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Quake 2 RTX Benchmarks Linux

Benchmarks by Michael Larabel. WIP tests.

Test Systems:

RTX 2060

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 2060 6GB, Audio: NVIDIA TU106 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and

seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 2060 SUPER

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 2060 SUPER 8GB, Audio: NVIDIA TU106 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
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Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 2070 SUPER

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 2070 SUPER 8GB, Audio: NVIDIA TU104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 2080 SUPER

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 2080 SUPER 8GB, Audio: NVIDIA TU104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 2080 Ti

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR

VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 2080 Ti 11GB, Audio: NVIDIA TU102 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

TITAN RTX

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA TITAN RTX 24GB, Audio: NVIDIA TU102 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3060 Ti

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 3060 Ti 8GB, Audio: NVIDIA GA104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3070

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 3070 8GB, Audio: NVIDIA GA104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server

1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3080

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 3080 10GB, Audio: NVIDIA GA102 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3090

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: NVIDIA GeForce RTX 3090 24GB, Audio: NVIDIA GA102 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11, Display Driver: NVIDIA 465.27, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.3.101, Vulkan: 1.2.168, Compiler: GCC 10.3.0 + CUDA 11.3, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	RTX 2060	RTX 2060 SUPER	RTX 2070 SUPER	RTX 2080 SUPER	RTX 2080 Ti	TITAN RTX	RTX 3060 Ti	RTX 3070	RTX 3080	RTX 3090

Quake 2 RTX Benchmarks Linux

Quake II RTX - 1920 x 1080 - Low - On - VK_KHR_ray_query (FPS)	**15.85467**	18.74090	21.65543	25.04234	32.10539	33.90523	32.04464	34.43954	48.42862	**55.71884**
Normalized	28.45%	33.63%	38.87%	44.94%	57.62%	60.85%	57.51%	61.81%	86.92%	100%
Standard Deviation	0.5%	0.8%	0.5%	0.5%	0.5%	0.5%	0.2%	0.2%	1.3%	0.9%
Quake II RTX - 1920 x 1080 - Off - On - VK_KHR_ray_query (FPS)	**18.92205**	22.41884	25.81851	29.55590	37.89221	39.91079	38.27193	40.99014	57.14854	**65.49968**
Normalized	28.89%	34.23%	39.42%	45.12%	57.85%	60.93%	58.43%	62.58%	87.25%	100%
Standard Deviation	0%	0.4%	0.6%	0.5%	0.4%	0.3%	0.2%	0.8%	0.6%	0.2%
Quake II RTX - 2560 x 1440 - Low - On - VK_KHR_ray_query (FPS)	**15.71737**	18.50351	21.55742	24.81545	31.50380	33.41993	31.82640	34.16176	47.92945	**54.91573**
Normalized	28.62%	33.69%	39.26%	45.19%	57.37%	60.86%	57.95%	62.21%	87.28%	100%
Standard Deviation	0%	0.1%	0.1%	0.4%	0.1%	0.8%	0.1%	0.2%	1%	0.7%
Quake II RTX - 2560 x 1440 - Off - On - VK_KHR_ray_query (FPS)	**18.88882**	22.32901	25.75836	29.46127	37.52947	39.73192	38.26021	41.05939	57.11013	**64.72341**
Normalized	29.18%	34.5%	39.8%	45.52%	57.98%	61.39%	59.11%	63.44%	88.24%	100%
Standard Deviation	0.1%	0.3%	0.5%	0.2%	0.4%	0.9%	0.1%	0.1%	0.5%	0.5%
Quake II RTX - 3840 x 2160 - Low - On - VK_KHR_ray_query (FPS)	**15.69647**	18.48003	21.54372	24.84192	31.40822	33.21935	31.84564	34.25209	47.84233	**54.59978**
Normalized	28.75%	33.85%	39.46%	45.5%	57.52%	60.84%	58.33%	62.73%	87.62%	100%
Standard Deviation	0.3%	0.4%	0.2%	0.2%	0.2%	0.2%	0.1%	0.3%	0.8%	0.8%
Quake II RTX - 3840 x 2160 - Off - On - VK_KHR_ray_query (FPS)	**18.90883**	22.30393	25.65686	29.49166	37.50528	39.67900	38.13821	40.96042	56.65438	**64.62976**
Normalized	29.26%	34.51%	39.7%	45.63%	58.03%	61.39%	59.01%	63.38%	87.66%	100%
Standard Deviation	0.1%	0.1%	0.3%	0.3%	0.6%	0.2%	0.5%	0.5%	0.6%	0.7%
Quake II RTX - 1920 x 1080 - High - On - VK_KHR_ray_query (FPS)	**12.61164**	14.70329	17.30580	20.09522	25.46044	26.91335	25.80857	27.90780	38.96150	**44.55266**
Normalized	28.31%	33%	38.84%	45.1%	57.15%	60.41%	57.93%	62.64%	87.45%	100%
Standard Deviation	0.2%	0.2%	0.3%	0.3%	0.5%	0.2%	0.2%	0.3%	0.4%	0.8%
Quake II RTX - 1920 x 1080 - Low - Off - VK_KHR_ray_query (FPS)	**26.95887**	31.23046	36.05333	42.12937	52.06759	54.14125	51.98993	54.62743	75.02923	**84.90197**
Normalized	31.75%	36.78%	42.46%	49.62%	61.33%	63.77%	61.24%	64.34%	88.37%	100%
Standard Deviation	0.4%	0.2%	0.4%	0.6%	0.8%	0.9%	0.2%	0.2%	1.3%	0.7%

Quake 2 RTX Benchmarks Linux

Quake II RTX - 1920 x 1080 - Low - On - VK_NV_ray_tracing (FPS)	**15.791057**	18.386067	21.569176	24.464503	30.602717	32.485269	31.045441	33.457810	46.031532	**52.764109**
Normalized	29.93%	34.85%	40.88%	46.37%	58%	61.57%	58.84%	63.41%	87.24%	100%
Standard Deviation	0.1%	0.3%	0.4%	0.3%	1.3%	0.3%	0.7%	0.3%	0.1%	0.4%
Quake II RTX - 1920 x 1080 - Off - Off - VK_KHR_ray_query (FPS)	**35.693760**	41.242881	47.097766	54.722460	66.782768	69.827474	64.800919	66.554766	92.650711	**105.036275**
Normalized	33.98%	39.27%	44.84%	52.1%	63.58%	66.48%	61.69%	63.36%	88.21%	100%
Standard Deviation	0.4%	0.6%	0.1%	0.3%	0.9%	0.4%	0.5%	1.3%	1.3%	1.2%
Quake II RTX - 1920 x 1080 - Off - On - VK_NV_ray_tracing (FPS)	**18.628254**	21.898934	25.249656	28.410488	35.921941	37.718660	37.280311	39.743554	54.931860	**61.380434**
Normalized	30.35%	35.68%	41.14%	46.29%	58.52%	61.45%	60.74%	64.75%	89.49%	100%
Standard Deviation	0.2%	0.3%	0.4%	0.6%	0.6%	0.7%	0.4%	0.4%	0.2%	0.5%
Quake II RTX - 2560 x 1440 - High - On - VK_KHR_ray_query (FPS)	**12.635865**	14.707145	17.291037	20.158532	25.574065	27.006635	25.801460	27.951533	39.188835	**44.874329**
Normalized	28.16%	32.77%	38.53%	44.92%	56.99%	60.18%	57.5%	62.29%	87.33%	100%
Standard Deviation	0.2%	0.1%	0.2%	0.2%	0.4%	0.5%	0.1%	0.4%	0.7%	0.4%
Quake II RTX - 2560 x 1440 - Low - Off - VK_KHR_ray_query (FPS)	**27.058033**	31.206073	36.166064	41.941798	52.062575	54.604824	51.544001	54.644647	74.819601	**84.151980**
Normalized	32.15%	37.08%	42.98%	49.84%	61.87%	64.89%	61.25%	64.94%	88.91%	100%
Standard Deviation	0.2%	0.4%	0.2%	0.1%	0.6%	0.6%	1.1%	0.7%	0.8%	0.8%
Quake II RTX - 2560 x 1440 - Low - On - VK_NV_ray_tracing (FPS)	**15.797914**	18.417879	21.631317	24.514453	30.745213	32.555108	31.220655	33.351045	45.693381	**52.552750**
Normalized	30.06%	35.05%	41.16%	46.65%	58.5%	61.95%	59.41%	63.46%	86.95%	100%
Standard Deviation	0.1%	0.3%	0%	0.2%	0.3%	0.3%	0.1%	0.2%	0.5%	0.1%
Quake II RTX - 2560 x 1440 - Off - Off - VK_KHR_ray_query (FPS)	**35.884470**	41.344306	46.922823	54.198991	66.519552	70.153837	65.036463	67.024058	92.791519	**105.521471**
Normalized	34.01%	39.18%	44.47%	51.36%	63.04%	66.48%	61.63%	63.52%	87.94%	100%
Standard Deviation	0.3%	1%	0.2%	0.7%	0.3%	0.9%	0.4%	0.9%	0.6%	1.7%
Quake II RTX - 2560 x 1440 - Off - On - VK_NV_ray_tracing (FPS)	**18.573842**	21.938934	25.193087	28.509537	35.880949	38.060445	37.353521	39.728896	54.556634	**62.107083**
Normalized	29.91%	35.32%	40.56%	45.9%	57.77%	61.28%	60.14%	63.97%	87.84%	100%
Standard Deviation	0.3%	0.1%	0.3%	0.2%	0.6%	0.3%	0.1%	1.1%	1.5%	0.4%

Quake 2 RTX Benchmarks Linux

Quake II RTX - 3840 x 2160 - High - On - VK_KHR_ray_query (FPS)	**12.614032**	14.699376	17.312823	20.124473	25.518393	27.030139	25.804674	27.879018	39.039317	**44.579842**
Normalized	28.3%	32.97%	38.84%	45.14%	57.24%	60.63%	57.88%	62.54%	87.57%	100%
Standard Deviation	0%	0.1%	0.1%	0.3%	0.2%	0.5%	0.2%	0.3%	0.7%	1.3%
Quake II RTX - 3840 x 2160 - Low - Off - VK_KHR_ray_query (FPS)	**27.065021**	31.062521	36.117421	41.839924	51.640983	54.525198	52.101567	54.087448	75.052244	**84.448738**
Normalized	32.05%	36.78%	42.77%	49.54%	61.15%	64.57%	61.7%	64.05%	88.87%	100%
Standard Deviation	0.3%	0.3%	0.4%	0.2%	0.2%	0.2%	0.2%	0.2%	0.6%	0.2%
Quake II RTX - 3840 x 2160 - Low - On - VK_NV_ray_tracing (FPS)	**15.786840**	18.429467	21.575873	24.463593	30.586686	32.240532	31.164235	33.175765	45.902798	**52.363302**
Normalized	30.15%	35.2%	41.2%	46.72%	58.41%	61.57%	59.52%	63.36%	87.66%	100%
Standard Deviation	0%	0.1%	0.1%	0.6%	1%	0.2%	0.3%	0.3%	0.8%	0.8%
Quake II RTX - 3840 x 2160 - Off - Off - VK_KHR_ray_query (FPS)	**35.871771**	41.316084	47.171805	53.928654	66.591962	70.614680	65.206609	66.492210	91.984998	**104.641309**
Normalized	34.28%	39.48%	45.08%	51.54%	63.64%	67.48%	62.31%	63.54%	87.91%	100%
Standard Deviation	0.4%	0.4%	0.2%	0.2%	1.1%	0.9%	0.3%	0.5%	1.1%	1.5%
Quake II RTX - 3840 x 2160 - Off - On - VK_NV_ray_tracing (FPS)	**18.604995**	21.938448	25.142150	28.321429	35.754055	37.940210	37.417796	39.785178	54.239961	**61.535724**
Normalized	30.23%	35.65%	40.86%	46.02%	58.1%	61.66%	60.81%	64.65%	88.14%	100%
Standard Deviation	0.1%	0.2%	0.2%	0.2%	0.5%	0.7%	0.2%	0.4%	0.5%	1.3%
Quake II RTX - 1920 x 1080 - High - Off - VK_KHR_ray_query (FPS)	**19.448988**	22.314250	26.155282	30.842688	38.431888	40.414508	38.309441	41.223732	56.387039	**63.492294**
Normalized	30.63%	35.14%	41.19%	48.58%	60.53%	63.65%	60.34%	64.93%	88.81%	100%
Standard Deviation	0.3%	0.2%	0.3%	0.5%	0.1%	0.4%	0.4%	0.5%	0.8%	1.5%
Quake II RTX - 1920 x 1080 - High - On - VK_NV_ray_tracing (FPS)	**12.799490**	14.751137	17.586241	20.258787	25.254590	26.557762	25.421718	27.281292	38.052291	**42.982756**
Normalized	29.78%	34.32%	40.91%	47.13%	58.76%	61.79%	59.14%	63.47%	88.53%	100%
Standard Deviation	0.2%	0.3%	0.1%	0.1%	0.3%	0.3%	0.2%	0.4%	0.4%	0.2%
Quake II RTX - 1920 x 1080 - Low - Off - VK_NV_ray_tracing (FPS)	**27.174911**	30.861424	36.295212	41.384803	49.864120	52.302169	50.560927	52.518477	70.975876	**80.114209**
Normalized	33.92%	38.52%	45.3%	51.66%	62.24%	65.28%	63.11%	65.55%	88.59%	100%
Standard Deviation	0.2%	0.3%	0.3%	0.4%	1.1%	0.4%	0.1%	0.5%	1%	1.2%

Quake 2 RTX Benchmarks Linux

Quake II RTX - 1920 x 1080 - Off - Off - VK_NV_ray_tracing (FPS)	34.54276	40.00176	45.35174	50.96327	61.53217	65.52043	62.38136	64.05308	85.13171	95.98186
Normalized	35.99%	41.68%	47.25%	53.1%	64.11%	68.26%	64.99%	66.73%	88.7%	100%
Standard Deviation	0.3%	0.6%	0.8%	1%	0.5%	0.8%	0.8%	0.4%	1.1%	0.6%
Quake II RTX - 2560 x 1440 - High - Off - VK_KHR_ray_query (FPS)	19.44541	22.27504	26.22140	30.87181	38.46942	40.49685	38.27911	40.80624	56.75672	63.91190
Normalized	30.43%	34.85%	41.03%	48.3%	60.19%	63.36%	59.89%	63.85%	88.8%	100%
Standard Deviation	0.3%	0%	0.1%	0.7%	1%	0.7%	0.7%	0.1%	0.2%	0.7%
Quake II RTX - 2560 x 1440 - High - On - VK_NV_ray_tracing (FPS)	12.79543	14.75142	17.63359	20.21970	25.29364	26.49932	25.30977	27.38218	37.96504	43.23084
Normalized	29.6%	34.12%	40.79%	46.77%	58.51%	61.3%	58.55%	63.34%	87.82%	100%
Standard Deviation	0.2%	0.2%	0.1%	0.5%	0.5%	0.2%	0.4%	0.3%	0.3%	0.5%
Quake II RTX - 2560 x 1440 - Low - Off - VK_NV_ray_tracing (FPS)	27.06014	30.98490	36.18227	41.18400	49.66038	52.62901	50.46274	52.99048	71.41701	80.21534
Normalized	33.73%	38.63%	45.11%	51.34%	61.91%	65.61%	62.91%	66.06%	89.03%	100%
Standard Deviation	0.4%	0.7%	0.7%	0.7%	0.7%	0.3%	0.3%	0.5%	0.6%	1.4%
Quake II RTX - 2560 x 1440 - Off - Off - VK_NV_ray_tracing (FPS)	34.78839	40.06061	45.63497	50.65400	61.37946	64.86973	62.44973	64.23827	87.21420	97.18921
Normalized	35.79%	41.22%	46.95%	52.12%	63.15%	66.75%	64.26%	66.1%	89.74%	100%
Standard Deviation	0.6%	0.4%	0.8%	0.9%	0.7%	0.5%	1.1%	0.5%	0.8%	1.1%
Quake II RTX - 3840 x 2160 - High - Off - VK_KHR_ray_query (FPS)	19.44661	22.27820	26.16378	30.96481	38.56015	40.37410	38.31444	40.99100	56.25327	63.61751
Normalized	30.57%	35.02%	41.13%	48.67%	60.61%	63.46%	60.23%	64.43%	88.42%	100%
Standard Deviation	0.3%	0.1%	0.5%	0.2%	0.8%	0.4%	0.6%	0.2%	0.5%	0.7%
Quake II RTX - 3840 x 2160 - High - On - VK_NV_ray_tracing (FPS)	12.80024	14.75625	17.62310	20.20549	25.29532	26.58077	25.41281	27.40269	37.85490	43.31286
Normalized	29.55%	34.07%	40.69%	46.65%	58.4%	61.37%	58.67%	63.27%	87.4%	100%
Standard Deviation	0.2%	0.2%	0.2%	0.3%	0.5%	0.2%	0.1%	0.2%	0.3%	0.5%
Quake II RTX - 3840 x 2160 - Low - Off - VK_NV_ray_tracing (FPS)	27.18545	30.99233	36.18216	41.47049	49.56240	52.83376	50.26390	52.59271	71.86285	80.03831
Normalized	33.97%	38.72%	45.21%	51.81%	61.92%	66.01%	62.8%	65.71%	89.79%	100%
Standard Deviation	0.2%	0.3%	0.3%	0.8%	0.8%	0.5%	1.1%	0.4%	0.3%	1.6%

Quake 2 RTX Benchmarks Linux

Quake II RTX - 3840 x 2160 - Off - Off - VK_NV_ray_tracing (FPS)	**34.434**	40.262	45.489	50.734	61.602	65.011	62.361	63.515	86.466	**95.111**
	2	14	55	33	42	617	808	399	995	**181**
Normalized	36.21%	42.33%	47.83%	53.34%	64.77%	68.35%	65.57%	66.78%	90.91%	100%
Standard Deviation	0.7%	0.2%	0.6%	1.1%	0.9%	0.8%	1.4%	1.9%	1.5%	1.5%
Quake II RTX - 1920 x 1080 - High - Off - VK_NV_ray_tracing (FPS)	**19.759**	22.296	26.777	30.959	37.746	39.529	37.602	39.693	54.611	**61.336**
	823	196	269	117	011	170	077	414	903	**330**
Normalized	32.22%	36.35%	43.66%	50.47%	61.54%	64.45%	61.3%	64.71%	89.04%	100%
Standard Deviation	0.3%	0.3%	0.8%	1%	0.8%	0.6%	0.1%	0.4%	0.3%	0.8%
Quake II RTX - 1920 x 1080 - Medium - On - VK_KHR_ray_query (FPS)	**13.941**	16.351	19.194	22.094	27.982	29.791	28.393	30.766	43.256	**49.394**
	161	429	523	106	077	531	137	180	377	**939**
Normalized	28.22%	33.1%	38.86%	44.73%	56.65%	60.31%	57.48%	62.29%	87.57%	100%
Standard Deviation	0.1%	0.2%	0.1%	0.1%	0.4%	0.3%	0.5%	0.3%	1%	0.3%
Quake II RTX - 2560 x 1440 - High - Off - VK_NV_ray_tracing (FPS)	**19.723**	22.354	26.780	30.814	37.442	39.346	37.398	39.758	53.726	**61.087**
	727	891	890	943	230	334	305	392	050	**921**
Normalized	32.29%	36.59%	43.84%	50.44%	61.29%	64.41%	61.22%	65.08%	87.95%	100%
Standard Deviation	0.2%	0.3%	0.2%	0.4%	0.2%	0.5%	0.7%	0.7%	0.5%	1.8%
Quake II RTX - 2560 x 1440 - Medium - On - VK_KHR_ray_query (FPS)	**13.973**	16.324	19.152	22.106	28.093	29.526	28.479	30.619	43.009	**49.195**
	164	179	787	630	978	170	444	722	310	**083**
Normalized	28.4%	33.18%	38.93%	44.94%	57.11%	60.02%	57.89%	62.24%	87.43%	100%
Standard Deviation	0.1%	0.1%	0.2%	0.3%	0.5%	0.6%	0%	0.2%	0.7%	0.5%
Quake II RTX - 3840 x 2160 - High - Off - VK_NV_ray_tracing (FPS)	**19.709**	22.326	26.598	30.655	37.680	39.456	37.517	39.481	54.123	**61.089**
	329	273	002	158	654	041	354	182	104	**456**
Normalized	32.26%	36.55%	43.54%	50.18%	61.68%	64.59%	61.41%	64.63%	88.6%	100%
Standard Deviation	0.1%	0%	0.2%	0.4%	0.6%	0.9%	0.3%	0.2%	1%	1.7%
Quake II RTX - 3840 x 2160 - Medium - On - VK_KHR_ray_query (FPS)	**13.963**	16.312	19.171	22.117	28.250	29.566	28.461	30.661	43.268	**49.973**
	167	359	434	639	948	033	047	914	342	**750**
Normalized	27.94%	32.64%	38.36%	44.26%	56.53%	59.16%	56.95%	61.36%	86.58%	100%
Standard Deviation	0.1%	0.1%	0.2%	0.2%	0.3%	0.4%	0.1%	0.5%	0.5%	0.9%

Quake 2 RTX Benchmarks Linux

Quake II RTX - 1920 x 1080 - Medium - Off - VK_KHR_ray_query (FPS)	**22.736057**	26.008685	30.419433	35.633207	44.191849	46.165409	44.495148	47.165616	65.259608	**74.017840**
Normalized	30.72%	35.14%	41.1%	48.14%	59.7%	62.37%	60.11%	63.72%	88.17%	100%
Standard Deviation	0.2%	0.4%	0.5%	0.3%	1%	0.7%	0.1%	0.6%	1%	0.8%
Quake II RTX - 1920 x 1080 - Medium - On - VK_NV_ray_tracing (FPS)	**14.075683**	16.292009	19.423963	22.174201	27.523853	29.161509	27.938207	29.966838	41.642512	**47.392123**
Normalized	29.7%	34.38%	40.99%	46.79%	58.08%	61.53%	58.95%	63.23%	87.87%	100%
Standard Deviation	0.3%	0.1%	0.1%	0.3%	0.7%	0.4%	0.3%	0.2%	0.7%	0.5%
Quake II RTX - 2560 x 1440 - Medium - Off - VK_KHR_ray_query (FPS)	**22.649869**	26.004890	30.590113	35.621080	44.276766	46.458668	44.525467	46.904553	65.556844	**73.980359**
Normalized	30.62%	35.15%	41.35%	48.15%	59.85%	62.8%	60.19%	63.4%	88.61%	100%
Standard Deviation	0.7%	0.5%	0.3%	0.3%	0.9%	0.9%	0%	0.4%	0.4%	1.4%
Quake II RTX - 2560 x 1440 - Medium - On - VK_NV_ray_tracing (FPS)	**14.078458**	16.284176	19.409250	22.099907	27.581800	29.077207	27.948657	30.015519	41.701374	**47.386973**
Normalized	29.71%	34.36%	40.96%	46.64%	58.21%	61.36%	58.98%	63.34%	88%	100%
Standard Deviation	0.2%	0.2%	0.2%	0.3%	0.6%	0.3%	0.4%	0.4%	0.8%	0.7%
Quake II RTX - 3840 x 2160 - Medium - Off - VK_KHR_ray_query (FPS)	**22.737574**	26.031369	30.499570	35.657289	43.881611	46.731990	44.330439	46.880296	65.622365	**73.931645**
Normalized	30.75%	35.21%	41.25%	48.23%	59.35%	63.21%	59.96%	63.41%	88.76%	100%
Standard Deviation	0.4%	0.6%	0.4%	0.8%	0.3%	0.4%	0.8%	0.5%	0.3%	1.2%
Quake II RTX - 3840 x 2160 - Medium - On - VK_NV_ray_tracing (FPS)	**14.100479**	16.304494	19.409901	22.161913	27.591511	29.039943	27.970703	30.078700	41.703772	**47.199487**
Normalized	29.87%	34.54%	41.12%	46.95%	58.46%	61.53%	59.26%	63.73%	88.36%	100%
Standard Deviation	0.2%	0.1%	0.3%	0.2%	0.7%	0.5%	0.1%	0.2%	0.4%	0.5%

Quake 2 RTX Benchmarks Linux

Quake II RTX - 1920 x 1080 - Medium - Off - VK_NV_ray_tracing (FPS)	**22.905274**	25.801867	30.966971	35.351715	42.657773	45.117450	43.369686	45.490622	62.332437	**70.276207**
Normalized	32.59%	36.71%	44.06%	50.3%	60.7%	64.2%	61.71%	64.73%	88.7%	100%
Standard Deviation	0.2%	0.2%	0.9%	0.3%	0.4%	0.5%	0%	0.1%	1.7%	0.5%
Quake II RTX - 2560 x 1440 - Medium - Off - VK_NV_ray_tracing (FPS)	**22.929058**	25.864957	30.951161	35.195695	42.690052	45.379685	43.445346	45.699822	62.398075	**70.275660**
Normalized	32.63%	36.81%	44.04%	50.08%	60.75%	64.57%	61.82%	65.03%	88.79%	100%
Standard Deviation	0%	0.2%	0.5%	1.1%	0.2%	0.3%	0.1%	0.4%	0.5%	0.8%
Quake II RTX - 3840 x 2160 - Medium - Off - VK_NV_ray_tracing (FPS)	**22.884523**	25.864319	31.051489	35.611200	42.906095	45.182939	43.303322	45.372143	61.733948	**69.812118**
Normalized	32.78%	37.05%	44.48%	51.01%	61.46%	64.72%	62.03%	64.99%	88.43%	100%
Standard Deviation	0.2%	0.3%	0.4%	0.7%	0.4%	0.5%	0.2%	0.4%	1%	0.9%
Quake II RTX - 1920 x 1080 - Low - On - VK_KHR_ray_tracing_pipeline (FPS)	**15.791116**	18.382768	21.495093	24.459342	30.733433	32.505385	31.130598	33.388231	46.126837	**52.174535**
Normalized	30.27%	35.23%	41.2%	46.88%	58.91%	62.3%	59.67%	63.99%	88.41%	100%
Standard Deviation	0.2%	0.4%	0.3%	0.7%	0.5%	0.6%	0.4%	0.3%	0.6%	0.9%
Quake II RTX - 1920 x 1080 - Off - On - VK_KHR_ray_tracing_pipeline (FPS)	**18.597477**	21.939720	25.153119	28.456995	35.646597	37.790845	37.366024	39.862306	54.727080	**61.300618**
Normalized	30.34%	35.79%	41.03%	46.42%	58.15%	61.65%	60.96%	65.03%	89.28%	100%
Standard Deviation	0%	0.2%	0.4%	0.6%	0.3%	0.4%	0%	0.4%	0.7%	0.4%
Quake II RTX - 2560 x 1440 - Low - On - VK_KHR_ray_tracing_pipeline (FPS)	**15.789357**	18.400358	21.533914	24.468640	30.728813	32.365944	31.170312	33.382933	45.713707	**52.445379**
Normalized	30.11%	35.08%	41.06%	46.66%	58.59%	61.71%	59.43%	63.65%	87.16%	100%
Standard Deviation	0.1%	0.5%	0.2%	0.4%	0.8%	0.4%	0.2%	0.8%	0.2%	0.4%
Quake II RTX - 2560 x 1440 - Off - On - VK_KHR_ray_tracing_pipeline (FPS)	**18.615773**	21.896311	25.251485	28.484521	35.863469	38.151512	37.262754	39.572161	54.650759	**62.416044**
Normalized	29.83%	35.08%	40.46%	45.64%	57.46%	61.12%	59.7%	63.4%	87.56%	100%
Standard Deviation	0.1%	0.4%	0.2%	0.4%	0.4%	0.1%	0.4%	0.6%	0.6%	0.4%

Quake 2 RTX Benchmarks Linux

Quake II RTX - 3840 x 2160 - Low - On - VK_KHR_ray_tracing_pipeline (FPS)	15.805839	18.395802	21.561081	24.408933	30.582612	32.367025	31.140075	33.423475	45.927668	52.298225
Normalized	30.22%	35.17%	41.23%	46.67%	58.48%	61.89%	59.54%	63.91%	87.82%	100%
Standard Deviation	0.1%	0.1%	0.4%	0.3%	0.1%	0.4%	0.5%	0.2%	0.6%	0.8%
Quake II RTX - 3840 x 2160 - Off - On - VK_KHR_ray_tracing_pipeline (FPS)	18.581285	21.872596	25.146077	28.363398	35.848433	37.991975	37.290558	39.600314	54.032278	61.959341
Normalized	29.99%	35.3%	40.58%	45.78%	57.86%	61.32%	60.19%	63.91%	87.21%	100%
Standard Deviation	0.2%	0.2%	0.4%	0.5%	0.3%	0.5%	0.4%	0.9%	0.4%	0.6%
Quake II RTX - 1920 x 1080 - High - On - VK_KHR_ray_tracing_pipeline (FPS)	12.814363	14.742956	17.618997	20.202068	25.288861	26.639095	25.325865	27.394805	37.614235	43.274442
Normalized	29.61%	34.07%	40.71%	46.68%	58.44%	61.56%	58.52%	63.3%	86.92%	100%
Standard Deviation	0.1%	0.3%	0.1%	0.3%	0.4%	0.5%	0.2%	0.3%	0.8%	0.8%
Quake II RTX - 1920 x 1080 - Low - Off - VK_KHR_ray_tracing_pipeline (FPS)	27.082119	30.915218	36.343057	41.196804	49.340986	51.925929	50.407519	52.630659	70.330679	79.835347
Normalized	33.92%	38.72%	45.52%	51.6%	61.8%	65.04%	63.14%	65.92%	88.09%	100%
Standard Deviation	0.3%	0.1%	0.1%	0.5%	1%	0.3%	0.2%	0.4%	0.4%	1.5%
Quake II RTX - 1920 x 1080 - Off - Off - VK_KHR_ray_tracing_pipeline (FPS)	34.618522	39.875980	45.541124	50.923069	61.747223	64.800883	62.562739	63.580681	86.313713	96.930511
Normalized	35.71%	41.14%	46.98%	52.54%	63.7%	66.85%	64.54%	65.59%	89.05%	100%
Standard Deviation	0.3%	0.5%	0.3%	0.3%	0.6%	1.3%	0.4%	0.6%	0.5%	0.6%
Quake II RTX - 2560 x 1440 - High - On - VK_KHR_ray_tracing_pipeline (FPS)	12.803006	14.752331	17.676607	20.270593	25.262334	26.723289	25.438450	27.475409	37.784549	43.007500
Normalized	29.77%	34.3%	41.1%	47.13%	58.74%	62.14%	59.15%	63.89%	87.86%	100%
Standard Deviation	0.1%	0.2%	0.2%	0.3%	0.2%	0.4%	0.1%	0.1%	0.6%	0.4%
Quake II RTX - 2560 x 1440 - Low - Off - VK_KHR_ray_tracing_pipeline (FPS)	27.149693	30.847402	36.085394	41.073213	49.437749	52.403988	50.313864	52.503528	71.568006	78.816808
Normalized	34.45%	39.14%	45.78%	52.11%	62.72%	66.49%	63.84%	66.61%	90.8%	100%
Standard Deviation	0.6%	0.3%	0.8%	0.4%	0.4%	0.9%	0.7%	0.7%	1.2%	0.4%
Quake II RTX - 2560 x 1440 - Off - Off - VK_KHR_ray_tracing_pipeline (FPS)	34.705321	40.110495	45.447087	50.846998	61.571999	65.278831	62.362985	64.209644	86.206571	95.245735
Normalized	36.44%	42.11%	47.72%	53.39%	64.65%	68.54%	65.48%	67.41%	90.51%	100%
Standard Deviation	0.1%	0.3%	0.2%	0.5%	0.5%	0.8%	0.8%	0.9%	0.3%	0.9%

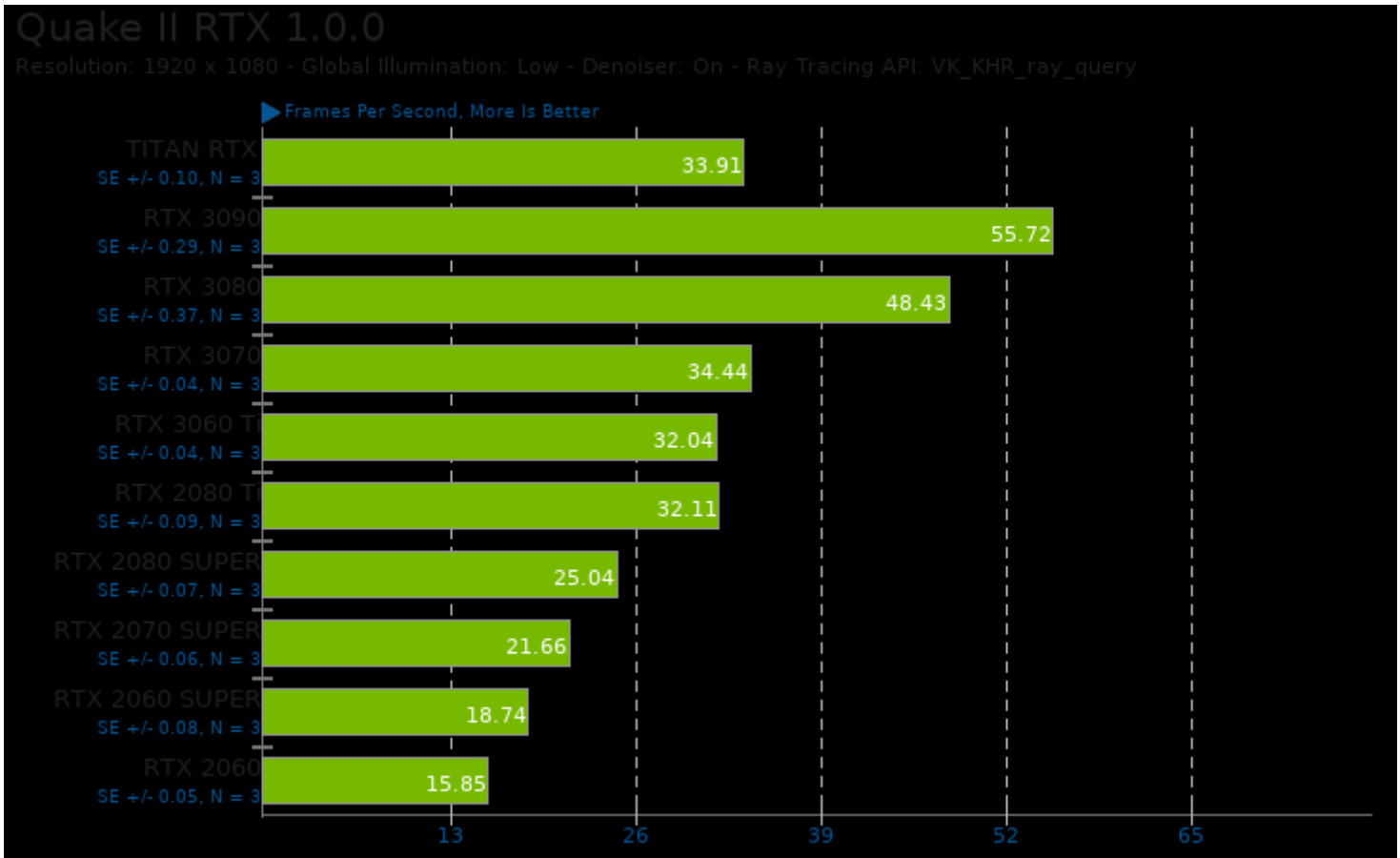
Quake 2 RTX Benchmarks Linux

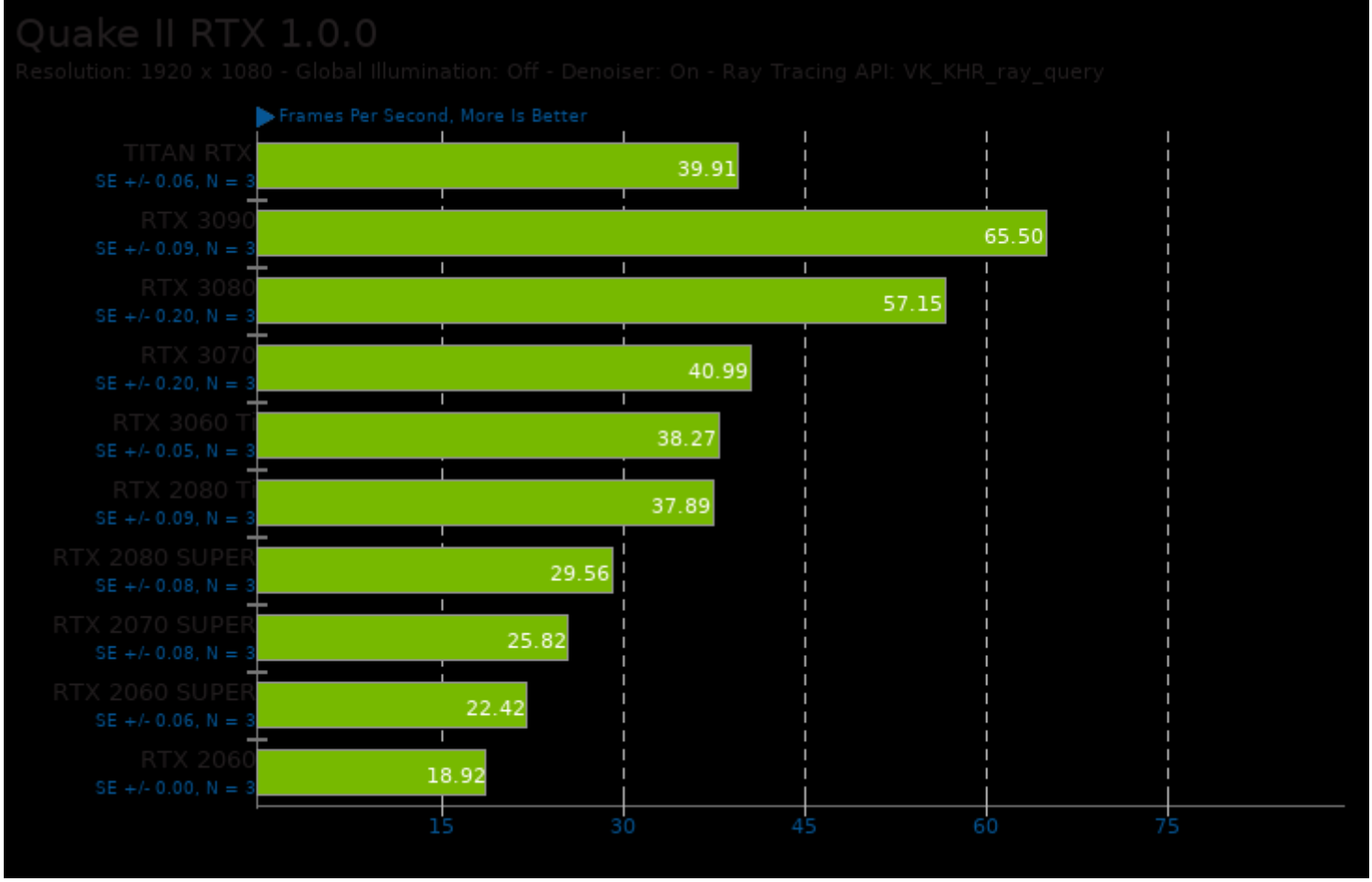
Quake II RTX - 3840 x 2160 - High - On - VK_KHR_ray_tracing_pipeline (FPS)	**12.808569**	14.774338	17.663715	20.281258	25.299180	26.698156	25.429215	27.344099	37.702461	**43.230378**
Normalized	29.63%	34.18%	40.86%	46.91%	58.52%	61.76%	58.82%	63.25%	87.21%	100%
Standard Deviation	0.2%	0.2%	0.1%	0.3%	0.7%	0.5%	0.1%	0.5%	0.8%	0.3%
Quake II RTX - 3840 x 2160 - Low - Off - VK_KHR_ray_tracing_pipeline (FPS)	**27.181193**	31.007547	36.207906	41.210900	49.718269	52.294345	50.536620	52.249860	70.600583	**78.975184**
Normalized	34.42%	39.26%	45.85%	52.18%	62.95%	66.22%	63.99%	66.16%	89.4%	100%
Standard Deviation	0.2%	0.3%	0.4%	0.4%	1.3%	0.2%	0.1%	2%	0.8%	1.2%
Quake II RTX - 3840 x 2160 - Off - Off - VK_KHR_ray_tracing_pipeline (FPS)	**34.600258**	40.304119	45.633743	50.961786	61.344860	64.188208	62.635475	63.828907	86.095675	**95.432574**
Normalized	36.26%	42.23%	47.82%	53.4%	64.28%	67.26%	65.63%	66.88%	90.22%	100%
Standard Deviation	0.3%	0.2%	0.7%	0.8%	0.6%	0.9%	0.5%	0.5%	0.8%	0.1%
Quake II RTX - 1920 x 1080 - High - Off - VK_KHR_ray_tracing_pipeline (FPS)	**19.737109**	22.268888	26.840758	31.019336	37.751399	39.648355	37.643990	40.038188	54.067412	**61.503125**
Normalized	32.09%	36.21%	43.64%	50.44%	61.38%	64.47%	61.21%	65.1%	87.91%	100%
Standard Deviation	0.2%	0.3%	0.4%	0.4%	0.8%	0.3%	0.2%	0.2%	0.3%	1.4%
Quake II RTX - 2560 x 1440 - High - Off - VK_KHR_ray_tracing_pipeline (FPS)	**19.723275**	22.299942	26.767515	30.770585	37.558515	39.376946	37.664894	39.890718	53.910486	**60.744128**
Normalized	32.47%	36.71%	44.07%	50.66%	61.83%	64.82%	62.01%	65.67%	88.75%	100%
Standard Deviation	0.1%	0.4%	0.6%	0.2%	0.4%	0.6%	0%	0.3%	0.3%	0.9%
Quake II RTX - 3840 x 2160 - High - Off - VK_KHR_ray_tracing_pipeline (FPS)	**19.675269**	22.255730	26.694002	30.847094	37.681500	39.673102	37.485900	40.075970	54.076687	**61.104566**
Normalized	32.2%	36.42%	43.69%	50.48%	61.67%	64.93%	61.35%	65.59%	88.5%	100%
Standard Deviation	0.4%	0.2%	0.2%	0.4%	0.2%	0.6%	0.1%	0.5%	0.3%	0.4%
Quake II RTX - 1920 x 1080 - Medium - On - VK_KHR_ray_tracing_pipeline (FPS)	**14.105924**	16.303968	19.410923	22.085102	27.653932	29.071936	27.911808	30.099698	41.527753	**47.681980**
Normalized	29.58%	34.19%	40.71%	46.32%	58%	60.97%	58.54%	63.13%	87.09%	100%
Standard Deviation	0.1%	0.2%	0.3%	0.1%	0.4%	0.6%	0.5%	0.5%	0.1%	1%

Quake 2 RTX Benchmarks Linux

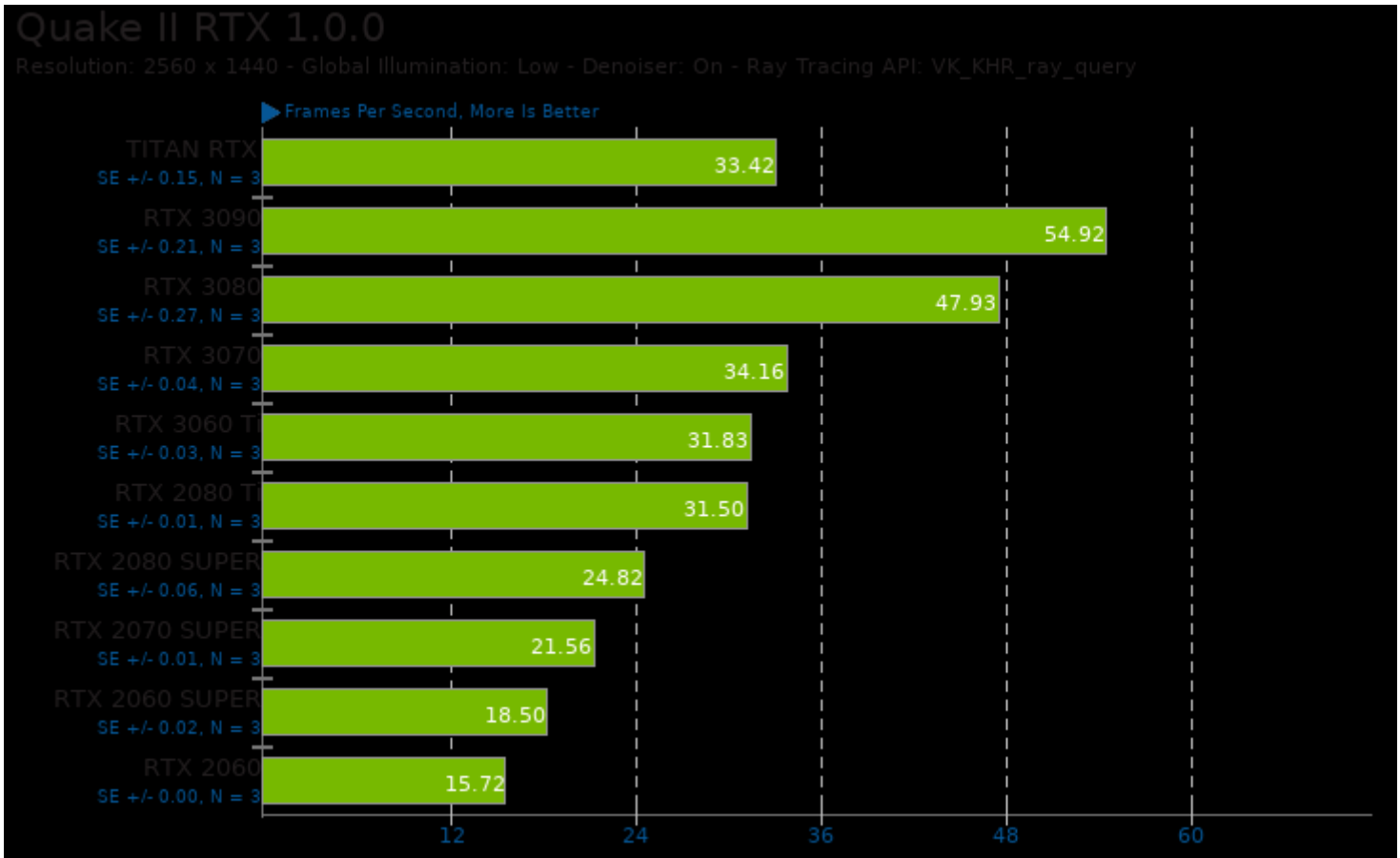
Quake II RTX - 2560 x 1440 - Medium - On - VK_KHR_ray_tracing_pipeline (FPS)	14.083991	16.281923	19.425756	22.123823	27.535842	28.967718	27.958705	30.150525	41.847120	47.485794
Normalized	29.66%	34.29%	40.91%	46.59%	57.99%	61%	58.88%	63.49%	88.13%	100%
Standard Deviation	0.1%	0.1%	0.1%	0.4%	0.2%	0.3%	0%	0.1%	0.8%	0.7%
Quake II RTX - 3840 x 2160 - Medium - On - VK_KHR_ray_tracing_pipeline (FPS)	14.068810	16.248451	19.317595	22.107725	27.689412	29.101522	27.930811	29.948294	41.566035	47.515369
Normalized	29.61%	34.2%	40.66%	46.53%	58.27%	61.25%	58.78%	63.03%	87.48%	100%
Standard Deviation	0.1%	0.3%	0.3%	0.4%	0.3%	0.4%	0.3%	0.1%	0.1%	0.3%
Quake II RTX - 1920 x 1080 - Medium - Off - VK_KHR_ray_tracing_pipeline (FPS)	22.850174	25.859360	31.007964	35.445938	42.732730	45.116717	43.363748	45.291073	62.373642	69.329394
Normalized	32.96%	37.3%	44.73%	51.13%	61.64%	65.08%	62.55%	65.33%	89.97%	100%
Standard Deviation	0.4%	0.5%	0.2%	0.5%	0.7%	0.2%	0.1%	0.8%	0.6%	0.6%
Quake II RTX - 2560 x 1440 - Medium - Off - VK_KHR_ray_tracing_pipeline (FPS)	22.904894	25.868998	31.062887	35.415989	42.734811	44.749669	43.163035	45.547869	61.745899	69.966019
Normalized	32.74%	36.97%	44.4%	50.62%	61.08%	63.96%	61.69%	65.1%	88.25%	100%
Standard Deviation	0.4%	0.4%	0.2%	0.7%	0.4%	0.1%	0.6%	0.7%	0.2%	0.7%
Quake II RTX - 3840 x 2160 - Medium - Off - VK_KHR_ray_tracing_pipeline (FPS)	22.912673	25.899687	31.036933	35.512791	42.973241	45.139876	43.342875	45.621864	62.332296	69.480357
Normalized	32.98%	37.28%	44.67%	51.11%	61.85%	64.97%	62.38%	65.66%	89.71%	100%
Standard Deviation	0.4%	0.3%	0.2%	0.8%	0.3%	0.5%	0%	0.5%	0.5%	0.7%

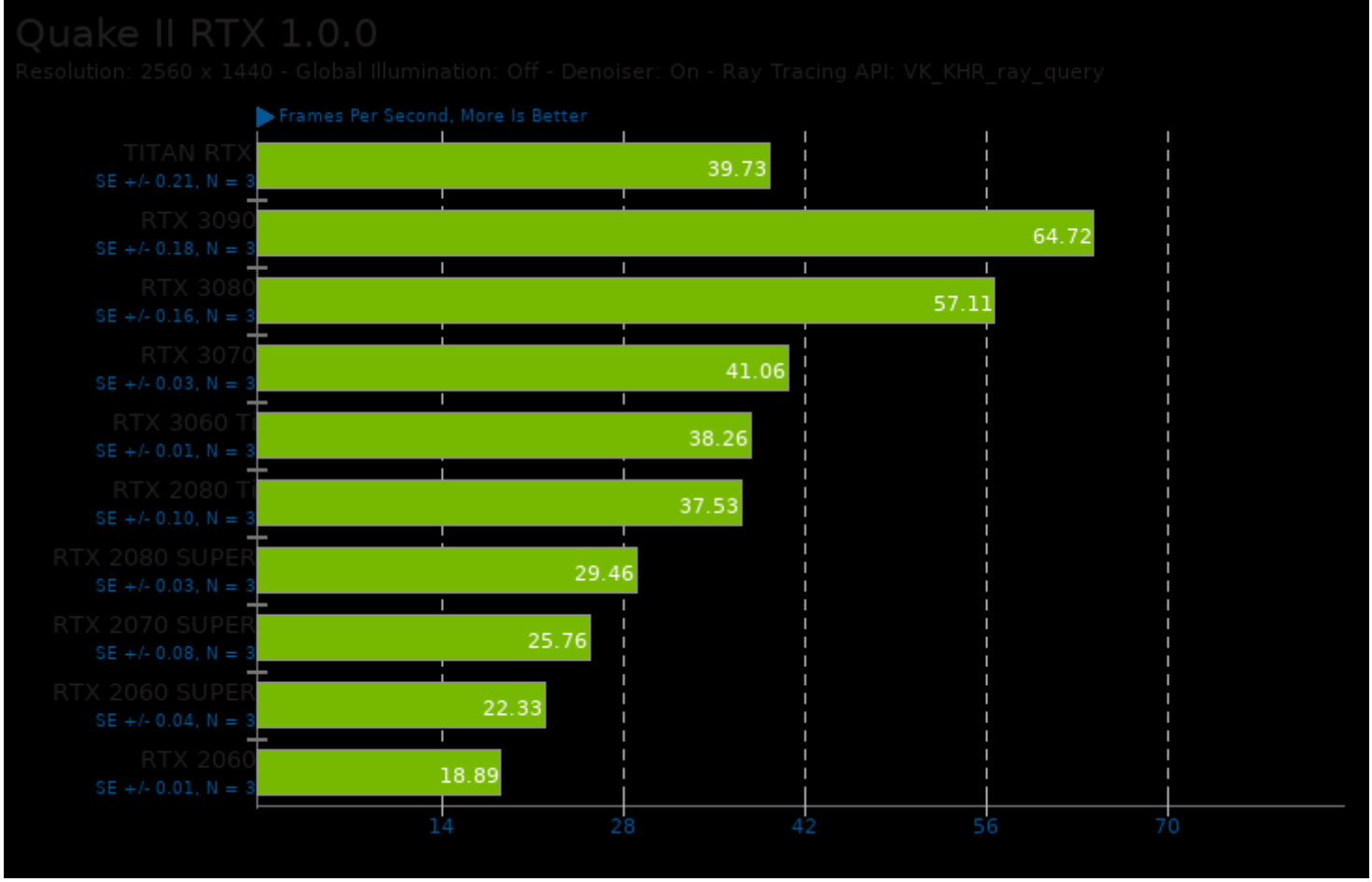
Quake 2 RTX Benchmarks Linux



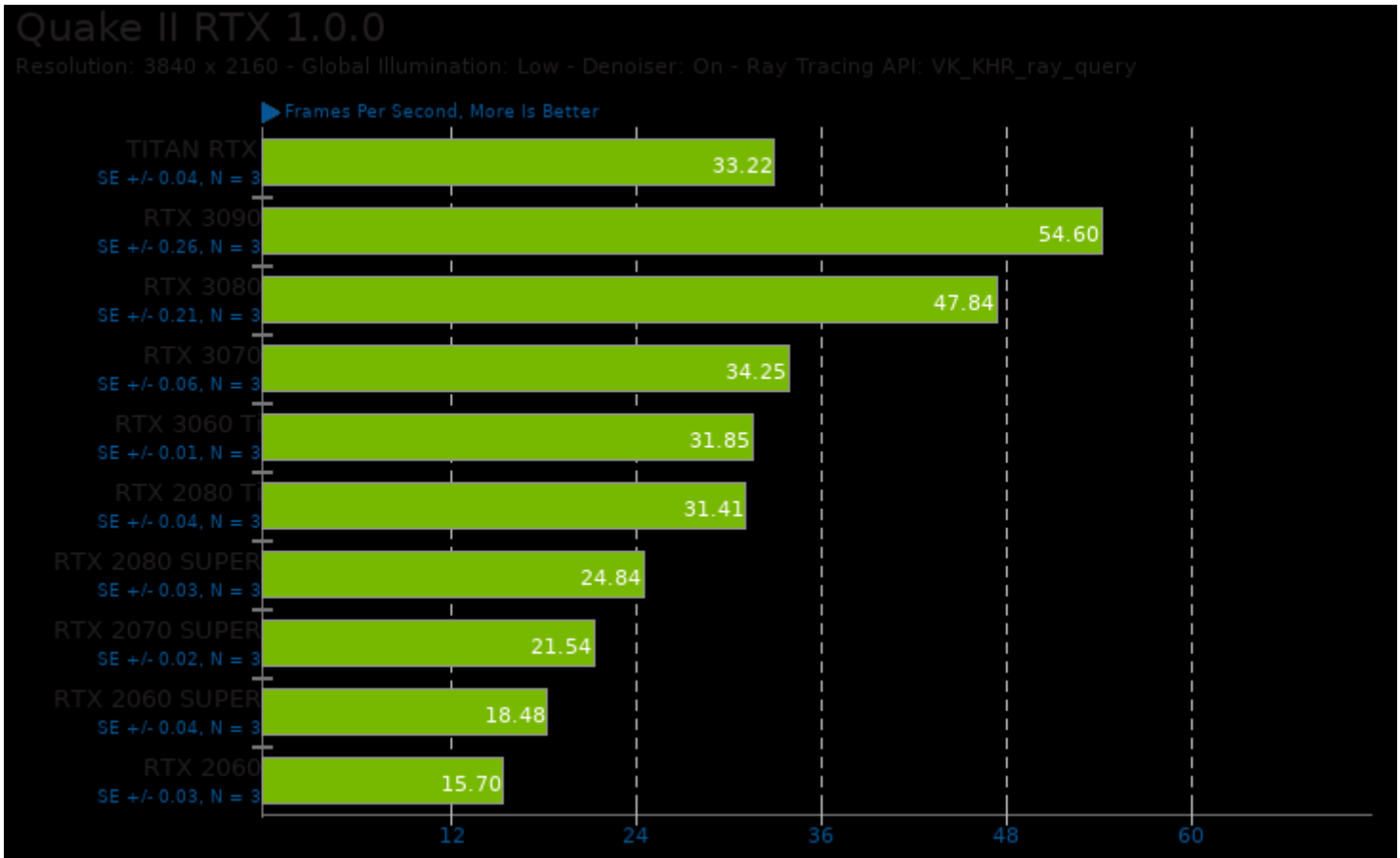


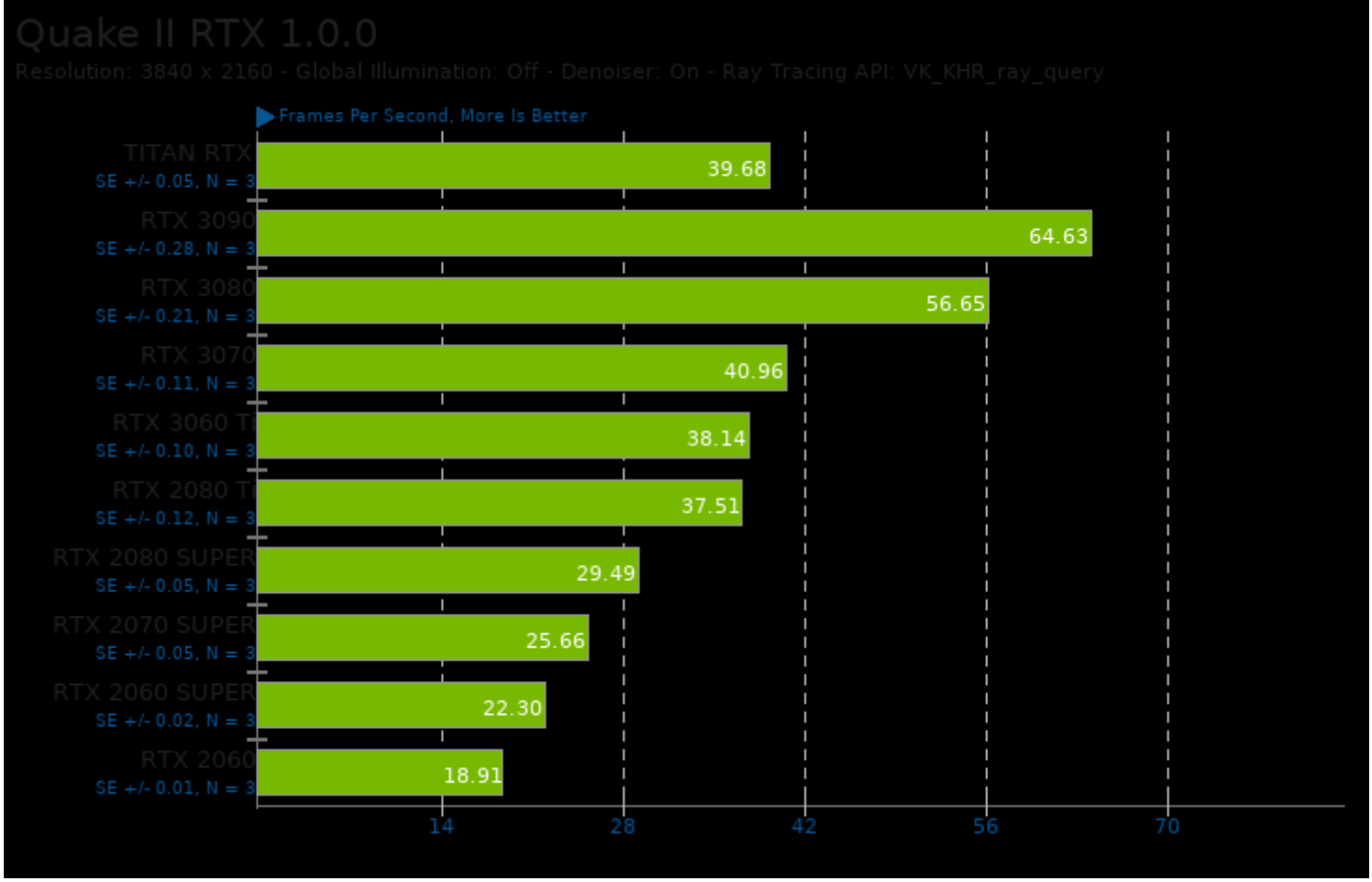
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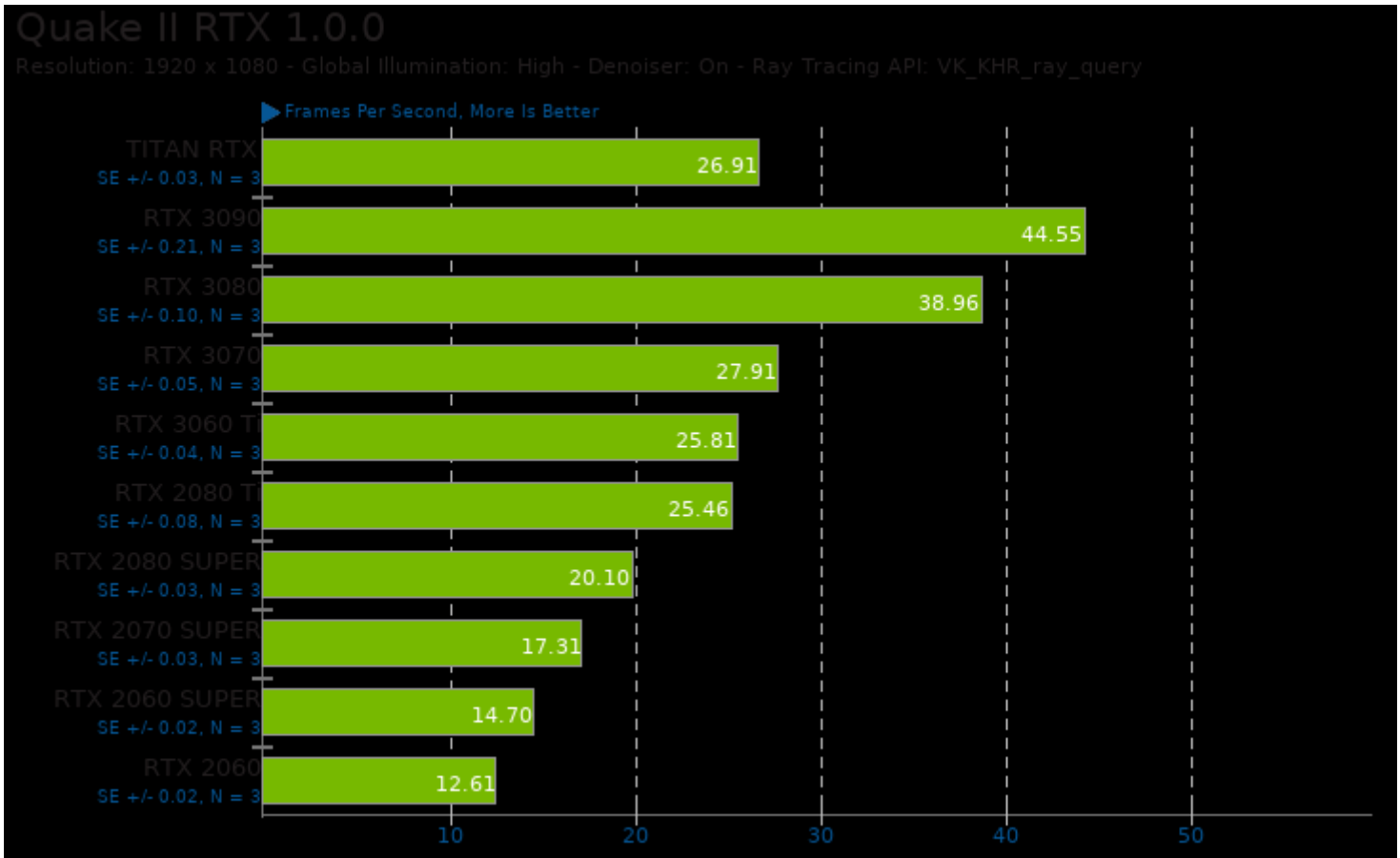


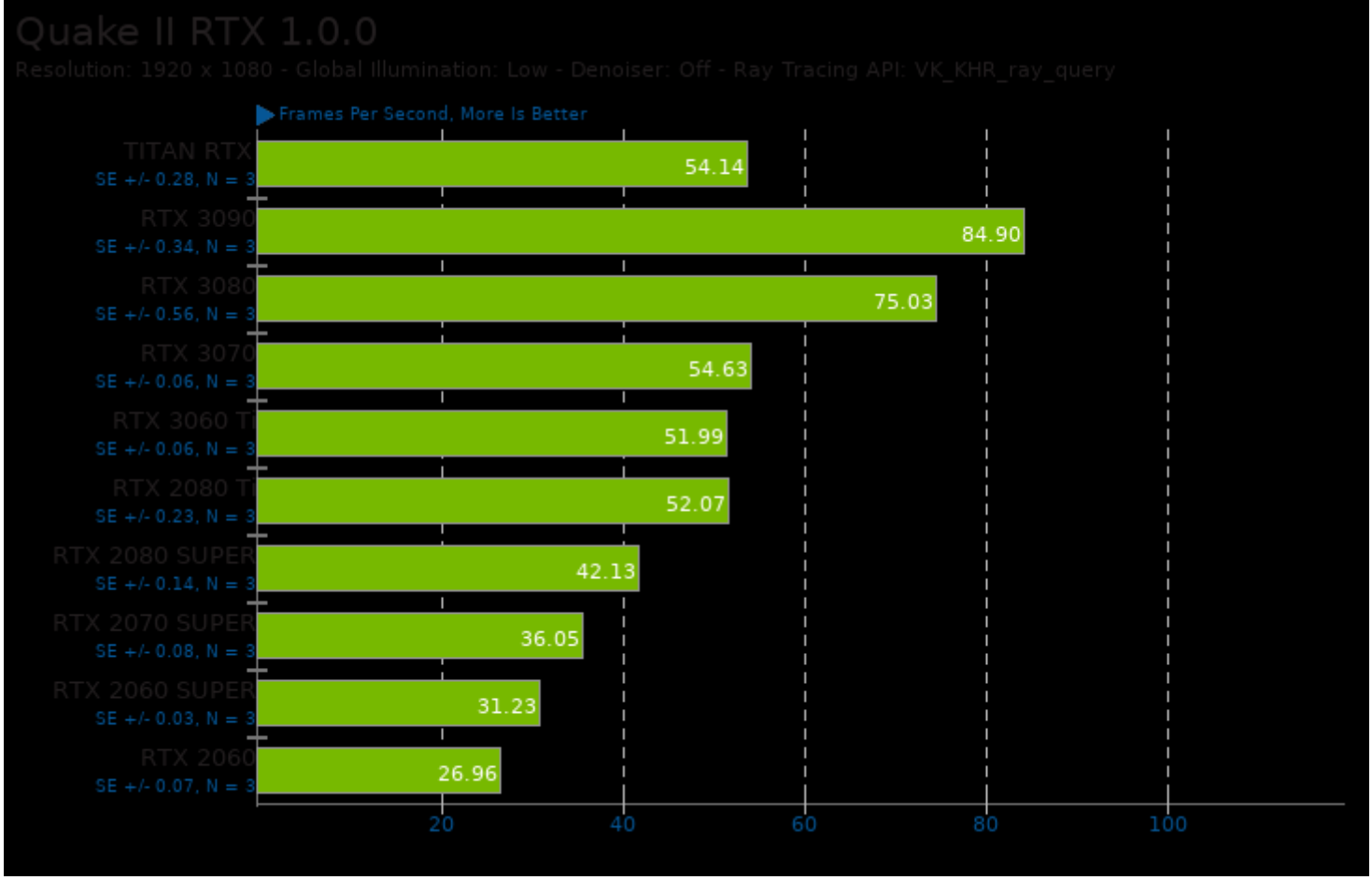
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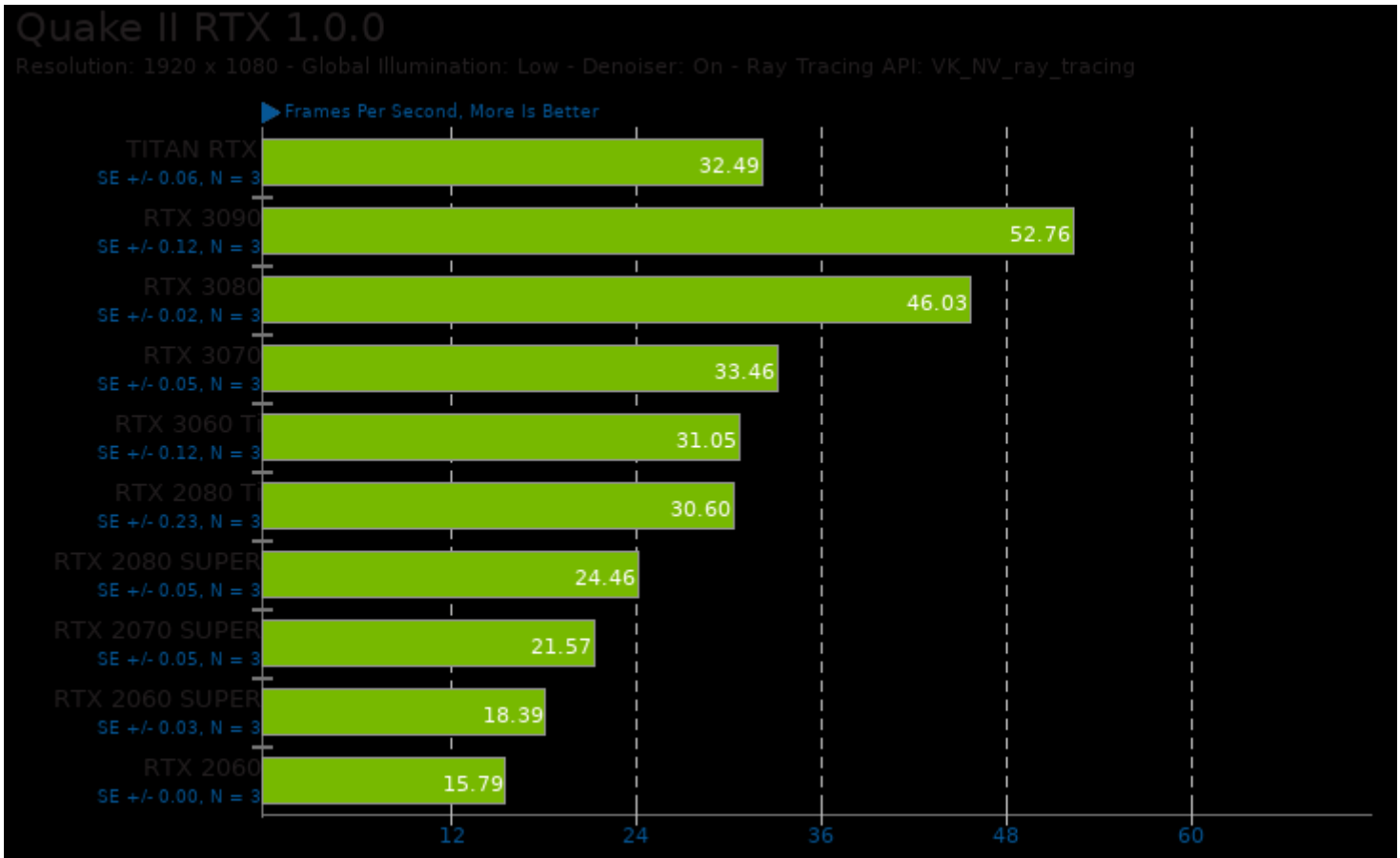


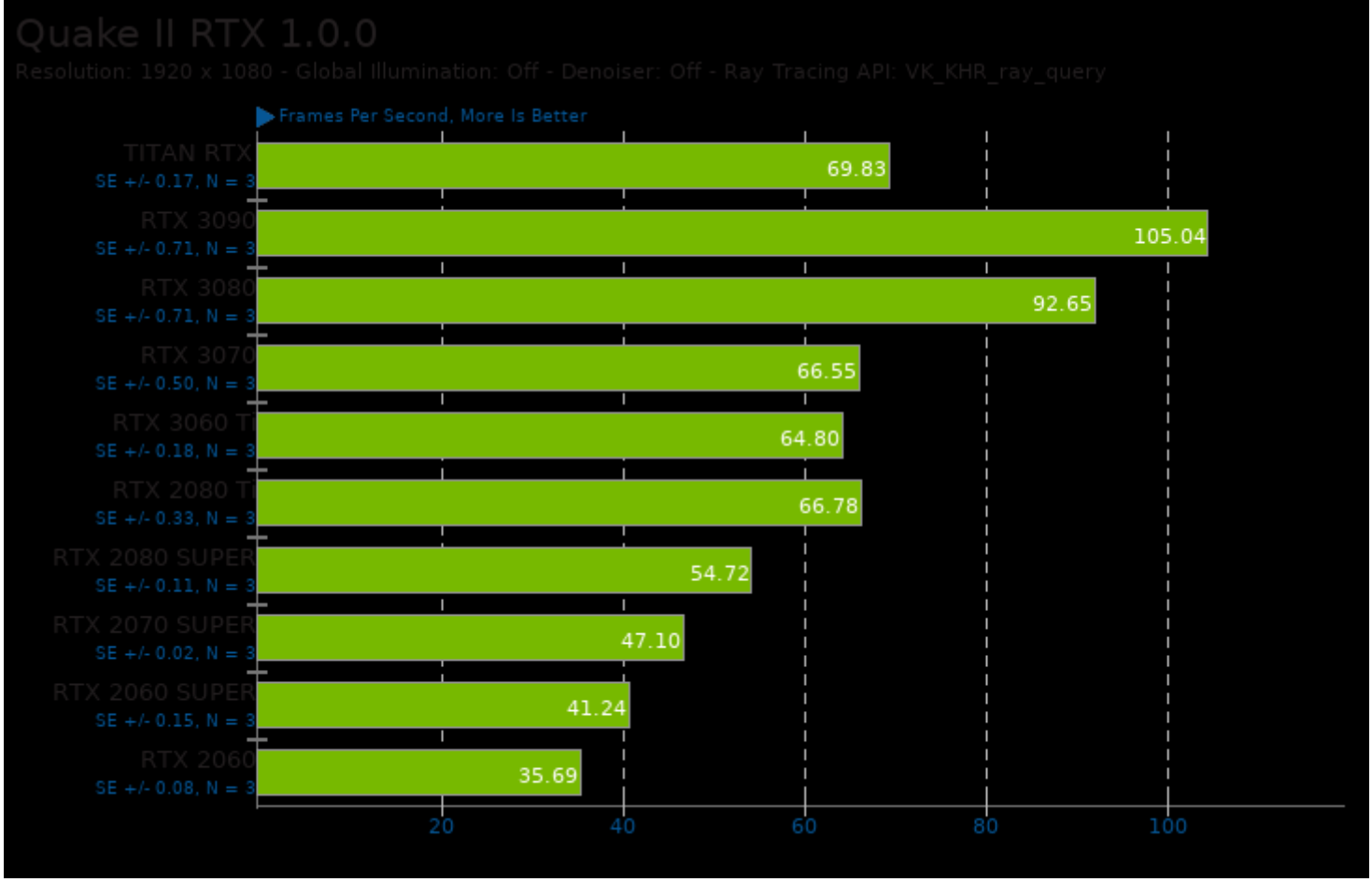
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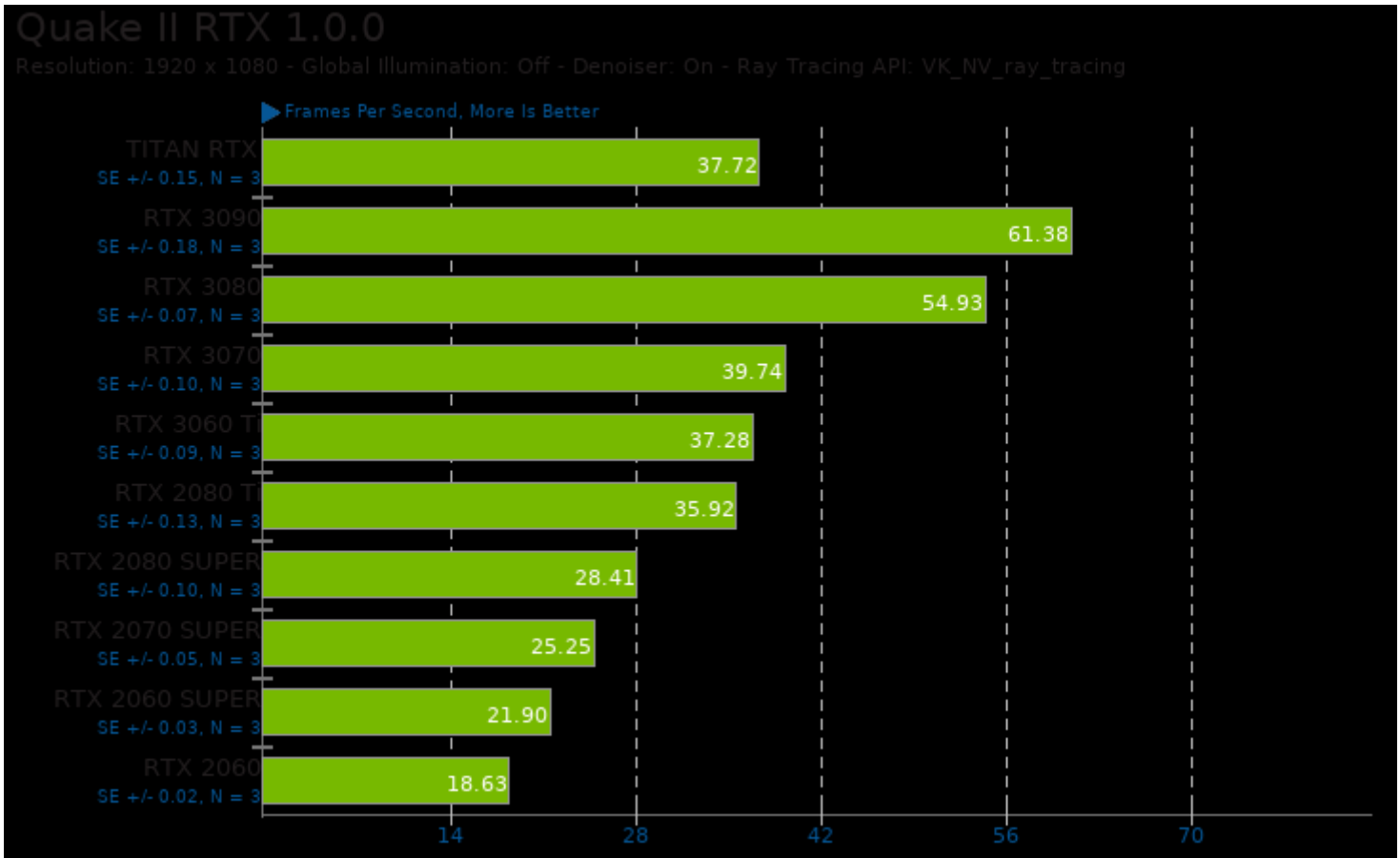


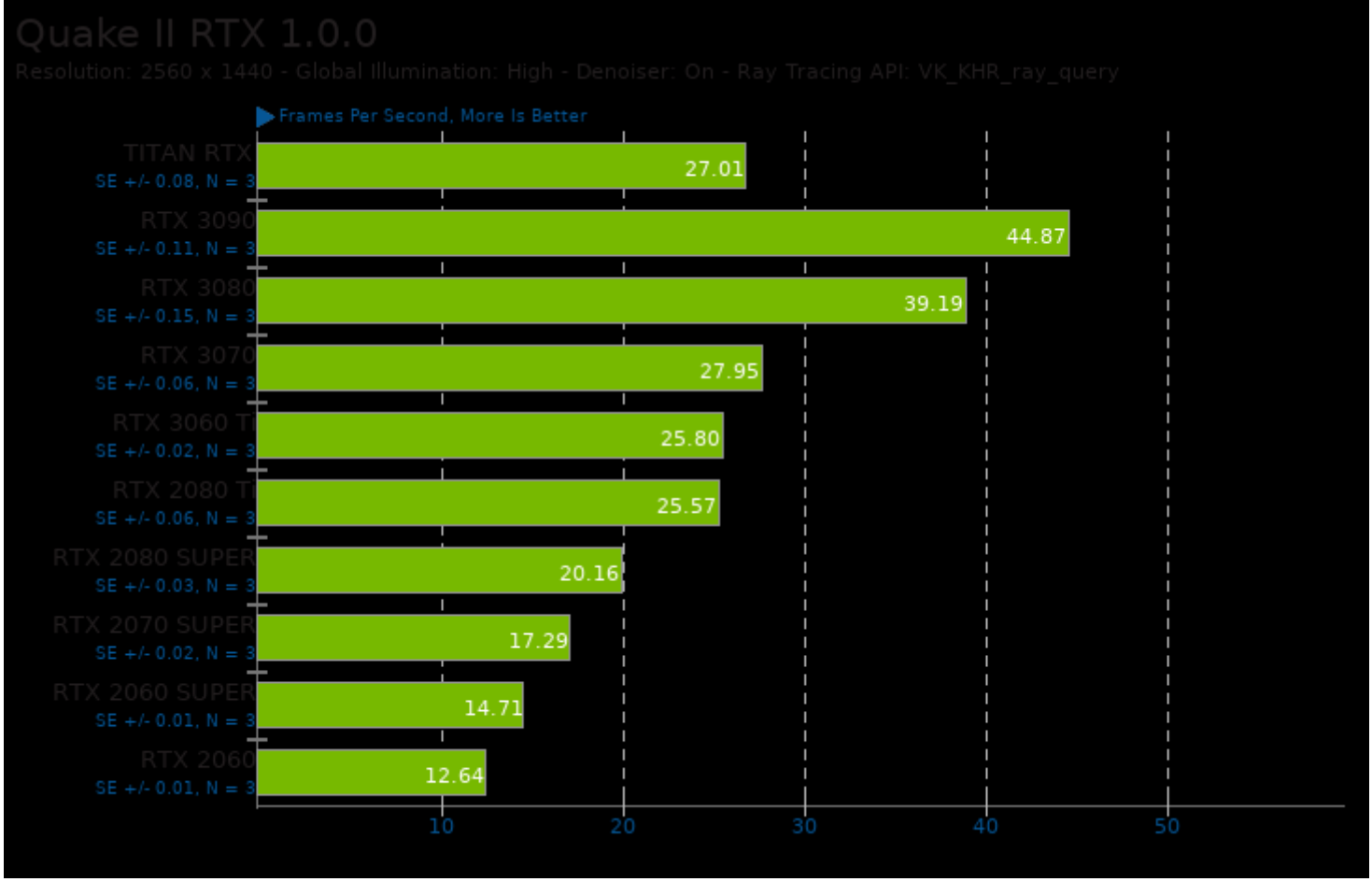
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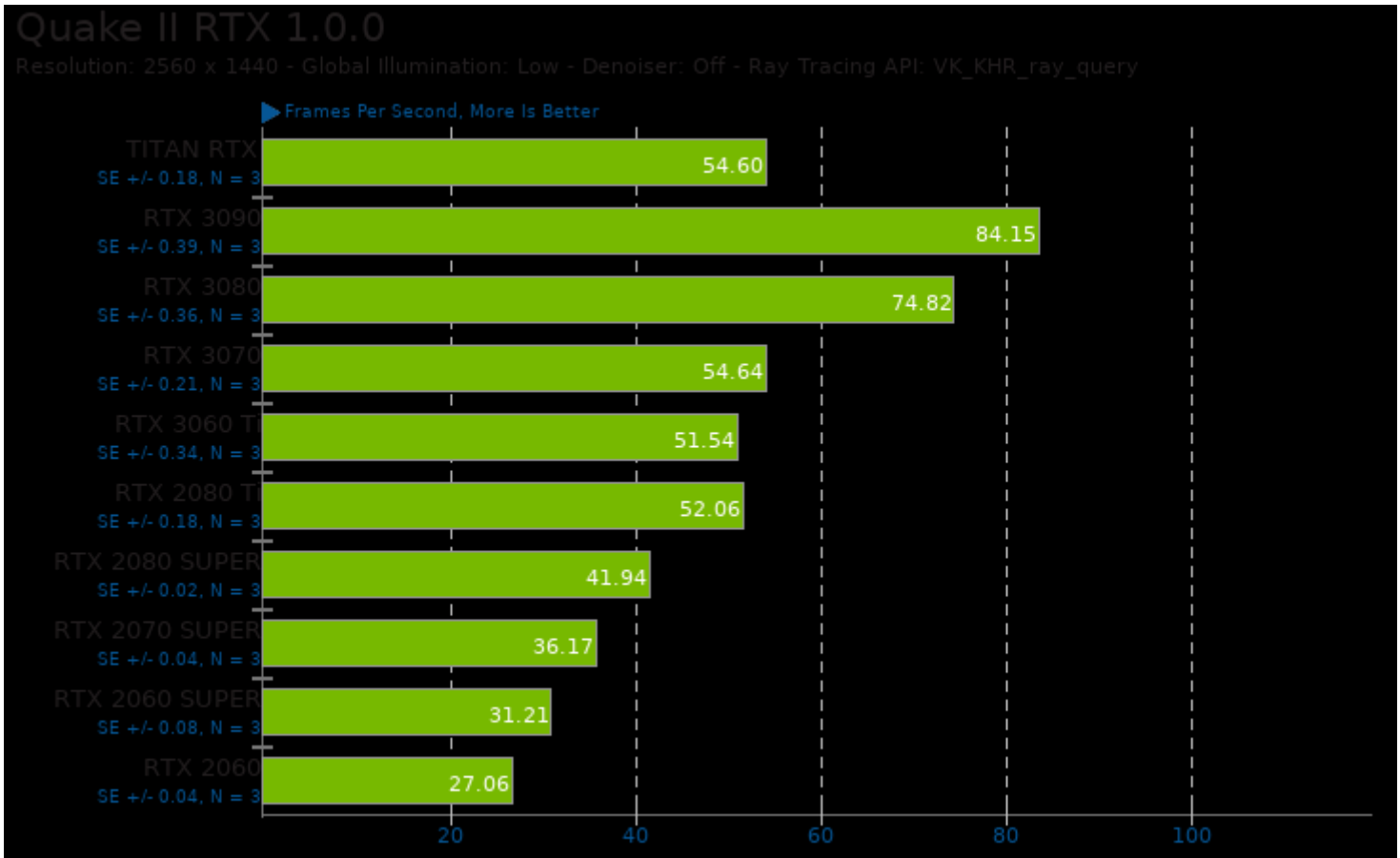


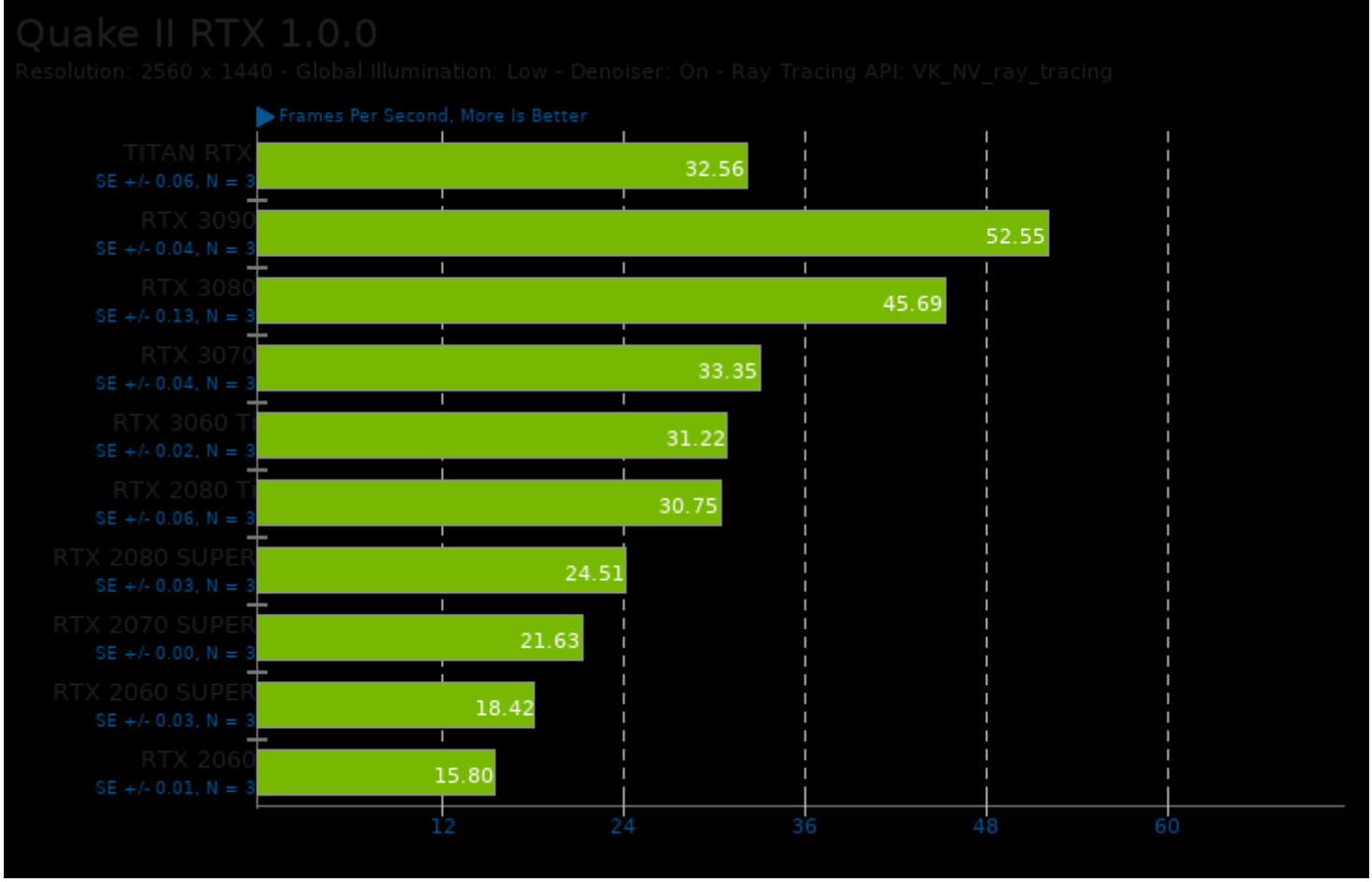
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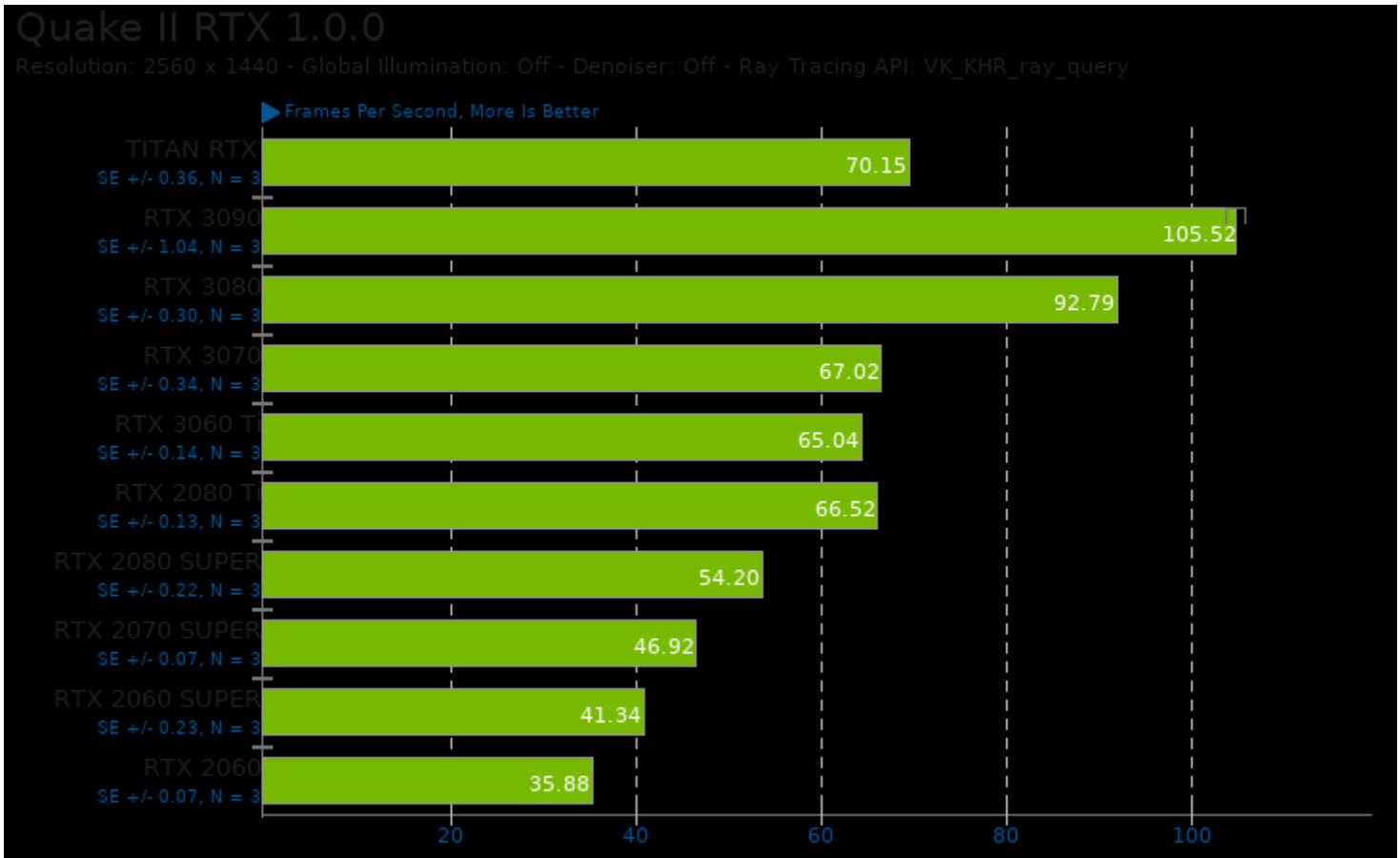


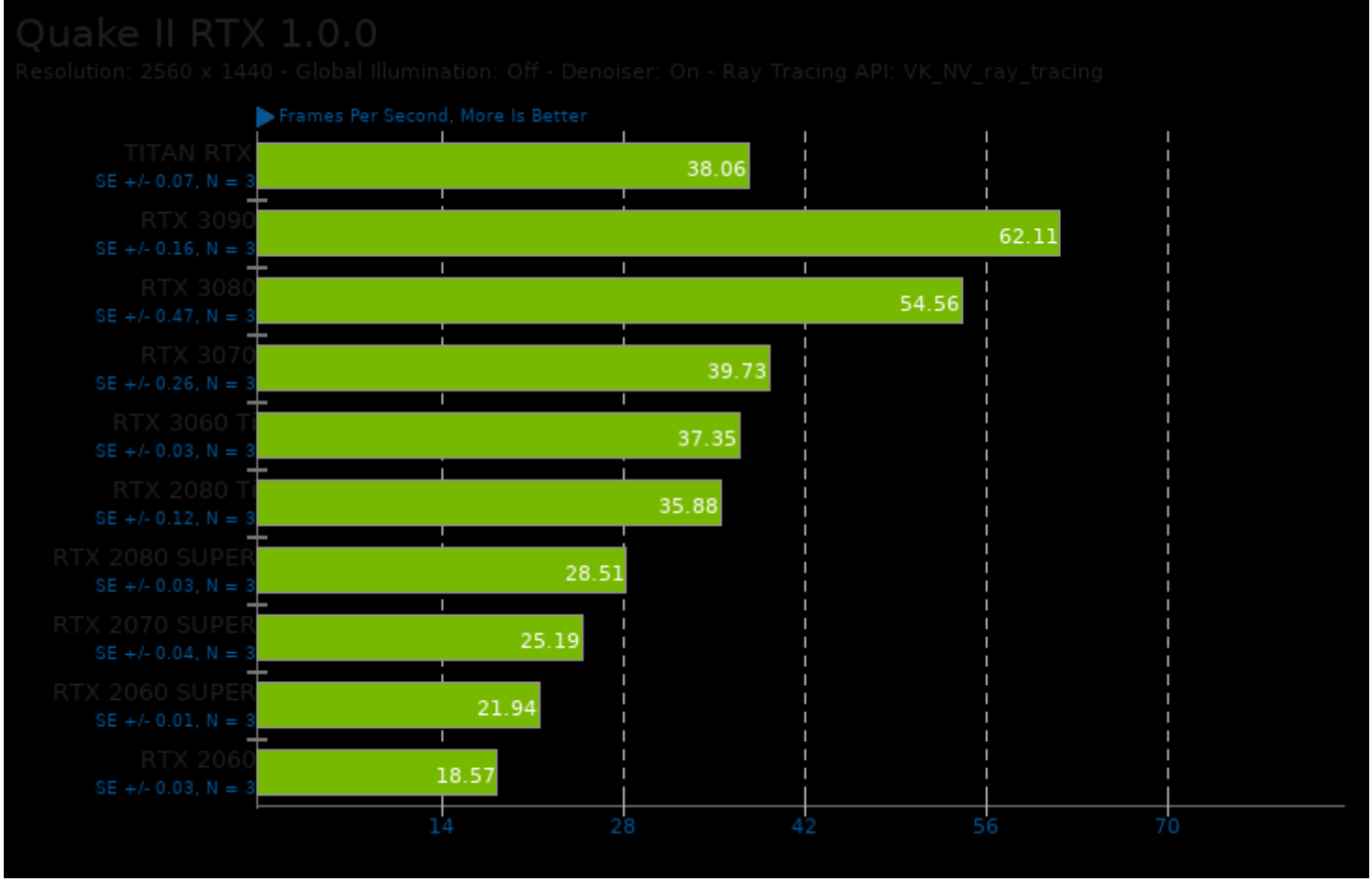
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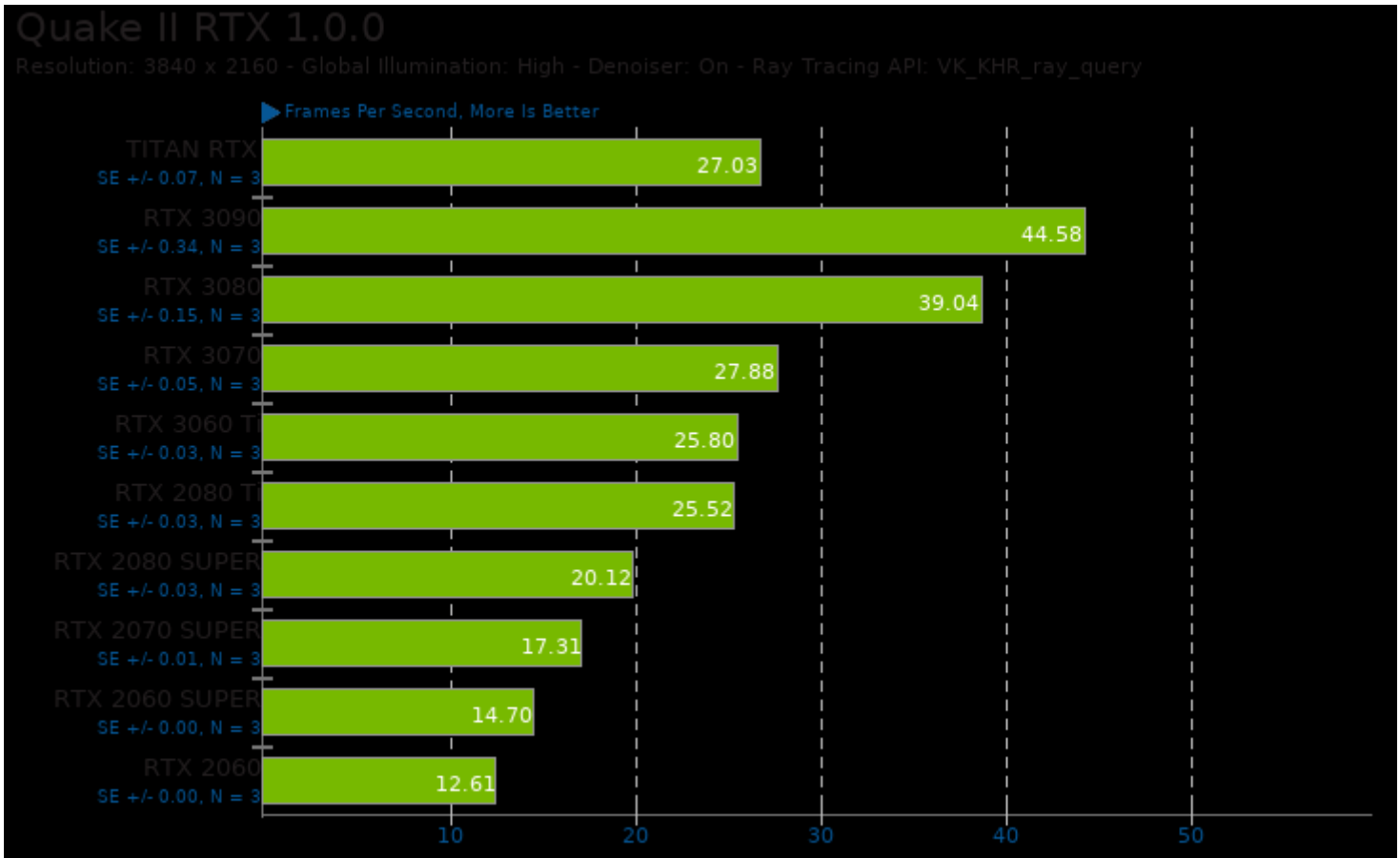


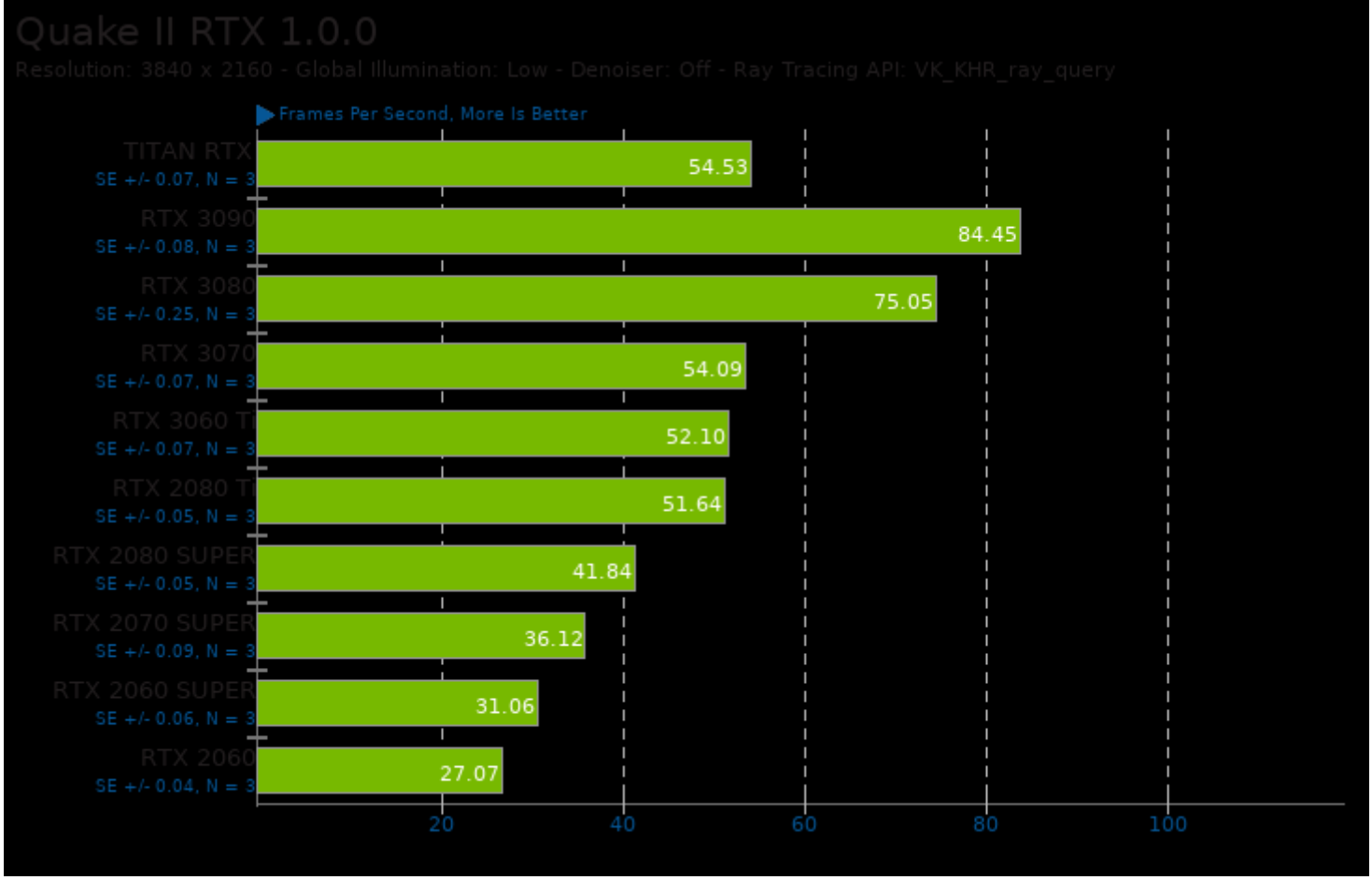
Quake 2 RTX Benchmarks Linux



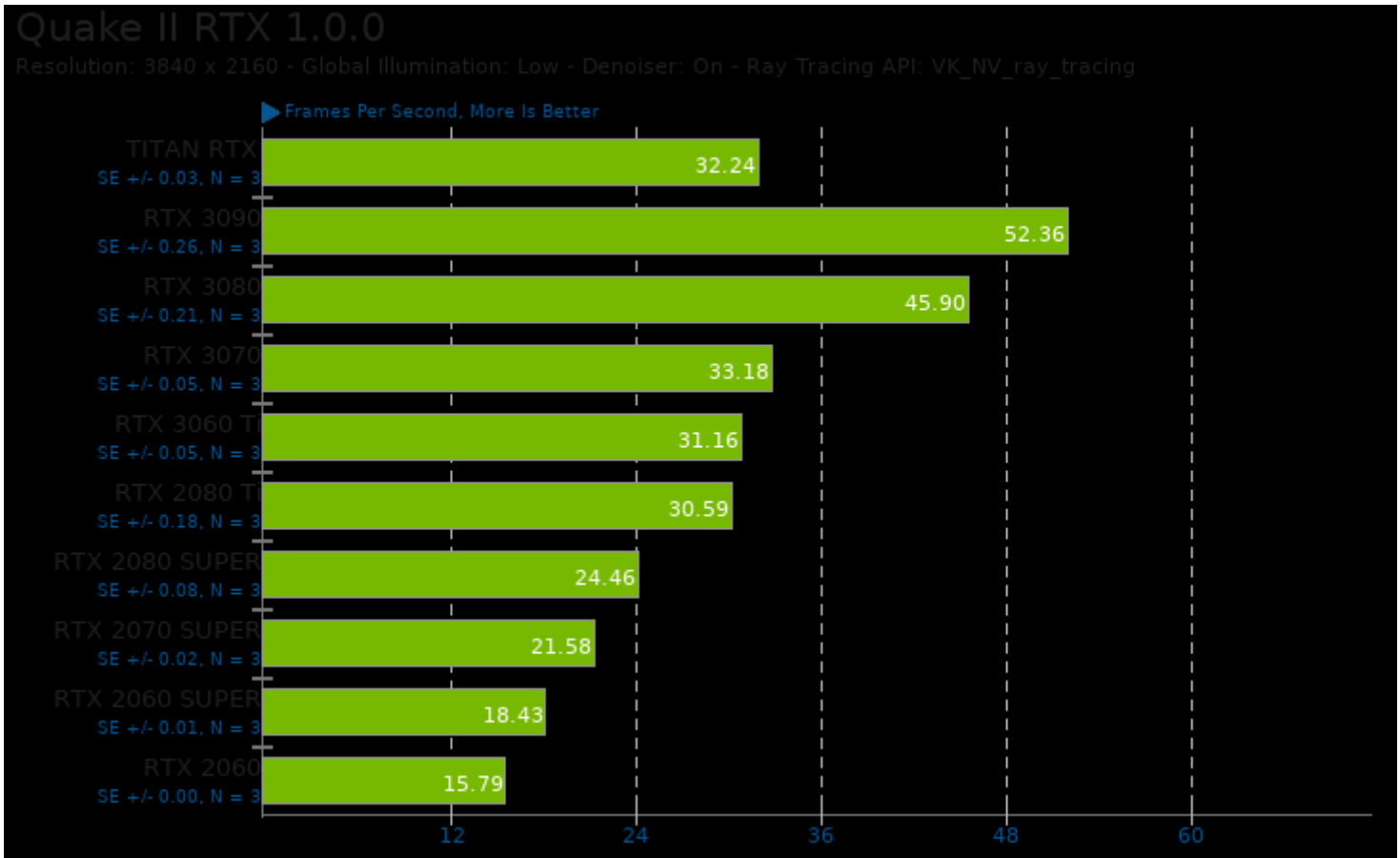


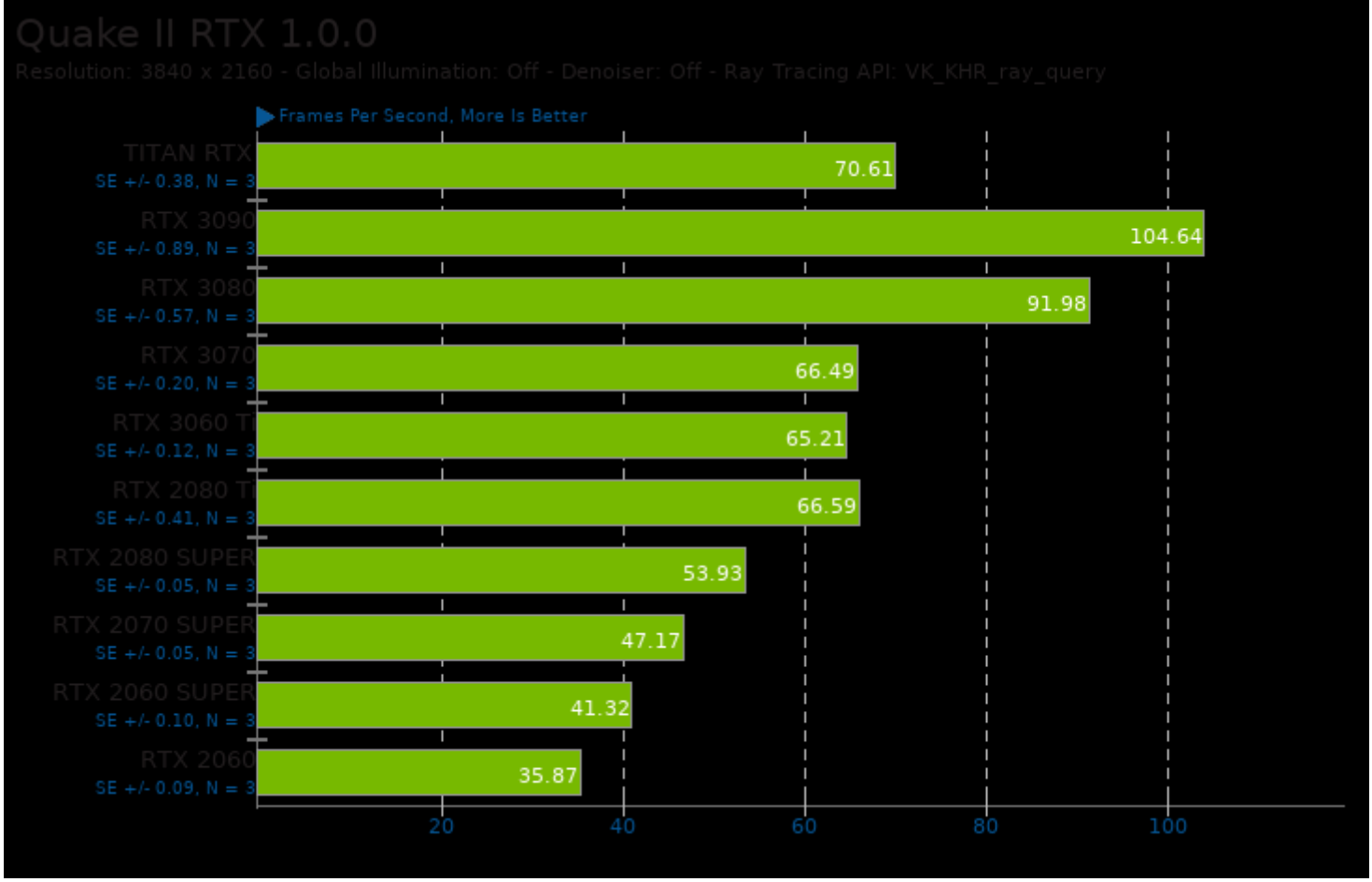
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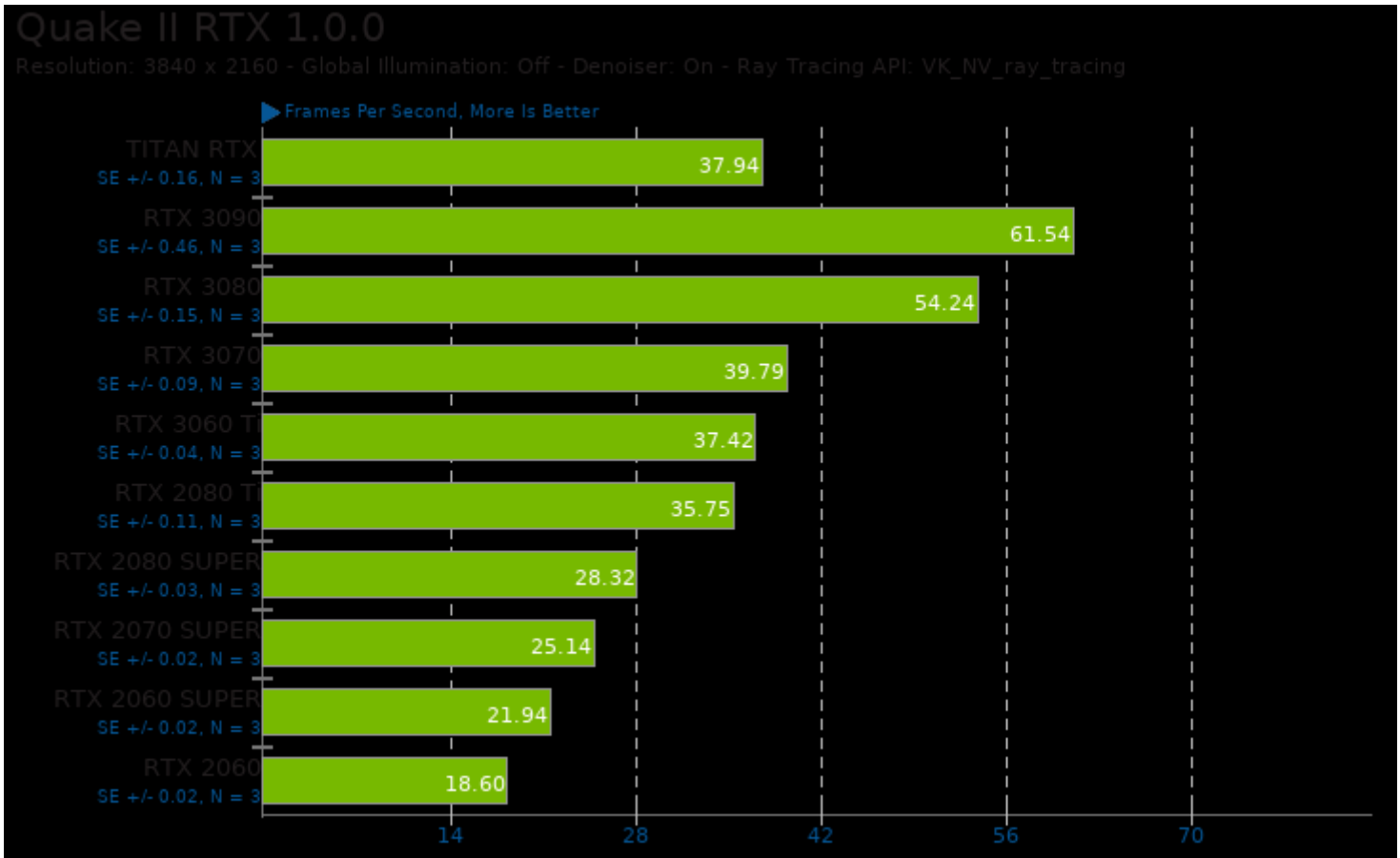


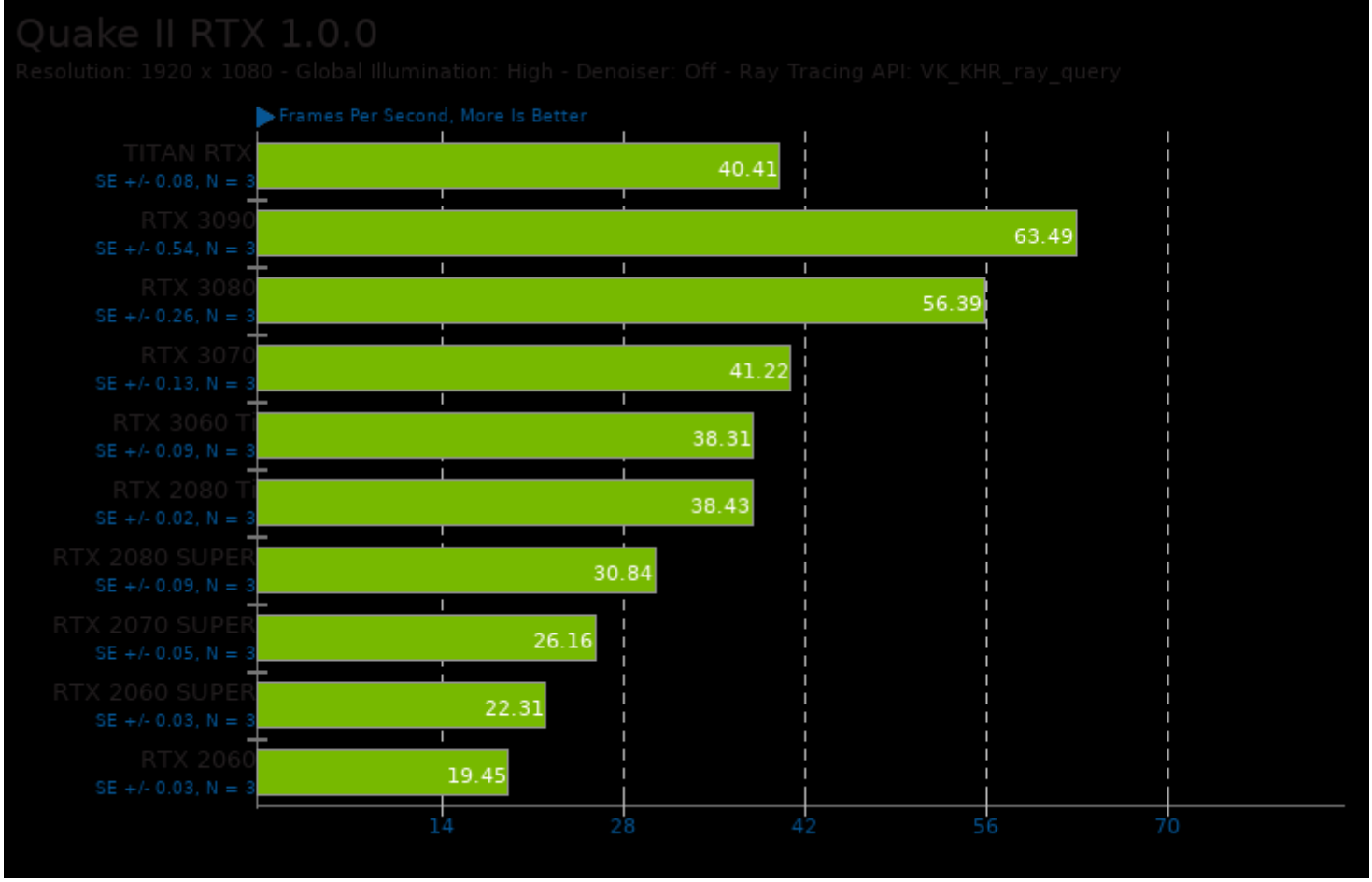
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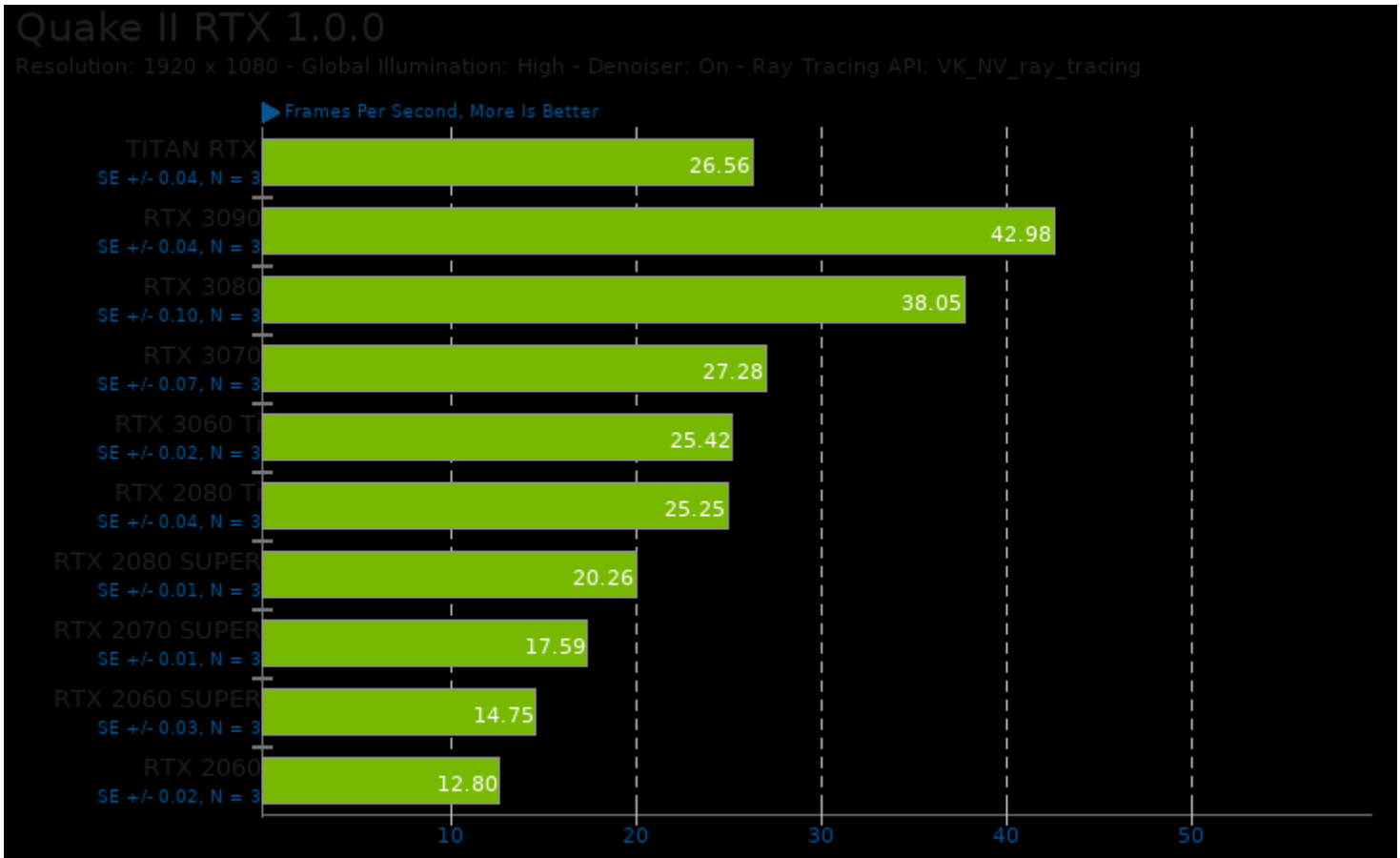


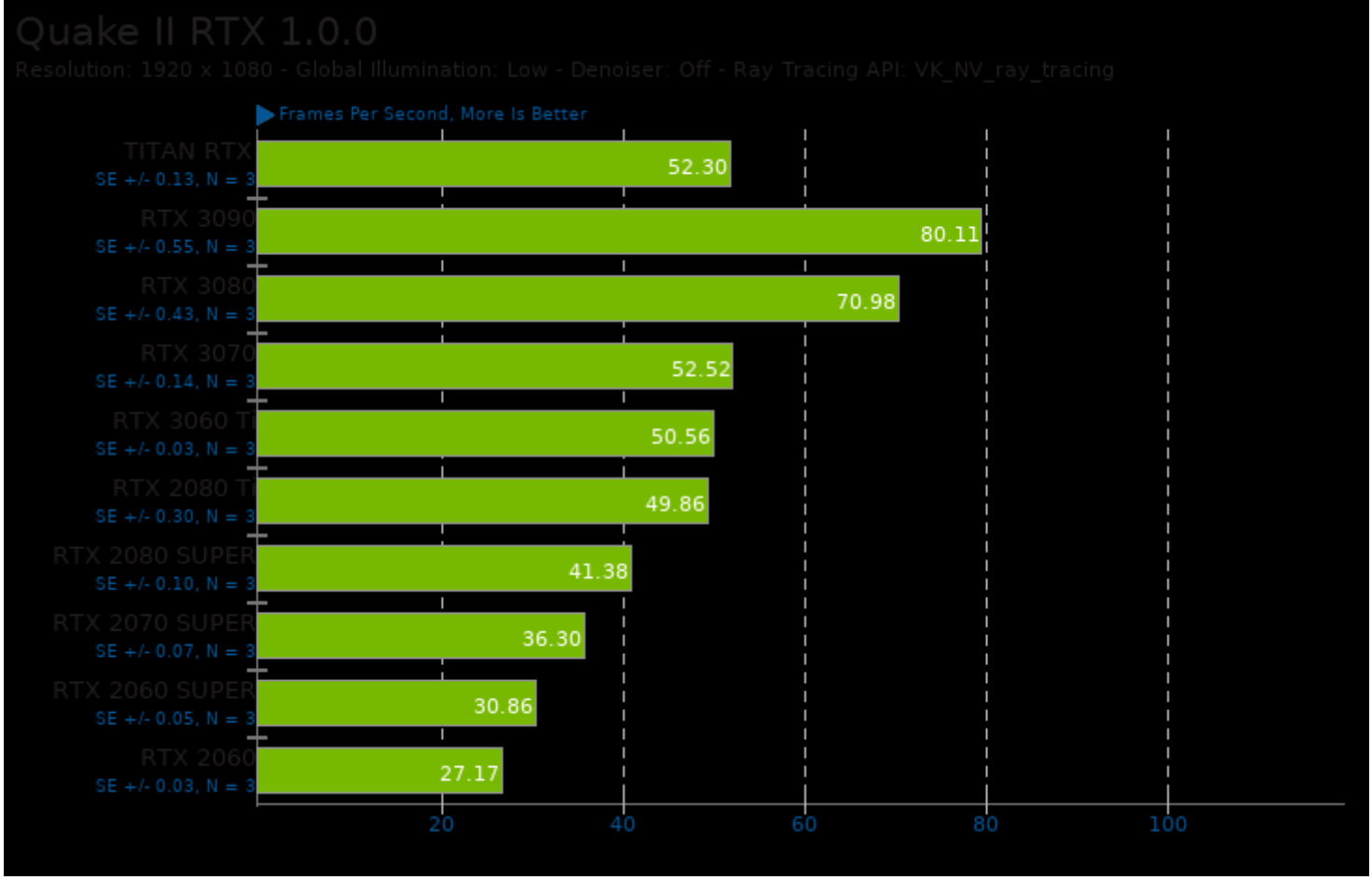
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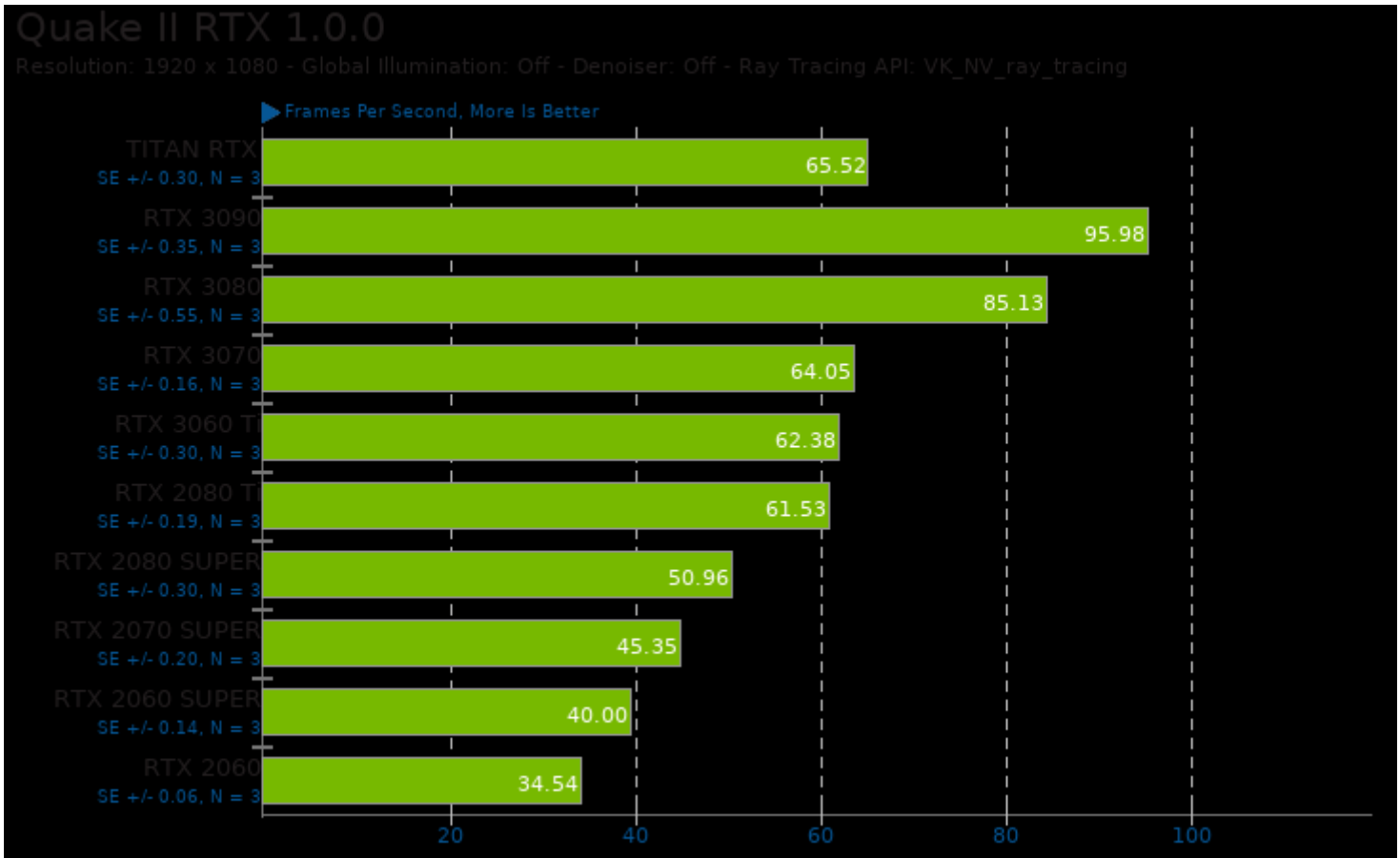


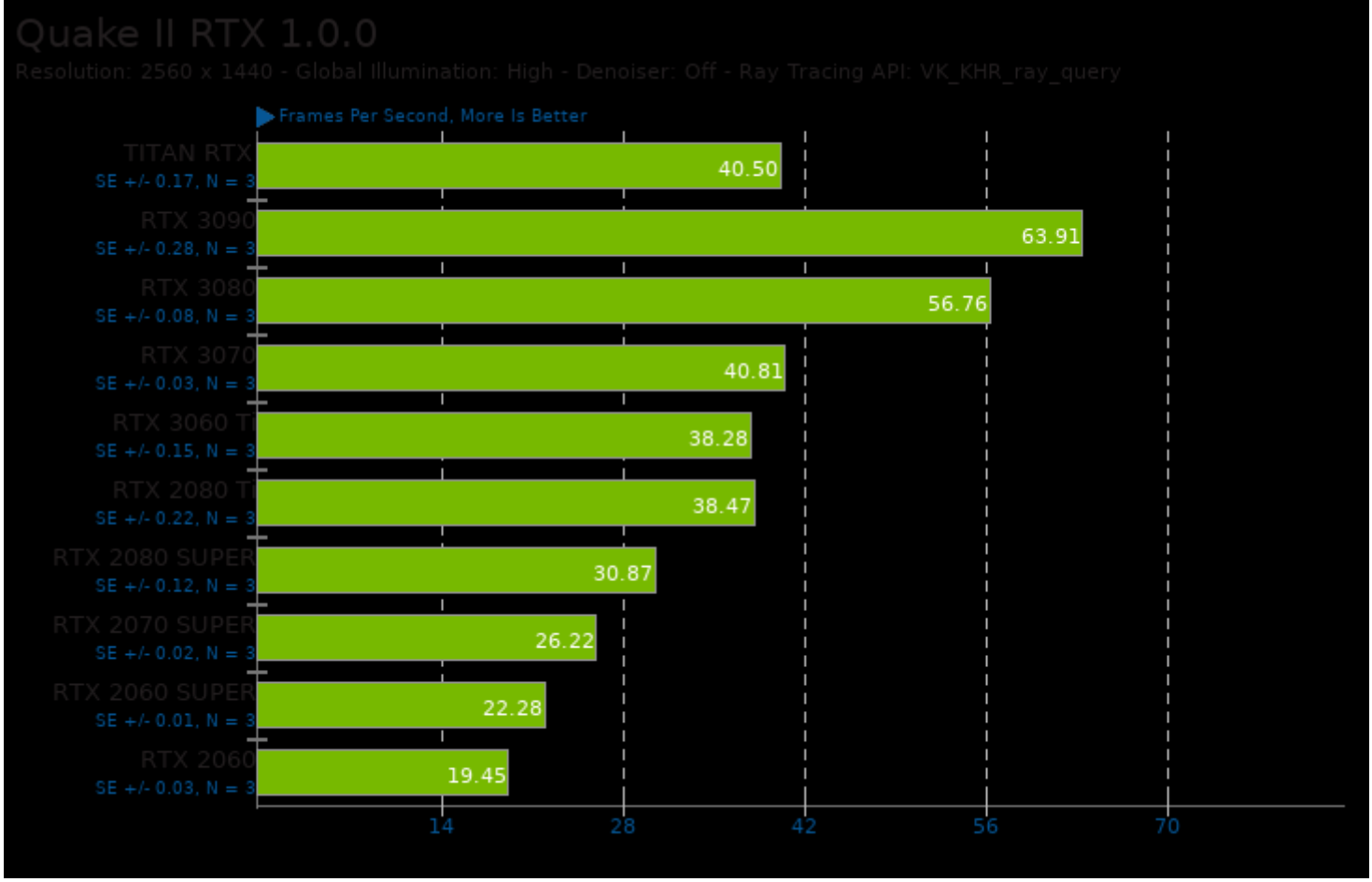
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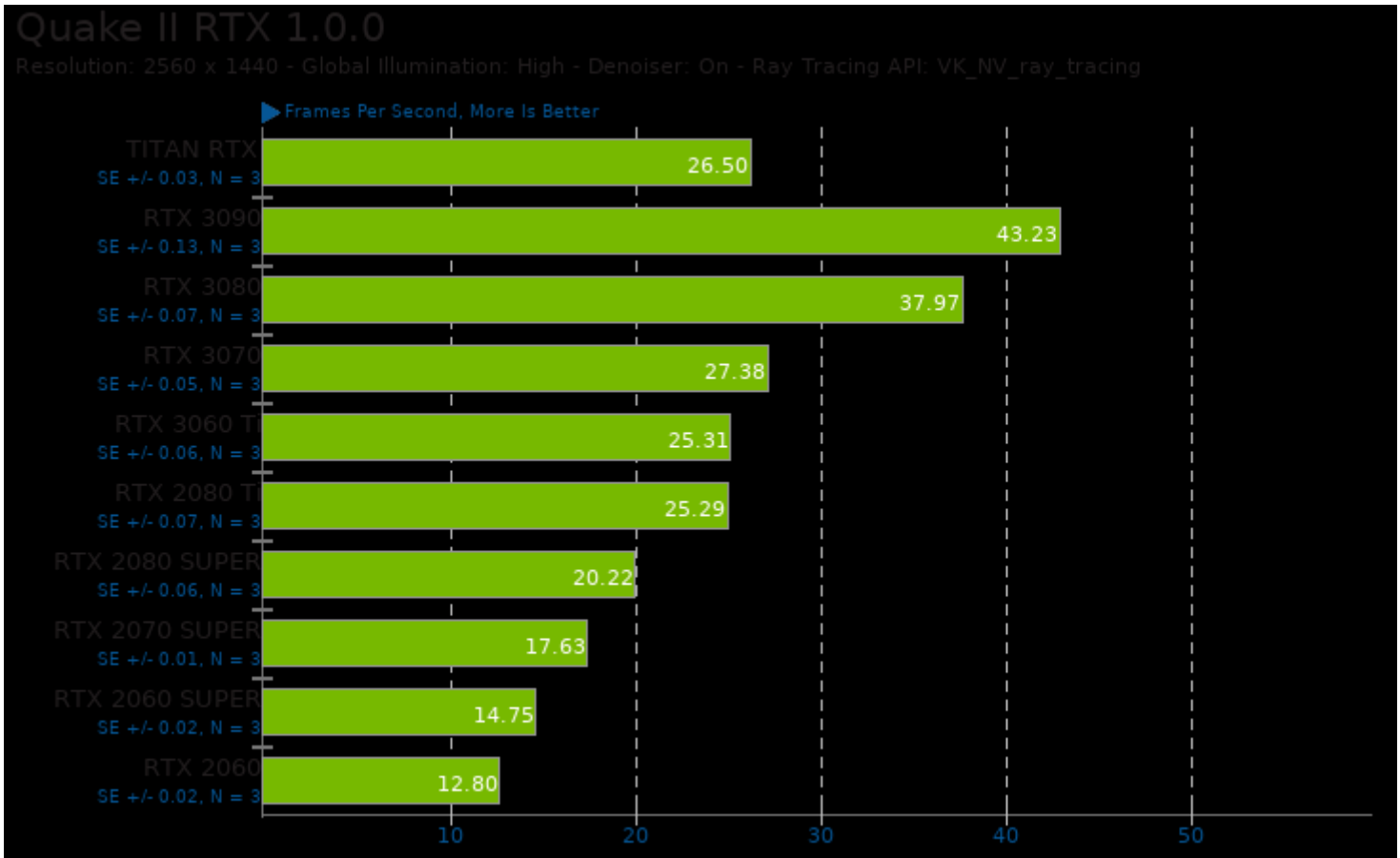


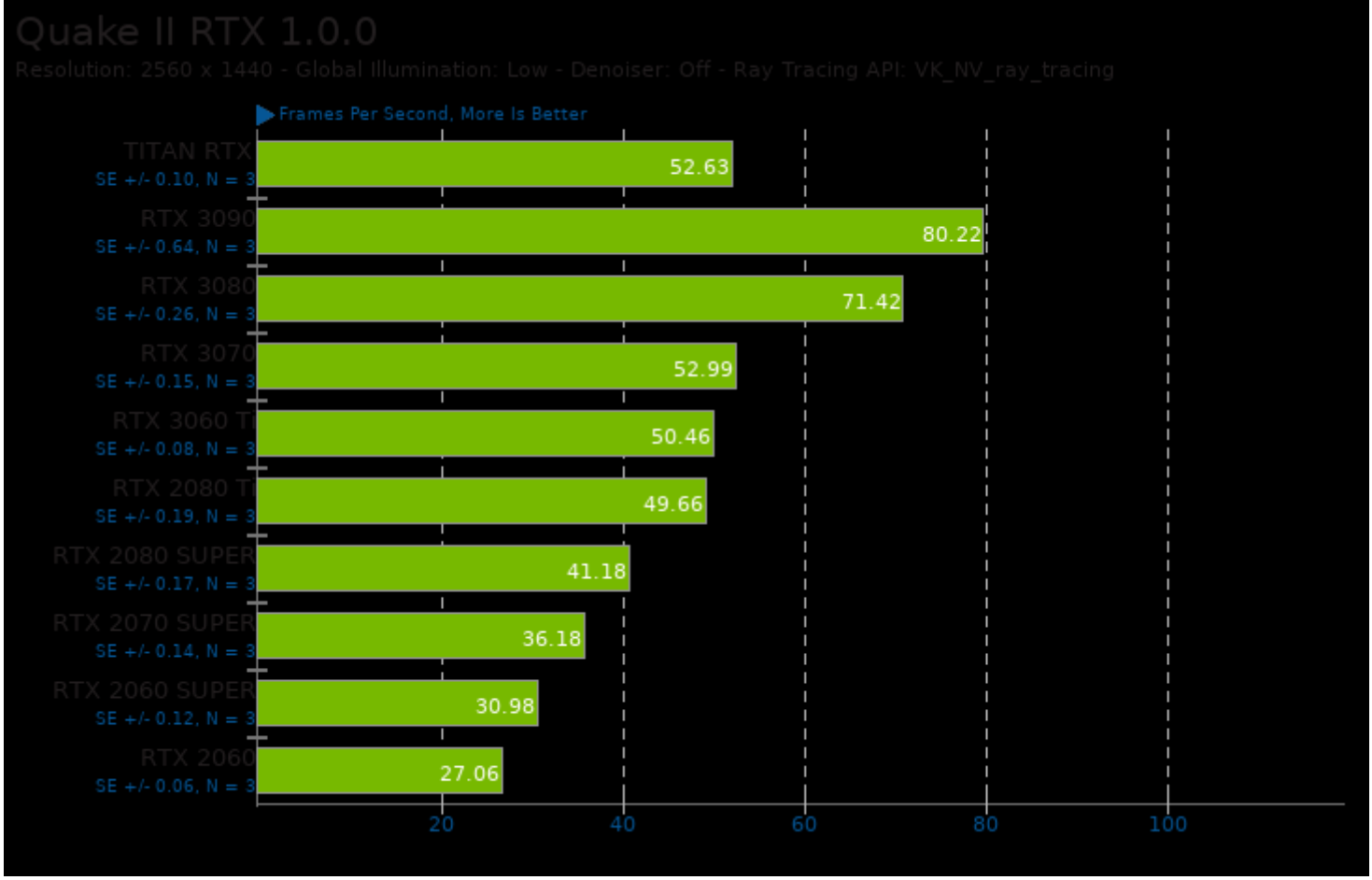
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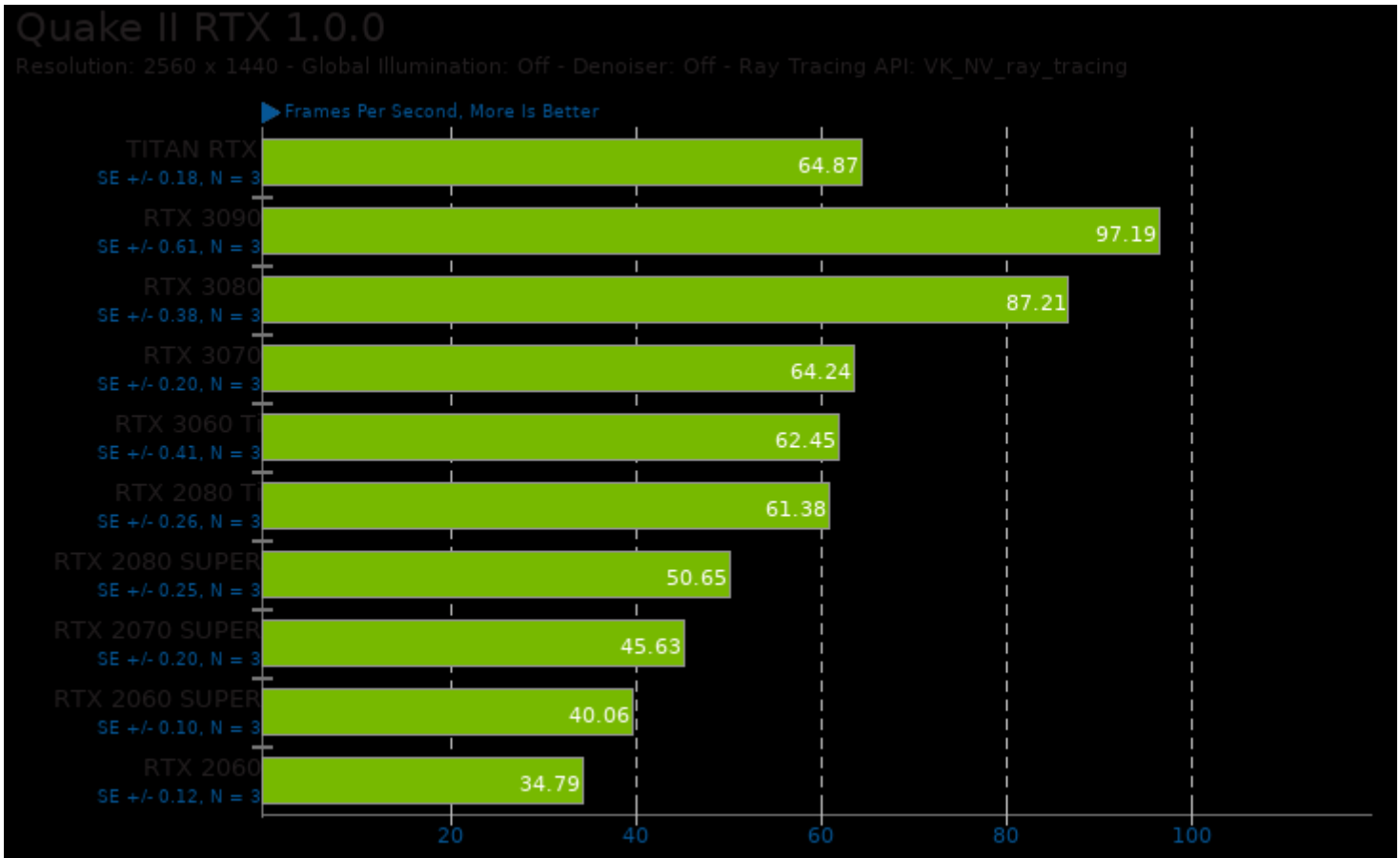


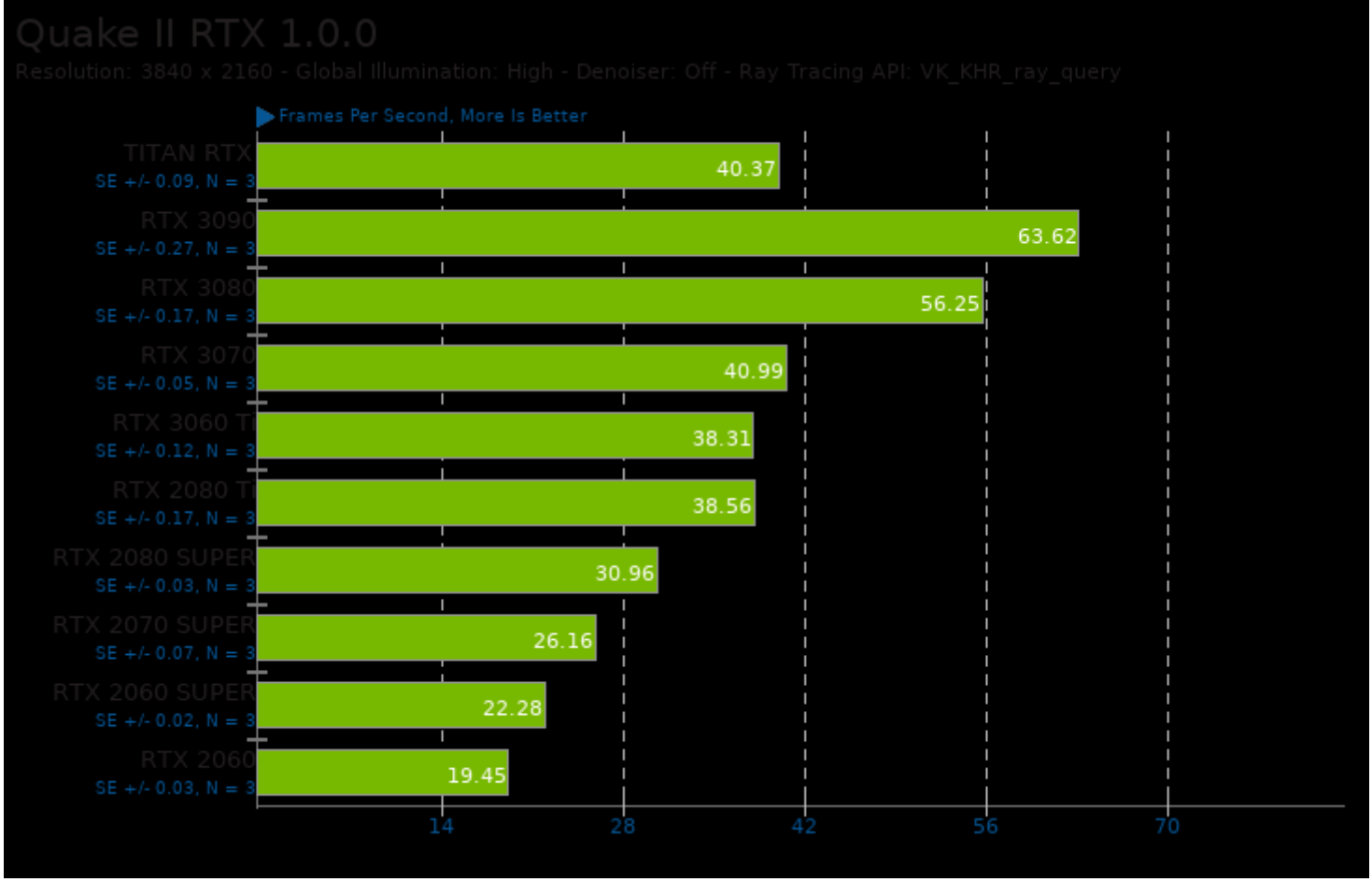
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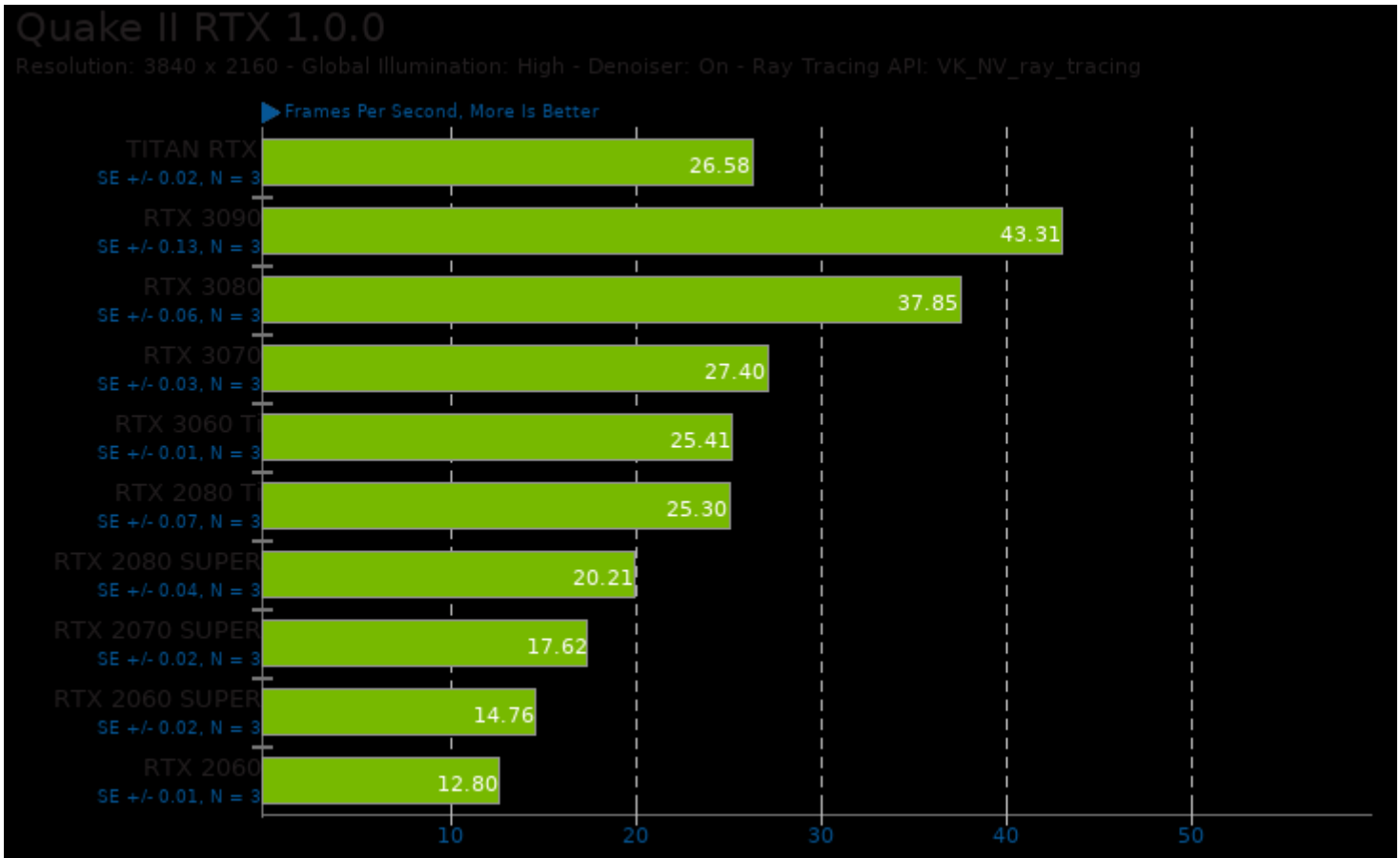


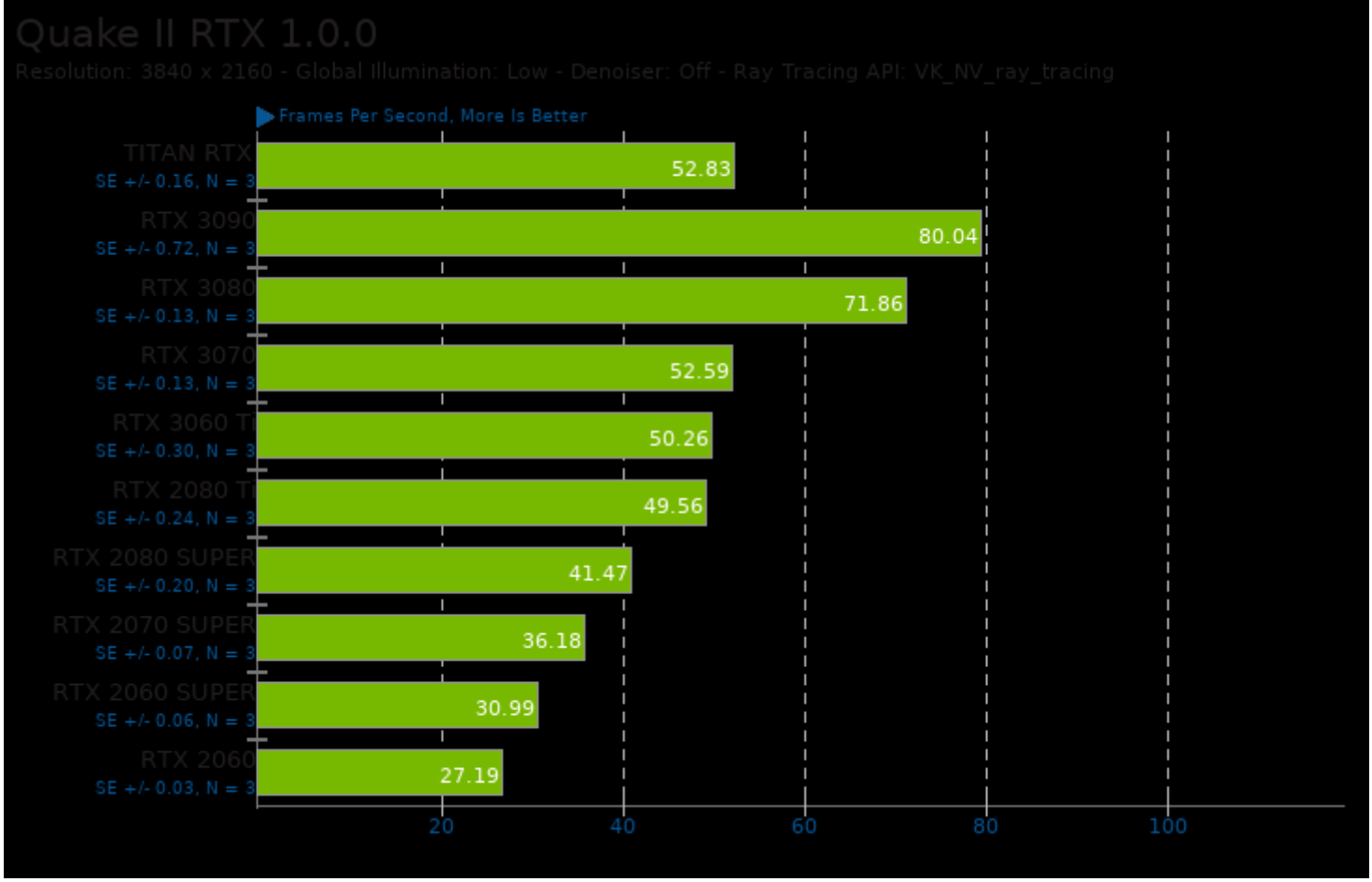
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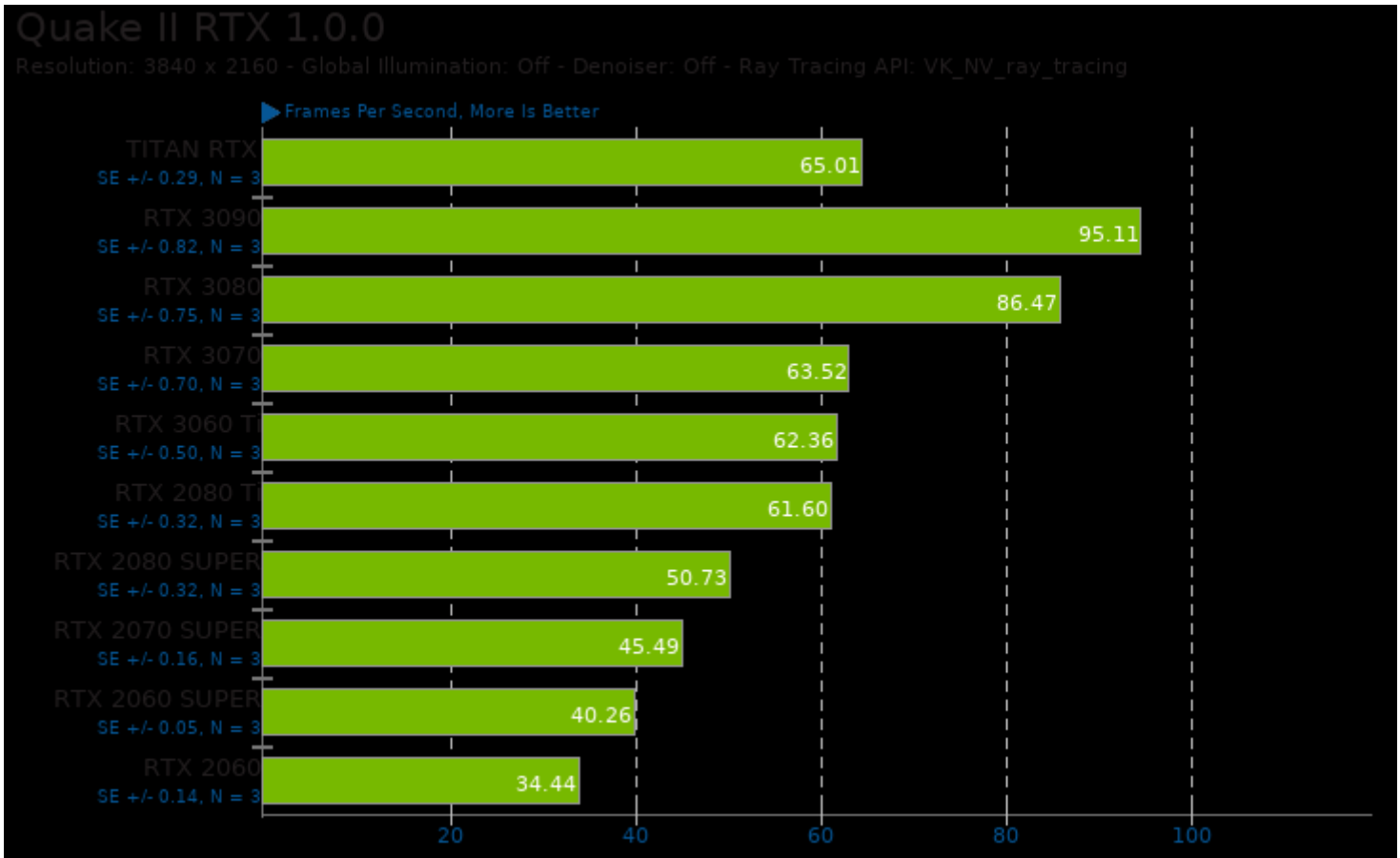


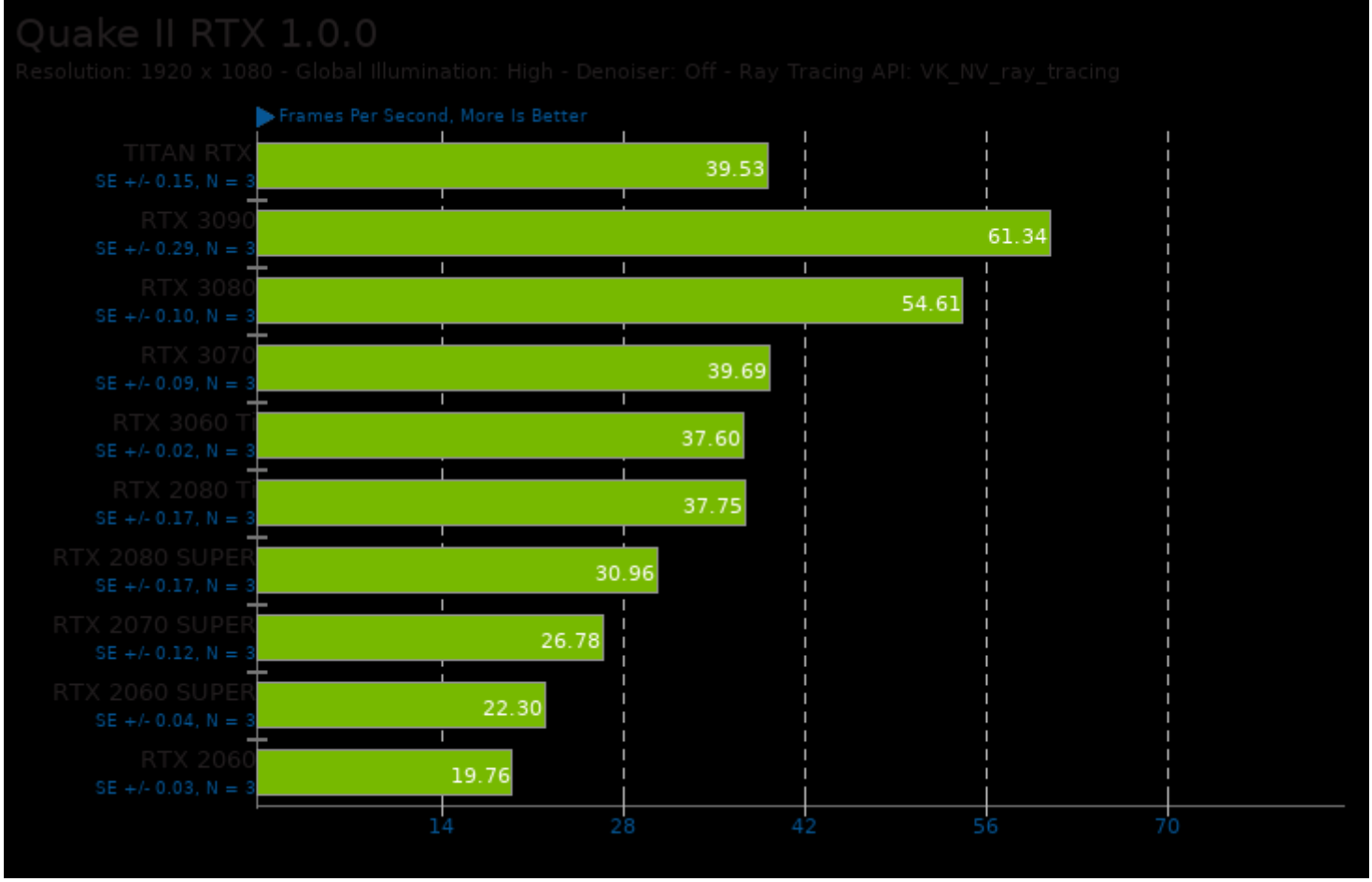
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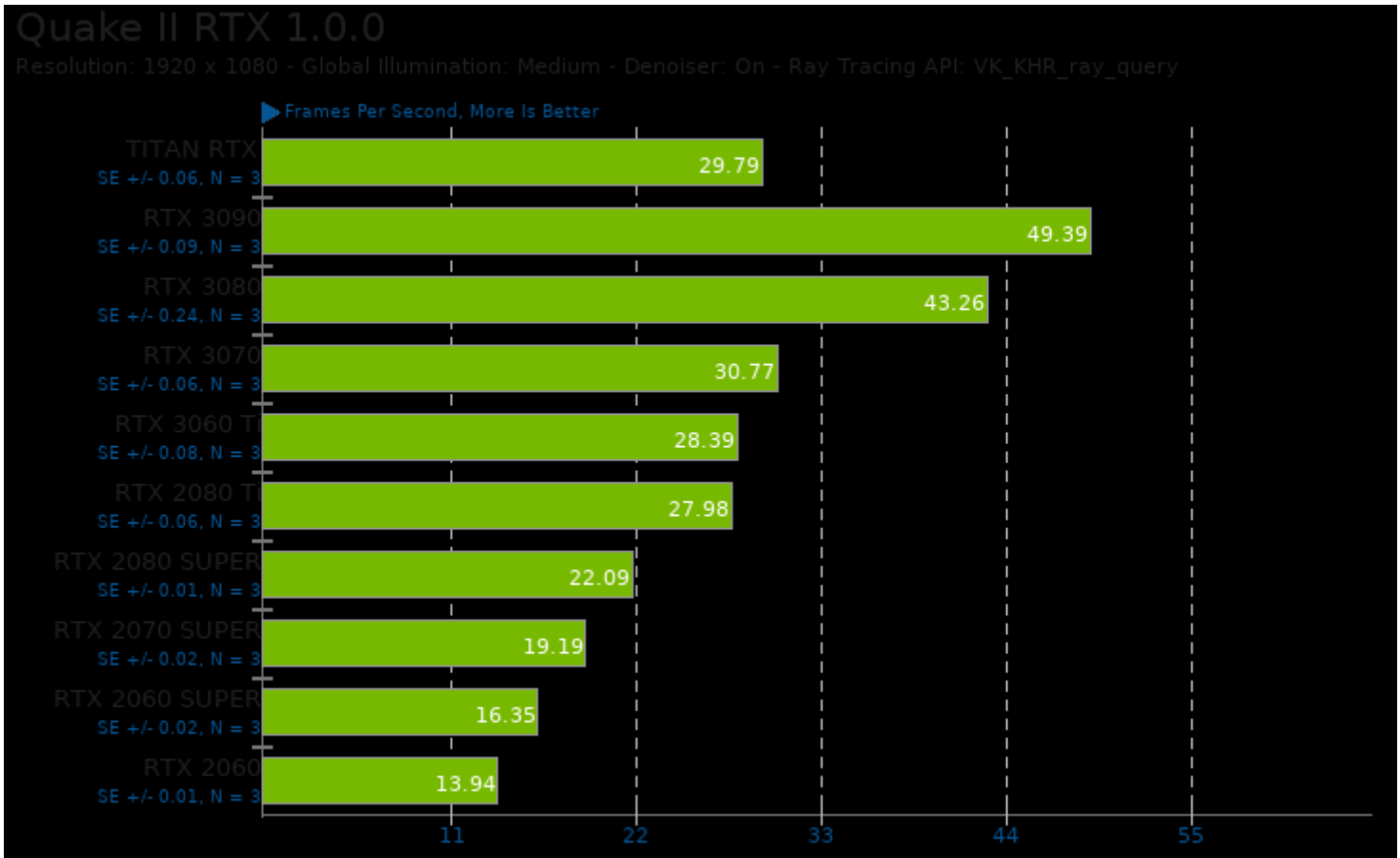


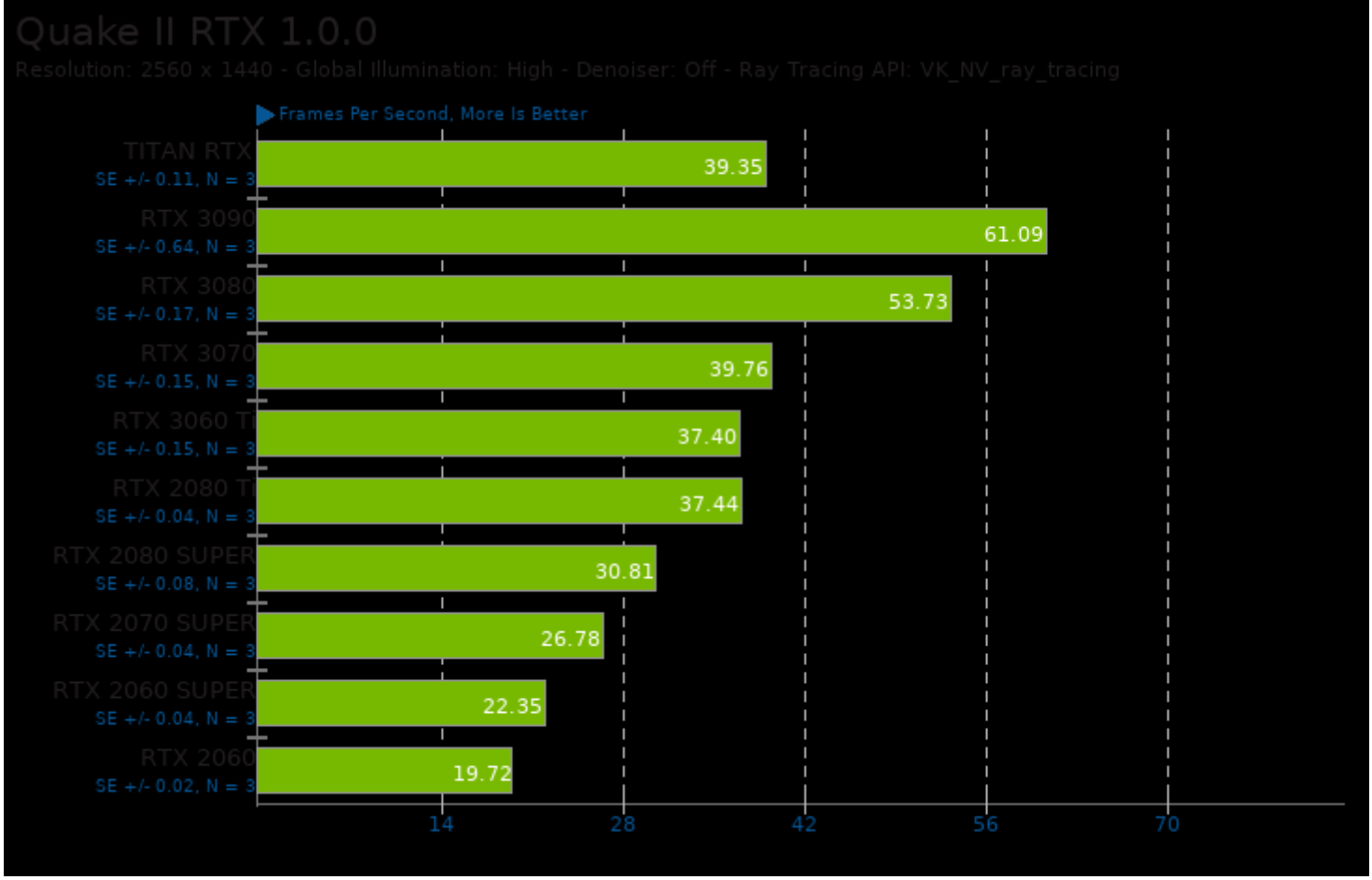
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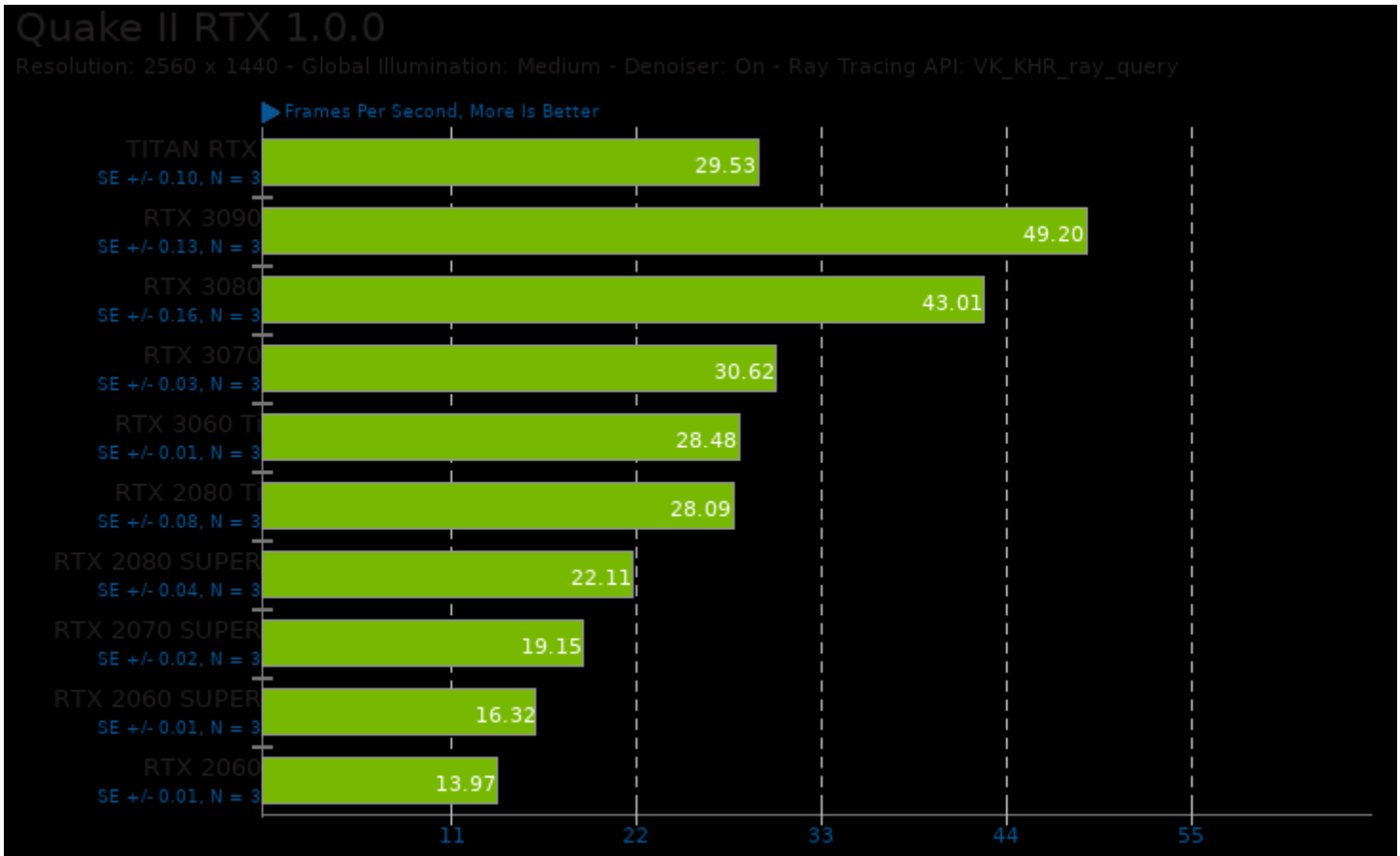


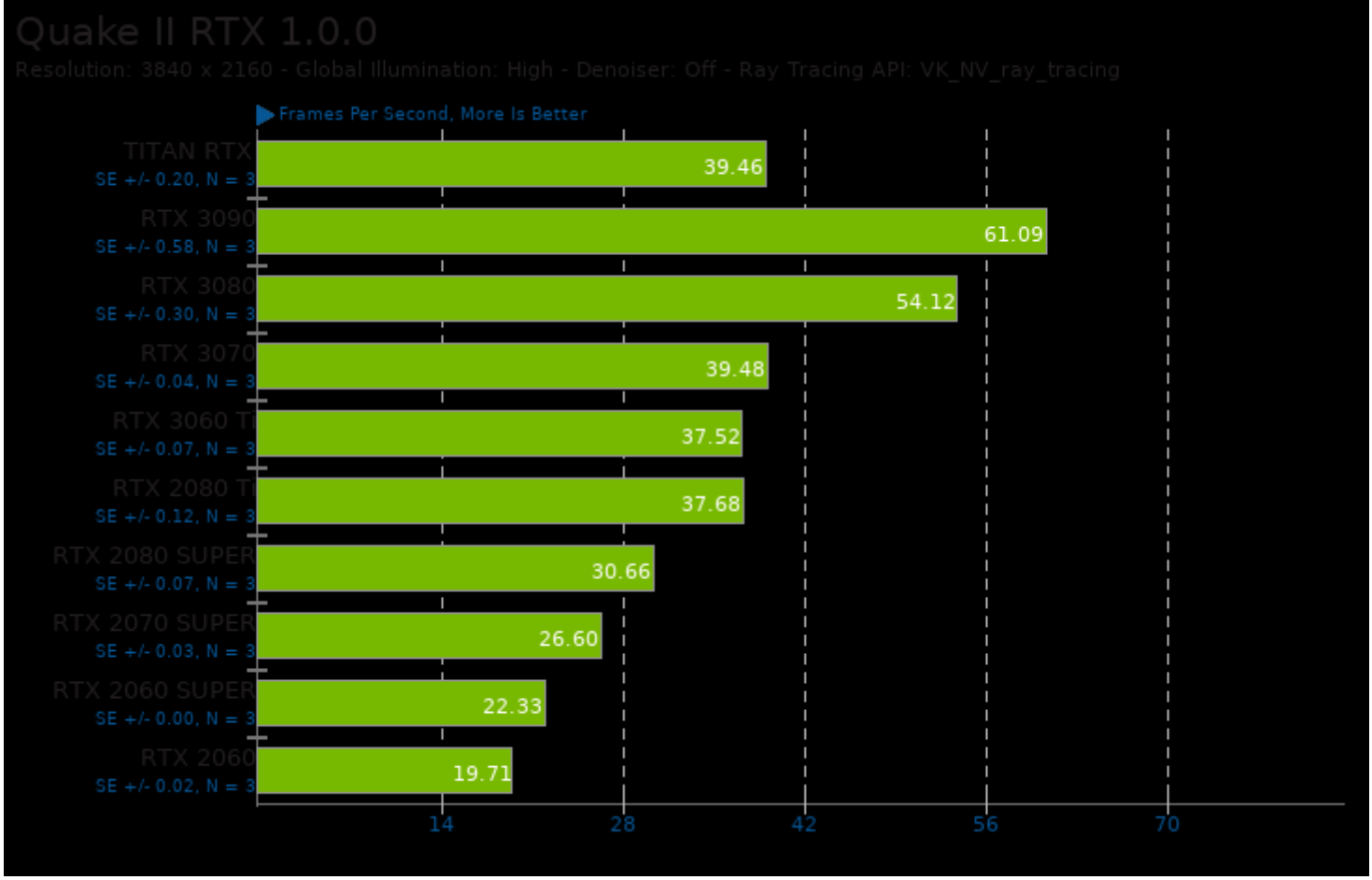
Quake 2 RTX Benchmarks Linux



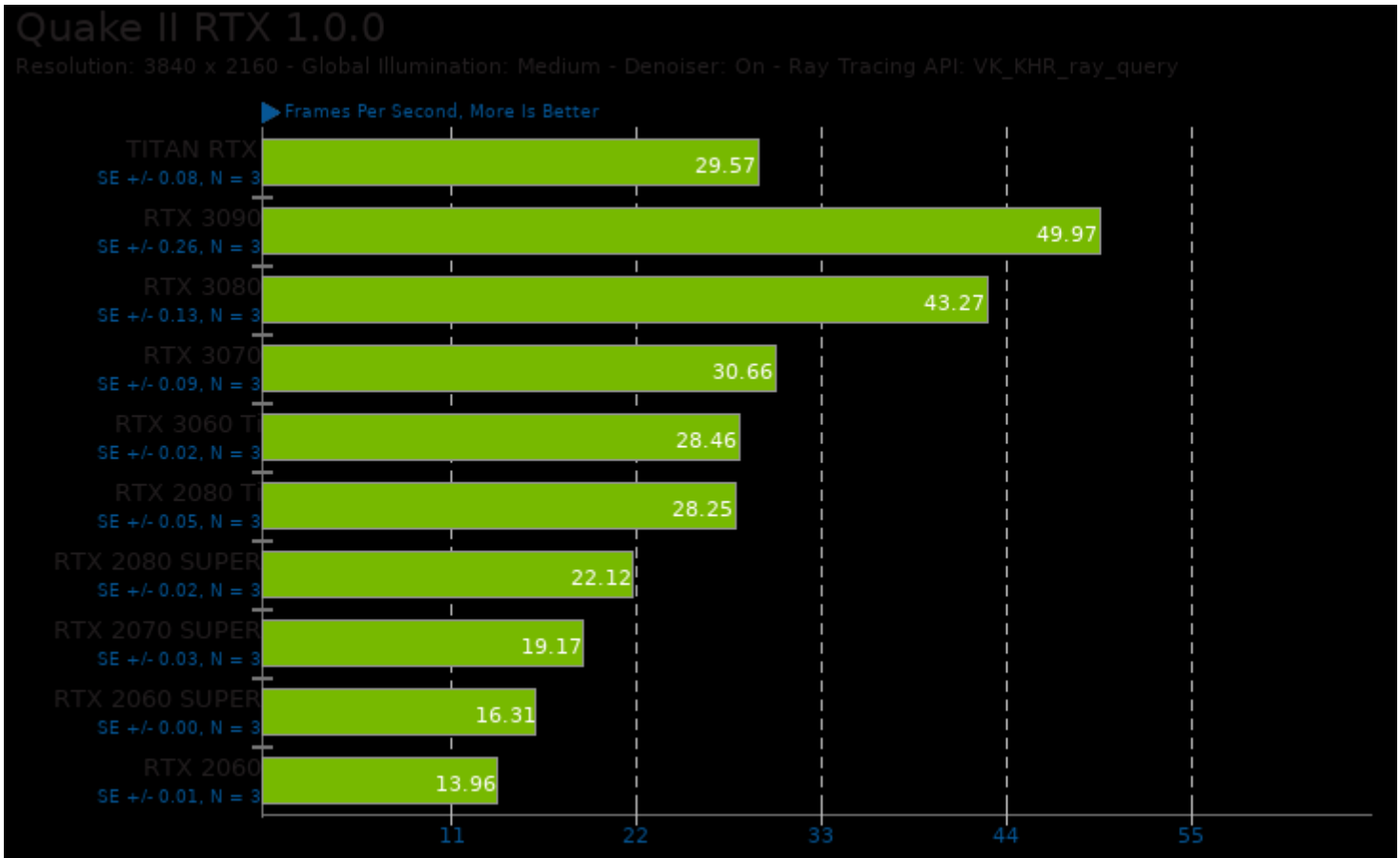


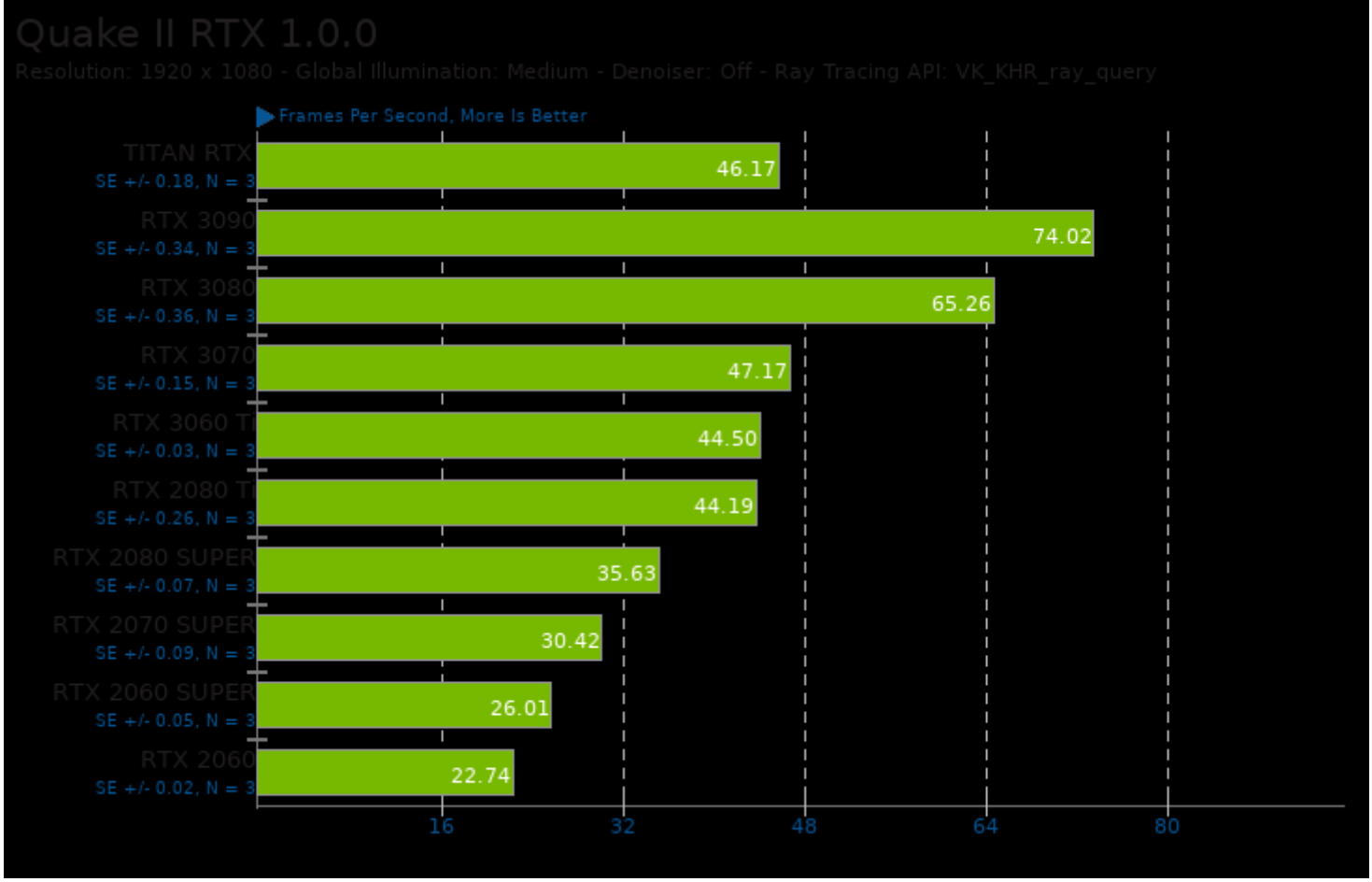
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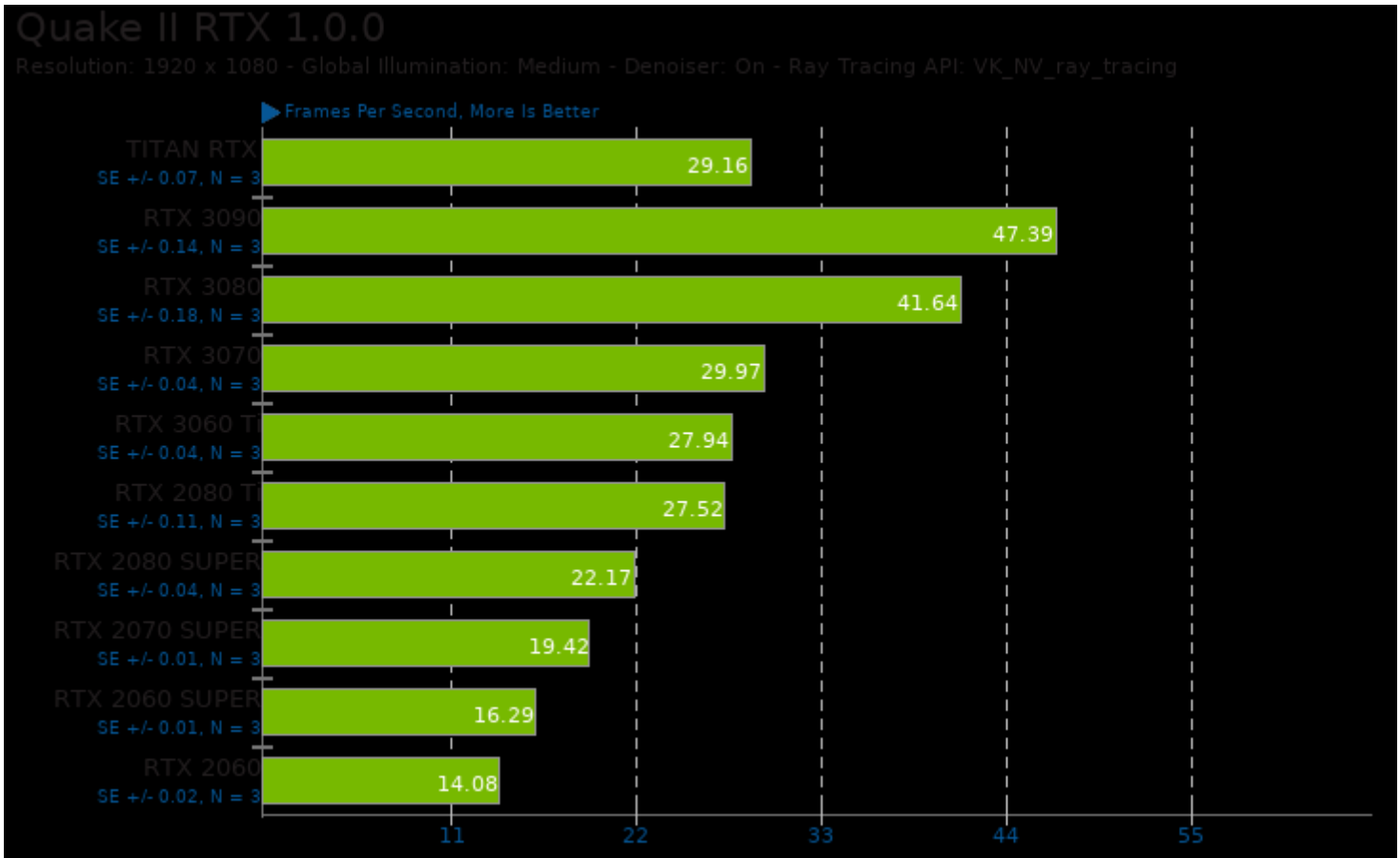


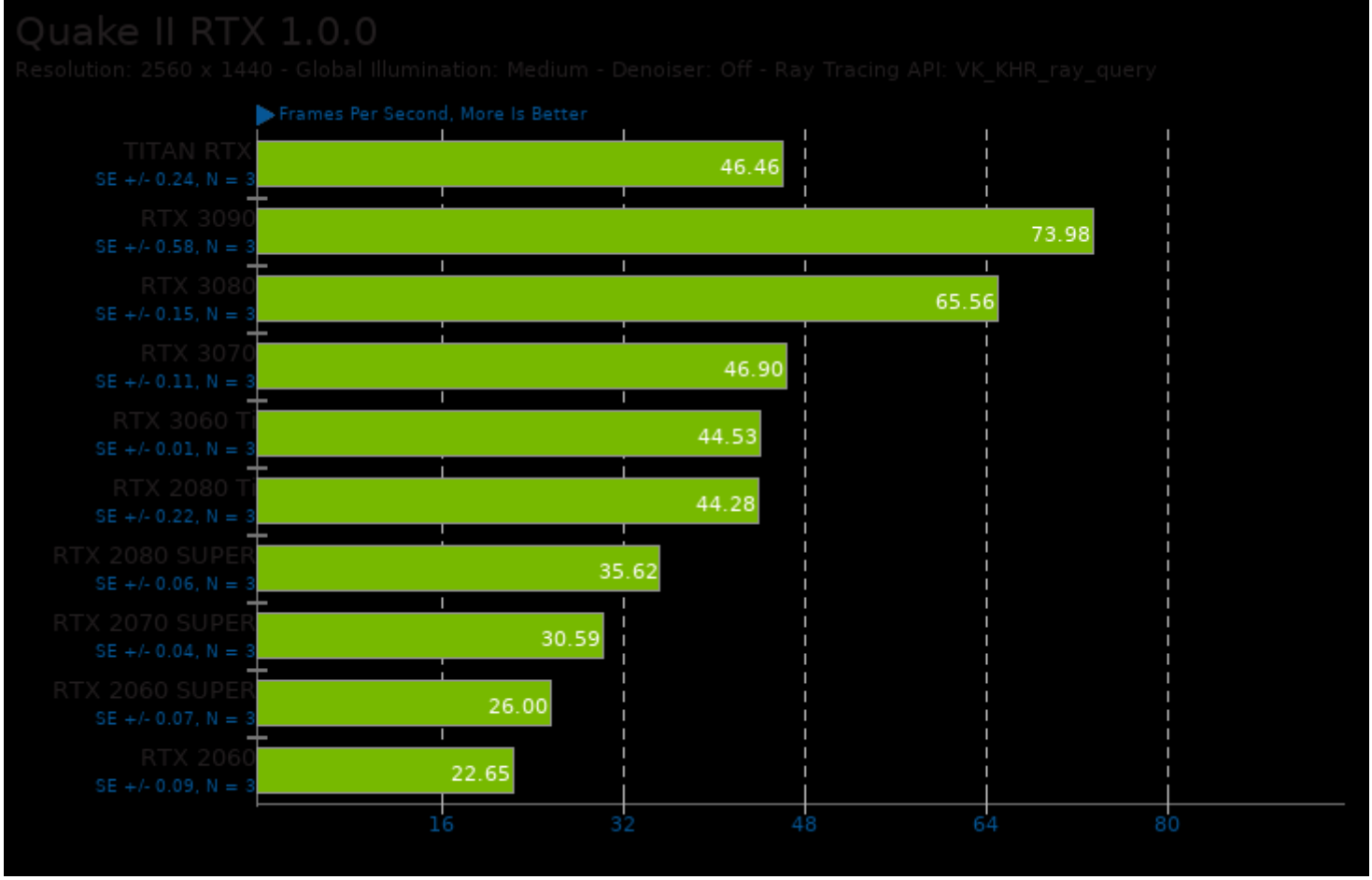
Quake 2 RTX Benchmarks Linux



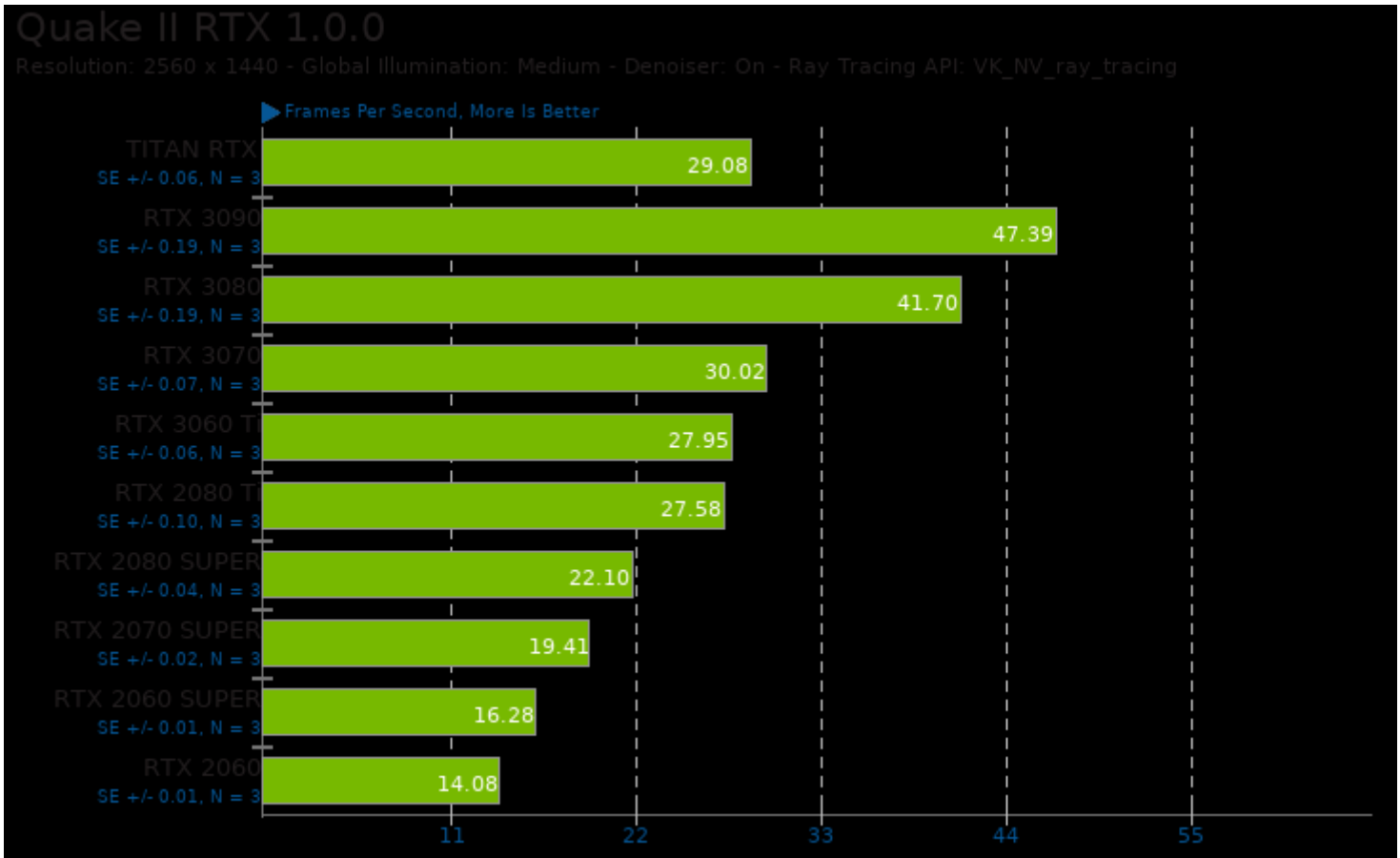


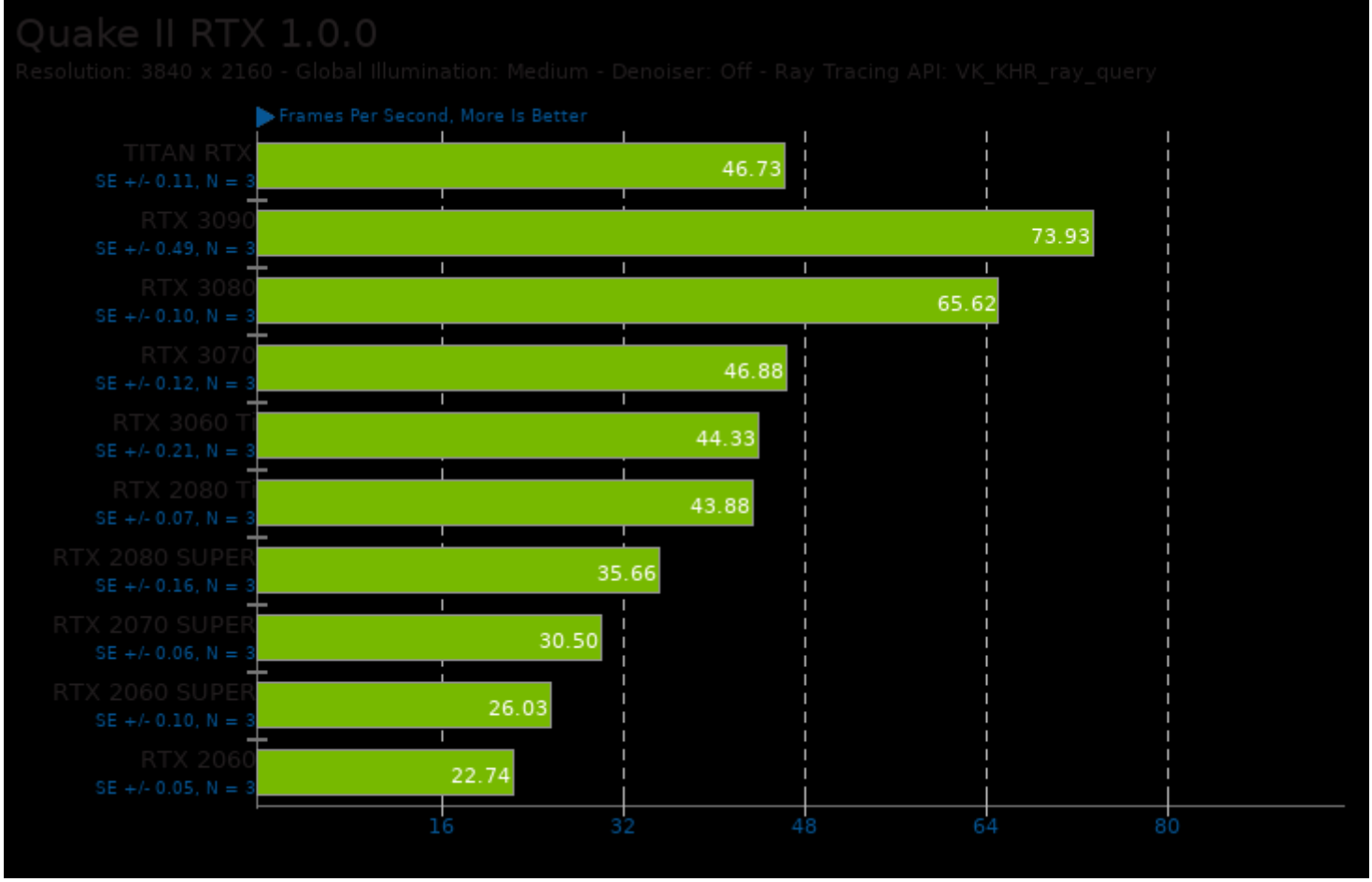
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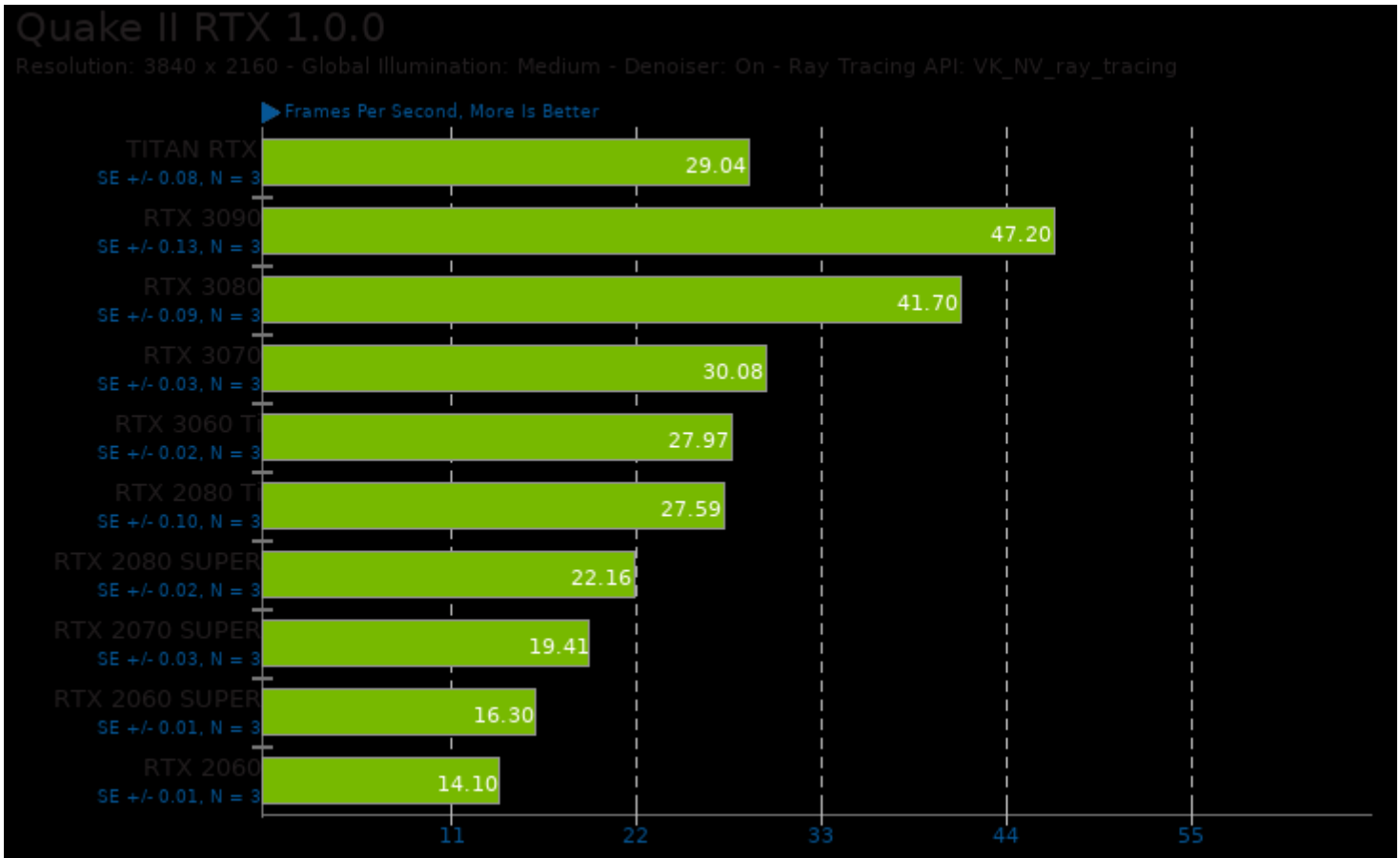


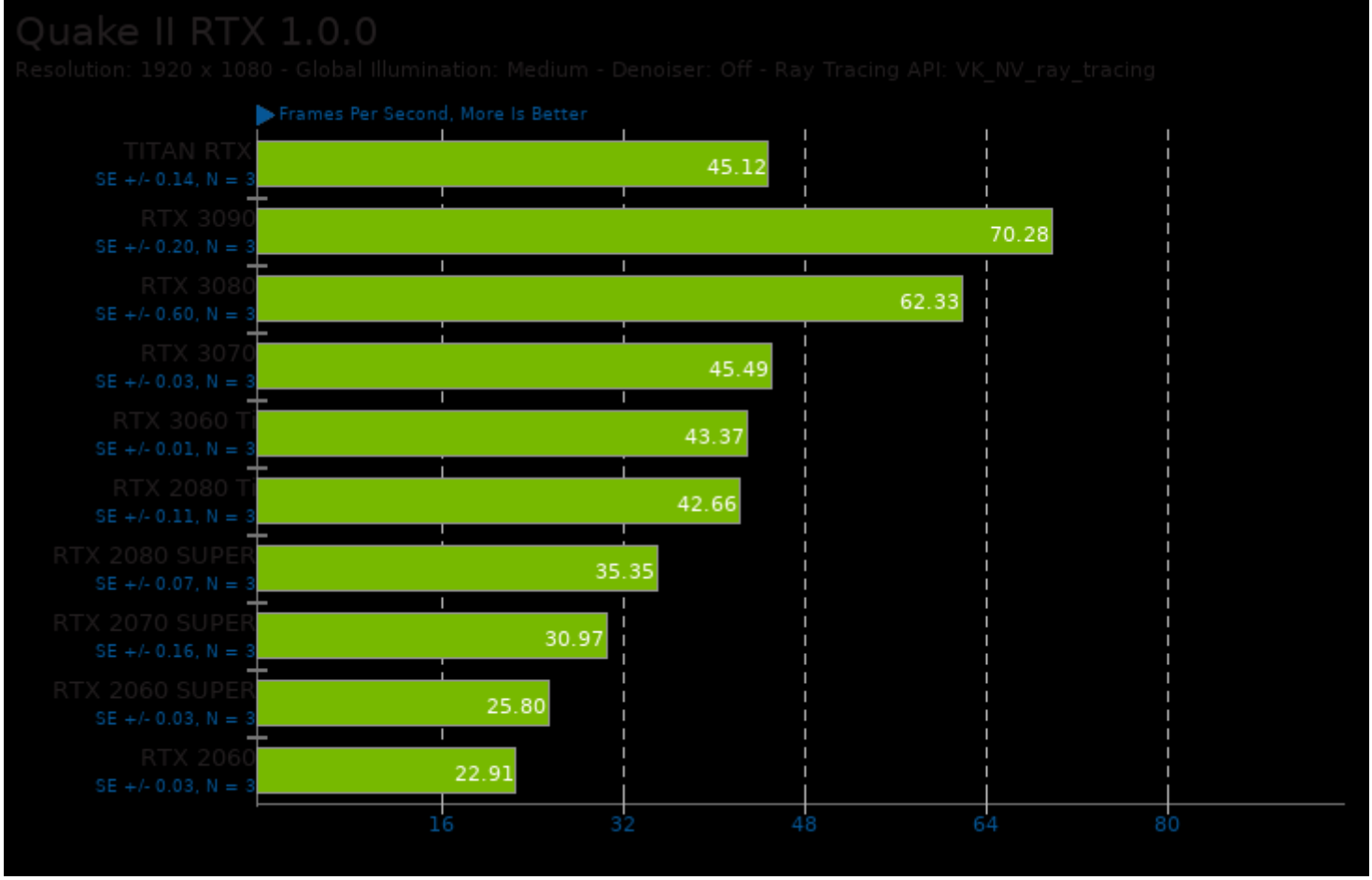
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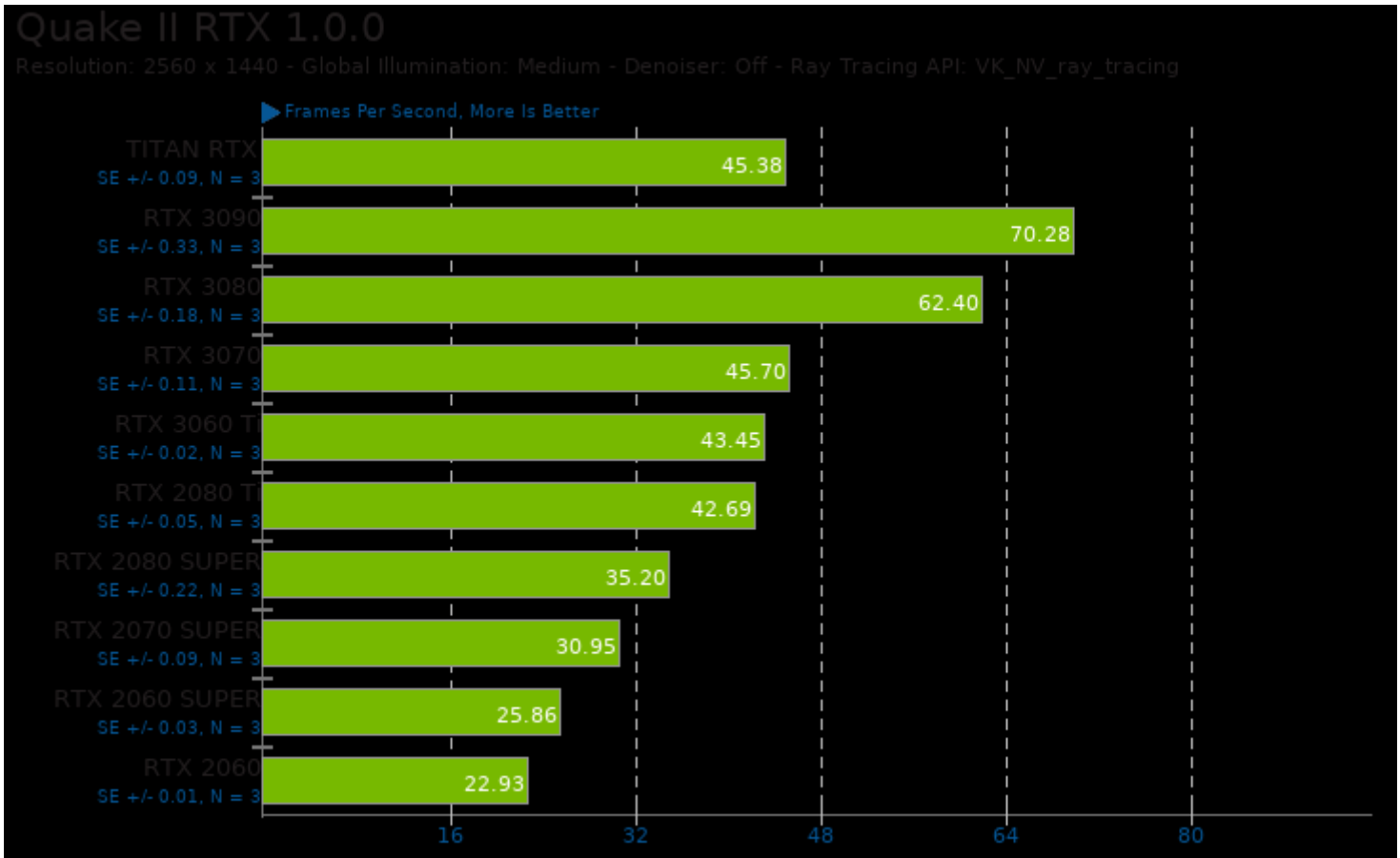


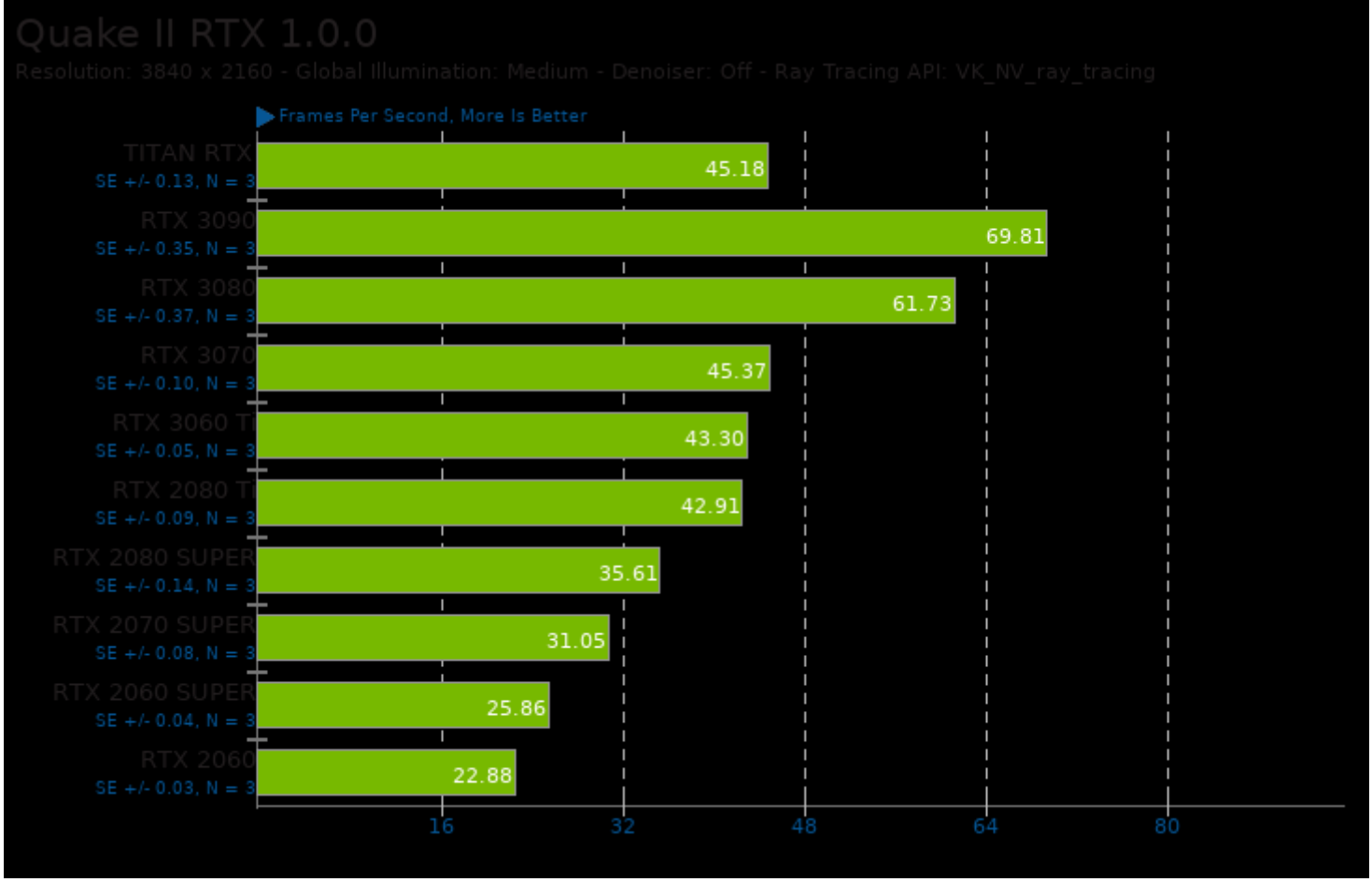
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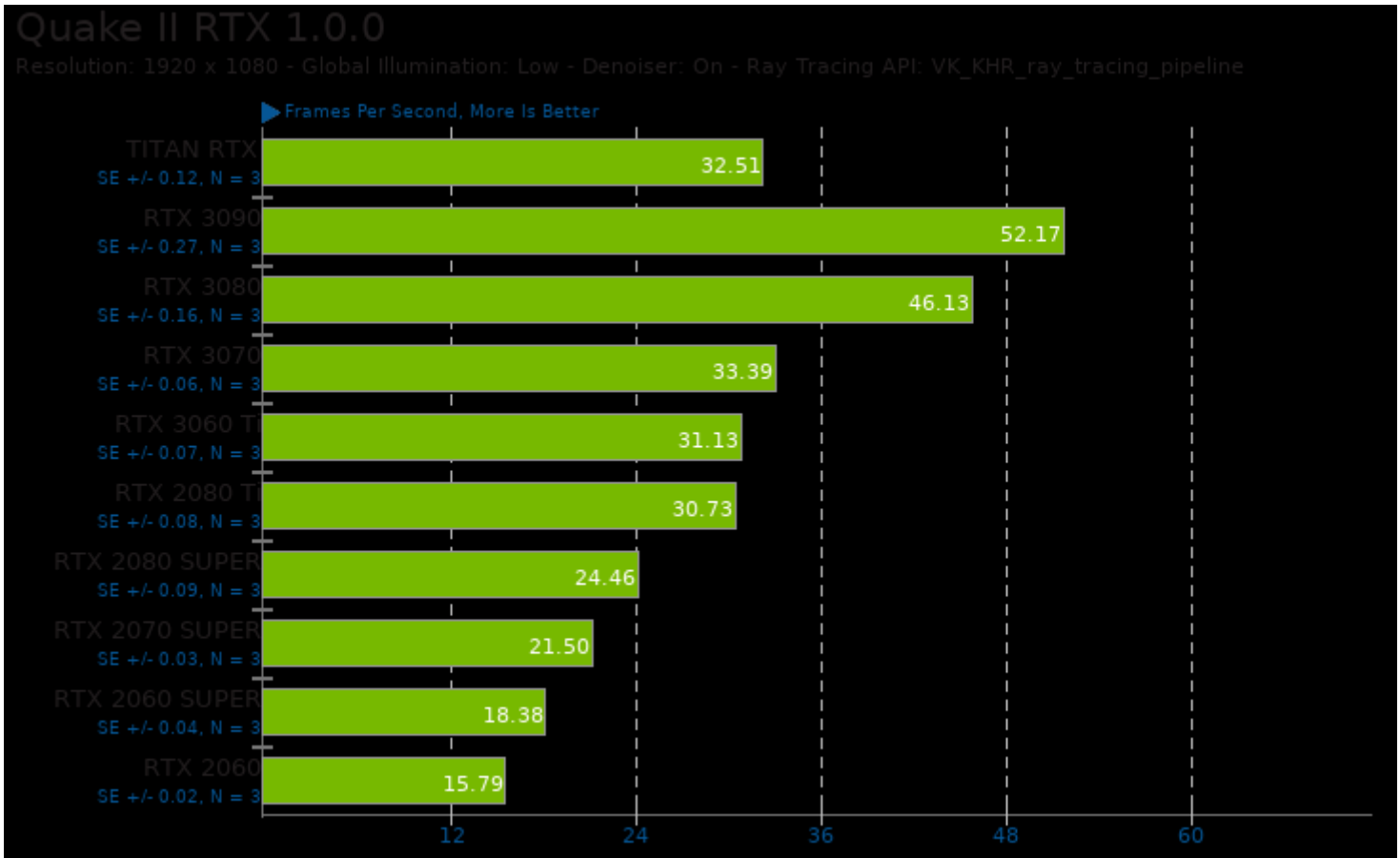


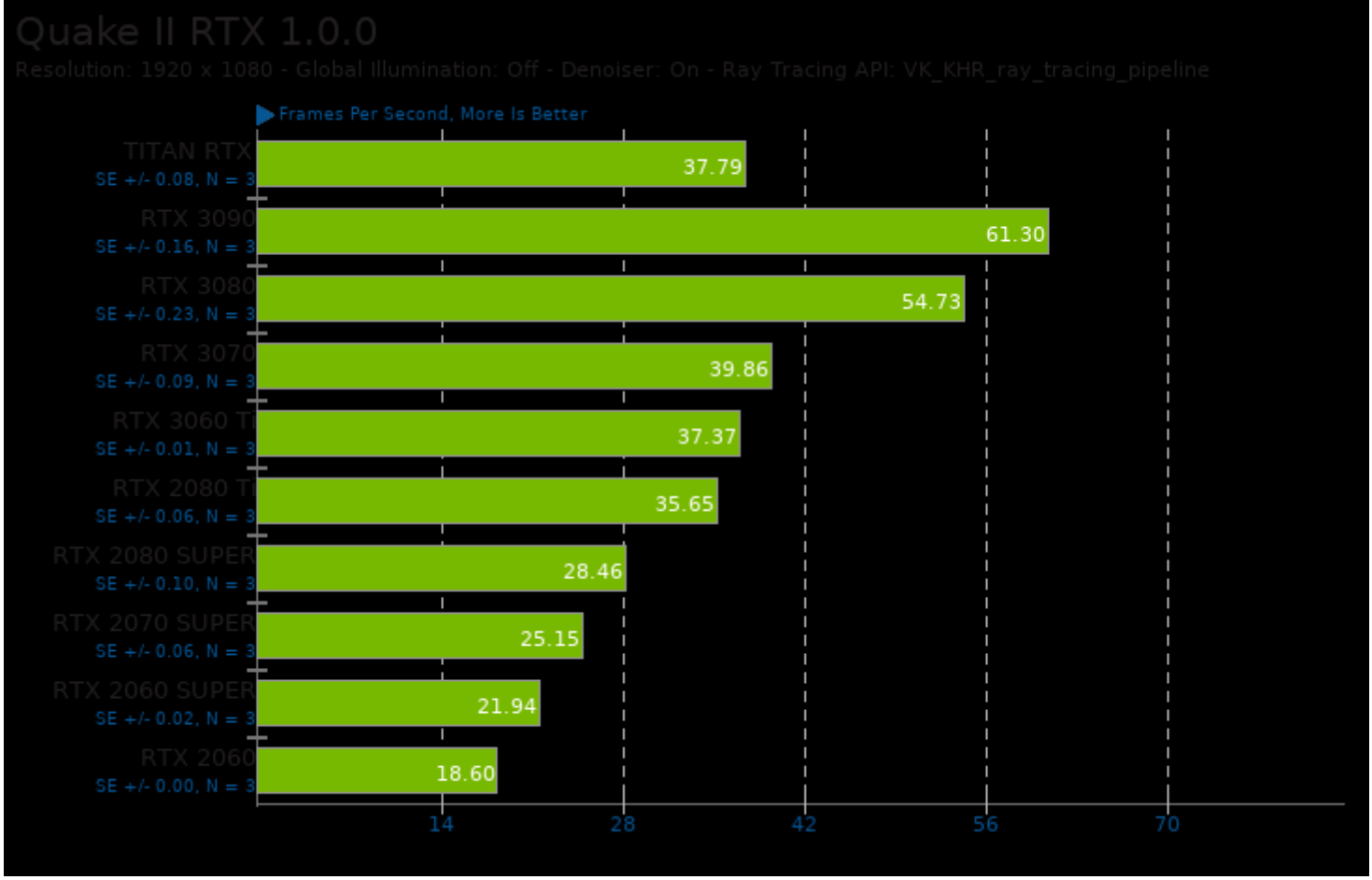
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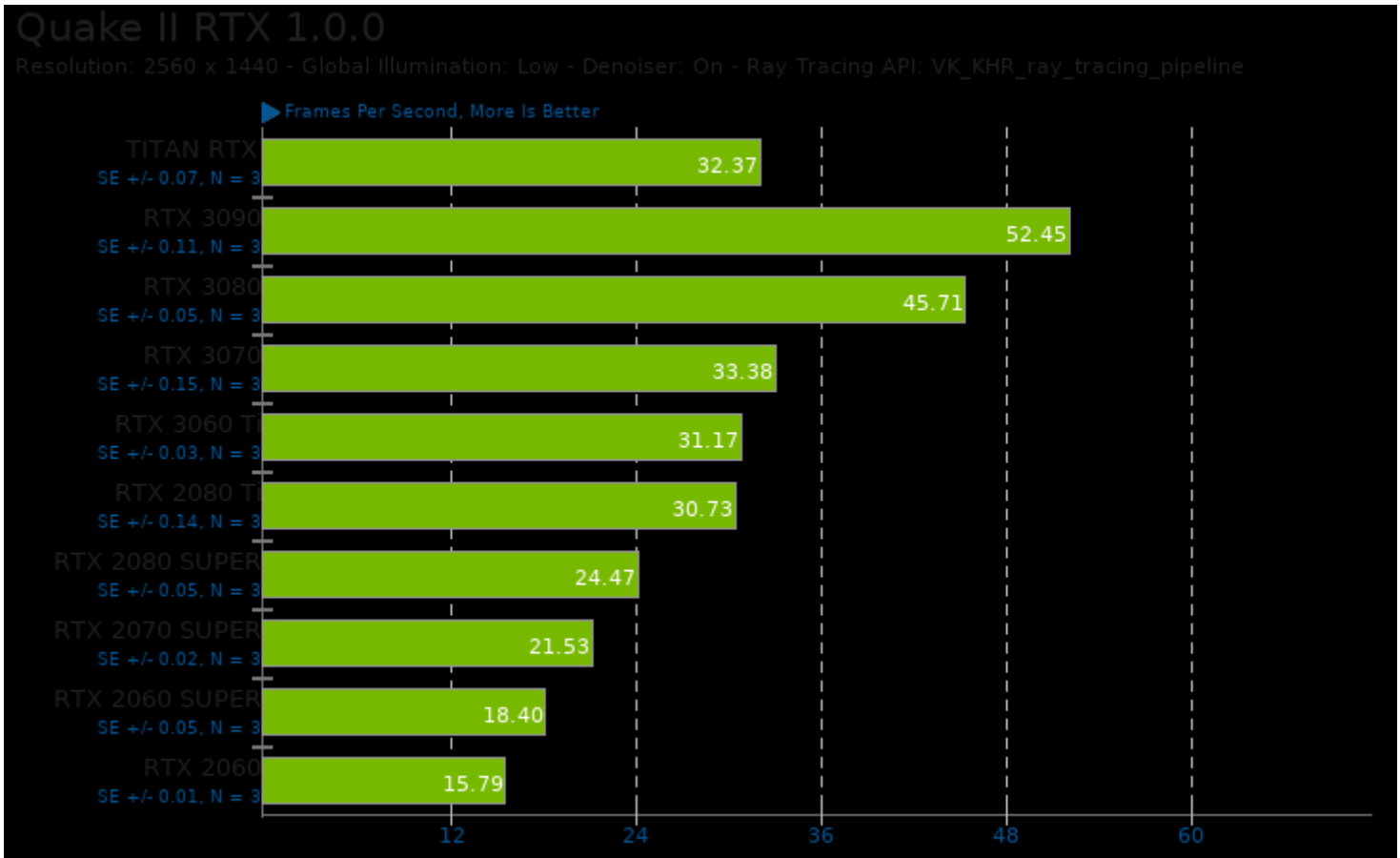


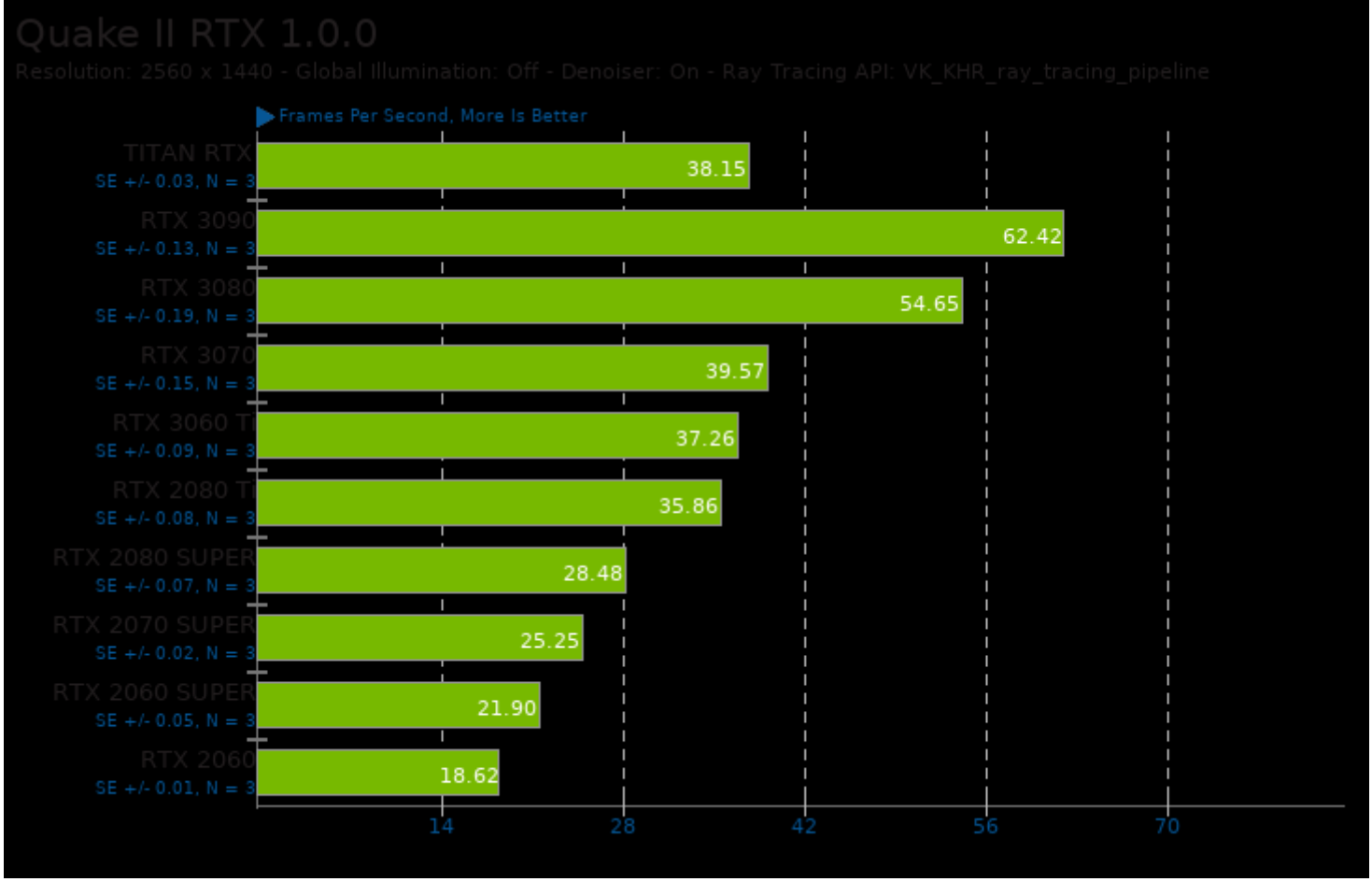
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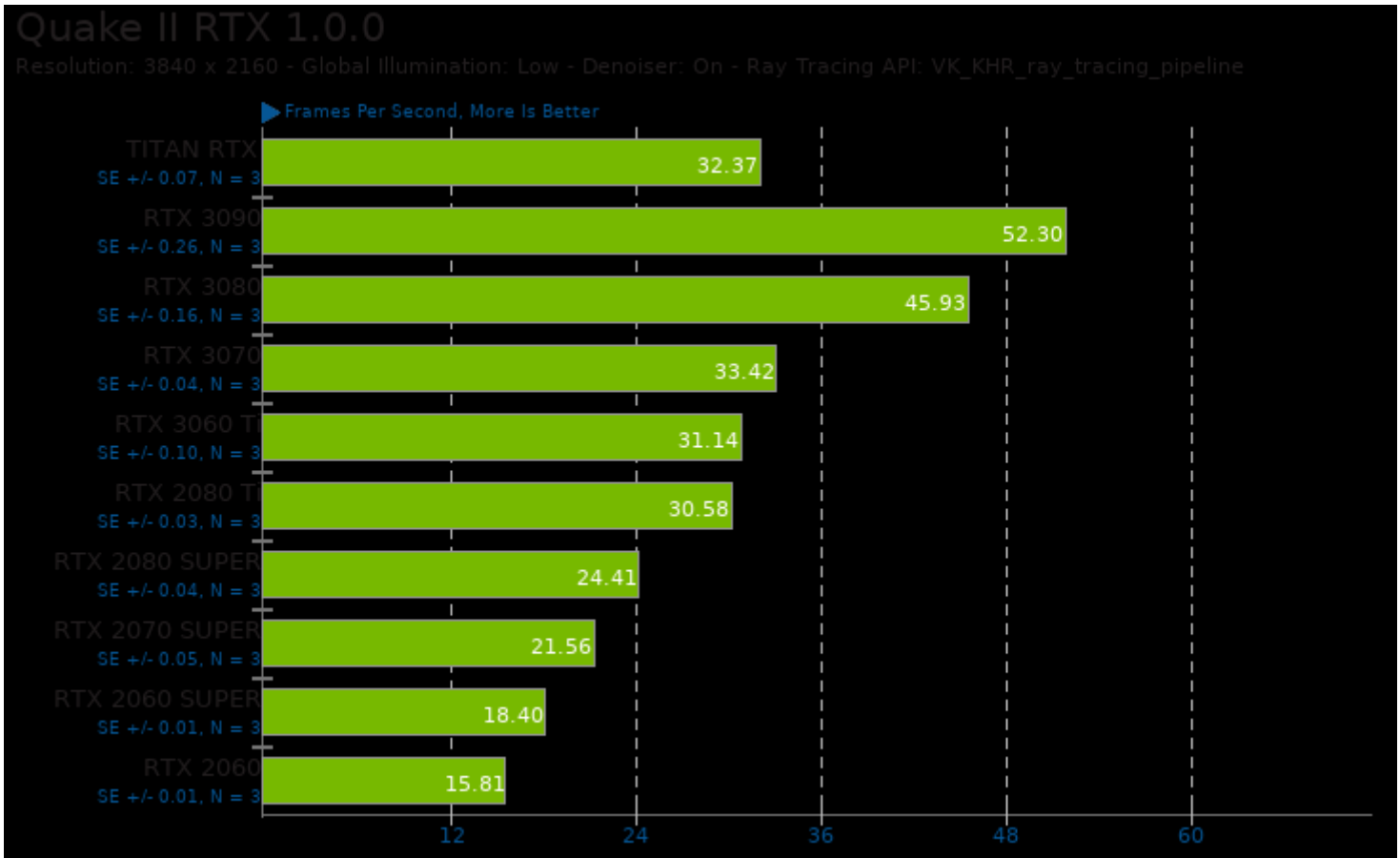


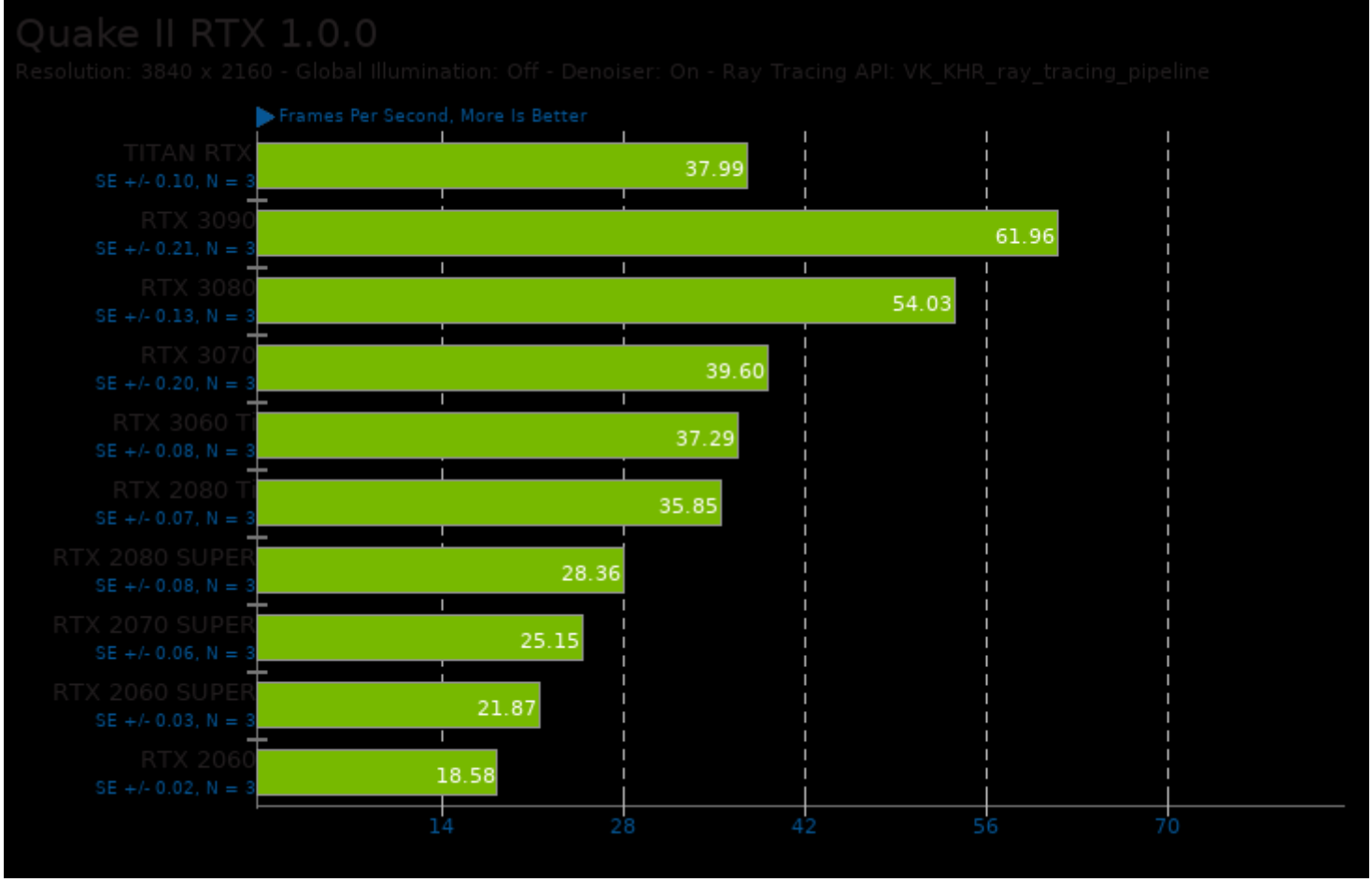
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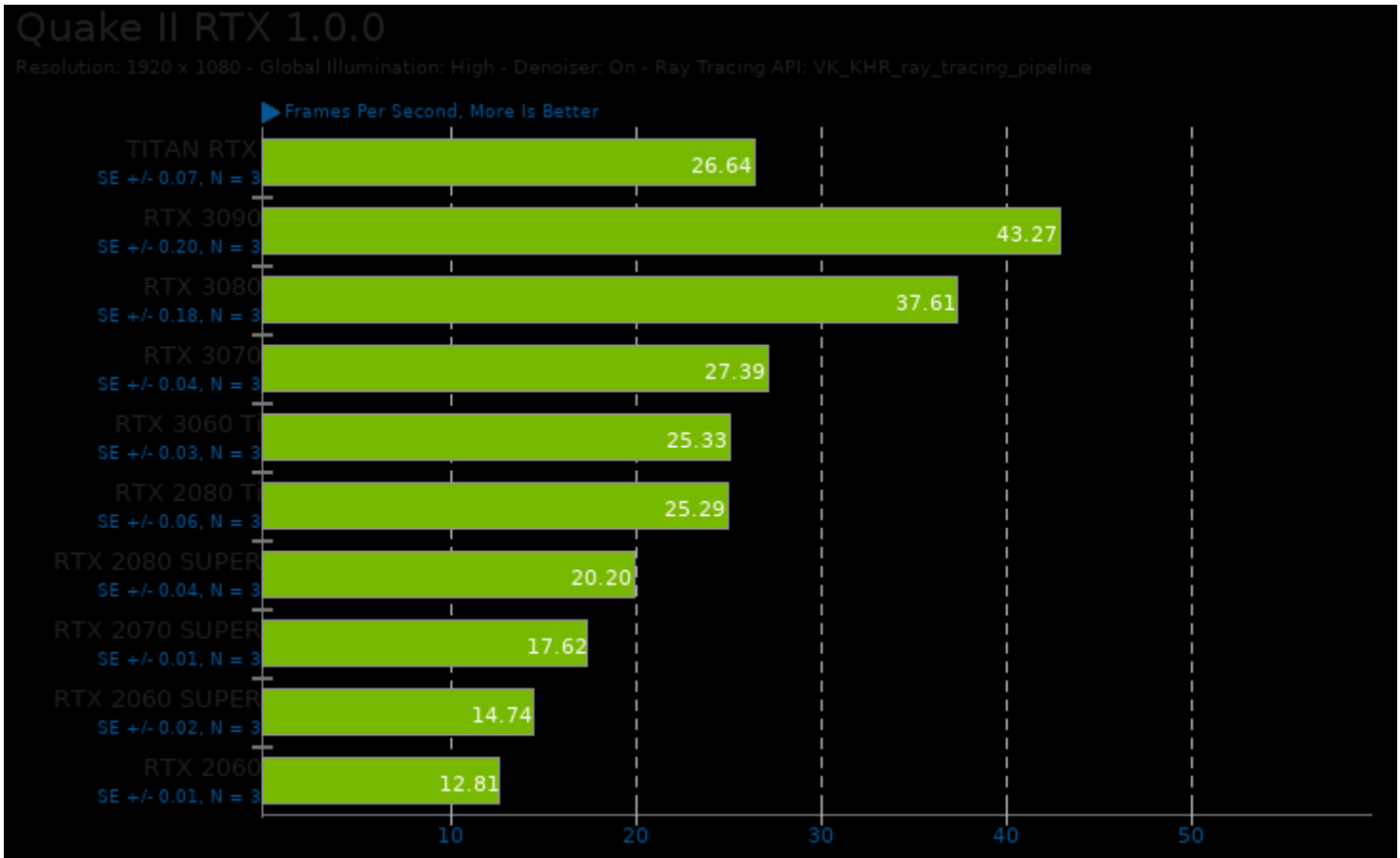


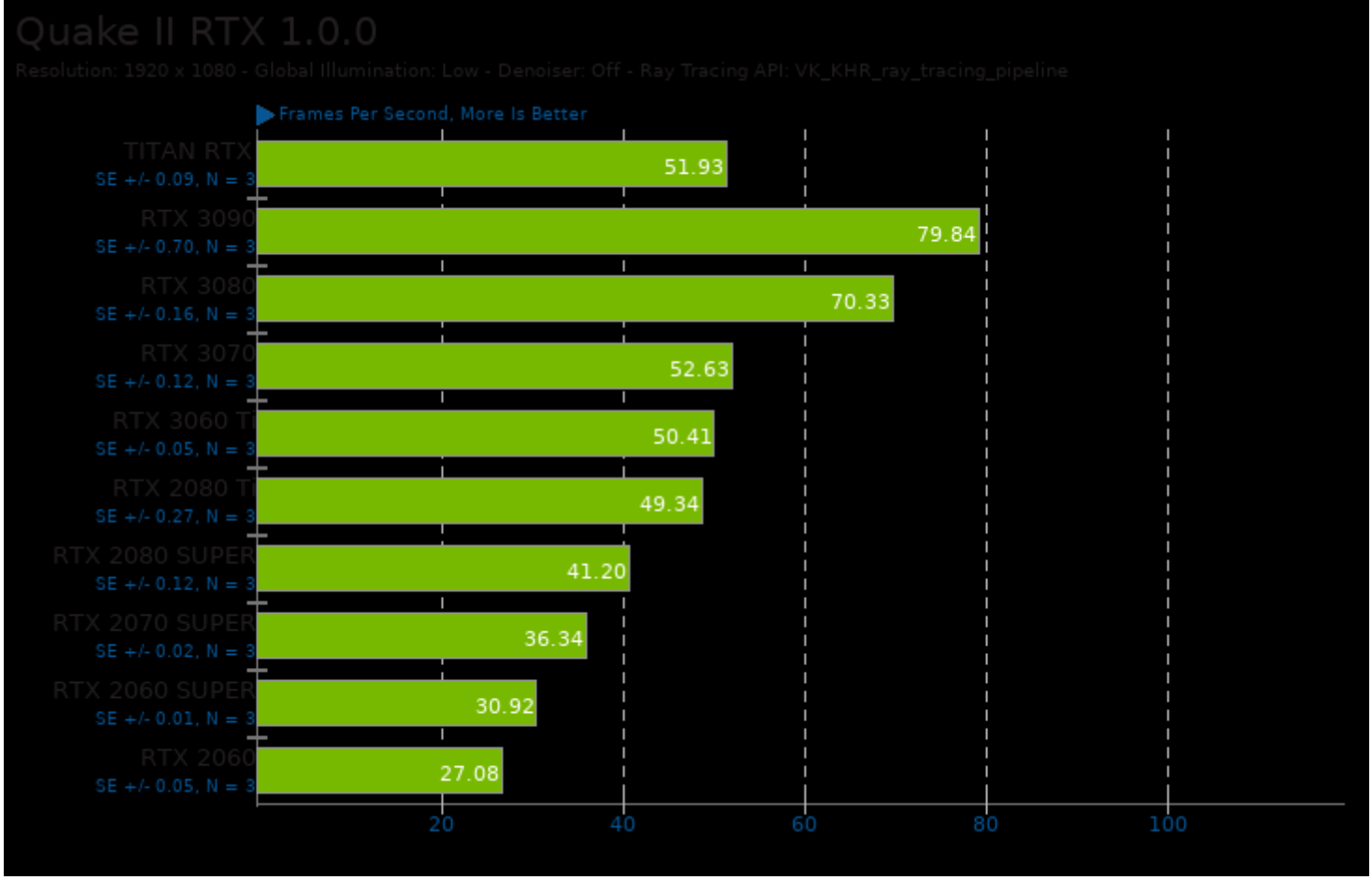
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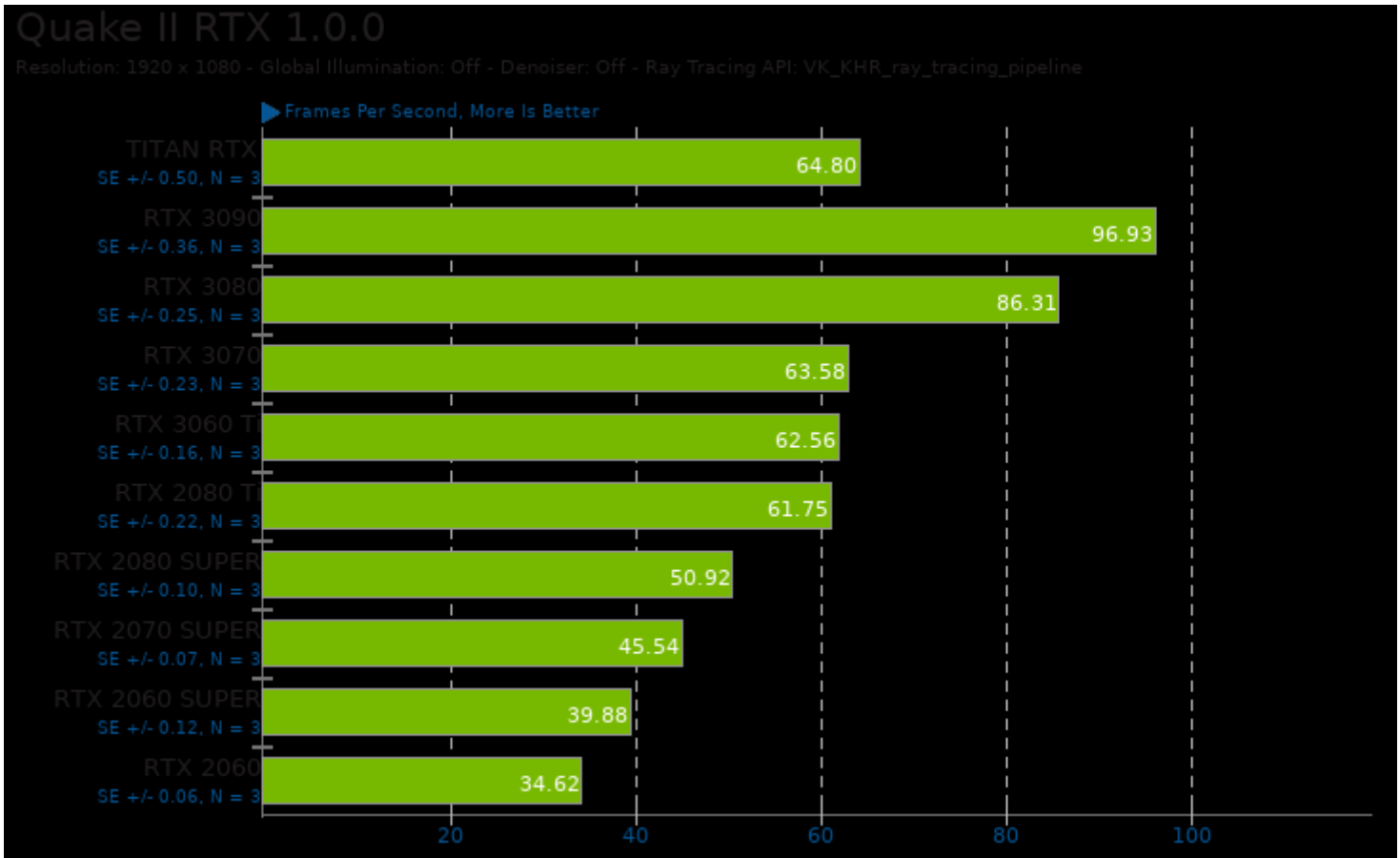


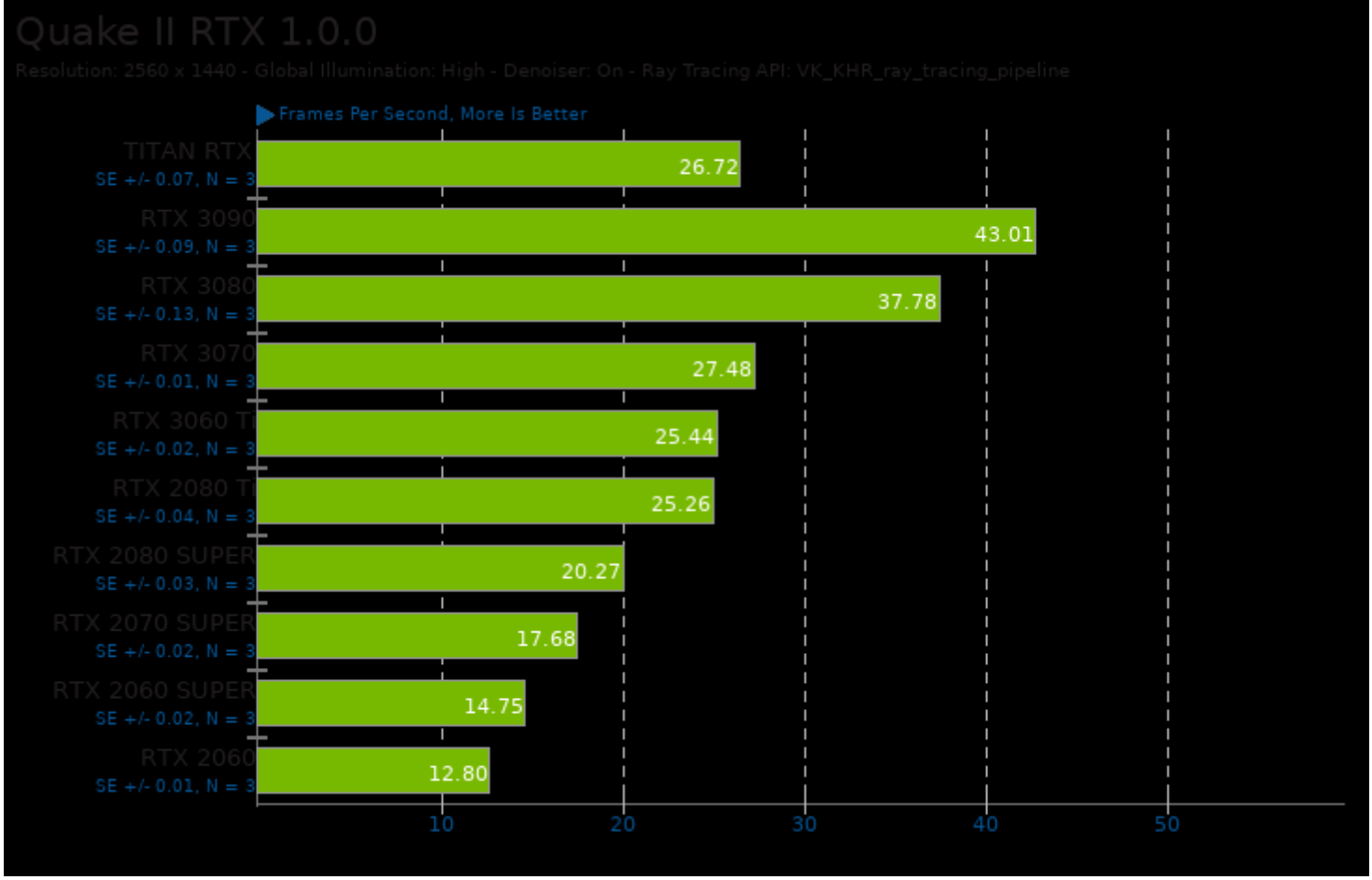
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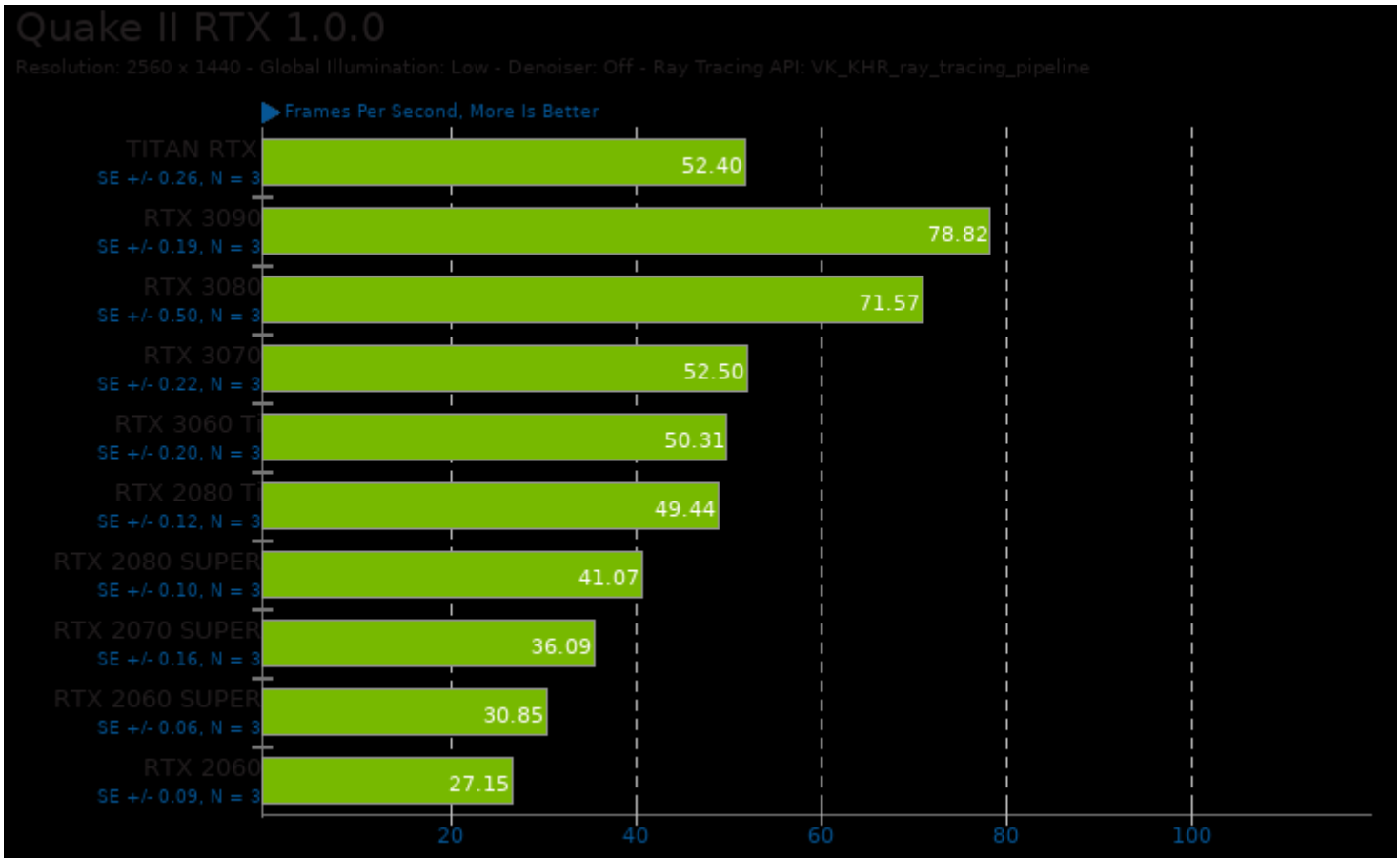


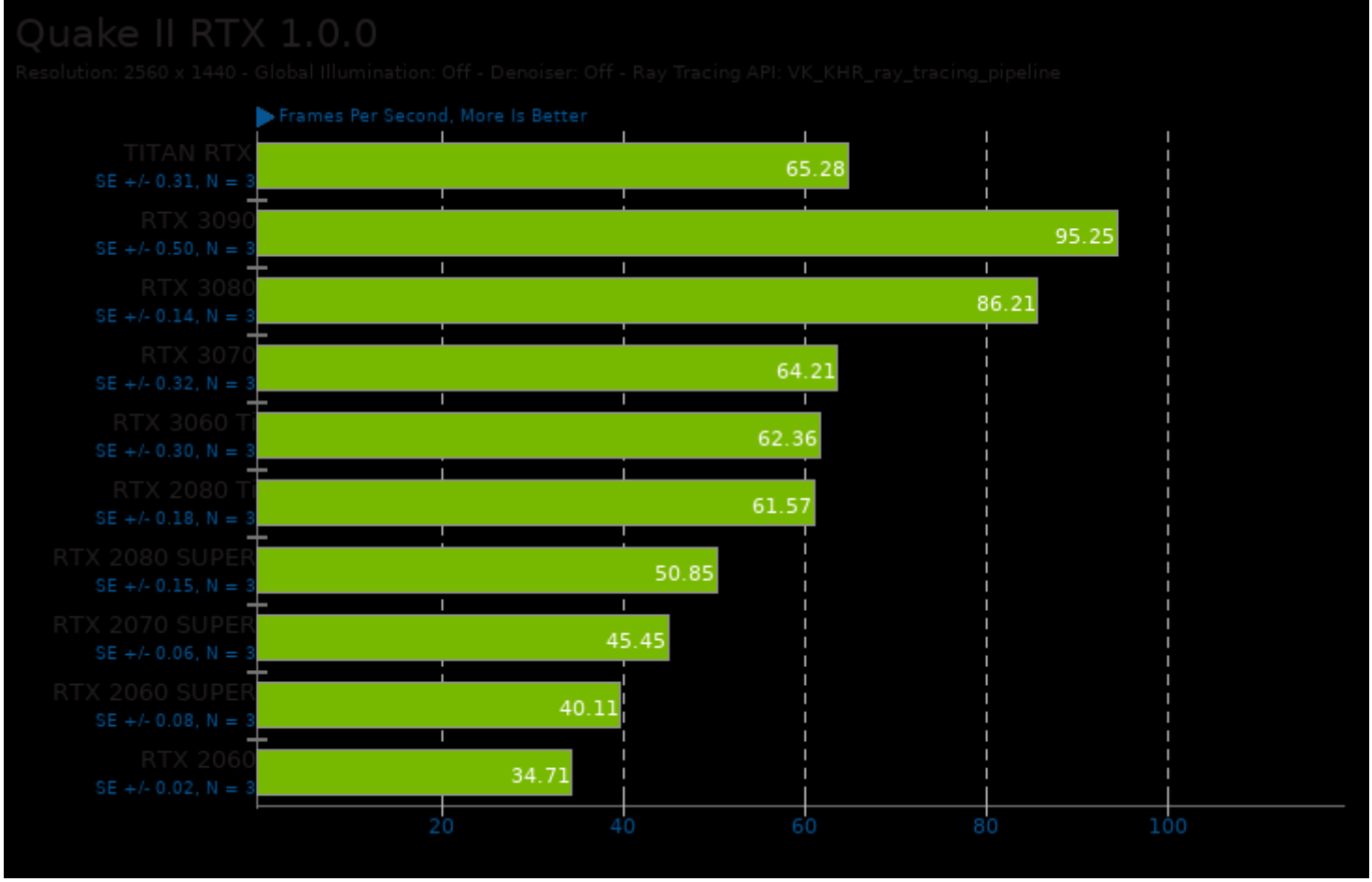
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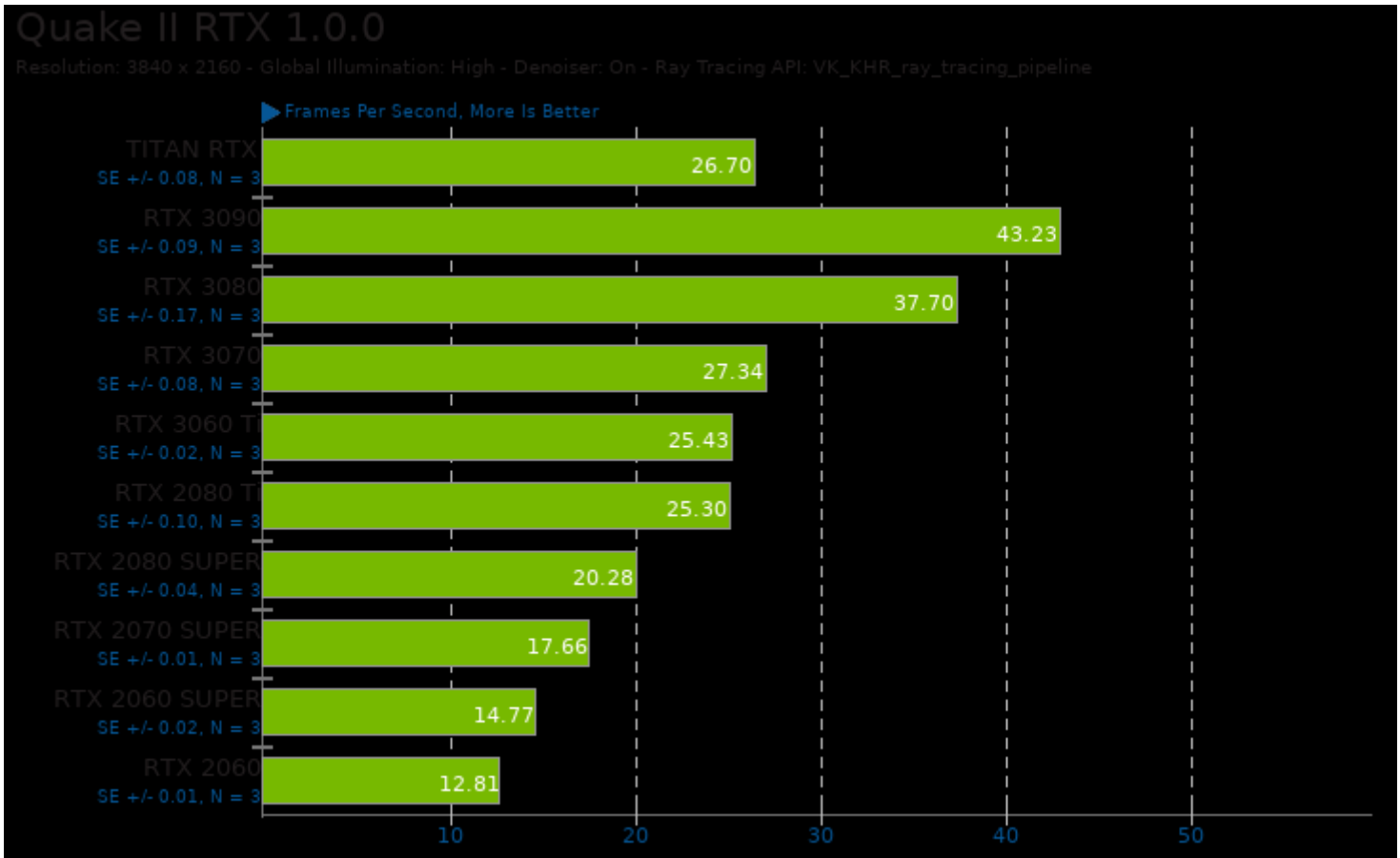


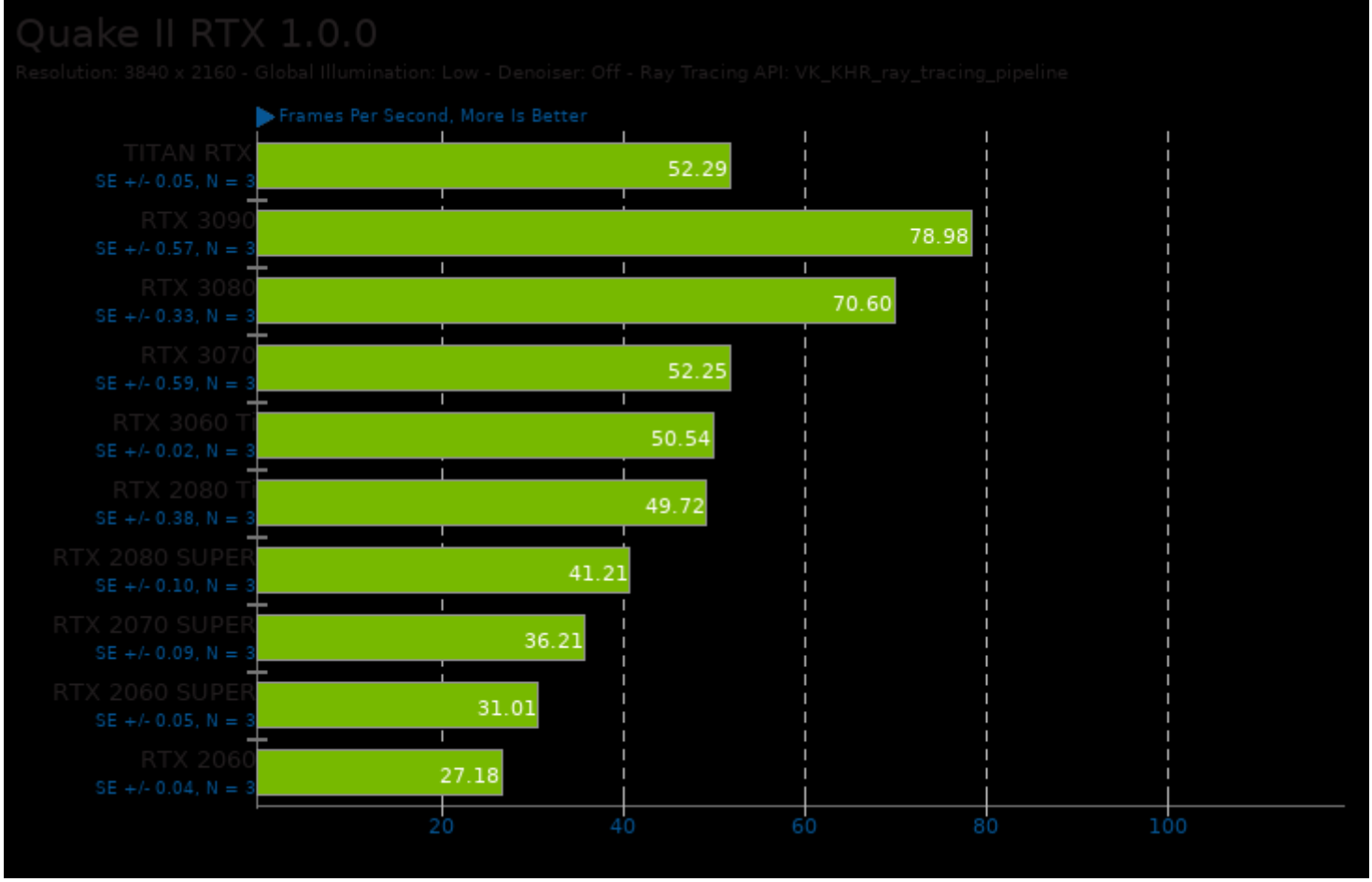
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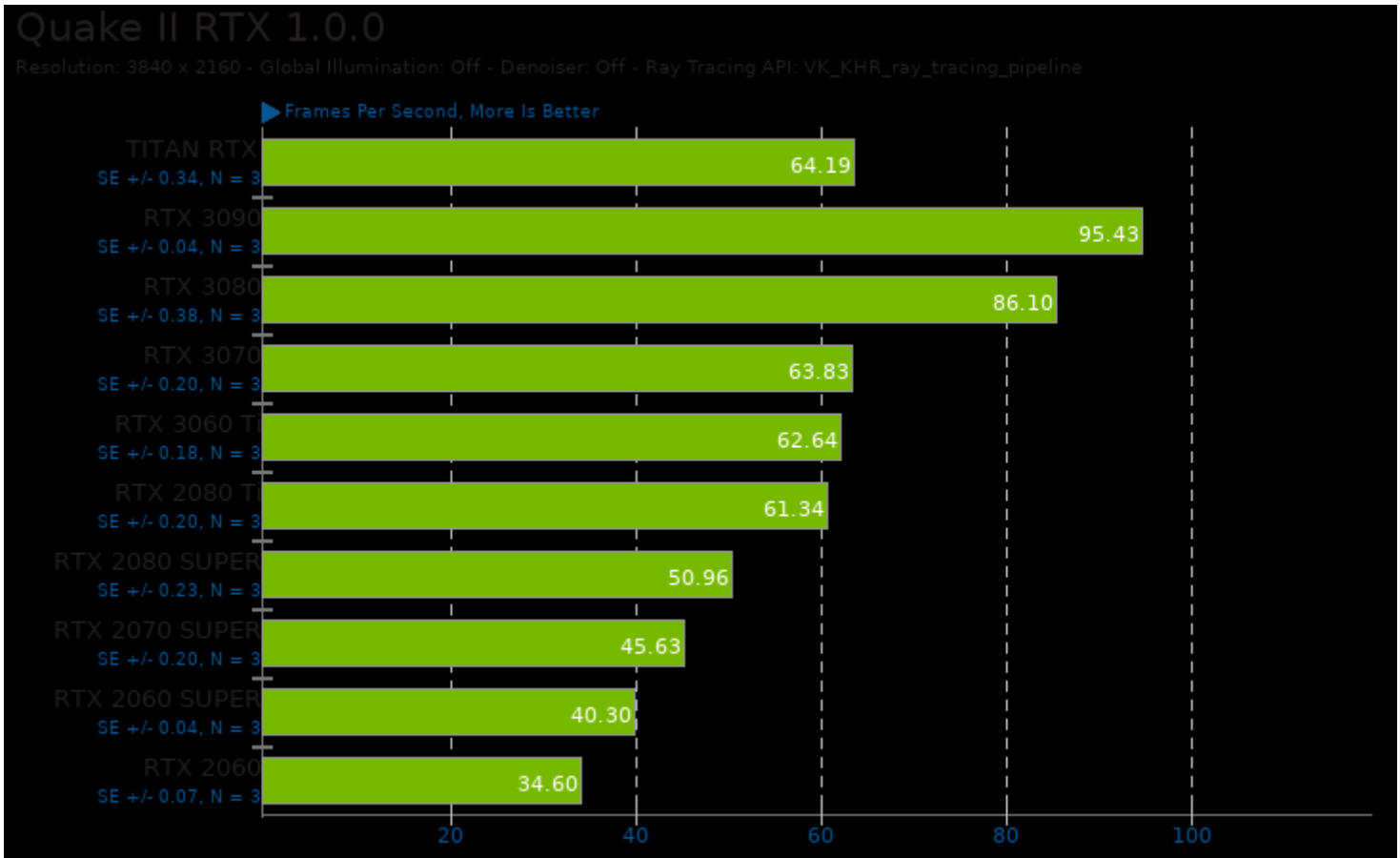


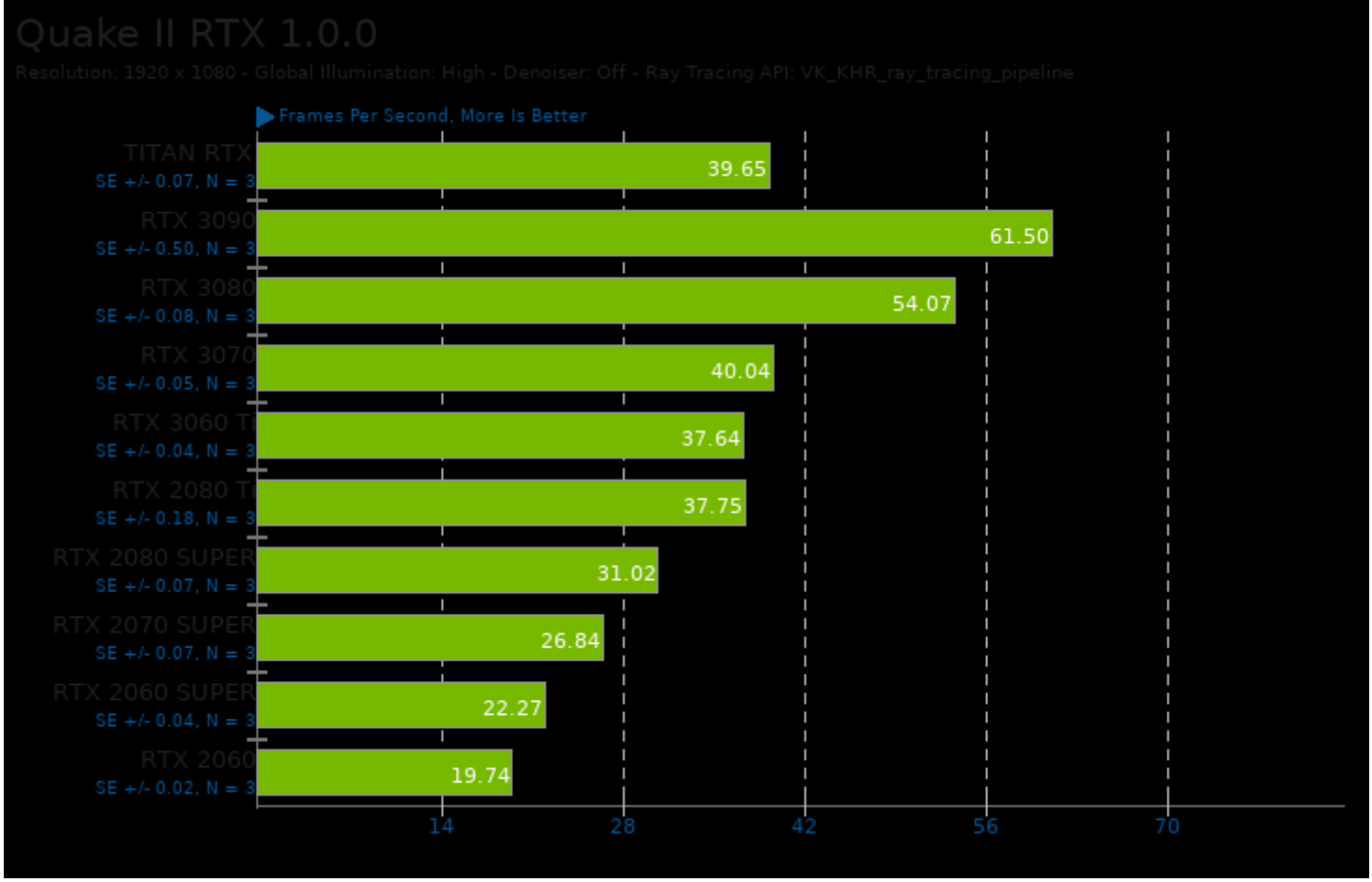
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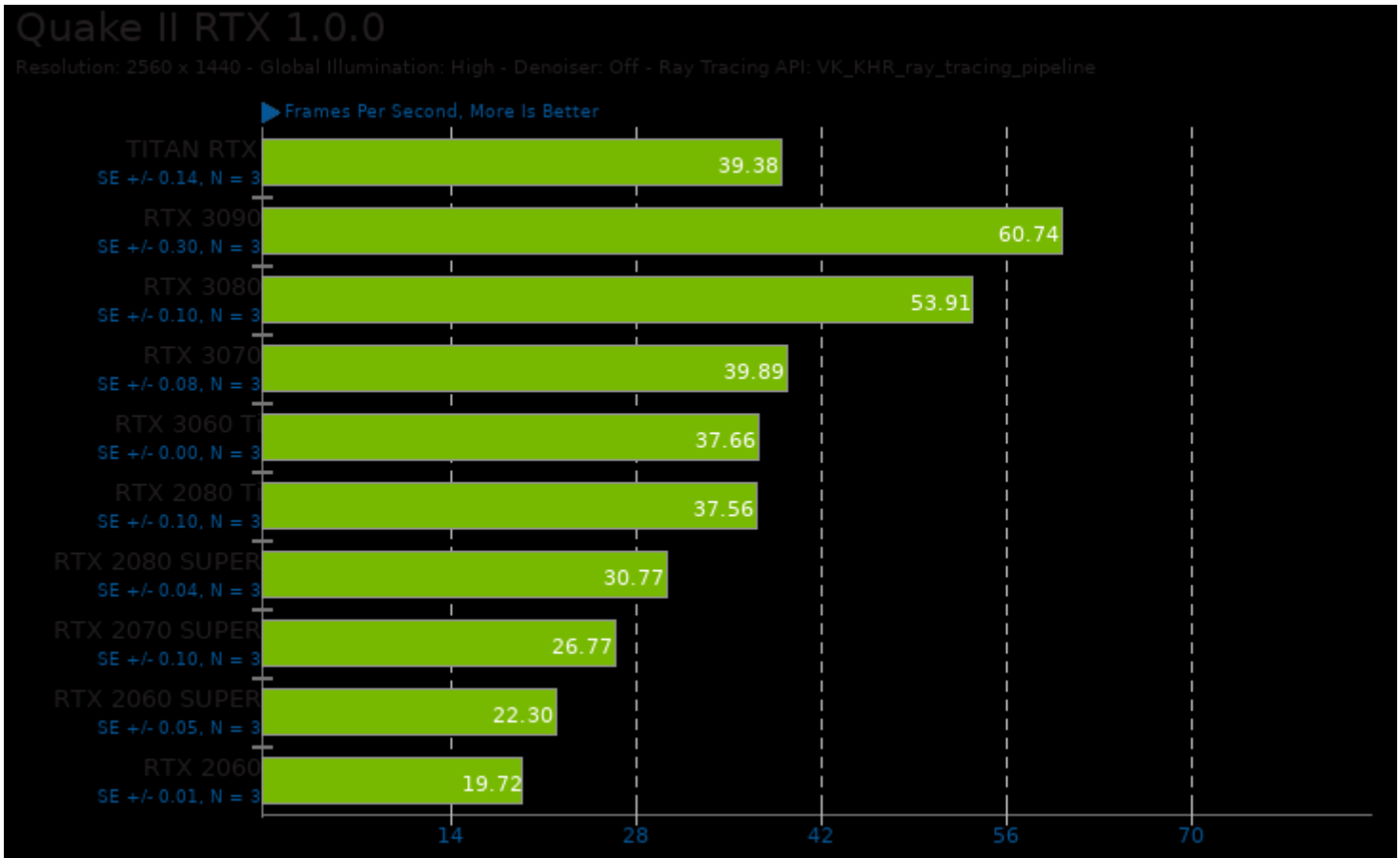


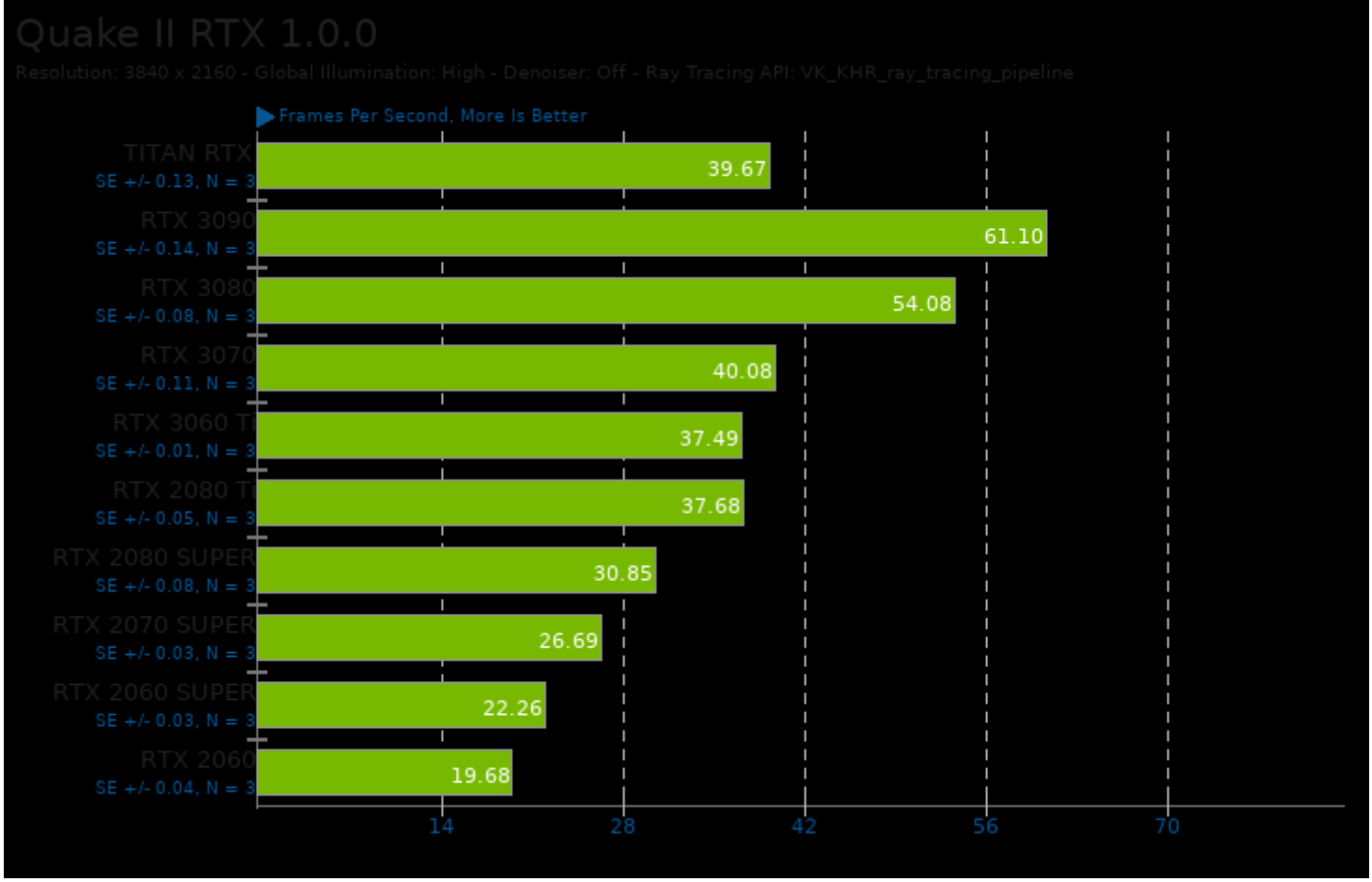
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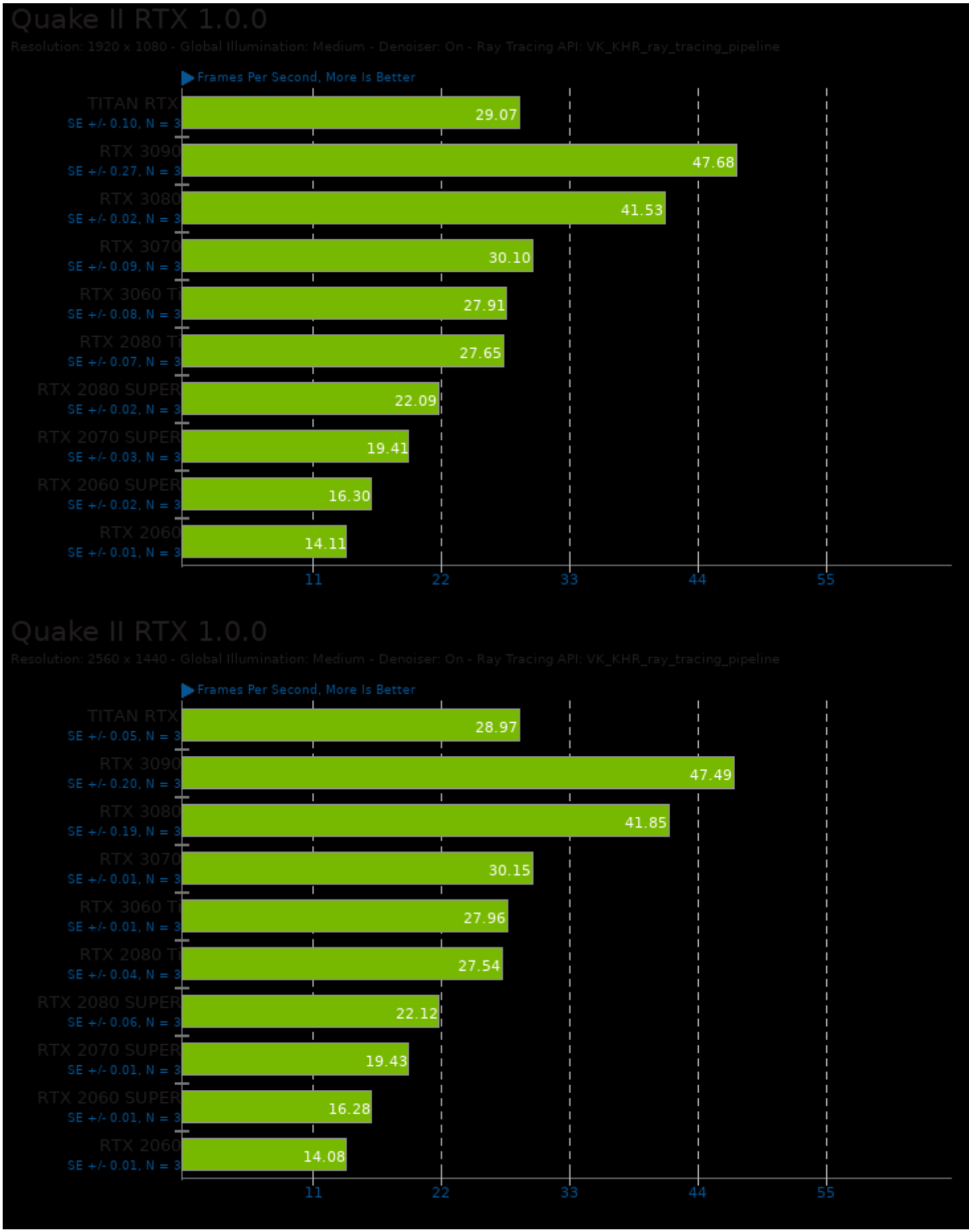


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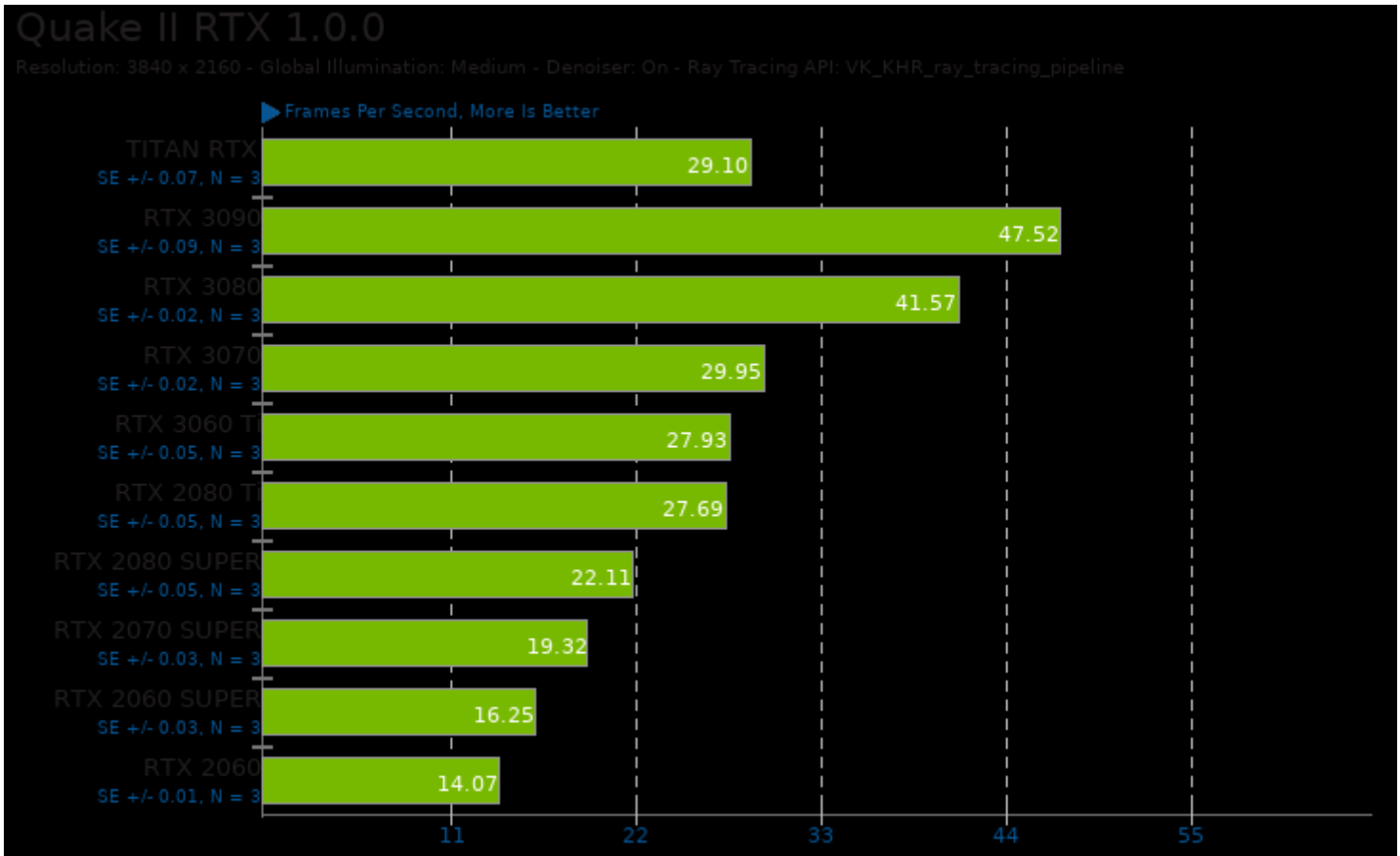


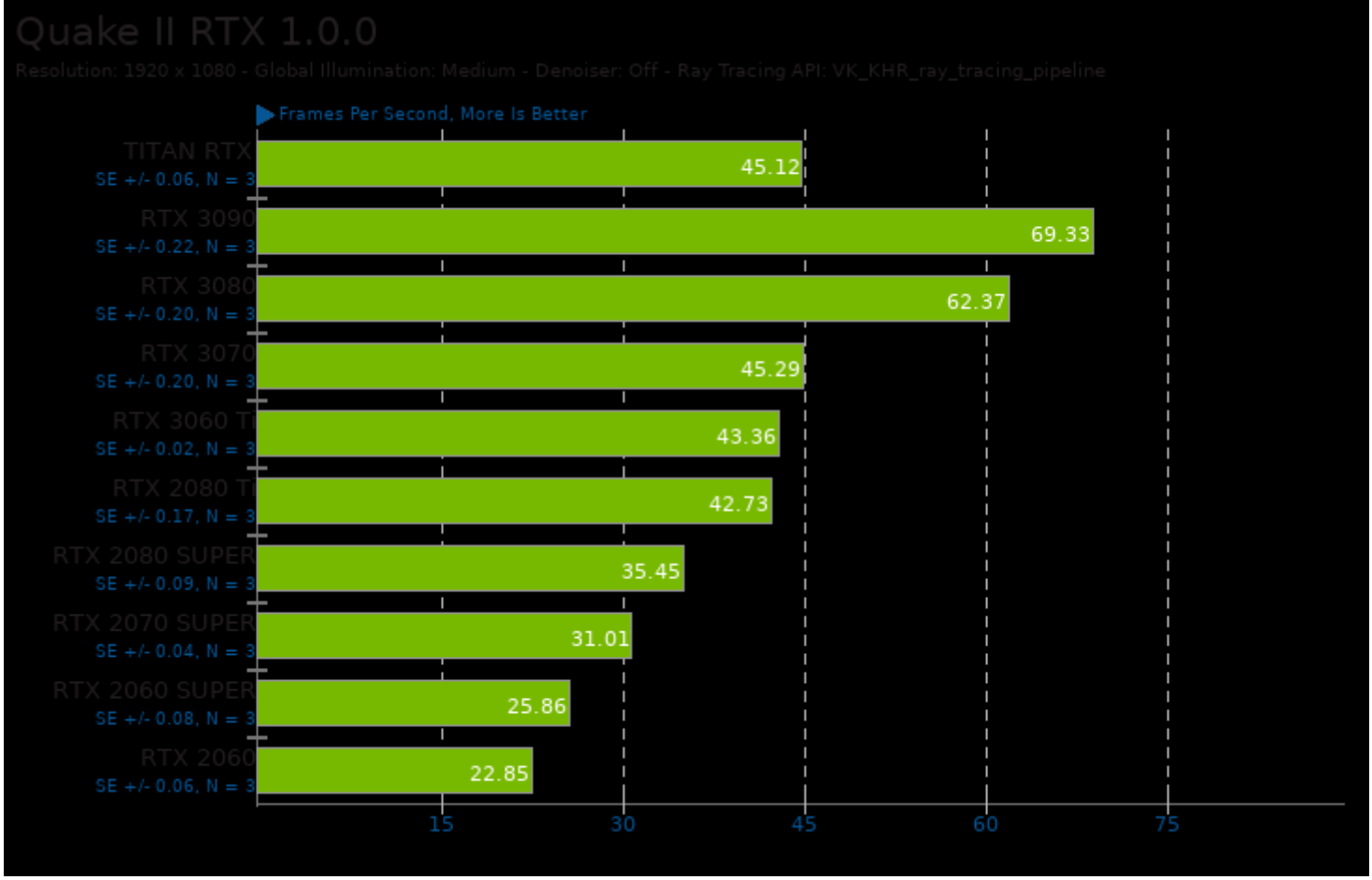


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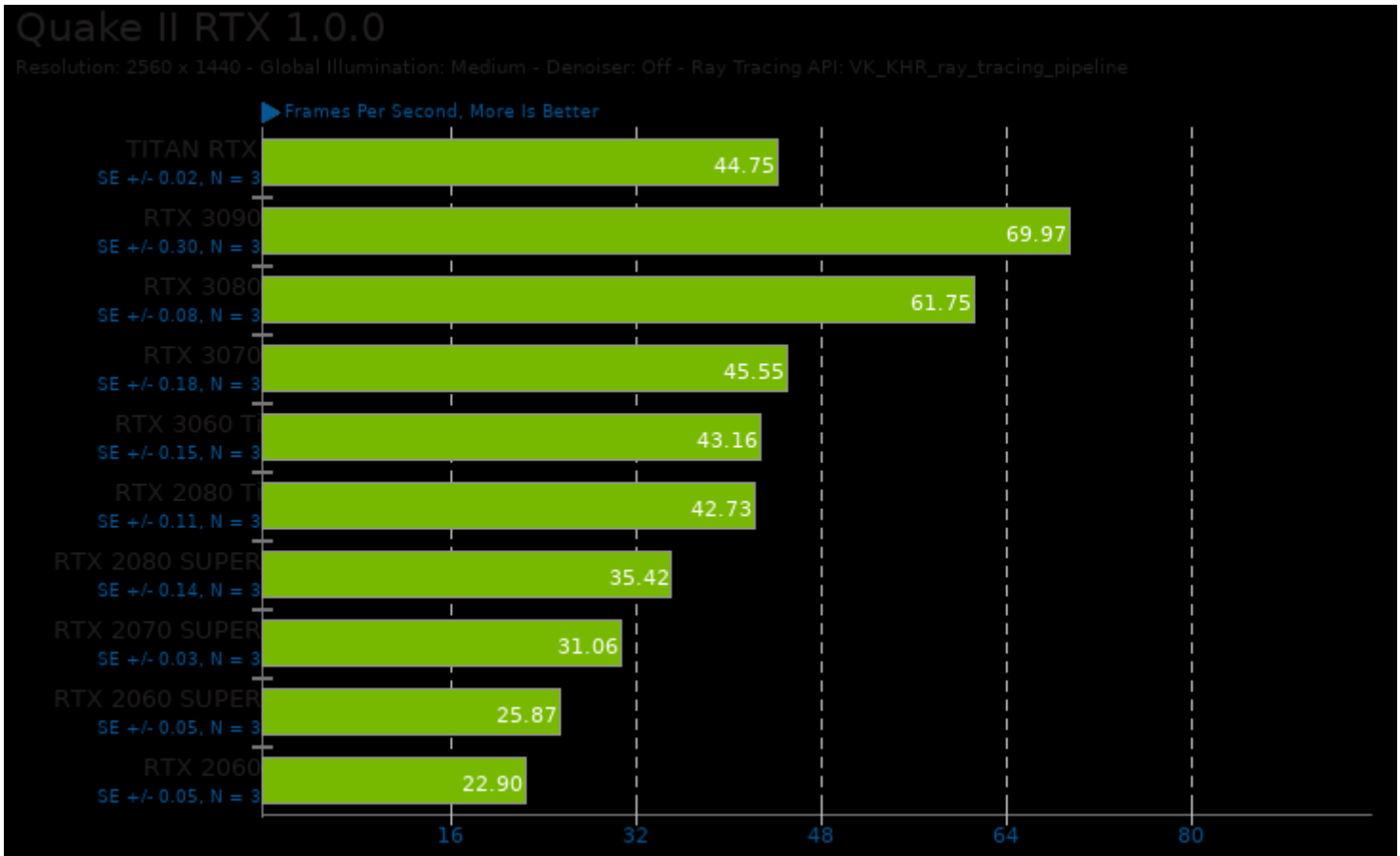


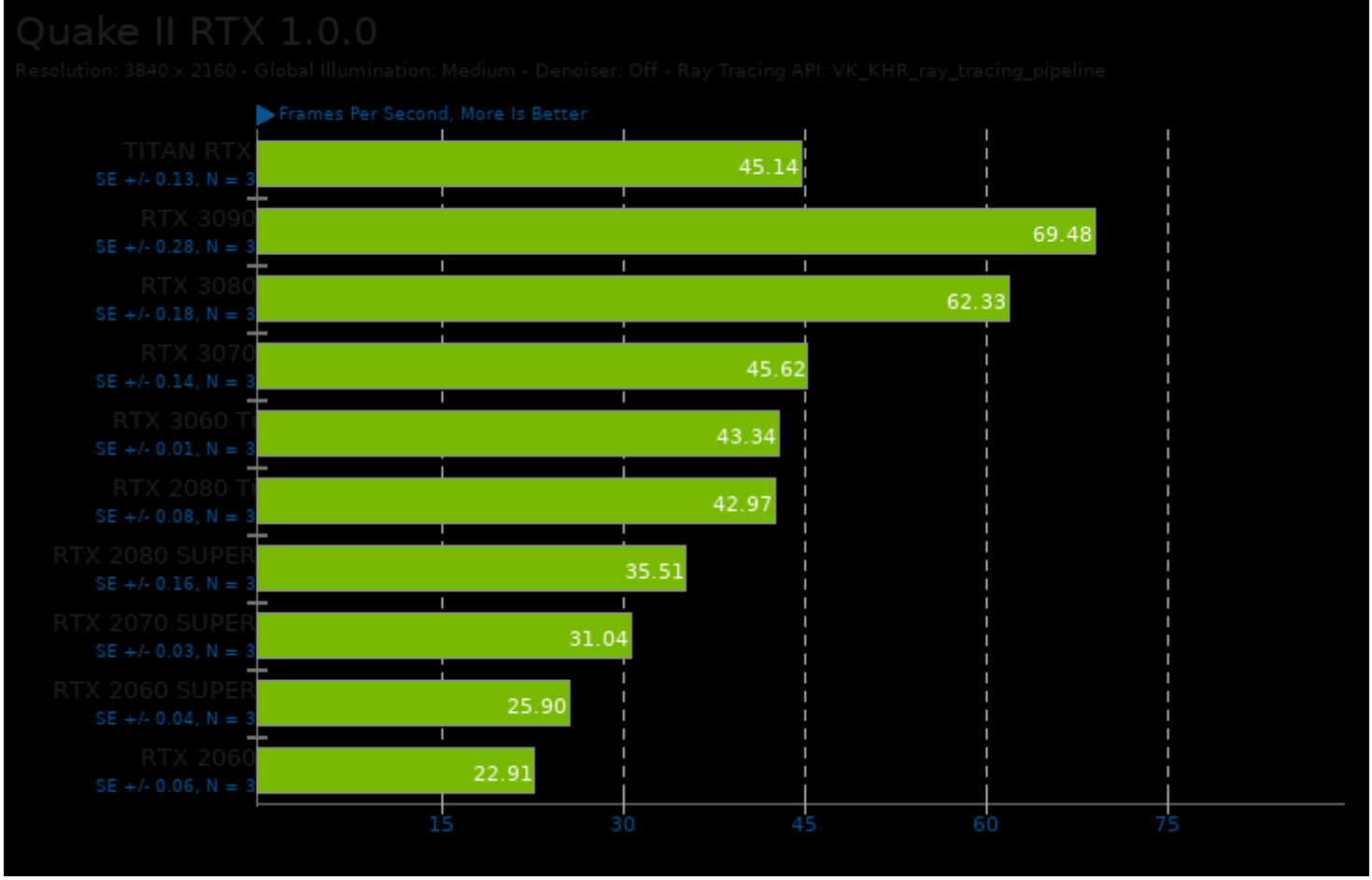
Quake 2 RTX Benchmarks Linux





Quake 2 RTX Benchmarks Linux





Quake 2 RTX Benchmarks Linux

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