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Intel Xeon E3-1275 v6 testing with a ASUS P10S-M WS (4401 BIOS) and Intel HD P630 on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 28% of the tests.

Based on the geometric mean of all complete results, the fastest (3) was 1.002x the speed of the slowest (4). 1 was 0.999x the speed of 3, 2 was 1x the speed of 1, 4 was 0.999x the speed of 2.

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

AOM AV1 (Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p) at 1.048x
SVT-AV1 (Encoder Mode: Preset 4 - Input: Bosphorus 1080p) at 1.028x
Embree (Binary: Pathtracer - Model: Asian Dragon Obj) at 1.027x
srsLTE (Test: OFDM_Test) at 1.026x
SVT-AV1 (Encoder Mode: Preset 4 - Input: Bosphorus 4K) at 1.024x
GROMACS (Implementation: MPI CPU - Input: water_GMX50_bare) at 1.024x
Embree (Binary: Pathtracer ISPC - Model: Asian Dragon) at 1.023x
Embree (Binary: Pathtracer - Model: Asian Dragon) at 1.022x
LuaRadio (Test: Complex Phase) at 1.022x

Sysbench (Test: RAM / Memory) at 1.021x.

Test Systems:

1

2

3

4

Processor: Intel Xeon E3-1275 v6 @ 4.20GHz (4 Cores / 8 Threads), Motherboard: ASUS P10S-M WS (4401 BIOS), Chipset: Intel Xeon E3-1200 v6/7th, Memory: 16GB, Disk: Samsung SSD 970 EVO Plus 500GB, Graphics: Intel HD P630 (1150MHz), Audio: Realtek ALC1150, Monitor: DELL S2409W, Network: 2 x Intel I210

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc8daily20201007-generic (x86_64) 20201006, Display Server: X Server 1.20.8, OpenCL: OpenCL 2.1, 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=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/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: intel_pstate powersave - CPU Microcode: 0xde - Thermald 1.9.1
Python Notes: Python 3.8.5
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + 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: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

	1	2	3	4
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.07	0.07	0.07	0.07
Standard Deviation	0%			
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	1.94	1.94	1.94	1.94
Standard Deviation	0.3%			
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	7.50	**7.48**	**7.51**	7.49
Normalized	99.87%	99.6%	100%	99.73%
Standard Deviation	0.1%			
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	3.66	3.66	3.66	3.66
Standard Deviation	0.2%			

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AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	24.26	**24.39**	24.24	**24.13**
Normalized	99.47%	100%	99.38%	98.93%
Standard Deviation	0.3%			
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	36.42	**36.44**	36.43	**36.33**
Normalized	99.95%	100%	99.97%	99.7%
Standard Deviation	0.1%			
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	**0.21**	**0.21**	**0.22**	**0.21**
Normalized	95.45%	95.45%	100%	95.45%
Standard Deviation	2.7%			
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	4.25	**4.24**	**4.26**	4.25
Normalized	99.77%	99.53%	100%	99.77%
Standard Deviation	0%			
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	13.83	13.76	**13.86**	**13.74**
Normalized	99.78%	99.28%	100%	99.13%
Standard Deviation	0%			
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	11.48	**11.45**	**11.49**	**11.45**
Normalized	99.91%	99.65%	100%	99.65%
Standard Deviation	0.3%			
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	79.50	**80.37**	80.2	**79.18**
Normalized	98.92%	100%	99.79%	98.52%
Standard Deviation	0.3%			
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	99.97	99.5	**100.01**	**98.74**
Normalized	99.96%	99.49%	100%	98.73%
Standard Deviation	0.2%			
ASTC Encoder - Medium (sec)	**6.7030**	6.7145	6.714	**6.7194**
Normalized	100%	99.83%	99.84%	99.76%
Standard Deviation	0.1%			
ASTC Encoder - Thorough (sec)	16.2952	**16.3071**	**16.2781**	16.2929
Normalized	99.9%	99.82%	100%	99.91%
Standard Deviation	0%			
ASTC Encoder - Exhaustive (sec)	**150.2763**	**150.3716**	150.2922	150.3307
Normalized	100%	99.94%	99.99%	99.96%
Standard Deviation	0.1%			
Basis Universal - ETC1S (sec)	34.501	**35.014**	**34.478**	34.569
Normalized	99.93%	98.47%	100%	99.74%
Standard Deviation	0.1%			
Basis Universal - UASTC Level 0 (sec)	**10.270**	10.285	**10.352**	10.283
Normalized	100%	99.85%	99.21%	99.87%
Standard Deviation	0%			
Basis Universal - UASTC Level 2 (sec)	**67.535**	67.529	**67.516**	67.525
Normalized	99.97%	99.98%	100%	99.99%
Standard Deviation	0%			
Basis Universal - UASTC Level 3 (sec)	133.336	**133.37**	**133.298**	133.359
Normalized	99.97%	99.95%	100%	99.95%
Standard Deviation	0%			
Botan - KASUMI (MiB/s)	94.128	94.008	**93.894**	**94.151**

Normalized	99.98%	99.85%	99.73%	100%
Standard Deviation	0.1%			
Botan - KASUMI - Decrypt (MiB/s)	89.922	**89.931**	**89.801**	89.923
Normalized	99.99%	100%	99.86%	99.99%
Standard Deviation	0%			
Botan - AES-256 (MiB/s)	4015	**4016**	4015	**3988**
Normalized	99.98%	100%	99.99%	99.32%
Standard Deviation	0%			
Botan - AES-256 - Decrypt (MiB/s)	**4011**	4010	4010	**3987**
Normalized	100%	99.99%	99.99%	99.41%
Standard Deviation	0%			
Botan - Twofish (MiB/s)	**363.083**	363.317	**365.144**	364.335
Normalized	99.44%	99.5%	100%	99.78%
Standard Deviation	0.1%			
Botan - Twofish - Decrypt (MiB/s)	**364.212**	364.534	**366.382**	365.736
Normalized	99.41%	99.5%	100%	99.82%
Standard Deviation	0.1%			
Botan - Blowfish (MiB/s)	452.849	**451.874**	**452.93**	452.601
Normalized	99.98%	99.77%	100%	99.93%
Standard Deviation	0%			
Botan - Blowfish - Decrypt (MiB/s)	449.173	**450.58**	449.116	**448.814**
Normalized	99.69%	100%	99.68%	99.61%
Standard Deviation	0%			
Botan - CAST-256 (MiB/s)	**143.474**	**143.226**	143.311	143.351
Normalized	100%	99.83%	99.89%	99.91%
Standard Deviation	0.3%			
Botan - CAST-256 - Decrypt (MiB/s)	**143.560**	**143.322**	143.405	143.42
Normalized	100%	99.83%	99.89%	99.9%
Standard Deviation	0.3%			
Botan - ChaCha20Poly1305 (MiB/s)	760.804	760.298	**759.725**	**760.921**
Normalized	99.98%	99.92%	99.84%	100%
Standard Deviation	0.1%			
Botan - ChaCha20Poly1305 - Decrypt (MiB/s)	**755.838**	**754.865**	755.484	755.708
Normalized	100%	99.87%	99.95%	99.98%
Standard Deviation	0.1%			
BRL-CAD - V.P.M (VGR Performance Metric)	54865	54798	**54555**	**54971**
Normalized	99.81%	99.69%	99.24%	100%
Chia Blockchain VDF - Square Plain C++ (IPS)	128733	**128800**	**127700**	128600
Normalized	99.95%	100%	99.15%	99.84%
Standard Deviation	0.1%			
Chia Blockchain VDF - S.A.O (IPS)	192933	194100	**194500**	**192200**
Normalized	99.19%	99.79%	100%	98.82%
Standard Deviation	0.1%			
CP2K Molecular Dynamics - Fayalite-FIST (sec)	1030	**1029**	**1037**	
Normalized	99.87%	100%	99.22%	
dav1d - Chimera 1080p (FPS)	356.15	356.06	**356.25**	**354.75**
Normalized	99.97%	99.95%	100%	99.58%
Standard Deviation	0.3%			
dav1d - Summer Nature 4K (FPS)	95.34	**95.57**	95.36	**95.05**
Normalized	99.76%	100%	99.78%	99.46%
Standard Deviation	0.1%			

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dav1d - S.N.1 (FPS)	329.39	**329.26**	**330.9**	330.42
Normalized	99.54%	99.5%	100%	99.85%
Standard Deviation	0.4%			
dav1d - C.1.1.b (FPS)	268.49	**268.71**	268.54	**268.18**
Normalized	99.92%	100%	99.94%	99.8%
Standard Deviation	0.2%			
Embree - Pathtracer - Crown (FPS)	4.5522	4.5593	**4.5771**	**4.539**
Normalized	99.46%	99.61%	100%	99.17%
Standard Deviation	0.9%			
Embree - Pathtracer ISPC - Crown (FPS)	5.2077	**5.2205**	**5.2057**	5.2144
Normalized	99.75%	100%	99.72%	99.88%
Standard Deviation	0.2%			
Embree - Pathtracer - Asian Dragon (FPS)	5.5129	**5.4586**	**5.5777**	5.5576
Normalized	98.84%	97.86%	100%	99.64%
Standard Deviation	0.9%			
Embree - Pathtracer - Asian Dragon Obj (FPS)	**4.9973**	5.0242	5.1296	**5.132**
Normalized	97.38%	97.9%	99.95%	100%
Standard Deviation	0.5%			
Embree - Pathtracer ISPC - Asian Dragon (FPS)	6.4542	**6.3638**	**6.5104**	6.4811
Normalized	99.14%	97.75%	100%	99.55%
Standard Deviation	0.9%			
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	**5.6719**	5.7302	**5.7695**	5.7396
Normalized	98.31%	99.32%	100%	99.48%
Standard Deviation	0.1%			
GNU GMP GMPbench - Total Time (GMPbench Score)	**5184**	**5211**	5190	5186
Normalized	99.49%	100%	99.61%	99.53%
GNU Radio - F.B.t.B.F.F (MiB/s)	**637.3**	643.9	641.5	**644.6**
Normalized	98.87%	99.89%	99.52%	100%
Standard Deviation	0.4%			
GNU Radio - S.S.C (MiB/s)	2445	**2450**	2450	**2444**
Normalized	99.8%	100%	99.98%	99.73%
Standard Deviation	0.3%			
GNU Radio - FIR Filter (MiB/s)	665.1	**669.9**	663.2	**661.1**
Normalized	99.28%	100%	99%	98.69%
Standard Deviation	0.3%			
GNU Radio - IIR Filter (MiB/s)	**541.4**	540.9	**540**	540.8
Normalized	100%	99.91%	99.74%	99.89%
Standard Deviation	0.1%			
GNU Radio - F.D.F (MiB/s)	**684.8**	**681.7**	683.3	683.7
Normalized	100%	99.55%	99.78%	99.84%
Standard Deviation	0.3%			
GNU Radio - Hilbert Transform (MiB/s)	506.4	**508.7**	506.6	**503.1**
Normalized	99.55%	100%	99.59%	98.9%
Standard Deviation	0.8%			
Google Draco - Lion (ms)	5558	**5552**	**5650**	5561
Normalized	99.89%	100%	98.27%	99.84%
Standard Deviation	0.6%			
Google Draco - Church Facade (ms)	**8606**	8562	**8606**	**8539**

Normalized	99.22%	99.73%	99.22%	100%
Standard Deviation	0.1%			
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	**0.556**	**0.543**	0.555	0.551
Normalized	100%	97.66%	99.82%	99.1%
Standard Deviation	0.3%			
Helsing - 12 digit (sec)	11.665	**11.658**	**11.666**	**11.666**
Normalized	99.94%	100%	99.93%	99.93%
Standard Deviation	0.1%			
Helsing - 14 digit (sec)	**1167**	1160	1150	**1150**
Normalized	98.5%	99.08%	100%	100%
Standard Deviation	2.7%			
Intel Open Image Denoise - RT.hdr_alb_nrm.3840x2160 (Images / Sec)	0.19	0.19	0.19	0.19
Standard Deviation	0%			
Intel Open Image Denoise - RT.ldr_alb_nrm.3840x2160 (Images / Sec)	0.19	0.19	0.19	0.19
Standard Deviation	0%			
Intel Open Image Denoise - RTLightmap.hdr.4096x4096 (Images / Sec)	0.09	0.09	0.09	0.09
Standard Deviation	0%			
KTX-Software toktx - UASTC 3 (sec)	**26.733**	26.763	26.765	**26.784**
Normalized	100%	99.89%	99.88%	99.81%
Standard Deviation	0%			
KTX-Software toktx - Zstd Compression 9 (sec)	**3.077**	3.072	**3.077**	**3.052**
Normalized	99.19%	99.35%	99.19%	100%
Standard Deviation	0.6%			
KTX-Software toktx - Z.C.1 (sec)	**21.965**	**22.024**	21.975	21.994
Normalized	100%	99.73%	99.95%	99.87%
Standard Deviation	0.1%			
KTX-Software toktx - U.3.Z.C.1 (sec)	**32.959**	32.97	**33.069**	32.994
Normalized	100%	99.97%	99.67%	99.89%
Standard Deviation	0.1%			
KTX-Software toktx - U.4.Z.C.1 (sec)	779.275	**779.507**	779.269	**779.122**
Normalized	99.98%	99.95%	99.98%	100%
Standard Deviation	0%			
libgav1 - Chimera 1080p (FPS)	152.92	**151.98**	**153.02**	152.1
Normalized	99.93%	99.32%	100%	99.4%
Standard Deviation	0%			
libgav1 - Summer Nature 4K (FPS)	46.81	46.79	**46.85**	**46.47**
Normalized	99.91%	99.87%	100%	99.19%
Standard Deviation	0.2%			
libgav1 - S.N.1 (FPS)	177.57	**178.81**	178.75	**177.12**
Normalized	99.31%	100%	99.97%	99.05%
Standard Deviation	1.1%			
libgav1 - C.1.1.b (FPS)	40.73	40.72	**40.76**	**40.63**
Normalized	99.93%	99.9%	100%	99.68%
Standard Deviation	0.1%			

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libjpeg-turbo tjbench - D.T (Megapixels/sec)	186.933814	186.914628	**186.73011**	**186.973513**
Normalized	99.98%	99.97%	99.87%	100%
Standard Deviation	0.2%			
Liquid-DSP - 1 - 256 - 57 (samples/s)	56374000	56367000	**56378000**	**55670000**
Normalized	99.99%	99.98%	100%	98.74%
Standard Deviation	0%			
Liquid-DSP - 2 - 256 - 57 (samples/s)	**107200000**	107550000	107410000	**107740000**
Normalized	99.5%	99.82%	99.69%	100%
Standard Deviation	0.4%			
Liquid-DSP - 4 - 256 - 57 (samples/s)	202166667	**201800000**	**202230000**	202100000
Normalized	99.97%	99.79%	100%	99.94%
Standard Deviation	0.1%			
Liquid-DSP - 8 - 256 - 57 (samples/s)	235540000	**235560000**	**235470000**	**235470000**
Normalized	99.99%	100%	99.96%	99.96%
Standard Deviation	0%			
LuaRadio - F.B.t.B.F.F (MiB/s)	**667.6**	**667.6**	668.8	**669.1**
Normalized	99.78%	99.78%	99.96%	100%
Standard Deviation	0.3%			
LuaRadio - F.D.F (MiB/s)	405.6	405.6	**406.4**	**402.8**
Normalized	99.8%	99.8%	100%	99.11%
Standard Deviation	0.1%			
LuaRadio - Hilbert Transform (MiB/s)	72.9	**72.8**	72.9	**73.1**
Normalized	99.73%	99.59%	99.73%	100%
Standard Deviation	0.2%			
LuaRadio - Complex Phase (MiB/s)	573.4	**565.8**	576.2	**578.1**
Normalized	99.19%	97.87%	99.67%	100%
Standard Deviation	0.9%			
Mobile Neural Network - SqueezeNetV1.0 (ms)	**6.732**	**6.692**	6.696	6.717
Normalized	99.41%	100%	99.94%	99.63%
Standard Deviation	0.2%			
Mobile Neural Network - resnet-v2-50 (ms)	**39.980**	39.743	39.955	**39.733**
Normalized	99.38%	99.97%	99.44%	100%
Standard Deviation	0.1%			
Mobile Neural Network - MobileNetV2_224 (ms)	3.590	3.605	**3.626**	**3.563**
Normalized	99.25%	98.83%	98.26%	100%
Standard Deviation	0.5%			
Mobile Neural Network - mobilenet-v1-1.0 (ms)	4.092	**4.11**	4.099	**4.069**
Normalized	99.44%	99%	99.27%	100%
Standard Deviation	0.3%			
Mobile Neural Network - inception-v3 (ms)	48.692	**49.18**	49	**48.222**
Normalized	99.03%	98.05%	98.41%	100%
Standard Deviation	1.2%			
NAS Parallel Benchmarks - BT.C (Mop/s)	**16197**	16204	16218	**16261**
Normalized	99.61%	99.65%	99.74%	100%
Standard Deviation	0.2%			

NAS Parallel Benchmarks - CG.C (Mop/s)	**3692**	3691	3687	**3683**
Normalized	100%	99.97%	99.86%	99.77%
Standard Deviation	0.1%			
NAS Parallel Benchmarks - EP.C (Mop/s)	585.66	**586.61**	**585.5**	586.06
Normalized	99.84%	100%	99.81%	99.91%
Standard Deviation	0.2%			
NAS Parallel Benchmarks - EP.D (Mop/s)	**576.60**	**588.21**	587.1	587.85
Normalized	98.03%	100%	99.81%	99.94%
Standard Deviation	2.9%			
NAS Parallel Benchmarks - FT.C (Mop/s)	**9217**	**9295**	9294	9244
Normalized	99.16%	100%	99.99%	99.45%
Standard Deviation	0.3%			
NAS Parallel Benchmarks - LU.C (Mop/s)	**17096**	**17215**	17097	17209
Normalized	99.31%	100%	99.32%	99.97%
Standard Deviation	0.3%			
NAS Parallel Benchmarks - MG.C (Mop/s)	8274	8279	**8270**	**8286**
Normalized	99.86%	99.93%	99.81%	100%
Standard Deviation	0.1%			
NAS Parallel Benchmarks - SP.B (Mop/s)	5136	**5147**	5136	**5104**
Normalized	99.77%	100%	99.78%	99.15%
Standard Deviation	0%			
NAS Parallel Benchmarks - SP.C (Mop/s)	5240	**5248**	5241	**5213**
Normalized	99.85%	100%	99.87%	99.34%
Standard Deviation	0%			
oneDNN - IP Shapes 1D - f32 - CPU (ms)	7.30592	**7.33003**	7.29745	**7.29644**
Normalized	99.87%	99.54%	99.99%	100%
Standard Deviation	0%			
oneDNN - IP Shapes 3D - f32 - CPU (ms)	**11.1328**	**11.2402**	11.1387	11.2302
Normalized	100%	99.04%	99.95%	99.13%
Standard Deviation	0.1%			
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)	3.35898	3.36223	**3.3628**	**3.35791**
Normalized	99.97%	99.87%	99.85%	100%
Standard Deviation	0%			
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	**2.87684**	2.87585	**2.86963**	2.87056
Normalized	99.75%	99.78%	100%	99.97%
Standard Deviation	0.2%			
oneDNN - C.B.S.A - f32 - CPU (ms)	18.2823	18.2862	**18.2784**	**18.2923**
Normalized	99.98%	99.96%	100%	99.92%
Standard Deviation	0%			
oneDNN - D.B.s - f32 - CPU (ms)	13.8200	**13.8087**	13.8265	**13.8285**
Normalized	99.92%	100%	99.87%	99.86%

Standard Deviation	0%			
oneDNN - D.B.s - f32 - CPU (ms)	**13.3095**	**13.4388**	13.3527	13.3883
Normalized	100%	99.04%	99.68%	99.41%
Standard Deviation	0.3%			
oneDNN - C.B.S.A - u8s8f32 - CPU	18.0745	**18.1643**	18.0805	**18.0599**
Normalized	99.92%	99.43%	99.89%	100%
Standard Deviation	0%			
oneDNN - D.B.s - u8s8f32 - CPU (ms)	4.41152	4.41663	**4.40059**	**4.42314**
Normalized	99.75%	99.64%	100%	99.49%
Standard Deviation	0.2%			
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**7.76262**	7.77868	**7.86731**	7.83295
Normalized	100%	99.79%	98.67%	99.1%
Standard Deviation	0.1%			
oneDNN - R.N.N.T - f32 - CPU (ms)	6778	**6778**	**6771**	6775
Normalized	99.9%	99.89%	100%	99.93%
Standard Deviation	0.2%			
oneDNN - R.N.N.I - f32 - CPU (ms)	3592	**3594**	3592	**3591**
Normalized	99.98%	99.91%	99.97%	100%
Standard Deviation	0.3%			
oneDNN - R.N.N.T - u8s8f32 - CPU	6768	**6773**	**6763**	6770
Normalized	99.93%	99.85%	100%	99.89%
Standard Deviation	0%			
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	3589	3591	**3585**	**3592**
Normalized	99.9%	99.83%	100%	99.8%
Standard Deviation	0.1%			
oneDNN - M.M.B.S.T - f32 - CPU (ms)	**4.73352**	**4.76037**	4.75196	4.74458
Normalized	100%	99.44%	99.61%	99.77%
Standard Deviation	0.2%			
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	**6769**	**6767**	6767	6767
Normalized	99.98%	100%	99.99%	100%
Standard Deviation	0%			
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	3591	**3590**	**3593**	3592
Normalized	99.96%	100%	99.92%	99.94%
Standard Deviation	0.1%			
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	**5.43785**	5.43991	5.44153	**5.4439**
Normalized	100%	99.96%	99.93%	99.89%
Standard Deviation	0.1%			
PJSIP - INVITE (Responses/sec)	**4001**	3999	**3994**	3996
Normalized	100%	99.95%	99.83%	99.88%
Standard Deviation	0%			
PJSIP - OPTIONS, Stateful (Responses/sec)	7782	**7764**	7783	**7789**
Normalized	99.91%	99.68%	99.92%	100%
Standard Deviation	0.1%			
PJSIP - OPTIONS, Stateless (Responses/sec)	**56587**	56590	**56690**	56677
Normalized	99.82%	99.82%	100%	99.98%
Standard Deviation	0.3%			
SecureMark - SecureMark-TLS	**238497**	**239752**	238509	238756
Normalized	99.48%	100%	99.48%	99.58%
Standard Deviation	0.1%			

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srsLTE - OFDM_Test (Samples / Second)	105566667	**107200000**	**104500000**	106900000
Normalized	98.48%	100%	97.48%	99.72%
Standard Deviation	0.4%			
srsLTE - PHY_DL_Test (eNb Mb/s)	249.5	249.5	**249.9**	**248.5**
Normalized	99.84%	99.84%	100%	99.44%
Standard Deviation	0.3%			
srsLTE - PHY_DL_Test (UE Mb/s)	94.6	**95.7**	**95.7**	**94.5**
Normalized	98.85%	100%	100%	98.75%
Standard Deviation	1.2%			
srsRAN - OFDM_Test (Samples / Second)	**109566667**	**108000000**	108900000	108400000
Normalized	100%	98.57%	99.39%	98.94%
Standard Deviation	0.4%			
srsRAN - 4.P.1.P.M.6.Q (eNb Mb/s)	343.3	**342.5**	**343.9**	**343.9**
Normalized	99.83%	99.59%	100%	100%
Standard Deviation	0.2%			
srsRAN - 4.P.1.P.M.6.Q (UE Mb/s)	**114.4**	114.3	114.3	**113.6**
Normalized	100%	99.91%	99.91%	99.3%
Standard Deviation	0.1%			
srsRAN - 4.P.1.P.S.6.Q (eNb Mb/s)	**348.7**	348.2	348.5	**347.4**
Normalized	100%	99.86%	99.94%	99.63%
Standard Deviation	0.1%			
srsRAN - 4.P.1.P.S.6.Q (UE Mb/s)	201.3	**201.1**	201.2	**201.5**
Normalized	99.9%	99.8%	99.85%	100%
Standard Deviation	0.2%			
srsRAN - 4.P.1.P.M.2.Q (eNb Mb/s)	376.0	**376.7**	375.8	**374.4**
Normalized	99.81%	100%	99.76%	99.39%
Standard Deviation	0.6%			
srsRAN - 4.P.1.P.M.2.Q (UE Mb/s)	124.4	**124.6**	**124.2**	**124.2**
Normalized	99.84%	100%	99.68%	99.68%
Standard Deviation	0.4%			
srsRAN - 4.P.1.P.S.2.Q (eNb Mb/s)	**379.5**	379.6	**379.5**	**380**
Normalized	99.87%	99.89%	99.87%	100%
Standard Deviation	0%			
srsRAN - 4.P.1.P.S.2.Q (UE Mb/s)	**239.8**	240.5	**241.4**	239.9
Normalized	99.34%	99.63%	100%	99.38%
Standard Deviation	0.1%			
srsRAN - 5.P.T.5.P.S.6.Q (eNb Mb/s)	115.6	**116.1**	**115.5**	115.7
Normalized	99.57%	100%	99.48%	99.66%
Standard Deviation	0.3%			
srsRAN - 5.P.T.5.P.S.6.Q (UE Mb/s)	**52.8**	**52.8**	**52.8**	**52.7**
Normalized	100%	100%	100%	99.81%
Standard Deviation	0.3%			
srsRAN - 5.P.T.2.P.S.2.Q (eNb Mb/s)	**130.1**	**130.1**	130.4	**130.7**
Normalized	99.54%	99.54%	99.77%	100%
Standard Deviation	0.3%			
srsRAN - 5.P.T.2.P.S.2.Q (UE Mb/s)	**71.8**	71.9	**72.1**	72
Normalized	99.58%	99.72%	100%	99.86%
Standard Deviation	0.2%			
Stockfish - Total Time (Nodes/s)	11116784	**11204831**	11157913	**11115255**
Normalized	99.21%	100%	99.58%	99.2%
Standard Deviation	0.9%			

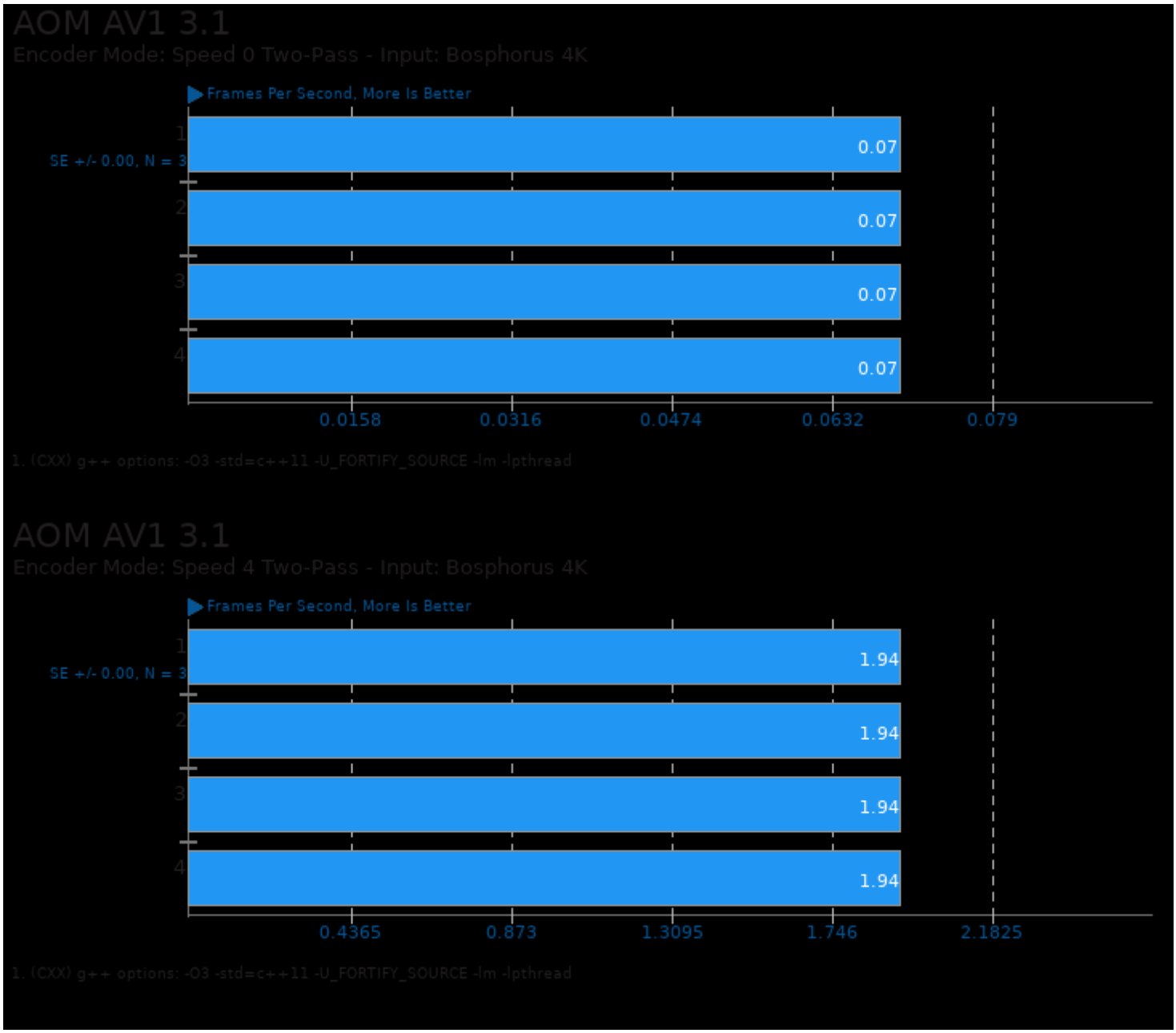
1275 june

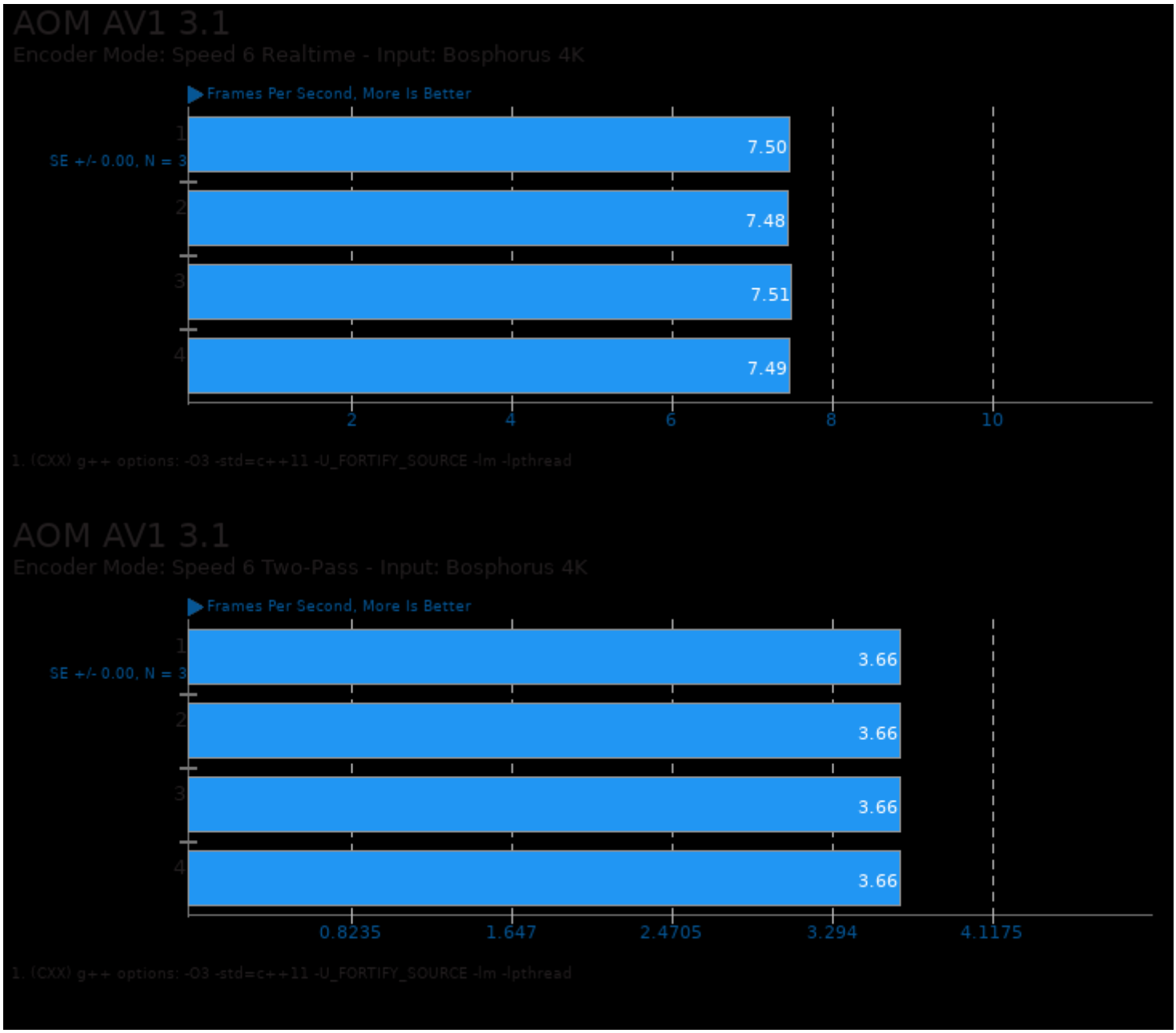
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	**0.767**	0.765	0.766	**0.749**
Normalized	100%	99.74%	99.87%	97.65%
Standard Deviation	0.1%			
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	**7.994**	7.969	7.989	**7.956**
Normalized	100%	99.69%	99.94%	99.52%
Standard Deviation	0.6%			
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	2.359	**2.386**	2.364	**2.32**
Normalized	98.87%	100%	99.08%	97.23%
Standard Deviation	0.5%			
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	**27.930**	27.826	27.868	**27.81**
Normalized	100%	99.63%	99.78%	99.57%
Standard Deviation	0.3%			
SVT-HEVC - 1 - Bosphorus 1080p	**3.33**	**3.33**	**3.34**	**3.34**
Normalized	99.7%	99.7%	100%	100%
Standard Deviation	0.2%			
SVT-HEVC - 7 - Bosphorus 1080p	**52.23**	52.09	52.07	**52.06**
Normalized	100%	99.73%	99.69%	99.67%
Standard Deviation	0%			
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	111.84	**112.09**	111.94	**111.82**
Normalized	99.78%	100%	99.87%	99.76%
Standard Deviation	0.1%			
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	**96.91**	**95.57**	96.15	95.73
Normalized	100%	98.62%	99.22%	98.78%
Standard Deviation	0.8%			
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	97.75	97.72	**97.97**	**97.42**
Normalized	99.78%	99.74%	100%	99.44%
Standard Deviation	0.2%			
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	77.31	77.3	**77.68**	**77.24**
Normalized	99.52%	99.51%	100%	99.43%
Standard Deviation	0.1%			
Sysbench - RAM / Memory (MiB/sec)	**17495**	**17861**	17764	17542
Normalized	97.95%	100%	99.46%	98.21%
Standard Deviation	1.1%			
Sysbench - CPU (Events/sec)	8484	**8481**	8485	**8485**
Normalized	99.99%	99.95%	100%	100%
Standard Deviation	0%			
Timed FFmpeg Compilation - Time To Compile (sec)	**124.936**	125.108	**125.278**	125.001
Normalized	100%	99.86%	99.73%	99.95%
Standard Deviation	0.2%			
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	**118.130**	118.682	**118.773**	118.419
Normalized	100%	99.53%	99.46%	99.76%
Standard Deviation	0.2%			
Timed HMMer Search - P.D.S (sec)	140.910	**140.785**	**141.017**	140.886
Normalized	99.91%	100%	99.84%	99.93%

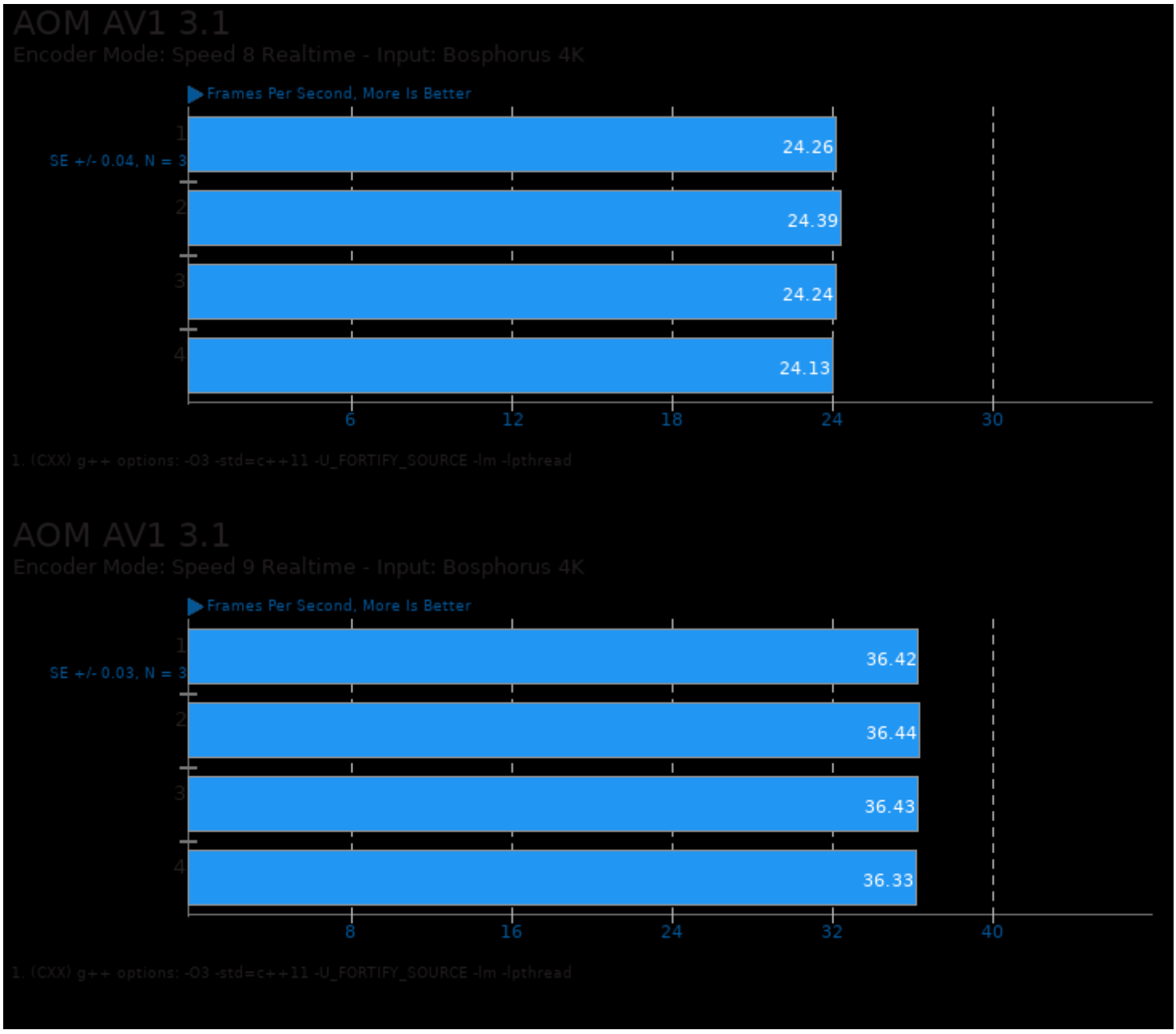
Standard Deviation	0%			
Timed Linux Kernel Compilation - Time To Compile (sec)	199.756	201.148	201.358	201.168
Normalized	100%	99.31%	99.2%	99.3%
Standard Deviation	0.7%			
Timed LLVM Compilation - Ninja (sec)	1592	1593	1591	1593
Normalized	99.91%	99.88%	100%	99.88%
Standard Deviation	0%			
Timed LLVM Compilation - Unix Makefiles (sec)	1616	1611	1606	1615
Normalized	99.38%	99.64%	100%	99.42%
Standard Deviation	0.3%			
Timed Mesa Compilation - Time To Compile (sec)	115.505	115.742	115.632	115.594
Normalized	100%	99.8%	99.89%	99.92%
Standard Deviation	0.1%			
Timed MrBayes Analysis - P.P.A (sec)	130.438	129.947	129.733	129.953
Normalized	99.46%	99.84%	100%	99.83%
Standard Deviation	0.4%			
Timed Node.js Compilation - Time To Compile (sec)	1017	1017	1016	1017
Normalized	99.87%	99.86%	100%	99.92%
Standard Deviation	0%			
ViennaCL - CPU BLAS - sCOPY (GB/s)	20.6	20.6	20.6	20.6
Standard Deviation	0.3%			
ViennaCL - CPU BLAS - sAXPY (GB/s)	30.7	30.7	30.8	30.8
Normalized	99.68%	99.68%	100%	100%
Standard Deviation	0.2%			
ViennaCL - CPU BLAS - dCOPY (GB/s)	19.9	19.9	19.9	19.9
Standard Deviation	0%			
ViennaCL - CPU BLAS - dAXPY (GB/s)	29.7	29.7	29.8	29.8
Normalized	99.66%	99.66%	100%	100%
Standard Deviation	0%			
ViennaCL - CPU BLAS - dDOT (GB/s)	30.5	30.5	30.5	30.5
Standard Deviation	0%			
ViennaCL - CPU BLAS - dGEMV-N (GB/s)	31	31	31	31
ViennaCL - CPU BLAS - dGEMV-T (GB/s)	30.2	30.3	30.3	30.2
Normalized	99.67%	100%	100%	99.67%
Standard Deviation	0%			
ViennaCL - CPU BLAS - dGEMM-NN (GFLOPs/s)	15.8	15.8	15.8	15.8
Standard Deviation	0%			
ViennaCL - CPU BLAS - dGEMM-NT (GFLOPs/s)	15.4	15.4	15.4	15.3
Normalized	100%	100%	100%	99.35%
Standard Deviation	0.4%			
ViennaCL - CPU BLAS - dGEMM-TN (GFLOPs/s)	16.4	16.4	16.5	16.4
Normalized	99.39%	99.39%	100%	99.39%
Standard Deviation	0%			

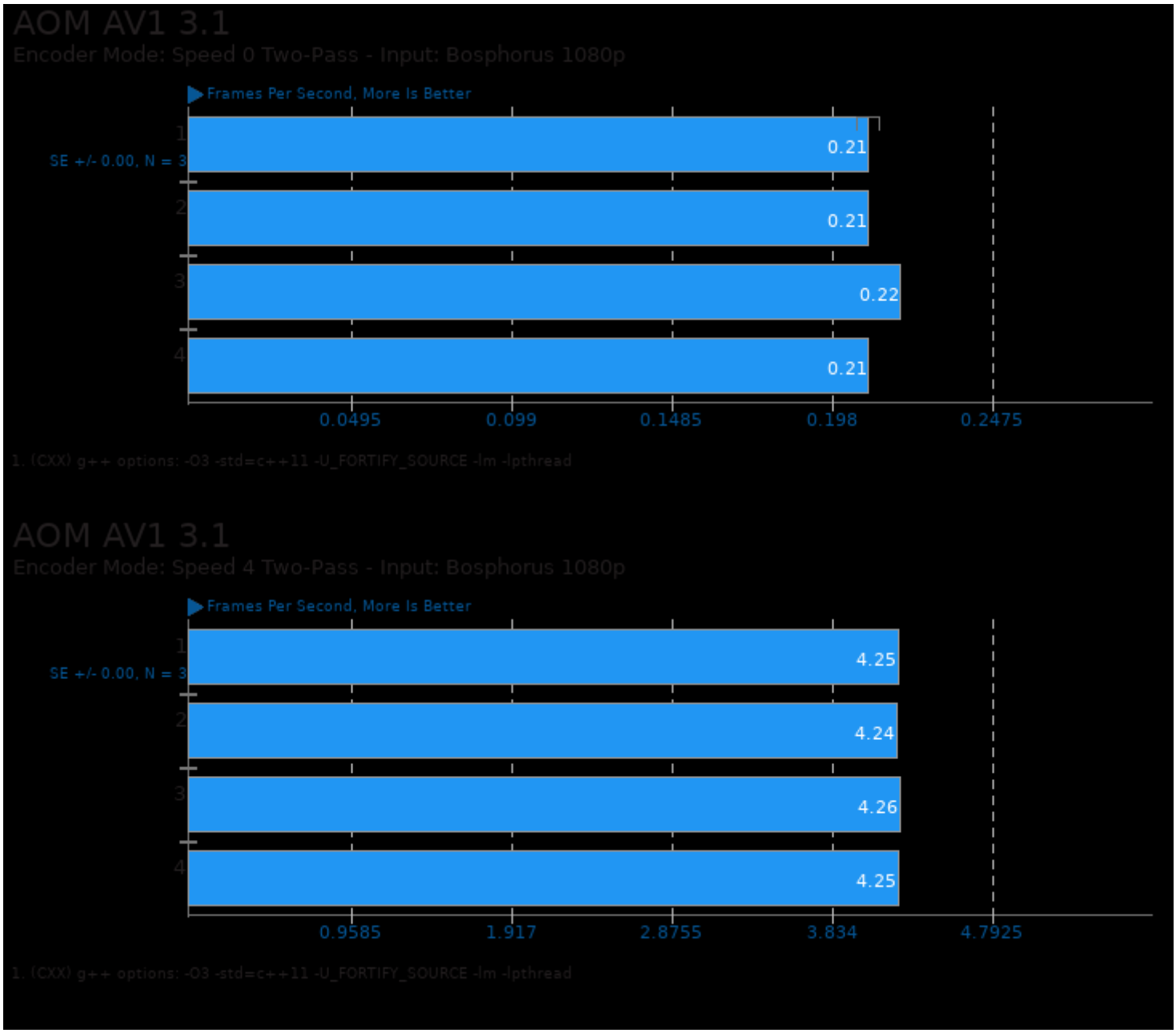
1275 june

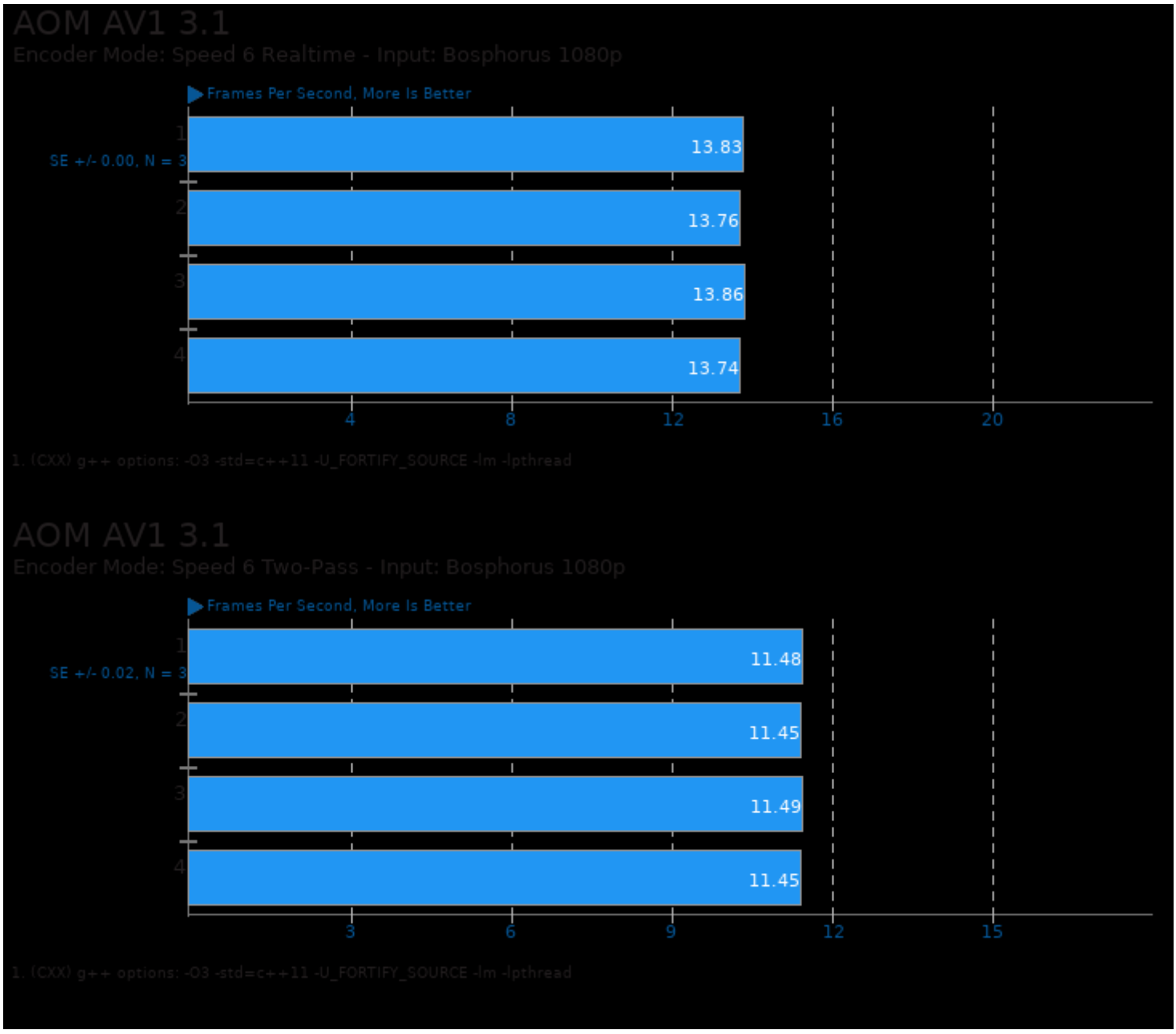
ViennaCL - CPU BLAS - dGEMM-TT (GFLOPs/s)	15.9	15.9	15.9	15.9
Standard Deviation	0%			
VOSK Speech Recognition Toolkit	**20.097**	20.207	20.131	**20.515**
Normalized	100%	99.46%	99.83%	97.96%
Standard Deviation	0.6%			
VP9 libvpx Encoding - Speed 0 - Bosphorus 4K (FPS)	**3.17**	3.18	3.18	**3.19**
Normalized	99.37%	99.69%	99.69%	100%
Standard Deviation	0.2%			
VP9 libvpx Encoding - Speed 5 - Bosphorus 4K (FPS)	**9.59**	**9.52**	9.54	**9.52**
Normalized	100%	99.27%	99.48%	99.27%
Standard Deviation	0.1%			
VP9 libvpx Encoding - Speed 0 - Bosphorus 1080p (FPS)	**7.51**	**7.45**	7.46	**7.45**
Normalized	100%	99.2%	99.33%	99.2%
Standard Deviation	0.4%			
VP9 libvpx Encoding - Speed 5 - Bosphorus 1080p (FPS)	24.21	**24.16**	**24.36**	24.23
Normalized	99.38%	99.18%	100%	99.47%
Standard Deviation	0.4%			
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	53.3612290	**53.2730637**	**53.4083862**	53.3947983
Normalized	99.83%	100%	99.75%	99.77%
Standard Deviation	0.2%			
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	180.771261	**180.650314**	180.711319	**181.330582**
Normalized	99.93%	100%	99.97%	99.62%
Standard Deviation	0.1%			
Xmrig - Monero - 1M (H/s)	**1635**	1636	1636	**1638**
Normalized	99.86%	99.87%	99.9%	100%
Standard Deviation	0.1%			
Xmrig - Wownero - 1M (H/s)	2316	**2319**	2318	**2314**
Normalized	99.86%	100%	99.95%	99.79%
Standard Deviation	0.1%			

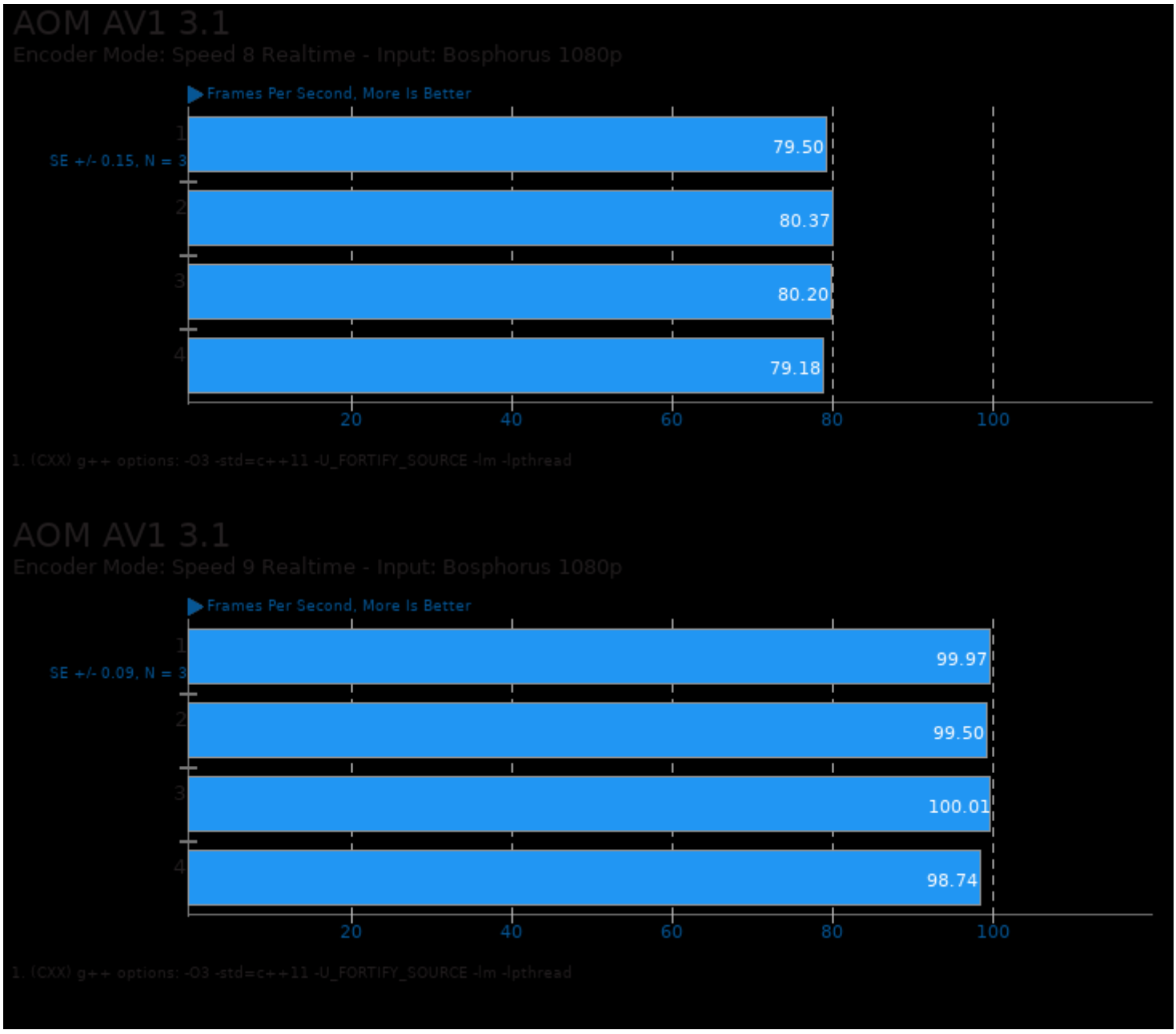

AOM AV1 3.1
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
0.07
0.07
0.07
0.07
0.0158
0.0316
0.0474
0.0632
0.079
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
1.94
1.94
1.94
1.94
0.4365
0.873
1.3095
1.746
2.1825
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

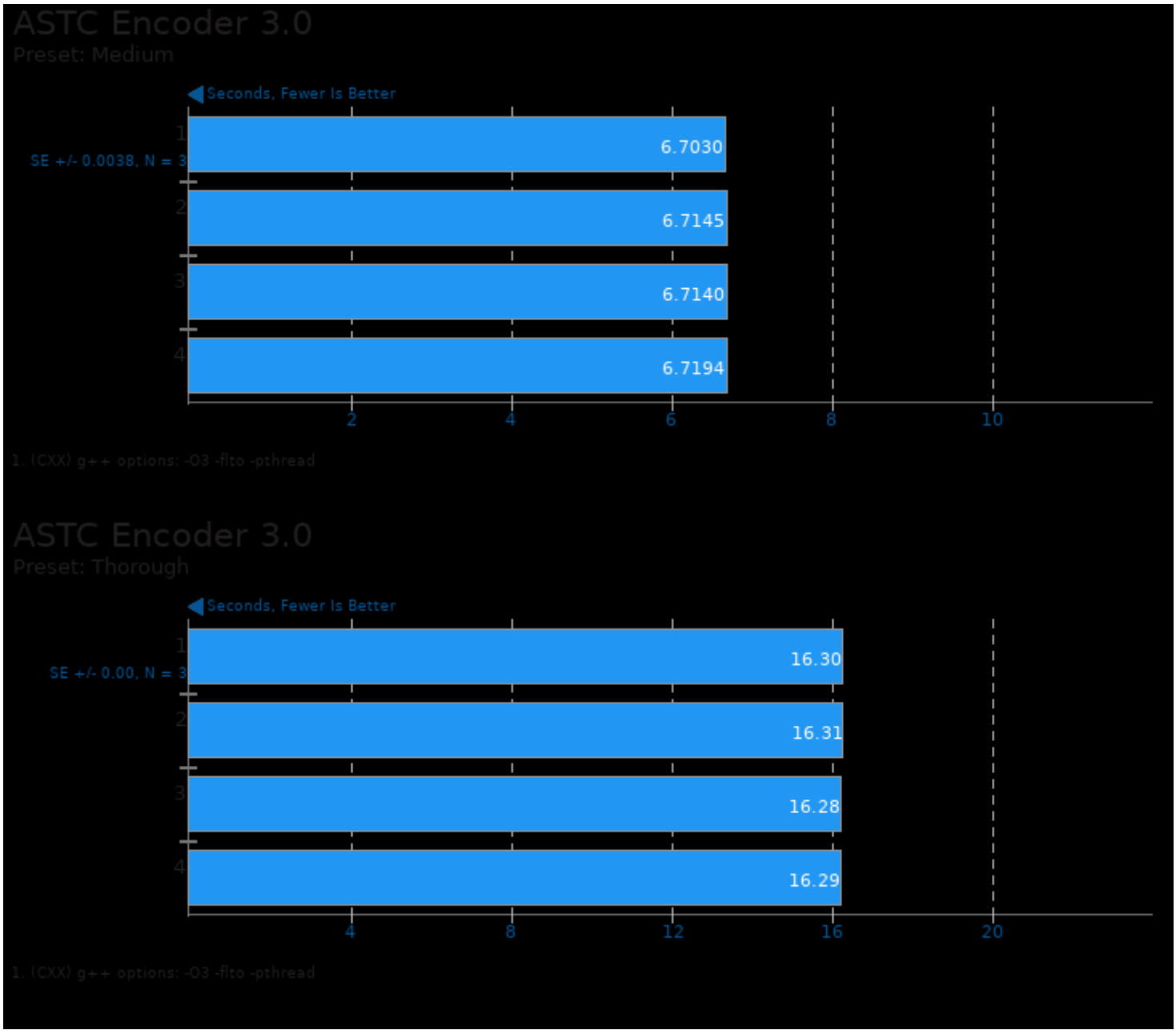

AOM AV1 3.1
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
7.50
7.48
7.51
7.49
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
3.66
3.66
3.66
3.66
0.8235
1.647
2.4705
3.294
4.1175
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

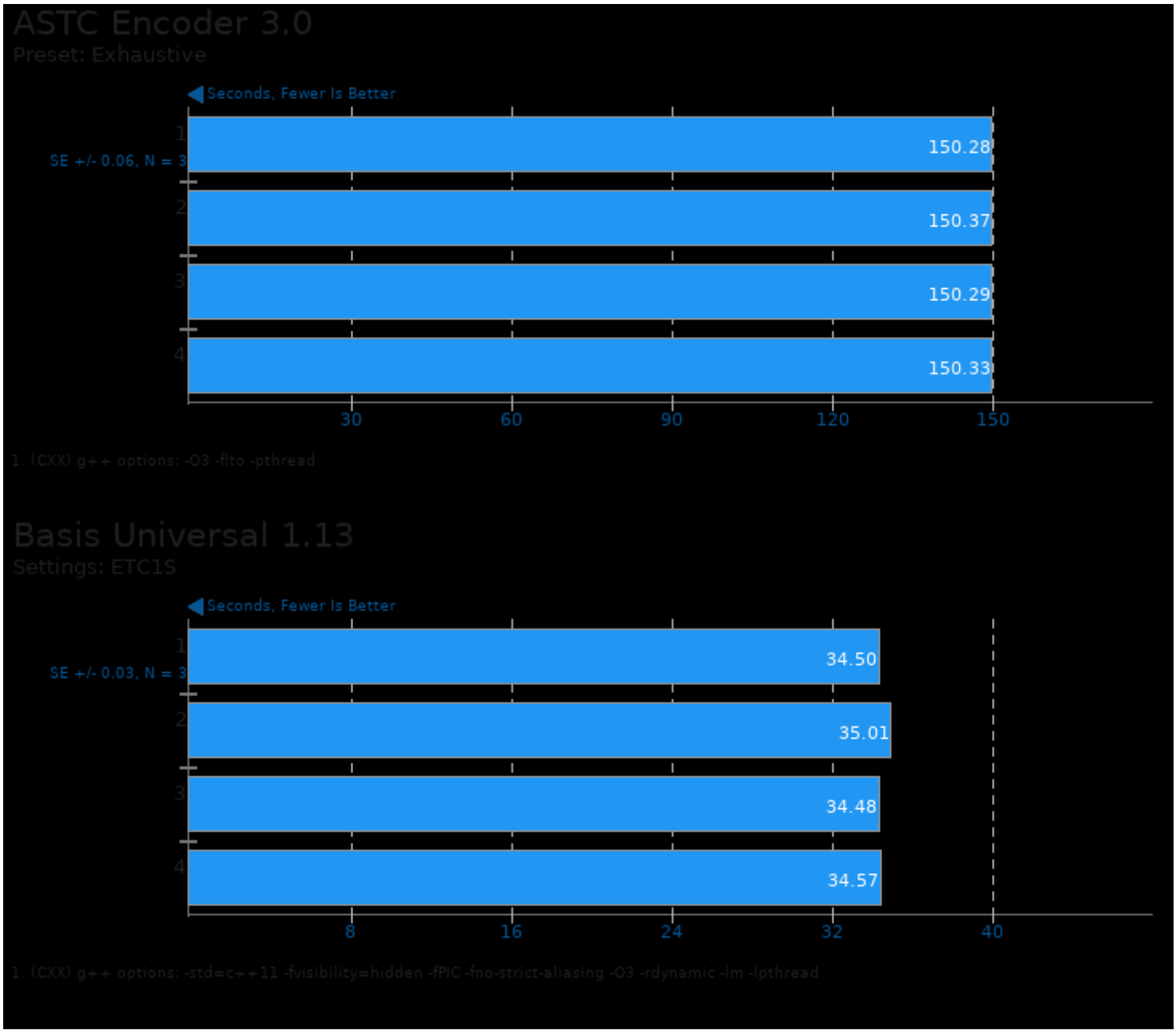

AOM AV1 3.1
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.04, N = 3
1
24.26
2
24.39
3
24.24
4
24.13
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.03, N = 3
1
36.42
2
36.44
3
36.43
4
36.33
8
16
24
32
40
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

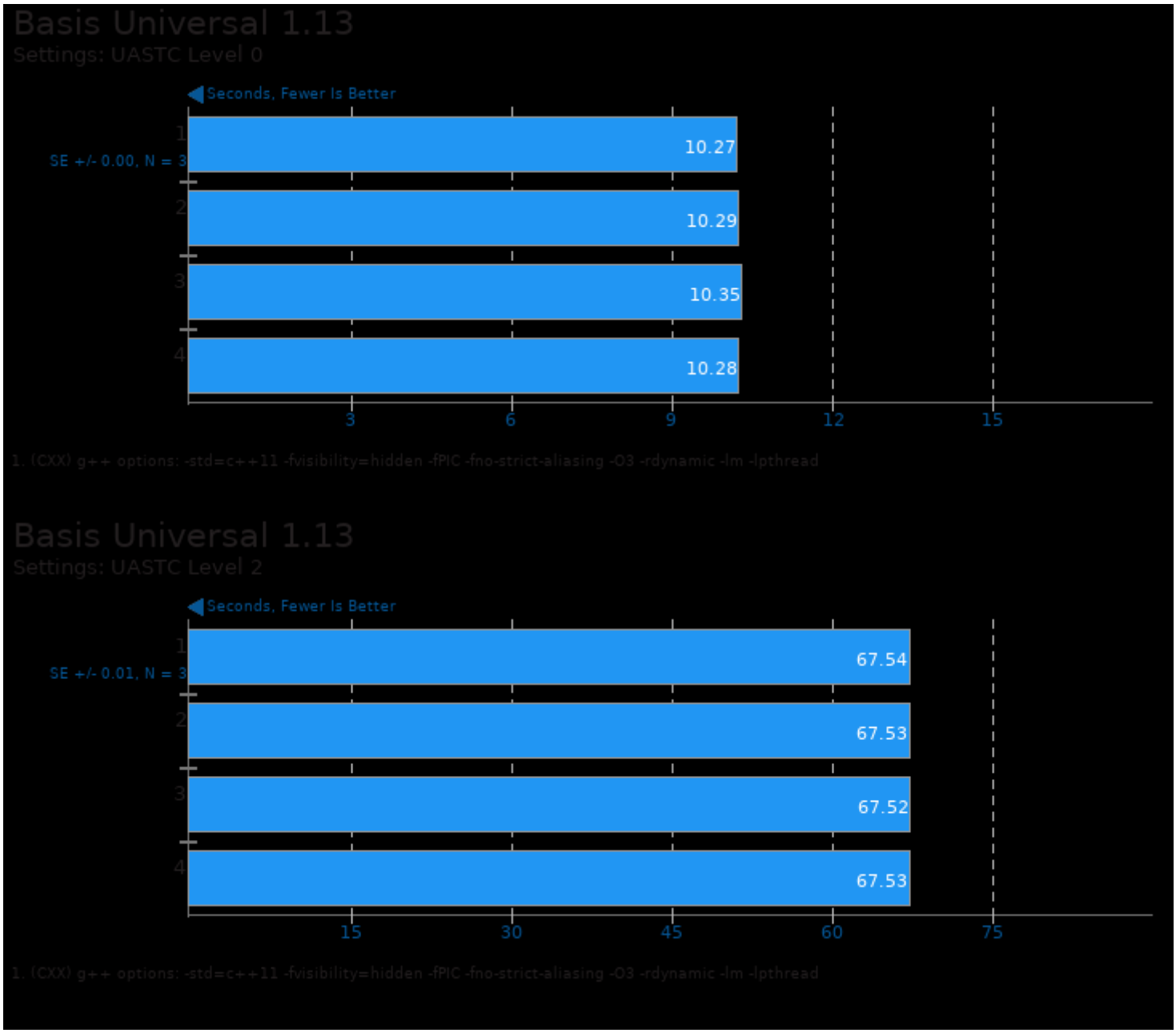

AOM AV1 3.1
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
0.21
0.21
0.22
0.21
0.0495
0.099
0.1485
0.198
0.2475
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
4.25
4.24
4.26
4.25
0.9585
1.917
2.8755
3.834
4.7925
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

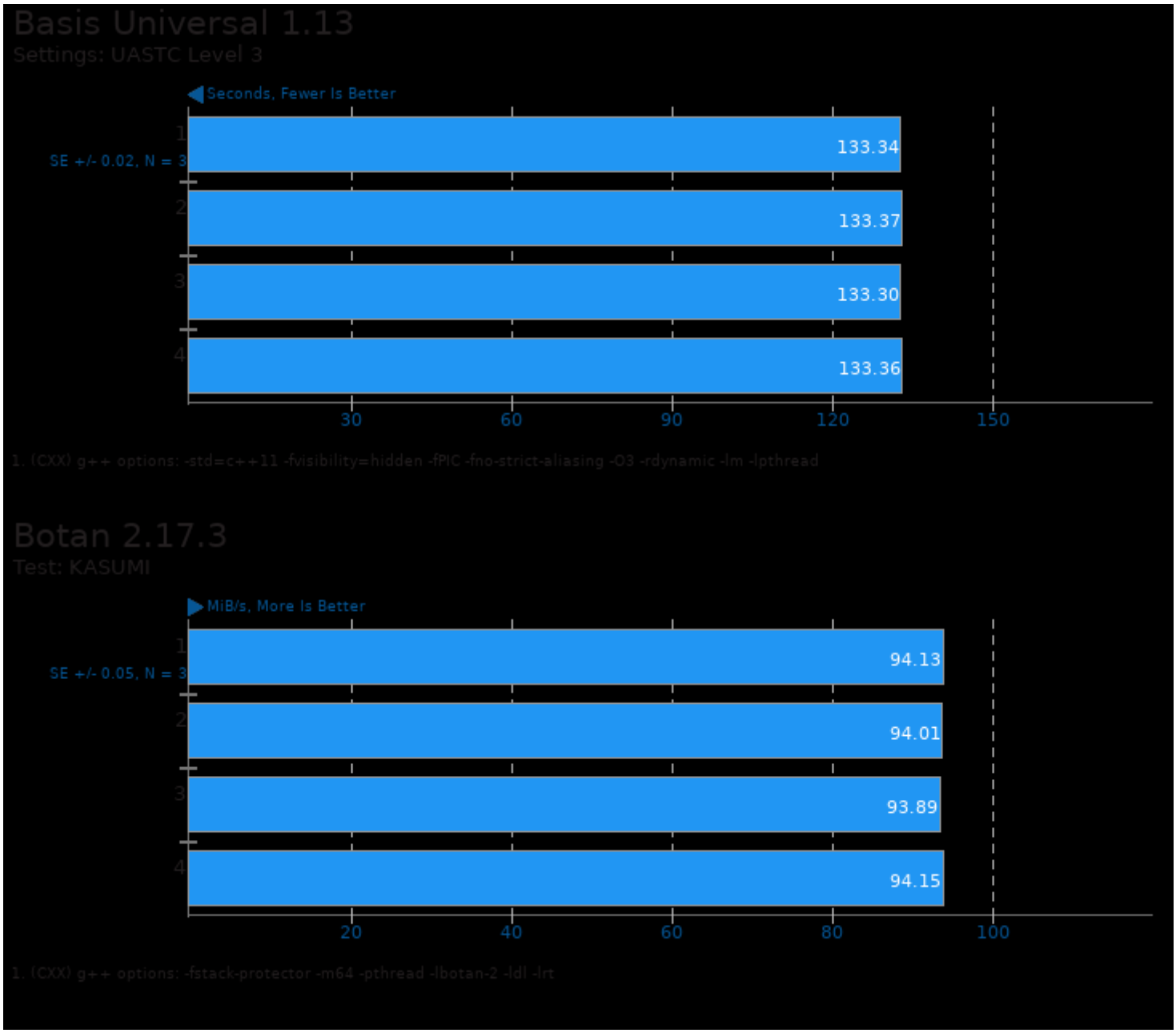

AOM AV1 3.1
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
13.83
13.76
13.86
13.74
4
8
12
16
20
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.02, N = 3
1
2
3
4
11.48
11.45
11.49
11.45
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

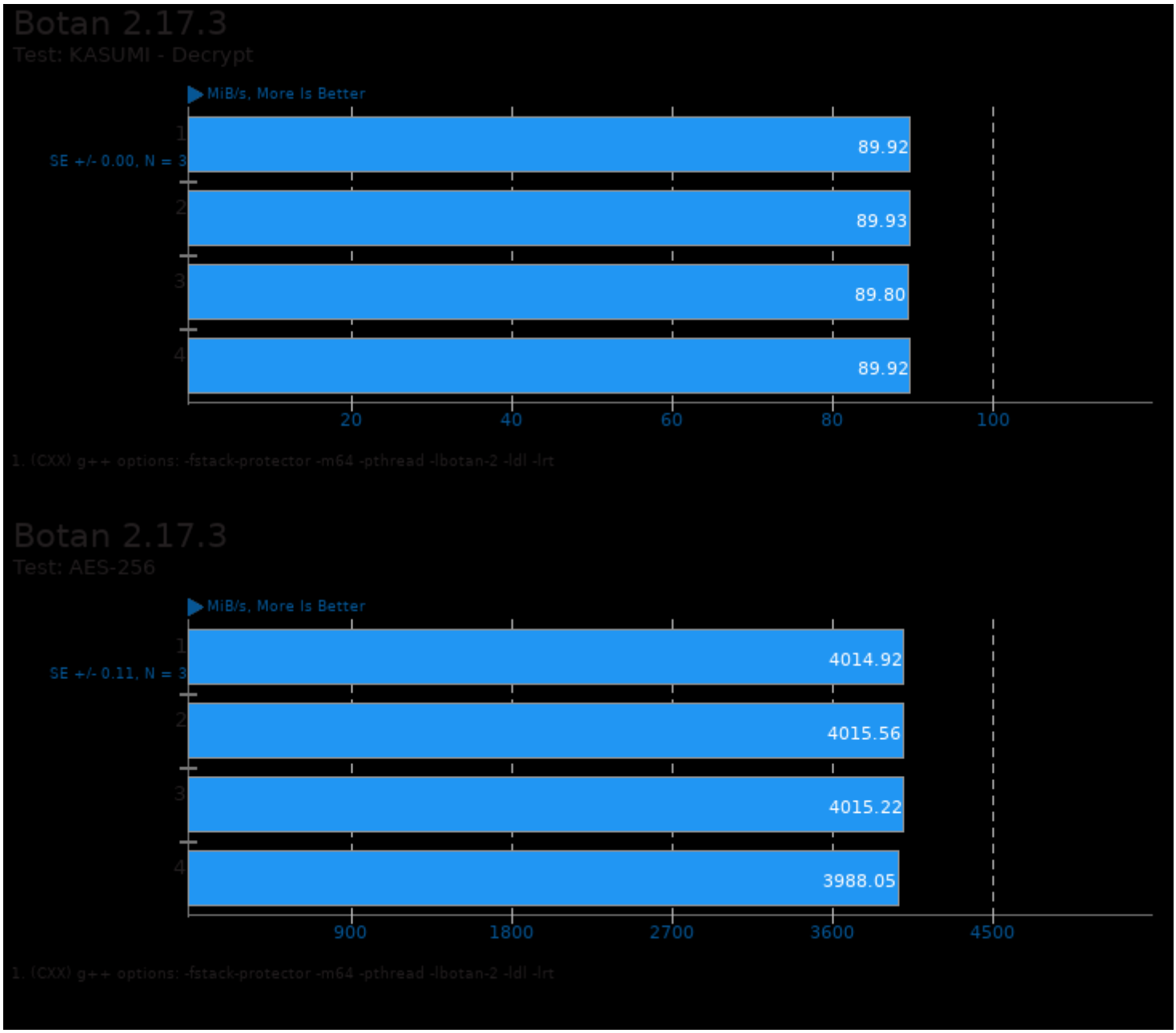

AOM AV1 3.1
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.15, N = 3
1
2
3
4
79.50
80.37
80.20
79.18
20
40
60
80
100
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.09, N = 3
1
2
3
4
99.97
99.50
100.01
98.74
20
40
60
80
100
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

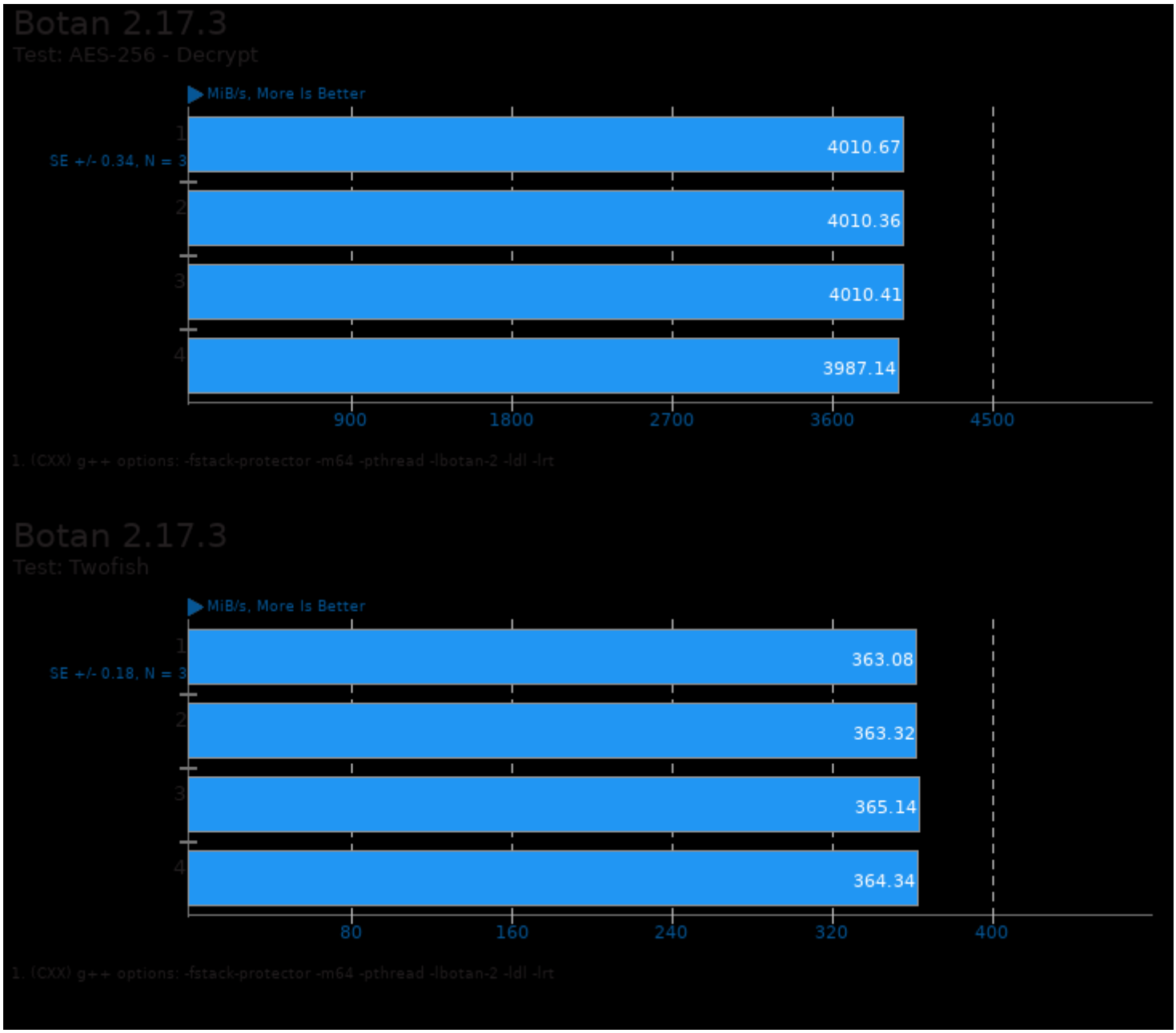

ASTC Encoder 3.0
Preset: Medium
Seconds, Fewer Is Better
SE +/- 0.0038, N = 3
1
2
3
4
6.7030
6.7145
6.7140
6.7194
2
4
6.
8
10
1. (CXX) g++ options: -O3 -flto -pthread
ASTC Encoder 3.0
Preset: Thorough
Seconds, Fewer Is Better
SE +/- 0.00, N = 3
1
2
3
4
16.30
16.31
16.28
16.29
4
8
12
16
20
1. (CXX) g++ options: -O3 -flto -pthread

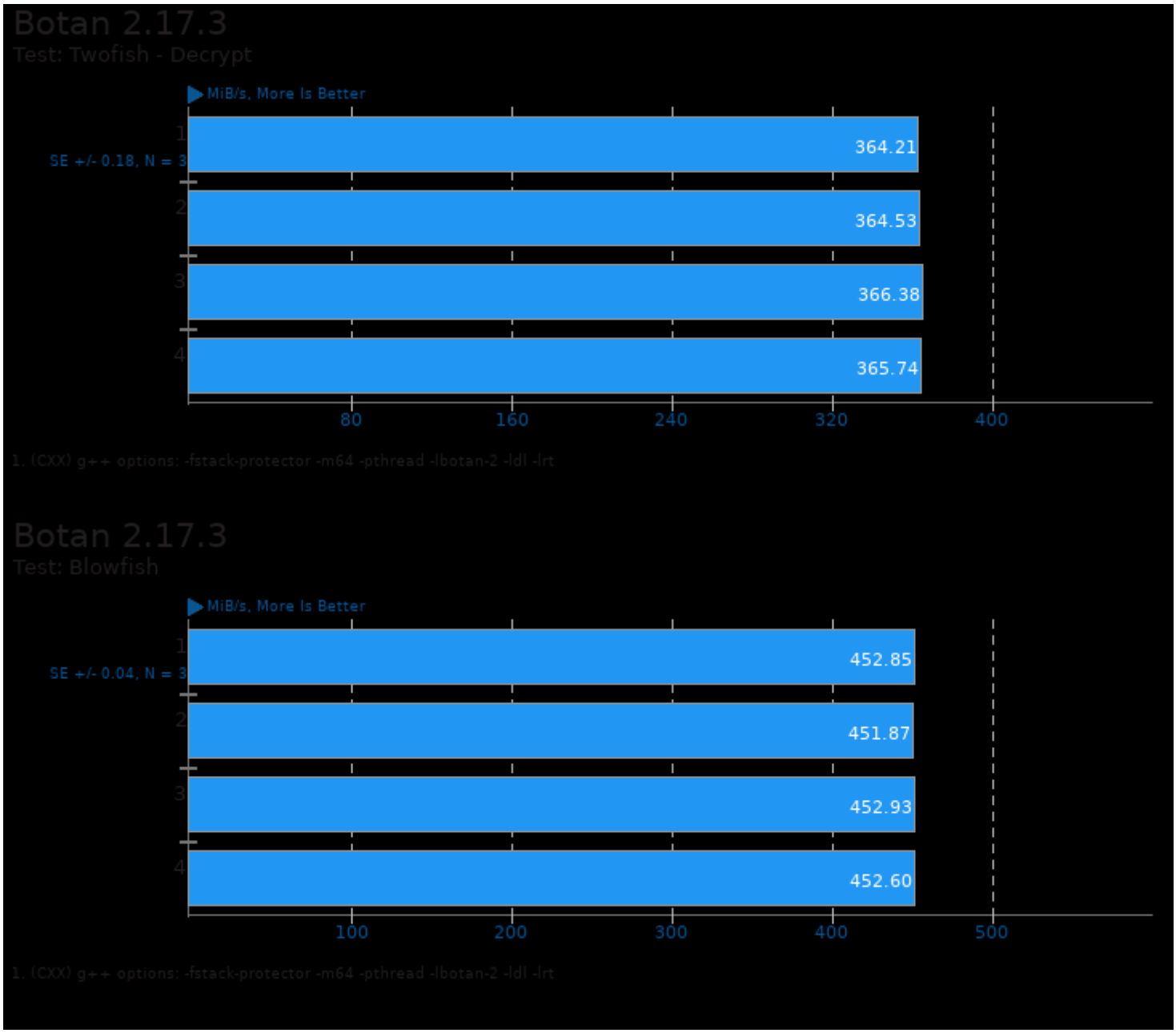

ASTC Encoder 3.0
Preset: Exhaustive
Seconds, Fewer Is Better
SE +/- 0.06, N = 3
1
2
3
4
150.28
150.37
150.29
150.33
30
60
90
120
150
1. (CXX) g++ options: -O3 -flto -pthread
Basis Universal 1.13
Settings: ETC1S
Seconds, Fewer Is Better
SE +/- 0.03, N = 3
1
2
3
4
34.50
35.01
34.48
34.57
8
16
24
32
40
1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

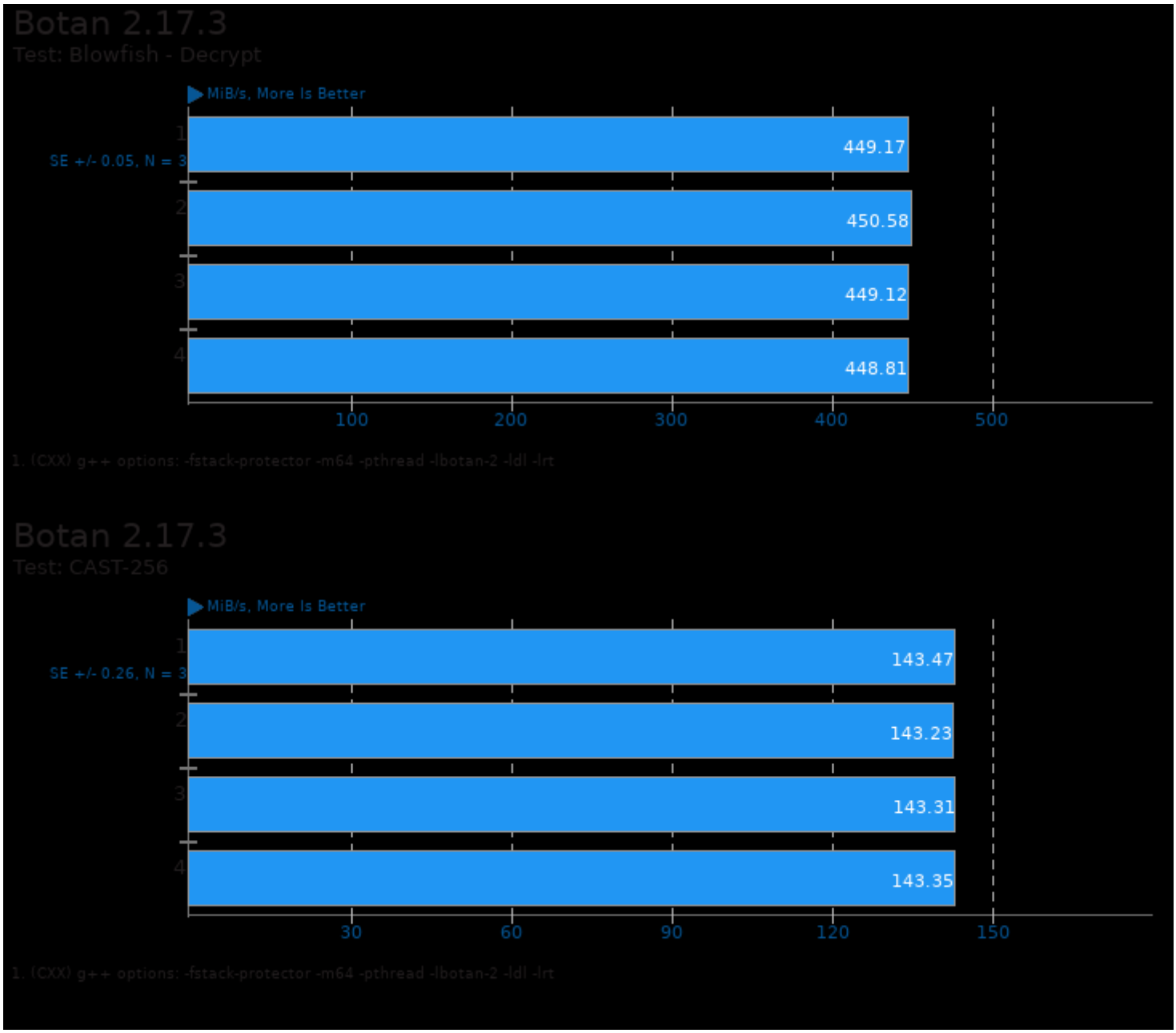

Basis Universal 1.13
Settings: UASTC Level 0
Seconds, Fewer Is Better
SE +/- 0.00, N = 3
1
2
3
4
10.27
10.29
10.35
10.28
3
6
9
12
15
1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread
Basis Universal 1.13
Settings: UASTC Level 2
Seconds, Fewer Is Better
SE +/- 0.01, N = 3
1
2
3
4
67.54
67.53
67.52
67.53
15
30
45
60
75
1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

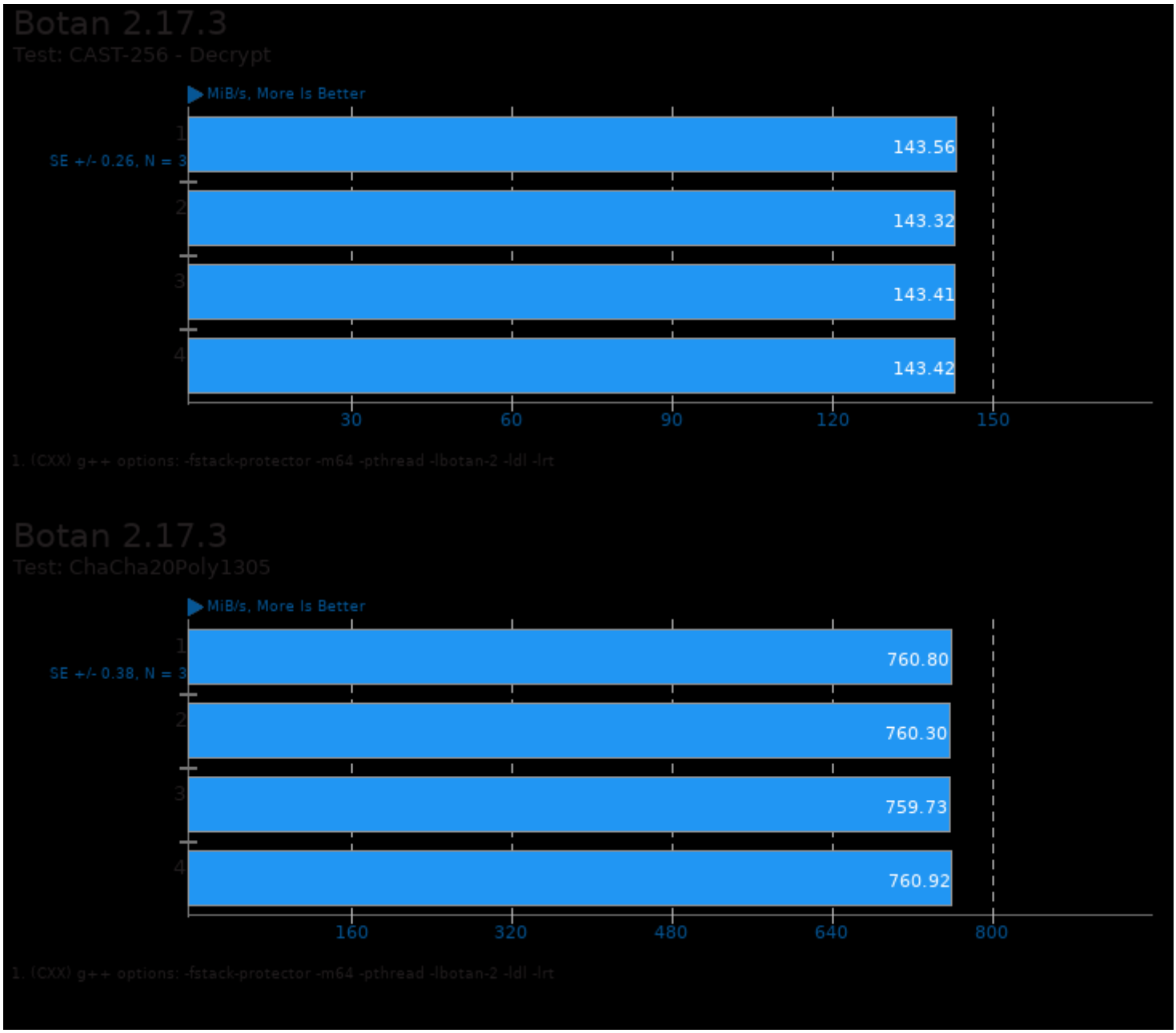

Basis Universal 1.13
Settings: UASTC Level 3
Seconds, Fewer Is Better
SE +/- 0.02, N = 3
1
133.34
2
133.37
3
133.30
4
133.36
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread
Botan 2.17.3
Test: KASUMI
MiB/s, More Is Better
SE +/- 0.05, N = 3
1
94.13
2
94.01
3
93.89
4
94.15
20
40
60
80
100
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

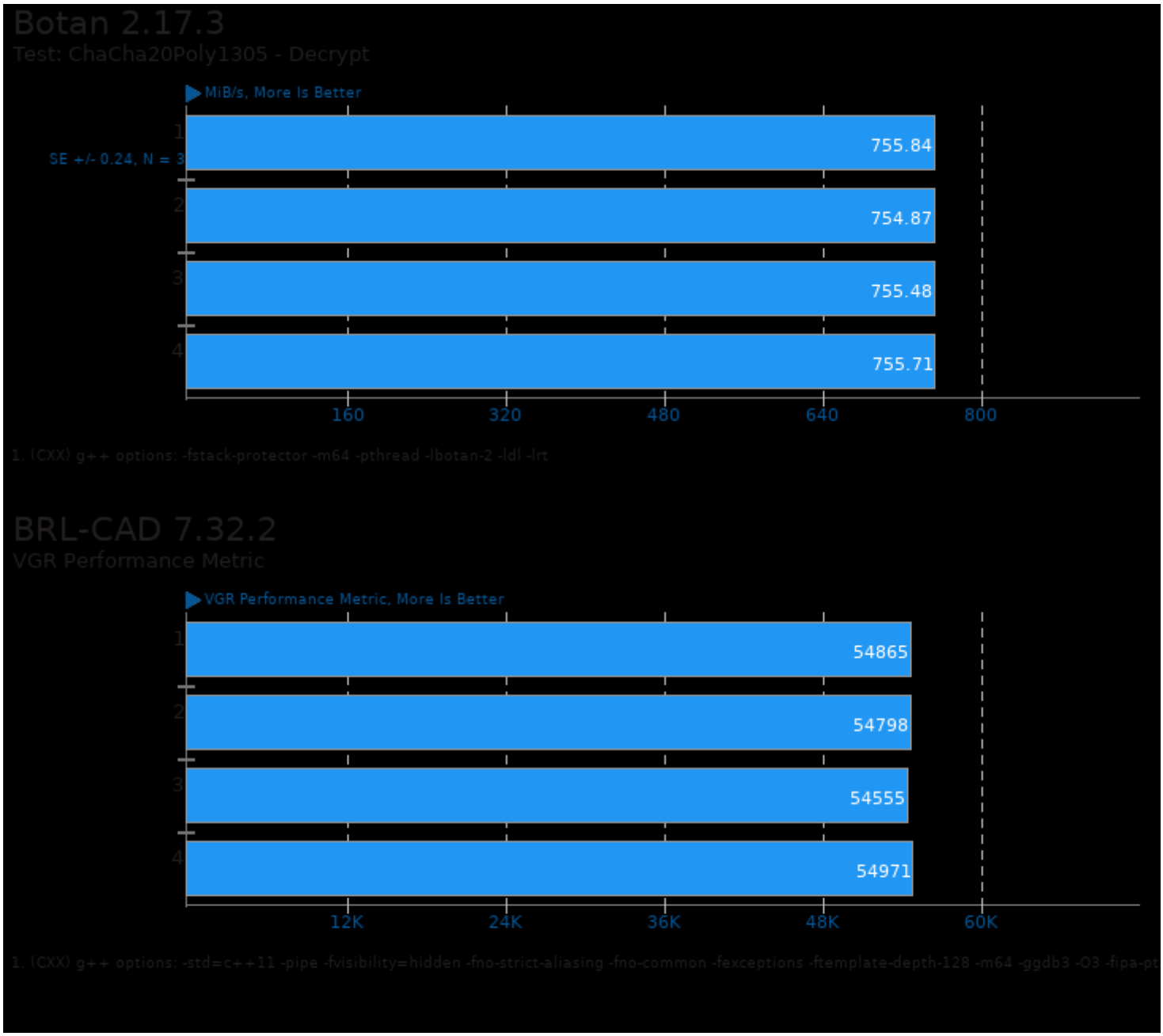

Botan 2.17.3
Test: KASUMI - Decrypt
MiB/s, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
89.92
89.93
89.80
89.92
20
40
60
80
100
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: AES-256
MiB/s, More Is Better
SE +/- 0.11, N = 3
1
2
3
4
4014.92
4015.56
4015.22
3988.05
900
1800
2700
3600
4500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.17.3
Test: AES-256 - Decrypt
MiB/s, More Is Better
SE +/- 0.34, N = 3
1
2
3
4
4010.67
4010.36
4010.41
3987.14
900
1800
2700
3600
4500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: Twofish
MiB/s, More Is Better
SE +/- 0.18, N = 3
1
2
3
4
363.08
363.32
365.14
364.34
80
160
240
320
400
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.17.3
Test: Twofish - Decrypt
MiB/s, More Is Better
SE +/- 0.18, N = 3
1
2
3
4
364.21
364.53
366.38
365.74
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
SE +/- 0.04, N = 3
1
2
3
4
452.85
451.87
452.93
452.60
100
200
300
400
500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

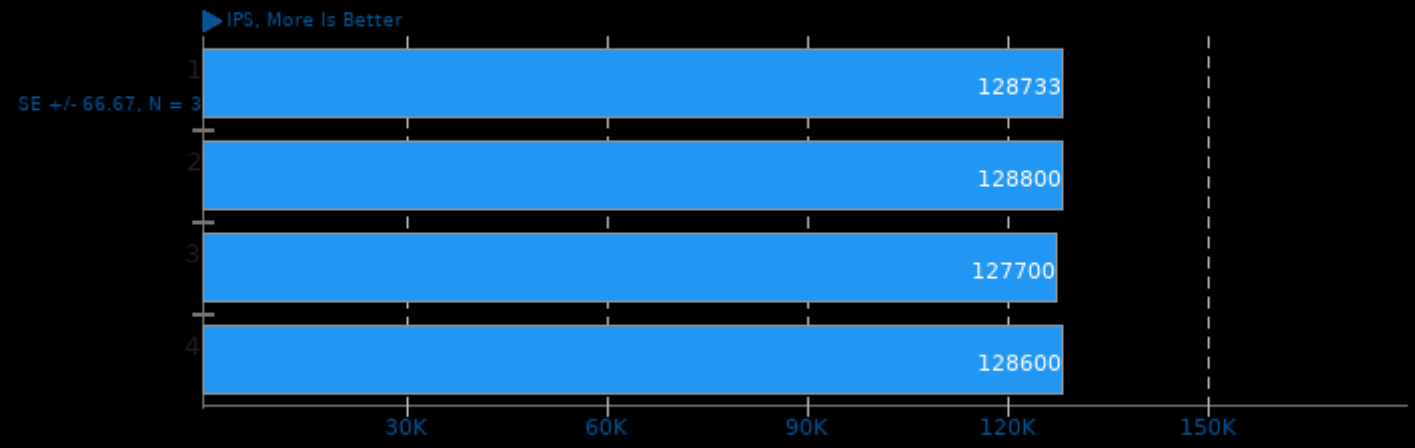

Botan 2.17.3
Test: Blowfish - Decrypt
MiB/s, More Is Better
SE +/- 0.05, N = 3
1
2
3
4
449.17
450.58
449.12
448.81
100
200
300
400
500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: CAST-256
MiB/s, More Is Better
SE +/- 0.26, N = 3
1
2
3
4
143.47
143.23
143.31
143.35
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
SE +/- 0.26, N = 3
1
2
3
4
143.56
143.32
143.41
143.42
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
SE +/- 0.38, N = 3
1
2
3
4
760.80
760.30
759.73
760.92
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
SE +/- 0.24, N = 3
1
2
3
4
755.84
754.87
755.48
755.71
160
320
480
640
800
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
BRL-CAD 7.32.2
VGR Performance Metric
VGR Performance Metric, More Is Better
1
2
3
4
54865
54798
54555
54971
12K
24K
36K
48K
60K
1. (CXX) g++ options: -std=c++11 -pipe -fvisibility=hidden -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth-128 -m64 -ggdb3 -O3 -fipa-pt

Chia Blockchain VDF 1.0.1

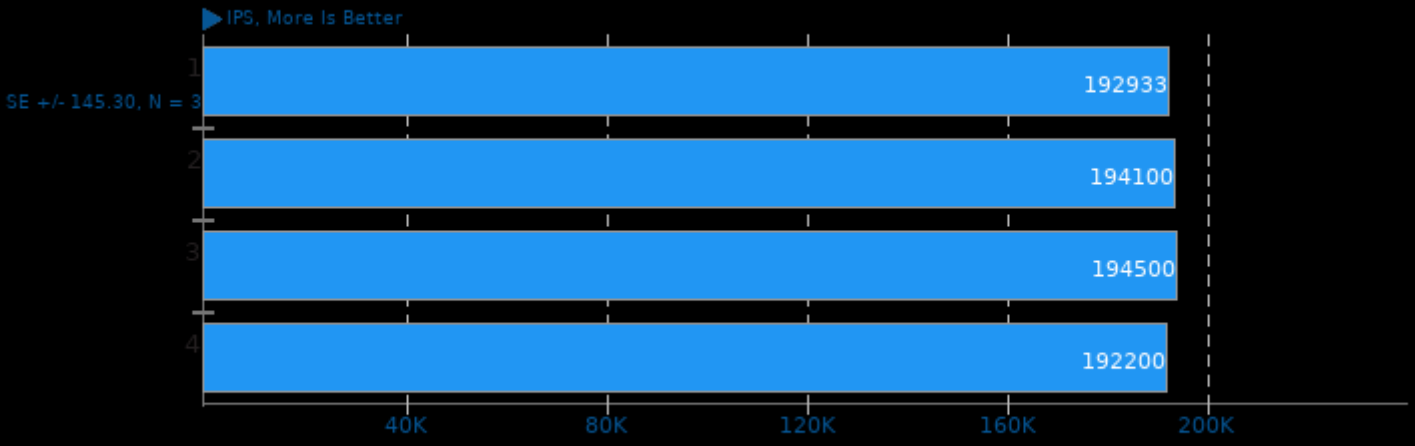
Test: Square Plain C++



1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

Chia Blockchain VDF 1.0.1

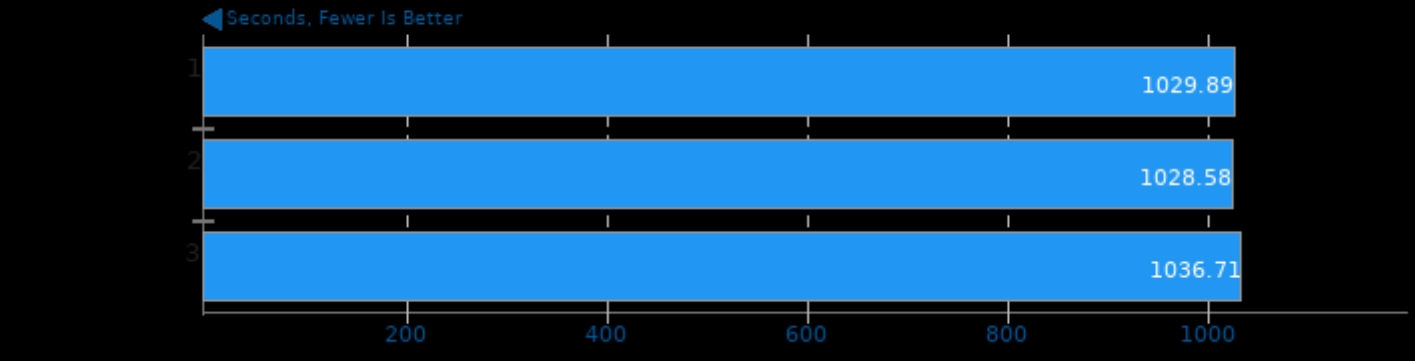
Test: Square Assembly Optimized

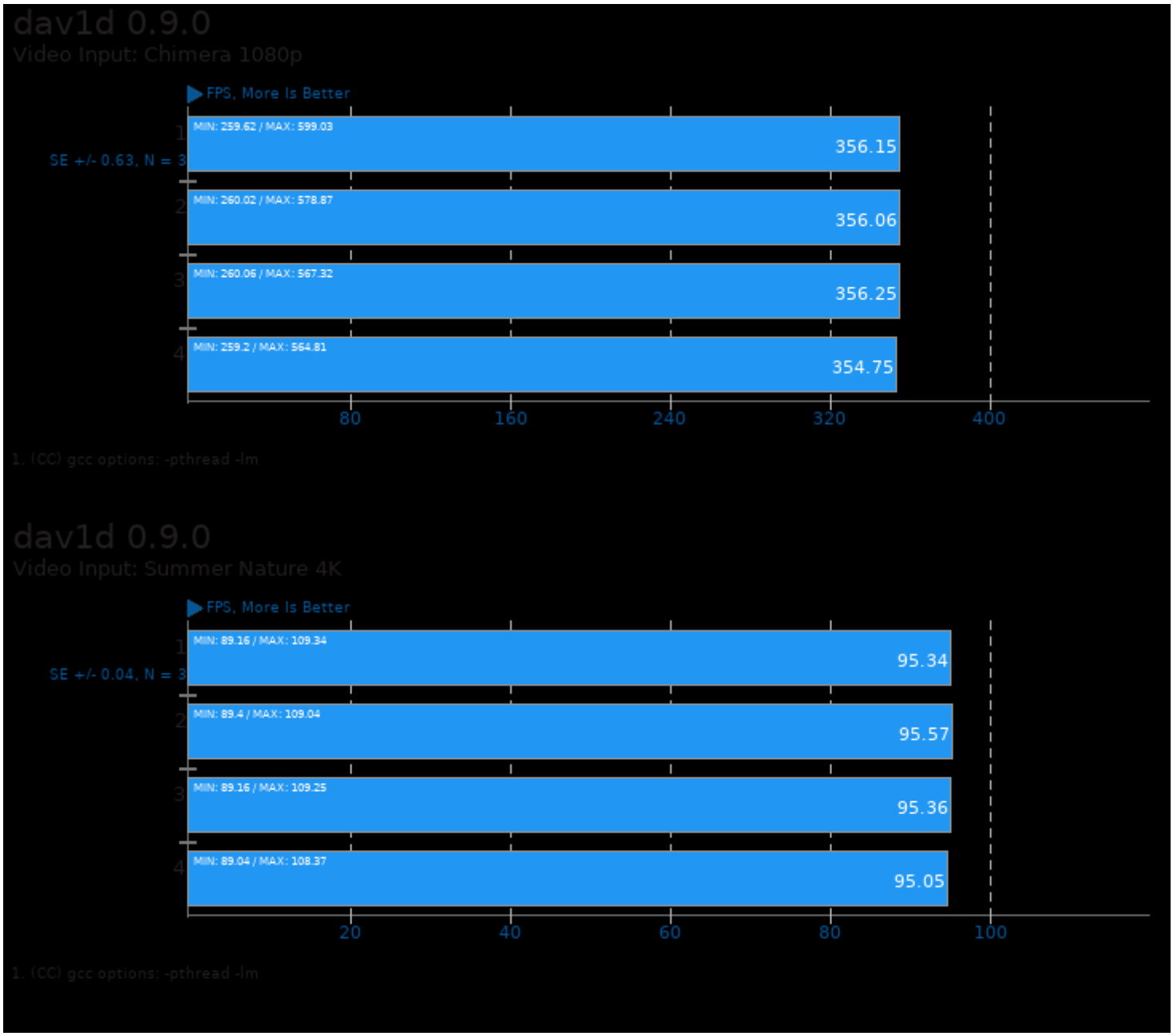


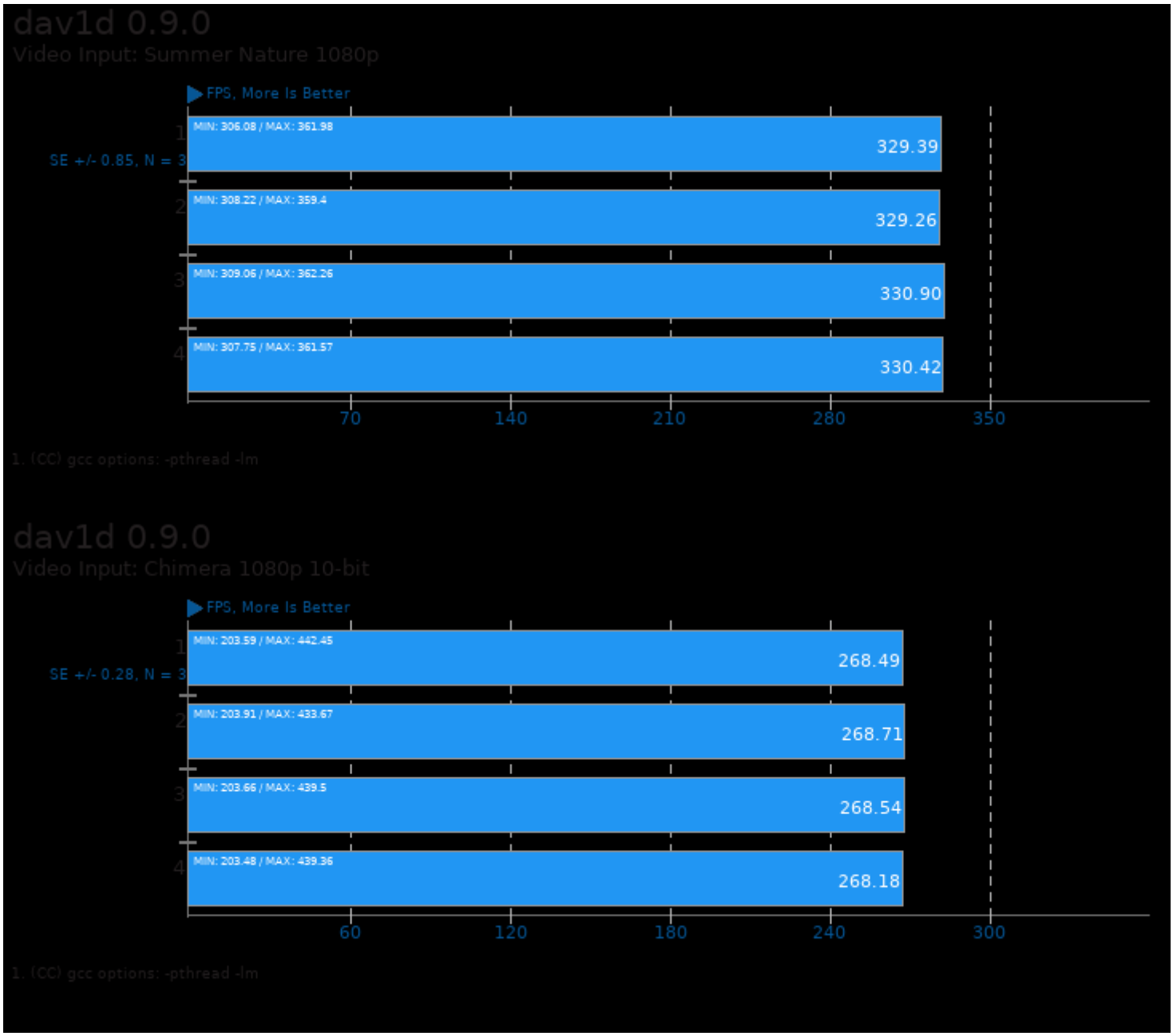
1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

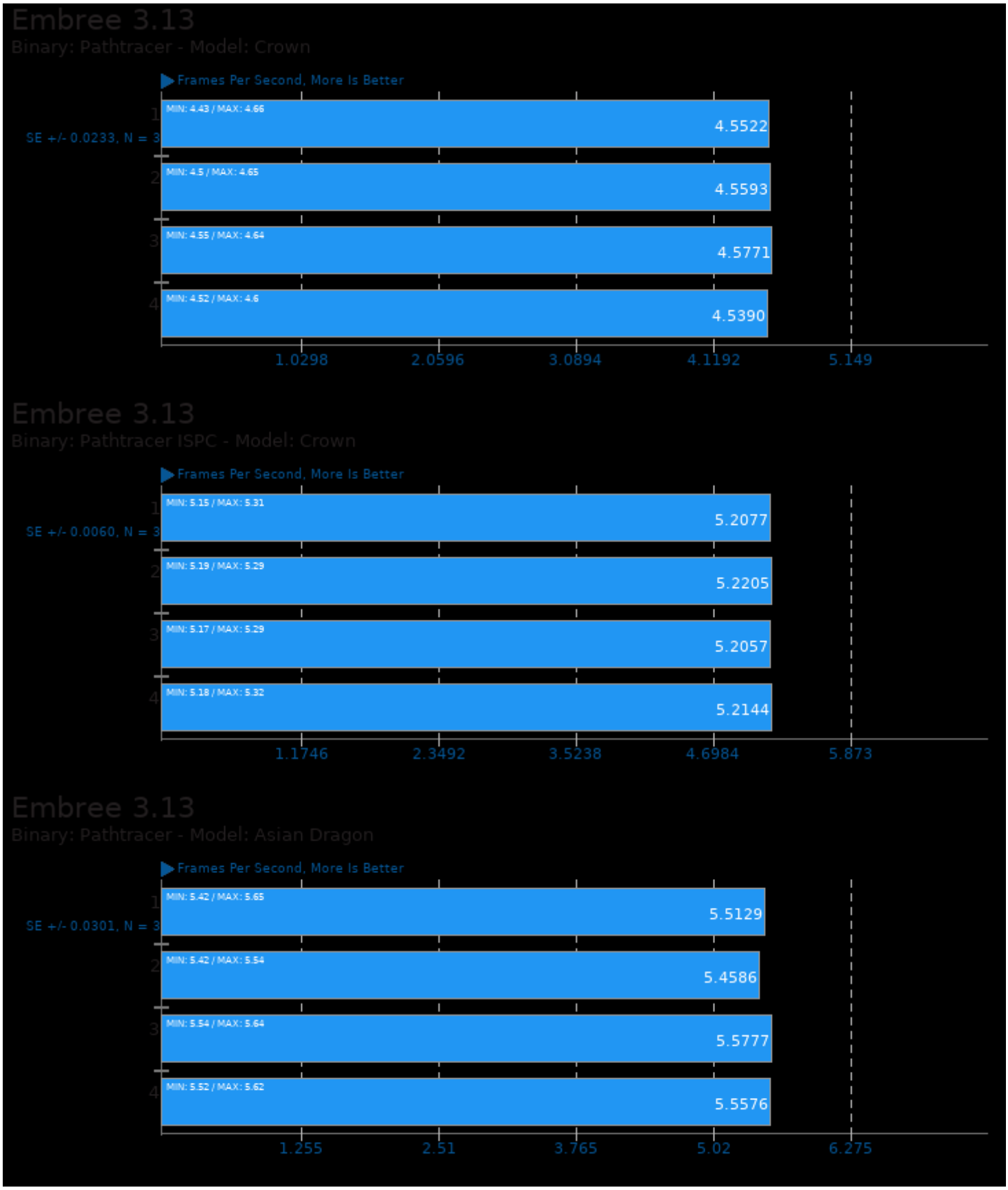
CP2K Molecular Dynamics 8.1

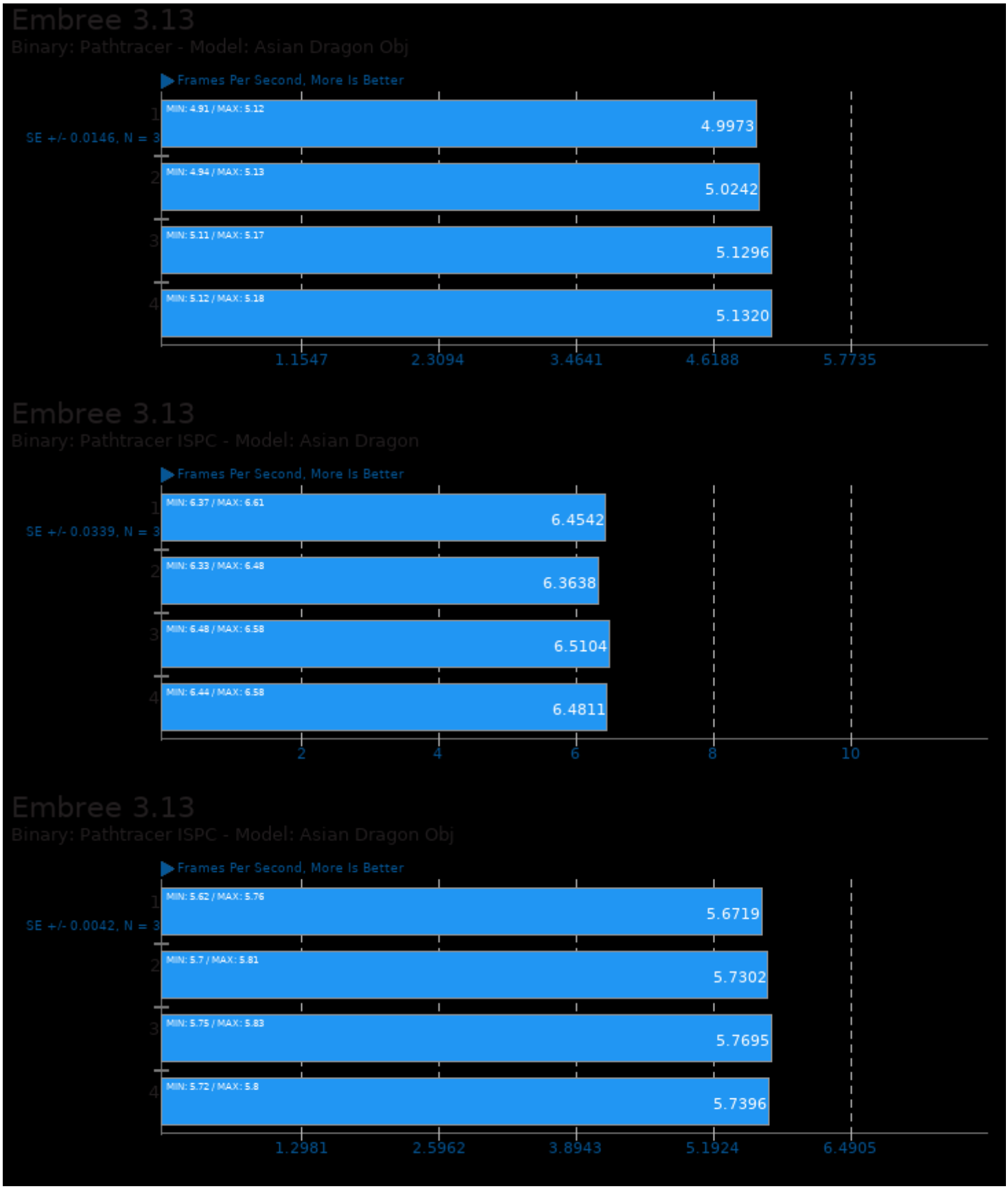
Input: Fayalite-FIST

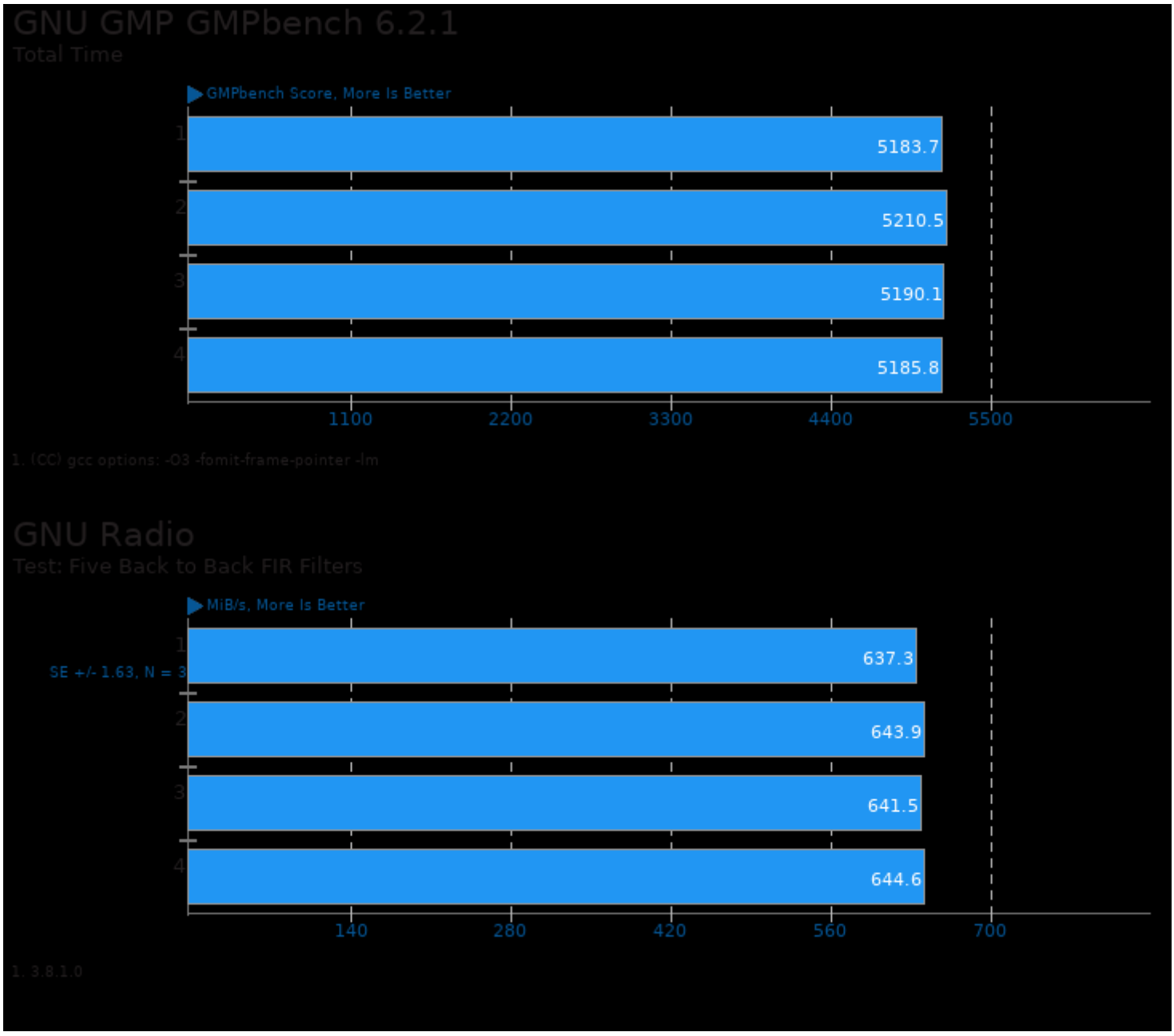



dav1d 0.9.0
Video Input: Chimera 1080p
FPS, More Is Better
SE +/- 0.63, N = 3
1
MIN: 259.62 / MAX: 599.03
356.15
2
MIN: 260.02 / MAX: 578.87
356.06
3
MIN: 260.06 / MAX: 567.32
356.25
4
MIN: 259.2 / MAX: 564.81
354.75
80
160
240
320
400
1. (CC) gcc options: -pthread -lm
dav1d 0.9.0
Video Input: Summer Nature 4K
FPS, More Is Better
SE +/- 0.04, N = 3
1
MIN: 89.16 / MAX: 109.34
95.34
2
MIN: 89.4 / MAX: 109.04
95.57
3
MIN: 89.16 / MAX: 109.25
95.36
4
MIN: 89.04 / MAX: 108.37
95.05
20
40
60
80
100
1. (CC) gcc options: -pthread -lm

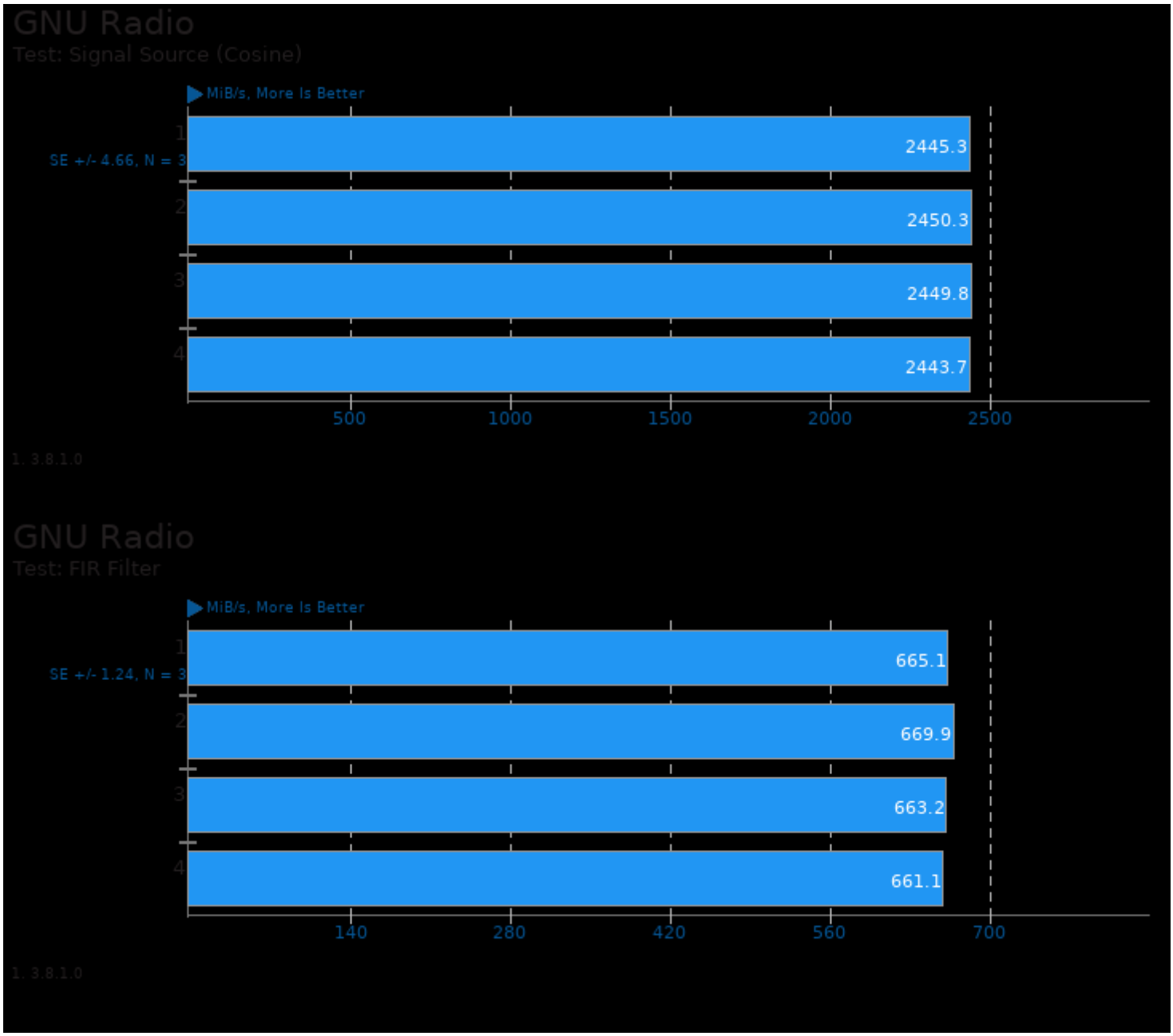

dav1d 0.9.0
Video Input: Summer Nature 1080p
FPS, More Is Better
SE +/- 0.85, N = 3
1
MIN: 306.08 / MAX: 361.98
329.39
2
MIN: 308.22 / MAX: 359.4
329.26
3
MIN: 309.06 / MAX: 362.26
330.90
4
MIN: 307.75 / MAX: 361.57
330.42
70
140
210
280
350
1. (CC) gcc options: -pthread -lm
dav1d 0.9.0
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
SE +/- 0.28, N = 3
1
MIN: 203.59 / MAX: 442.45
268.49
2
MIN: 203.91 / MAX: 433.67
268.71
3
MIN: 203.66 / MAX: 439.5
268.54
4
MIN: 203.48 / MAX: 439.36
268.18
60
120
180
240
300
1. (CC) gcc options: -pthread -lm


Embree 3.13
Binary: Pathtracer - Model: Crown
Frames Per Second, More Is Better
SE +/- 0.0233, N = 3
1
MIN: 4.43 / MAX: 4.66
4.5522
2
MIN: 4.5 / MAX: 4.65
4.5593
3
MIN: 4.55 / MAX: 4.64
4.5771
4
MIN: 4.52 / MAX: 4.6
4.5390
1.0298
2.0596
3.0894
4.1192
5.149
Embree 3.13
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
SE +/- 0.0060, N = 3
1
MIN: 5.15 / MAX: 5.31
5.2077
2
MIN: 5.19 / MAX: 5.29
5.2205
3
MIN: 5.17 / MAX: 5.29
5.2057
4
MIN: 5.18 / MAX: 5.32
5.2144
1.1746
2.3492
3.5238
4.6984
5.873
Embree 3.13
Binary: Pathtracer - Model: Asian Dragon
Frames Per Second, More Is Better
SE +/- 0.0301, N = 3
1
MIN: 5.42 / MAX: 5.65
5.5129
2
MIN: 5.42 / MAX: 5.54
5.4586
3
MIN: 5.54 / MAX: 5.64
5.5777
4
MIN: 5.52 / MAX: 5.62
5.5576
1.255
2.51
3.765
5.02
6.275

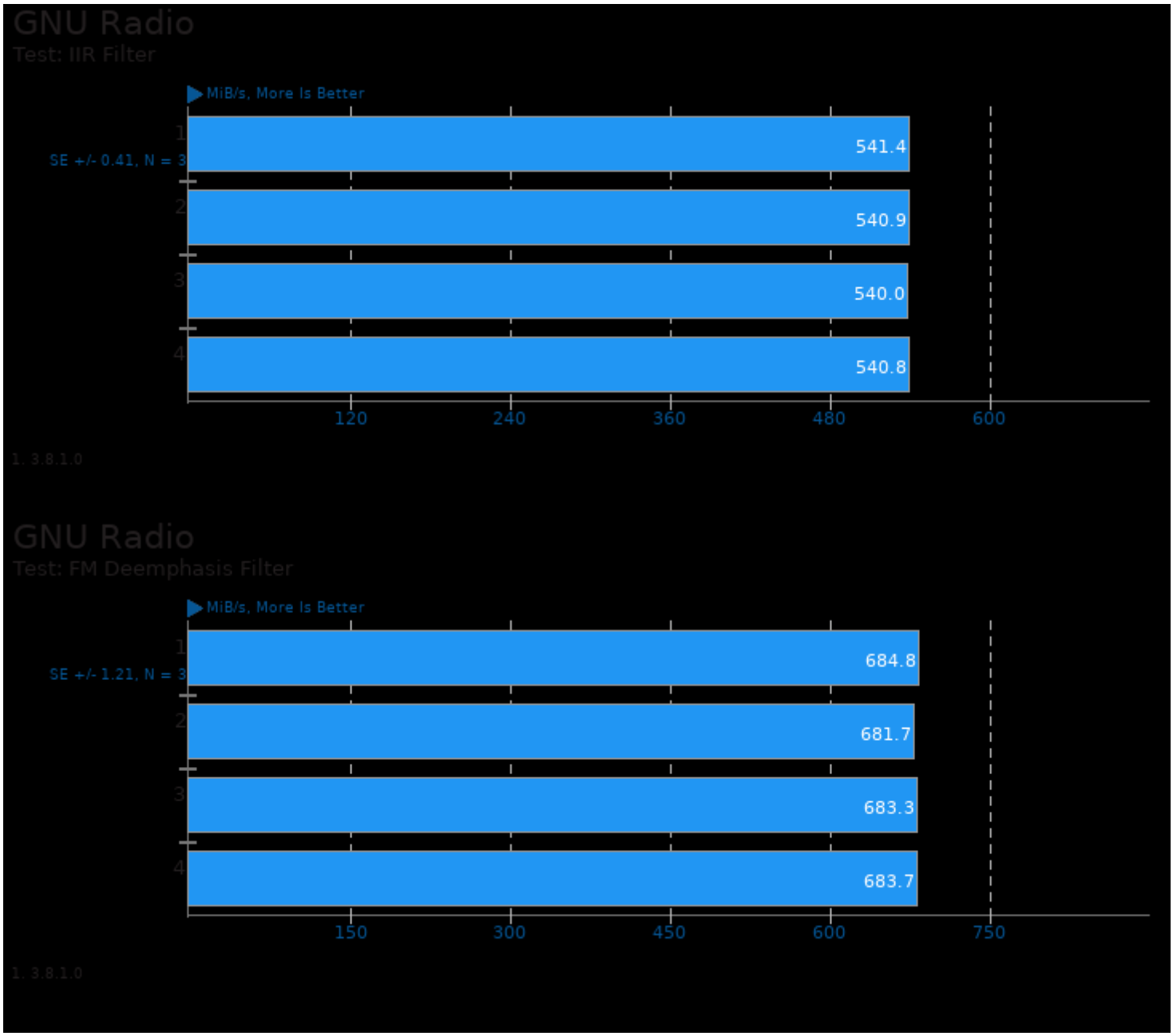

Embree 3.13
Binary: Pathtracer - Model: Asian Dragon Obj
Frames Per Second, More Is Better
SE +/- 0.0146, N = 3
1
MIN: 4.91 / MAX: 5.12
4.9973
2
MIN: 4.94 / MAX: 5.13
5.0242
3
MIN: 5.11 / MAX: 5.17
5.1296
4
MIN: 5.12 / MAX: 5.18
5.1320
1.1547
2.3094
3.4641
4.6188
5.7735
Embree 3.13
Binary: Pathtracer ISPC - Model: Asian Dragon
Frames Per Second, More Is Better
SE +/- 0.0339, N = 3
1
MIN: 6.37 / MAX: 6.61
6.4542
2
MIN: 6.33 / MAX: 6.48
6.3638
3
MIN: 6.48 / MAX: 6.58
6.5104
4
MIN: 6.44 / MAX: 6.58
6.4811
2
4
6
8
10
Embree 3.13
Binary: Pathtracer ISPC - Model: Asian Dragon Obj
Frames Per Second, More Is Better
SE +/- 0.0042, N = 3
1
MIN: 5.62 / MAX: 5.76
5.6719
2
MIN: 5.7 / MAX: 5.81
5.7302
3
MIN: 5.75 / MAX: 5.83
5.7695
4
MIN: 5.72 / MAX: 5.8
5.7396
1.2981
2.5962
3.8943
5.1924
6.4905

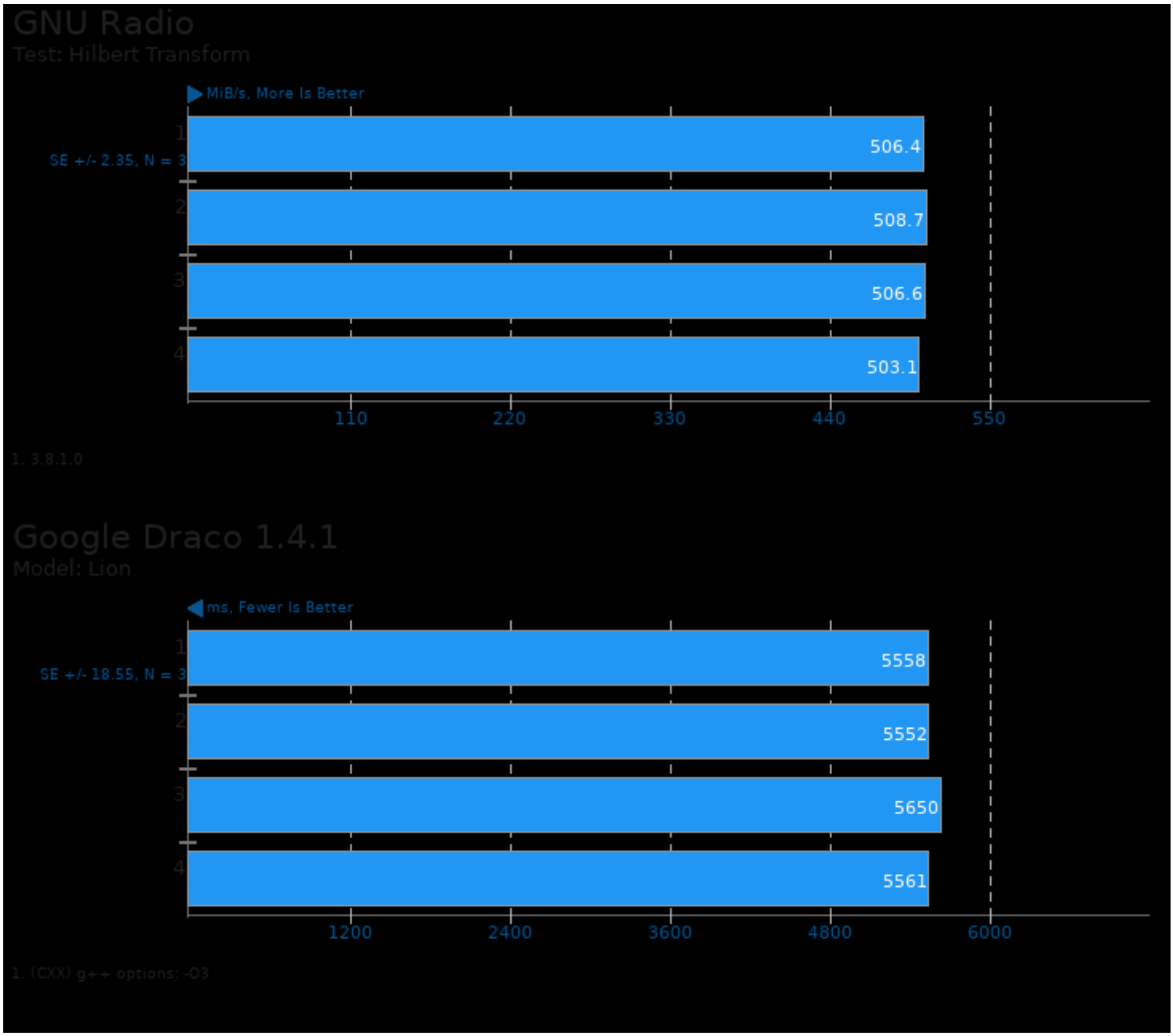

GNU GMP GMPbench 6.2.1
Total Time
GMPbench Score, More Is Better
1
5183.7
2
5210.5
3
5190.1
4
5185.8
1100
2200
3300
4400
5500
1. (CC) gcc options: -O3 -fomit-frame-pointer -lm
GNU Radio
Test: Five Back to Back FIR Filters
MiB/s, More Is Better
SE +/- 1.63, N = 3
1
637.3
2
643.9
3
641.5
4
644.6
140
280
420
560
700
1. 3.8.1.0

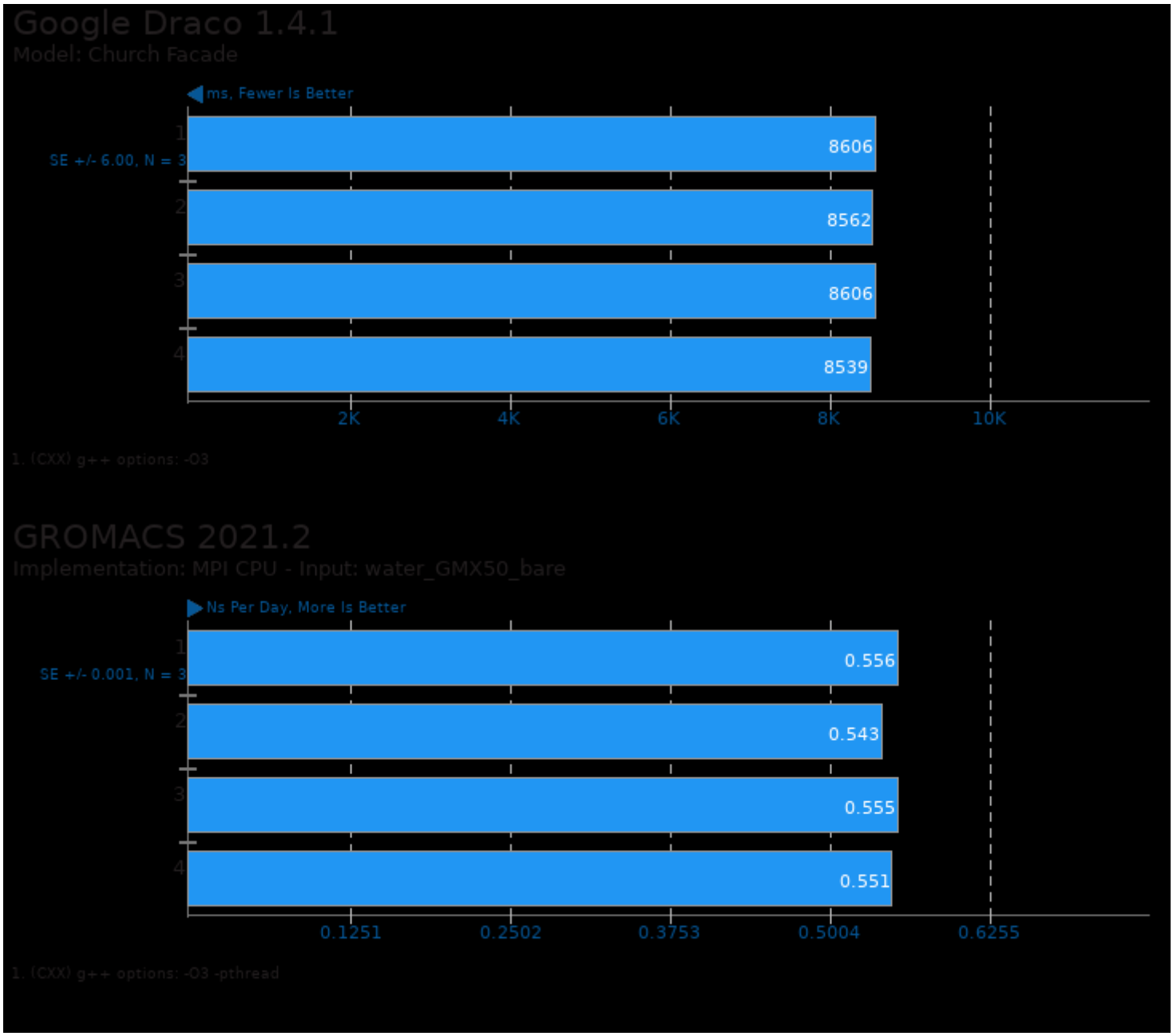
1275 june

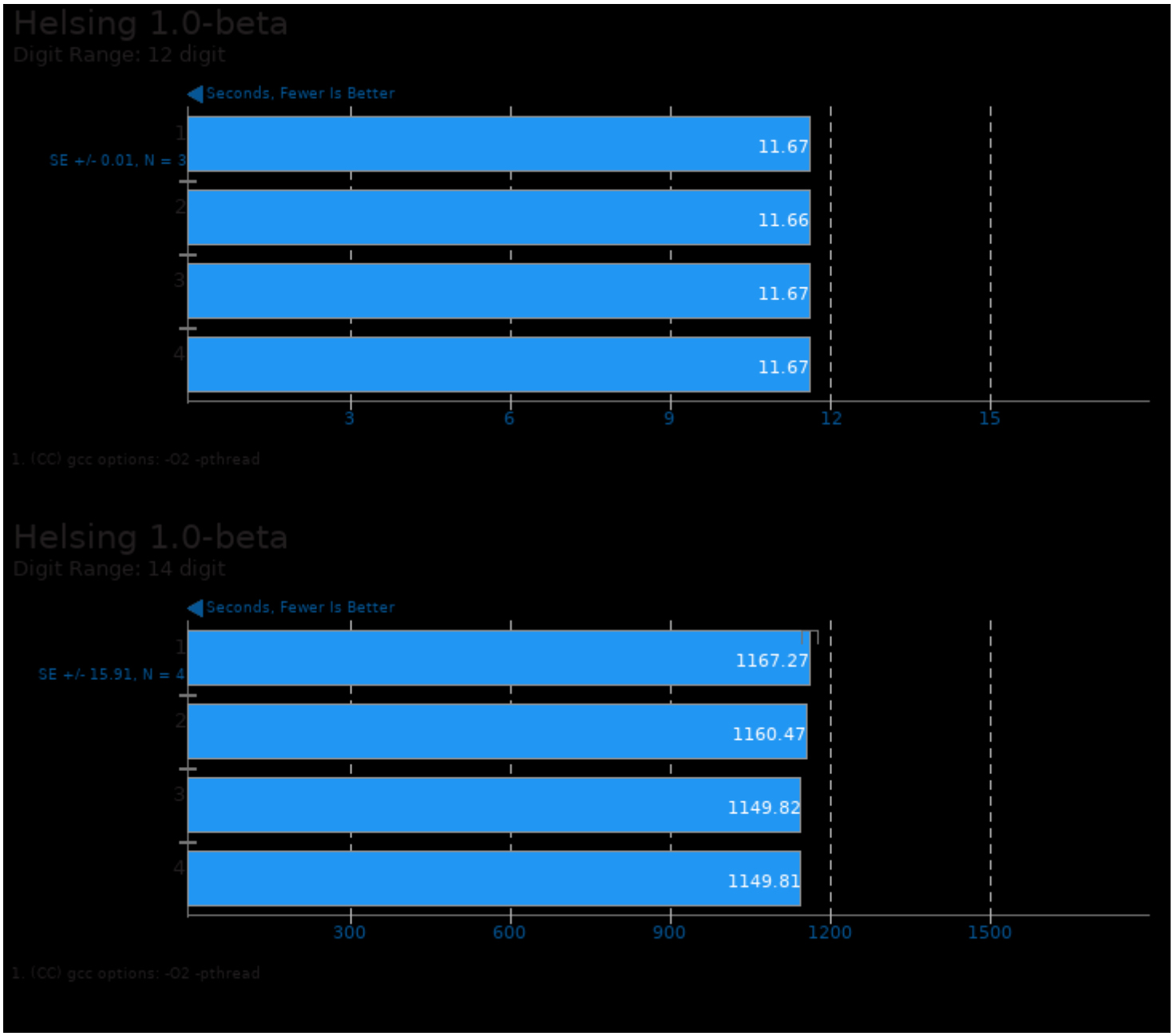

GNU Radio
Test: Signal Source (Cosine)
MiB/s, More Is Better
SE +/- 4.66, N = 3
1
2
3
4
2445.3
2450.3
2449.8
2443.7
500
1000
1500
2000
2500
1. 3.8.1.0
GNU Radio
Test: FIR Filter
MiB/s, More Is Better
SE +/- 1.24, N = 3
1
2
3
4
665.1
669.9
663.2
661.1
140
280
420
560
700
1. 3.8.1.0

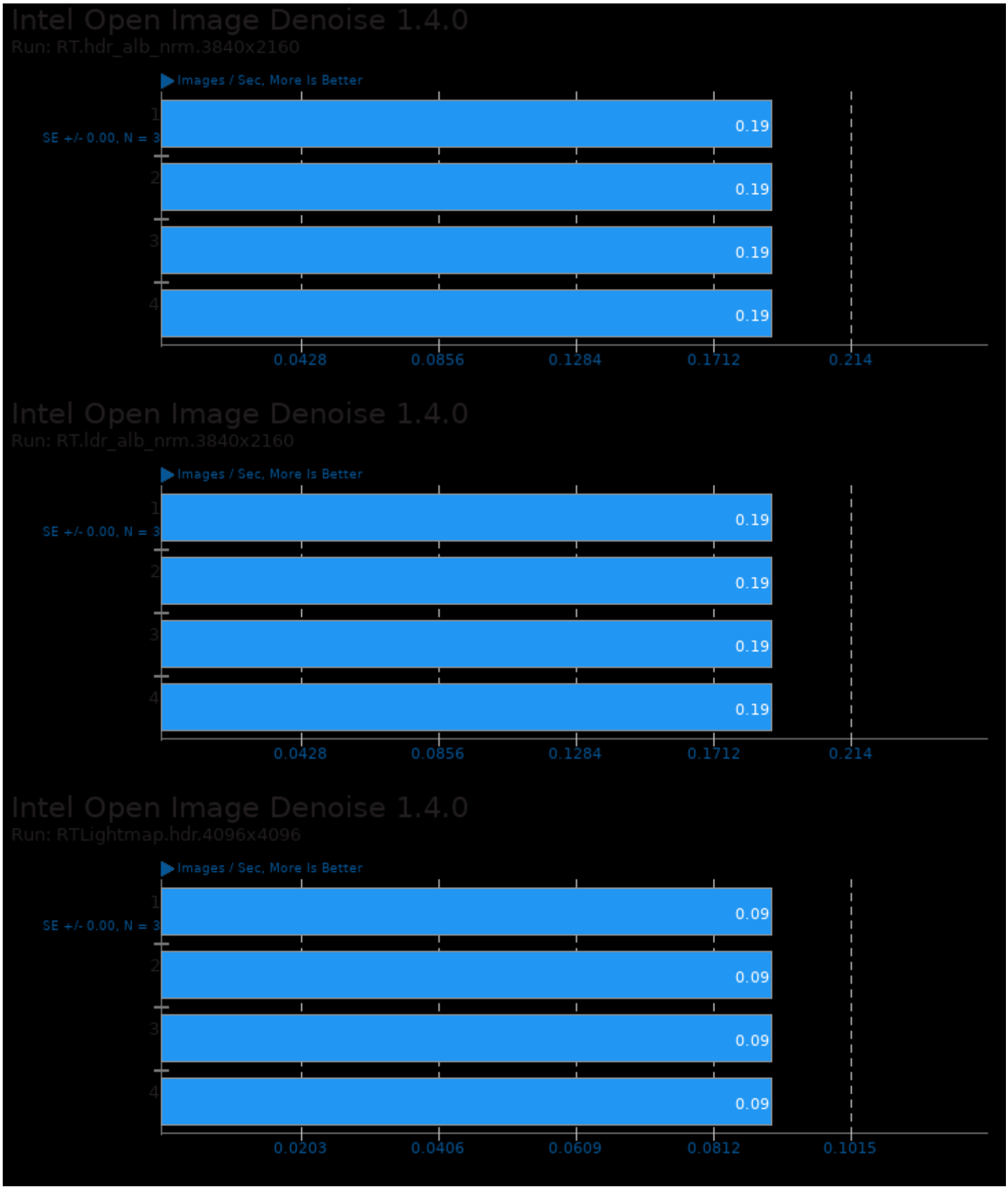
1275 june

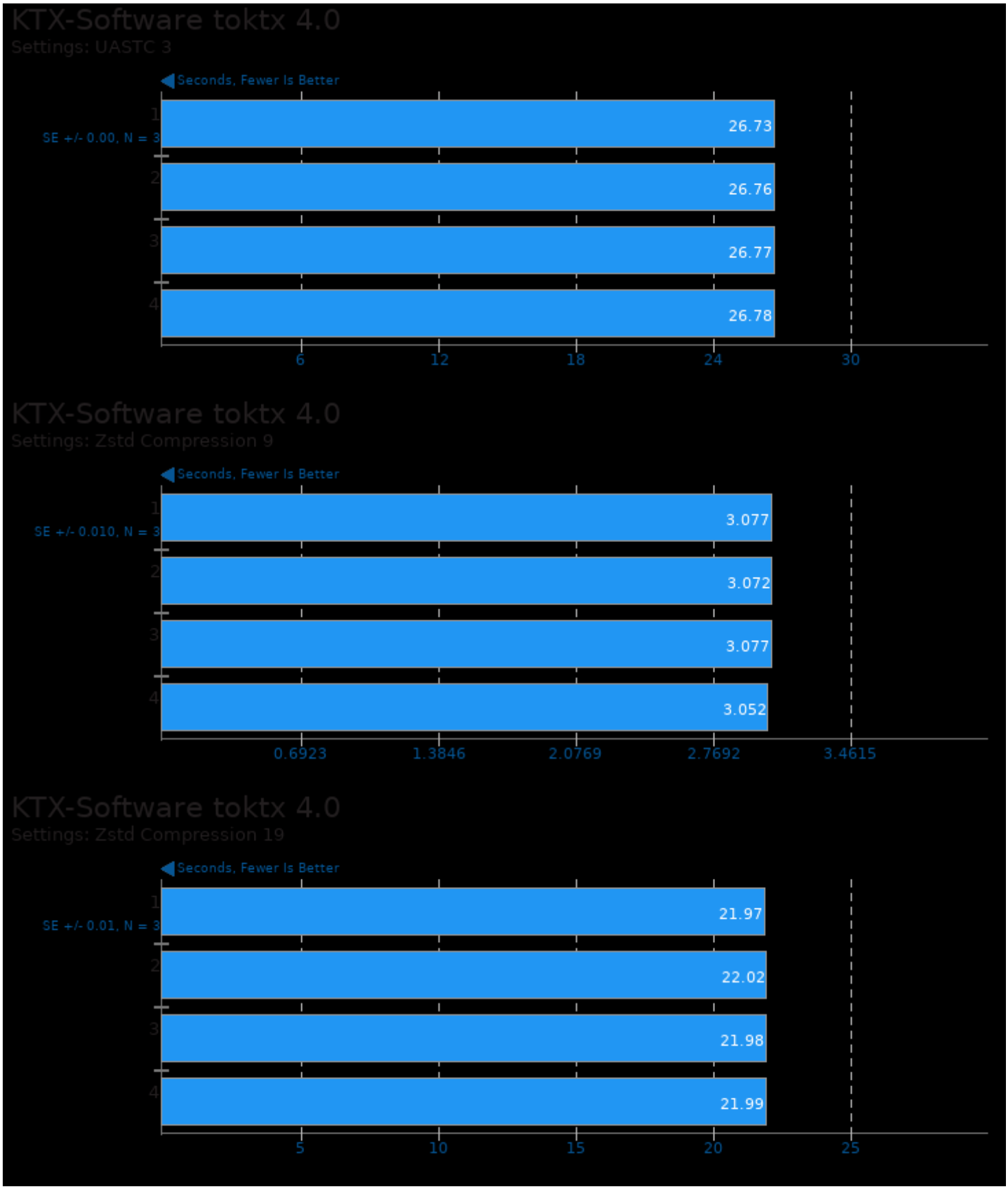

GNU Radio
Test: IIR Filter
MiB/s, More Is Better
SE +/- 0.41, N = 3
1
2
3
4
541.4
540.9
540.0
540.8
120
240
360
480
600
1. 3.8.1.0
GNU Radio
Test: FM Deemphasis Filter
MiB/s, More Is Better
SE +/- 1.21, N = 3
1
2
3
4
684.8
681.7
683.3
683.7
150
300
450
600
750
1. 3.8.1.0

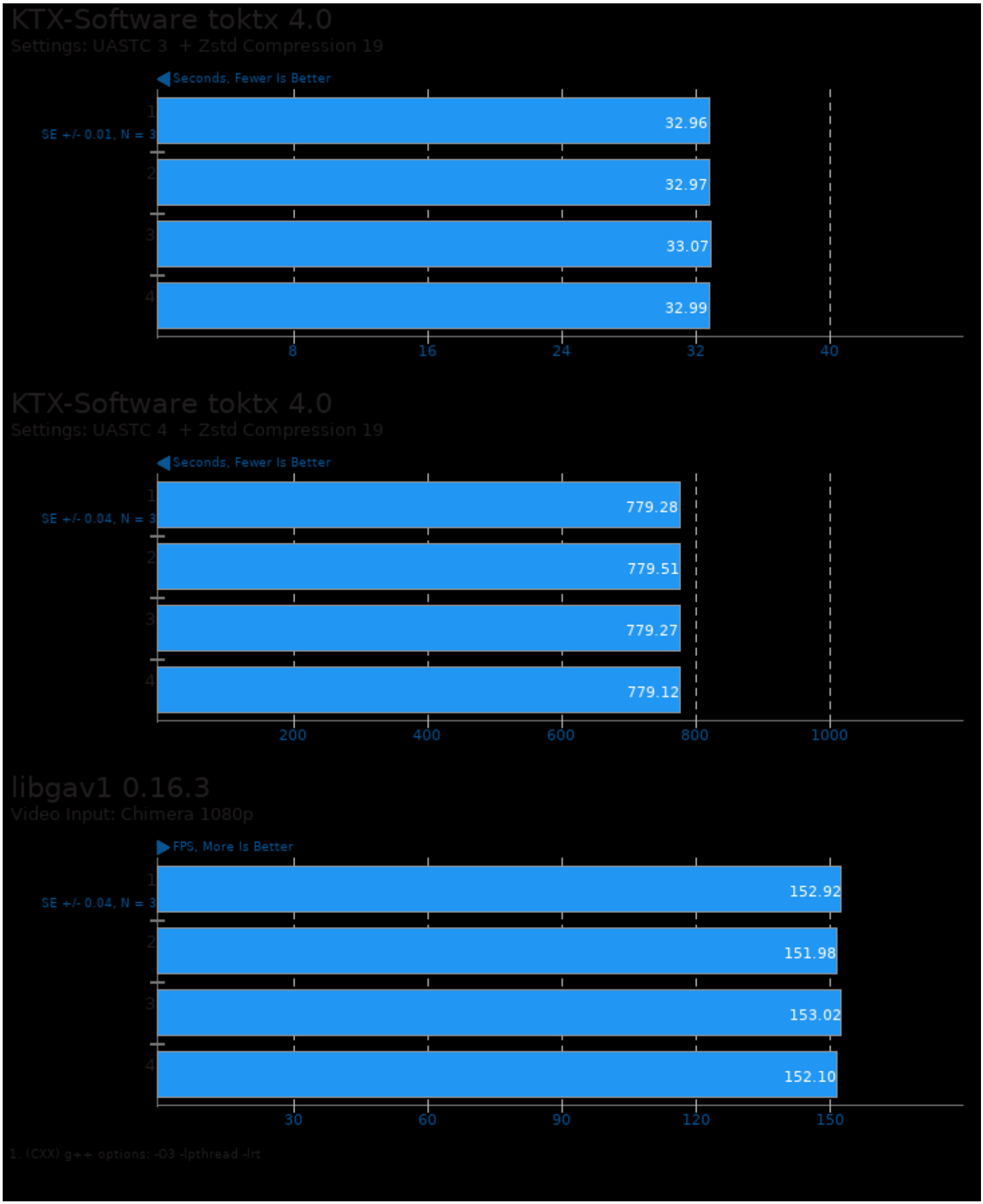

GNU Radio
Test: Hilbert Transform
MiB/s, More Is Better
SE +/- 2.35, N = 3
1
2
3
4
506.4
508.7
506.6
503.1
110
220
330
440
550
1. 3.8.1.0
Google Draco 1.4.1
Model: Lion
ms, Fewer Is Better
SE +/- 18.55, N = 3
1
2
3
4
5558
5552
5650
5561
1200
2400
3600
4800
6000
1. (CXX) g++ options: -O3

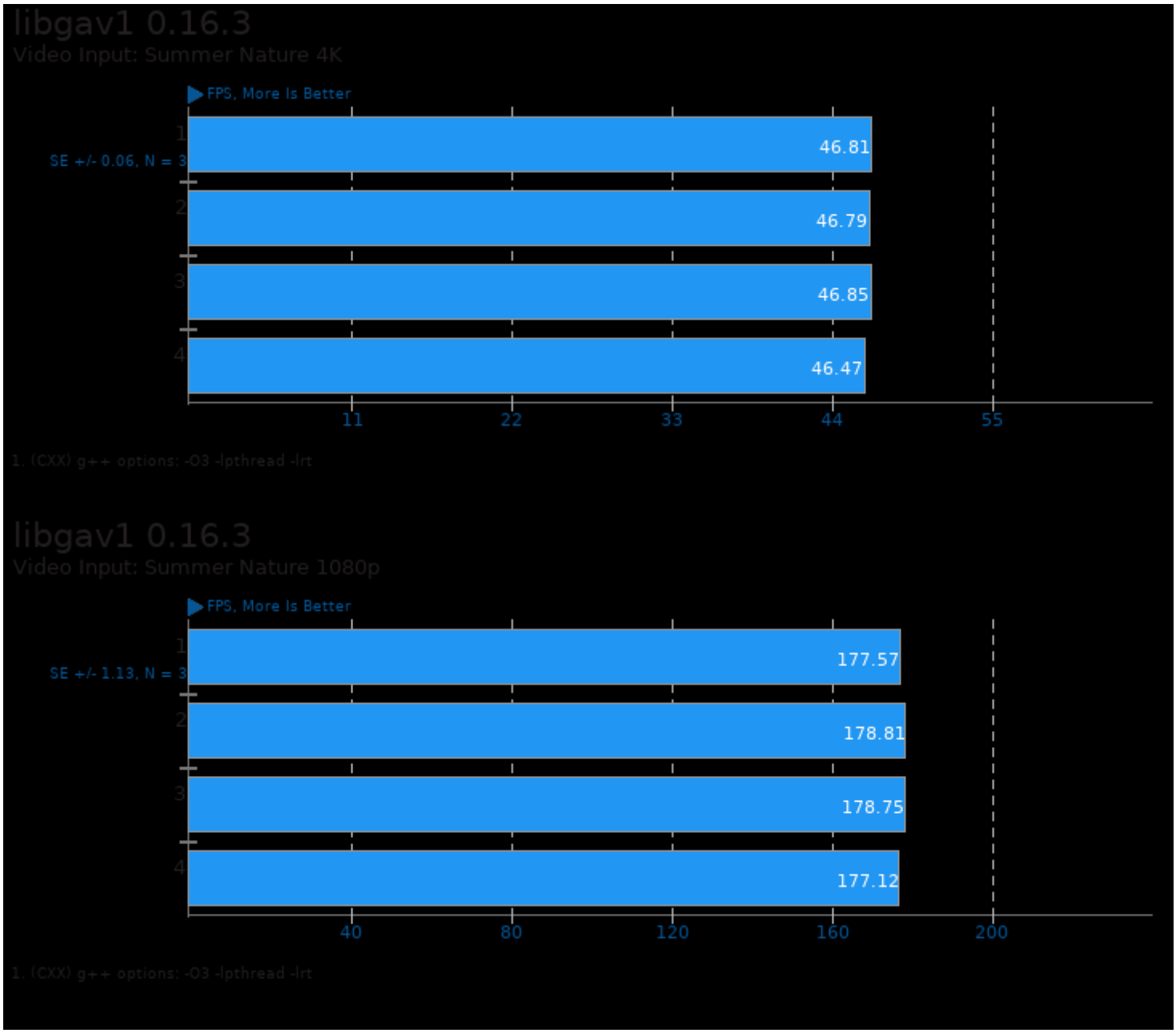

Google Draco 1.4.1
Model: Church Facade
ms, Fewer Is Better
SE +/- 6.00, N = 3
1
2
3
4
8606
8562
8606
8539
2K
4K
6K
8K
10K
1. (CXX) g++ options: -O3
GROMACS 2021.2
Implementation: MPI CPU - Input: water_GMX50_bare
Ns Per Day, More Is Better
SE +/- 0.001, N = 3
1
2
3
4
0.556
0.543
0.555
0.551
0.1251
0.2502
0.3753
0.5004
0.6255
1. (CXX) g++ options: -O3 -pthread

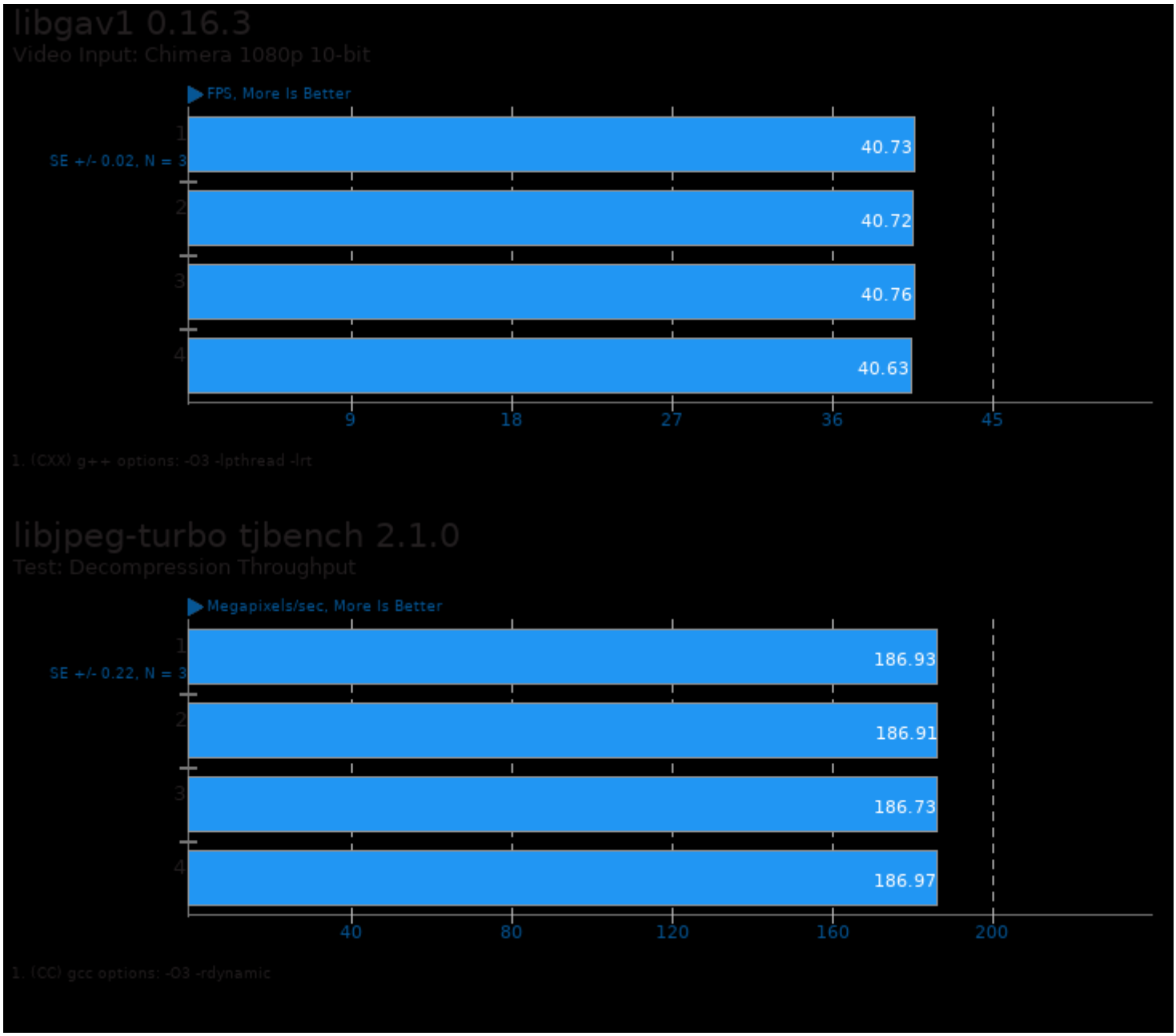

Helsing 1.0-beta
Digit Range: 12 digit
Seconds, Fewer Is Better
SE +/- 0.01, N = 3
1
11.67
2
11.66
3
11.67
4
11.67
3
6
9
12
15
1. (CC) gcc options: -O2 -pthread
Helsing 1.0-beta
Digit Range: 14 digit
Seconds, Fewer Is Better
SE +/- 15.91, N = 4
1
1167.27
2
1160.47
3
1149.82
4
1149.81
300
600
900
1200
1500
1. (CC) gcc options: -O2 -pthread

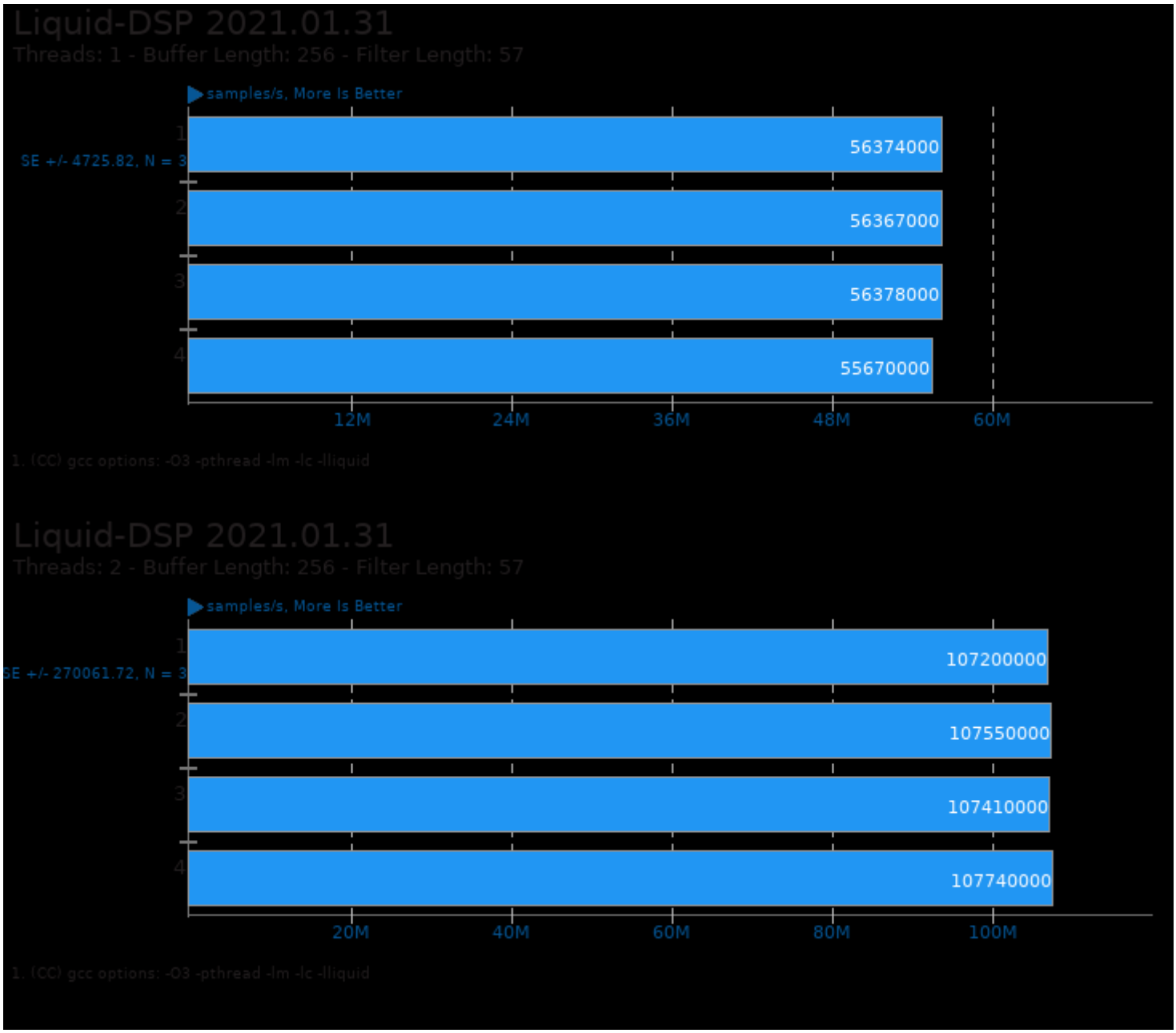

Intel Open Image Denoise 1.4.0
Run: RT.hdr_alb_nrm.3840x2160
Images / Sec, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
0.19
0.19
0.19
0.19
0.0428
0.0856
0.1284
0.1712
0.214
Intel Open Image Denoise 1.4.0
Run: RT.ldr_alb_nrm.3840x2160
Images / Sec, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
0.19
0.19
0.19
0.19
0.0428
0.0856
0.1284
0.1712
0.214
Intel Open Image Denoise 1.4.0
Run: RTLightmap.hdr.4096x4096
Images / Sec, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
0.09
0.09
0.09
0.09
0.0203
0.0406
0.0609
0.0812
0.1015


KTX-Software toktx 4.0
Settings: UASTC 3
Seconds, Fewer Is Better
SE +/- 0.00, N = 3
1
26.73
2
26.76
3
26.77
4
26.78
6
12
18
24
30
KTX-Software toktx 4.0
Settings: Zstd Compression 9
Seconds, Fewer Is Better
SE +/- 0.010, N = 3
1
3.077
2
3.072
3
3.077
4
3.052
0.6923
1.3846
2.0769
2.7692
3.4615
KTX-Software toktx 4.0
Settings: Zstd Compression 19
Seconds, Fewer Is Better
SE +/- 0.01, N = 3
1
21.97
2
22.02
3
21.98
4
21.99
5
10
15
20
25


KTX-Software toktx 4.0
Settings: UASTC 3 + Zstd Compression 19
Seconds, Fewer Is Better
SE +/- 0.01, N = 3
1
32.96
2
32.97
3
33.07
4
32.99
8
16
24
32
40
KTX-Software toktx 4.0
Settings: UASTC 4 + Zstd Compression 19
Seconds, Fewer Is Better
SE +/- 0.04, N = 3
1
779.28
2
779.51
3
779.27
4
779.12
200
400
600
800
1000
libgav1 0.16.3
Video Input: Chimera 1080p
FPS, More Is Better
SE +/- 0.04, N = 3
1
152.92
2
151.98
3
153.02
4
152.10
30
60
90
120
150
1. (CXX) g++ options: -O3 -lpthread -lrt

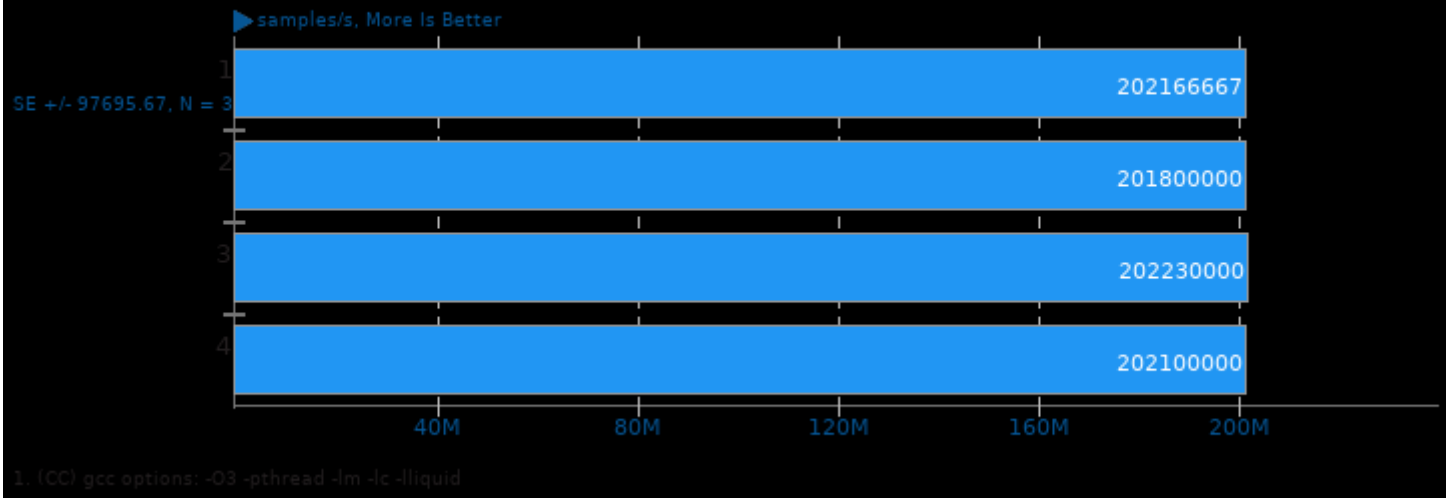

libgav1 0.16.3
Video Input: Summer Nature 4K
FPS, More Is Better
SE +/- 0.06, N = 3
1
2
3
4
46.81
46.79
46.85
46.47
11
22
33
44
55
1. (CXX) g++ options: -O3 -lpthread -lrt
libgav1 0.16.3
Video Input: Summer Nature 1080p
FPS, More Is Better
SE +/- 1.13, N = 3
1
2
3
4
177.57
178.81
178.75
177.12
40
80
120
160
200
1. (CXX) g++ options: -O3 -lpthread -lrt


libgav1 0.16.3
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
SE +/- 0.02, N = 3
1
40.73
2
40.72
3
40.76
4
40.63
9
18
27
36
45
1. (CXX) g++ options: -O3 -lpthread -lrt
libjpeg-turbo tjbench 2.1.0
Test: Decompression Throughput
Megapixels/sec, More Is Better
SE +/- 0.22, N = 3
1
186.93
2
186.91
3
186.73
4
186.97
40
80
120
160
200
1. (CC) gcc options: -O3 -rdynamic


Liquid-DSP 2021.01.31
Threads: 1 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
SE +/- 4725.82, N = 3
1
2
3
4
56374000
56367000
56378000
55670000
12M
24M
36M
48M
60M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid
Liquid-DSP 2021.01.31
Threads: 2 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
SE +/- 270061.72, N = 3
1
2
3
4
107200000
107550000
107410000
107740000
20M
40M
60M
80M
100M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid

Liquid-DSP 2021.01.31

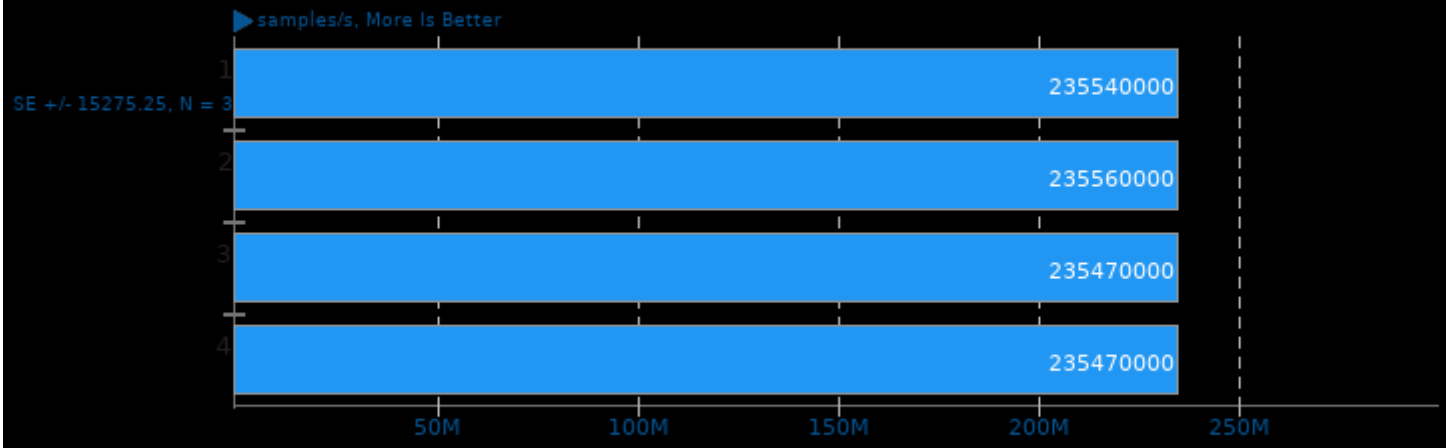
Threads: 4 - Buffer Length: 256 - Filter Length: 57



1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid

Liquid-DSP 2021.01.31

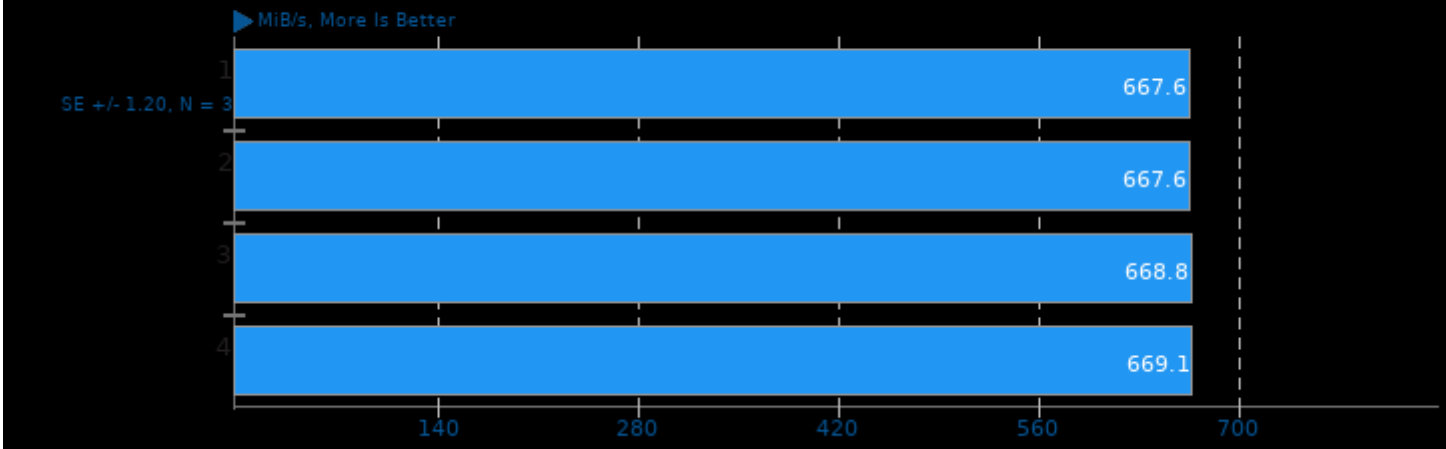
Threads: 8 - Buffer Length: 256 - Filter Length: 57

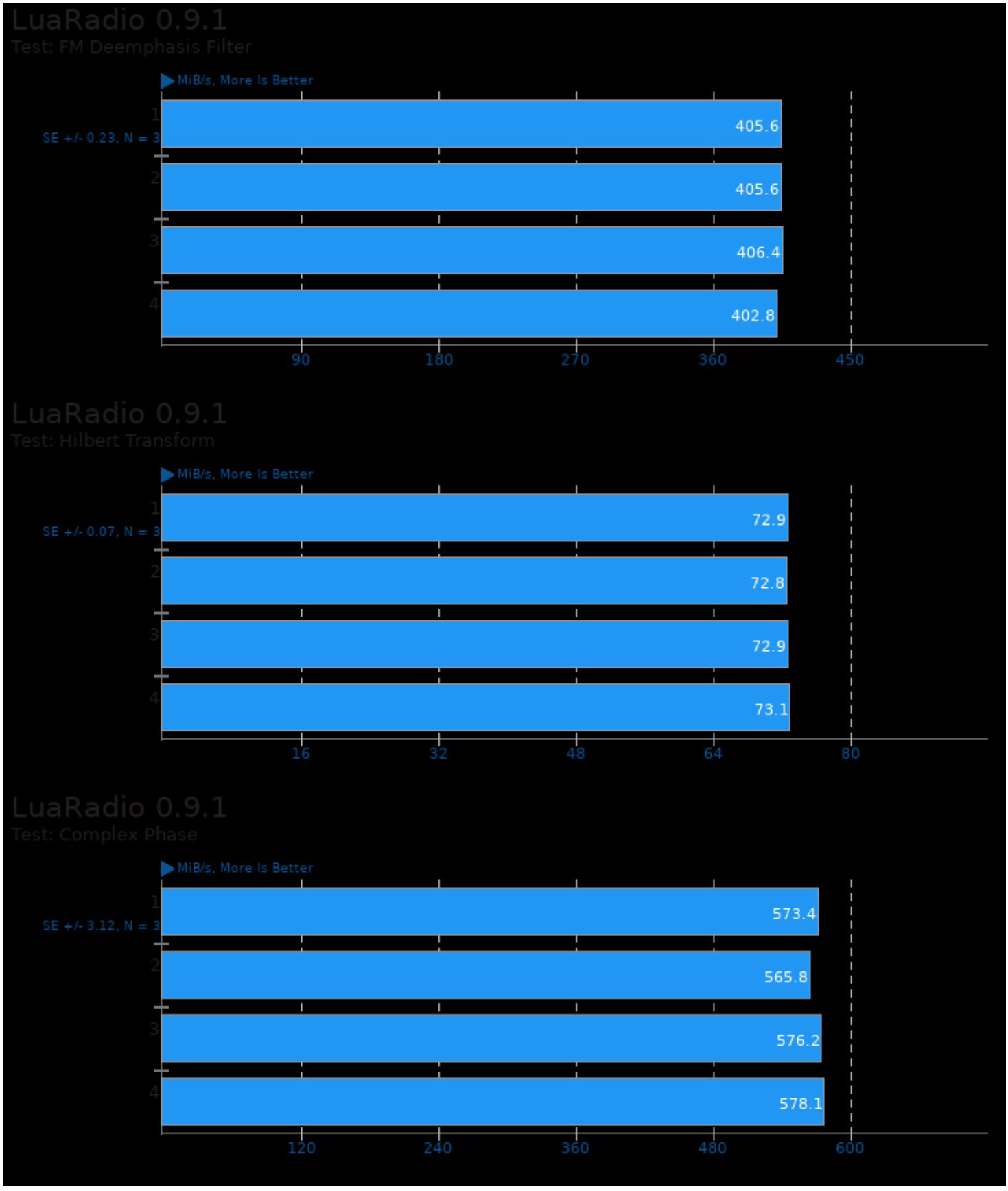


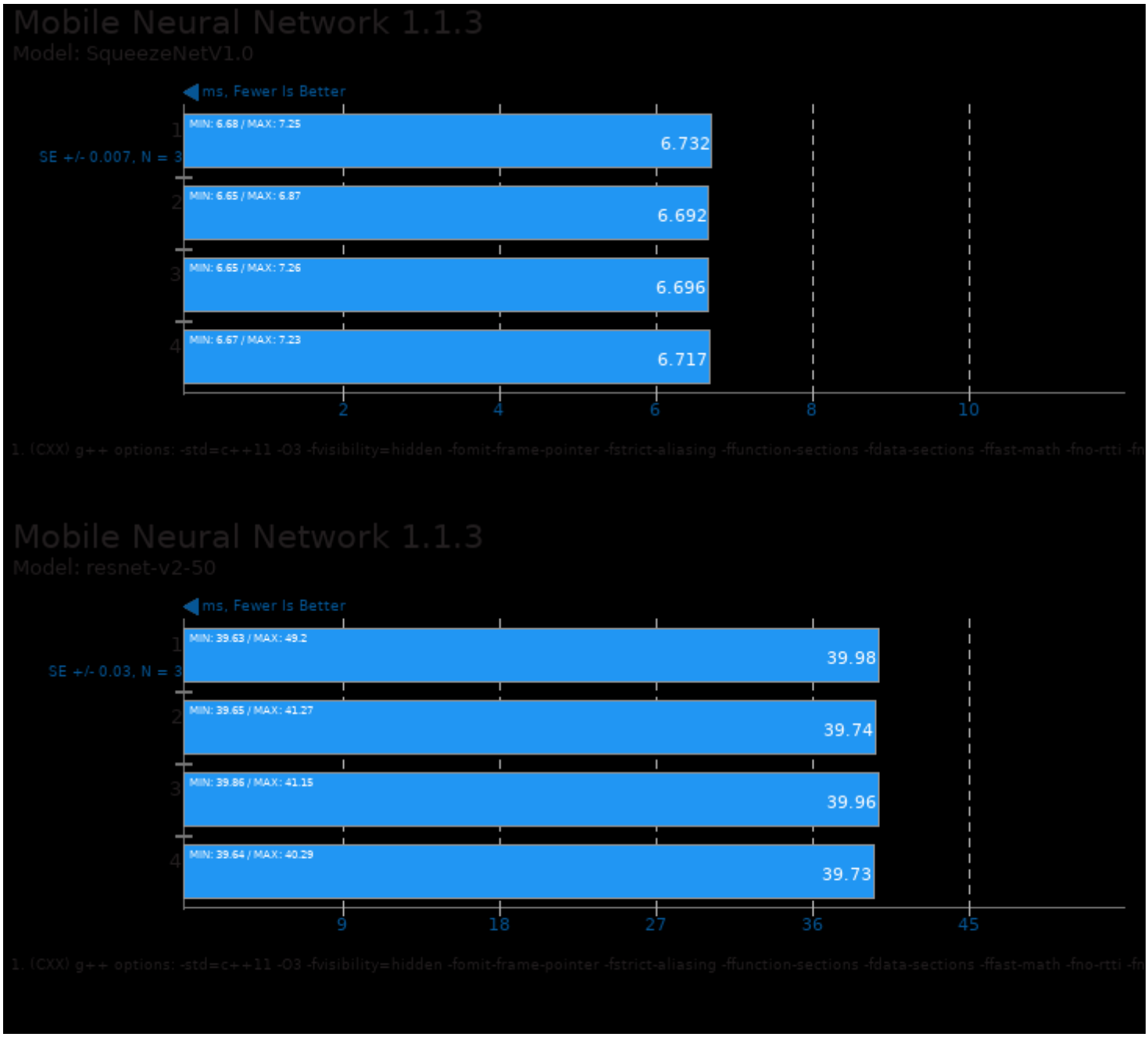
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid

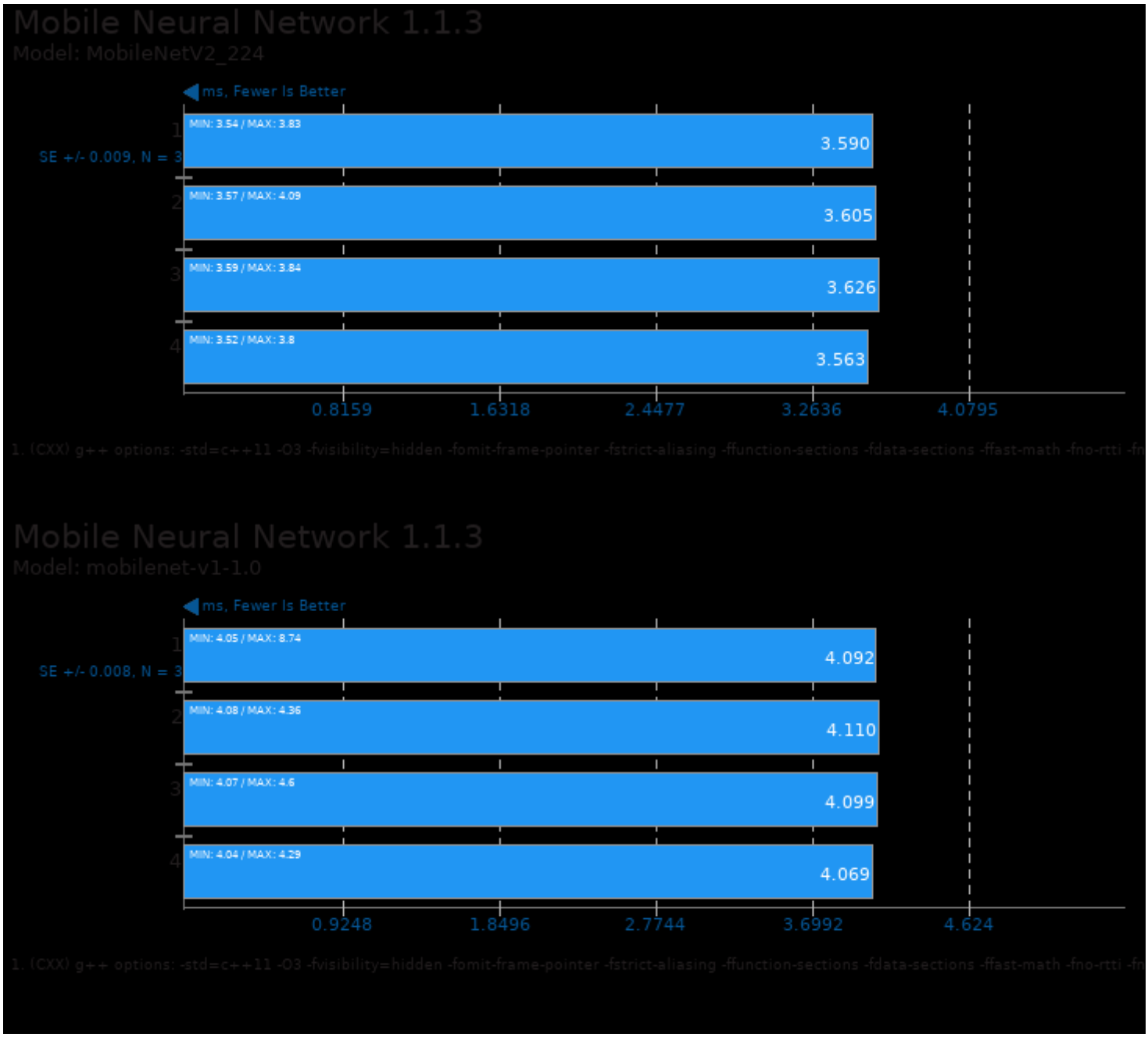
LuaRadio 0.9.1

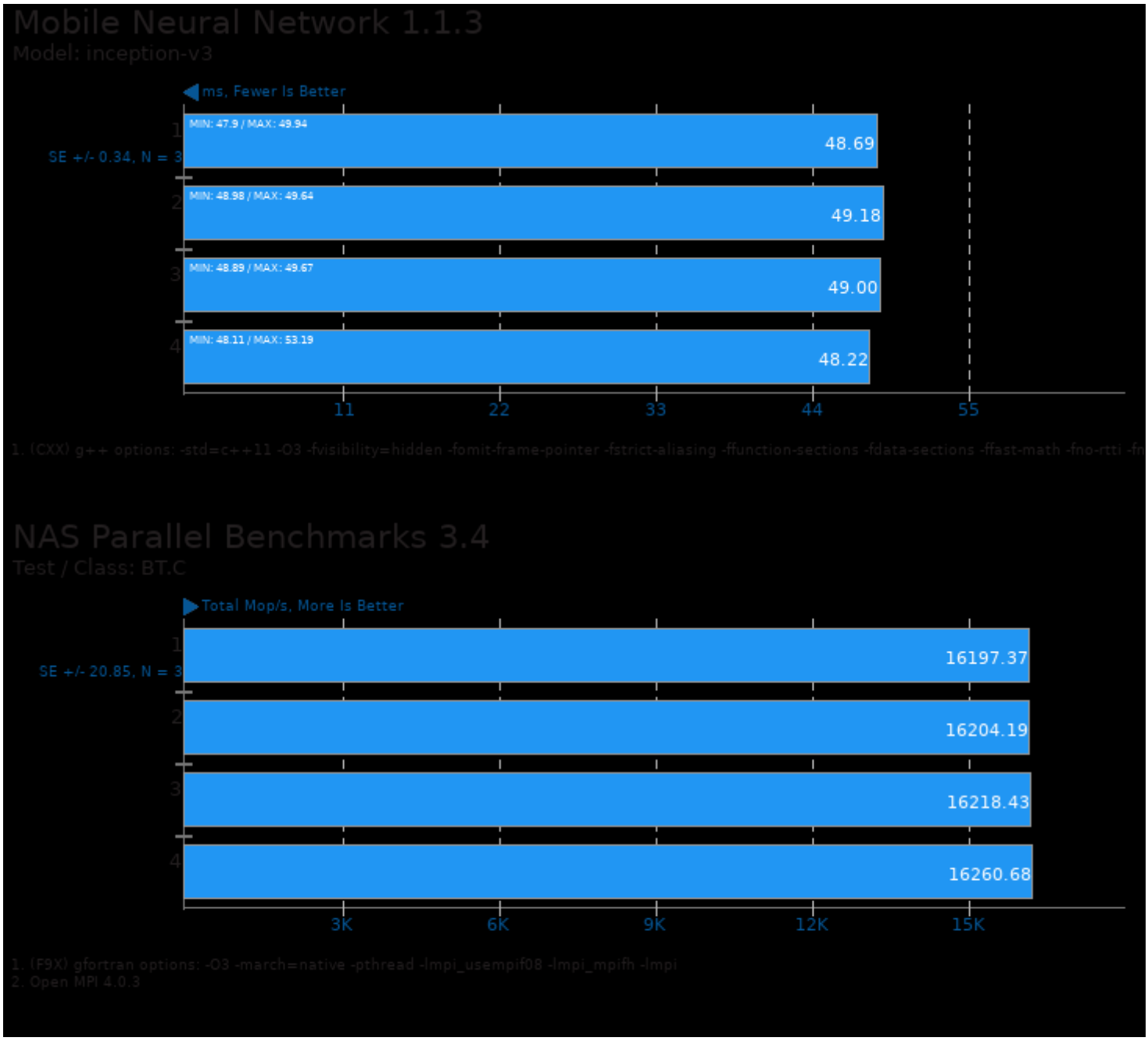
Test: Five Back to Back FIR Filters

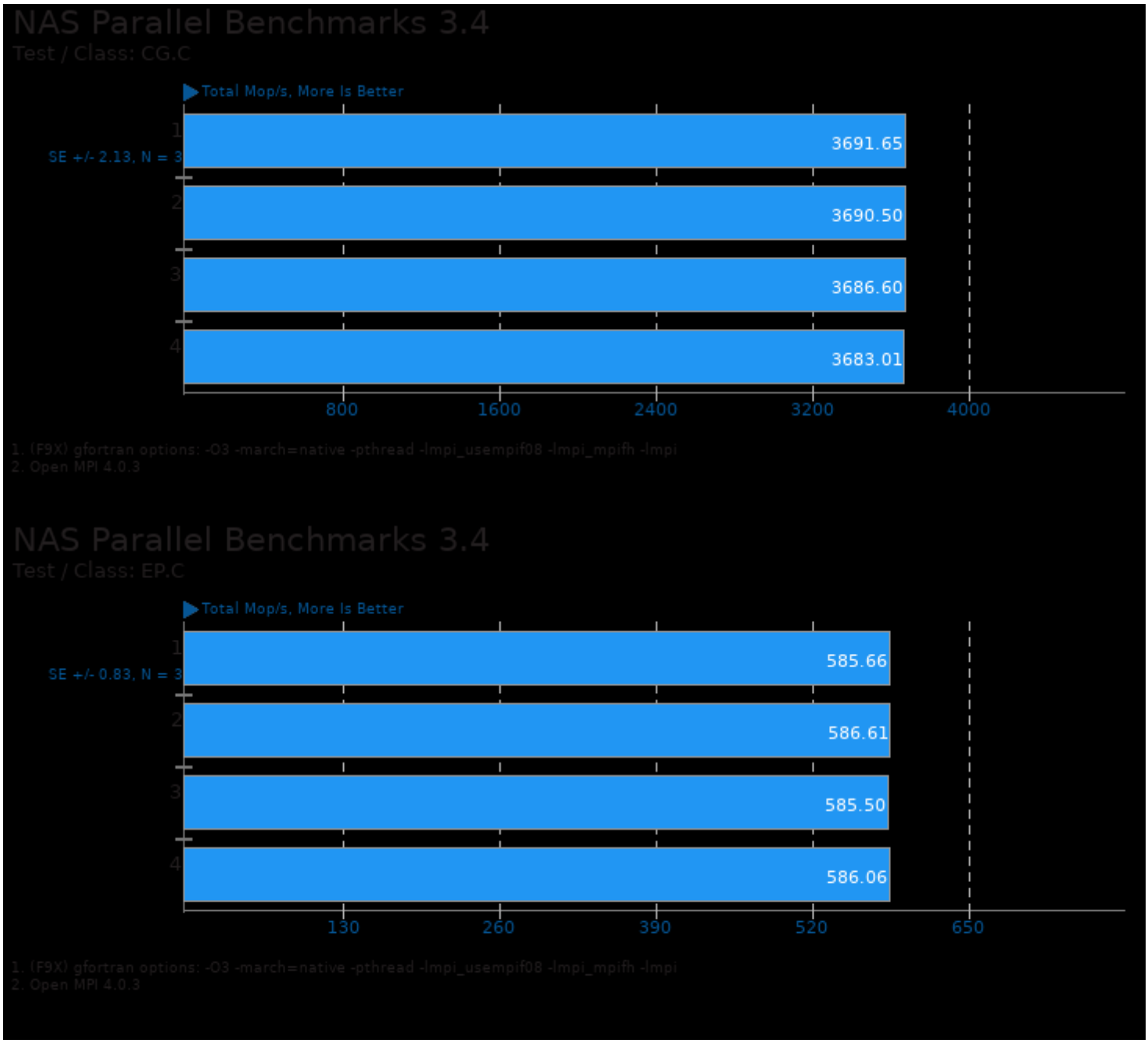


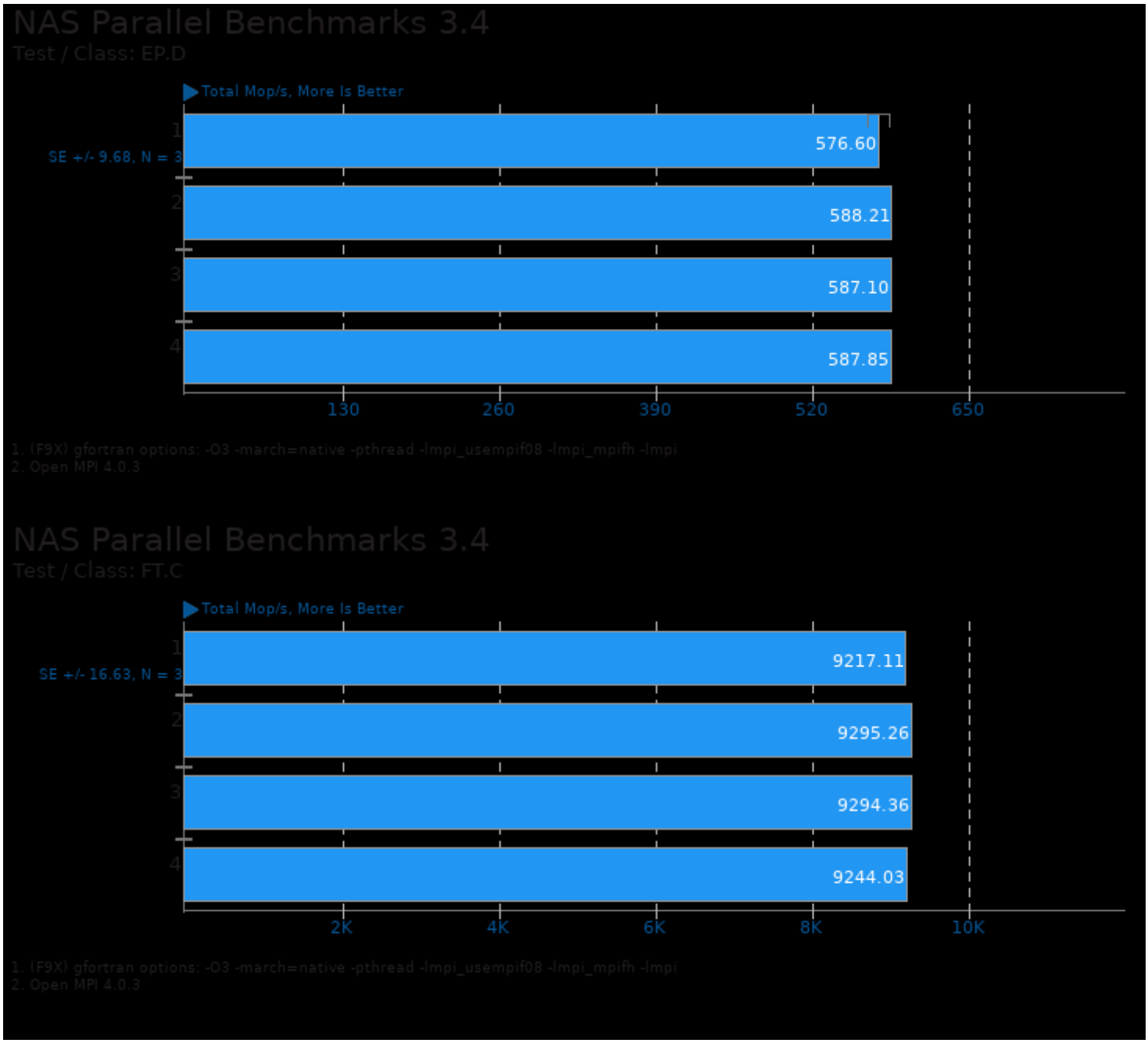

LuaRadio 0.9.1
Test: FM Deemphasis Filter
MiB/s, More Is Better
SE +/- 0.23, N = 3
1
405.6
2
405.6
3
406.4
4
402.8
90
180
270
360
450
LuaRadio 0.9.1
Test: Hilbert Transform
MiB/s, More Is Better
SE +/- 0.07, N = 3
1
72.9
2
72.8
3
72.9
4
73.1
16
32
48
64
80
LuaRadio 0.9.1
Test: Complex Phase
MiB/s, More Is Better
SE +/- 3.12, N = 3
1
573.4
2
565.8
3
576.2
4
578.1
120
240
360
480
600

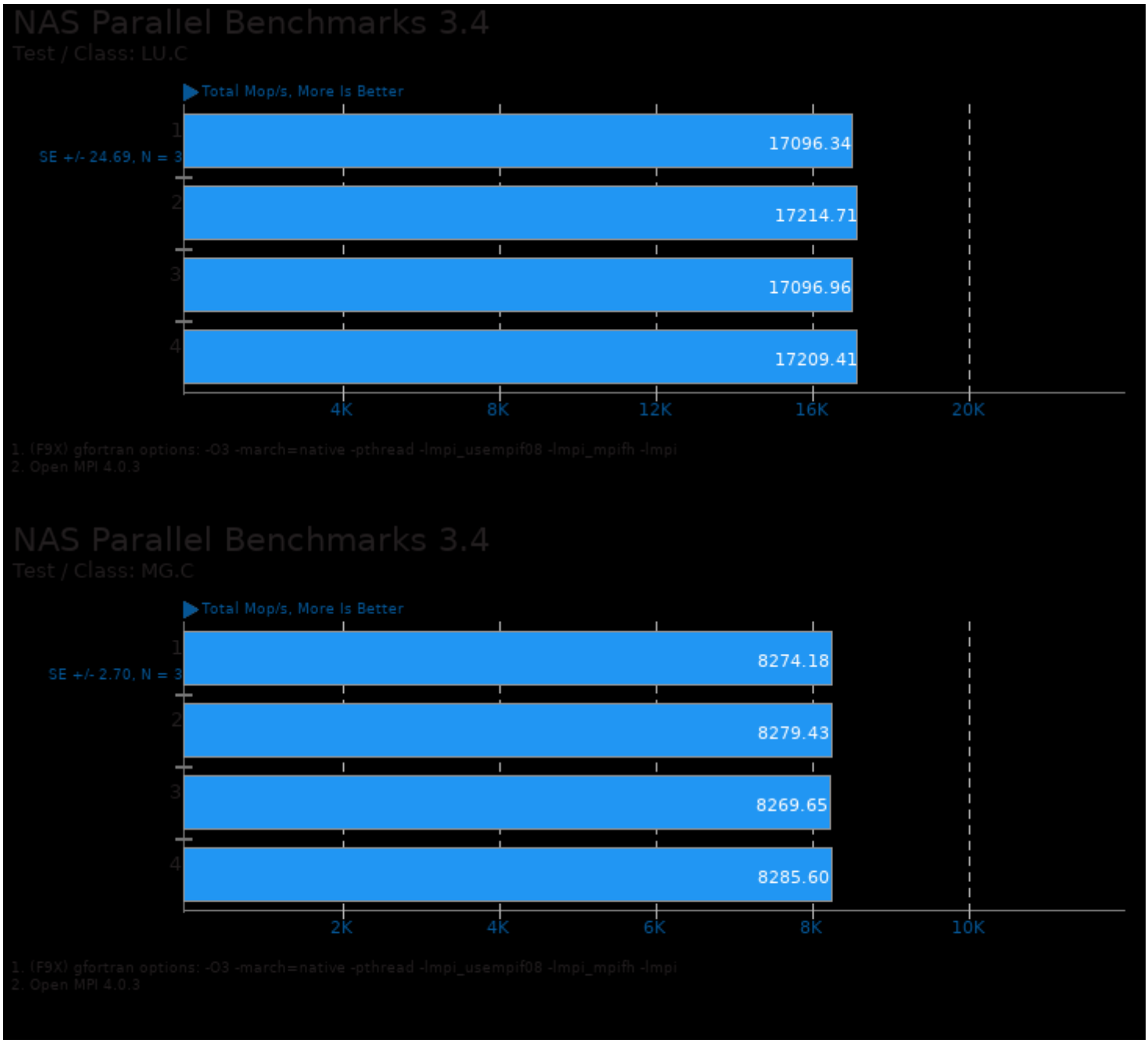

Mobile Neural Network 1.1.3
Model: SqueezeNetV1.0
ms, Fewer Is Better
SE +/- 0.007, N = 3
1
MIN: 6.68 / MAX: 7.25
6.732
2
MIN: 6.65 / MAX: 6.87
6.692
3
MIN: 6.65 / MAX: 7.26
6.696
4
MIN: 6.67 / MAX: 7.23
6.717
2
4
6
8
10
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
Mobile Neural Network 1.1.3
Model: resnet-v2-50
ms, Fewer Is Better
SE +/- 0.03, N = 3
1
MIN: 39.63 / MAX: 49.2
39.98
2
MIN: 39.65 / MAX: 41.27
39.74
3
MIN: 39.86 / MAX: 41.15
39.96
4
MIN: 39.64 / MAX: 40.29
39.73
9
18
27
36
45
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr

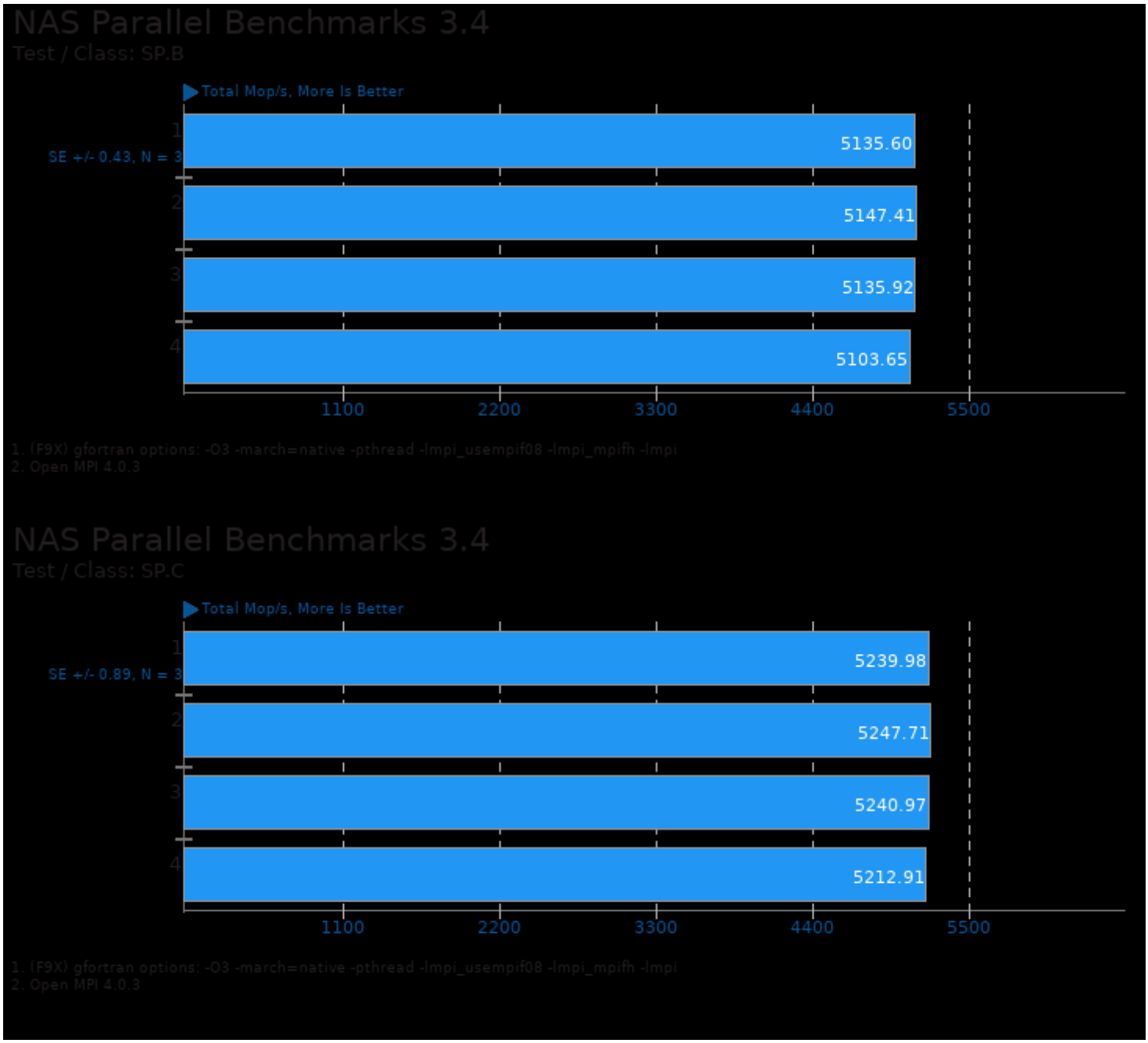

Mobile Neural Network 1.1.3
Model: MobileNetV2_224
ms, Fewer Is Better
SE +/- 0.009, N = 3
1
MIN: 3.54 / MAX: 3.83
3.590
2
MIN: 3.57 / MAX: 4.09
3.605
3
MIN: 3.59 / MAX: 3.84
3.626
4
MIN: 3.52 / MAX: 3.8
3.563
0.8159
1.6318
2.4477
3.2636
4.0795
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
Mobile Neural Network 1.1.3
Model: mobilenet-v1-1.0
ms, Fewer Is Better
SE +/- 0.008, N = 3
1
MIN: 4.05 / MAX: 8.74
4.092
2
MIN: 4.08 / MAX: 4.36
4.110
3
MIN: 4.07 / MAX: 4.6
4.099
4
MIN: 4.04 / MAX: 4.29
4.069
0.9248
1.8496
2.7744
3.6992
4.624
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr

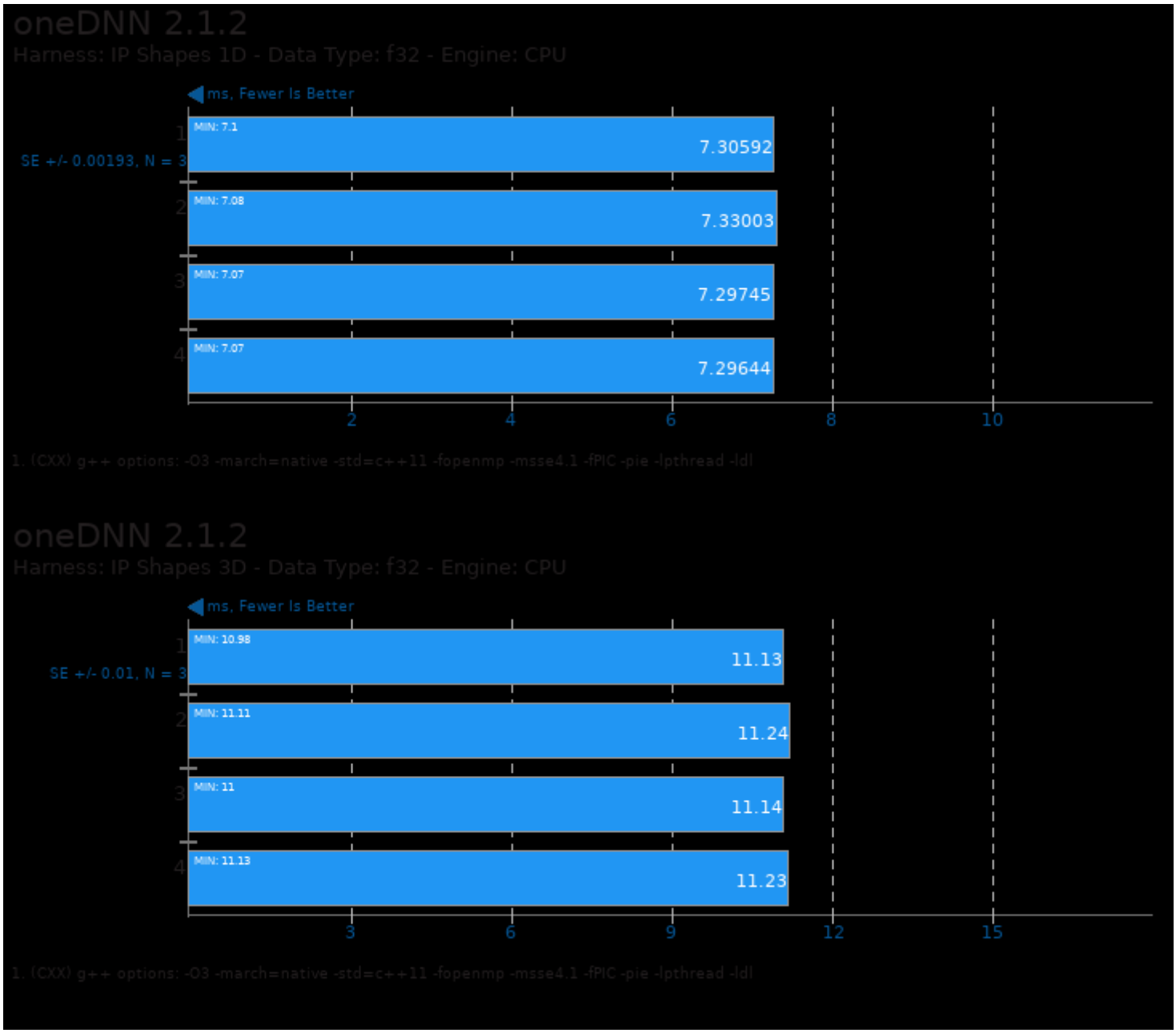

Mobile Neural Network 1.1.3
Model: inception-v3
ms, Fewer Is Better
SE +/- 0.34, N = 3
1
MIN: 47.9 / MAX: 49.94
48.69
2
MIN: 48.98 / MAX: 49.64
49.18
3
MIN: 48.89 / MAX: 49.67
49.00
4
MIN: 48.11 / MAX: 53.19
48.22
11
22
33
44
55
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
NAS Parallel Benchmarks 3.4
Test / Class: BT.C
Total Mop/s, More Is Better
SE +/- 20.85, N = 3
1
16197.37
2
16204.19
3
16218.43
4
16260.68
3K
6K
9K
12K
15K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

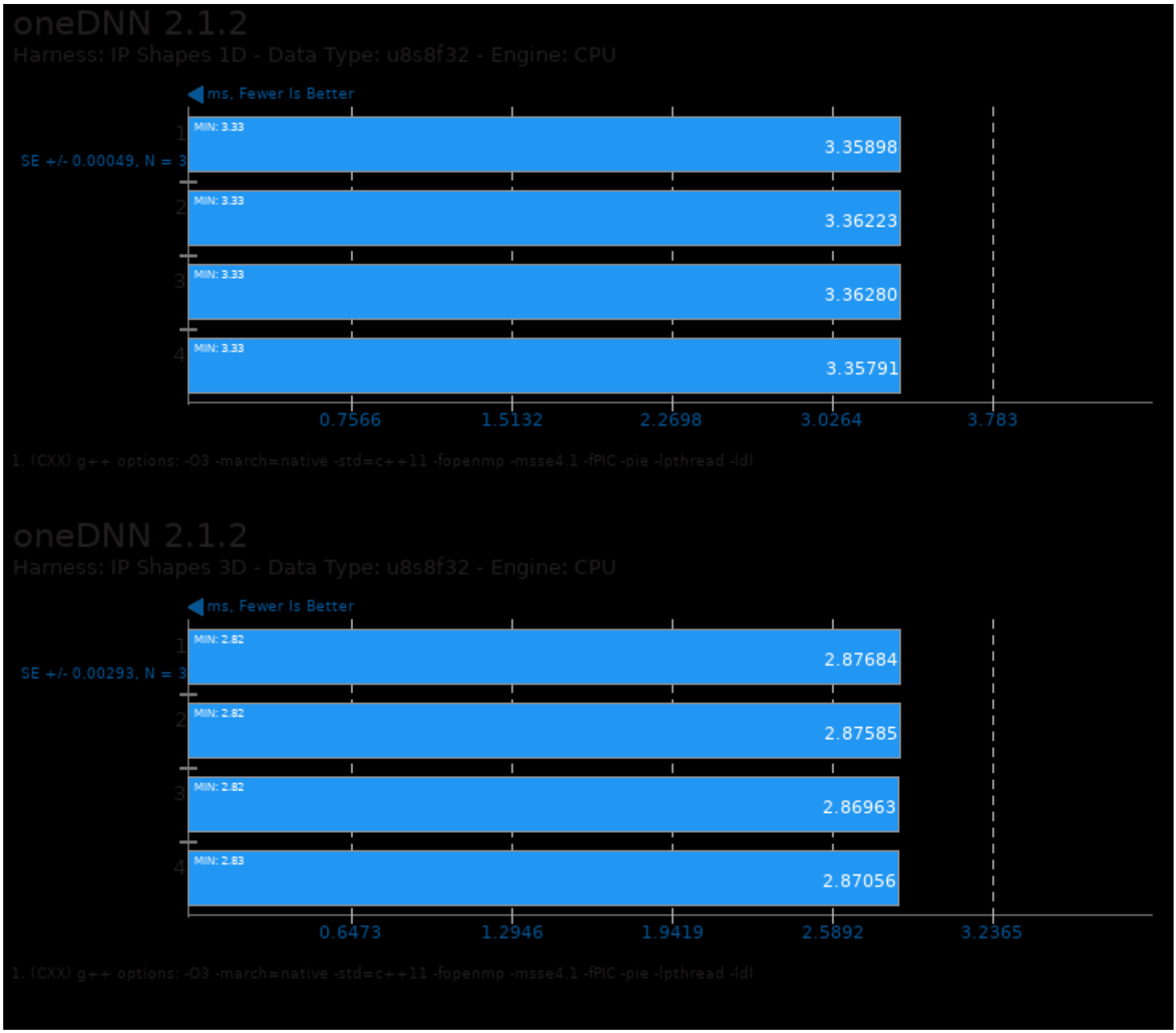

NAS Parallel Benchmarks 3.4
Test / Class: CG.C
Total Mop/s, More Is Better
SE +/- 2.13, N = 3
1
2
3
4
3691.65
3690.50
3686.60
3683.01
800
1600
2400
3200
4000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: EP.C
Total Mop/s, More Is Better
SE +/- 0.83, N = 3
1
2
3
4
585.66
586.61
585.50
586.06
130
260
390
520
650
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

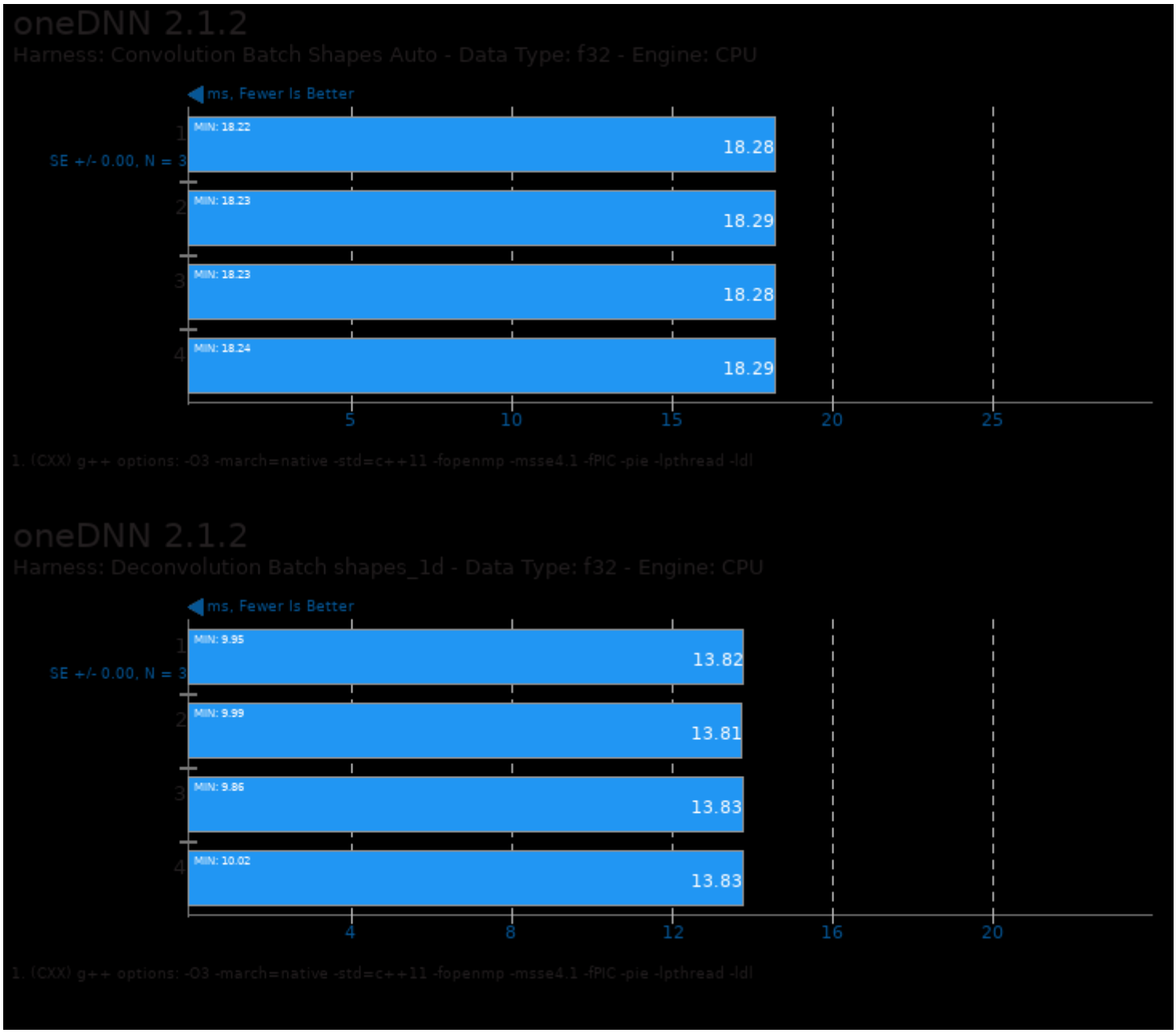

NAS Parallel Benchmarks 3.4
Test / Class: EP.D
Total Mop/s, More Is Better
SE +/- 9.68, N = 3
1
2
3
4
576.60
588.21
587.10
587.85
130
260
390
520
650
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: FT.C
Total Mop/s, More Is Better
SE +/- 16.63, N = 3
1
2
3
4
9217.11
9295.26
9294.36
9244.03
2K
4K
6K
8K
10K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

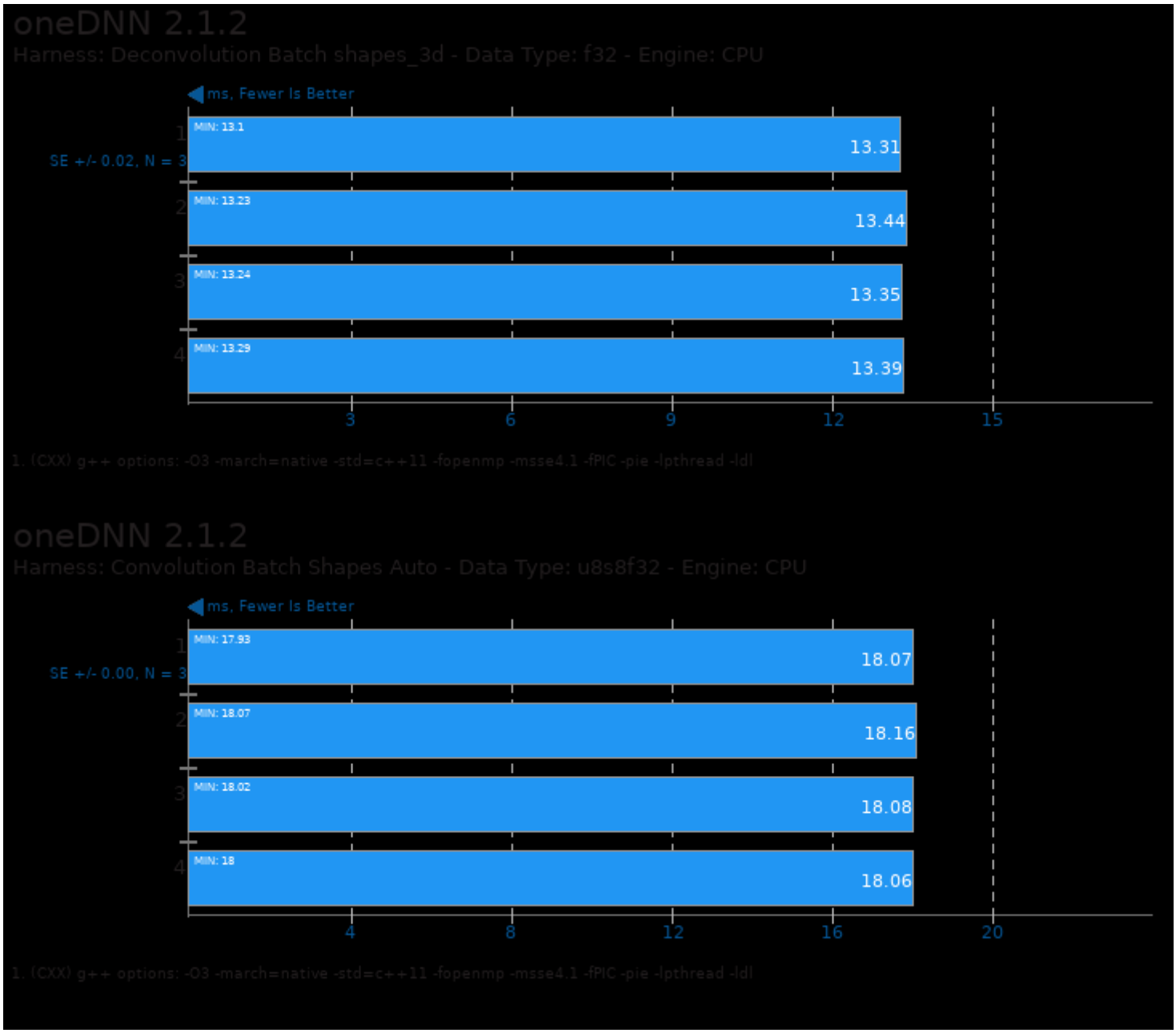

NAS Parallel Benchmarks 3.4
Test / Class: LU.C
Total Mop/s, More Is Better
SE +/- 24.69, N = 3
1
17096.34
2
17214.71
3
17096.96
4
17209.41
4K
8K
12K
16K
20K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: MG.C
Total Mop/s, More Is Better
SE +/- 2.70, N = 3
1
8274.18
2
8279.43
3
8269.65
4
8285.60
2K
4K
6K
8K
10K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

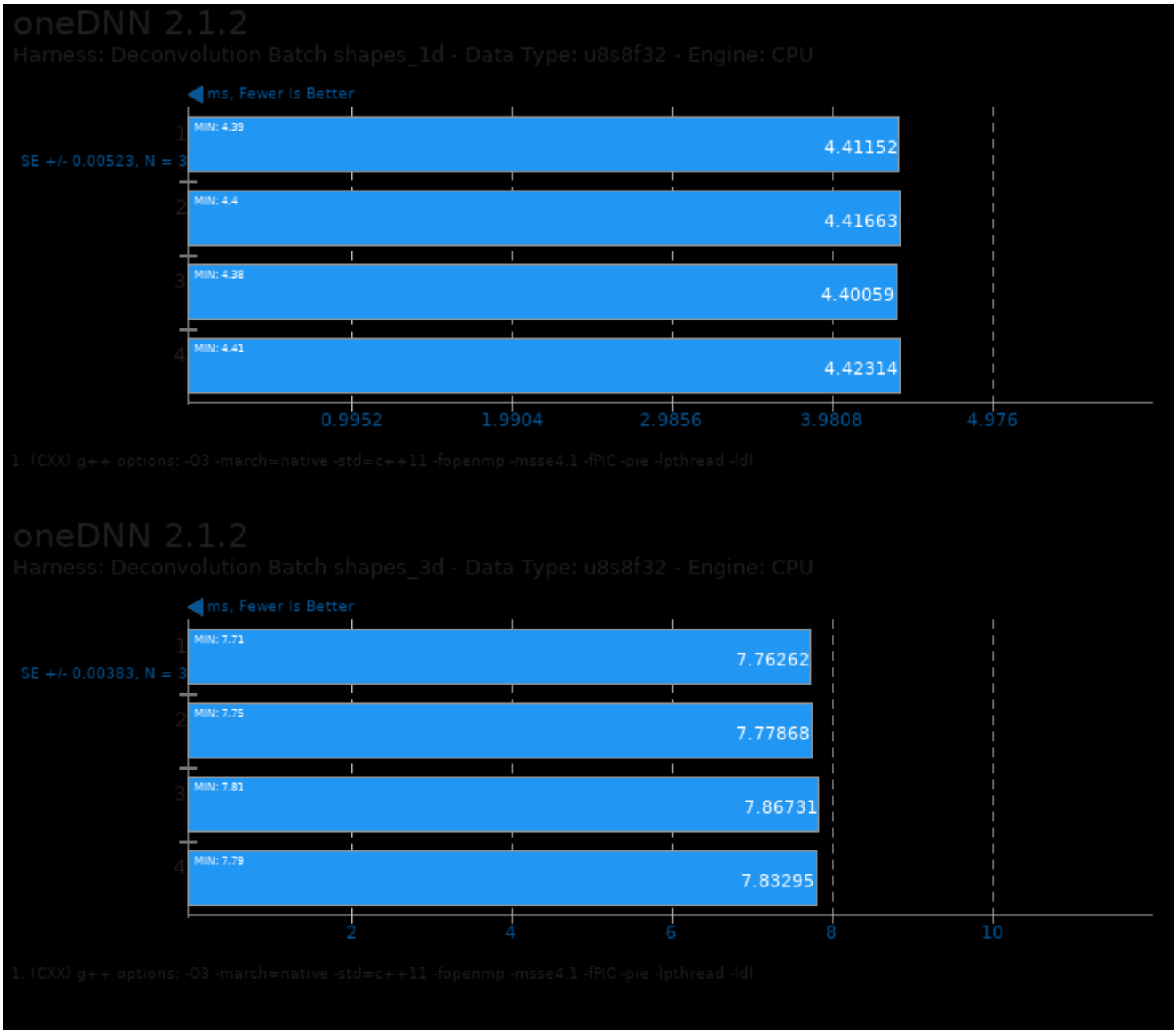

NAS Parallel Benchmarks 3.4
Test / Class: SP.B
Total Mop/s, More Is Better
SE +/- 0.43, N = 3
1
2
3
4
5135.60
5147.41
5135.92
5103.65
1100
2200
3300
4400
5500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: SP.C
Total Mop/s, More Is Better
SE +/- 0.89, N = 3
1
2
3
4
5239.98
5247.71
5240.97
5212.91
1100
2200
3300
4400
5500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

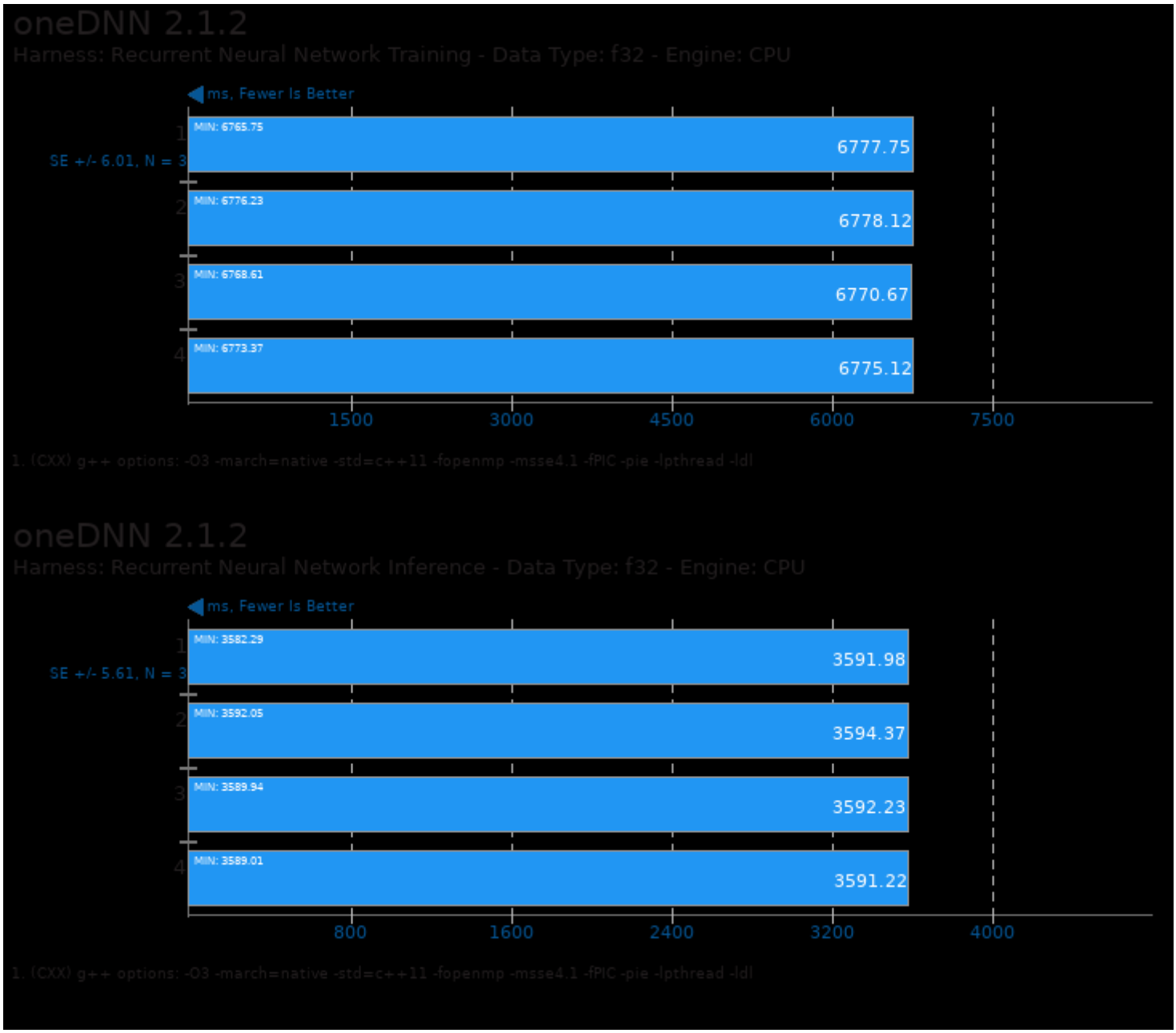

oneDNN 2.1.2
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00193, N = 3
MIN: 7.1
7.30592
MIN: 7.08
7.33003
MIN: 7.07
7.29745
MIN: 7.07
7.29644
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.01, N = 3
MIN: 10.98
11.13
MIN: 11.11
11.24
MIN: 11
11.14
MIN: 11.13
11.23
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

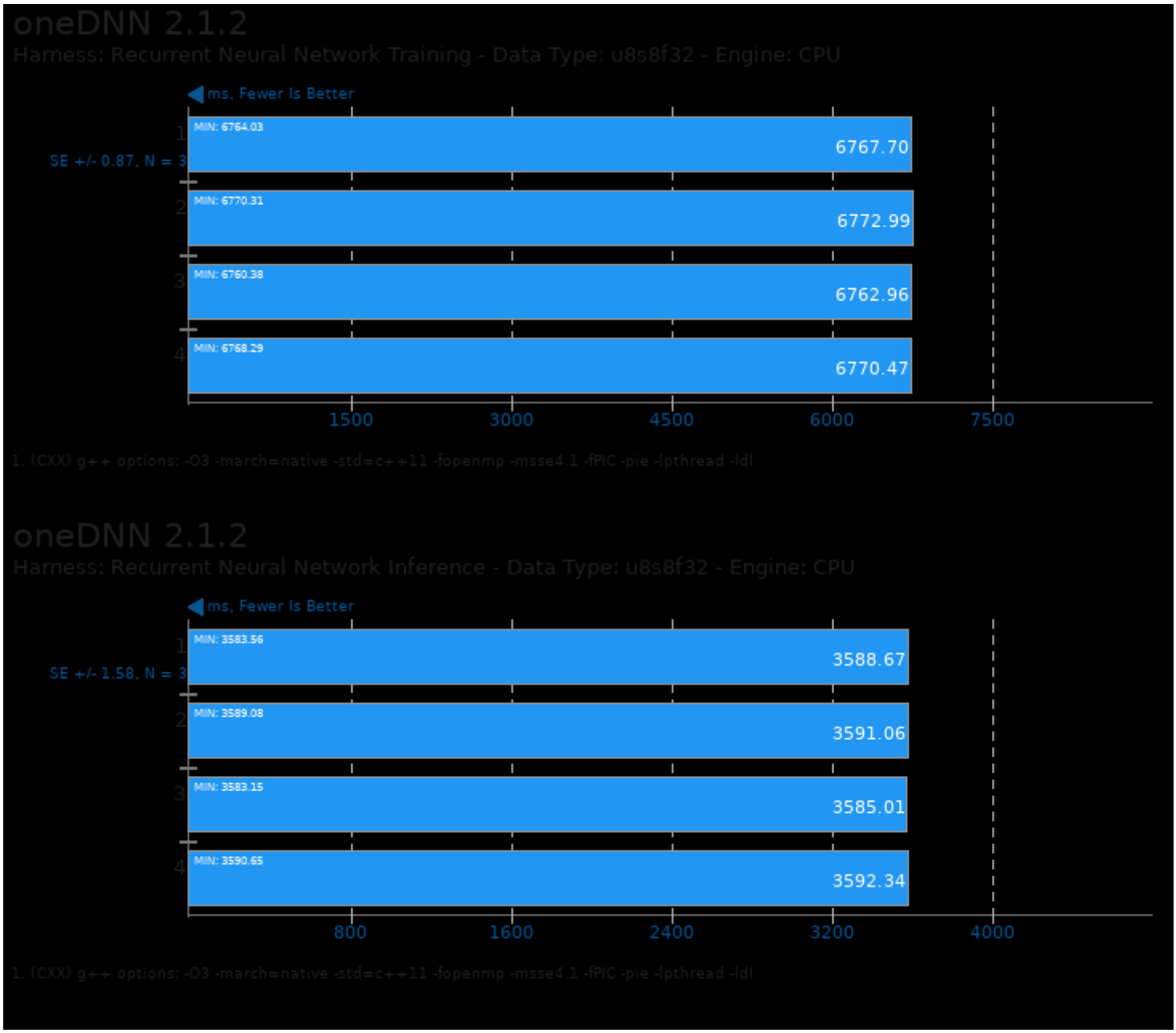

oneDNN 2.1.2
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00049, N = 3
1
MIN: 3.33
3.35898
2
MIN: 3.33
3.36223
3
MIN: 3.33
3.36280
4
MIN: 3.33
3.35791
0.7566
1.5132
2.2698
3.0264
3.783
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00293, N = 3
1
MIN: 2.82
2.87684
2
MIN: 2.82
2.87585
3
MIN: 2.82
2.86963
4
MIN: 2.83
2.87056
0.6473
1.2946
1.9419
2.5892
3.2365
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

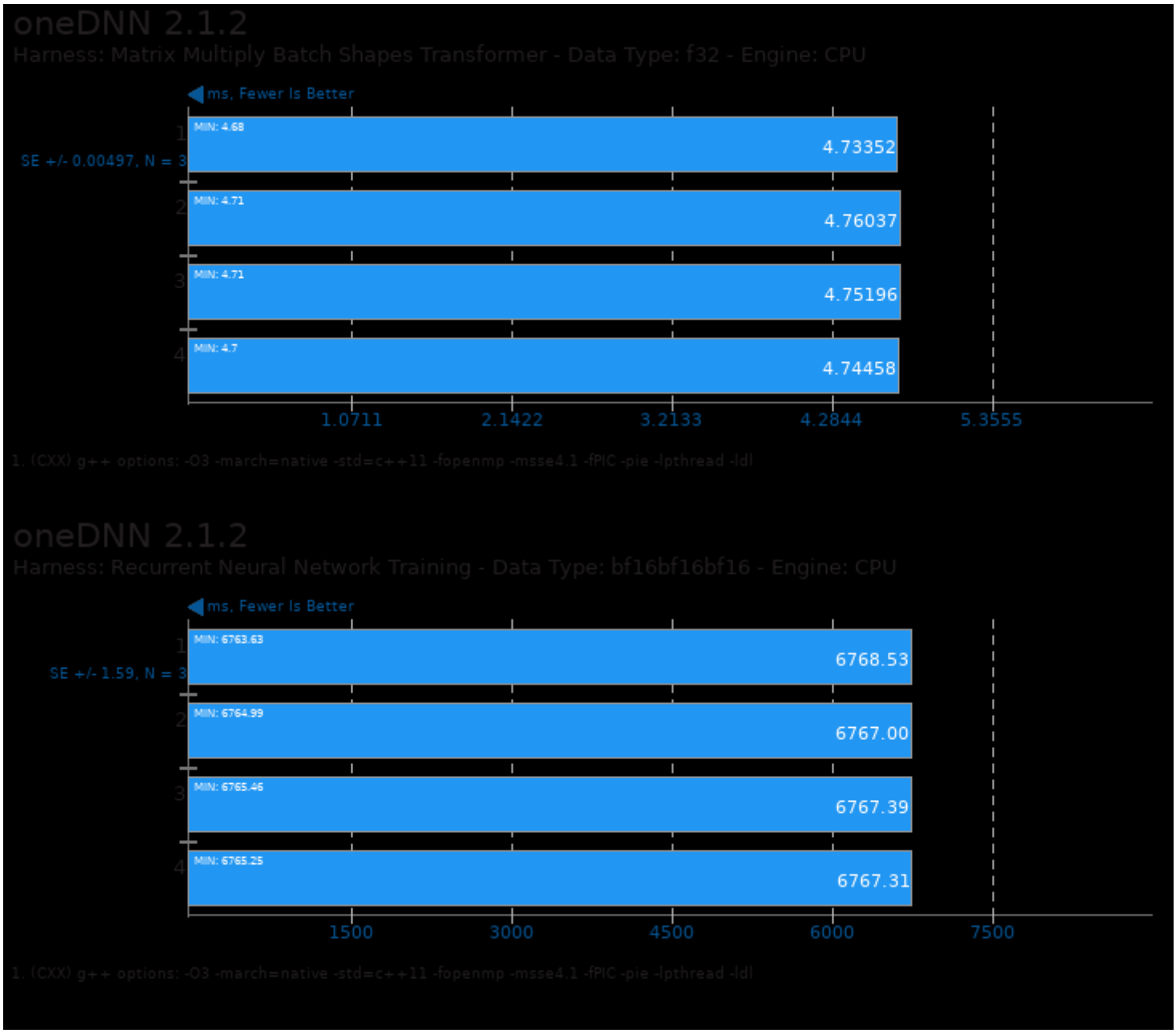

oneDNN 2.1.2
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00, N = 3
1
MIN: 18.22
18.28
2
MIN: 18.23
18.29
3
MIN: 18.23
18.28
4
MIN: 18.24
18.29
5
10
15
20
25
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00, N = 3
1
MIN: 9.95
13.82
2
MIN: 9.99
13.81
3
MIN: 9.86
13.83
4
MIN: 10.02
13.83
4
8
12
16
20
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

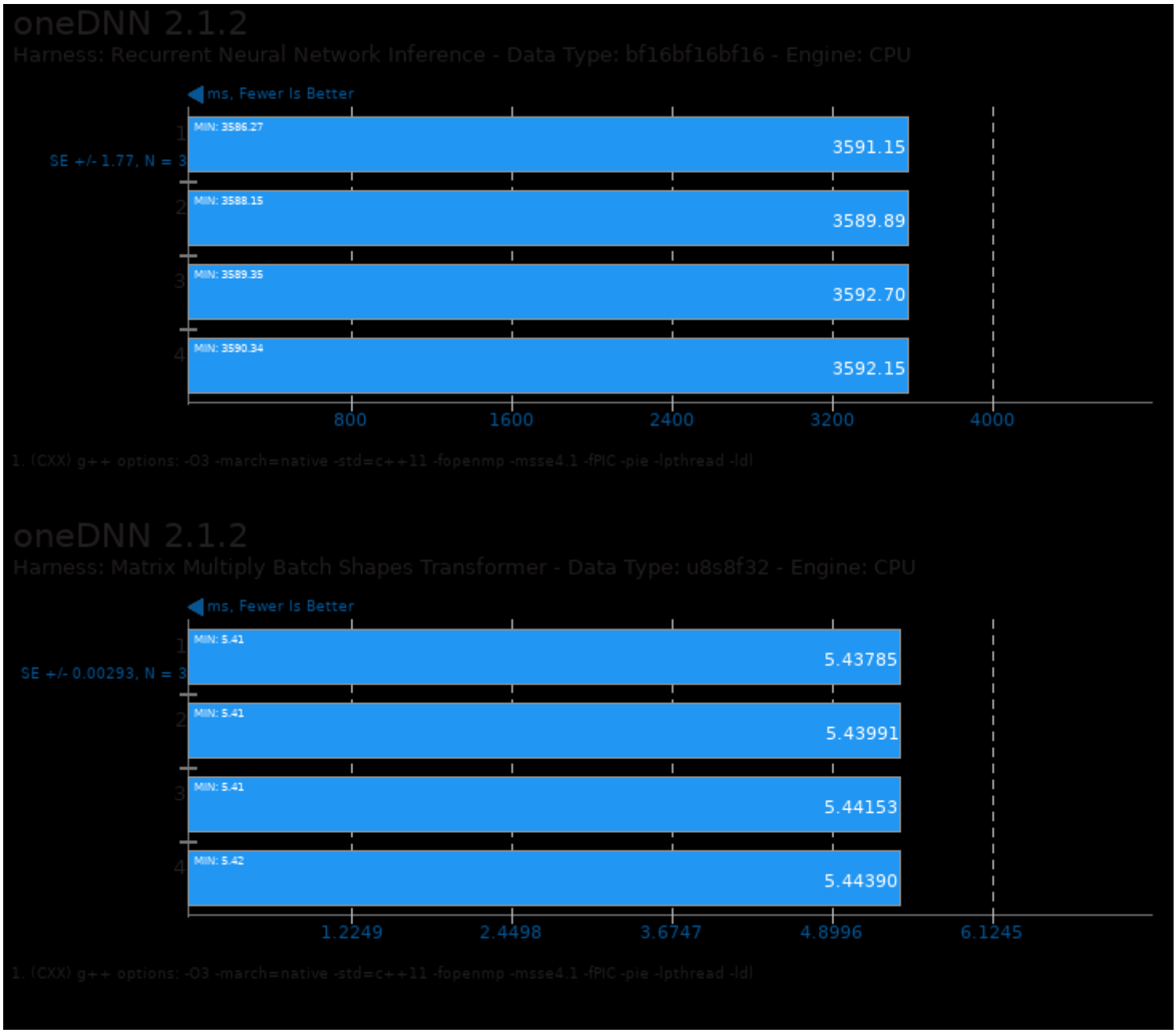

oneDNN 2.1.2
Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.02, N = 3
MIN: 13.1
13.31
MIN: 13.23
13.44
MIN: 13.24
13.35
MIN: 13.29
13.39
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00, N = 3
MIN: 17.93
18.07
MIN: 18.07
18.16
MIN: 18.02
18.08
MIN: 18
18.06
4
8
12
16
20
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

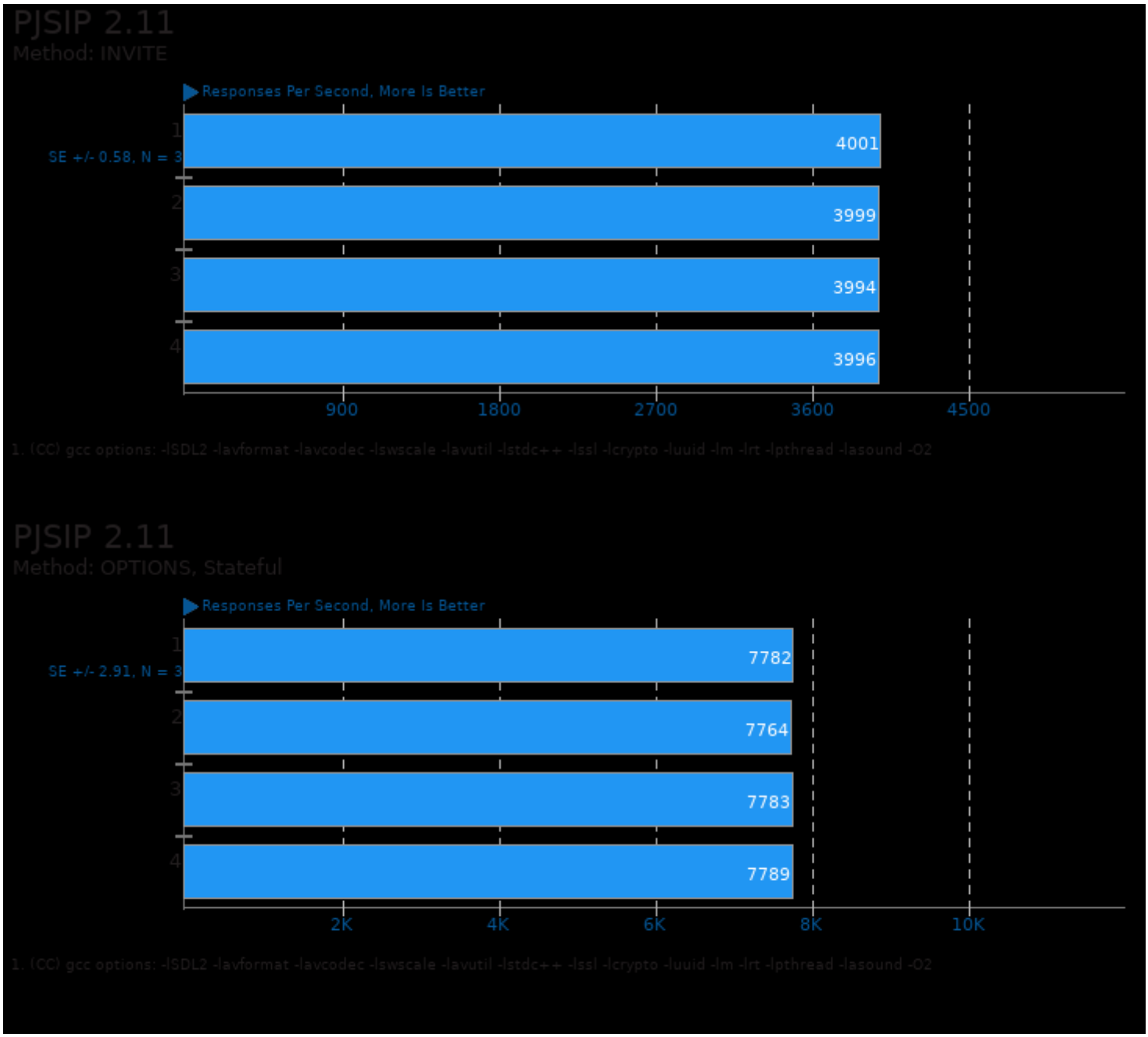

oneDNN 2.1.2
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00523, N = 3
MIN: 4.39
4.41152
MIN: 4.4
4.41663
MIN: 4.38
4.40059
MIN: 4.41
4.42314
0.9952
1.9904
2.9856
3.9808
4.976
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00383, N = 3
MIN: 7.71
7.76262
MIN: 7.75
7.77868
MIN: 7.81
7.86731
MIN: 7.79
7.83295
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

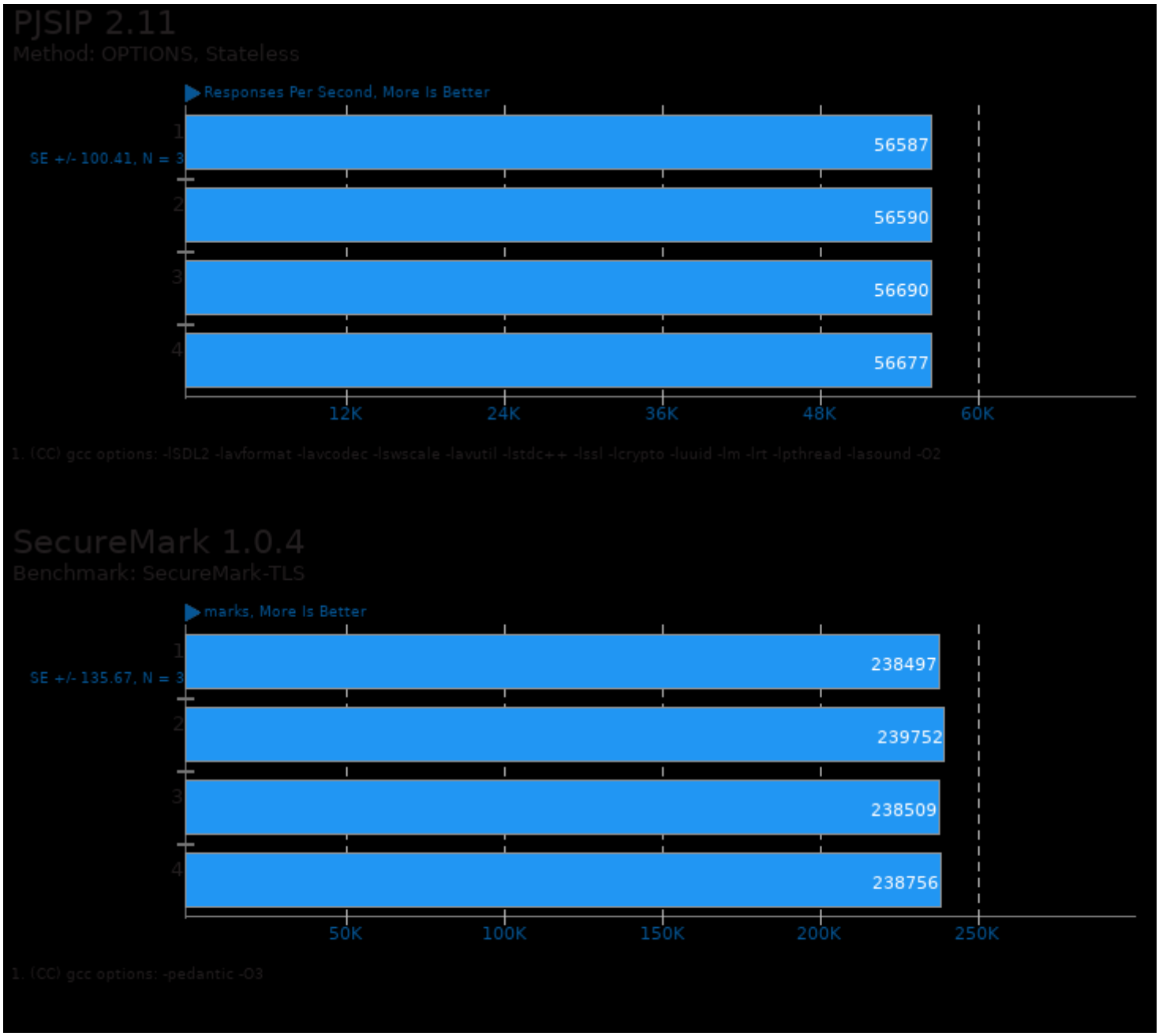

oneDNN 2.1.2
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 6.01, N = 3
1
MIN: 6765.75
6777.75
2
MIN: 6776.23
6778.12
3
MIN: 6768.61
6770.67
4
MIN: 6773.37
6775.12
1500
3000
4500
6000
7500
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 5.61, N = 3
1
MIN: 3582.29
3591.98
2
MIN: 3592.05
3594.37
3
MIN: 3589.94
3592.23
4
MIN: 3589.01
3591.22
800
1600
2400
3200
4000
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

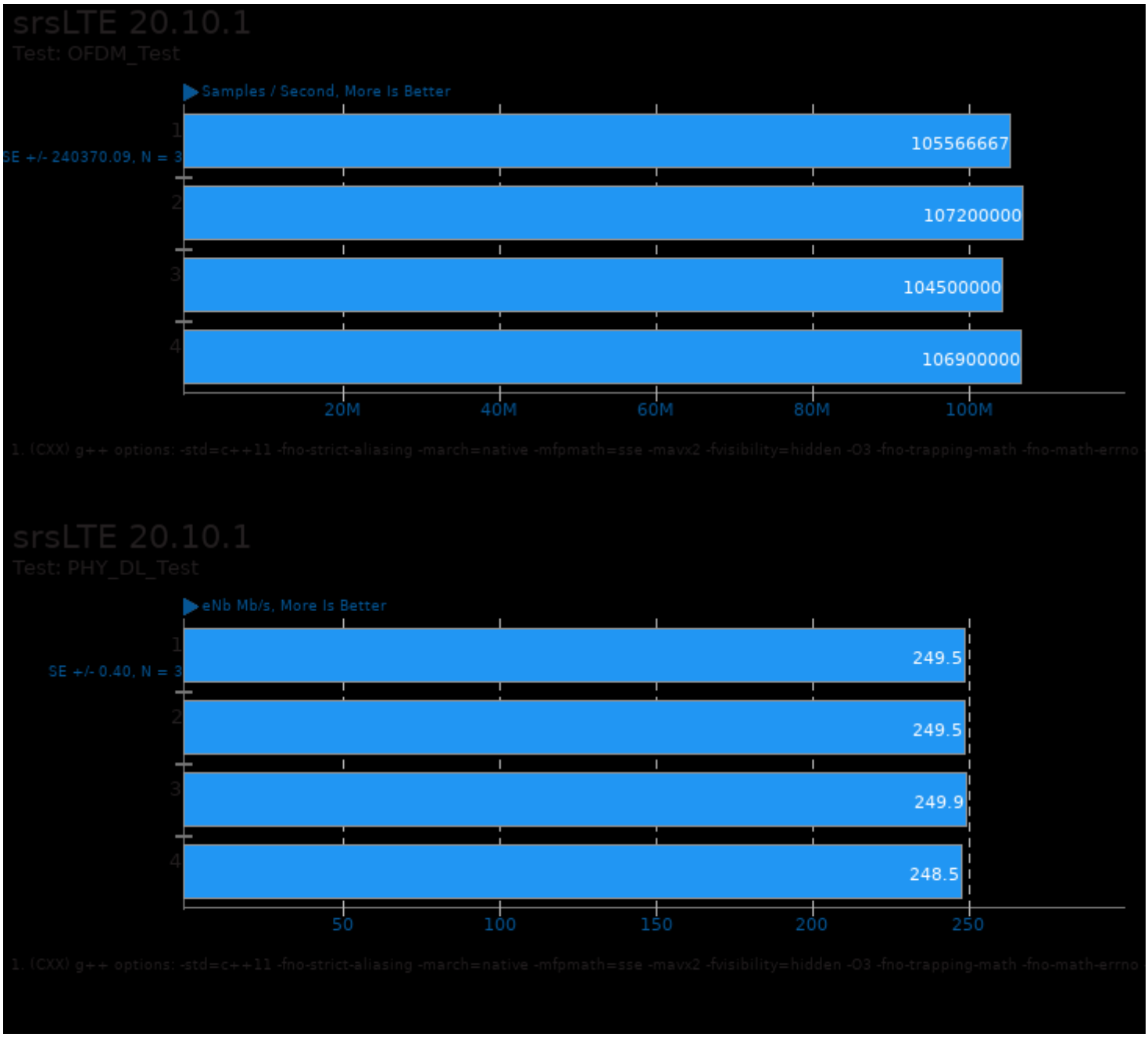

oneDNN 2.1.2
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.87, N = 3
1
MIN: 6764.03
6767.70
2
MIN: 6770.31
6772.99
3
MIN: 6760.38
6762.96
4
MIN: 6768.29
6770.47
1500
3000
4500
6000
7500
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 1.58, N = 3
1
MIN: 3583.56
3588.67
2
MIN: 3589.08
3591.06
3
MIN: 3583.15
3585.01
4
MIN: 3590.65
3592.34
800
1600
2400
3200
4000
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

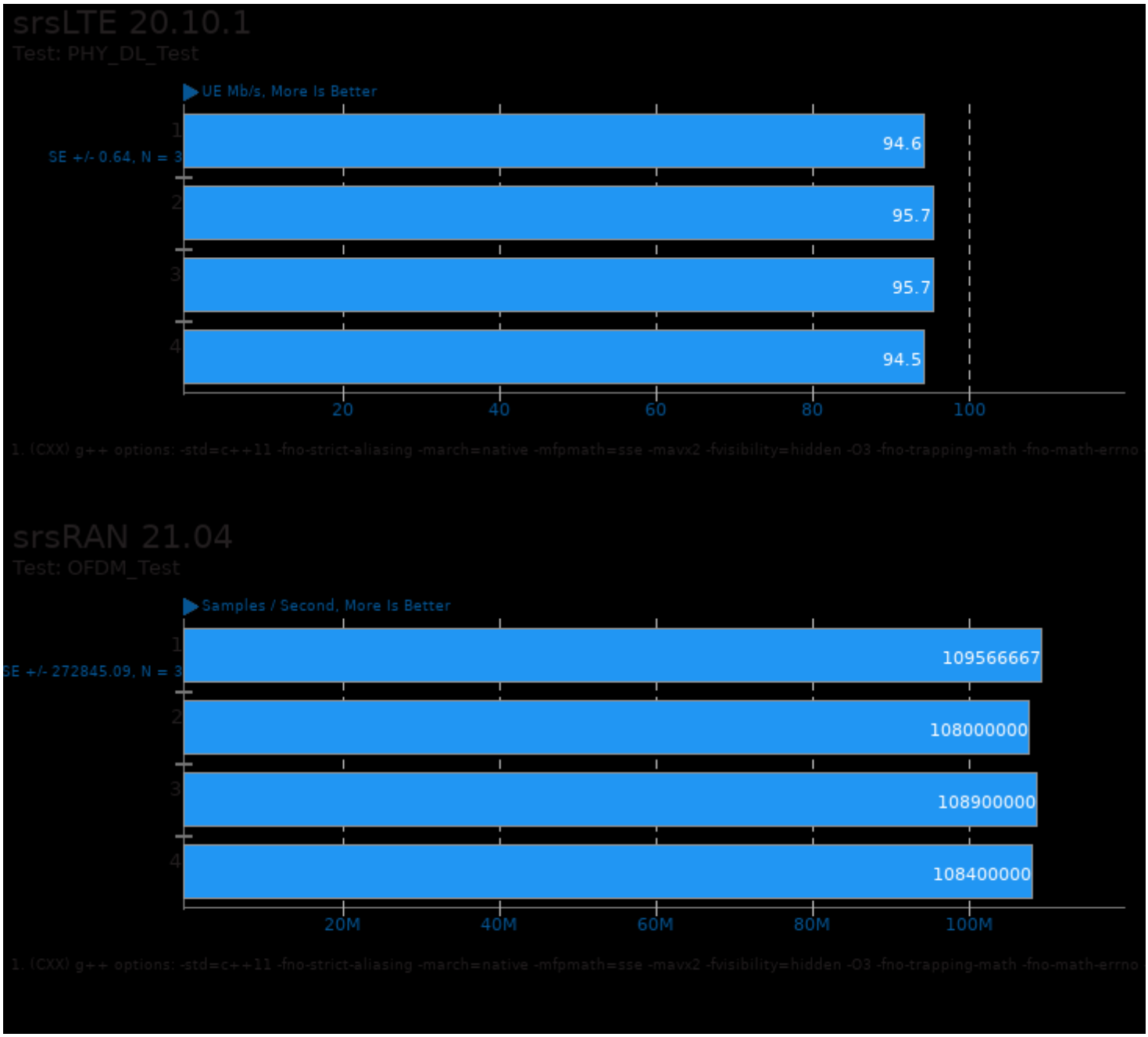

oneDNN 2.1.2
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00497, N = 3
MIN: 4.68
4.73352
MIN: 4.71
4.76037
MIN: 4.71
4.75196
MIN: 4.7
4.74458
1.0711
2.1422
3.2133
4.2844
5.3555
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
SE +/- 1.59, N = 3
MIN: 6763.63
6768.53
MIN: 6764.99
6767.00
MIN: 6765.46
6767.39
MIN: 6765.25
6767.31
1500
3000
4500
6000
7500
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

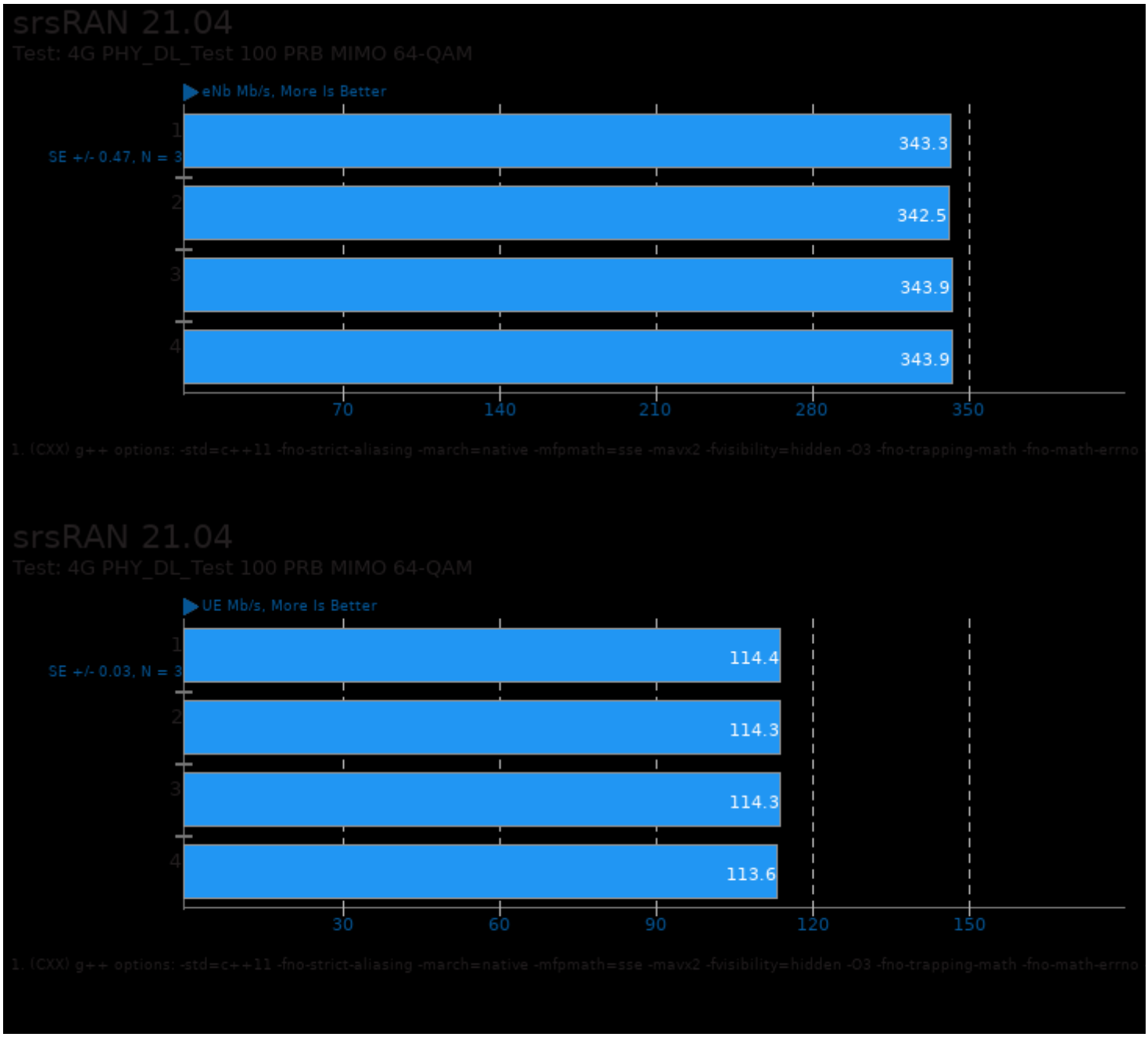

oneDNN 2.1.2
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
SE +/- 1.77, N = 3
MIN: 3586.27
3591.15
MIN: 3588.15
3589.89
MIN: 3589.35
3592.70
MIN: 3590.34
3592.15
800
1600
2400
3200
4000
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
SE +/- 0.00293, N = 3
MIN: 5.41
5.43785
MIN: 5.41
5.43991
MIN: 5.41
5.44153
MIN: 5.42
5.44390
1.2249
2.4498
3.6747
4.8996
6.1245
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

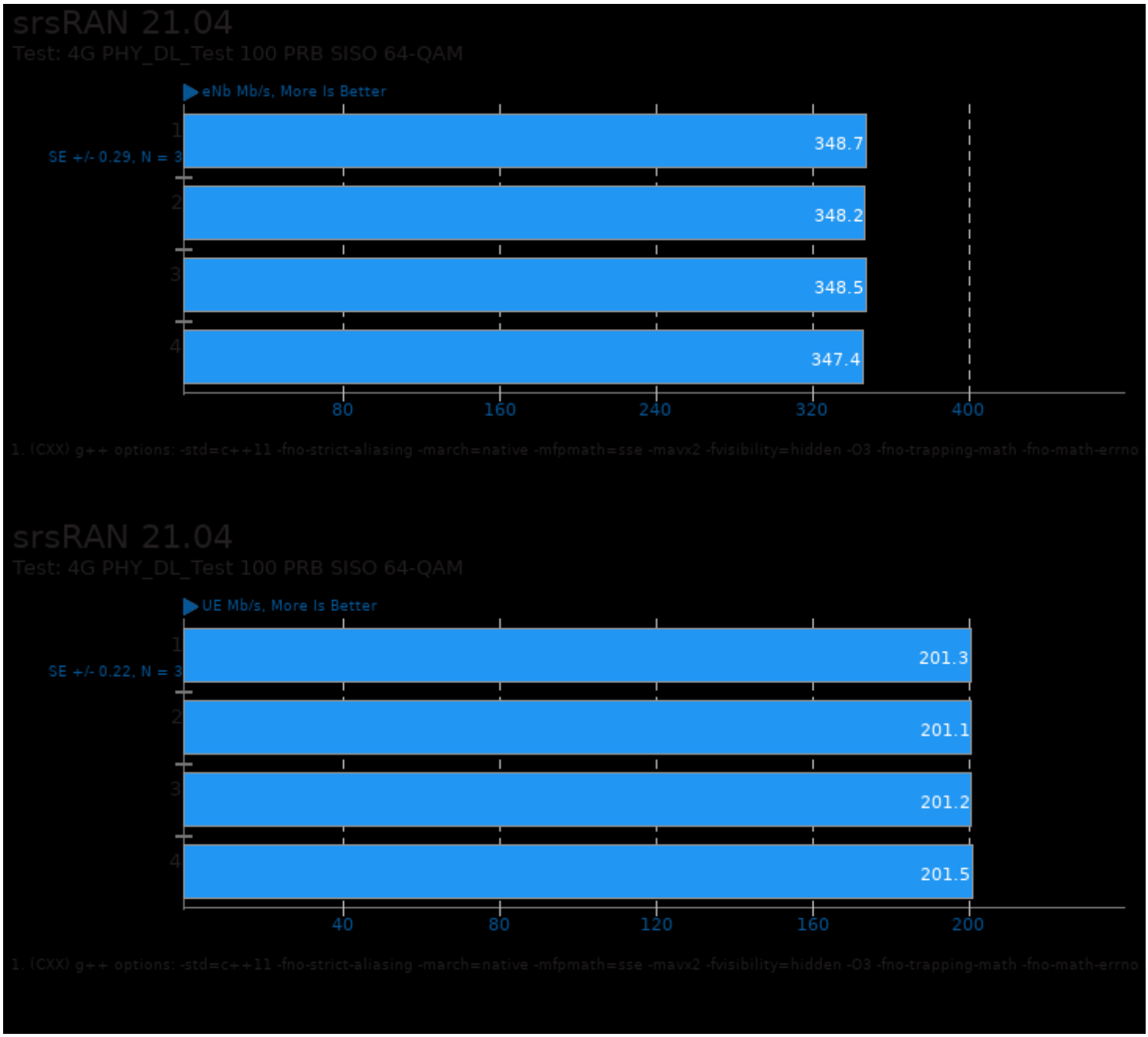

PJSIP 2.11
Method: INVITE
Responses Per Second, More Is Better
SE +/- 0.58, N = 3
1
2
3
4
4001
3999
3994
3996
900
1800
2700
3600
4500
1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2
PJSIP 2.11
Method: OPTIONS, Stateful
Responses Per Second, More Is Better
SE +/- 2.91, N = 3
1
2
3
4
7782
7764
7783
7789
2K
4K
6K
8K
10K
1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

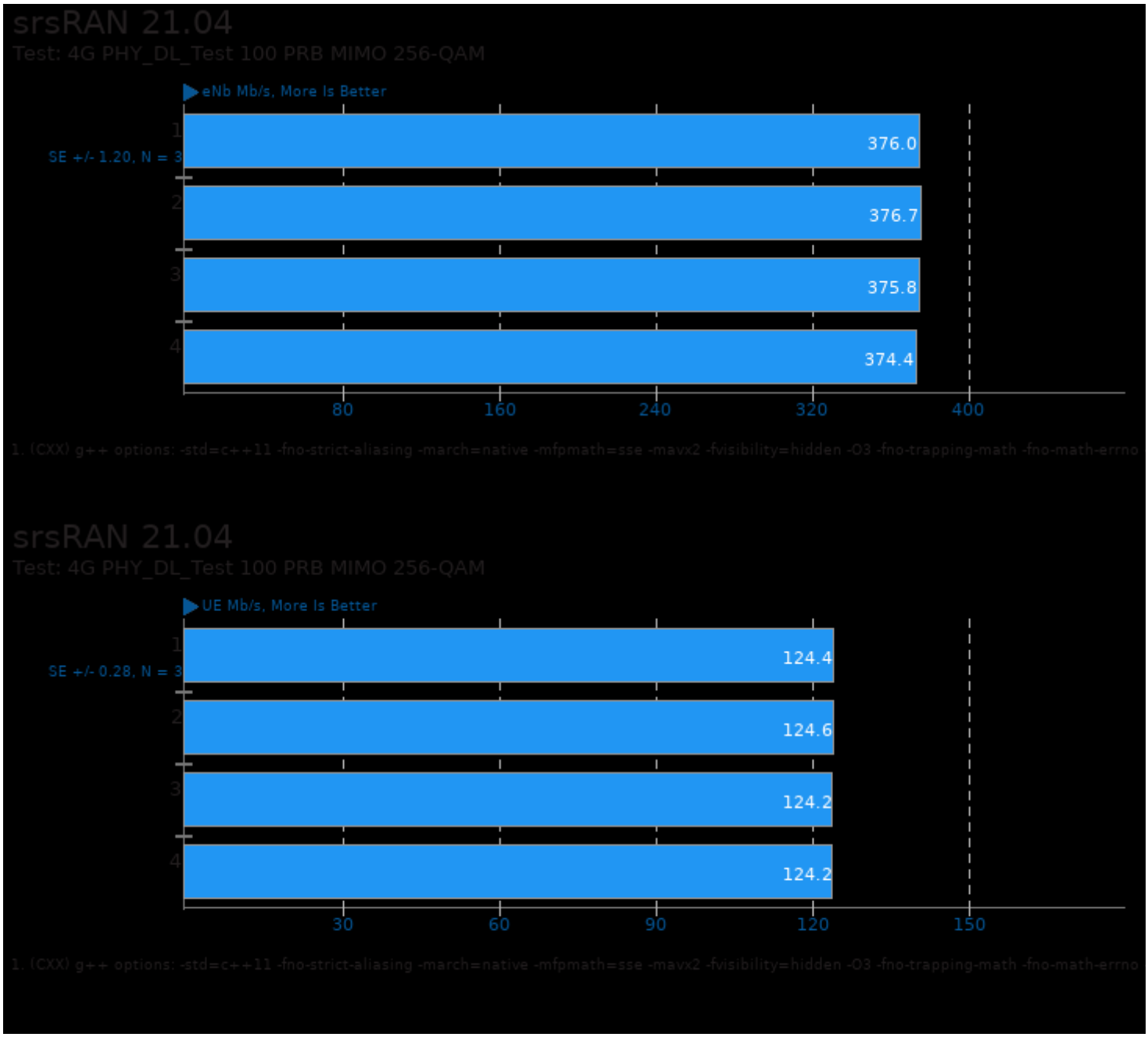

PJSIP 2.11
Method: OPTIONS, Stateless
Responses Per Second, More Is Better
SE +/- 100.41, N = 3
1
56587
2
56590
3
56690
4
56677
12K
24K
36K
48K
60K
1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2
SecureMark 1.0.4
Benchmark: SecureMark-TLS
marks, More Is Better
SE +/- 135.67, N = 3
1
238497
2
239752
3
238509
4
238756
50K
100K
150K
200K
250K
1. (CC) gcc options: -pedantic -O3

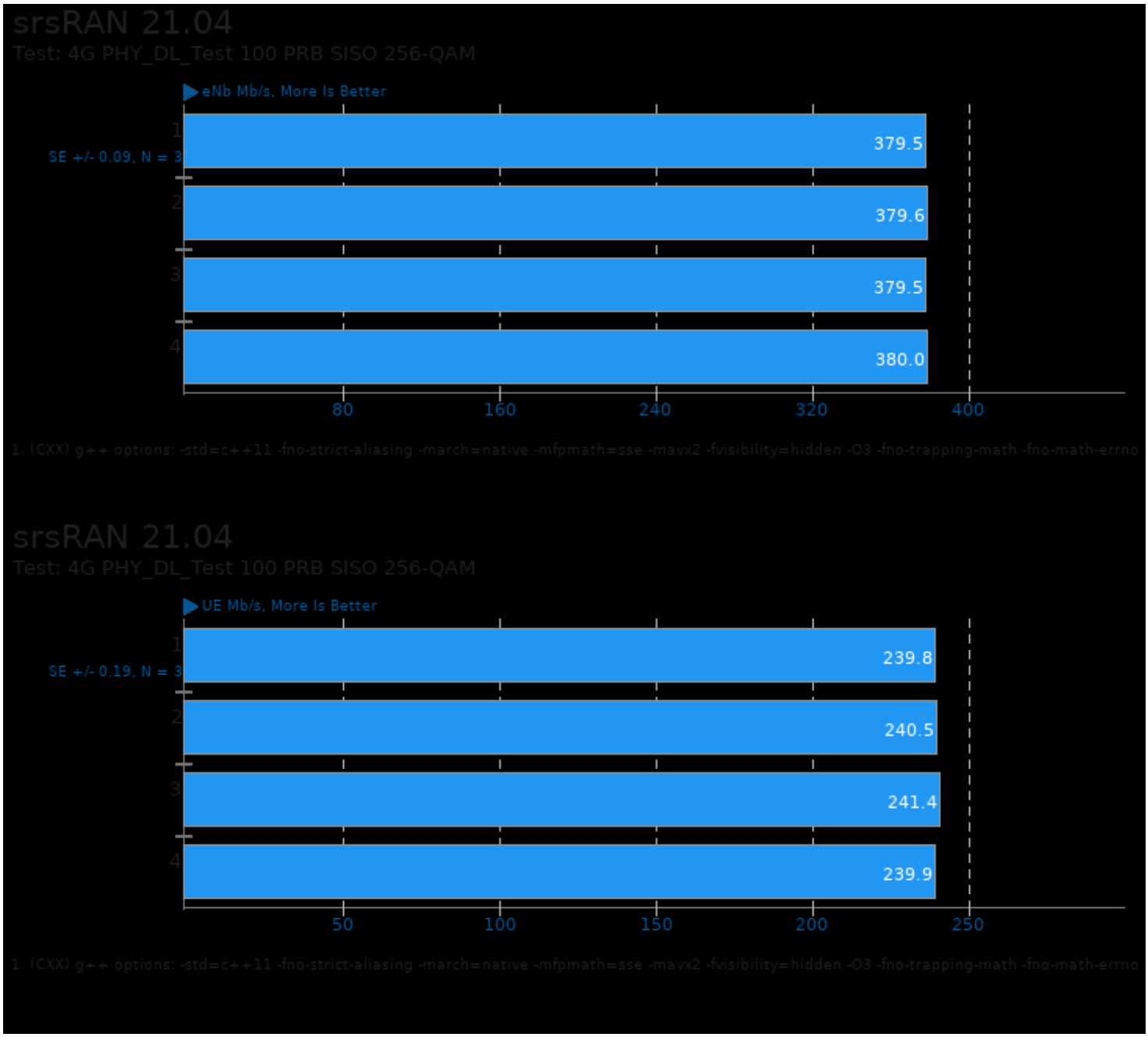

srsLTE 20.10.1
Test: OFDM_Test
Samples / Second, More Is Better
SE +/- 240370.09, N = 3
1
2
3
4
105566667
107200000
104500000
106900000
20M
40M
60M
80M
100M
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsLTE 20.10.1
Test: PHY_DL_Test
eNb Mb/s, More Is Better
SE +/- 0.40, N = 3
1
2
3
4
249.5
249.5
249.9
248.5
50
100
150
200
250
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

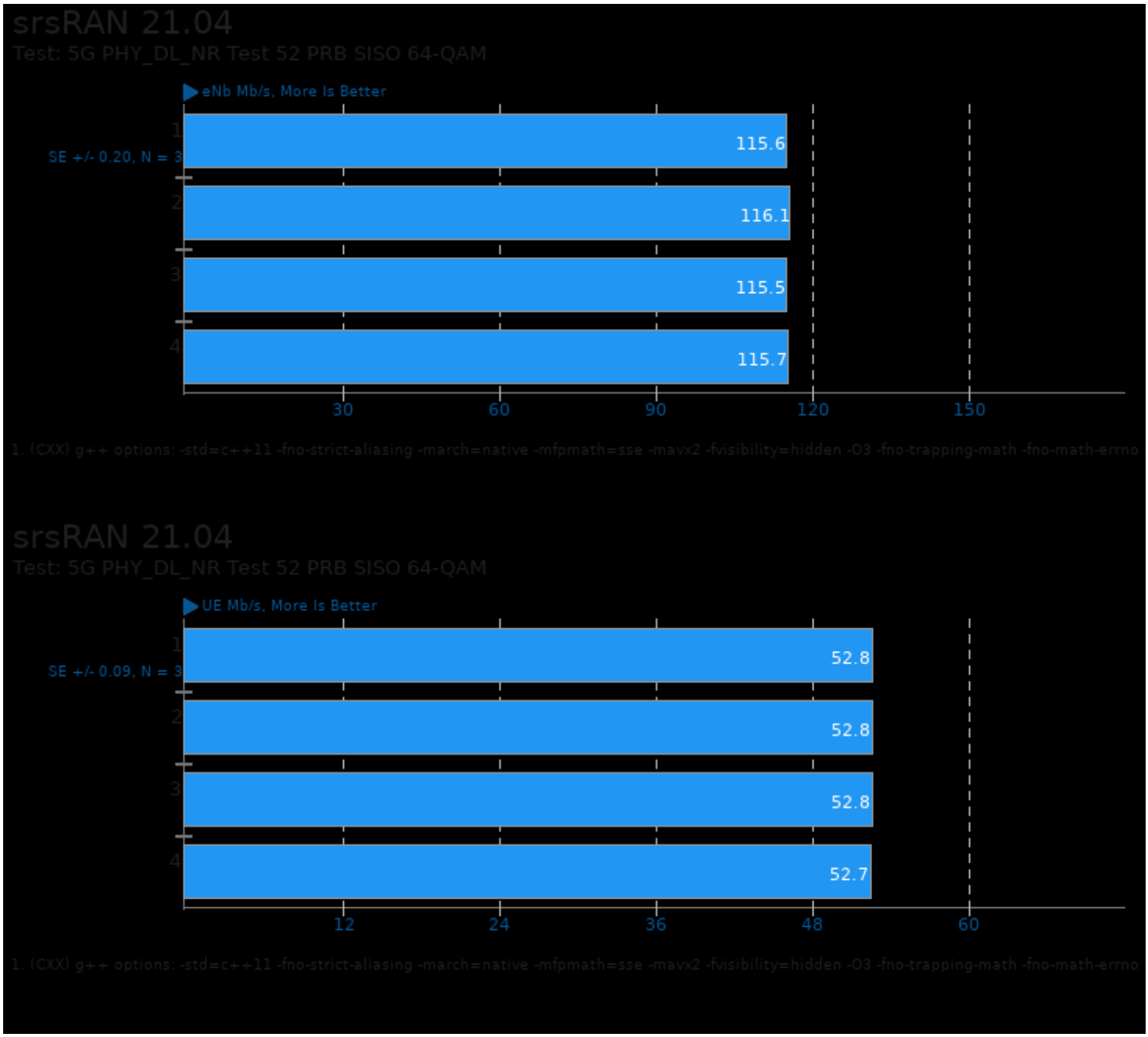

srsLTE 20.10.1
Test: PHY_DL_Test
UE Mb/s, More Is Better
SE +/- 0.64, N = 3
1
2
3
4
94.6
95.7
95.7
94.5
20
40
60
80
100
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: OFDM_Test
Samples / Second, More Is Better
SE +/- 272845.09, N = 3
1
2
3
4
109566667
108000000
108900000
108400000
20M
40M
60M
80M
100M
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

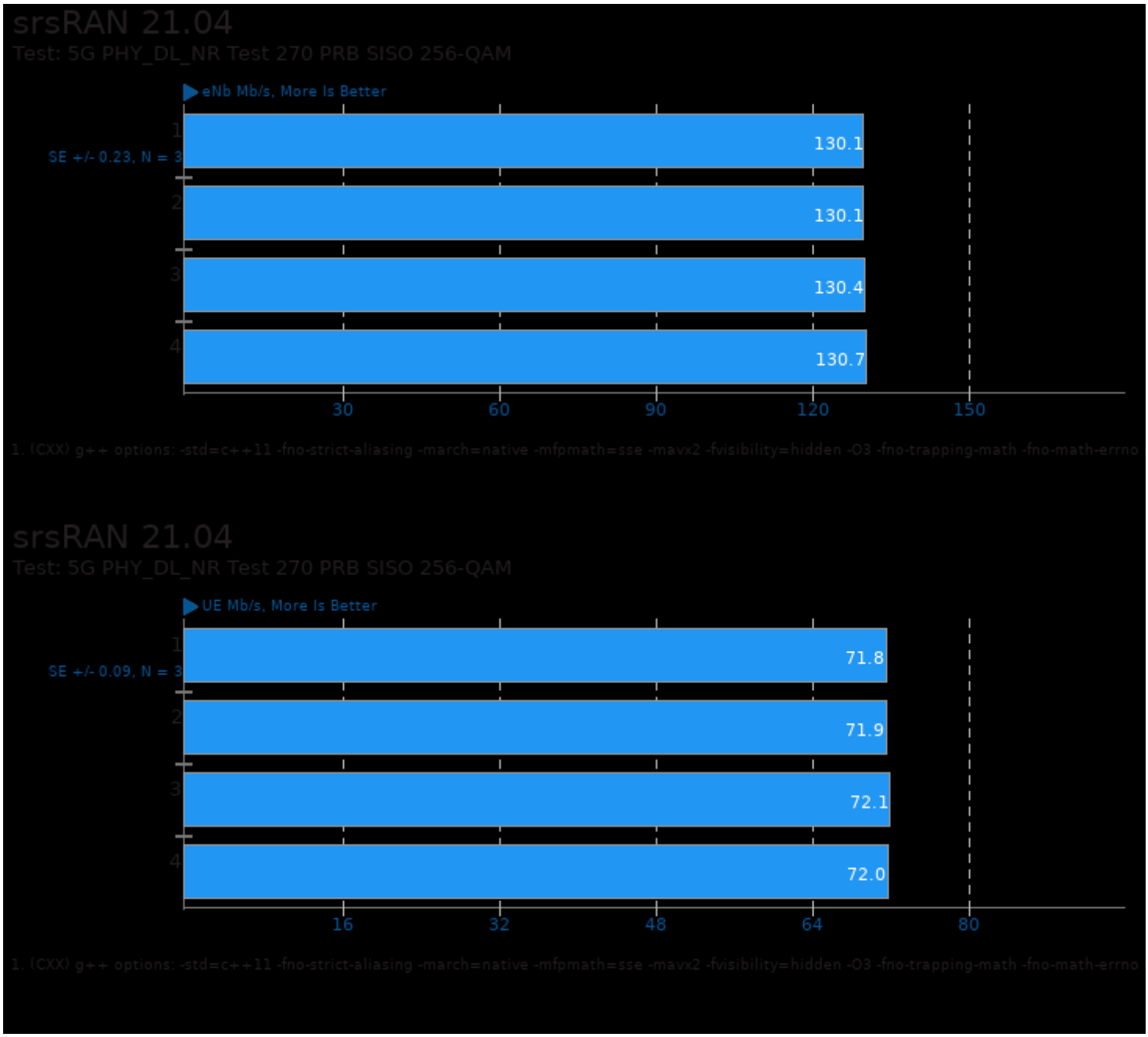

srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM
eNb Mb/s, More Is Better
SE +/- 0.47, N = 3
1
343.3
2
342.5
3
343.9
4
343.9
70
140
210
280
350
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM
UE Mb/s, More Is Better
SE +/- 0.03, N = 3
1
114.4
2
114.3
3
114.3
4
113.6
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

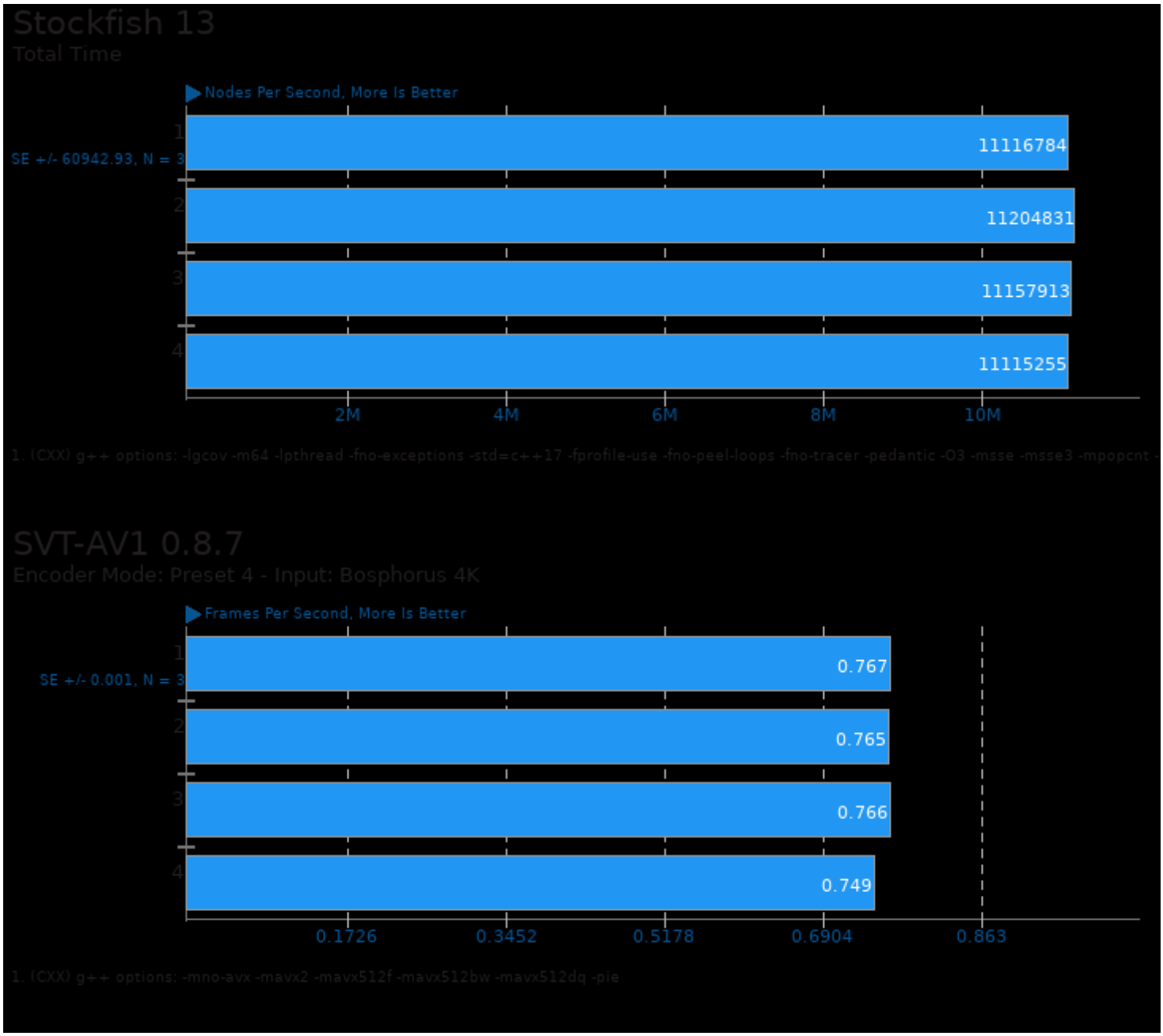

srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM
eNb Mb/s, More Is Better
SE +/- 0.29, N = 3
1
348.7
2
348.2
3
348.5
4
347.4
80
160
240
320
400
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM
UE Mb/s, More Is Better
SE +/- 0.22, N = 3
1
201.3
2
201.1
3
201.2
4
201.5
40
80
120
160
200
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

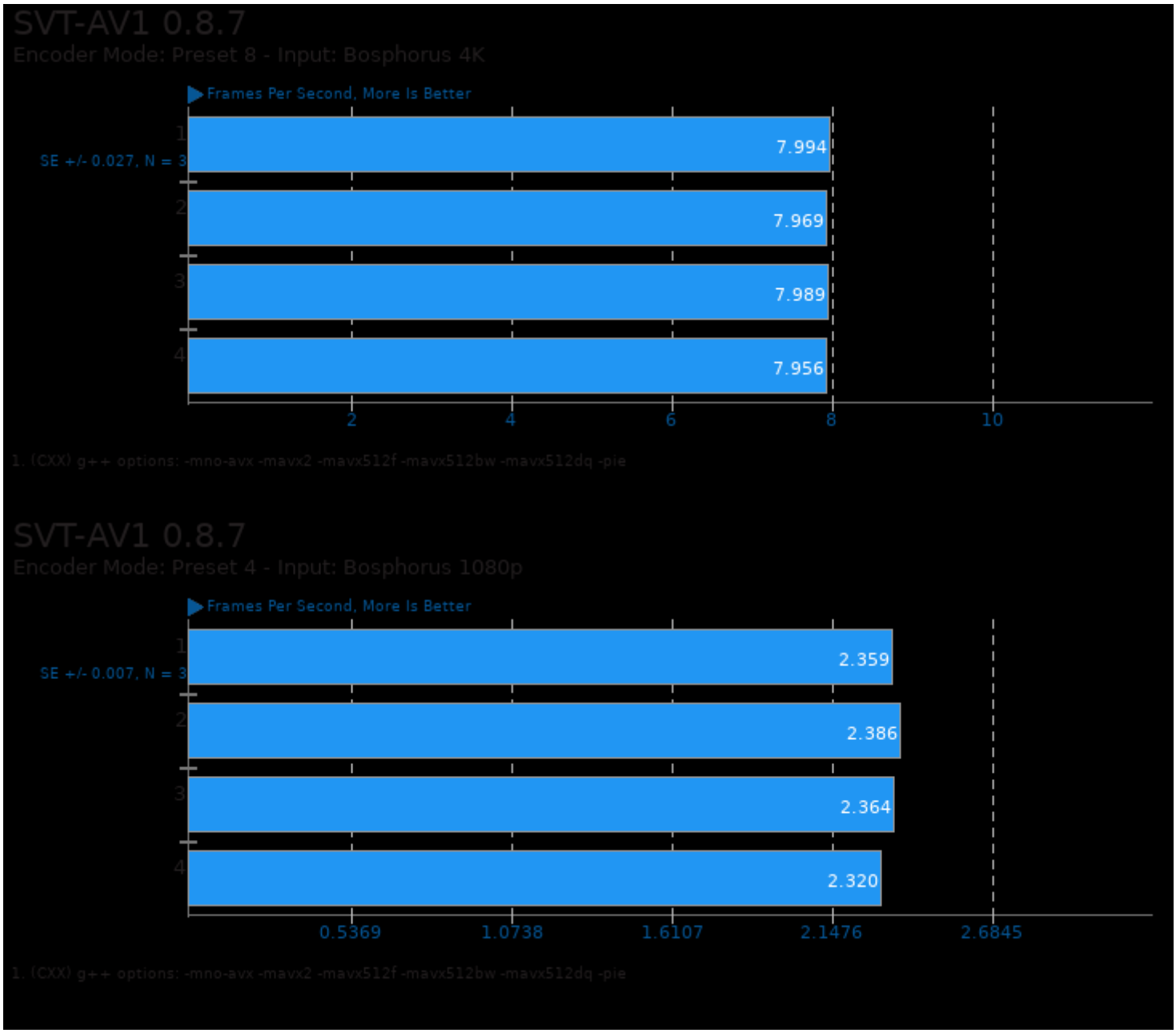

srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB MIMO 256-QAM
eNb Mb/s, More Is Better
SE +/- 1.20, N = 3
1
376.0
2
376.7
3
375.8
4
374.4
80
160
240
320
400
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB MIMO 256-QAM
UE Mb/s, More Is Better
SE +/- 0.28, N = 3
1
124.4
2
124.6
3
124.2
4
124.2
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

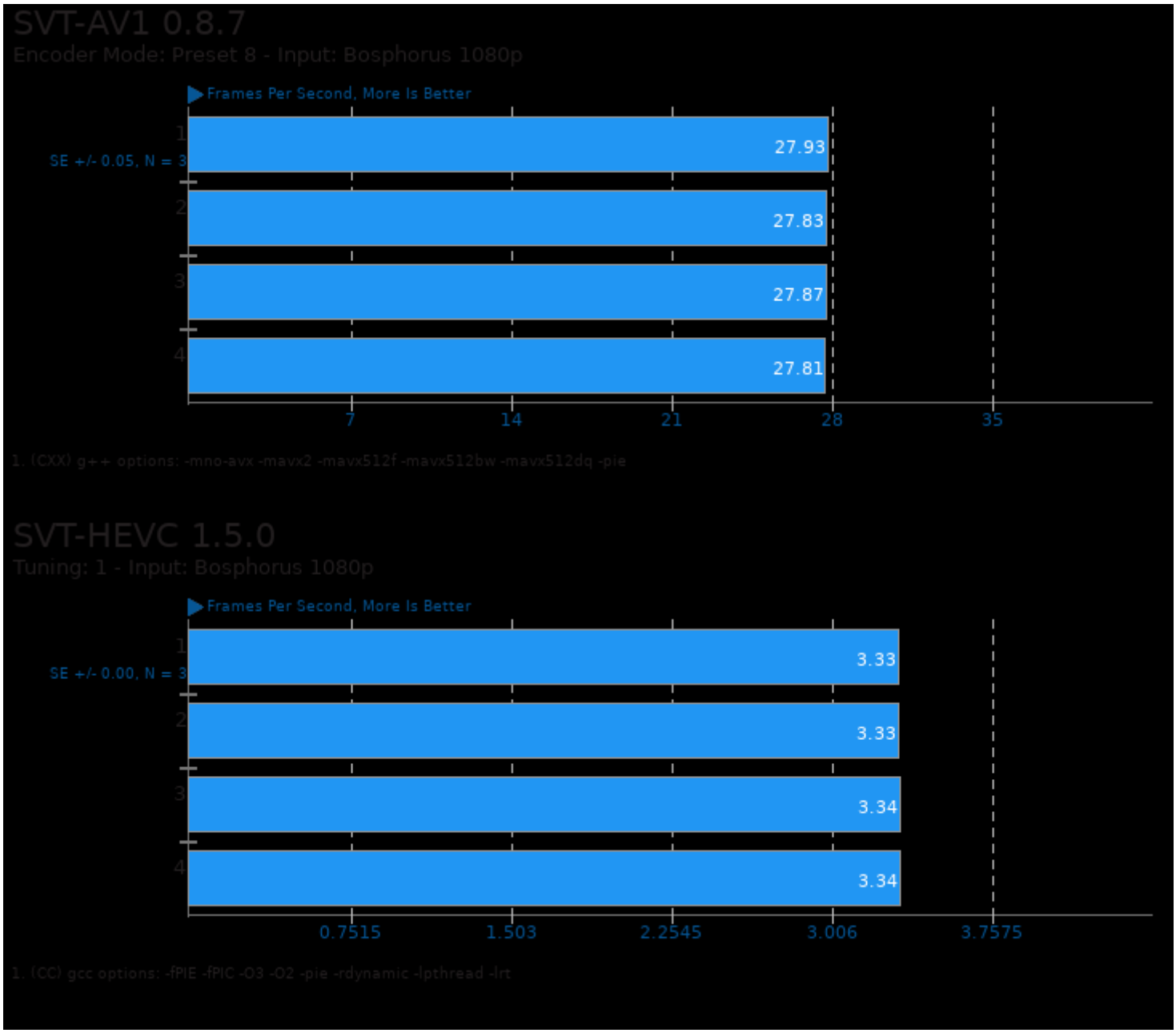

srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB SISO 256-QAM
eNb Mb/s, More Is Better
SE +/- 0.09, N = 3
1
2
3
4
379.5
379.6
379.5
380.0
80
160
240
320
400
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB SISO 256-QAM
UE Mb/s, More Is Better
SE +/- 0.19, N = 3
1
2
3
4
239.8
240.5
241.4
239.9
50
100
150
200
250
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

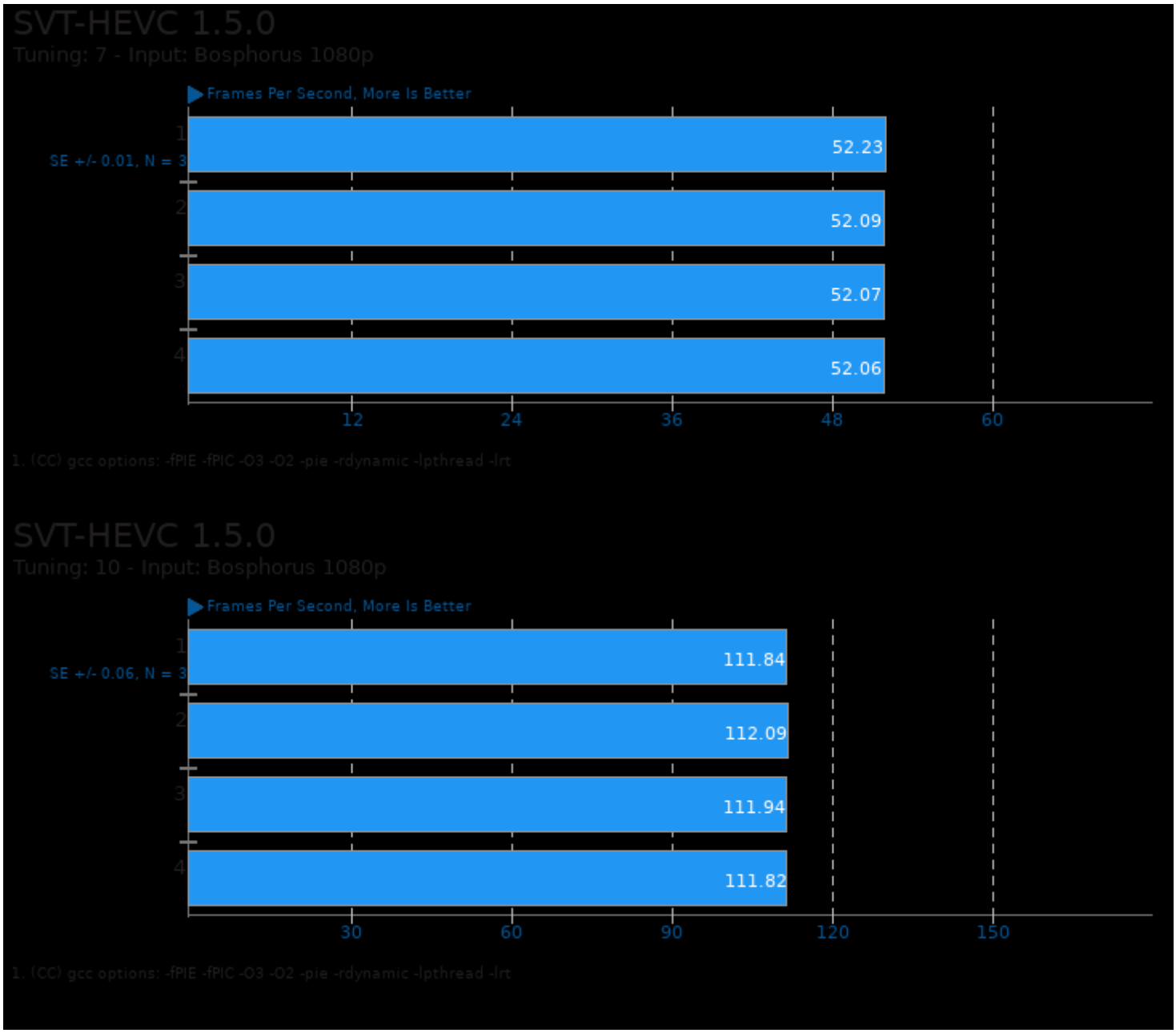

srsRAN 21.04
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM
eNb Mb/s, More Is Better
SE +/- 0.20, N = 3
1
2
3
4
115.6
116.1
115.5
115.7
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM
UE Mb/s, More Is Better
SE +/- 0.09, N = 3
1
2
3
4
52.8
52.8
52.8
52.7
12
24
36
48
60
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

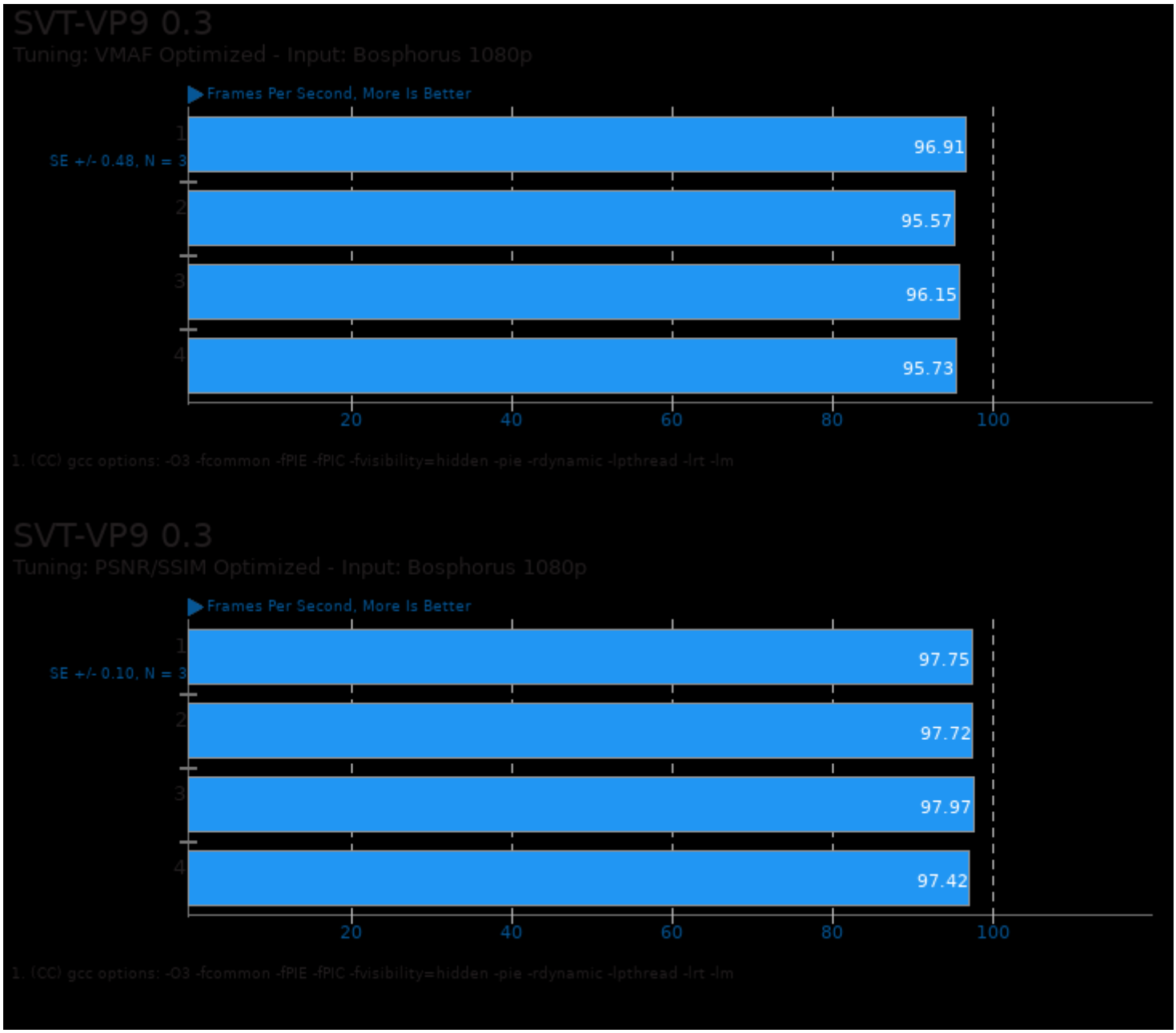

srsRAN 21.04
Test: 5G PHY_DL_NR Test 270 PRB SISO 256-QAM
eNb Mb/s, More Is Better
SE +/- 0.23, N = 3
1
2
3
4
130.1
130.1
130.4
130.7
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 5G PHY_DL_NR Test 270 PRB SISO 256-QAM
UE Mb/s, More Is Better
SE +/- 0.09, N = 3
1
2
3
4
71.8
71.9
72.1
72.0
16
32
48
64
80
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

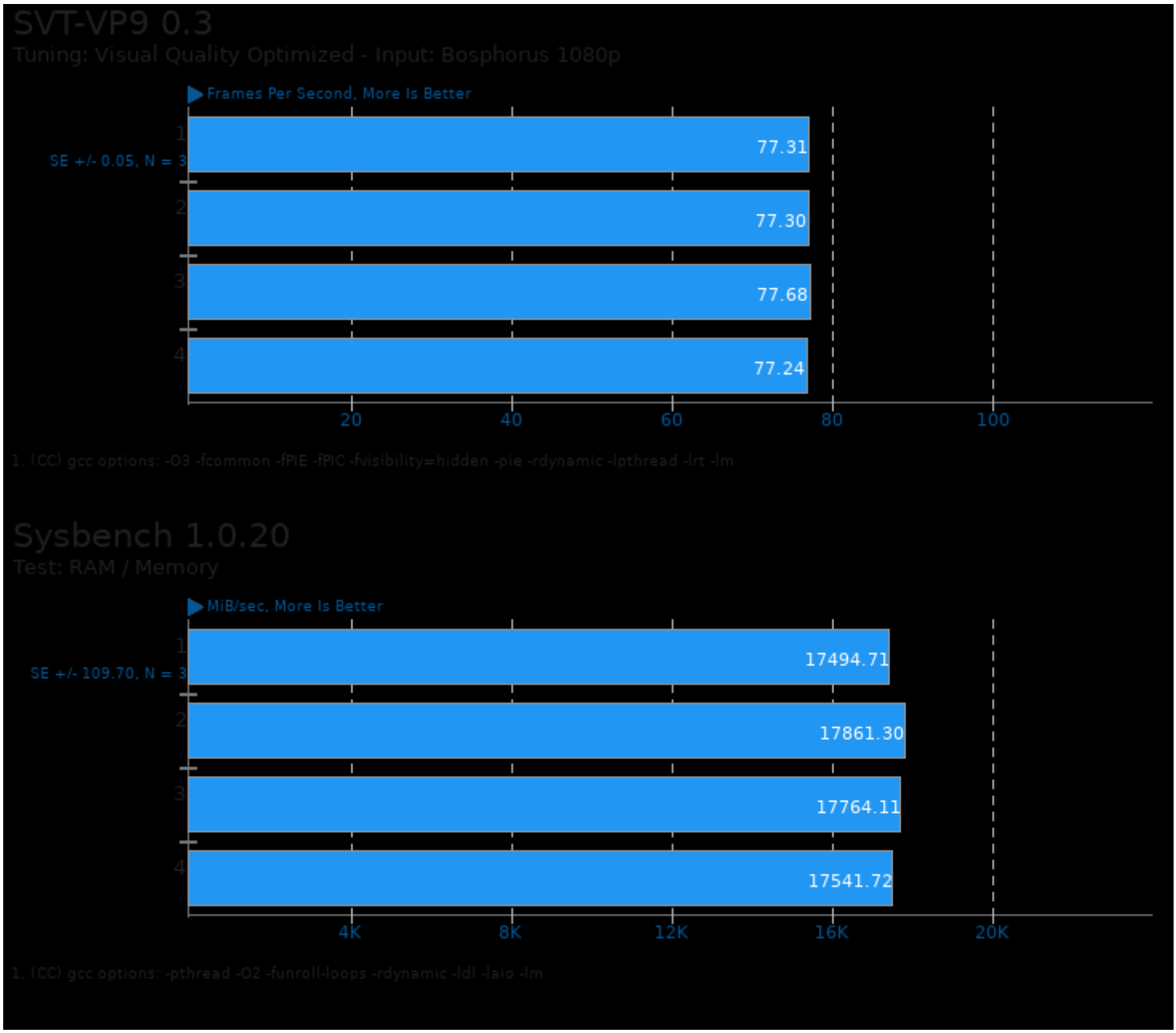

Stockfish 13
Total Time
Nodes Per Second, More Is Better
SE +/- 60942.93, N = 3
1
11116784
2
11204831
3
11157913
4
11115255
2M
4M
6M
8M
10M
1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt
SVT-AV1 0.8.7
Encoder Mode: Preset 4 - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.001, N = 3
1
0.767
2
0.765
3
0.766
4
0.749
0.1726
0.3452
0.5178
0.6904
0.863
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.027, N = 3
1
2
3
4
7.994
7.969
7.989
7.956
2
4
6
8
10
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 0.8.7
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.007, N = 3
1
2
3
4
2.359
2.386
2.364
2.320
0.5369
1.0738
1.6107
2.1476
2.6845
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.05, N = 3
1
2
3
4
27.93
27.83
27.87
27.81
7
14
21
28
35
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-HEVC 1.5.0
Tuning: 1 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
3.33
3.33
3.34
3.34
0.7515
1.503
2.2545
3.006
3.7575
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

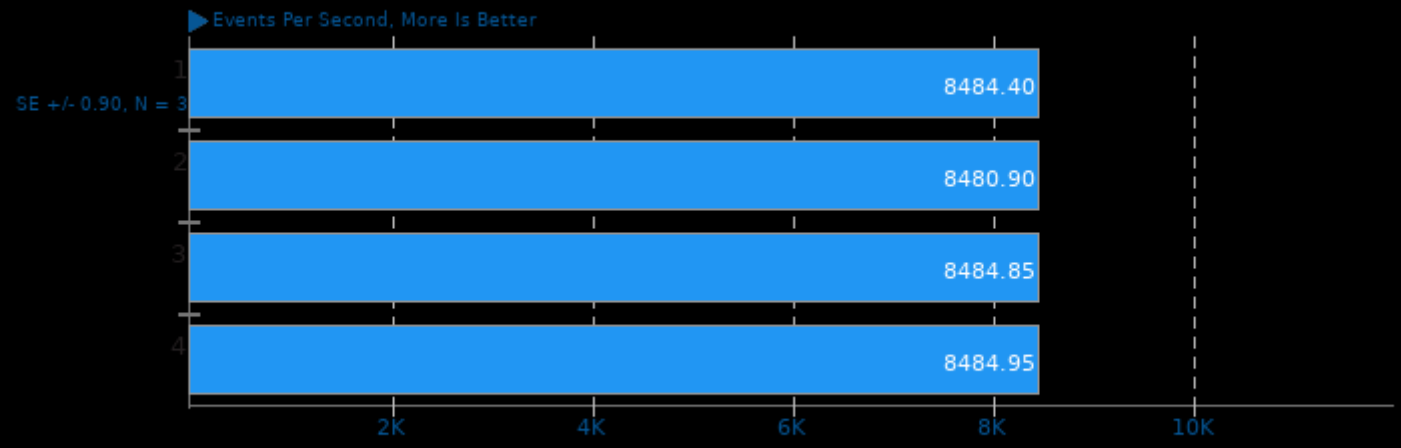

SVT-HEVC 1.5.0
Tuning: 7 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.01, N = 3
1
2
3
4
52.23
52.09
52.07
52.06
12
24
36
48
60
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
SVT-HEVC 1.5.0
Tuning: 10 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.06, N = 3
1
2
3
4
111.84
112.09
111.94
111.82
30
60
90
120
150
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt


SVT-VP9 0.3
Tuning: VMAF Optimized - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.48, N = 3
1
2
3
4
96.91
95.57
96.15
95.73
20
40
60
80
100
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm
SVT-VP9 0.3
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.10, N = 3
1
2
3
4
97.75
97.72
97.97
97.42
20
40
60
80
100
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm


SVT-VP9 0.3
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.05, N = 3
1
77.31
2
77.30
3
77.68
4
77.24
20
40
60
80
100
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm
Sysbench 1.0.20
Test: RAM / Memory
MiB/sec, More Is Better
SE +/- 109.70, N = 3
1
17494.71
2
17861.30
3
17764.11
4
17541.72
4K
8K
12K
16K
20K
1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

Sysbench 1.0.20

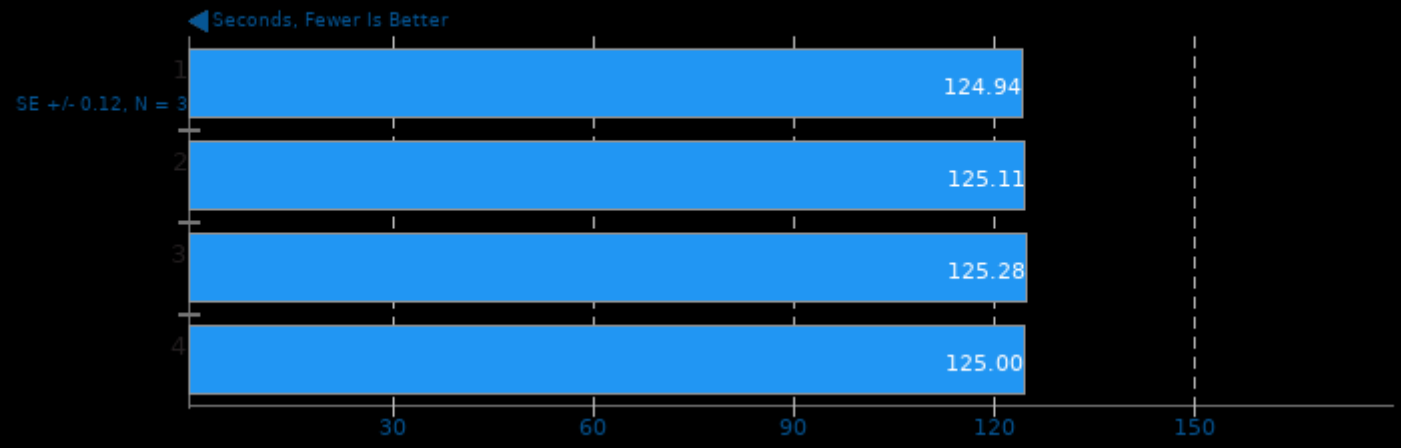
Test: CPU



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

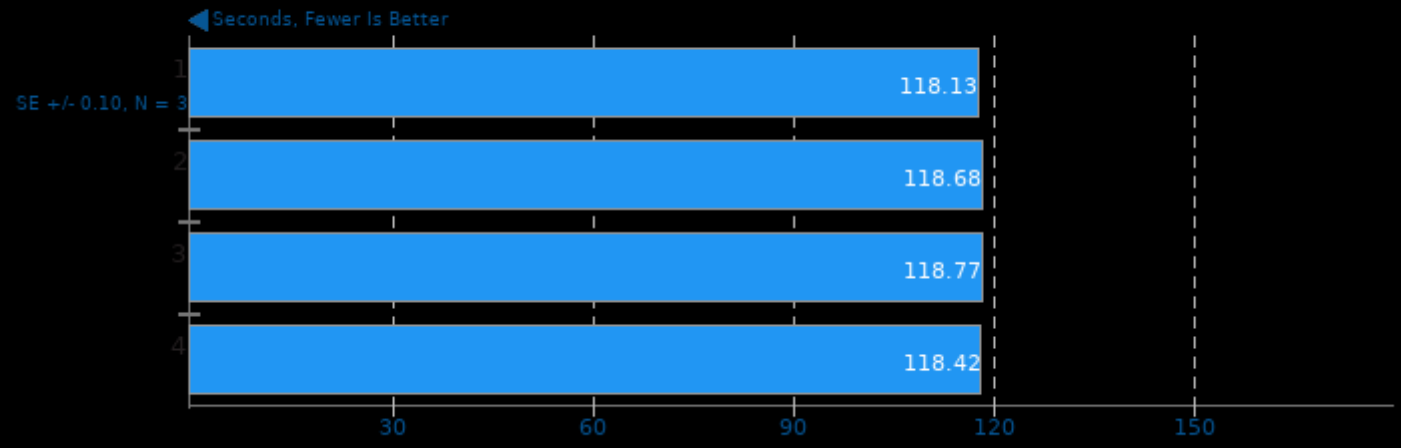
Timed FFmpeg Compilation 4.4

Time To Compile



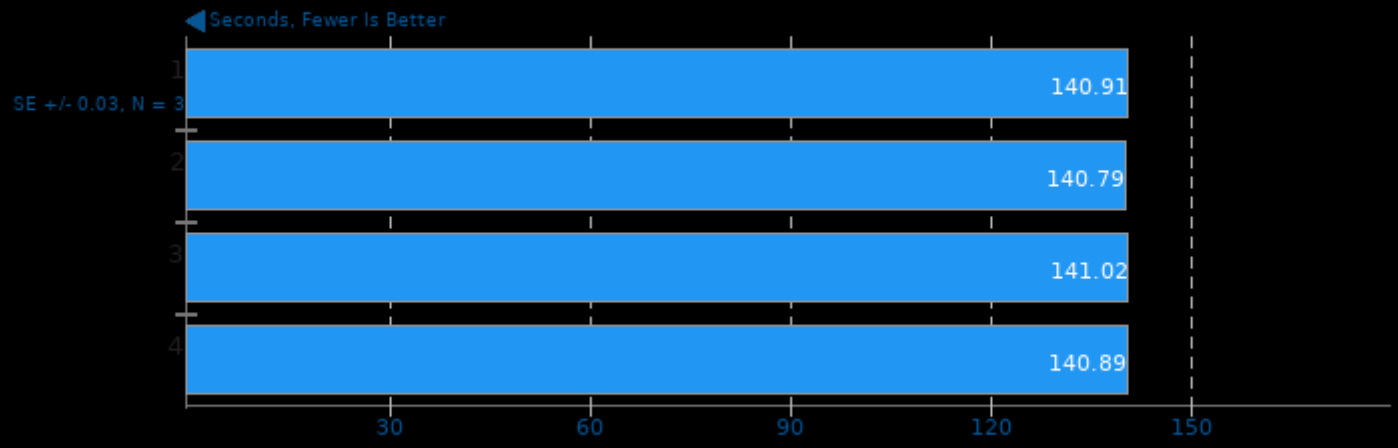
Timed GDB GNU Debugger Compilation 10.2

Time To Compile



Timed HMMer Search 3.3.2

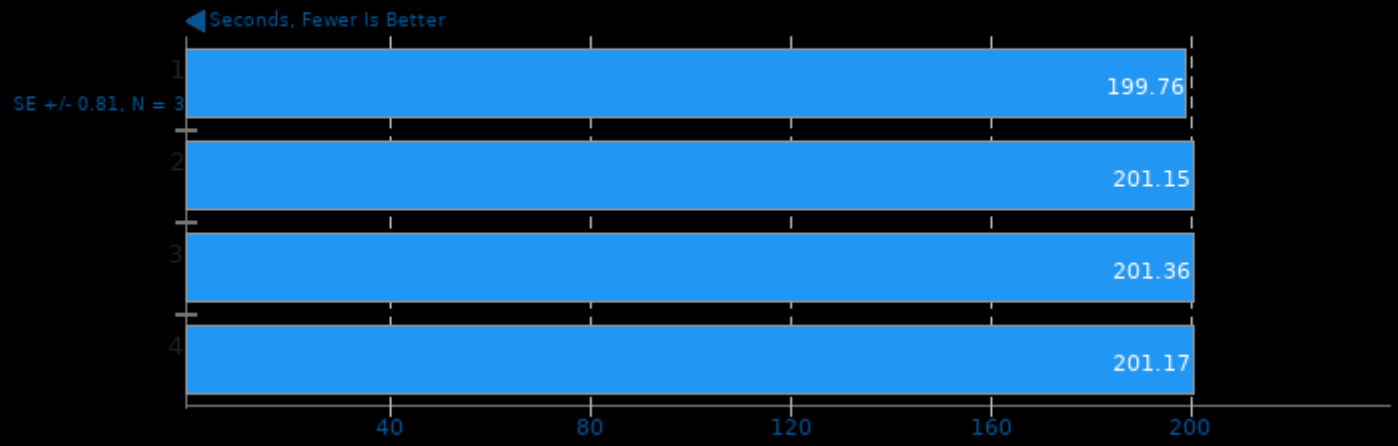
Pfam Database Search



1. (CC) gcc options: -O3 -pthread -lhmmer -leasel -lm -lmpi

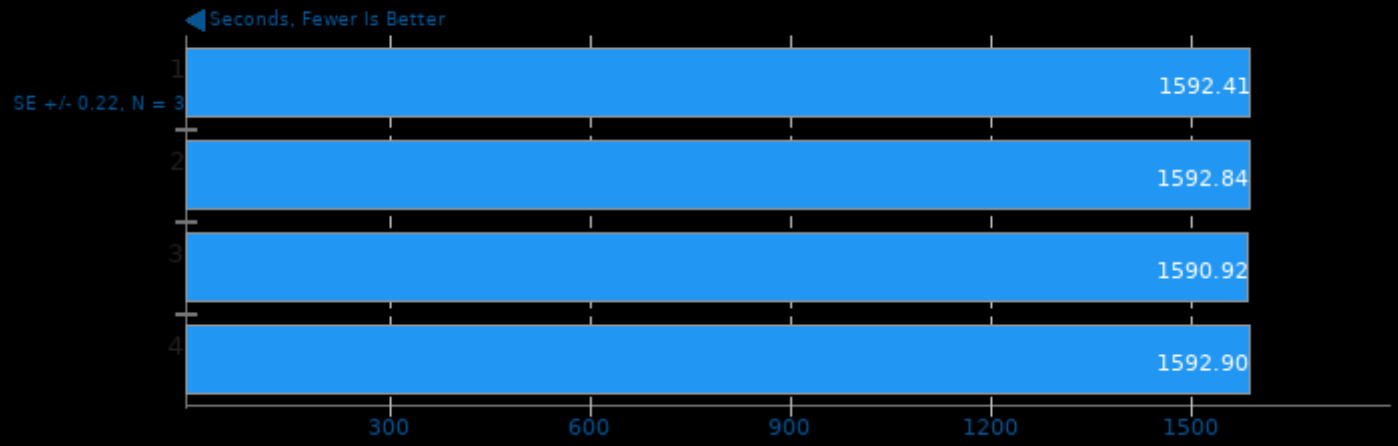
Timed Linux Kernel Compilation 5.10.20

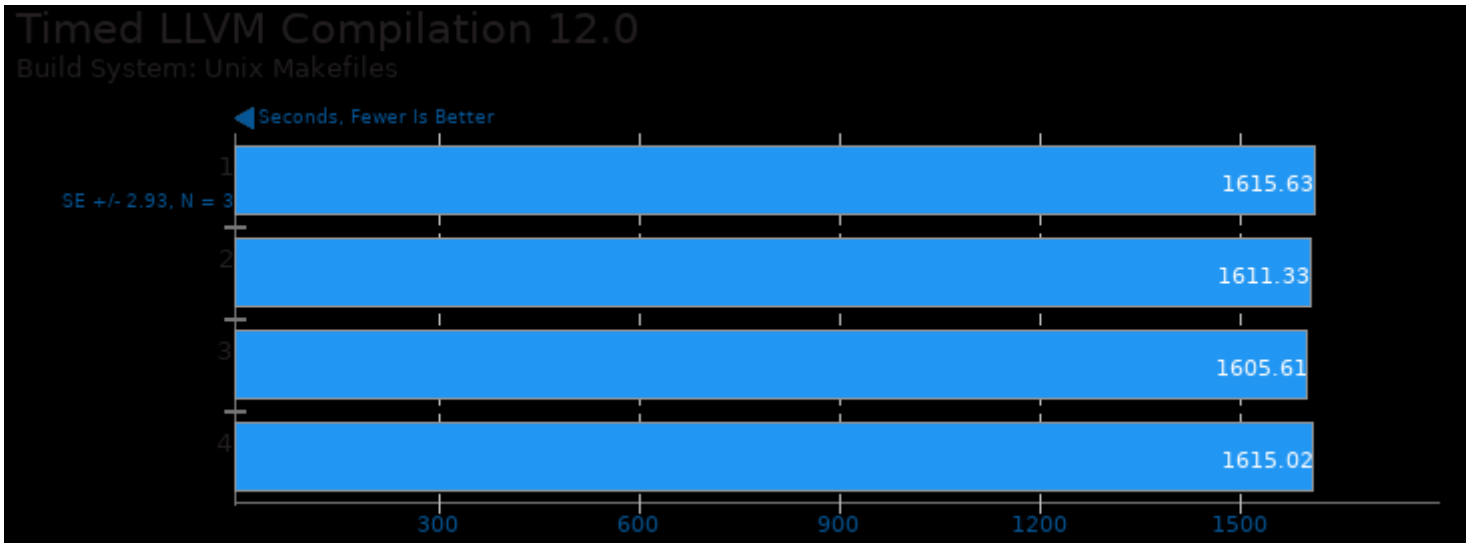
Time To Compile

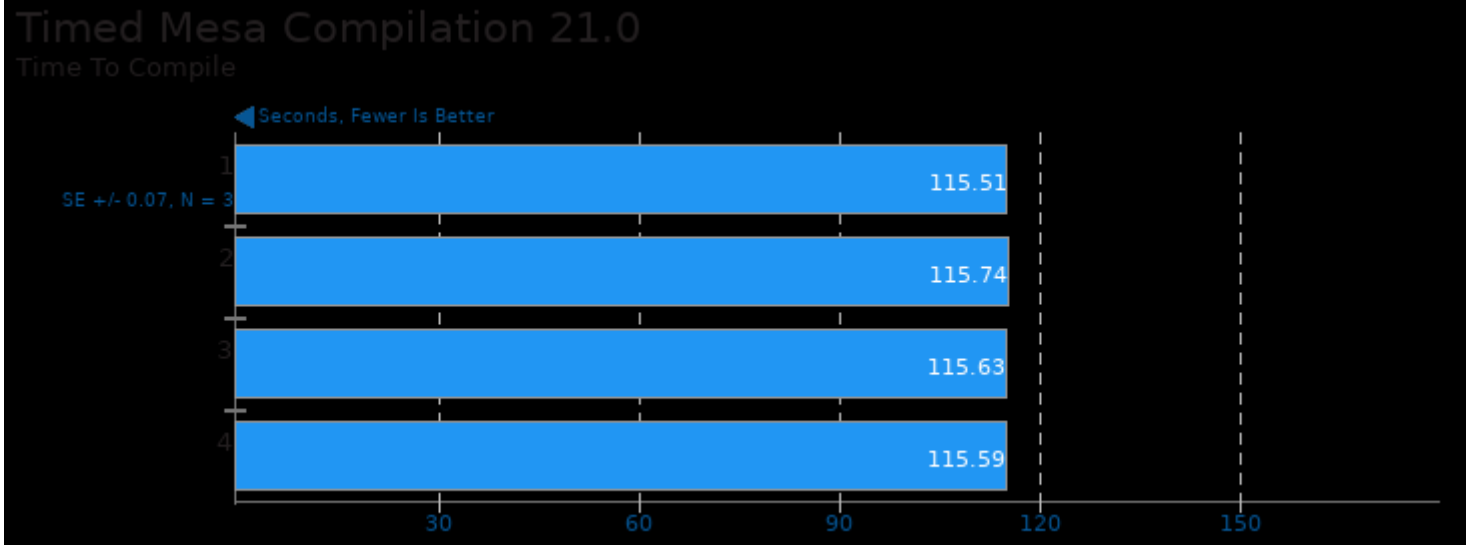


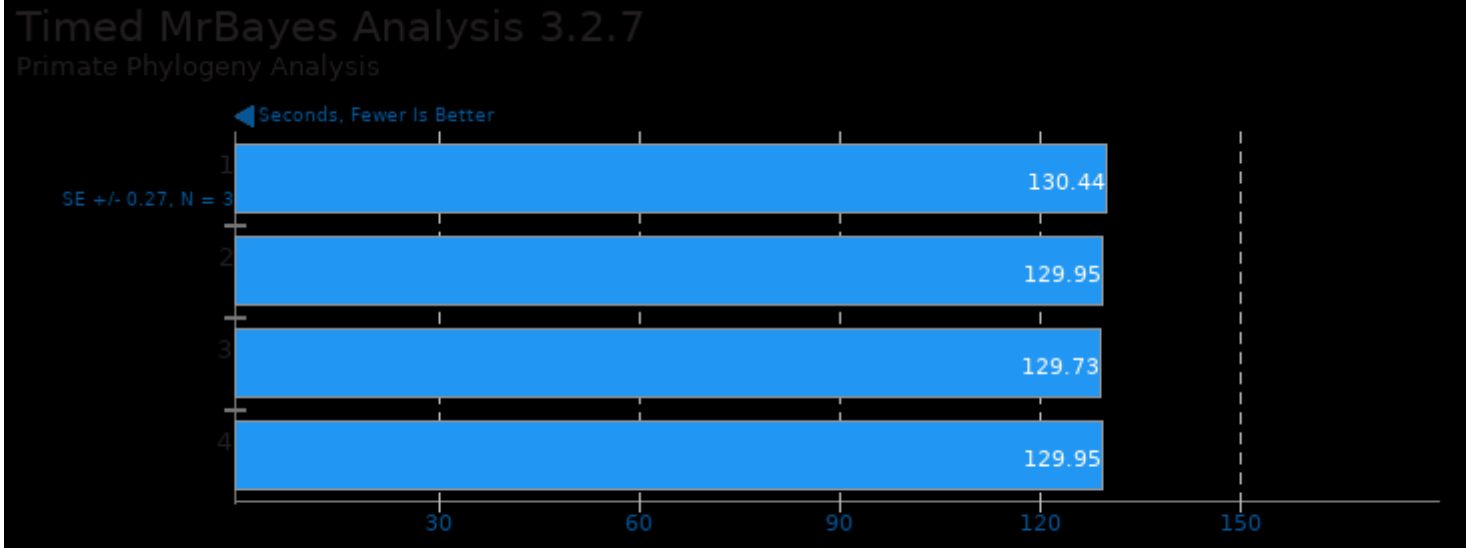
Timed LLVM Compilation 12.0

Build System: Ninja





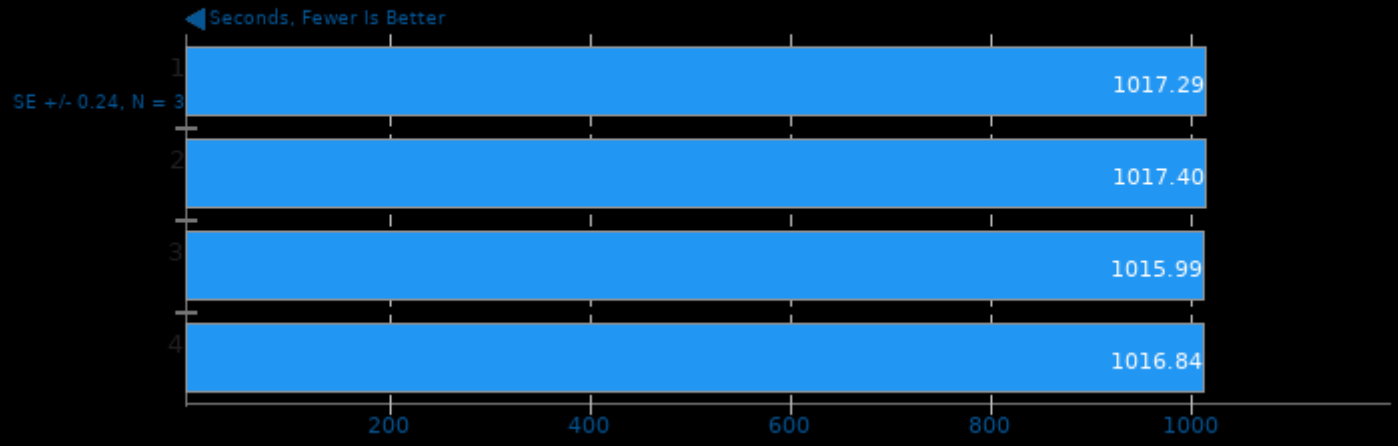




1. (CC) gcc options: -mmmx -msse -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -maes -mavx -mfma -mavx2 -mrdrnd -mbmi -mbmi2 -madx -mmpx -mabm -

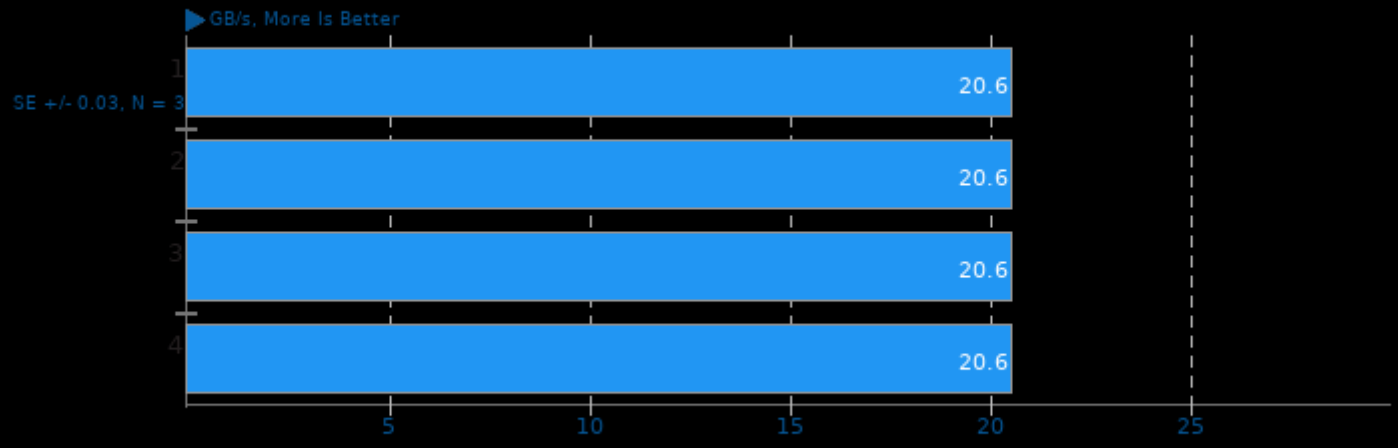
Timed Node.js Compilation 15.11

Time To Compile



ViennaCL 1.7.1

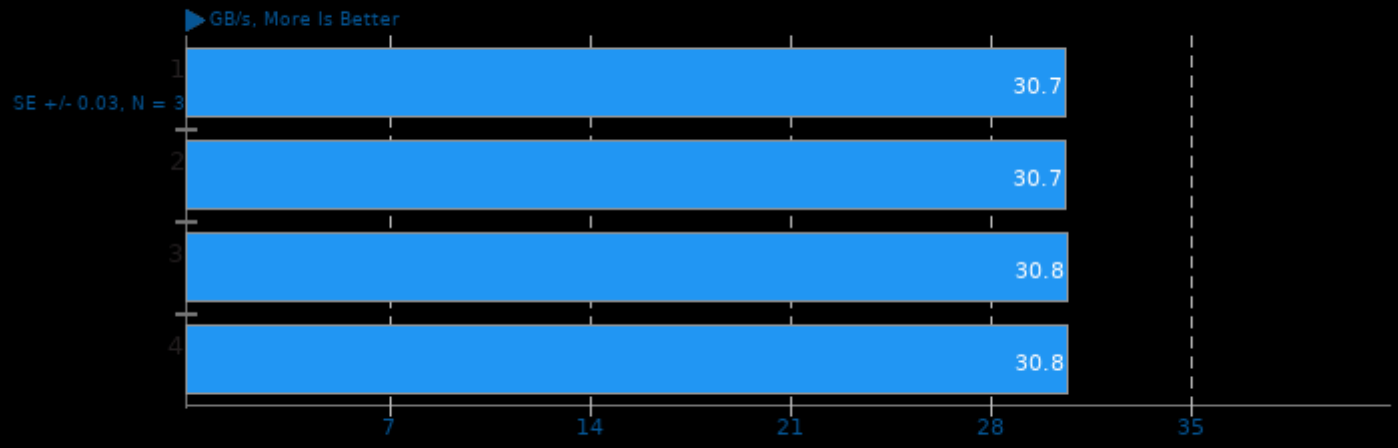
Test: CPU BLAS - sCOPY



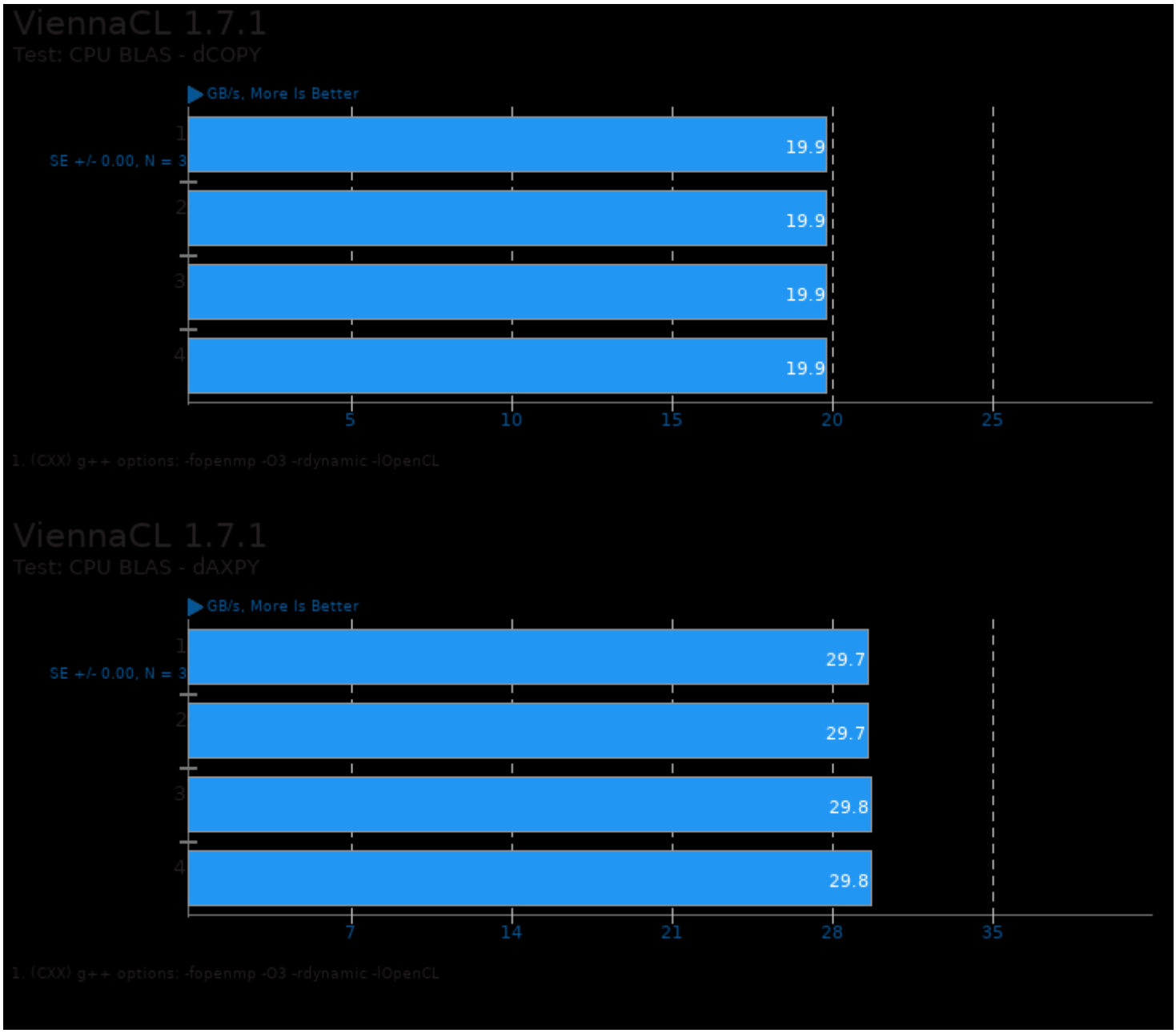
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

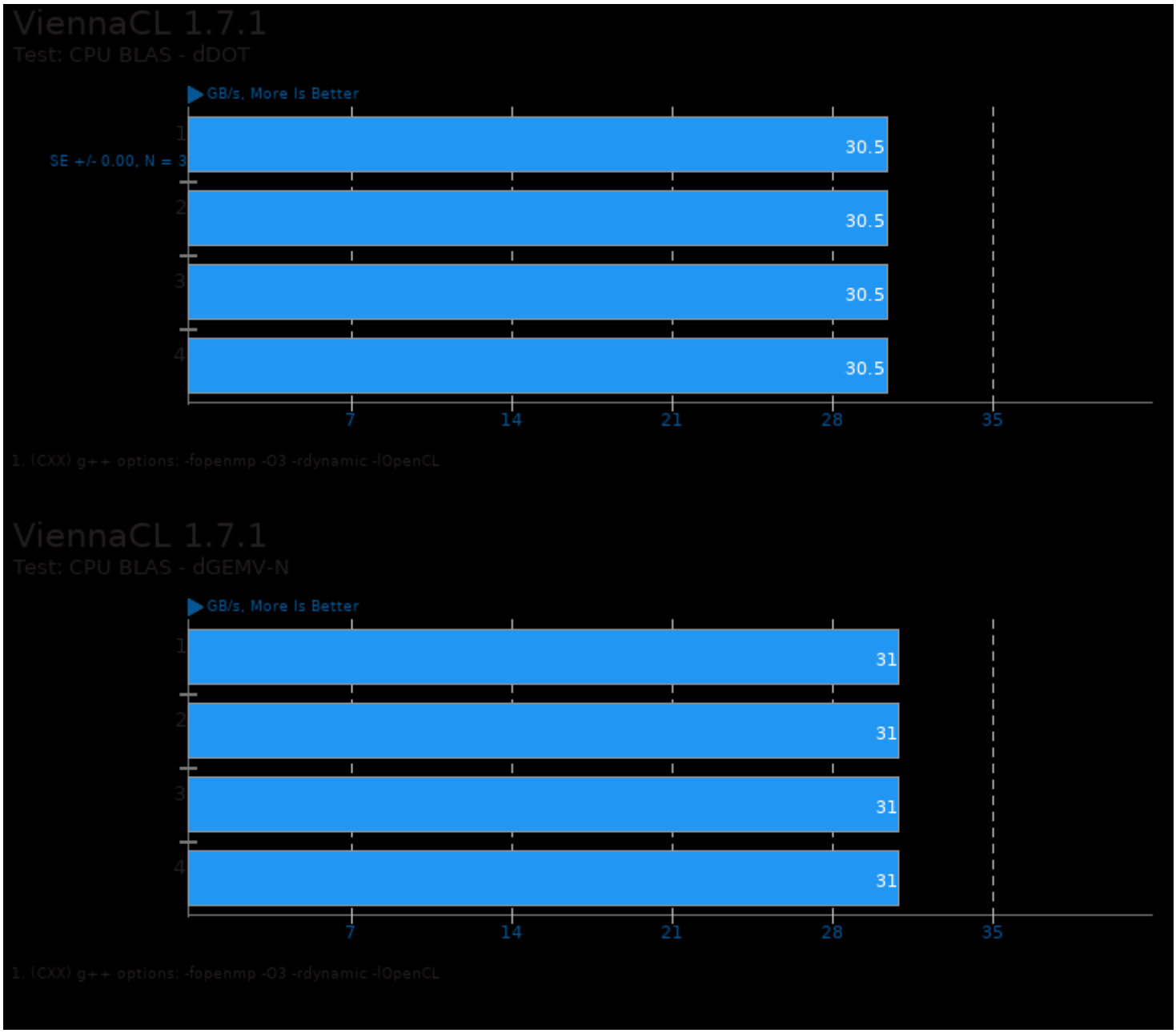
ViennaCL 1.7.1

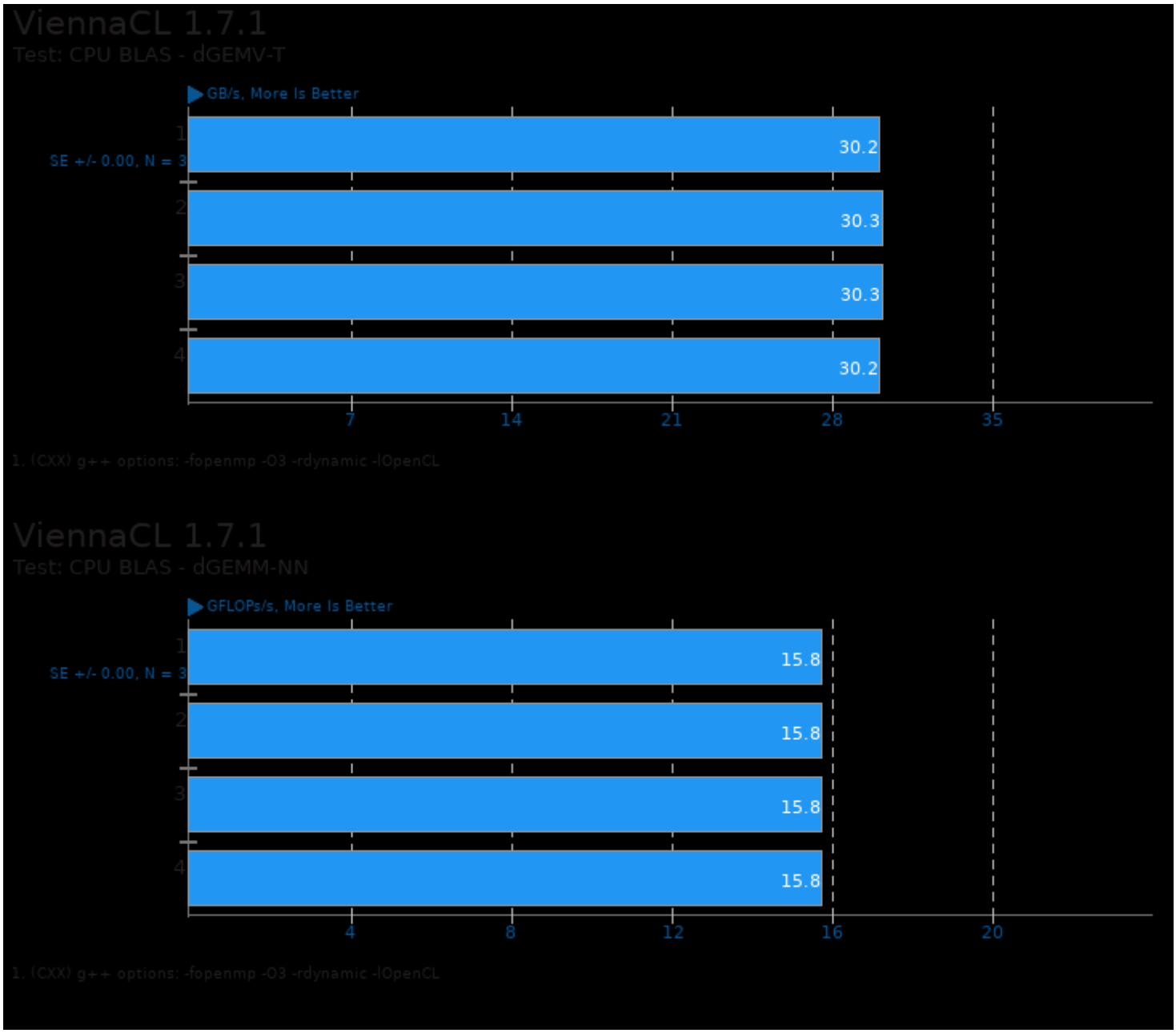
Test: CPU BLAS - sAXPY

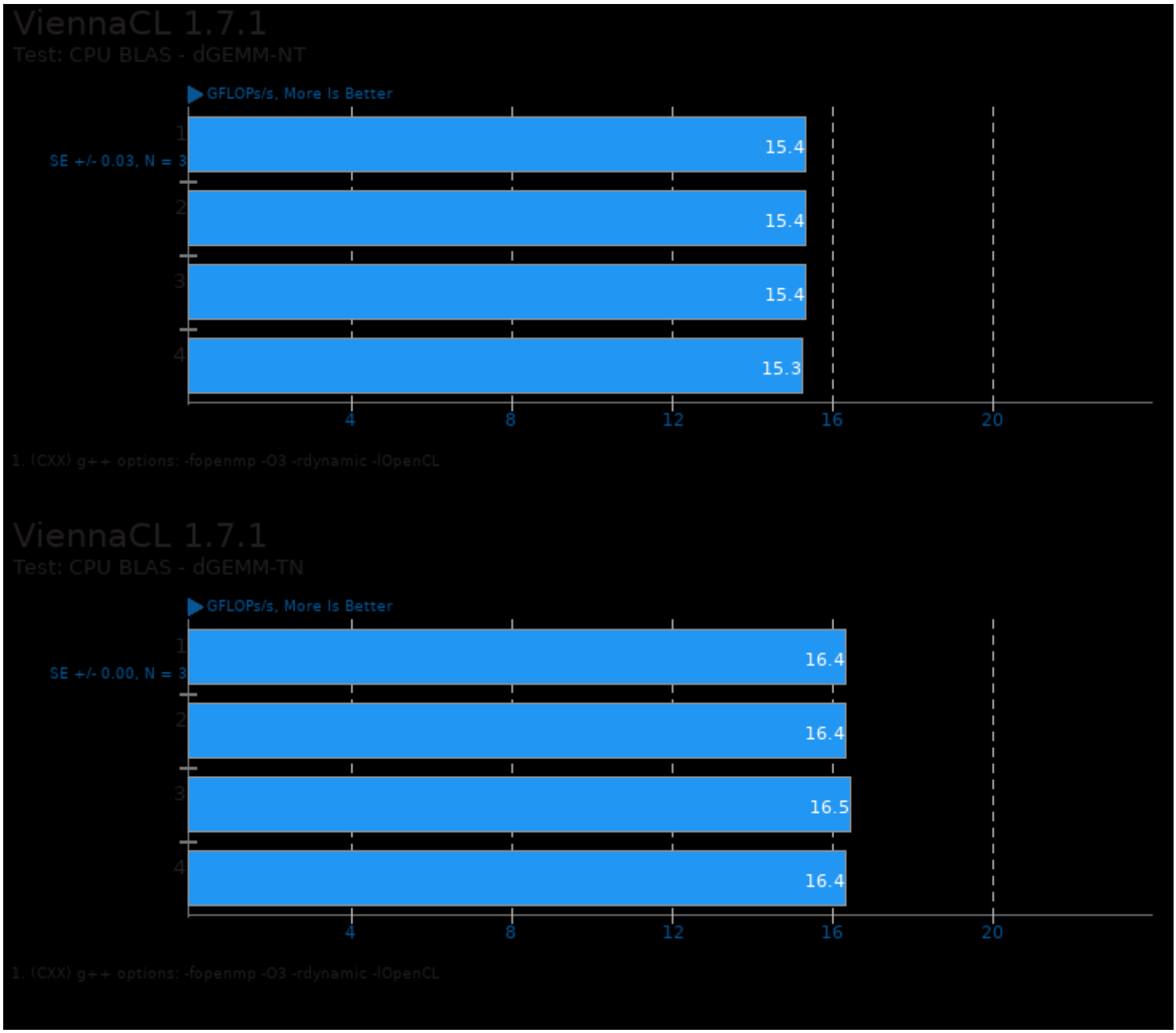


1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL


ViennaCL 1.7.1
Test: CPU BLAS - dCOPY
GB/s, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
19.9
19.9
19.9
19.9
5
10
15
20
25
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL
ViennaCL 1.7.1
Test: CPU BLAS - dAXPY
GB/s, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
29.7
29.7
29.8
29.8
7
14
21
28
35
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

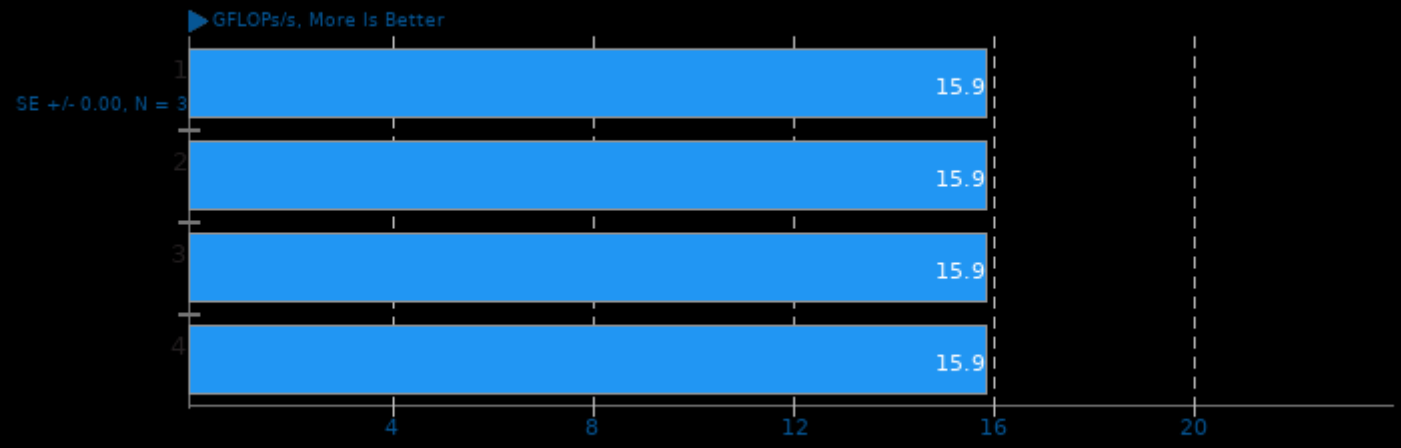

ViennaCL 1.7.1
Test: CPU BLAS - dDOT
GB/s, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
30.5
30.5
30.5
30.5
7
14
21
28
35
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL
ViennaCL 1.7.1
Test: CPU BLAS - dGEMV-N
GB/s, More Is Better
1
2
3
4
31
31
31
31
7
14
21
28
35
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL


ViennaCL 1.7.1
Test: CPU BLAS - dGEMV-T
GB/s, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
30.2
30.3
30.3
30.2
7
14
21
28
35
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL
ViennaCL 1.7.1
Test: CPU BLAS - dGEMM-NN
GFLOPs/s, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
15.8
15.8
15.8
15.8
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
SE +/- 0.03, N = 3
1
15.4
2
15.4
3
15.4
4
15.3
4
8
12
16
20
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL
ViennaCL 1.7.1
Test: CPU BLAS - dGEMM-TN
GFLOPs/s, More Is Better
SE +/- 0.00, N = 3
1
16.4
2
16.4
3
16.5
4
16.4
4
8
12
16
20
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

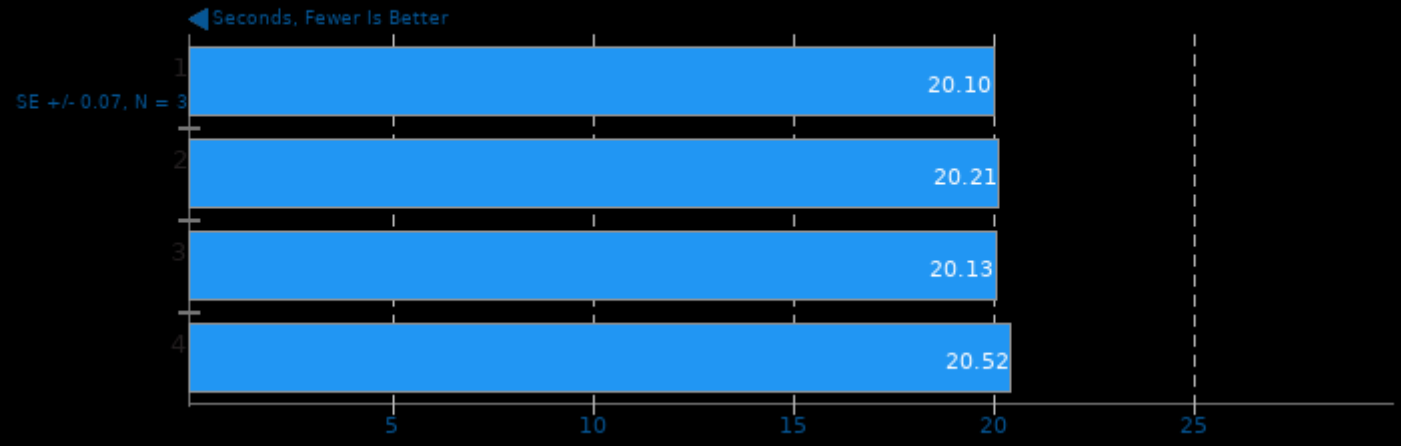
ViennaCL 1.7.1

Test: CPU BLAS - dGEMM-TT



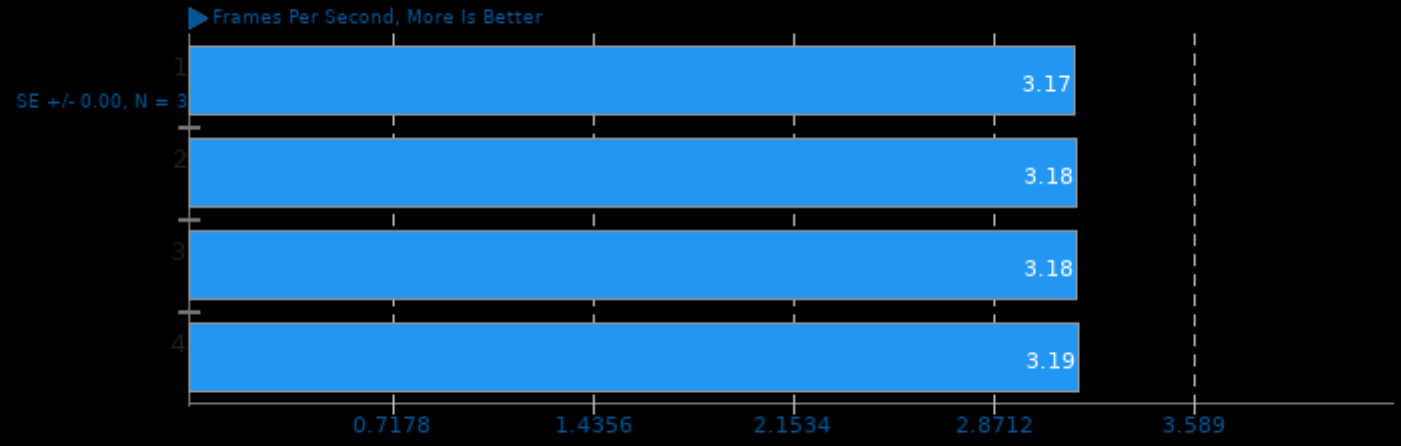
1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

VOSK Speech Recognition Toolkit 0.3.21

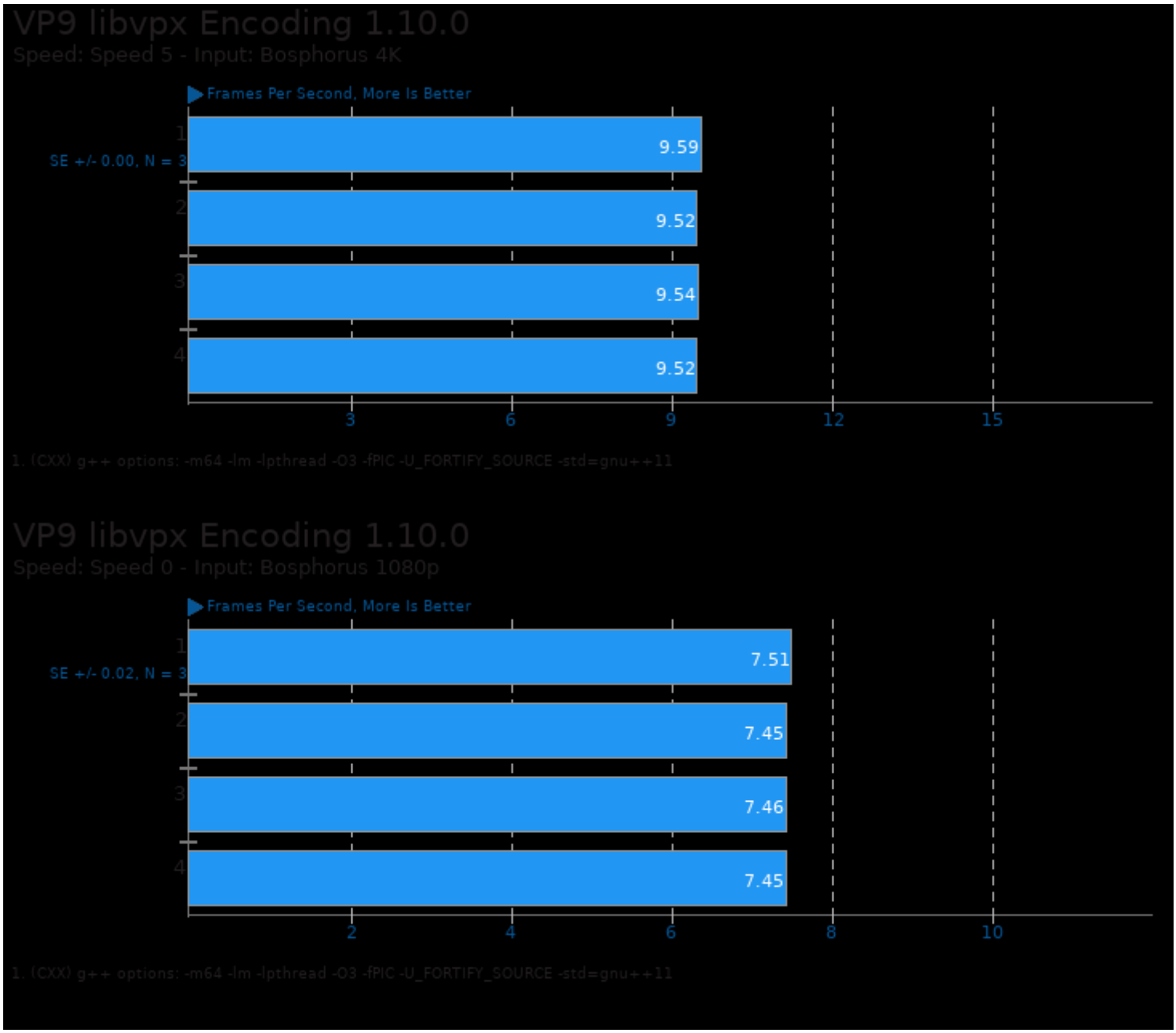


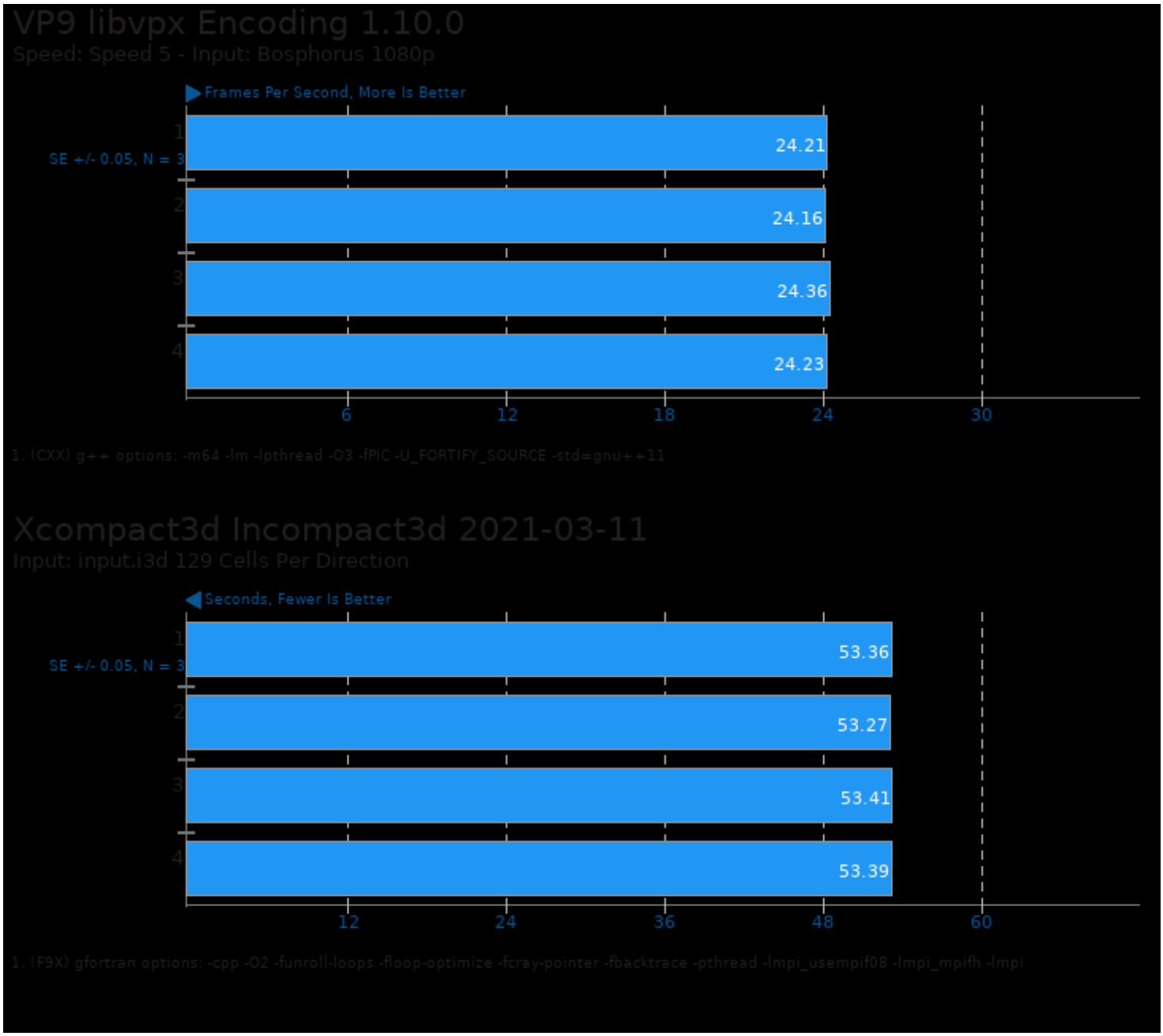
VP9 libvpx Encoding 1.10.0

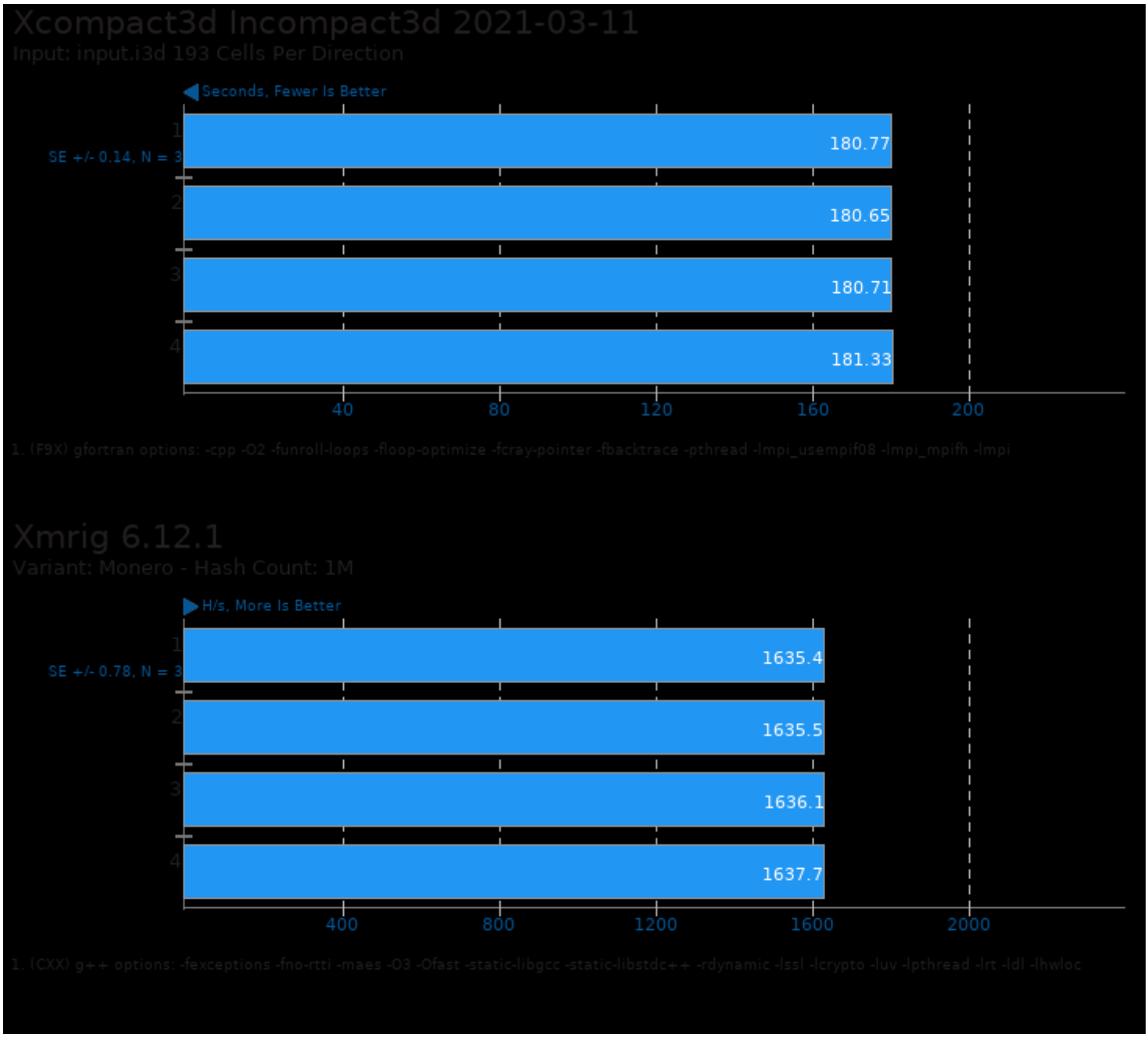
Speed: Speed 0 - Input: Bosphorus 4K

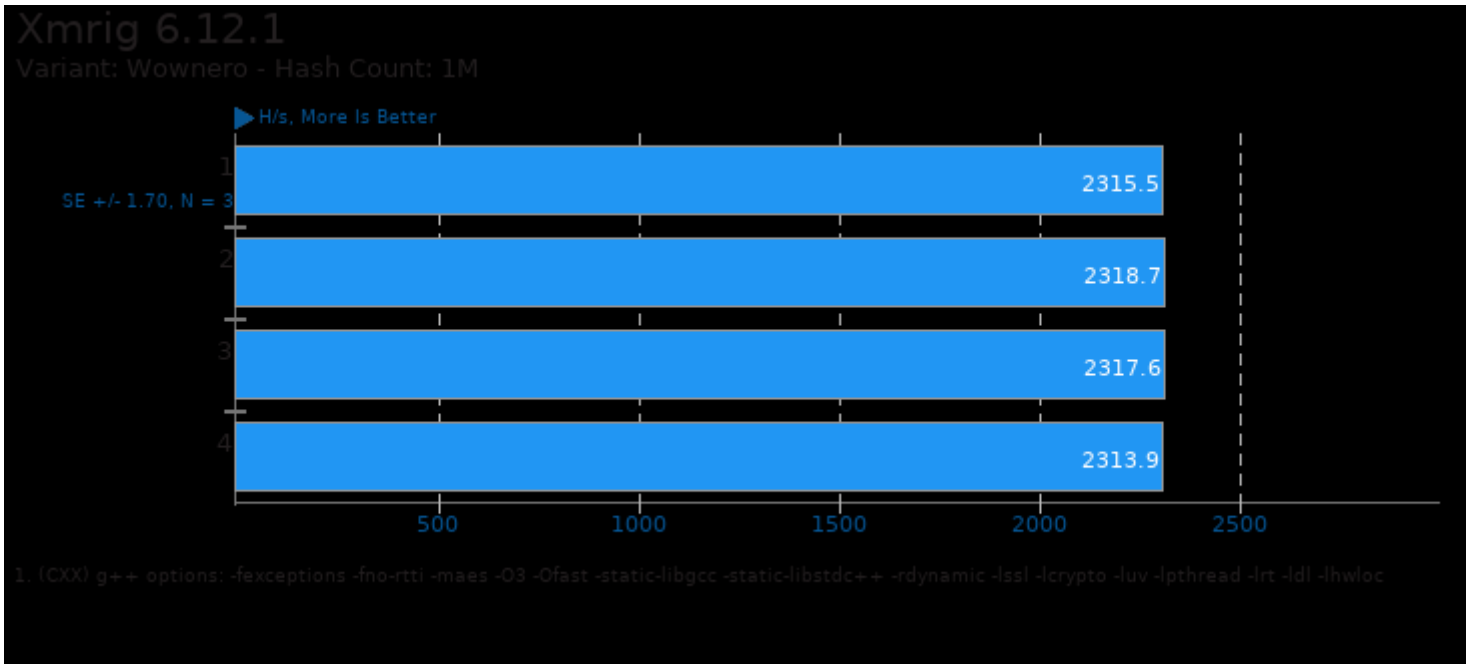


1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11

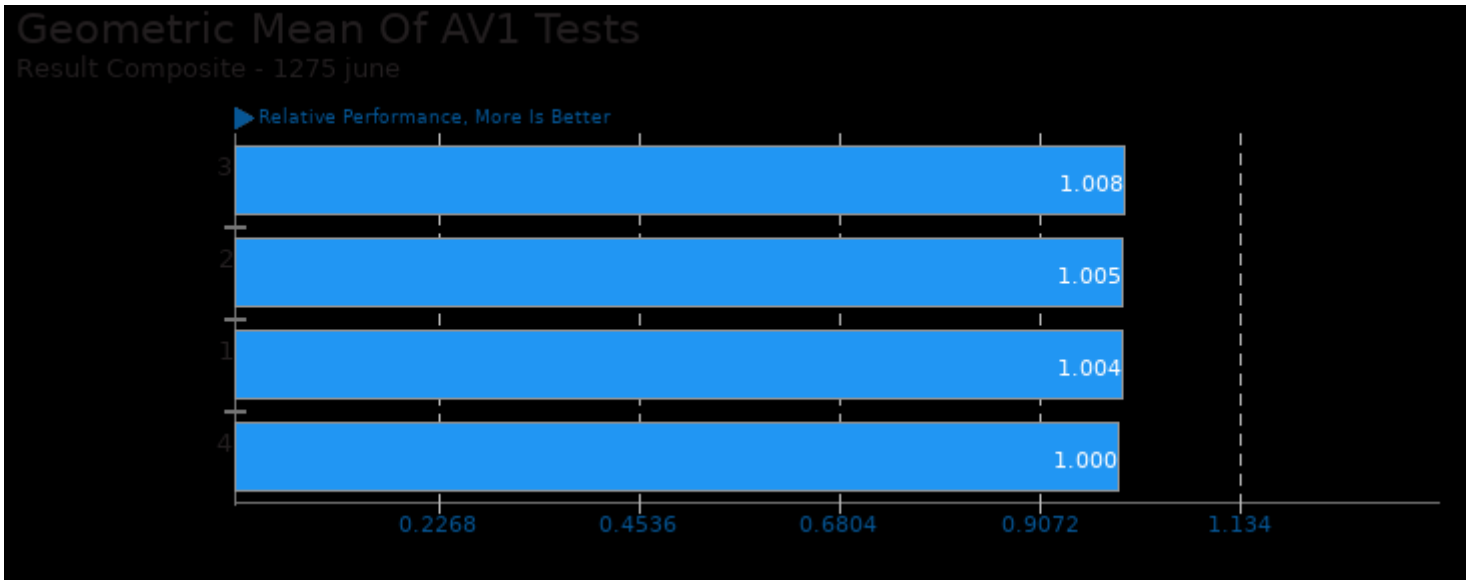

VP9 libvpx Encoding 1.10.0
Speed: Speed 5 - Input: Bosphorus 4K
Frames Per Second, More Is Better
SE +/- 0.00, N = 3
1
2
3
4
9.59
9.52
9.54
9.52
3
6
9
12
15
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11
VP9 libvpx Encoding 1.10.0
Speed: Speed 0 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.02, N = 3
1
2
3
4
7.51
7.45
7.46
7.45
2
4
6
8
10
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11


VP9 libvpx Encoding 1.10.0
Speed: Speed 5 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
SE +/- 0.05, N = 3
1
24.21
2
24.16
3
24.36
4
24.23
6
12
18
24
30
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11
Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 129 Cells Per Direction
Seconds, Fewer Is Better
SE +/- 0.05, N = 3
1
53.36
2
53.27
3
53.41
4
53.39
12
24
36
48
60
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

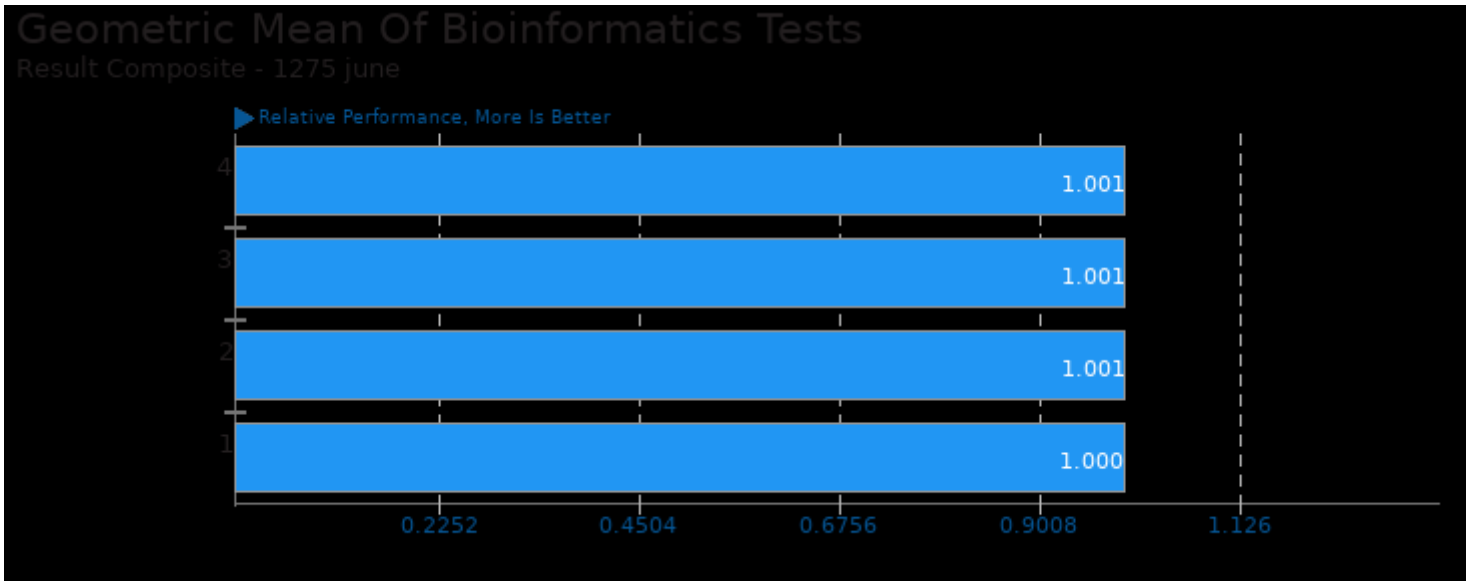

Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 193 Cells Per Direction
Seconds, Fewer Is Better
SE +/- 0.14, N = 3
1
2
3
4
180.77
180.65
180.71
181.33
40
80
120
160
200
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
Xmrig 6.12.1
Variant: Monero - Hash Count: 1M
H/s, More Is Better
SE +/- 0.78, N = 3
1
2
3
4
1635.4
1635.5
1636.1
1637.7
400
800
1200
1600
2000
1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc


Xmrig 6.12.1
Variant: Wownero - Hash Count: 1M
H/s, More Is Better
SE +/- 1.70, N = 3
1
2315.5
2
2318.7
3
2317.6
4
2313.9
500
1000
1500
2000
2500
1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

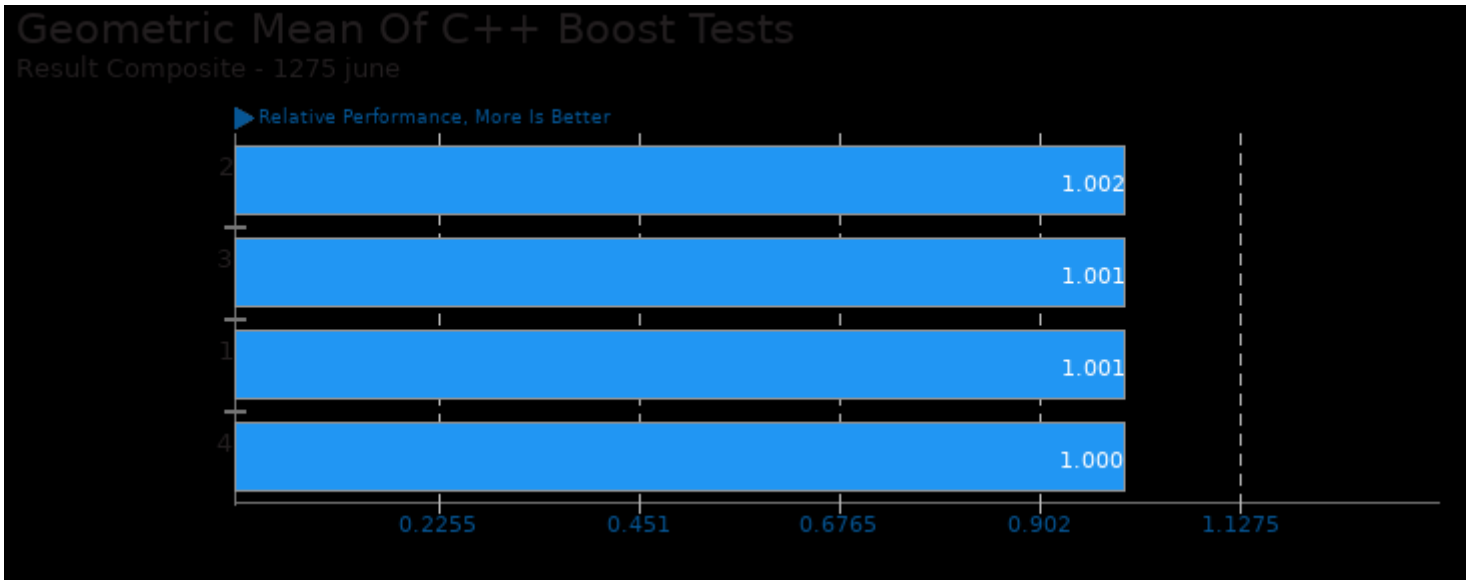
These geometric means are based upon test groupings / test suites for this result file.



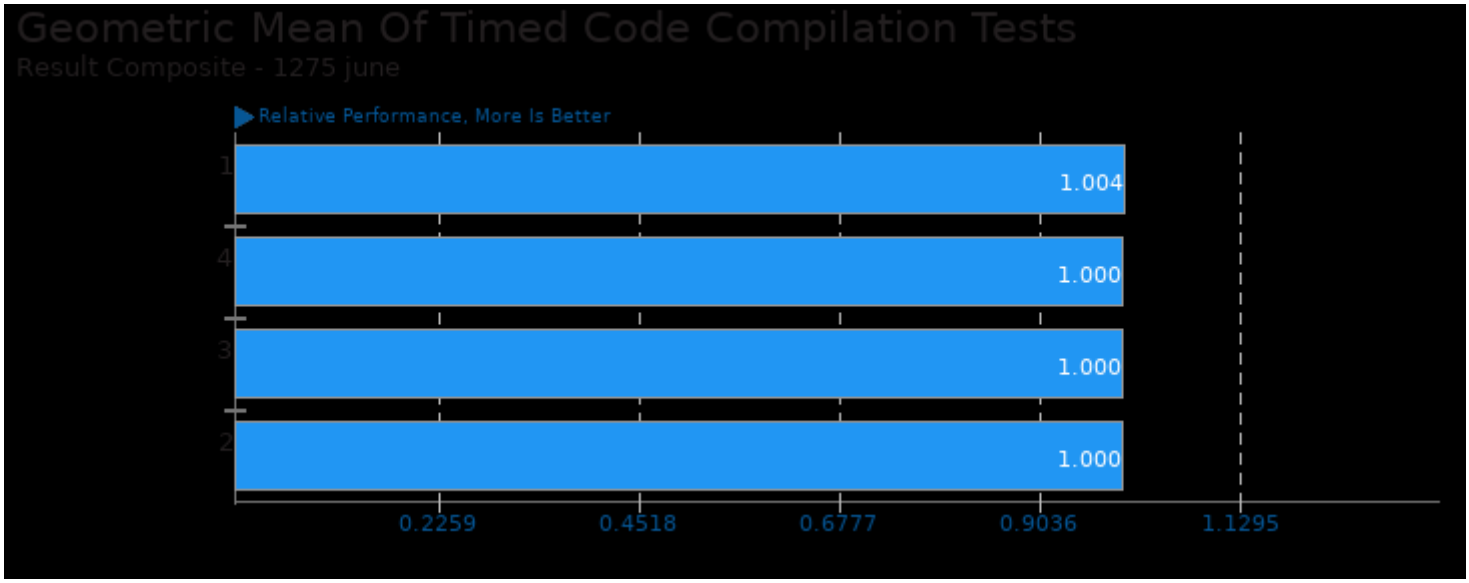
Geometric mean based upon tests: pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/libgav1



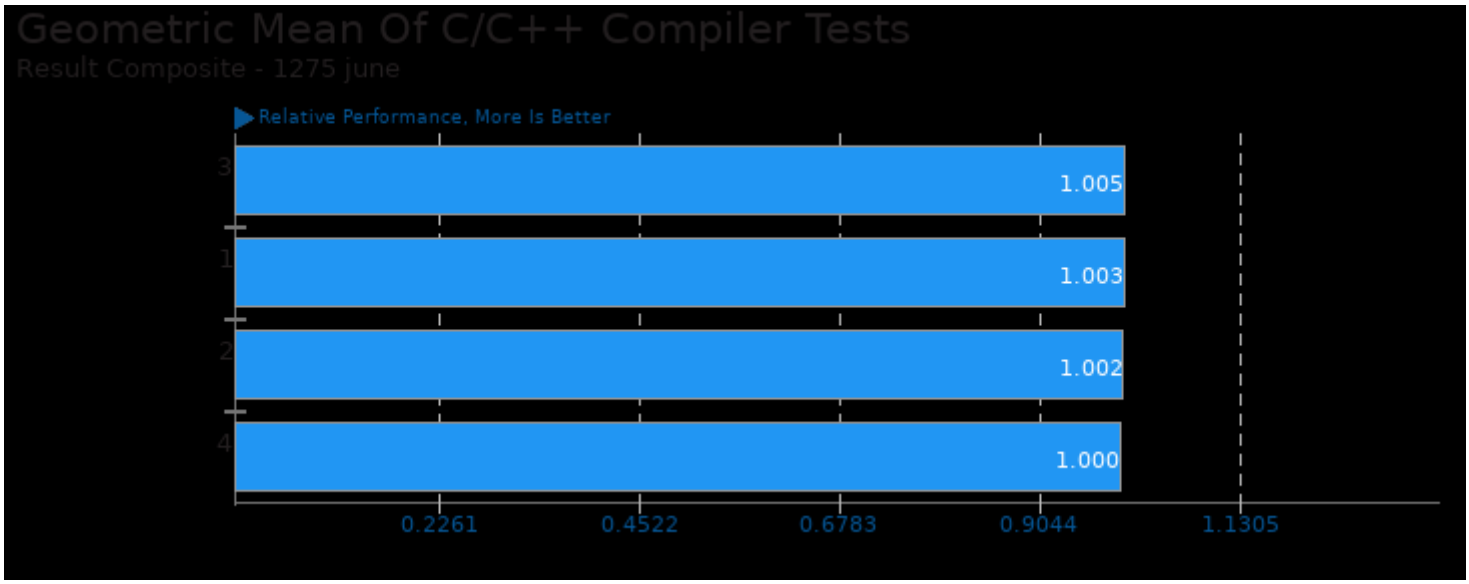
Geometric mean based upon tests: pts/mrbayes and pts/hmmer



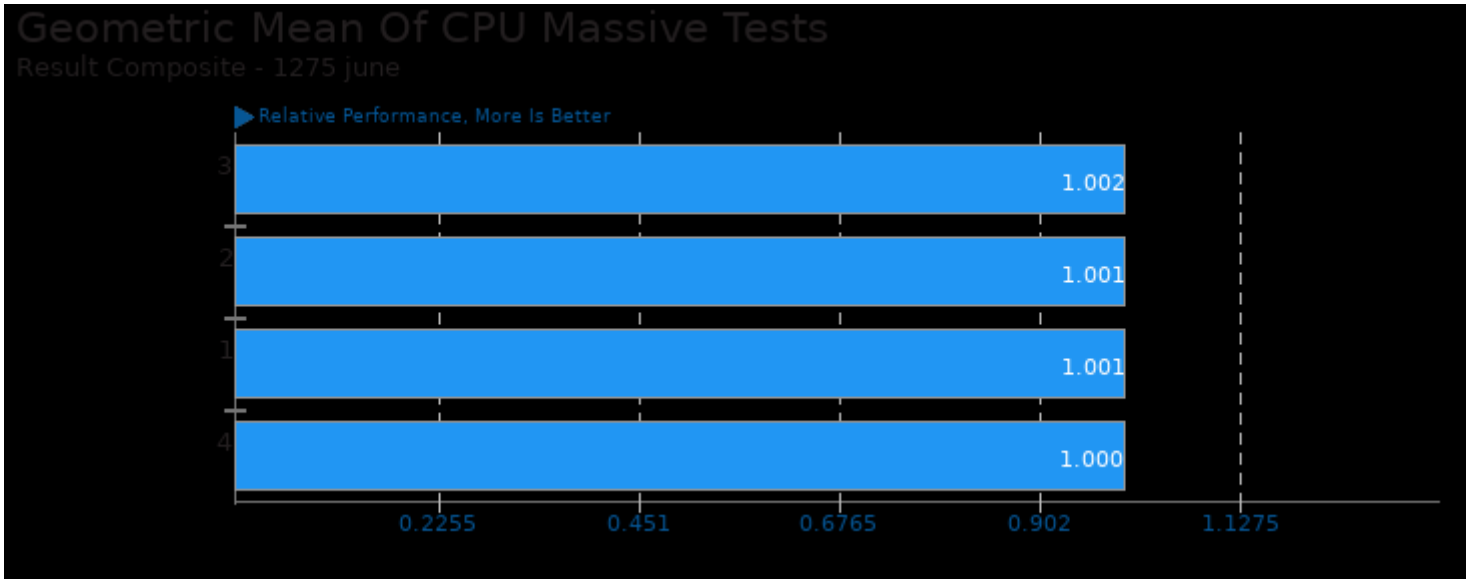
Geometric mean based upon tests: pts/chia-vdf, pts/srslte and pts/srsran



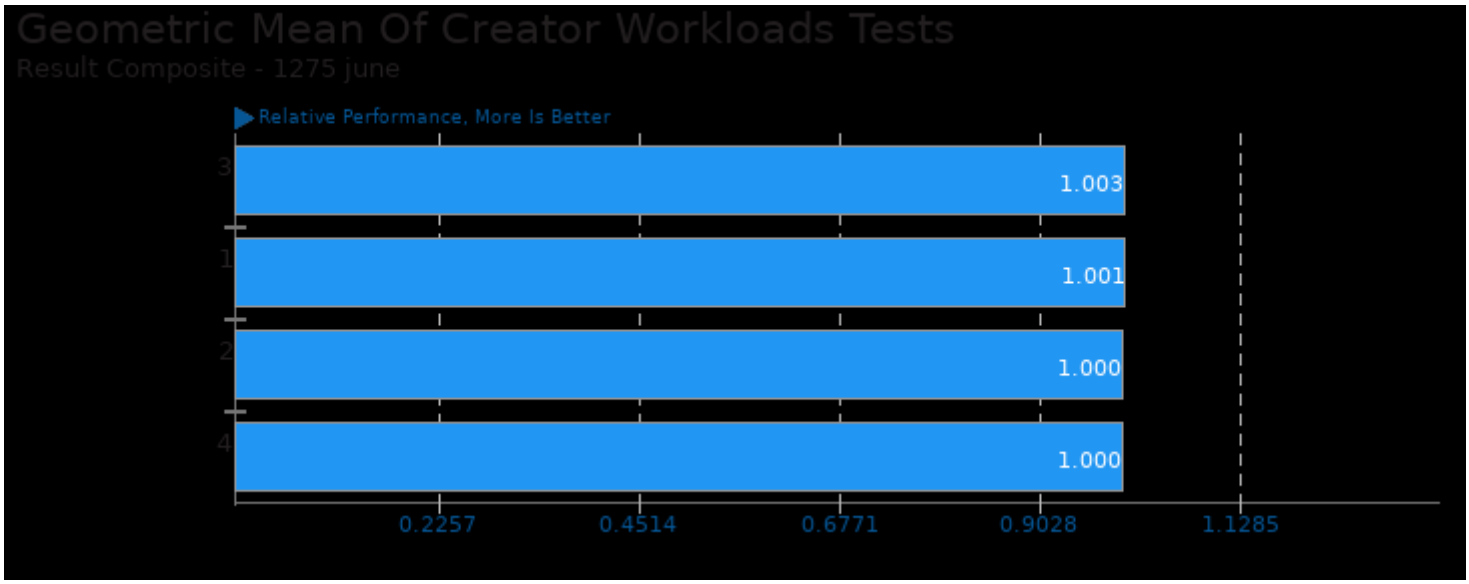
Geometric mean based upon tests: pts/build-linux-kernel, pts/build-gdb, pts/build-llvm, pts/build-ffmpeg, pts/build-nodejs and pts/build-mesa



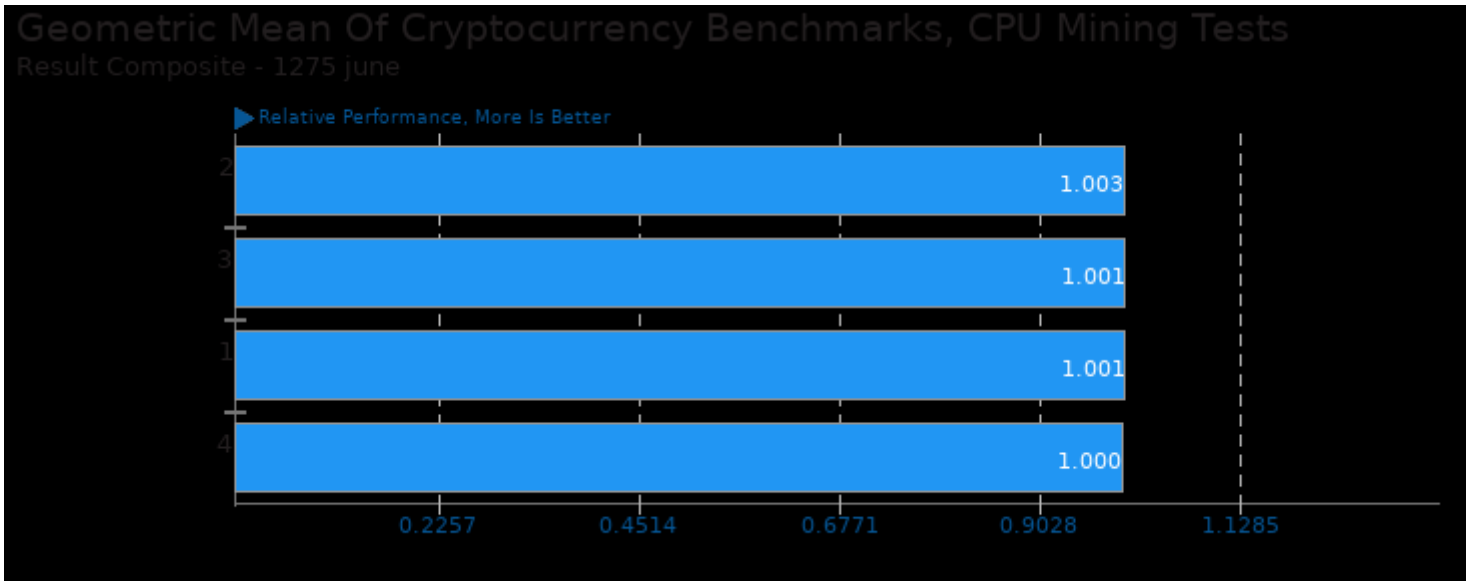
Geometric mean based upon tests: pts/vpxenc, pts/stockfish, pts/hmmer, pts/build-llvm, pts/mrbayes, pts/libgav1, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/svt-vp9, pts/gromacs, pts/build-gdb, pts/build-ffmpeg and pts/basis



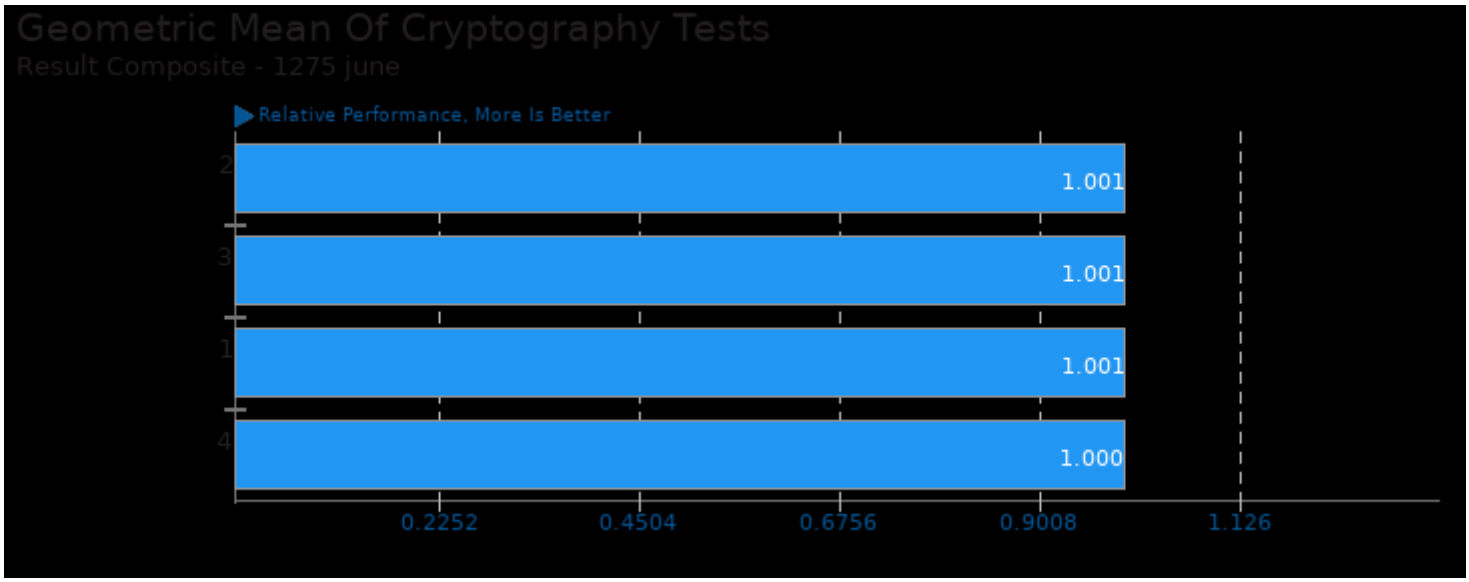
Geometric mean based upon tests: pts/brl-cad, pts/build-llvm, pts/build-linux-kernel, pts/dav1d, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/vpxenc, pts/hmmer, pts/onednn, pts/mrbayes, pts/npb, pts/stockfish, pts/sysbench, pts/botan and pts/tjbench



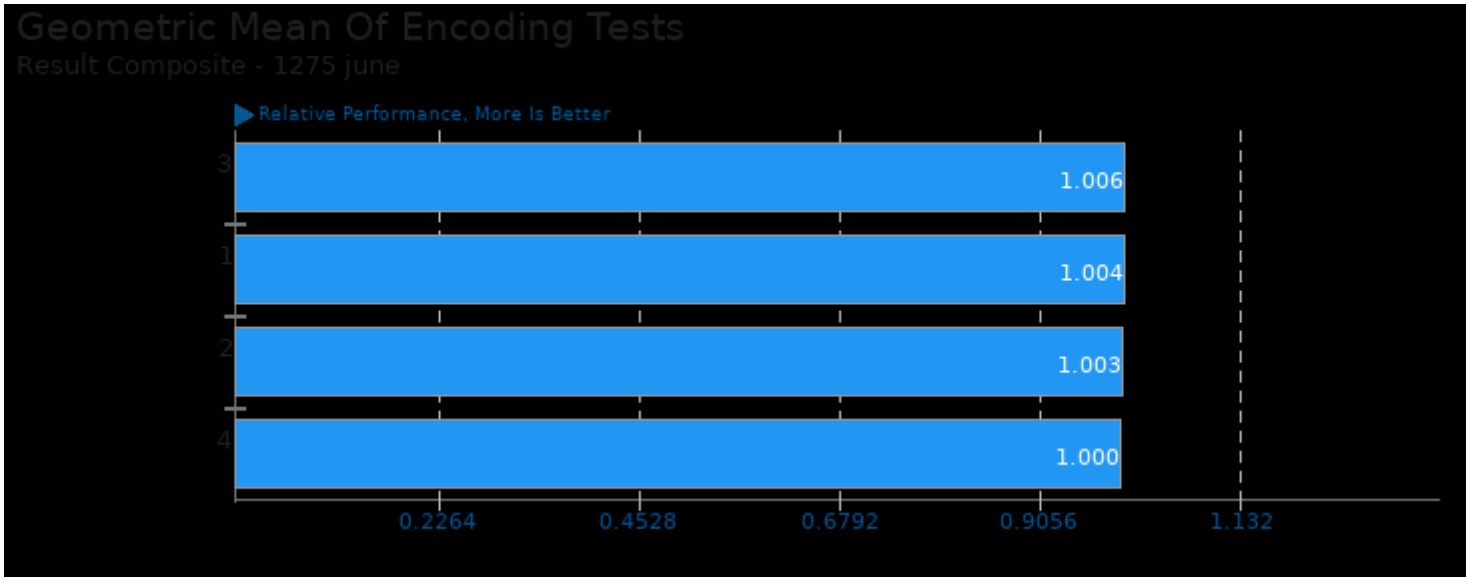
Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/libgav1, pts/tjbench, pts/embree, pts/onednn, pts/oidn, pts/basis, pts/astcenc, pts/toktx, pts/draco, pts/vosk and pts/brl-cad



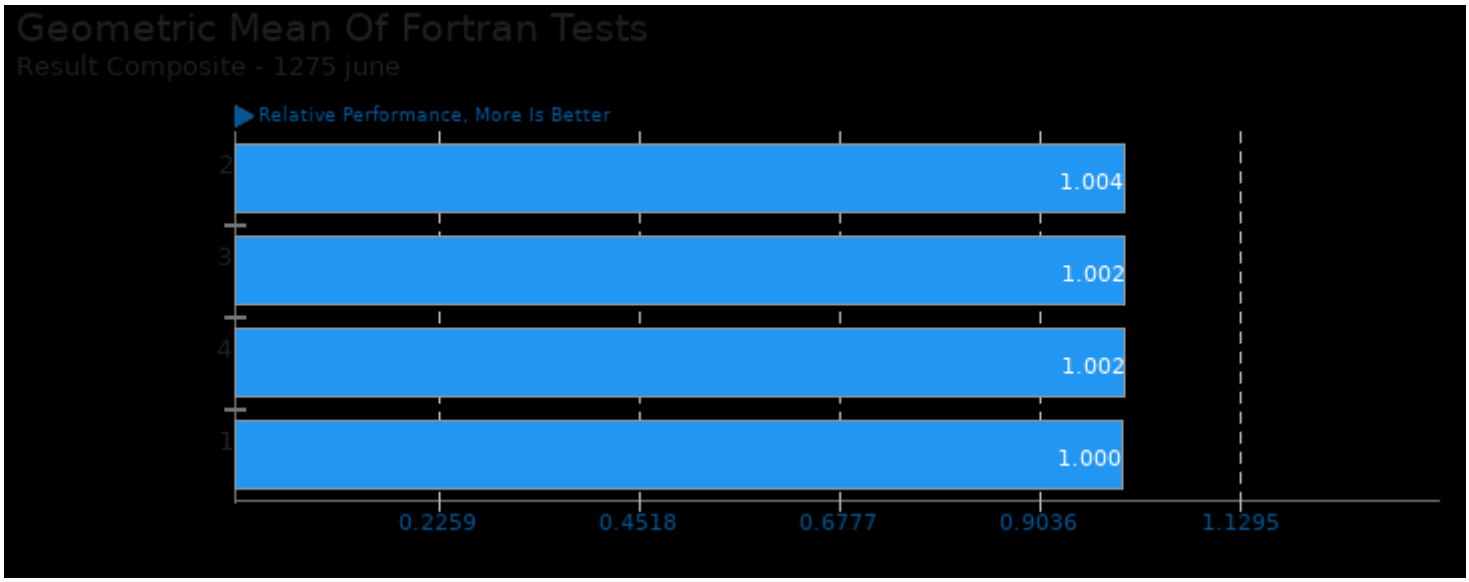
Geometric mean based upon tests: pts/xmrig and pts/chia-vdf



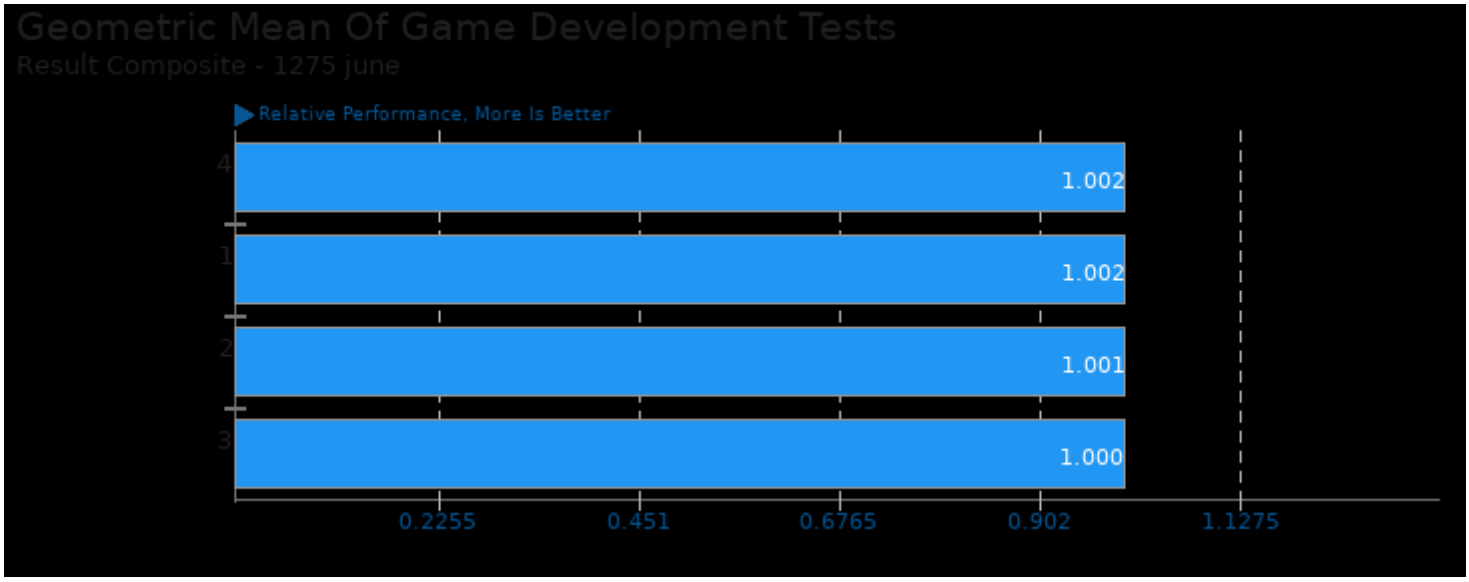
Geometric mean based upon tests: pts/botan, pts/securemark, pts/xmrig and pts/chia-vdf



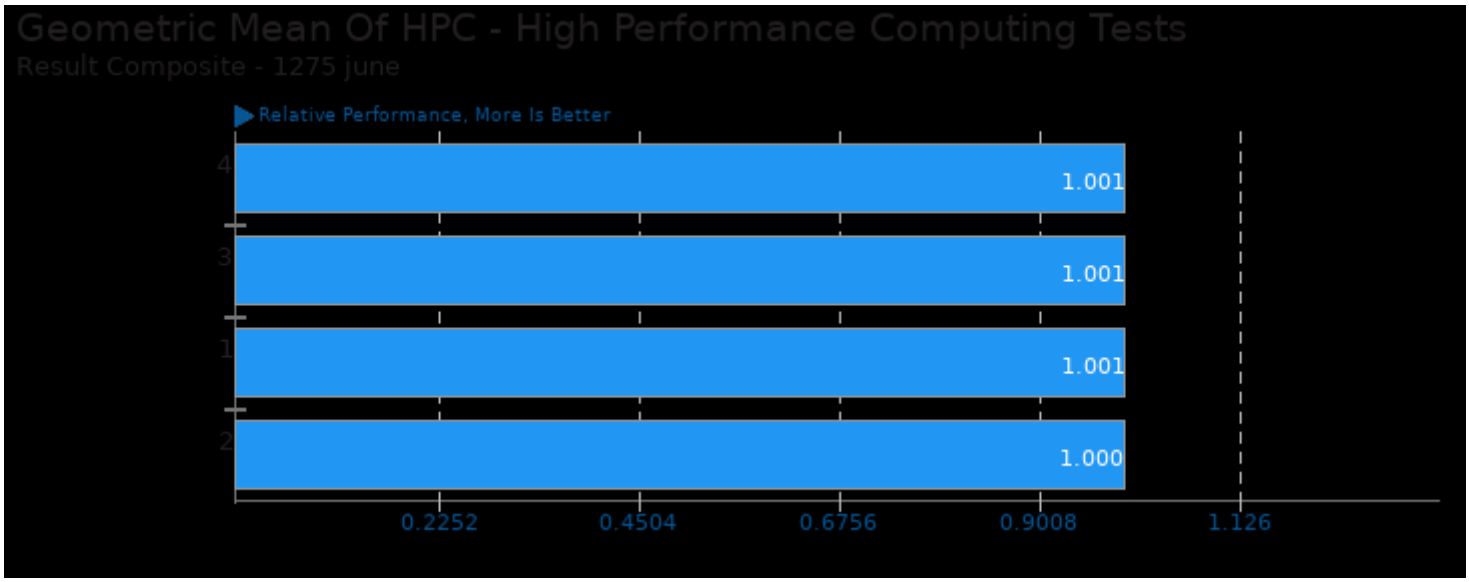
Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/libgav1



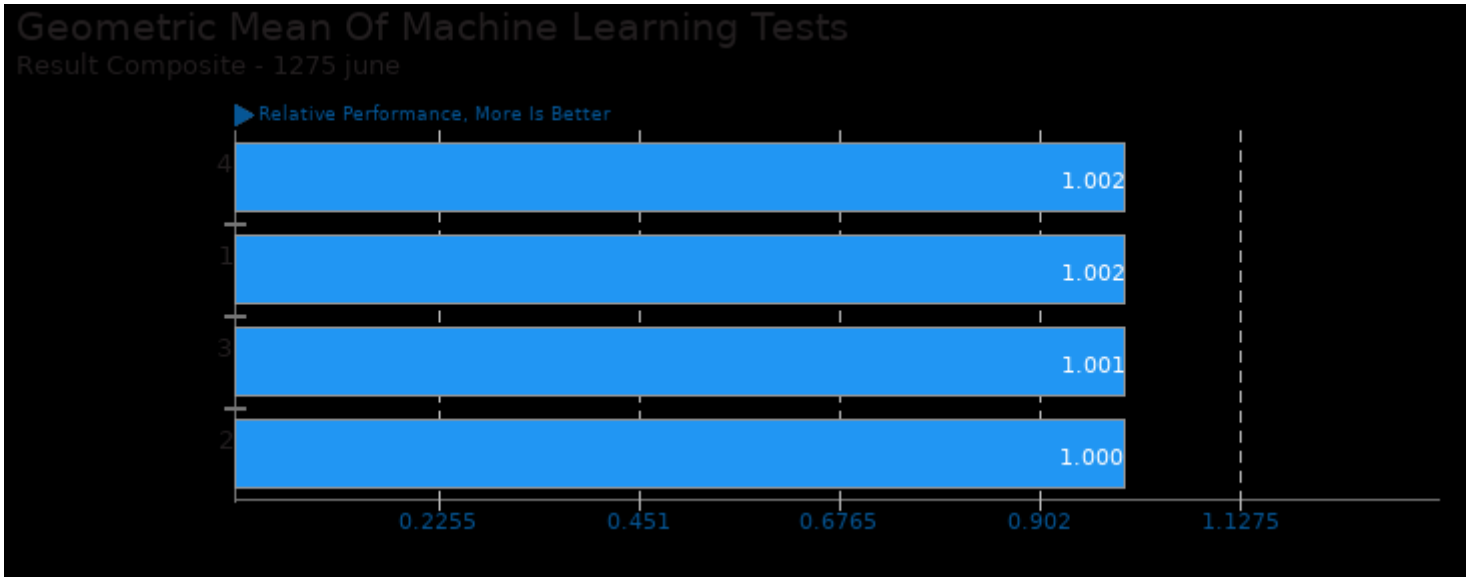
Geometric mean based upon tests: pts/npb and pts/incompact3d



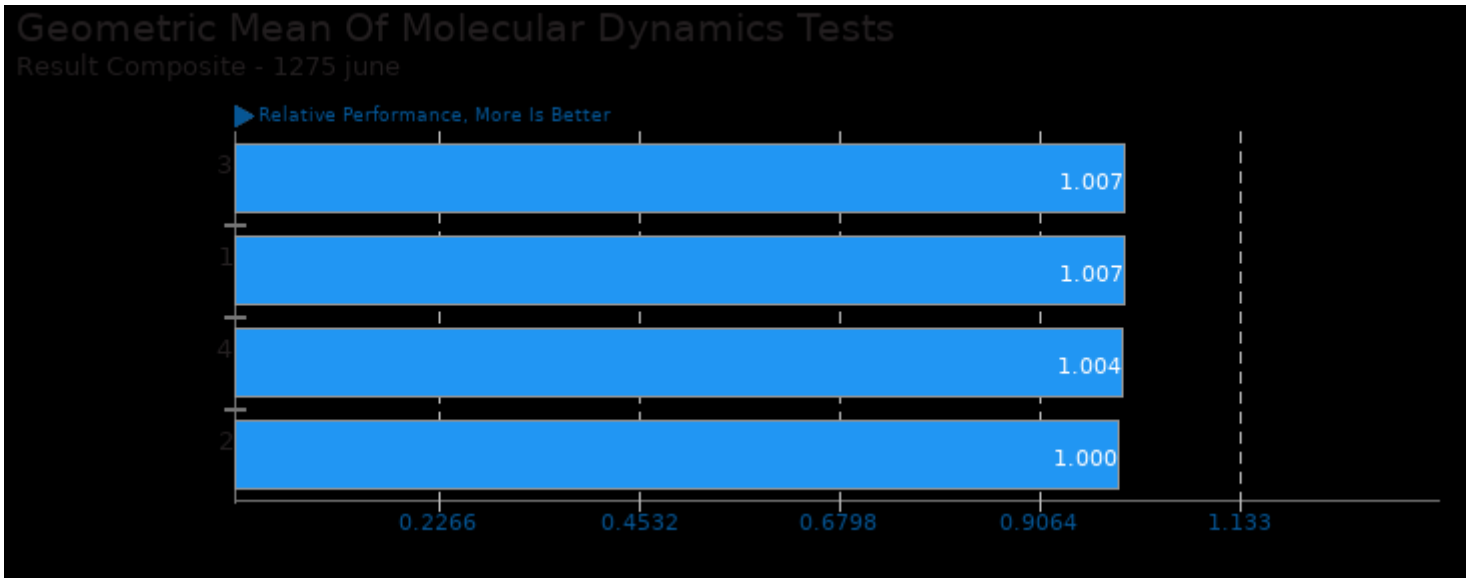
Geometric mean based upon tests: pts/basis, pts/astcenc, pts/toktx, pts/draco and pts/oidn



Geometric mean based upon tests: pts/npb, pts/gromacs, pts/cp2k, pts/incompact3d, pts/mrbayes, pts/hmmer, pts/mnn and pts/onednn



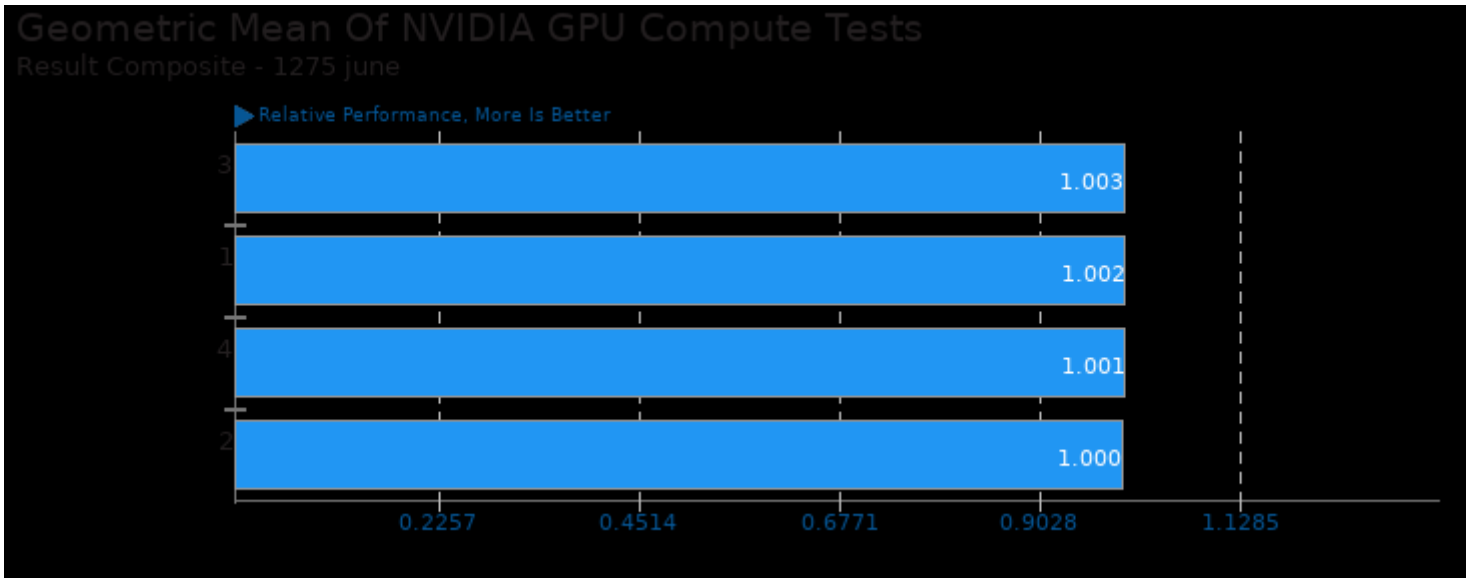
Geometric mean based upon tests: pts/mnn and pts/onednn



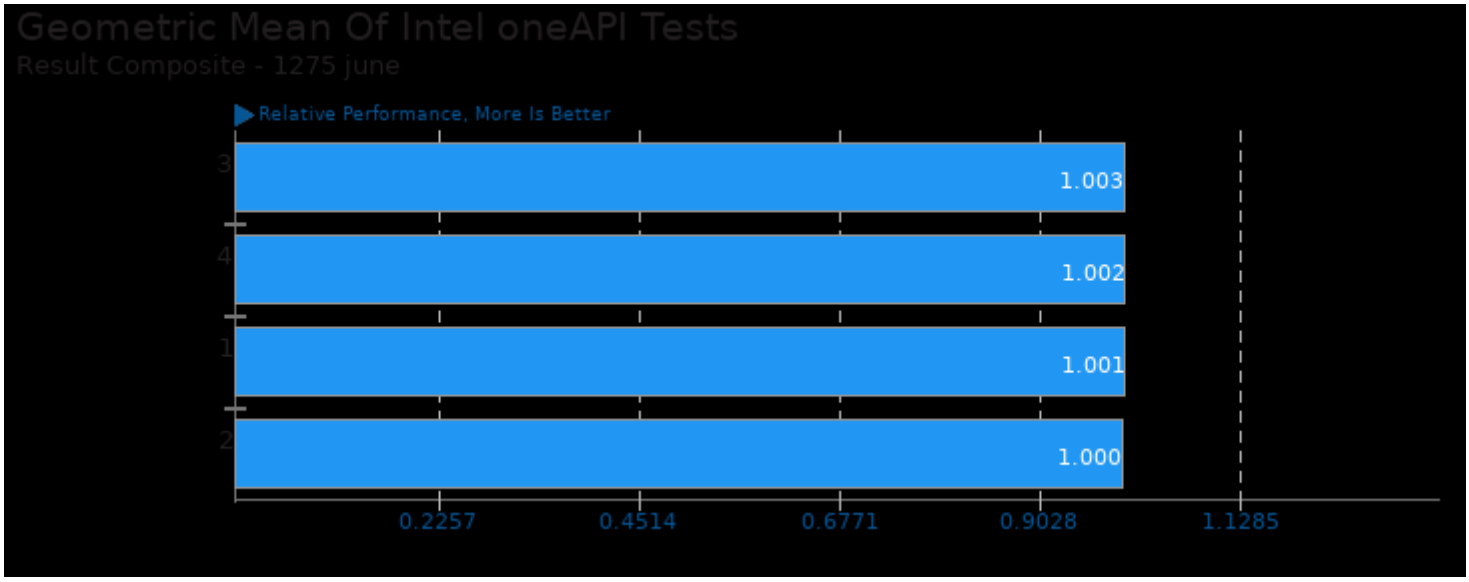
Geometric mean based upon tests: pts/gromacs, pts/cp2k and pts/incompact3d



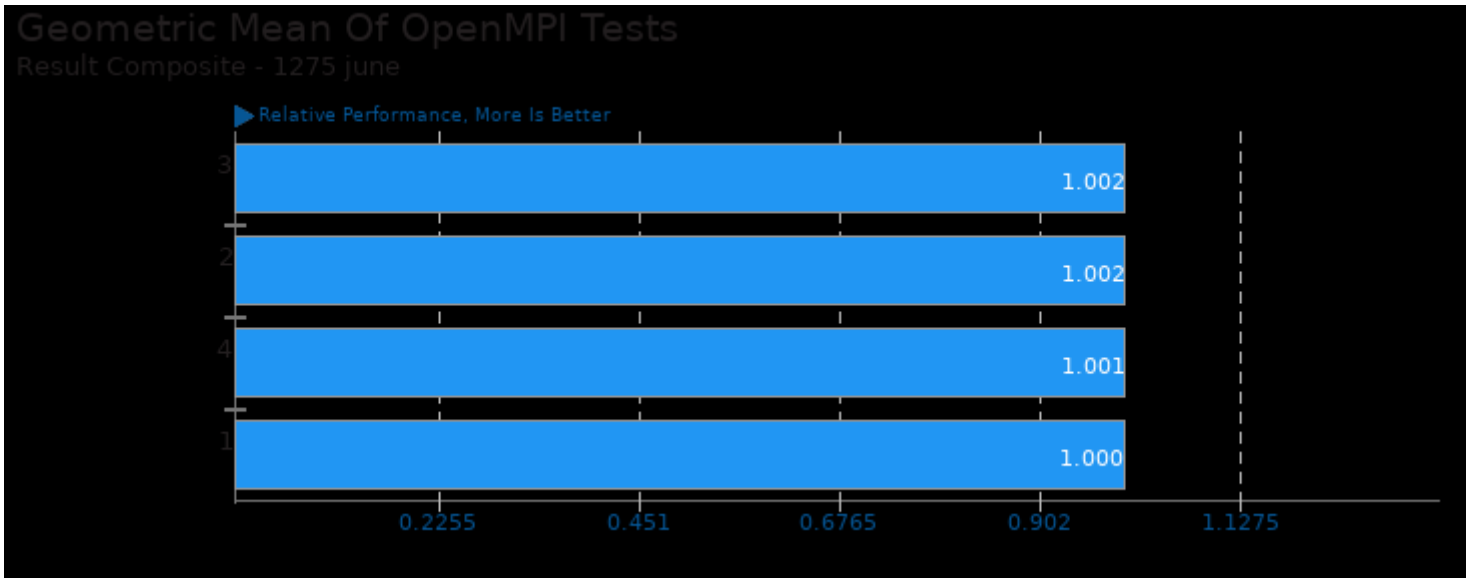
Geometric mean based upon tests: pts/incompact3d, pts/gromacs, pts/mrbayes and pts/npb



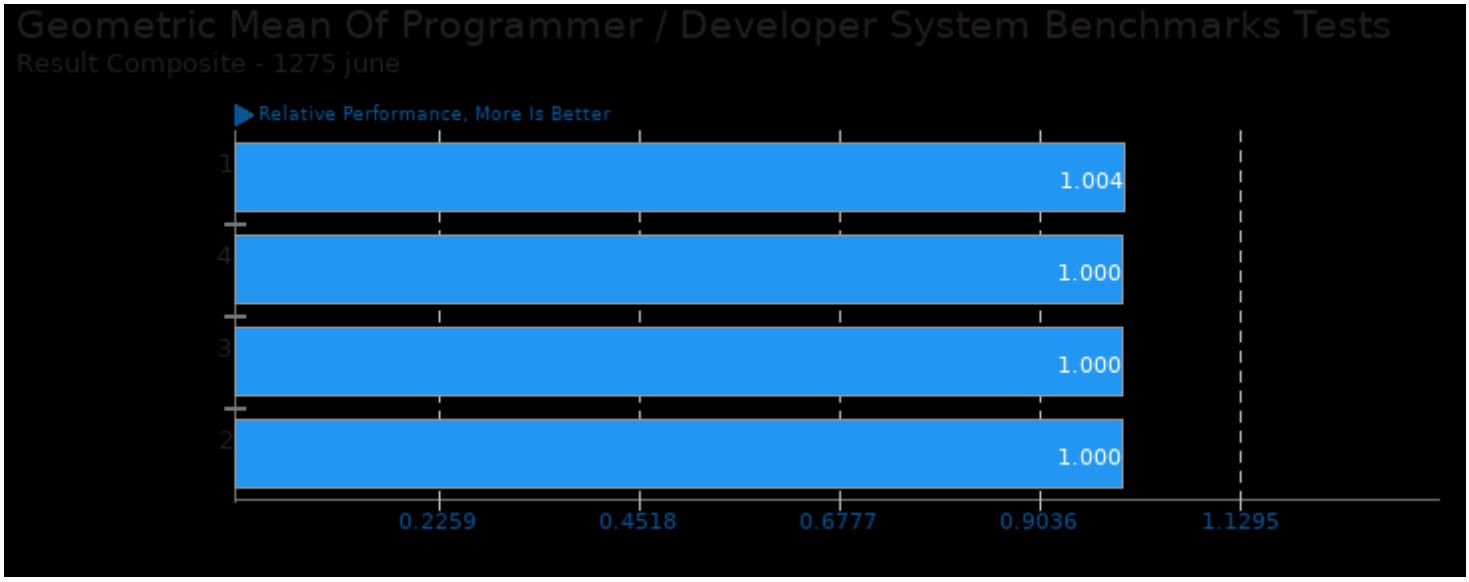
Geometric mean based upon tests: pts/gromacs and pts/viennacl



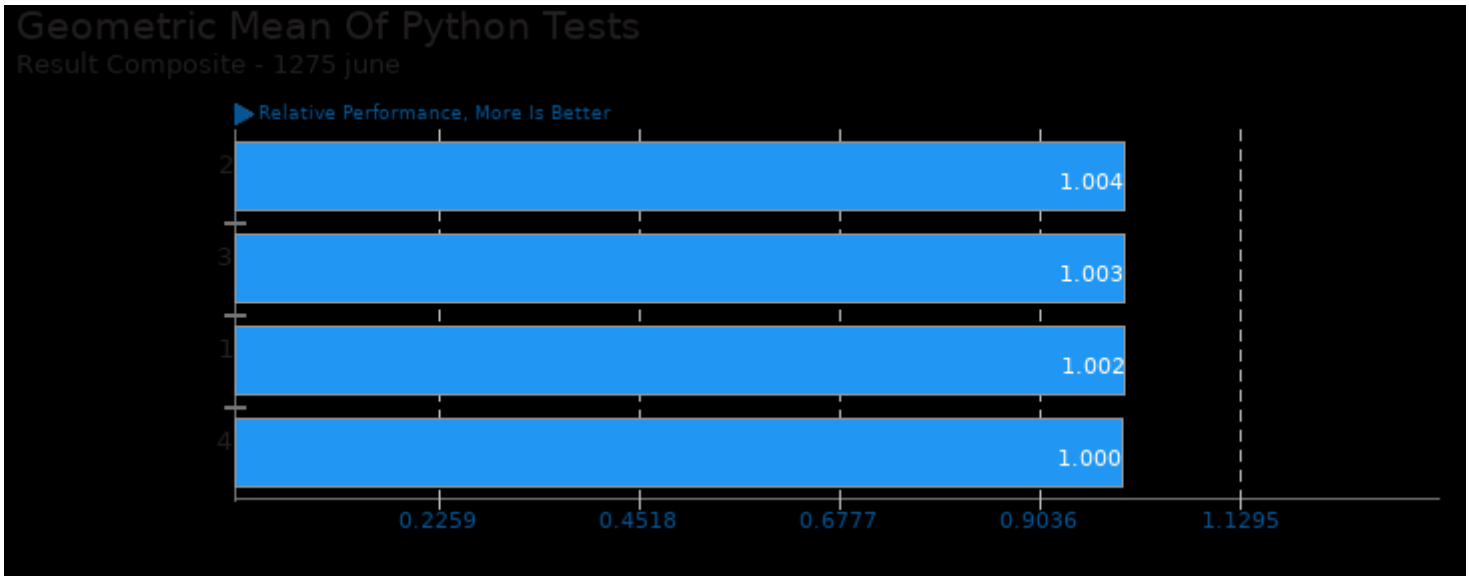
Geometric mean based upon tests: pts/embree, pts/onednn and pts/oidn



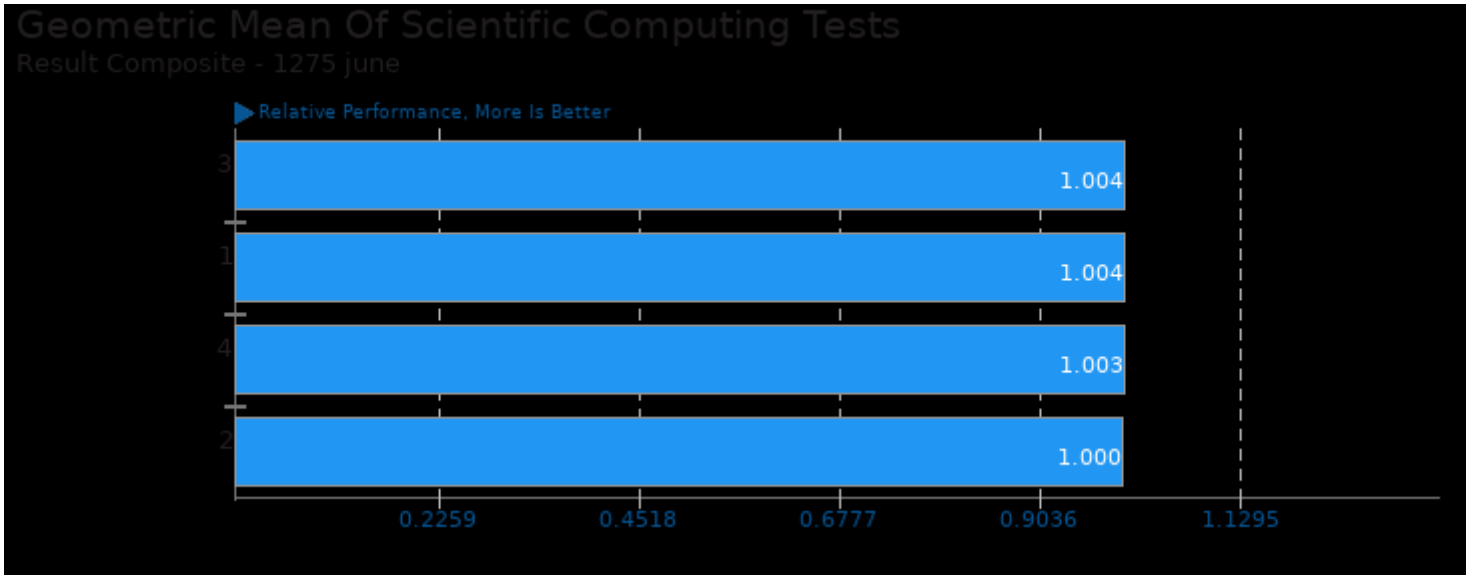
Geometric mean based upon tests: pts/cp2k, pts/gromacs, pts/npb, pts/hmmer, pts/mrbayes and pts/incompact3d



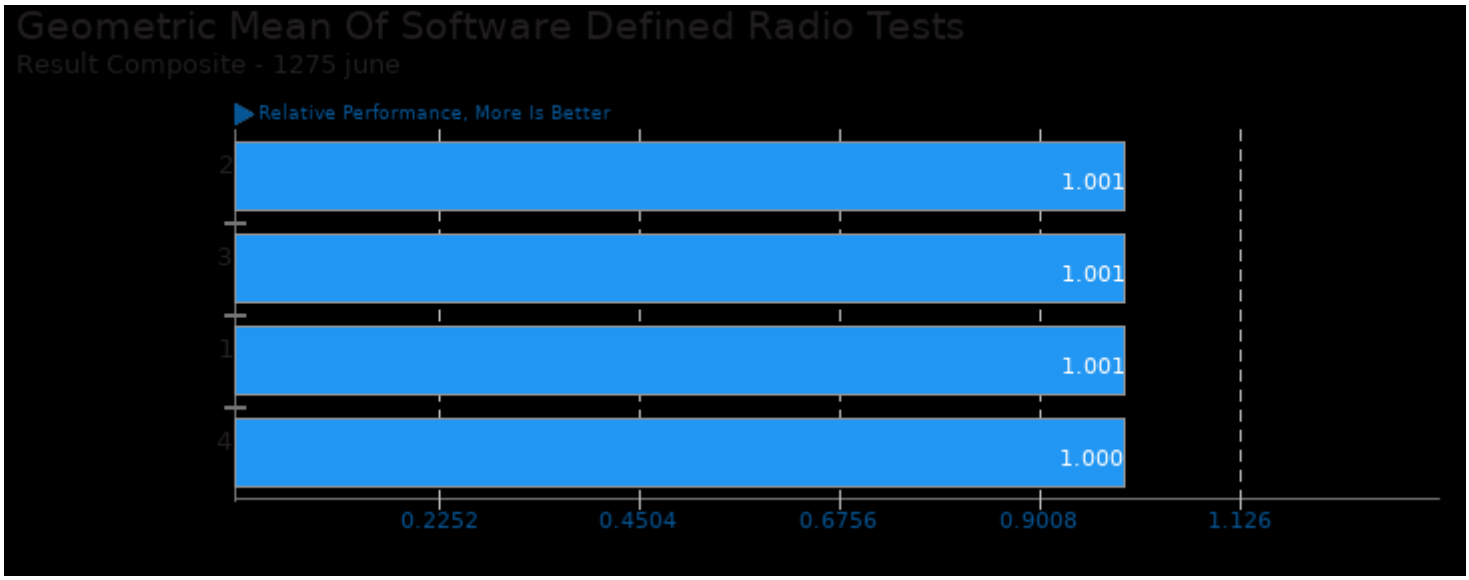
Geometric mean based upon tests: pts/build-linux-kernel, pts/build-gdb, pts/build-llvm, pts/build-ffmpeg, pts/build-nodejs and pts/build-mesa



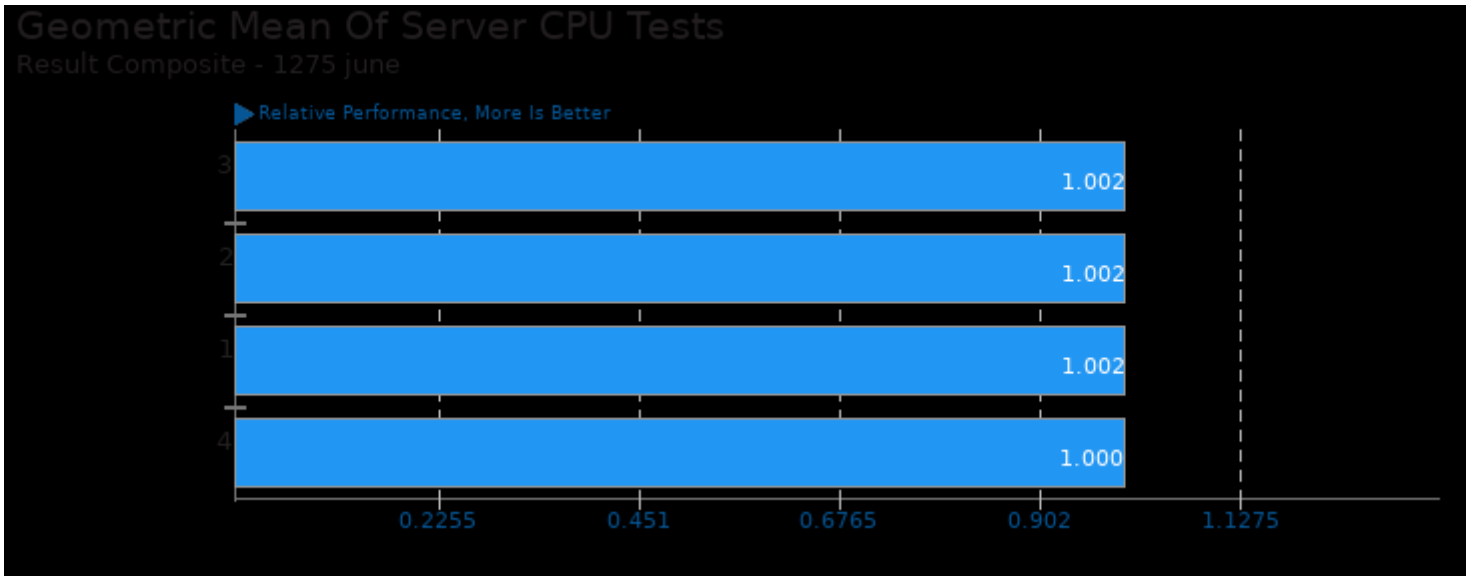
Geometric mean based upon tests: pts/chia-vdf, system/gnuradio, pts/build-llvm, pts/build-mesa, pts/build-nodejs and pts/vosk



Geometric mean based upon tests: pts/gromacs, pts/cp2k, pts/incompact3d, pts/mrbayes and pts/hmmer

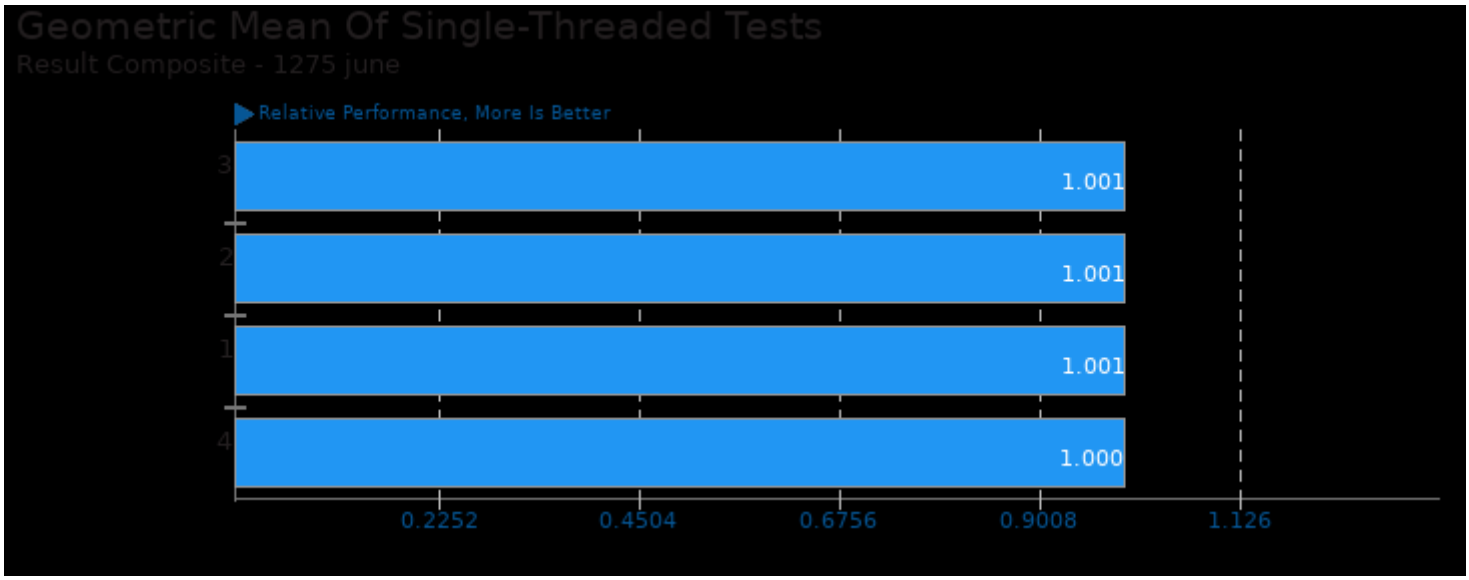


Geometric mean based upon tests: pts/liquid-dsp, pts/srsran, pts/srslte, pts/luaradio and system/gnuradio

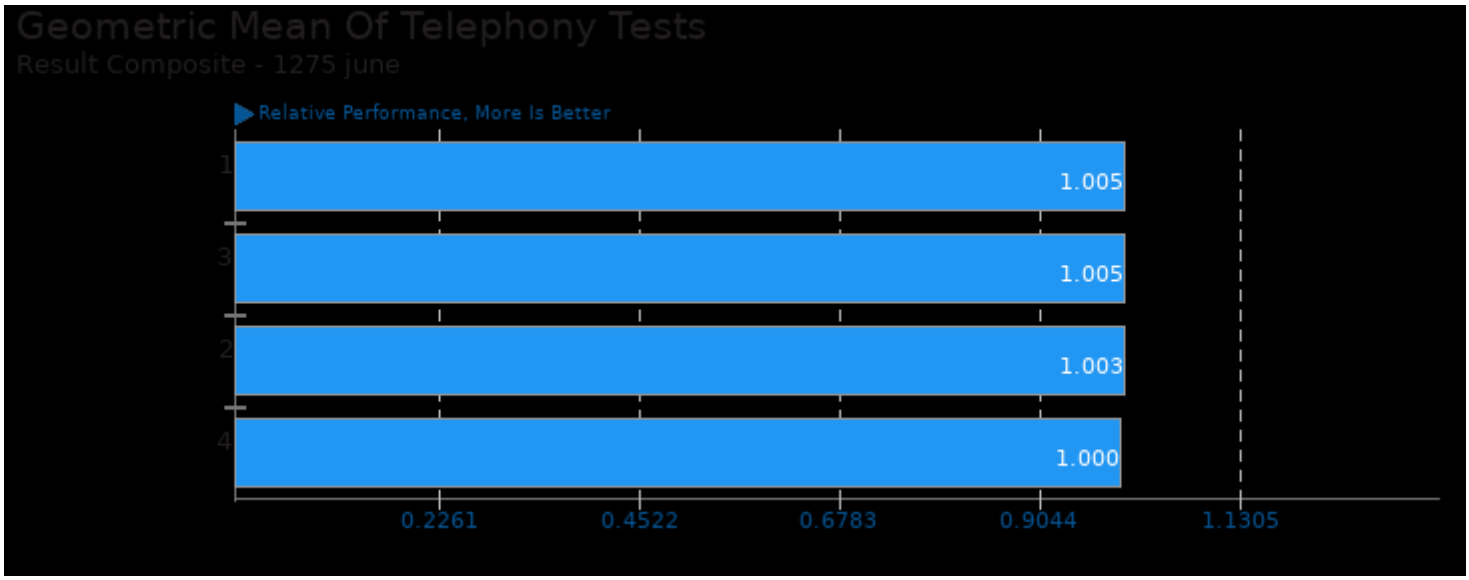


Geometric mean based upon tests: pts/npb, pts/cp2k, pts/onednn, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/dav1d, pts/stockfish, pts/build-linux-kernel, pts/build-llvm, pts/tjbench and pts/sysbench

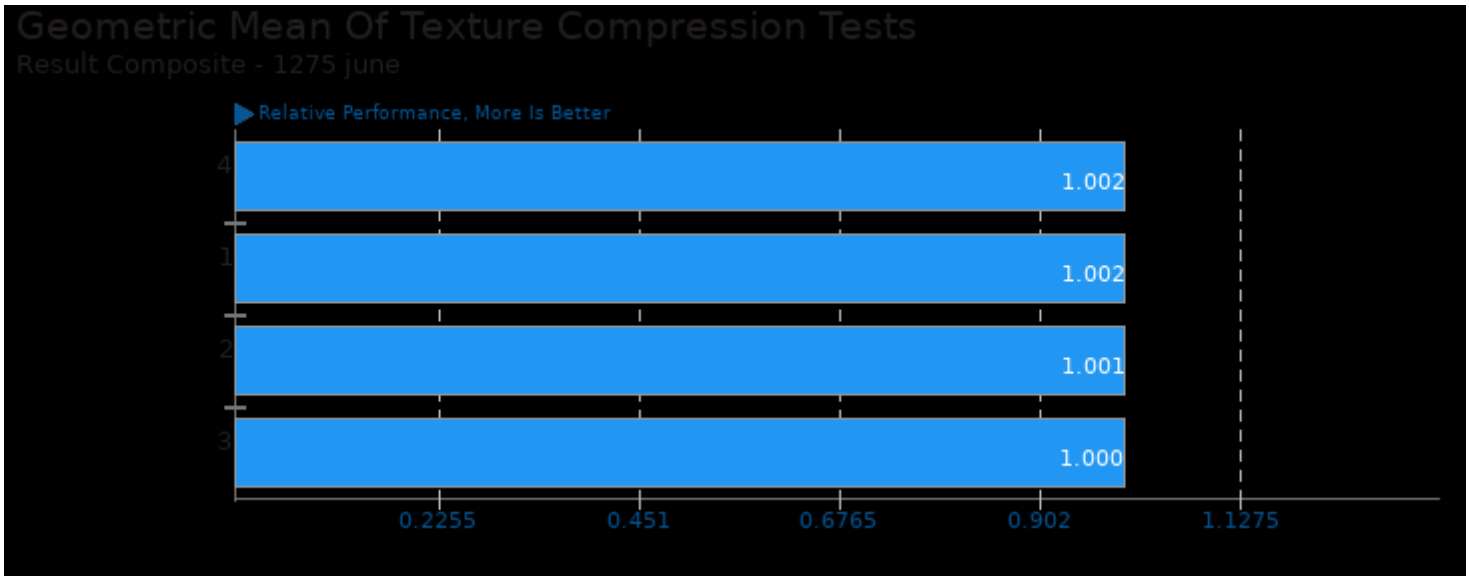
1275 june



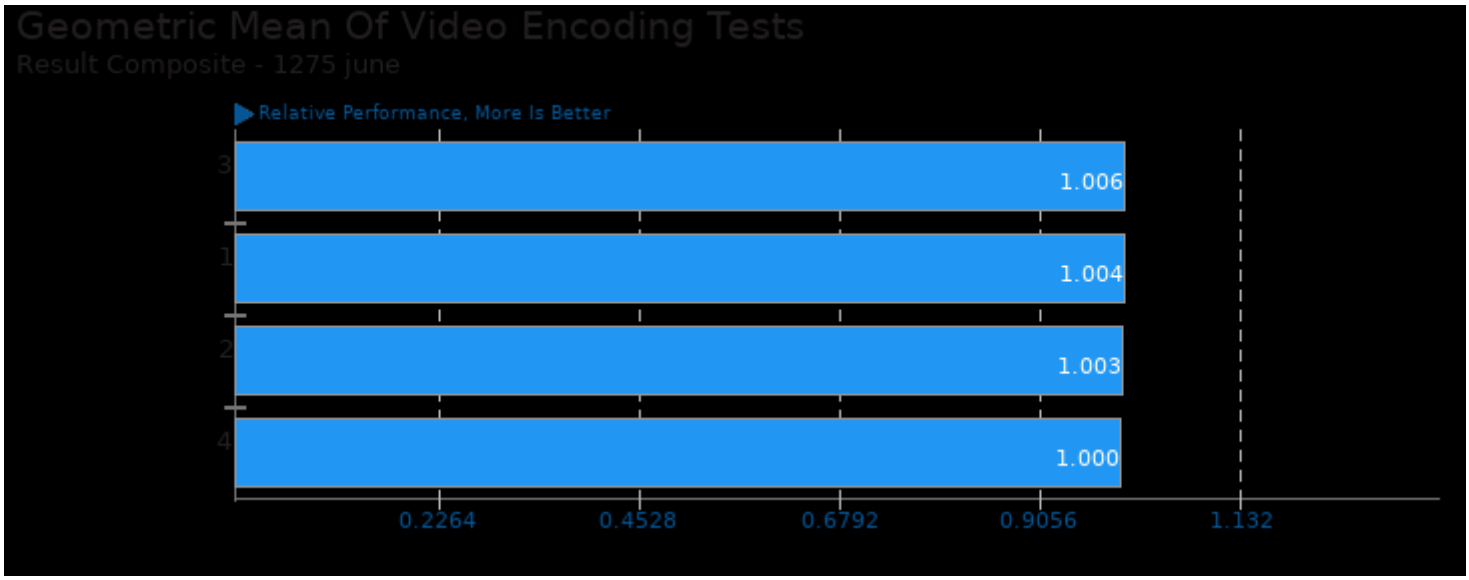
Geometric mean based upon tests: pts/gmpbench, pts/botan and pts/tjbench



Geometric mean based upon tests: pts/pjsip and pts/vosk

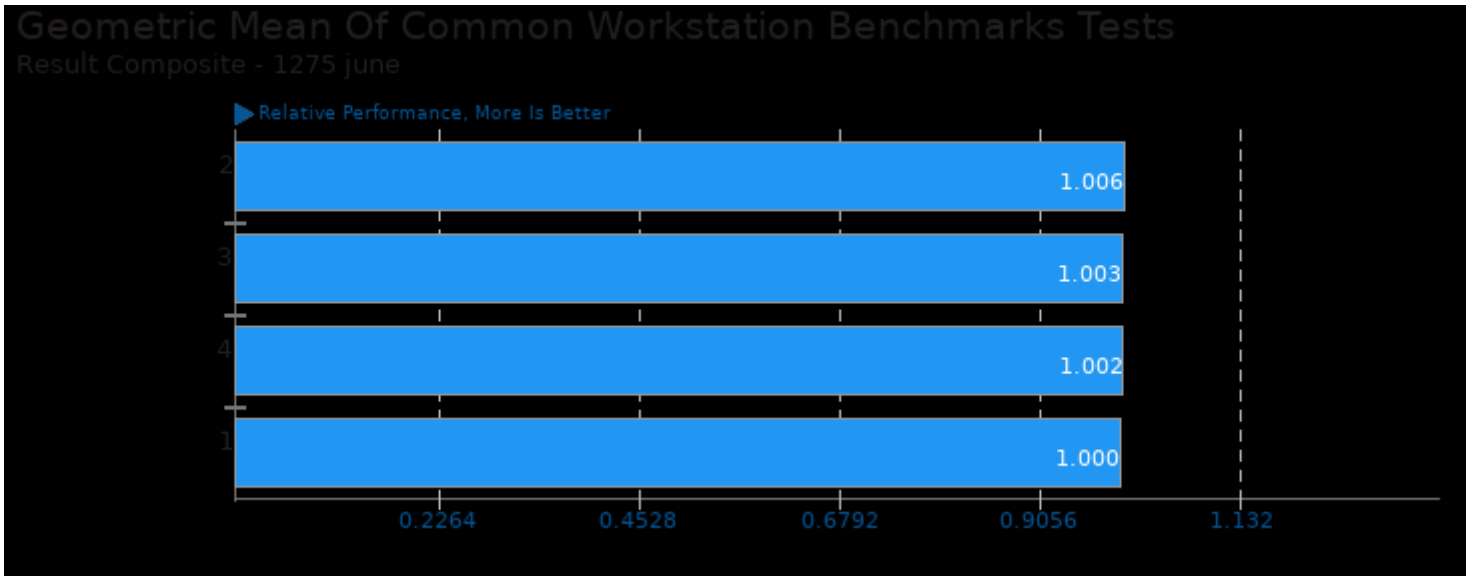


Geometric mean based upon tests: pts/basis, pts/astcenc, pts/toktx and pts/draco



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/libgav1

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Geometric mean based upon tests: pts/brl-cad and pts/sysbench

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