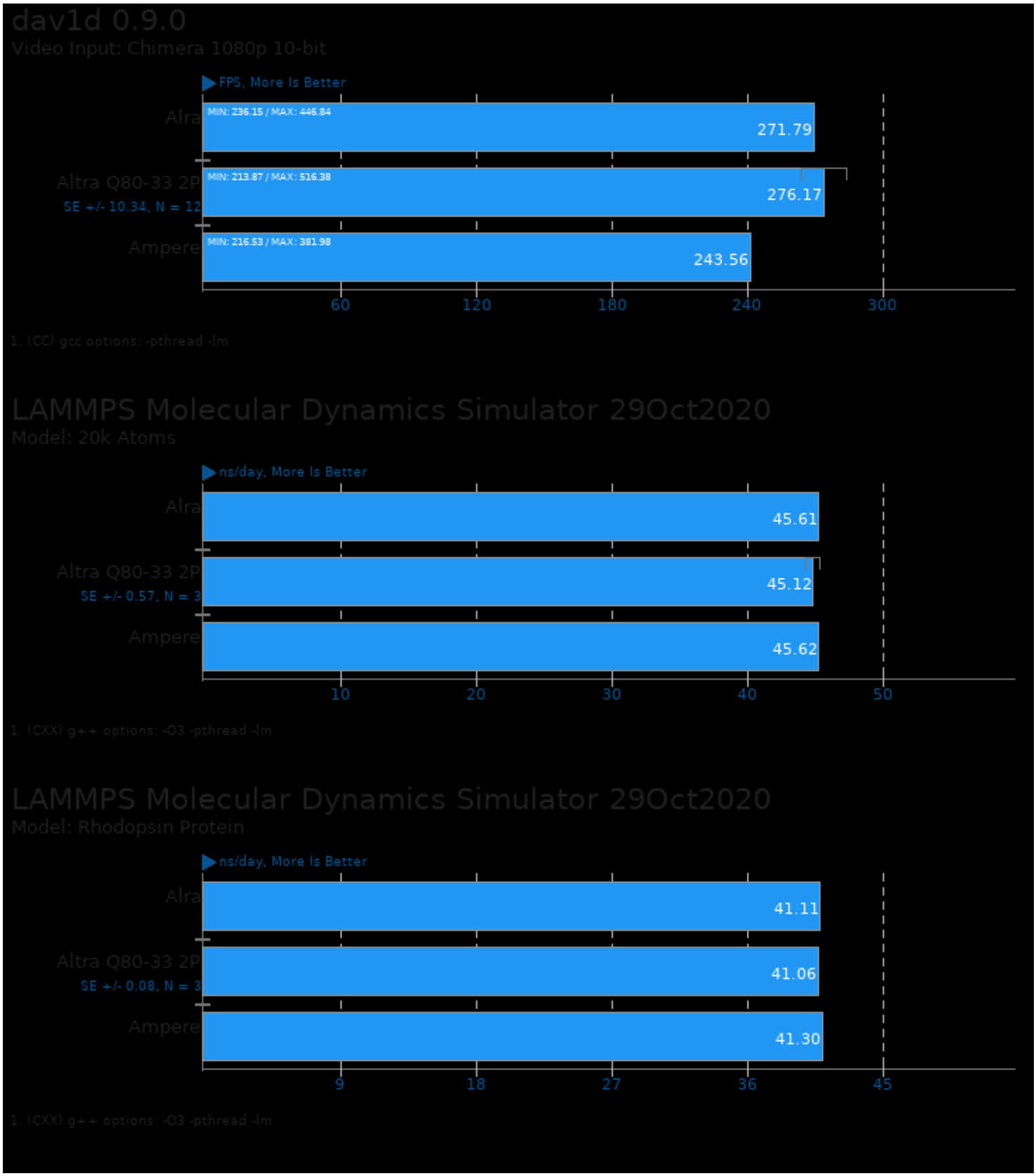
Ampere Altra Q80-33 2P

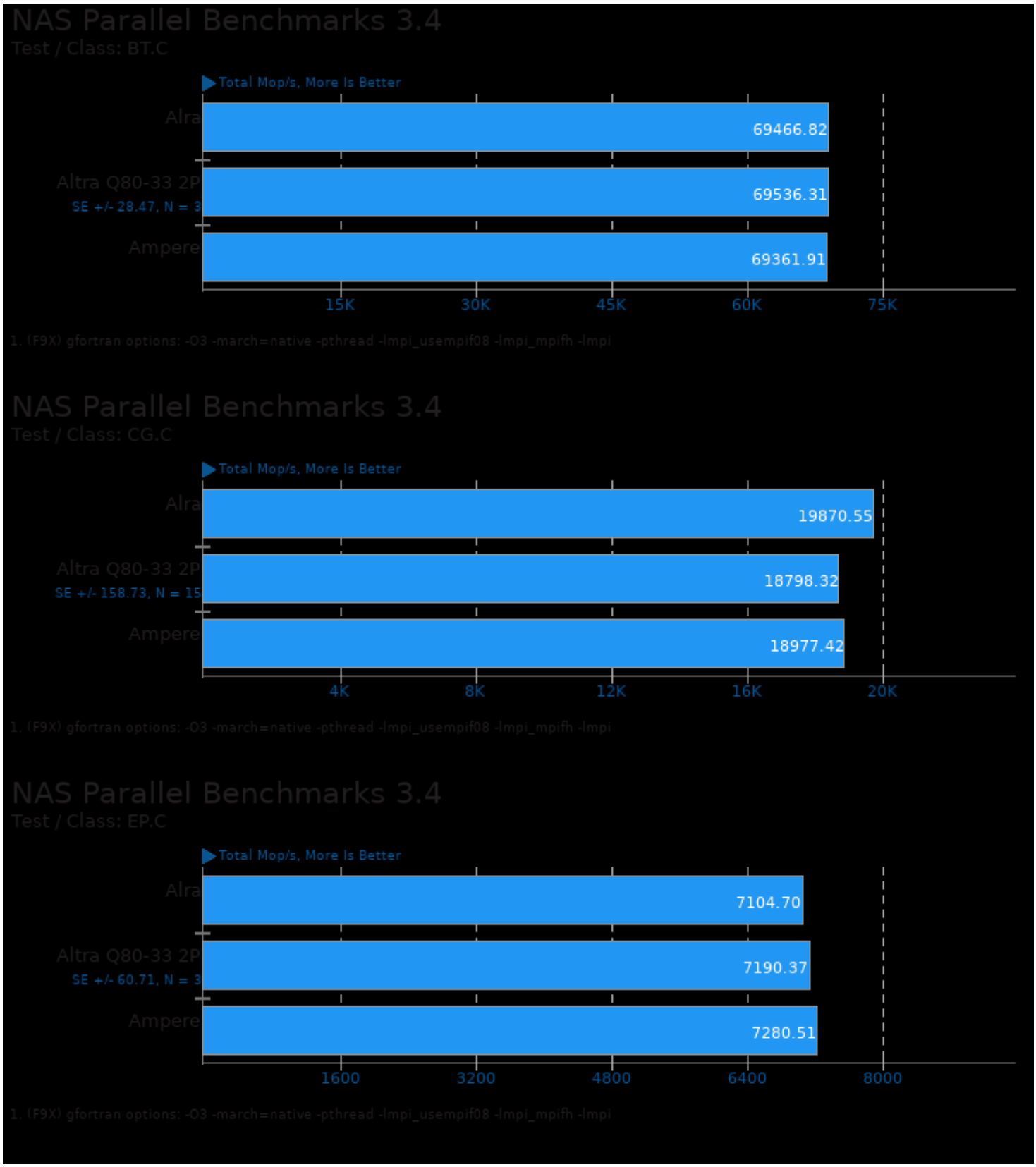
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	**41.063**	41.111	**41.298**
Normalized	99.43%	99.55%	100%
Standard Deviation	0.3%		
NAS Parallel Benchmarks - BT.C (Mop/s)	**69536**	69467	**69362**
Normalized	100%	99.9%	99.75%
Standard Deviation	0.1%		
NAS Parallel Benchmarks - CG.C (Mop/s)	**18798**	**19871**	18977
Normalized	94.6%	100%	95.51%
Standard Deviation	3.3%		
NAS Parallel Benchmarks - EP.C (Mop/s)	7190	**7105**	**7281**
Normalized	98.76%	97.59%	100%
Standard Deviation	1.5%		
NAS Parallel Benchmarks - EP.D (Mop/s)	**7330**	**7236**	7319
Normalized	100%	98.72%	99.85%
Standard Deviation	0.2%		
NAS Parallel Benchmarks - FT.C (Mop/s)	47928	**47874**	**48017**
Normalized	99.81%	99.7%	100%
Standard Deviation	0.5%		
NAS Parallel Benchmarks - IS.D (Mop/s)	**1217**	1181	**947.66**
Normalized	100%	97.02%	77.88%
Standard Deviation	0.2%		
NAS Parallel Benchmarks - LU.C (Mop/s)	**45351**	**45470**	45470
Normalized	99.74%	100%	100%
Standard Deviation	0.4%		
NAS Parallel Benchmarks - MG.C (Mop/s)	**59637**	60711	**60962**
Normalized	97.83%	99.59%	100%
Standard Deviation	1.1%		
NAS Parallel Benchmarks - SP.B (Mop/s)	**26426**	**26338**	26347
Normalized	100%	99.67%	99.7%
Standard Deviation	0.2%		
NAS Parallel Benchmarks - SP.C (Mop/s)	**27086**	27325	**27326**
Normalized	99.12%	100%	100%
Standard Deviation	0.8%		
OpenFOAM - Motorbike 30M (sec)	**17.27**	17.09	**17**
Normalized	98.44%	99.47%	100%
Standard Deviation	2.2%		
OpenFOAM - Motorbike 60M (sec)	101.77	**101.56**	**101.93**
Normalized	99.79%	100%	99.64%
Standard Deviation	0.3%		
srsRAN - OFDM_Test (Samples / Second)	**46133333**	**46500000**	46400000
Normalized	99.21%	100%	99.78%
Standard Deviation	0.1%		
srsRAN - PHY_DL_Test (eNb Mb/s)	129.7	**129.6**	**130.1**
Normalized	99.69%	99.62%	100%
Standard Deviation	0.4%		
srsRAN - PHY_DL_Test (UE Mb/s)	**47.2**	**46.3**	46.8
Normalized	100%	98.09%	99.15%
Standard Deviation	4.1%		
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	**0.509**	0.516	**0.535**
Normalized	95.14%	96.45%	100%
Standard Deviation	3.5%		
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	3.306	**2.99**	**3.52**
Normalized	93.92%	84.94%	100%
Standard Deviation	6%		

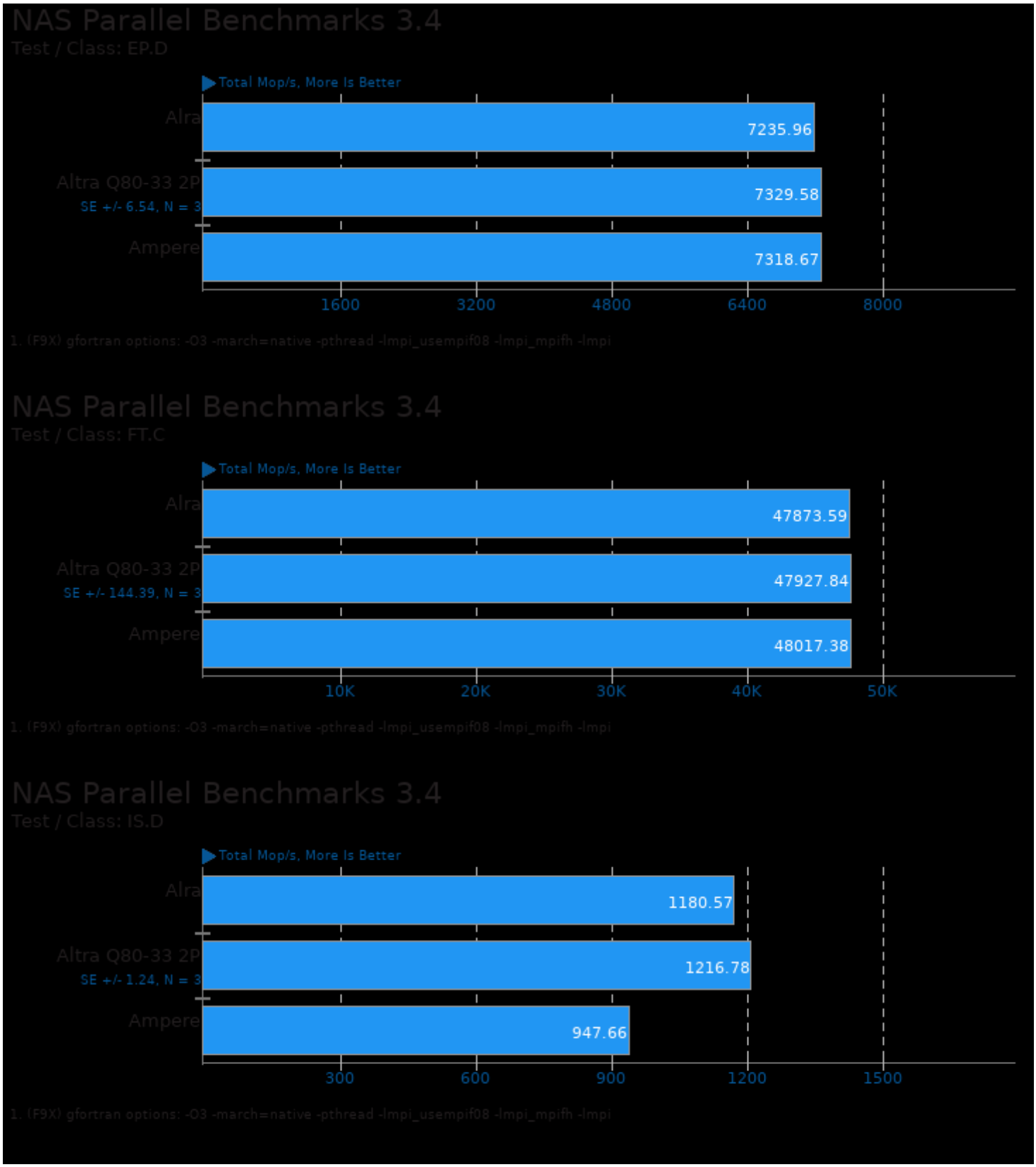
Ampere Altra Q80-33 2P

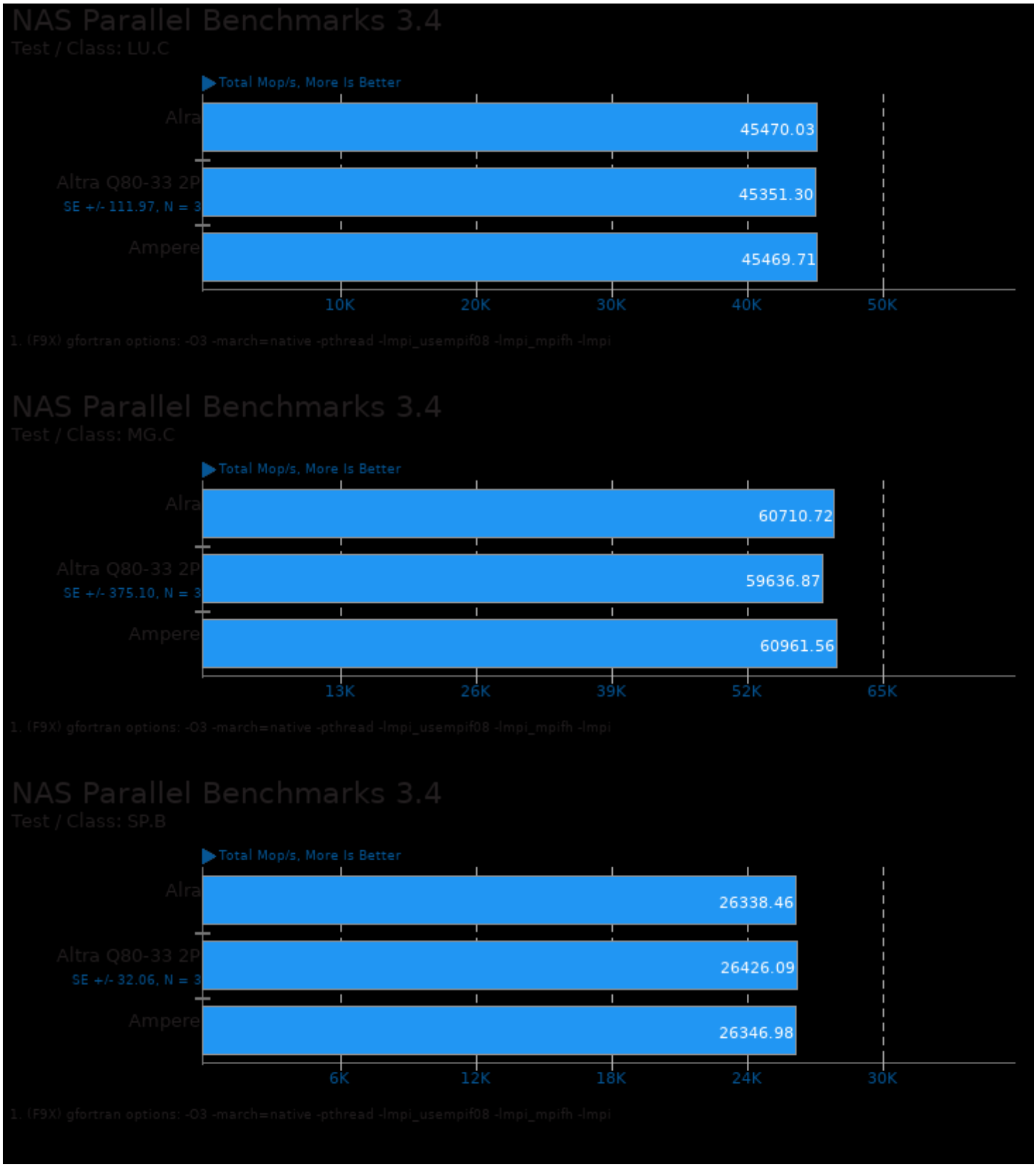
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	**1.570**	1.579	**1.581**
Normalized	99.3%	99.87%	100%
Standard Deviation	0.2%		
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	**16.850**	17.261	**17.484**
Normalized	96.37%	98.72%	100%
Standard Deviation	5.1%		
Zstd Compression - 3 - Compression Speed (MB/s)	**2315**	**2206**	2296
Normalized	100%	95.3%	99.19%
Standard Deviation	6.1%		
Zstd Compression - 3 - D.S (MB/s)	**3112**	**3060**	3078
Normalized	100%	98.34%	98.91%
Standard Deviation	1.6%		
Zstd Compression - 8 - Compression Speed (MB/s)	**1036**	1001	**717.9**
Normalized	100%	96.66%	69.3%
Standard Deviation	2.4%		
Zstd Compression - 8 - D.S (MB/s)	3162	**3162**	**3139**
Normalized	99.99%	100%	99.25%
Standard Deviation	1%		
Zstd Compression - 19 - Compression Speed (MB/s)	50.9	**54.8**	**47.4**
Normalized	92.88%	100%	86.5%
Standard Deviation	1.8%		
Zstd Compression - 19 - D.S (MB/s)	2545	**2555**	**2518**
Normalized	99.57%	100%	98.54%
Standard Deviation	1%		
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	**718.1**	**551**	689.6
Normalized	100%	76.73%	96.03%
Standard Deviation	2.1%		
Zstd Compression - 3, Long Mode - D.S	**3314**	3286	**3282**
Normalized	100%	99.16%	99.03%
Standard Deviation	0.9%		
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	457.4	**440.7**	**467.2**
Normalized	97.9%	94.33%	100%
Standard Deviation	3%		
Zstd Compression - 8, Long Mode - D.S	3375	**3296**	**3395**
Normalized	99.4%	97.08%	100%
Standard Deviation	1.5%		
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	**30.5**	**22.4**	29.9
Normalized	100%	73.44%	98.03%
Standard Deviation	7.4%		
Zstd Compression - 19, Long Mode - D.S (MB/s)	**2690**	**2629**	2690
Normalized	100%	97.7%	99.97%
Standard Deviation	1.2%		

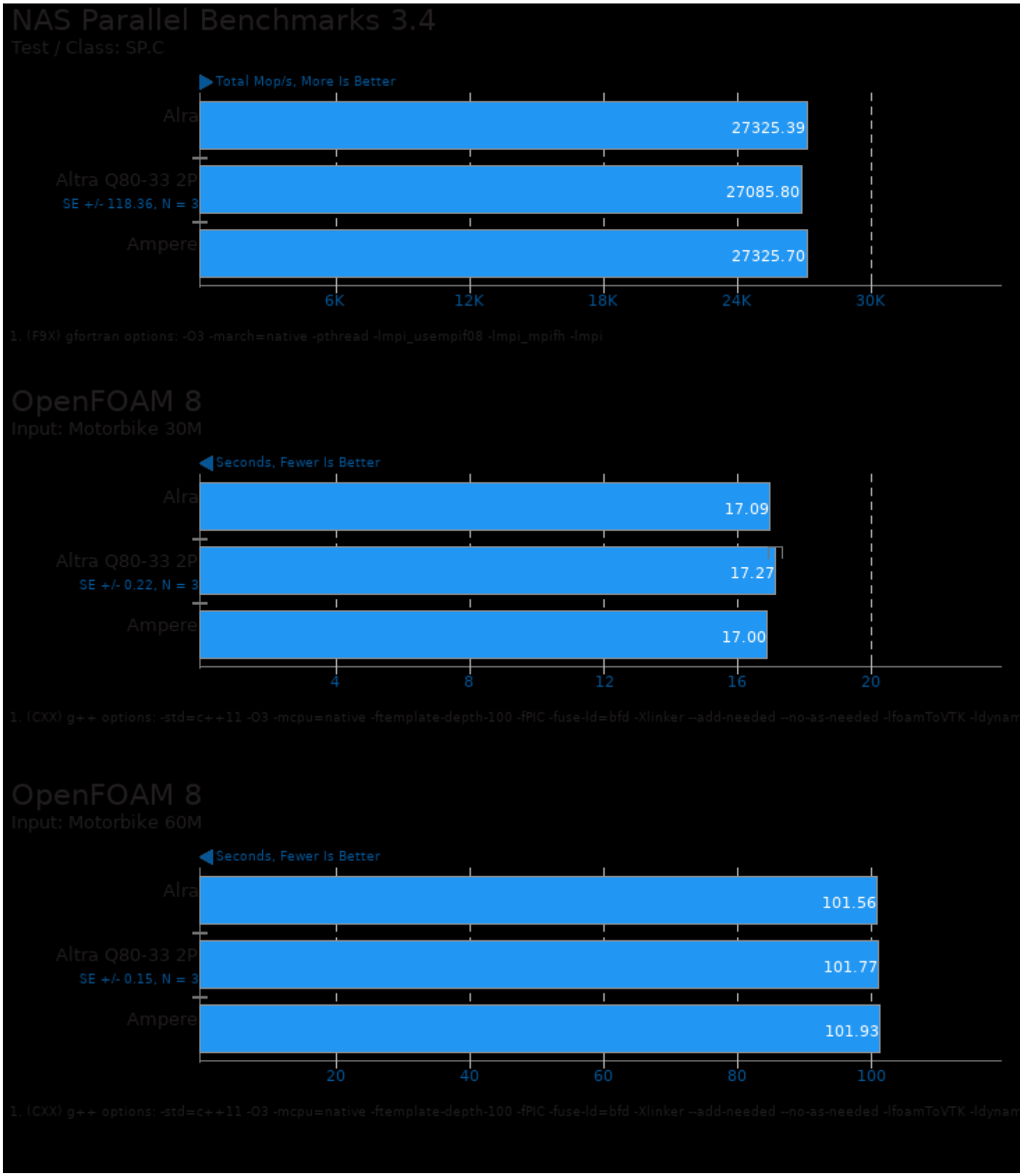

dav1d 0.9.0
Video Input: Chimera 1080p
FPS, More Is Better
Altra Q80-33 2P
SE +/- 31.14, N = 12
MIN: 259.42 / MAX: 638.61
323.76
MIN: 250.26 / MAX: 1090.96
387.25
MIN: 307.13 / MAX: 648.07
386.88
80
160
240
320
400
1. (CC) gcc options: -pthread -lm
dav1d 0.9.0
Video Input: Summer Nature 4K
FPS, More Is Better
Altra Q80-33 2P
SE +/- 8.12, N = 15
MIN: 91.86 / MAX: 203.44
160.76
MIN: 86.44 / MAX: 272.17
177.97
MIN: 97.66 / MAX: 210.31
168.17
40
80
120
160
200
1. (CC) gcc options: -pthread -lm
dav1d 0.9.0
Video Input: Summer Nature 1080p
FPS, More Is Better
Altra Q80-33 2P
SE +/- 23.56, N = 15
MIN: 236.32 / MAX: 506.06
413.63
MIN: 223.97 / MAX: 796.42
587.39
MIN: 258.65 / MAX: 614.18
543.01
130
260
390
520
650
1. (CC) gcc options: -pthread -lm

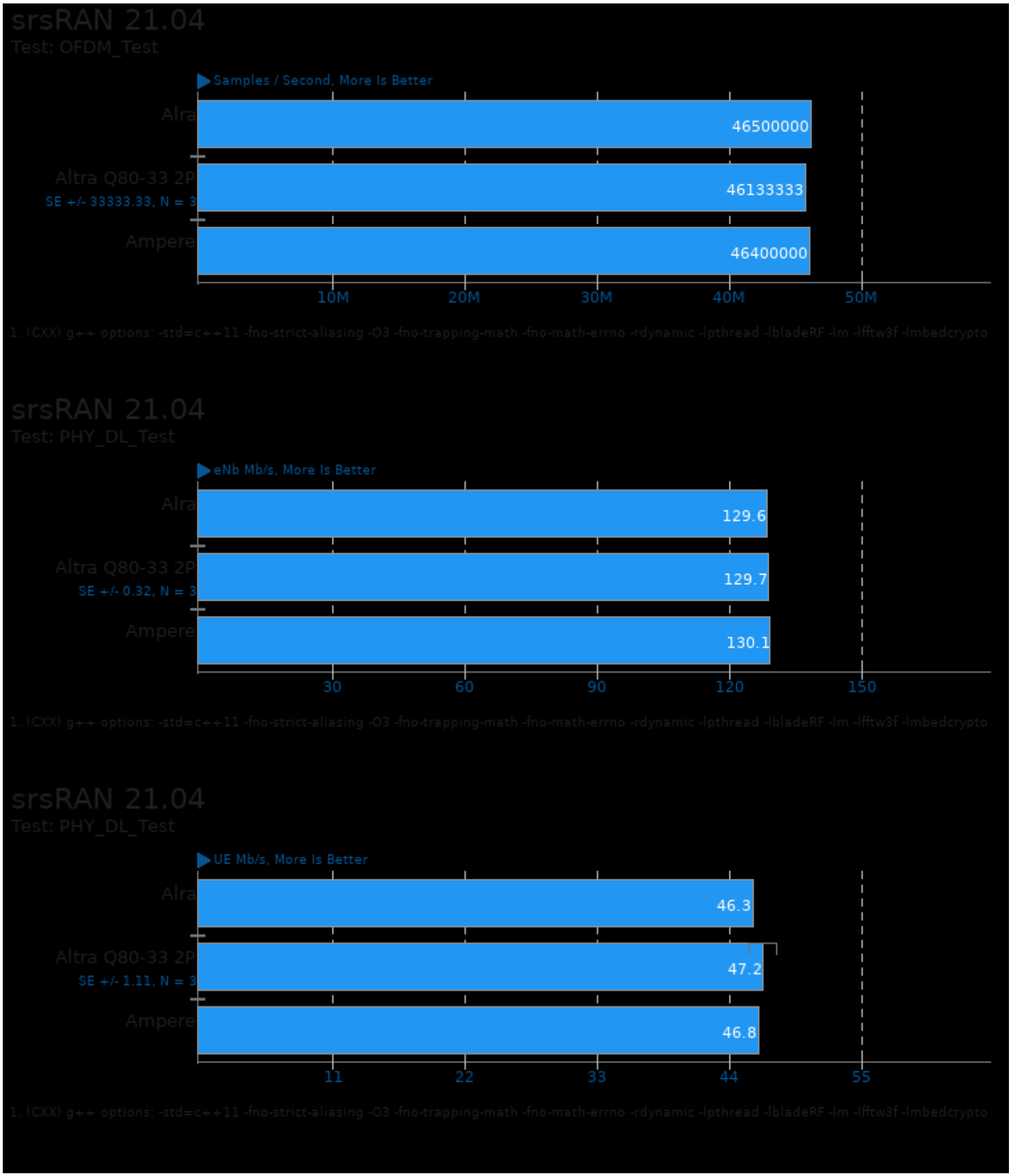

dav1d 0.9.0
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
Altra
MIN: 236.15 / MAX: 446.84
271.79
Altra Q80-33 2P
SE +/- 10.34, N = 12
MIN: 213.87 / MAX: 516.38
276.17
Ampere
MIN: 216.53 / MAX: 381.98
243.56
60
120
180
240
300
1. (CC) gcc options: -pthread -lm
LAMMPS Molecular Dynamics Simulator 29Oct2020
Model: 20k Atoms
ns/day, More Is Better
Altra
45.61
Altra Q80-33 2P
SE +/- 0.57, N = 3
45.12
Ampere
45.62
10
20
30
40
50
1. (CXX) g++ options: -O3 -pthread -lm
LAMMPS Molecular Dynamics Simulator 29Oct2020
Model: Rhodopsin Protein
ns/day, More Is Better
Altra
41.11
Altra Q80-33 2P
SE +/- 0.08, N = 3
41.06
Ampere
41.30
9
18
27
36
45
1. (CXX) g++ options: -O3 -pthread -lm

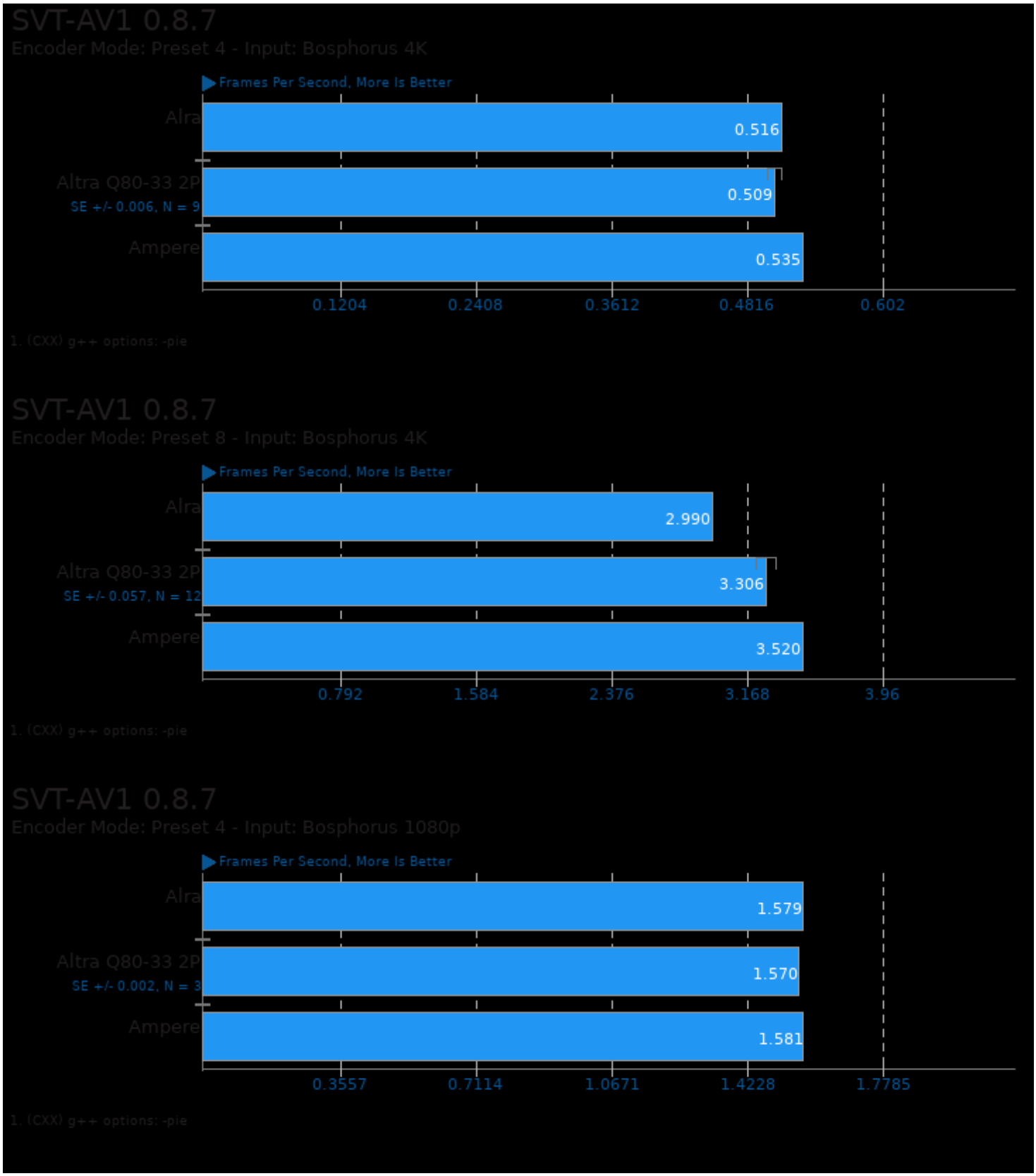

NAS Parallel Benchmarks 3.4
Test / Class: BT.C
Total Mop/s, More Is Better
Altra
69466.82
Altra Q80-33 2P
SE +/- 28.47, N = 3
69536.31
Ampere
69361.91
15K
30K
45K
60K
75K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
NAS Parallel Benchmarks 3.4
Test / Class: CG.C
Total Mop/s, More Is Better
Altra
19870.55
Altra Q80-33 2P
SE +/- 158.73, N = 15
18798.32
Ampere
18977.42
4K
8K
12K
16K
20K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
NAS Parallel Benchmarks 3.4
Test / Class: EP.C
Total Mop/s, More Is Better
Altra
7104.70
Altra Q80-33 2P
SE +/- 60.71, N = 3
7190.37
Ampere
7280.51
1600
3200
4800
6400
8000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

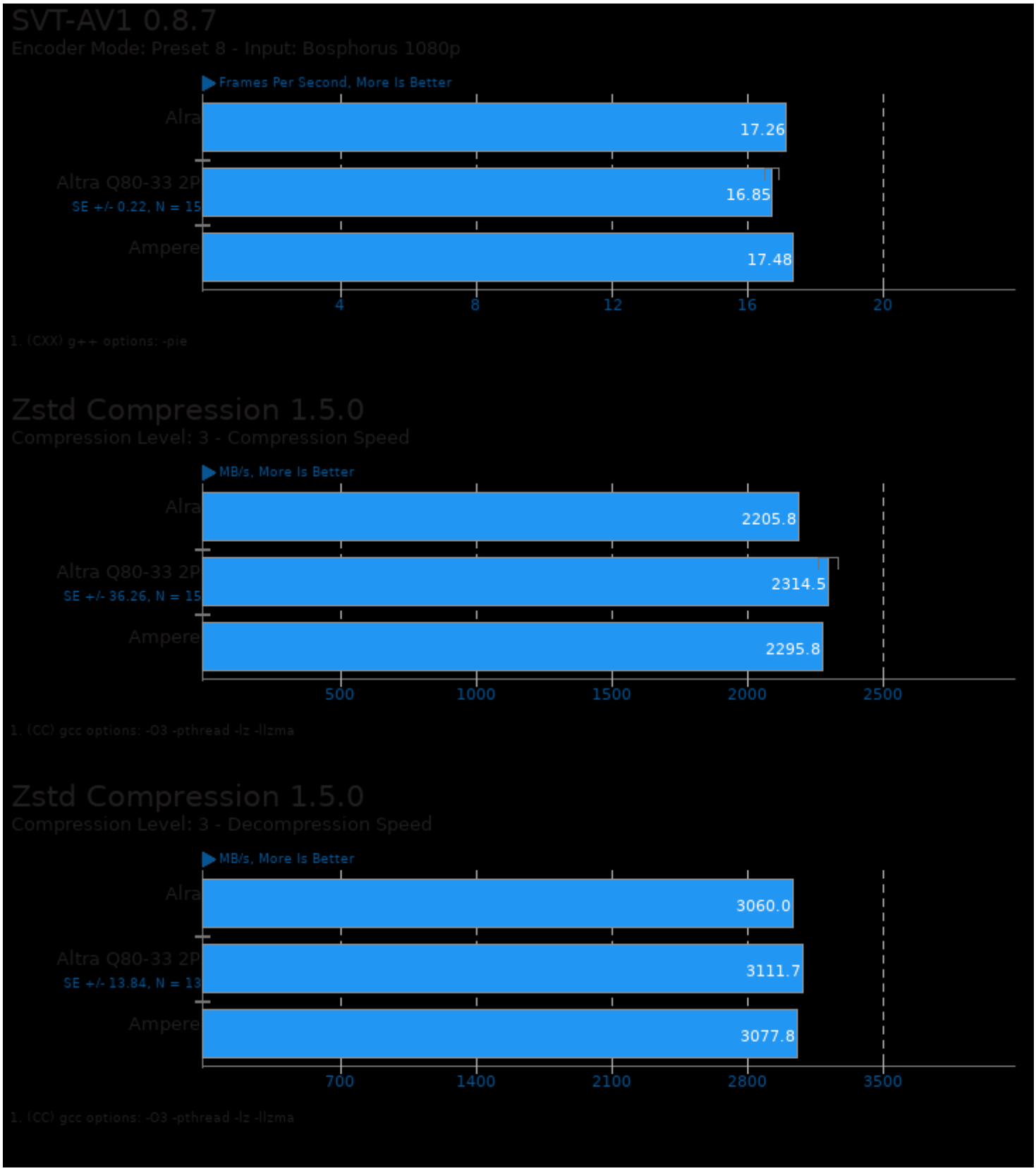

NAS Parallel Benchmarks 3.4
Test / Class: EP.D
Total Mop/s, More Is Better
Altra
7235.96
Altra Q80-33 2P
SE +/- 6.54, N = 3
7329.58
Ampere
7318.67
1600
3200
4800
6400
8000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
NAS Parallel Benchmarks 3.4
Test / Class: FT.C
Total Mop/s, More Is Better
Altra
47873.59
Altra Q80-33 2P
SE +/- 144.39, N = 3
47927.84
Ampere
48017.38
10K
20K
30K
40K
50K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
NAS Parallel Benchmarks 3.4
Test / Class: IS.D
Total Mop/s, More Is Better
Altra
1180.57
Altra Q80-33 2P
SE +/- 1.24, N = 3
1216.78
Ampere
947.66
300
600
900
1200
1500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

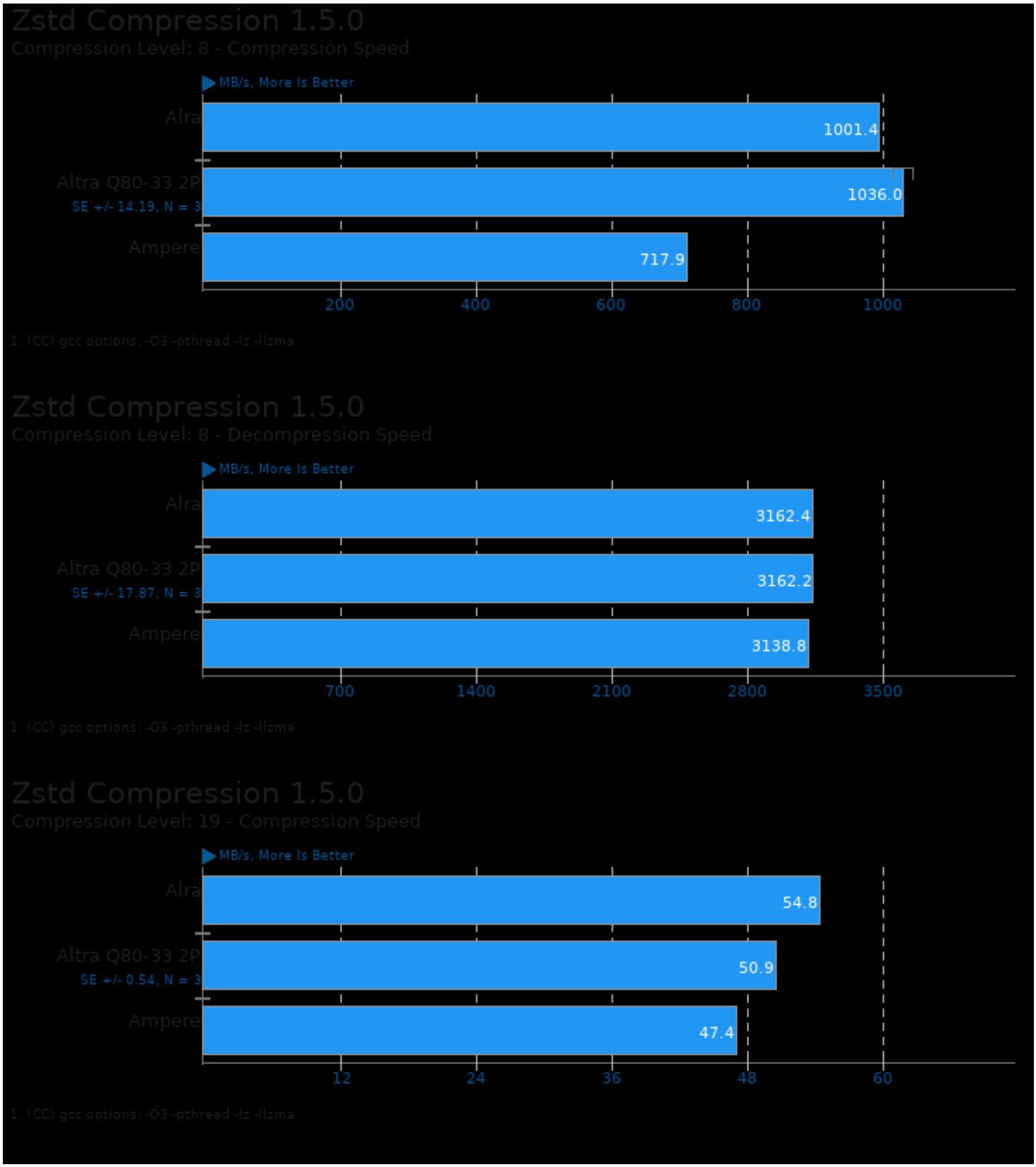

NAS Parallel Benchmarks 3.4
Test / Class: LU.C
Total Mop/s, More Is Better
Altra
45470.03
Altra Q80-33 2P
SE +/- 111.97, N = 3
45351.30
Ampere
45469.71
10K
20K
30K
40K
50K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
NAS Parallel Benchmarks 3.4
Test / Class: MG.C
Total Mop/s, More Is Better
Altra
60710.72
Altra Q80-33 2P
SE +/- 375.10, N = 3
59636.87
Ampere
60961.56
13K
26K
39K
52K
65K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
NAS Parallel Benchmarks 3.4
Test / Class: SP.B
Total Mop/s, More Is Better
Altra
26338.46
Altra Q80-33 2P
SE +/- 32.06, N = 3
26426.09
Ampere
26346.98
6K
12K
18K
24K
30K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

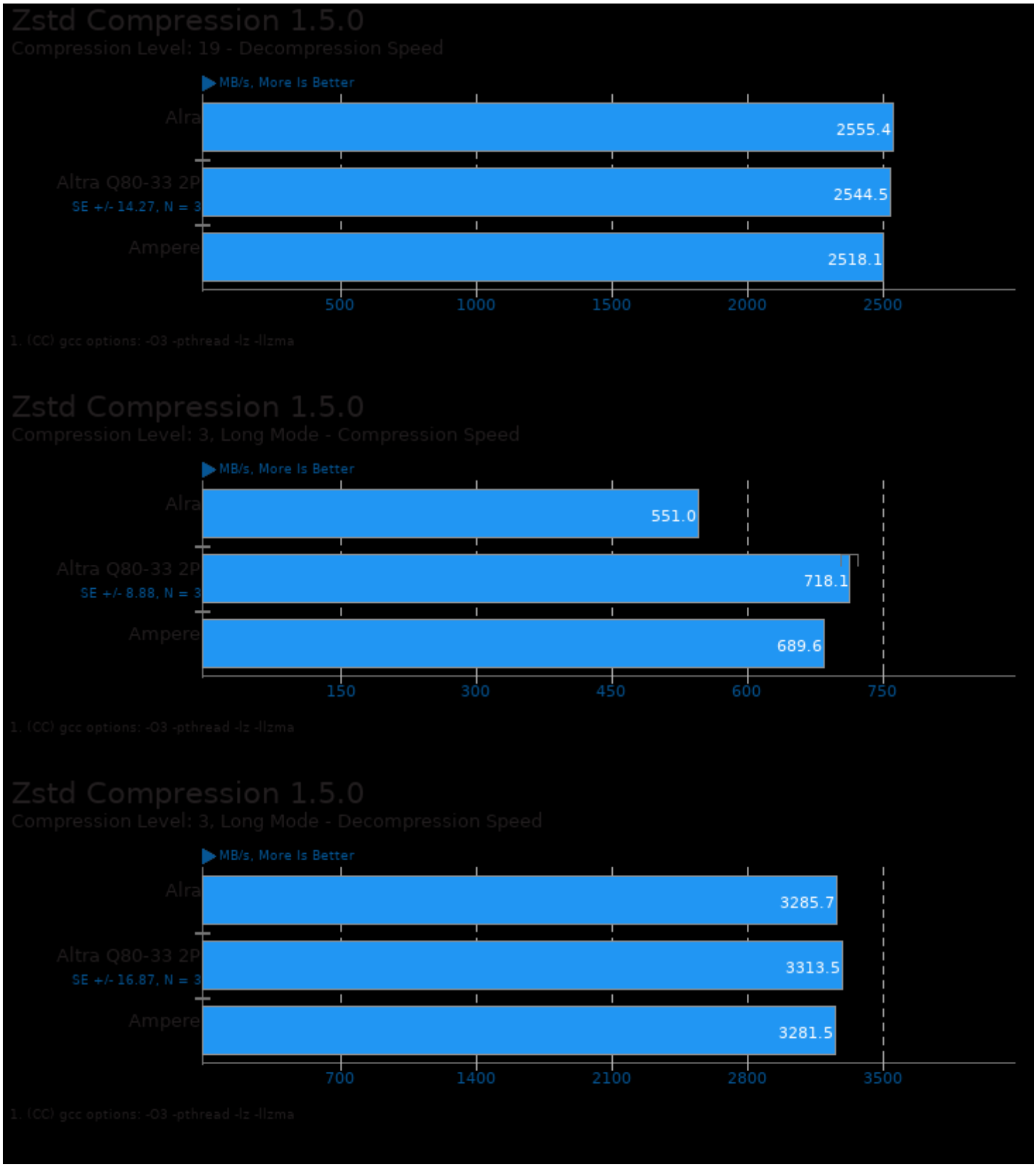

NAS Parallel Benchmarks 3.4
Test / Class: SP.C
Total Mop/s, More Is Better
Altra
27325.39
Altra Q80-33 2P
SE +/- 118.36, N = 3
27085.80
Ampere
27325.70
6K
12K
18K
24K
30K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
OpenFOAM 8
Input: Motorbike 30M
Seconds, Fewer Is Better
Altra
17.09
Altra Q80-33 2P
SE +/- 0.22, N = 3
17.27
Ampere
17.00
4
8
12
16
20
1. (CXX) g++ options: -std=c++11 -O3 -mcpu=native -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfoamToVTK -ldynam
OpenFOAM 8
Input: Motorbike 60M
Seconds, Fewer Is Better
Altra
101.56
Altra Q80-33 2P
SE +/- 0.15, N = 3
101.77
Ampere
101.93
20
40
60
80
100
1. (CXX) g++ options: -std=c++11 -O3 -mcpu=native -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfoamToVTK -ldynam

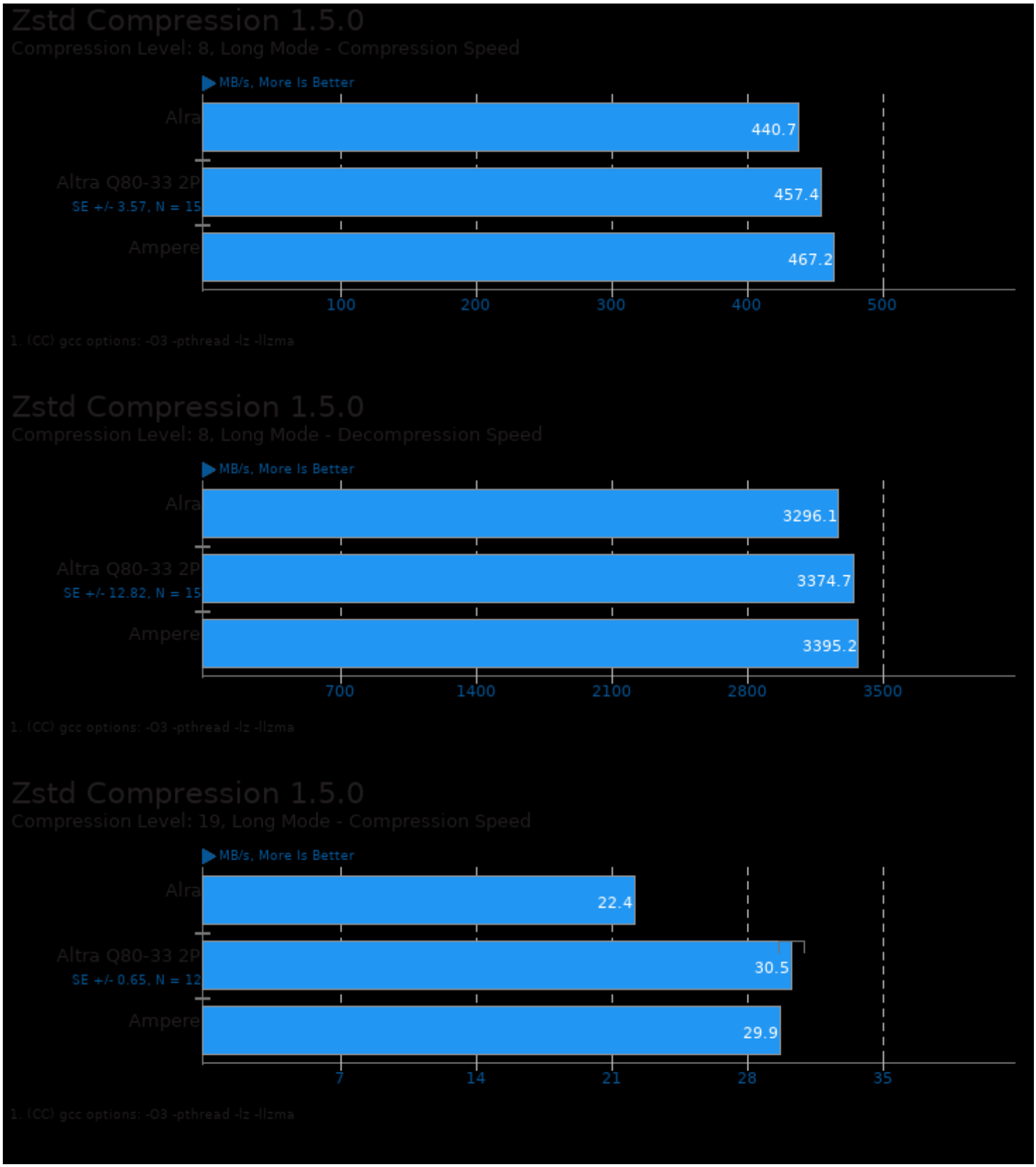

srsRAN 21.04
Test: OFDM_Test
Samples / Second, More Is Better
Altra
46500000
Altra Q80-33 2P
SE +/- 33333.33, N = 3
46133333
Ampere
46400000
10M
20M
30M
40M
50M
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -O3 -fno-trapping-math -fno-math-errno -rdynamic -lpthread -lbladeRF -lm -lfftw3f -lmbedcrypto
srsRAN 21.04
Test: PHY_DL_Test
eNb Mb/s, More Is Better
Altra
129.6
Altra Q80-33 2P
SE +/- 0.32, N = 3
129.7
Ampere
130.1
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -O3 -fno-trapping-math -fno-math-errno -rdynamic -lpthread -lbladeRF -lm -lfftw3f -lmbedcrypto
srsRAN 21.04
Test: PHY_DL_Test
UE Mb/s, More Is Better
Altra
46.3
Altra Q80-33 2P
SE +/- 1.11, N = 3
47.2
Ampere
46.8
11
22
33
44
55
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -O3 -fno-trapping-math -fno-math-errno -rdynamic -lpthread -lbladeRF -lm -lfftw3f -lmbedcrypto

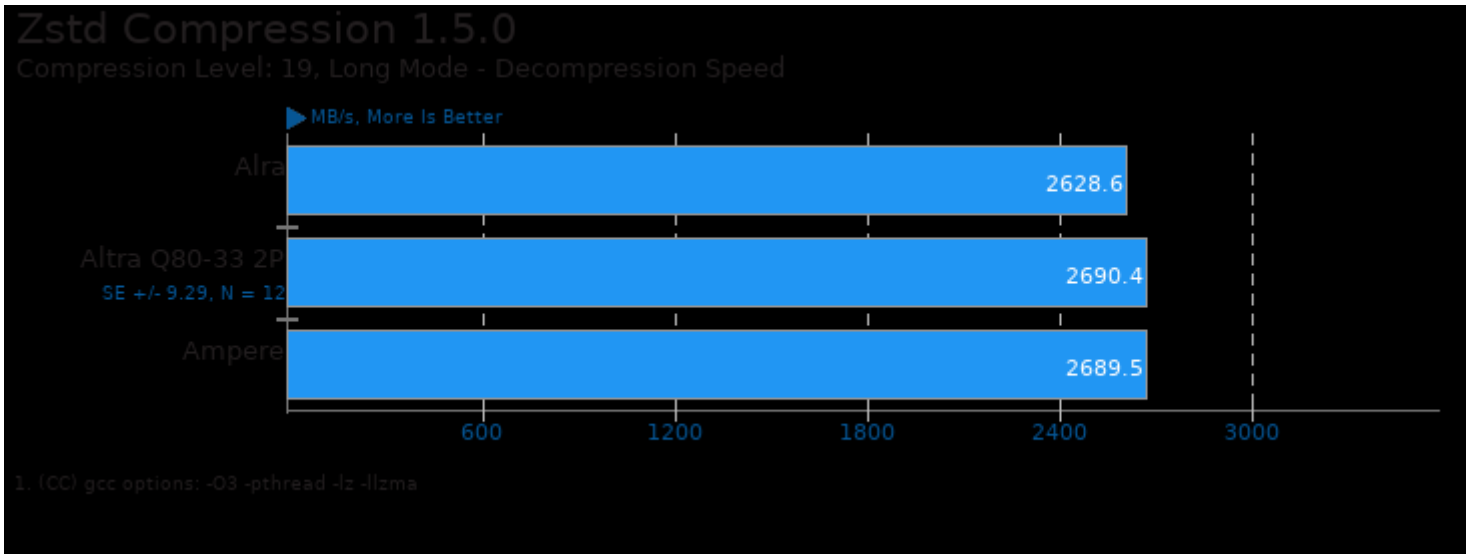

SVT-AV1 0.8.7
Encoder Mode: Preset 4 - Input: Bosphorus 4K
Frames Per Second, More Is Better
Altra
0.516
Altra Q80-33 2P
SE +/- 0.006, N = 9
0.509
Ampere
0.535
0.1204
0.2408
0.3612
0.4816
0.602
1. (CXX) g++ options: -pie
SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
Altra
2.990
Altra Q80-33 2P
SE +/- 0.057, N = 12
3.306
Ampere
3.520
0.792
1.584
2.376
3.168
3.96
1. (CXX) g++ options: -pie
SVT-AV1 0.8.7
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
Altra
1.579
Altra Q80-33 2P
SE +/- 0.002, N = 3
1.570
Ampere
1.581
0.3557
0.7114
1.0671
1.4228
1.7785
1. (CXX) g++ options: -pie


SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
Altra
17.26
Altra Q80-33 2P
SE +/- 0.22, N = 15
16.85
Ampere
17.48
4
8
12
16
20
1. (CXX) g++ options: -pie
Zstd Compression 1.5.0
Compression Level: 3 - Compression Speed
MB/s, More Is Better
Altra
2205.8
Altra Q80-33 2P
SE +/- 36.26, N = 15
2314.5
Ampere
2295.8
500
1000
1500
2000
2500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
Altra
3060.0
Altra Q80-33 2P
SE +/- 13.84, N = 13
3111.7
Ampere
3077.8
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma

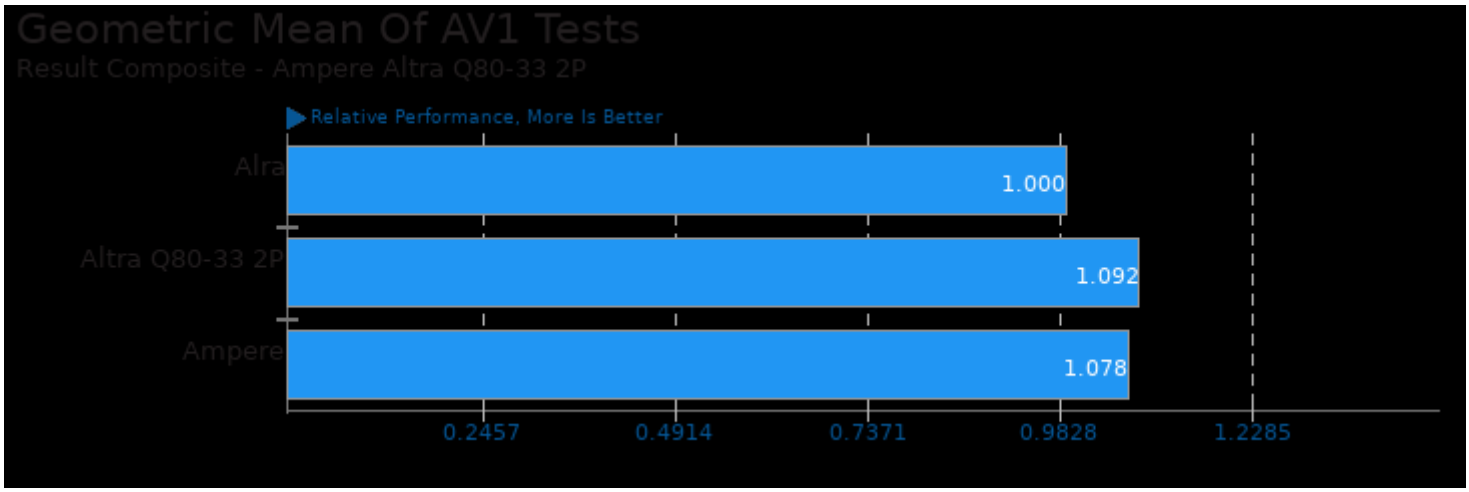

Zstd Compression 1.5.0
Compression Level: 8 - Compression Speed
MB/s, More Is Better
Altra
1001.4
Altra Q80-33 2P
SE +/- 14.19, N = 3
1036.0
Ampere
717.9
200
400
600
800
1000
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8 - Decompression Speed
MB/s, More Is Better
Altra
3162.4
Altra Q80-33 2P
SE +/- 17.87, N = 3
3162.2
Ampere
3138.8
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 19 - Compression Speed
MB/s, More Is Better
Altra
54.8
Altra Q80-33 2P
SE +/- 0.54, N = 3
50.9
Ampere
47.4
12
24
36
48
60
1. (CC) gcc options: -O3 -pthread -lz -llzma


Zstd Compression 1.5.0
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
Altra
2555.4
Altra Q80-33 2P
SE +/- 14.27, N = 3
2544.5
Ampere
2518.1
500
1000
1500
2000
2500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
Altra
551.0
Altra Q80-33 2P
SE +/- 8.88, N = 3
718.1
Ampere
689.6
150
300
450
600
750
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
Altra
3285.7
Altra Q80-33 2P
SE +/- 16.87, N = 3
3313.5
Ampere
3281.5
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma

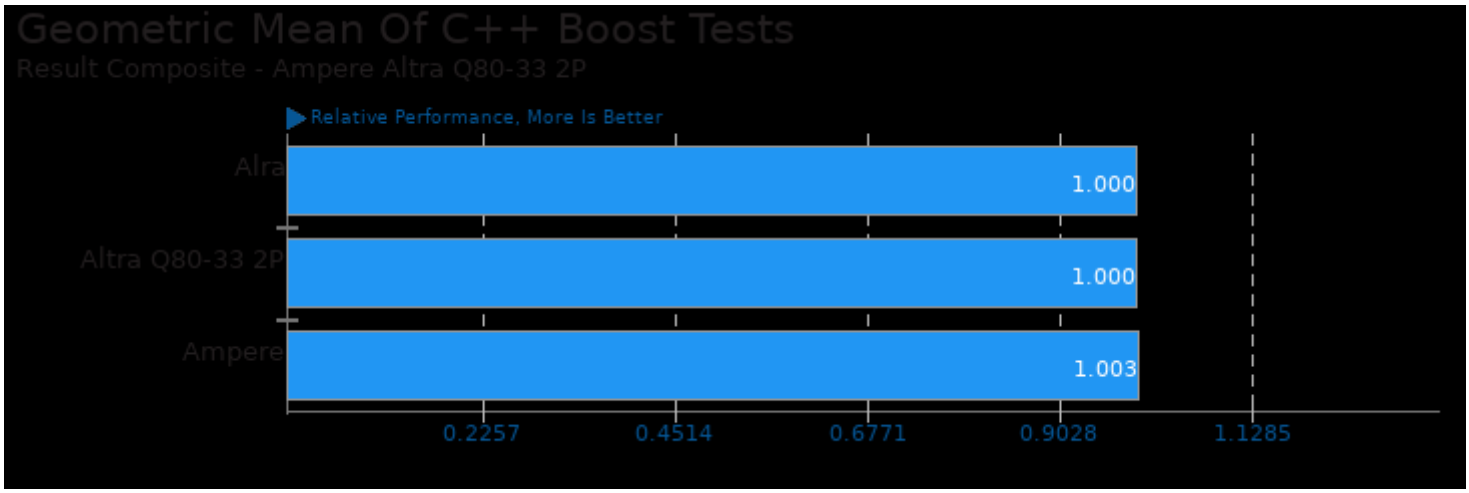

Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
Altra
440.7
Altra Q80-33 2P
SE +/- 3.57, N = 15
457.4
Ampere
467.2
100
200
300
400
500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
Altra
3296.1
Altra Q80-33 2P
SE +/- 12.82, N = 15
3374.7
Ampere
3395.2
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
Altra
22.4
Altra Q80-33 2P
SE +/- 0.65, N = 12
30.5
Ampere
29.9
7
14
21
28
35
1. (CC) gcc options: -O3 -pthread -lz -llzma


Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Decompression Speed
MB/s, More Is Better
Alra
2628.6
Altra Q80-33 2P
SE +/- 9.29, N = 12
2690.4
Ampere
2689.5
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma

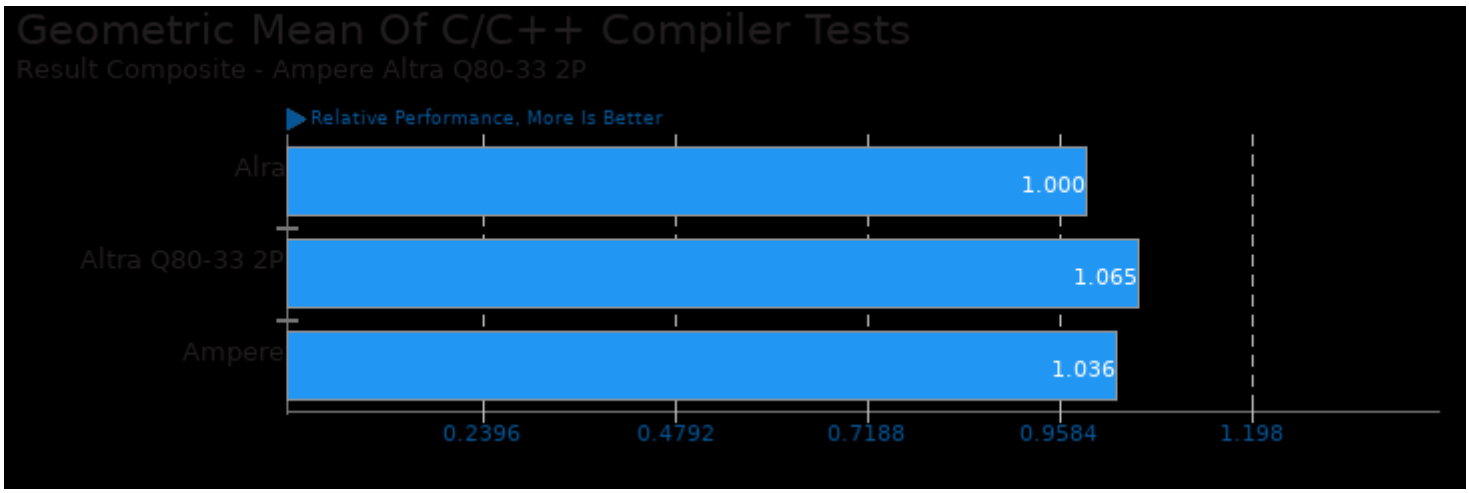
These geometric means are based upon test groupings / test suites for this result file.



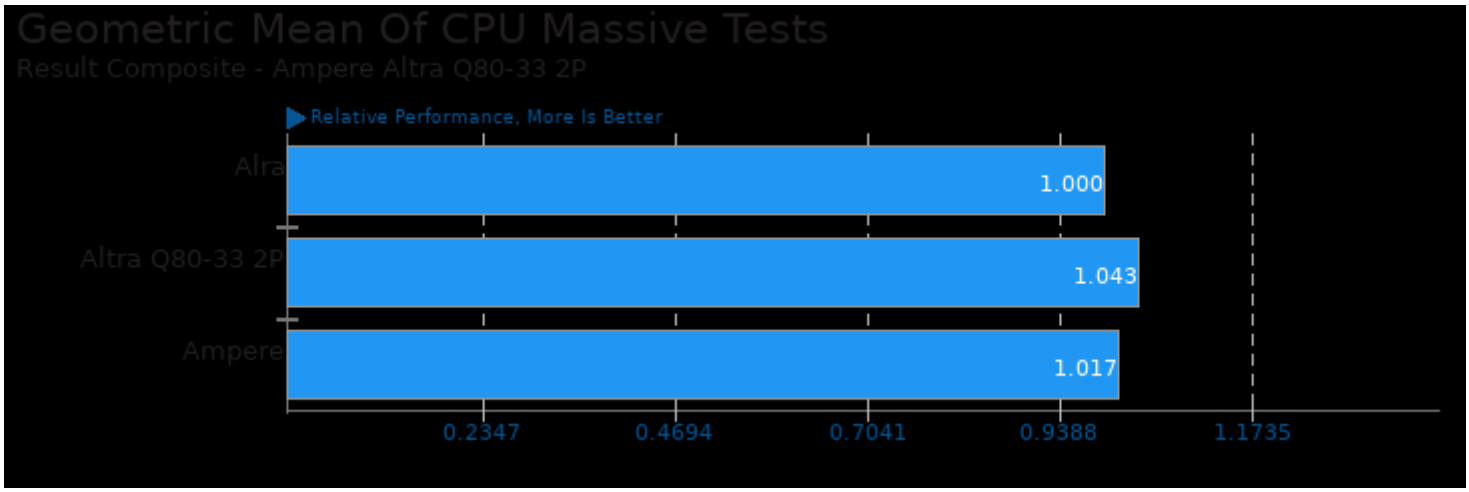
Geometric mean based upon tests: pts/dav1d and pts/svt-av1



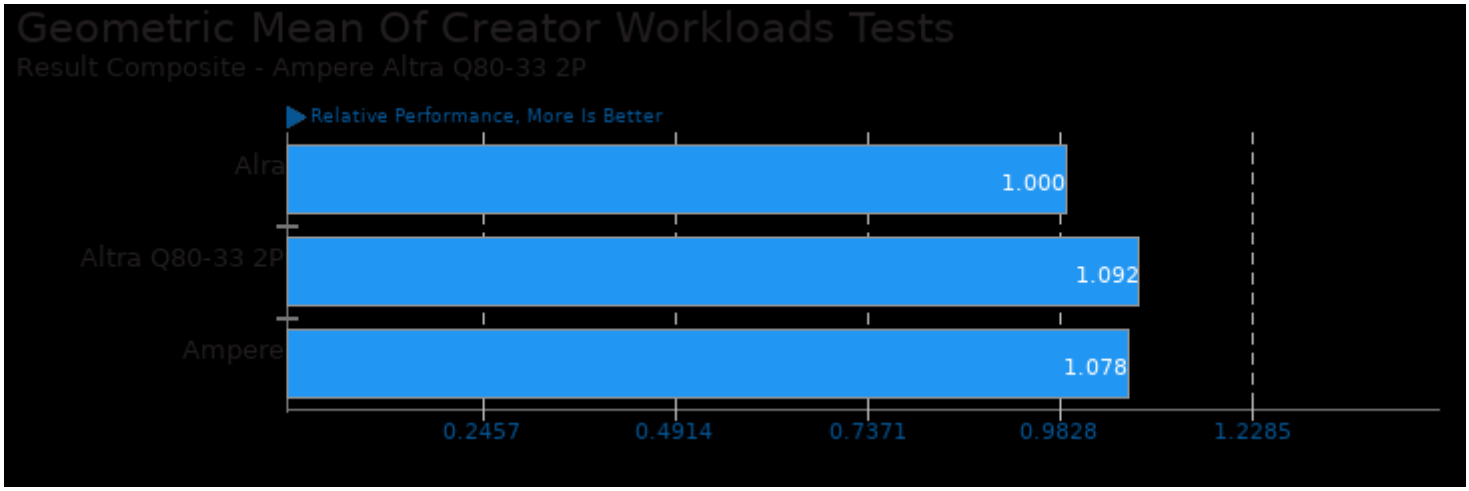
Geometric mean based upon tests: pts/openfoam and pts/srsran



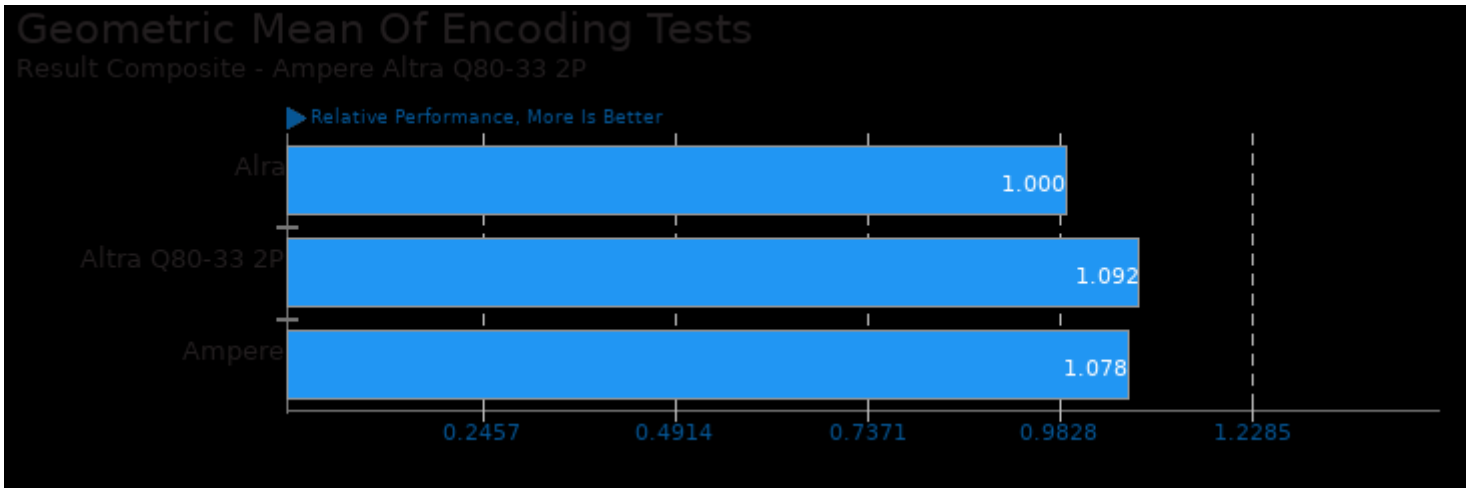
Geometric mean based upon tests: pts/dav1d, pts/compress-zstd, pts/lammps and pts/svt-av1



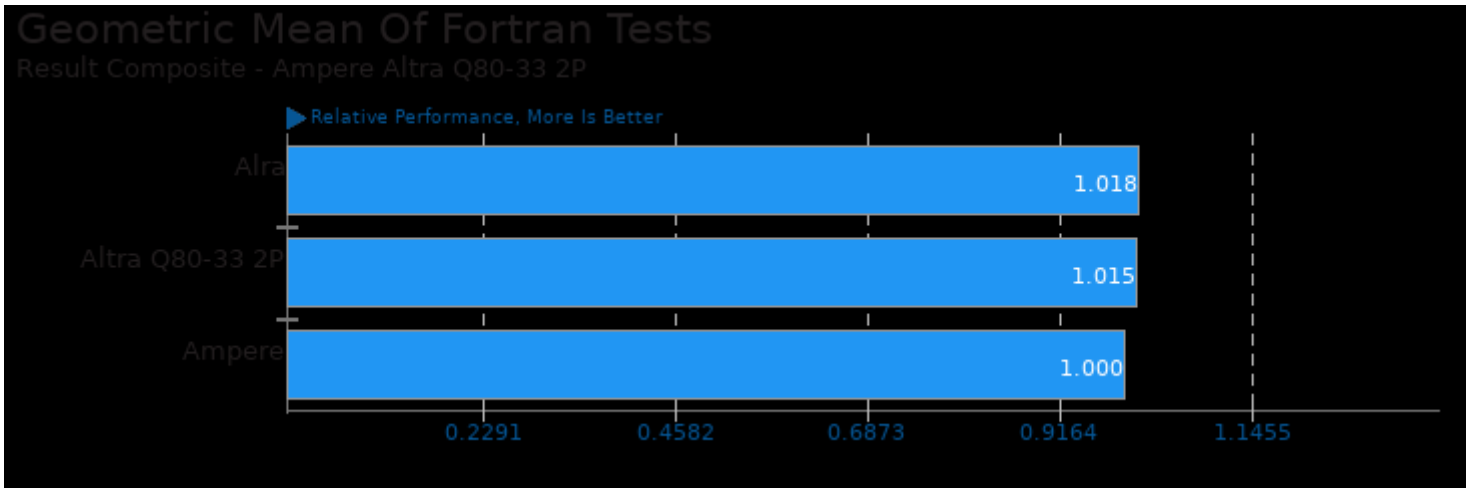
Geometric mean based upon tests: pts/compress-zstd, pts/dav1d, pts/svt-av1, pts/lammps and pts/npb



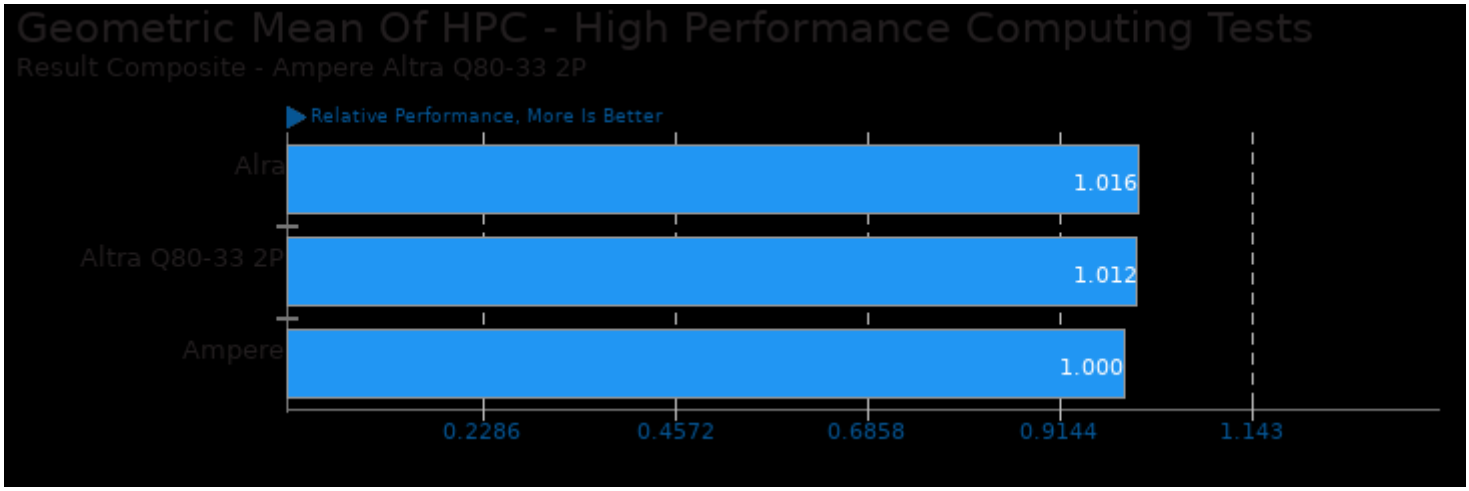
Geometric mean based upon tests: pts/dav1d and pts/svt-av1



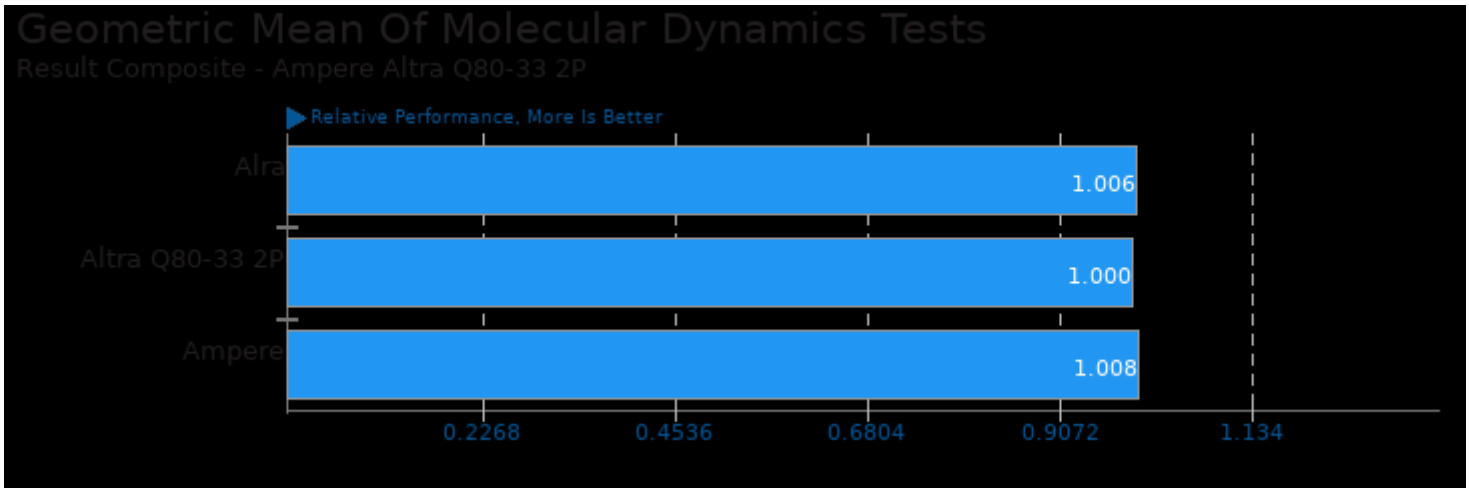
Geometric mean based upon tests: pts/dav1d and pts/svt-av1



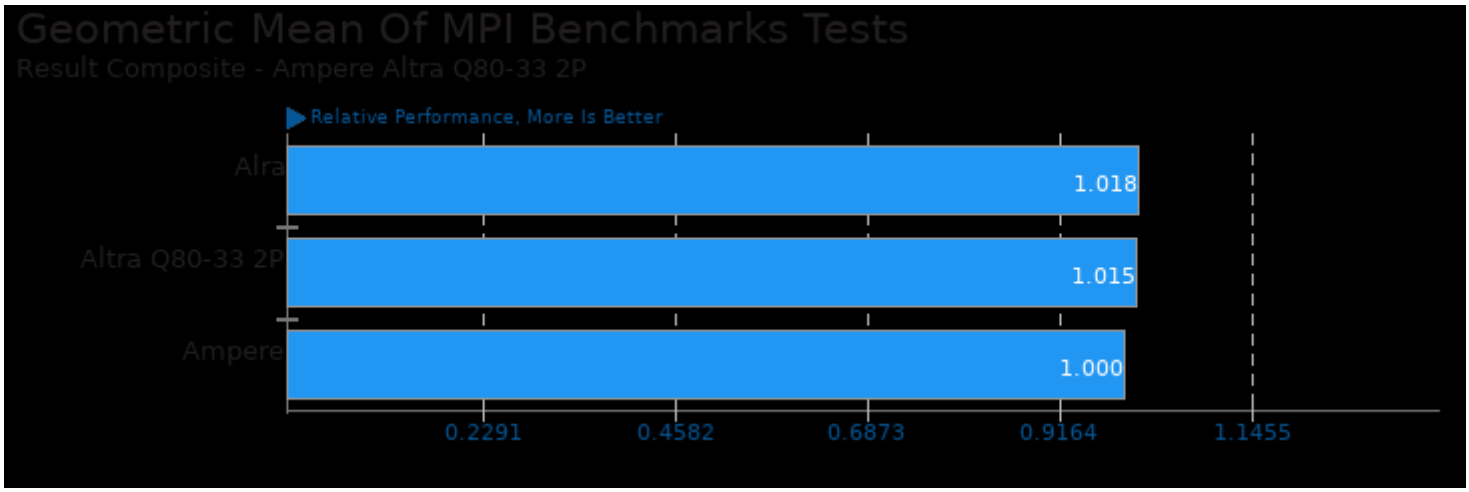
Geometric mean based upon tests: pts/lammps and pts/npb



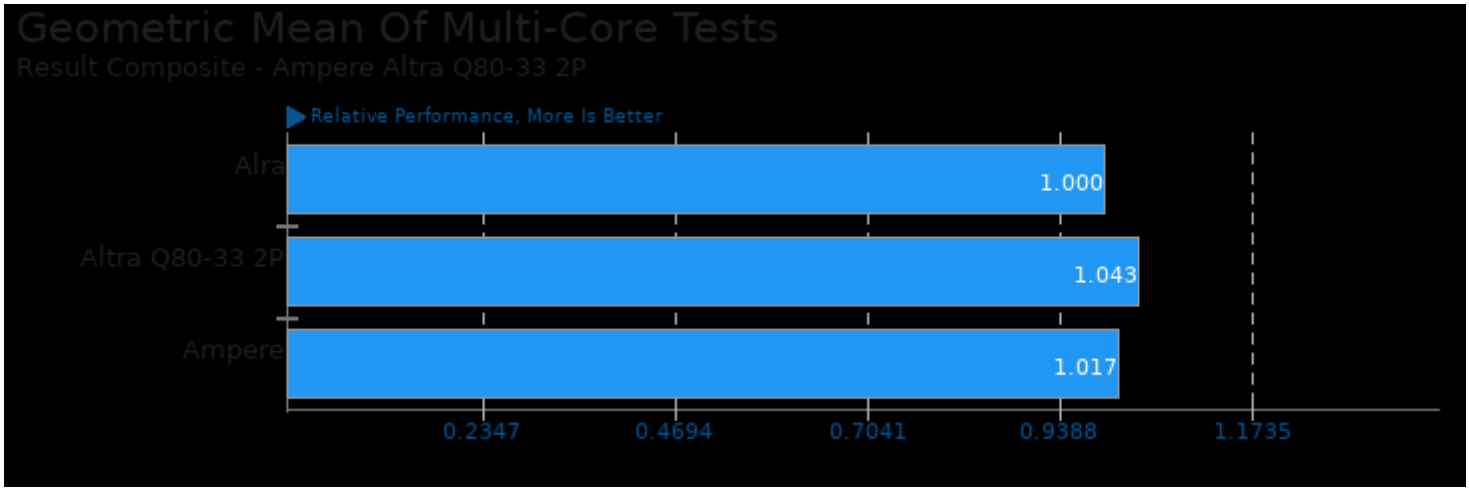
Geometric mean based upon tests: pts/npb, pts/lammps and pts/openfoam



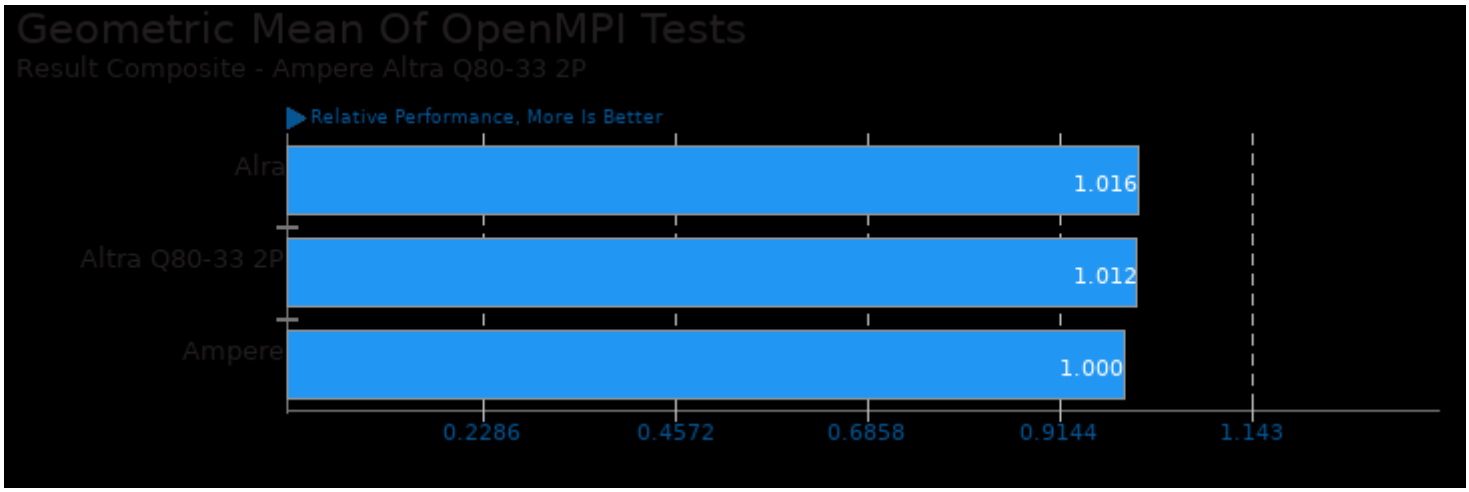
Geometric mean based upon tests: pts/lammps and pts/openfoam



Geometric mean based upon tests: pts/lammps and pts/npb

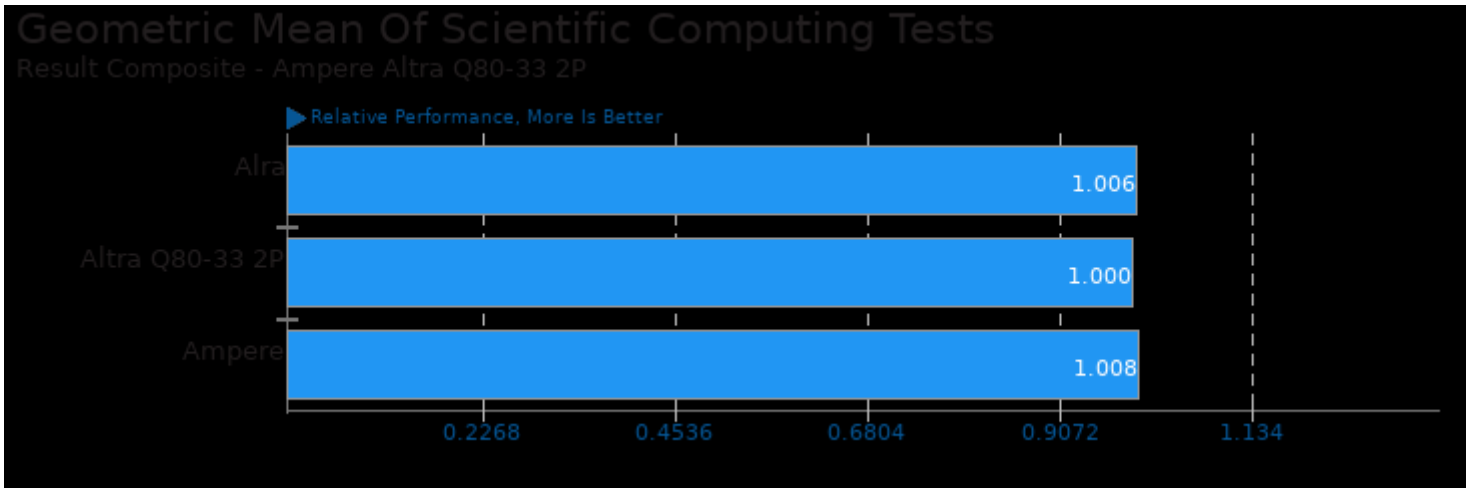


Geometric mean based upon tests: pts/dav1d, pts/svt-av1, pts/npb, pts/lammps and pts/compress-zstd

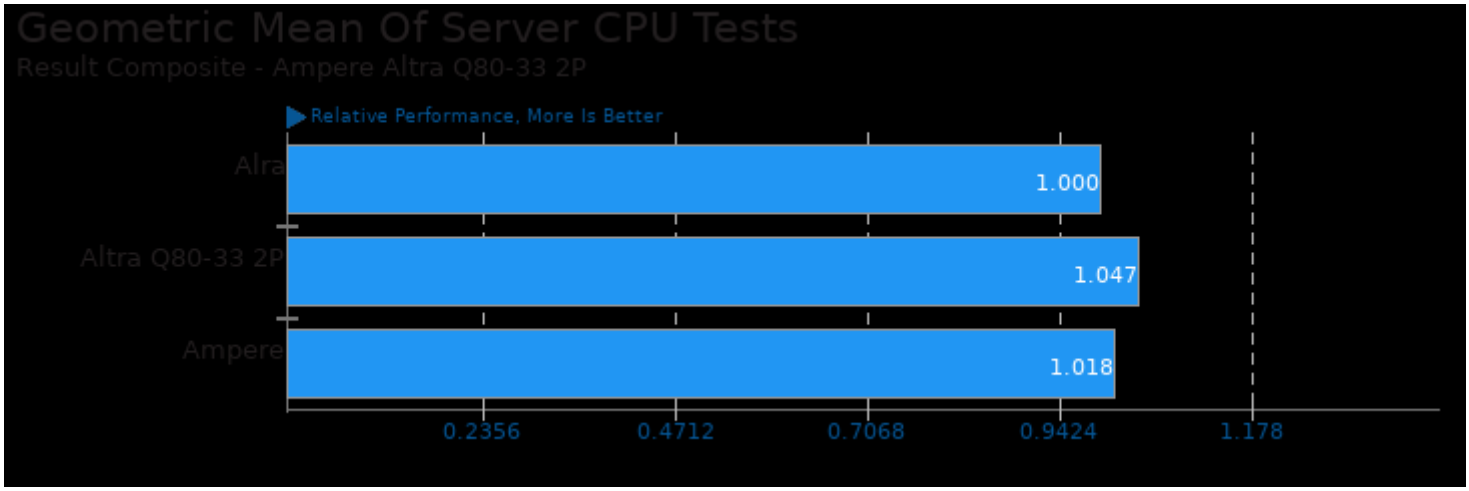


Geometric mean based upon tests: pts/lammps, pts/npb and pts/openfoam

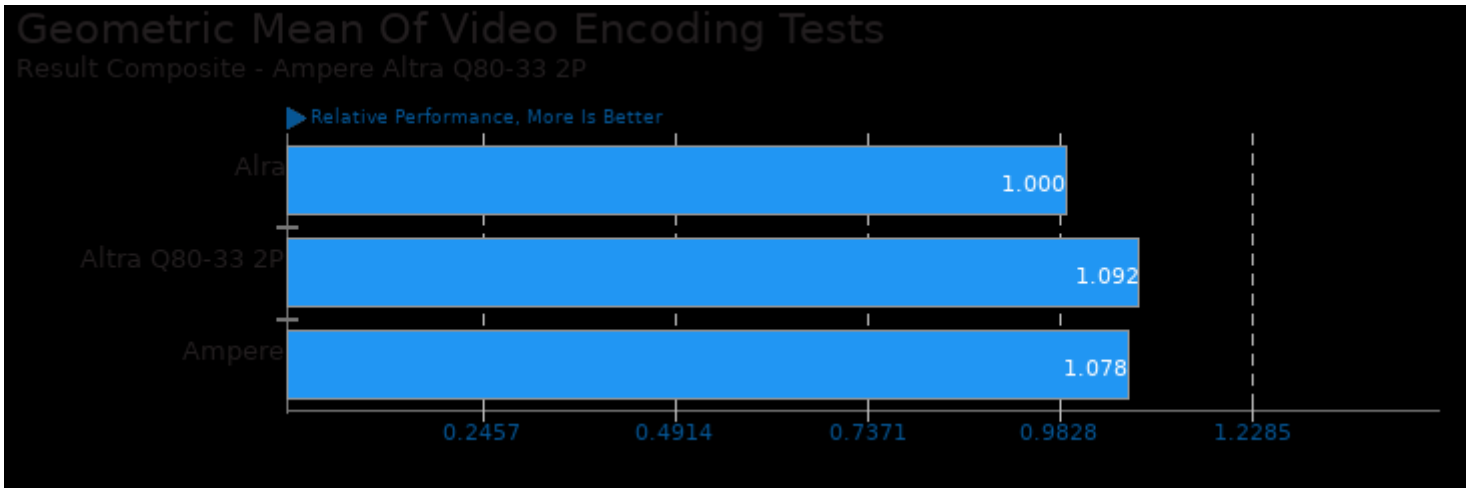
Ampere Altra Q80-33 2P



Geometric mean based upon tests: pts/lammps and pts/openfoam



Geometric mean based upon tests: pts/npb, pts/svt-av1, pts/dav1d and pts/compress-zstd



Geometric mean based upon tests: pts/dav1d and pts/svt-av1

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 02:45.