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NVIDIA Resizable BAR GeForce RTX 30 Linux Benchmarks

NVIDIA Resizable BAR Linux benchmarks for a future article on Phoronix by Michael Larabel.

Automated Executive Summary

RTX 3090: Original had the most wins, coming in first place for 50% of the tests.

Based on the geometric mean of all complete results, the fastest (RTX 3090: ReBAR) was 1.576x the speed of the slowest (RTX 3060 Ti: ReBAR). RTX 3060 Ti: ReBAR was 0.999x the speed of RTX 3060 Ti: Original, RTX 3070: Original was 1.116x the speed of RTX 3060 Ti: ReBAR, RTX 3070: ReBAR was 0.998x the speed of RTX 3070: Original, RTX 3090: Original was 1.41x the speed of RTX 3070: ReBAR, RTX 3090: ReBAR was 1.003x the speed of RTX 3090: Original.

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

Total War: Three Kingdoms (Resolution: 3840 x 2160 - Graphics Preset: Medium - Scenario: Battle Benchmark) at 1.772x
Total War: Three Kingdoms (Resolution: 2560 x 1440 - Graphics Preset: Medium - Scenario: Battle Benchmark) at 1.754x
Shadow of the Tomb Raider (Resolution: 3840 x 2160 - Graphics Preset: Highest - Anti Aliasing: Off) at 1.748x
DiRT Rally 2.0 (Resolution: 3840 x 1600 - Graphics Preset: Ultra) at 1.726x
Shadow of the Tomb Raider (Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off) at 1.725x

Total War: Three Kingdoms (Resolution: 3840 x 2160 - Graphics Preset: Ultra - Scenario: Battle Benchmark) at 1.707x
DiRT Rally 2.0 (Resolution: 2880 x 1620 - Graphics Preset: Ultra) at 1.696x
DiRT Rally 2.0 (Resolution: 3840 x 1600 - Graphics Preset: High) at 1.679x
HITMAN 2 (Resolution: 3840 x 2160 - Quality Level: Medium) at 1.656x
GravityMark (Resolution: 3840 x 2160 - Renderer: Vulkan) at 1.652x.

Test Systems:

RTX 3060 Ti: Original

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 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 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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: ReBAR

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 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 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.112, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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: Original

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce

RTX 3070 8GB, Audio: NVIDIA GA104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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: ReBAR

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce RTX 3070 8GB, Audio: NVIDIA GA104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.112, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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: Original

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce RTX 3090 24GB, Audio: NVIDIA GA102 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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: ReBAR

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce RTX 3090 24GB, Audio: NVIDIA GA102 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

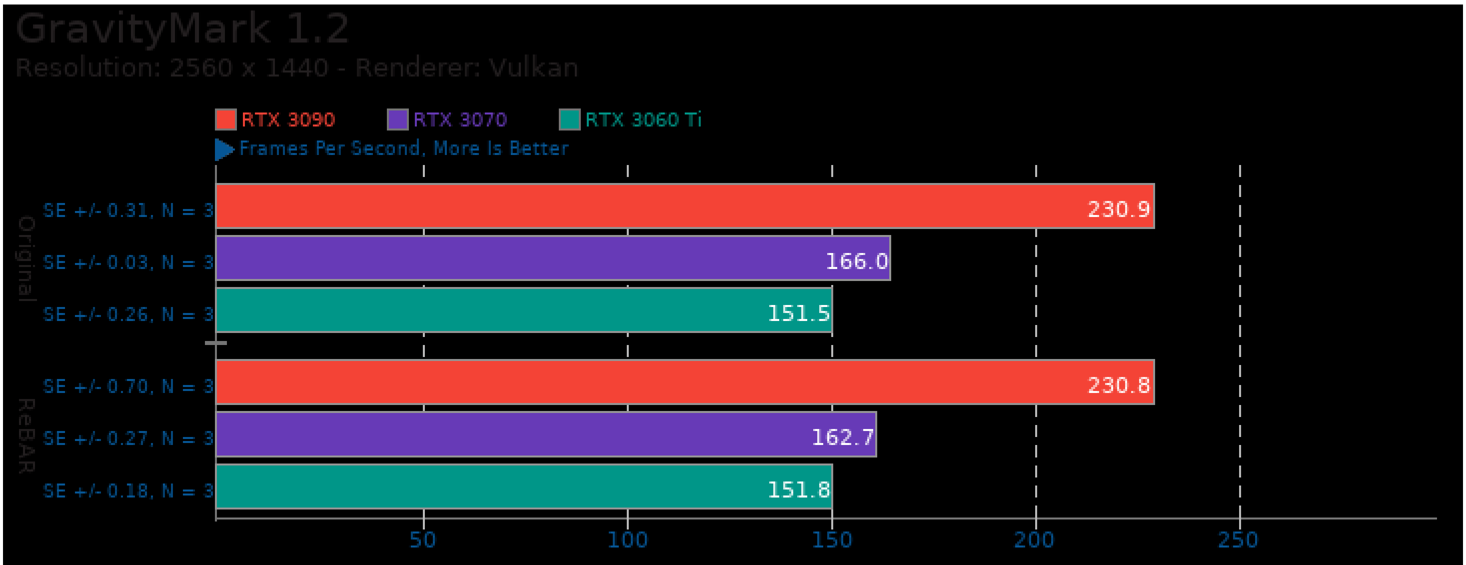
OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.112, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

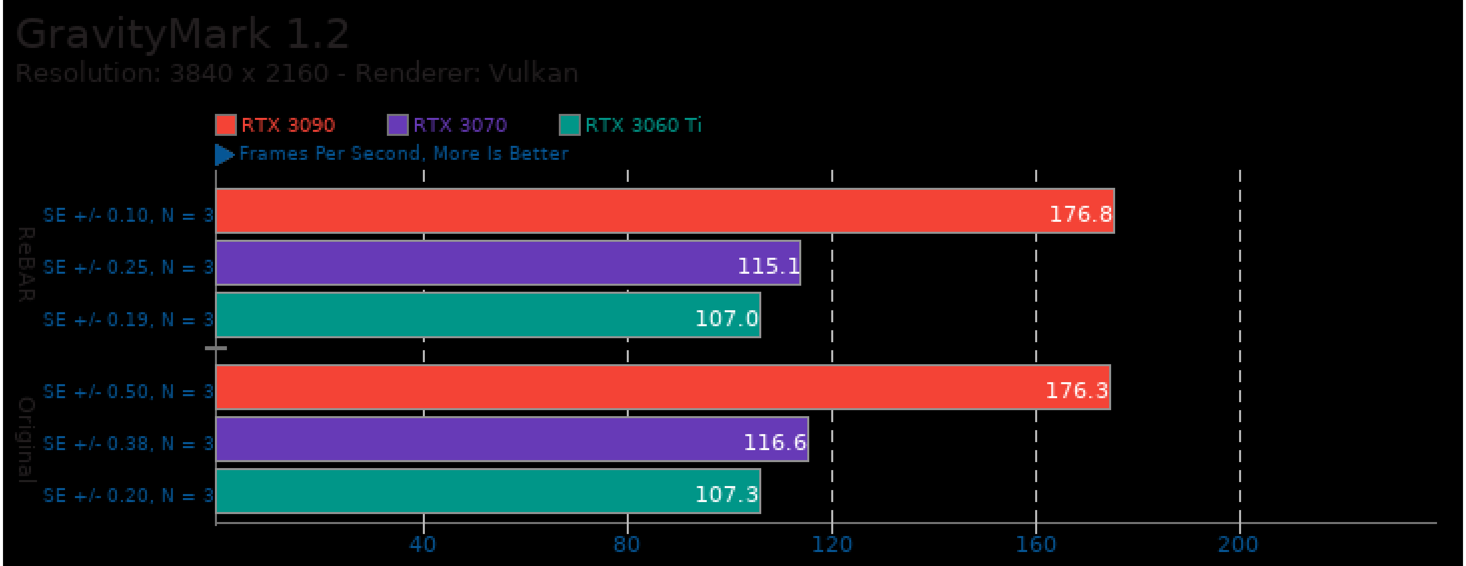
Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled 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

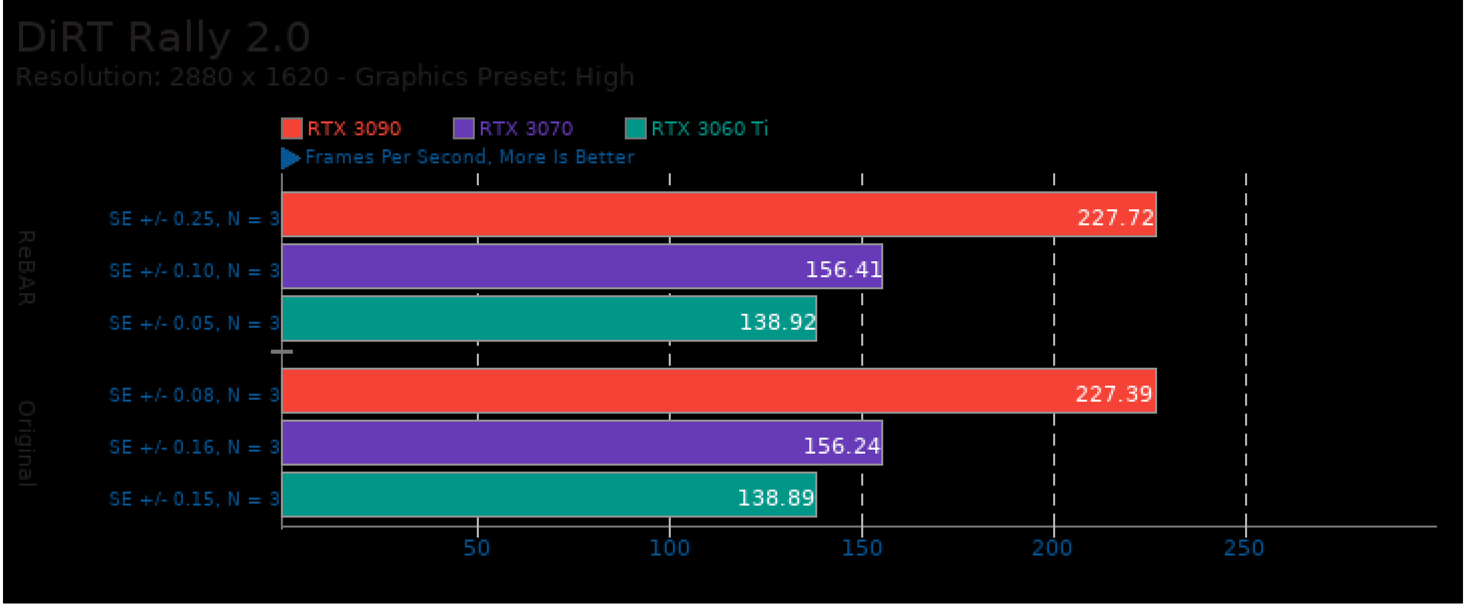
	RTX 3060 Ti: Original	RTX 3060 Ti: ReBAR	RTX 3070: Original	RTX 3070: ReBAR	RTX 3090: Original	RTX 3090: ReBAR
GravityMark - 2560 x 1440 - Vulkan (FPS)	**151.5**	151.8	166.0	162.7	**230.9**	230.8
Normalized	65.61%	65.74%	71.89%	70.46%	100%	99.96%
Standard Deviation	0.3%	0.2%	0%	0.3%	0.2%	0.5%
GravityMark - 3840 x 2160 - Vulkan (FPS)	107.3	**107.0**	116.6	115.1	176.3	**176.8**
Normalized	60.69%	60.52%	65.95%	65.1%	99.72%	100%
Standard Deviation	0.3%	0.3%	0.6%	0.4%	0.5%	0.1%
DiRT Rally 2.0 - 2880 x 1620 - High (FPS)	**138.887975**	138.924545	156.240061	156.413523	227.390086	**227.721232**
Normalized	60.99%	61.01%	68.61%	68.69%	99.85%	100%
Standard Deviation	0.2%	0.1%	0.2%	0.1%	0.1%	0.2%
DiRT Rally 2.0 - 3840 x 1600 - High (FPS)	**119.322306**	119.364398	135.022542	135.228582	**200.387746**	200.035253
Normalized	59.55%	59.57%	67.38%	67.48%	100%	99.82%
Standard Deviation	0.1%	0%	0%	0%	0.2%	0.1%
DiRT Rally 2.0 - 2880 x 1620 - Ultra (FPS)	84.968228	**84.841840**	95.981562	95.904421	143.404622	**143.889654**
Normalized	59.05%	58.96%	66.7%	66.65%	99.66%	100%
Standard Deviation	0.1%	0.1%	0.1%	0.1%	0.2%	0.4%
DiRT Rally 2.0 - 3840 x 1600 - Ultra (FPS)	72.852905	**72.789200**	82.697937	82.789248	125.499481	**125.615453**
Normalized	58%	57.95%	65.83%	65.91%	99.91%	100%
Standard Deviation	0.1%	0.1%	0.1%	0%	0.2%	0.2%
F1 2020 - 2560 x 1440 - High (FPS)	**223**	224	237	239	247	**252**
Normalized	88.49%	88.89%	94.05%	94.84%	98.02%	100%
Standard Deviation	0.3%	0.3%	0.5%	0.9%	1.3%	1%
F1 2020 - 3840 x 2160 - High (FPS)	**146**	**146**	165	164	227	**229**
Normalized	63.76%	63.76%	72.05%	71.62%	99.13%	100%
Standard Deviation	0.4%	0%	0.4%	0%	0.3%	0.3%
F1 2020 - 2560 x 1440 - Ultra (FPS)	167	**166**	181	182	200	**207**
Normalized	80.68%	80.19%	87.44%	87.92%	96.62%	100%
Standard Deviation	0%	0.3%	1%	0.5%	1.3%	1.4%

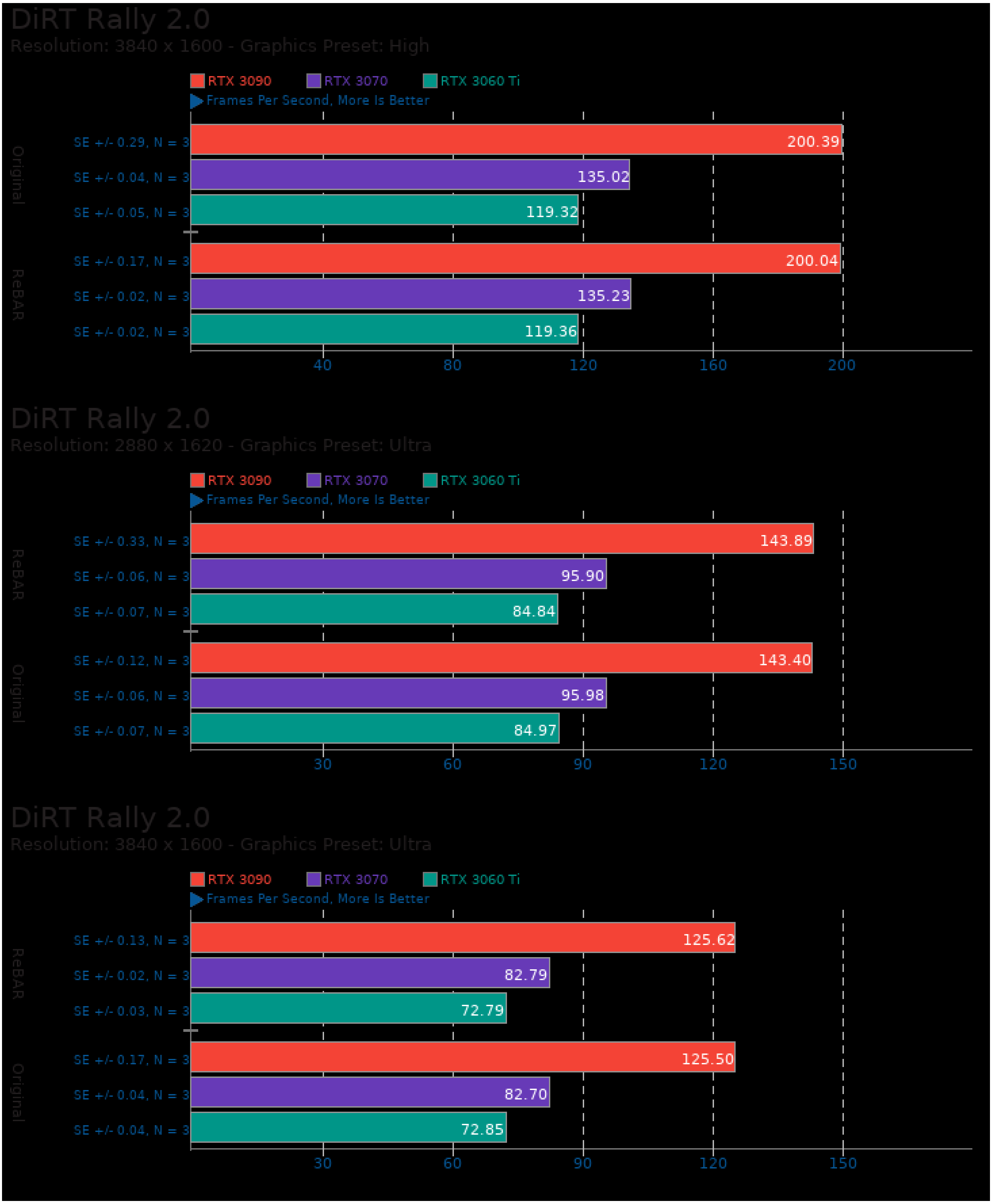
F1 2020 - 3840 x 2160 - Ultra (FPS)	111	**110**	125	125	176	**178**
Normalized	62.36%	61.8%	70.22%	70.22%	98.88%	100%
Standard Deviation	0%	0%	0.5%	0%	0.3%	0%
HITMAN 2 - 2560 x 1440 - Ultra (FPS)	**101.30**	101.69	111.28	111.83	**139.67**	139.00
Normalized	72.53%	72.81%	79.67%	80.07%	100%	99.52%
Standard Deviation	0.2%	0.2%	0.2%	0.6%	0.4%	1.8%
HITMAN 2 - 3840 x 2160 - Ultra (FPS)	59.20	**59.12**	66.86	66.71	96.85	**96.91**
Normalized	61.09%	61.01%	68.99%	68.84%	99.94%	100%
Standard Deviation	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%
HITMAN 2 - 2560 x 1440 - Medium (FPS)	**108.95**	109.15	119.81	119.45	145.39	**150.08**
Normalized	72.59%	72.73%	79.83%	79.59%	96.88%	100%
Standard Deviation	0%	0.2%	0.2%	0.8%	2.2%	0.4%
HITMAN 2 - 3840 x 2160 - Medium (FPS)	62.21	**62.16**	70.88	70.87	102.50	**102.93**
Normalized	60.44%	60.39%	68.86%	68.85%	99.58%	100%
Standard Deviation	0.1%	0.1%	0.2%	0.1%	0.3%	0.2%
Shadow of the Tomb Raider - 2560 x 1440 - Medium - Off (FPS)	**120.6**	120.7	134.2	134.3	**195.3**	194.7
Normalized	61.75%	61.8%	68.71%	68.77%	100%	99.69%
Standard Deviation	0.1%	0%	0.1%	0%	0.2%	0.4%
Shadow of the Tomb Raider - 3840 x 2160 - Medium - Off (FPS)	**68.8**	69.0	77.2	77.0	**118.7**	118.5
Normalized	57.96%	58.13%	65.04%	64.87%	100%	99.83%
Standard Deviation	0.1%	0.1%	0.1%	0.1%	0.2%	0%
Shadow of the Tomb Raider - 2560 x 1440 - Highest - Off (FPS)	**107.7**	**107.7**	119.9	119.7	**176.3**	175.9
Normalized	61.09%	61.09%	68.01%	67.9%	100%	99.77%
Standard Deviation	0.1%	0.1%	0%	0%	0.2%	0.3%
Shadow of the Tomb Raider - 3840 x 2160 - Highest - Off (FPS)	**60**	60.1	67.1	67.4	**104.9**	104.7
Normalized	57.2%	57.29%	63.97%	64.25%	100%	99.81%
Standard Deviation	0%	0.1%	0.1%	0%	0.2%	0.1%
Total War: Three Kingdoms - 2560 x 1440 - Ultra - Battle Benchmark (FPS)	48.1	**48.0**	53.0	52.8	**72.1**	71.9
Normalized	66.71%	66.57%	73.51%	73.23%	100%	99.72%
Standard Deviation	1.1%	0.9%	0.9%	1.4%	0.4%	0.9%
Total War: Three Kingdoms - 3840 x 2160 - Ultra - Battle Benchmark (FPS)	26.8	**26.3**	30.0	30.1	**44.9**	**44.9**
Normalized	59.69%	58.57%	66.82%	67.04%	100%	100%
Standard Deviation	1%	1.3%	0.8%	0.5%	0.6%	0.3%

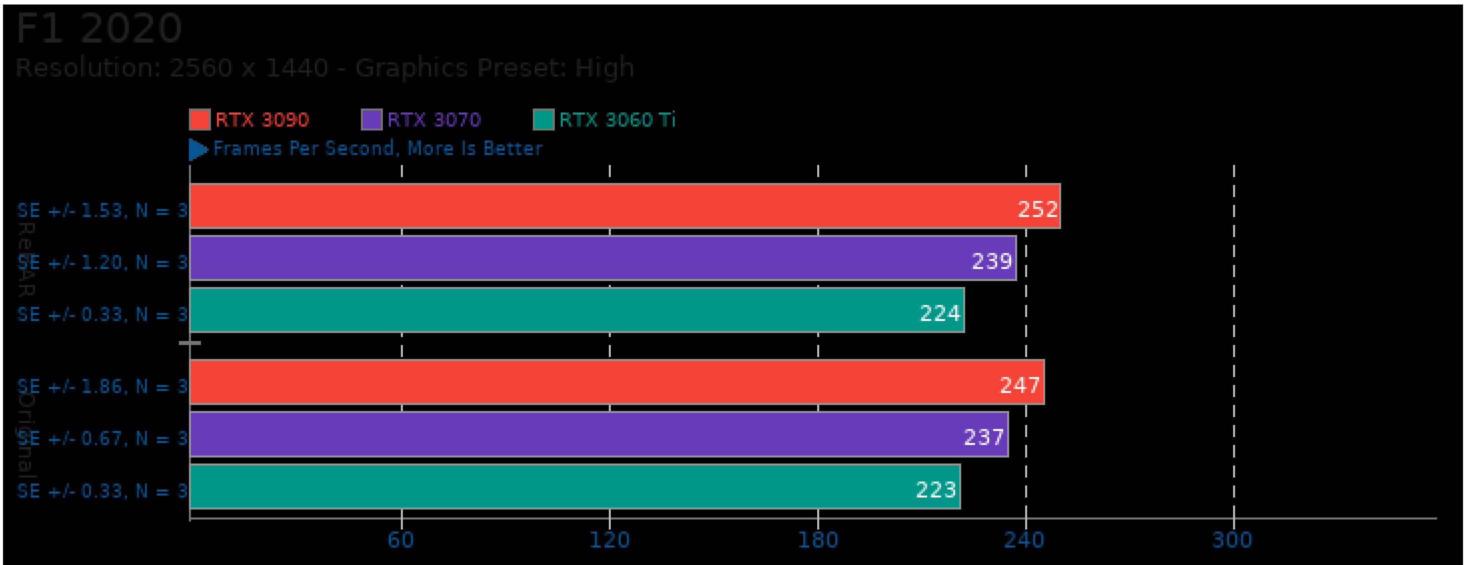
Total War: Three Kingdoms - 2560 x 1440 - Medium - Battle Benchmark (FPS)	**115.7**	116.1	132.6	130.1	**202.9**	197.8
Normalized	57.02%	57.22%	65.35%	64.12%	100%	97.49%
Standard Deviation	0%	1.5%	2.4%	0.5%	2.1%	2.1%
Total War: Three Kingdoms - 3840 x 2160 - Medium - Battle Benchmark (FPS)	**57.8**	58.1	65.4	65.4	**102.4**	102.0
Normalized	56.45%	56.74%	63.87%	63.87%	100%	99.61%
Standard Deviation	0.9%	0.6%	0.6%	0.9%	0.7%	1.2%

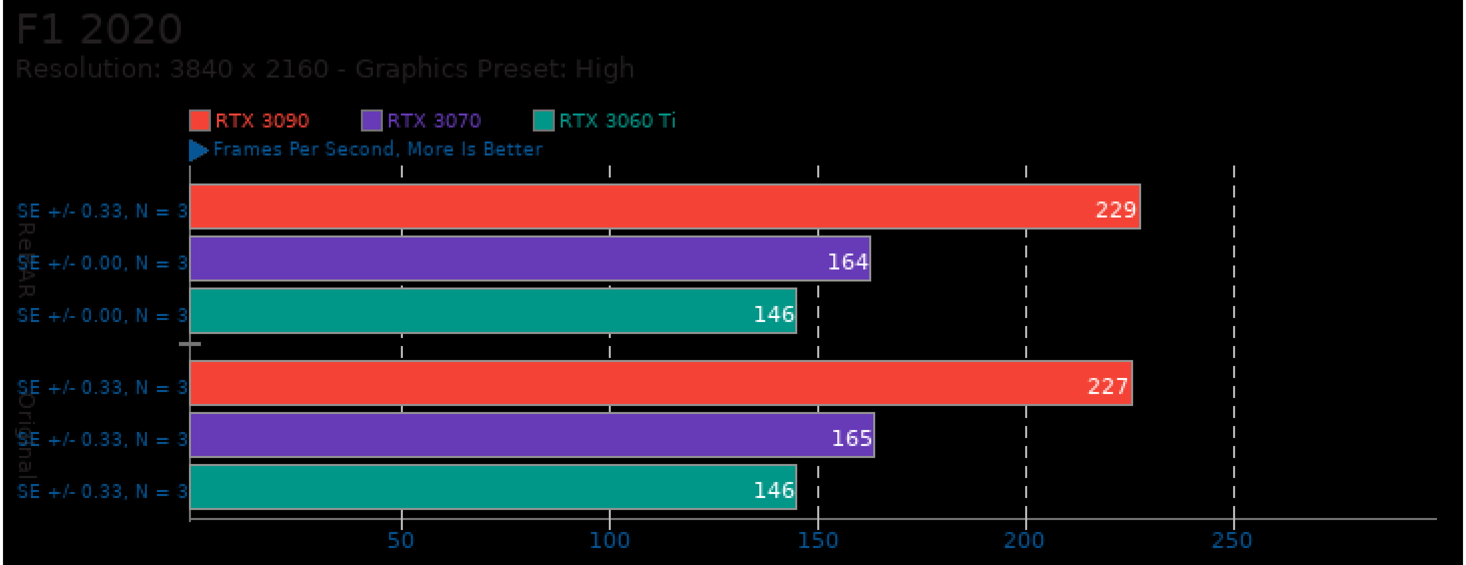

GravityMark 1.2
Resolution: 2560 x 1440 - Renderer: Vulkan
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 0.31, N = 3
230.9
SE +/- 0.03, N = 3
166.0
SE +/- 0.26, N = 3
151.5
ReBAR
SE +/- 0.70, N = 3
230.8
SE +/- 0.27, N = 3
162.7
SE +/- 0.18, N = 3
151.8
50
100
150
200
250

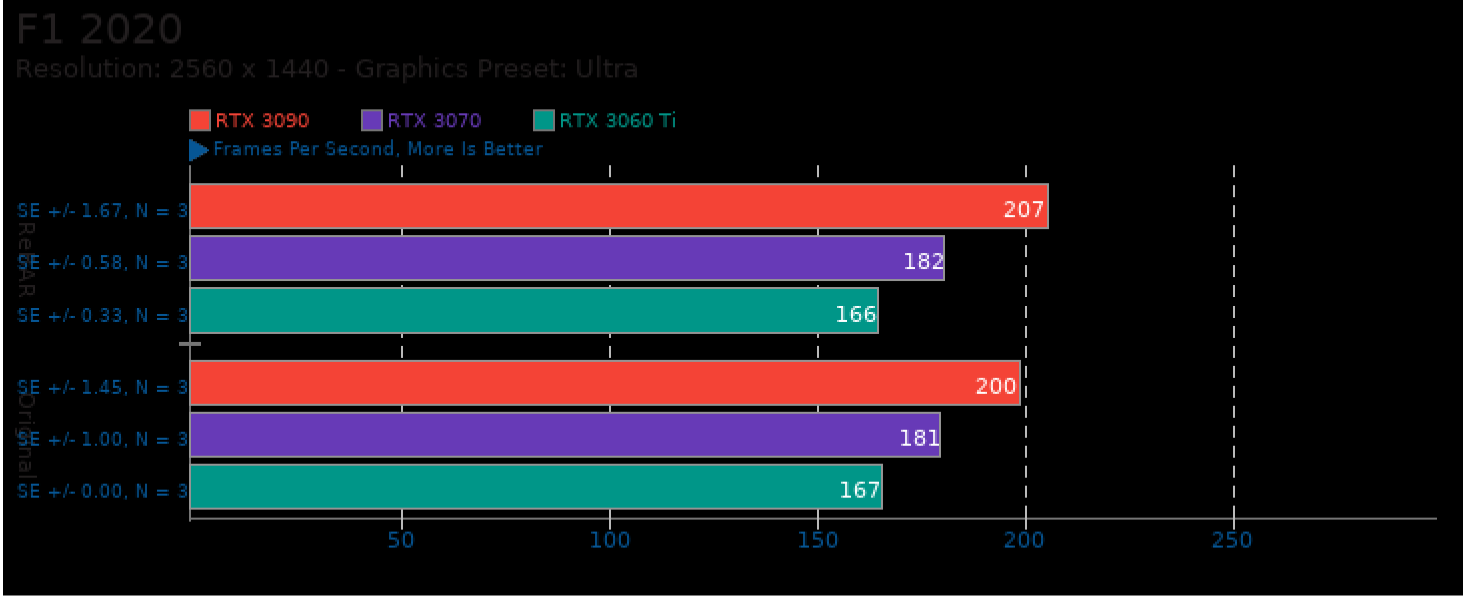

GravityMark 1.2
Resolution: 3840 x 2160 - Renderer: Vulkan
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
SE +/- 0.10, N = 3
176.8
SE +/- 0.25, N = 3
115.1
SE +/- 0.19, N = 3
107.0
Original
SE +/- 0.50, N = 3
176.3
SE +/- 0.38, N = 3
116.6
SE +/- 0.20, N = 3
107.3
40
80
120
160
200

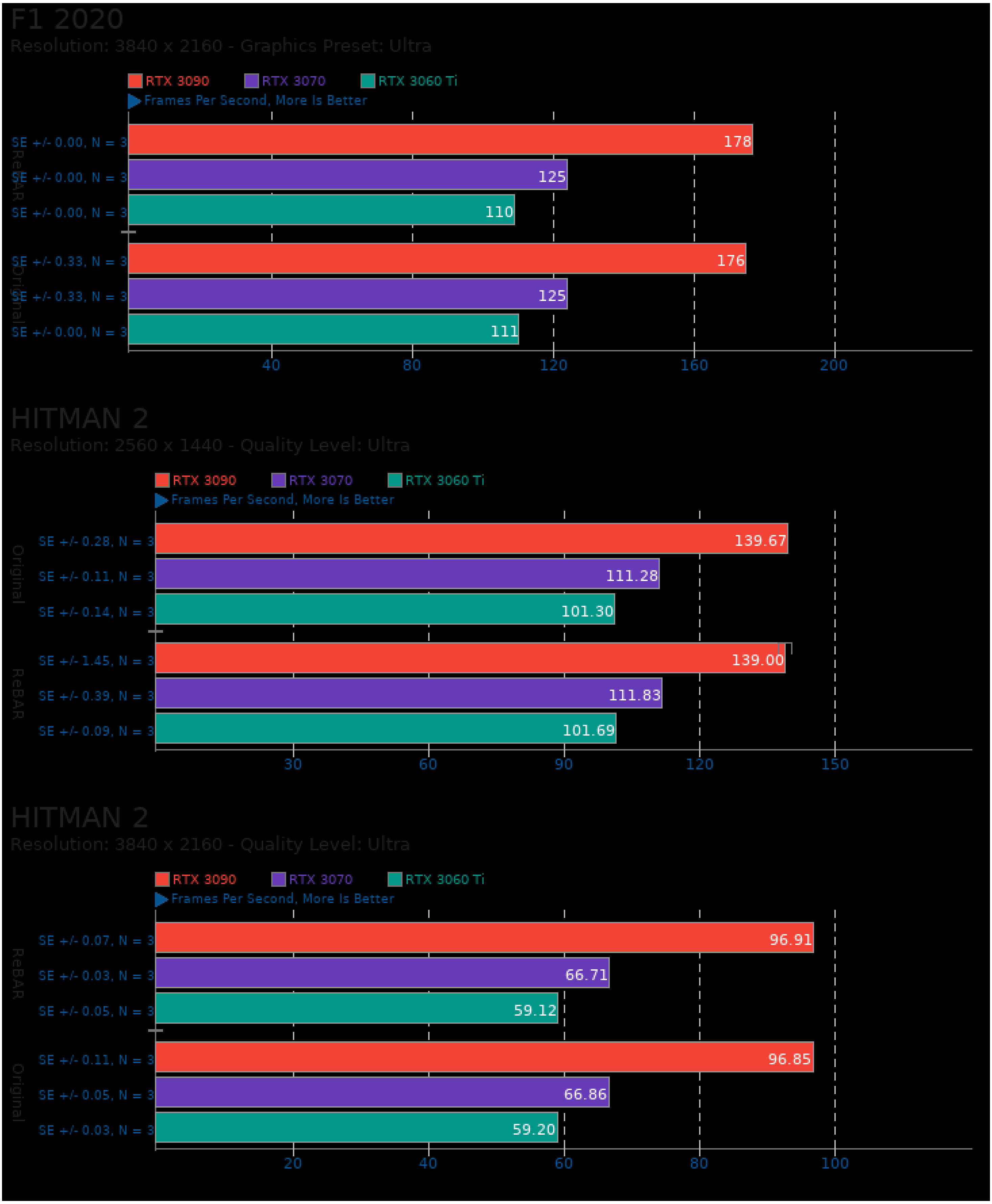

DiRT Rally 2.0
Resolution: 2880 x 1620 - Graphics Preset: High
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
SE +/- 0.25, N = 3
227.72
SE +/- 0.10, N = 3
156.41
SE +/- 0.05, N = 3
138.92
Original
SE +/- 0.08, N = 3
227.39
SE +/- 0.16, N = 3
156.24
SE +/- 0.15, N = 3
138.89
50
100
150
200
250

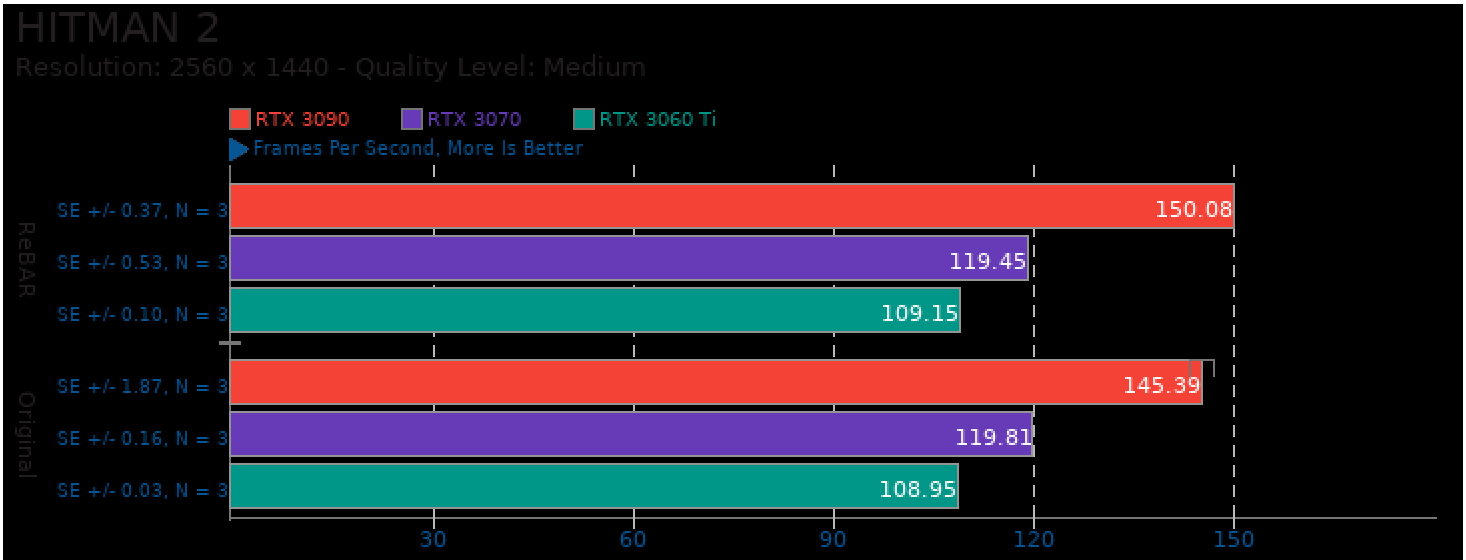

DiRT Rally 2.0
Resolution: 3840 x 1600 - Graphics Preset: High
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 0.29, N = 3
200.39
SE +/- 0.04, N = 3
135.02
SE +/- 0.05, N = 3
119.32
ReBAR
SE +/- 0.17, N = 3
200.04
SE +/- 0.02, N = 3
135.23
SE +/- 0.02, N = 3
119.36
40
80
120
160
200
DiRT Rally 2.0
Resolution: 2880 x 1620 - Graphics Preset: Ultra
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
SE +/- 0.33, N = 3
143.89
SE +/- 0.06, N = 3
95.90
SE +/- 0.07, N = 3
84.84
Original
SE +/- 0.12, N = 3
143.40
SE +/- 0.06, N = 3
95.98
SE +/- 0.07, N = 3
84.97
30
60
90
120
150
DiRT Rally 2.0
Resolution: 3840 x 1600 - Graphics Preset: Ultra
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
SE +/- 0.13, N = 3
125.62
SE +/- 0.02, N = 3
82.79
SE +/- 0.03, N = 3
72.79
Original
SE +/- 0.17, N = 3
125.50
SE +/- 0.04, N = 3
82.70
SE +/- 0.04, N = 3
72.85
30
60
90
120
150

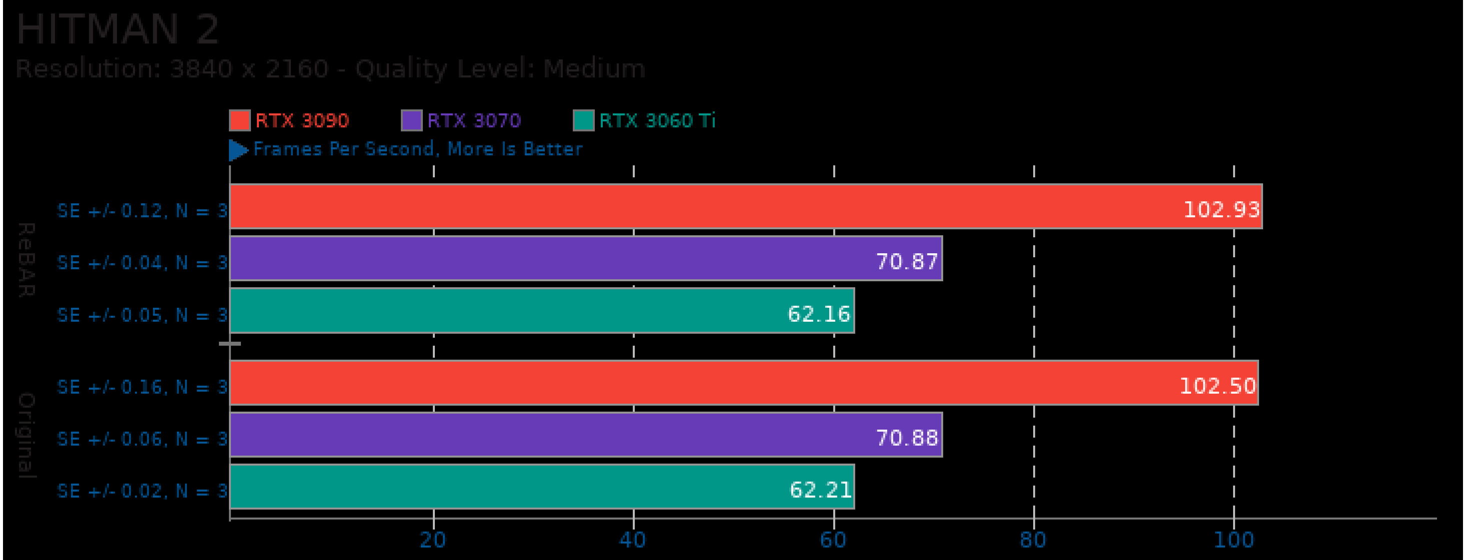

F1 2020
Resolution: 2560 x 1440 - Graphics Preset: High
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
Original
SE +/- 1.53, N = 3
252
SE +/- 1.20, N = 3
239
SE +/- 0.33, N = 3
224
SE +/- 1.86, N = 3
247
SE +/- 0.67, N = 3
237
SE +/- 0.33, N = 3
223
60
120
180
240
300

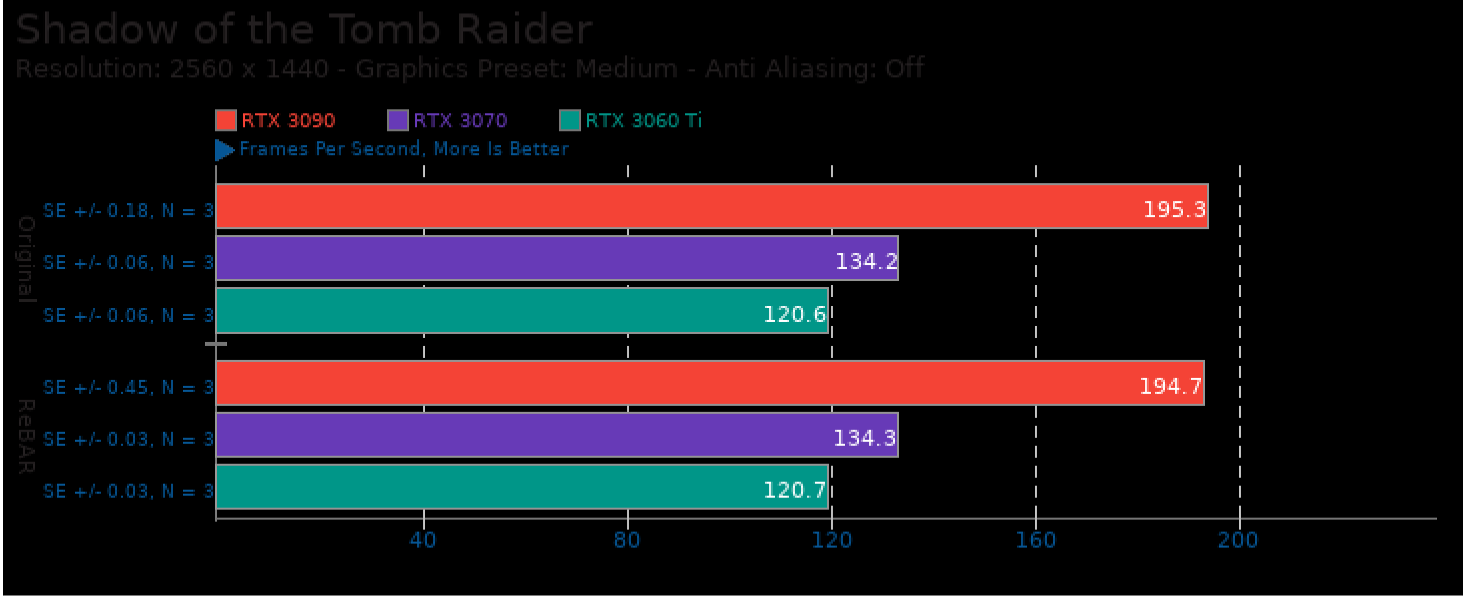

F1 2020
Resolution: 3840 x 2160 - Graphics Preset: High
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
Original
SE +/- 0.33, N = 3
229
SE +/- 0.00, N = 3
164
SE +/- 0.00, N = 3
146
SE +/- 0.33, N = 3
227
SE +/- 0.33, N = 3
165
SE +/- 0.33, N = 3
146
50
100
150
200
250

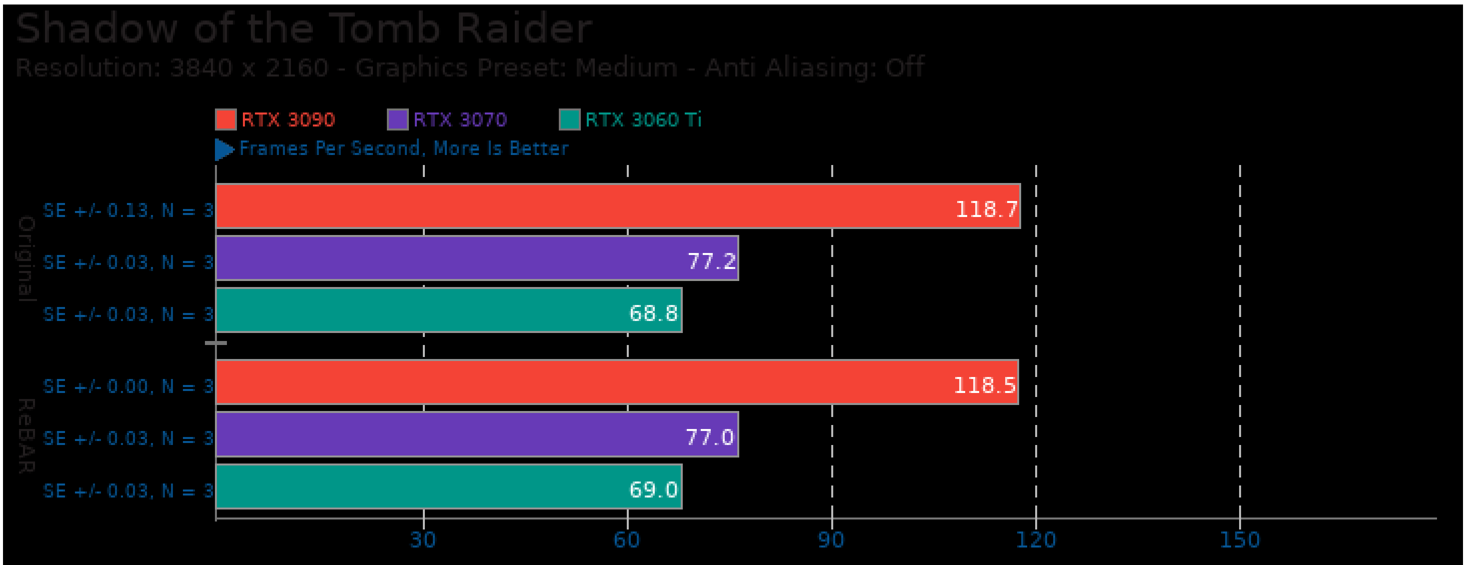

F1 2020
Resolution: 2560 x 1440 - Graphics Preset: Ultra
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
Original
SE +/- 1.67, N = 3
207
SE +/- 0.58, N = 3
182
SE +/- 0.33, N = 3
166
SE +/- 1.45, N = 3
200
SE +/- 1.00, N = 3
181
SE +/- 0.00, N = 3
167
50
100
150
200
250

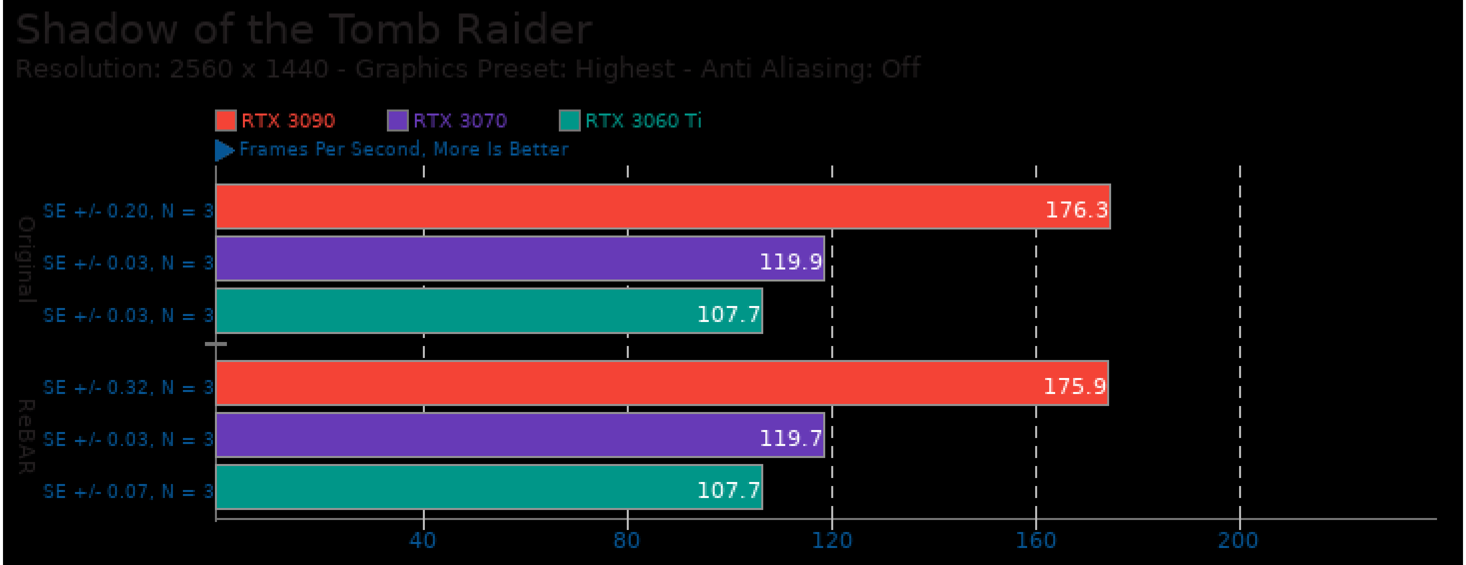

F1 2020
Resolution: 3840 x 2160 - Graphics Preset: Ultra
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
SE +/- 0.00, N = 3
178
SE +/- 0.00, N = 3
125
SE +/- 0.00, N = 3
110
Original
SE +/- 0.33, N = 3
176
SE +/- 0.33, N = 3
125
SE +/- 0.00, N = 3
111
40
80
120
160
200
HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Ultra
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 0.28, N = 3
139.67
SE +/- 0.11, N = 3
111.28
SE +/- 0.14, N = 3
101.30
ReBAR
SE +/- 1.45, N = 3
139.00
SE +/- 0.39, N = 3
111.83
SE +/- 0.09, N = 3
101.69
30
60
90
120
150
HITMAN 2
Resolution: 3840 x 2160 - Quality Level: Ultra
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
SE +/- 0.07, N = 3
96.91
SE +/- 0.03, N = 3
66.71
SE +/- 0.05, N = 3
59.12
Original
SE +/- 0.11, N = 3
96.85
SE +/- 0.05, N = 3
66.86
SE +/- 0.03, N = 3
59.20
20
40
60
80
100

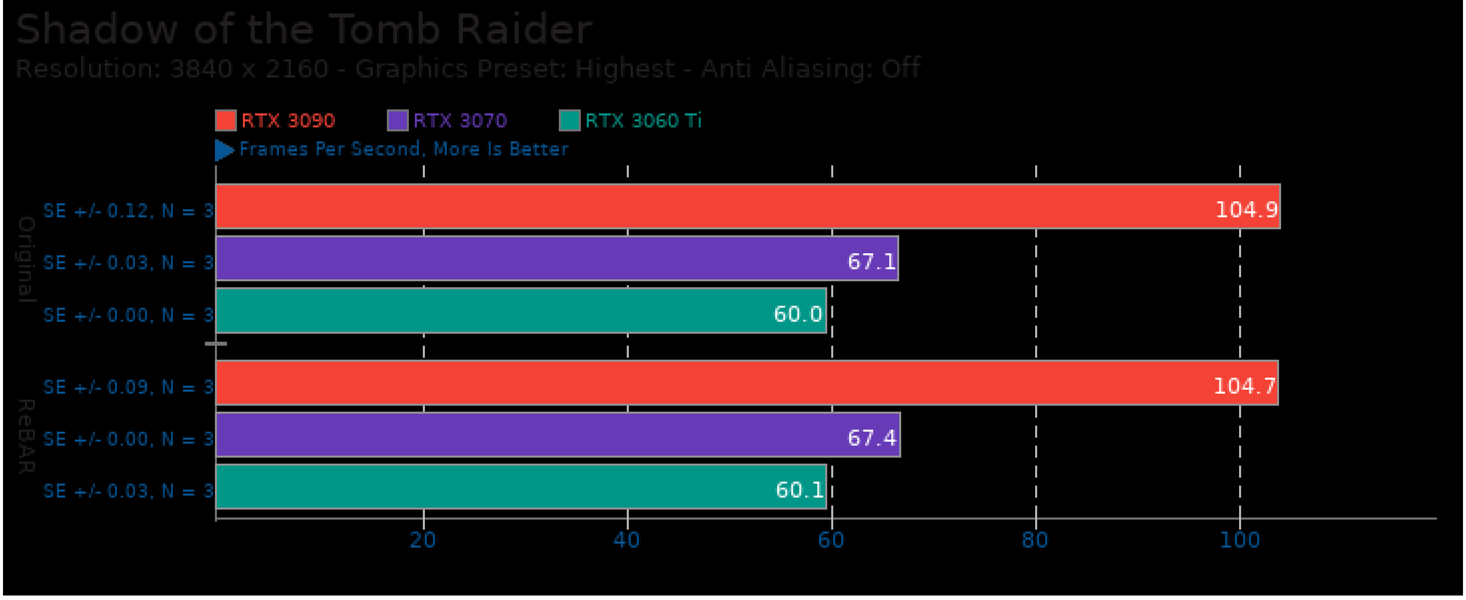

HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Medium
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
Original
SE +/- 0.37, N = 3
150.08
SE +/- 0.53, N = 3
119.45
SE +/- 0.10, N = 3
109.15
SE +/- 1.87, N = 3
145.39
SE +/- 0.16, N = 3
119.81
SE +/- 0.03, N = 3
108.95
30
60
90
120
150

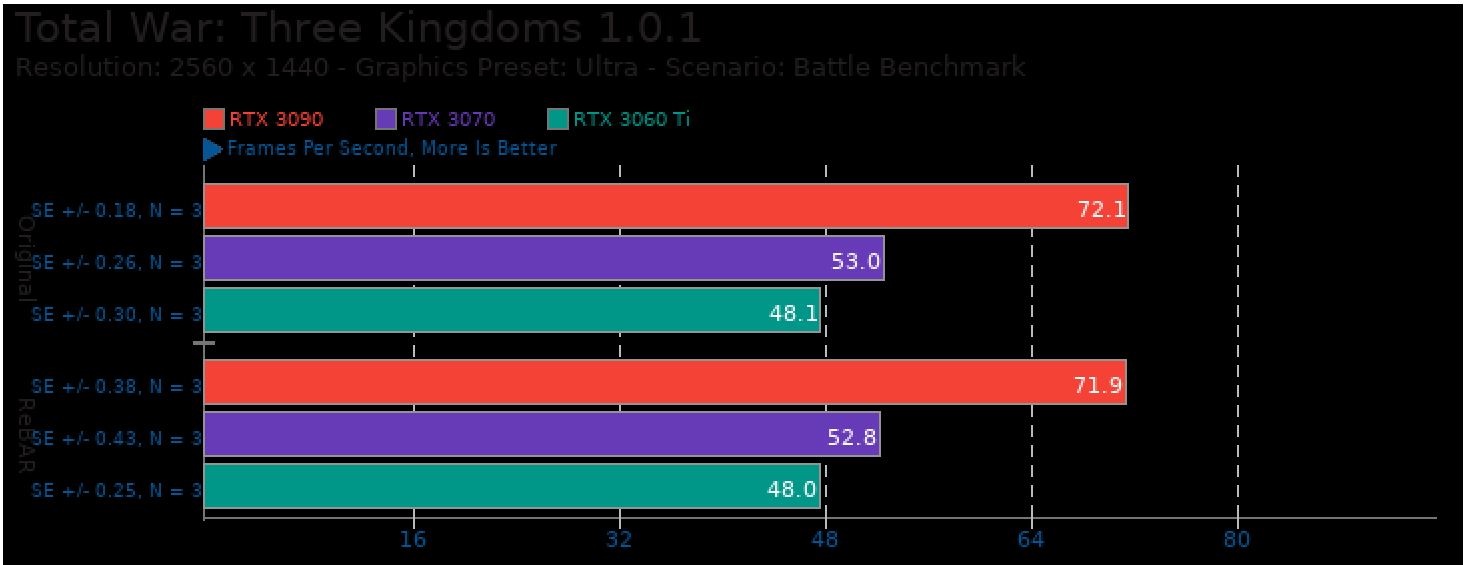

HITMAN 2
Resolution: 3840 x 2160 - Quality Level: Medium
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
Original
SE +/- 0.12, N = 3
102.93
SE +/- 0.04, N = 3
70.87
SE +/- 0.05, N = 3
62.16
SE +/- 0.16, N = 3
102.50
SE +/- 0.06, N = 3
70.88
SE +/- 0.02, N = 3
62.21
20
40
60
80
100

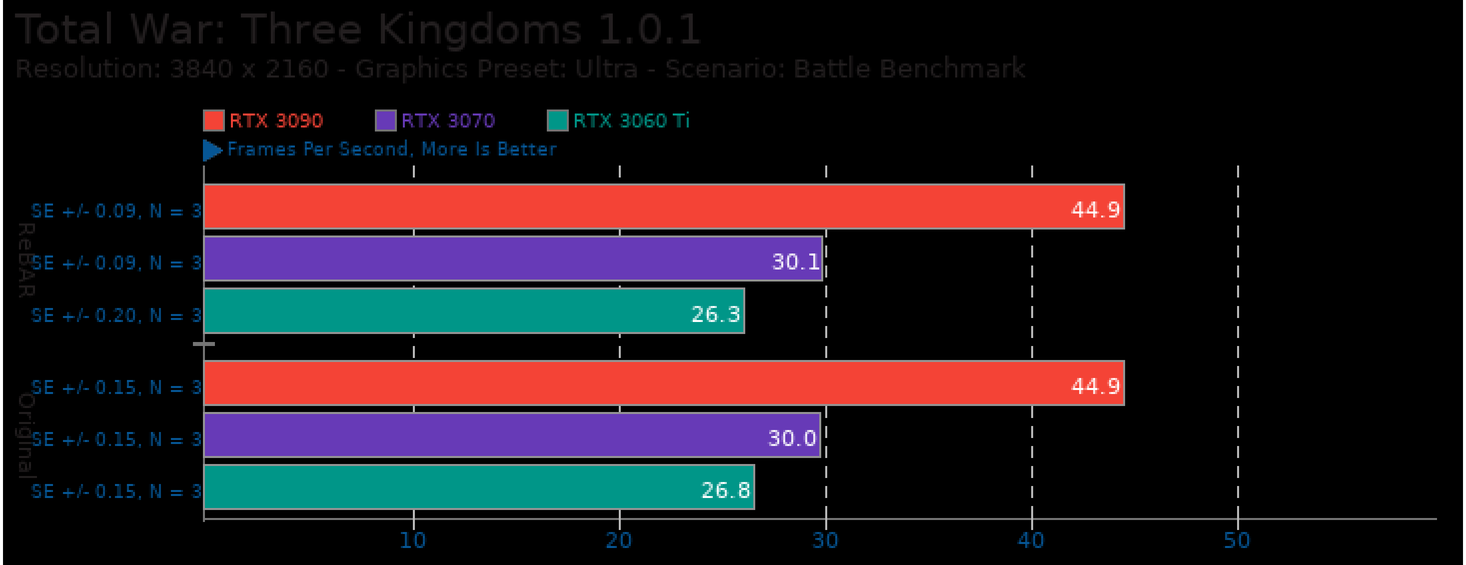

Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Medium - Anti Aliasing: Off
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.18, N = 3
195.3
SE +/- 0.06, N = 3
134.2
SE +/- 0.06, N = 3
120.6
SE +/- 0.45, N = 3
194.7
SE +/- 0.03, N = 3
134.3
SE +/- 0.03, N = 3
120.7
40
80
120
160
200

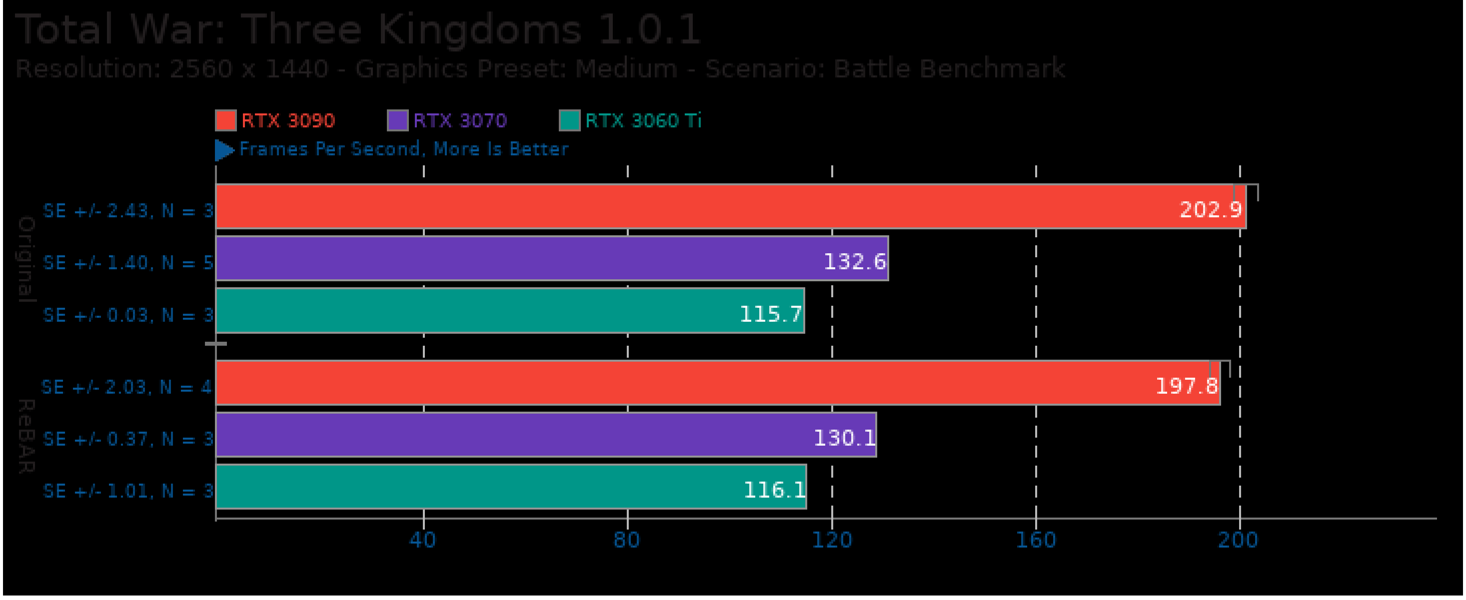

Shadow of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 0.13, N = 3
118.7
SE +/- 0.03, N = 3
77.2
SE +/- 0.03, N = 3
68.8
ReBAR
SE +/- 0.00, N = 3
118.5
SE +/- 0.03, N = 3
77.0
SE +/- 0.03, N = 3
69.0
30
60
90
120
150

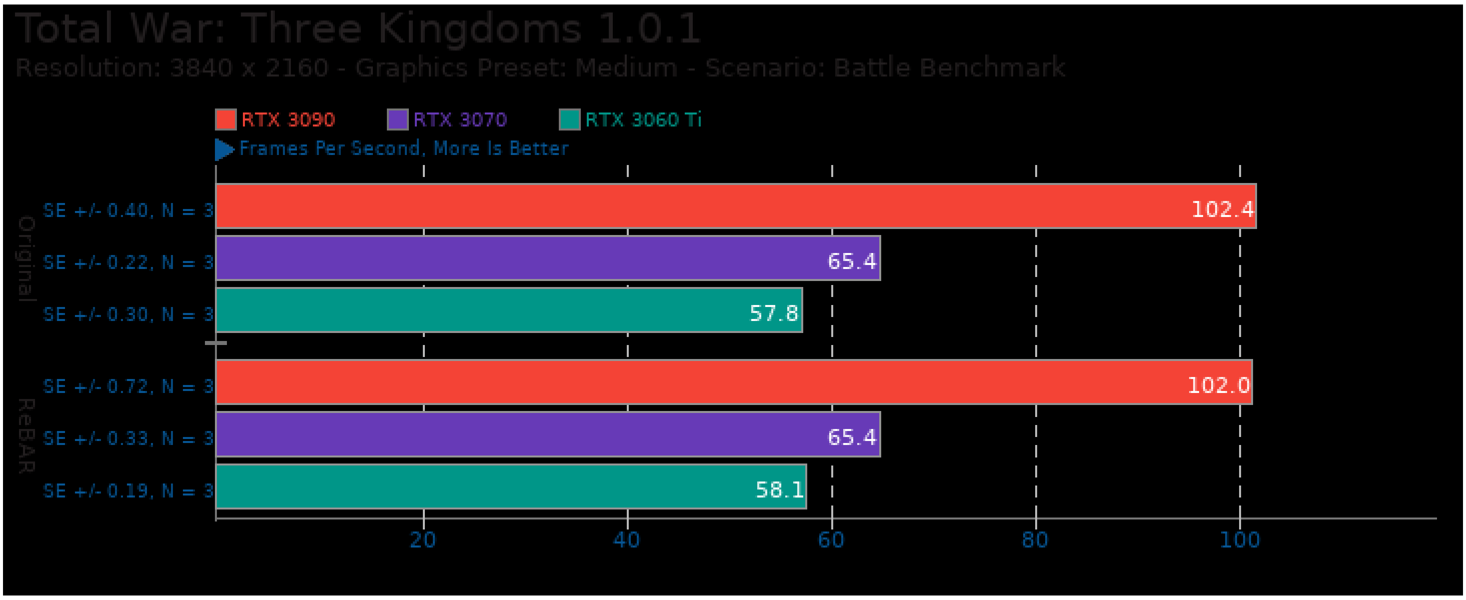

Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Highest - Anti Aliasing: Off
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 0.20, N = 3
176.3
SE +/- 0.03, N = 3
119.9
SE +/- 0.03, N = 3
107.7
ReBAR
SE +/- 0.32, N = 3
175.9
SE +/- 0.03, N = 3
119.7
SE +/- 0.07, N = 3
107.7
40
80
120
160
200


Shadow of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Highest - Anti Aliasing: Off
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 0.12, N = 3
104.9
SE +/- 0.03, N = 3
67.1
SE +/- 0.00, N = 3
60.0
ReBAR
SE +/- 0.09, N = 3
104.7
SE +/- 0.00, N = 3
67.4
SE +/- 0.03, N = 3
60.1
20
40
60
80
100

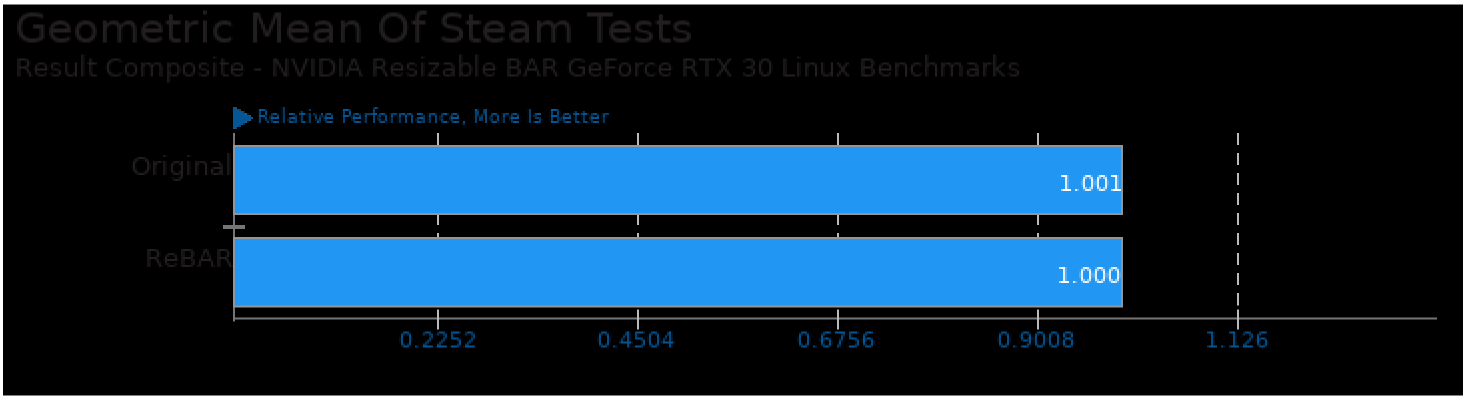

Total War: Three Kingdoms 1.0.1
Resolution: 2560 x 1440 - Graphics Preset: Ultra - Scenario: Battle Benchmark
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 0.18, N = 3
72.1
SE +/- 0.26, N = 3
53.0
SE +/- 0.30, N = 3
48.1
ReBAR
SE +/- 0.38, N = 3
71.9
SE +/- 0.43, N = 3
52.8
SE +/- 0.25, N = 3
48.0
16
32
48
64
80


Total War: Three Kingdoms 1.0.1
Resolution: 3840 x 2160 - Graphics Preset: Ultra - Scenario: Battle Benchmark
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
ReBAR
SE +/- 0.09, N = 3
44.9
SE +/- 0.09, N = 3
30.1
SE +/- 0.20, N = 3
26.3
Original
SE +/- 0.15, N = 3
44.9
SE +/- 0.15, N = 3
30.0
SE +/- 0.15, N = 3
26.8
10
20
30
40
50


Total War: Three Kingdoms 1.0.1
Resolution: 2560 x 1440 - Graphics Preset: Medium - Scenario: Battle Benchmark
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 2.43, N = 3
202.9
SE +/- 1.40, N = 5
132.6
SE +/- 0.03, N = 3
115.7
ReBAR
SE +/- 2.03, N = 4
197.8
SE +/- 0.37, N = 3
130.1
SE +/- 1.01, N = 3
116.1
40
80
120
160
200


Total War: Three Kingdoms 1.0.1
Resolution: 3840 x 2160 - Graphics Preset: Medium - Scenario: Battle Benchmark
RTX 3090
RTX 3070
RTX 3060 Ti
Frames Per Second, More Is Better
Original
SE +/- 0.40, N = 3
102.4
SE +/- 0.22, N = 3
65.4
SE +/- 0.30, N = 3
57.8
ReBAR
SE +/- 0.72, N = 3
102.0
SE +/- 0.33, N = 3
65.4
SE +/- 0.19, N = 3
58.1
20
40
60
80
100

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



Geometric mean based upon tests: pts/dirt-rally2, pts/f12020, pts/hitman2, pts/shadowofthetombraider and pts/twtk

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 15:35.