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# Nouveau Summer 2018 vs. NVIDIA Linux Performance

Nouveau vs. NVIDIA Linux driver benchmarks for a future article on Phoronix.com..

**Automated Executive Summary**

*NVIDIA 396: GTX 1080 Ti had the most wins, coming in first place for 83% of the tests.*

*Based on the geometric mean of all complete results, the fastest (NVIDIA 396: GTX 1080 Ti) was 10.919x the speed of the slowest (Nouveau: GTX 1080 Ti).*

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

*Mad Max (Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: OpenGL - Scene: Landmover) at 45.521x*
*OpenArena (Resolution: 1920 x 1080 - Total Frame Time) at 25x*
*Metro: Last Light Redux (Resolution: 1920 x 1080) at 20.245x*
*Portal (Resolution: 3840 x 2160) at 19.001x*
*Portal (Resolution: 2560 x 1440) at 17.113x*
*BioShock Infinite (Resolution: 2560 x 1440 - Effects Quality: Low) at 15.733x*
*BioShock Infinite (Resolution: 2560 x 1440 - Effects Quality: High) at 15.636x*
*Tomb Raider (Resolution: 2560 x 1440 - Quality: Normal) at 13.285x*
*Dota 2 (Resolution: 2560 x 1440 - Renderer: OpenGL) at 13.193x*
*Tesseract (Resolution: 3840 x 2160) at 12.115x.*

# Test Systems:

## Nouveau: GTX 680

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVE4 2048MB, Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.3 Mesa 18.2.0-devel, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## Nouveau: GTX 750 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NV117 2048MB, Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.3 Mesa 18.2.0-devel, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## Nouveau: GTX 760

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVE4 2048MB, Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.3 Mesa 18.2.0-devel, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## Nouveau: GTX 780 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVF1 3072MB, Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.3 Mesa 18.2.0-devel, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## Nouveau: GTX 980 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NV120 6144MB, Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.3 Mesa 18.2.0-devel, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## Nouveau: GTX 1080 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NV132 11264MB, Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.3 Mesa 18.2.0-devel, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## NVIDIA 396: GTX 680

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVIDIA GeForce GTX 680 2048MB (1006/3004MHz), Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: NVIDIA 396.24, OpenGL: 4.6.0, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## NVIDIA 396: GTX 750 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVIDIA GeForce GTX 750 Ti 2048MB (1019/2700MHz), Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: NVIDIA 396.24, OpenGL: 4.6.0, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## NVIDIA 396: GTX 760

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVIDIA GeForce GTX 760 2048MB (980/3004MHz), Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: NVIDIA 396.24, OpenGL: 4.6.0, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## NVIDIA 396: GTX 780 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVIDIA GeForce GTX 780 Ti 3072MB (875/3500MHz), Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: NVIDIA 396.24, OpenGL: 4.6.0, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## NVIDIA 396: GTX 980 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVIDIA GeForce GTX 980 Ti 6144MB (999/3505MHz), Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: NVIDIA 396.24, OpenGL: 4.6.0, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

## NVIDIA 396: GTX 1080 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0616 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB SABRENT + 118GB INTEL SSDPEK1W120GA, Graphics: NVIDIA GeForce GTX 1080 Ti 11264MB (1480/5508MHz), Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-041700-generic (x86_64), Desktop: GNOME Shell 3.28.1, Display Server: X Server 1.19.6, Display Driver: NVIDIA 396.24, OpenGL: 4.6.0, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance

# Nouveau Summer 2018 vs. NVIDIA Linux Performance

Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

| | Nouveau: GTX 680 | Nouveau: GTX 750 Ti | Nouveau: GTX 760 | Nouveau: GTX 780 Ti | Nouveau: GTX 980 Ti | Nouveau: GTX 1080 Ti | NVIDIA 396: GTX 680 | NVIDIA 396: GTX 750 Ti | NVIDIA 396: GTX 760 | NVIDIA 396: GTX 780 Ti | NVIDIA 396: GTX 980 Ti | NVIDIA 396: GTX 1080 Ti |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BioShock Infinite - 1920 x 1080 - Low (FPS)** | 58.27 | 37.85 | 52.40 | 61.25 | **20.90** | 22.59 | 155.04 | 92.02 | 138.56 | 206.66 | 217.92 | **237.44** |
| **Normalized** | 24.54% | 15.94% | 22.07% | 25.8% | 8.8% | 9.51% | 65.3% | 38.76% | 58.36% | 87.04% | 91.78% | 100% |
| **Standard Deviation** | 0.2% | 0.1% | 0.1% | 0.1% | 0.2% | 0.2% | 0.1% | 0.1% | 0.6% | 0.4% | 0.2% | 1.1% |
| **BioShock Infinite - 2560 x 1440 - Low (FPS)** | 40.41 | 24.88 | 35.87 | 45.86 | **15.00** | 15.59 | 106.56 | 61.42 | 94.39 | 152.32 | 174.67 | **236.00** |
| **Normalized** | 17.12% | 10.54% | 15.2% | 19.43% | 6.36% | 6.61% | 45.15% | 26.03% | 40% | 64.54% | 74.01% | 100% |
| **Standard Deviation** | 0.1% | 0.1% | 0.1% | 0.1% | 0% | 0.1% | 0.2% | 0.1% | 0.1% | 0.4% | 0.2% | 0.7% |
| **BioShock Infinite - 1920 x 1080 - High (FPS)** | 58.27 | 37.78 | 52.45 | 61.34 | **20.94** | 22.51 | 154.92 | 91.92 | 138.62 | 206.72 | 217.30 | **239.08** |
| **Normalized** | 24.37% | 15.8% | 21.94% | 25.66% | 8.76% | 9.42% | 64.8% | 38.45% | 57.98% | 86.46% | 90.89% | 100% |
| **Standard Deviation** | 0% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0% | 0.1% | 0.7% | 0.2% | 0.2% | 0.5% |
| **BioShock Infinite - 2560 x 1440 - High (FPS)** | 40.41 | 24.84 | 35.87 | 45.86 | **14.99** | 15.59 | 106.65 | 61.37 | 93.78 | 152.33 | 174.26 | **234.38** |
| **Normalized** | 17.24% | 10.6% | 15.3% | 19.57% | 6.4% | 6.65% | 45.5% | 26.18% | 40.01% | 64.99% | 74.35% | 100% |
| **Standard Deviation** | 0.1% | 0.1% | 0.1% | 0% | 0% | 0% | 0% | 0.1% | 0.3% | 0.2% | 0.2% | 0.9% |
| **Dota 2 - 1920 x 1080 - OpenGL (FPS)** | 34.87 | 26.80 | 31.87 | 34.80 | **13.20** | 13.80 | 112.60 | 73.20 | 101.00 | 140.08 | **141.02** | 139.38 |
| **Normalized** | 24.73% | 19% | 22.6% | 24.68% | 9.36% | 9.79% | 79.85% | 51.91% | 71.62% | 99.33% | 100% | 98.84% |
| **Standard Deviation** | 0.2% | 0% | 0.2% | 0.3% | 0% | 0% | 0.5% | 2.1% | 3.2% | 3.4% | 3.8% | 3.5% |
| **Dota 2 - 2560 x 1440 - OpenGL (FPS)** | 28.23 | 20 | 25.20 | 30.20 | 11 | **10.70** | 77.40 | 48.37 | 70.07 | 115.03 | **141.17** | 140.97 |
| **Normalized** | 20% | 14.17% | 17.85% | 21.39% | 7.79% | 7.58% | 54.83% | 34.26% | 49.64% | 81.48% | 100% | 99.86% |
| **Standard Deviation** | 0.2% | | 0% | 0% | | 0% | 0.1% | 1.3% | 0.3% | 0.4% | 0.5% | 0.7% |
| **Mad Max - 1920 x 1080 - Default - OpenGL - Camp Hollow Point (FPS)** | 29.61 | | **25.08** | 33.18 | | | 71.74 | 40.07 | 62.47 | 108.09 | 134.93 | **222.00** |
| **Normalized** | 13.34% | | 11.3% | 14.95% | | | 32.32% | 18.05% | 28.14% | 48.69% | 60.78% | 100% |

# Nouveau Summer 2018 vs. NVIDIA Linux Performance

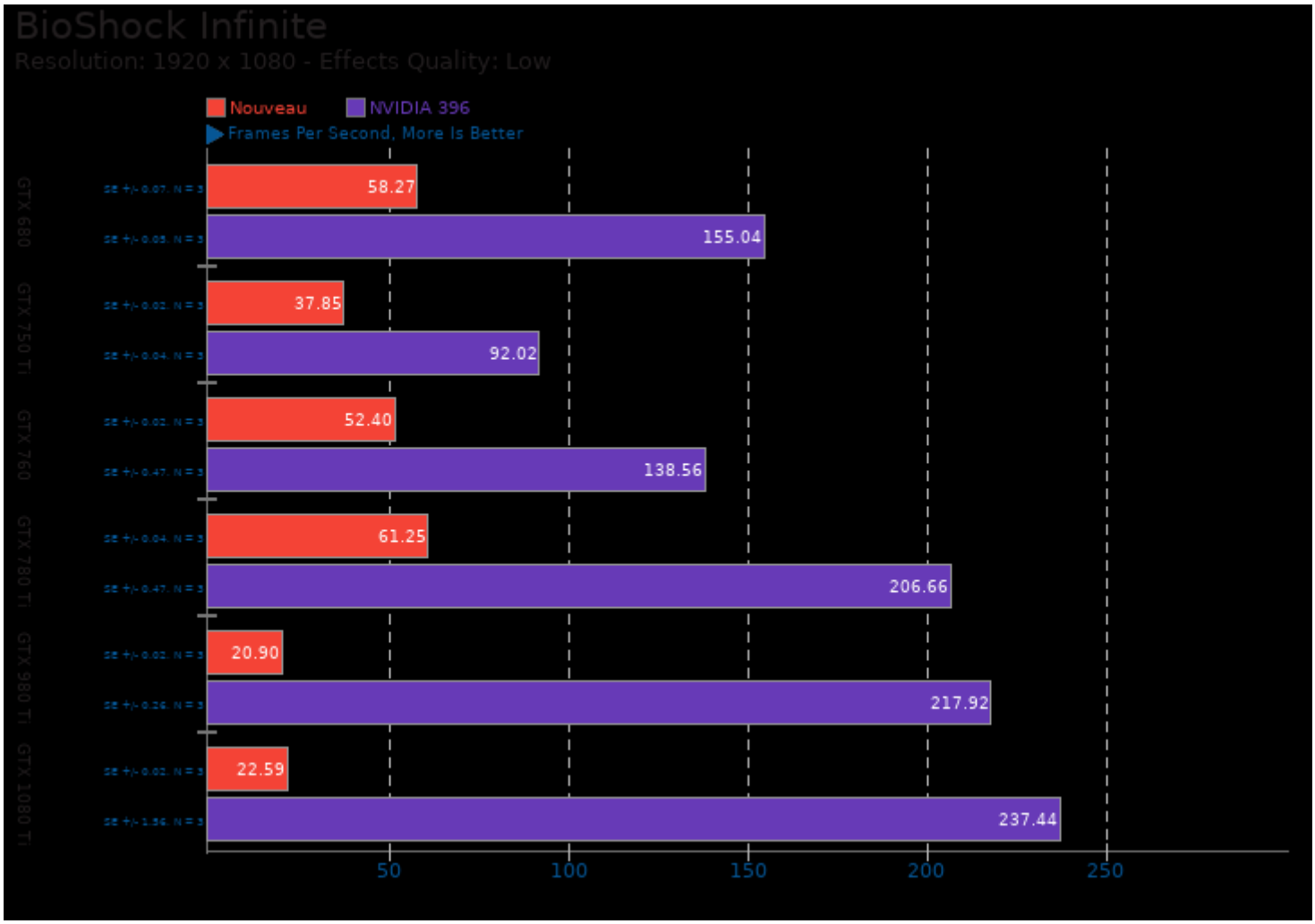
Phoronix Test Suite

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mad Max - 1920 x 1080 - Default - OpenGL - Stronghold** | 16.86 | | **14.94** | 16.69 | | | 62.25 | 36.71 | 50.30 | 80.02 | 90.69 | **97.68** |
| **Normalized** | 17.26% | | 15.29% | 17.09% | | | 63.73% | 37.58% | 51.49% | 81.92% | 92.84% | 100% |
| **Mad Max - 1920 x 1080 - Default - OpenGL - H.G.a.D.i.D (FPS)** | 32.65 | | **26.91** | 40.18 | | | 68.09 | 39.82 | 56.88 | 104.76 | 134.55 | **229.07** |
| **Normalized** | 14.25% | | 11.75% | 17.54% | | | 29.72% | 17.38% | 24.83% | 45.73% | 58.74% | 100% |
| **Mad Max - 1920 x 1080 - Default - OpenGL - Landmover** | 36.57 | | 30.32 | 45.93 | | | 79.63 | 46.94 | **5.62** | 120.34 | 156.04 | **255.83** |
| **Normalized** | 14.29% | | 11.85% | 17.95% | | | 31.13% | 18.35% | 2.2% | 47.04% | 60.99% | 100% |
| **Portal - 2560 x 1440 (FPS)** | 232.07 | 102.94 | 195.03 | 326.72 | 69.98 | **55.85** | 308.40 | 151.67 | 268.50 | 458.71 | 561.69 | **955.77** |
| **Normalized** | 24.28% | 10.77% | 20.41% | 34.18% | 7.32% | 5.84% | 32.27% | 15.87% | 28.09% | 47.99% | 58.77% | 100% |
| **Standard Deviation** | 0.1% | 0% | 0.1% | 0.1% | 0.1% | 0.1% | 0.2% | 0.4% | 0.2% | 0.3% | 0.7% | 1.1% |
| **Portal - 3840 x 2160 (FPS)** | 122.64 | 52.47 | 102.75 | 181.55 | 38.34 | **29.34** | 162.85 | 65.71 | 139.45 | 254.81 | 321.46 | **557.49** |
| **Normalized** | 22% | 9.41% | 18.43% | 32.57% | 6.88% | 5.26% | 29.21% | 11.79% | 25.01% | 45.71% | 57.66% | 100% |
| **Standard Deviation** | 0.1% | 0.1% | 0% | 0% | 0.1% | 0% | 0.2% | 0.5% | 0.4% | 0.2% | 0.8% | 0.2% |
| **Tomb Raider - 1920 x 1080 - Normal (FPS)** | 70.93 | 34.23 | 60.13 | 86.43 | 26.00 | **23.97** | 96.80 | 57.40 | 84.80 | 128.67 | 164.23 | **261.90** |
| **Normalized** | 27.08% | 13.07% | 22.96% | 33% | 9.93% | 9.15% | 36.96% | 21.92% | 32.38% | 49.13% | 62.71% | 100% |
| **Standard Deviation** | 0.2% | 0.4% | 0.3% | 0.4% | 0.4% | 0.5% | 0.6% | 0.5% | 0.7% | 0.6% | 0.5% | 0.2% |
| **Tomb Raider - 2560 x 1440 - Normal (FPS)** | 49.20 | 21.80 | 40.27 | 64.17 | 18.20 | **15.90** | 64.60 | 36.57 | 55.40 | | 123.47 | **211.23** |
| **Normalized** | 23.29% | 10.32% | 19.06% | 30.38% | 8.62% | 7.53% | 30.58% | 17.31% | 26.23% | | 58.45% | 100% |
| **Standard Deviation** | 0.2% | 0.5% | 0.3% | 0.1% | 0% | 0% | 0% | 0.4% | 0.2% | | 0.5% | 0.3% |
| **ET: Legacy - Renderer2 - 3840 x 2160 (FPS)** | 156.37 | 75.37 | 142.93 | 199.43 | 45.57 | **35** | 175.20 | 104.13 | 184.90 | 249.07 | 243.23 | **278.00** |
| **Normalized** | 56.25% | 27.11% | 51.41% | 71.74% | 16.39% | 12.59% | 63.02% | 37.46% | 66.51% | 89.59% | 87.49% | 100% |
| **Standard Deviation** | 2.1% | 0.1% | 2.1% | 3.2% | 0.5% | | 2.6% | 0.1% | 1.3% | 1.8% | 3.3% | 3.1% |
| **OpenArena - 1920 x 1080 (FPS)** | 300.67 | 137.00 | 249.90 | 339.90 | 146.60 | **130.90** | 421.90 | 260.10 | 356.30 | 534.50 | 566.37 | **655.60** |
| **Normalized** | 45.86% | 20.9% | 38.12% | 51.85% | 22.36% | 19.97% | 64.35% | 39.67% | 54.35% | 81.53% | 86.39% | 100% |
| **Standard Deviation** | 1.2% | 0.1% | 0.2% | 2.1% | 0.6% | 0.1% | 0.2% | 0.5% | 0.6% | 0.5% | 0.6% | 1.1% |
| **Tesseract - 1920 x 1080 (FPS)** | 239.08 | 127.24 | 198.89 | 322.00 | 82.58 | **67.18** | 263.26 | 155.96 | 253.46 | 343.20 | 389.55 | **484.91** |
| **Normalized** | 49.3% | 26.24% | 41.02% | 66.4% | 17.03% | 13.85% | 54.29% | 32.16% | 52.27% | 70.78% | 80.33% | 100% |
| **Standard Deviation** | 0.8% | 0.8% | 0.1% | 0.5% | 0.6% | 0.2% | 3.3% | 0.6% | 0.8% | 0.7% | 1% | 0.7% |
| **Tesseract - 2560 x 1440 (FPS)** | 158.00 | 85.05 | 130.54 | 224.77 | 59.64 | **45.44** | 175.71 | 101.41 | 179.89 | 282.99 | 326.55 | **423.89** |
| **Normalized** | 37.27% | 20.06% | 30.8% | 53.03% | 14.07% | 10.72% | 41.45% | 23.92% | 42.44% | 66.76% | 77.04% | 100% |
| **Standard Deviation** | 0.3% | 0.3% | 0% | 0.4% | 0.7% | 0.2% | 3.2% | 0.5% | 1% | 1.2% | 1.4% | 1.4% |

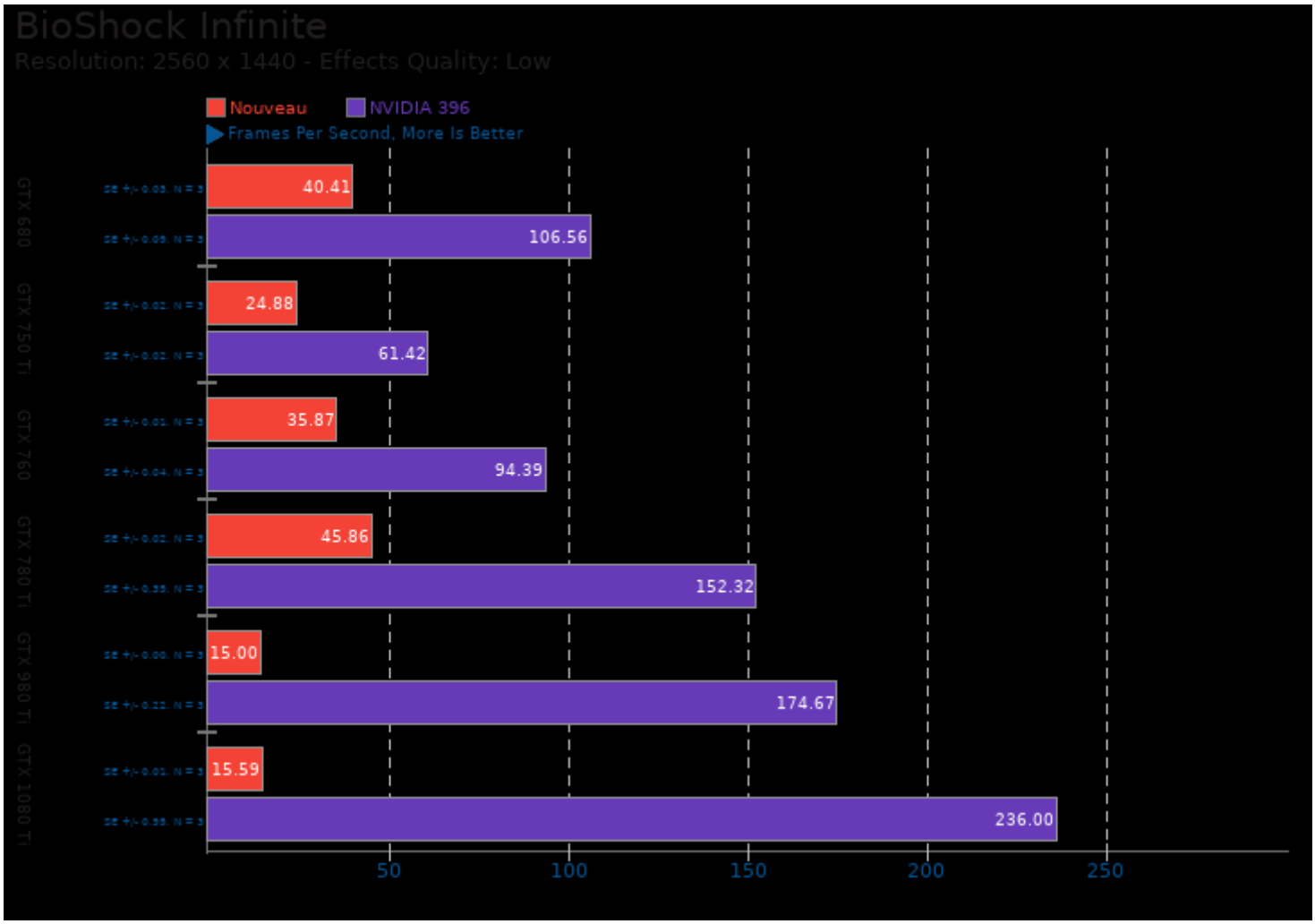
# Nouveau Summer 2018 vs. NVIDIA Linux Performance

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Tesseract - 3840 x 2160 (FPS)** | 82.37 | 46.14 | 68.93 | 121.84 | 37.62 | **27.09** | 89.27 | 54.29 | 80.99 | 152.74 | 186.12 | **328.20** |
| **Normalized** | 25.1% | 14.06% | 21% | 37.12% | 11.46% | 8.25% | 27.2% | 16.54% | 24.68% | 46.54% | 56.71% | 100% |
| **Standard Deviation** | 0.8% | 0.2% | 0.7% | 0.7% | 1.5% | 0.8% | 2% | 0.3% | 1% | 7.1% | 8.5% | 0.5% |
| **Xonotic - 3840 x 2160 - Low (FPS)** | 370.49 | | 326.66 | 429.91 | 117.34 | **80.96** | 403.96 | 262.43 | 383.49 | 483.41 | **497.25** | 486.46 |
| **Normalized** | 74.51% | | 65.69% | 86.46% | 23.6% | 16.28% | 81.24% | 52.78% | 77.12% | 97.22% | 100% | 97.83% |
| **Standard Deviation** | 0.2% | | 0.1% | 0% | 0.1% | 0% | 0.3% | 0% | 0.1% | 0.6% | 0.3% | 0.6% |
| **Xonotic - 3840 x 2160 - High** | 166.70 | | 141.50 | 235.78 | 49.50 | **38.76** | 189.88 | 102.86 | 171.34 | 302.85 | 349.58 | **417.77** |
| **Normalized** | 39.9% | | 33.87% | 56.44% | 11.85% | 9.28% | 45.45% | 24.62% | 41.01% | 72.49% | 83.68% | 100% |
| **Standard Deviation** | 0% | | 0% | 0.1% | 0% | 0% | 0.1% | 0.2% | 0.2% | 0.4% | 0.1% | 0.1% |
| **Xonotic - 3840 x 2160 - Ultra** | 124.80 | | 102.47 | 179.24 | **42.39** | | 149.12 | 69.66 | 129.37 | 238.21 | 252.09 | **359.44** |
| **Normalized** | 34.72% | | 28.51% | 49.87% | 11.79% | | 41.49% | 19.38% | 35.99% | 66.27% | 70.13% | 100% |
| **Standard Deviation** | 0% | | 0% | 0.1% | 0% | | 0.2% | 0.2% | 0.4% | 0% | 0.4% | 0.2% |
| **Metro: Last Light Redux - 1920 x 1080 (FPS)** | 29.22 | 23.79 | 27.67 | 29.35 | 10.86 | **10.70** | 106.34 | 68.31 | 100.20 | 175.86 | **216.62** | 214.77 |
| **Normalized** | 13.49% | 10.98% | 12.77% | 13.55% | 5.01% | 4.94% | 49.09% | 31.53% | 46.26% | 81.18% | 100% | 99.15% |
| **Standard Deviation** | 0.4% | 0.3% | 0.5% | 0.8% | 0.3% | 0.4% | 4.3% | 1.1% | 4.4% | 4.6% | 0.9% | 0.7% |
| **Serious Sam 3: BFE - 1920 x 1080 - Low - OpenGL (FPS)** | 80.10 | 56.75 | 76.50 | 84.73 | 34.47 | **33.03** | 133.48 | 78.17 | 125.95 | 171.80 | 176.68 | **189.33** |
| **Normalized** | 42.31% | 29.97% | 40.41% | 44.75% | 18.21% | 17.45% | 70.5% | 41.29% | 66.52% | 90.74% | 93.32% | 100% |
| **Standard Deviation** | 2.2% | 4.6% | 2% | 1.6% | 2.4% | 2.3% | 5.3% | 9.2% | 4.8% | 4.7% | 10.1% | 6.8% |
| **Serious Sam 3: BFE - 1920 x 1080 - High - OpenGL (FPS)** | 47.63 | 29.22 | 43.77 | 54.27 | 18.53 | **16.47** | 60.65 | 32.73 | 56.90 | 84.32 | 92.17 | **163.57** |
| **Normalized** | 29.12% | 17.86% | 26.76% | 33.18% | 11.33% | 10.07% | 37.08% | 20.01% | 34.79% | 51.55% | 56.35% | 100% |
| **Standard Deviation** | 1.8% | 3.7% | 0.6% | 0.6% | 2.2% | 7.3% | 3.2% | 3.1% | 2.7% | 6.7% | 6.6% | 7.4% |
| **Unigine Heaven - 1920 x 1080 - Fullscreen - OpenGL (FPS)** | | 20.17 | | 53.89 | **19.74** | 20.37 | 43.67 | 31.22 | 39.80 | 84.72 | 111.63 | **197.02** |
| **Normalized** | | 10.24% | | 27.35% | 10.02% | 10.34% | 22.17% | 15.85% | 20.2% | 43% | 56.66% | 100% |
| **Standard Deviation** | | 0.1% | | 0.2% | 0.1% | 0.1% | 0.1% | 0.3% | 0% | 0.3% | 0.2% | 0.8% |
| **Unigine Valley - 1920 x 1080 - Fullscreen - OpenGL (FPS)** | | **22.28** | | 62.86 | 23.74 | 24.43 | 58.99 | 32.97 | 50.93 | 87.77 | 104.97 | **149.89** |
| **Normalized** | | 14.86% | | 41.94% | 15.84% | 16.3% | 39.36% | 22% | 33.98% | 58.56% | 70.03% | 100% |
| **Standard Deviation** | | 0.1% | | 0.2% | 0.1% | 0% | 0.1% | 0.1% | 0.4% | 0.2% | 0.2% | 0.4% |

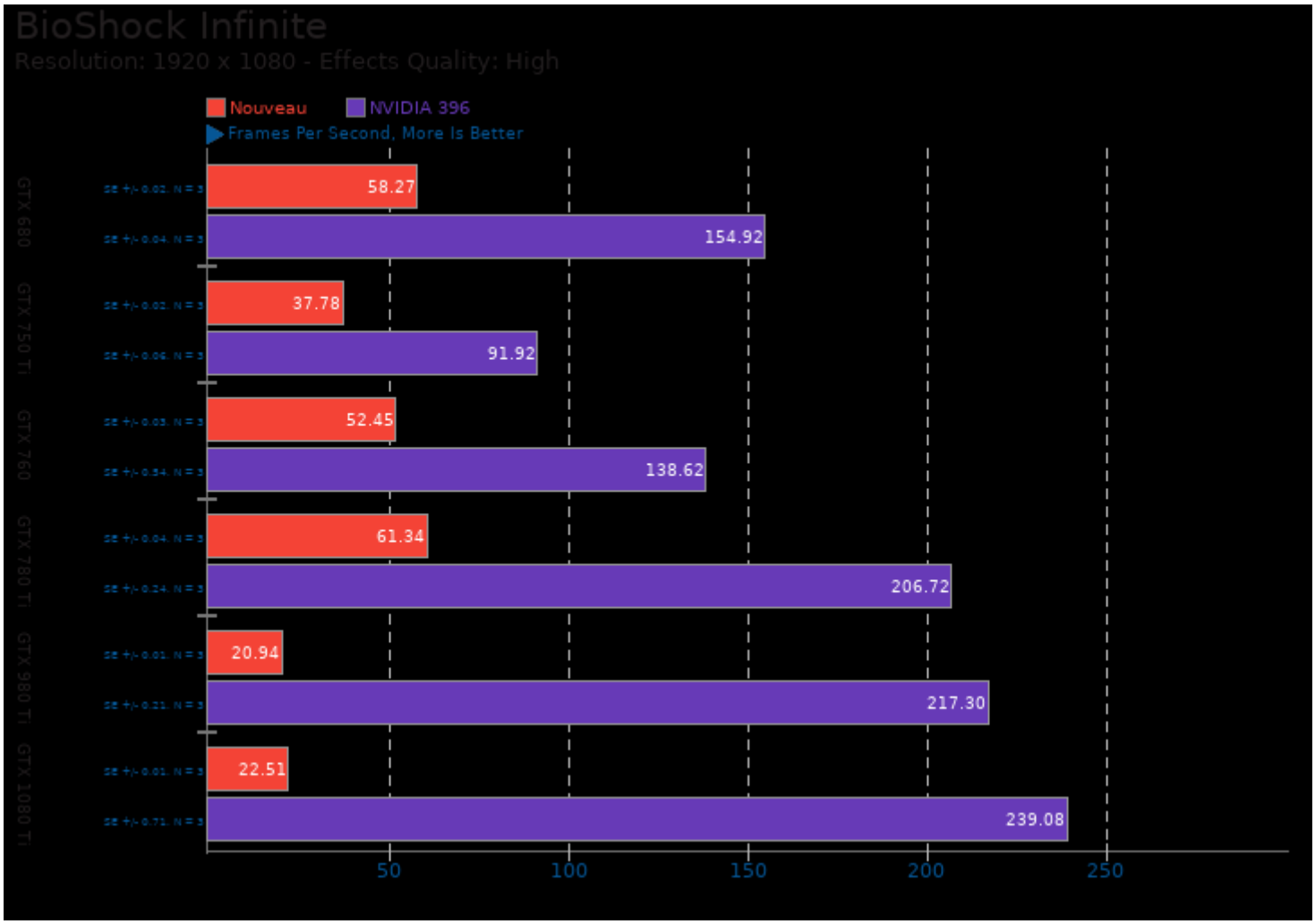
# Nouveau Summer 2018 vs. NVIDIA Linux Performance



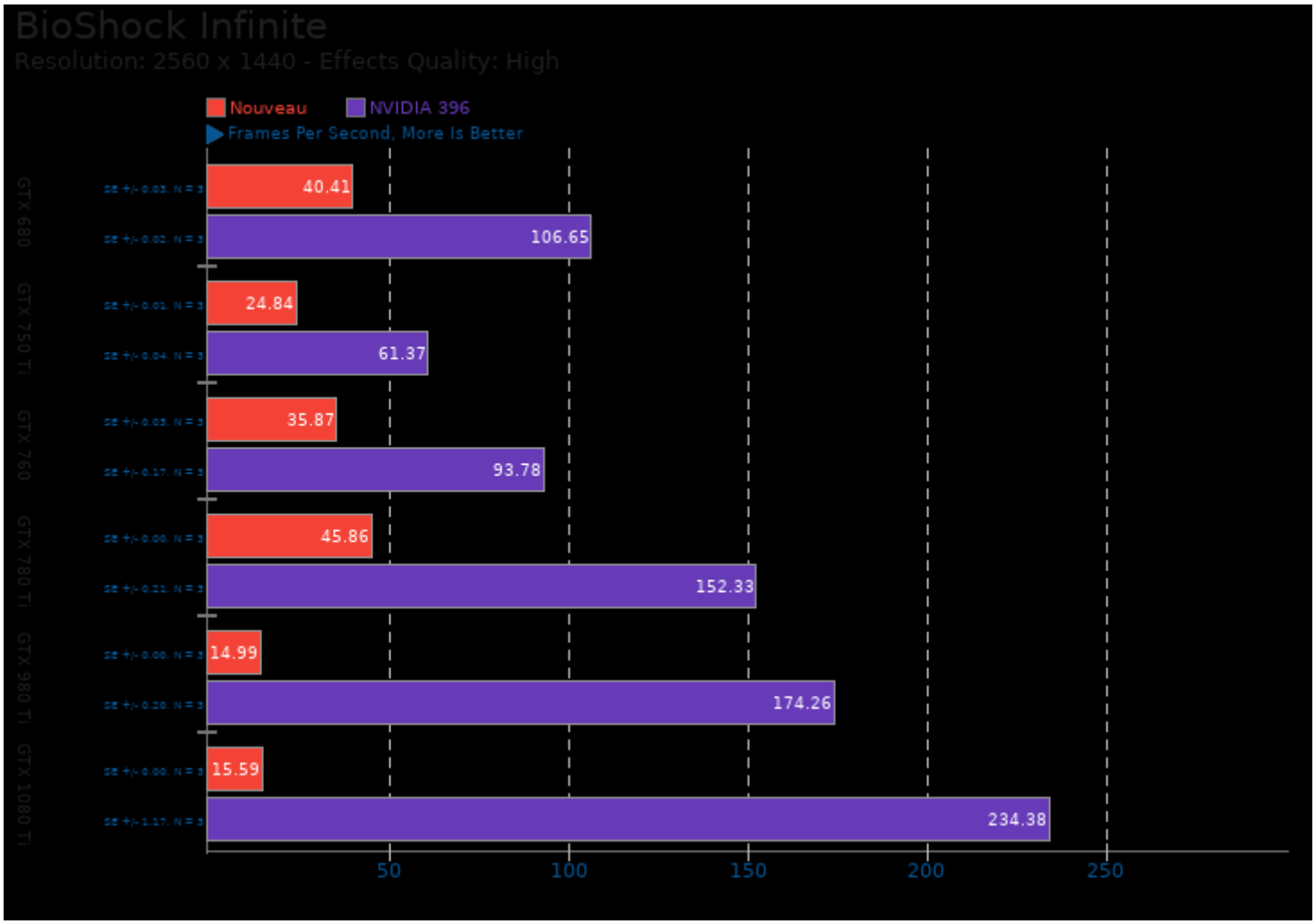
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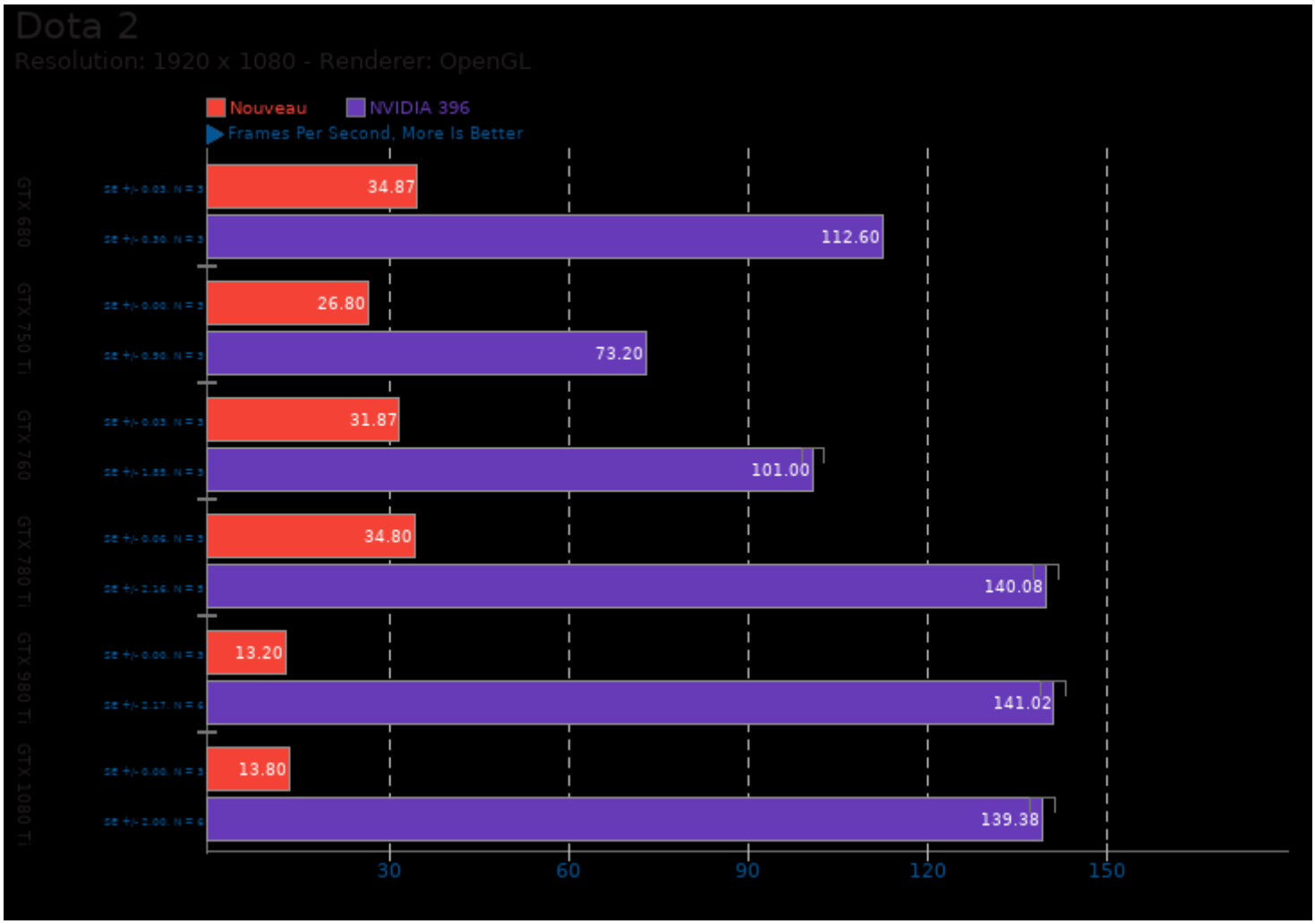
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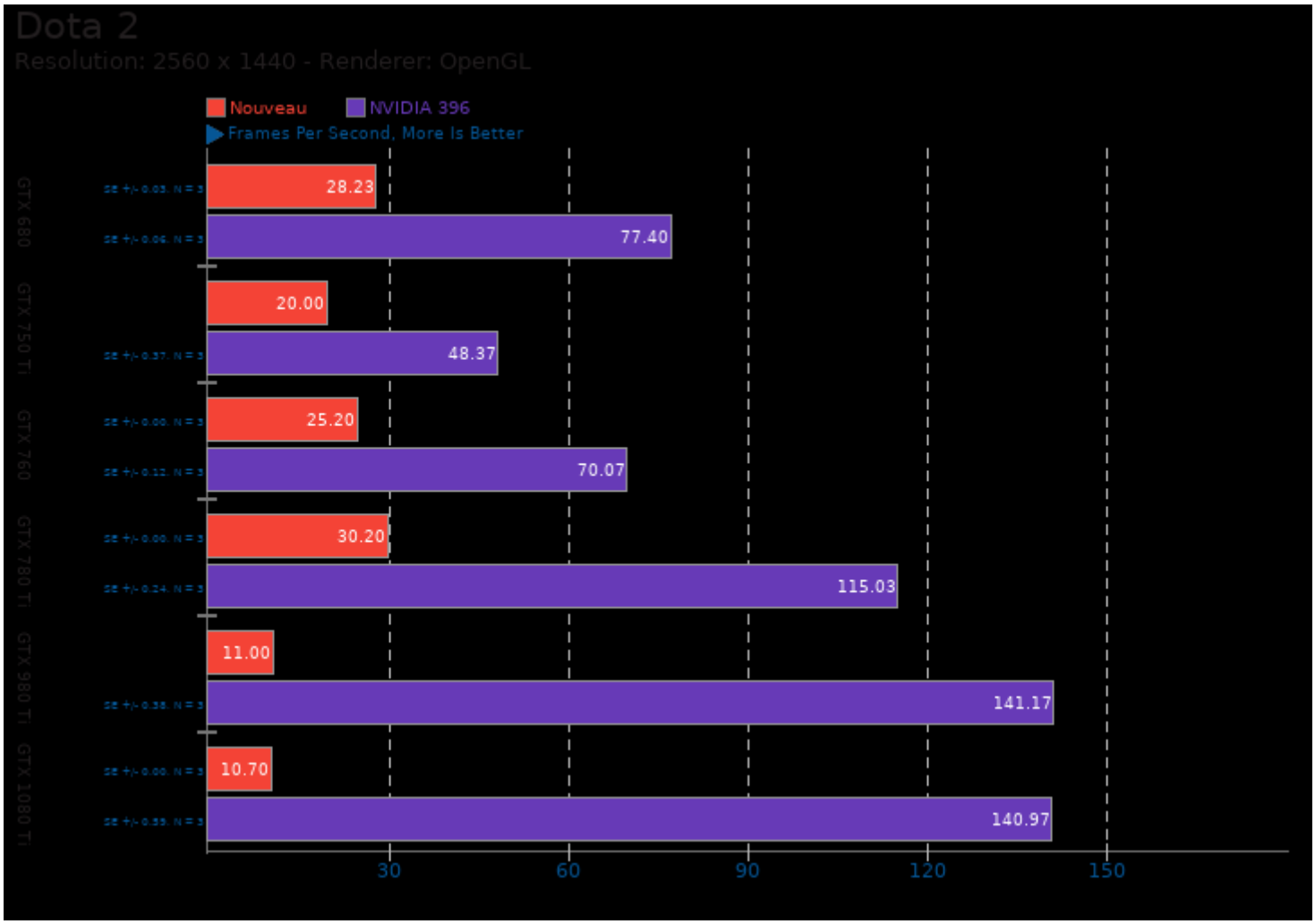
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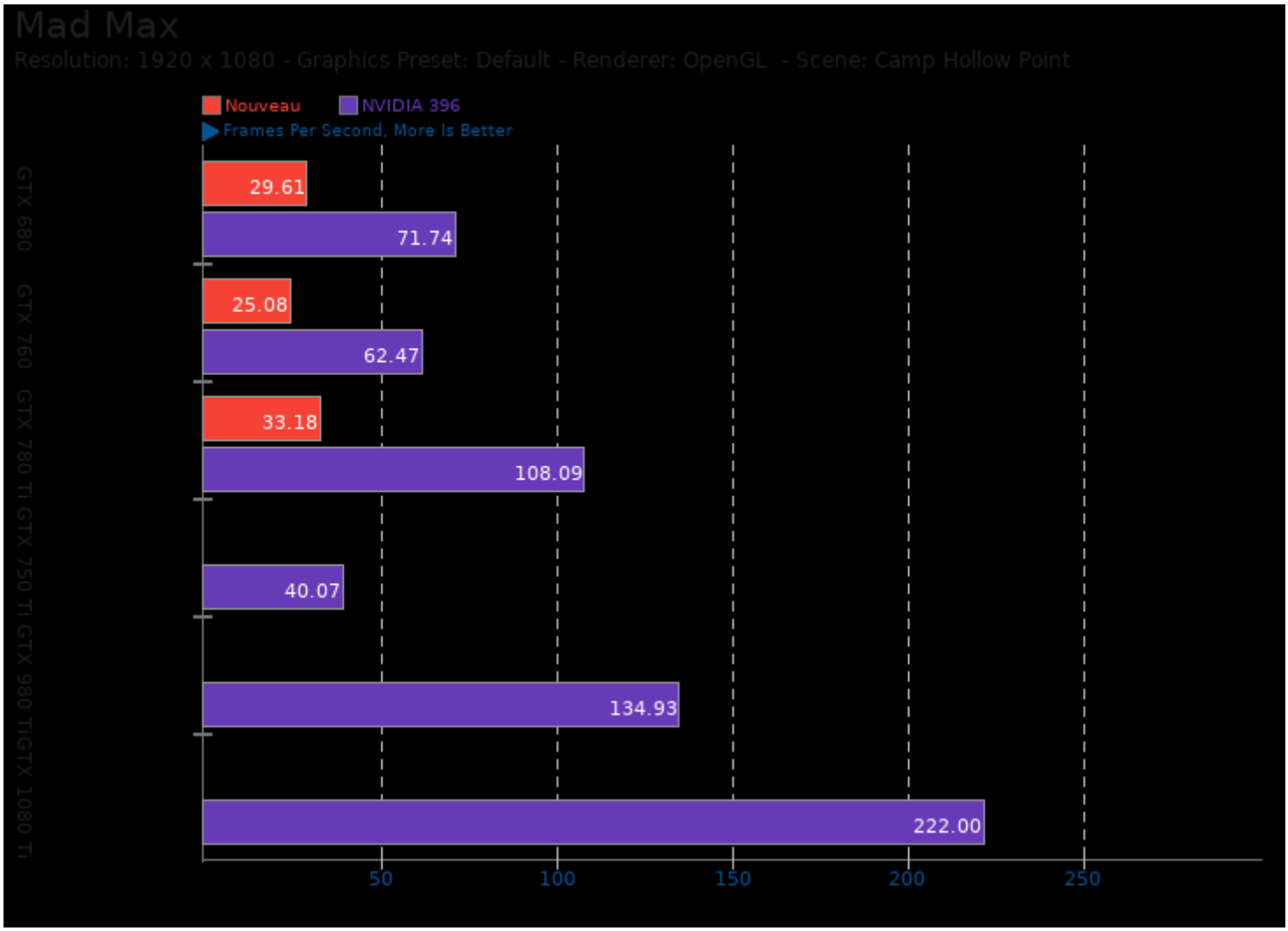
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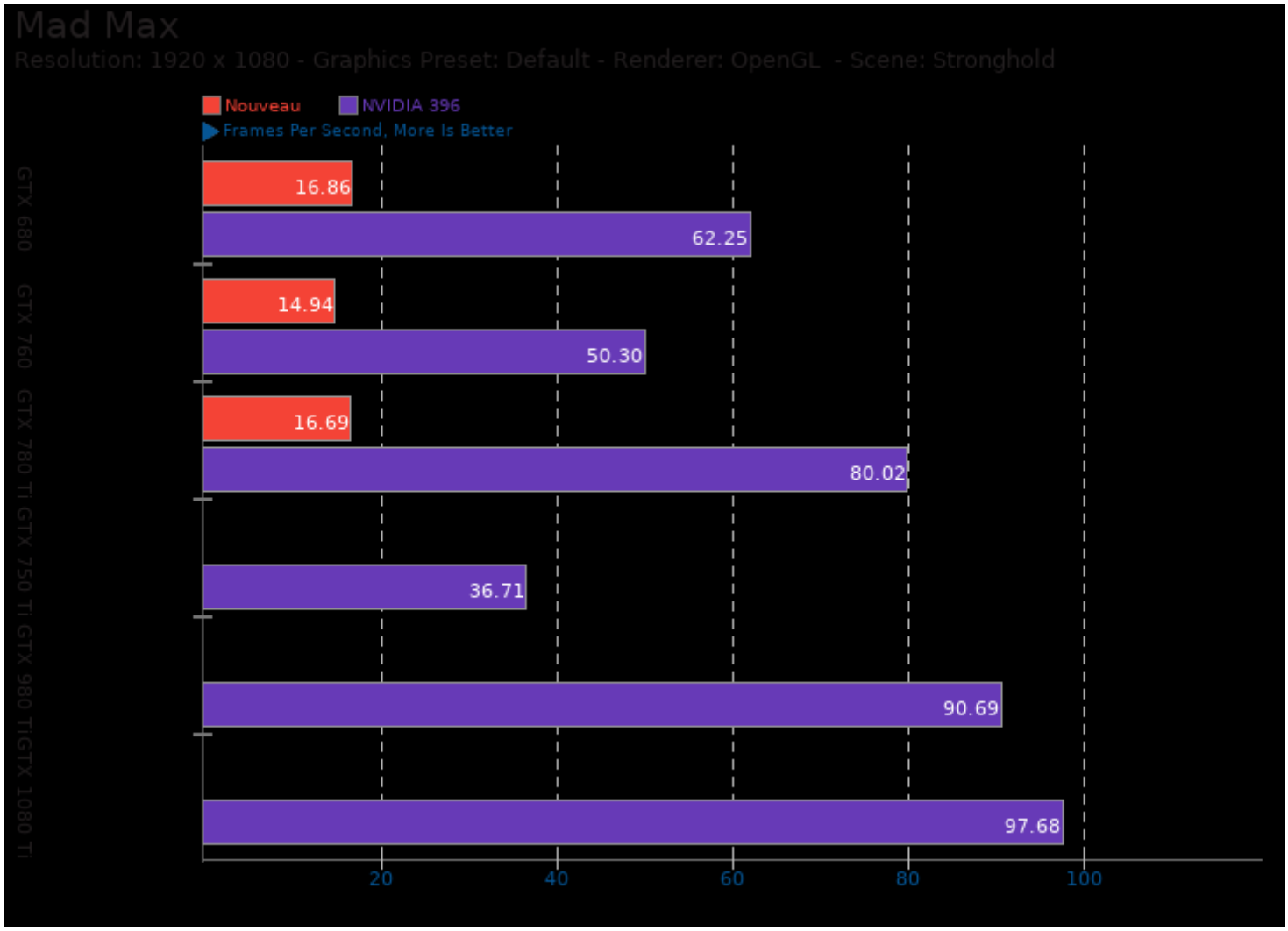
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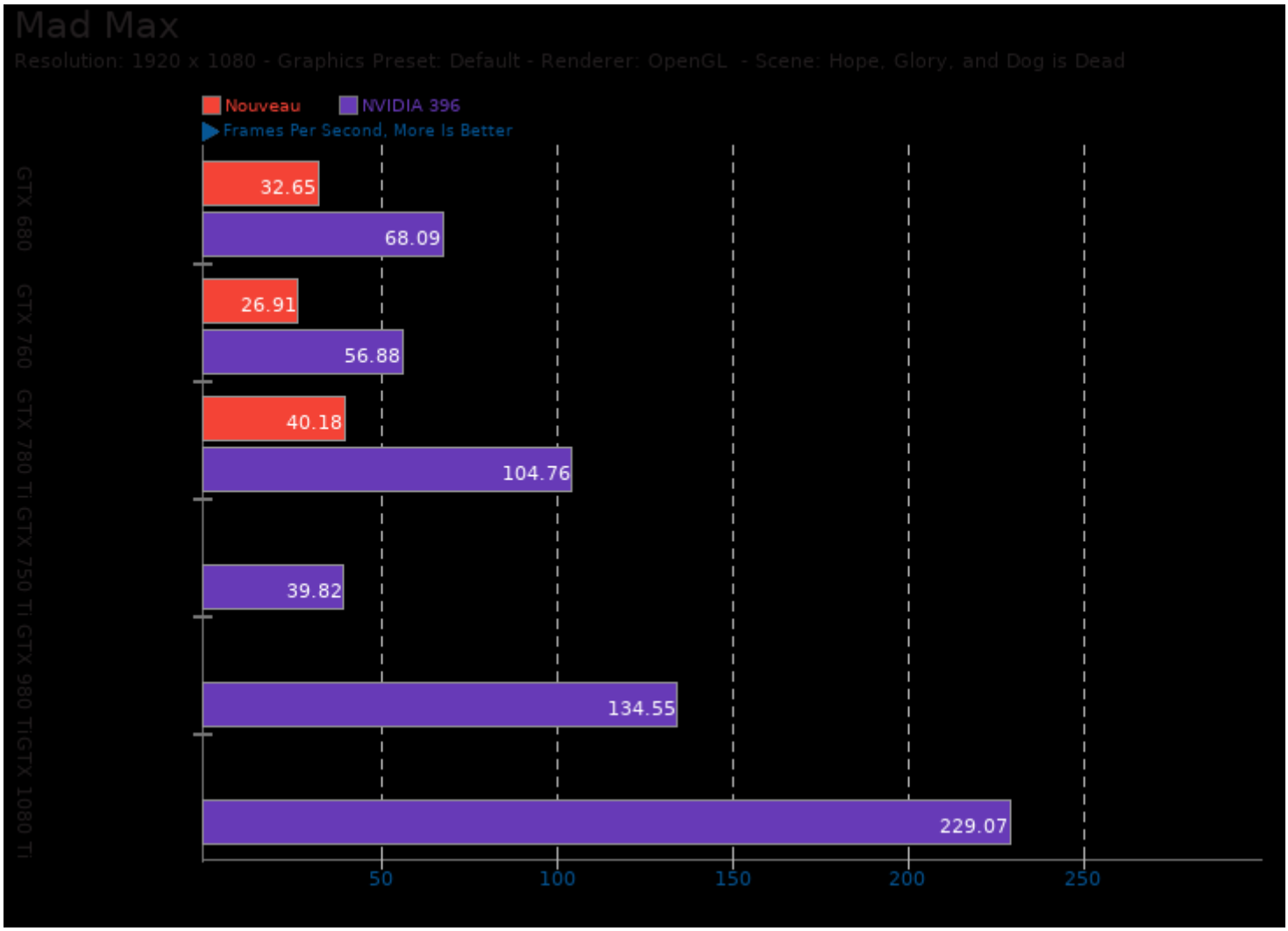
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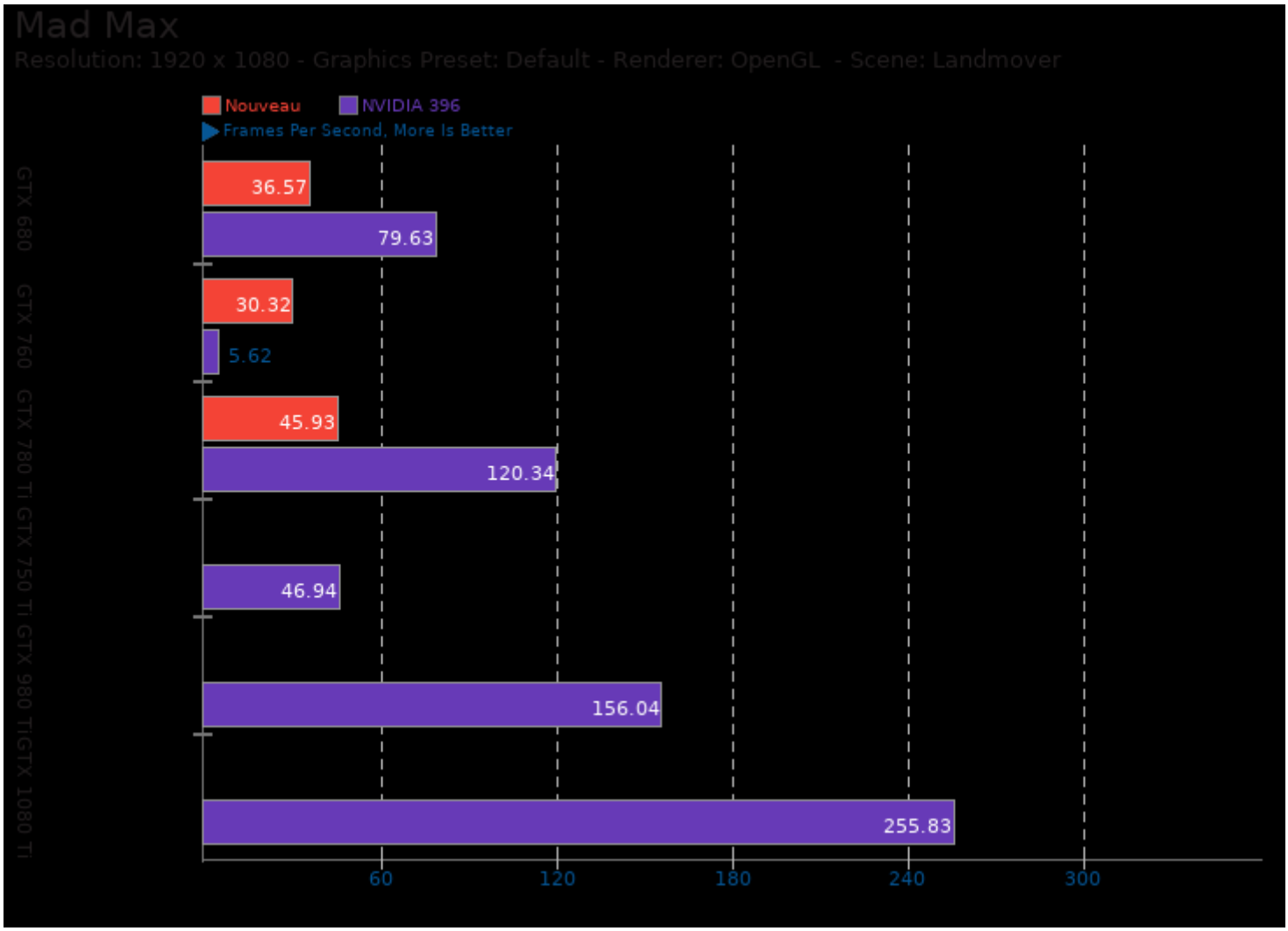
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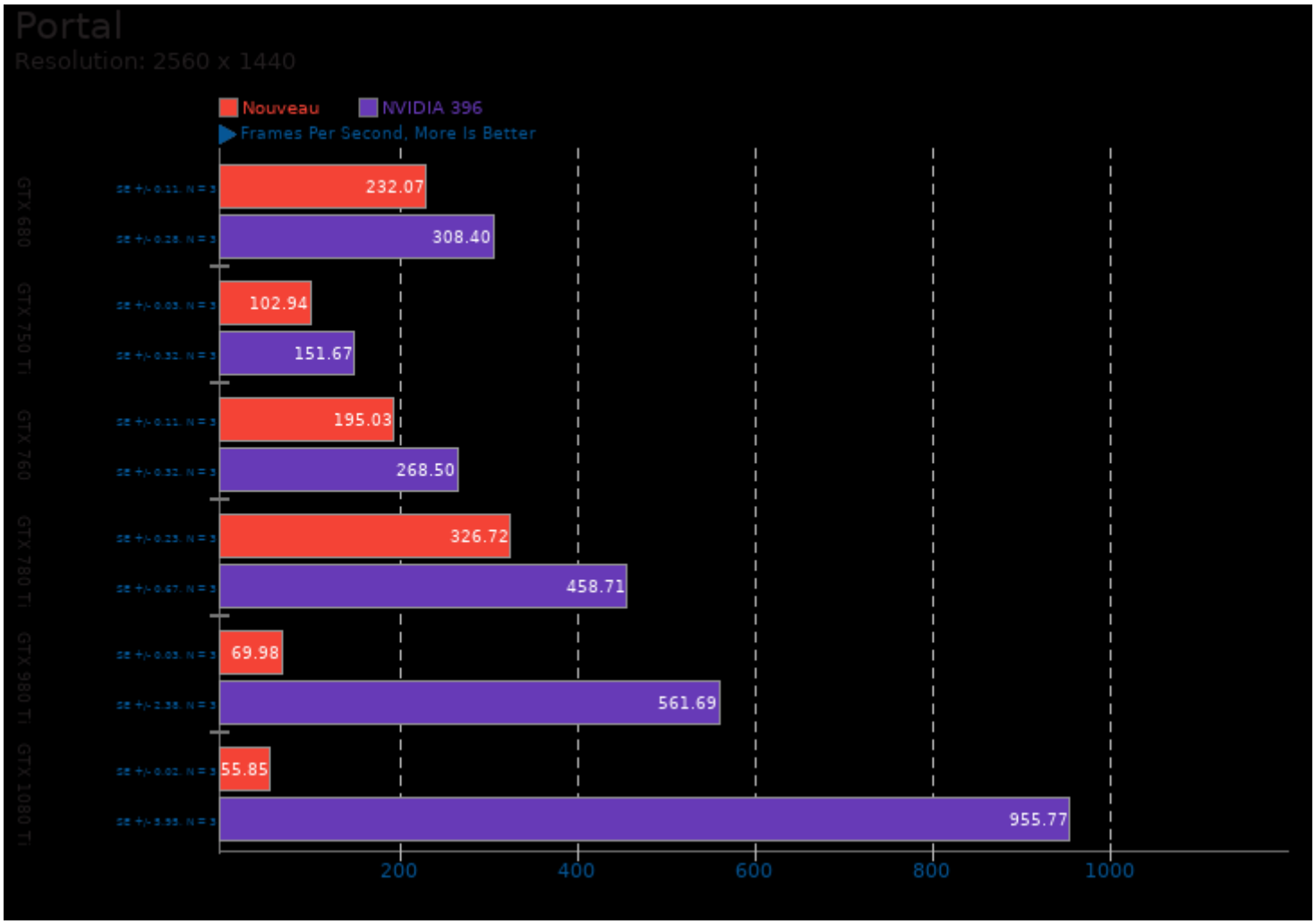
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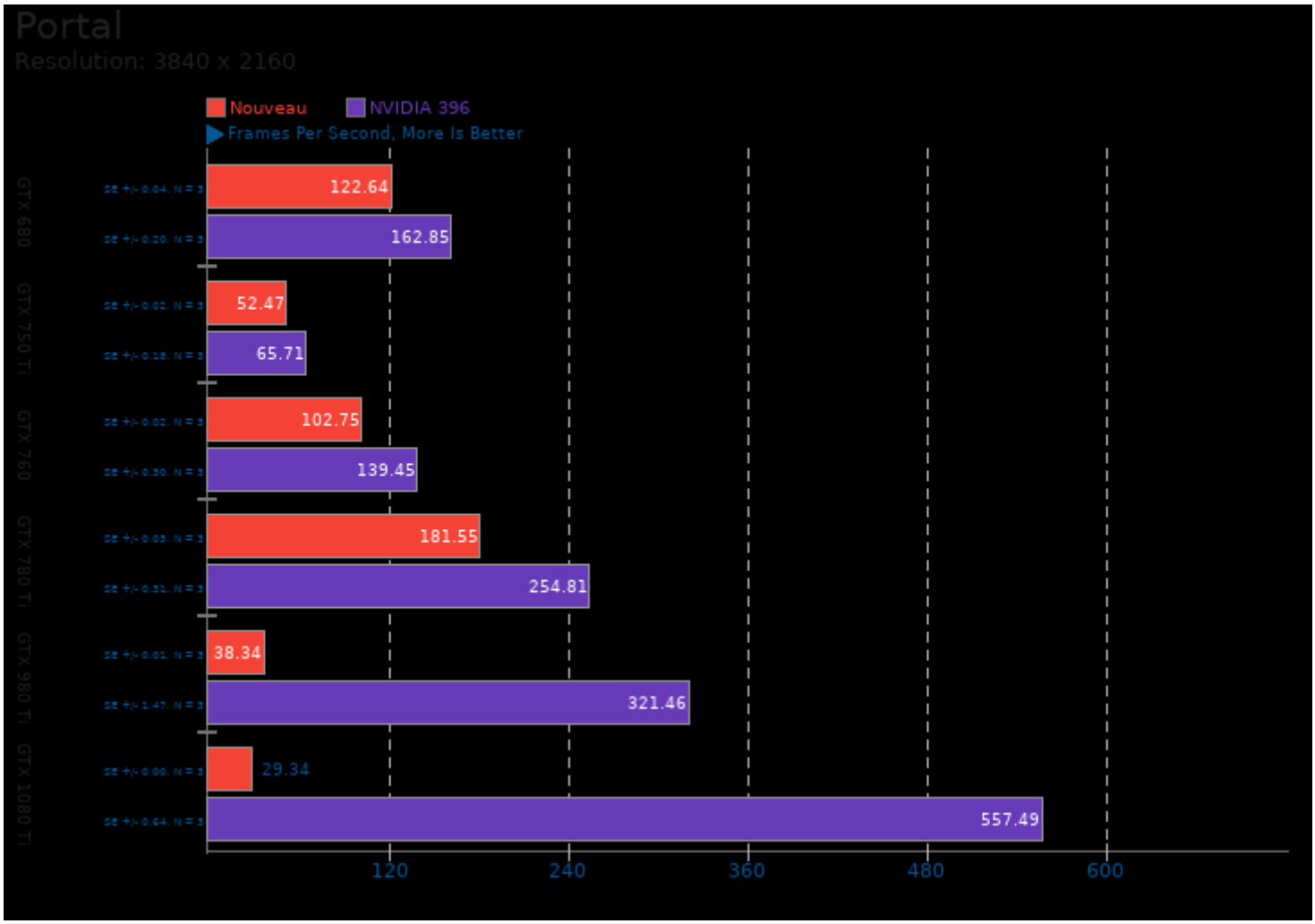
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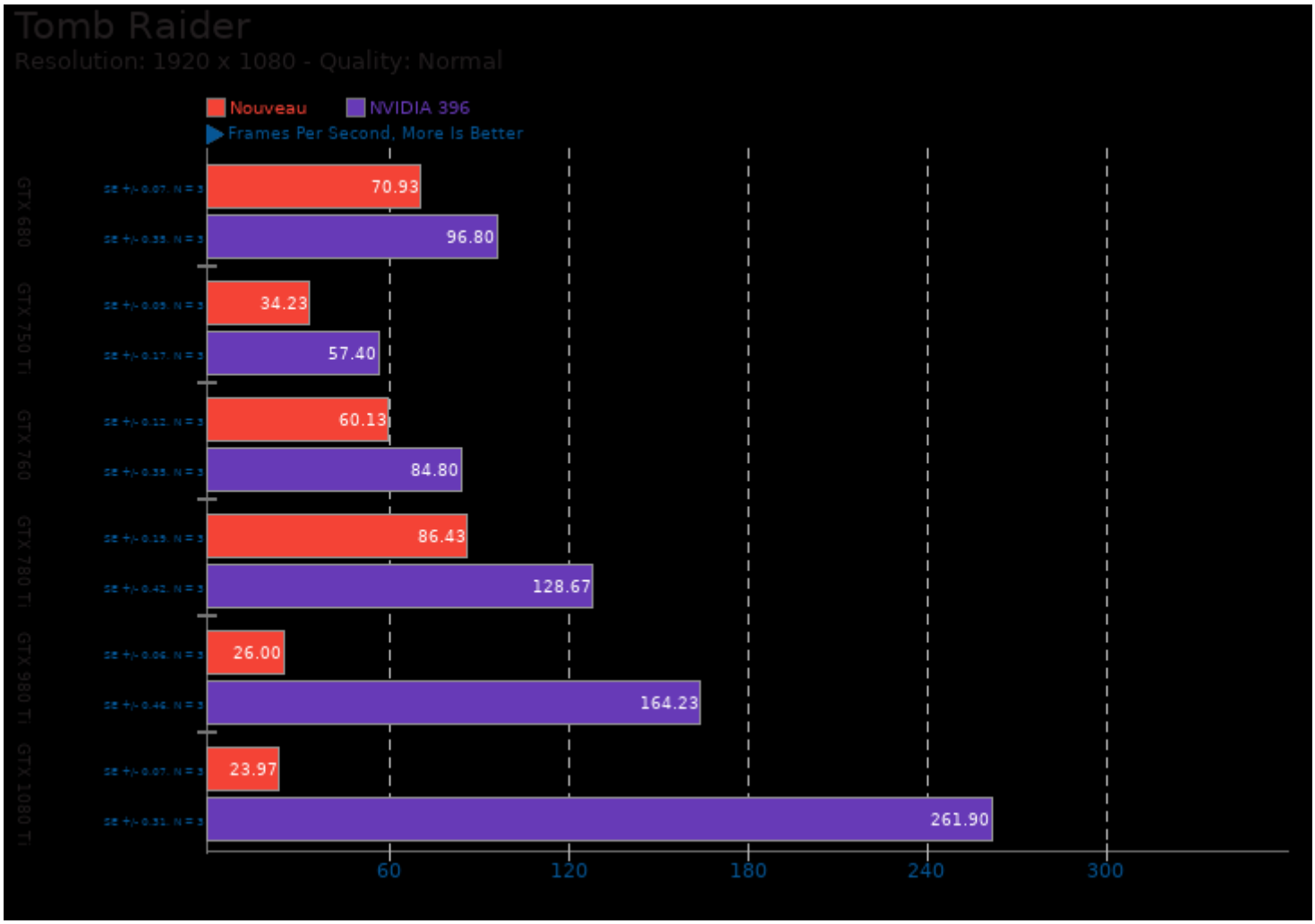
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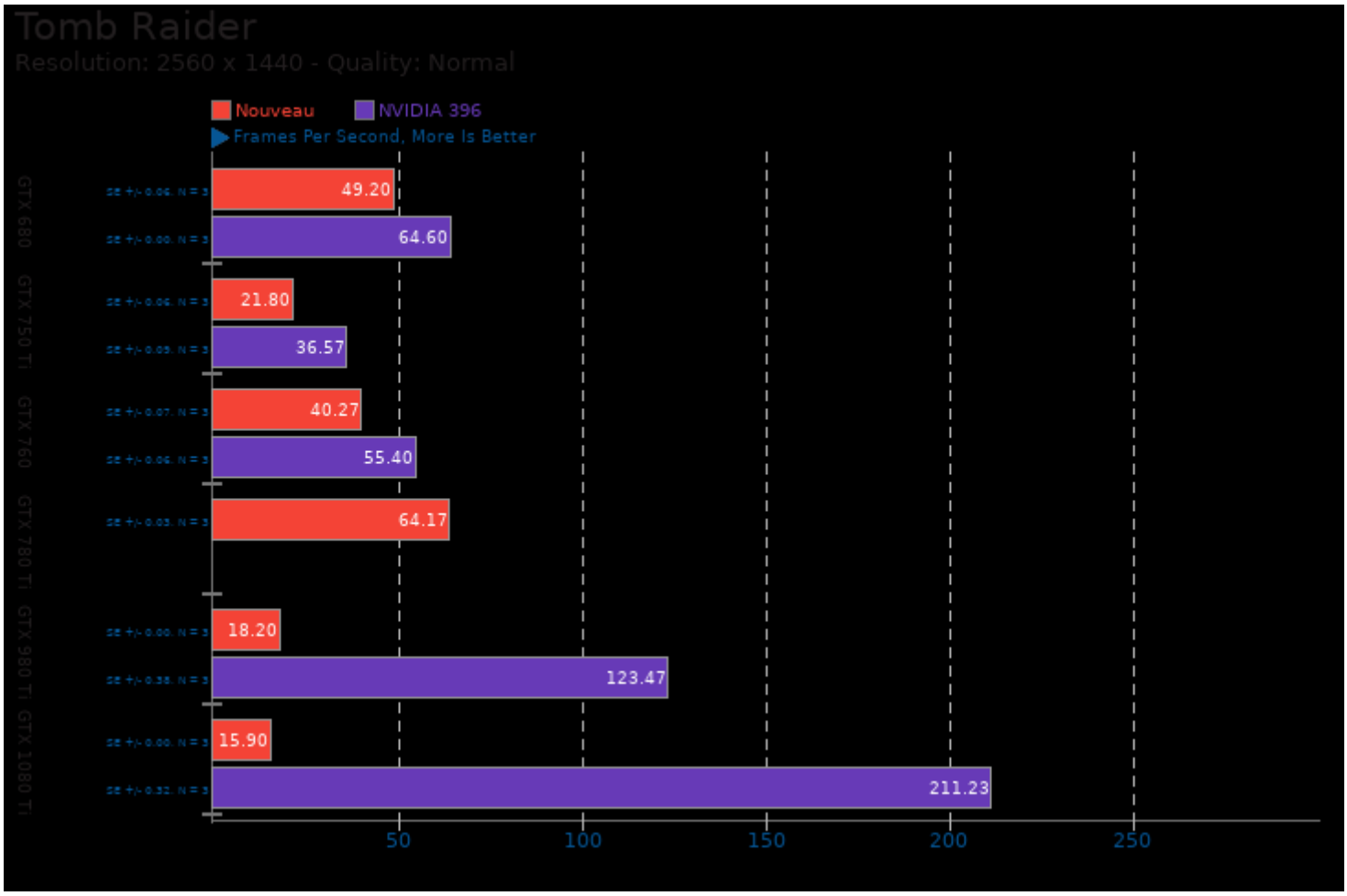
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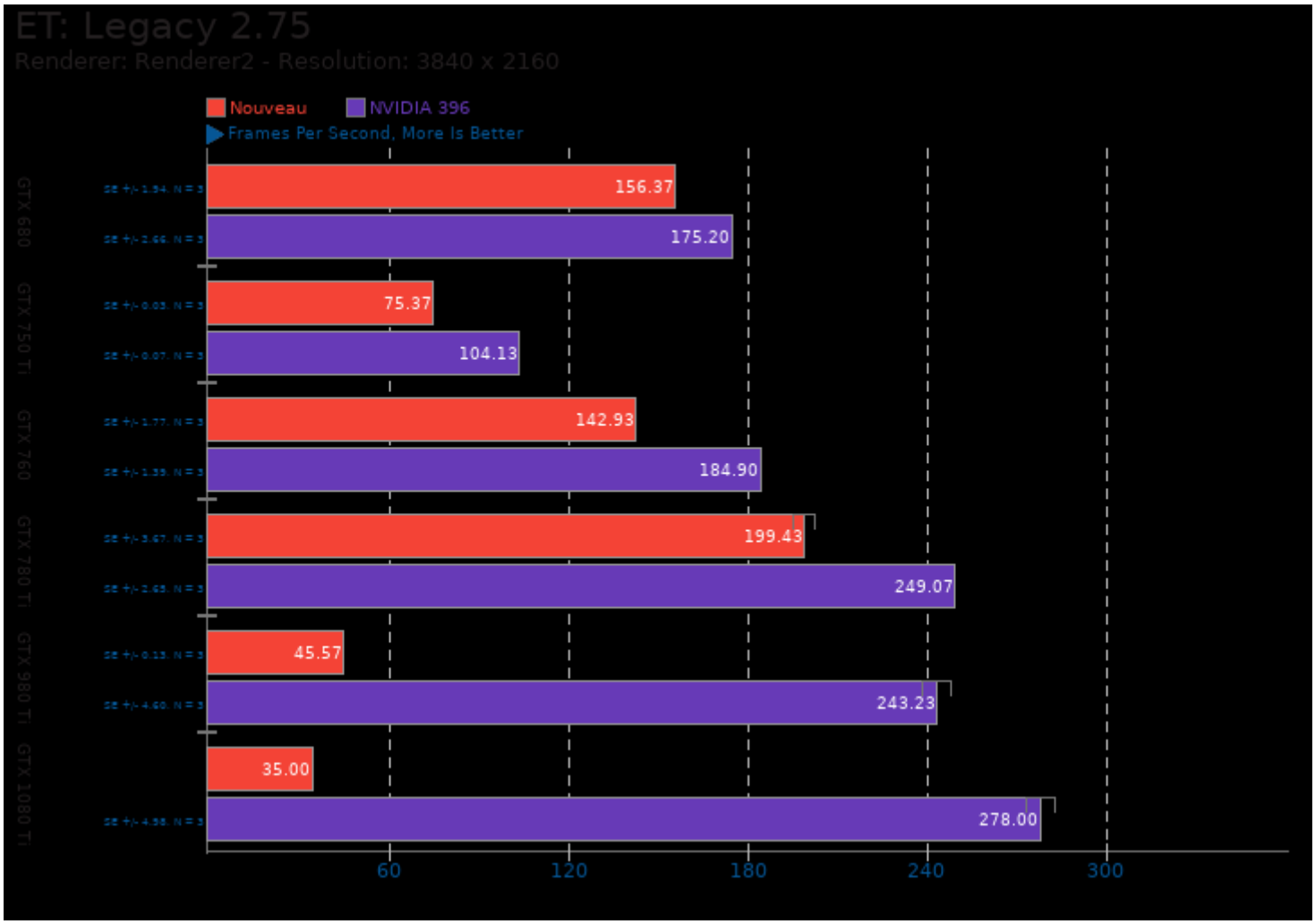
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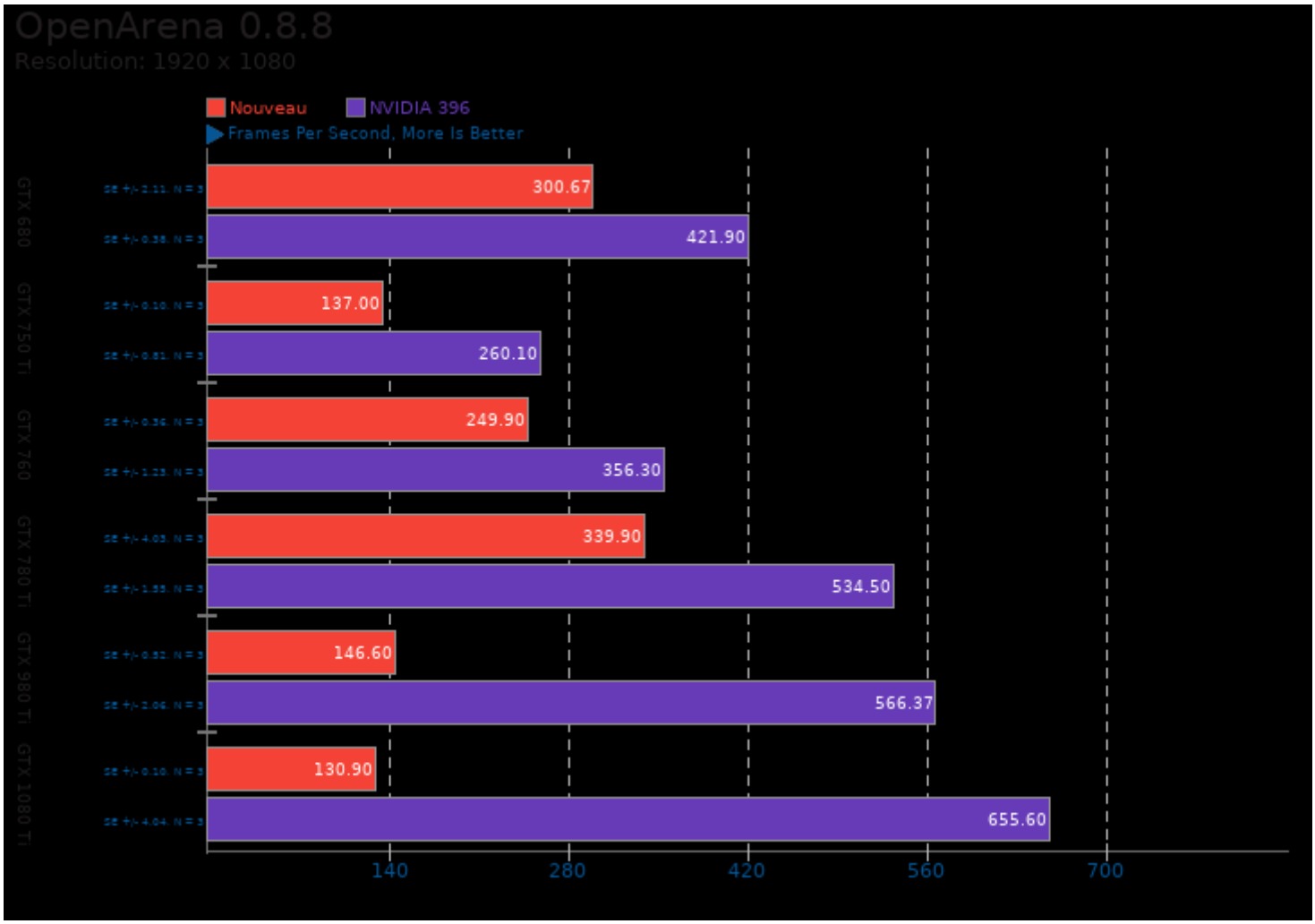
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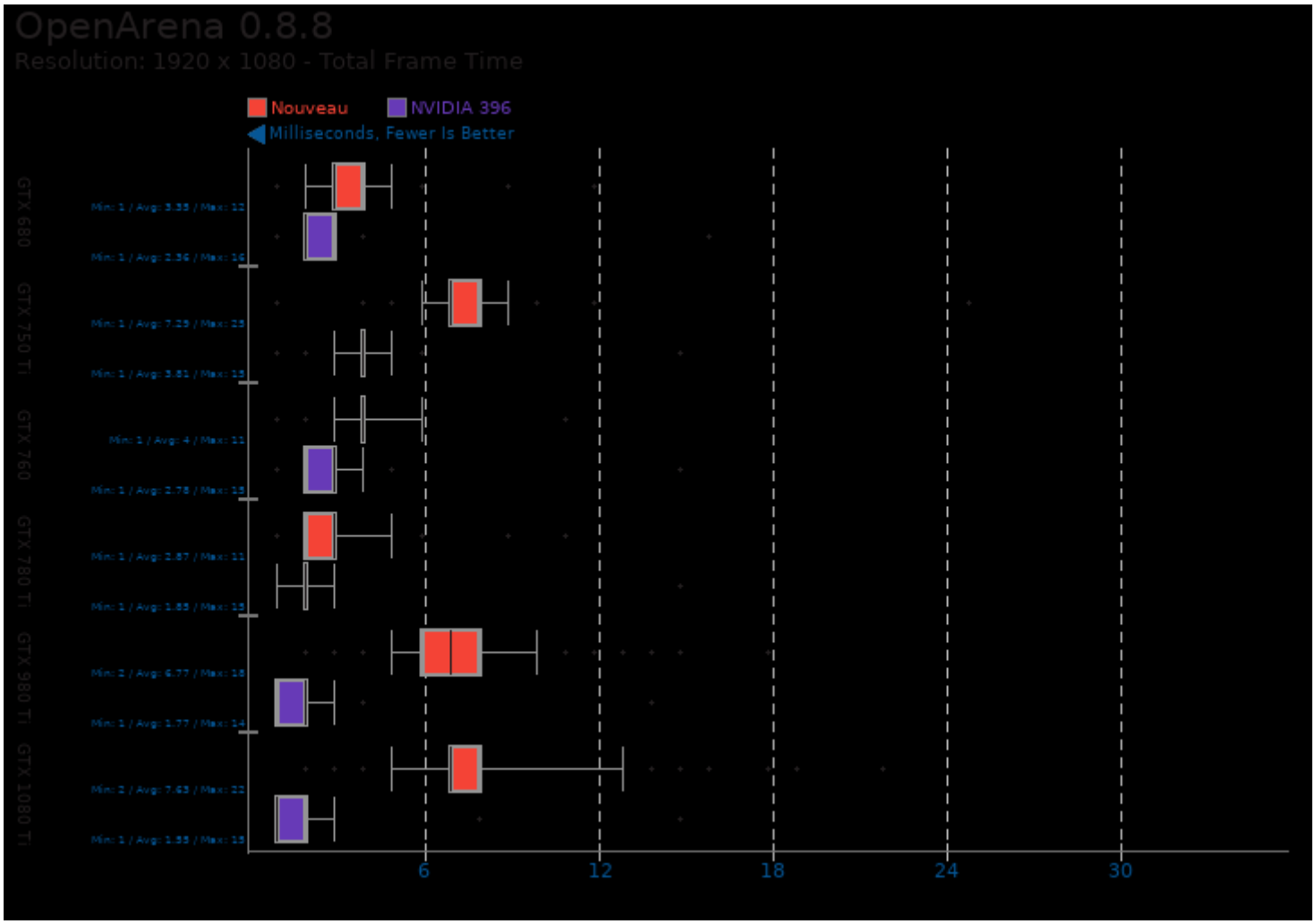
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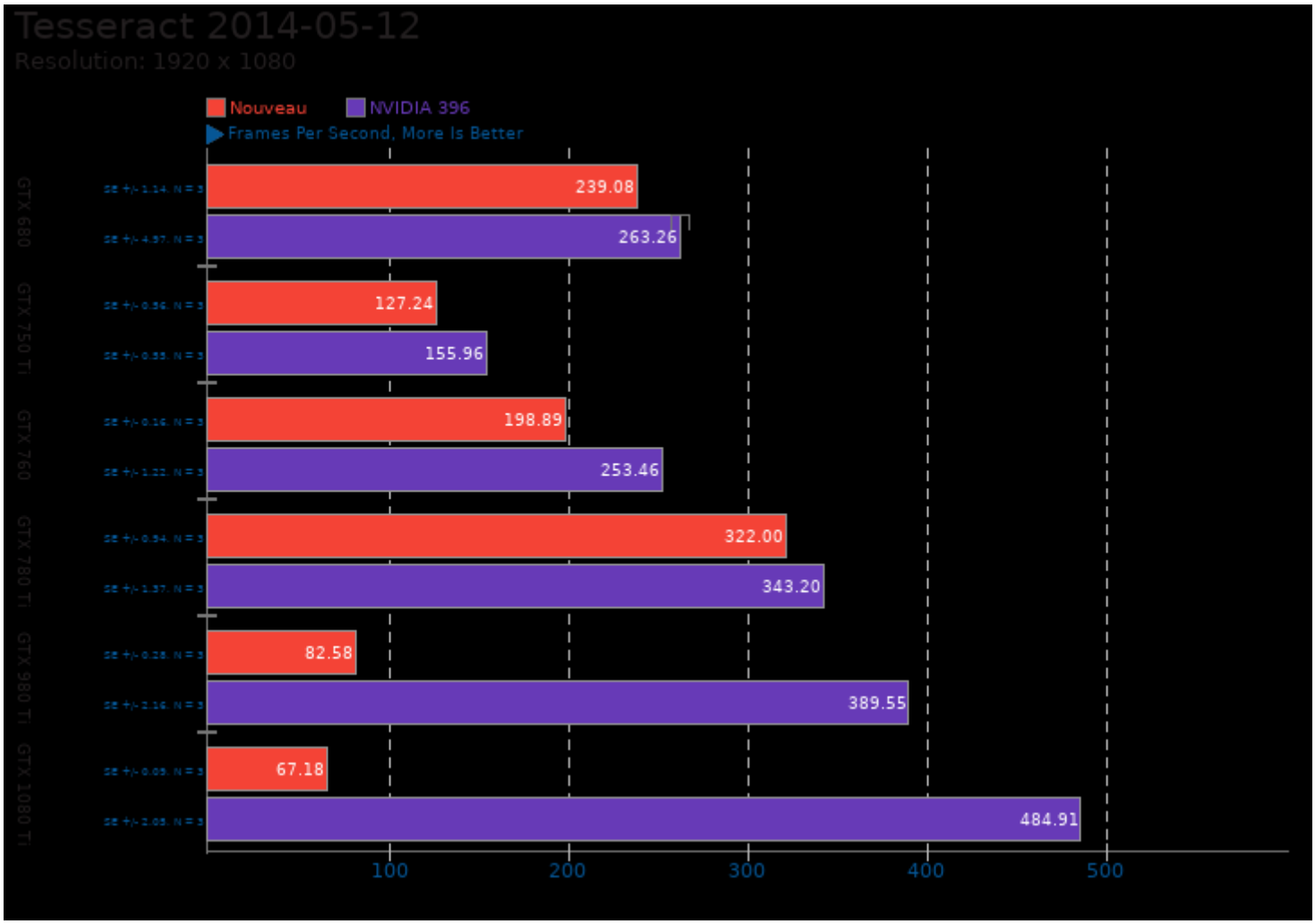
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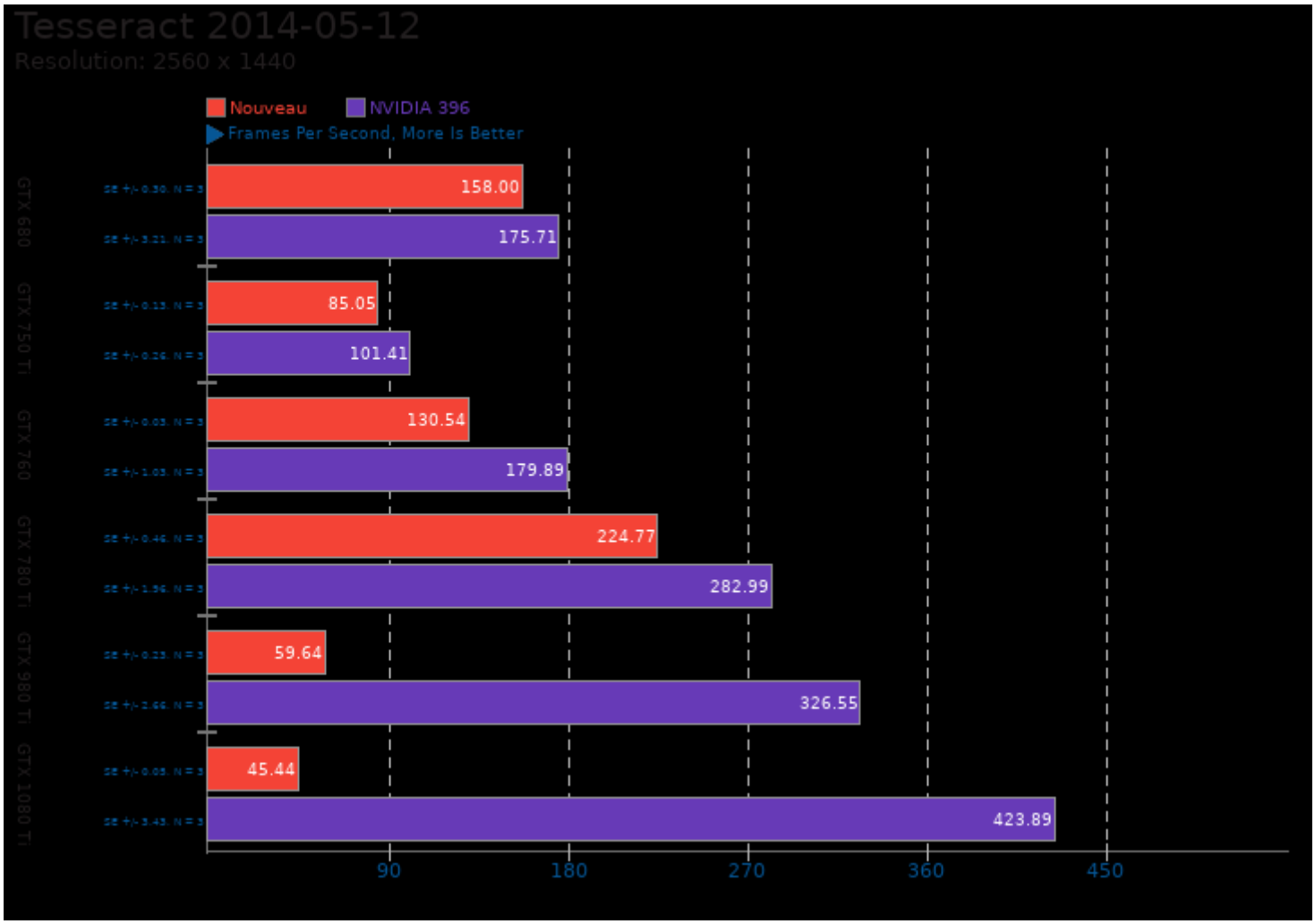
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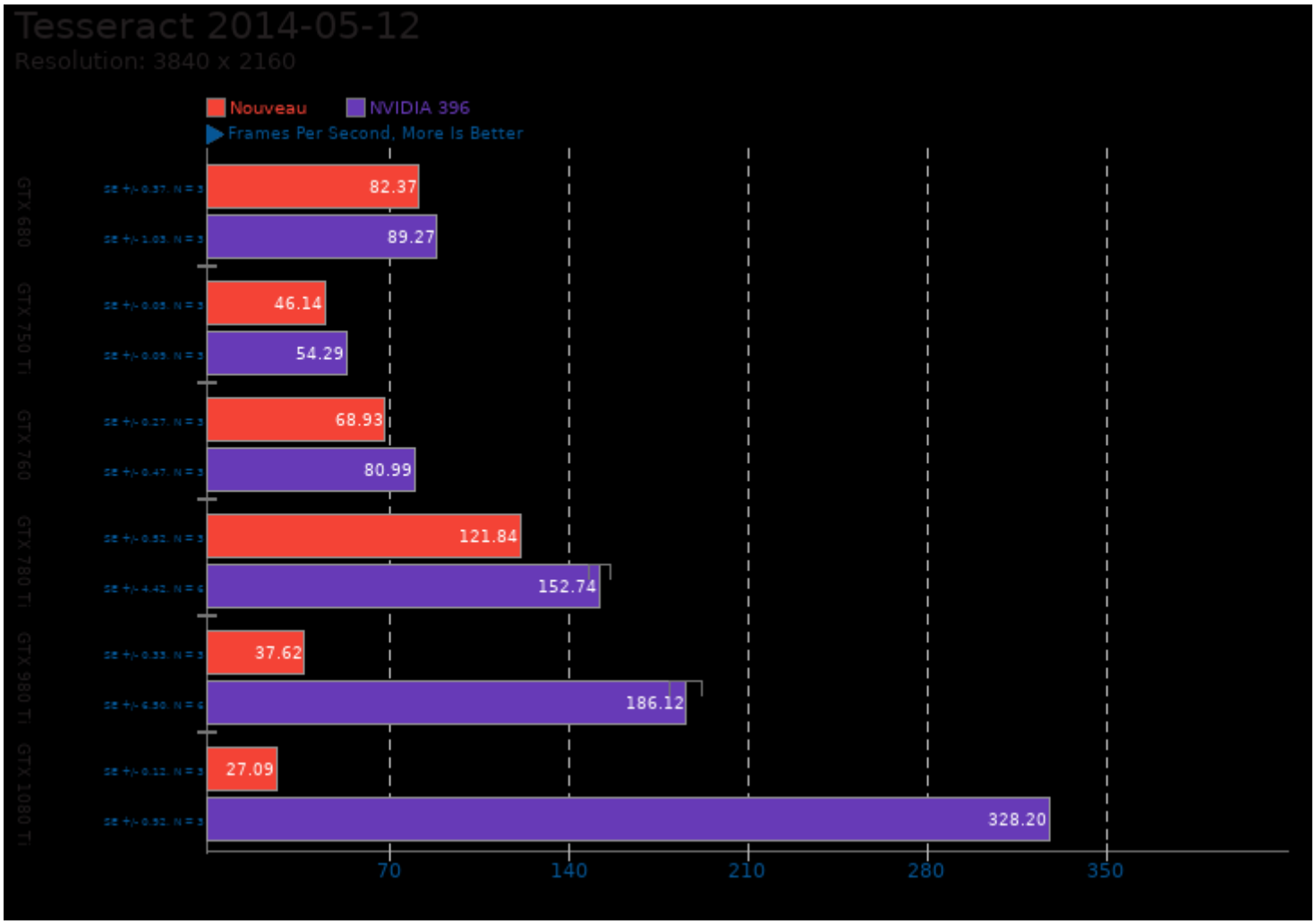
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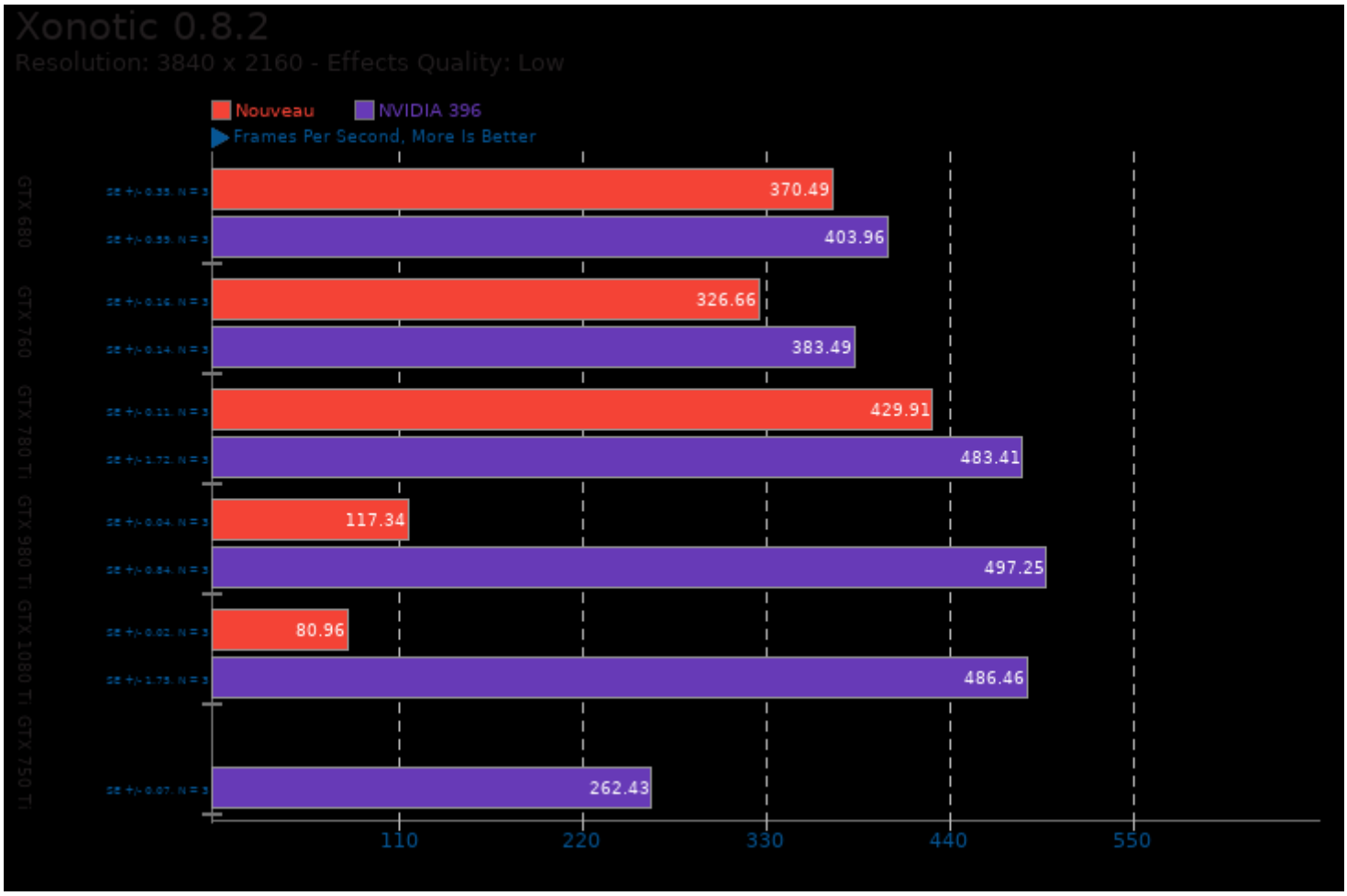
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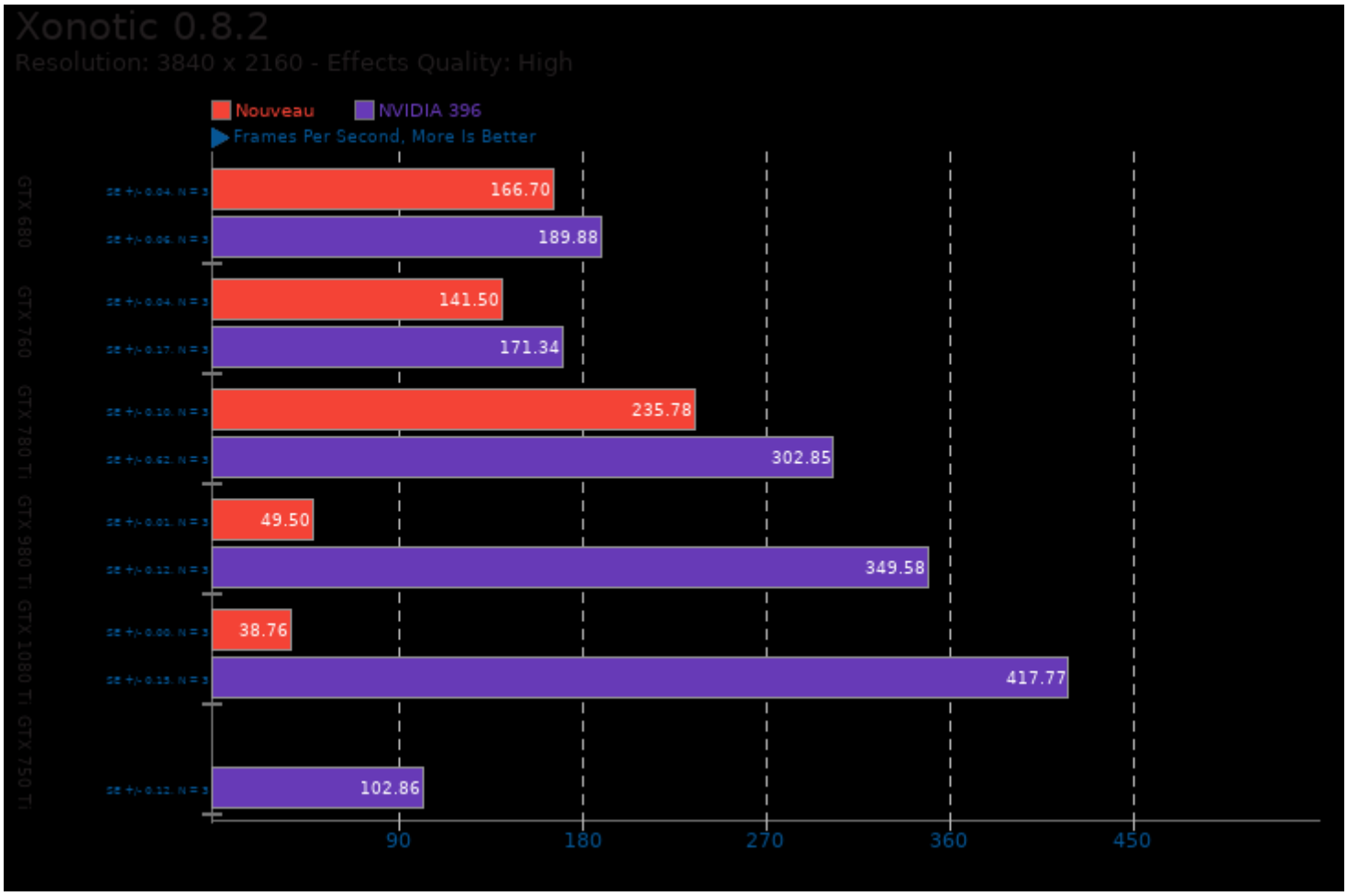
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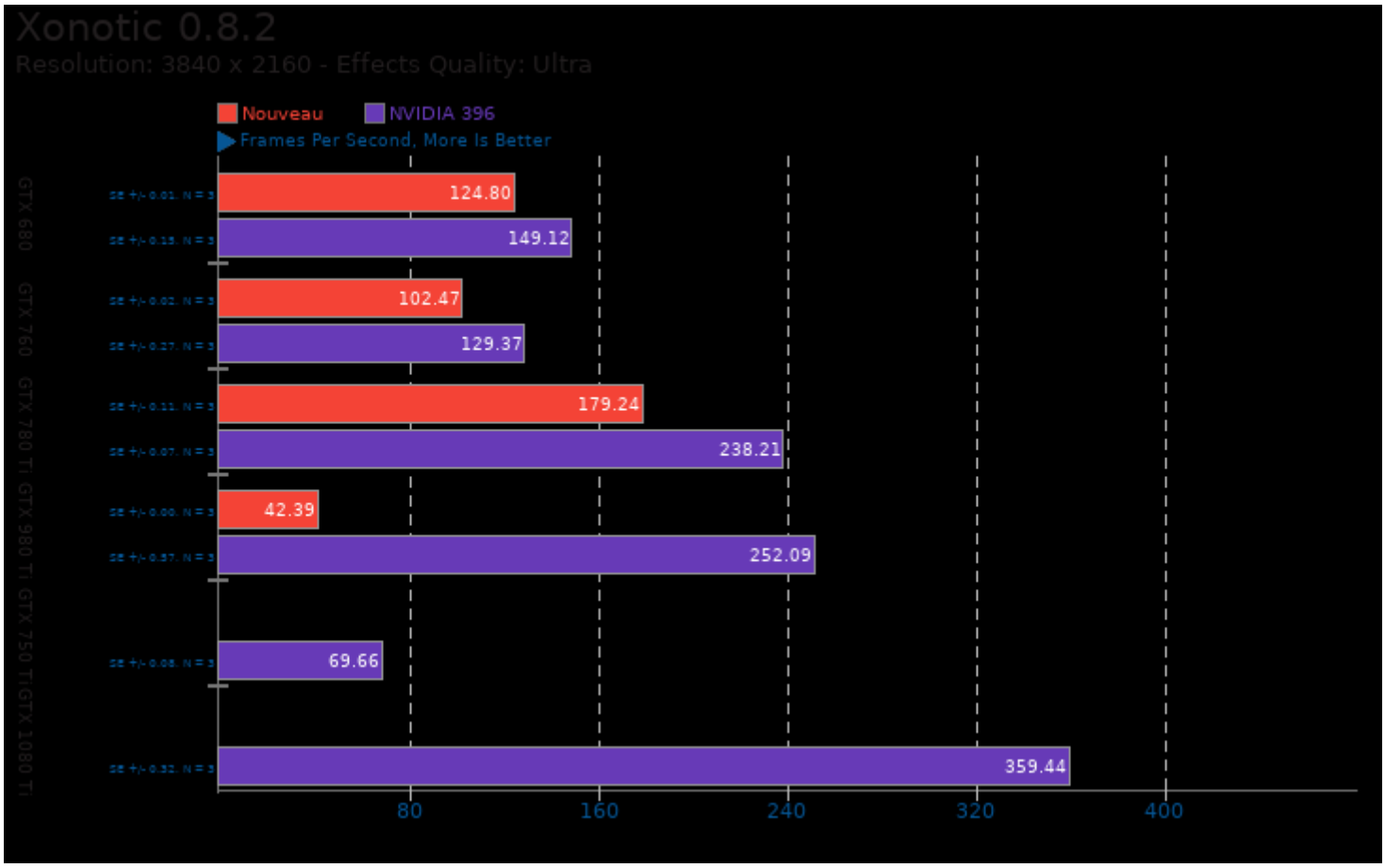
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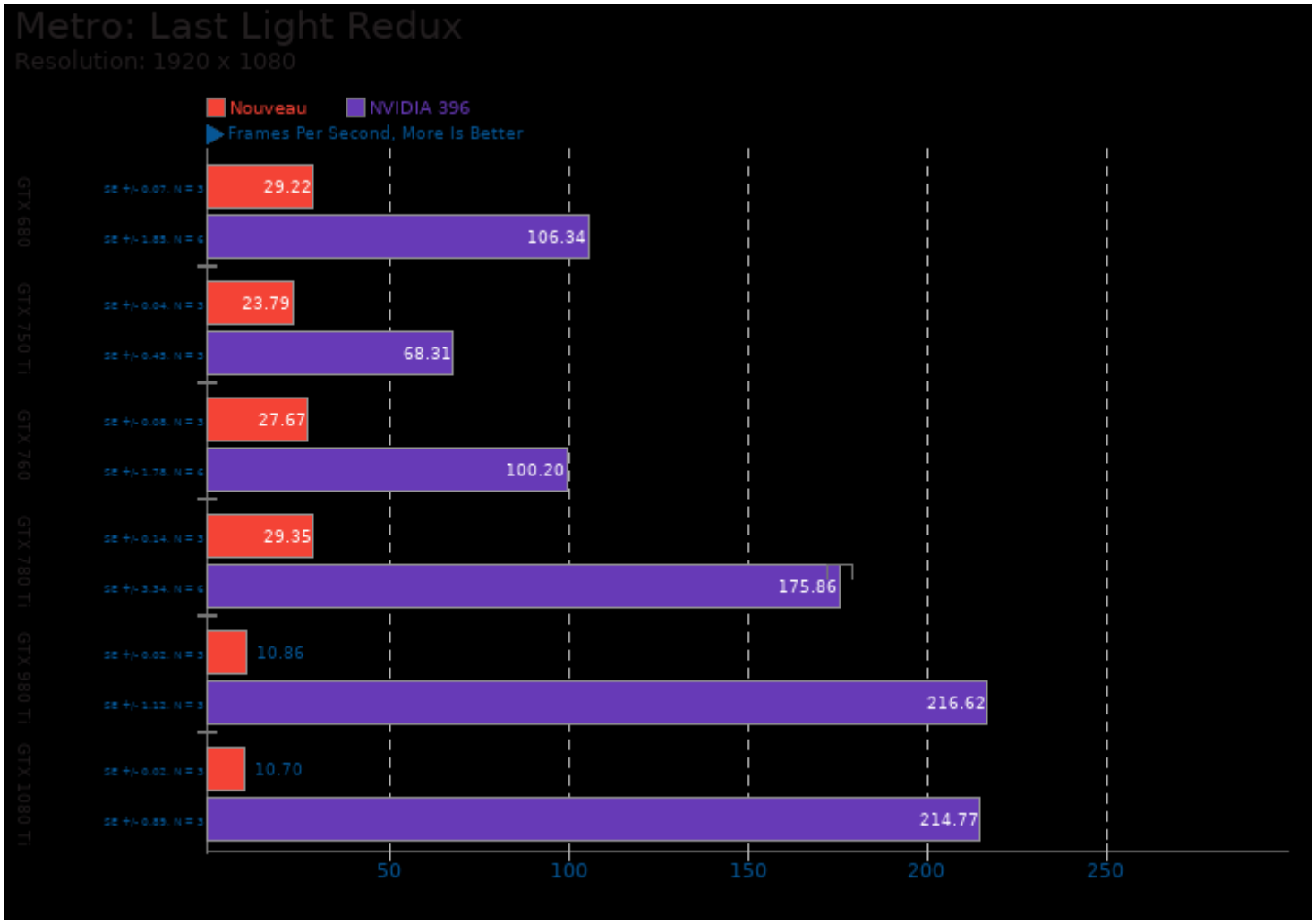
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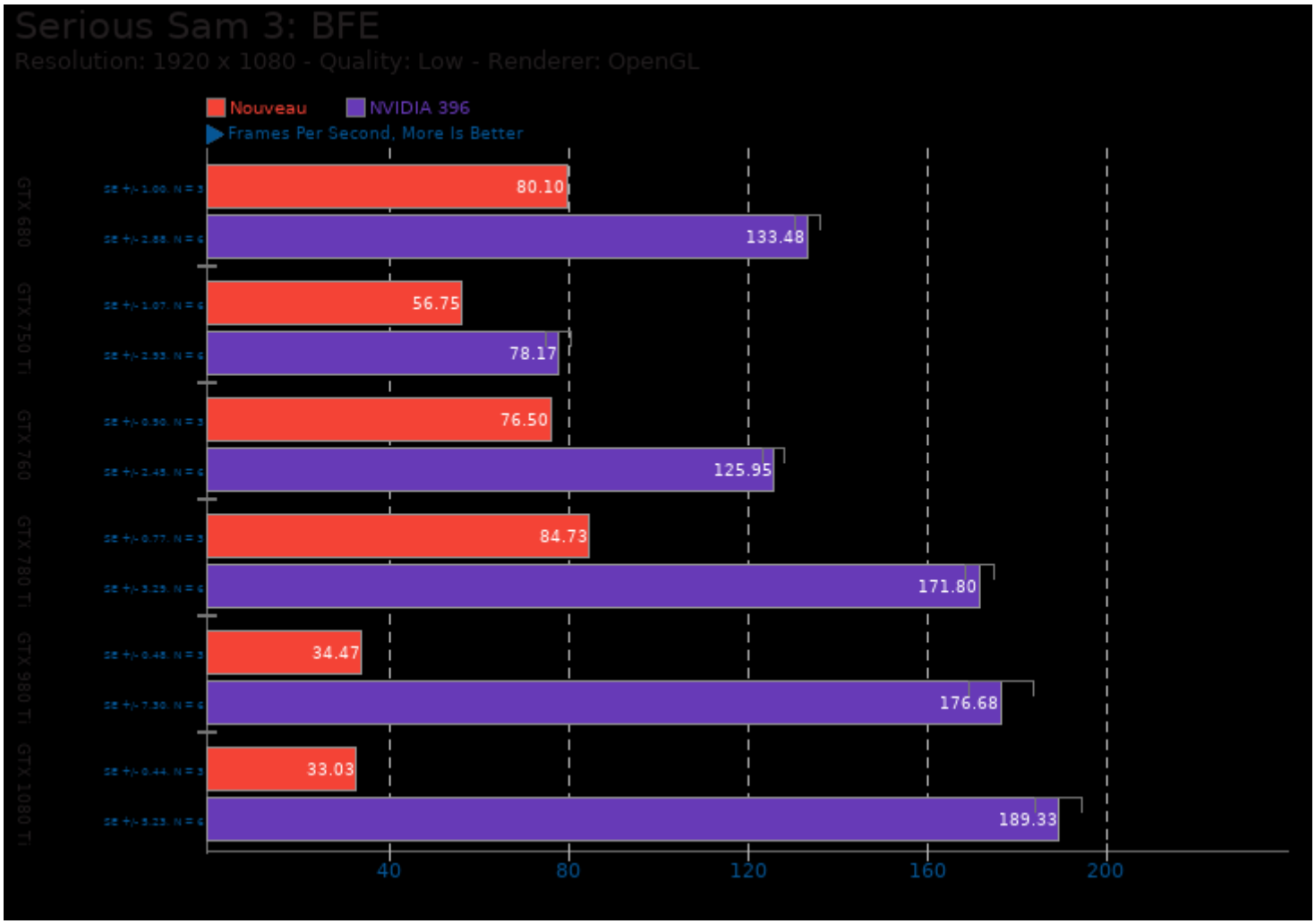
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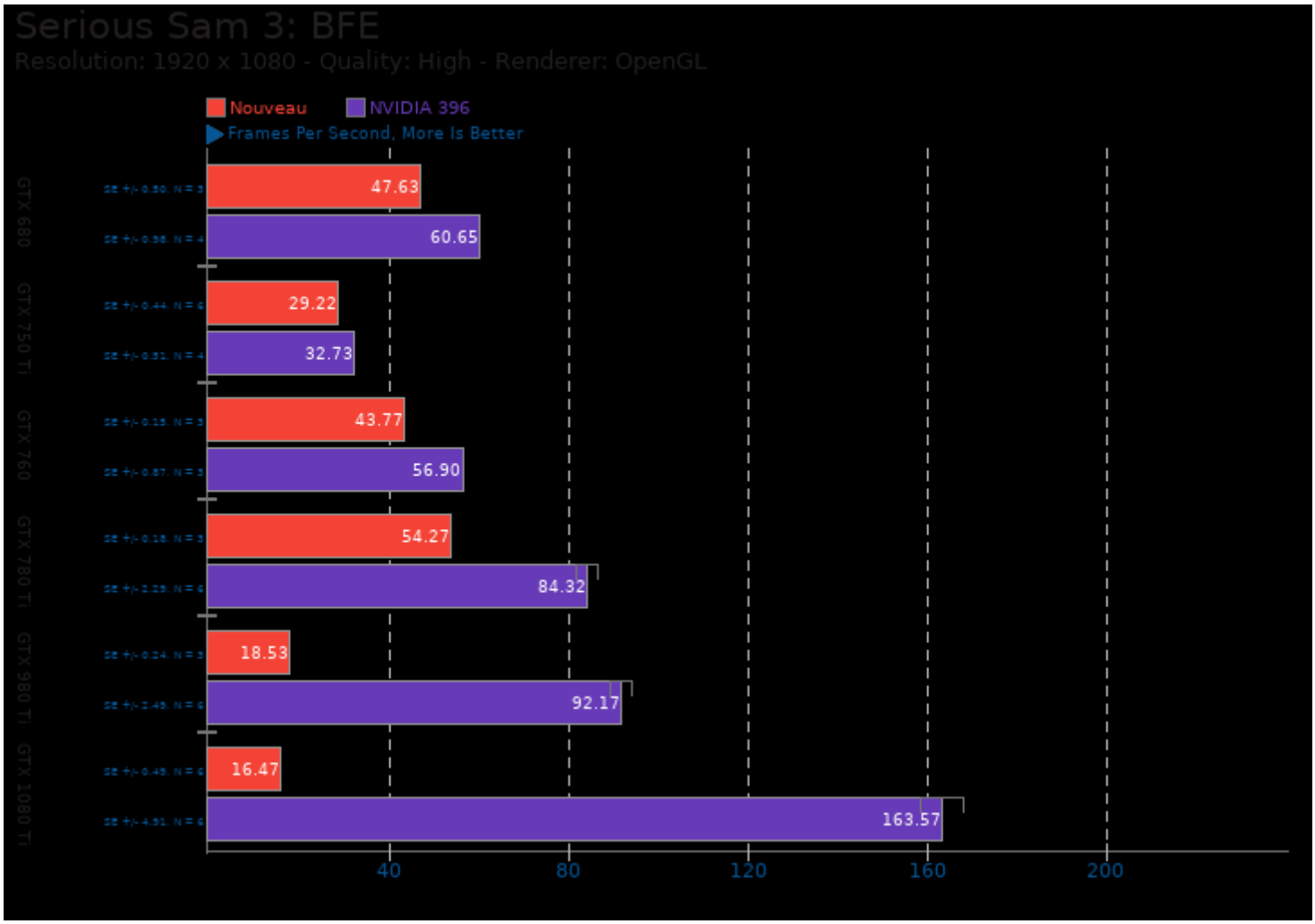
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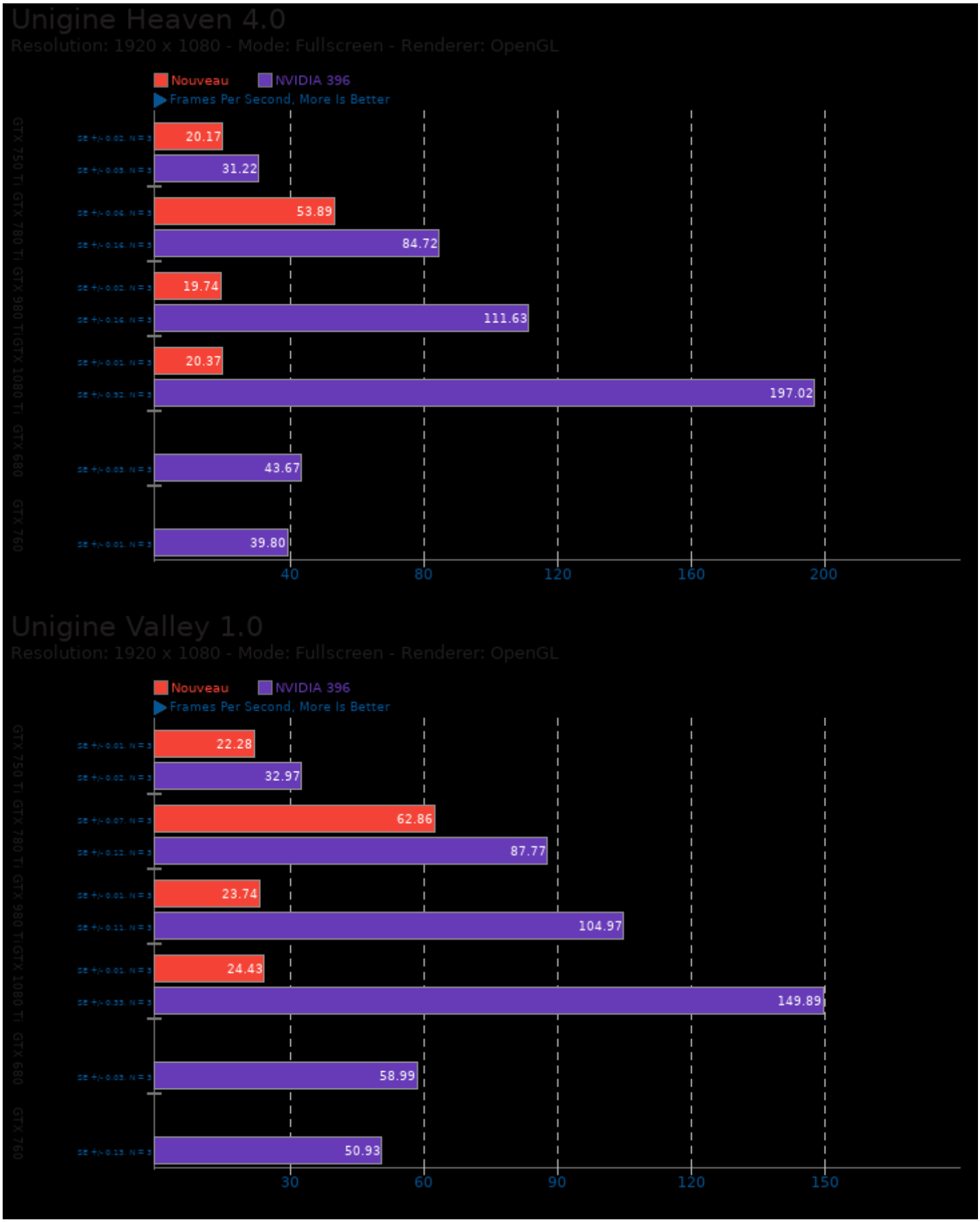
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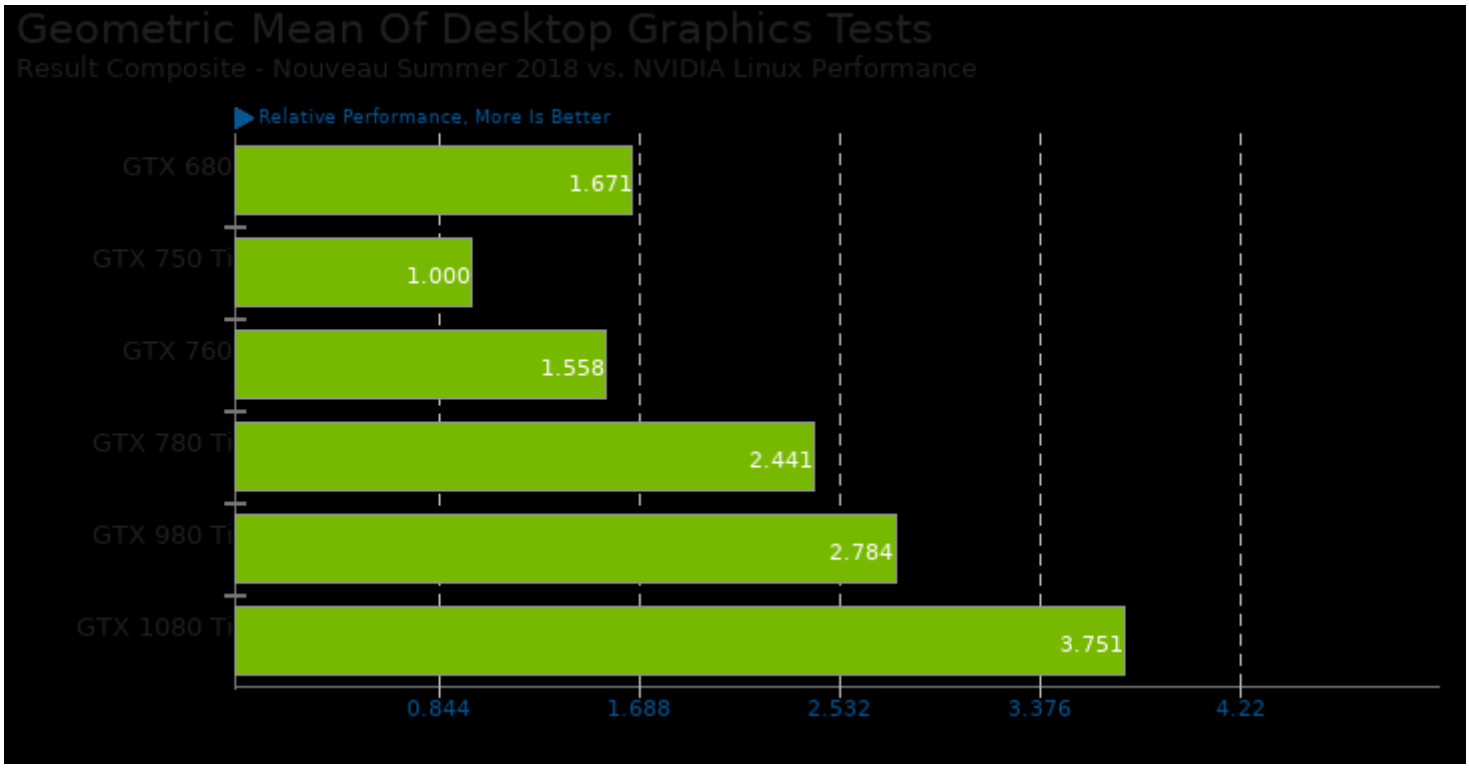
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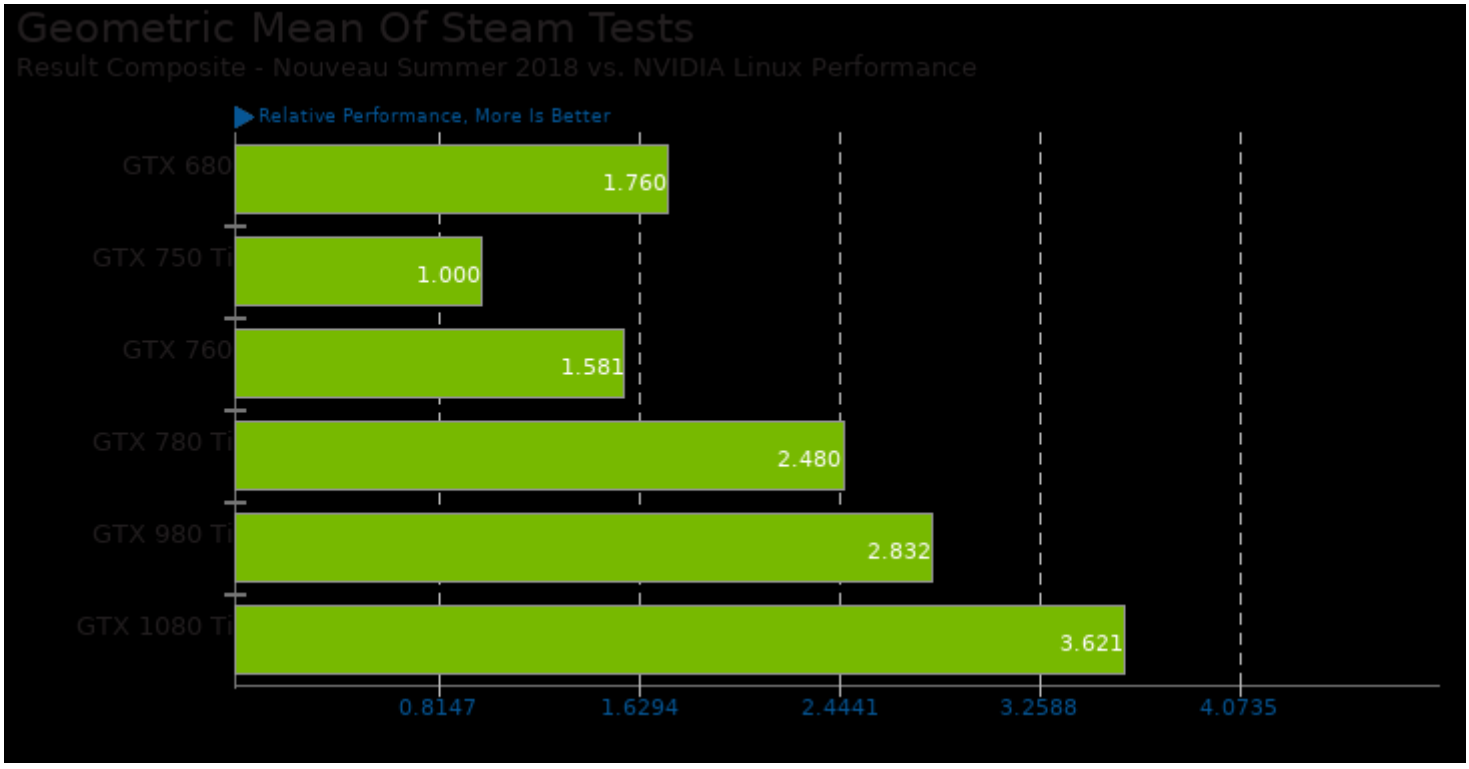
# Nouveau Summer 2018 vs. NVIDIA Linux Performance



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




Geometric mean based upon tests: pts/xonotic, pts/openarena, pts/tesseract, pts/unigine-valley and pts/unigine-heaven




Geometric mean based upon tests: pts/bioshock-infinite, pts/dota2, pts/metroll-redux, pts/portal, pts/ss3bfe and pts/tomb-raider

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 11:54.*