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4K Linux Gaming

AMD Ryzen 9 5900X 12-Core testing with a ASUS ROG CROSSHAIR VIII HERO (3402 BIOS) and NVIDIA GeForce RTX 3080 10GB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

NVIDIA 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 Device 1aef, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.04, Kernel: 5.8.0-48-generic (x86_64), Desktop: GNOME Shell 3.36.7, Display Server: X Server 1.20.9, Display Driver: NVIDIA 460.67, OpenGL: 4.6.0, Vulkan: 1.2.155, 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: 0xa201009

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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

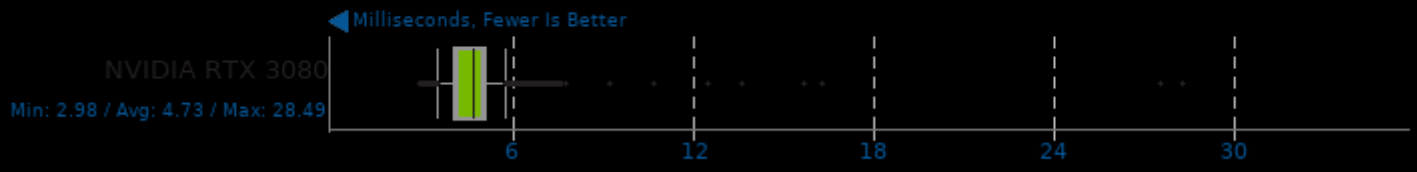
	NVIDIA RTX 3080
Basemark GPU - Vulkan - 3840 x 2160 - Medium (FPS)	563.28
Standard Deviation	0.1%
Basemark GPU - Vulkan - 3840 x 2160 - High (FPS)	163.54
Standard Deviation	0.1%
Xonotic - 3840 x 2160 - Ultimate (FPS)	347.3338316
Standard Deviation	0.7%
Unigine Valley - 3840 x 2160 - Fullscreen - OpenGL (FPS)	94.3164
Standard Deviation	0.2%
Unigine Superposition - 3840 x 2160 - Fullscreen - Medium - OpenGL (FPS)	74.6
Standard Deviation	0.1%
Unigine Superposition - 3840 x 2160 - Fullscreen - High - OpenGL (FPS)	52.1
Standard Deviation	0.1%
Unigine Superposition - 3840 x 2160 - Fullscreen - Low - OpenGL	169.6
Standard Deviation	0%
Unigine Heaven - 3840 x 2160 - Fullscreen - OpenGL (FPS)	91.9649
Standard Deviation	0.3%
Tesseract - 3840 x 2160 (FPS)	552.0745
Standard Deviation	0.3%
X-Plane - 3840 x 2160 - High - Vulkan (FPS)	166.67
Standard Deviation	2.2%
Total War: Three Kingdoms - 3840 x 2160 - Ultra - Battle Benchmark (FPS)	39.6
Standard Deviation	3.7%
Total War: Three Kingdoms - 3840 x 2160 - High - Battle Benchmark (FPS)	58.8
Standard Deviation	2.5%
Total War: Three Kingdoms - 3840 x 2160 - Low - Battle Benchmark (FPS)	143.6
Standard Deviation	1.2%
The Talos Principle - Vulkan - 3840 x 2160 (FPS)	175.8
Standard Deviation	0.3%
Strange Brigade - 3840 x 2160 - Medium (FPS)	187.6
Standard Deviation	0.6%
Strange Brigade - 3840 x 2160 - Ultra (FPS)	170.4
Standard Deviation	0.3%
Strange Brigade - 3840 x 2160 - High (FPS)	179.1
Standard Deviation	0.1%
Strange Brigade - 3840 x 2160 - Low (FPS)	203.0
Standard Deviation	0.5%
Shadow of the Tomb Raider - 3840 x 2160 - Highest - Off (FPS)	90.8
Standard Deviation	0.1%
Shadow of the Tomb Raider - 3840 x 2160 - High - Off (FPS)	98.5

Standard Deviation	0.1%
Portal 2 - 3840 x 2160 - OpenGL (FPS)	318.64
Standard Deviation	0%
HITMAN 2 - 3840 x 2160 - Ultra (FPS)	86.47
Standard Deviation	0%
HITMAN - 3840 x 2160 - Ultra (FPS)	97.91
Standard Deviation	0.7%
F1 2020 - 3840 x 2160 - Ultra (FPS)	162
Standard Deviation	0.7%
F1 2020 - 3840 x 2160 - High (FPS)	211
Standard Deviation	0.5%
F1 2020 - 3840 x 2160 - Low (FPS)	254
Standard Deviation	0.5%
F1 2017 - 3840 x 2160 - High - Off (FPS)	191
Standard Deviation	0.5%
Dawn of War III - 3840 x 2160 - Ultra - Vulkan (FPS)	104.511739
Standard Deviation	0.7%
Dota 2 - 3840 x 2160 - Vulkan (FPS)	198.6
Standard Deviation	2.6%
DiRT Rally 2.0 - 3840 x 1600 - Ultra (FPS)	109.816198
Standard Deviation	0.3%
DiRT Rally 2.0 - 3840 x 1600 - High (FPS)	173.844798
Standard Deviation	0.1%
DiRT Rally 2.0 - 3840 x 1600 - Low (FPS)	326.075155
Standard Deviation	0.3%
Counter-Strike: Global Offensive - 3840 x 2160 (FPS)	309.2
Standard Deviation	0.1%
Batman: Arkham Knight - 3840 x 2160 - High (FPS)	133.69
Standard Deviation	0.6%

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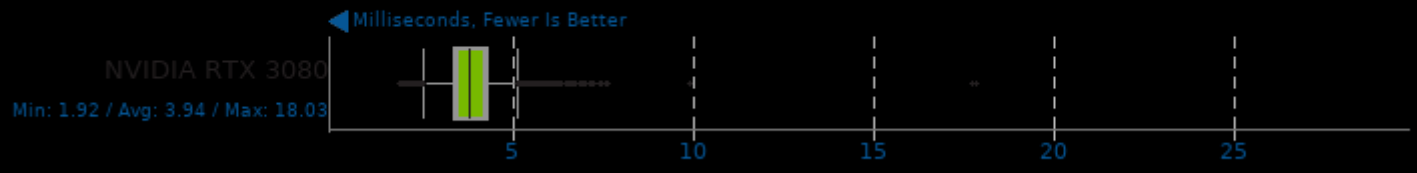
F1 2020

Resolution: 3840 x 2160 - Graphics Preset: High - Total Frame Time



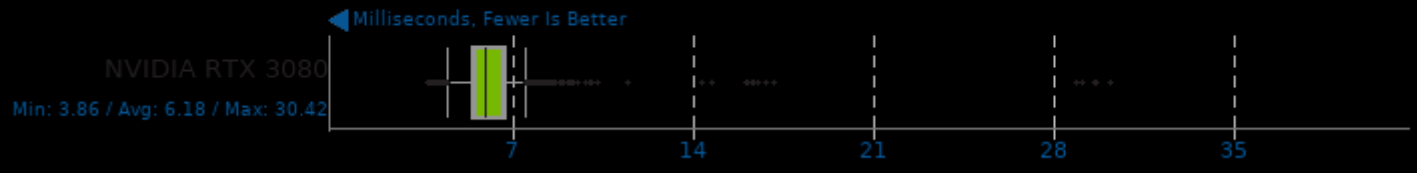
F1 2020

Resolution: 3840 x 2160 - Graphics Preset: Low - Total Frame Time



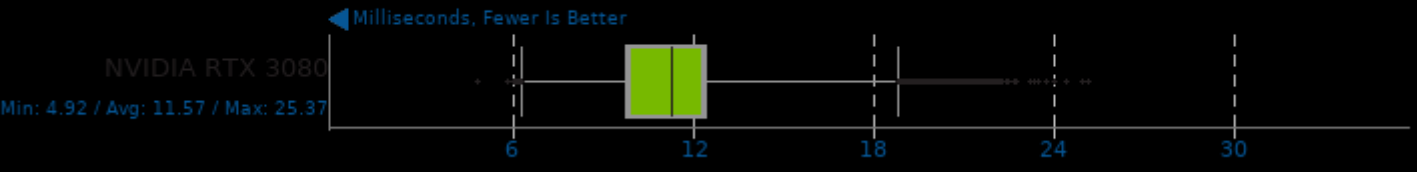
F1 2020

Resolution: 3840 x 2160 - Graphics Preset: Ultra - Total Frame Time



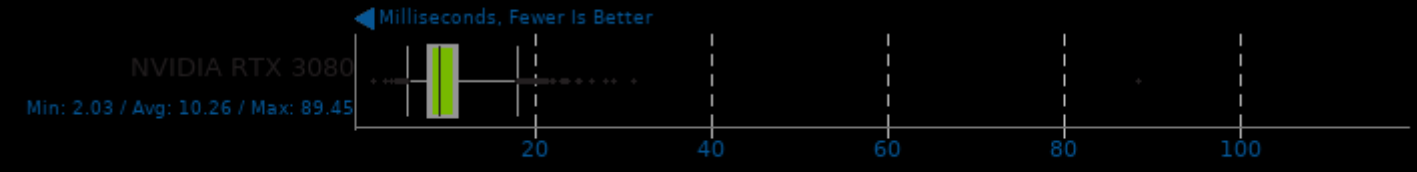
HITMAN 2

Resolution: 3840 x 2160 - Quality Level: Ultra - Total Frame Time



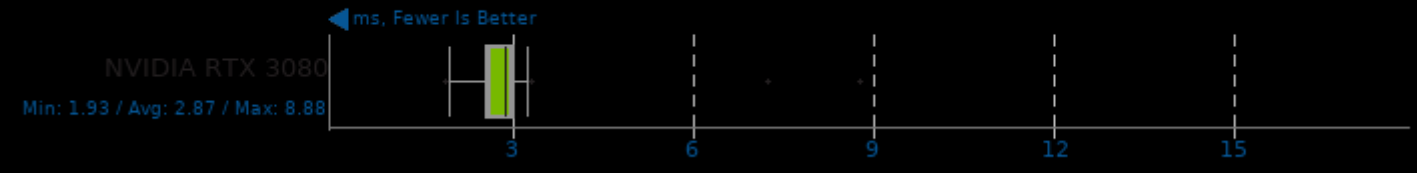
HITMAN

Resolution: 3840 x 2160 - Quality Level: Ultra - Total Frame Time

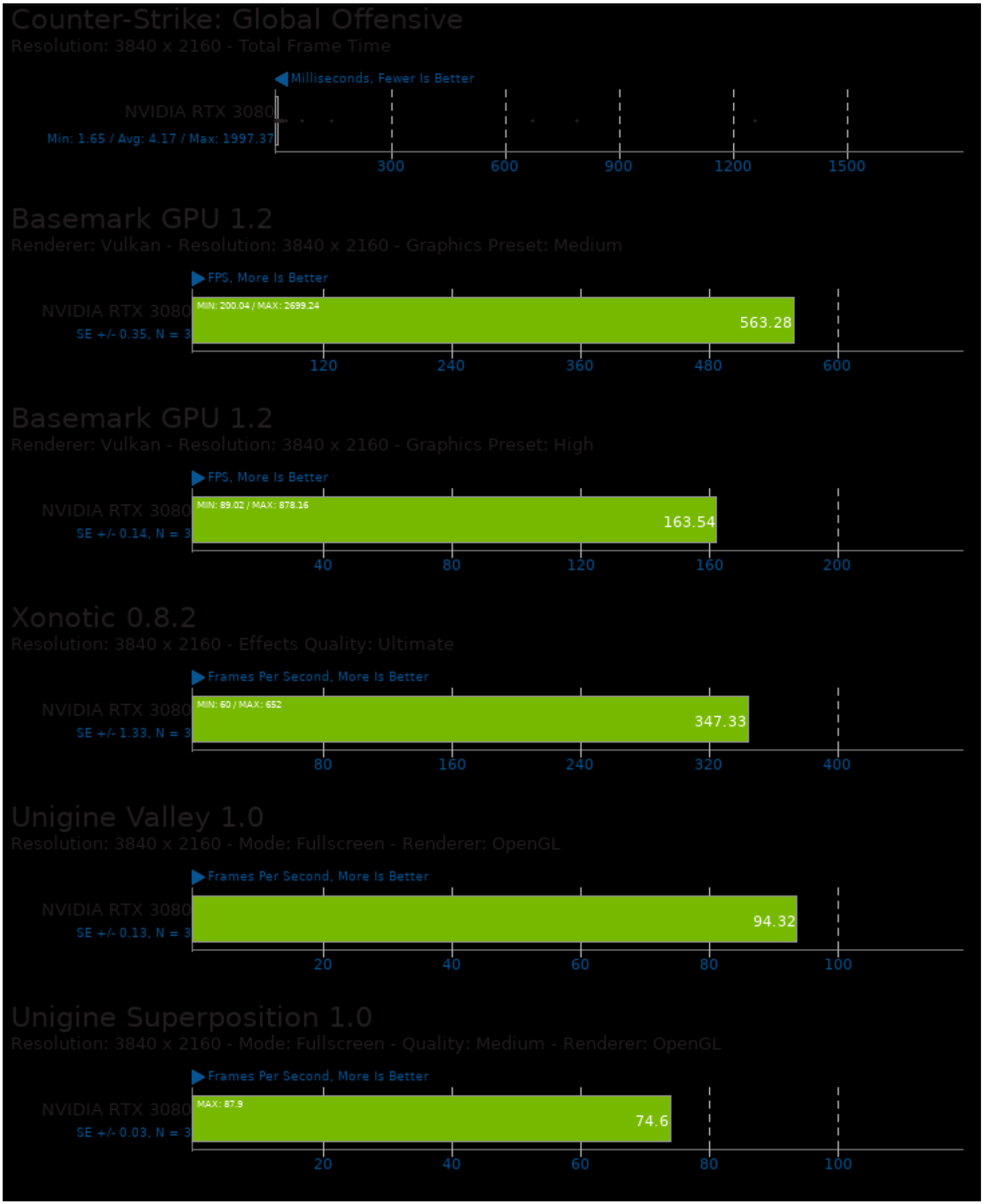


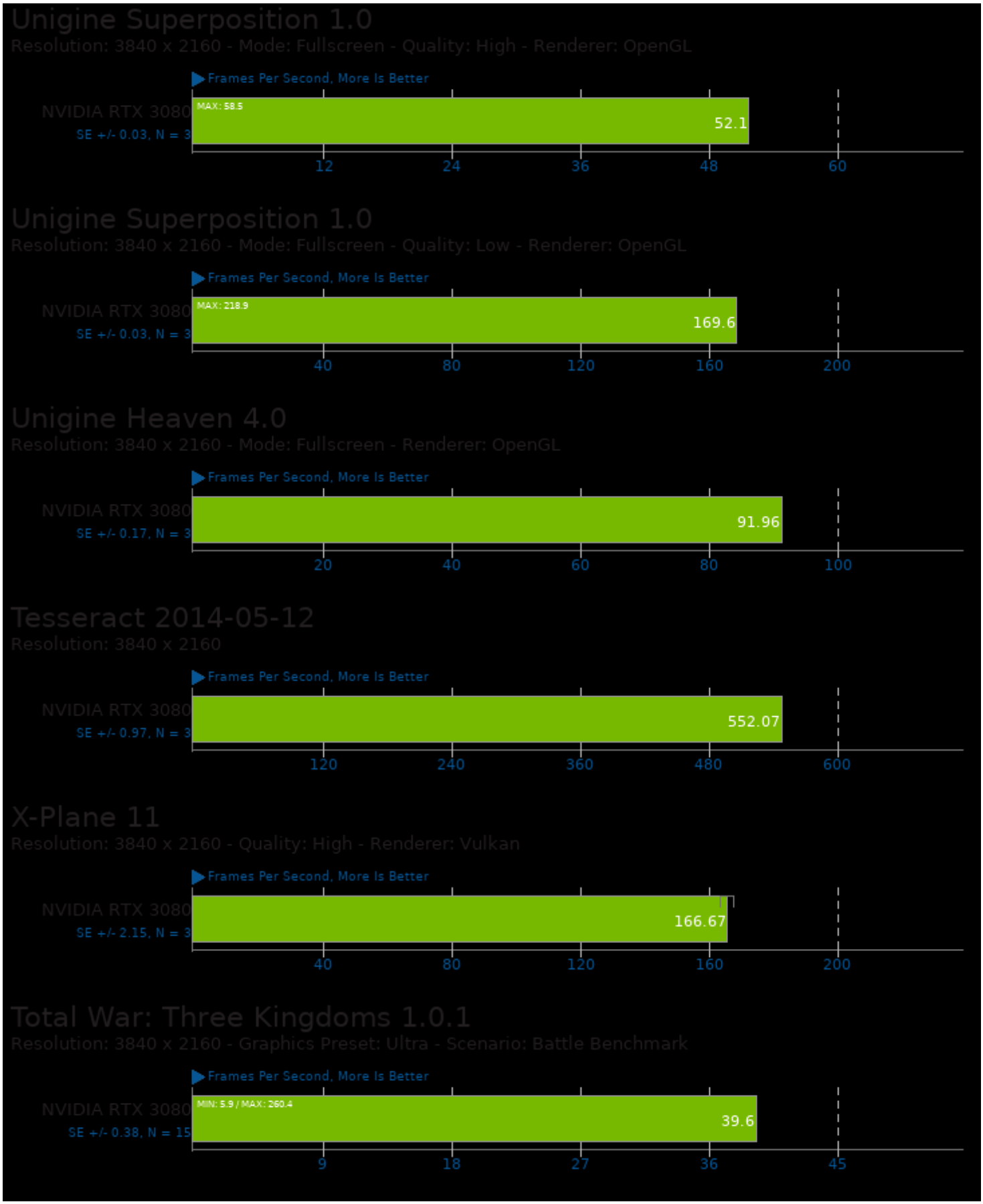
X-Plane 11

Resolution: 3840 x 2160 - Quality: High - Renderer: Vulkan - Per Frame Timing

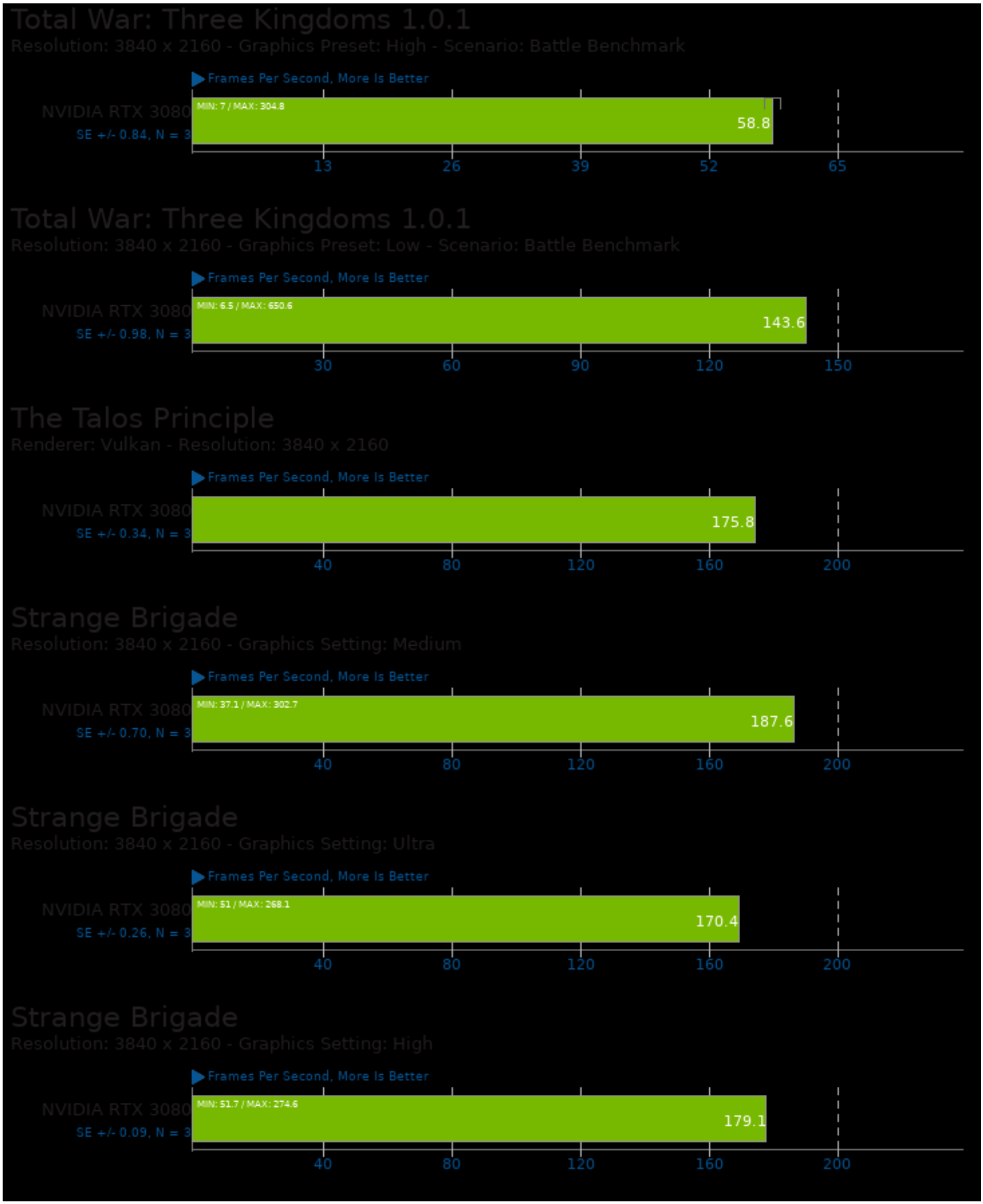


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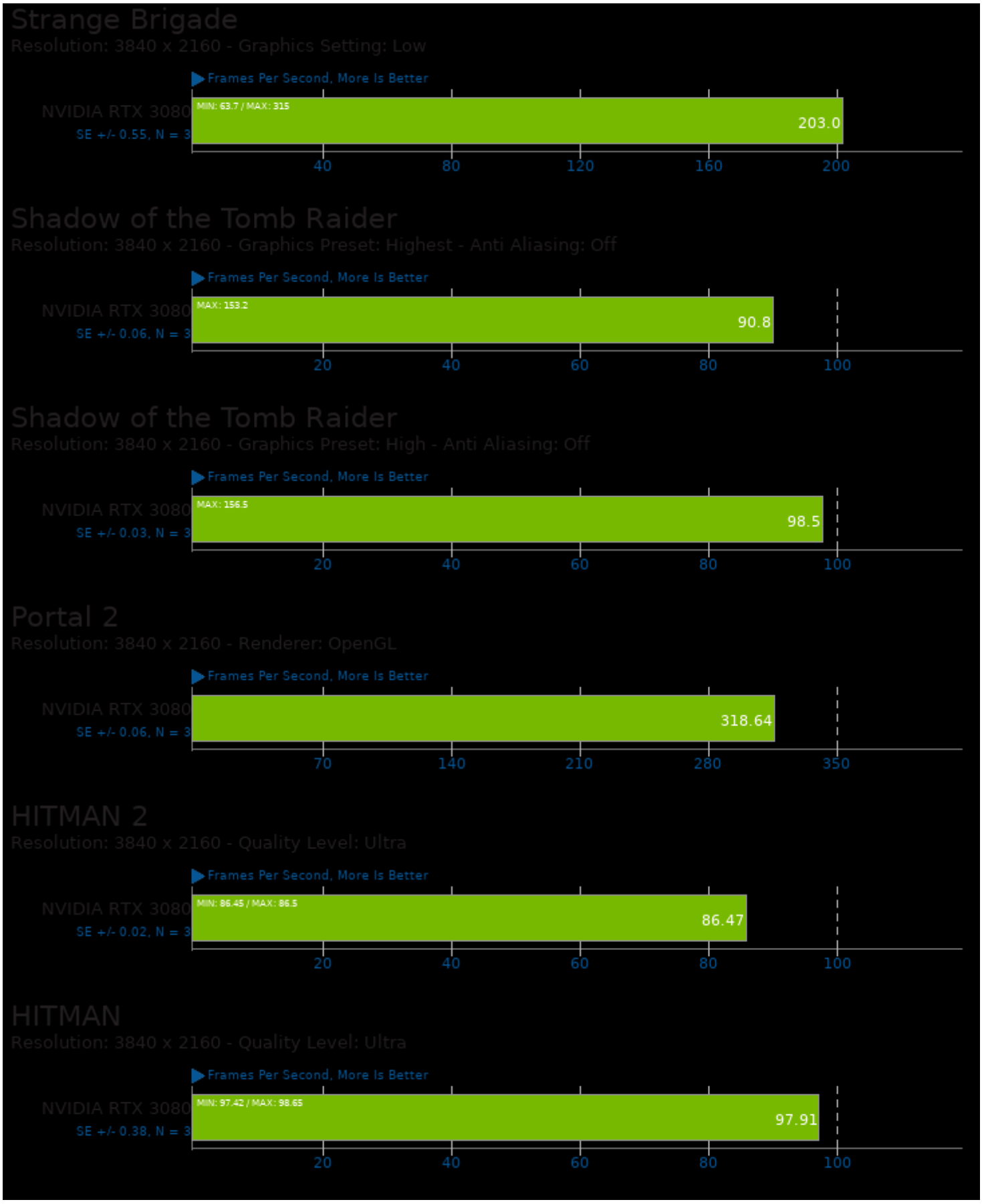



Unigine Superposition 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Quality: High - Renderer: OpenGL
Frames Per Second, More Is Better
NVIDIA RTX 3080
SE +/- 0.03, N = 3
MAX: 58.5
52.1
12
24
36
48
60
Unigine Superposition 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Quality: Low - Renderer: OpenGL
Frames Per Second, More Is Better
NVIDIA RTX 3080
SE +/- 0.03, N = 3
MAX: 218.9
169.6
40
80
120
160
200
Unigine Heaven 4.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
NVIDIA RTX 3080
SE +/- 0.17, N = 3
91.96
20
40
60
80
100
Tesseract 2014-05-12
Resolution: 3840 x 2160
Frames Per Second, More Is Better
NVIDIA RTX 3080
SE +/- 0.97, N = 3
552.07
120
240
360
480
600
X-Plane 11
Resolution: 3840 x 2160 - Quality: High - Renderer: Vulkan
Frames Per Second, More Is Better
NVIDIA RTX 3080
SE +/- 2.15, N = 3
166.67
40
80
120
160
200
Total War: Three Kingdoms 1.0.1
Resolution: 3840 x 2160 - Graphics Preset: Ultra - Scenario: Battle Benchmark
Frames Per Second, More Is Better
NVIDIA RTX 3080
SE +/- 0.38, N = 15
MIN: 5.9 / MAX: 260.4
39.6
9
18
27
36
45

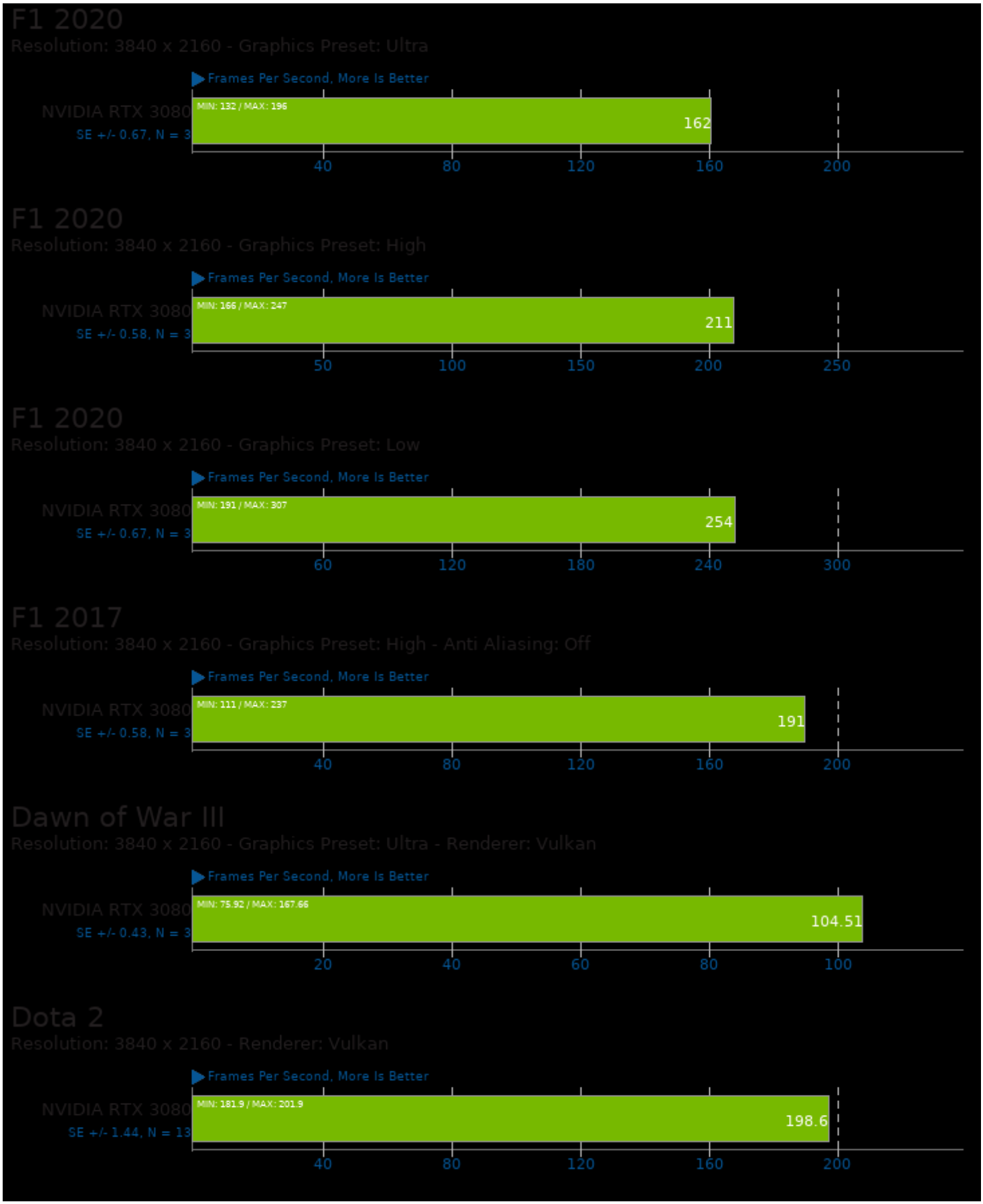
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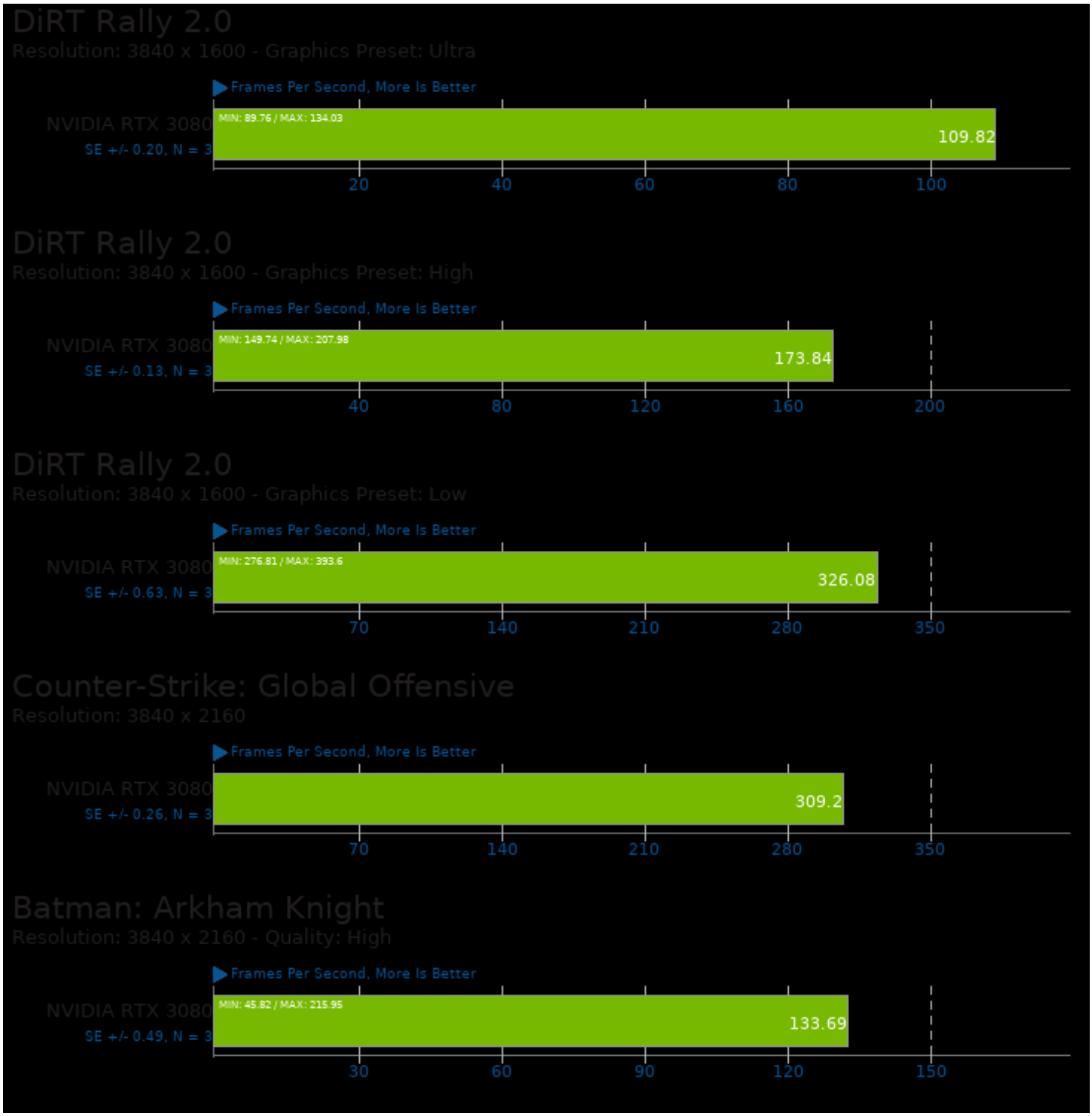


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