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Core i7 5775C ON Linux In 2022

Intel Core i7-5775C testing with a MSI Z97-G45 GAMING (MS-7821) v1.0 (V2.9 BIOS) and MSI Intel Iris Pro 6200 3GB on Ubuntu 18.10 via the Phoronix Test Suite.

Automated Executive Summary

C had the most wins, coming in first place for 32% of the tests.

Based on the geometric mean of all complete results, the fastest (A) was 1.002x the speed of the slowest (D). C was 1x the speed of A, B was 0.999x the speed of C, D was 0.999x the speed of B.

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

Stress-NG (Test: Atomic) at 1.158x
CLOMP (Static OMP Speedup) at 1.103x
OpenCV (Test: DNN - Deep Neural Network) at 1.095x
RAR Compression (Linux Source Tree Archiving To RAR) at 1.072x
Stress-NG (Test: Socket Activity) at 1.062x
Mobile Neural Network (Model: inception-v3) at 1.061x
OpenCV (Test: Object Detection) at 1.056x
yquake2 (Renderer: Vulkan - Resolution: 1920 x 1080) at 1.052x
NCNN (Target: CPU - Model: blazeface) at 1.045x

NCNN (Target: CPU - Model: mobilenet) at 1.045x.

Test Systems:

A

B

C

D

Processor: Intel Core i7-5775C @ 3.70GHz (4 Cores / 8 Threads), Motherboard: MSI Z97-G45 GAMING (MS-7821) v1.0 (V2.9 BIOS), Chipset: Intel Broadwell-U DMI, Memory: 16GB, Disk: 120GB CT120BX100SSD1, Graphics: MSI Intel Iris Pro 6200 3GB (1150MHz), Audio: Intel Broadwell-U Audio, Monitor: VA2431, Network: Qualcomm Atheros Killer E220x

OS: Ubuntu 18.10, Kernel: 5.0.0-999-generic (x86_64) 20190223, Desktop: GNOME Shell 3.30.2, Display Server: X Server 1.20.1, OpenGL: 4.5 Mesa 19.2.0-devel (git-2631fd3 2019-07-24 cosmic-oibaf-ppa), Vulkan: 1.1.102, Compiler: GCC 8.3.0, 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-bootstrap --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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x20 - Thermald 1.7
Python Notes: Python 2.7.16 + Python 3.6.8
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling

	A	B	C	D
yquake2 - Vulkan - 1920 x 1080 (FPS)	**321.5**	310.1	312.4	**305.5**
Normalized	100%	96.45%	97.17%	95.02%
yquake2 - OpenGL 3.x - 1920 x 1080 (FPS)	310.7	**312.1**	308.3	**306.2**
Normalized	99.55%	100%	98.78%	98.11%
Etcpak - DXT1 (Mpx/s)	**1112**	**1132**	1126	1116
Normalized	98.19%	100%	99.47%	98.55%
Etcpak - ETC1 (Mpx/s)	**247.821**	247.995	247.99	**248.388**
Normalized	99.77%	99.84%	99.84%	100%
Etcpak - ETC2 (Mpx/s)	149.683	**149.876**	149.812	**147.292**
Normalized	99.87%	100%	99.96%	98.28%

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Etcpak - ETC1 + Dithering (Mpx/s)	238.441	238.415	**238.45**	**237.607**
Normalized	100%	99.99%	100%	99.65%
CLOMP - Static OMP Speedup (Speedup)	**3.2**	**2.9**	3.1	3
Normalized	100%	90.63%	96.88%	93.75%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	46.0422325	**46.0284424**	46.0894966	**46.1456413**
Normalized	99.97%	100%	99.87%	99.75%
Quantum ESPRESSO - AUSURF112 (sec)	**1294**	1281	1278	**1276**
Normalized	98.61%	99.62%	99.9%	100%
libgav1 - Chimera 1080p (FPS)	**138.33**	**136.81**	137.82	137.43
Normalized	100%	98.9%	99.63%	99.35%
libgav1 - Summer Nature 4K (FPS)	44.06	**44.3**	43.96	**43.88**
Normalized	99.46%	100%	99.23%	99.05%
libgav1 - S.N.1 (FPS)	**161.72**	**159.89**	160.71	161.26
Normalized	100%	98.87%	99.38%	99.72%
libgav1 - C.1.1.b (FPS)	38.54	**38.69**	**38.53**	38.58
Normalized	99.61%	100%	99.59%	99.72%
GNU GMP GMPbench - Total Time (GMPbench Score)	4623	**4626**	**4623**	4625
Normalized	99.95%	100%	99.94%	99.98%
Xmrig - Monero - 1M (H/s)	**2214**	2235	2225	**2295**
Normalized	96.48%	97.39%	96.95%	100%
Xmrig - Wownero - 1M (H/s)	**2567**	2593	2567	**2597**
Normalized	98.81%	99.85%	98.84%	100%
Zstd Compression - 3 - Compression Speed (MB/s)	**1498**	1497	**1490**	1493
Normalized	100%	99.93%	99.47%	99.62%
Zstd Compression - 3 - D.S (MB/s)	**2843**	**2825**	2843	2838
Normalized	100%	99.38%	99.99%	99.84%
Zstd Compression - 8 - Compression Speed (MB/s)	**375.1**	**368.7**	372	372.5
Normalized	100%	98.29%	99.17%	99.31%
Zstd Compression - 8 - D.S (MB/s)	2921	2916	**2924**	**2875**
Normalized	99.91%	99.74%	100%	98.33%
Zstd Compression - 19 - Compression Speed (MB/s)	**21.3**	**21.3**	21.1	**21**
Normalized	100%	100%	99.06%	98.59%
Zstd Compression - 19 - D.S (MB/s)	**2564**	**2547**	2554	2561
Normalized	100%	99.33%	99.61%	99.91%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	**774.9**	**760.3**	771.1	766
Normalized	100%	98.12%	99.51%	98.85%
Zstd Compression - 3, Long Mode - D.S (MB/s)	3020	3012	**3022**	**2986**
Normalized	99.94%	99.69%	100%	98.82%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	364.9	**359.9**	364.7	**365.6**
Normalized	99.81%	98.44%	99.75%	100%

Zstd Compression - 8, Long Mode - D.S (MB/s)	3096	**3098**	3091	**3080**
Normalized	99.92%	100%	99.78%	99.42%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	**18.3**	**18.6**	18.4	**18.6**
Normalized	98.39%	100%	98.92%	100%
Zstd Compression - 19, Long Mode - D.S (MB/s)	2601	2592	**2601**	**2591**
Normalized	99.98%	99.63%	100%	99.6%
Zstd Compression - 3 - Compression Speed (MB/s)	1736	**1736**	**1758**	1739
Normalized	98.74%	98.71%	100%	98.88%
Zstd Compression - 3 - D.S (MB/s)	**2299**	**2290**	2298	2295
Normalized	100%	99.59%	99.96%	99.8%
Zstd Compression - 8 - Compression Speed (MB/s)	**348.3**	**340.9**	**348.3**	341.8
Normalized	100%	97.88%	100%	98.13%
Zstd Compression - 8 - D.S (MB/s)	2542	**2550**	2550	**2541**
Normalized	99.66%	100%	100%	99.64%
Zstd Compression - 19 - Compression Speed (MB/s)	22	**22.1**	**22.1**	**21.7**
Normalized	99.55%	100%	100%	98.19%
Zstd Compression - 19 - D.S (MB/s)	**2363**	**2349**	2361	2351
Normalized	100%	99.38%	99.92%	99.48%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	364.1	366.6	**370.1**	**363.1**
Normalized	98.38%	99.05%	100%	98.11%
Zstd Compression - 3, Long Mode - D.S (MB/s)	**2468**	**2453**	2453	2464
Normalized	100%	99.38%	99.4%	99.85%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	**265.7**	267.4	266.1	**268.1**
Normalized	99.1%	99.74%	99.25%	100%
Zstd Compression - 8, Long Mode - D.S (MB/s)	2731	2738	**2746**	**2729**
Normalized	99.45%	99.71%	100%	99.39%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	**15.4**	15.5	**15.4**	**15.6**
Normalized	98.72%	99.36%	98.72%	100%
Zstd Compression - 19, Long Mode - D.S (MB/s)	2464	2464	**2468**	**2458**
Normalized	99.83%	99.83%	100%	99.6%
JPEG XL libjxl - PNG - 5 (MP/s)	**17.68**	17.73	**17.74**	**17.68**
Normalized	99.66%	99.94%	100%	99.66%
JPEG XL libjxl - PNG - 7 (MP/s)	**5.55**	**5.55**	**5.57**	**5.55**
Normalized	99.64%	99.64%	100%	99.64%
JPEG XL libjxl - PNG - 8 (MP/s)	0.6	0.6	0.6	0.6
JPEG XL libjxl - JPEG - 5 (MP/s)	**48.6**	49.05	**49.21**	**49.21**
Normalized	98.76%	99.67%	100%	100%
JPEG XL libjxl - JPEG - 7 (MP/s)	**49.47**	**49**	49.25	49.05
Normalized	100%	99.05%	99.56%	99.15%

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JPEG XL libjxl - JPEG - 8 (MP/s)	**20.55**	**20.55**	20.62	**20.63**
Normalized	99.61%	99.61%	99.95%	100%
JPEG XL Decoding libjxl - 1 (MP/s)	39.73	39.78	**39.68**	**40.04**
Normalized	99.23%	99.35%	99.1%	100%
JPEG XL Decoding libjxl - All (MP/s)	**135.41**	135.35	**135.18**	135.23
Normalized	100%	99.96%	99.83%	99.87%
srsRAN - OFDM_Test (Samples / Second)	**81400000**	**82400000**	81900000	**81400000**
Normalized	98.79%	100%	99.39%	98.79%
srsRAN - 4.P.1.P.M.6.Q (eNb Mb/s)	270.6	**272.6**	269.7	**269.4**
Normalized	99.27%	100%	98.94%	98.83%
srsRAN - 4.P.1.P.M.6.Q (UE Mb/s)	**88.7**	88.8	**89.4**	88.8
Normalized	99.22%	99.33%	100%	99.33%
srsRAN - 4.P.1.P.S.6.Q (eNb Mb/s)	**279.8**	279.5	279.6	**279**
Normalized	100%	99.89%	99.93%	99.71%
srsRAN - 4.P.1.P.S.6.Q (UE Mb/s)	**109.3**	108.9	**108.6**	108.8
Normalized	100%	99.63%	99.36%	99.54%
srsRAN - 4.P.1.P.M.2.Q (eNb Mb/s)	299.8	**297.7**	**300.9**	299.2
Normalized	99.63%	98.94%	100%	99.44%
srsRAN - 4.P.1.P.M.2.Q (UE Mb/s)	**96.9**	**97.6**	97.5	**97.6**
Normalized	99.28%	100%	99.9%	100%
srsRAN - 4.P.1.P.S.2.Q (eNb Mb/s)	308.7	308.7	**309.1**	**308.1**
Normalized	99.87%	99.87%	100%	99.68%
srsRAN - 4.P.1.P.S.2.Q (UE Mb/s)	**115.4**	115.7	**116.4**	115.9
Normalized	99.14%	99.4%	100%	99.57%
srsRAN - 5.P.T.5.P.S.6.Q (eNb Mb/s)	90.1	**90.3**	**89.9**	**89.9**
Normalized	99.78%	100%	99.56%	99.56%
srsRAN - 5.P.T.5.P.S.6.Q (UE Mb/s)	42.4	42.4	42.4	42.4
LuaRadio - F.B.t.B.F.F (MiB/s)	536.3	**538.8**	**535.5**	538.1
Normalized	99.54%	100%	99.39%	99.87%
LuaRadio - F.D.F (MiB/s)	**364.8**	364.4	**363.1**	**364.8**
Normalized	100%	99.89%	99.53%	100%
LuaRadio - Hilbert Transform (MiB/s)	**83.4**	**83.4**	**83.5**	**83.5**
Normalized	99.88%	99.88%	100%	100%
LuaRadio - Complex Phase (MiB/s)	569	**570.2**	570.1	**567.9**
Normalized	99.79%	100%	99.98%	99.6%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	5.55	**5.59**	**5.53**	5.55
Normalized	99.28%	100%	98.93%	99.28%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	**3.57**	**3.56**	**3.57**	**3.56**
Normalized	100%	99.72%	100%	99.72%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	18.59	18.59	**18.63**	**18.57**
Normalized	99.79%	99.79%	100%	99.68%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**26.52**	**26.69**	26.68	26.61
Normalized	99.36%	100%	99.96%	99.7%
AOM AV1 - Speed 10 Realtime - Bosphorus 4K (FPS)	29.66	29.72	**29.79**	**29.53**
Normalized	99.56%	99.77%	100%	99.13%

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AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	5.32	5.34	**5.35**	**5.31**
Normalized	99.44%	99.81%	100%	99.25%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	**10.63**	**10.63**	10.58	**10.57**
Normalized	100%	100%	99.53%	99.44%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	61.72	**61.96**	**61.48**	61.55
Normalized	99.61%	100%	99.23%	99.34%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	**77.06**	78.15	**78.25**	77.92
Normalized	98.48%	99.87%	100%	99.58%
AOM AV1 - Speed 10 Realtime - Bosphorus 1080p (FPS)	**85.54**	86.63	85.6	**86.74**
Normalized	98.62%	99.87%	98.69%	100%
Embree - Pathtracer - Crown (FPS)	4.714	4.7129	**4.7495**	**4.7121**
Normalized	99.25%	99.23%	100%	99.21%
Embree - Pathtracer ISPC - Crown (FPS)	**5.3411**	5.3059	**5.2896**	5.2996
Normalized	100%	99.34%	99.04%	99.22%
Embree - Pathtracer - Asian Dragon (FPS)	5.6619	**5.6772**	5.6605	**5.6562**
Normalized	99.73%	100%	99.71%	99.63%
Embree - Pathtracer - Asian Dragon Obj (FPS)	**5.252**	5.2204	5.1981	**5.1511**
Normalized	100%	99.4%	98.97%	98.08%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	6.6103	**6.6453**	6.6071	**6.5647**
Normalized	99.47%	100%	99.43%	98.79%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	**5.9359**	**5.856**	5.8995	5.8708
Normalized	100%	98.65%	99.39%	98.9%
Kvazaar - Bosphorus 4K - Slow (FPS)	2.68	2.68	2.68	2.68
Kvazaar - Bosphorus 4K - Medium	**2.73**	**2.74**	**2.73**	**2.73**
Normalized	99.64%	100%	99.64%	99.64%
Kvazaar - Bosphorus 1080p - Slow (FPS)	**14.26**	14.29	**14.3**	14.29
Normalized	99.72%	99.93%	100%	99.93%
Kvazaar - Bosphorus 1080p - Medium (FPS)	14.72	**14.75**	**14.7**	14.73
Normalized	99.8%	100%	99.66%	99.86%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	**6.23**	**6.23**	**6.23**	**6.25**
Normalized	99.68%	99.68%	99.68%	100%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	**10.89**	**10.94**	10.91	**10.89**
Normalized	99.54%	100%	99.73%	99.54%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	29.01	29.01	**29.03**	**29**
Normalized	99.93%	99.93%	100%	99.9%

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Kvazaar - Bosphorus 1080p - Ultra Fast (FPS)	49.77	49.69	49.81	49.76
Normalized	99.92%	99.76%	100%	99.9%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	0.837	0.838	0.835	0.838
Normalized	99.88%	100%	99.64%	100%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	9.757	9.764	9.757	9.758
Normalized	99.93%	100%	99.93%	99.94%
SVT-AV1 - Preset 10 - Bosphorus 4K (FPS)	19.934	19.832	19.772	19.748
Normalized	100%	99.49%	99.19%	99.07%
SVT-AV1 - Preset 12 - Bosphorus 4K (FPS)	35.192	35.083	34.85	35.199
Normalized	99.98%	99.67%	99.01%	100%
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	3.089	3.094	3.098	3.095
Normalized	99.71%	99.87%	100%	99.9%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	36.874	37.042	37.019	36.893
Normalized	99.55%	100%	99.94%	99.6%
SVT-AV1 - Preset 10 - Bosphorus 1080p (FPS)	86.167	85.627	84.968	85.385
Normalized	100%	99.37%	98.61%	99.09%
SVT-AV1 - Preset 12 - Bosphorus 1080p (FPS)	183.461	181.581	182.45	185.222
Normalized	99.05%	98.03%	98.5%	100%
SVT-HEVC - 1 - Bosphorus 1080p	2.72	2.72	2.73	2.72
Normalized	99.63%	99.63%	100%	99.63%
SVT-HEVC - 7 - Bosphorus 1080p	42.48	42.41	42.1	42.31
Normalized	100%	99.84%	99.11%	99.6%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	92.91	92.34	92.75	91.74
Normalized	100%	99.39%	99.83%	98.74%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	78.68	78.03	78.91	78.9
Normalized	99.71%	98.88%	100%	99.99%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	80.33	81.15	81.33	81.07
Normalized	98.77%	99.78%	100%	99.68%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	64.47	64.24	64.32	64.37
Normalized	100%	99.64%	99.77%	99.84%
Intel Open Image Denoise - RT.hdr_alb_nrm.3840x2160 (Images / Sec)	0.16	0.16	0.16	0.16
Intel Open Image Denoise - RT.ldr_alb_nrm.3840x2160 (Images / Sec)	0.16	0.16	0.16	

Intel Open Image Denoise - RTLightmap.hdr.4096x4096 (Images / Sec)	0.08	0.08	0.08
7-Zip Compression - Compression Rating (MIPS)	30051	**29813**	**31072**
Normalized	96.71%	95.95%	100%
7-Zip Compression - D.R (MIPS)	21697	**21643**	**21806**
Normalized	99.5%	99.25%	100%
Stockfish - Total Time (Nodes/s)	**9426291**	9617039	**9758294**
Normalized	96.6%	98.55%	100%
PJSIP - INVITE (Responses/sec)	4034	**4036**	**4030**
Normalized	99.95%	100%	99.85%
PJSIP - OPTIONS, Stateful (Responses/sec)	6229	**6162**	**6238**
Normalized	99.86%	98.78%	100%
PJSIP - OPTIONS, Stateless (Responses/sec)	**52542**	52764	**53155**
Normalized	98.85%	99.26%	100%
Timed FFmpeg Compilation - Time To Compile (sec)	**129.29**	**131.022**	129.489
Normalized	100%	98.68%	99.85%
Timed GCC Compilation - Time To Compile (sec)	1920	**1920**	**1919**
Normalized	99.92%	99.91%	100%
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	**125.212**	124.355	**123.454**
Normalized	98.6%	99.28%	100%
Timed Linux Kernel Compilation - defconfig (sec)	208.117	**208.895**	**207.353**
Normalized	99.63%	99.26%	100%
Timed Linux Kernel Compilation - allmodconfig (sec)	**2810**	**2789**	2794
Normalized	99.26%	100%	99.82%
Timed Node.js Compilation - Time To Compile (sec)	**1348**	**1334**	1340
Normalized	99.02%	100%	99.56%
Primesieve - 1.P.N.G (sec)	**89.067**	89.496	**90.376**
Normalized	100%	99.52%	98.55%
YafaRay - T.T.F.S.S (sec)	**408.92**	409.586	**410.268**
Normalized	100%	99.84%	99.67%
FLAC Audio Encoding - WAV To FLAC (sec)	**22.434**	22.736	**22.741**
Normalized	100%	98.67%	98.65%
Helsing - 12 digit (sec)	**14.26**	14.256	**14.25**
Normalized	99.93%	99.96%	100%
Google SynthMark - VoiceMark_100 (Voices)	638.523	**639.414**	**638.246**
Normalized	99.86%	100%	99.82%
Cpuminer-Opt - Magi (kH/s)	**95.65**	**96.62**	96.18
Normalized	99%	100%	99.54%
Cpuminer-Opt - x25x (kH/s)	**103.34**	103.39	**103.42**
Normalized	99.92%	99.97%	100%

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Cpuminer-Opt - Deepcoin (kH/s)	3348	**3347**	**3461**
Normalized	96.73%	96.72%	100%
Cpuminer-Opt - Ringcoin (kH/s)	**725.97**	**731.12**	730.29
Normalized	99.3%	100%	99.89%
Cpuminer-Opt - Blake-2 S (kH/s)	**129190**	130290	**130300**
Normalized	99.15%	99.99%	100%
Cpuminer-Opt - Garlicoin (kH/s)	870.29	**873.42**	**868.48**
Normalized	99.64%	100%	99.43%
Cpuminer-Opt - Skeincoin (kH/s)	**14780**	**14780**	**14810**
Normalized	99.8%	99.8%	100%
Cpuminer-Opt - Myriad-Groestl (kH/s)	**4912**	**4920**	4914
Normalized	99.84%	100%	99.88%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)	9876	**9865**	**9880**
Normalized	99.97%	99.86%	100%
Cpuminer-Opt - Q.S.2.P (kH/s)	18060	**18130**	**18030**
Normalized	99.61%	100%	99.45%
Cpuminer-Opt - T.S.2.O (kH/s)	**26070**	25990	**25830**
Normalized	100%	99.69%	99.08%
OpenJPEG - N.C.P.M (ms)	75179	**75471**	**75099**
Normalized	99.89%	99.51%	100%
Liquid-DSP - 1 - 256 - 57 (samples/s)	53235000	**53092000**	**53292000**
Normalized	99.89%	99.62%	100%
Liquid-DSP - 2 - 256 - 57 (samples/s)	**103070000**	105000000	**105120000**
Normalized	98.05%	99.89%	100%
Liquid-DSP - 4 - 256 - 57 (samples/s)	**201730000**	**202310000**	202040000
Normalized	99.71%	100%	99.87%
Liquid-DSP - 8 - 256 - 57 (samples/s)	**209050000**	**209050000**	**209080000**
Normalized	99.99%	99.99%	100%
OpenSSL (sign/s)	1047	**1045**	**1056**
Normalized	99.14%	98.99%	100%
OpenSSL (verify/s)	70456	**69586**	**70656**
Normalized	99.72%	98.49%	100%
Basis Universal - ETC1S (sec)	**37.924**	37.914	**37.861**
Normalized	99.83%	99.86%	100%
Basis Universal - UASTC Level 0 (sec)	**12.001**	**12.043**	**12.001**
Normalized	100%	99.65%	100%
Basis Universal - UASTC Level 2 (sec)	81.574	**81.562**	**81.609**
Normalized	99.99%	100%	99.94%
Basis Universal - UASTC Level 3 (sec)	**159.393**	159.448	**159.525**
Normalized	100%	99.97%	99.92%
Google Draco - Lion (ms)	6068	**6161**	**6031**
Normalized	99.39%	97.89%	100%
Google Draco - Church Facade (ms)	**9059**	**8890**	8970
Normalized	98.13%	100%	99.11%
Stress-NG - MMAP (Bogo Ops/s)	**54.44**	**54.89**	54.79
Normalized	99.18%	100%	99.82%
Stress-NG - NUMA (Bogo Ops/s)	**83.01**	**84.43**	83.99
Normalized	98.32%	100%	99.48%
Stress-NG - MEMFD (Bogo Ops/s)	**289.42**	296.05	**297.21**
Normalized	97.38%	99.61%	100%
Stress-NG - Atomic (Bogo Ops/s)	**191501**	165377	**165346**
Normalized	100%	86.36%	86.34%

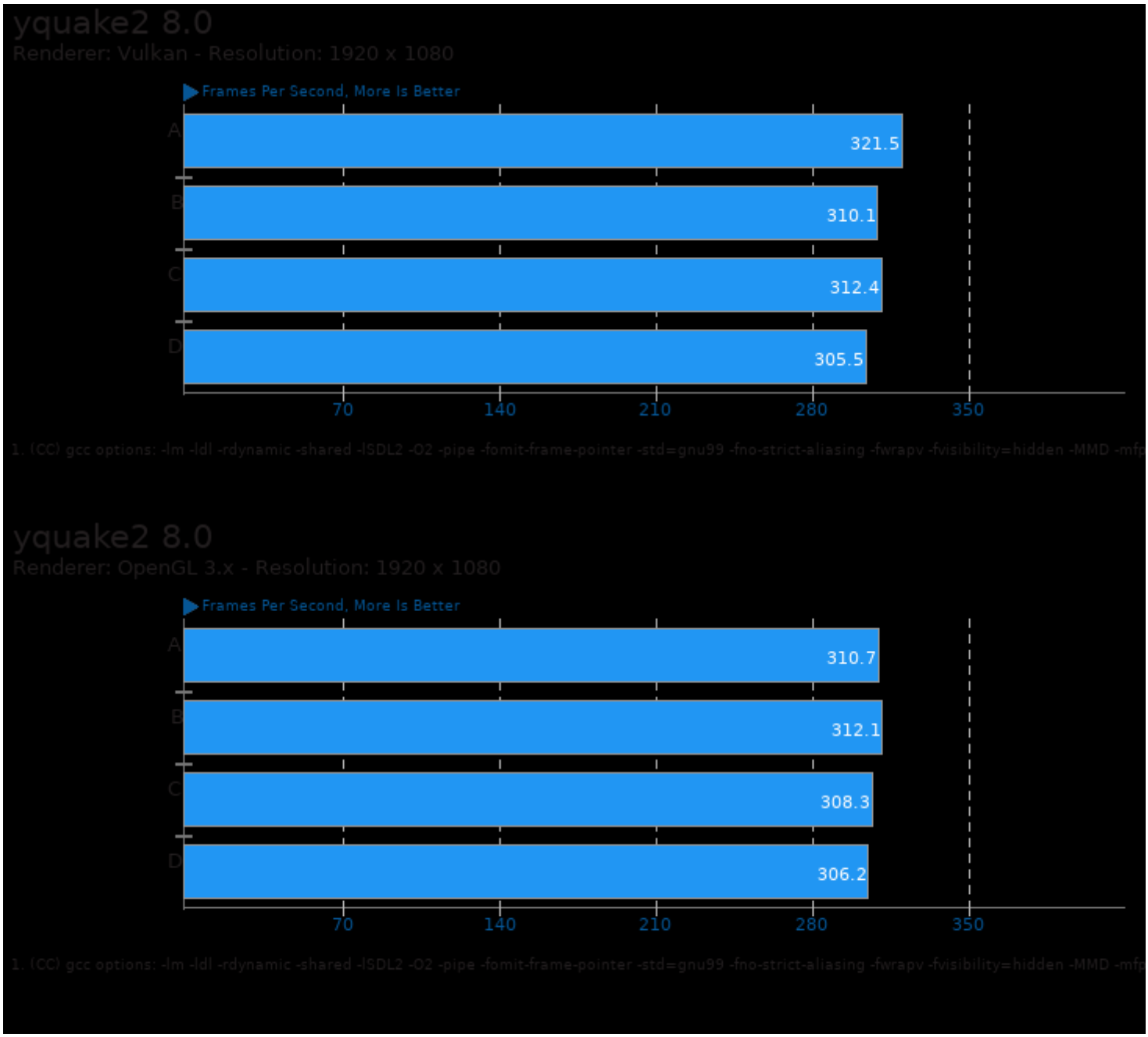
Stress-NG - Crypto (Bogo Ops/s)	**818.81**	817.78	**817.44**
Normalized	100%	99.87%	99.83%
Stress-NG - Malloc (Bogo Ops/s)	**32504849**	32165115	**31904463**
Normalized	100%	98.95%	98.15%
Stress-NG - RdRand (Bogo Ops/s)	240194	**240195**	**240188**
Normalized	100%	100%	100%
Stress-NG - Forking (Bogo Ops/s)	**29008**	29258	**29746**
Normalized	97.52%	98.36%	100%
Stress-NG - SENDFILE (Bogo Ops/s)	**46844**	**46948**	46863
Normalized	99.78%	100%	99.82%
Stress-NG - CPU Cache (Bogo Ops/s)	**239.83**	**233.86**	237.23
Normalized	100%	97.51%	98.92%
Stress-NG - CPU Stress (Bogo Ops/s)	6816	**6931**	**6756**
Normalized	98.33%	100%	97.48%
Stress-NG - Semaphores (Bogo	**743483**	742871	**742473**
Normalized	100%	99.92%	99.86%
Stress-NG - Matrix Math (Bogo Ops/s)	**19379**	19306	**19230**
Normalized	100%	99.62%	99.23%
Stress-NG - Vector Math (Bogo Ops/s)	**11516**	**11519**	11519
Normalized	99.97%	100%	100%
Stress-NG - Memory Copying (Bogo Ops/s)	**1710**	1726	**1768**
Normalized	96.75%	97.62%	100%
Stress-NG - Socket Activity (Bogo	**5654**	5996	**6003**
Normalized	94.2%	99.89%	100%
Stress-NG - Context Switching (Bogo Ops/s)	**1723043**	1768781	**1788332**
Normalized	96.35%	98.91%	100%
Stress-NG - G.C.S.F (Bogo Ops/s)	**458785**	464895	**468769**
Normalized	97.87%	99.17%	100%
Stress-NG - G.Q.D.S (Bogo Ops/s)	**59.97**	59.6	**59.47**
Normalized	100%	99.38%	99.17%
Stress-NG - S.V.M.P (Bogo Ops/s)	4367140	**4363258**	**4380936**
Normalized	99.69%	99.6%	100%
Mobile Neural Network - mobilenetV3 (ms)	**2.218**	**2.186**	2.201
Normalized	98.56%	100%	99.32%
Mobile Neural Network - squeezenetv1.1 (ms)	**4.136**	**4.149**	4.145
Normalized	100%	99.69%	99.78%
Mobile Neural Network - resnet-v2-50 (ms)	35.511	**35.881**	**35.22**
Normalized	99.18%	98.16%	100%
Mobile Neural Network - SqueezeNetV1.0 (ms)	6.244	**6.211**	**6.358**
Normalized	99.47%	100%	97.69%
Mobile Neural Network - MobileNetV2_224 (ms)	**4.015**	**4.15**	4.105
Normalized	100%	96.75%	97.81%
Mobile Neural Network - mobilenet-v1-1.0 (ms)	**4.259**	**4.387**	4.345
Normalized	100%	97.08%	98.02%

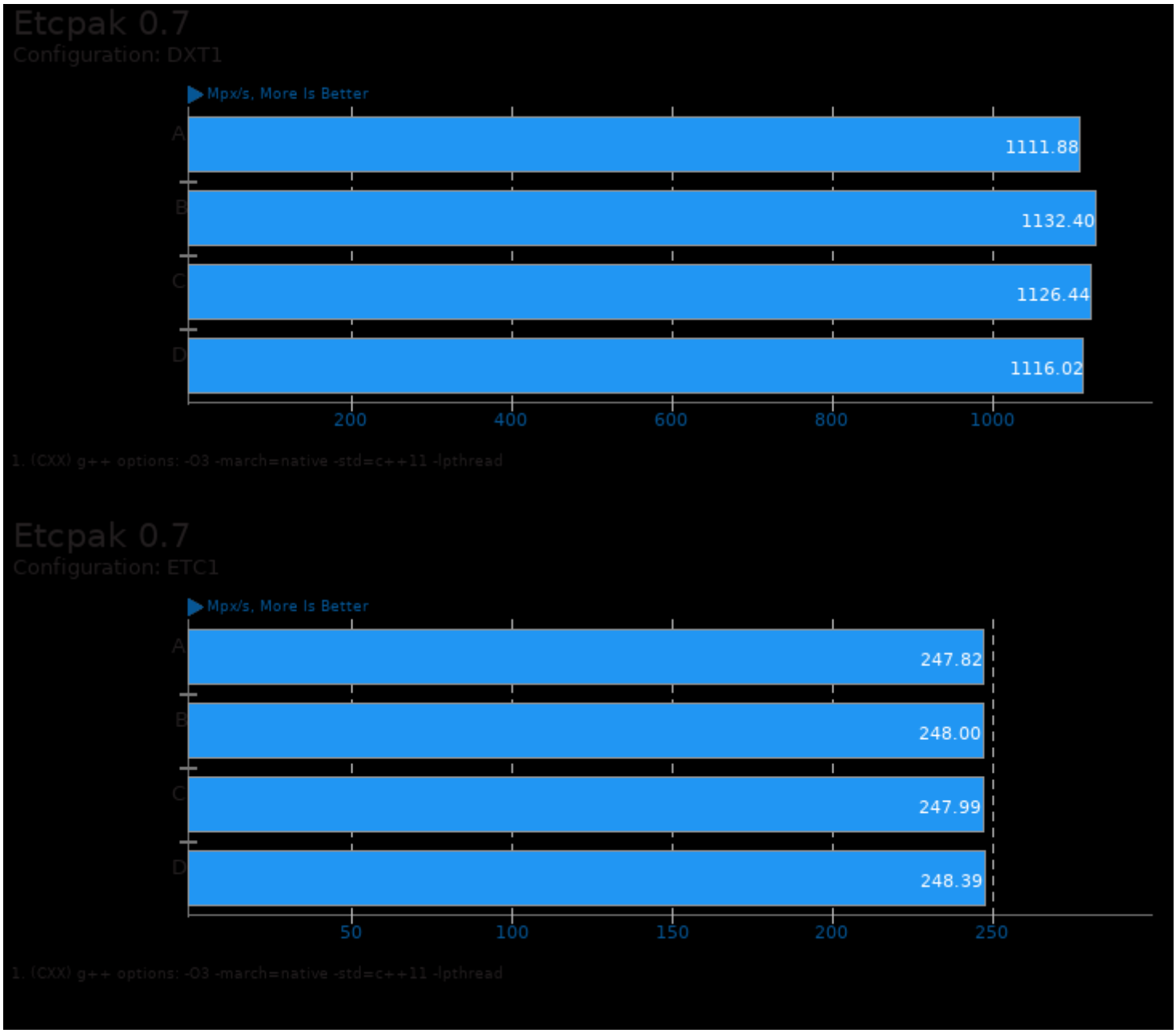
Core i7 5775C ON Linux In 2022

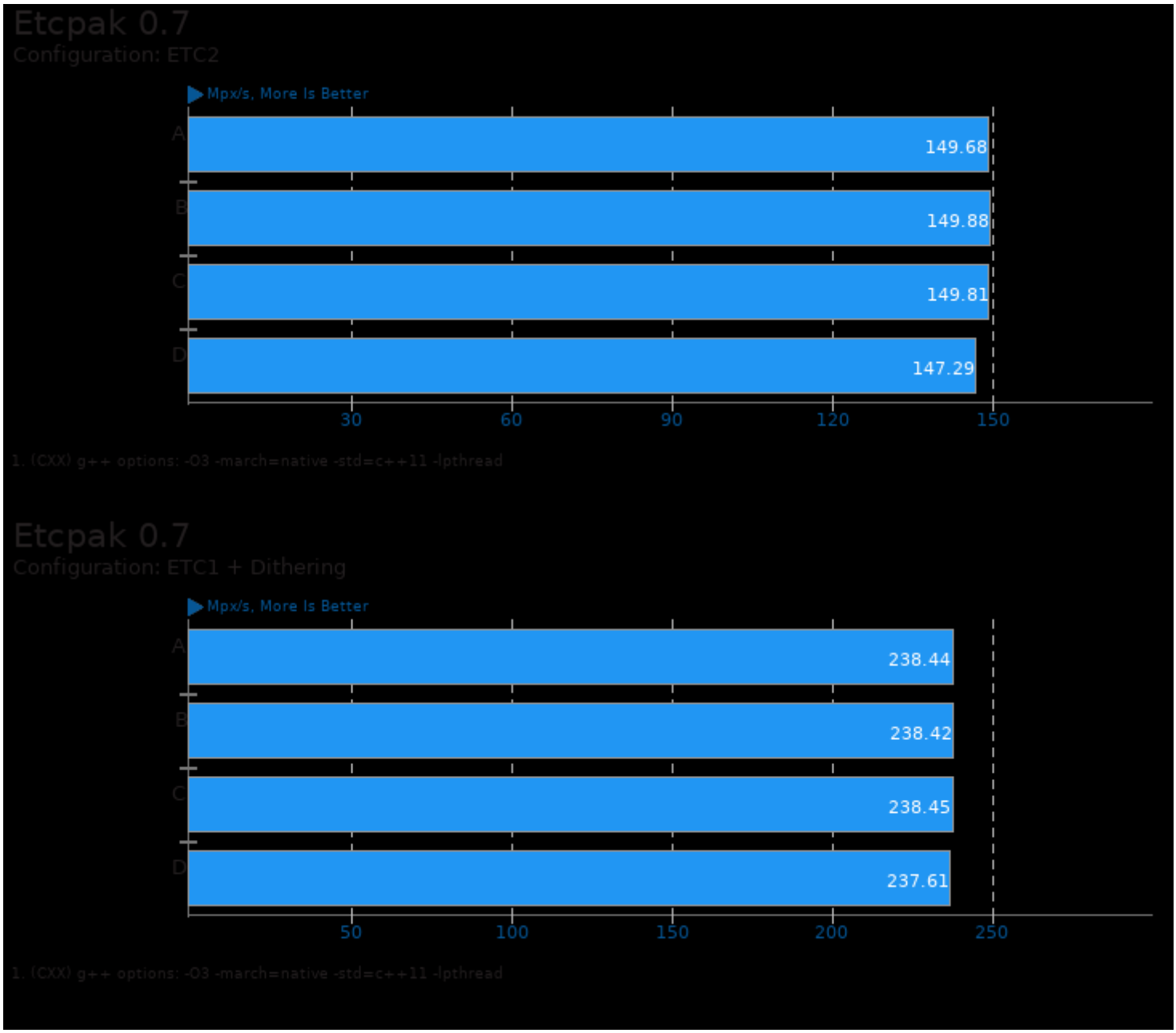
Mobile Neural Network - inception-v3 (ms)	**45.45**	**48.201**	46.971
Normalized	100%	94.29%	96.76%
NCNN - CPU - mobilenet (ms)	**23.48**	22.56	**22.46**
Normalized	95.66%	99.56%	100%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	**5.89**	**6**	5.96
Normalized	100%	98.17%	98.83%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	**5.47**	5.41	**5.39**
Normalized	98.54%	99.63%	100%
NCNN - CPU - shufflenet-v2 (ms)	**5.2**	**5.25**	5.24
Normalized	100%	99.05%	99.24%
NCNN - CPU - mnasnet (ms)	5.75	**5.77**	**5.71**
Normalized	99.3%	98.96%	100%
NCNN - CPU - efficientnet-b0 (ms)	**8.81**	**8.88**	8.83
Normalized	100%	99.21%	99.77%
NCNN - CPU - blazeface (ms)	**2.2**	**2.3**	**2.3**
Normalized	100%	95.65%	95.65%
NCNN - CPU - googlenet (ms)	**18.74**	18.89	**19.15**
Normalized	100%	99.21%	97.86%
NCNN - CPU - vgg16 (ms)	81.52	**81.43**	**81.88**
Normalized	99.89%	100%	99.45%
NCNN - CPU - resnet18 (ms)	**23.83**	23.96	**24.05**
Normalized	100%	99.46%	99.09%
NCNN - CPU - alexnet (ms)	**21.88**	22.22	**22.24**
Normalized	100%	98.47%	98.38%
NCNN - CPU - resnet50 (ms)	**42.31**	**43.07**	42.83
Normalized	100%	98.24%	98.79%
NCNN - CPU - yolov4-tiny (ms)	**35.17**	**34.8**	**35.17**
Normalized	98.95%	100%	98.95%
NCNN - CPU - squeezenet_ssd (ms)	**30.55**	**30.12**	30.39
Normalized	98.59%	100%	99.11%
NCNN - CPU - regnety_400m (ms)	**12.5**	12.61	**12.64**
Normalized	100%	99.13%	98.89%
TNN - CPU - DenseNet (ms)	**4340**	**4301**	4316
Normalized	99.11%	100%	99.65%
TNN - CPU - MobileNet v2 (ms)	**319.045**	**314.529**	315.377
Normalized	98.58%	100%	99.73%
TNN - CPU - SqueezeNet v2 (ms)	**76.929**	76.989	**77.007**
Normalized	100%	99.92%	99.9%
TNN - CPU - SqueezeNet v1.1 (ms)	289.465	**289.303**	**290.275**
Normalized	99.94%	100%	99.67%
Blender - BMW27 - CPU-Only (sec)	389.19	**391.36**	**384.38**
Normalized	98.76%	98.22%	100%
Blender - Fishy Cat - CPU-Only (sec)	547.4	**545.22**	**549.58**
Normalized	99.6%	100%	99.21%
Blender - Pabellon Barcelona - CPU-Only (sec)	**1347**	**1342**	1344
Normalized	99.7%	100%	99.9%
Sysbench - RAM / Memory (MiB/sec)	**16690**	**17049**	16960
Normalized	97.89%	100%	99.48%
Sysbench - CPU (Events/sec)	**7478**	7479	**7480**
Normalized	99.97%	99.99%	100%
RAR Compression - L.S.T.A.T.R (sec)	**73.423**	**78.697**	78.519

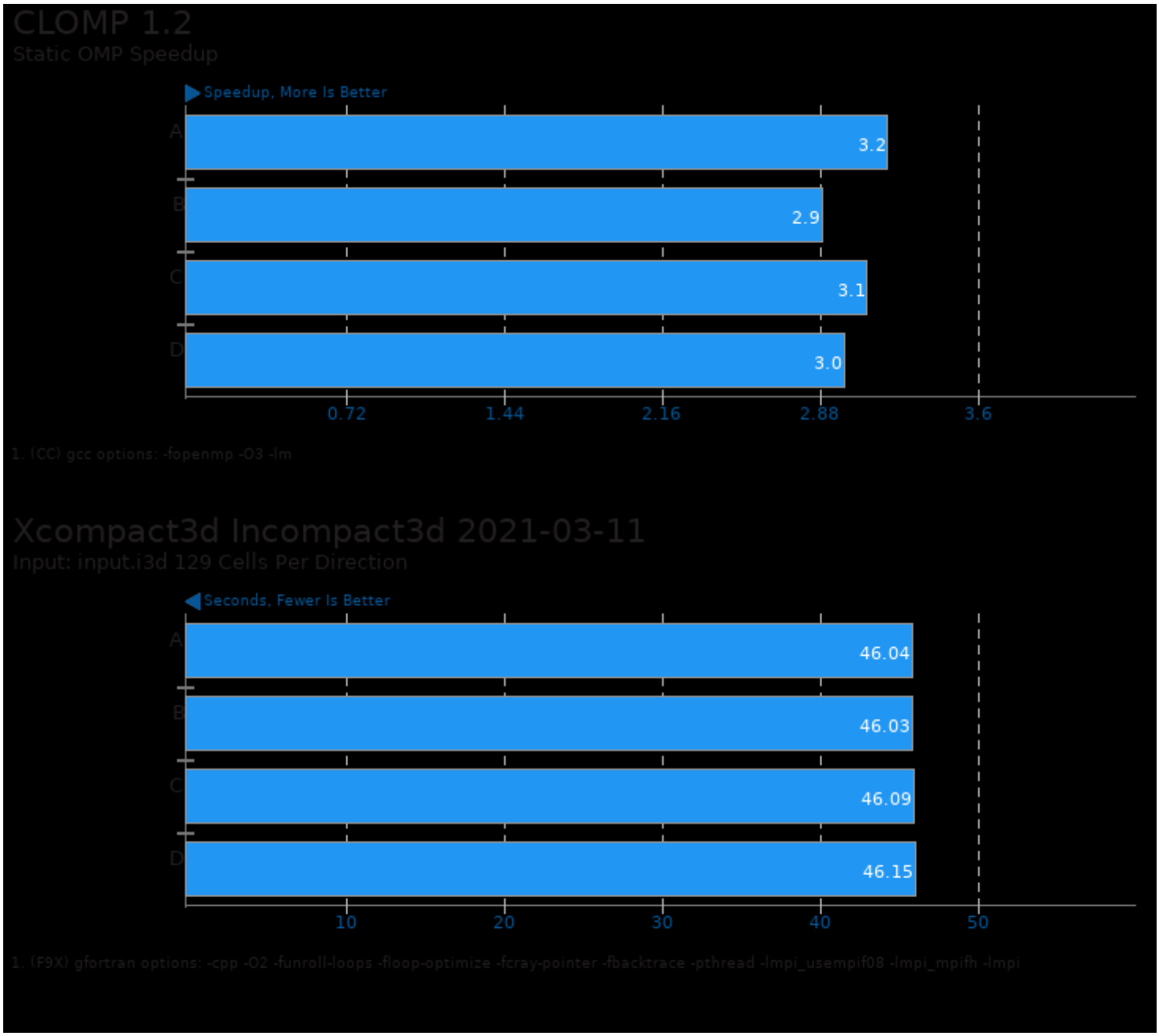
Core i7 5775C ON Linux In 2022

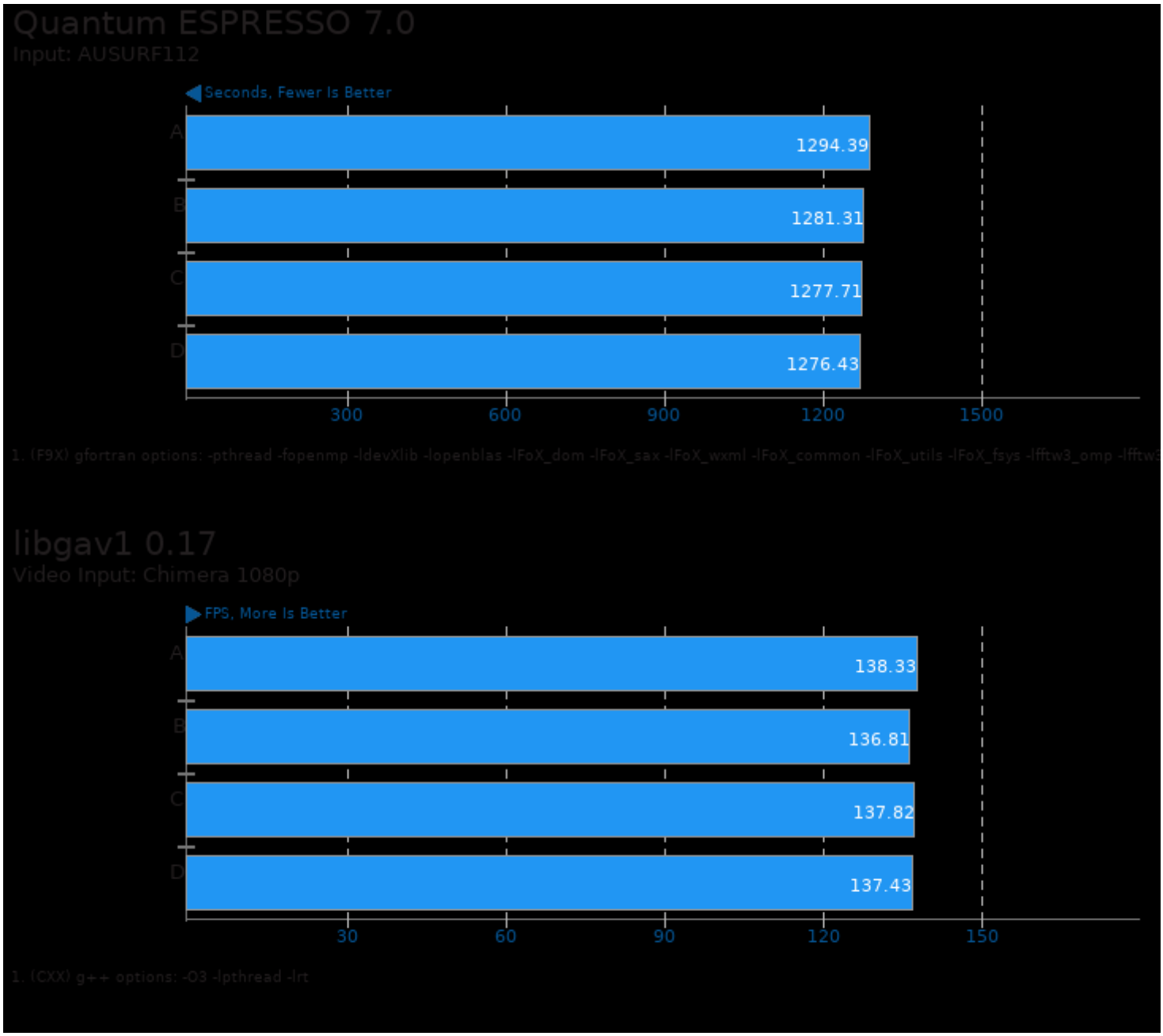
Normalized	100%	93.3%	93.51%
GnuPG - 2.7.S.F.E (sec)	**81.473**	80.968	**79.321**
Normalized	97.36%	97.97%	100%
BRL-CAD - V.P.M (VGR Performance Metric)	45843	**45555**	**45853**
Normalized	99.98%	99.35%	100%
OpenCV - Features 2D (ms)	158383	**162729**	**157991**
Normalized	99.75%	97.09%	100%
OpenCV - Object Detection (ms)	**77490**	**73360**	73422
Normalized	94.67%	100%	99.92%
OpenCV - DNN - D.N.N (ms)	**19313**	19917	**21155**
Normalized	100%	96.97%	91.29%

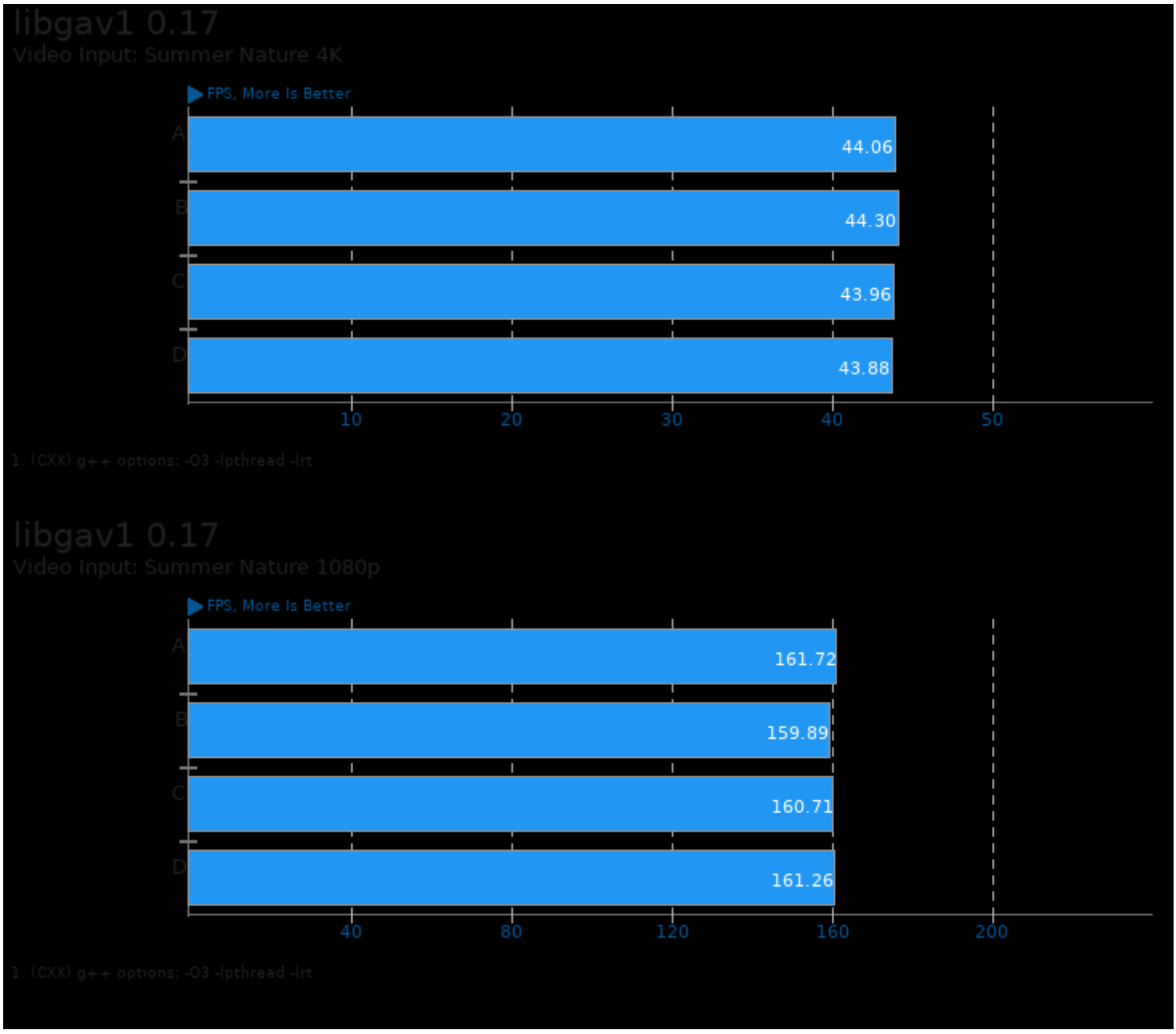

yquake2 8.0
Renderer: Vulkan - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
321.5
B
310.1
C
312.4
D
305.5
70
140
210
280
350
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.0
Renderer: OpenGL 3.x - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
310.7
B
312.1
C
308.3
D
306.2
70
140
210
280
350
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

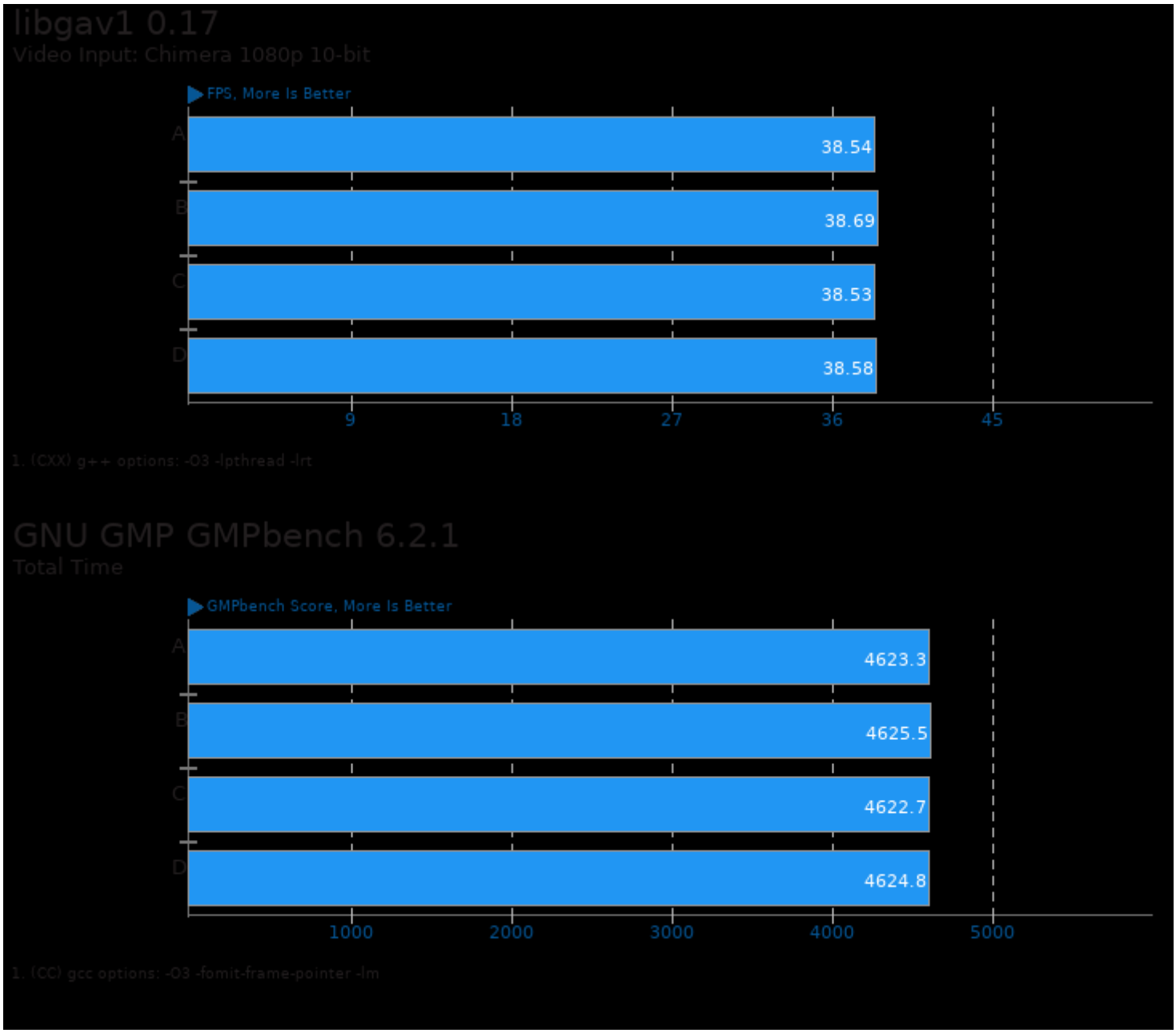

Etcpak 0.7
Configuration: DXT1
Mpx/s, More Is Better
A
1111.88
B
1132.40
C
1126.44
D
1116.02
200
400
600
800
1000
1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread
Etcpak 0.7
Configuration: ETC1
Mpx/s, More Is Better
A
247.82
B
248.00
C
247.99
D
248.39
50
100
150
200
250
1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

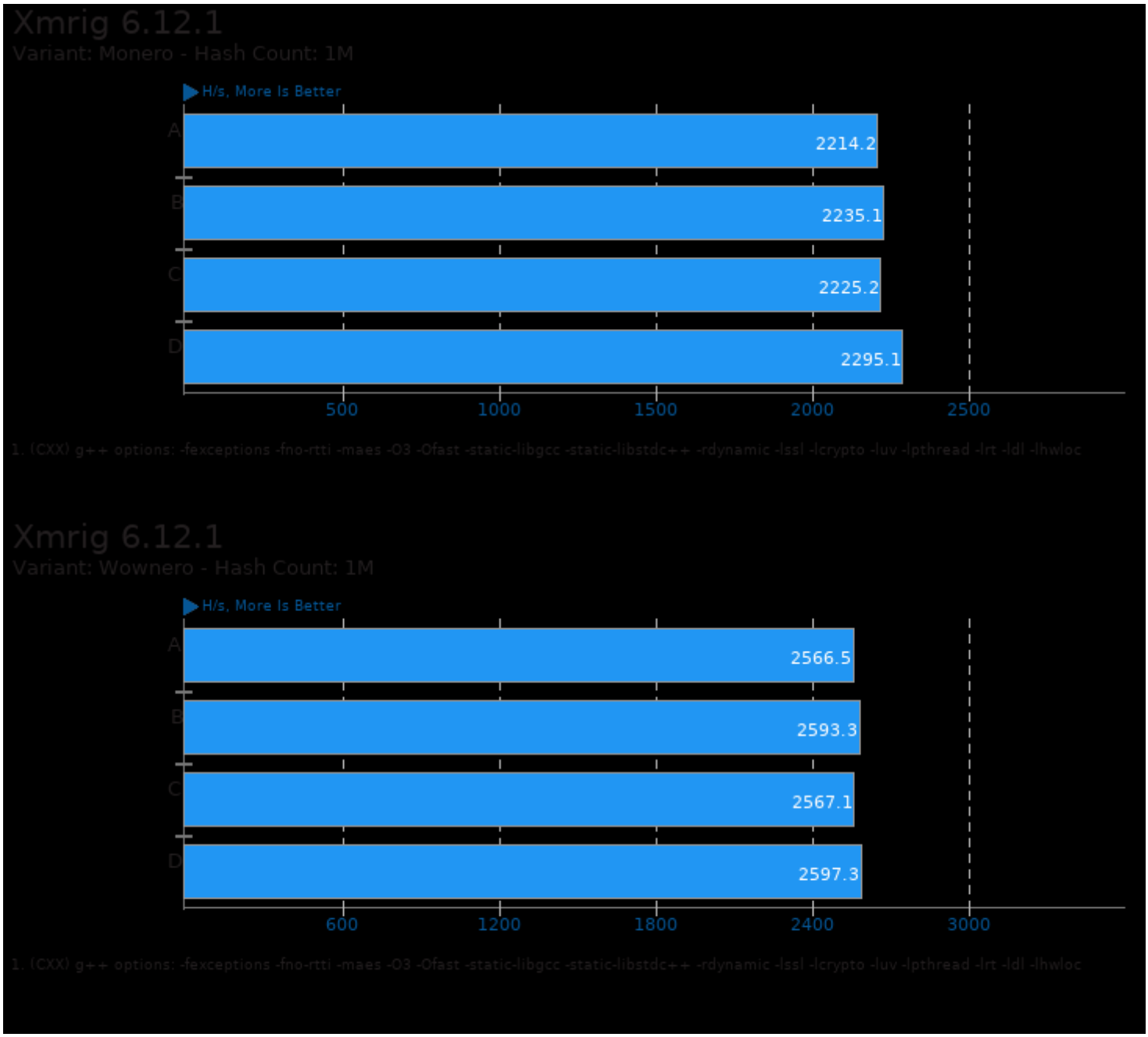

Etcpak 0.7
Configuration: ETC2
Mpx/s, More Is Better
A
B
C
D
149.68
149.88
149.81
147.29
30
60
90
120
150
1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread
Etcpak 0.7
Configuration: ETC1 + Dithering
Mpx/s, More Is Better
A
B
C
D
238.44
238.42
238.45
237.61
50
100
150
200
250
1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

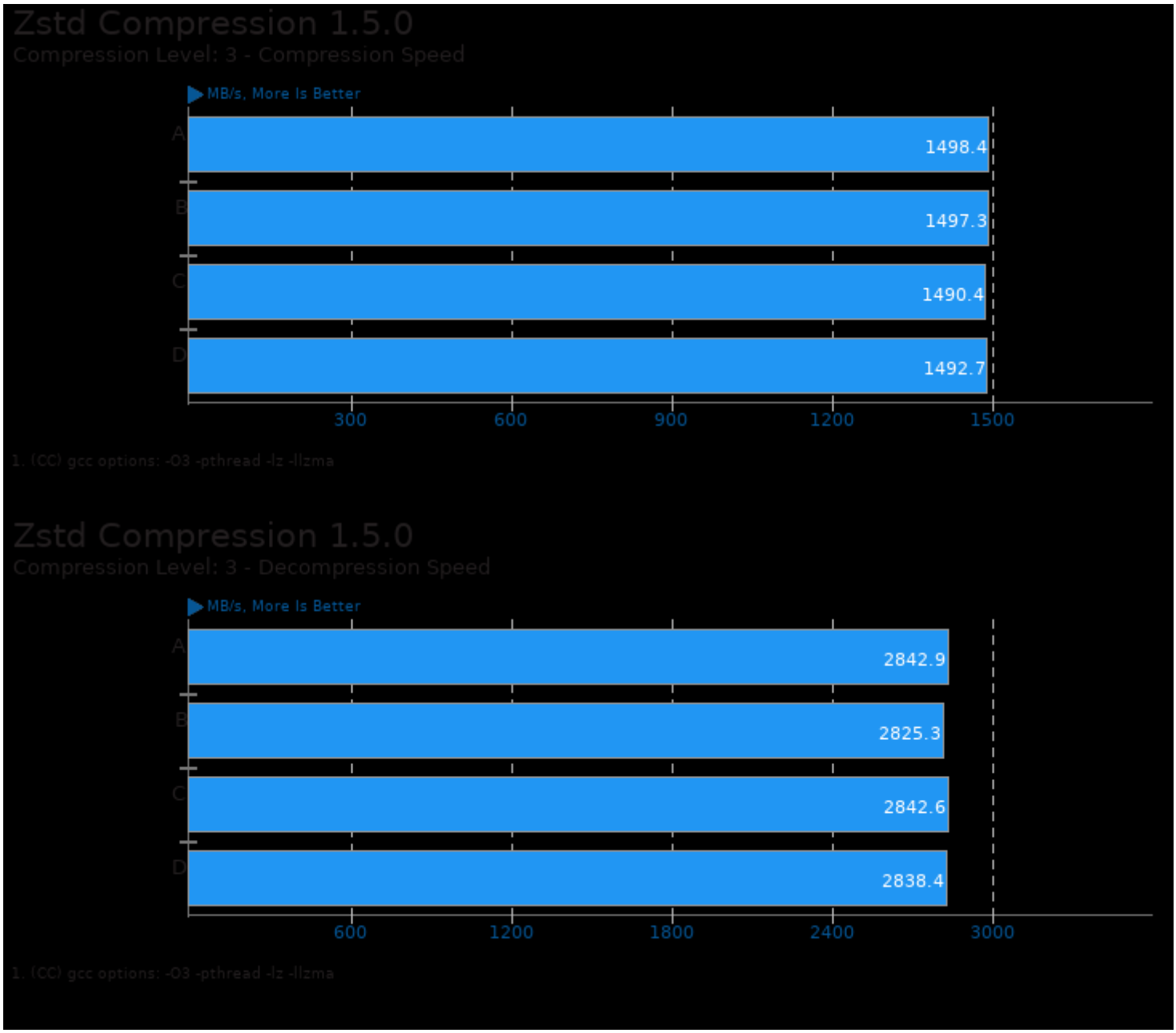

CLOMP 1.2
Static OMP Speedup
Speedup, More Is Better
A
B
C
D
3.2
2.9
3.1
3.0
0.72
1.44
2.16
2.88
3.6
1. (CC) gcc options: -fopenmp -O3 -lm
Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 129 Cells Per Direction
Seconds, Fewer Is Better
A
B
C
D
46.04
46.03
46.09
46.15
10
20
30
40
50
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

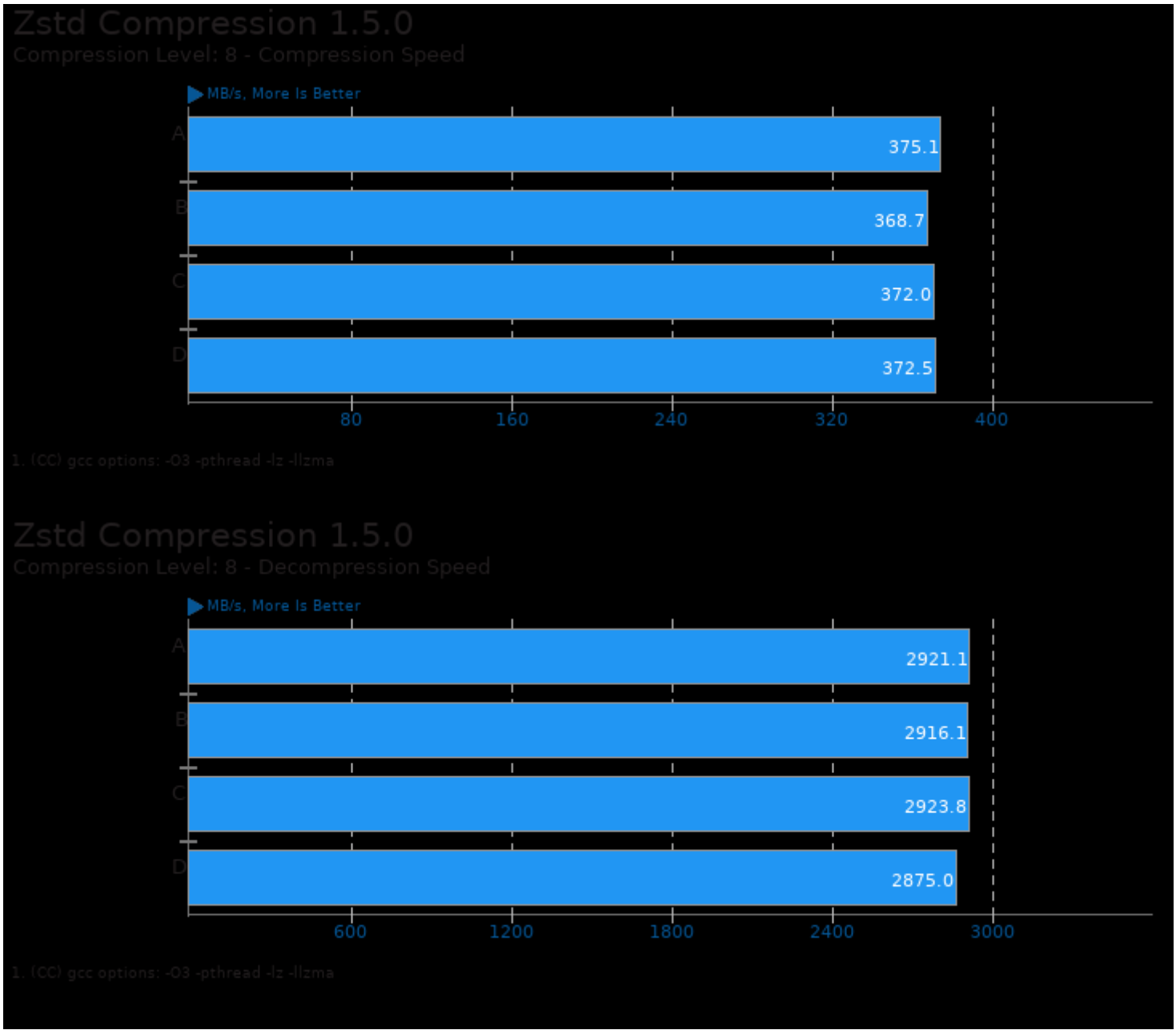

Quantum ESPRESSO 7.0
Input: AUSURF112
Seconds, Fewer Is Better
A
1294.39
B
1281.31
C
1277.71
D
1276.43
300
600
900
1200
1500
1. (F9X) gfortran options: -pthread -fopenmp -ldevXlib -lopenblas -lFoX_dom -lFoX_sax -lFoX_wxml -lFoX_common -lFoX_utils -lFoX_fsys -lfftw3_omp -lfftw
libgav1 0.17
Video Input: Chimera 1080p
FPS, More Is Better
A
138.33
B
136.81
C
137.82
D
137.43
30
60
90
120
150
1. (CXX) g++ options: -O3 -lpthread -lrt

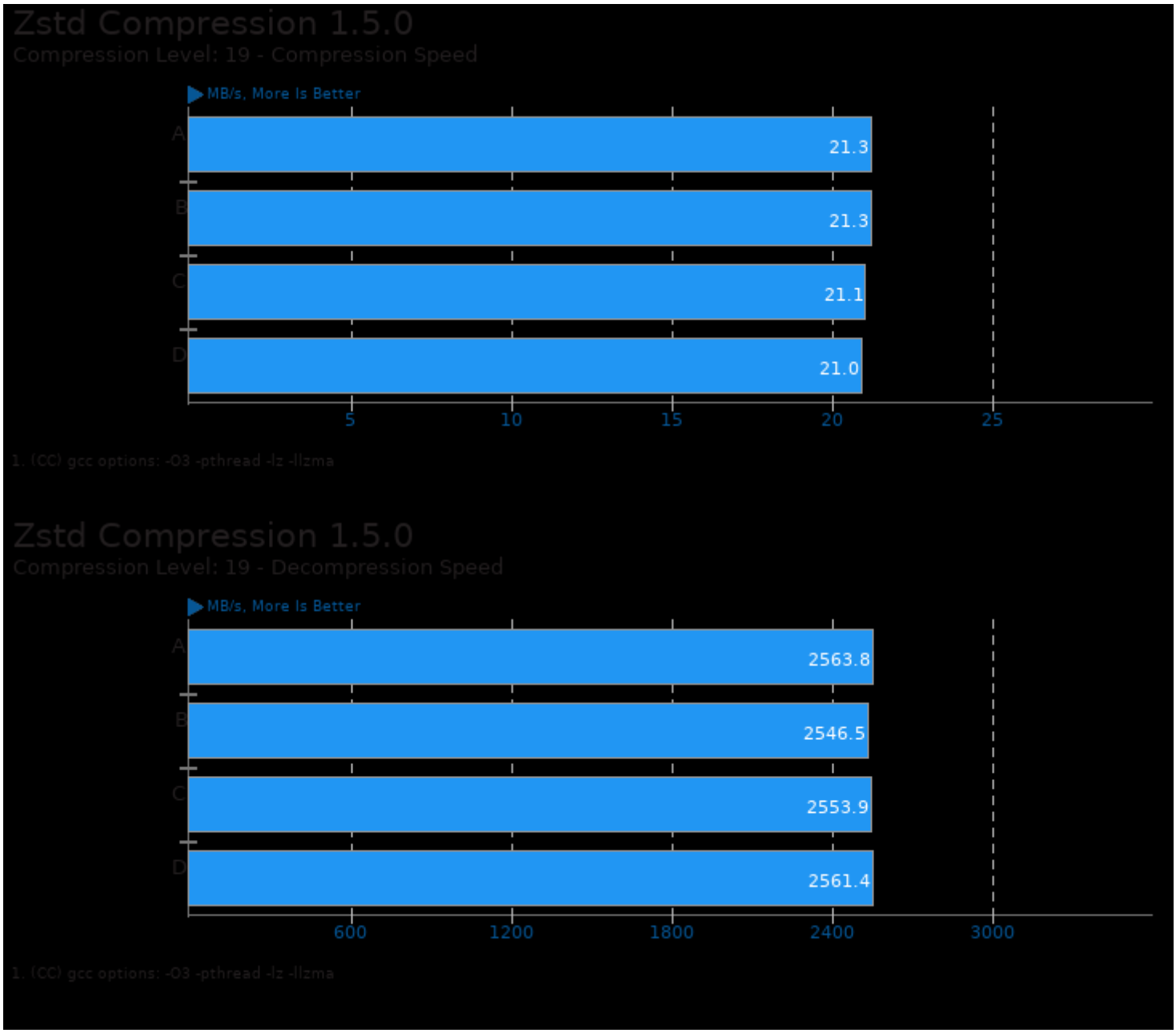

libgav1 0.17
Video Input: Summer Nature 4K
FPS, More Is Better
A
B
C
D
44.06
44.30
43.96
43.88
10
20
30
40
50
1. (CXX) g++ options: -O3 -lpthread -lrt
libgav1 0.17
Video Input: Summer Nature 1080p
FPS, More Is Better
A
B
C
D
161.72
159.89
160.71
161.26
40
80
120
160
200
1. (CXX) g++ options: -O3 -lpthread -lrt

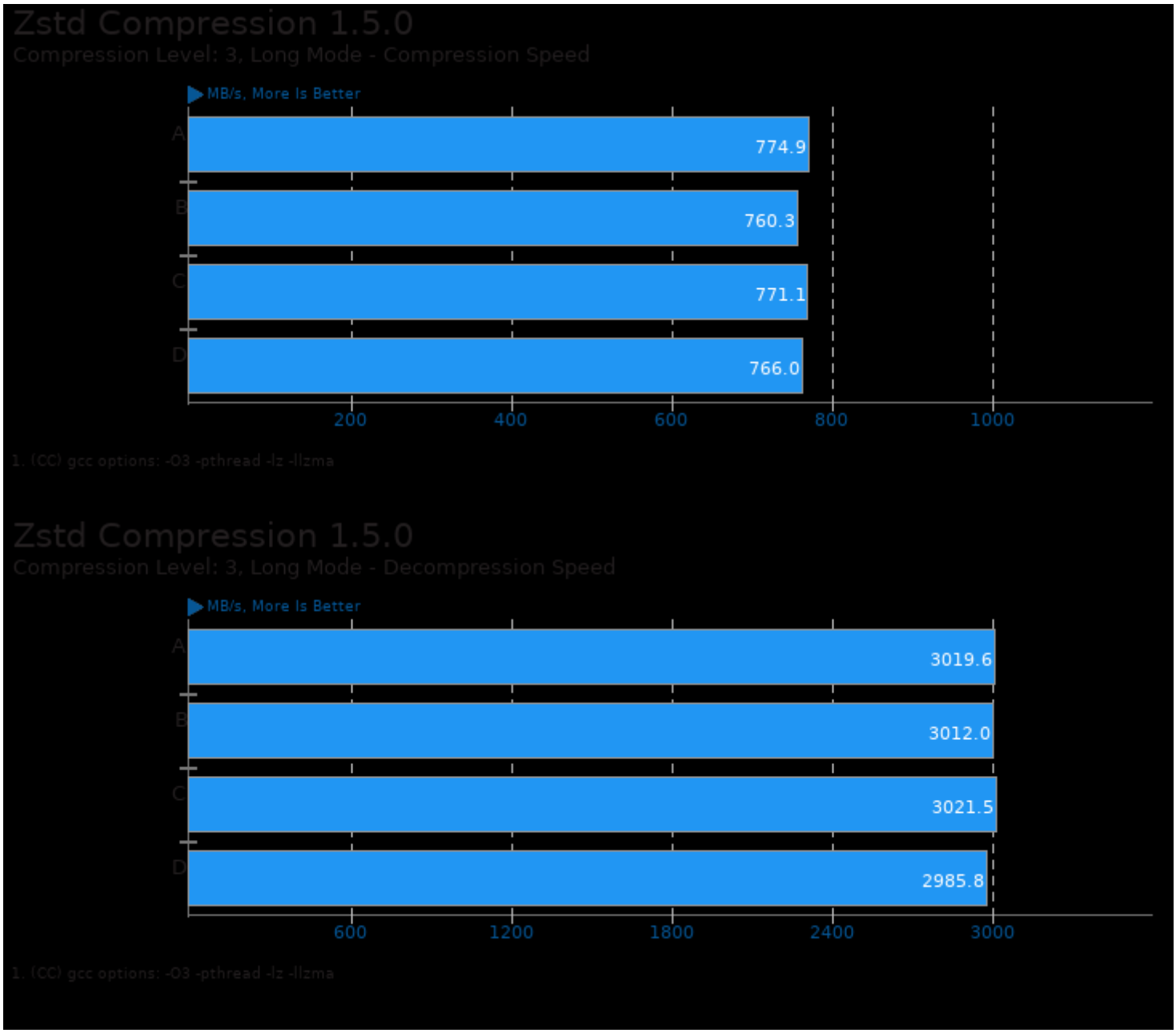

libgav1 0.17
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
A
38.54
B
38.69
C
38.53
D
38.58
9
18
27
36
45
1. (CXX) g++ options: -O3 -lpthread -lrt
GNU GMP GMPbench 6.2.1
Total Time
GMPbench Score, More Is Better
A
4623.3
B
4625.5
C
4622.7
D
4624.8
1000
2000
3000
4000
5000
1. (CC) gcc options: -O3 -fomit-frame-pointer -lm

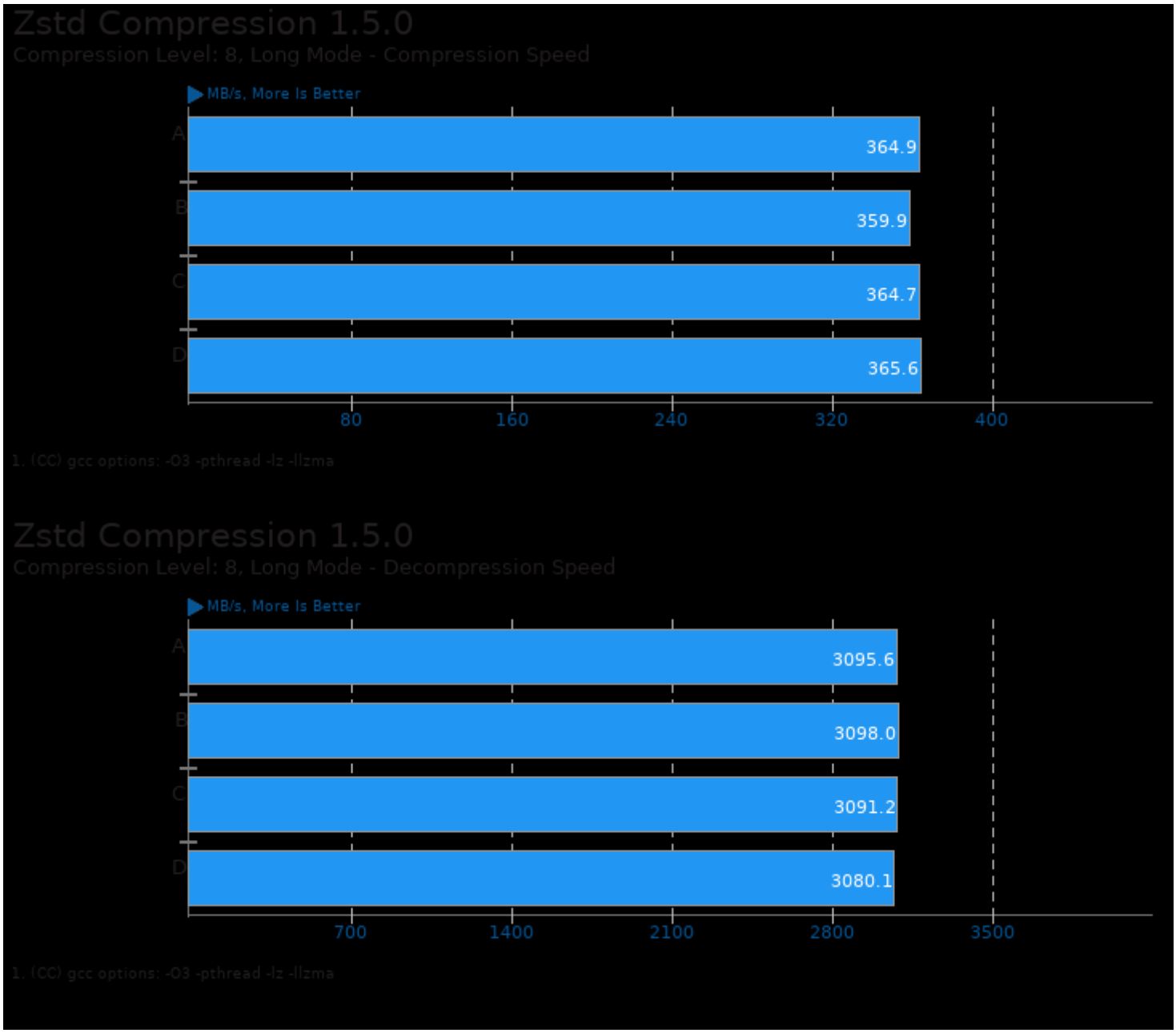

Xmrig 6.12.1
Variant: Monero - Hash Count: 1M
H/s, More Is Better
A
B
C
D
2214.2
2235.1
2225.2
2295.1
500
1000
1500
2000
2500
1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc
Xmrig 6.12.1
Variant: Wownero - Hash Count: 1M
H/s, More Is Better
A
B
C
D
2566.5
2593.3
2567.1
2597.3
600
1200
1800
2400
3000
1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

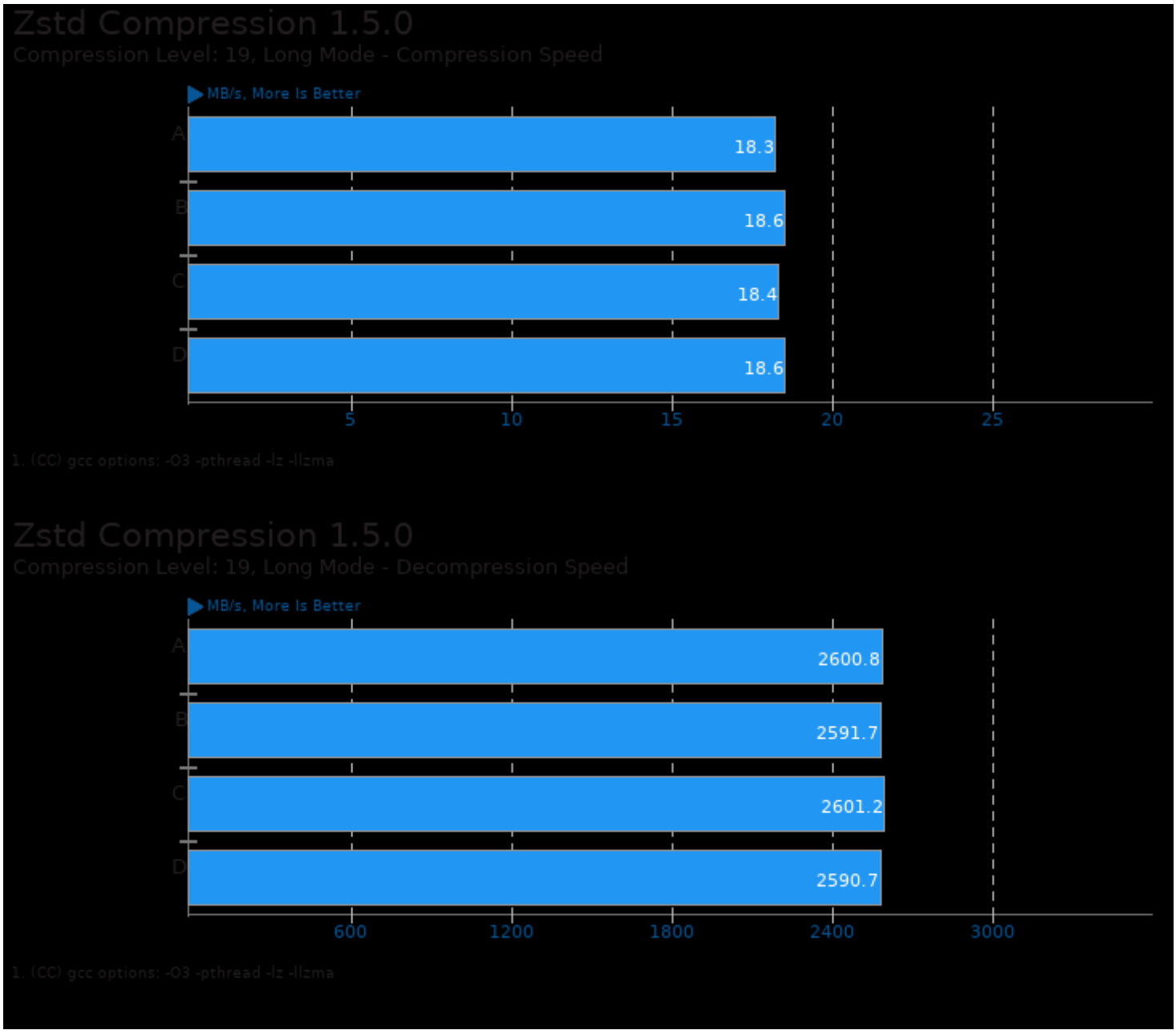

Zstd Compression 1.5.0
Compression Level: 3 - Compression Speed
MB/s, More Is Better
A
B
C
D
1498.4
1497.3
1490.4
1492.7
300
600
900
1200
1500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
A
B
C
D
2842.9
2825.3
2842.6
2838.4
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma

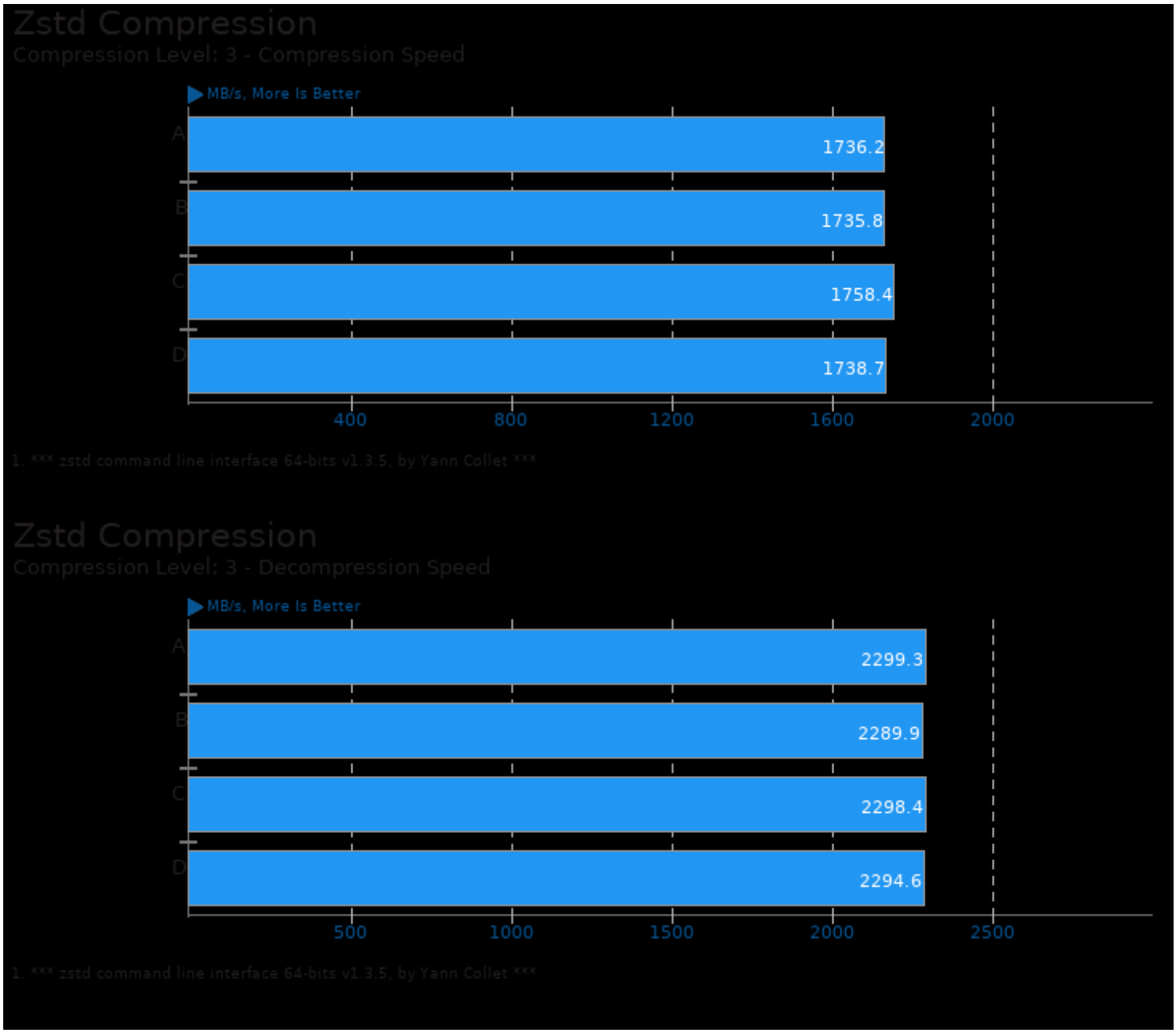

Zstd Compression 1.5.0
Compression Level: 8 - Compression Speed
MB/s, More Is Better
A
B
C
D
375.1
368.7
372.0
372.5
80
160
240
320
400
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8 - Decompression Speed
MB/s, More Is Better
A
B
C
D
2921.1
2916.1
2923.8
2875.0
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma

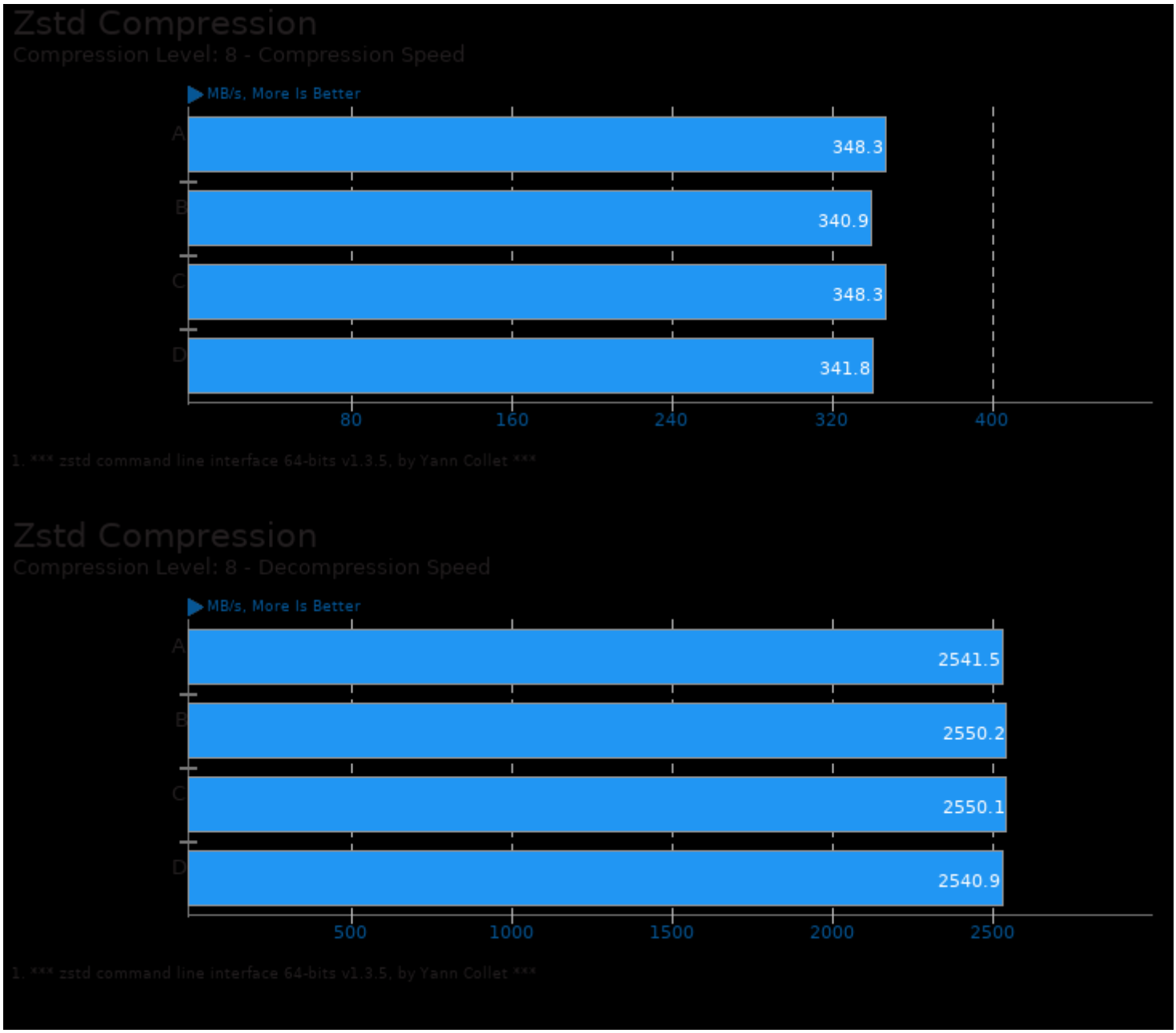

Zstd Compression 1.5.0
Compression Level: 19 - Compression Speed
MB/s, More Is Better
A
B
C
D
21.3
21.3
21.1
21.0
5
10
15
20
25
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
A
B
C
D
2563.8
2546.5
2553.9
2561.4
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma

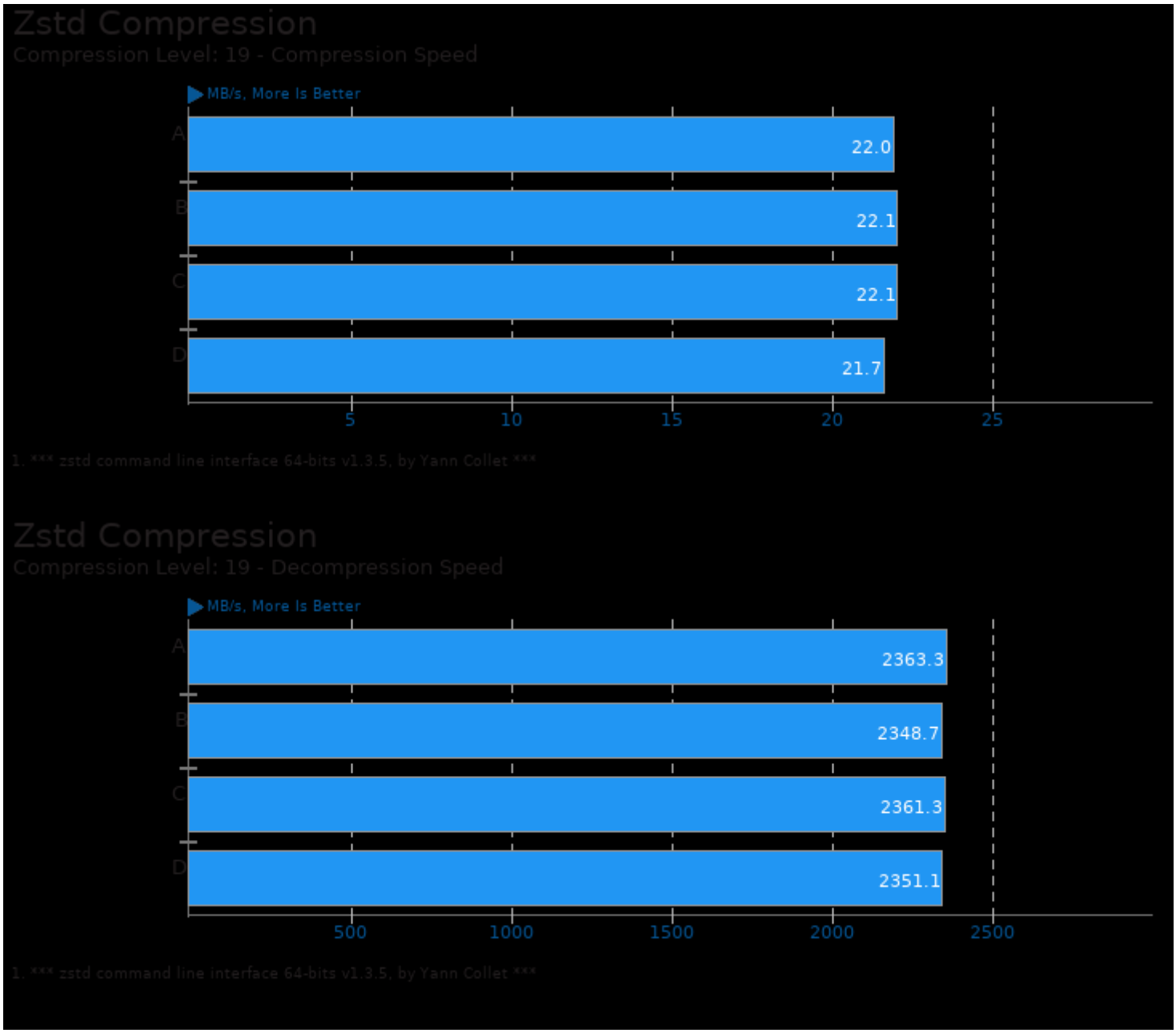

Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
A
774.9
B
760.3
C
771.1
D
766.0
200
400
600
800
1000
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
A
3019.6
B
3012.0
C
3021.5
D
2985.8
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma

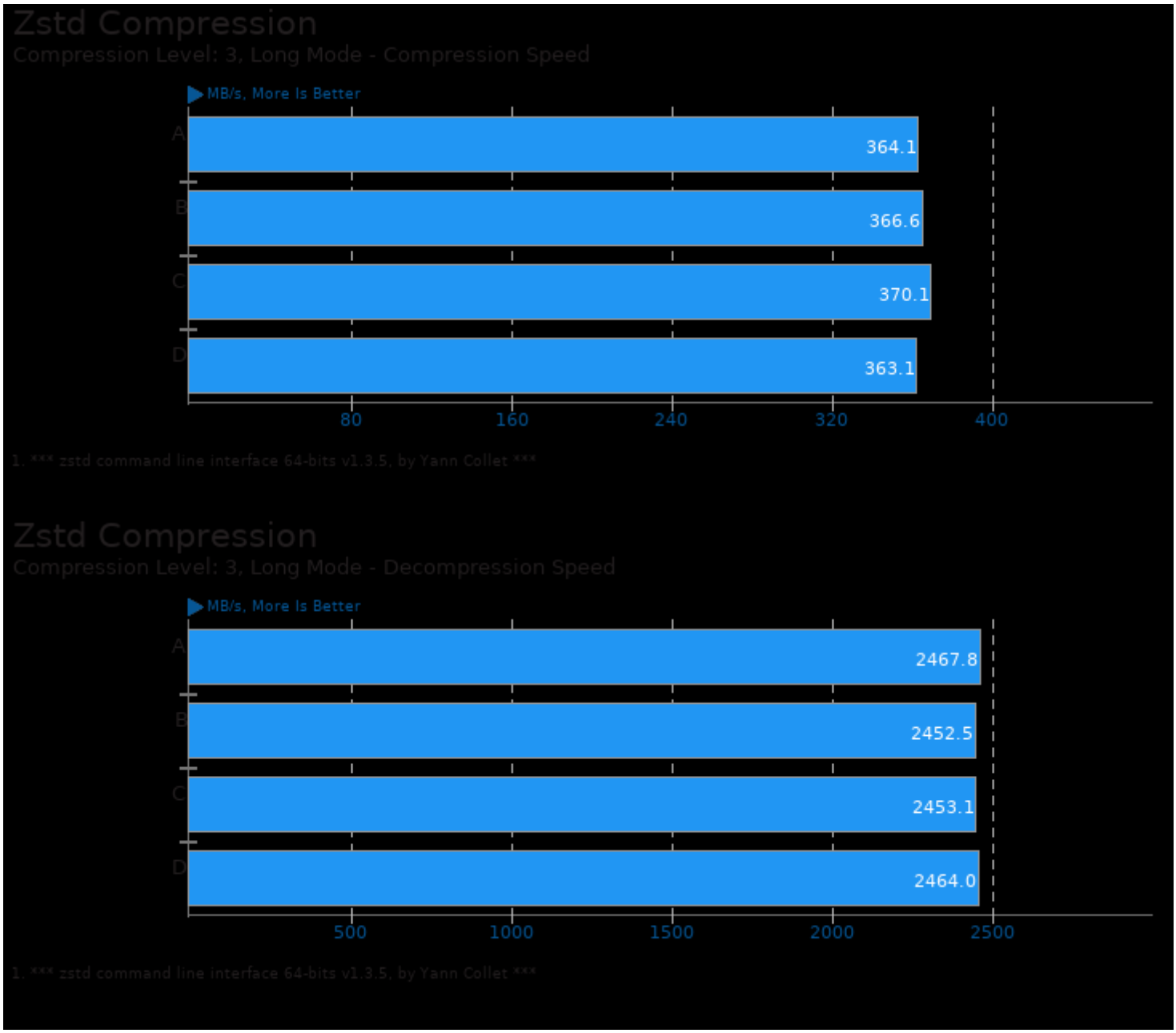

Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
A
B
C
D
364.9
359.9
364.7
365.6
80
160
240
320
400
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
A
B
C
D
3095.6
3098.0
3091.2
3080.1
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma

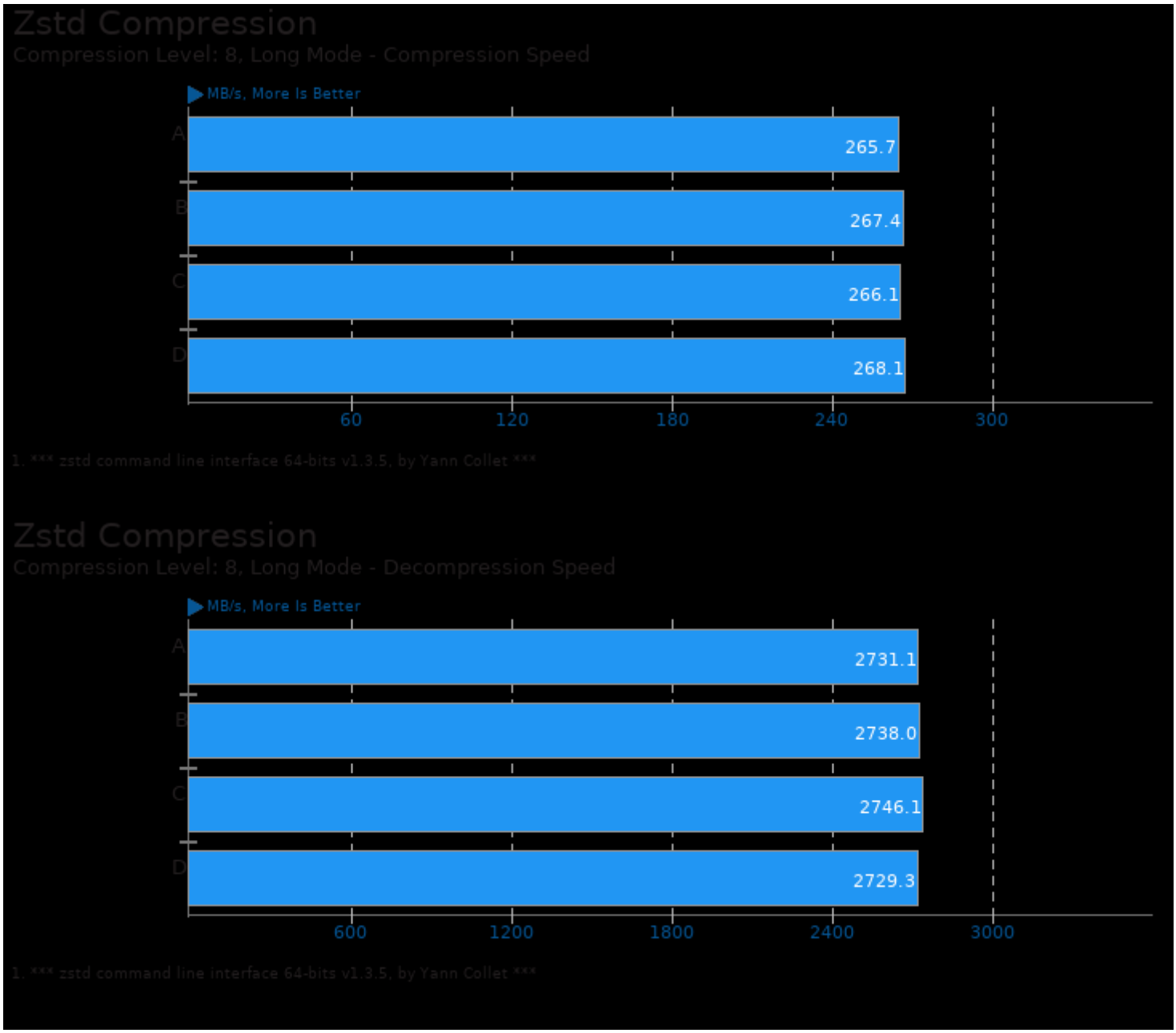

Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
A
B
C
D
18.3
18.6
18.4
18.6
5
10
15
20
25
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Decompression Speed
MB/s, More Is Better
A
B
C
D
2600.8
2591.7
2601.2
2590.7
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma

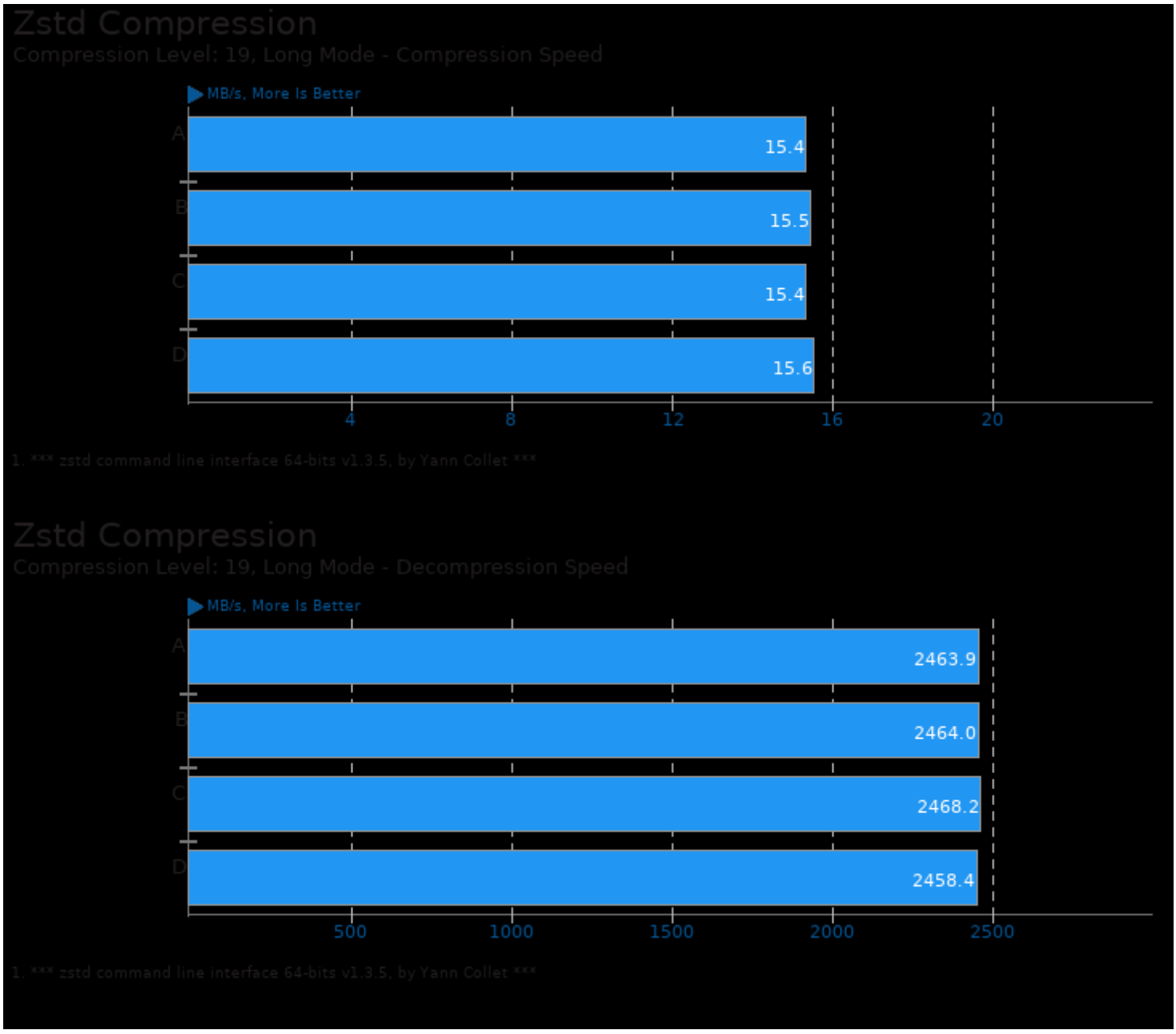

Zstd Compression
Compression Level: 3 - Compression Speed
MB/s, More Is Better
A
B
C
D
1736.2
1735.8
1758.4
1738.7
400
800
1200
1600
2000
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***
Zstd Compression
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
A
B
C
D
2299.3
2289.9
2298.4
2294.6
500
1000
1500
2000
2500
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***

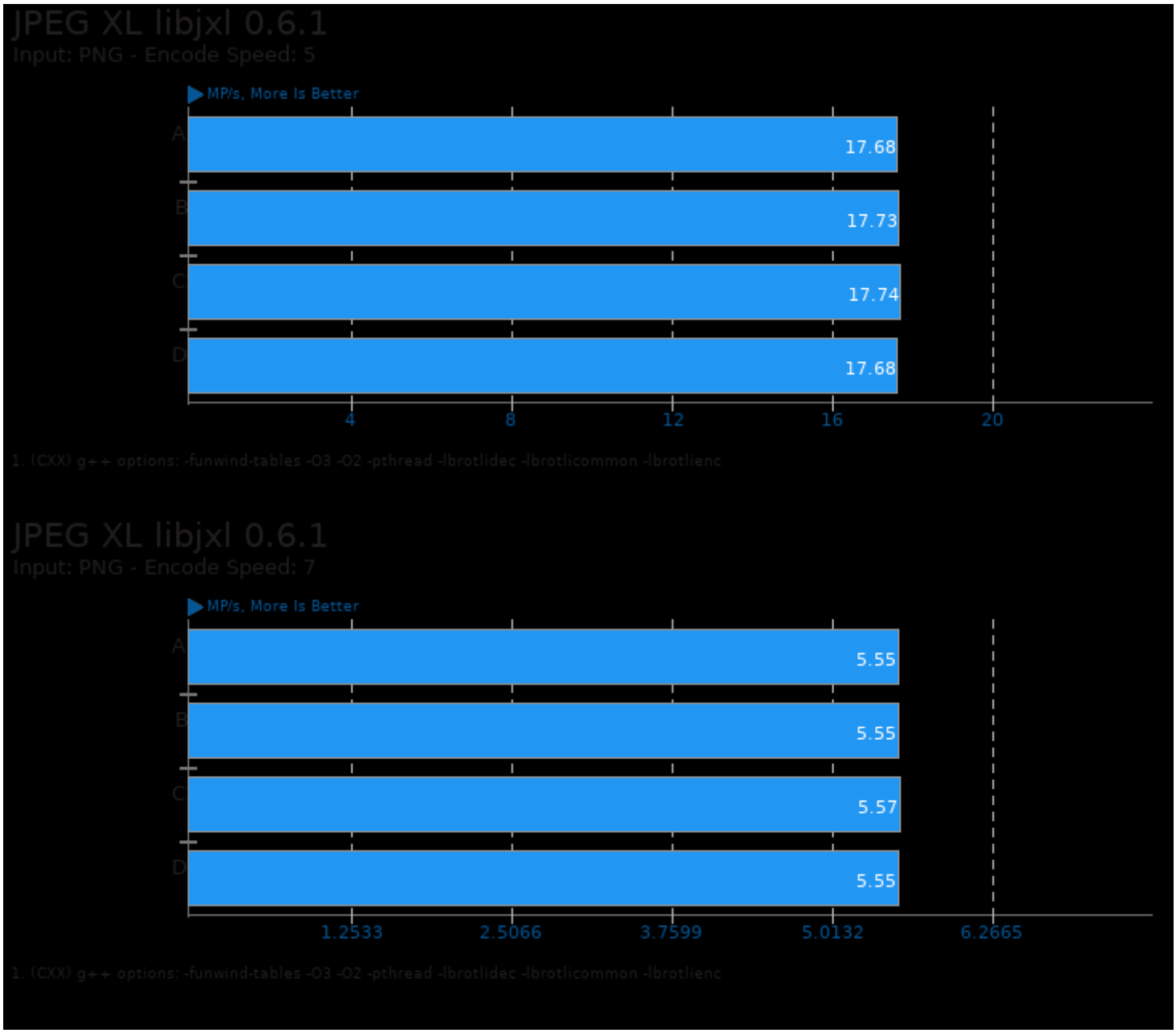

Zstd Compression
Compression Level: 8 - Compression Speed
MB/s, More Is Better
A
B
C
D
348.3
340.9
348.3
341.8
80
160
240
320
400
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***
Zstd Compression
Compression Level: 8 - Decompression Speed
MB/s, More Is Better
A
B
C
D
2541.5
2550.2
2550.1
2540.9
500
1000
1500
2000
2500
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***

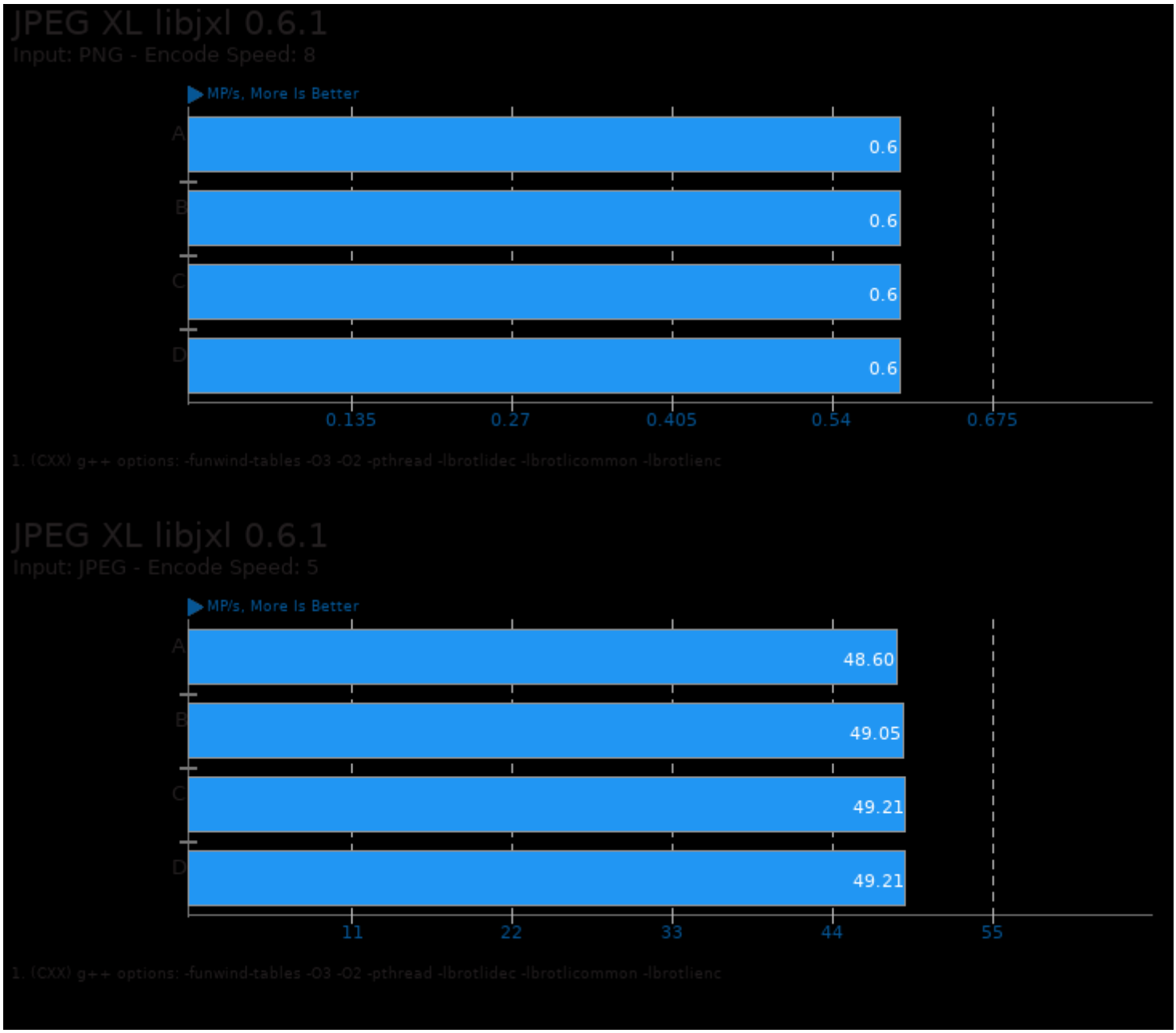

Zstd Compression
Compression Level: 19 - Compression Speed
MB/s, More Is Better
A
B
C
D
22.0
22.1
22.1
21.7
5
10
15
20
25
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***
Zstd Compression
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
A
B
C
D
2363.3
2348.7
2361.3
2351.1
500
1000
1500
2000
2500
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***


Zstd Compression
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
A
B
C
D
364.1
366.6
370.1
363.1
80
160
240
320
400
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***
Zstd Compression
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
A
B
C
D
2467.8
2452.5
2453.1
2464.0
500
1000
1500
2000
2500
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***


Zstd Compression
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
A
B
C
D
265.7
267.4
266.1
268.1
60
120
180
240
300
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***
Zstd Compression
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
A
B
C
D
2731.1
2738.0
2746.1
2729.3
600
1200
1800
2400
3000
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***

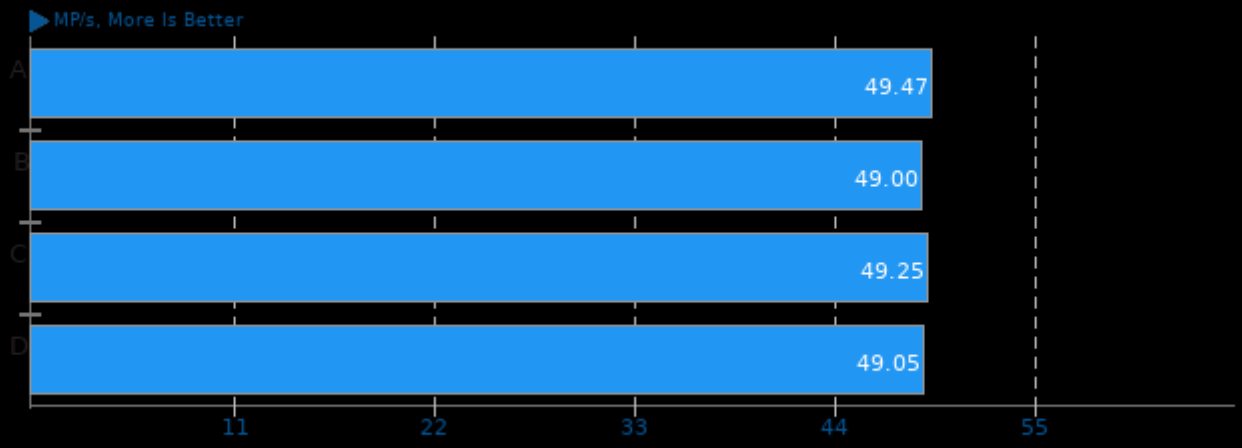

Zstd Compression
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
A
B
C
D
15.4
15.5
15.4
15.6
4
8
12
16
20
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***
Zstd Compression
Compression Level: 19, Long Mode - Decompression Speed
MB/s, More Is Better
A
B
C
D
2463.9
2464.0
2468.2
2458.4
500
1000
1500
2000
2500
1. *** zstd command line interface 64-bits v1.3.5, by Yann Collet ***


JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 5
MP/s, More Is Better
A
B
C
D
17.68
17.73
17.74
17.68
4
8
12
16
20
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -lbrotlidec -lbrotlicommon -lbrotlienc
JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 7
MP/s, More Is Better
A
B
C
D
5.55
5.55
5.57
5.55
1.2533
2.5066
3.7599
5.0132
6.2665
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -lbrotlidec -lbrotlicommon -lbrotlienc


JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 8
MP/s, More Is Better
A
B
C
D
0.6
0.6
0.6
0.6
0.135
0.27
0.405
0.54
0.675
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -lbrotlidec -lbrotlicommon -lbrotlienc
JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
A
B
C
D
48.60
49.05
49.21
49.21
11
22
33
44
55
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -lbrotlidec -lbrotlicommon -lbrotlienc

JPEG XL libjxl 0.6.1

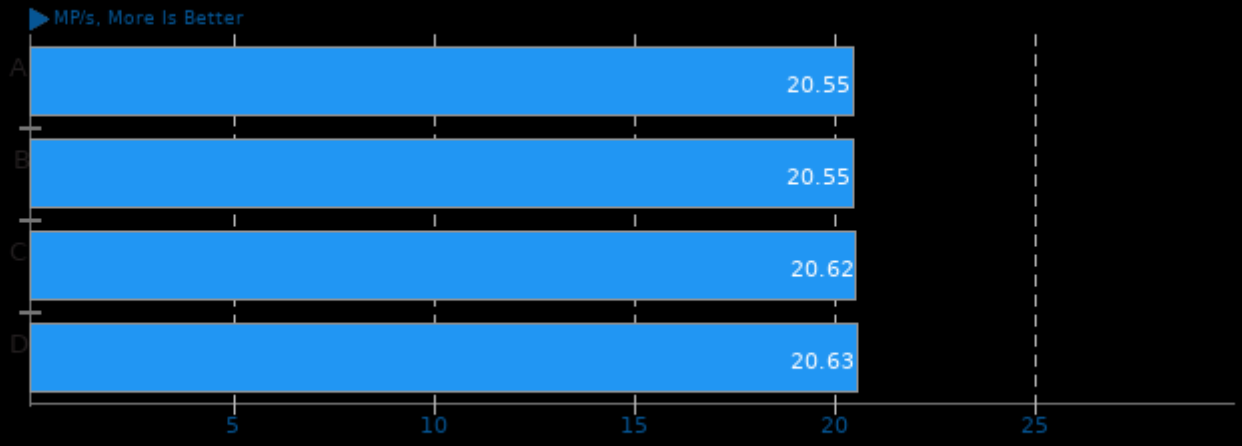
Input: JPEG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -lbrotlidec -lbrotlicommon -lbrotlienc

JPEG XL libjxl 0.6.1

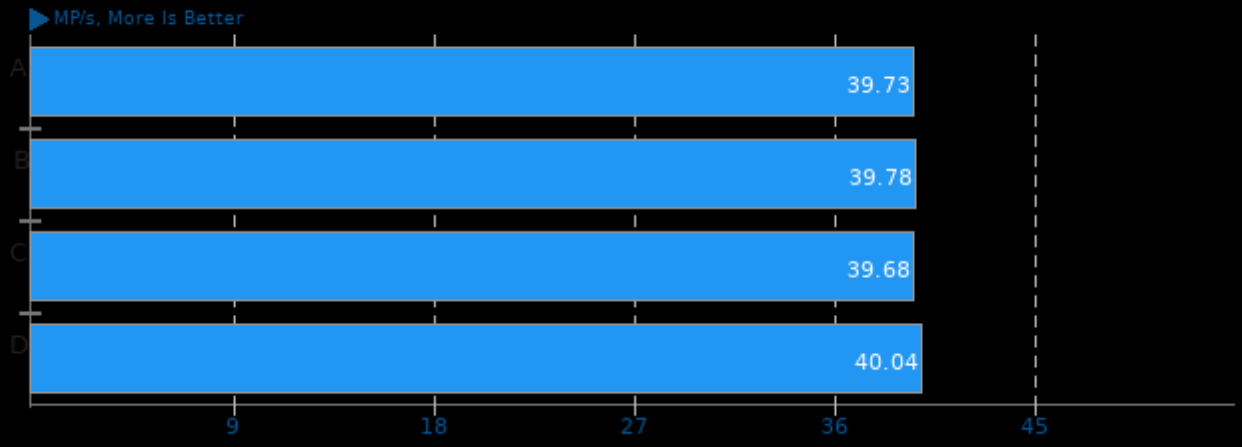
Input: JPEG - Encode Speed: 8

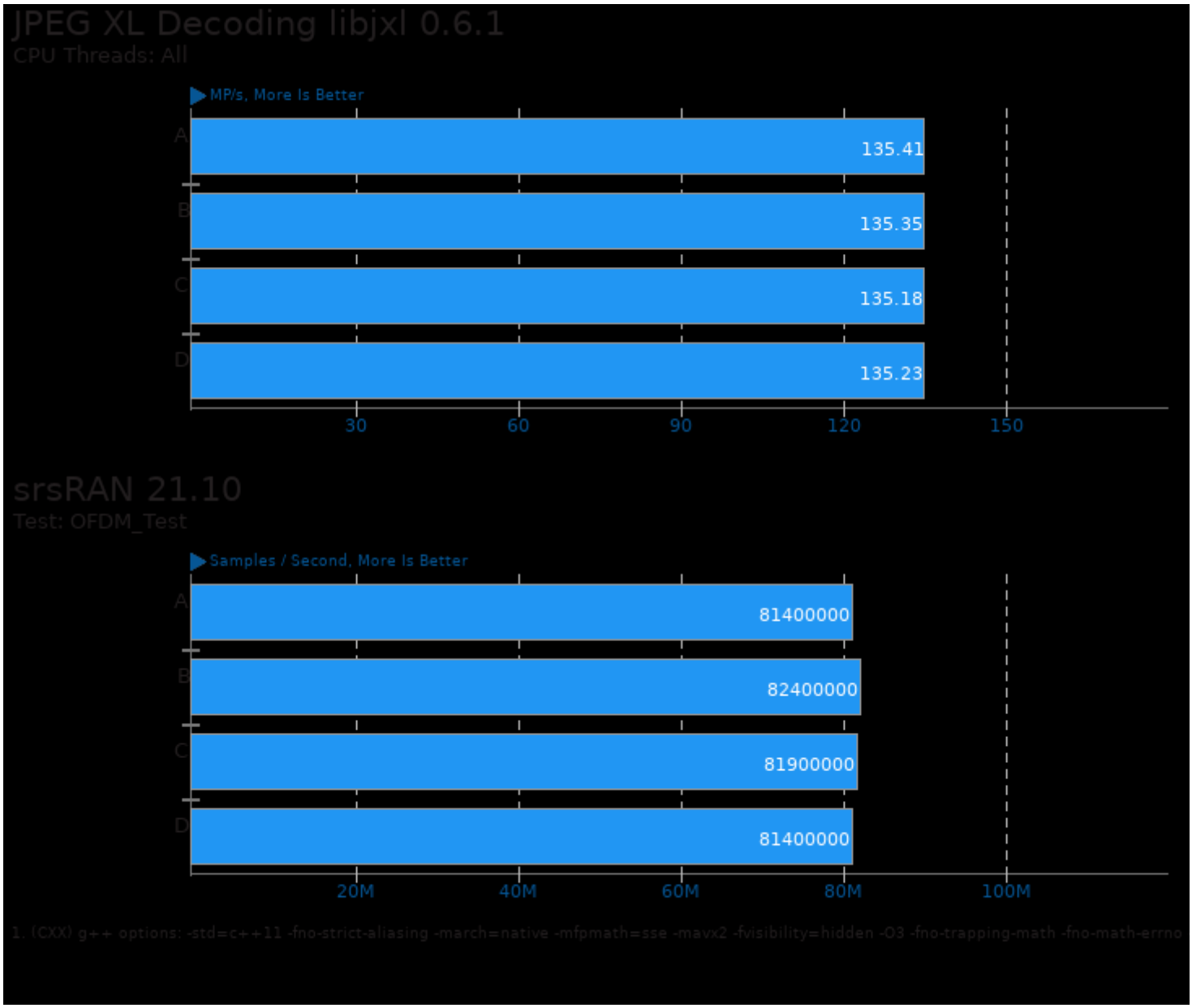


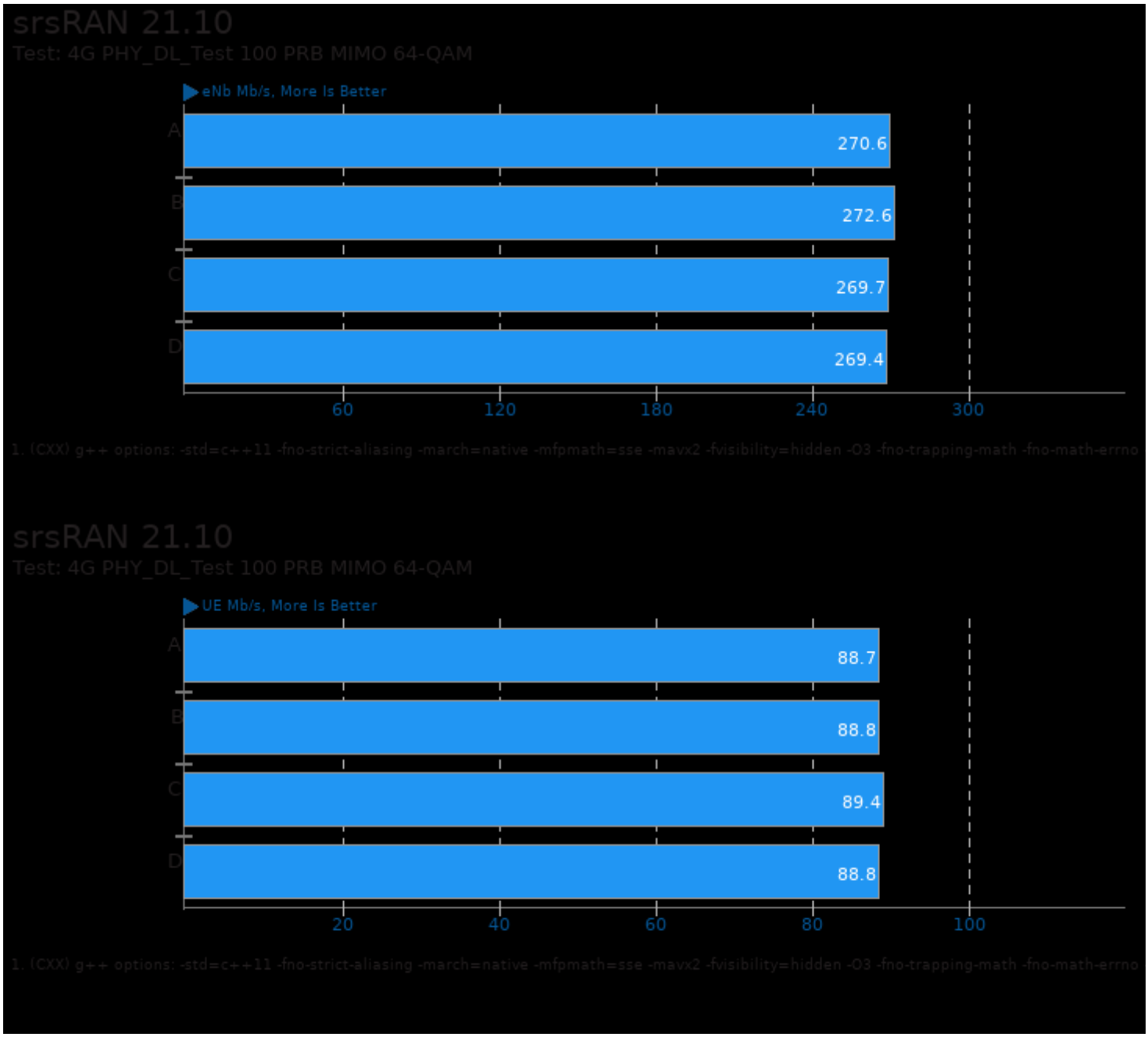
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -lbrotlidec -lbrotlicommon -lbrotlienc

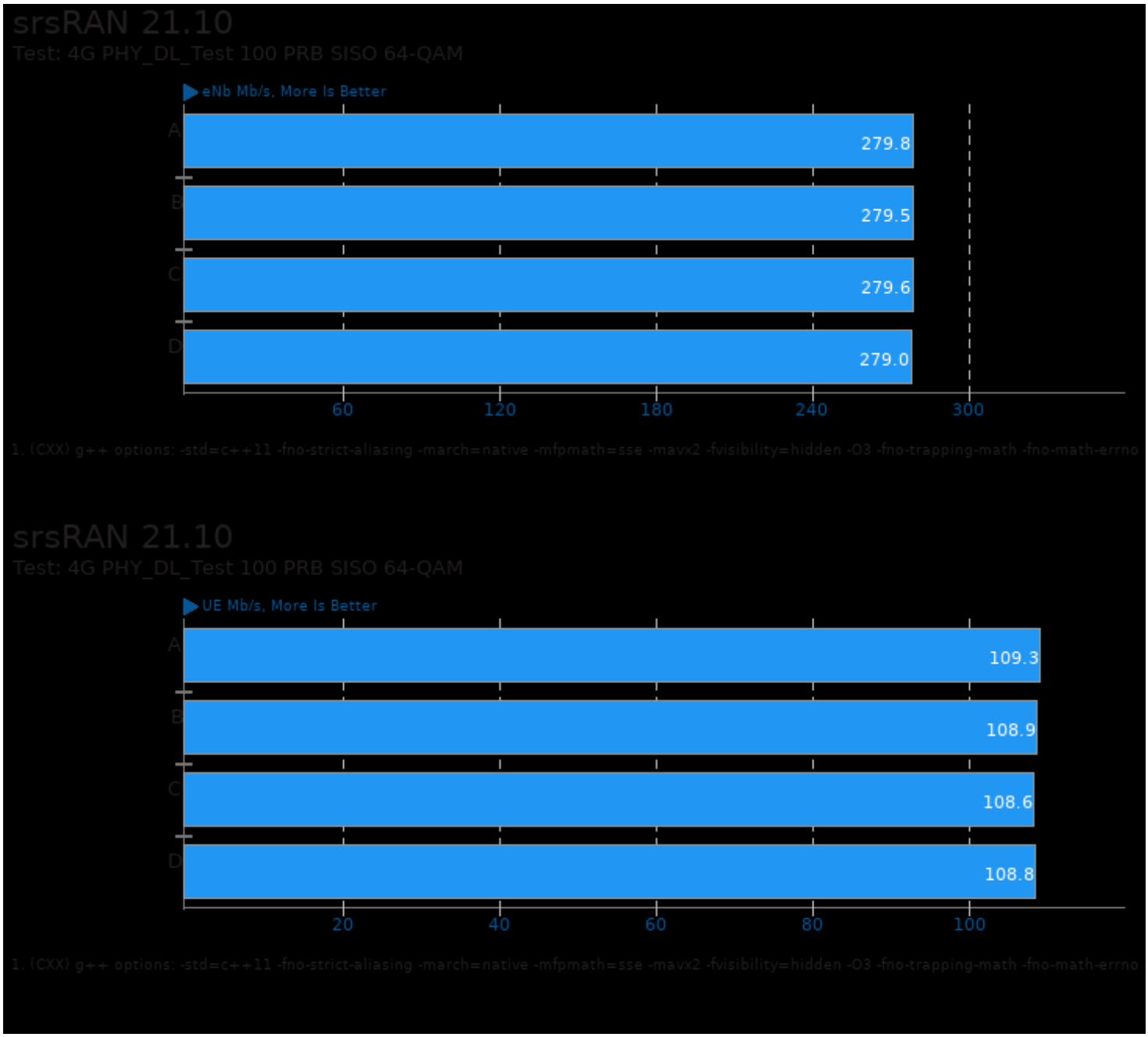
JPEG XL Decoding libjxl 0.6.1

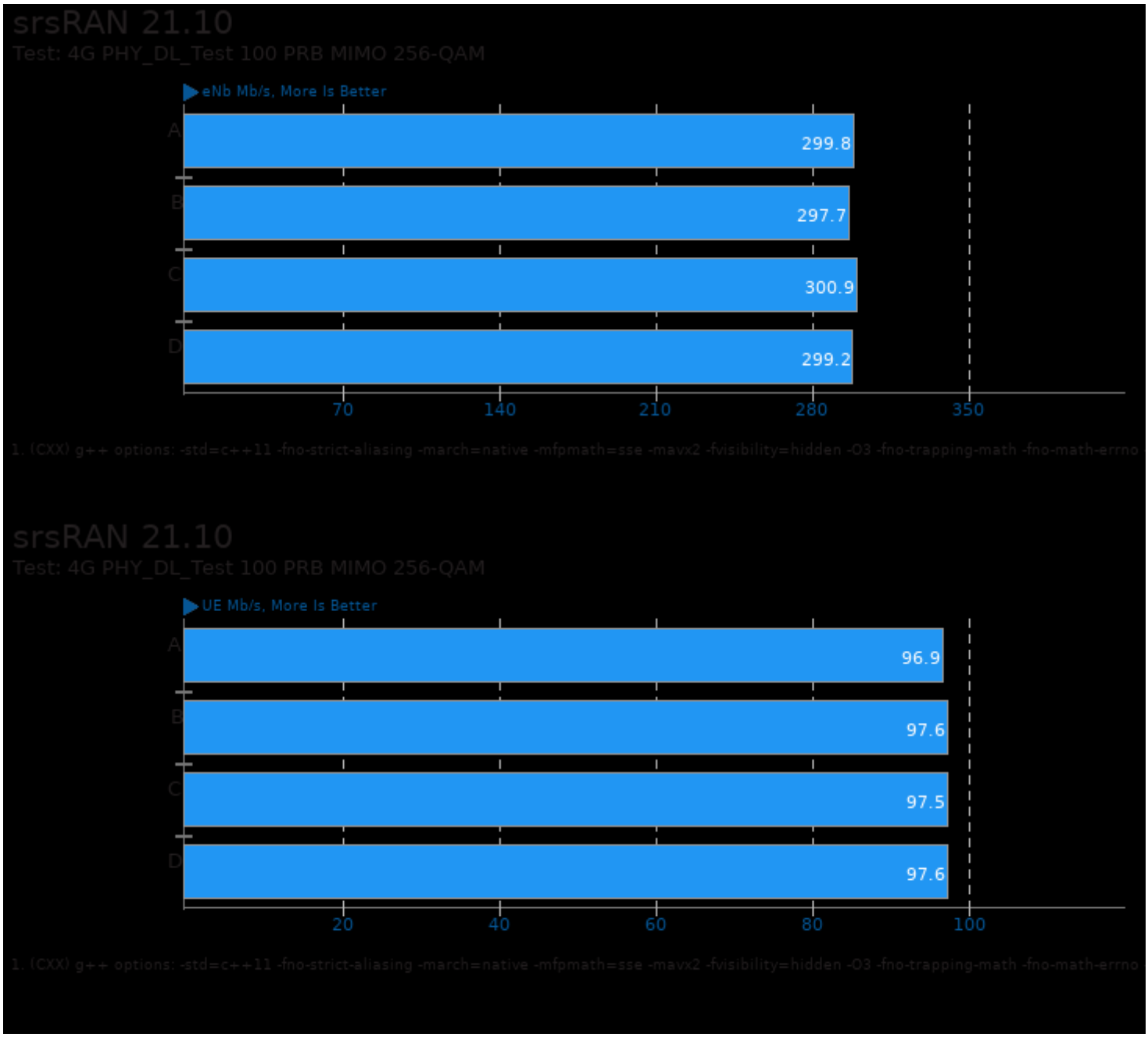
CPU Threads: 1

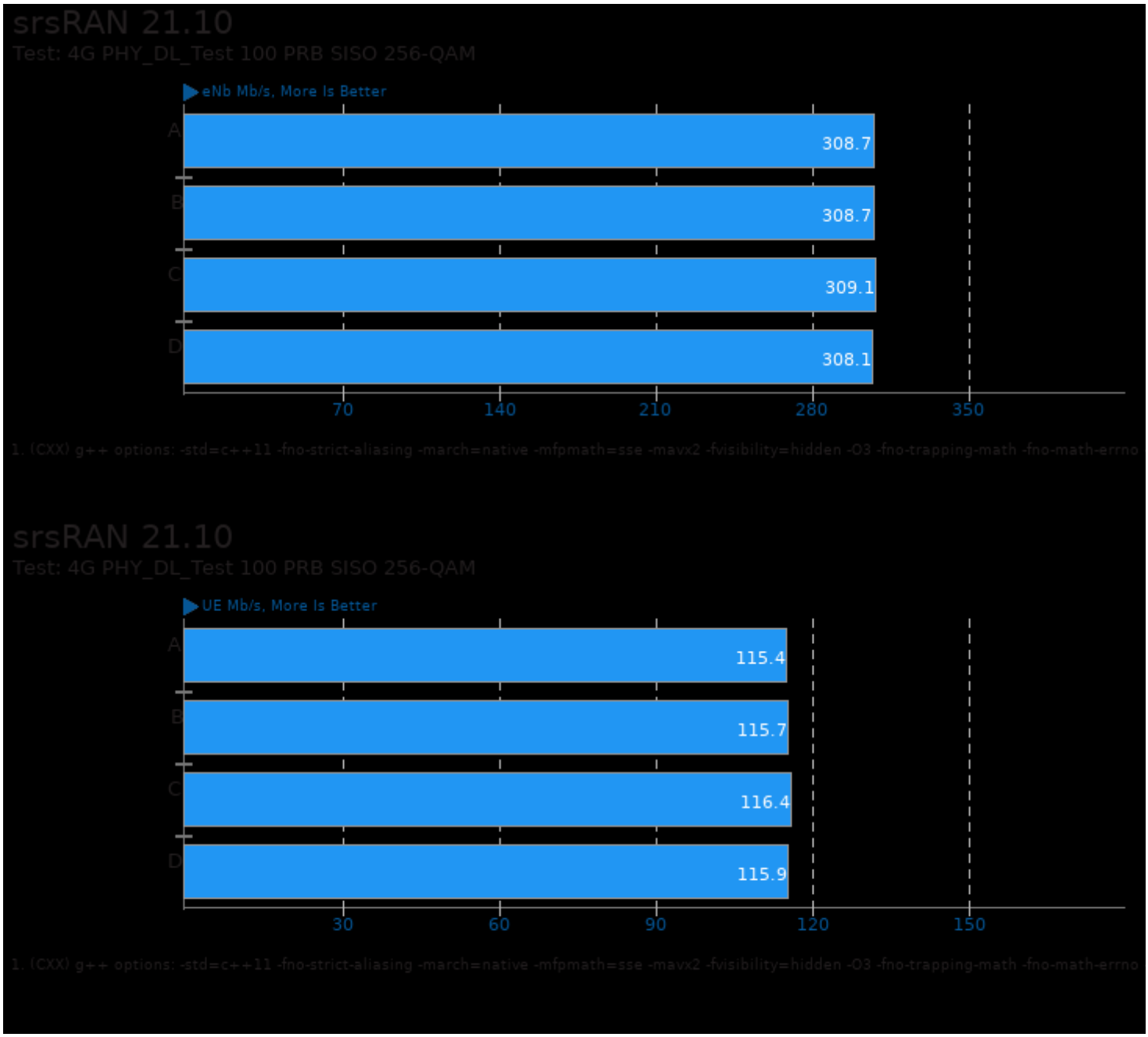


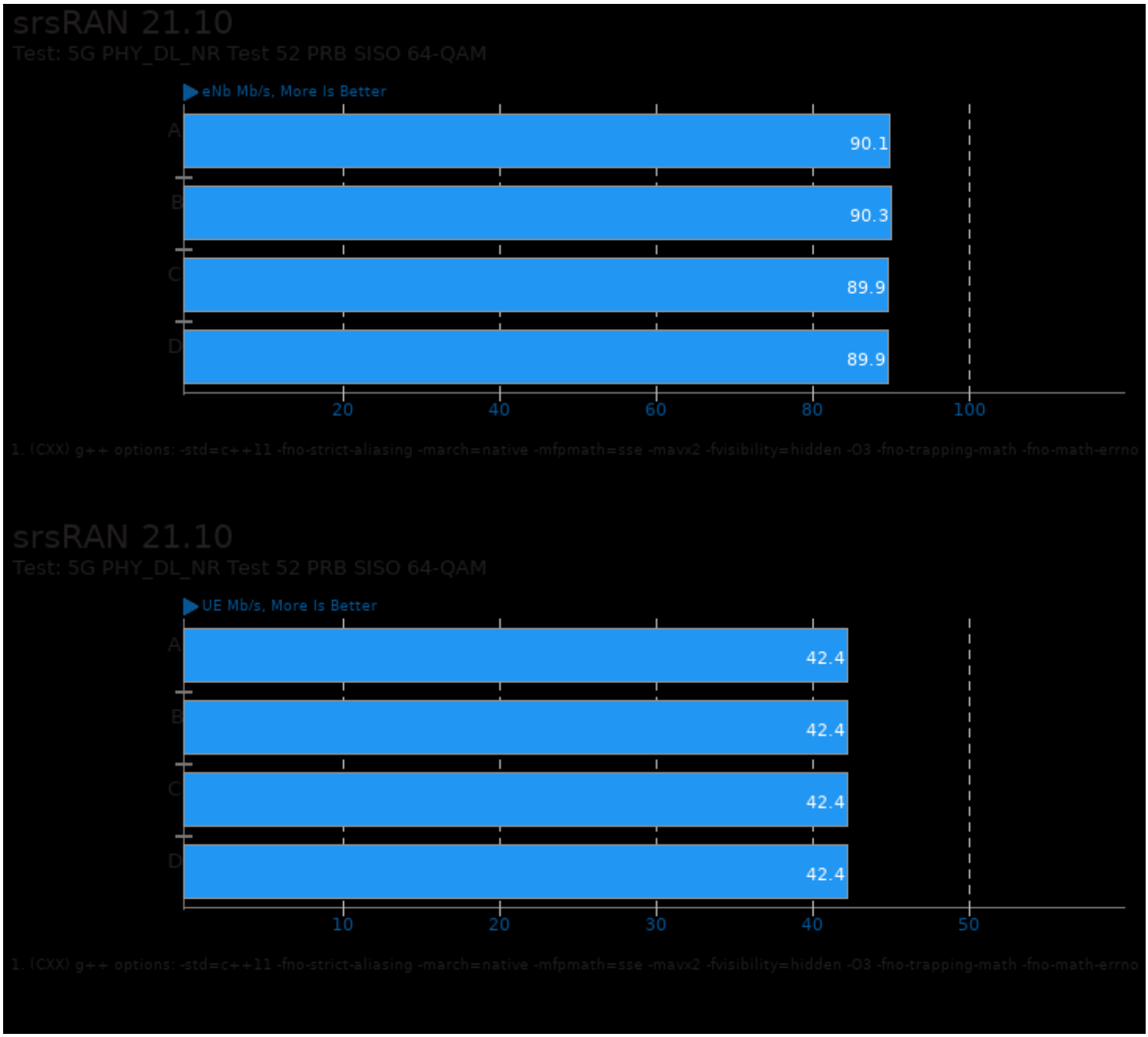

JPEG XL Decoding libjxl 0.6.1
CPU Threads: All
MP/s, More Is Better
A
135.41
B
135.35
C
135.18
D
135.23
30
60
90
120
150
srsRAN 21.10
Test: OFDM_Test
Samples / Second, More Is Better
A
81400000
B
82400000
C
81900000
D
81400000
20M
40M
60M
80M
100M
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

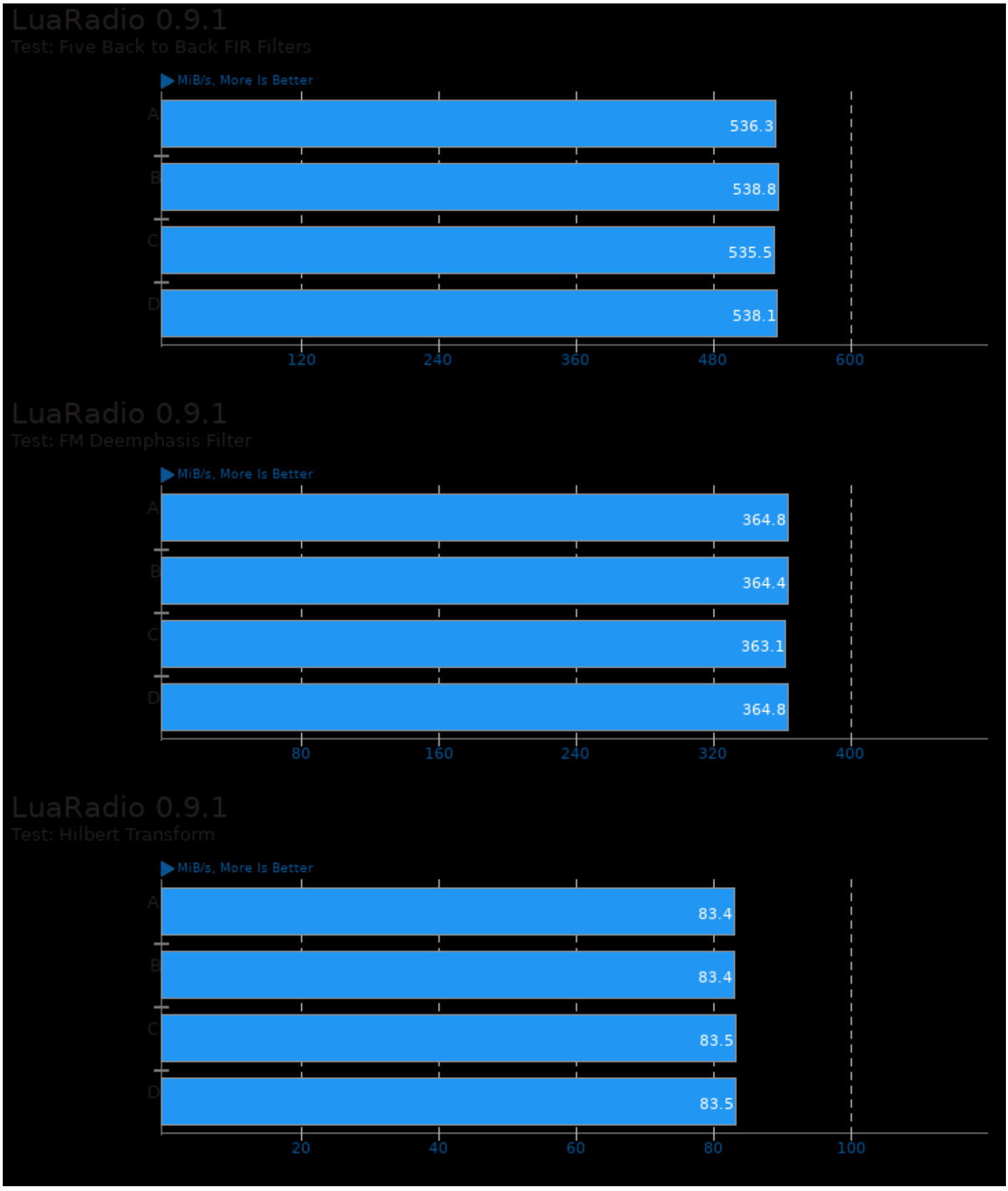

srsRAN 21.10
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM
eNb Mb/s, More Is Better
A
B
C
D
270.6
272.6
269.7
269.4
60
120
180
240
300
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.10
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM
UE Mb/s, More Is Better
A
B
C
D
88.7
88.8
89.4
88.8
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 21.10
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM
eNb Mb/s, More Is Better
A
279.8
B
279.5
C
279.6
D
279.0
60
120
180
240
300
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 21.10
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM
UE Mb/s, More Is Better
A
109.3
B
108.9
C
108.6
D
108.8
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 21.10
Test: 4G PHY_DL_Test 100 PRB MIMO 256-QAM
eNb Mb/s, More Is Better
A
B
C
D
299.8
297.7
300.9
299.2
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 21.10
Test: 4G PHY_DL_Test 100 PRB MIMO 256-QAM
UE Mb/s, More Is Better
A
B
C
D
96.9
97.6
97.5
97.6
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

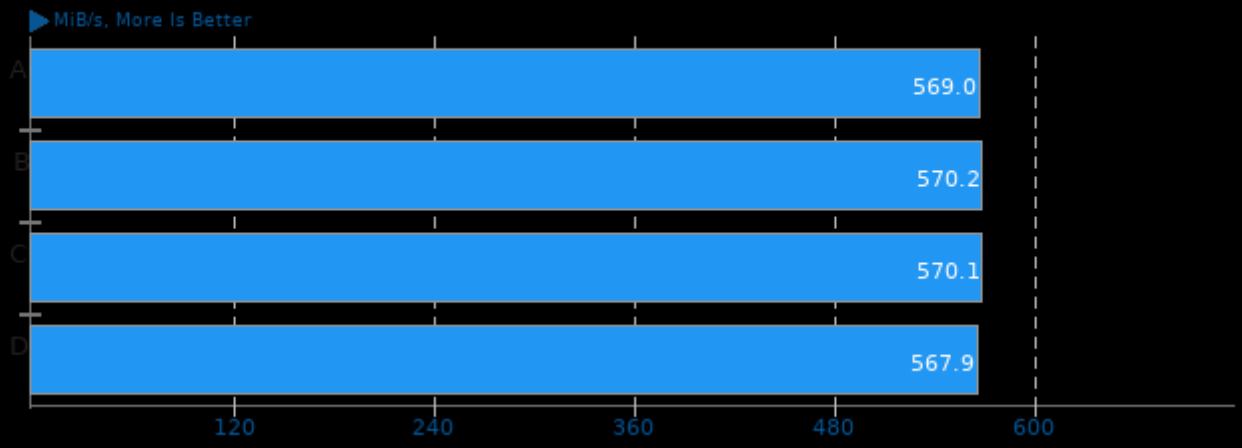

srsRAN 21.10
Test: 4G PHY_DL_Test 100 PRB SISO 256-QAM
eNb Mb/s, More Is Better
A
B
C
D
308.7
308.7
309.1
308.1
70
140
210
280
350
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.10
Test: 4G PHY_DL_Test 100 PRB SISO 256-QAM
UE Mb/s, More Is Better
A
B
C
D
115.4
115.7
116.4
115.9
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 21.10
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM
eNb Mb/s, More Is Better
A
B
C
D
90.1
90.3
89.9
89.9
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 21.10
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM
UE Mb/s, More Is Better
A
B
C
D
42.4
42.4
42.4
42.4
10
20
30
40
50
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno


LuaRadio 0.9.1
Test: Five Back to Back FIR Filters
MiB/s, More Is Better
A
536.3
B
538.8
C
535.5
D
538.1
120
240
360
480
600
LuaRadio 0.9.1
Test: FM Deemphasis Filter
MiB/s, More Is Better
A
364.8
B
364.4
C
363.1
D
364.8
80
160
240
320
400
LuaRadio 0.9.1
Test: Hilbert Transform
MiB/s, More Is Better
A
83.4
B
83.4
C
83.5
D
83.5
20
40
60
80
100

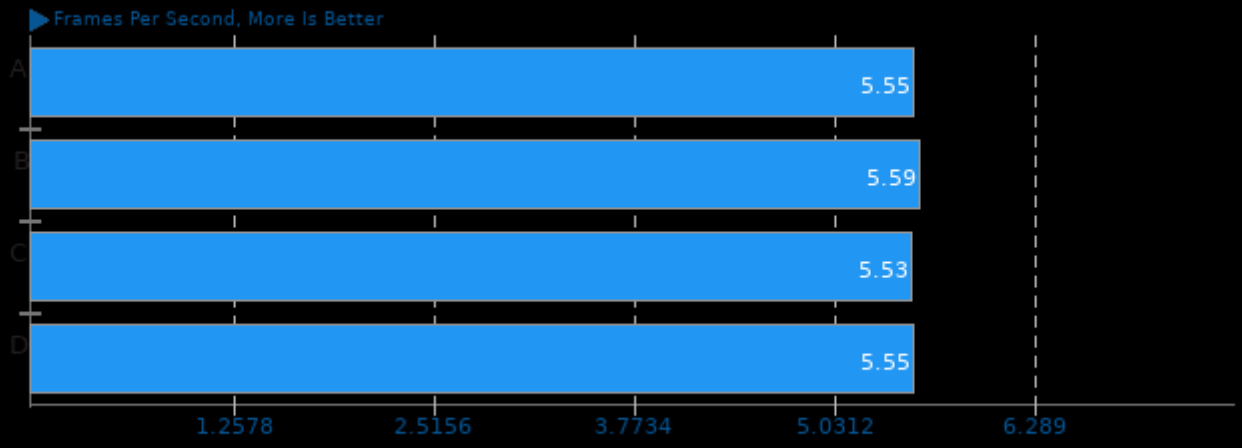
LuaRadio 0.9.1

Test: Complex Phase



AOM AV1 3.2

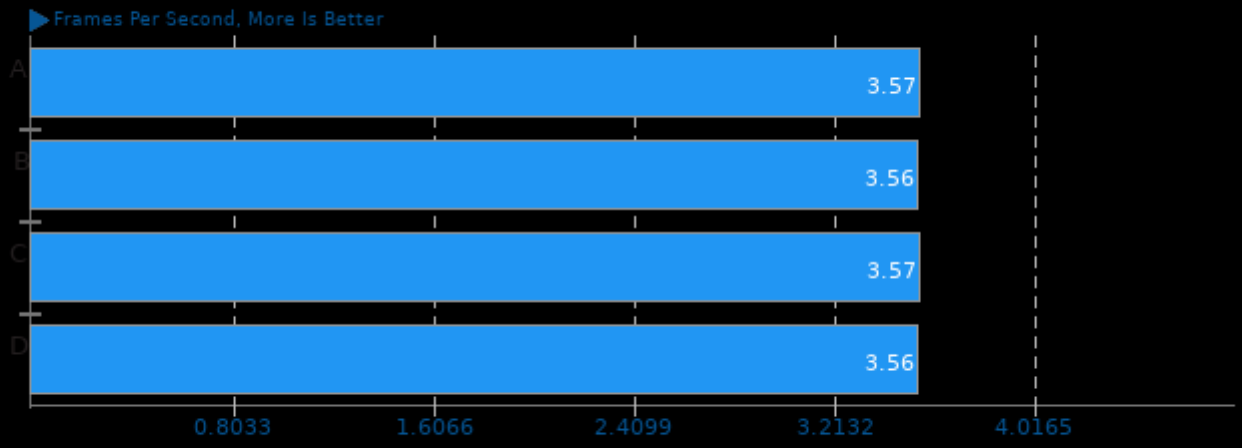
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K



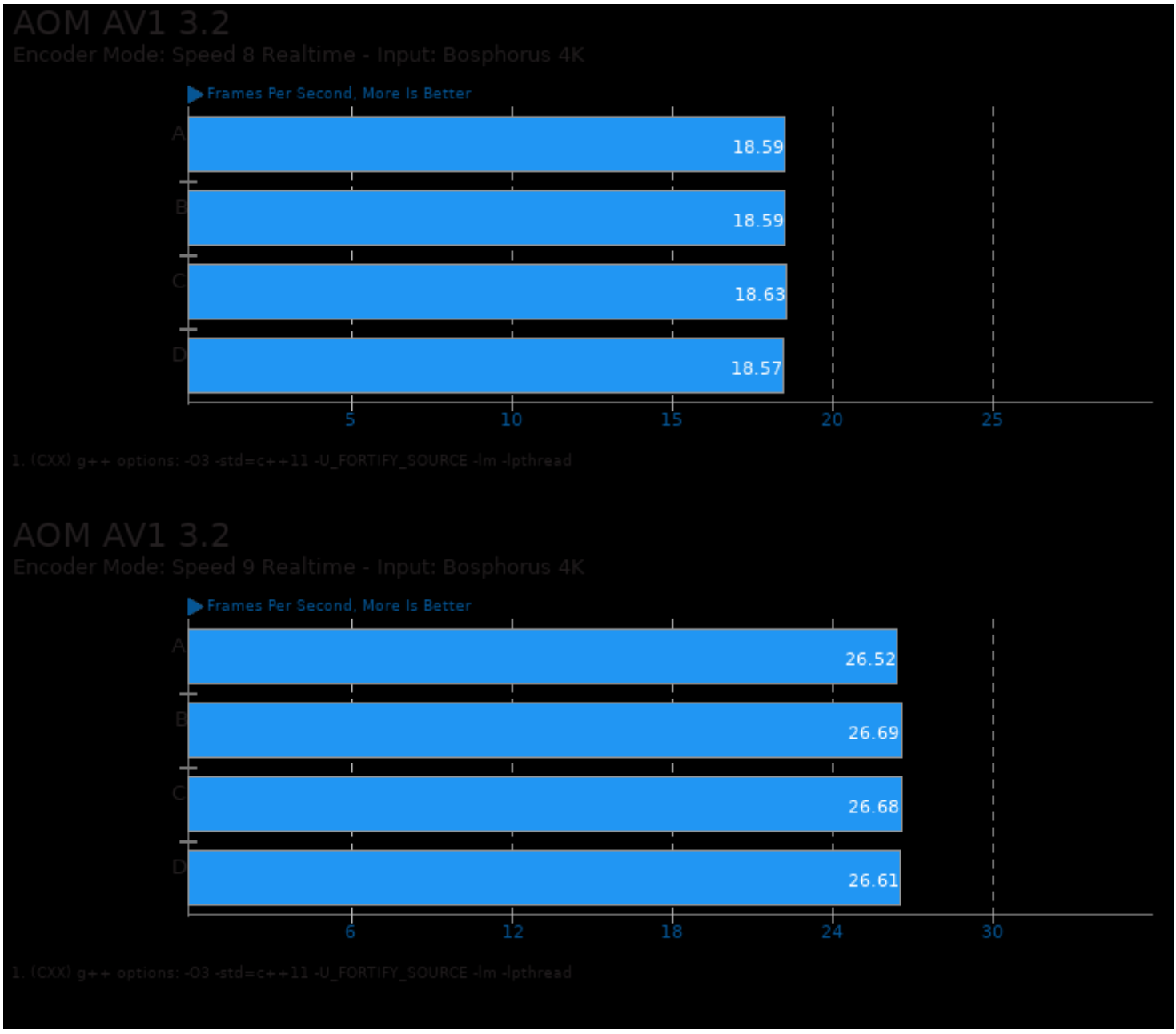
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

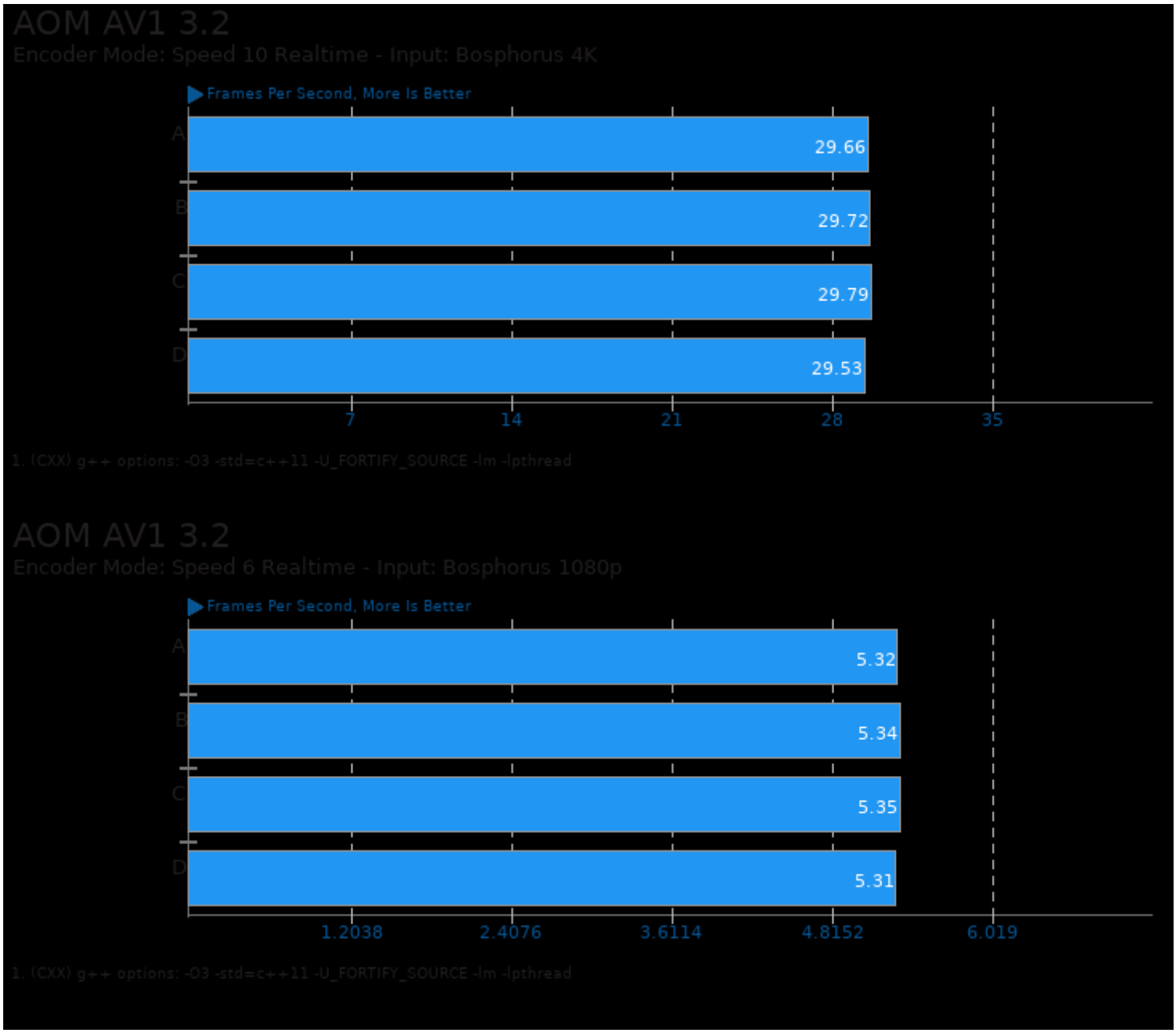
AOM AV1 3.2

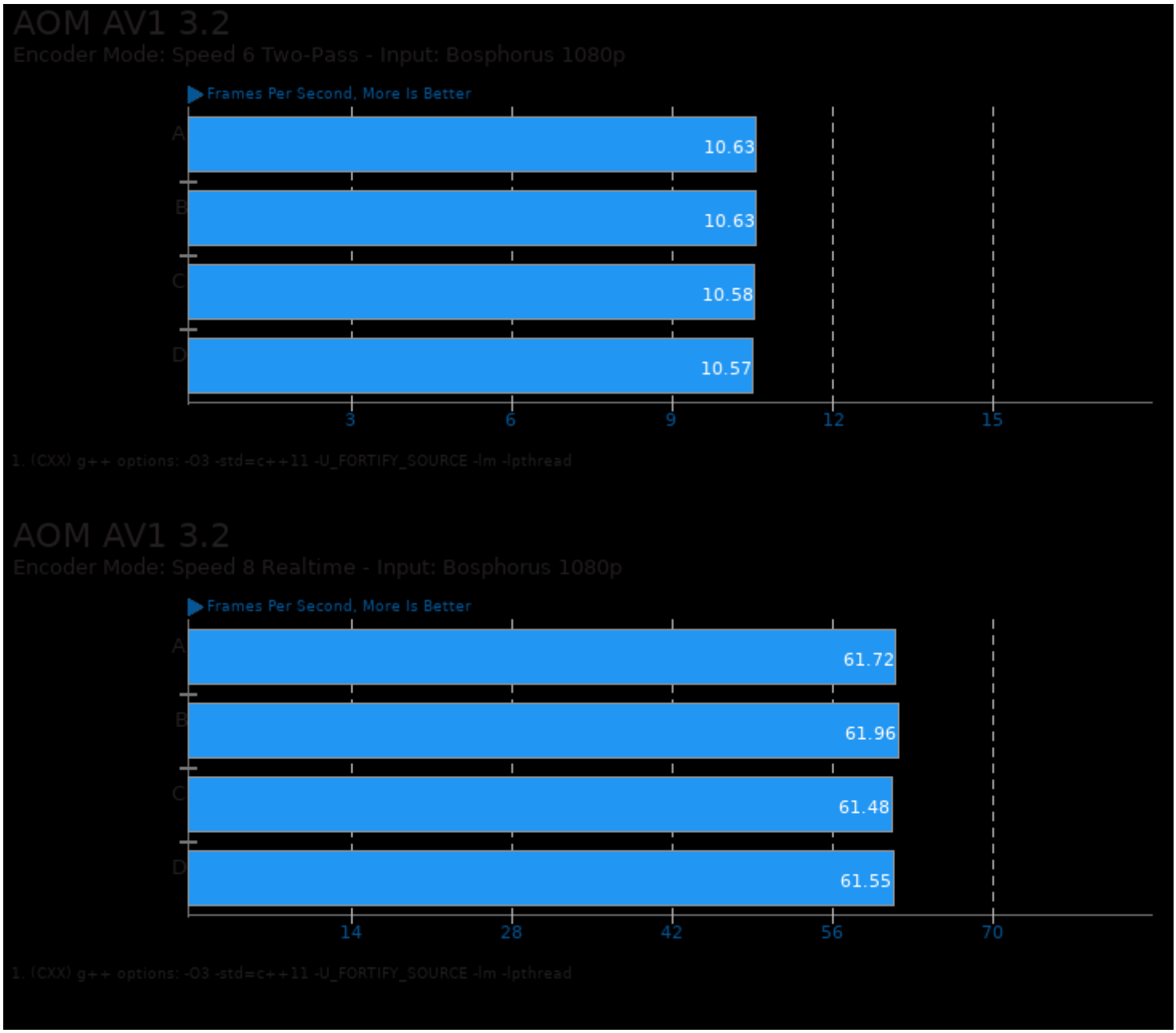
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K



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

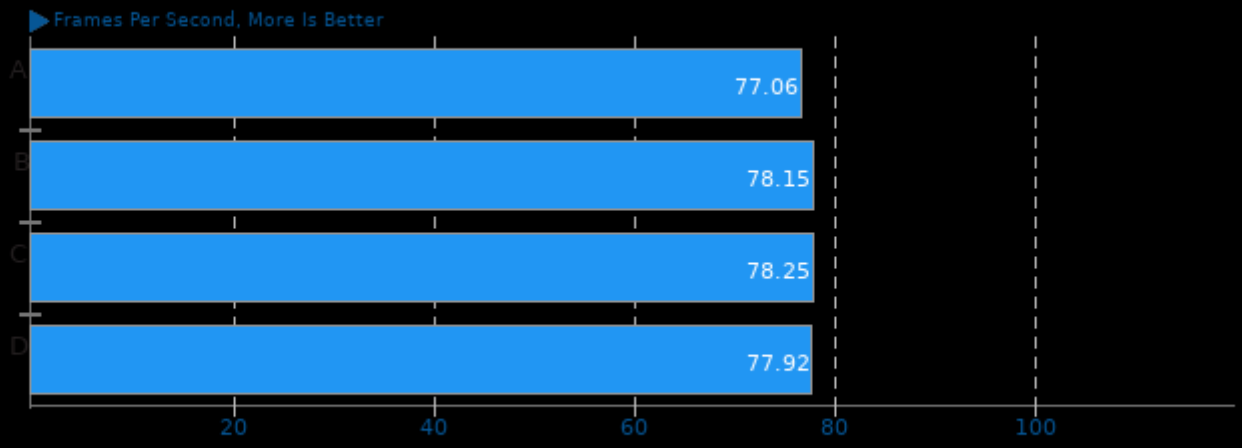

AOM AV1 3.2
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
18.59
B
18.59
C
18.63
D
18.57
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.2
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
26.52
B
26.69
C
26.68
D
26.61
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


AOM AV1 3.2
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
29.66
29.72
29.79
29.53
7
14
21
28
35
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.2
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
5.32
5.34
5.35
5.31
1.2038
2.4076
3.6114
4.8152
6.019
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


AOM AV1 3.2
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
10.63
10.63
10.58
10.57
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.2
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
61.72
61.96
61.48
61.55
14
28
42
56
70
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

AOM AV1 3.2

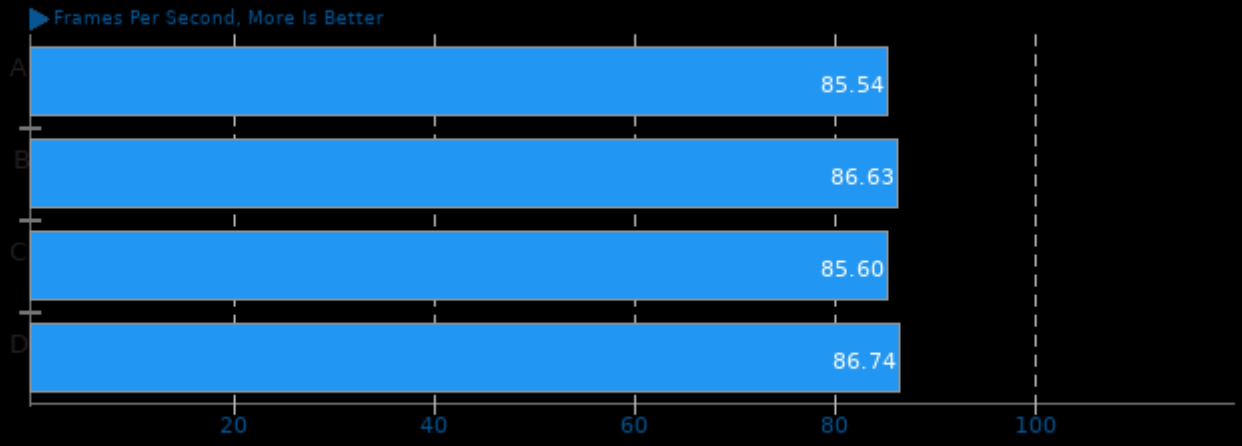
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p



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

AOM AV1 3.2

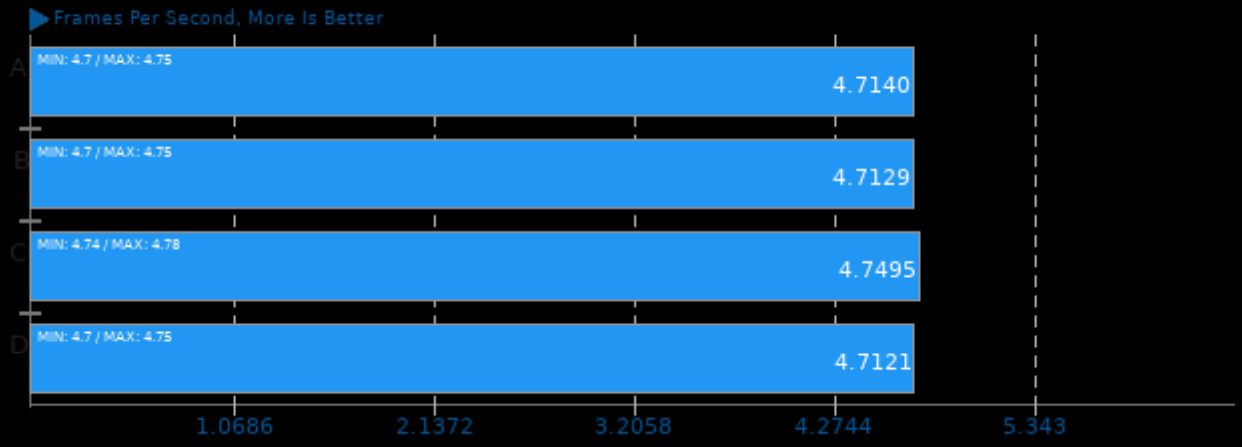
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 1080p

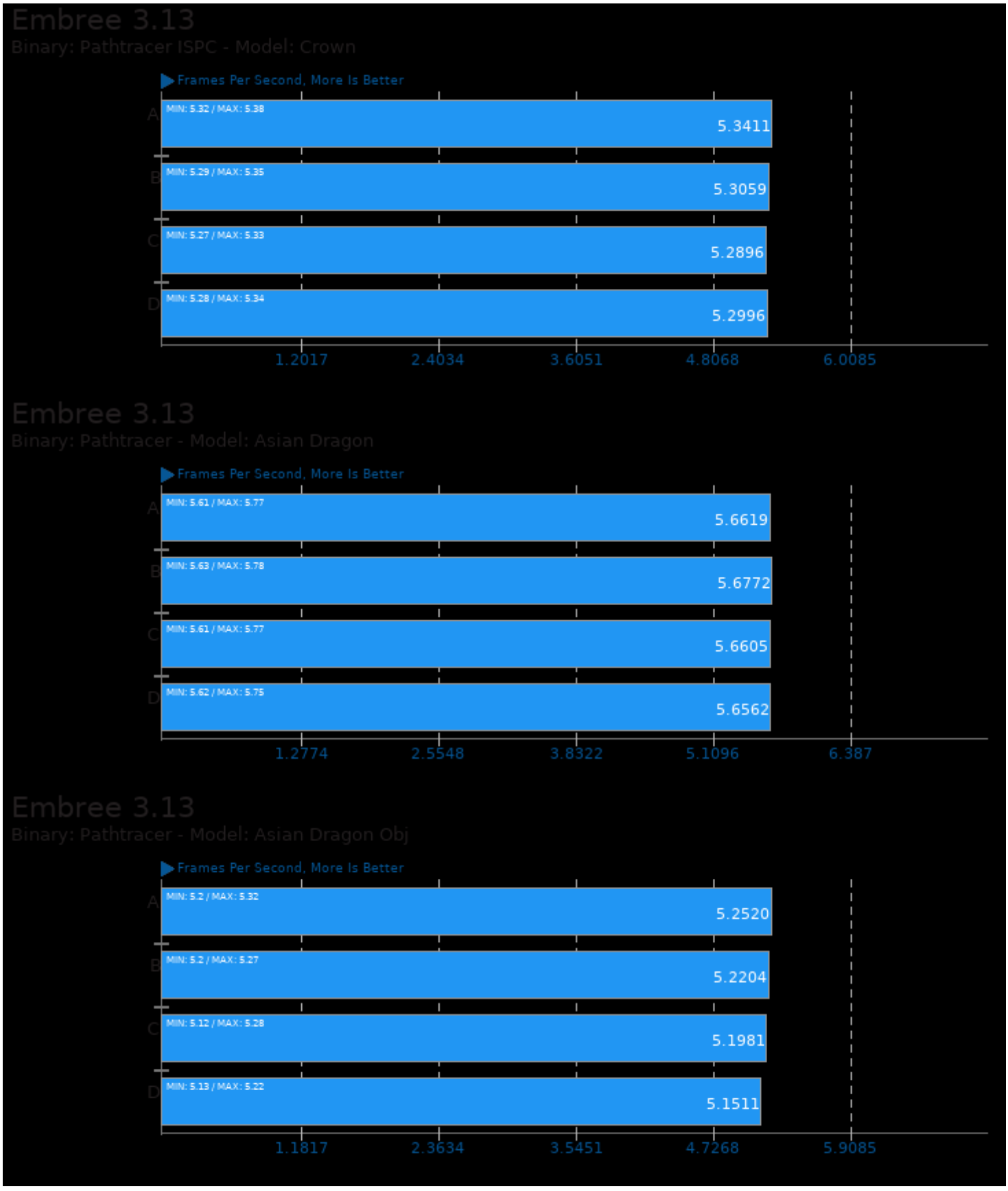


1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

Embree 3.13

Binary: Pathtracer - Model: Crown

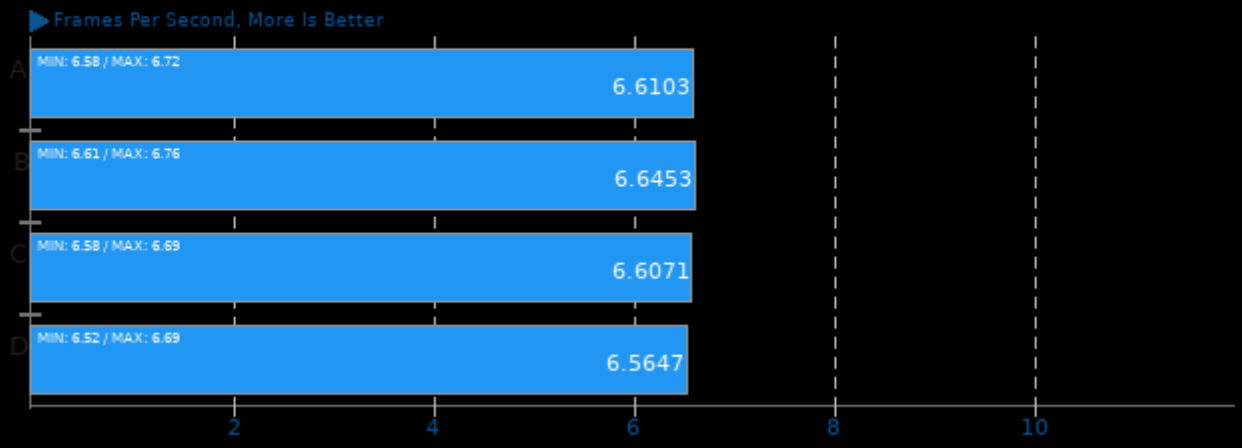



Embree 3.13
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
A
MIN: 5.32 / MAX: 5.38
5.3411
B
MIN: 5.29 / MAX: 5.35
5.3059
C
MIN: 5.27 / MAX: 5.33
5.2896
D
MIN: 5.28 / MAX: 5.34
5.2996
1.2017
2.4034
3.6051
4.8068
6.0085
Embree 3.13
Binary: Pathtracer - Model: Asian Dragon
Frames Per Second, More Is Better
A
MIN: 5.61 / MAX: 5.77
5.6619
B
MIN: 5.63 / MAX: 5.78
5.6772
C
MIN: 5.61 / MAX: 5.77
5.6605
D
MIN: 5.62 / MAX: 5.75
5.6562
1.2774
2.5548
3.8322
5.1096
6.387
Embree 3.13
Binary: Pathtracer - Model: Asian Dragon Obj
Frames Per Second, More Is Better
A
MIN: 5.2 / MAX: 5.32
5.2520
B
MIN: 5.2 / MAX: 5.27
5.2204
C
MIN: 5.12 / MAX: 5.28
5.1981
D
MIN: 5.13 / MAX: 5.22
5.1511
1.1817
2.3634
3.5451
4.7268
5.9085

Core i7 5775C ON Linux In 2022

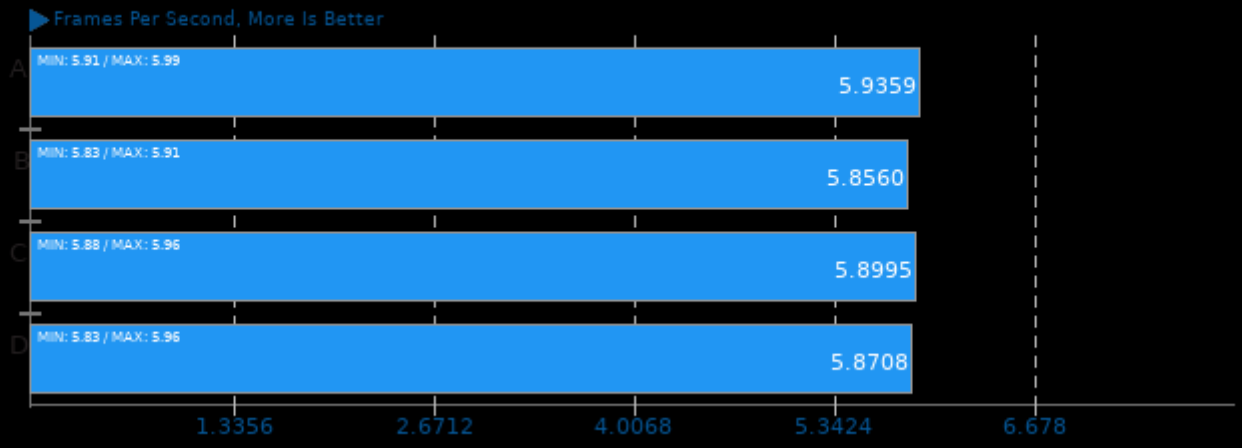
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon



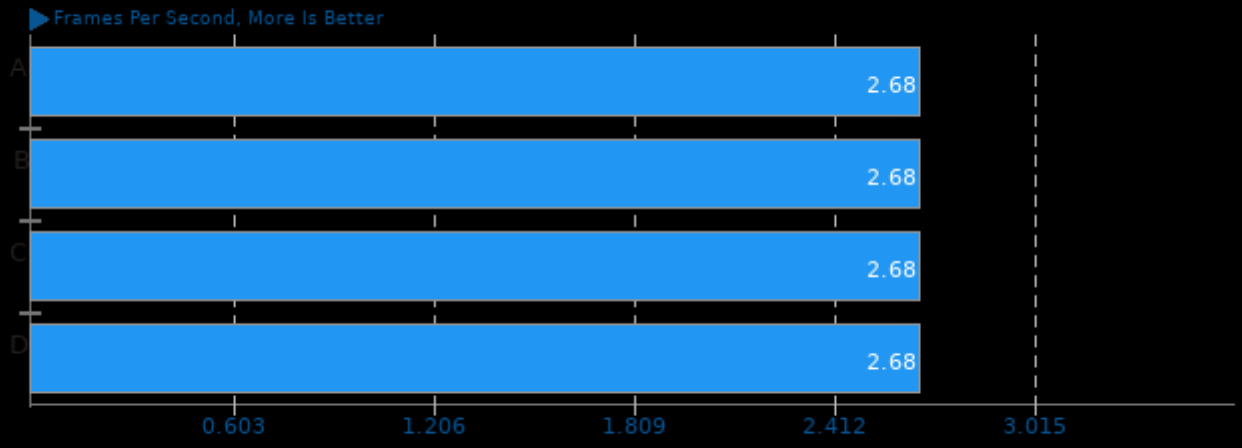
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon Obj

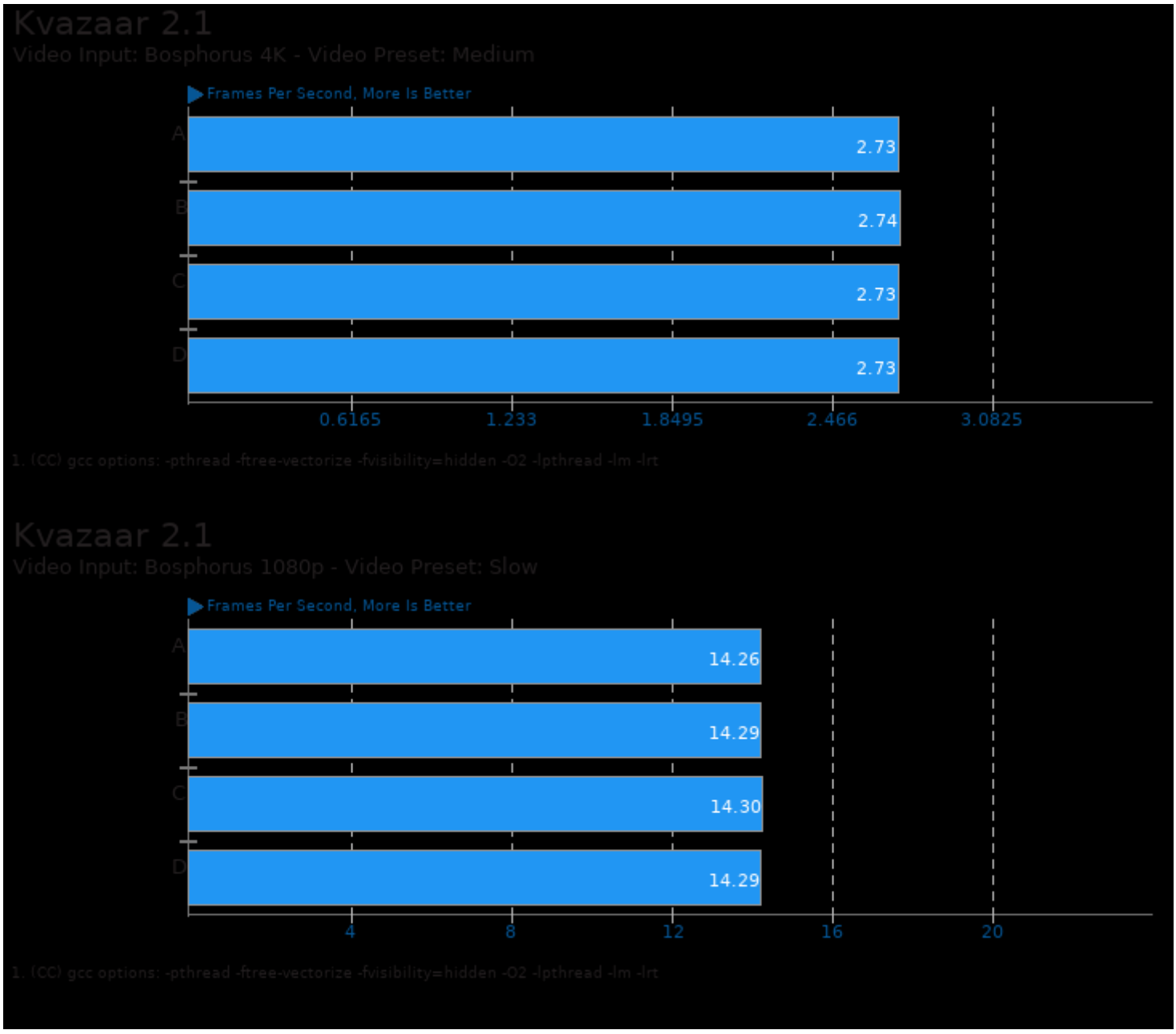


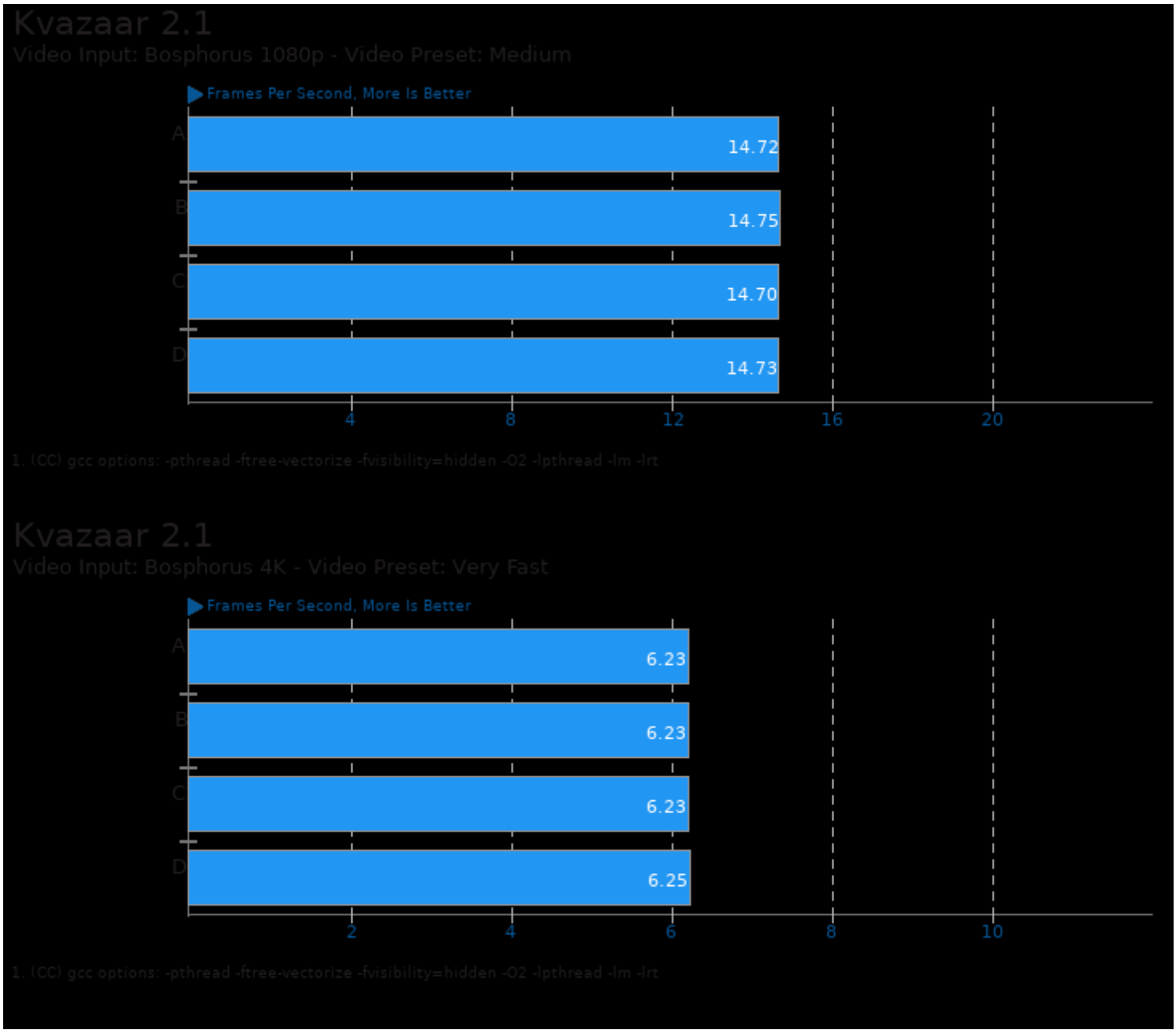
Kvazaar 2.1

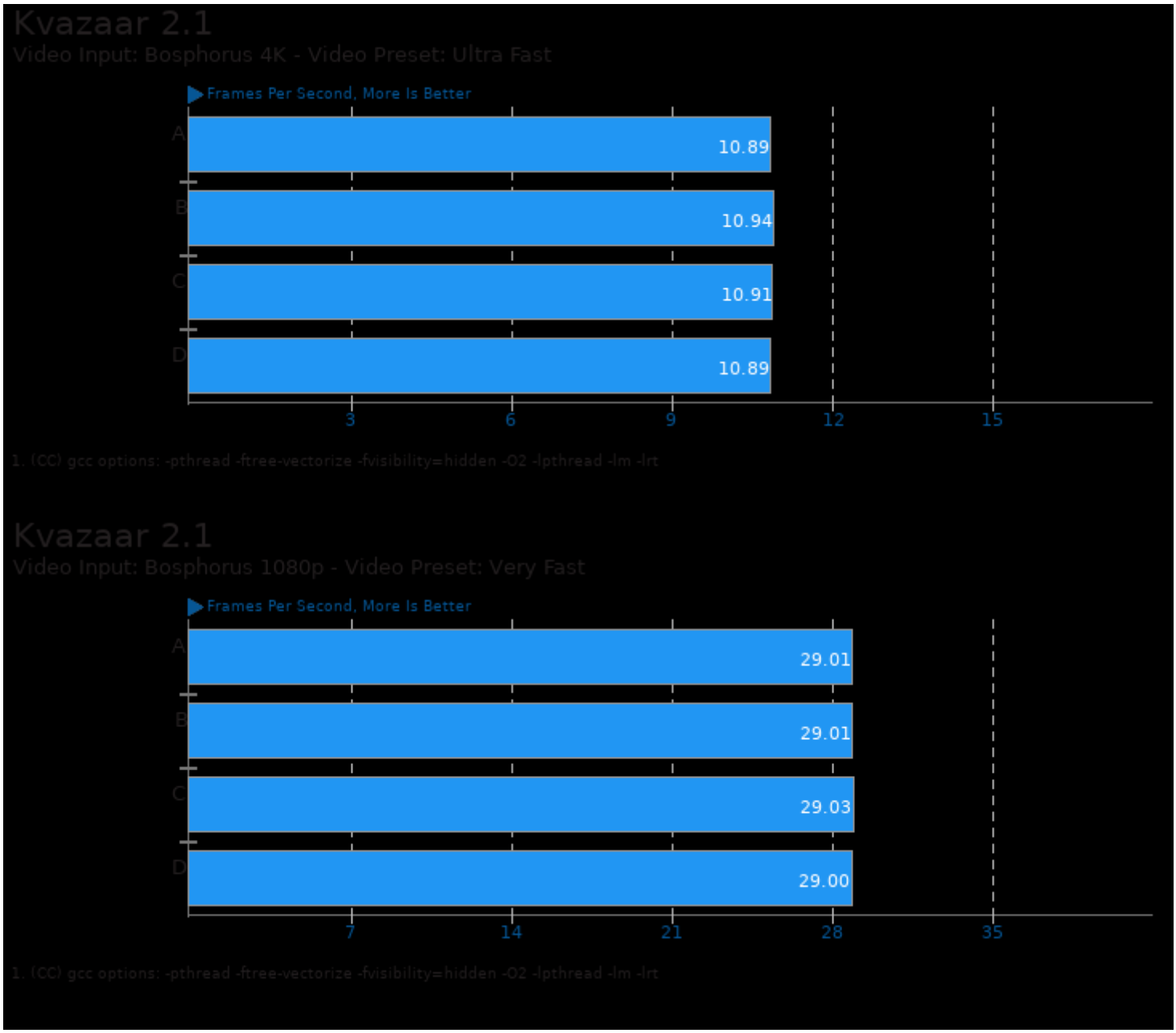
Video Input: Bosphorus 4K - Video Preset: Slow

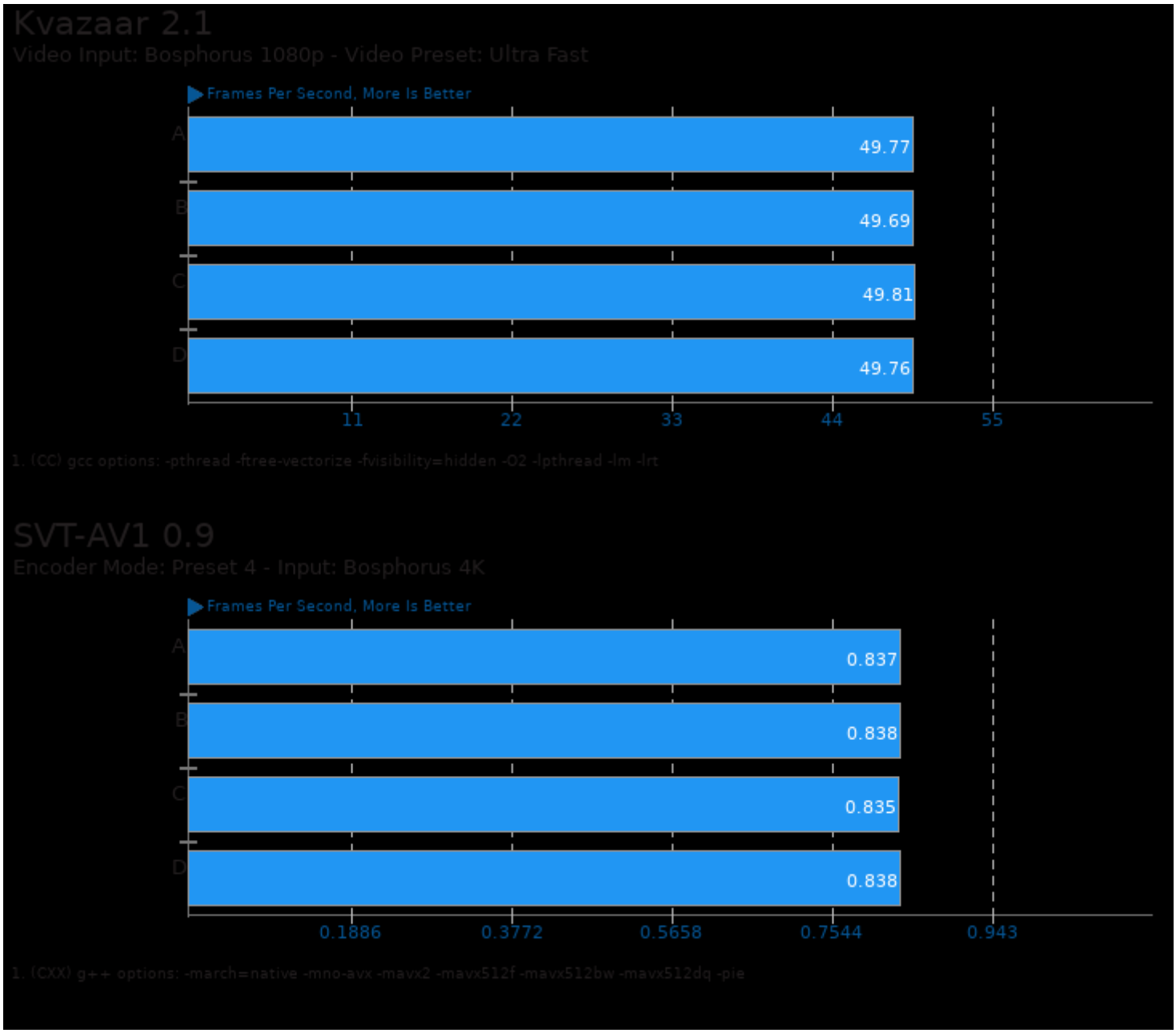


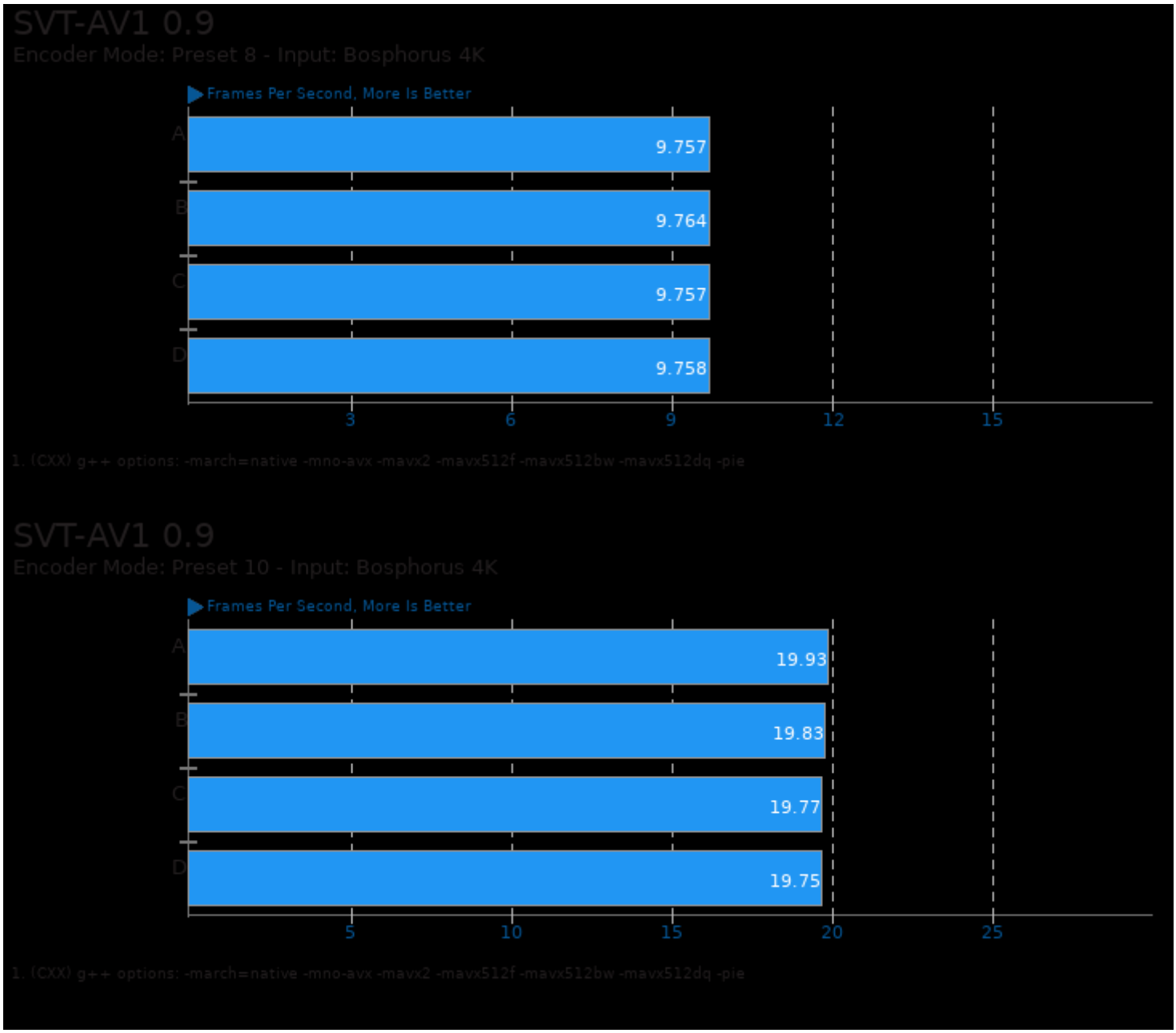
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

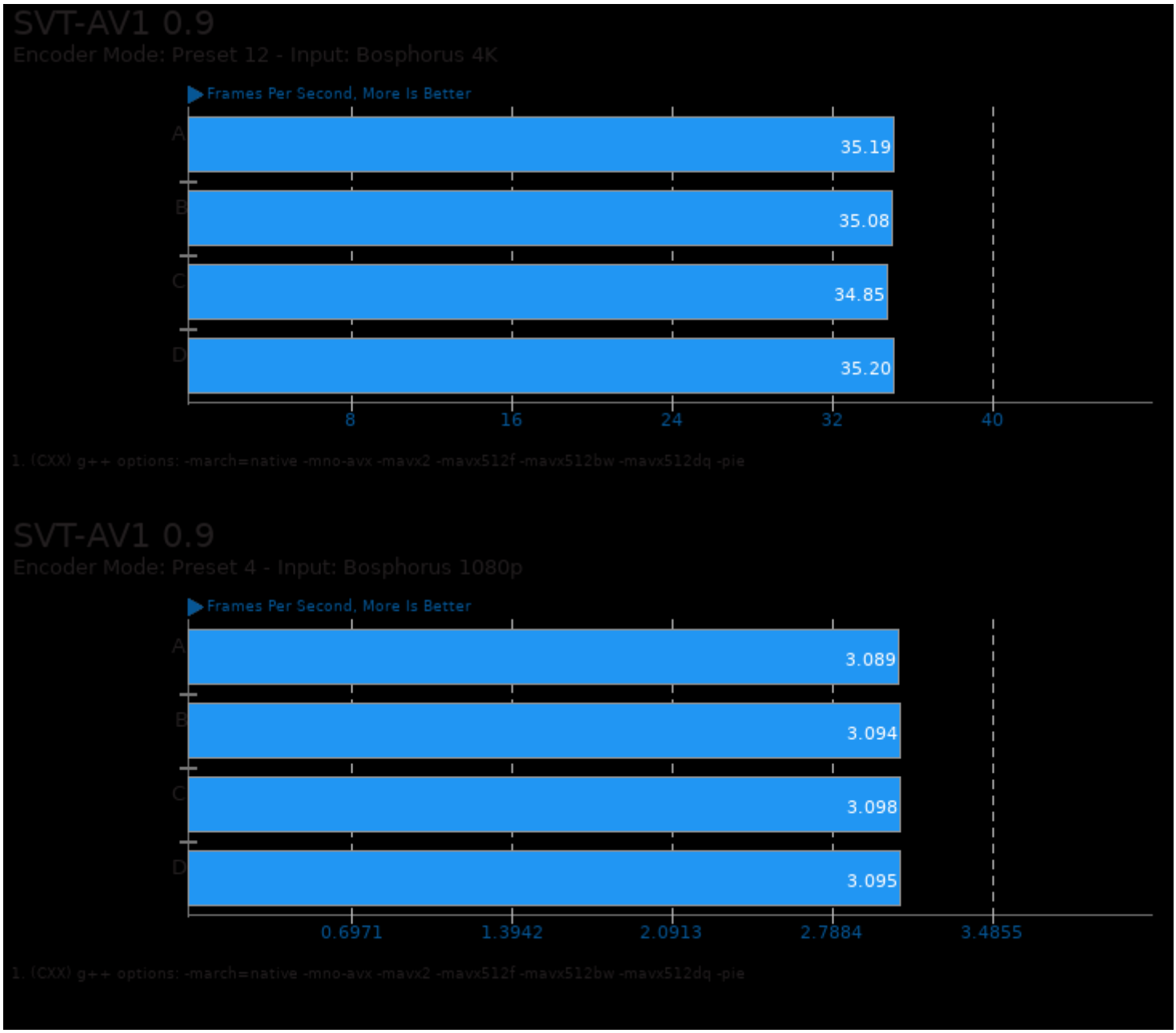

Kvazaar 2.1
Video Input: Bosphorus 4K - Video Preset: Medium
Frames Per Second, More Is Better
A
2.73
B
2.74
C
2.73
D
2.73
0.6165
1.233
1.8495
2.466
3.0825
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.1
Video Input: Bosphorus 1080p - Video Preset: Slow
Frames Per Second, More Is Better
A
14.26
B
14.29
C
14.30
D
14.29
4
8
12
16
20
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

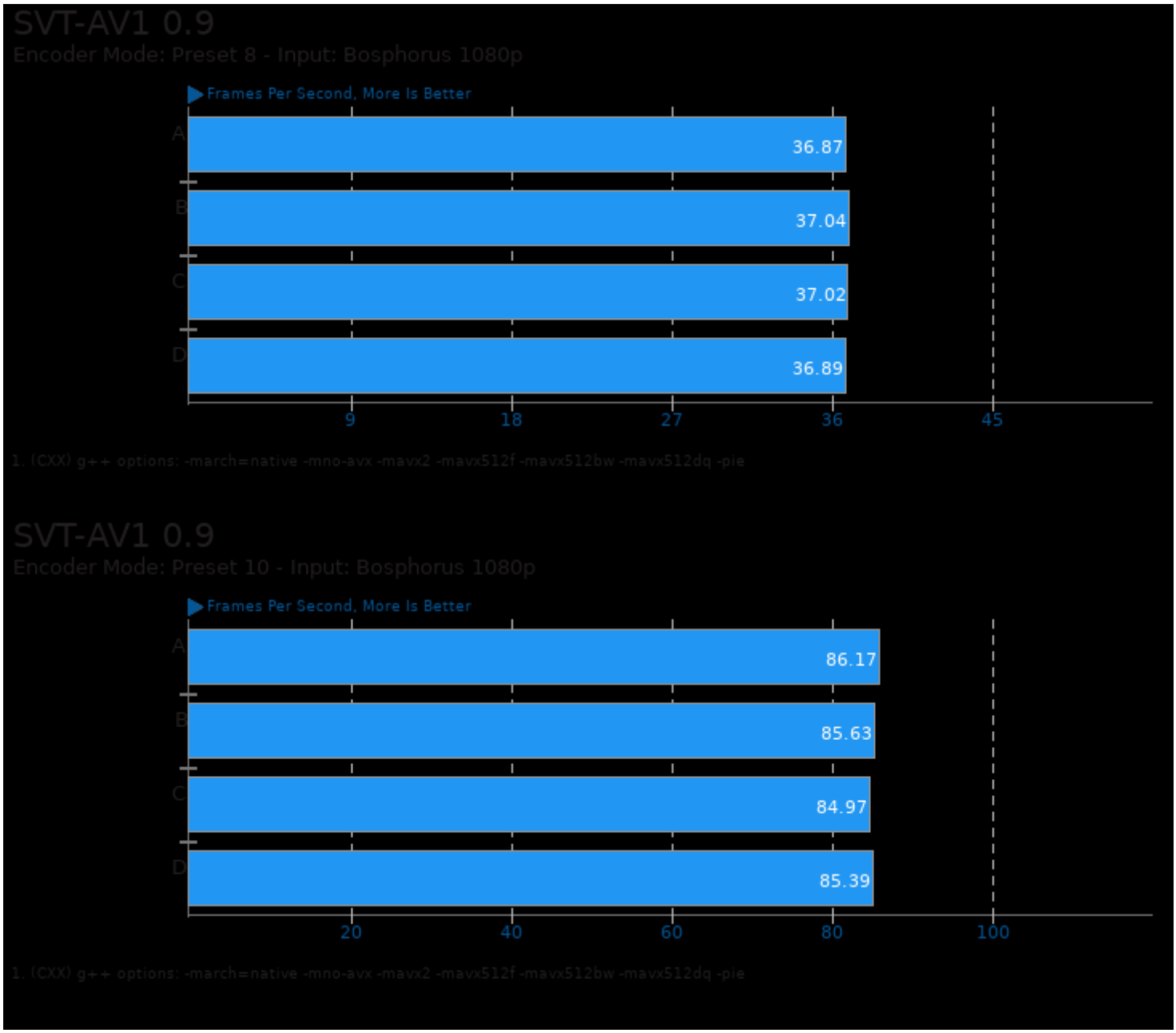

Kvazaar 2.1
Video Input: Bosphorus 1080p - Video Preset: Medium
Frames Per Second, More Is Better
A
B
C
D
14.72
14.75
14.70
14.73
4
8
12
16
20
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.1
Video Input: Bosphorus 4K - Video Preset: Very Fast
Frames Per Second, More Is Better
A
B
C
D
6.23
6.23
6.23
6.25
2
4
6
8
10
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

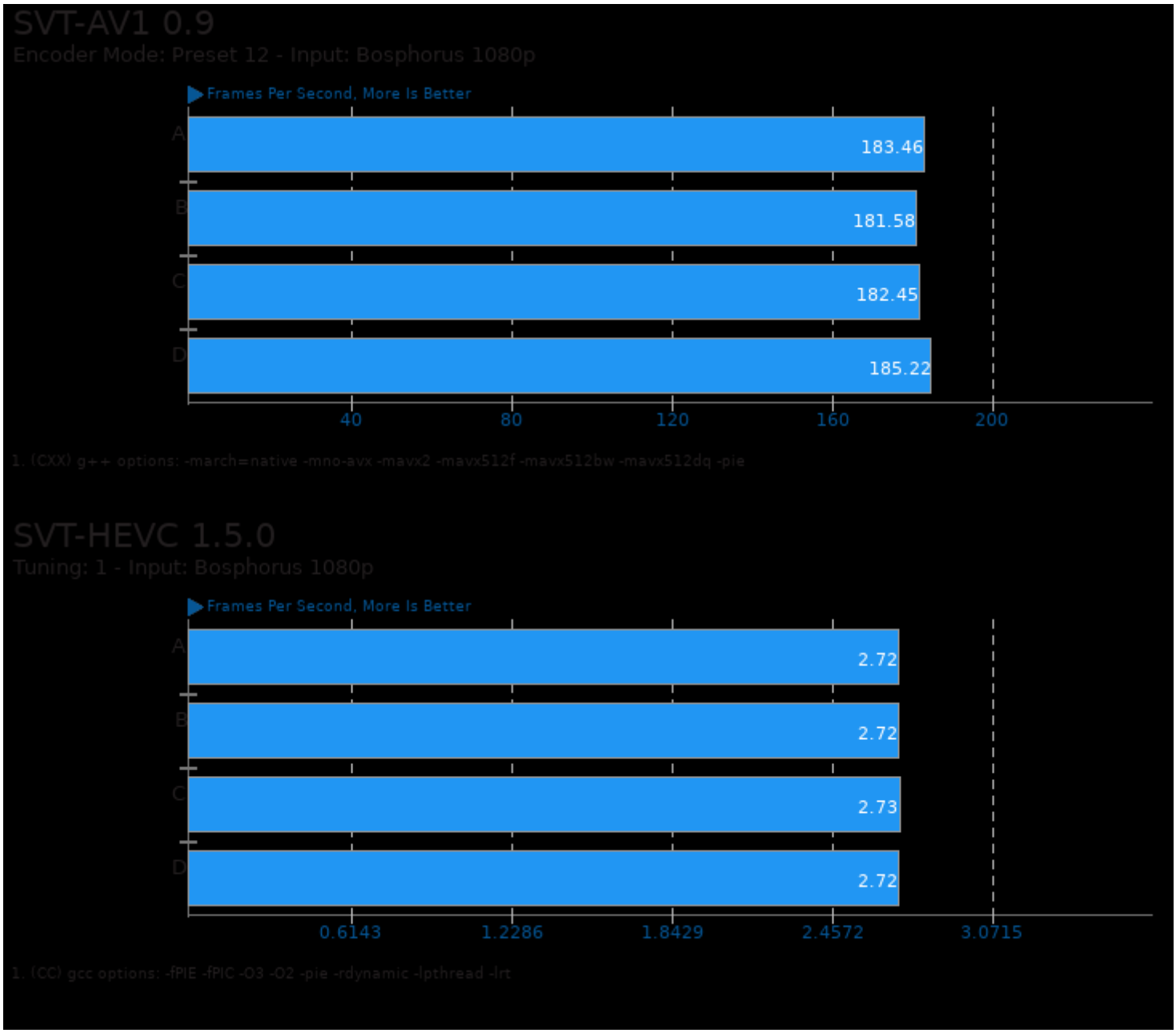

Kvazaar 2.1
Video Input: Bosphorus 4K - Video Preset: Ultra Fast
Frames Per Second, More Is Better
A
10.89
B
10.94
C
10.91
D
10.89
3
6
9
12
15
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.1
Video Input: Bosphorus 1080p - Video Preset: Very Fast
Frames Per Second, More Is Better
A
29.01
B
29.01
C
29.03
D
29.00
7
14
21
28
35
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

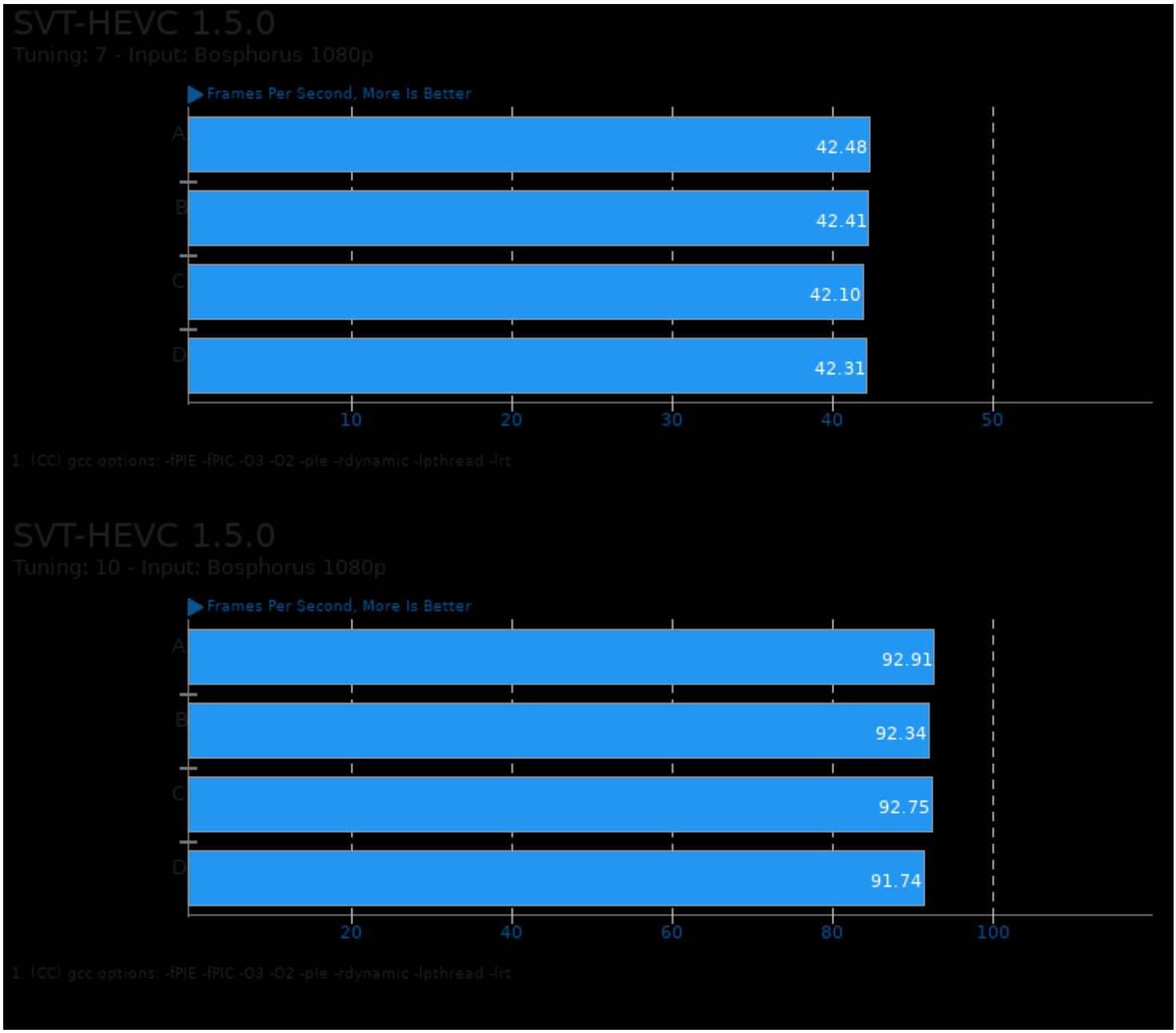

Kvazaar 2.1
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast
Frames Per Second, More Is Better
A
B
C
D
49.77
49.69
49.81
49.76
11
22
33
44
55
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
SVT-AV1 0.9
Encoder Mode: Preset 4 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
0.837
0.838
0.835
0.838
0.1886
0.3772
0.5658
0.7544
0.943
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

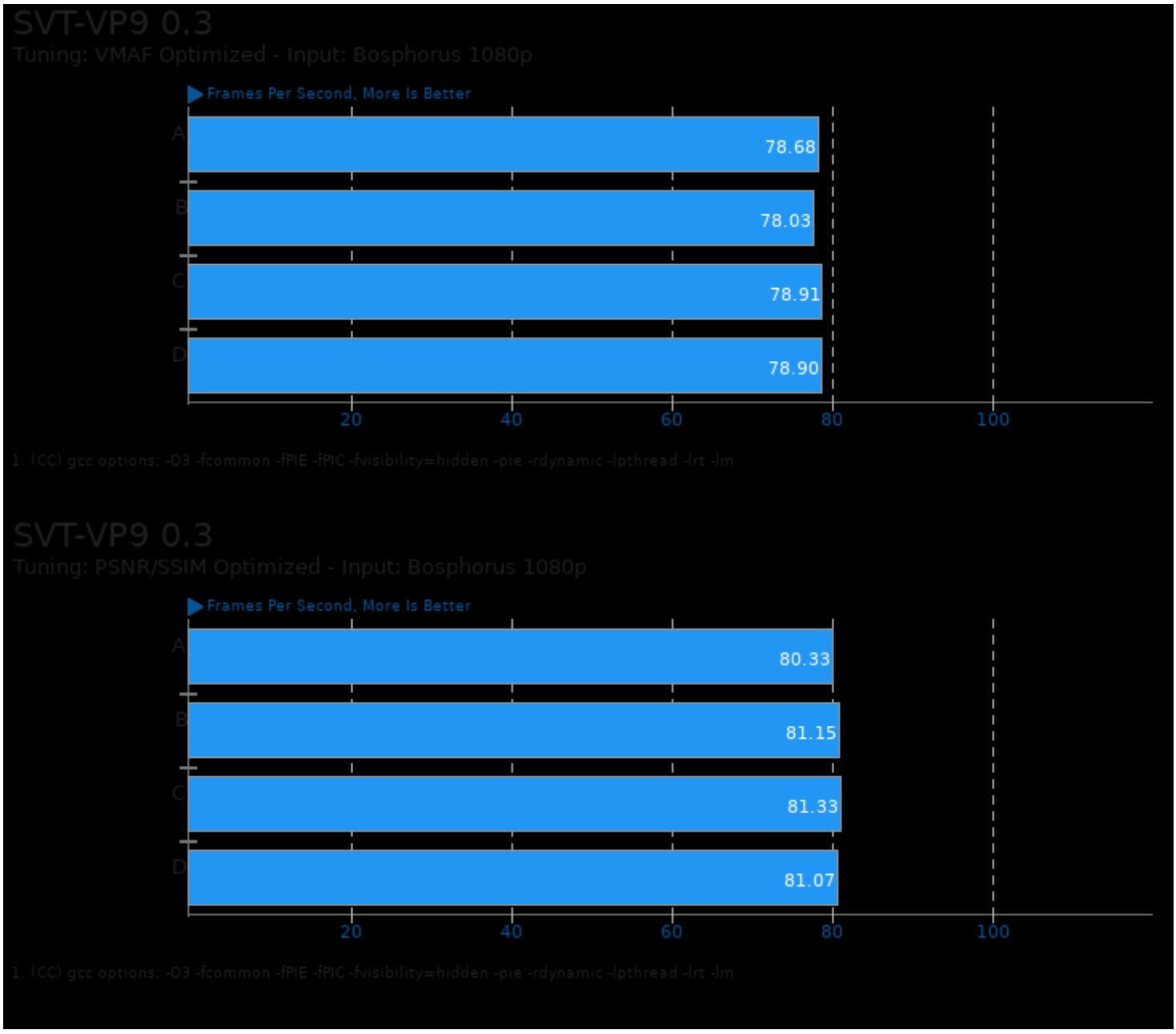

SVT-AV1 0.9
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
9.757
9.764
9.757
9.758
3
6
9
12
15
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 0.9
Encoder Mode: Preset 10 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
19.93
19.83
19.77
19.75
5
10
15
20
25
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 0.9
Encoder Mode: Preset 12 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
35.19
35.08
34.85
35.20
8
16
24
32
40
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 0.9
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
3.089
3.094
3.098
3.095
0.6971
1.3942
2.0913
2.7884
3.4855
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 0.9
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
36.87
B
37.04
C
37.02
D
36.89
9
18
27
36
45
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 0.9
Encoder Mode: Preset 10 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
86.17
B
85.63
C
84.97
D
85.39
20
40
60
80
100
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

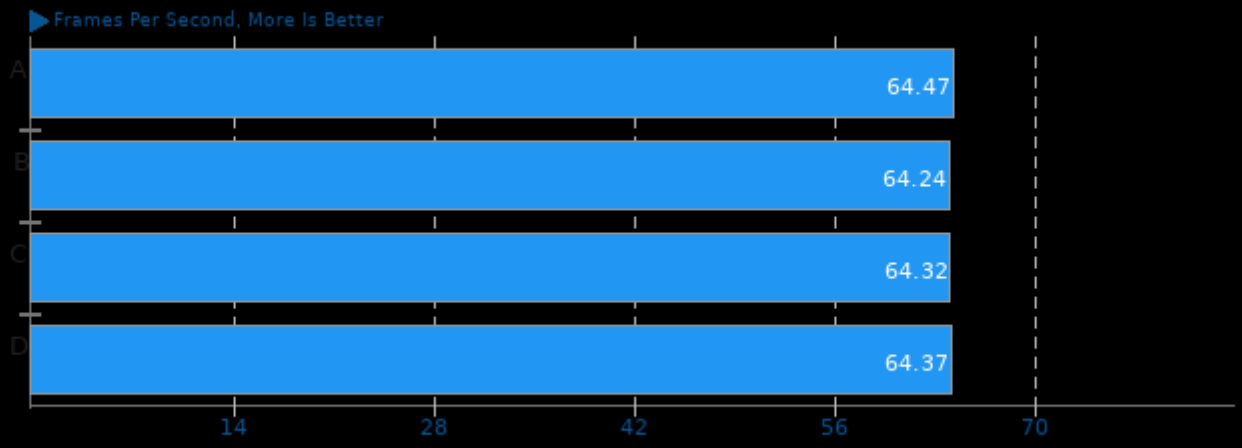

SVT-AV1 0.9
Encoder Mode: Preset 12 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
183.46
B
181.58
C
182.45
D
185.22
40
80
120
160
200
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-HEVC 1.5.0
Tuning: 1 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
2.72
B
2.72
C
2.73
D
2.72
0.6143
1.2286
1.8429
2.4572
3.0715
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
A
B
C
D
42.48
42.41
42.10
42.31
10
20
30
40
50
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
A
B
C
D
92.91
92.34
92.75
91.74
20
40
60
80
100
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
A
78.68
B
78.03
C
78.91
D
78.90
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
A
80.33
B
81.15
C
81.33
D
81.07
20
40
60
80
100
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.3

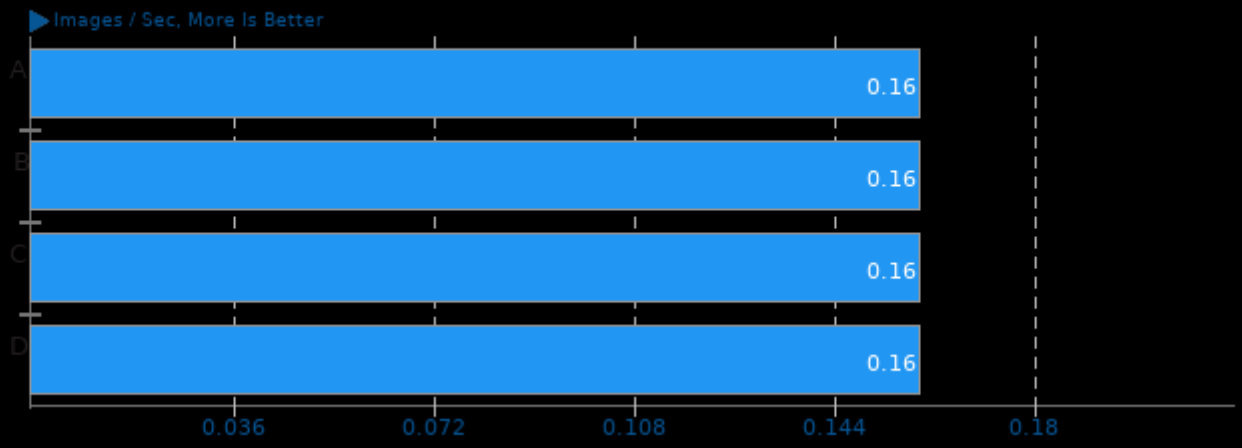
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

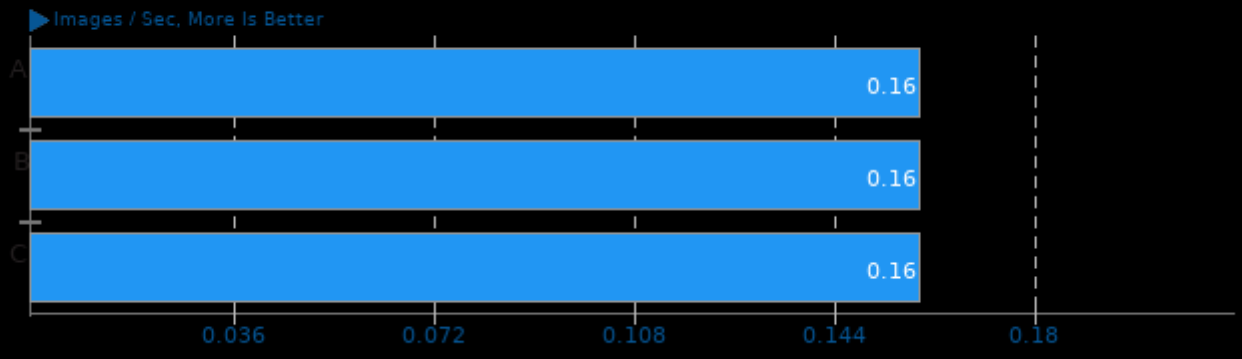
Intel Open Image Denoise 1.4.0

Run: RT.hdr_alb_nrm.3840x2160



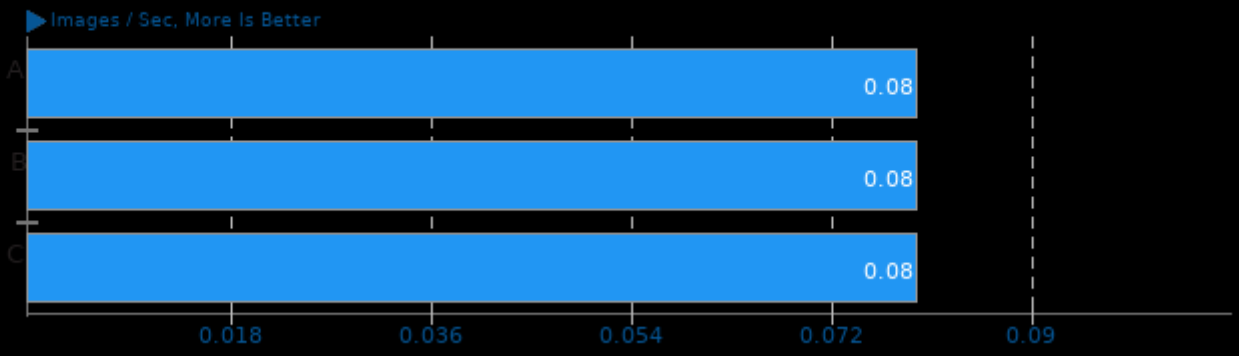
Intel Open Image Denoise 1.4.0

Run: RT.ldr_alb_nrm.3840x2160



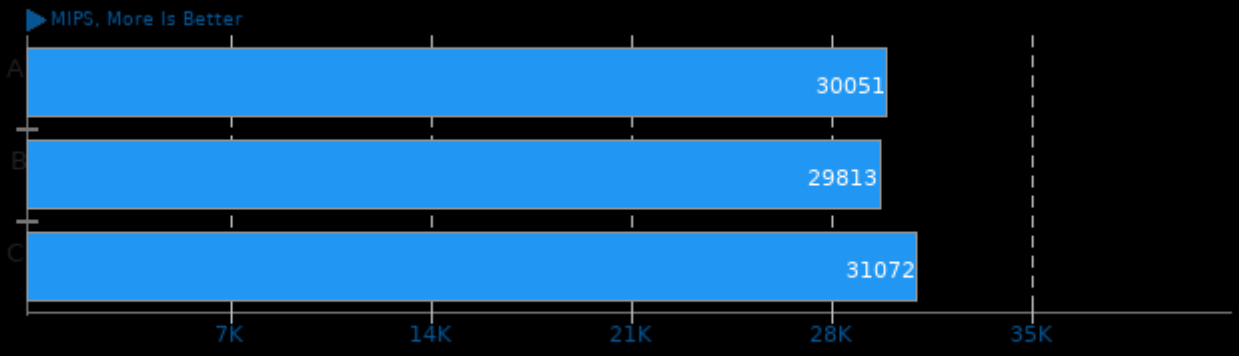
Intel Open Image Denoise 1.4.0

Run: RTLightmap.hdr.4096x4096



7-Zip Compression 21.06

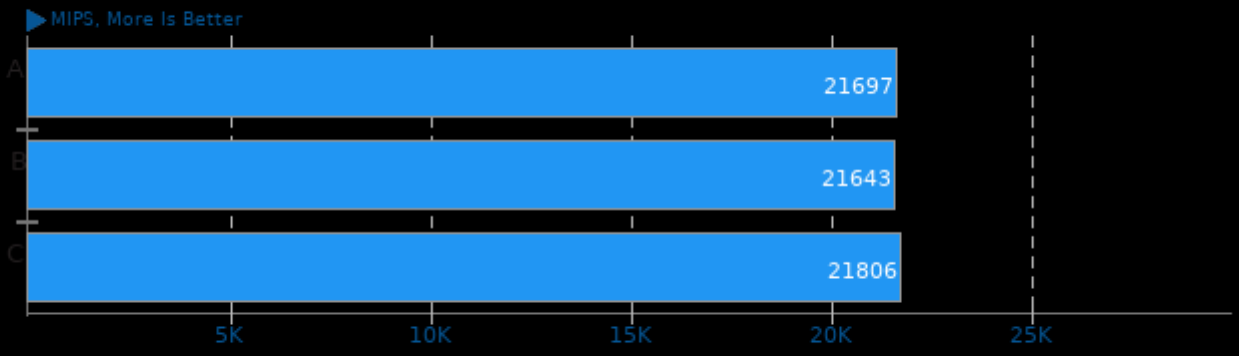
Test: Compression Rating



1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

7-Zip Compression 21.06

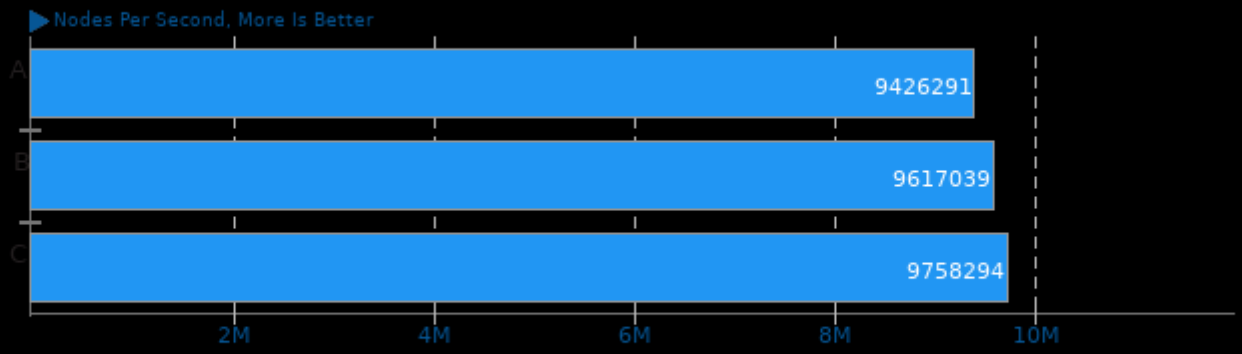
Test: Decompression Rating



1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

Stockfish 13

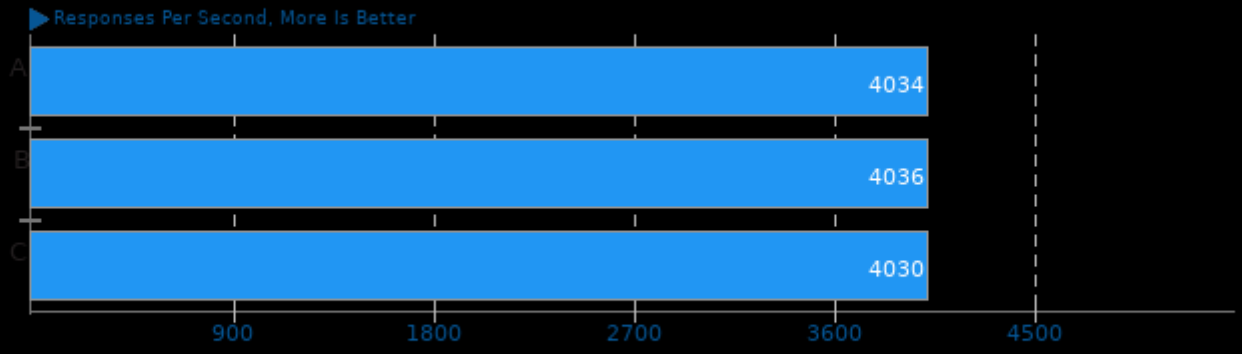
Total Time



1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt -

PJSIP 2.11

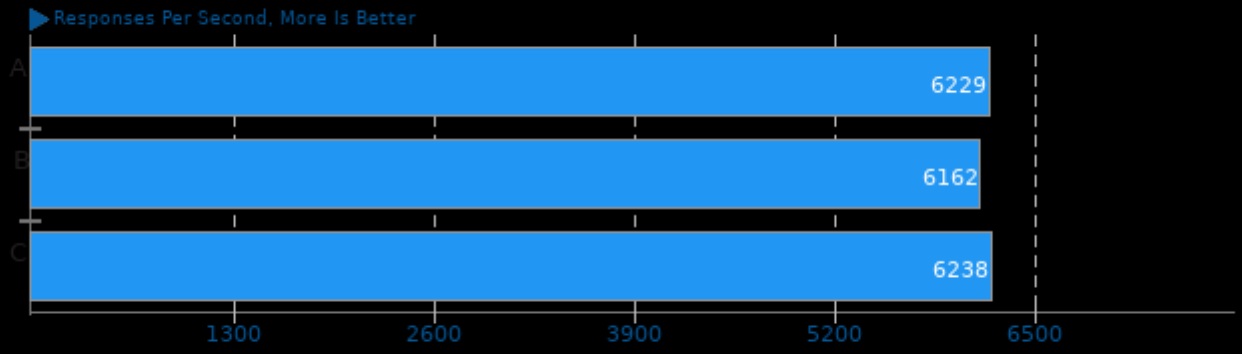
Method: INVITE



1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

PJSIP 2.11

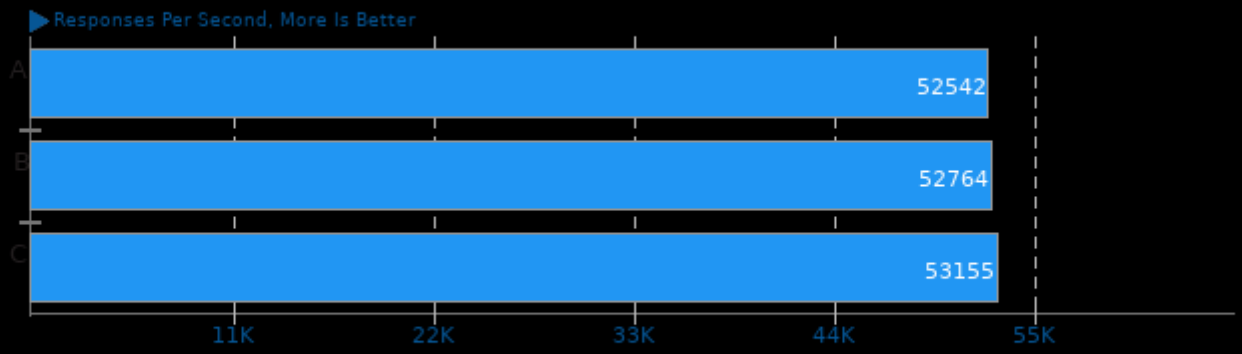
Method: OPTIONS, Stateful



1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

PJSIP 2.11

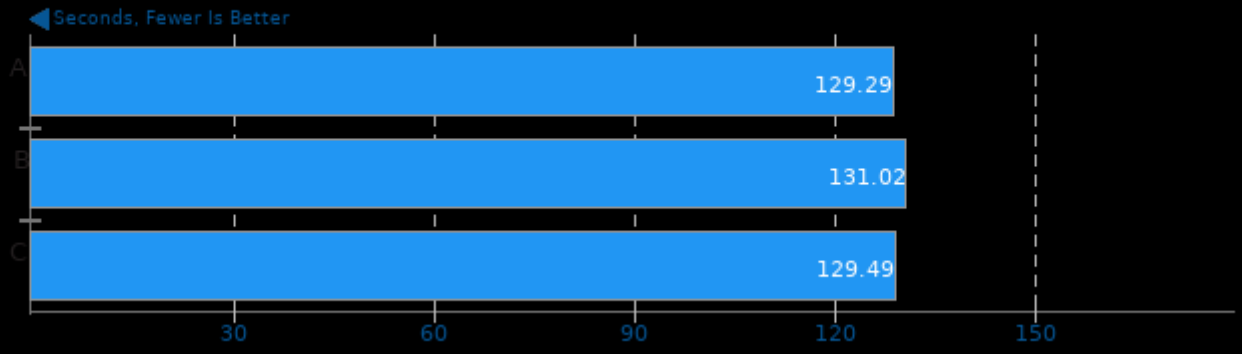
Method: OPTIONS, Stateless



1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

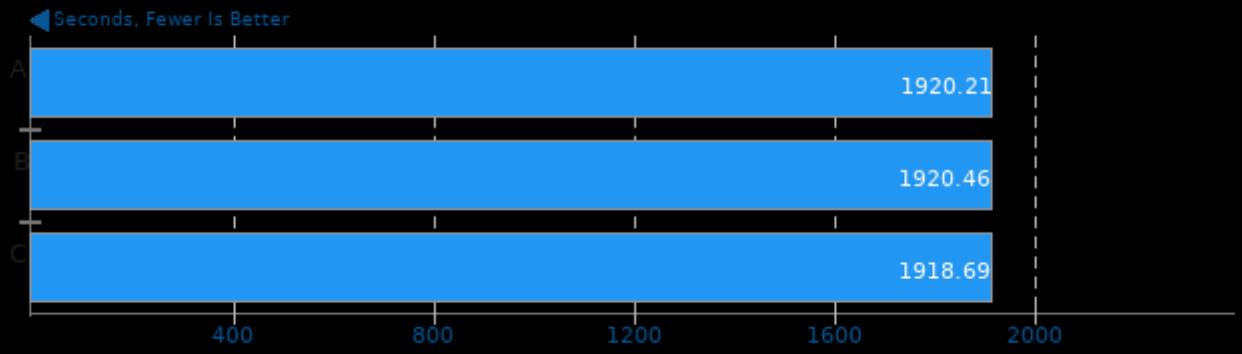
Timed FFmpeg Compilation 4.4

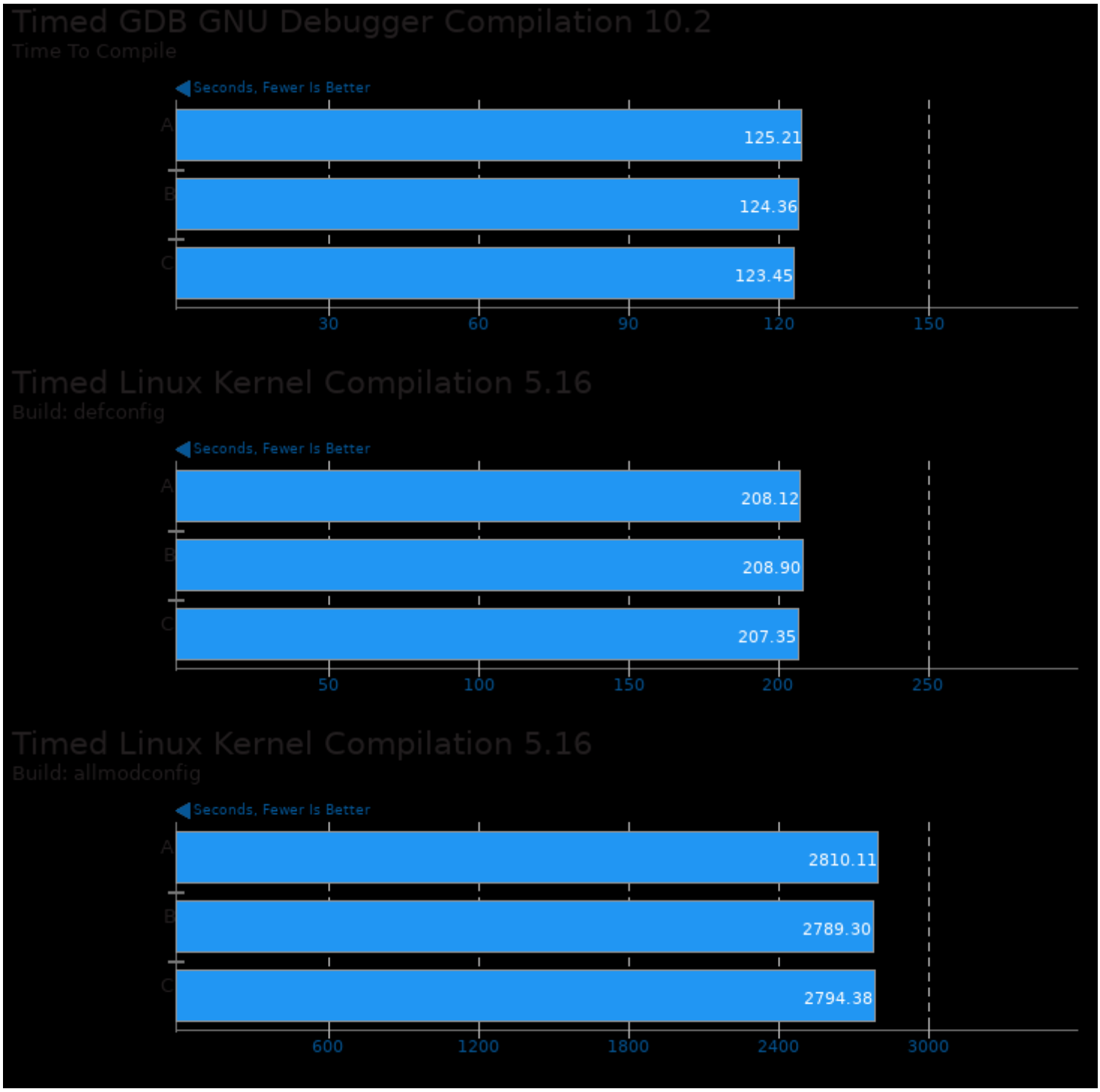
Time To Compile



Timed GCC Compilation 11.2.0

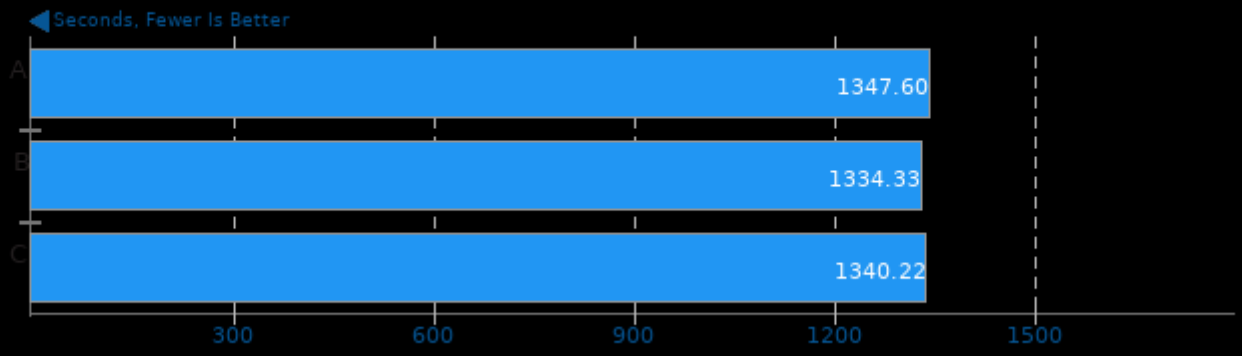
Time To Compile




Timed GDB GNU Debugger Compilation 10.2
Time To Compile
Seconds, Fewer Is Better
A
B
C
125.21
124.36
123.45
30
60
90
120
150
Timed Linux Kernel Compilation 5.16
Build: defconfig
Seconds, Fewer Is Better
A
B
C
208.12
208.90
207.35
50
100
150
200
250
Timed Linux Kernel Compilation 5.16
Build: allmodconfig
Seconds, Fewer Is Better
A
B
C
2810.11
2789.30
2794.38
600
1200
1800
2400
3000

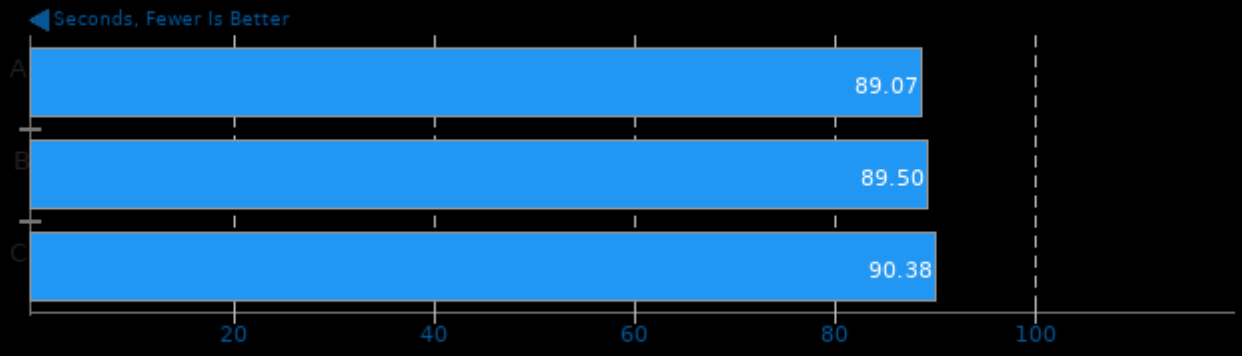
Timed Node.js Compilation 17.3

Time To Compile



Primesieve 7.7

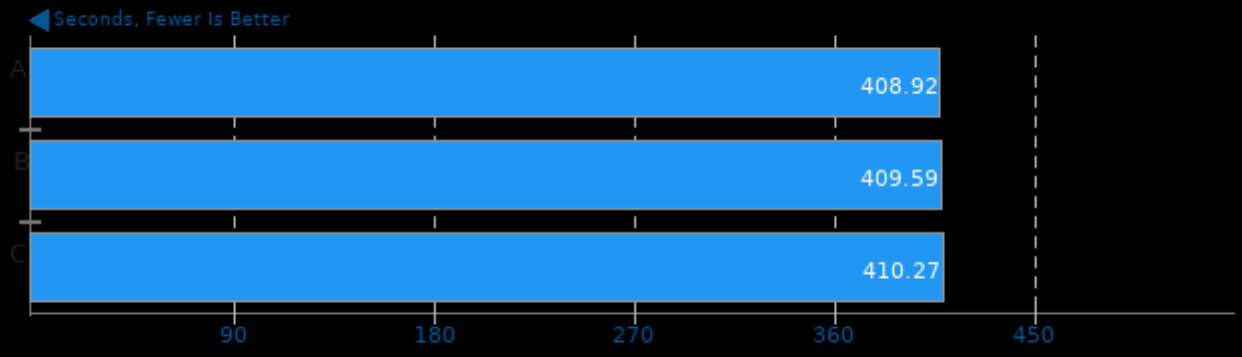
1e12 Prime Number Generation



1. (CXX) g++ options: -O3 -lpthread

YafaRay 3.5.1

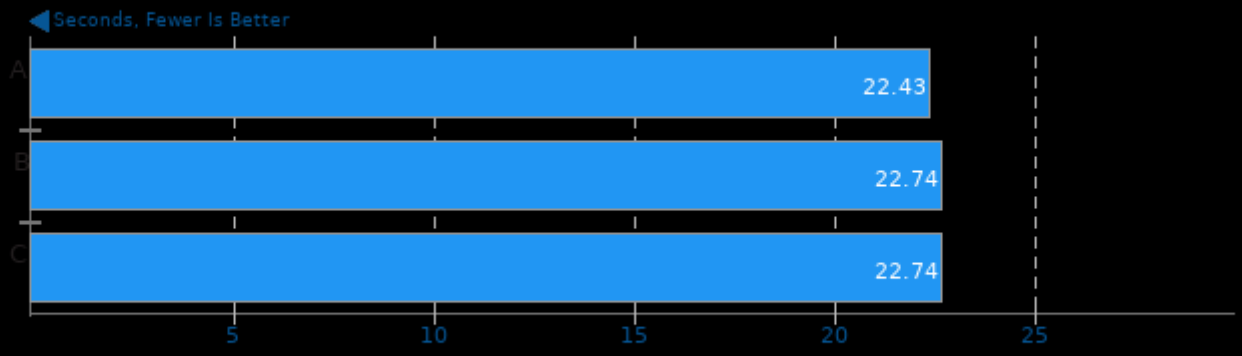
Total Time For Sample Scene



1. (CXX) g++ options: -std=c++11 -pthread -O3 -ffast-math -rdynamic -ldl -lImath -lIlmImf -lIex -lHalf -lz -lIlmThread -lxml2 -lfreetype

FLAC Audio Encoding 1.3.3

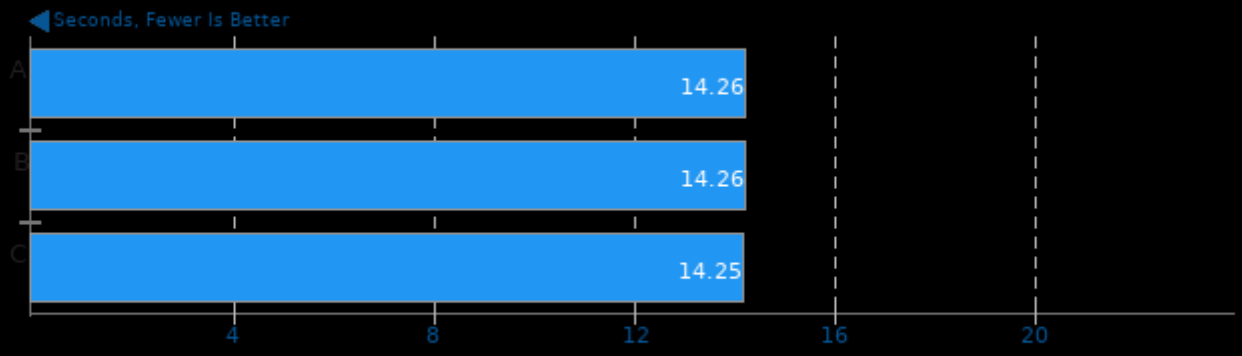
WAV To FLAC



1. (CXX) g++ options: -fvisibility=hidden -logg -lm

Helsing 1.0-beta

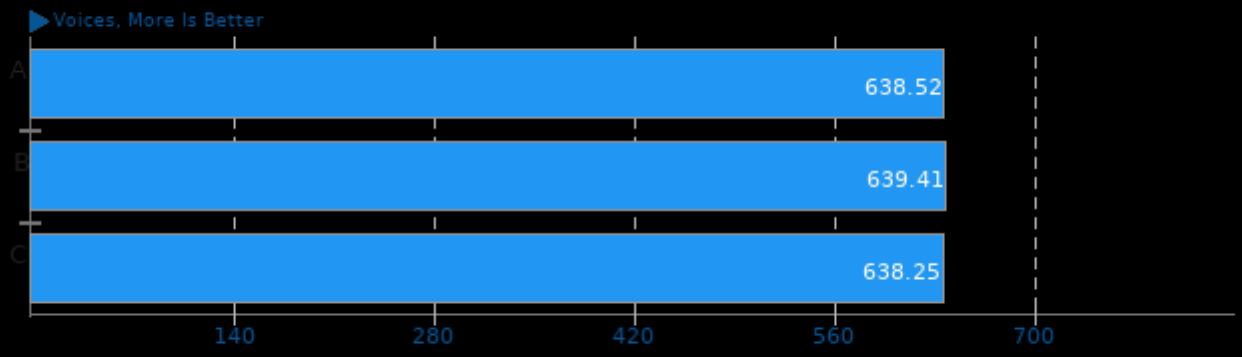
Digit Range: 12 digit



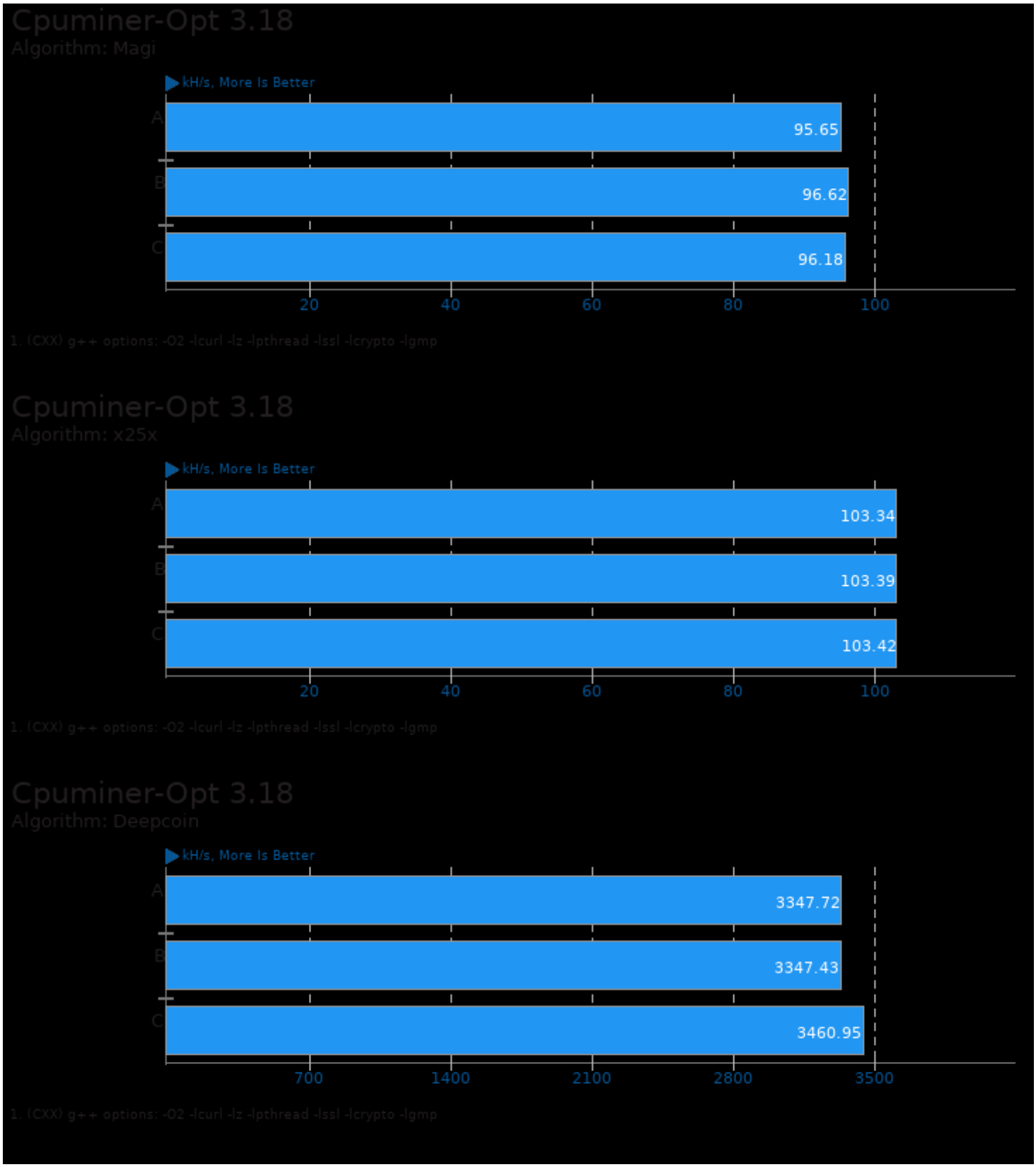
1. (CC) gcc options: -O2 -pthread

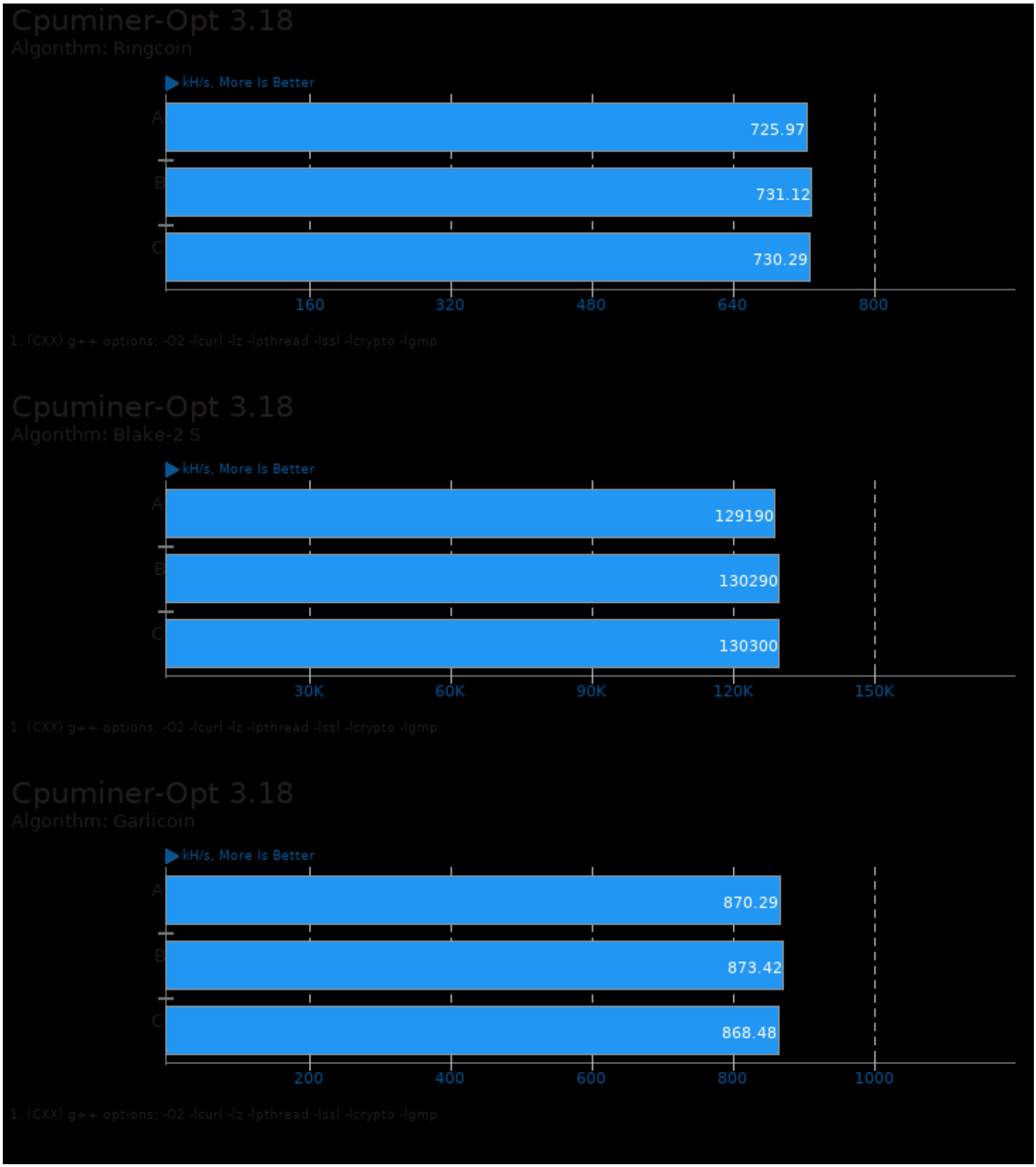
Google SynthMark 20201109

Test: VoiceMark_100



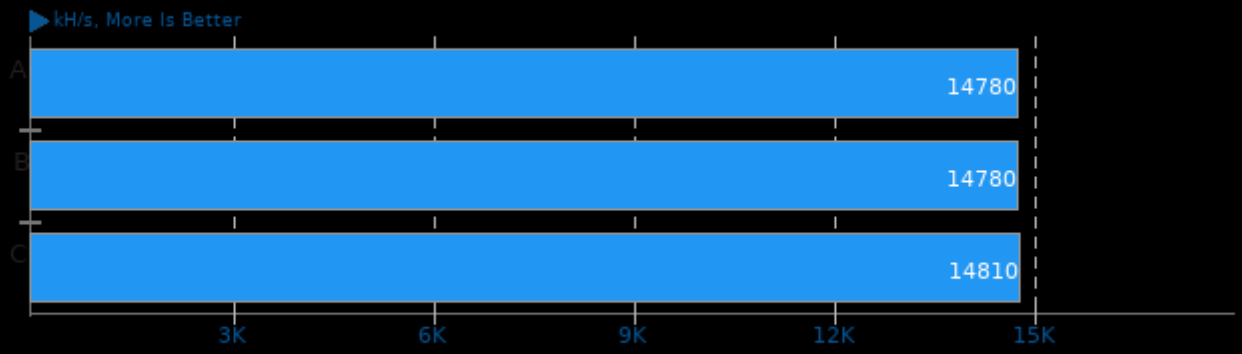
1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast


Cpuminer-Opt 3.18
Algorithm: Magi
kH/s, More Is Better
A
B
C
95.65
96.62
96.18
20
40
60
80
100
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: x25x
kH/s, More Is Better
A
B
C
103.34
103.39
103.42
20
40
60
80
100
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: Deepcoin
kH/s, More Is Better
A
B
C
3347.72
3347.43
3460.95
700
1400
2100
2800
3500
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp


Cpuminer-Opt 3.18
Algorithm: Ringcoin
kH/s, More Is Better
A
B
C
725.97
731.12
730.29
160
320
480
640
800
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: Blake-2 S
kH/s, More Is Better
A
B
C
129190
130290
130300
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: Garlicoin
kH/s, More Is Better
A
B
C
870.29
873.42
868.48
200
400
600
800
1000
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

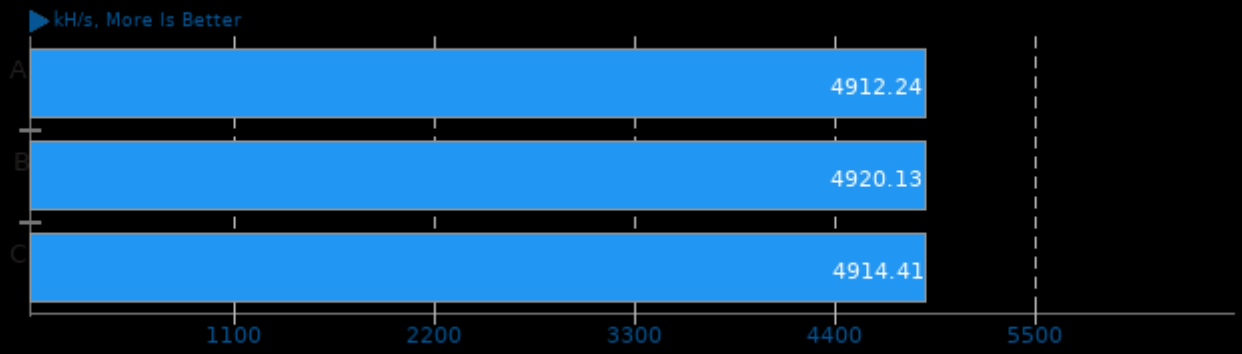
Algorithm: Skeincoin



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

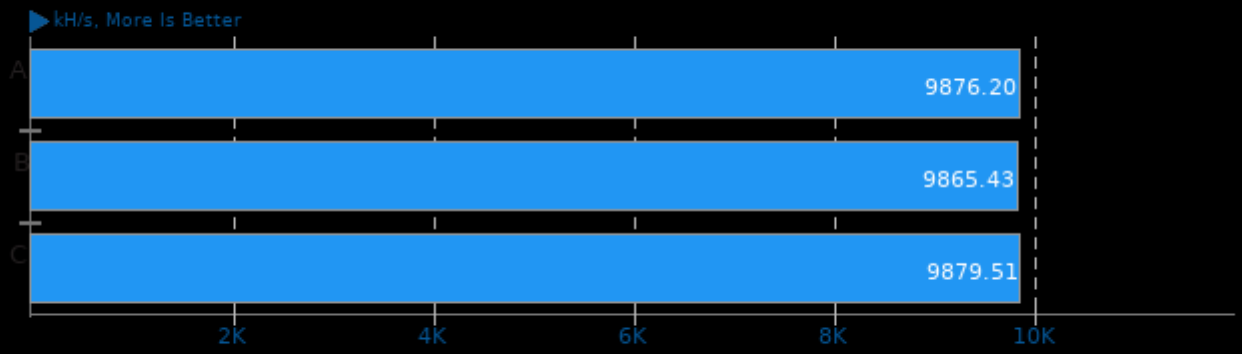
Algorithm: Myriad-Groestl



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

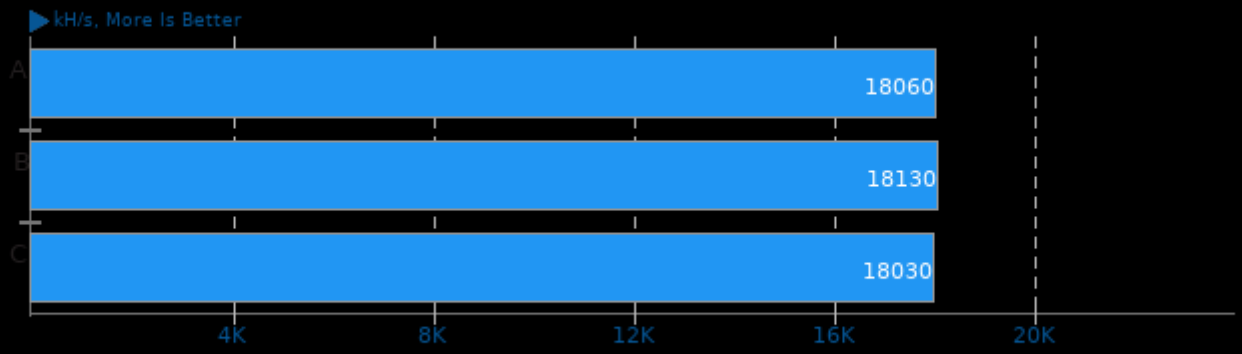
Algorithm: LBC, LBRY Credits



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

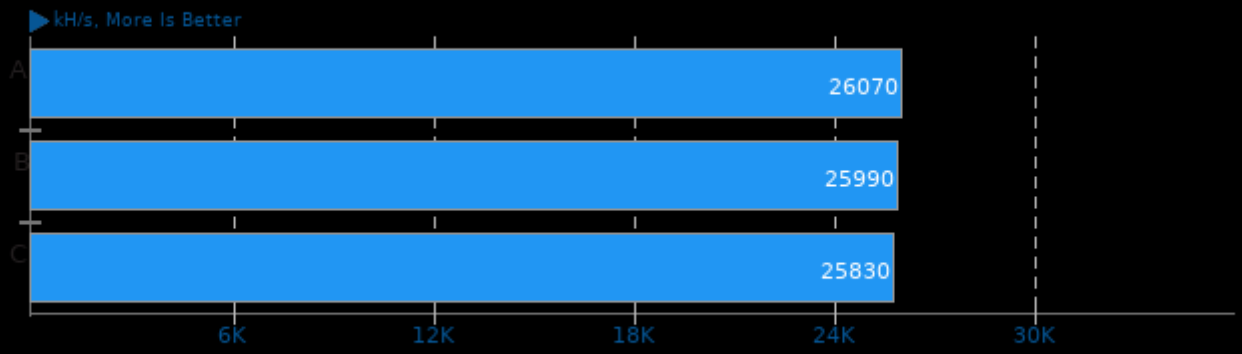
Algorithm: Quad SHA-256, Pyrite



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

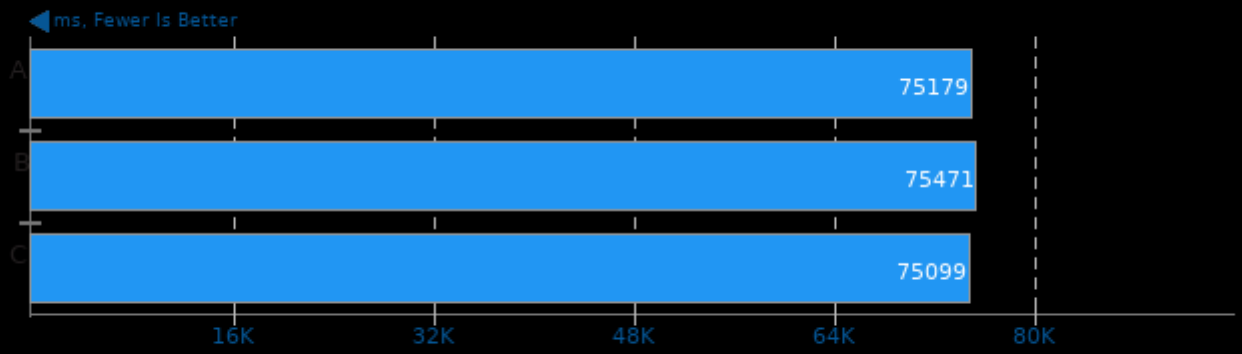
Algorithm: Triple SHA-256, Onecoin



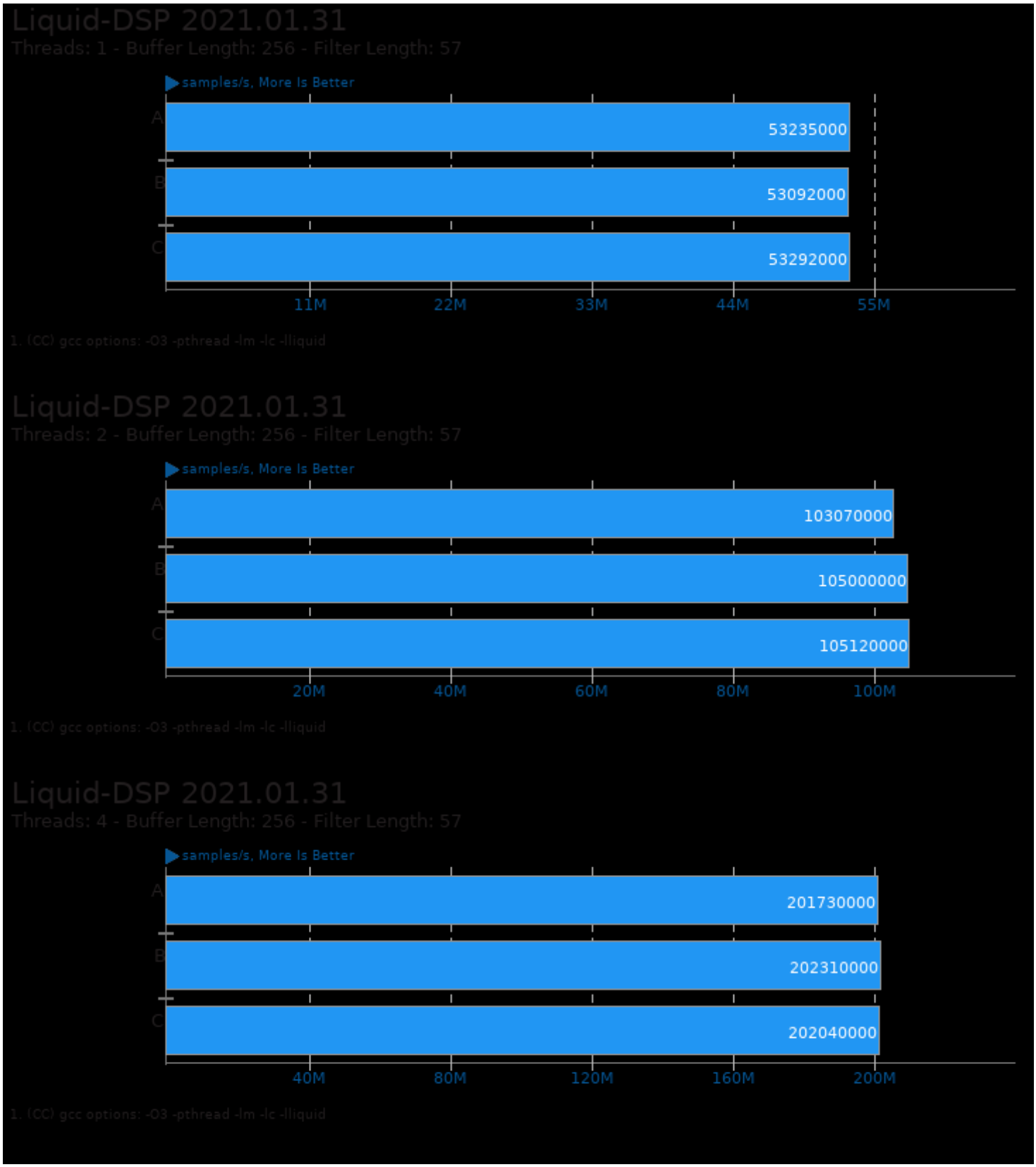
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

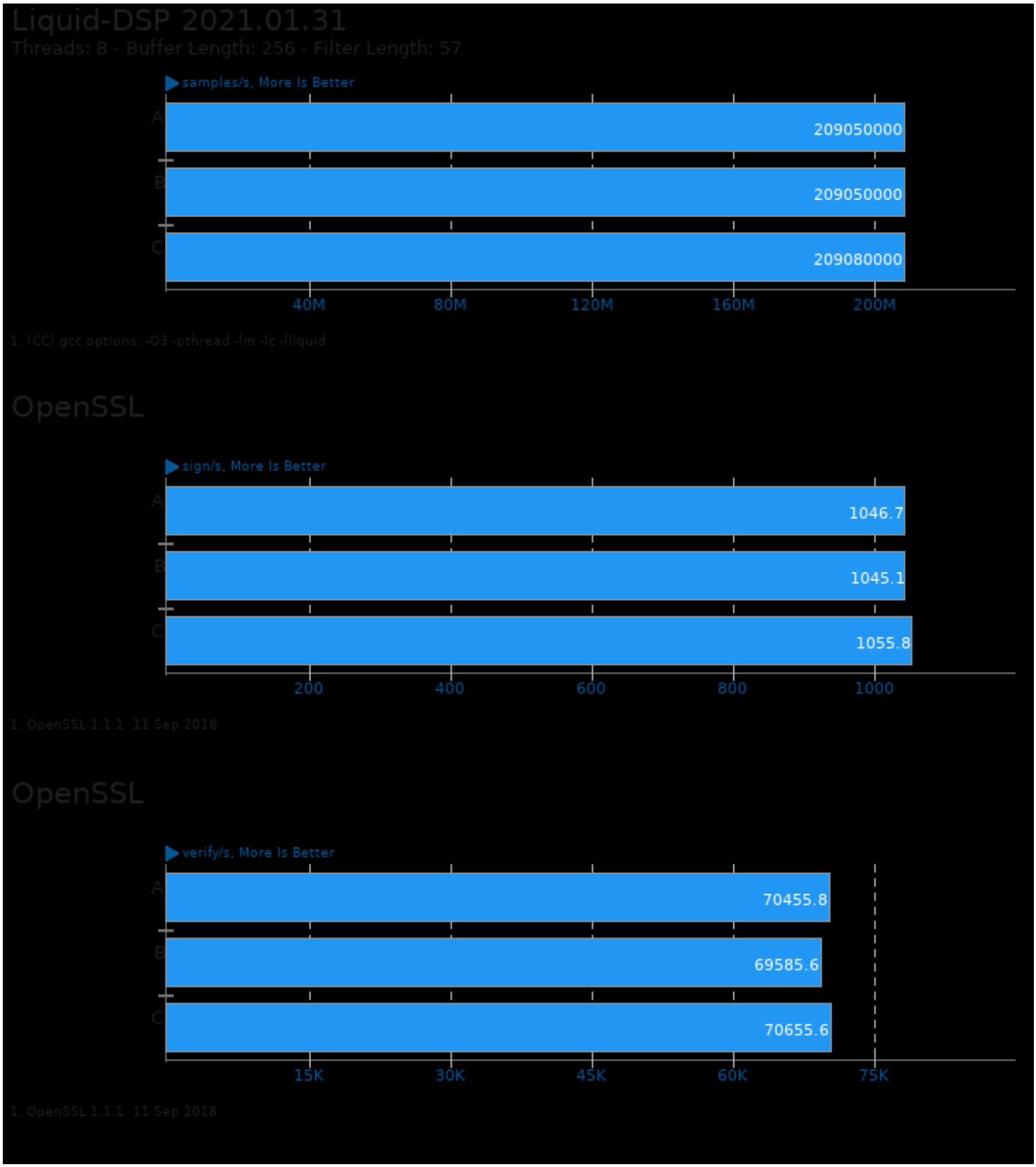
OpenJPEG 2.4

Encode: NASA Curiosity Panorama M34



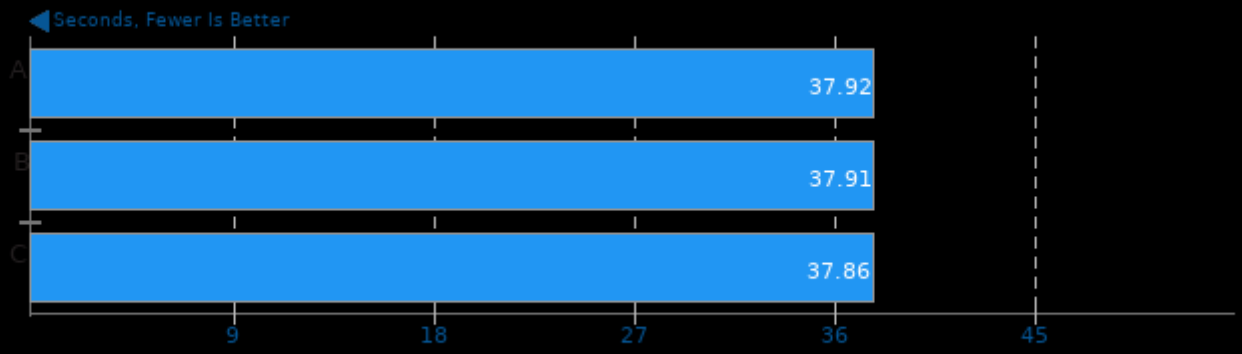
1. (CXX) g++ options: -rdynamic


Liquid-DSP 2021.01.31
Threads: 1 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
A
B
C
53235000
53092000
53292000
11M
22M
33M
44M
55M
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
A
B
C
103070000
105000000
105120000
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
samples/s, More Is Better
A
B
C
201730000
202310000
202040000
40M
80M
120M
160M
200M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid


Liquid-DSP 2021.01.31
Threads: 8 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
A
209050000
B
209050000
C
209080000
40M
80M
120M
160M
200M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid
OpenSSL
sign/s, More Is Better
A
1046.7
B
1045.1
C
1055.8
200
400
600
800
1000
1. OpenSSL 1.1.1 11 Sep 2018
OpenSSL
verify/s, More Is Better
A
70455.8
B
69585.6
C
70655.6
15K
30K
45K
60K
75K
1. OpenSSL 1.1.1 11 Sep 2018

Basis Universal 1.13

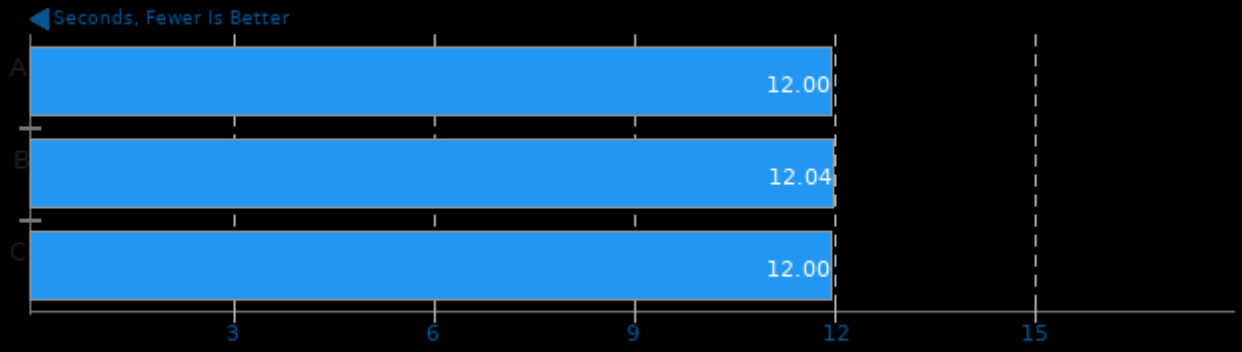
Settings: ETC1S



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.13

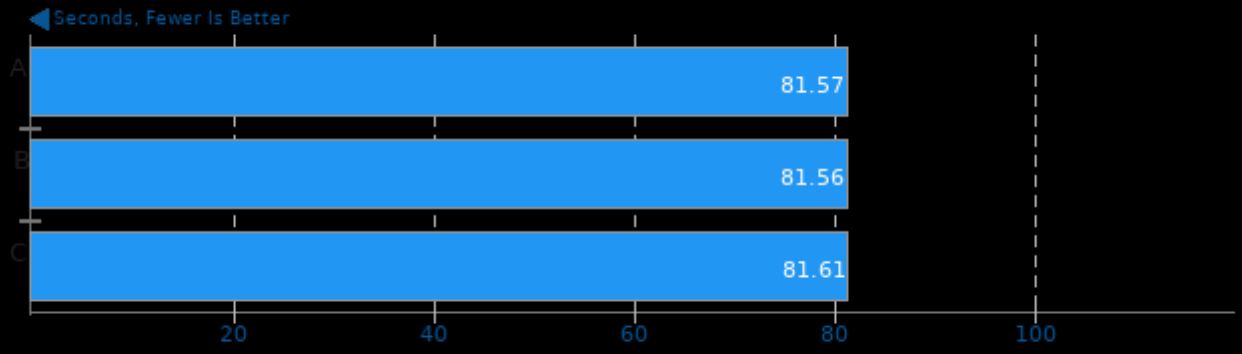
Settings: UASTC Level 0



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.13

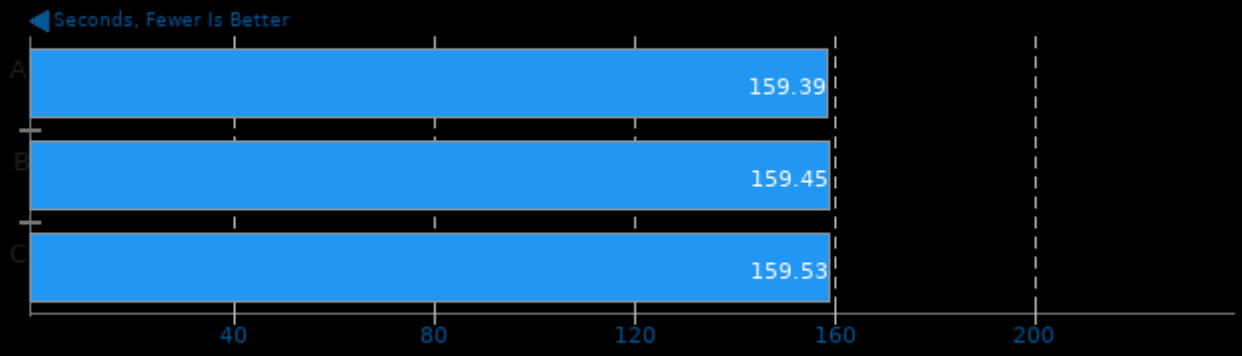
Settings: UASTC Level 2



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.13

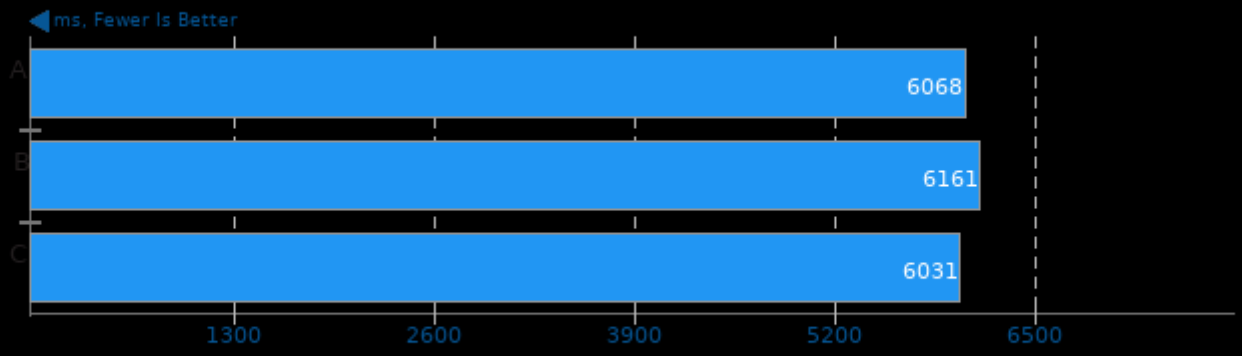
Settings: UASTC Level 3



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Google Draco 1.5.0

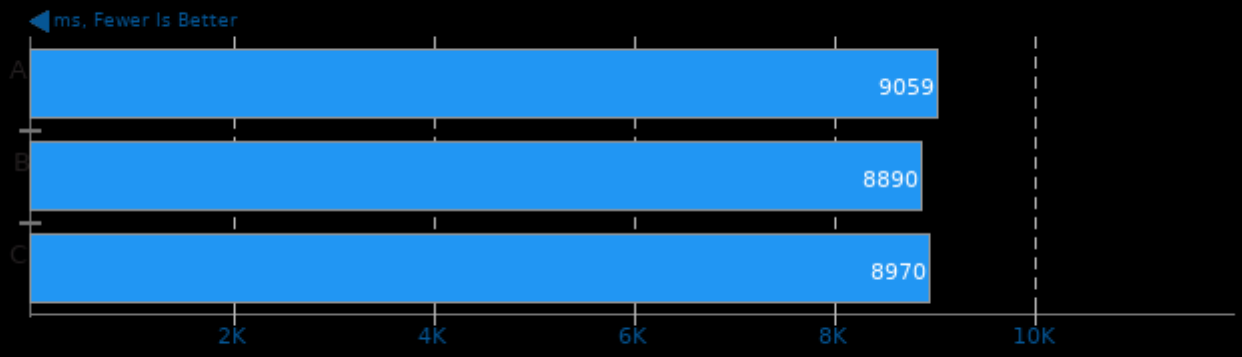
Model: Lion



1. (CXX) g++ options: -O3

Google Draco 1.5.0

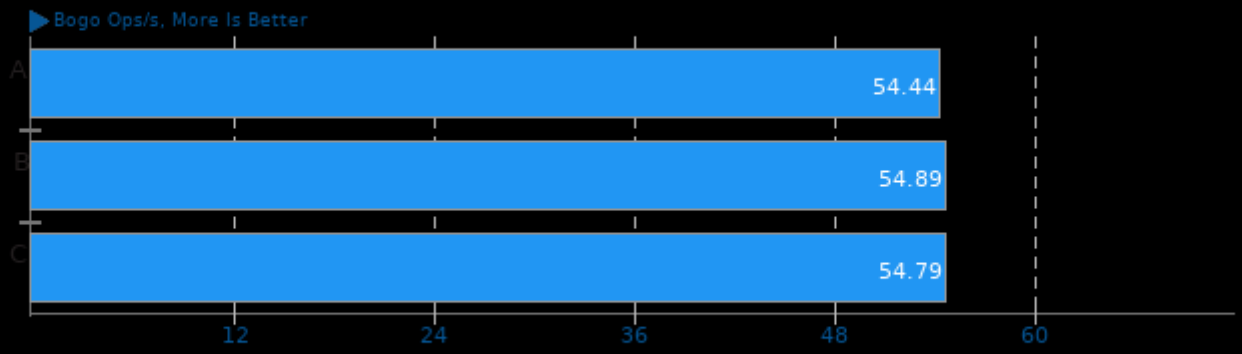
Model: Church Facade



1. (CXX) g++ options: -O3

Stress-NG 0.13.02

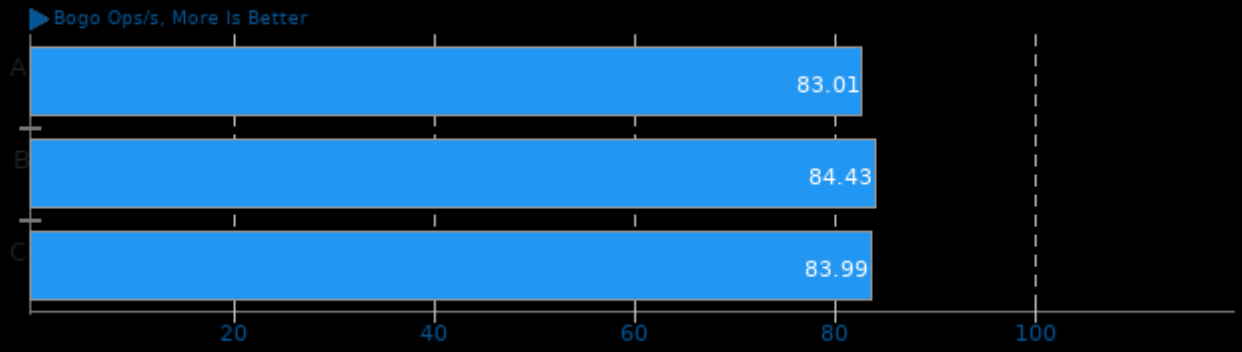
Test: MMAP



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

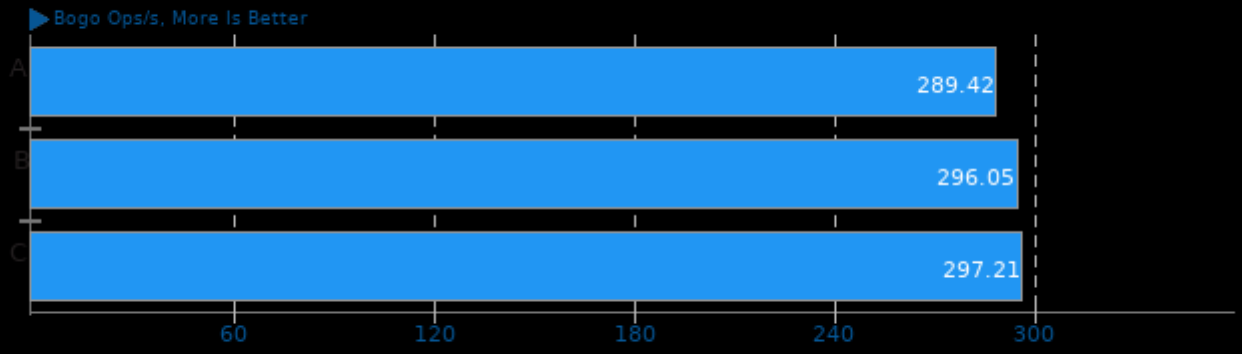
Test: NUMA



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

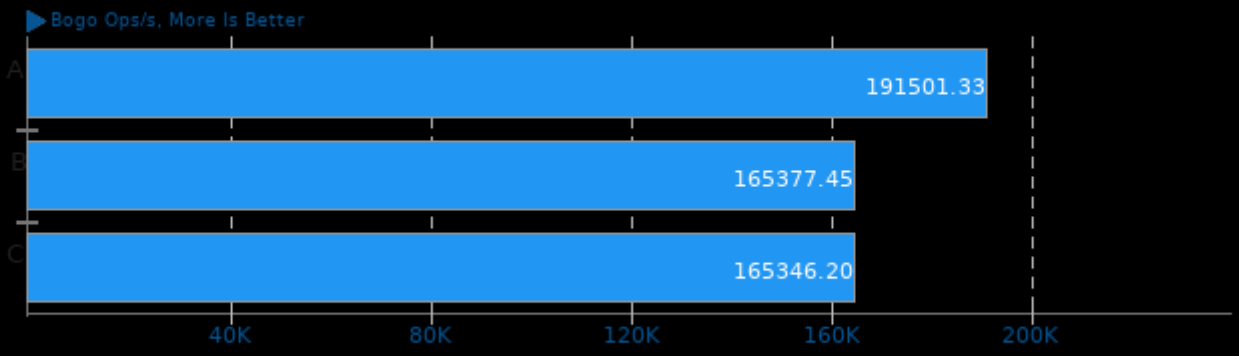
Test: MEMFD



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

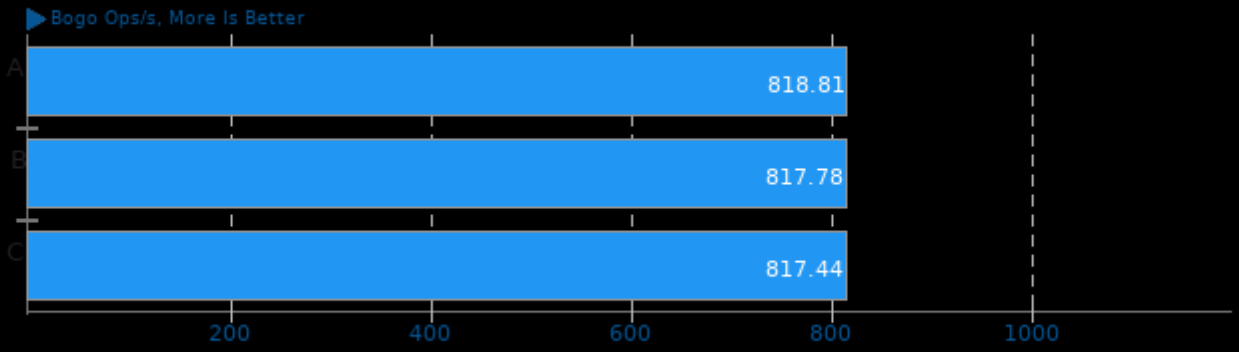
Test: Atomic



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

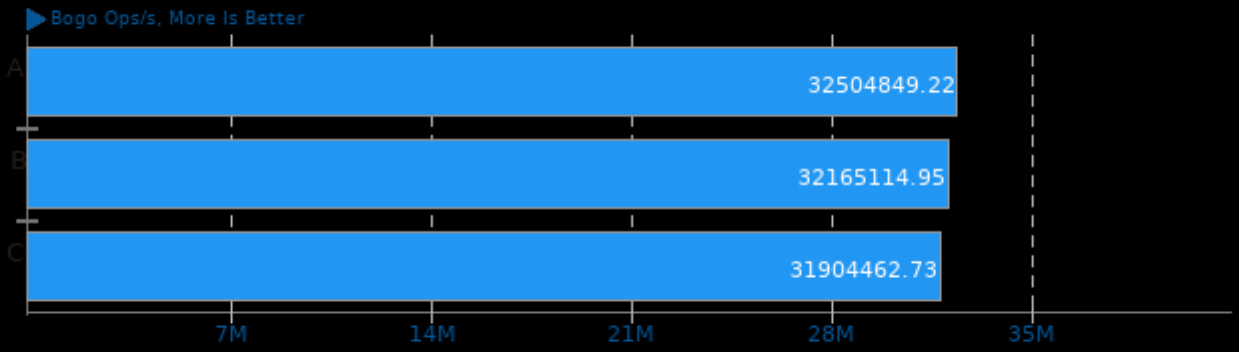
Test: Crypto



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

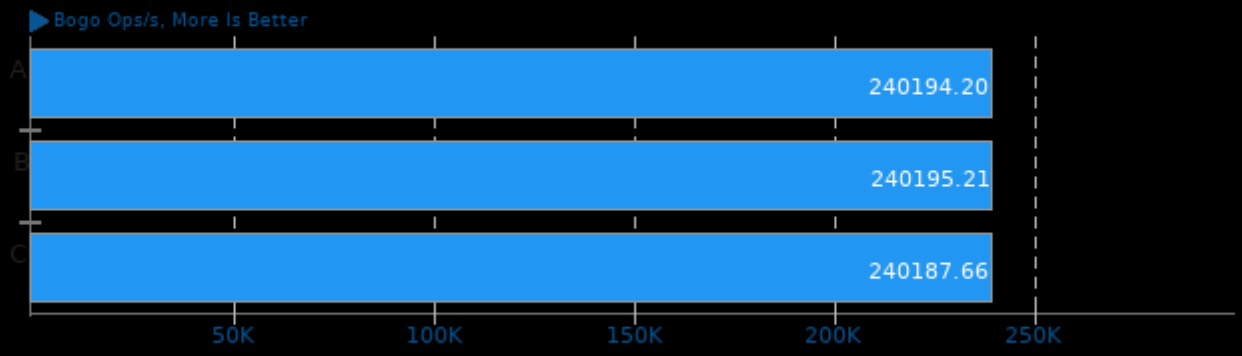
Test: Malloc



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

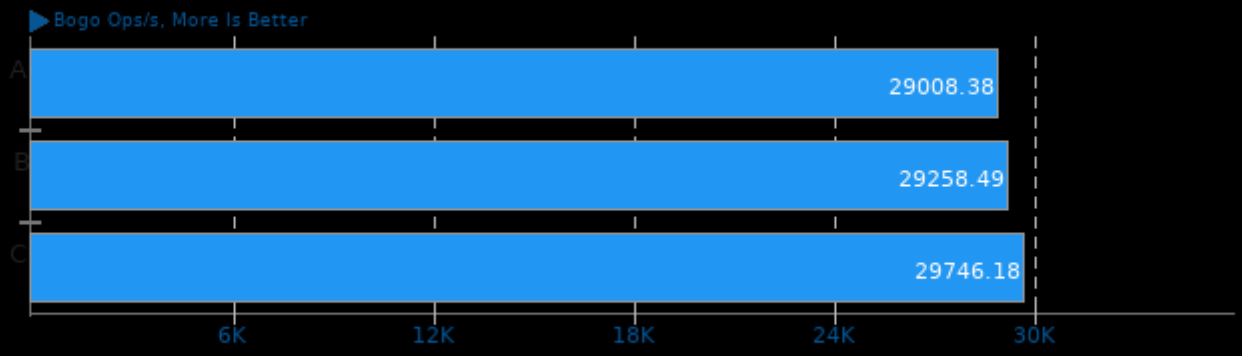
Test: RdRand



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

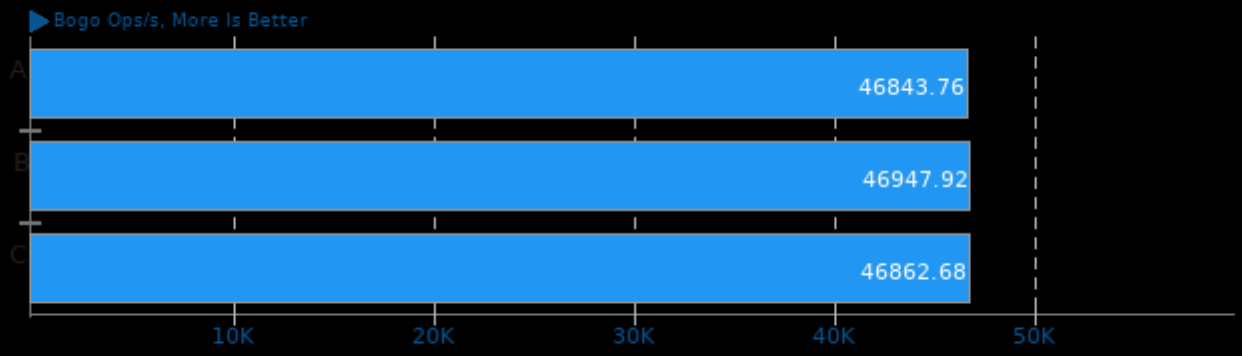
Test: Forking



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

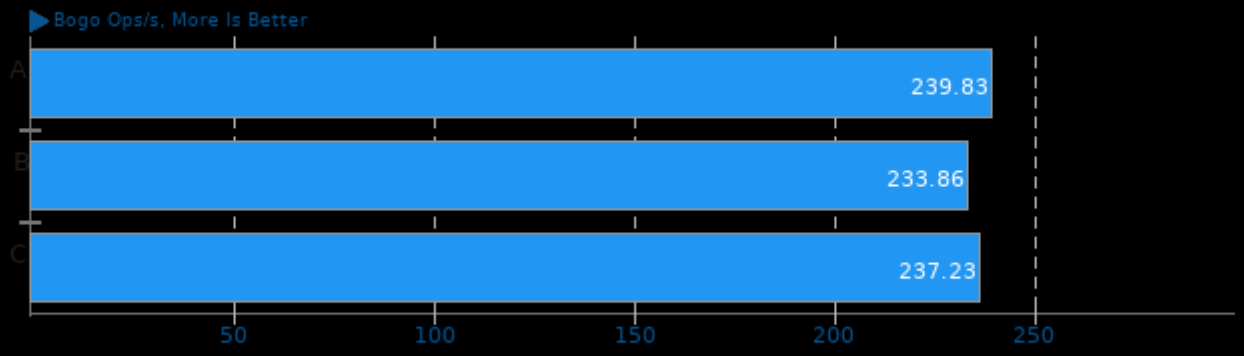
Test: SENDFILE



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

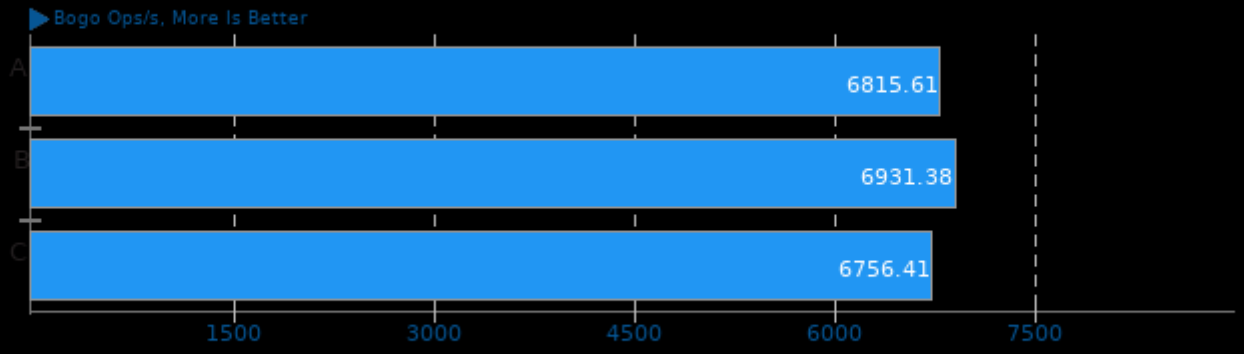
Test: CPU Cache



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

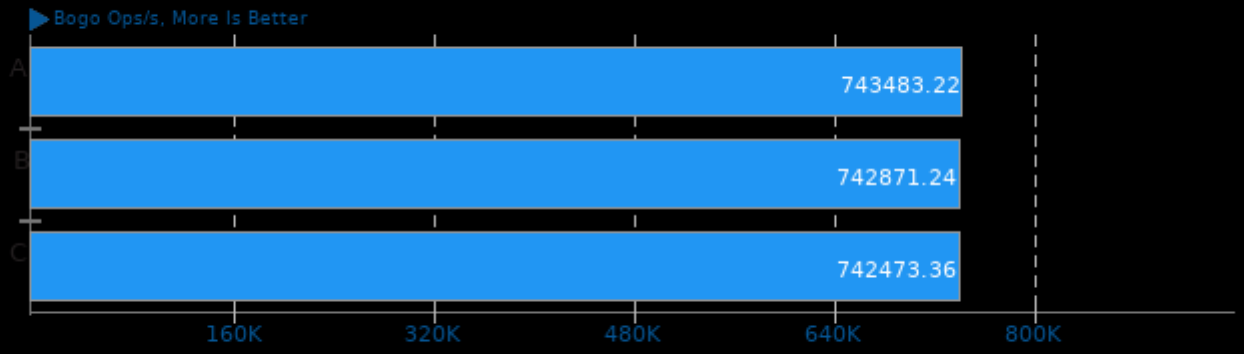
Test: CPU Stress



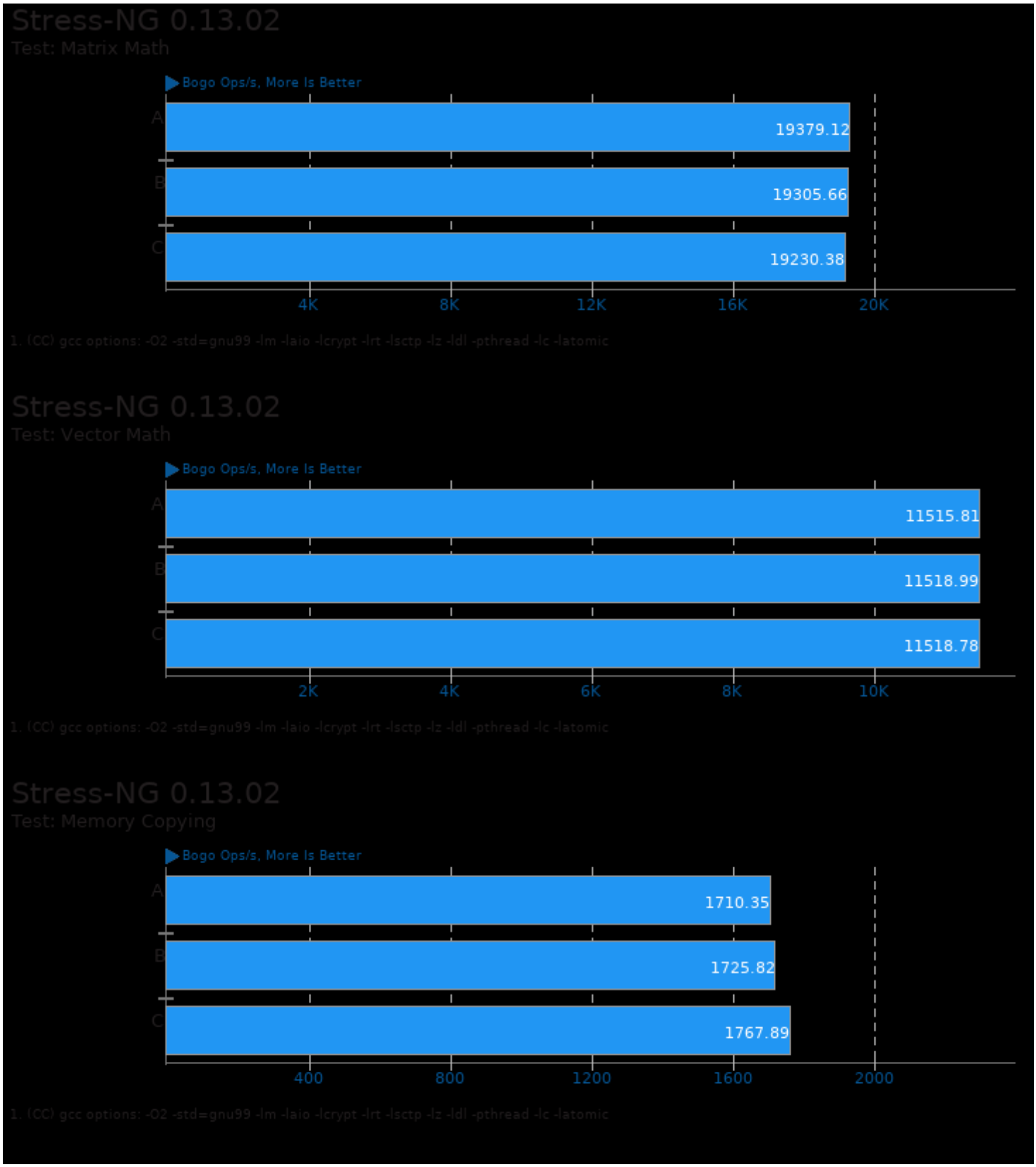
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

Test: Semaphores

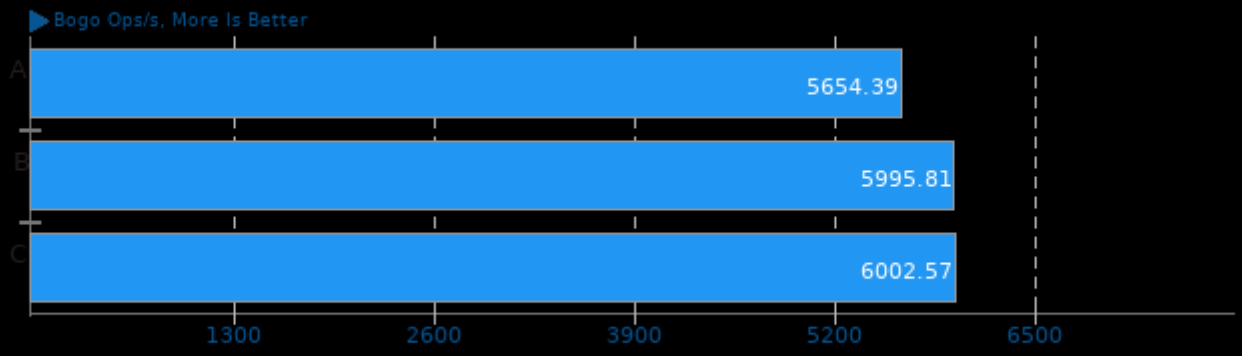


1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic


Stress-NG 0.13.02
Test: Matrix Math
Bogo Ops/s, More Is Better
A
B
C
19379.12
19305.66
19230.38
4K
8K
12K
16K
20K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: Vector Math
Bogo Ops/s, More Is Better
A
B
C
11515.81
11518.99
11518.78
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: Memory Copying
Bogo Ops/s, More Is Better
A
B
C
1710.35
1725.82
1767.89
400
800
1200
1600
2000
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

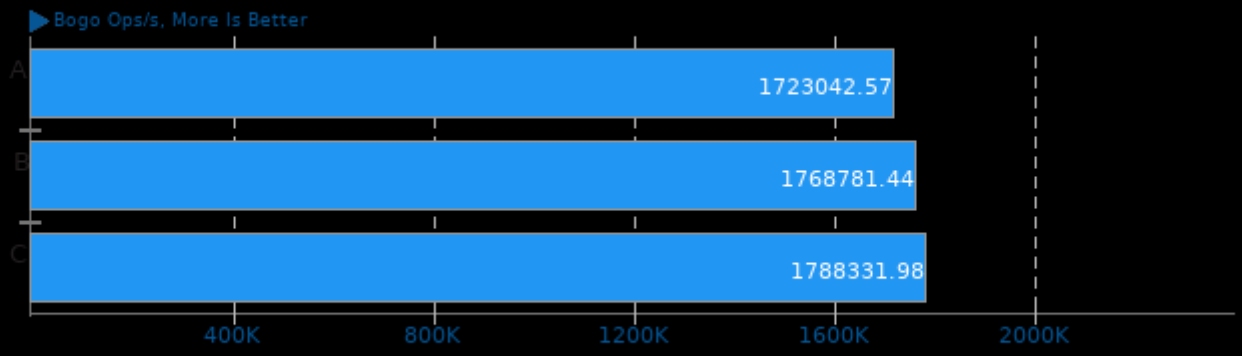
Test: Socket Activity



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

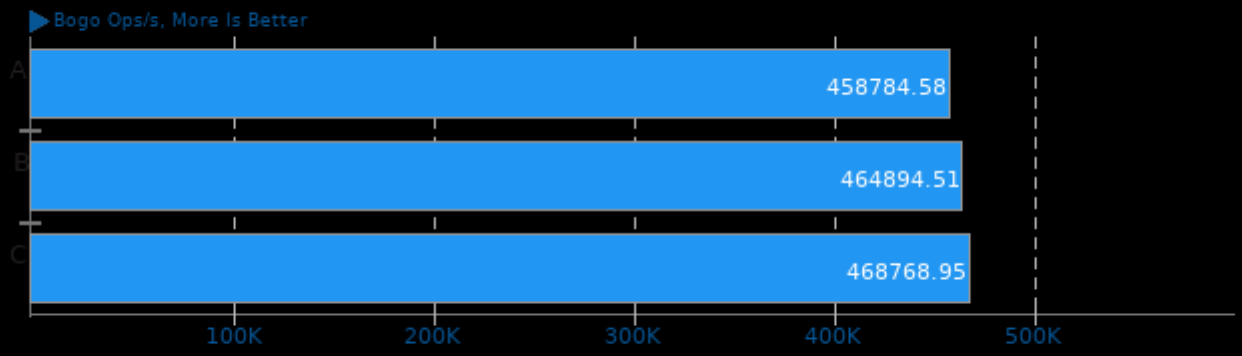
Test: Context Switching



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

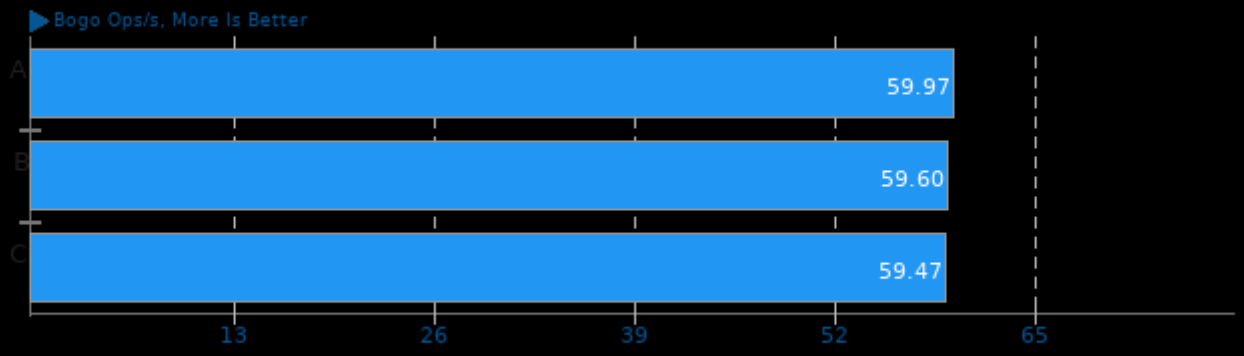
Test: Glibc C String Functions



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

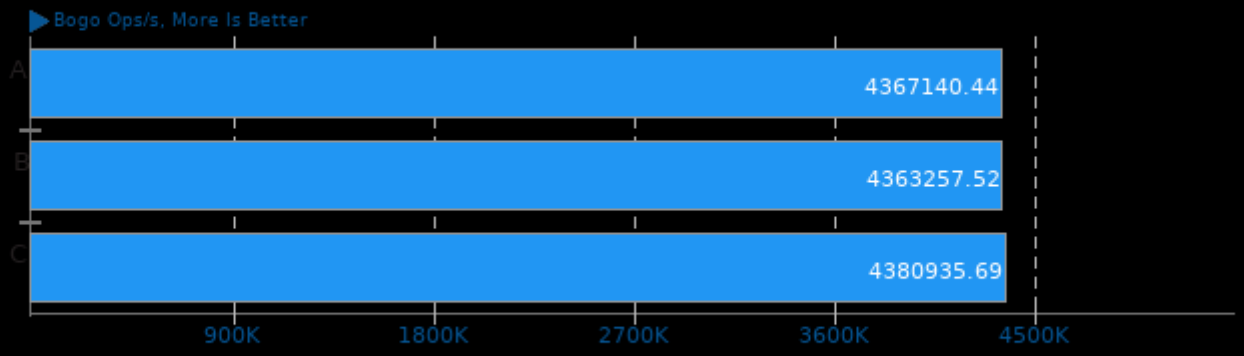
Test: Glibc Qsort Data Sorting



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

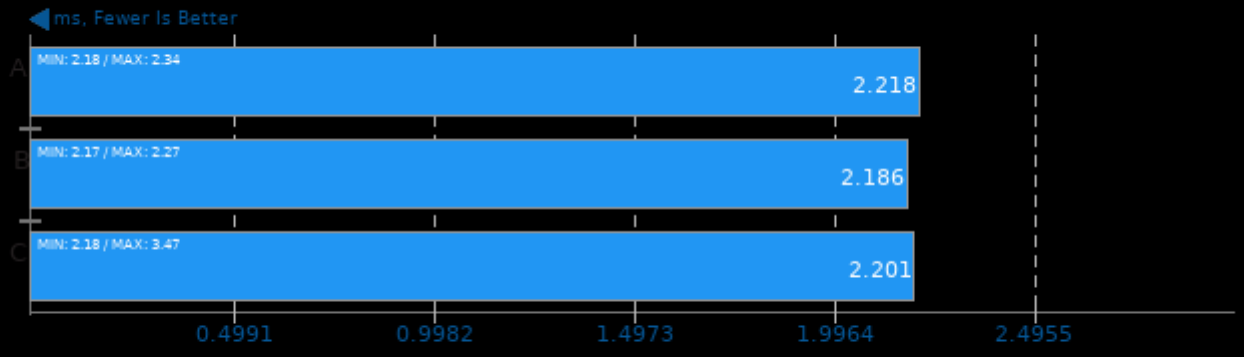
Test: System V Message Passing



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Mobile Neural Network 1.2

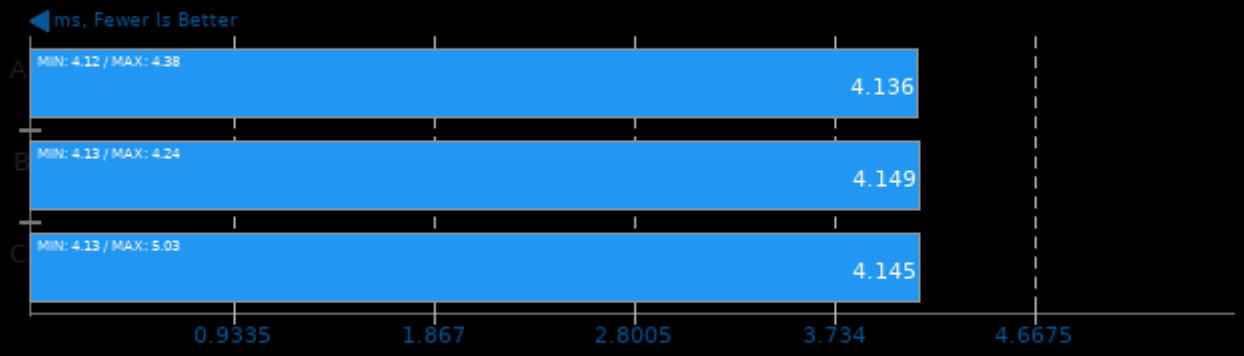
Model: mobilenetV3



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

Mobile Neural Network 1.2

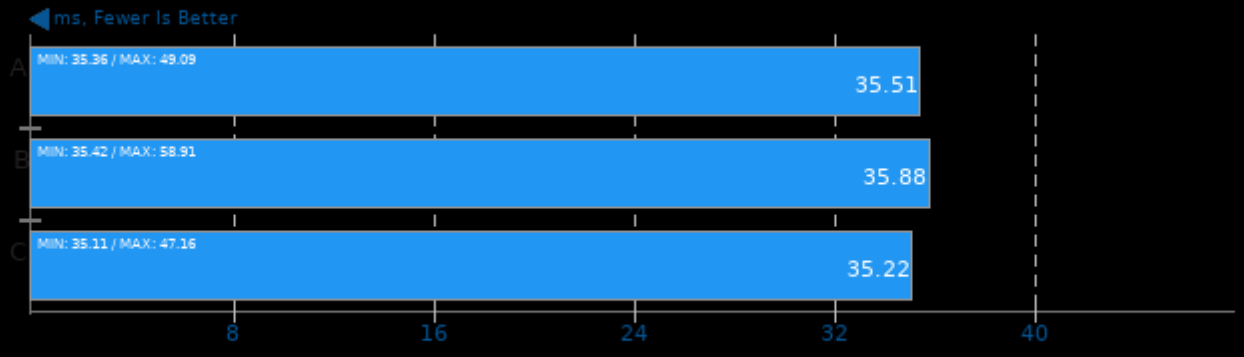
Model: squeezenetv1.1



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

Mobile Neural Network 1.2

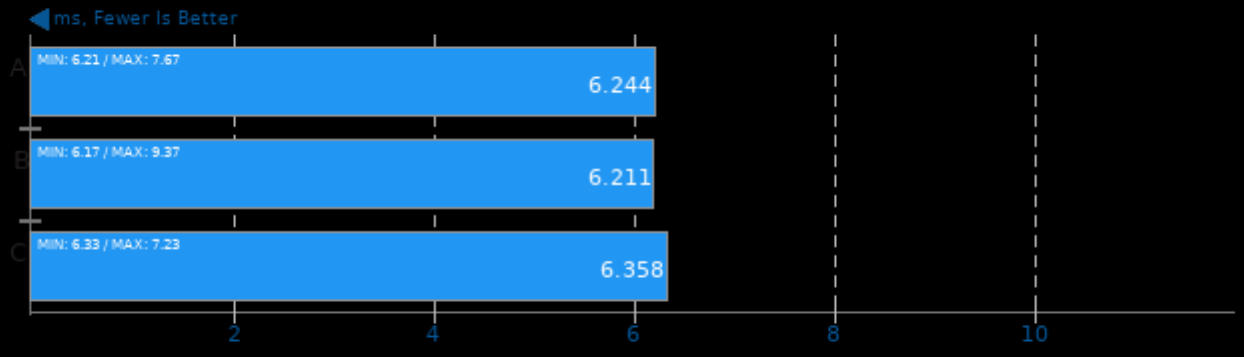
Model: resnet-v2-50



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

Mobile Neural Network 1.2

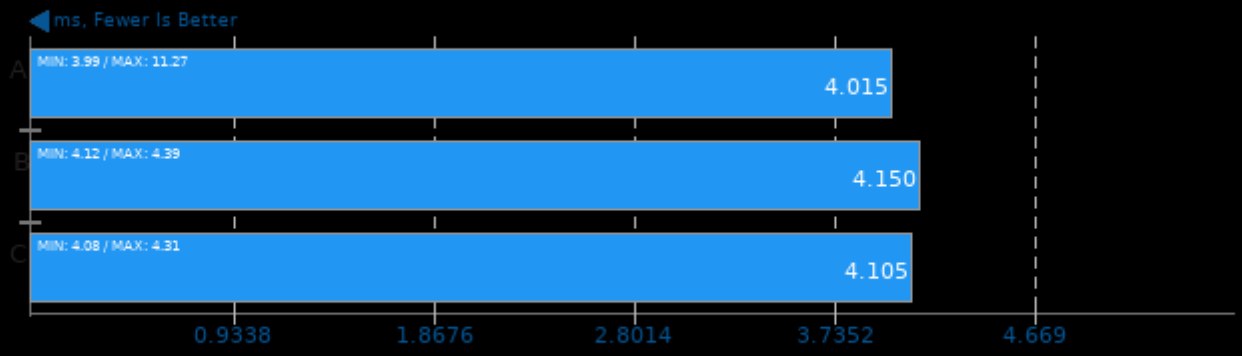
Model: SqueezeNetV1.0



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

Mobile Neural Network 1.2

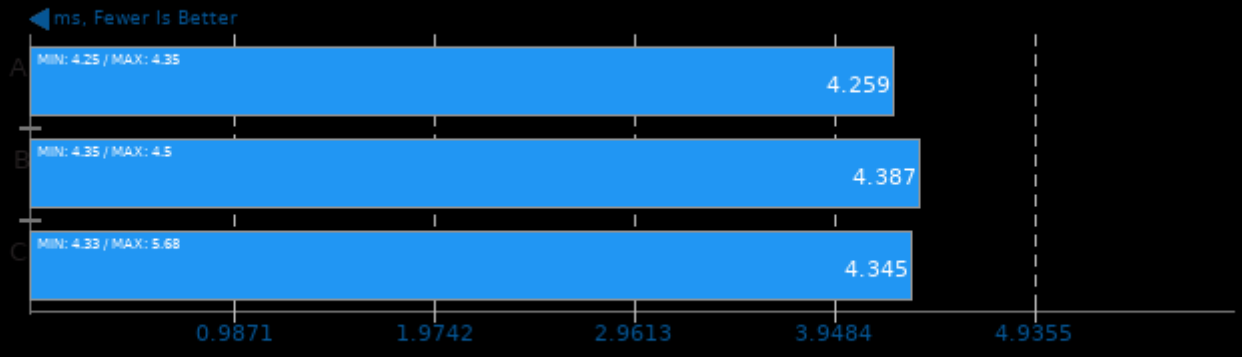
Model: MobileNetV2_224



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

Mobile Neural Network 1.2

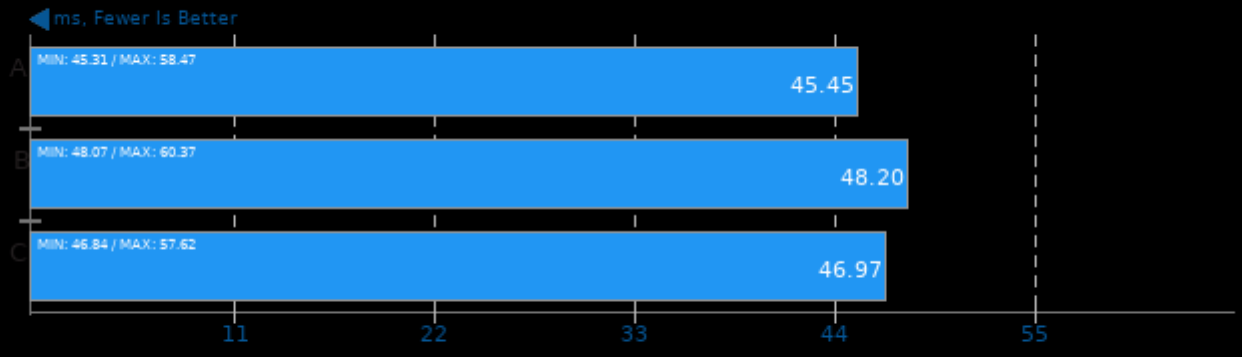
Model: mobilenet-v1-1.0



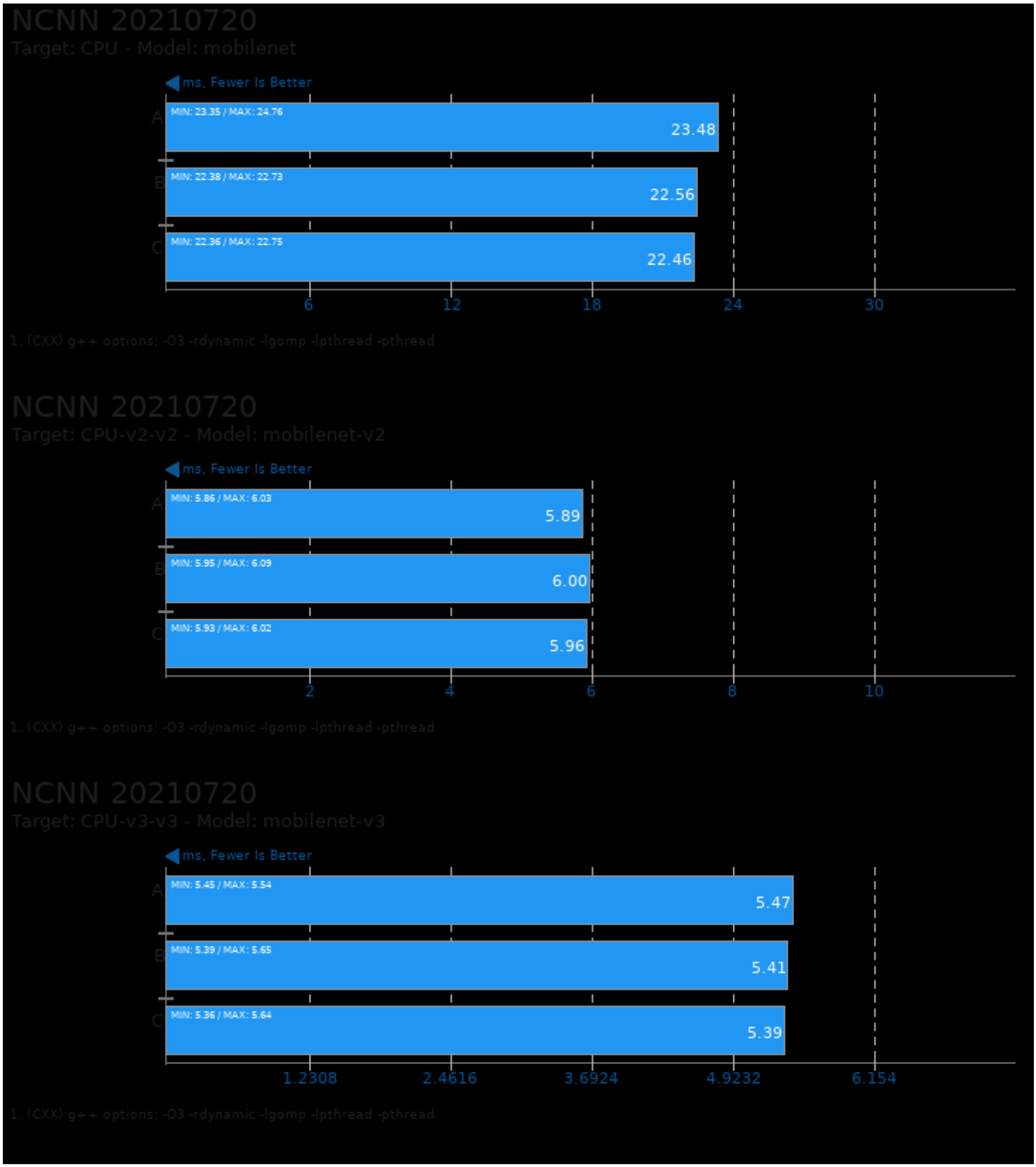
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

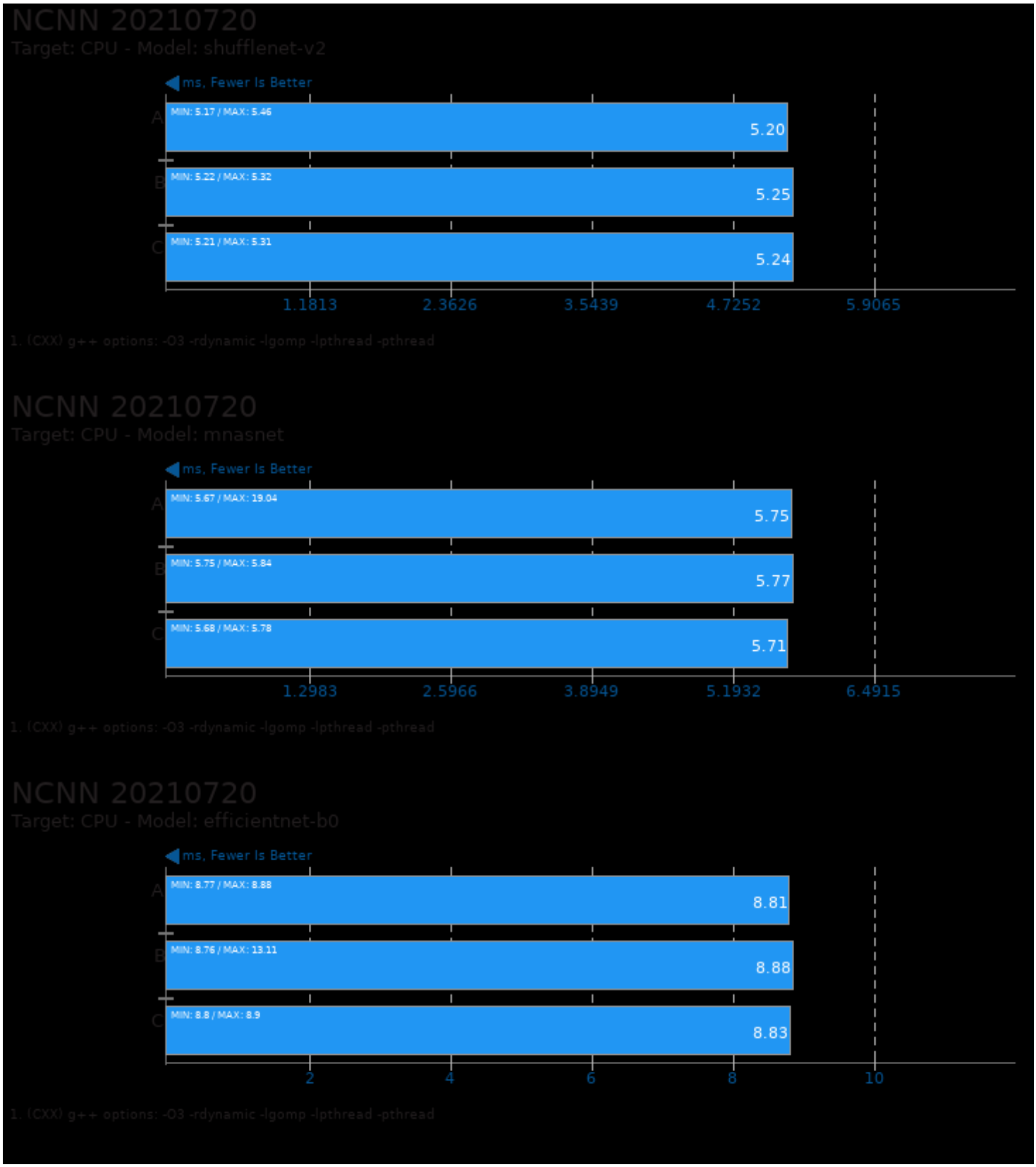
Mobile Neural Network 1.2

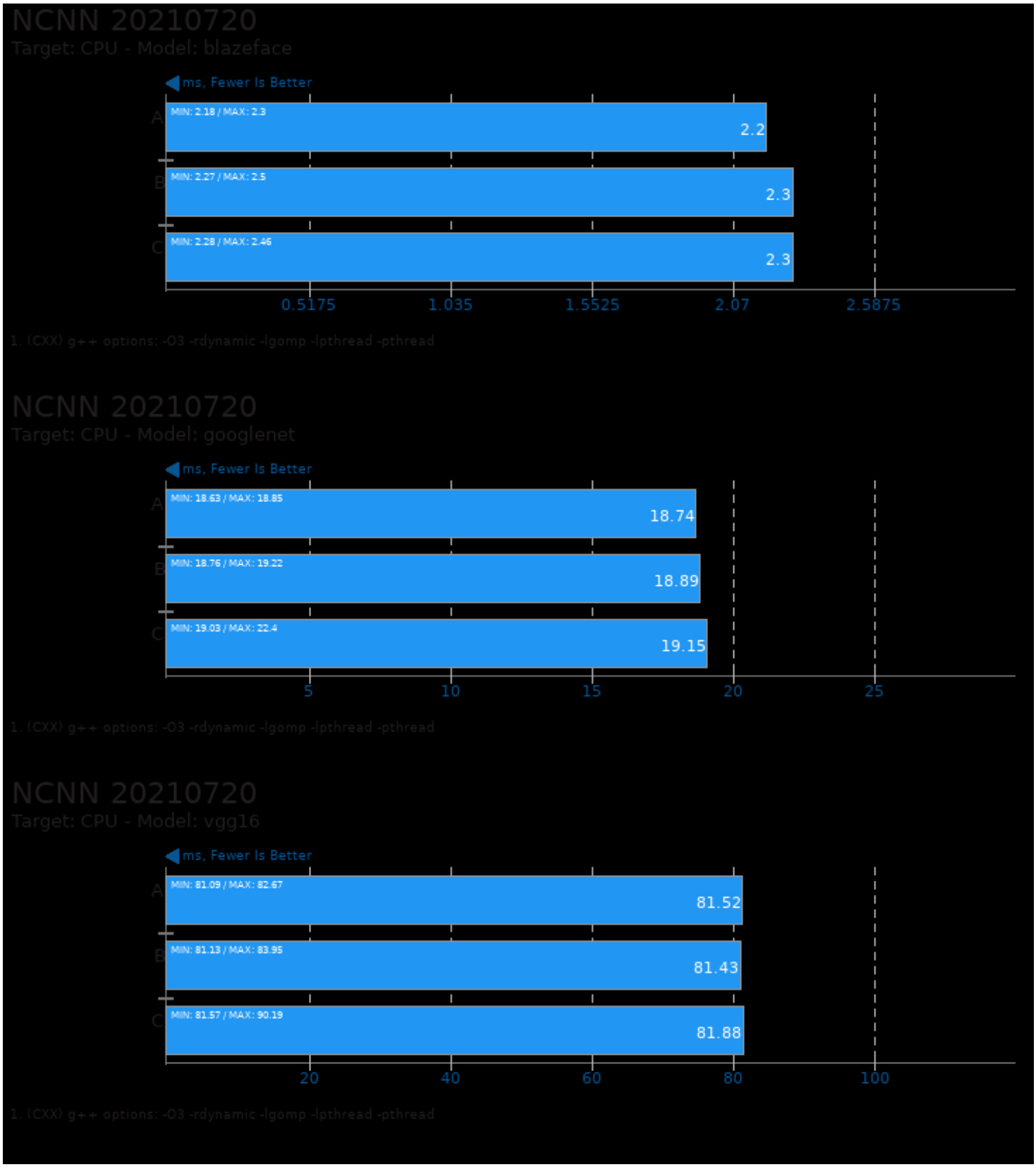
Model: inception-v3

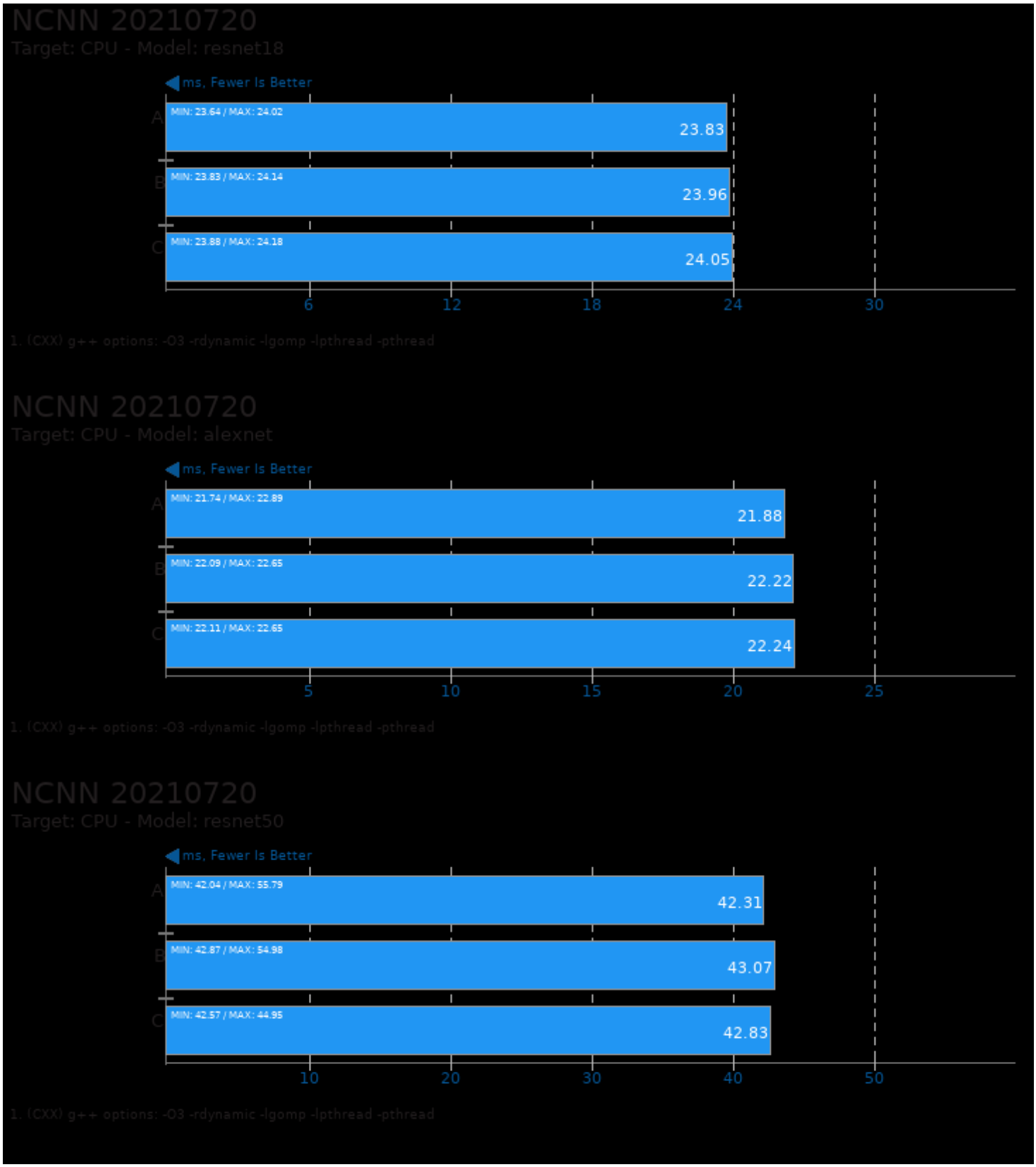


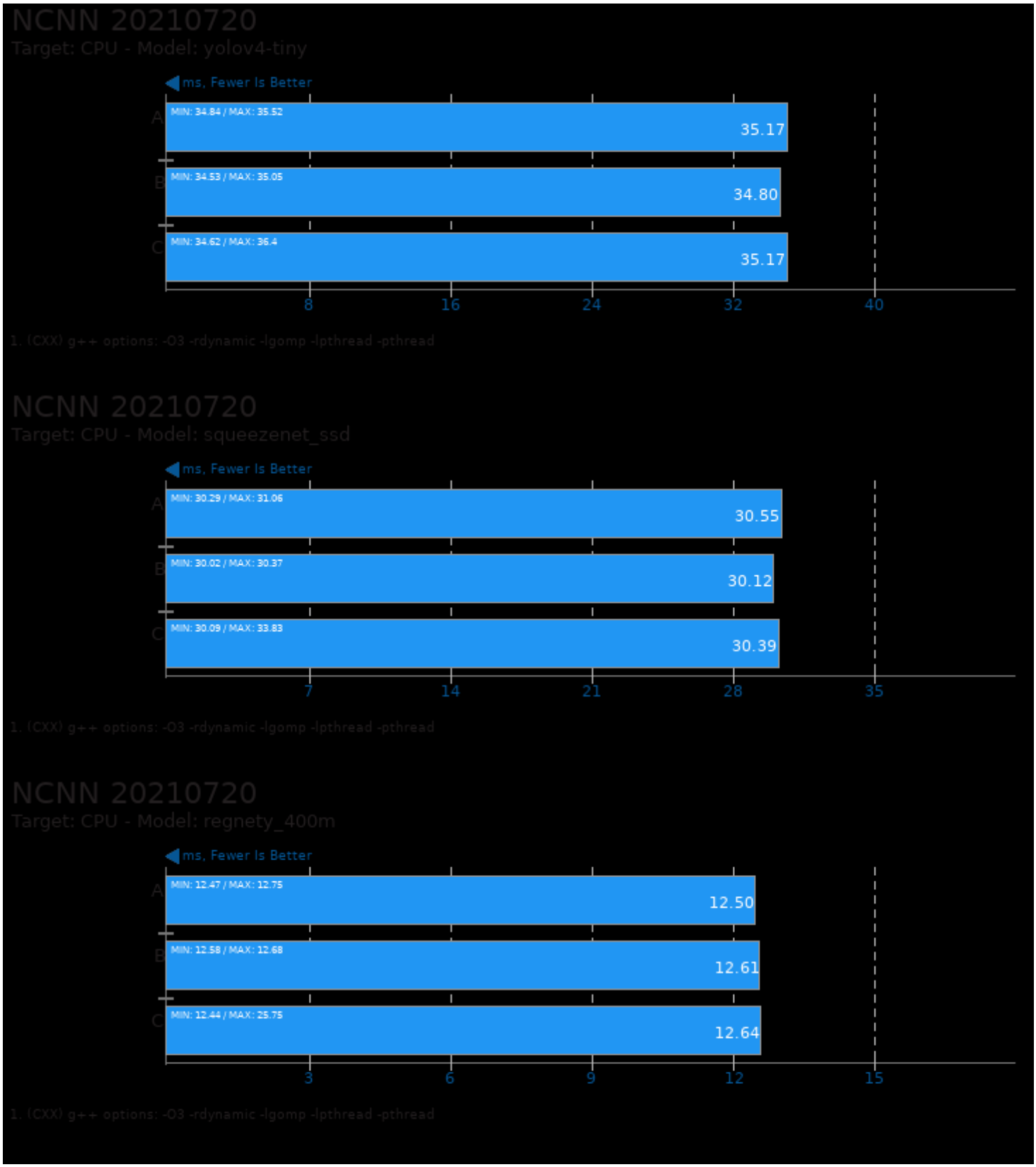
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn


NCNN 20210720
Target: CPU - Model: mobilenet
ms, Fewer Is Better
A
MIN: 23.35 / MAX: 24.76
23.48
B
MIN: 22.38 / MAX: 22.73
22.56
C
MIN: 22.36 / MAX: 22.75
22.46
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU-v2-v2 - Model: mobilenet-v2
ms, Fewer Is Better
A
MIN: 5.86 / MAX: 6.03
5.89
B
MIN: 5.95 / MAX: 6.09
6.00
C
MIN: 5.93 / MAX: 6.02
5.96
2
4
6
8
10
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU-v3-v3 - Model: mobilenet-v3
ms, Fewer Is Better
A
MIN: 5.45 / MAX: 5.54
5.47
B
MIN: 5.39 / MAX: 5.65
5.41
C
MIN: 5.36 / MAX: 5.64
5.39
1.2308
2.4616
3.6924
4.9232
6.154
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread


NCNN 20210720
Target: CPU - Model: shufflenet-v2
ms, Fewer Is Better
A
MIN: 5.17 / MAX: 5.46
5.20
B
MIN: 5.22 / MAX: 5.32
5.25
C
MIN: 5.21 / MAX: 5.31
5.24
1.1813
2.3626
3.5439
4.7252
5.9065
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: mnasnet
ms, Fewer Is Better
A
MIN: 5.67 / MAX: 19.04
5.75
B
MIN: 5.75 / MAX: 5.84
5.77
C
MIN: 5.68 / MAX: 5.78
5.71
1.2983
2.5966
3.8949
5.1932
6.4915
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: efficientnet-b0
ms, Fewer Is Better
A
MIN: 8.77 / MAX: 8.88
8.81
B
MIN: 8.76 / MAX: 13.11
8.88
C
MIN: 8.8 / MAX: 8.9
8.83
2
4
6
8
10
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

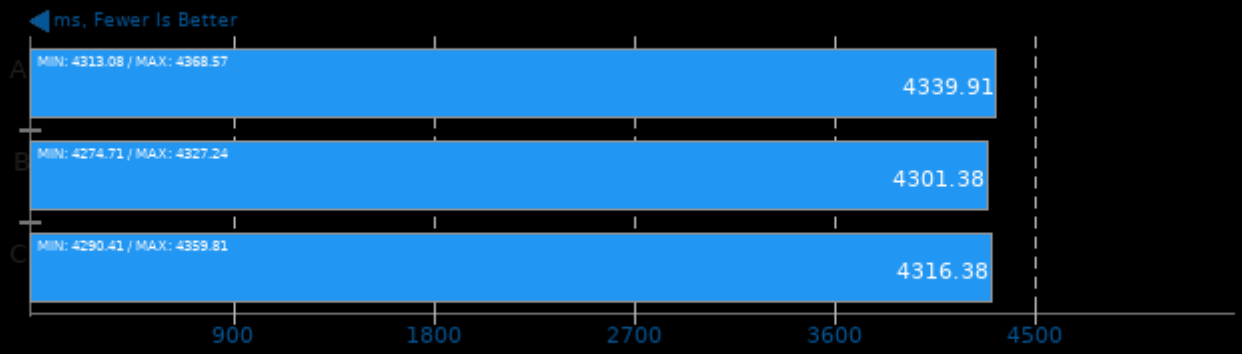

NCNN 20210720
Target: CPU - Model: blazeface
ms, Fewer Is Better
A
MIN: 2.18 / MAX: 2.3
2.2
B
MIN: 2.27 / MAX: 2.5
2.3
C
MIN: 2.28 / MAX: 2.46
2.3
0.5175
1.035
1.5525
2.07
2.5875
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: googlenet
ms, Fewer Is Better
A
MIN: 18.63 / MAX: 18.85
18.74
B
MIN: 18.76 / MAX: 19.22
18.89
C
MIN: 19.03 / MAX: 22.4
19.15
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: vgg16
ms, Fewer Is Better
A
MIN: 81.09 / MAX: 82.67
81.52
B
MIN: 81.13 / MAX: 83.95
81.43
C
MIN: 81.57 / MAX: 90.19
81.88
20
40
60
80
100
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread


NCNN 20210720
Target: CPU - Model: resnet18
ms, Fewer Is Better
A
MIN: 23.64 / MAX: 24.02
23.83
B
MIN: 23.83 / MAX: 24.14
23.96
C
MIN: 23.88 / MAX: 24.18
24.05
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: alexnet
ms, Fewer Is Better
A
MIN: 21.74 / MAX: 22.89
21.88
B
MIN: 22.09 / MAX: 22.65
22.22
C
MIN: 22.11 / MAX: 22.65
22.24
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: resnet50
ms, Fewer Is Better
A
MIN: 42.04 / MAX: 55.79
42.31
B
MIN: 42.87 / MAX: 54.98
43.07
C
MIN: 42.57 / MAX: 44.95
42.83
10
20
30
40
50
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread


NCNN 20210720
Target: CPU - Model: yolov4-tiny
ms, Fewer Is Better
A
MIN: 34.84 / MAX: 35.52
35.17
B
MIN: 34.53 / MAX: 35.05
34.80
C
MIN: 34.62 / MAX: 36.4
35.17
8
16
24
32
40
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: squeezenet_ssd
ms, Fewer Is Better
A
MIN: 30.29 / MAX: 31.06
30.55
B
MIN: 30.02 / MAX: 30.37
30.12
C
MIN: 30.09 / MAX: 33.83
30.39
7
14
21
28
35
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: regnety_400m
ms, Fewer Is Better
A
MIN: 12.47 / MAX: 12.75
12.50
B
MIN: 12.58 / MAX: 12.68
12.61
C
MIN: 12.44 / MAX: 25.75
12.64
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

TNN 0.3

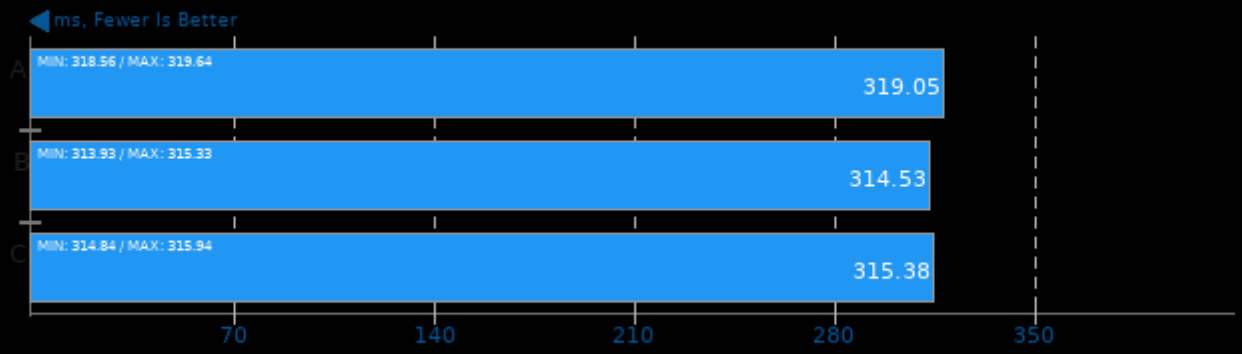
Target: CPU - Model: DenseNet



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

TNN 0.3

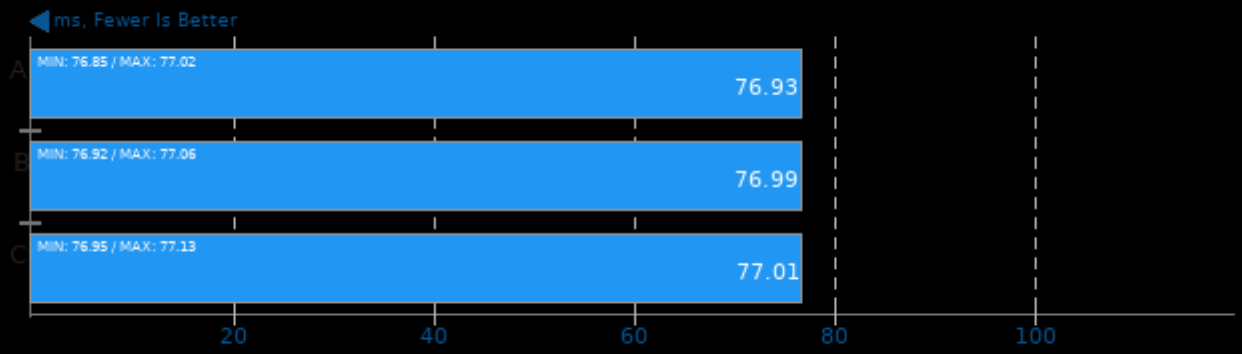
Target: CPU - Model: MobileNet v2



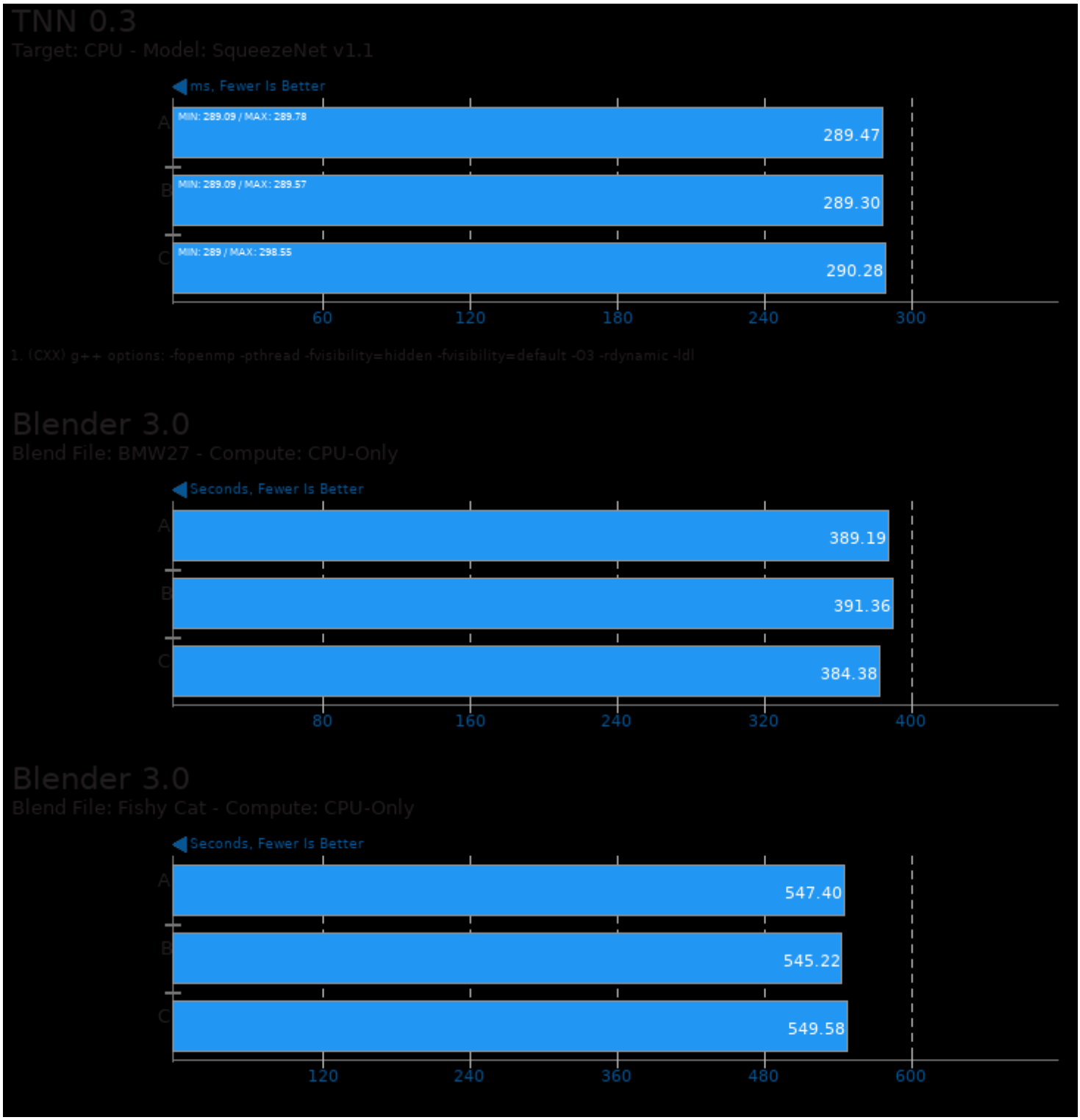
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

TNN 0.3

Target: CPU - Model: SqueezeNet v2

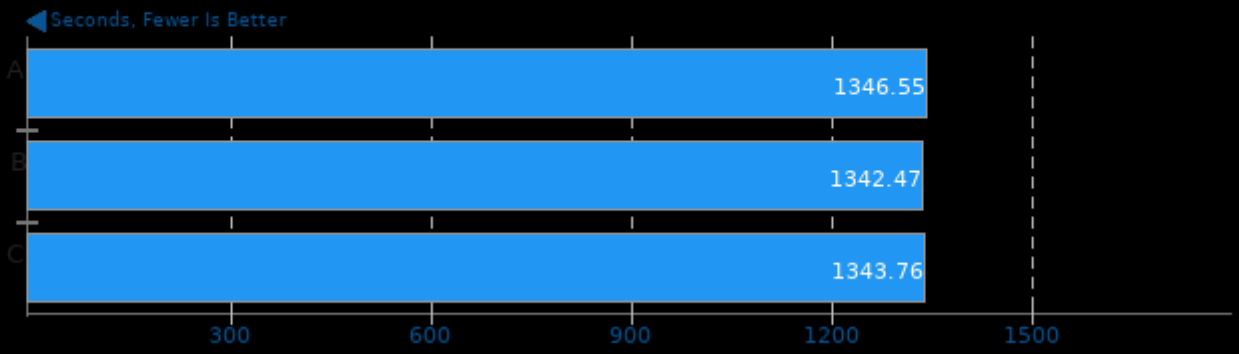


1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl


TNN 0.3
Target: CPU - Model: SqueezeNet v1.1
ms, Fewer Is Better
A
MIN: 289.09 / MAX: 289.78
289.47
B
MIN: 289.09 / MAX: 289.57
289.30
C
MIN: 289 / MAX: 298.55
290.28
60
120
180
240
300
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl
Blender 3.0
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
A
389.19
B
391.36
C
384.38
80
160
240
320
400
Blender 3.0
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
A
547.40
B
545.22
C
549.58
120
240
360
480
600

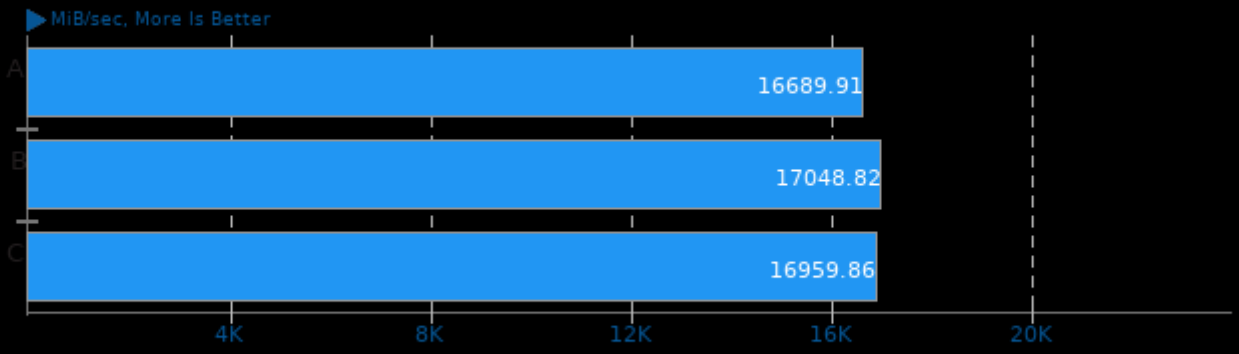
Blender 3.0

Blend File: Pabellon Barcelona - Compute: CPU-Only



Sysbench 1.0.20

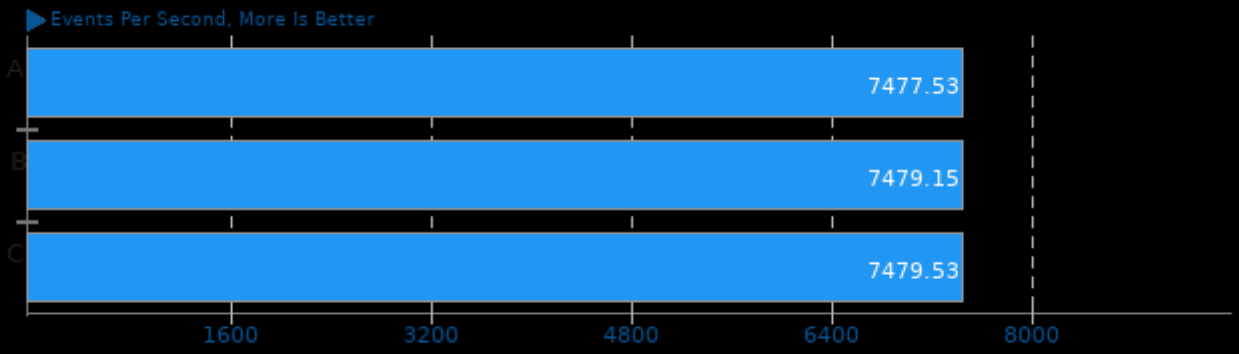
Test: RAM / Memory



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

Sysbench 1.0.20

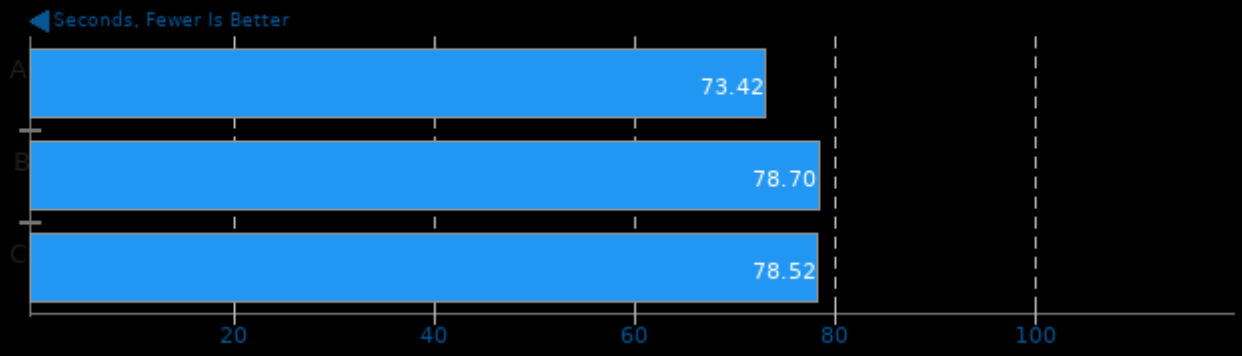
Test: CPU



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

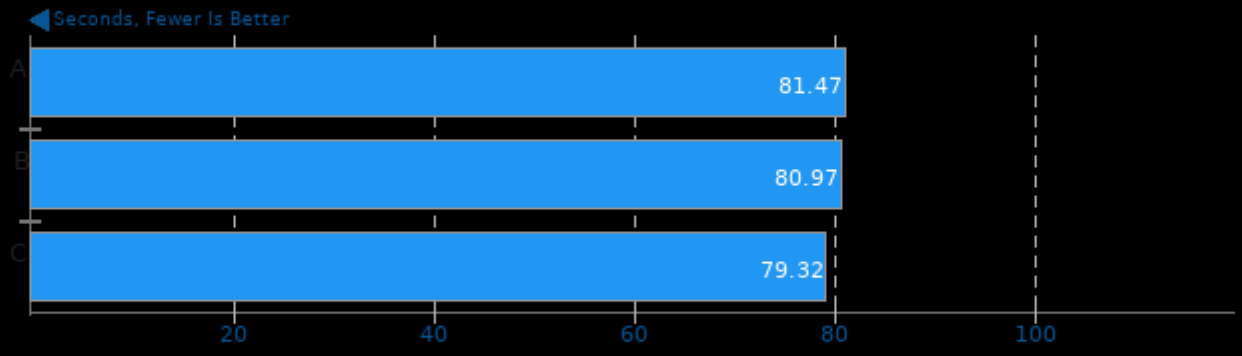
RAR Compression 6.0.2

Linux Source Tree Archiving To RAR



GnuPG 2.2.27

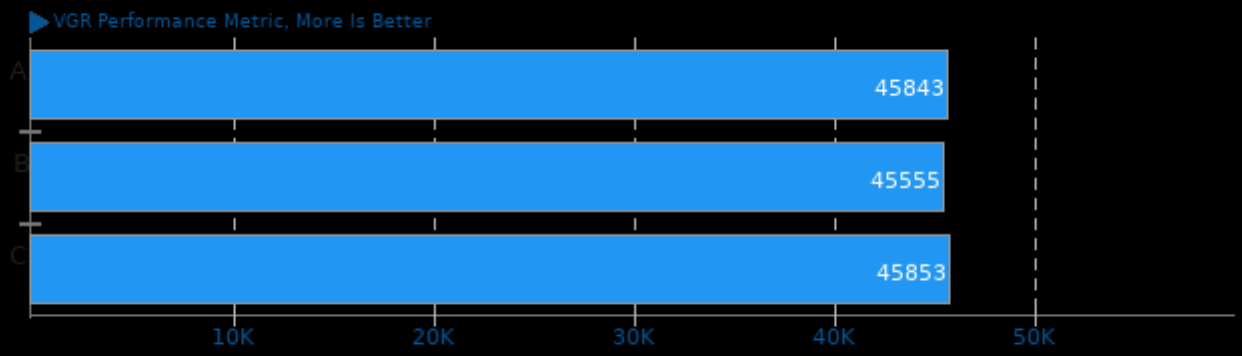
2.7GB Sample File Encryption



1. (CC) gcc options: -O2

BRL-CAD 7.32.2

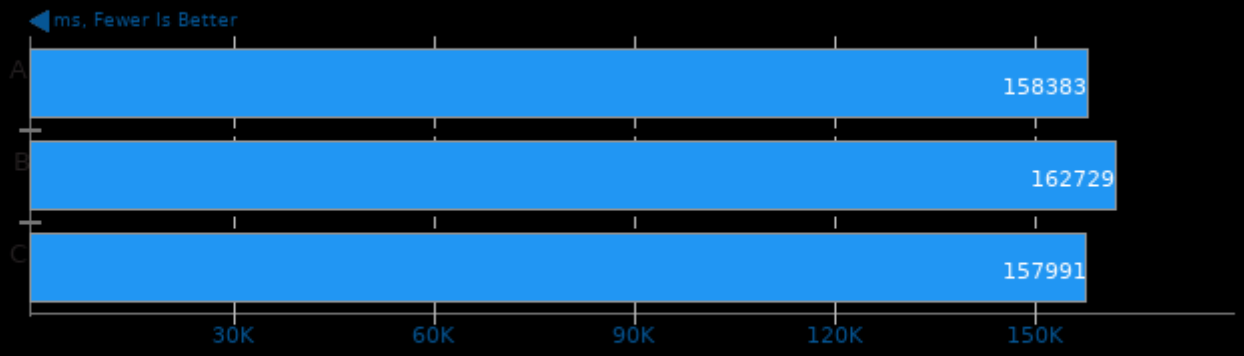
VGR Performance Metric



1. (CXX) g++ options: -std=c++11 -pipe -fvisibility=hidden -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth-128 -m64 -ggdb3 -O3 -fipa-pt

OpenCV 4.5.4

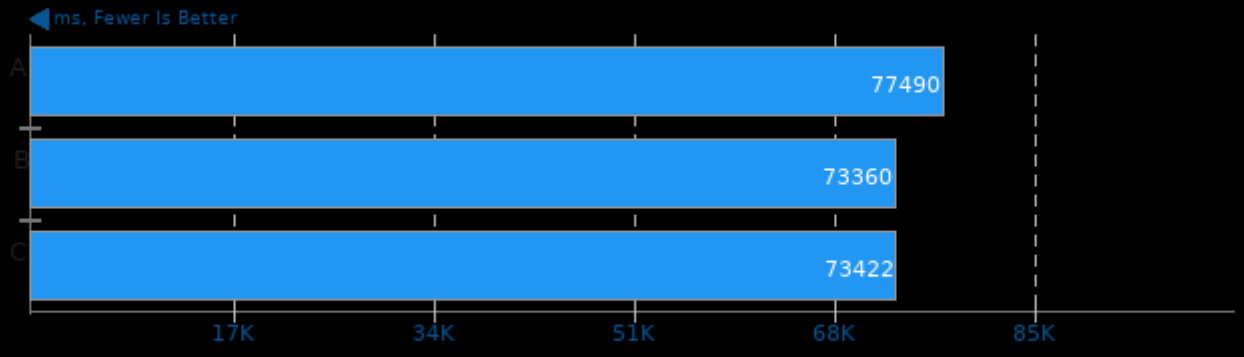
Test: Features 2D



1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl -lr

OpenCV 4.5.4

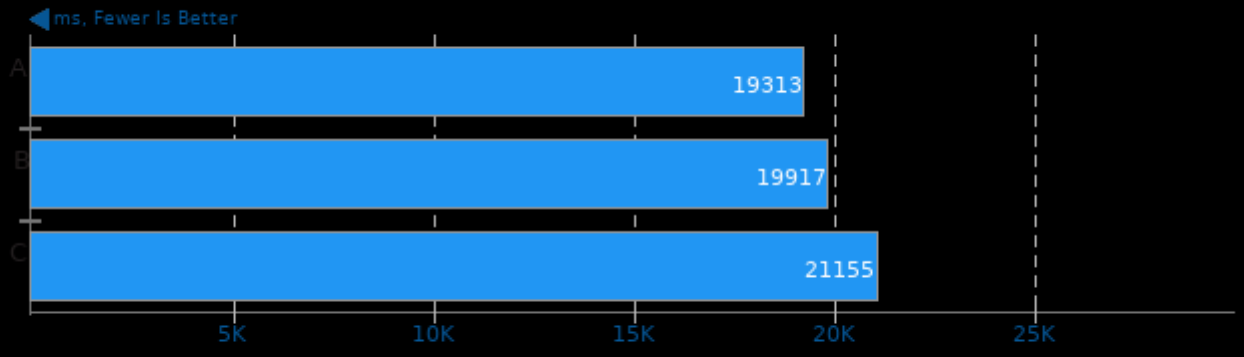
Test: Object Detection



1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl -lr

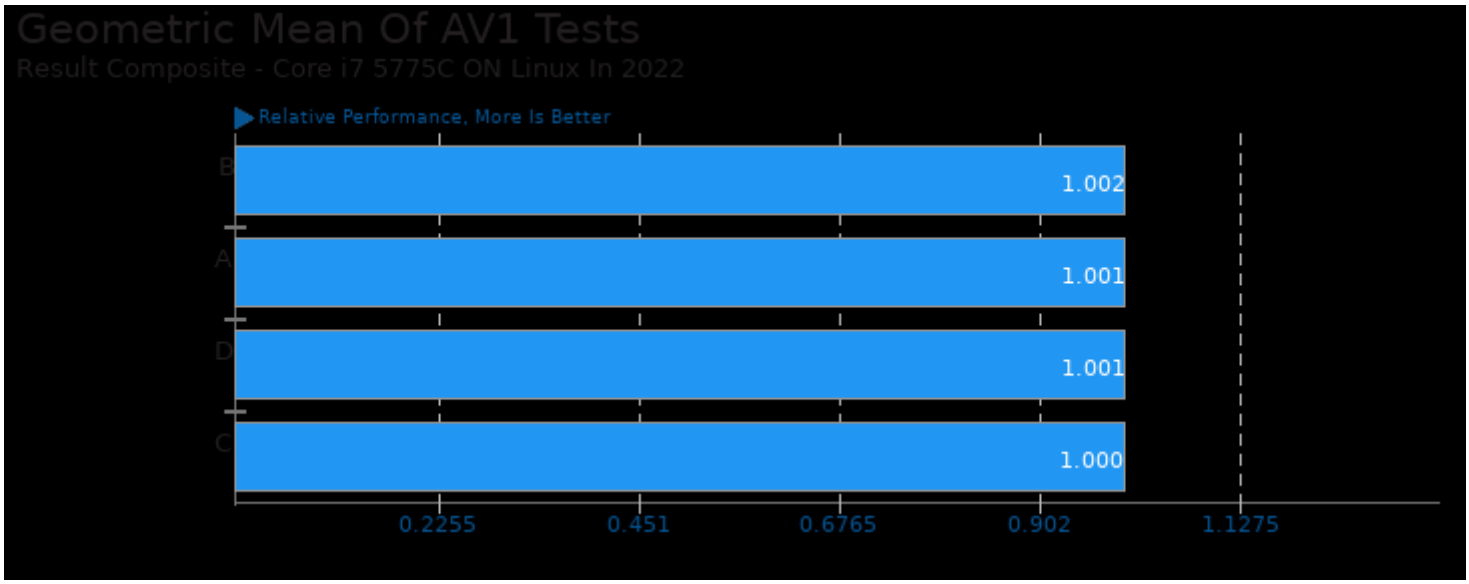
OpenCV 4.5.4

Test: DNN - Deep Neural Network

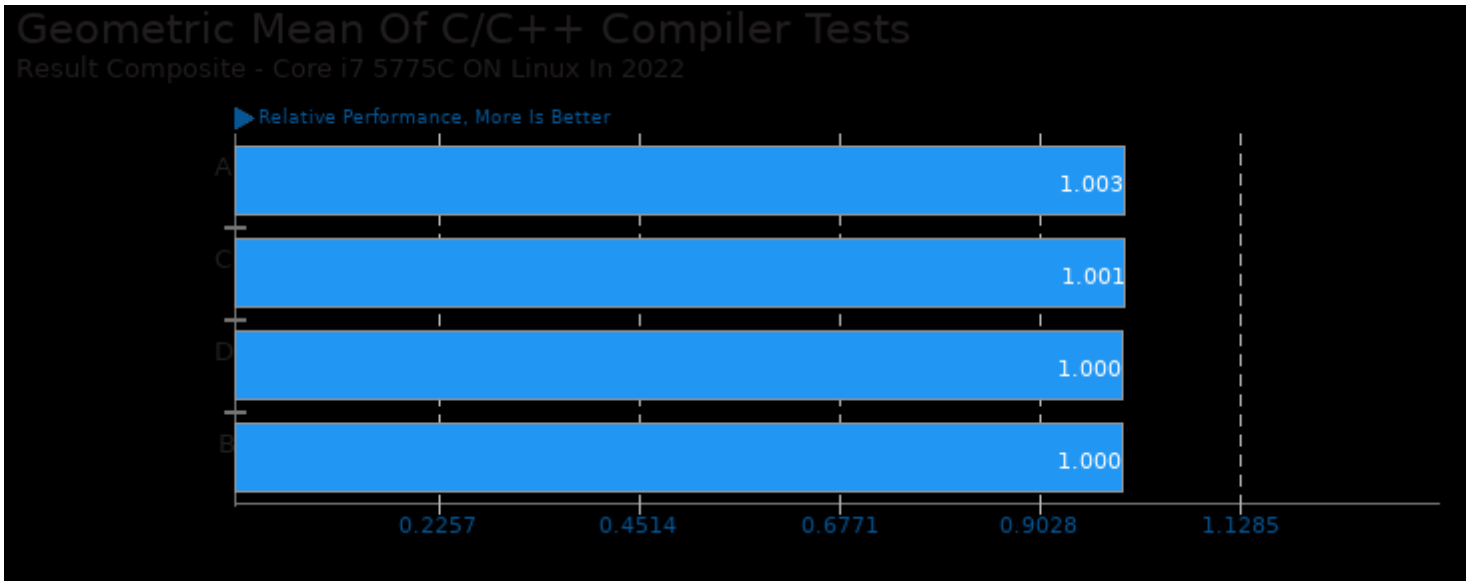


1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl -lr

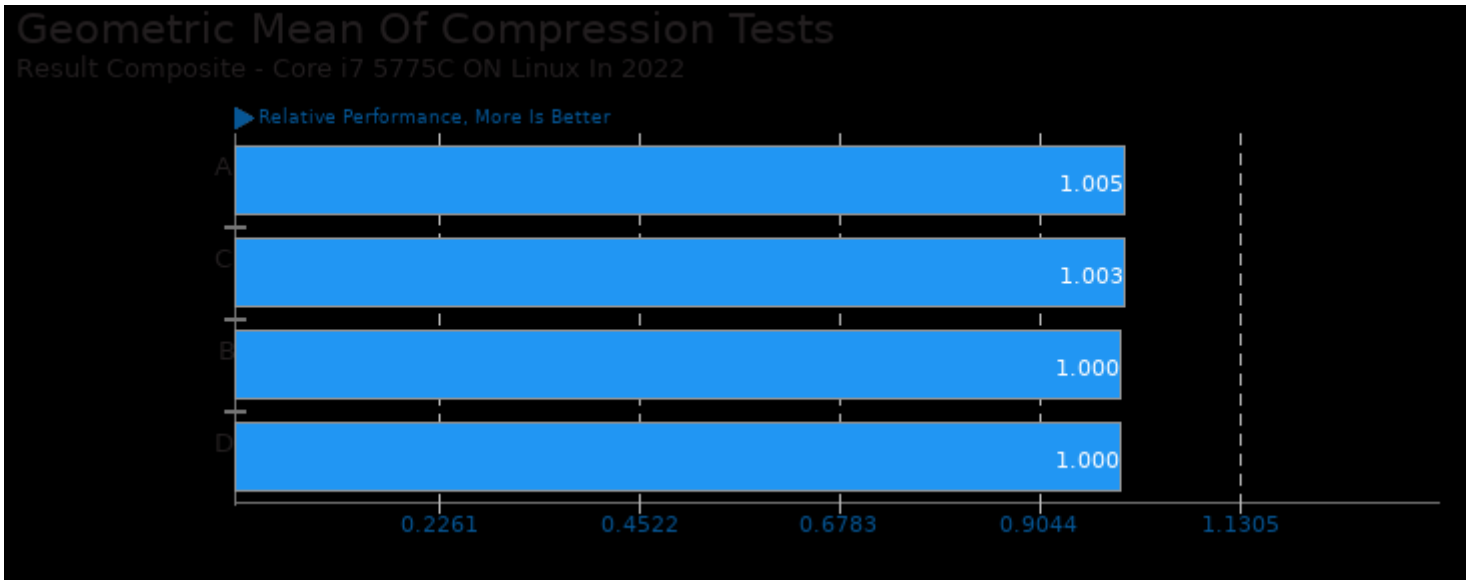
These geometric means are based upon test groupings / test suites for this result file.



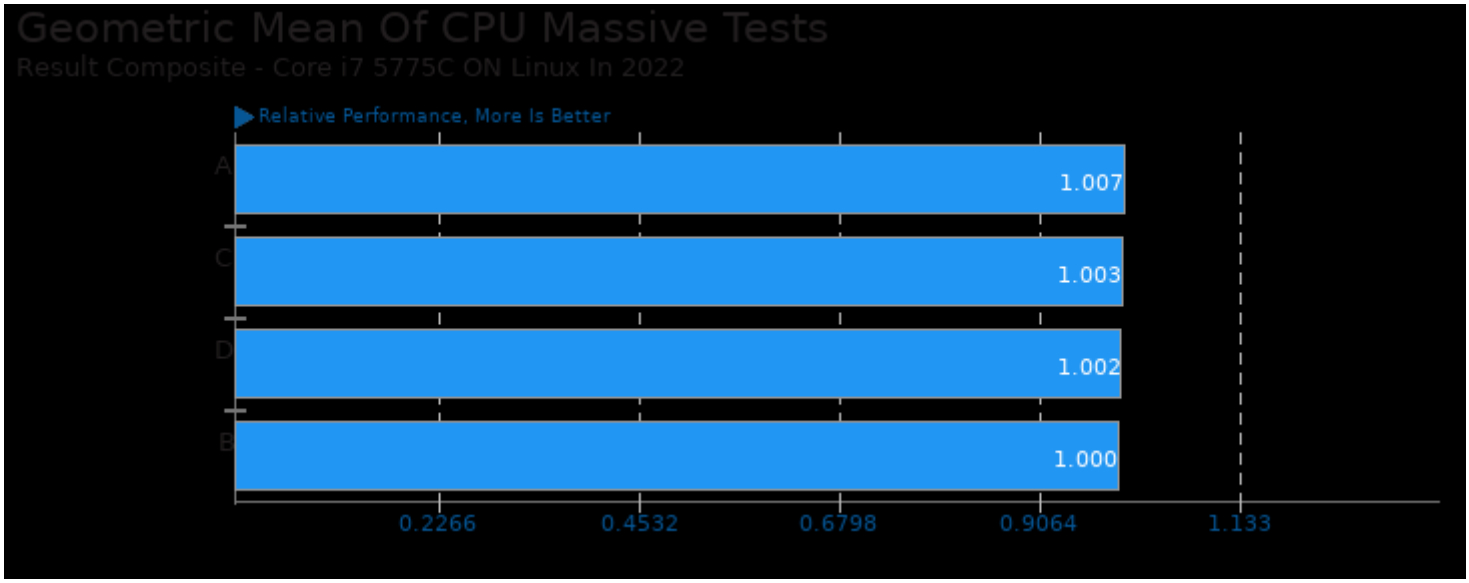
Geometric mean based upon tests: pts/aom-av1, pts/svt-av1 and pts/libgav1



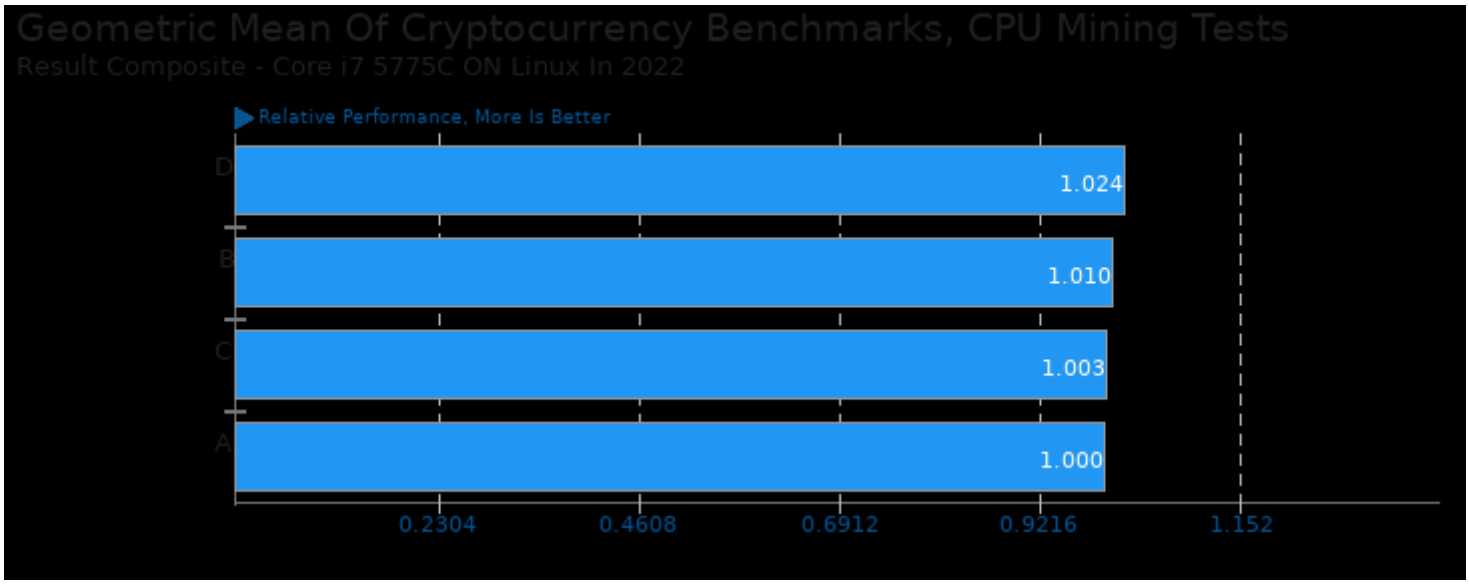
Geometric mean based upon tests: pts/stockfish, pts/compress-7zip, pts/encode-flac, pts/libgav1, pts/kvazaar, pts/clomp, pts/compress-zstd, pts/nginx, pts/aom-av1, pts/svt-av1, pts/svt-vp9, pts/build-gdb, pts/build-ffmpeg and pts/basis



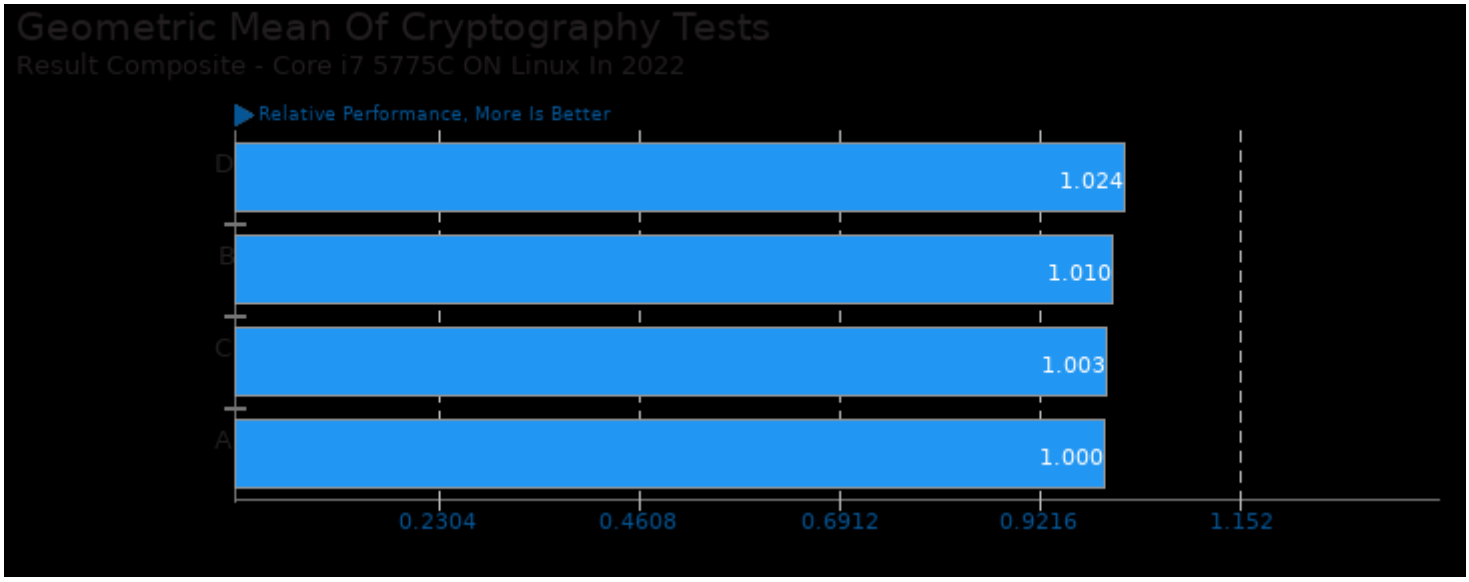
Geometric mean based upon tests: pts/compress-7zip, pts/compress-zstd and pts/compress-rar



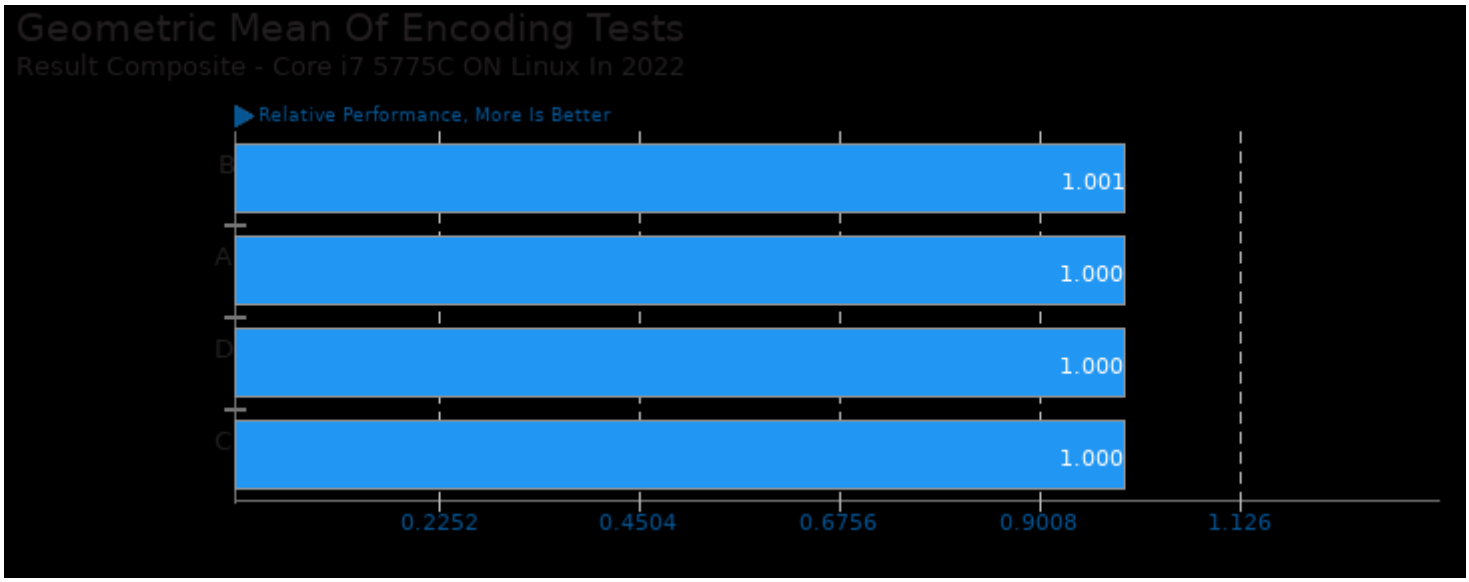
Geometric mean based upon tests: pts/brl-cad, pts/build-gcc, pts/build-linux-kernel, pts/compress-7zip, pts/compress-zstd, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/encode-flac, pts/nginx, pts/primesieve, pts/stockfish, pts/stress-ng, pts/sysbench, pts/blender, pts/clomp and pts/cpuminer-opt



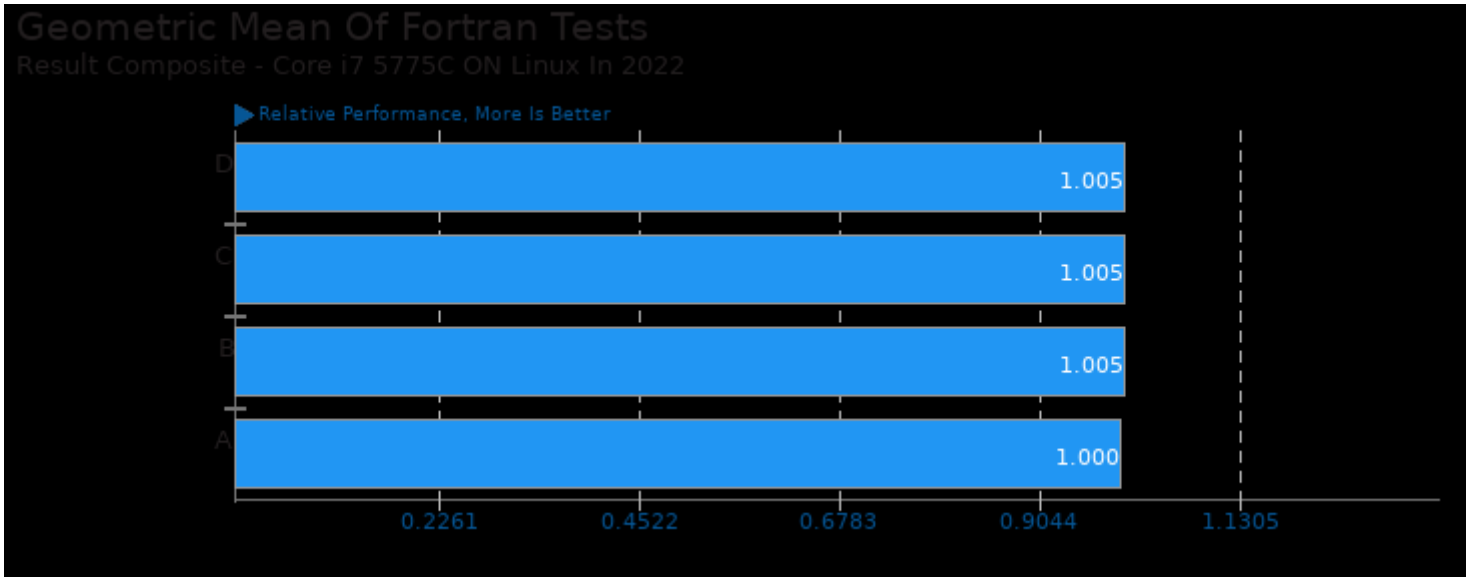
Geometric mean based upon tests: pts/cpuminer-opt and pts/xmrig



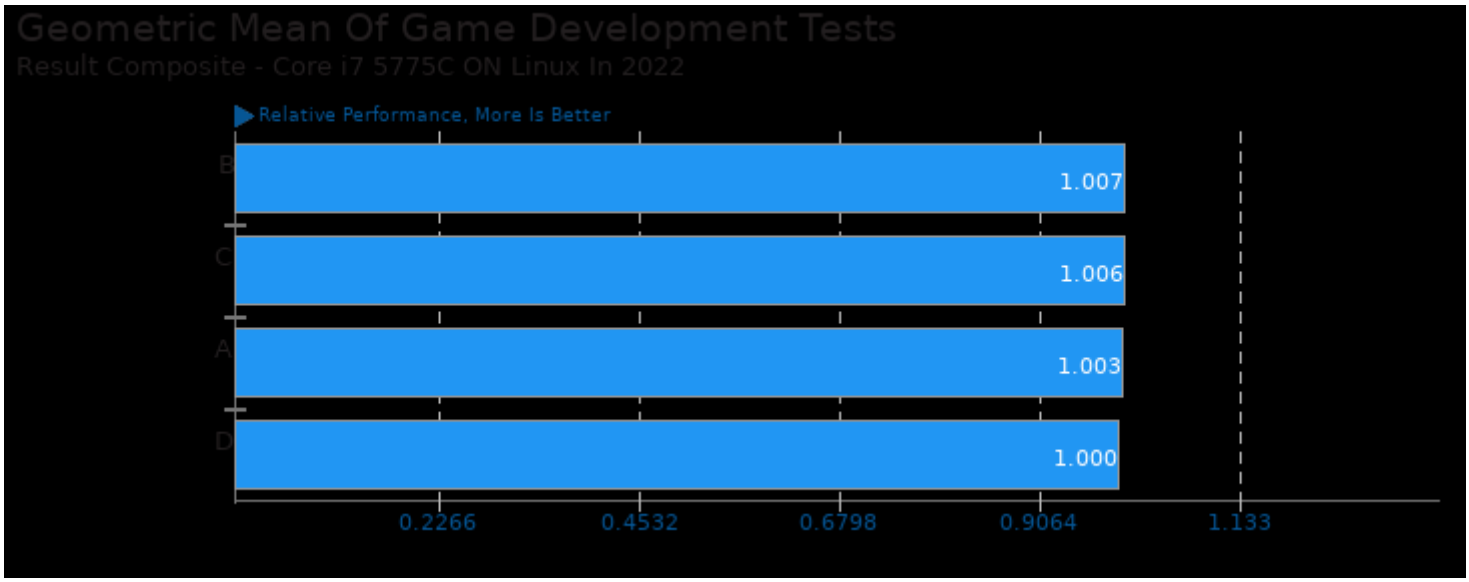
Geometric mean based upon tests: pts/gnupg, pts/cpuminer-opt and pts/xmrig



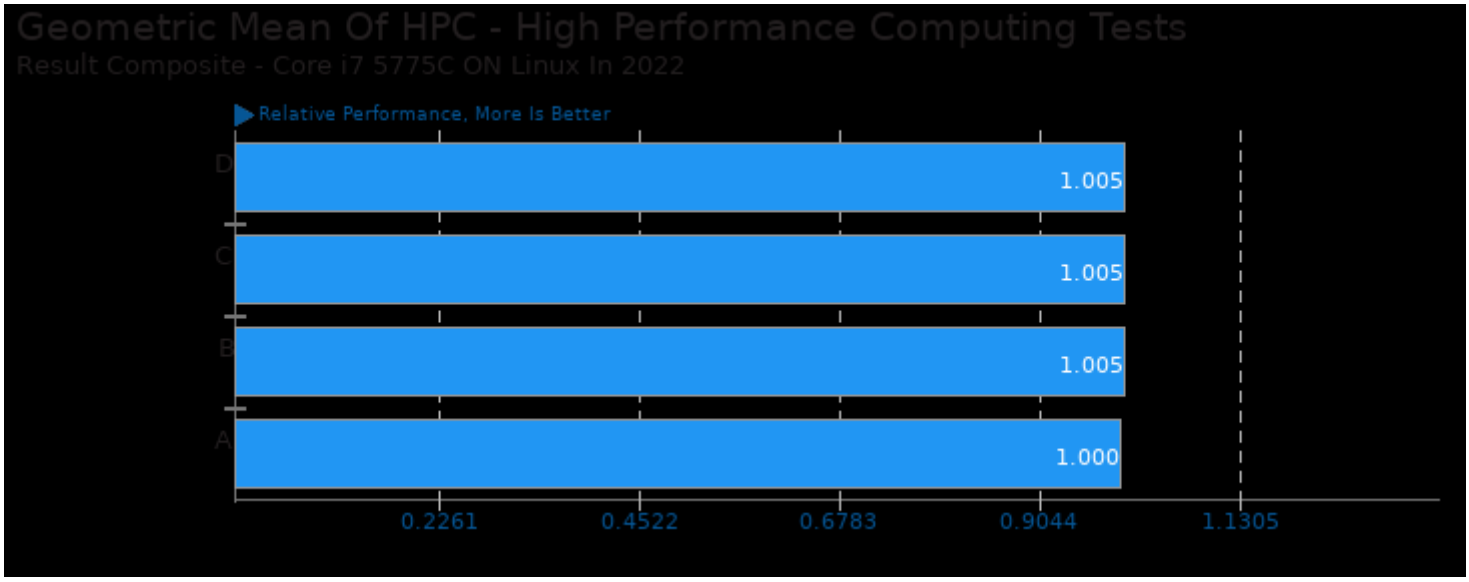
Geometric mean based upon tests: pts/encode-flac, pts/svt-vp9, pts/svt-hevc, pts/kvazaar, pts/aom-av1, pts/svt-av1 and pts/libgav1



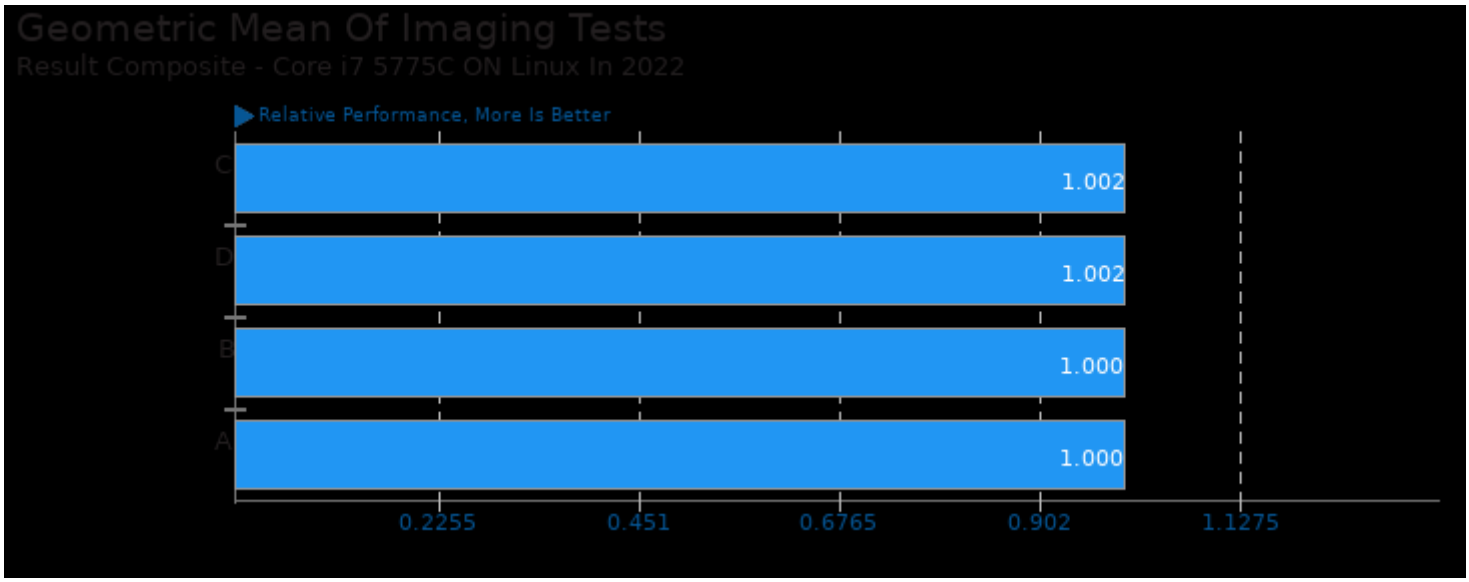
Geometric mean based upon tests: pts/incompact3d and pts/qe



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



Geometric mean based upon tests: pts/qe, pts/incompact3d, pts/mnn, pts/ncnn, pts/tnn and pts/opencv



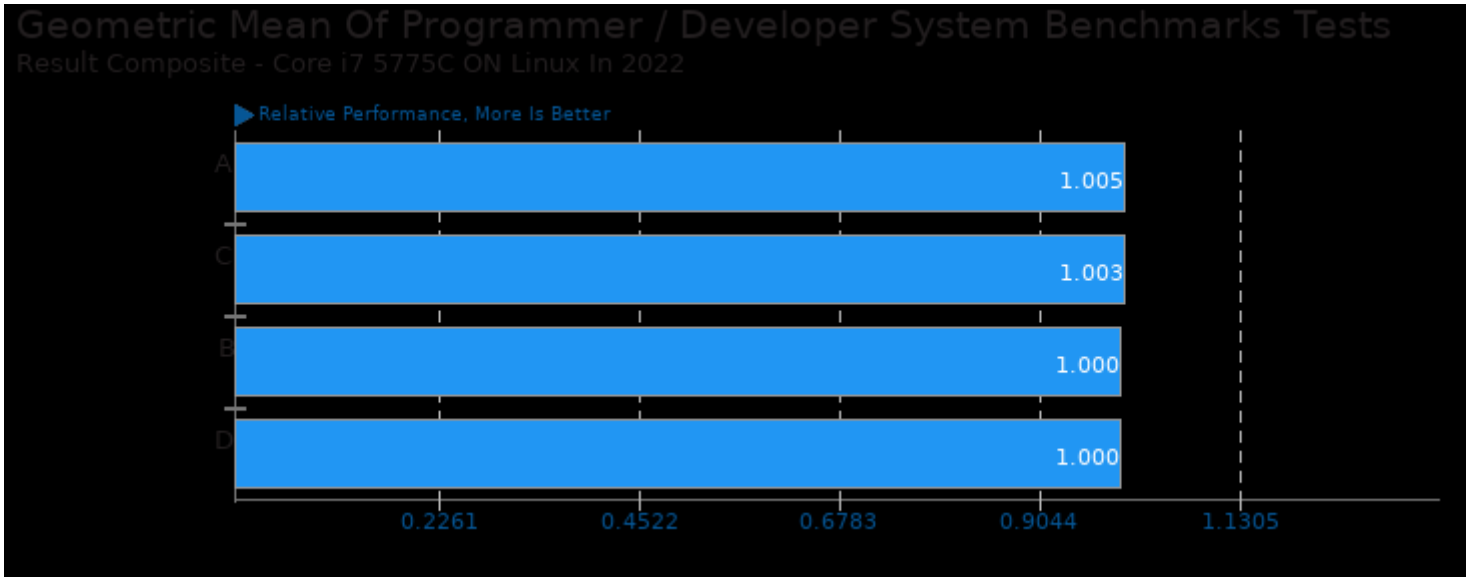
Geometric mean based upon tests: pts/openjpeg, pts/jpegxl and pts/jpegxl-decode



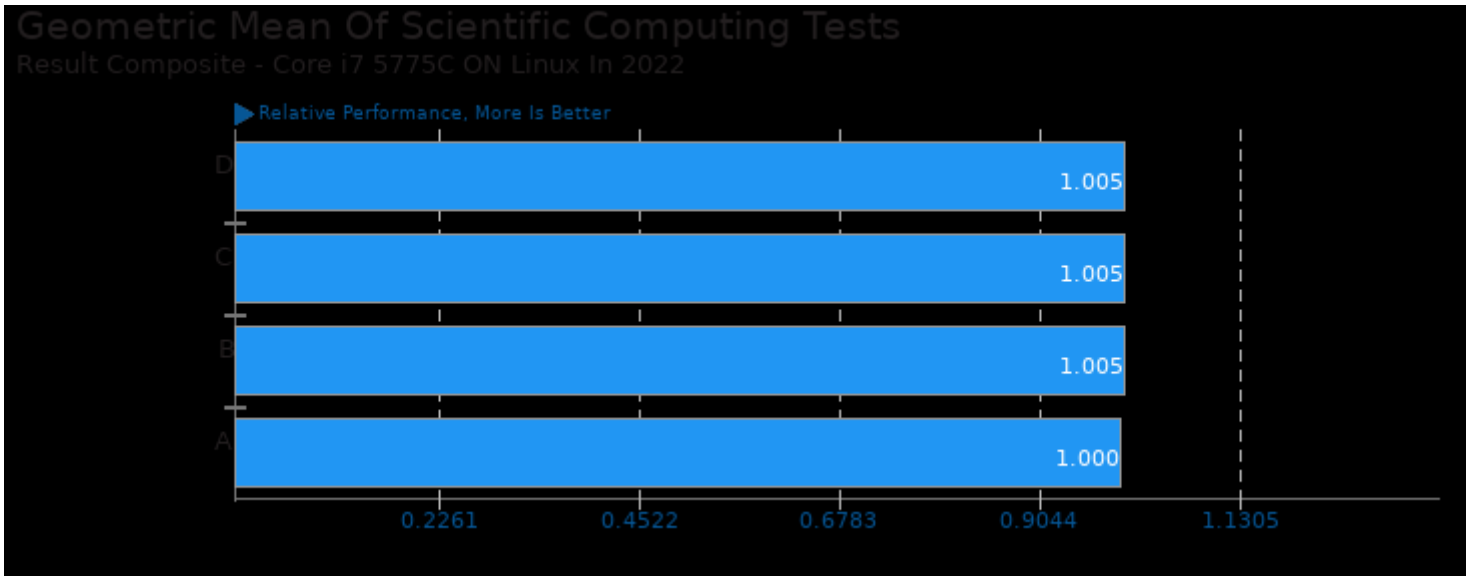
Geometric mean based upon tests: pts/embree and pts/oidn



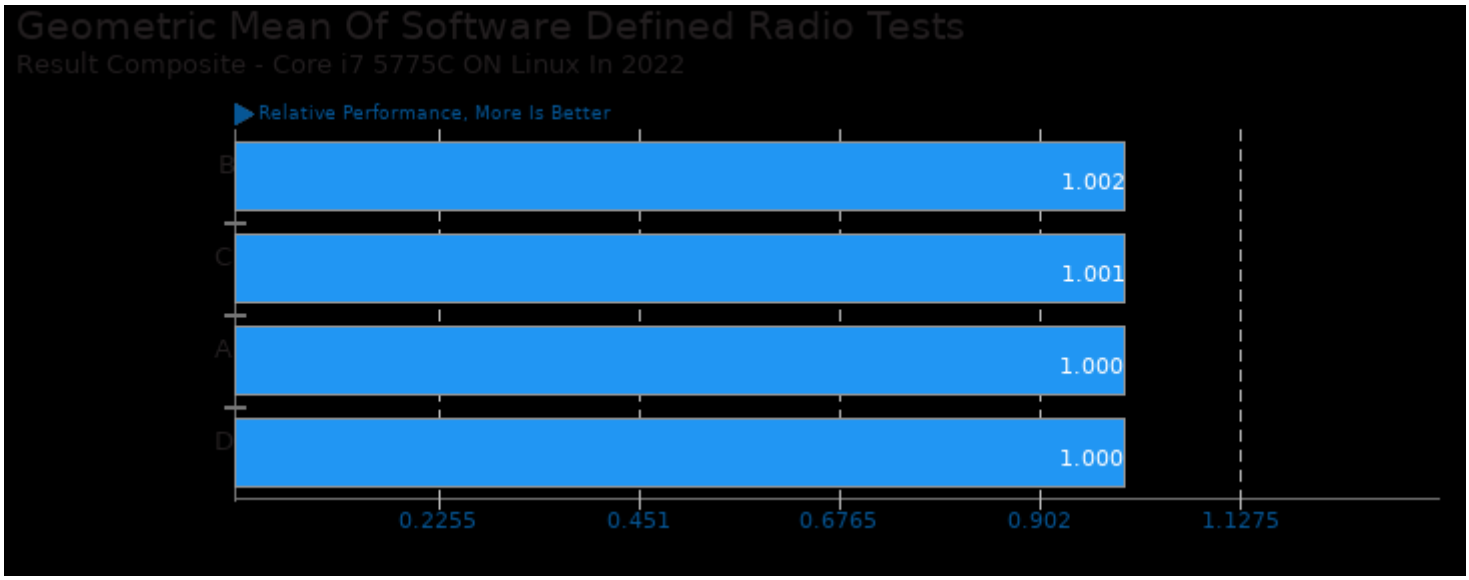
Geometric mean based upon tests: pts/incompact3d and pts/qe



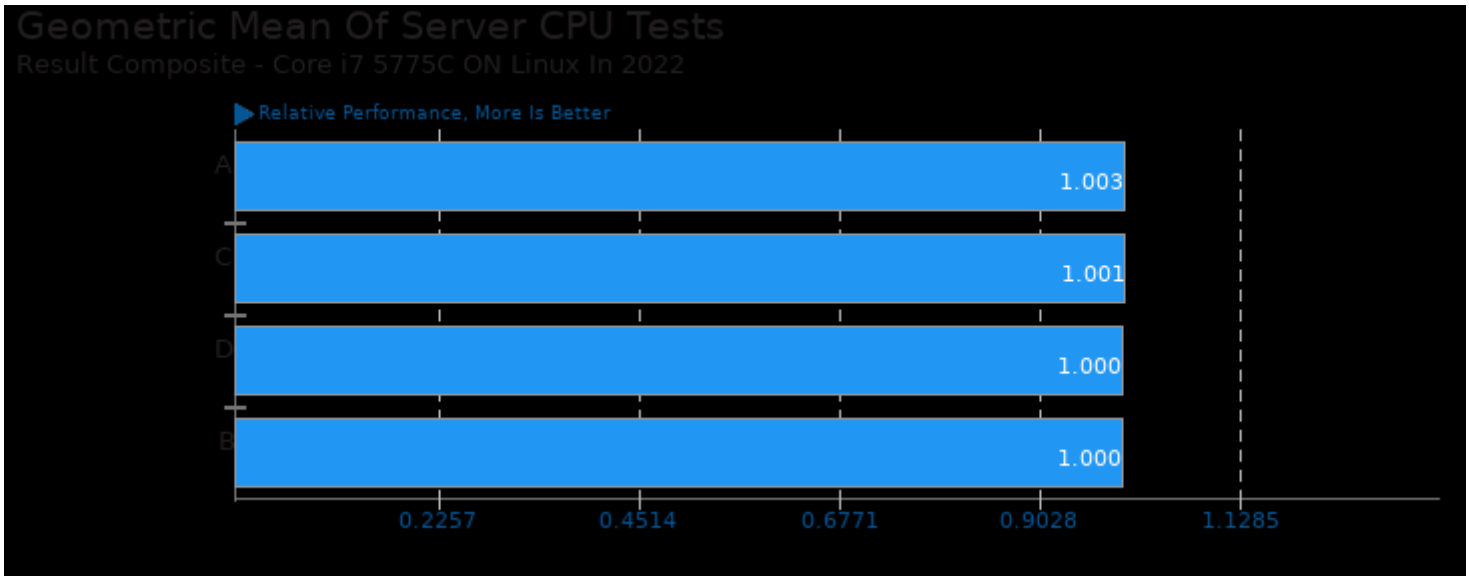
Geometric mean based upon tests: pts/compress-zstd, pts/build-linux-kernel, pts/build-gcc, pts/build-gdb, pts/build-ffmpeg, pts/build-nodejs and pts/build-mesa



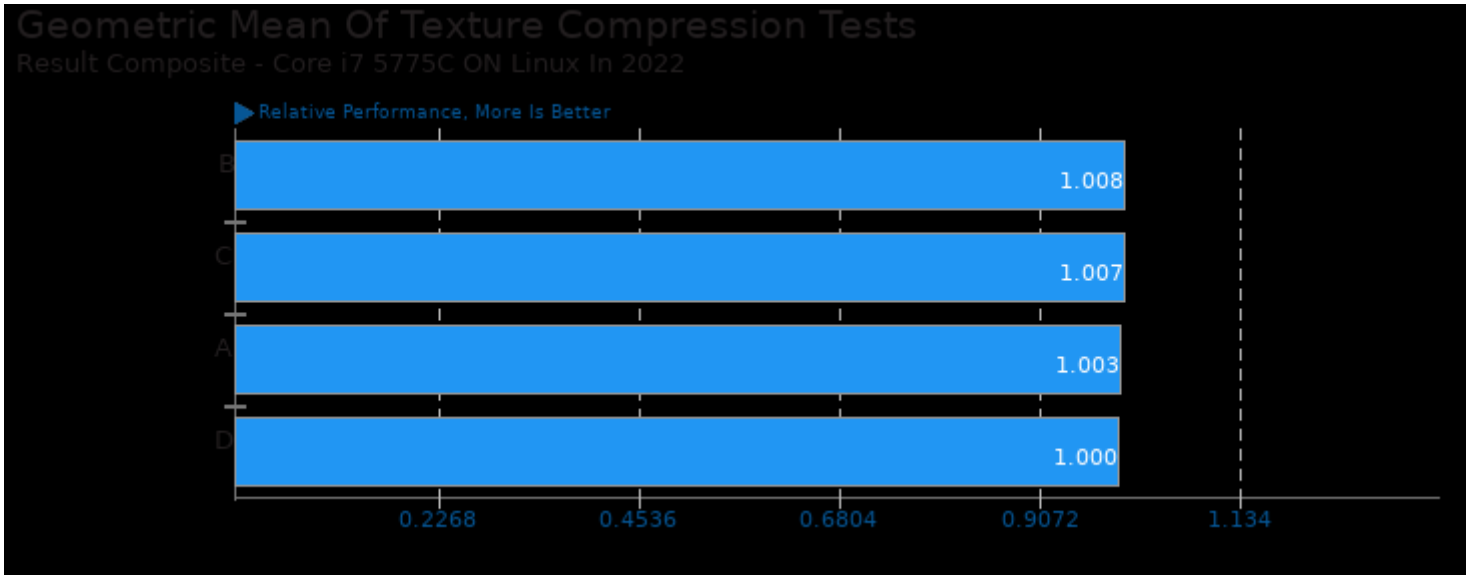
Geometric mean based upon tests: pts/incompact3d and pts/qe



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

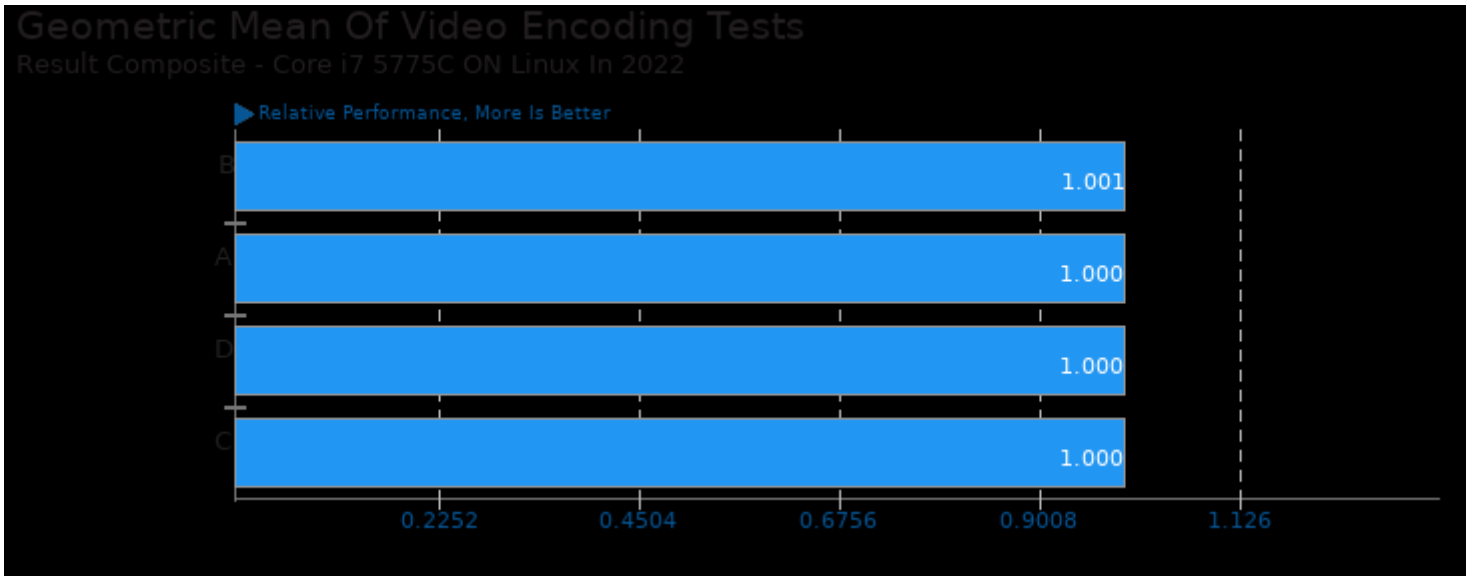


Geometric mean based upon tests: pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/compress-7zip, pts/stockfish, pts/build-gcc, pts/build-linux-kernel, pts/compress-zstd, pts/stress-ng, pts/sysbench, pts/blender and pts/cpuminer-opt



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

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

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