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etl

AMD Ryzen 9 5900X 12-Core testing with a ASUS ROG CROSSHAIR VIII HERO (3801 BIOS) and NVIDIA GeForce GTX 1060 6GB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

RTX 2060 SUPER

2060 SUPER

NVIDIA 2060 SUPER

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 + 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 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server

1.20.11, Display Driver: NVIDIA 470.74, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.136, Vulkan: 1.2.175, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Graphics Notes: BAR1 / Visible vRAM Size: 256 MiB
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

3060 Ti

NVIDIA 3060 Ti

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 + 2000GB, Graphics: NVIDIA GeForce RTX 3060 Ti 8GB, Audio: NVIDIA Device 228b, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.74, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.136, Vulkan: 1.2.175, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Graphics Notes: BAR1 / Visible vRAM Size: 8192 MiB
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

NVIDIA 2070 SUPER

2070 SUPER

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 + 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 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.74, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.136, Vulkan: 1.2.175, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Graphics Notes: BAR1 / Visible vRAM Size: 256 MiB
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

NVIDIA RTX 3080

NVIDIA 3080

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 + 2000GB, Graphics: NVIDIA GeForce RTX 3080 10GB, Audio: NVIDIA Device 1aef, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.74, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.136, Vulkan: 1.2.175, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Graphics Notes: BAR1 / Visible vRAM Size: 256 MiB
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

NVIDIA RTX 3060

3060

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 + 2000GB, Graphics: eVGA NVIDIA GeForce RTX 3060 12GB, Audio: NVIDIA Device 228e, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.74, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.136, Vulkan: 1.2.175, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Graphics Notes: BAR1 / Visible vRAM Size: 16384 MiB
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

GTX 1660

1660 SUPER

1660 SUP

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 + 2000GB, Graphics: eVGA NVIDIA GeForce GTX 1660 SUPER 6GB, Audio: NVIDIA TU116 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.74, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.136, Vulkan: 1.2.175, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise

Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Graphics Notes: BAR1 / Visible vRAM Size: 256 MiB
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

GTX 1060

NVIDIA 1060

1060

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 + 2000GB, Graphics: NVIDIA GeForce GTX 1060 6GB, Audio: NVIDIA GP106 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.74, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.136, Vulkan: 1.2.175, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Graphics Notes: BAR1 / Visible vRAM Size: 256 MiB
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	2060 SUPER	NVIDIA 2060 SUPER	RTX 3060 Ti	3060 Ti	NVIDIA 3060 Ti	RTX 2070 SUPER	NVIDIA 2070 SUPER	2070 SUPER	RTX 3080	NVIDIA RTX 3080	NVIDIA 3080	RTX 3060	NVIDIA RTX 3060	3060	GTX 1660	1660 SUPER	1660 SUP	GTX 1060	NVIDIA 1060	1060
ET: Legacy - 1920 x 1080 (FPS)	594.3	651.3	649.9	612.2	648.7	651.1	631	653.6	645.1	557.1	656.9	641.4	546.7	627	613.2	614.3	651.5	639.4	640	663.7	653
Normalized	89.54%	98.13%	97.92%	92.24%	97.74%	98.1%	95.07%	98.48%	97.2%	83.94%	98.98%	96.64%	82.37%	94.47%	92.39%	92.56%	98.16%	96.34%	96.43%	100%	98.39%

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ET: Legacy - 1920 x 1200 (FPS)	667.4	681	667.6	660.2	**687.3**	661.6	615.4	648.1	650.1	638.4	646.8	657.5	643.9	617	629.5	**612.1**	674.1	649.1	612.2	669.4	669.7
Normalized	97.1%	99.08%	97.13%	96.06%	100%	96.26%	89.54%	94.3%	94.59%	92.89%	94.11%	95.66%	93.69%	89.77%	91.59%	89.06%	98.08%	94.44%	89.07%	97.4%	97.44%
ET: Legacy - 2560 x 1440 (FPS)	653.7	651.2	648.5	651.8	653.4	**669.9**	641	634.2	634.8	643.5	655.6	654.7	**591.5**	604.2	597.5	634.7	635.4	640.9	661.6	666.2	660.2
Normalized	97.58%	97.21%	96.81%	97.3%	97.54%	100%	95.69%	94.67%	94.76%	96.06%	97.87%	97.73%	88.3%	90.19%	89.19%	94.75%	94.85%	95.67%	98.76%	99.45%	98.55%
ET: Legacy - 3840 x 2160 (FPS)	587.4	592.4	604.8	632.8	655.3	636.9	619.6	605.1	581.7	631.6	653.9	**657.2**	483.2	488.1	499.4	466.9	463.2	464	439.8	442.2	**439.7**
Normalized	89.38%	90.14%	92.03%	96.29%	99.71%	96.91%	94.28%	92.07%	88.51%	96.1%	99.5%	100%	73.52%	74.27%	75.99%	71.04%	70.48%	70.6%	66.92%	67.29%	66.91%
ET: Legacy - 1600 x 1200 (FPS)		666.3	673.6	696.9	680.6	683.9	669.3	663.9	671.4	678.4	658.7	693	654.3	651.1	**647.8**	688.4	**707**	668	694.6	695.4	701.5
Normalized		94.24%	95.28%	98.57%	96.27%	96.73%	94.67%	93.9%	94.96%	95.95%	93.17%	98.02%	92.55%	92.09%	91.63%	97.37%	100%	94.48%	98.25%	98.36%	99.22%

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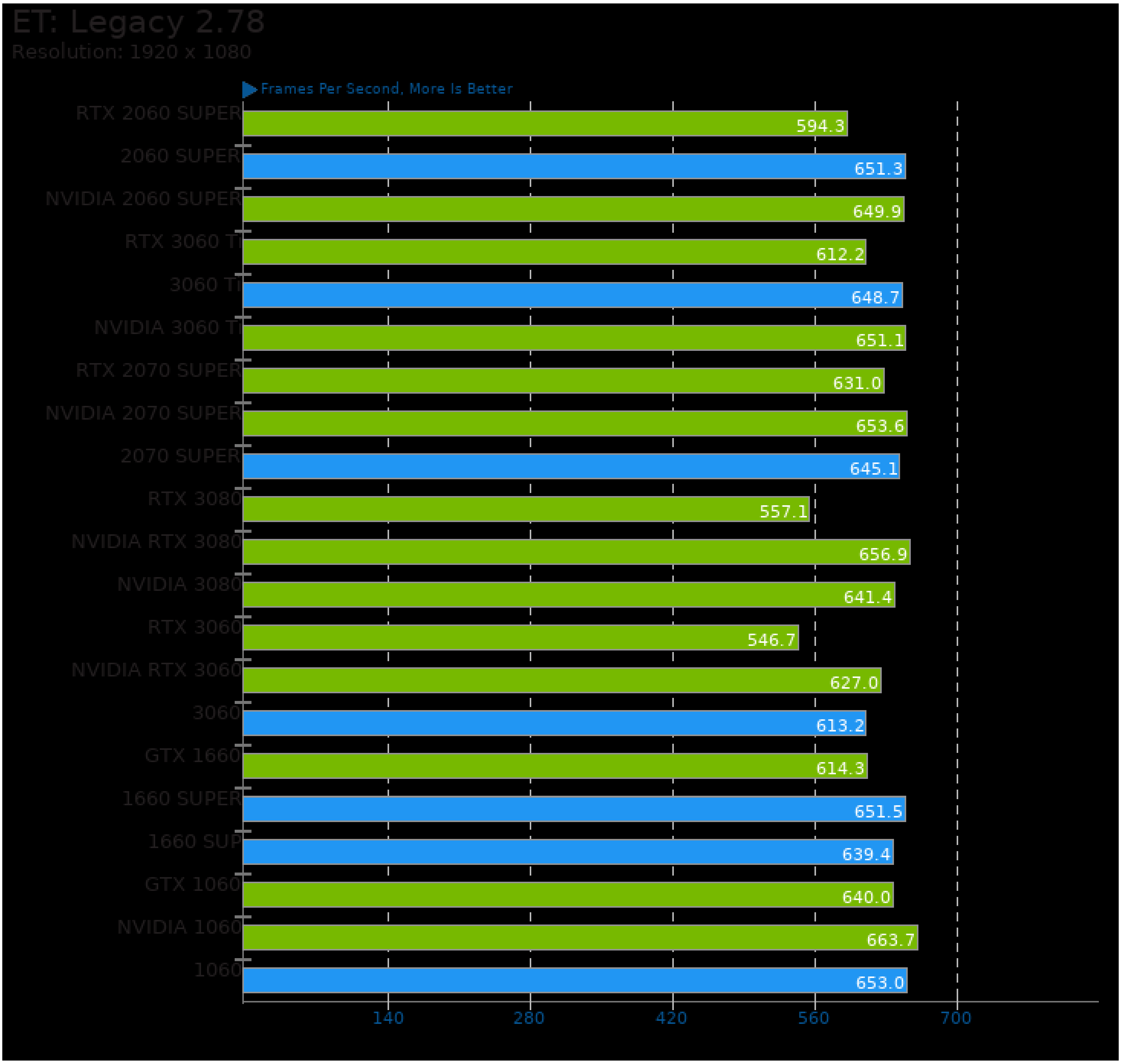
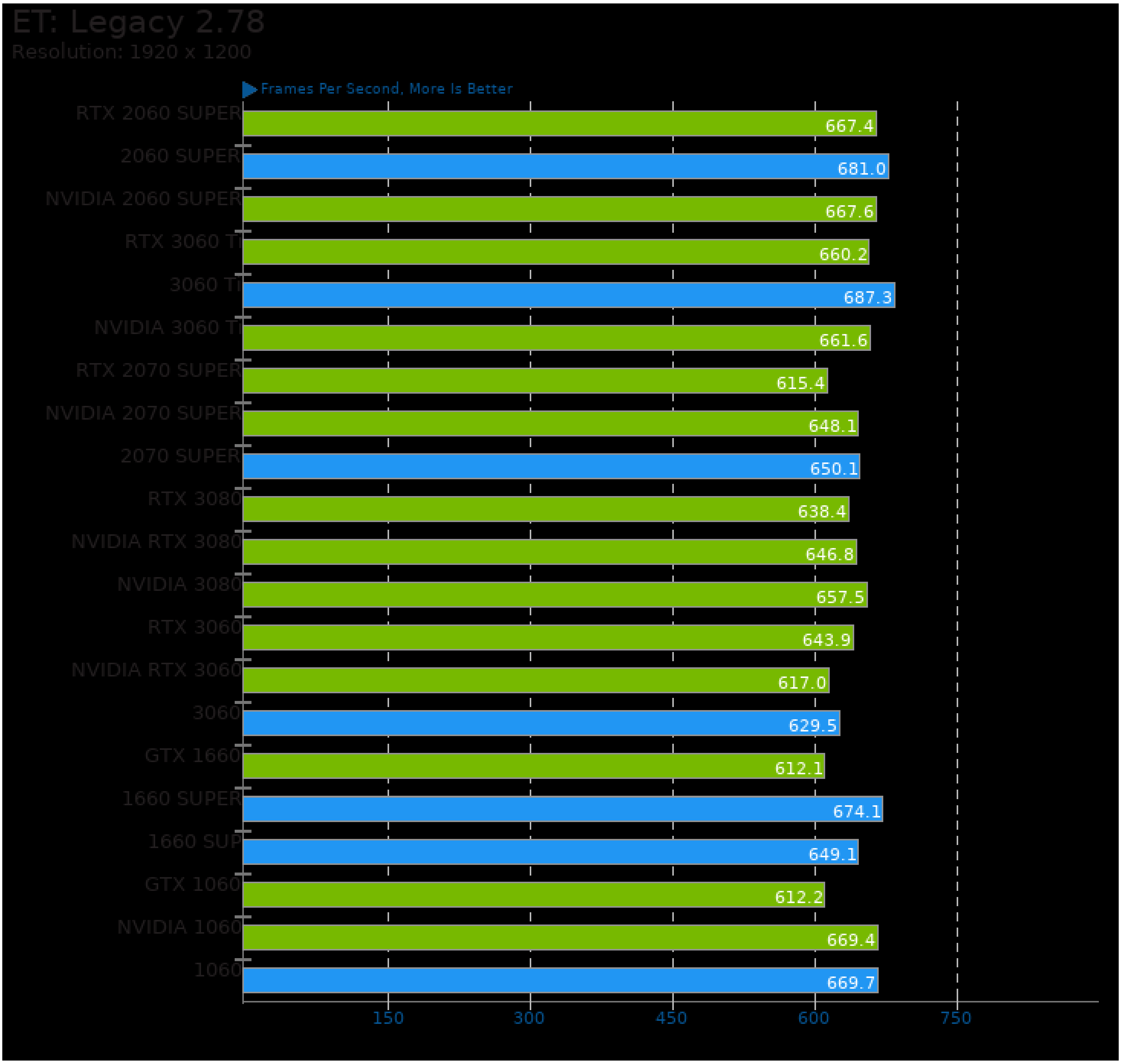
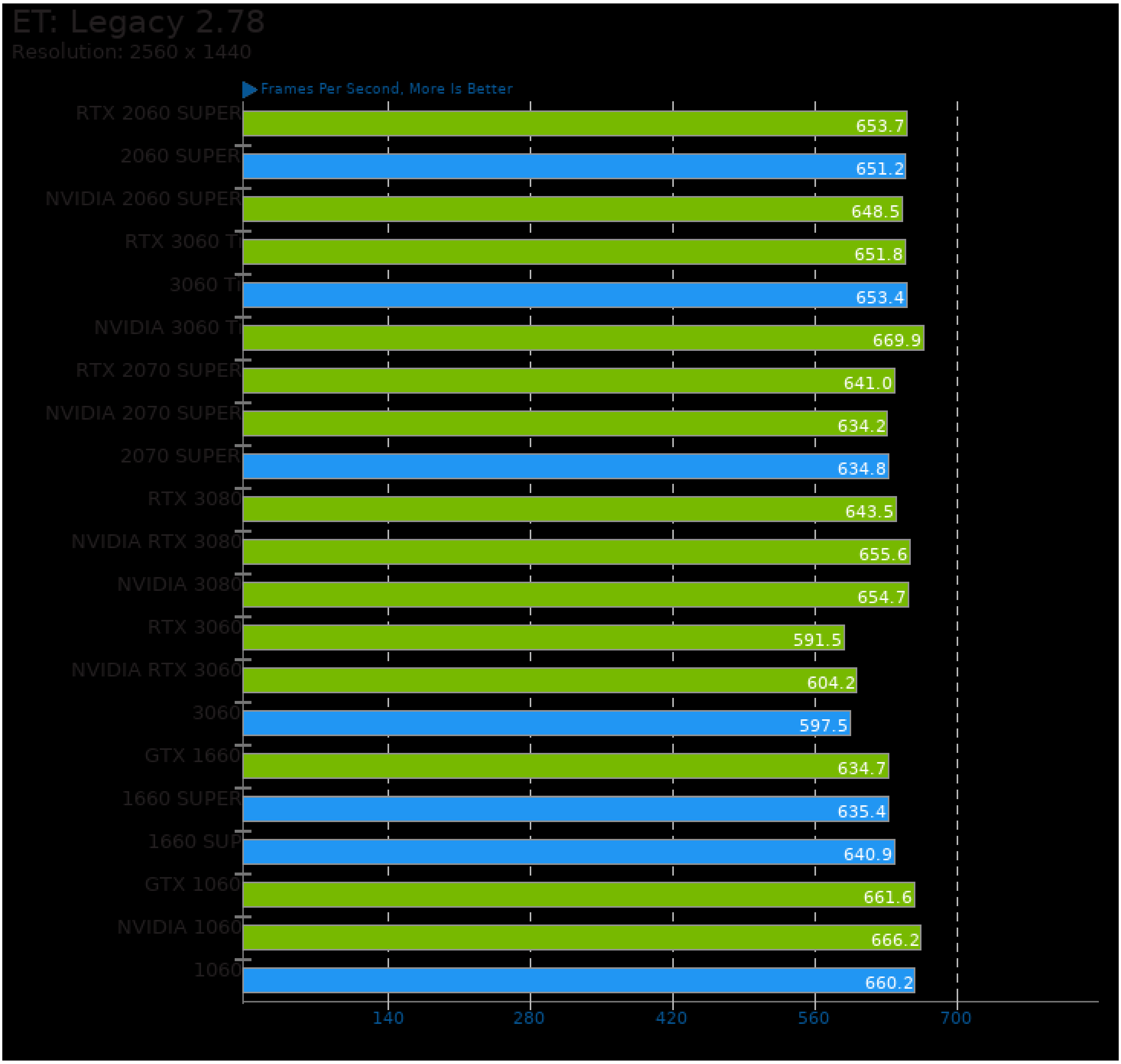


ET: Legacy 2.78
Resolution: 1920 x 1080
Frames Per Second, More Is Better
RTX 2060 SUPER 594.3
2060 SUPER 651.3
NVIDIA 2060 SUPER 649.9
RTX 3060 Ti 612.2
3060 Ti 648.7
NVIDIA 3060 Ti 651.1
RTX 2070 SUPER 631.0
NVIDIA 2070 SUPER 653.6
2070 SUPER 645.1
RTX 3080 557.1
NVIDIA RTX 3080 656.9
NVIDIA 3080 641.4
RTX 3060 546.7
NVIDIA RTX 3060 627.0
3060 613.2
GTX 1660 614.3
1660 SUPER 651.5
1660 SUP 639.4
GTX 1060 640.0
NVIDIA 1060 663.7
1060 653.0
140
280
420
560
700

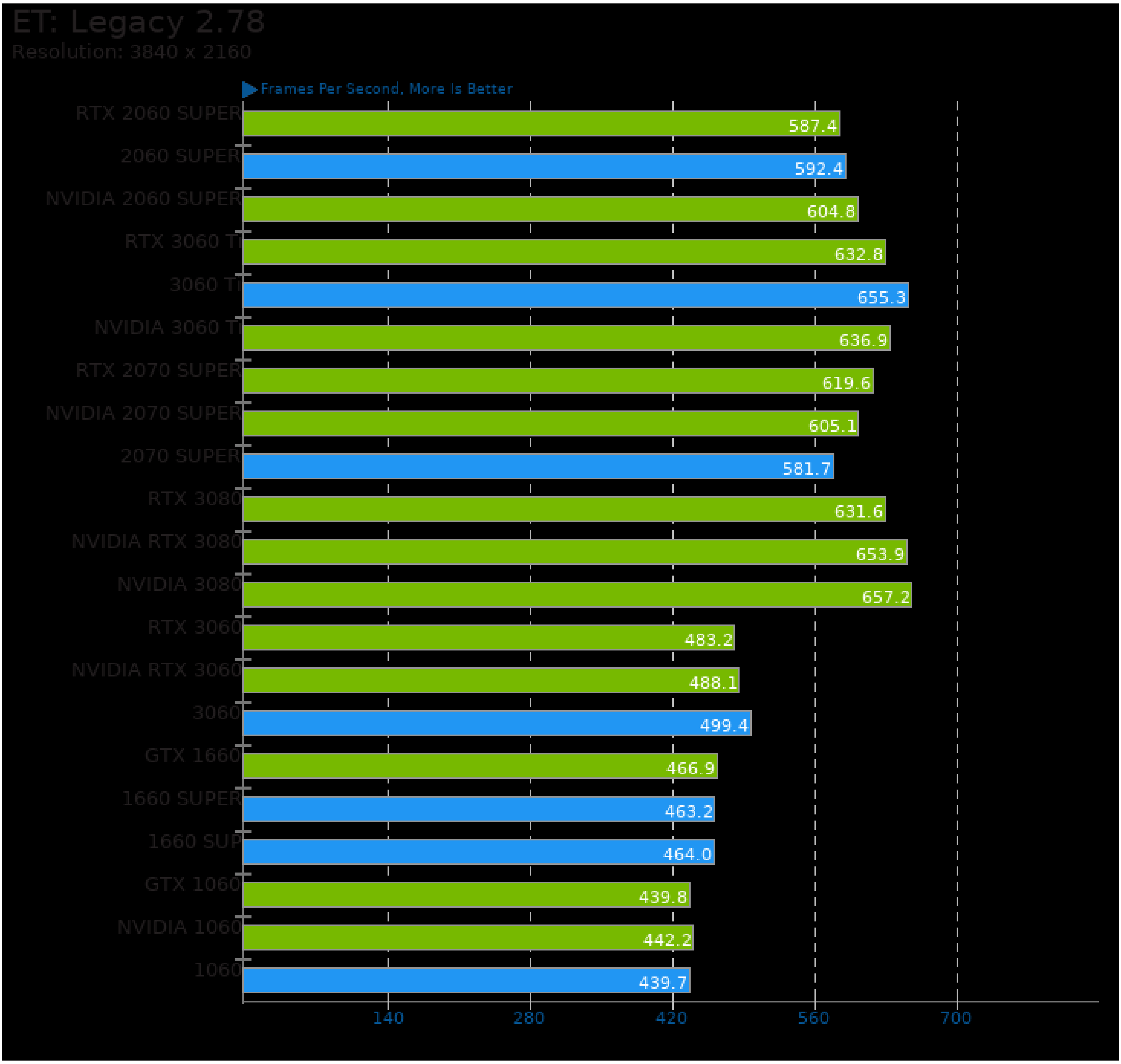
etl


ET: Legacy 2.78
Resolution: 1920 x 1200
Frames Per Second, More Is Better
RTX 2060 SUPER
667.4
2060 SUPER
681.0
NVIDIA 2060 SUPER
667.6
RTX 3060 Ti
660.2
3060 Ti
687.3
NVIDIA 3060 Ti
661.6
RTX 2070 SUPER
615.4
NVIDIA 2070 SUPER
648.1
2070 SUPER
650.1
RTX 3080
638.4
NVIDIA RTX 3080
646.8
NVIDIA 3080
657.5
RTX 3060
643.9
NVIDIA RTX 3060
617.0
3060
629.5
GTX 1660
612.1
1660 SUPER
674.1
1660 SUP
649.1
GTX 1060
612.2
NVIDIA 1060
669.4
1060
669.7
150
300
450
600
750

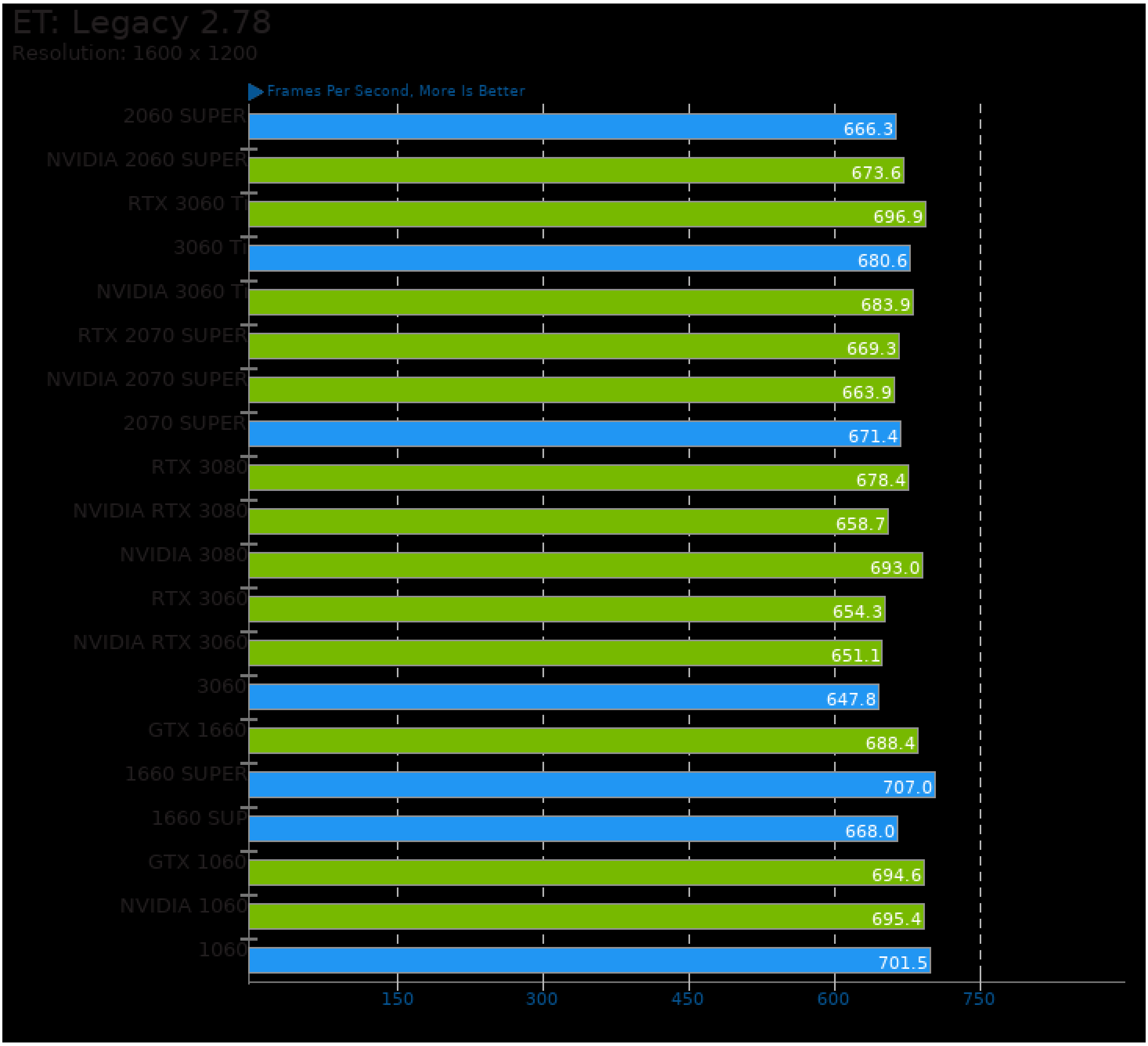
etl


ET: Legacy 2.78
Resolution: 2560 x 1440
Frames Per Second, More Is Better
RTX 2060 SUPER 653.7
2060 SUPER 651.2
NVIDIA 2060 SUPER 648.5
RTX 3060 Ti 651.8
3060 Ti 653.4
NVIDIA 3060 Ti 669.9
RTX 2070 SUPER 641.0
NVIDIA 2070 SUPER 634.2
2070 SUPER 634.8
RTX 3080 643.5
NVIDIA RTX 3080 655.6
NVIDIA 3080 654.7
RTX 3060 591.5
NVIDIA RTX 3060 604.2
3060 597.5
GTX 1660 634.7
1660 SUPER 635.4
1660 SUP 640.9
GTX 1060 661.6
NVIDIA 1060 666.2
1060 660.2
140
280
420
560
700

etl



ET: Legacy 2.78
Resolution: 3840 x 2160
Frames Per Second, More Is Better
RTX 2060 SUPER
587.4
2060 SUPER
592.4
NVIDIA 2060 SUPER
604.8
RTX 3060 Ti
632.8
3060 Ti
655.3
NVIDIA 3060 Ti
636.9
RTX 2070 SUPER
619.6
NVIDIA 2070 SUPER
605.1
2070 SUPER
581.7
RTX 3080
631.6
NVIDIA RTX 3080
653.9
NVIDIA 3080
657.2
RTX 3060
483.2
NVIDIA RTX 3060
488.1
3060
499.4
GTX 1660
466.9
1660 SUPER
463.2
1660 SUP
464.0
GTX 1060
439.8
NVIDIA 1060
442.2
1060
439.7
140
280
420
560
700



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