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Radeon Vulkan Drivers Mid-2022

RADV vs AMDVLK Vulkan benchmarks by Michael Larabel for a future article.

Automated Executive Summary

Mesa 22.2-dev had the most wins, coming in first place for 52% of the tests.

Based on the geometric mean of all complete results, the fastest (Mesa 22.0.1) was 1.269x the speed of the slowest (AMDVLK 2022.Q2.3). Mesa 22.2-dev was 0.994x the speed of Mesa 22.0.1 and AMDVLK 2022.Q2.3 was 0.793x the speed of Mesa 22.2-dev.

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

HITMAN 3 (Resolution: 1920 x 1080 - Quality Level: Low) at 8.103x
HITMAN 3 (Resolution: 1920 x 1080 - Quality Level: Ultra) at 7.89x
HITMAN 3 (Resolution: 2560 x 1440 - Quality Level: Ultra) at 6.428x
HITMAN 3 (Resolution: 2560 x 1440 - Quality Level: Low) at 6.306x
VKMark (Resolution: 1920 x 1080 - Present Mode: Mailbox) at 4.359x
VKMark (Resolution: 1920 x 1200 - Present Mode: Mailbox) at 4.23x
VKMark (Resolution: 2560 x 1440 - Present Mode: Mailbox) at 3.95x
HITMAN 3 (Resolution: 3840 x 2160 - Quality Level: Ultra) at 3.734x
VKMark (Resolution: 3840 x 2160 - Present Mode: Mailbox) at 3.248x

yquake2 (Renderer: Vulkan - AF: Off - MSAA: On - Resolution: 2560 x 1440) at 1.765x.

Test Systems:

Mesa 22.0.1

Processor: Intel Core i9-12900K @ 5.20GHz (16 Cores / 24 Threads), Motherboard: ASUS ROG STRIX Z690-E GAMING WIFI (1003 BIOS), Chipset: Intel Device 7aa7, Memory: 32GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 2000GB, Graphics: AMD Radeon RX 6800 XT 16GB (2575/1000MHz), Audio: Intel Device 7ad0, Monitor: ASUS VP28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.04, Kernel: 5.18.0-051800-generic (x86_64), Desktop: GNOME Shell 42.2, Display Server: X Server 1.21.1.3 + Wayland, OpenGL: 4.6 Mesa 22.0.1 (LLVM 13.0.1 DRM 3.46), Vulkan: 1.3.204, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance (EPP: performance) - CPU Microcode: 0x18 - Thermald 2.4.9
Graphics Notes: BAR1 / Visible vRAM Size: 16368 MB - vBIOS Version: 113-D4120500-101
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Mesa 22.2-dev

Processor: Intel Core i9-12900K @ 5.20GHz (16 Cores / 24 Threads), Motherboard: ASUS ROG STRIX Z690-E GAMING WIFI (1003 BIOS), Chipset: Intel Device 7aa7, Memory: 32GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 2000GB, Graphics: AMD Radeon RX 6800 XT 16GB (2575/1000MHz), Audio: Intel Device 7ad0, Monitor: ASUS VP28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.04, Kernel: 5.18.0-051800-generic (x86_64), Desktop: GNOME Shell 42.2, Display Server: X Server 1.21.1.3 + Wayland, OpenGL: 4.6 Mesa 22.2.0-devel (git-deb36dc 2022-06-23 jammy-oibaf-ppa) (LLVM 14.0.5 DRM 3.46), Vulkan: 1.3.217, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance (EPP: performance) - CPU Microcode: 0x18 - Thermald 2.4.9
Graphics Notes: BAR1 / Visible vRAM Size: 16368 MB - vBIOS Version: 113-D4120500-101
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

AMDVLK 2022.Q2.3

Radeon Vulkan Drivers Mid-2022

Processor: Intel Core i9-12900K @ 5.20GHz (16 Cores / 24 Threads), Motherboard: ASUS ROG STRIX Z690-E GAMING WIFI (1003 BIOS), Chipset: Intel Device 7aa7, Memory: 32GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 2000GB, Graphics: AMD Radeon RX 6800 XT 16GB (2575/1000MHz), Audio: Intel Device 7ad0, Monitor: ASUS VP28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.04, Kernel: 5.18.0-051800-generic (x86_64), Desktop: GNOME Shell 42.2, Display Server: X Server 1.21.1.3 + Wayland, OpenGL: 4.6 Mesa 22.0.1 (LLVM 13.0.1 DRM 3.46), Vulkan: 1.3.216, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance (EPP: performance) - CPU Microcode: 0x18 - Thermald 2.4.9
Graphics Notes: BAR1 / Visible vRAM Size: 16368 MB - vBIOS Version: 113-D4120500-101
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Mesa 22.0.1	Mesa 22.2-dev	AMDVLK 2022.Q2.3
GravityMark - 1920 x 1080 - Vulkan (FPS)	216.9	**217.1**	**212.1**
Normalized	99.91%	100%	97.7%
Standard Deviation	0.3%	0.3%	0.6%
GravityMark - 2560 x 1440 - Vulkan (FPS)	192.2	**192.5**	**189.2**
Normalized	99.84%	100%	98.29%
Standard Deviation	0%	0.1%	1.2%
GravityMark - 3840 x 2160 - Vulkan (FPS)	**143.3**	143.7	**145.5**
Normalized	98.49%	98.76%	100%
Standard Deviation	0%	0%	2.2%
Batman: Arkham Knight - 1920 x 1080 - High (FPS)	262.51	**258.66**	**265.01**
Normalized	99.06%	97.6%	100%
Standard Deviation	0.6%	0.3%	0.3%
Batman: Arkham Knight - 2560 x 1440 - High (FPS)	240.48	**240.90**	**234.71**
Normalized	99.83%	100%	97.43%
Standard Deviation	1.1%	0.8%	1.1%
Batman: Arkham Knight - 3840 x 2160 - High (FPS)	**141.13**	141.11	**135.00**
Normalized	100%	99.99%	95.66%
Standard Deviation	0.9%	0.3%	0.7%
Civilization VI - Lowest - 3840 x 2160 (FPS)	94.49	**90.88**	**95.83**
Normalized	98.6%	94.83%	100%
Standard Deviation	1.2%	0.3%	0.6%
Civilization VI - Highest - 3840 x 2160 (FPS)	71.46	**68.33**	**71.87**
Normalized	99.43%	95.07%	100%
Standard Deviation	0.4%	1.3%	0.2%
DiRT Rally 2.0 - 2560 x 1080 - Low (FPS)	449.646871	**428.297363**	**452.778117**
Normalized	99.31%	94.59%	100%

Radeon Vulkan Drivers Mid-2022

Standard Deviation	0.1%	0.3%	0.8%
DiRT Rally 2.0 - 3840 x 1600 - Low (FPS)	**424.248779**	412.674784	**385.470713**
Normalized	100%	97.27%	90.86%
Standard Deviation	0.5%	0.6%	0.1%
DiRT Rally 2.0 - 2560 x 1080 - High (FPS)	326.018127	**327.256478**	**316.709696**
Normalized	99.62%	100%	96.78%
Standard Deviation	0.3%	4.8%	1.7%
DiRT Rally 2.0 - 3840 x 1600 - High (FPS)	227.547353	**227.698099**	**209.116043**
Normalized	99.93%	100%	91.84%
Standard Deviation	0.1%	0.1%	0%
DiRT Rally 2.0 - 2560 x 1080 - Ultra (FPS)	204.367462	**204.936305**	**193.115789**
Normalized	99.72%	100%	94.23%
Standard Deviation	0%	0%	0%
DiRT Rally 2.0 - 3840 x 1600 - Ultra (FPS)	132.121582	**132.381541**	**124.466738**
Normalized	99.8%	100%	94.02%
Standard Deviation	0.1%	0%	0.1%
F1 2021 - 2560 x 1440 - High (FPS)	**254**	**271**	
Normalized	93.73%	100%	
Standard Deviation	0.6%	0.2%	
F1 2021 - 3840 x 2160 - High (FPS)	**150**	**156**	
Normalized	96.15%	100%	
Standard Deviation	0.4%	0.4%	
F1 2021 - 1920 x 1080 - Medium (FPS)	**392**	**414**	
Normalized	94.69%	100%	
Standard Deviation	0.5%	0.8%	
F1 2021 - 2560 x 1440 - Medium (FPS)	**296**	**313**	
Normalized	94.57%	100%	
Standard Deviation	0.2%	0.4%	
F1 2021 - 3840 x 2160 - Medium (FPS)	**167**	**173**	
Normalized	96.53%	100%	
Standard Deviation	0.3%	0.3%	
F1 2021 - 1920 x 1080 - Ultra High (FPS)	**231**	**252**	
Normalized	91.67%	100%	
Standard Deviation	0.2%	0.2%	
F1 2021 - 2560 x 1440 - Ultra High (FPS)	**178**	**190**	
Normalized	93.68%	100%	
Standard Deviation	0.3%	0.3%	
F1 2021 - 3840 x 2160 - Ultra High (FPS)	**106**	**111**	
Normalized	95.5%	100%	
Standard Deviation	0%	0.5%	
HITMAN 2 - 1920 x 1080 - Low (FPS)	150.76	**146.42**	**152.17**
Normalized	99.07%	96.22%	100%
Standard Deviation	0.3%	0.4%	0.7%
HITMAN 2 - 2560 x 1440 - Low (FPS)	150.99	**146.09**	**151.24**
Normalized	99.83%	96.59%	100%
Standard Deviation	0.4%	0.5%	0.5%
HITMAN 2 - 3840 x 2160 - Low (FPS)	**116.22**	116.13	**108.31**
Normalized	100%	99.92%	93.19%
Standard Deviation	0.1%	0.3%	0.1%
HITMAN 2 - 1920 x 1080 - Ultra (FPS)	140.75	**136.17**	**141.46**
Normalized	99.5%	96.26%	100%
Standard Deviation	0.4%	0.7%	0.5%
HITMAN 2 - 2560 x 1440 - Ultra (FPS)	140.55	**135.90**	**141.37**
Normalized	99.42%	96.13%	100%
Standard Deviation	0.2%	0.4%	0.5%

Radeon Vulkan Drivers Mid-2022

HITMAN 2 - 3840 x 2160 - Ultra (FPS)	106.68	**106.71**	**100.10**
Normalized	99.97%	100%	93.81%
Standard Deviation	0.2%	0.3%	0.2%
HITMAN 2 - 1920 x 1080 - Medium (FPS)	149.36	**143.70**	**150.43**
Normalized	99.29%	95.53%	100%
Standard Deviation	0.6%	1%	0.5%
HITMAN 2 - 2560 x 1440 - Medium (FPS)	149.83	**143.99**	**149.86**
Normalized	99.98%	96.08%	100%
Standard Deviation	0.9%	0.4%	0.4%
HITMAN 2 - 3840 x 2160 - Medium (FPS)	113.62	**113.74**	**106.33**
Normalized	99.89%	100%	93.49%
Standard Deviation	0%	0.3%	0.1%
HITMAN 3 - 1920 x 1080 - Low (FPS)	298.41	**307.19**	**37.91**
Normalized	97.14%	100%	12.34%
Standard Deviation	0.6%	1.6%	0.1%
HITMAN 3 - 2560 x 1440 - Low (FPS)	217.35	**228.08**	**36.17**
Normalized	95.3%	100%	15.86%
Standard Deviation	0.6%	0.1%	0.2%
HITMAN 3 - 1920 x 1080 - Ultra (FPS)	274.82	**275.13**	**34.87**
Normalized	99.89%	100%	12.67%
Standard Deviation	0.9%	0.4%	0.1%
HITMAN 3 - 2560 x 1440 - Ultra (FPS)	205.52	**214.70**	**33.40**
Normalized	95.72%	100%	15.56%
Standard Deviation	0%	0.4%	0.2%
HITMAN 3 - 3840 x 2160 - Ultra (FPS)	117.20	**121.35**	**32.50**
Normalized	96.58%	100%	26.78%
Standard Deviation	0.4%	0.2%	0.4%
Half-Life 2: Episode Two - 2560 x 1440 - Vulkan (FPS)	**863.26**	**854.26**	
Normalized	100%	98.96%	
Standard Deviation	0.1%	0.1%	
Half-Life 2: Episode Two - 3840 x 2160 - Vulkan (FPS)	**613.82**	**611.45**	
Normalized	100%	99.61%	
Standard Deviation	0.1%	0.1%	
Shadow of the Tomb Raider - 1920 x 1080 - Low - Off (FPS)	284.4	**284.1**	**288.7**
Normalized	98.51%	98.41%	100%
Standard Deviation	0.2%	0.8%	0.5%
Shadow of the Tomb Raider - 1920 x 1080 - Low - TAA (FPS)	285.8	**282.5**	**289.9**
Normalized	98.59%	97.45%	100%
Standard Deviation	0.8%	0.4%	0.9%
Shadow of the Tomb Raider - 2560 x 1440 - Low - Off (FPS)	257.9	**257.7**	**258.1**
Normalized	99.92%	99.85%	100%
Standard Deviation	0.3%	0.3%	0.3%
Shadow of the Tomb Raider - 2560 x 1440 - Low - TAA (FPS)	**257.8**	256.7	**255.8**
Normalized	100%	99.57%	99.22%
Standard Deviation	0.1%	0.3%	0.9%
Shadow of the Tomb Raider - 3840 x 2160 - Low - Off (FPS)	151.2	**151.5**	**150.9**
Normalized	99.8%	100%	99.6%

Standard Deviation	0.2%	0.1%	0.2%
Shadow of the Tomb Raider - 3840 x 2160 - Low - TAA (FPS)	151.1	**151.6**	**150.5**
Normalized	99.67%	100%	99.27%
Standard Deviation	0%	0%	0%
Shadow of the Tomb Raider - 1920 x 1080 - Highest - Off (FPS)	**241.1**	240.4	**239.9**
Normalized	100%	99.71%	99.5%
Standard Deviation	0.2%	0.3%	0.2%
Shadow of the Tomb Raider - 1920 x 1080 - Highest - TAA (FPS)	**241.9**	241.2	**238.6**
Normalized	100%	99.71%	98.64%
Standard Deviation	0.3%	0.3%	0.2%
Shadow of the Tomb Raider - 2560 x 1440 - Highest - Off (FPS)	177.2	**177.6**	**174.5**
Normalized	99.77%	100%	98.25%
Standard Deviation	0.1%	0.1%	0.1%
Shadow of the Tomb Raider - 2560 x 1440 - Highest - TAA (FPS)	176.9	**177.6**	**174.5**
Normalized	99.61%	100%	98.25%
Standard Deviation	0.1%	0.1%	0.1%
Shadow of the Tomb Raider - 3840 x 2160 - Highest - Off (FPS)	**94.6**	**94.8**	94.7
Normalized	99.79%	100%	99.89%
Standard Deviation	0%	0.1%	0.2%
Shadow of the Tomb Raider - 3840 x 2160 - Highest - TAA (FPS)	**94.6**	**94.7**	**94.6**
Normalized	99.89%	100%	99.89%
Standard Deviation	0.1%	0%	0.1%
Strange Brigade - 1920 x 1080 - Low (FPS)	240.7	**229.7**	**255.2**
Normalized	94.32%	90.01%	100%
Standard Deviation	0.9%	0.5%	0.3%
Strange Brigade - 2560 x 1440 - Low (FPS)	242.4	**229.4**	**254.4**
Normalized	95.28%	90.17%	100%
Standard Deviation	0.2%	0.4%	0.5%
Strange Brigade - 3840 x 2160 - Low (FPS)	200.7	**201.7**	**192.2**
Normalized	99.5%	100%	95.29%
Standard Deviation	0.4%	0.4%	0.3%
Strange Brigade - 1920 x 1080 - High (FPS)	224.9	**215.5**	**235.8**
Normalized	95.38%	91.39%	100%
Standard Deviation	0.4%	0.5%	0.3%
Strange Brigade - 2560 x 1440 - High (FPS)	225.6	**215.8**	**235.8**
Normalized	95.67%	91.52%	100%
Standard Deviation	0.9%	0%	0.5%
Strange Brigade - 3840 x 2160 - High (FPS)	169.0	**170.6**	**165.4**
Normalized	99.06%	100%	96.95%
Standard Deviation	0.3%	0.2%	0.3%
Strange Brigade - 1920 x 1080 - Ultra (FPS)	225.0	**214.4**	**235.5**
Normalized	95.54%	91.04%	100%
Standard Deviation	0.1%	0.6%	0.6%
Strange Brigade - 2560 x 1440 - Ultra (FPS)	225.1	**215.6**	**236.1**
Normalized	95.34%	91.32%	100%
Standard Deviation	0.1%	0.3%	0.2%
Strange Brigade - 3840 x 2160 - Ultra (FPS)	160.0	**161.3**	**156.6**

Radeon Vulkan Drivers Mid-2022

Normalized	99.19%	100%	97.09%
Standard Deviation	0.4%	0.8%	0.4%
Total War: Three Kingdoms - 1920 x 1080 - Low - Battle Benchmark (FPS)	**333.0**	323.0	**295.4**
Normalized	100%	97%	88.71%
Standard Deviation	1.7%	2.3%	1.7%
Total War: Three Kingdoms - 2560 x 1440 - Low - Battle Benchmark (FPS)	**285.0**	279.8	**259.5**
Normalized	100%	98.18%	91.05%
Standard Deviation	0.8%	0.6%	0.5%
Total War: Three Kingdoms - 3840 x 2160 - Low - Battle Benchmark (FPS)	**146.3**	143.8	**136.4**
Normalized	100%	98.29%	93.23%
Standard Deviation	1.1%	0.8%	1%
Total War: Three Kingdoms - 1920 x 1080 - Ultra - Battle Benchmark (FPS)	**139.9**	136.4	**128.7**
Normalized	100%	97.5%	91.99%
Standard Deviation	0.9%	1.2%	0.6%
Total War: Three Kingdoms - 2560 x 1440 - Ultra - Battle Benchmark (FPS)	**89.1**	88.0	**84.6**
Normalized	100%	98.77%	94.95%
Standard Deviation	0.3%	0.5%	1.2%
Total War: Three Kingdoms - 3840 x 2160 - Ultra - Battle Benchmark (FPS)	41.9	**42.1**	**41.0**
Normalized	99.52%	100%	97.39%
Standard Deviation	1%	1.1%	0.5%
Total War: WARHAMMER III - 1920 x 1080 - High - Battle Benchmark (FPS)	141.4	**142.5**	**126.1**
Normalized	99.23%	100%	88.49%
Standard Deviation	0.2%	0.4%	0.3%
Total War: WARHAMMER III - 2560 x 1440 - High - Battle Benchmark (FPS)	**96.2**	95.8	**85.3**
Normalized	100%	99.58%	88.67%
Standard Deviation	0.3%	0.5%	0.3%
Total War: WARHAMMER III - 3840 x 2160 - High - Battle Benchmark (FPS)	**48.4**	**48.4**	**42.3**
Normalized	100%	100%	87.4%
Standard Deviation	0.2%	0.2%	0.4%
Total War: WARHAMMER III - 1920 x 1080 - Ultra - Battle Benchmark (FPS)	120.5	**121.6**	**107.6**
Normalized	99.1%	100%	88.49%
Standard Deviation	0.1%	0.7%	0.1%
Total War: WARHAMMER III - 2560 x 1440 - Ultra - Battle Benchmark (FPS)	**84.6**	84.4	**75.3**
Normalized	100%	99.76%	89.01%
Standard Deviation	0.1%	0.1%	0.3%
Total War: WARHAMMER III - 3840 x 2160 - Ultra - Battle Benchmark (FPS)	44.3	**44.4**	**38.9**
Normalized	99.77%	100%	87.61%
Standard Deviation	0.1%	0.1%	0%
Total War: WARHAMMER III - 1920 x 1080 - Medium - Battle Benchmark (FPS)	190.7	**195.6**	**173.5**
Normalized	97.49%	100%	88.7%

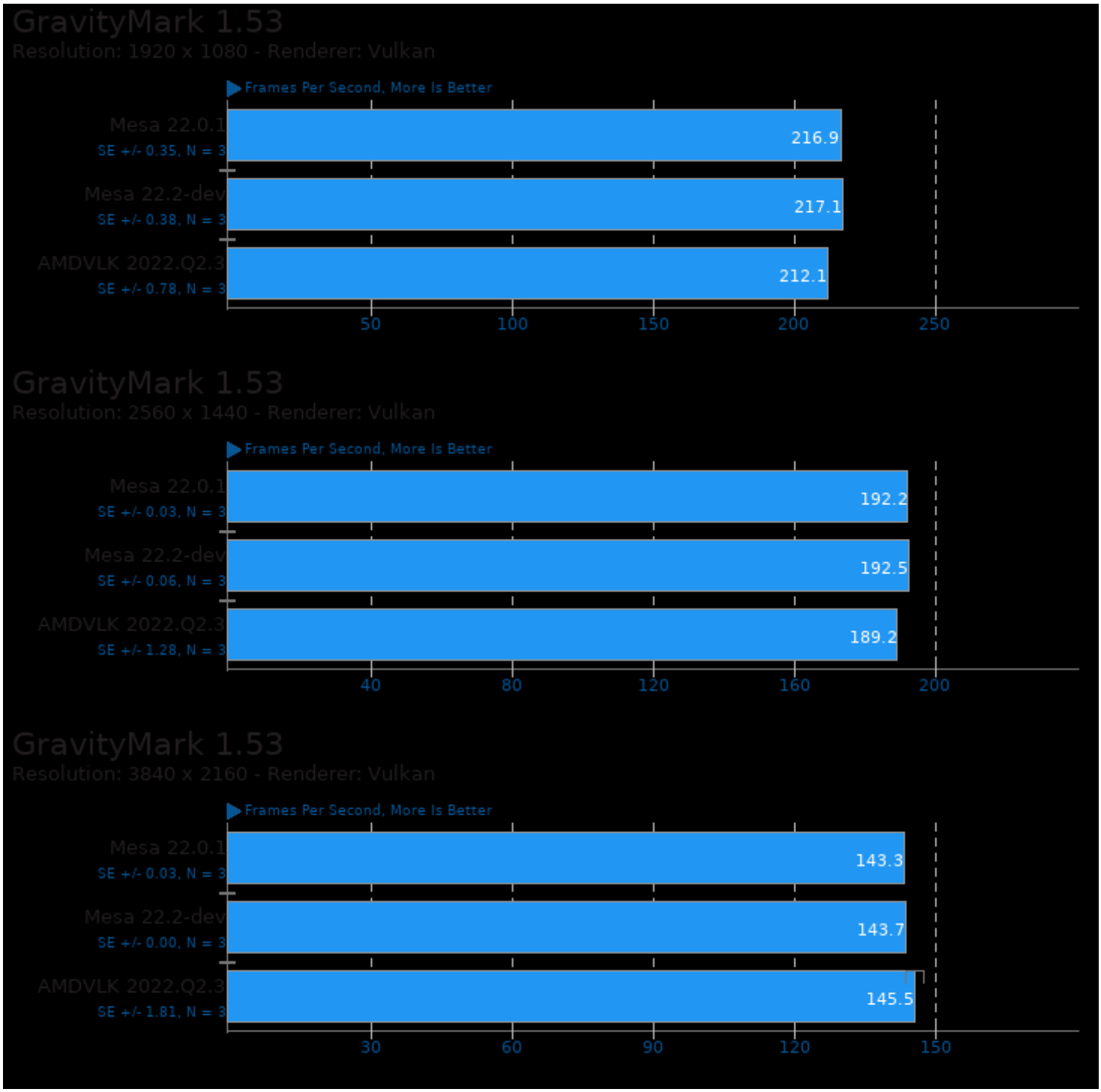
Radeon Vulkan Drivers Mid-2022

Standard Deviation	0.6%	0.5%	0.1%
Total War: WARHAMMER III - 2560 x 1440 - Medium - Battle Benchmark (FPS)	126.6	**127.2**	**116.6**
Normalized	99.53%	100%	91.67%
Standard Deviation	0.2%	0.3%	0.2%
Total War: WARHAMMER III - 3840 x 2160 - Medium - Battle Benchmark (FPS)	62.1	**62.3**	**56.7**
Normalized	99.68%	100%	91.01%
Standard Deviation	0.1%	0%	0.2%
yquake2 - Vulkan - On - On - 1920 x 1080 (FPS)	1785	**1787**	**1443**
Normalized	99.9%	100%	80.74%
Standard Deviation	0.3%	0.2%	0%
yquake2 - Vulkan - On - On - 2560 x 1440 (FPS)	1142	**1144**	**664.1**
Normalized	99.89%	100%	58.08%
Standard Deviation	0.1%	0.2%	0.2%
yquake2 - Vulkan - On - On - 3840 x 2160 (FPS)	**421.8**	421.6	**278.3**
Normalized	100%	99.95%	65.98%
Standard Deviation	0.1%	0.7%	0.2%
yquake2 - Vulkan - Off - On - 1920 x 1080 (FPS)	1848	**1861**	**1479**
Normalized	99.32%	100%	79.48%
Standard Deviation	0%	0.3%	0.1%
yquake2 - Vulkan - Off - On - 2560 x 1440 (FPS)	1171	**1176**	**666.5**
Normalized	99.57%	100%	56.67%
Standard Deviation	0.2%	0.1%	0.3%
yquake2 - Vulkan - Off - On - 3840 x 2160 (FPS)	**425.6**	**425.6**	**277.9**
Normalized	100%	100%	65.3%
Standard Deviation	0.1%	0.1%	0.2%
yquake2 - Vulkan - On - Off - 1920 x 1080 (FPS)	4232	**4224**	**4389**
Normalized	96.42%	96.23%	100%
Standard Deviation	0.4%	1.9%	1.2%
yquake2 - Vulkan - On - Off - 2560 x 1440 (FPS)	**3846**	3823	**3770**
Normalized	100%	99.39%	98.01%
Standard Deviation	0.4%	0.3%	0.7%
yquake2 - Vulkan - On - Off - 3840 x 2160 (FPS)	2674	**2686**	**1933**
Normalized	99.58%	100%	71.97%
Standard Deviation	0.5%	0.2%	0.3%
yquake2 - Vulkan - Off - Off - 1920 x 1080 (FPS)	4252	**4177**	**4431**
Normalized	95.96%	94.27%	100%
Standard Deviation	1.4%	1.4%	1.5%
yquake2 - Vulkan - Off - Off - 2560 x 1440 (FPS)	3854	**3886**	**3800**
Normalized	99.19%	100%	97.79%
Standard Deviation	1.1%	0.9%	0.9%

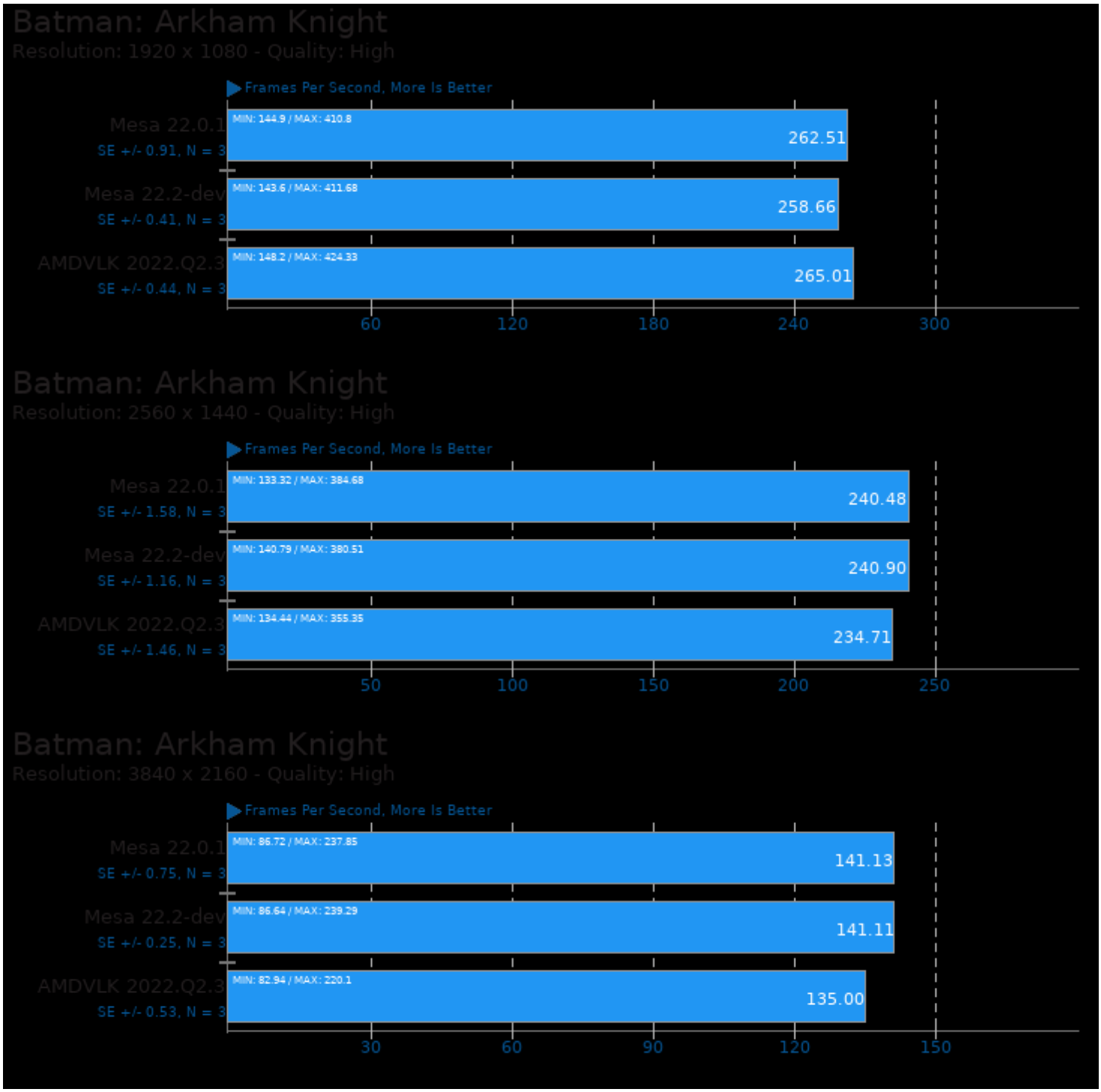
Radeon Vulkan Drivers Mid-2022

yquake2 - Vulkan - Off - Off - 3840 x 2160 (FPS)	2697	**2709**	**1941**
Normalized	99.58%	100%	71.65%
Standard Deviation	0.2%	0.2%	0.2%
X-Plane - 3840 x 2160 - Very High - Vulkan (FPS)	**108.37**	107.85	**103.93**
Normalized	100%	99.52%	95.9%
Standard Deviation	0.4%	0.1%	0.3%
VKMark - 1920 x 1080 - Mailbox (VKMark Score)	39152	**39270**	**9008**
Normalized	99.7%	100%	22.94%
Standard Deviation	0.1%	0%	0.5%
VKMark - 1920 x 1200 - Mailbox (VKMark Score)	**37953**	37749	**8973**
Normalized	100%	99.46%	23.64%
Standard Deviation	0.2%	0.2%	0.1%
VKMark - 2560 x 1440 - Mailbox (VKMark Score)	34968	**35224**	**8917**
Normalized	99.27%	100%	25.32%
Standard Deviation	0%	0%	0.1%
VKMark - 3840 x 2160 - Mailbox (VKMark Score)	27837	**27982**	**8614**
Normalized	99.48%	100%	30.78%
Standard Deviation	0%	0%	0.3%

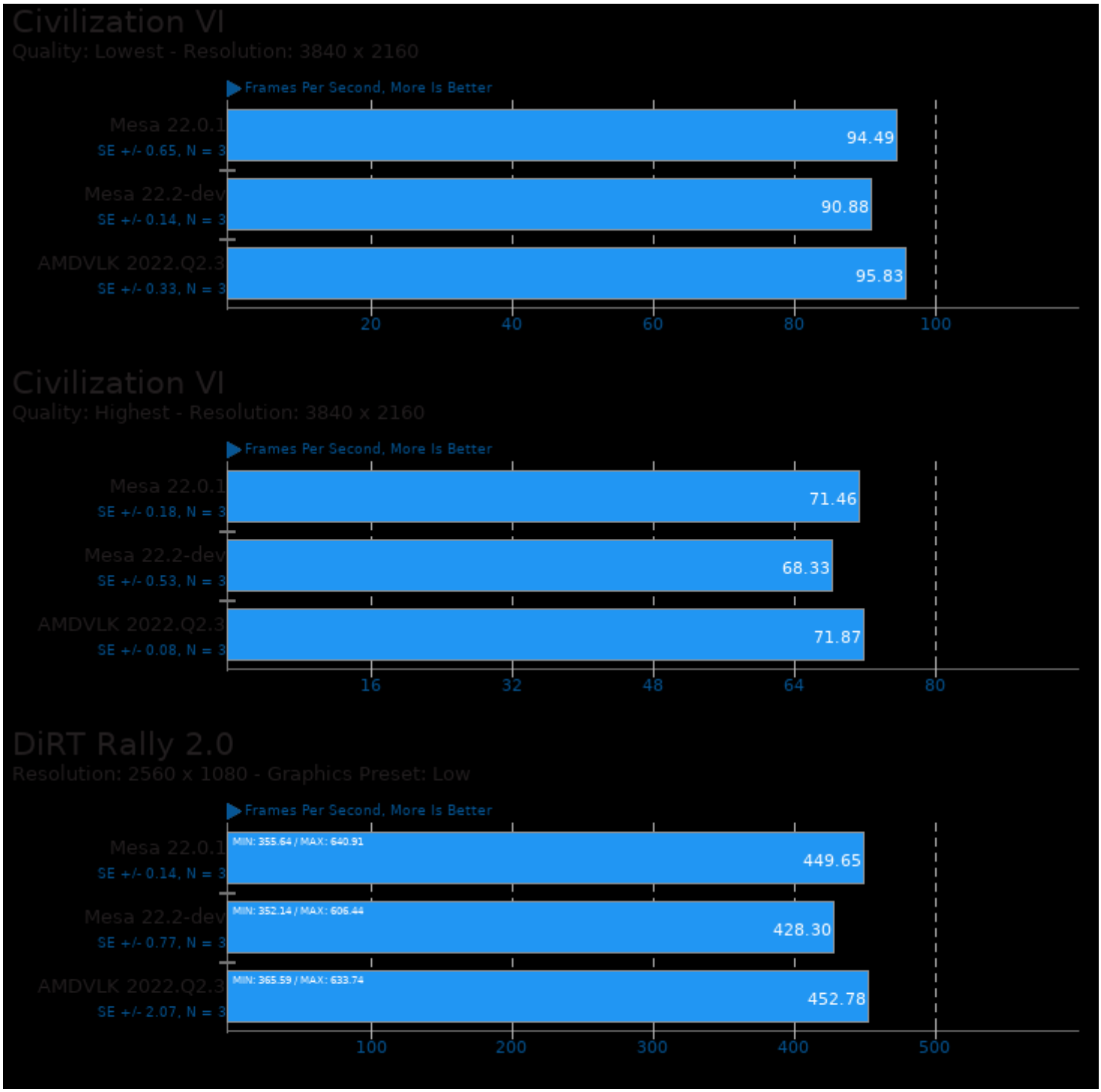
Radeon Vulkan Drivers Mid-2022



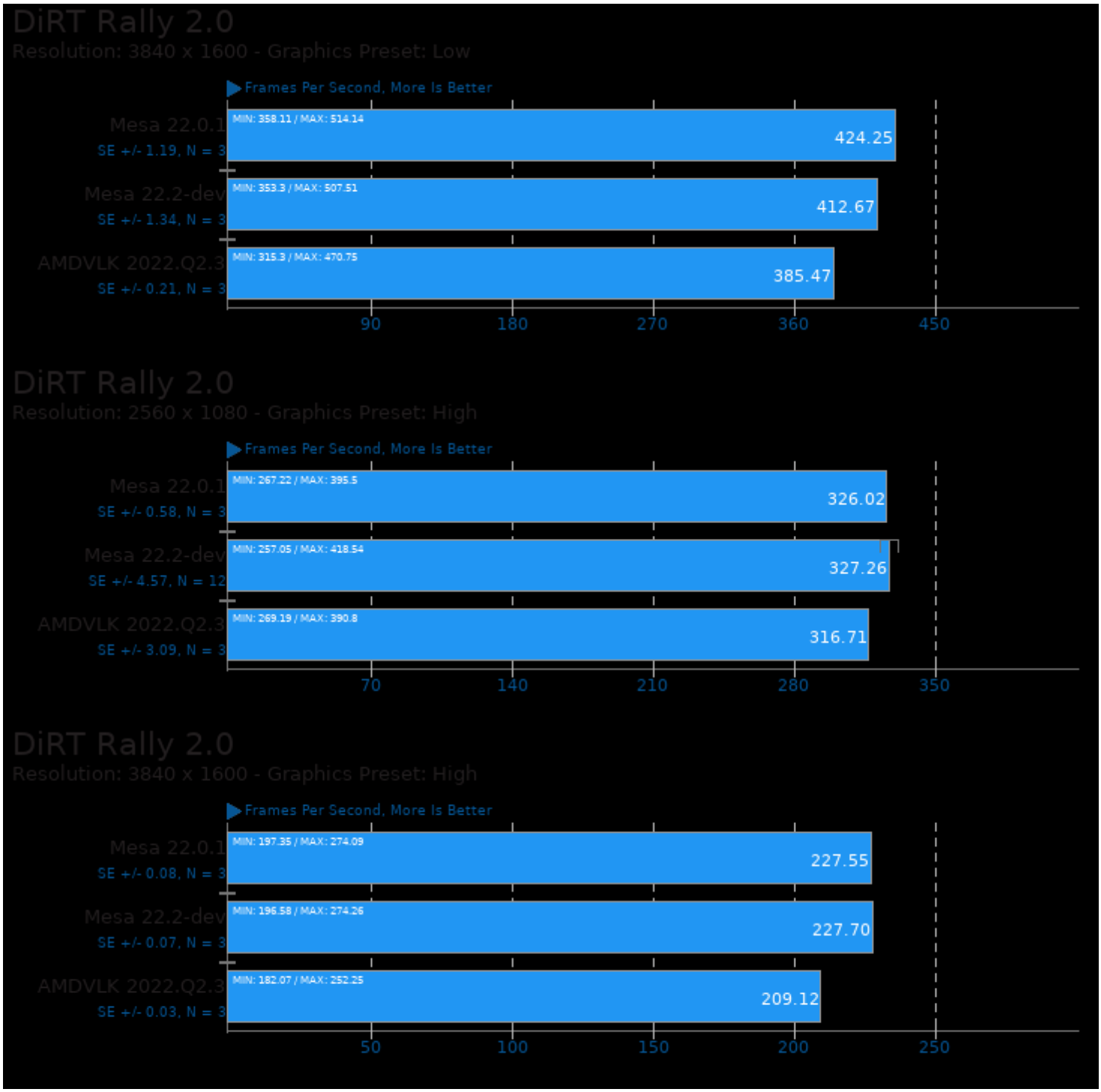
Radeon Vulkan Drivers Mid-2022



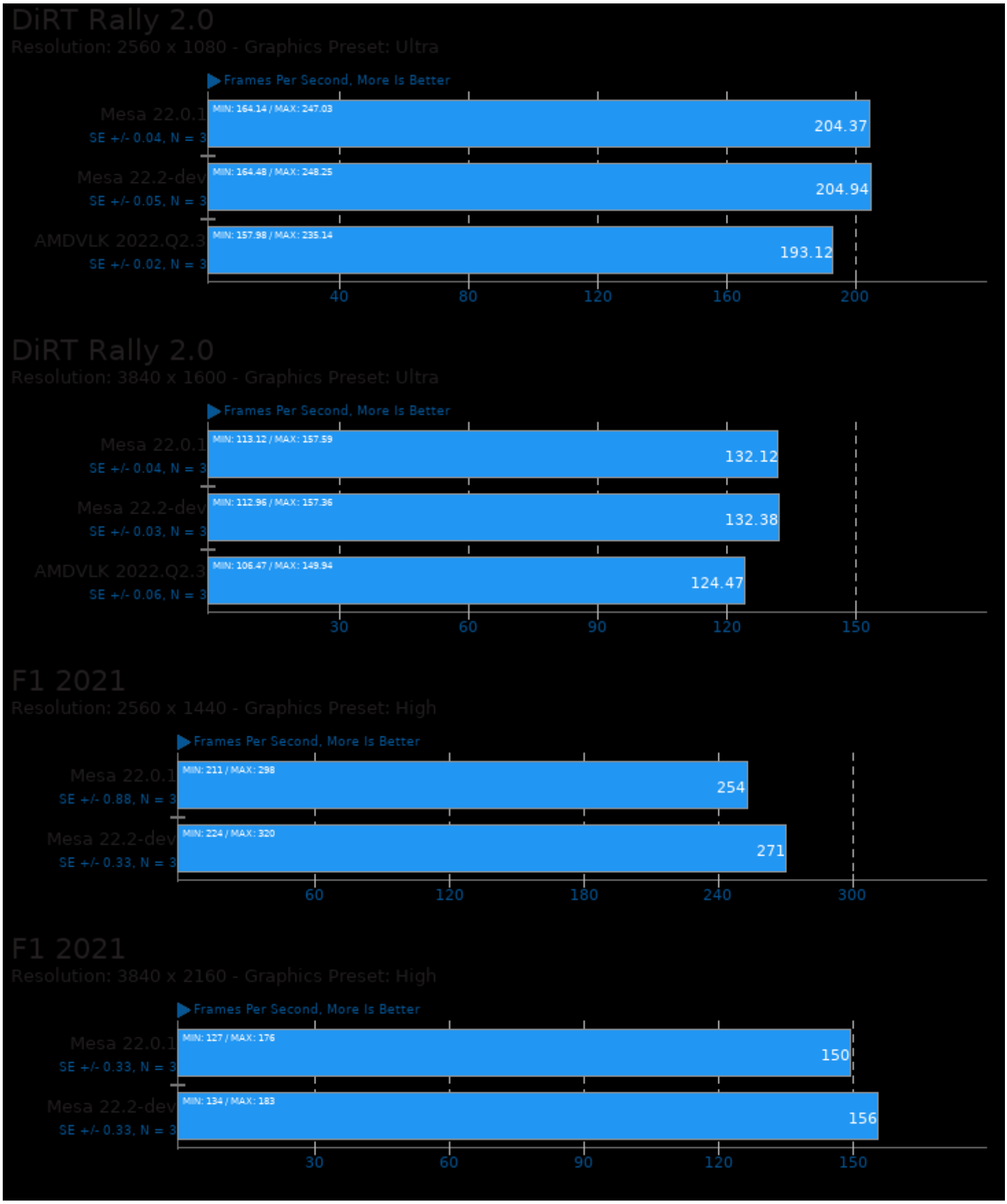
Radeon Vulkan Drivers Mid-2022



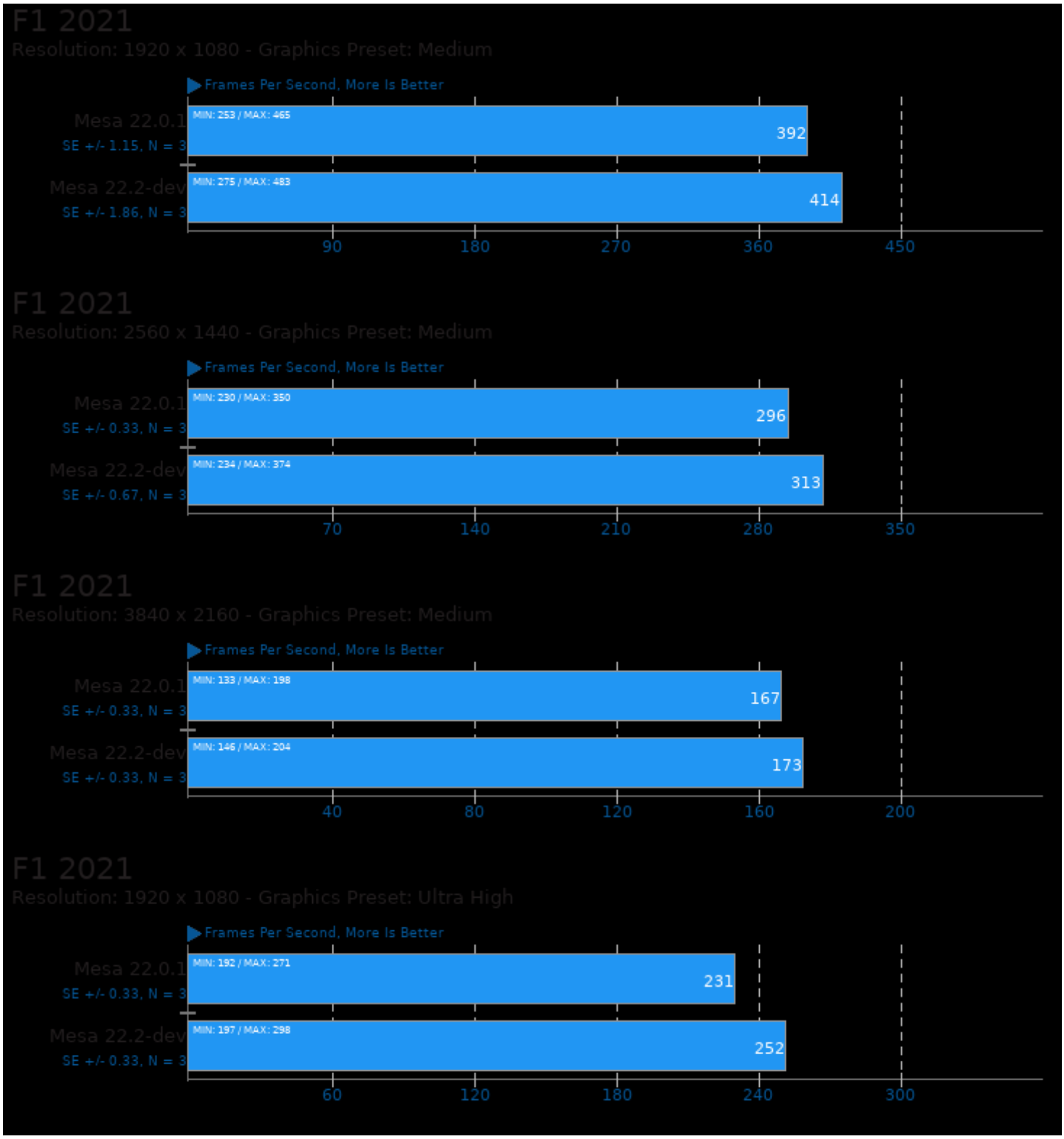
Radeon Vulkan Drivers Mid-2022



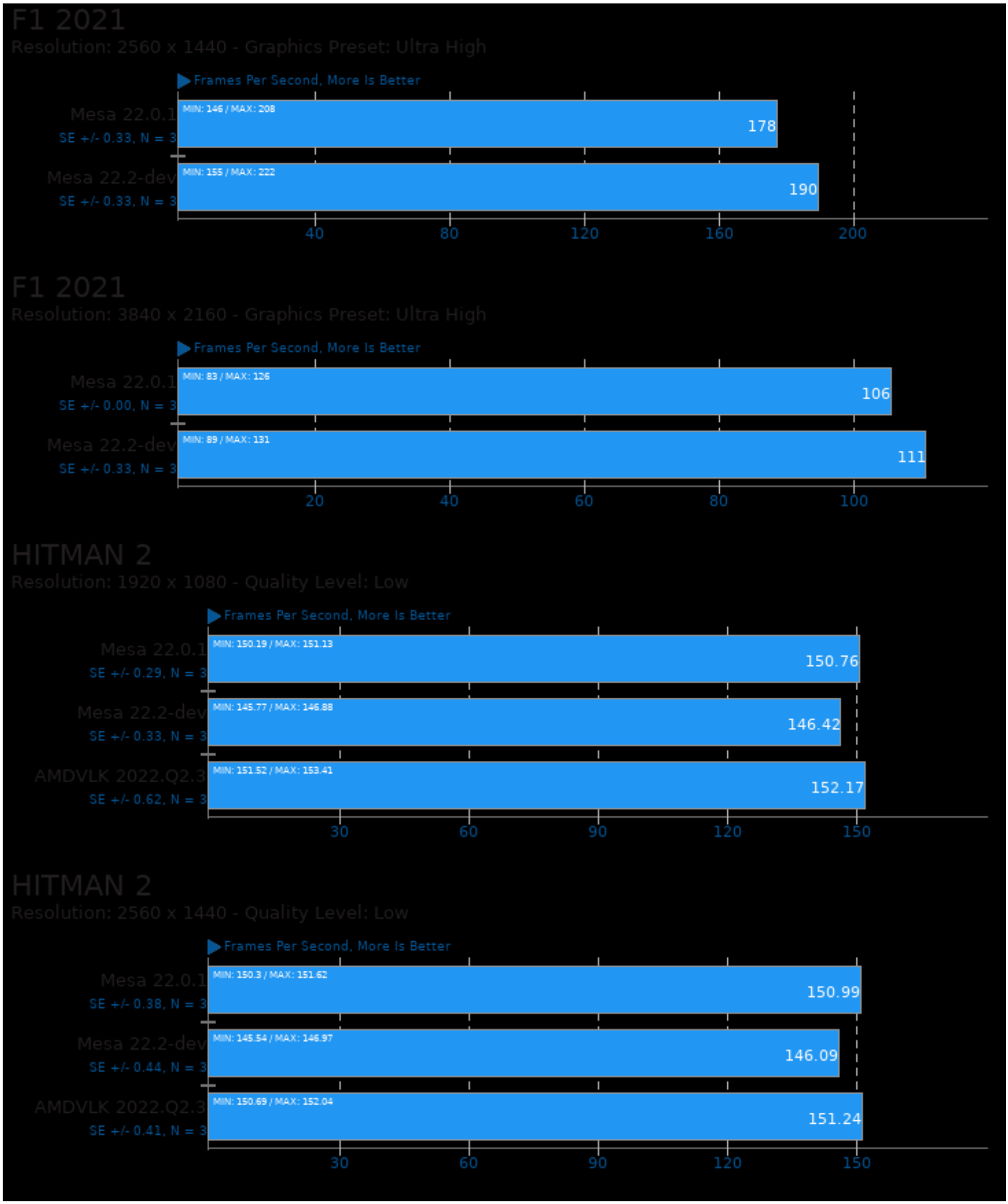
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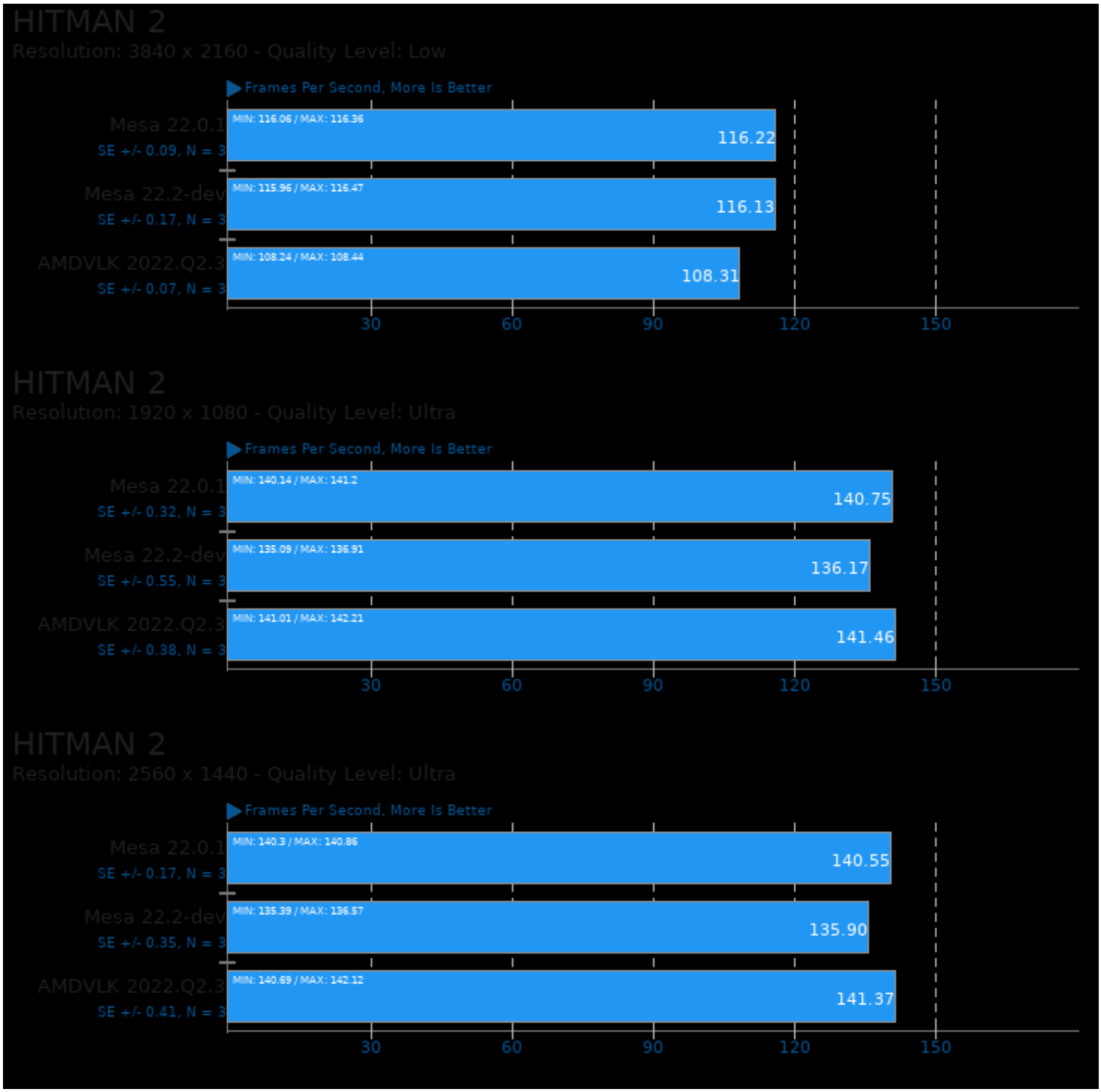
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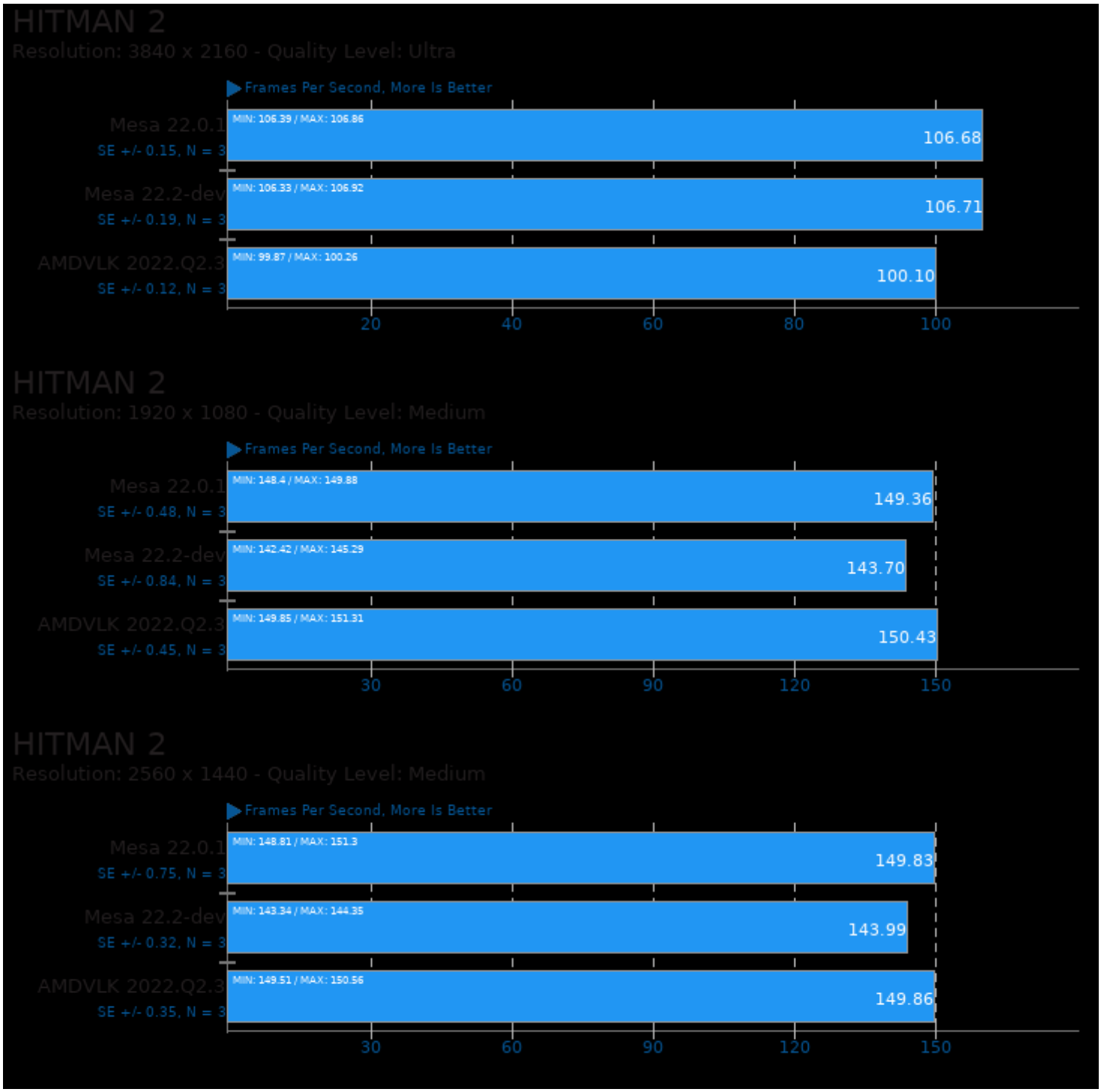
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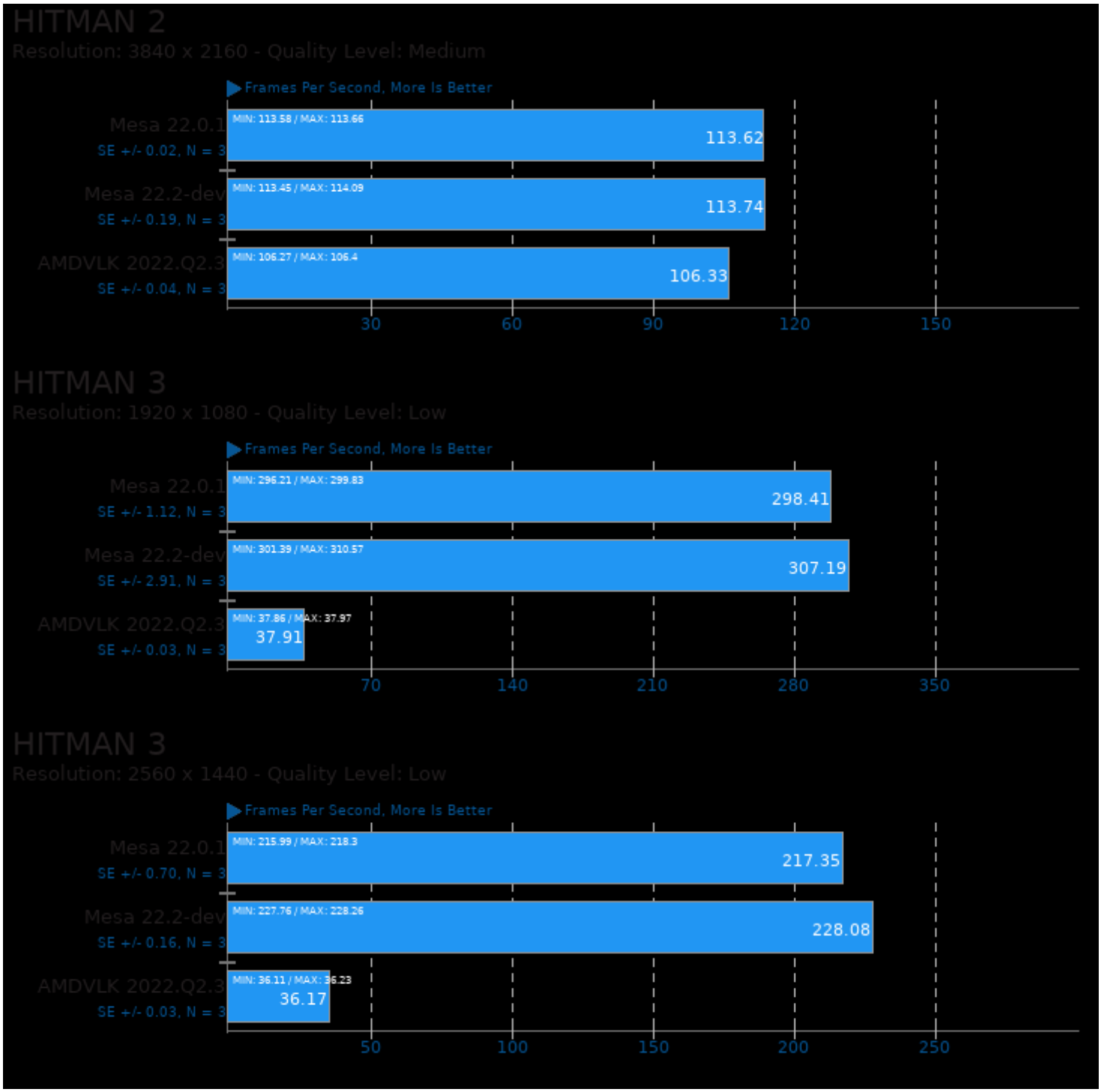
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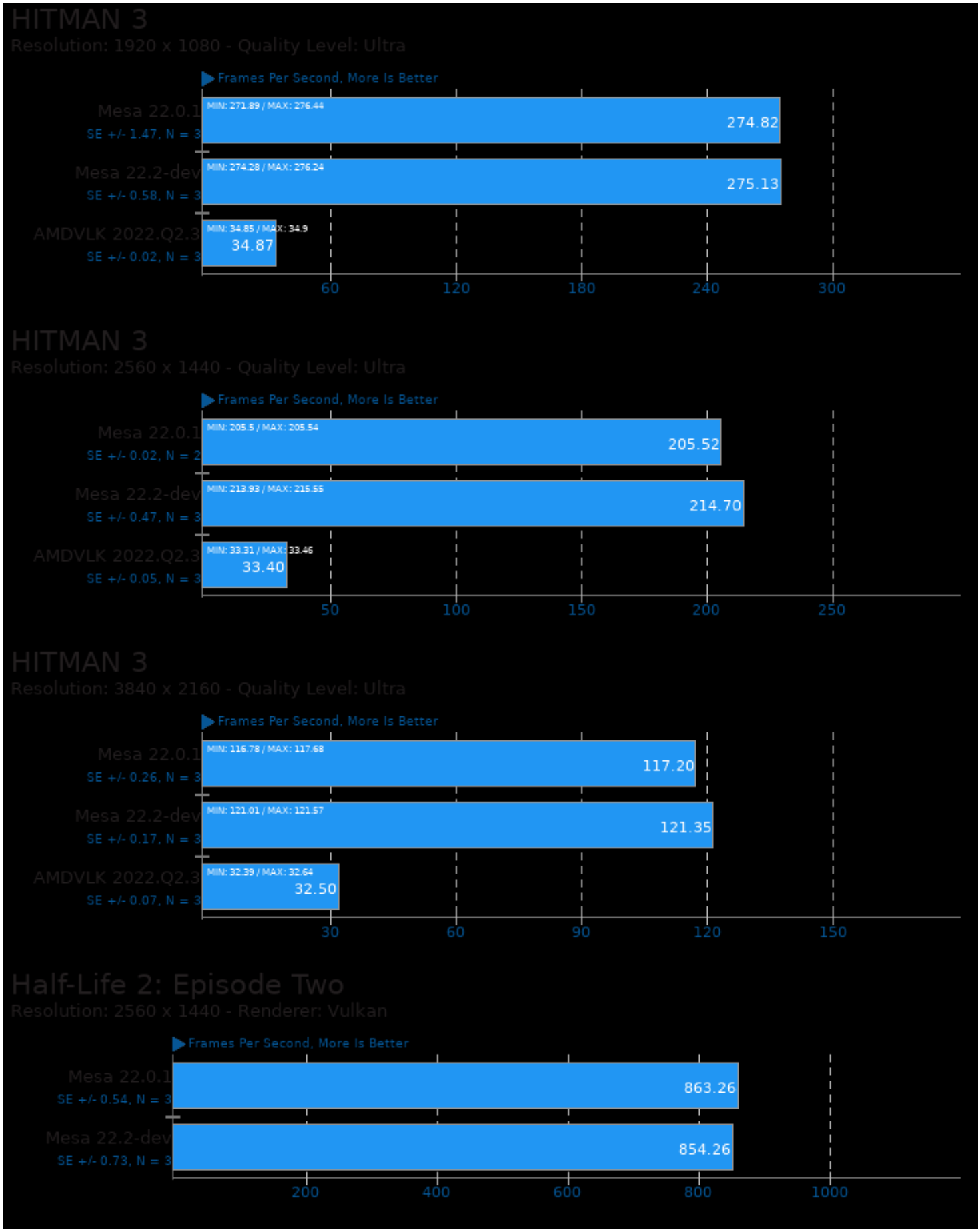
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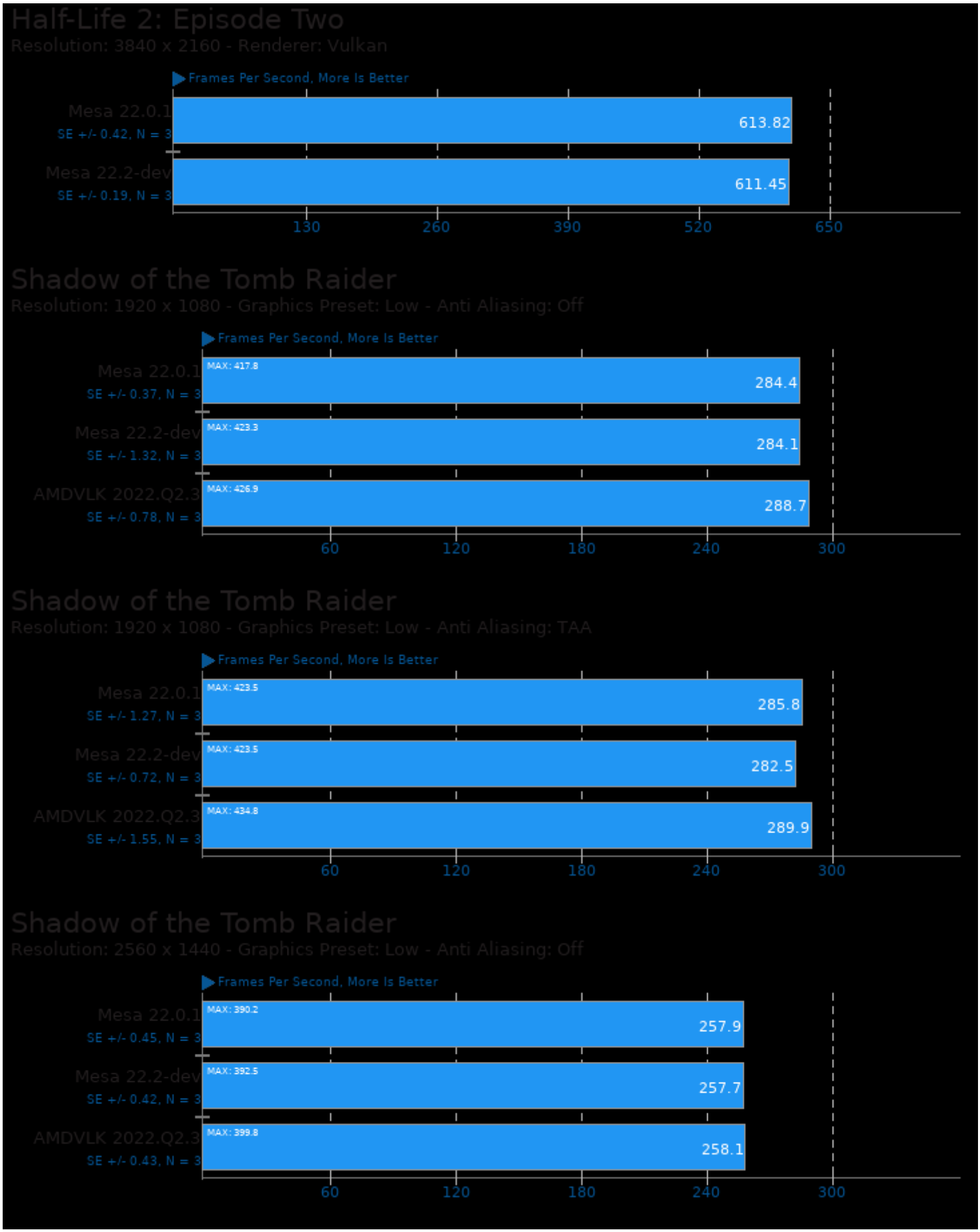
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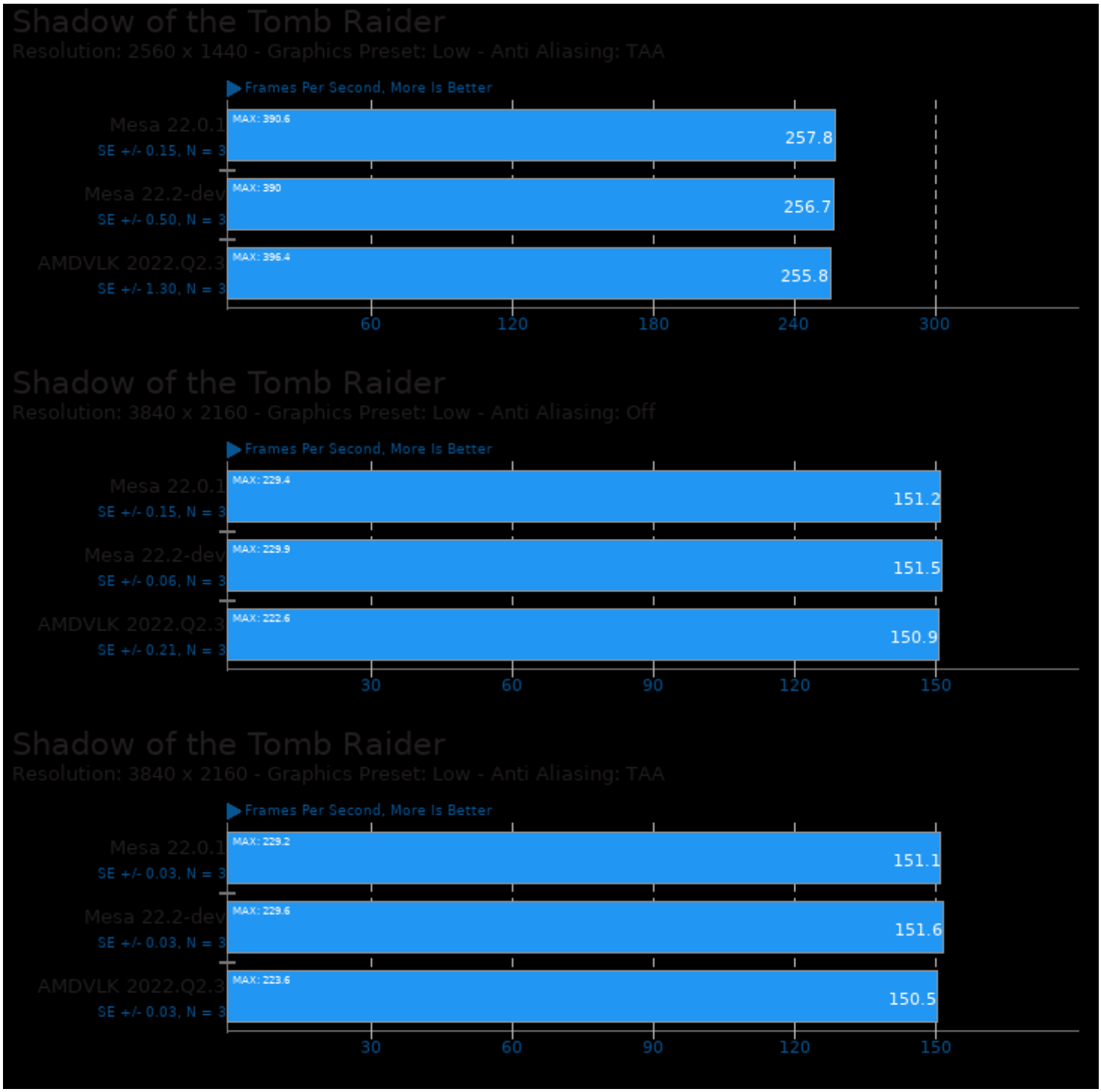
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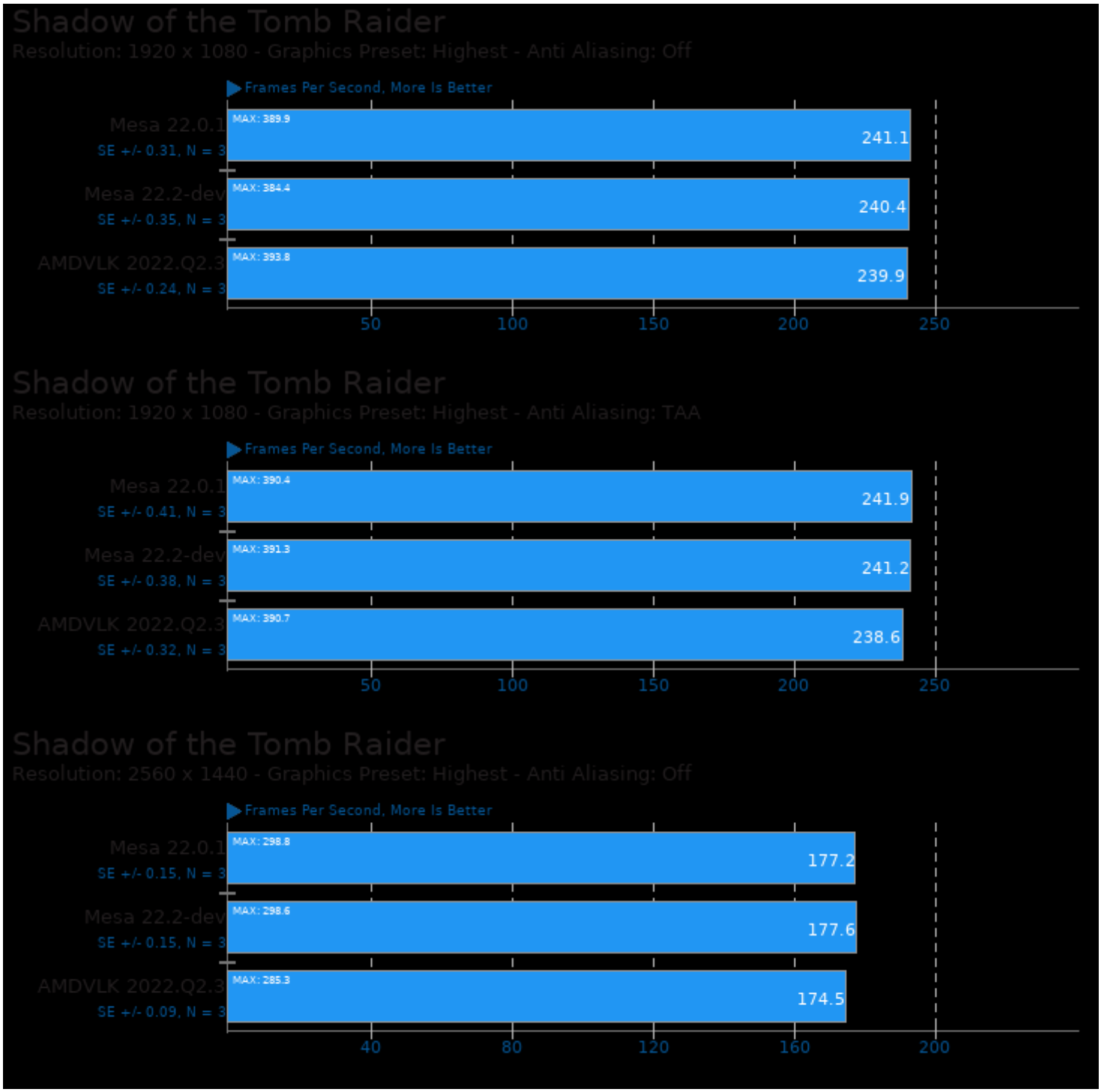
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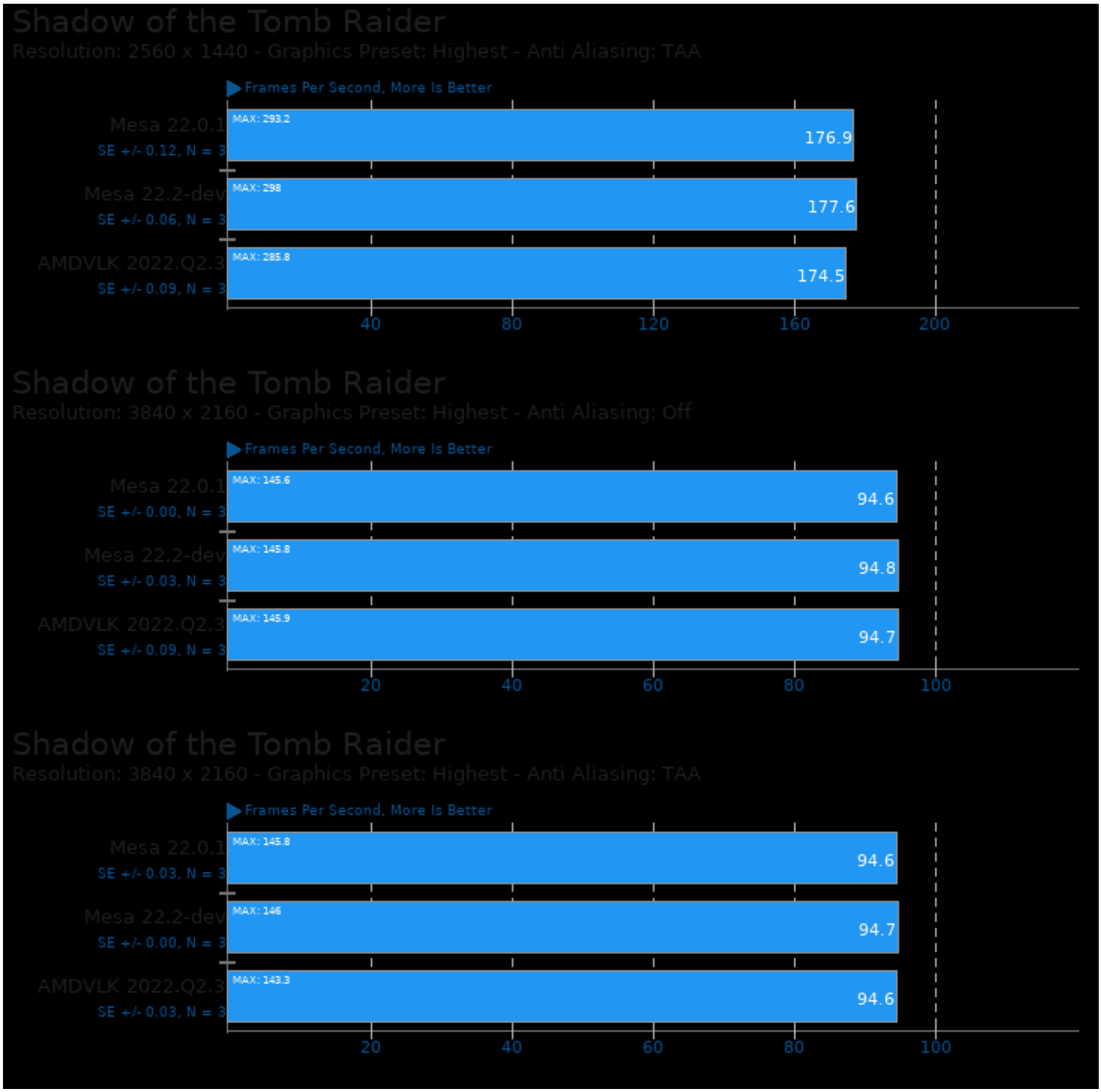
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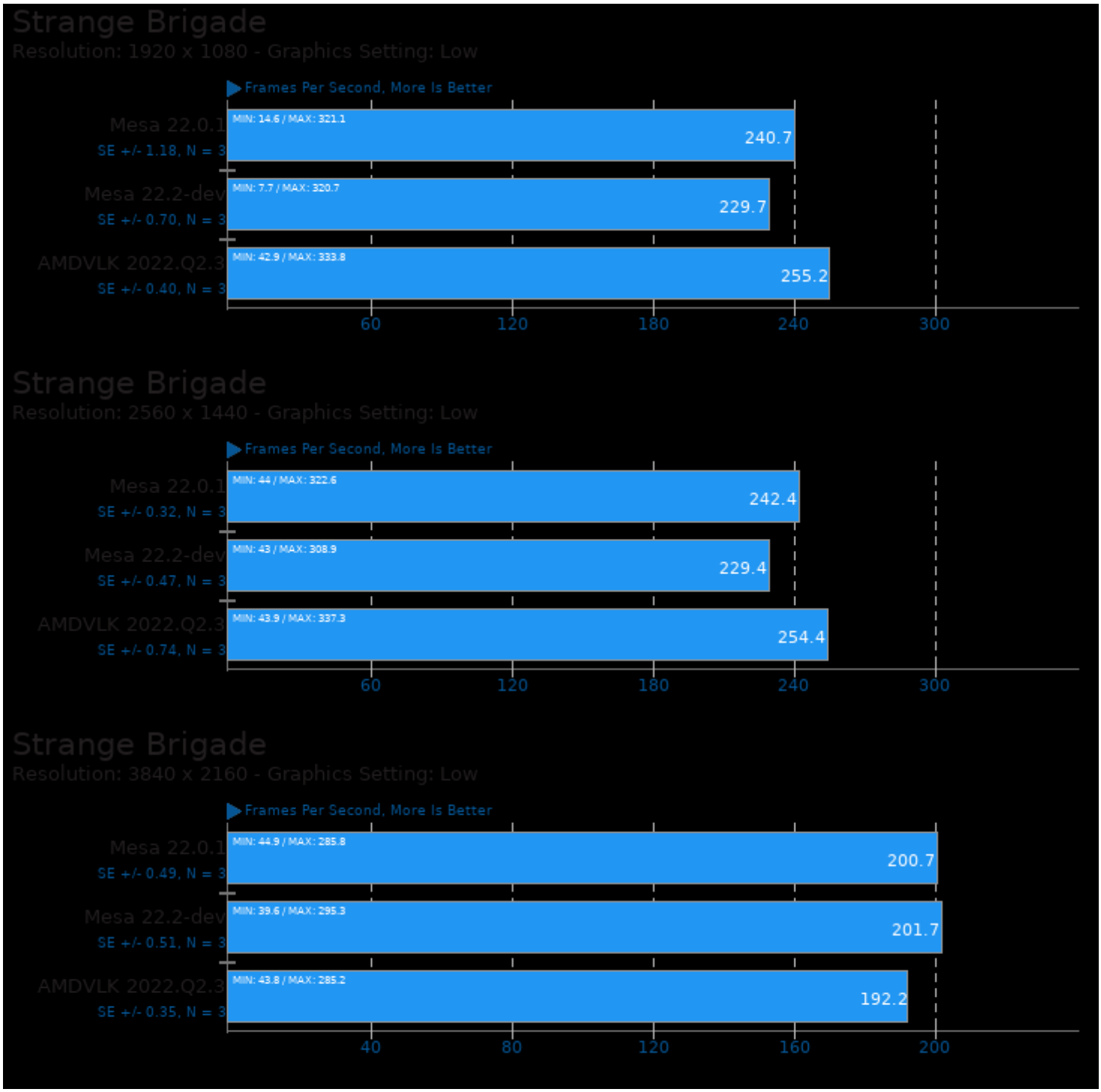
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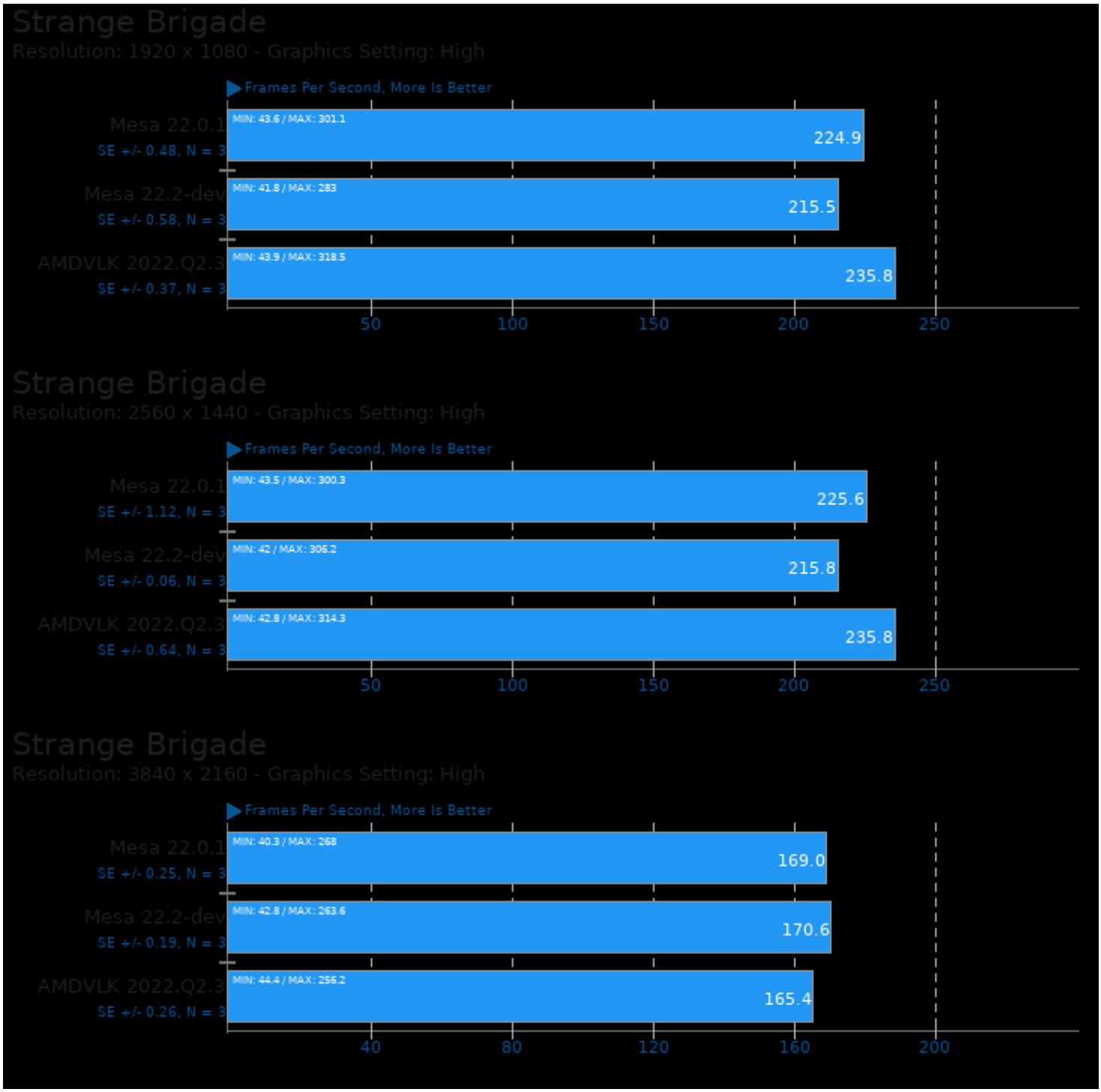
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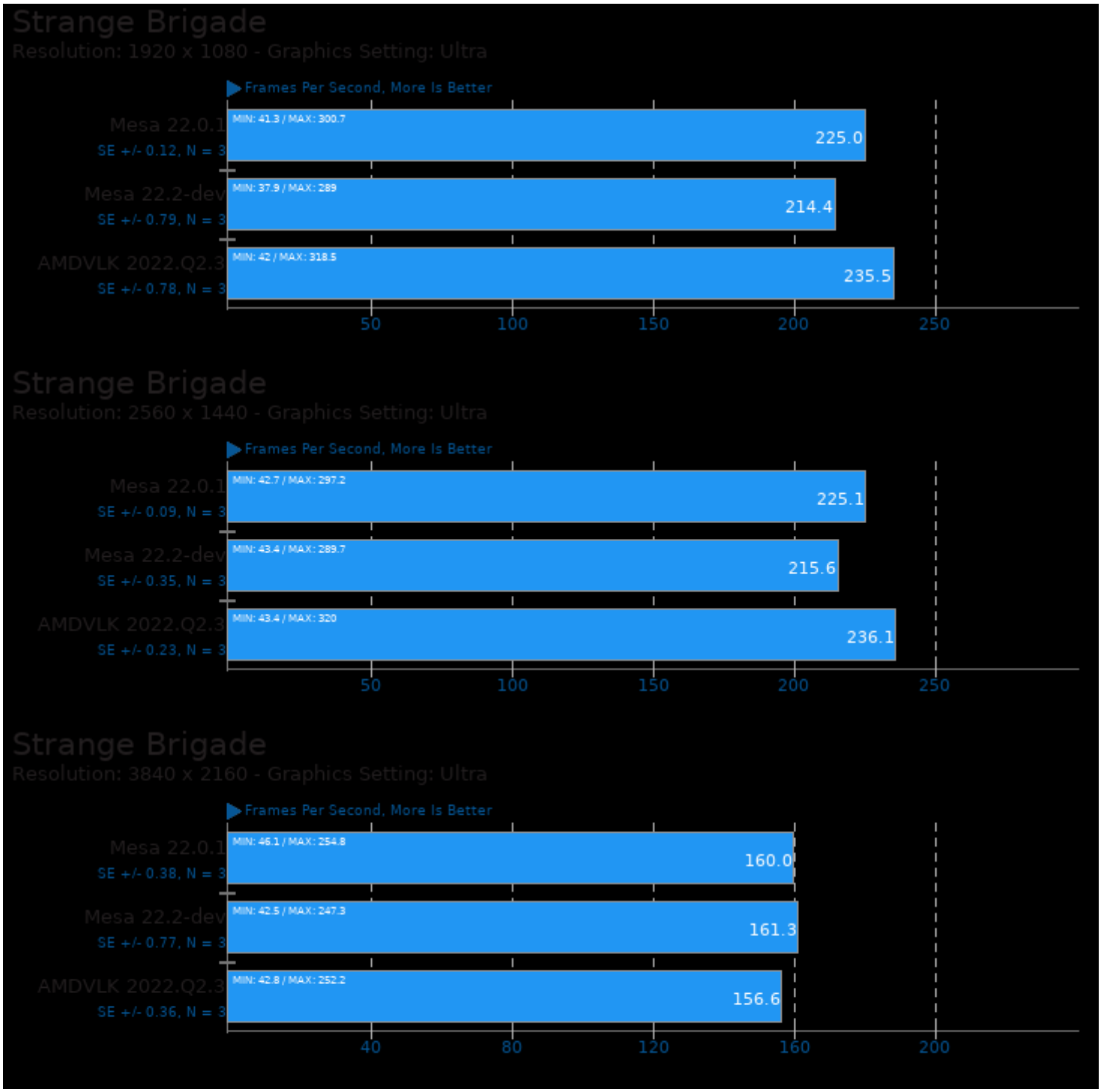
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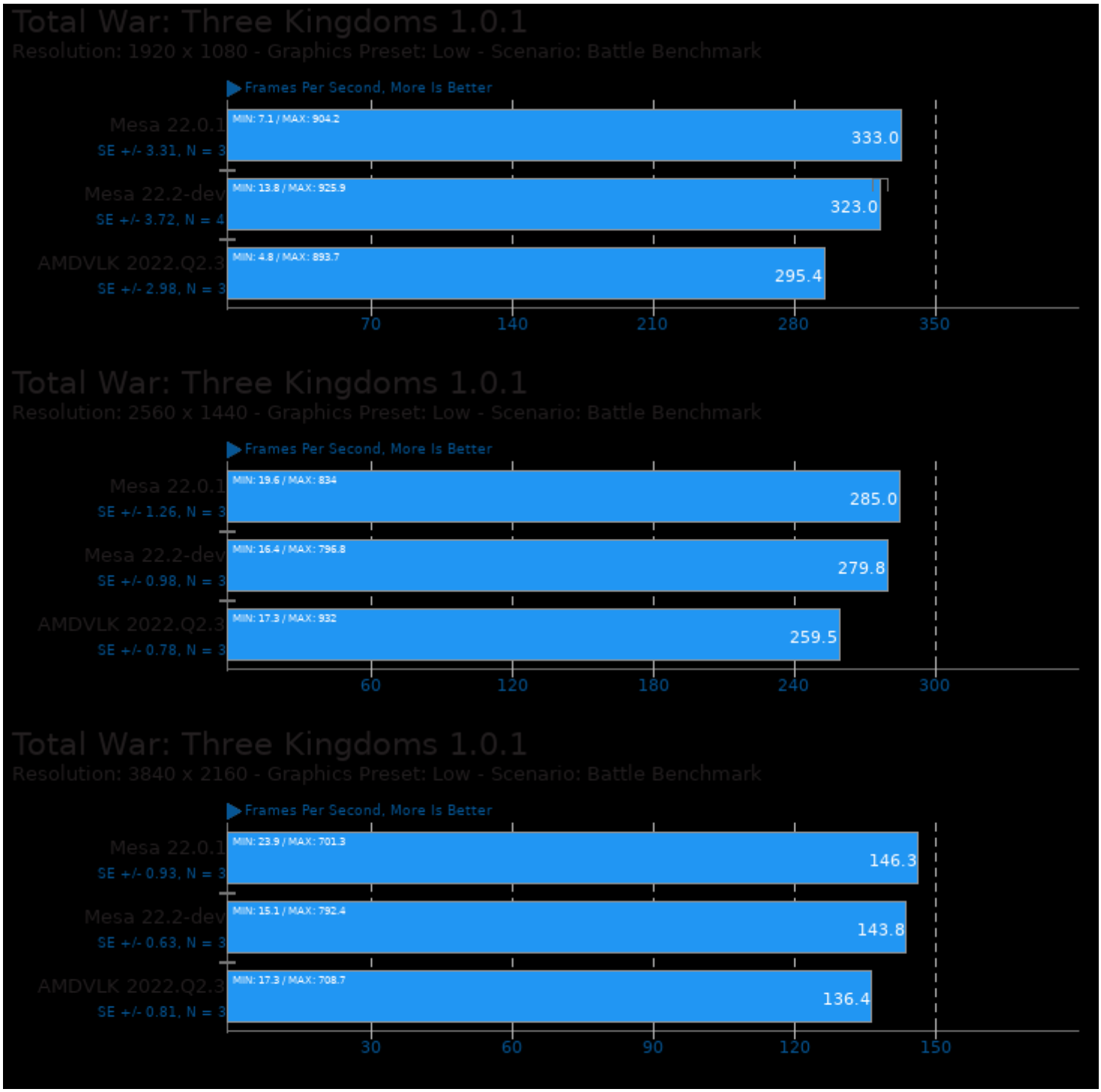
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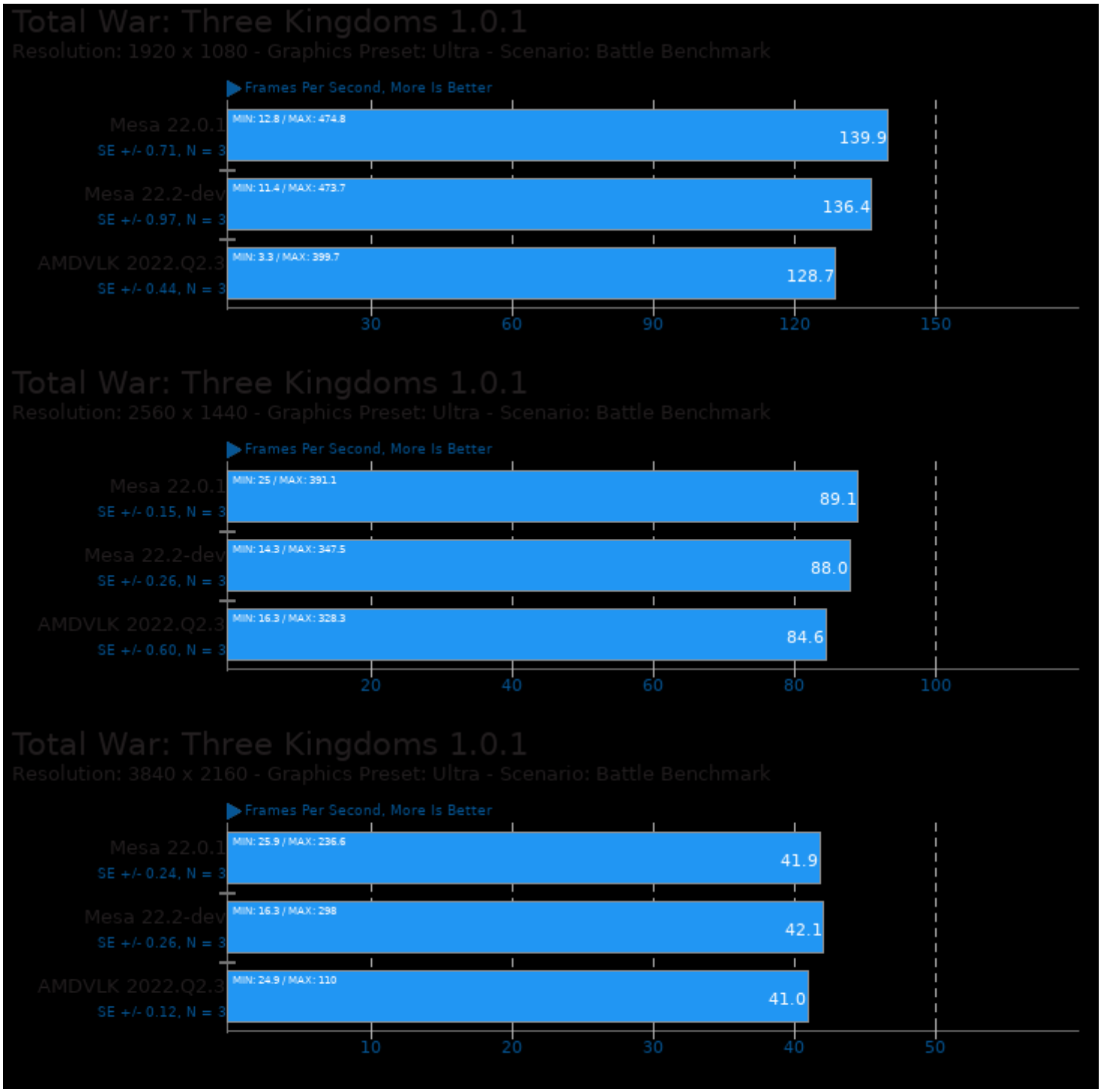
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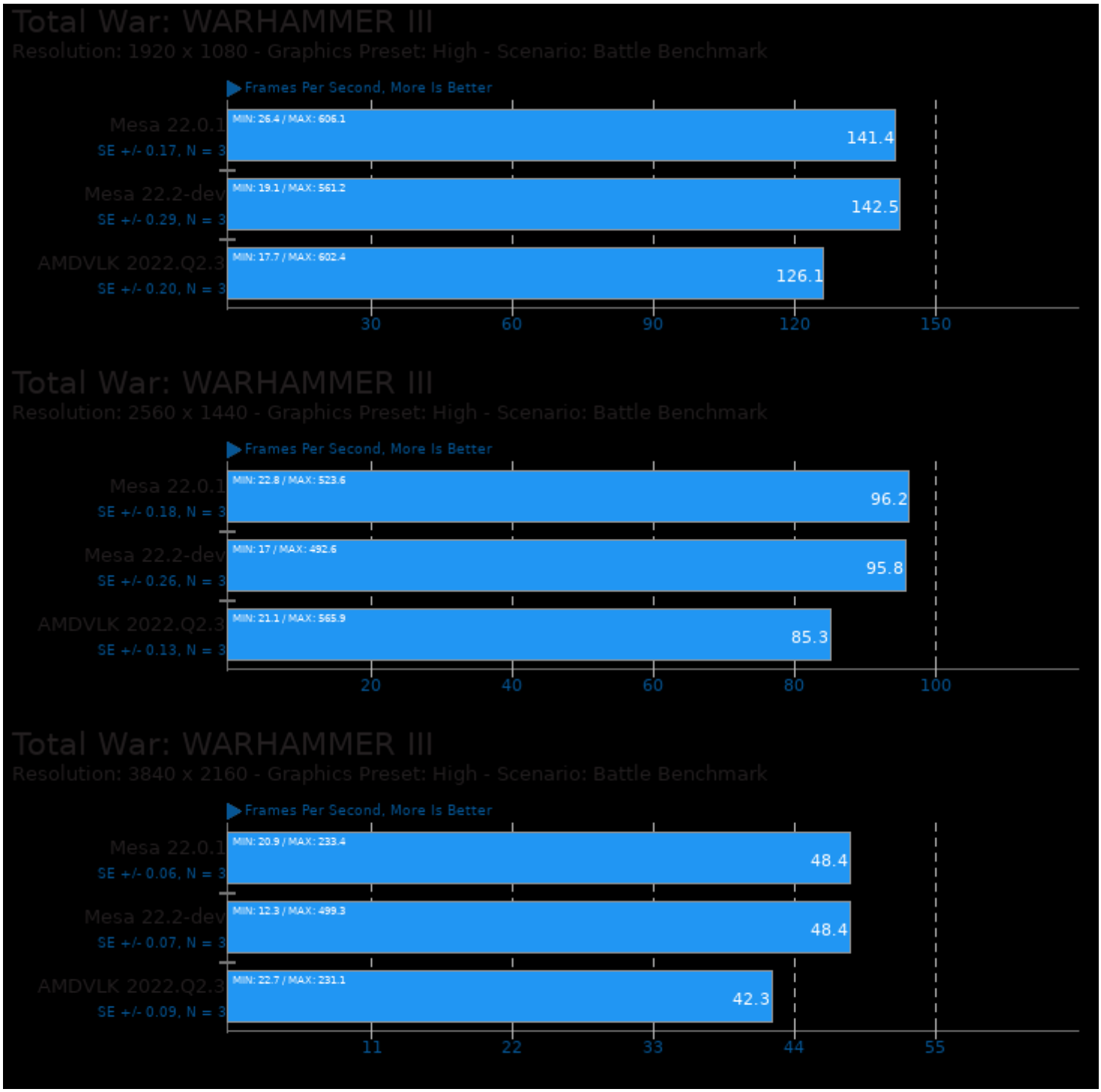
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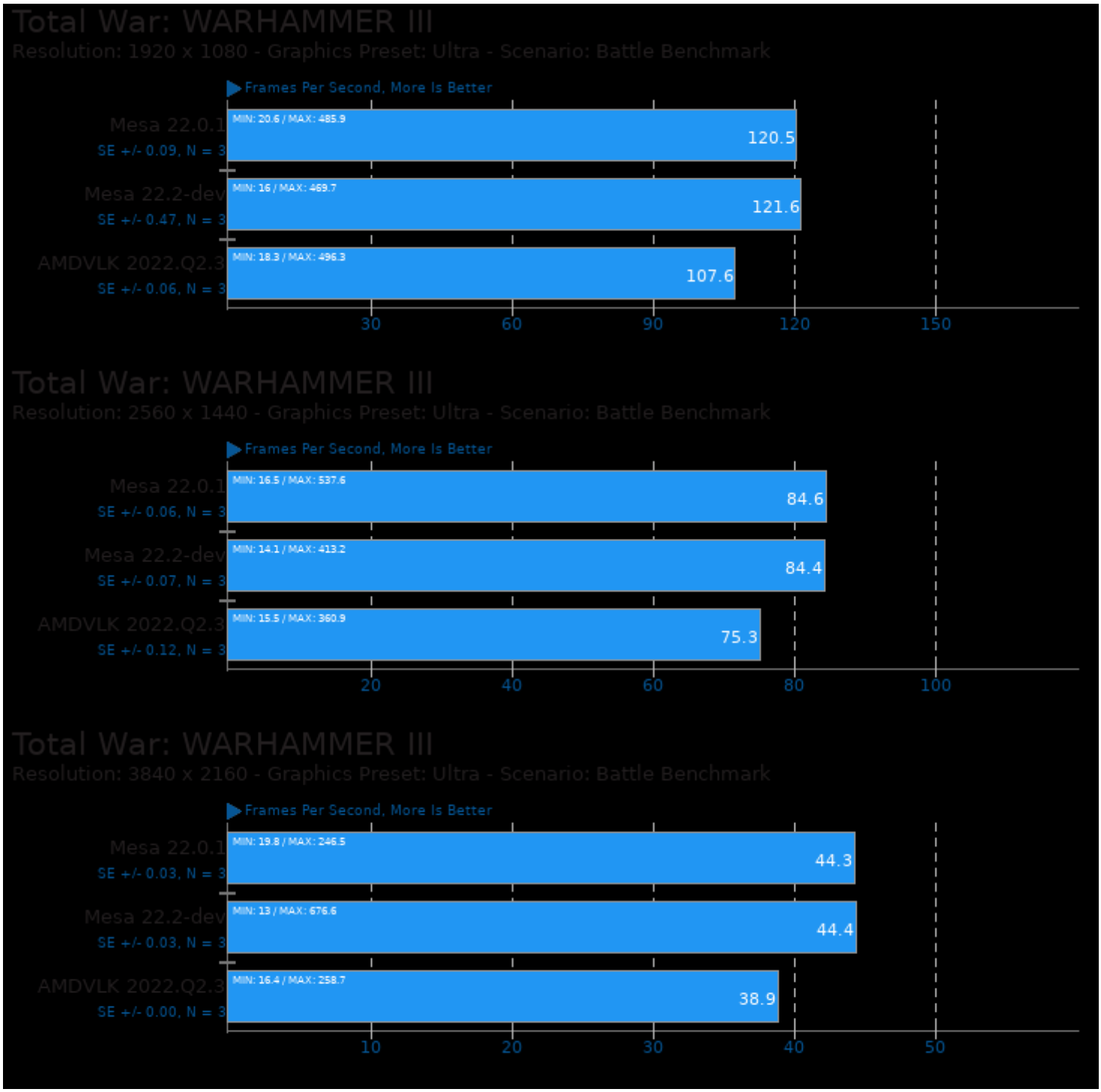
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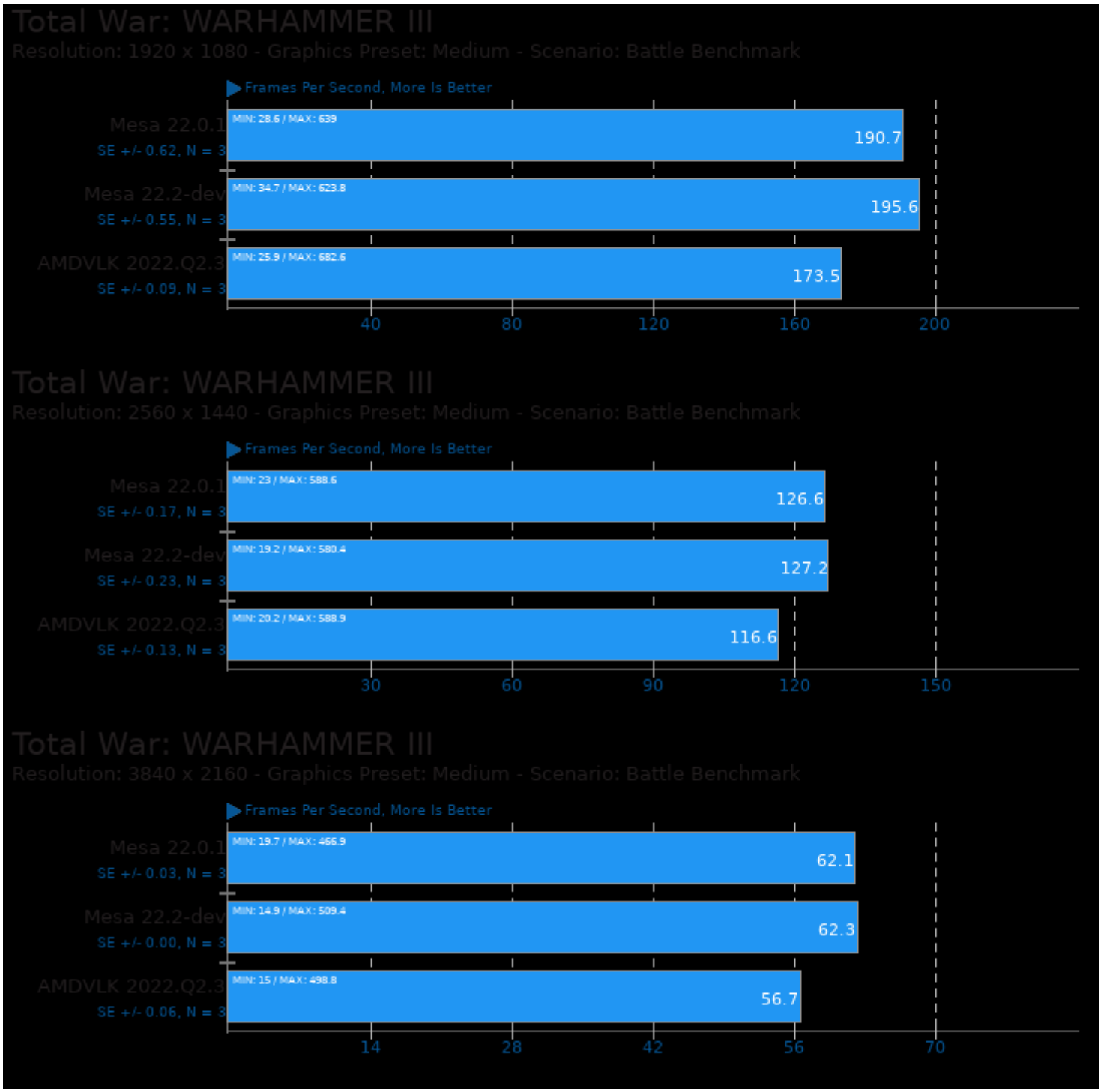
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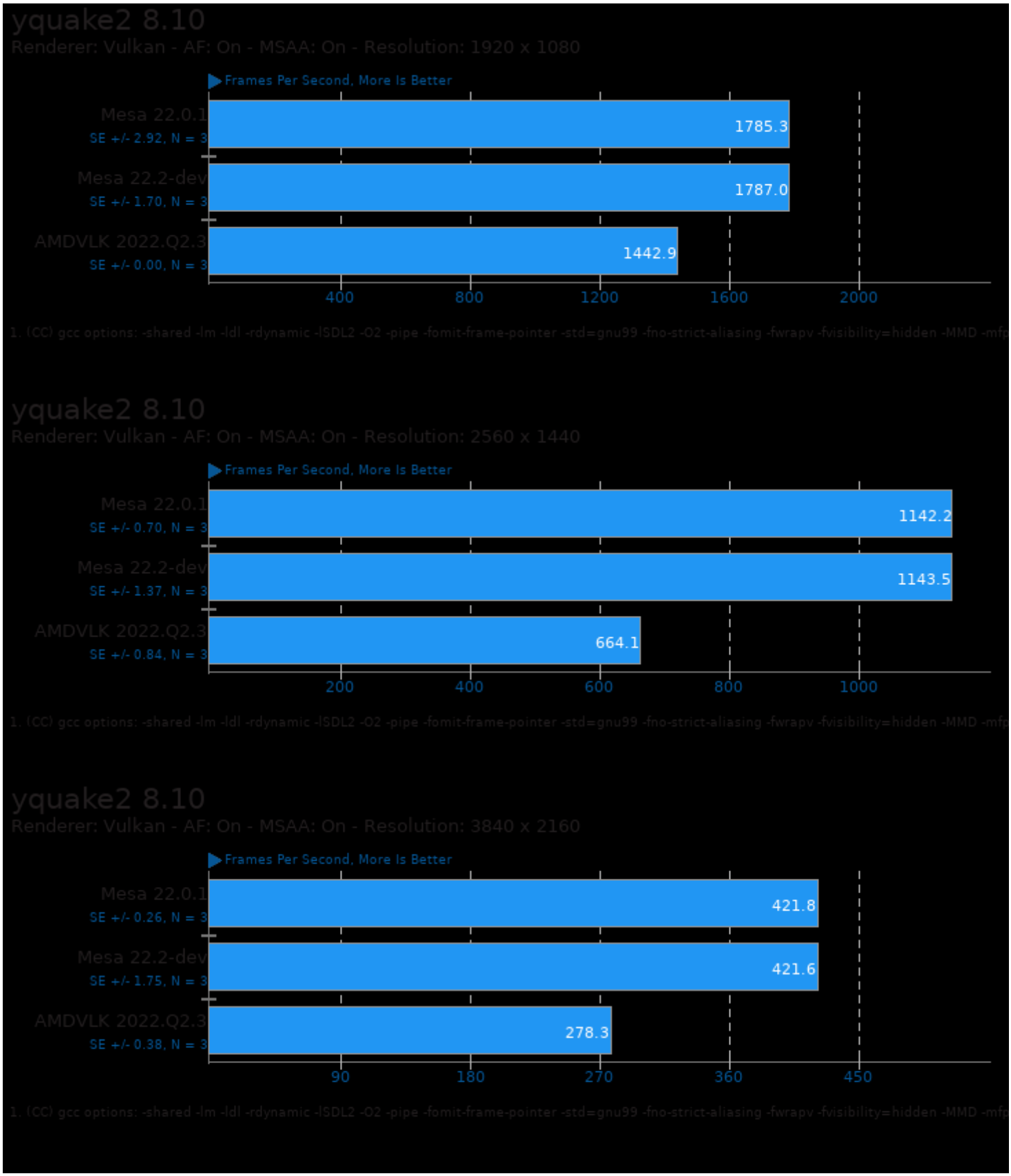


Radeon Vulkan Drivers Mid-2022

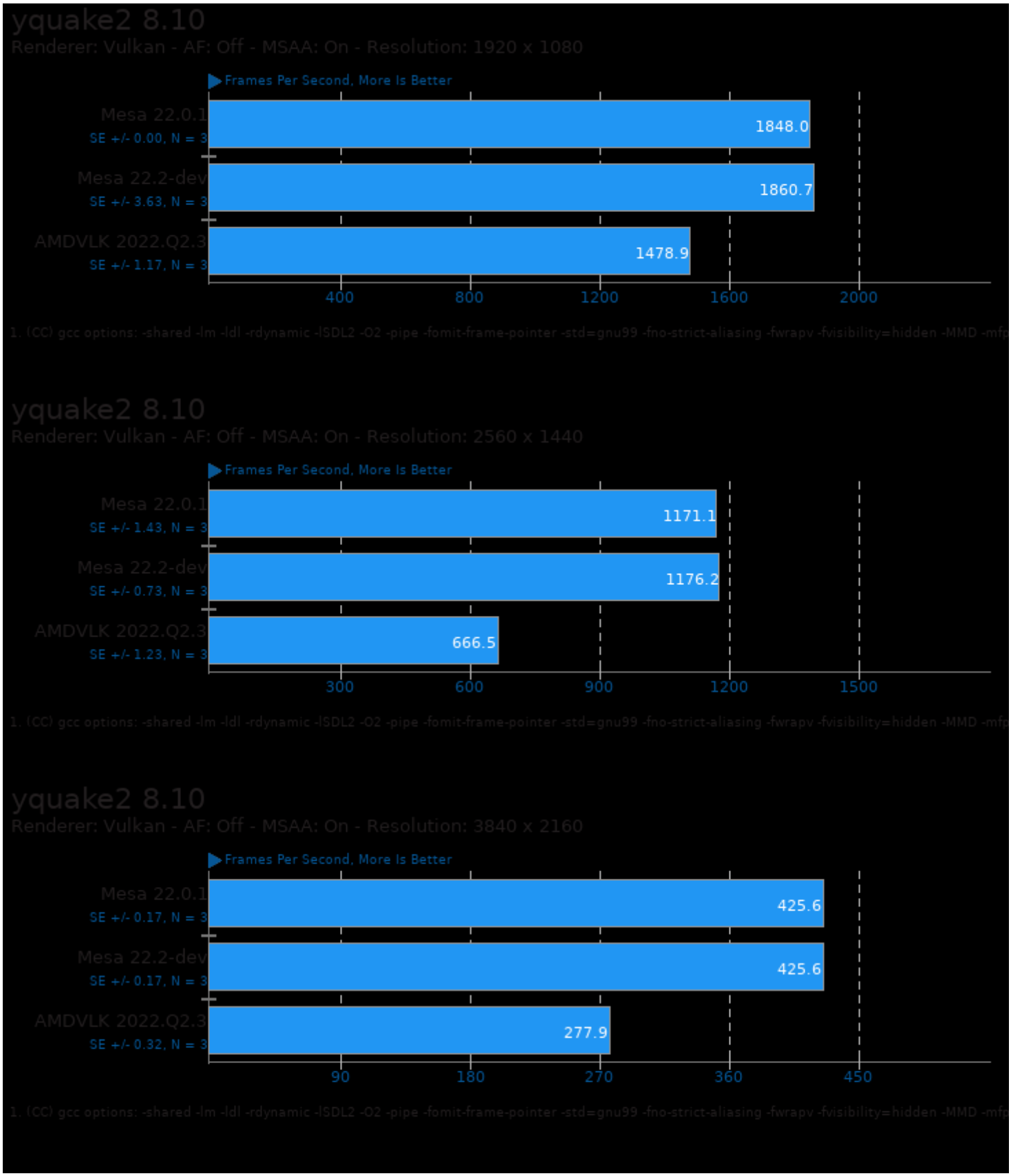


Radeon Vulkan Drivers Mid-2022

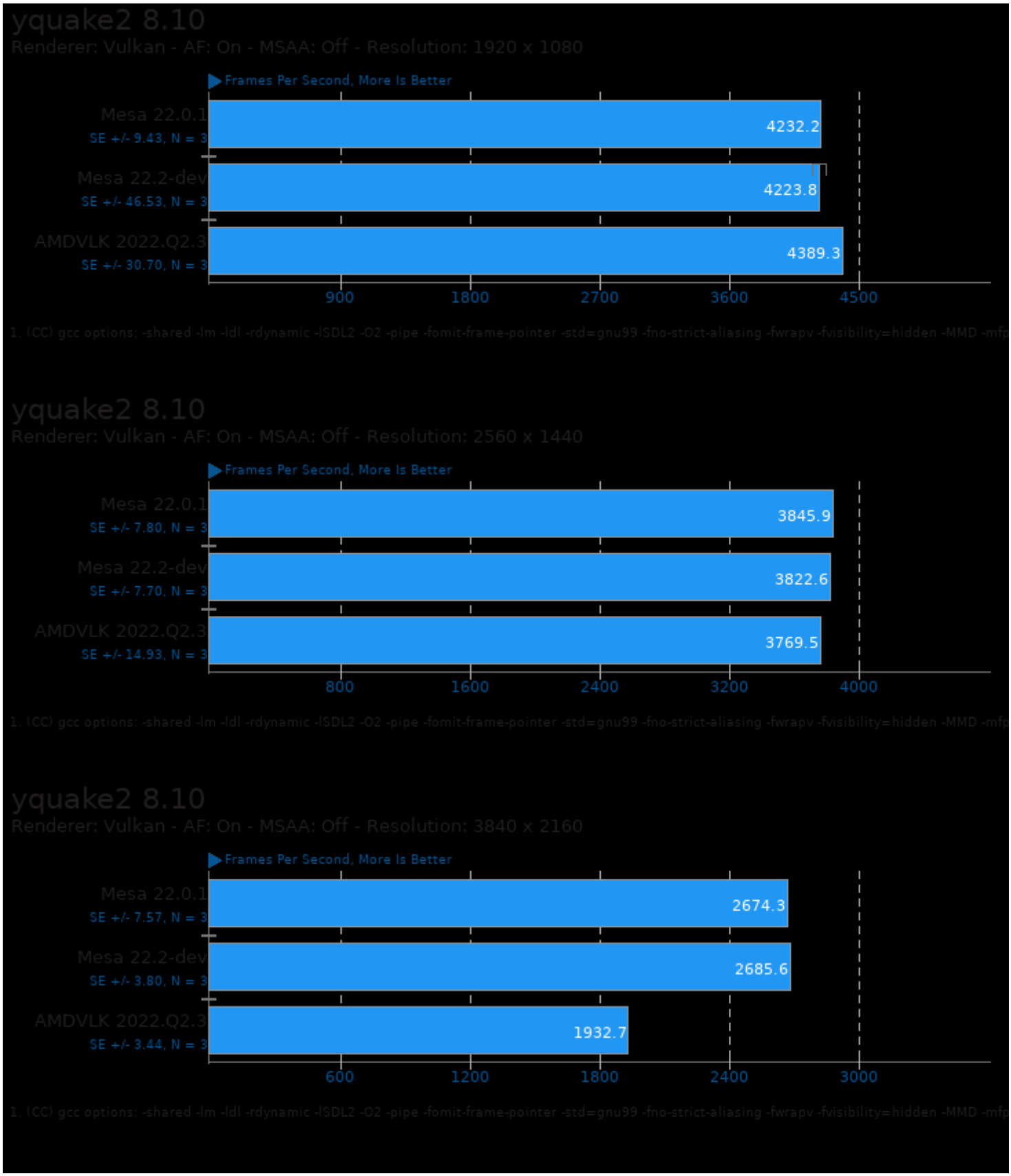



yquake2 8.10
Renderer: Vulkan - AF: On - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
Mesa 22.0.1
SE +/- 2.92, N = 3
1785.3
Mesa 22.2-dev
SE +/- 1.70, N = 3
1787.0
AMDVLK 2022.Q2.3
SE +/- 0.00, N = 3
1442.9
400
800
1200
1600
2000
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: Vulkan - AF: On - MSAA: On - Resolution: 2560 x 1440
Frames Per Second, More Is Better
Mesa 22.0.1
SE +/- 0.70, N = 3
1142.2
Mesa 22.2-dev
SE +/- 1.37, N = 3
1143.5
AMDVLK 2022.Q2.3
SE +/- 0.84, N = 3
664.1
200
400
600
800
1000
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: Vulkan - AF: On - MSAA: On - Resolution: 3840 x 2160
Frames Per Second, More Is Better
Mesa 22.0.1
SE +/- 0.26, N = 3
421.8
Mesa 22.2-dev
SE +/- 1.75, N = 3
421.6
AMDVLK 2022.Q2.3
SE +/- 0.38, N = 3
278.3
90
180
270
360
450
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

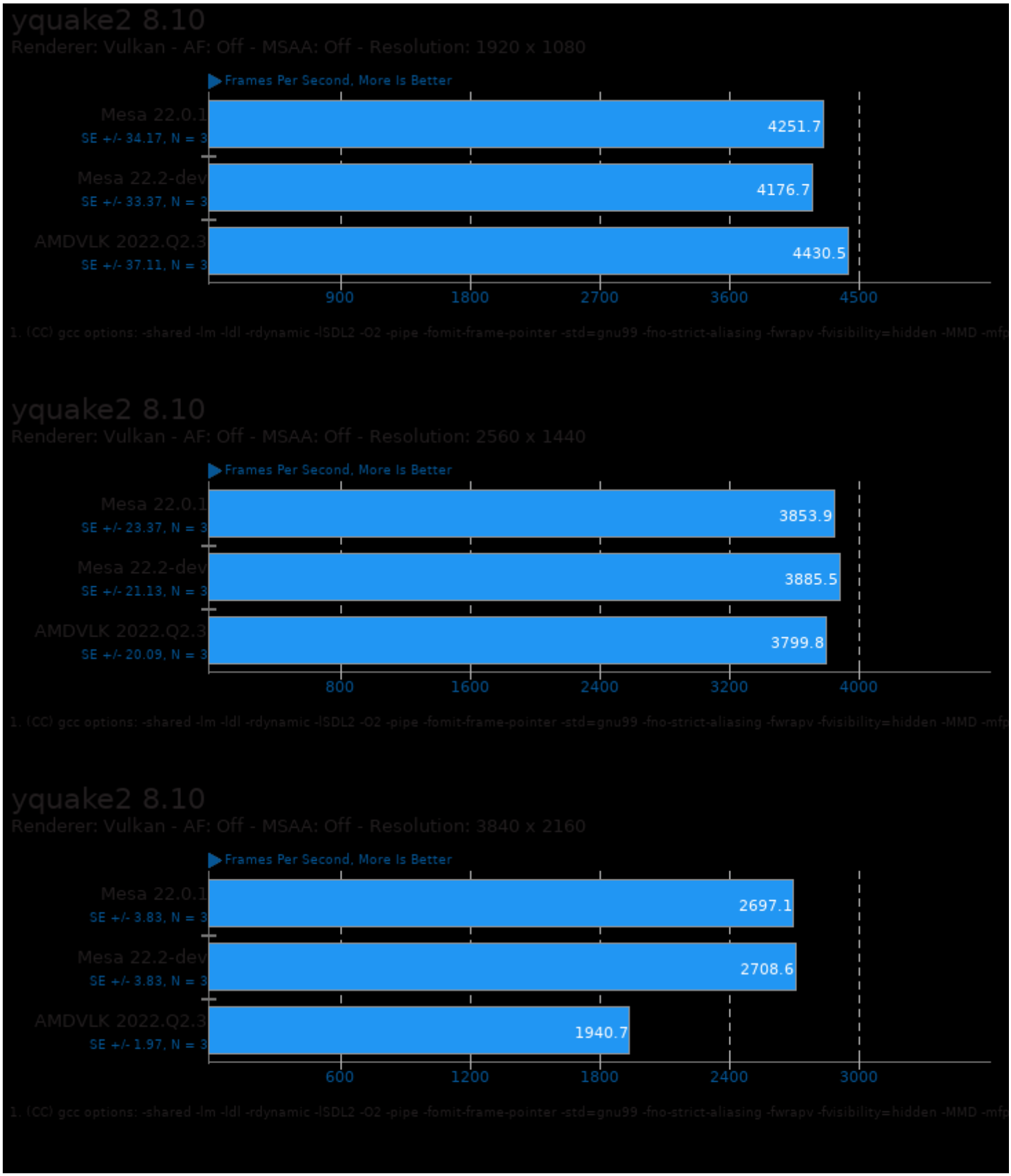
Radeon Vulkan Drivers Mid-2022



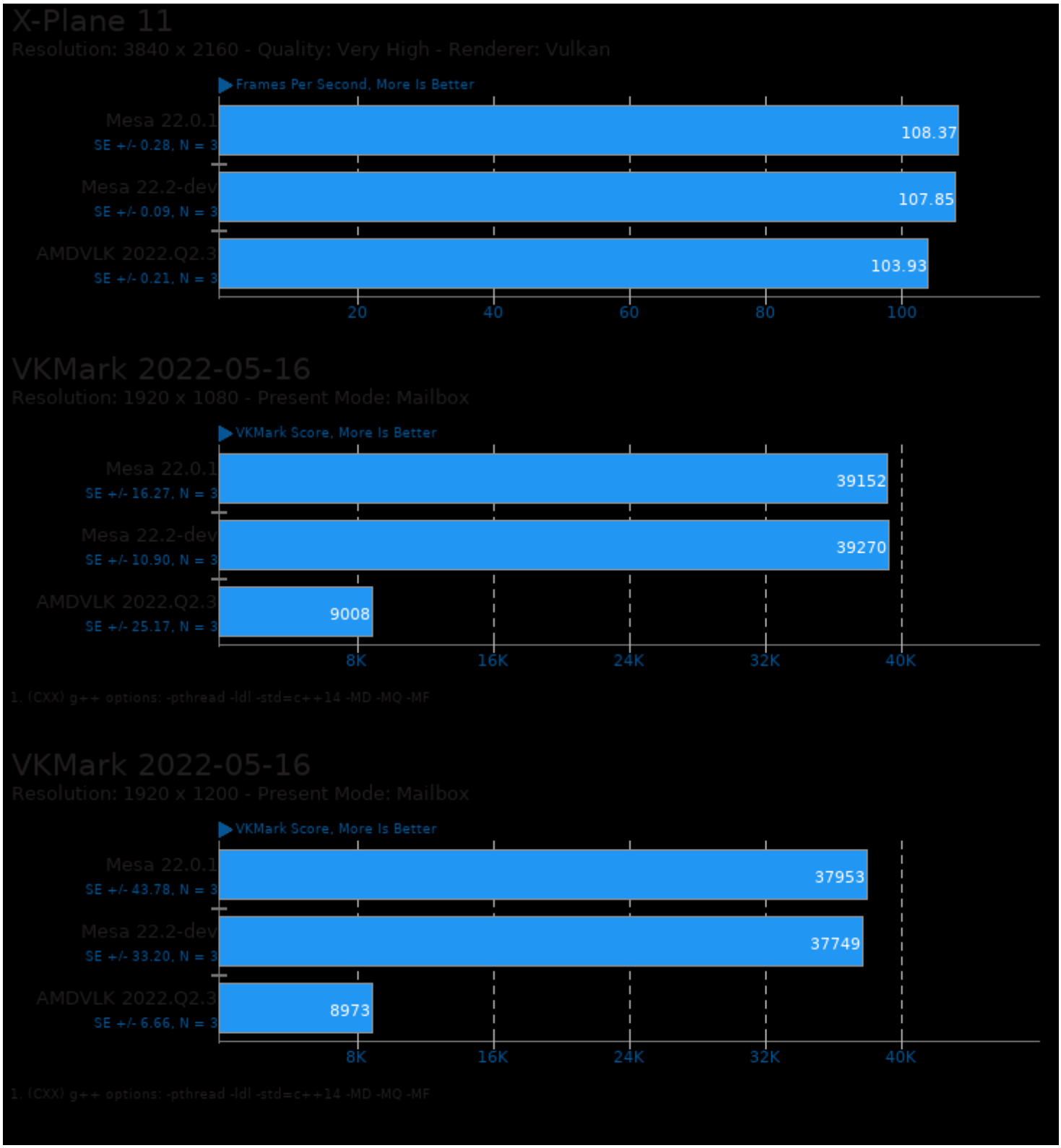
Radeon Vulkan Drivers Mid-2022



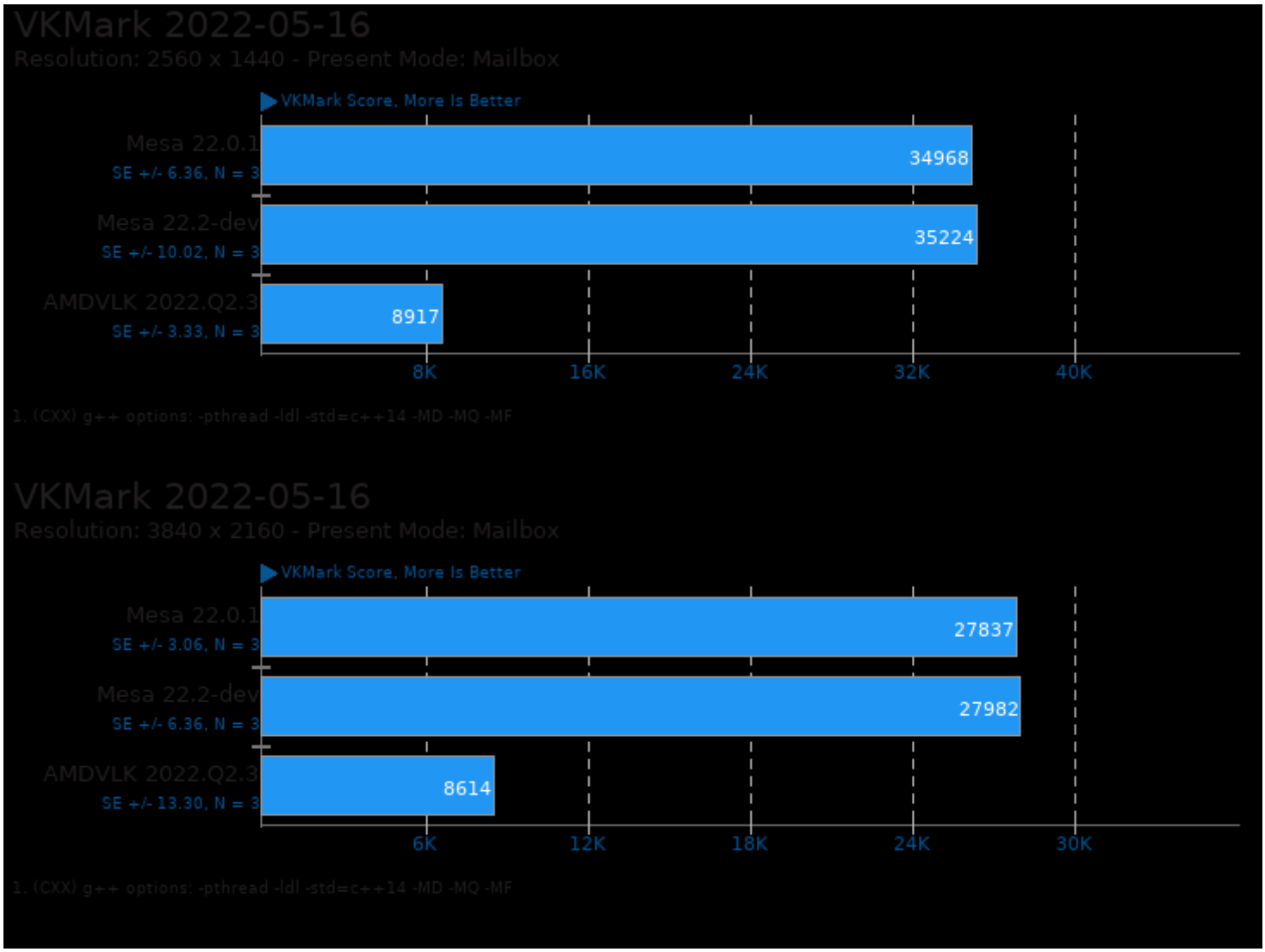
Radeon Vulkan Drivers Mid-2022



Radeon Vulkan Drivers Mid-2022

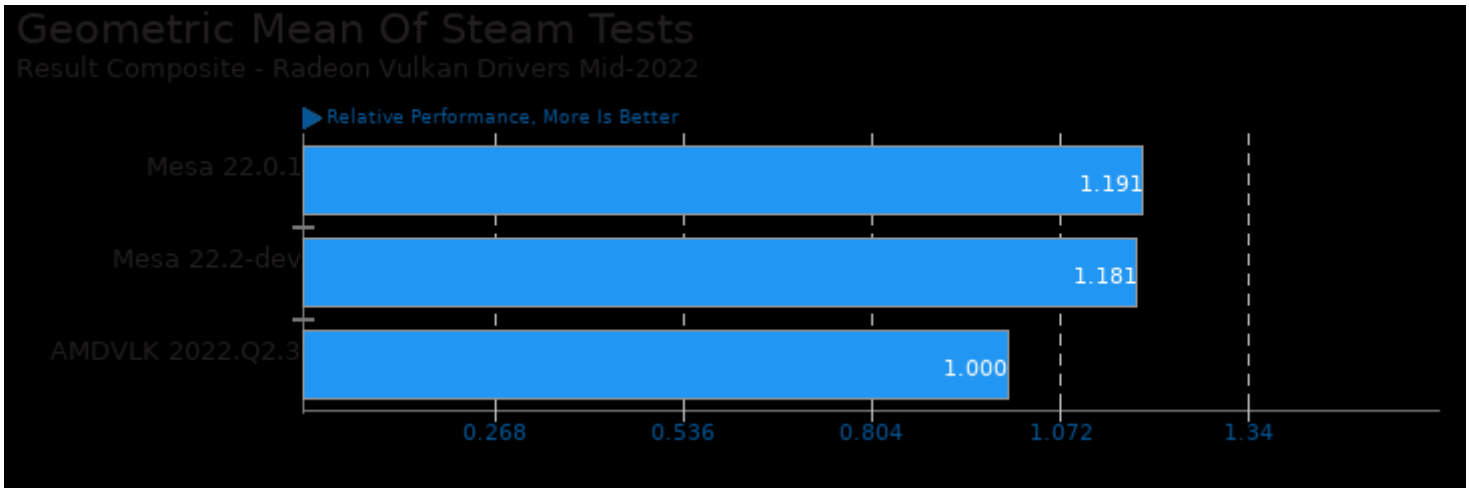


Radeon Vulkan Drivers Mid-2022



Radeon Vulkan Drivers Mid-2022

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



Geometric mean based upon tests: pts/batman-knight, pts/civilization-vi, pts/dirt-rally2, pts/f12021, pts/hitman2, pts/hitman3, pts/shadowofthetombraider, pts/strange-brigade, pts/twtk, pts/tww3, pts/xplane11 and pts/hl2-ep2

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 07:47.