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march-2021-linux-gaming

Benchmarks by Michael Larabel for a future article.

Automated Executive Summary

RTX 3080 had the most wins, coming in first place for 96% of the tests.

Based on the geometric mean of all complete results, the fastest (RTX 3080) was 1.783x the speed of the slowest (RTX 2060 SUPER). TITAN RTX was 0.898x the speed of RTX 3080, RTX 2080 Ti was 0.932x the speed of TITAN RTX, RTX 3060 Ti was 0.892x the speed of RTX 2080 Ti, RTX 2080 SUPER was 0.983x the speed of RTX 3060 Ti, RTX 2070 SUPER was 0.893x the speed of RTX 2080 SUPER, RTX 2060 SUPER was 0.856x the speed of RTX 2070 SUPER.

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

HITMAN (Resolution: 3840 x 2160 - Quality Level: Medium - Total Frame Time) at 66.901x
HITMAN (Resolution: 2560 x 1440 - Quality Level: Ultra - Total Frame Time) at 37.691x
HITMAN (Resolution: 3840 x 2160 - Quality Level: Medium) at 2.201x
Unigine Heaven (Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: OpenGL) at 2.193x
Shadow of the Tomb Raider (Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off) at 2.076x
Rise of the Tomb Raider (Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off - Scene: Spine Of The Mountain) at 2.019x
Rise of the Tomb Raider (Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off - Scene: Geothermal

Valley) at 2.011x
The Talos Principle (Renderer: Vulkan - Resolution: 3840 x 2160) at 2.007x
Rise of the Tomb Raider (Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off - Scene: Prophets Tomb) at 2.007x
Unigine Heaven (Resolution: 2560 x 1440 - Mode: Fullscreen - Renderer: OpenGL) at 1.996x.

Test Systems:

RTX 3060 Ti

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3204 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: NVIDIA GeForce RTX 3060 Ti 8GB, Audio: NVIDIA Device 228b, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, Display Driver: NVIDIA 460.39, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.2.136, Vulkan: 1.2.155, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 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 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3204 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: NVIDIA GeForce RTX 3080 10GB, Audio: NVIDIA Device 1aef, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, Display Driver: NVIDIA 460.39, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.2.136, Vulkan: 1.2.155, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

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RTX 2080 Ti

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3204 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: NVIDIA GeForce RTX 2080 Ti 11GB, Audio: NVIDIA TU102 HD Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, Display Driver: NVIDIA 460.39, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.2.136, Vulkan: 1.2.155, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

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TITAN RTX

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3204 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: NVIDIA TITAN RTX 24GB, Audio: NVIDIA TU102 HD Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, Display Driver: NVIDIA 460.39, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.2.136, Vulkan: 1.2.155, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 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 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3204 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: NVIDIA GeForce RTX 2080 SUPER 8GB, Audio: NVIDIA TU104 HD Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, Display Driver: NVIDIA 460.39, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.2.136, Vulkan: 1.2.155, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

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RTX 2070 SUPER

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3204 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: NVIDIA GeForce RTX 2070 SUPER 8GB, Audio: NVIDIA TU104 HD Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, Display Driver: NVIDIA 460.39, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.2.136, Vulkan: 1.2.155, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 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 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3204 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: NVIDIA GeForce RTX 2060 SUPER 8GB, Audio: NVIDIA TU106 HD Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, Display Driver: NVIDIA 460.39, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.2.136, Vulkan: 1.2.155, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 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	RTX 3080	RTX 2080 Ti	TITAN RTX	RTX 2080 SUPER	RTX 2070 SUPER	RTX 2060 SUPER
HITMAN - 3840 x 2160 - Medium (FPS)	74.66	**103.24**	76.35	80.20	61.89	54.60	**46.90**
Normalized	72.32%	100%	73.95%	77.68%	59.95%	52.89%	45.43%
Standard Deviation	0.2%	0.2%	0.2%	0.2%	0%	0.1%	0.3%
Unigine Heaven - 3840 x 2160 - Fullscreen - OpenGL (FPS)	56.5396	**90.9540**	74.1992	70.1697	56.4170	49.3502	**41.4668**
Normalized	62.16%	100%	81.58%	77.15%	62.03%	54.26%	45.59%
Standard Deviation	0.2%	0%	0.2%	0.4%	0.1%	0.1%	0.2%
Shadow of the Tomb Raider - 3840 x 2160 - Medium - Off (FPS)	67.3	**101.1**	80.6	84.1	66.1	58.0	**48.7**
Normalized	66.57%	100%	79.72%	83.18%	65.38%	57.37%	48.17%
Standard Deviation	0.1%	0.1%	0%	0.1%	0%	0.1%	0.1%
Rise of the Tomb Raider - 3840 x 2160 - Medium - Off - S.O.T.M (FPS)	111.6	**161.5**	131.6	137.9	107.2	95.2	**80.0**
Normalized	69.1%	100%	81.49%	85.39%	66.38%	58.95%	49.54%
Standard Deviation	0.6%	0.8%	0.3%	0.3%	0.6%	1.5%	1.3%
Rise of the Tomb Raider - 3840 x 2160 - Medium - Off - Geothermal Valley (FPS)	89.3	**132.9**	107.2	114.6	89.1	78.8	**66.1**
Normalized	67.19%	100%	80.66%	86.23%	67.04%	59.29%	49.74%
Standard Deviation	0.1%	0.2%	0.4%	0.5%	0.3%	0.2%	0.1%
The Talos Principle - Vulkan - 3840 x 2160	120.5	**166.8**	133.1	142.5	109.9	96.8	**83.1**
Normalized	72.24%	100%	79.8%	85.43%	65.89%	58.03%	49.82%

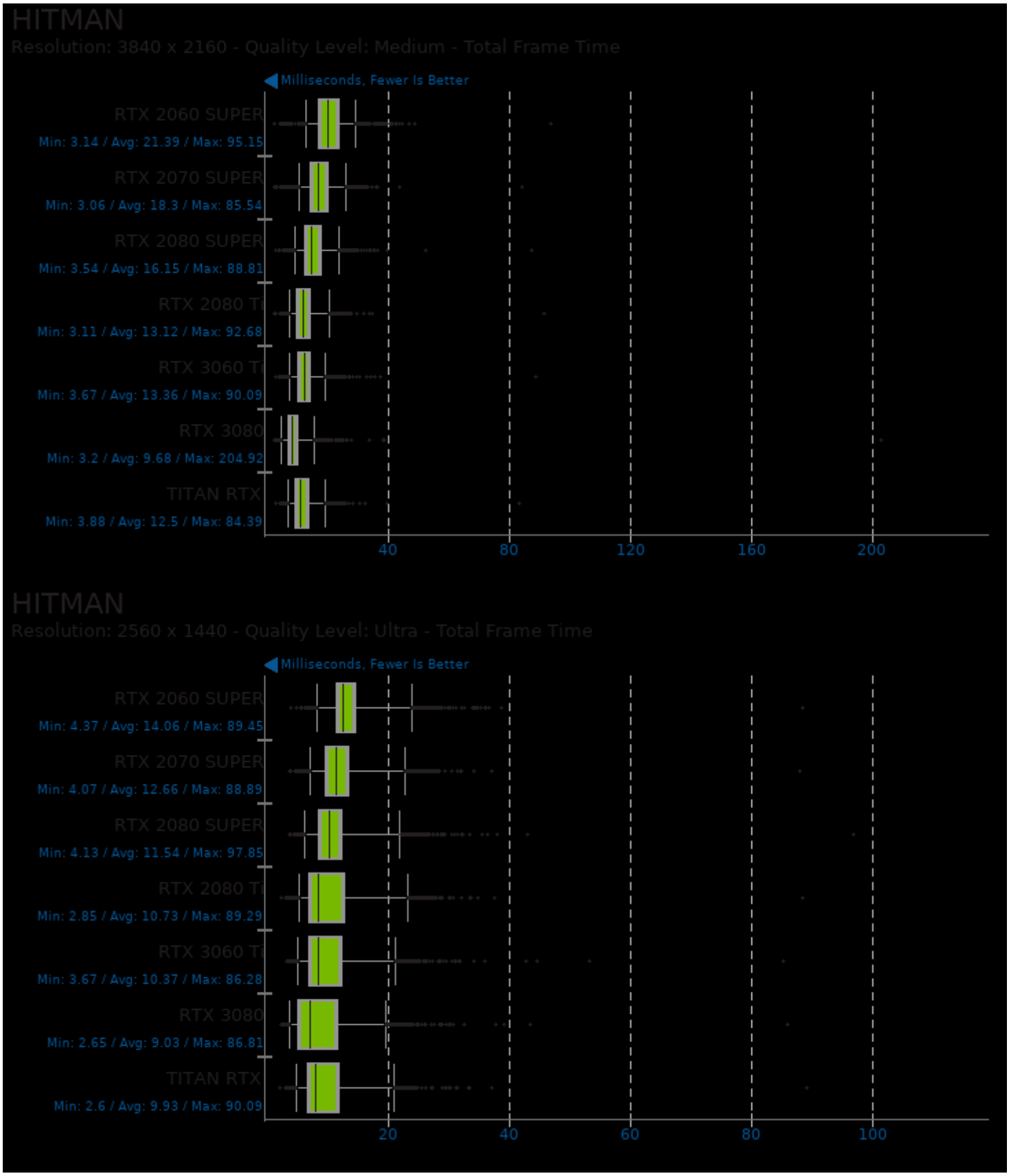
Standard Deviation	0.8%	1.5%	1.8%	1.2%	1.2%	1.7%	0.9%
Rise of the Tomb Raider - 3840 x 2160 - Medium - Off - Prophets Tomb (FPS)	81.9	**122.0**	101.3	105.7	82.5	72.5	**60.8**
Normalized	67.13%	100%	83.03%	86.64%	67.62%	59.43%	49.84%
Standard Deviation	0.1%	0%	0.5%	0.4%	0.5%	0.3%	0.2%
Unigine Heaven - 2560 x 1440 - Fullscreen - OpenGL (FPS)	132.995	**201.379**	166.005	176.563	139.122	121.921	**100.879**
Normalized	66.04%	100%	82.43%	87.68%	69.08%	60.54%	50.09%
Standard Deviation	0.1%	0.1%	0.6%	0.1%	0%	0.1%	0.1%
Unigine Superposition - 2560 x 1440 - Fullscreen - High - OpenGL (FPS)	67.9	**100.2**	82.4	86.2	68.4	60.6	**50.7**
Normalized	67.76%	100%	82.24%	86.03%	68.26%	60.48%	50.6%
Standard Deviation	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%	0%
Shadow of the Tomb Raider - 2560 x 1440 - Highest - SMAA (FPS)	105.0	**151.4**	123.6	128.2	103.3	91.7	**77.4**
Normalized	69.35%	100%	81.64%	84.68%	68.23%	60.57%	51.12%
Standard Deviation	0.1%	0%	0.1%	0.1%	0%	0.1%	0.1%
Dawn of War III - 3840 x 2160 - Ultra - Vulkan (FPS)	72.351784	**95.493879**	77.557520	86.512817	68.069921	59.264416	**49.173738**
Normalized	75.77%	100%	81.22%	90.6%	71.28%	62.06%	51.49%
Standard Deviation	0.4%	0.9%	0.2%	0.5%	0.8%	0.8%	0.4%
Unigine Superposition - 3840 x 2160 - Fullscreen - Low - OpenGL (FPS)	115.3	**166.8**	141.8	148.8	116.0	102.6	**86.5**
Normalized	69.12%	100%	85.01%	89.21%	69.54%	61.51%	51.86%
Standard Deviation	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Rise of the Tomb Raider - 2560 x 1440 - Very High - FXAA - Prophets Tomb (FPS)	129.9	**185.6**	158.6	166.3	132.5	117.1	**98.9**
Normalized	69.99%	100%	85.45%	89.6%	71.39%	63.09%	53.29%
Standard Deviation	0.2%	0.3%	0.4%	0.1%	0.1%	0.2%	0.2%
Rise of the Tomb Raider - 2560 x 1440 - Very High - FXAA - S.O.T.M (FPS)	161.5	**229.5**	196.4	206.3	162.4	143.4	**123.5**
Normalized	70.37%	100%	85.58%	89.89%	70.76%	62.48%	53.81%
Standard Deviation	0.7%	0.5%	1.7%	0.8%	0.3%	0.8%	0.7%
Dawn of War III - 3840 x 2160 - High - Vulkan (FPS)	79.304194	**99.462453**	83.050445	92.077889	74.897705	65.396713	**54.167099**
Normalized	79.73%	100%	83.5%	92.58%	75.3%	65.75%	54.46%
Standard Deviation	0.5%	0.6%	0.9%	0.5%	0.4%	0.4%	0.2%
Deus Ex: Mankind Divided - 3840 x 2160 - Low Quality (FPS)	59.5	**78.0**	67.6	70.8	56.5	51.2	**43.3**
Normalized	76.28%	100%	86.67%	90.77%	72.44%	65.64%	55.51%
Standard Deviation	0.2%	0.4%	1.1%	0.8%	0.2%	0.7%	0.9%

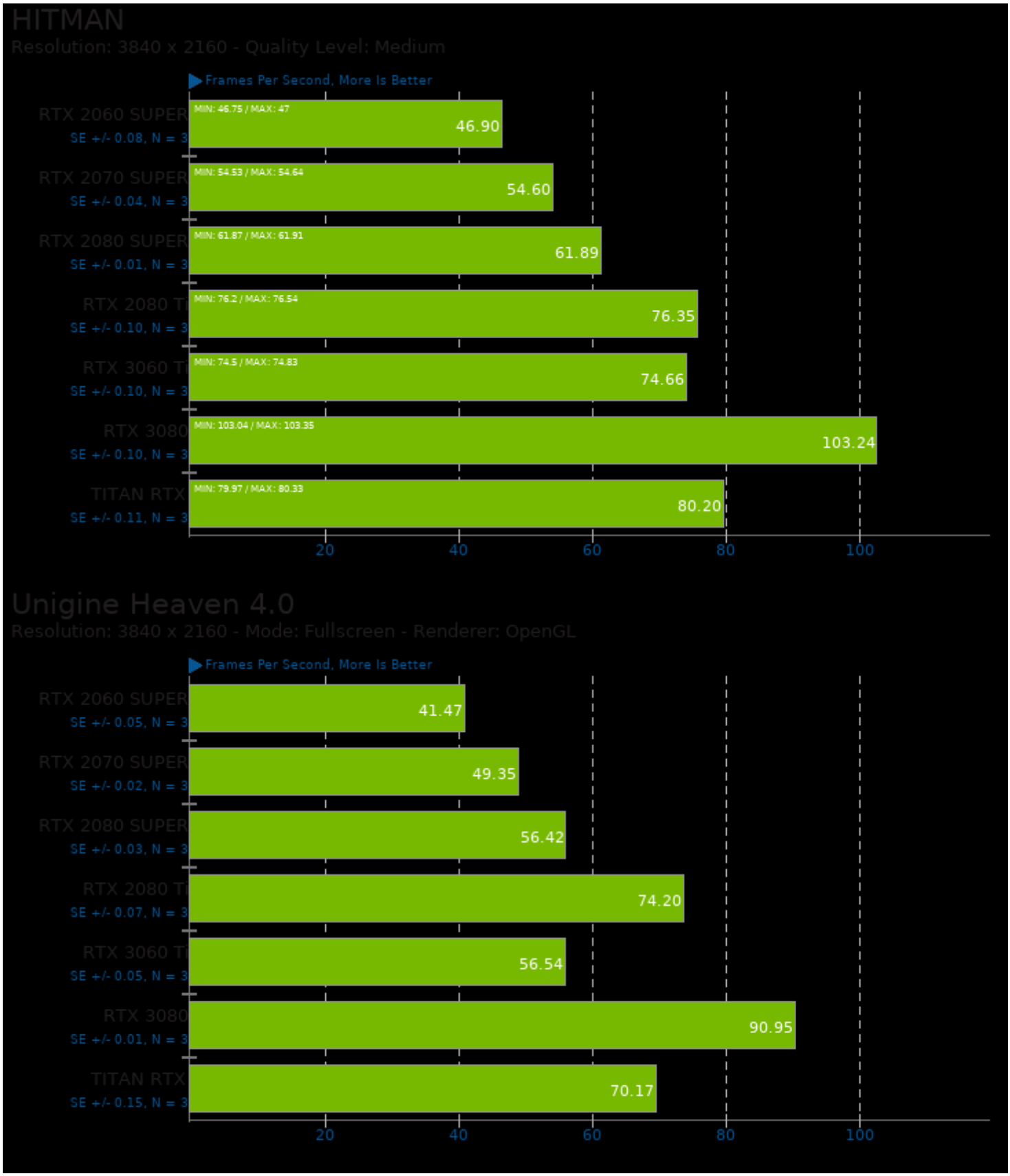
Rise of the Tomb Raider - 2560 x 1440 - Very High - FXAA - Geothermal Valley (FPS)	120.8	**164.5**	144.6	154.4	127.5	112.3	**94.4**
Normalized	73.43%	100%	87.9%	93.86%	77.51%	68.27%	57.39%
Standard Deviation	0.6%	2.7%	4.2%	1.9%	0.3%	0.3%	0.1%
Meta Performance Per Watts - P.P.W (Performance/Watts)	112.4801	**149.4251**	125.6656	135.5889	105.8073	99.9175	**88.6491**
Normalized	75.28%	100%	84.1%	90.74%	70.81%	66.87%	59.33%
Tesseract - 3840 x 2160 (FPS)	419.0193	**532.2610**	423.6161	459.4923	397.0156	356.9668	**320.2597**
Normalized	78.72%	100%	79.59%	86.33%	74.59%	67.07%	60.17%
Standard Deviation	1.1%	1.7%	1.7%	1.2%	1%	0.2%	1.3%
F1 2017 - 3840 x 2160 - Medium - Off (FPS)	143	**172**	148	166	140	124	**105**
Normalized	83.14%	100%	86.05%	96.51%	81.4%	72.09%	61.05%
Standard Deviation	1.2%	1%	1.6%	0.9%	0.8%	0.5%	2%
Xonotic - 3840 x 2160 - Ultimate (FPS)	239.2276814	**338.3473697**	273.0724888	331.3656357	265.2999938	235.8706662	**208.0655234**
Normalized	70.7%	100%	80.71%	97.94%	78.41%	69.71%	61.49%
Standard Deviation	0.2%	0.5%	8.5%	0.2%	0.4%	0.1%	0.3%
Portal 2 - 3840 x 2160 - OpenGL (FPS)	225.29	**302.08**	281.69	290.62	241.95	215.66	**186.40**
Normalized	74.58%	100%	93.25%	96.21%	80.09%	71.39%	61.71%
Standard Deviation	0.2%	0.4%	0.1%	0.1%	0.2%	0.2%	0.1%
Deus Ex: Mankind Divided - 2560 x 1440 - High Quality (FPS)	73.4	**87.0**	76.8	83.9	70.5	64.4	**55.8**
Normalized	84.37%	100%	88.28%	96.44%	81.03%	74.02%	64.14%
Standard Deviation	0.1%	0.3%	1.3%	0.4%	0.3%	0.2%	0.1%
HITMAN - 2560 x 1440 - Ultra (FPS)	96.46	**110.09**	92.86	100.23	86.51	79.28	**71.12**
Normalized	87.62%	100%	84.35%	91.04%	78.58%	72.01%	64.6%
Standard Deviation	0.4%	0.6%	0.3%	0.5%	0.2%	0.3%	0.3%
Dota 2 - 3840 x 2160 - Vulkan (FPS)	160.2	177.3	155.9	**178.7**	161.5	147.8	**130.0**
Normalized	89.65%	99.22%	87.24%	100%	90.37%	82.71%	72.75%
Standard Deviation	0.8%	2.4%	1.6%	2.3%	2.5%	2.3%	2.4%
F1 2017 - 2560 x 1440 - Ultra High - Off (FPS)	147	**154**	130	**154**	147	138	**123**
Normalized	95.45%	100%	84.42%	100%	95.45%	89.61%	79.87%
Standard Deviation	1.7%	2.7%	3.2%	2.3%	1%	0.4%	0.8%
Dawn of War III - 2560 x 1440 - Ultra - Vulkan (FPS)	101.965154	**109.443171**	99.761368	106.733154	100.026711	98.335442	**91.191424**
Normalized	93.17%	100%	91.15%	97.52%	91.4%	89.85%	83.32%
Standard Deviation	1.1%	1.7%	1%	1.7%	2%	1%	0.4%
Unigine Superposition - 2560 x 1440 - Fullscreen - High - OpenGL (FPS/Watt)	**0.39**	0.35	0.36	0.35	**0.32**	0.33	**0.32**
Normalized	100%	89.74%	92.31%	89.74%	82.05%	84.62%	82.05%

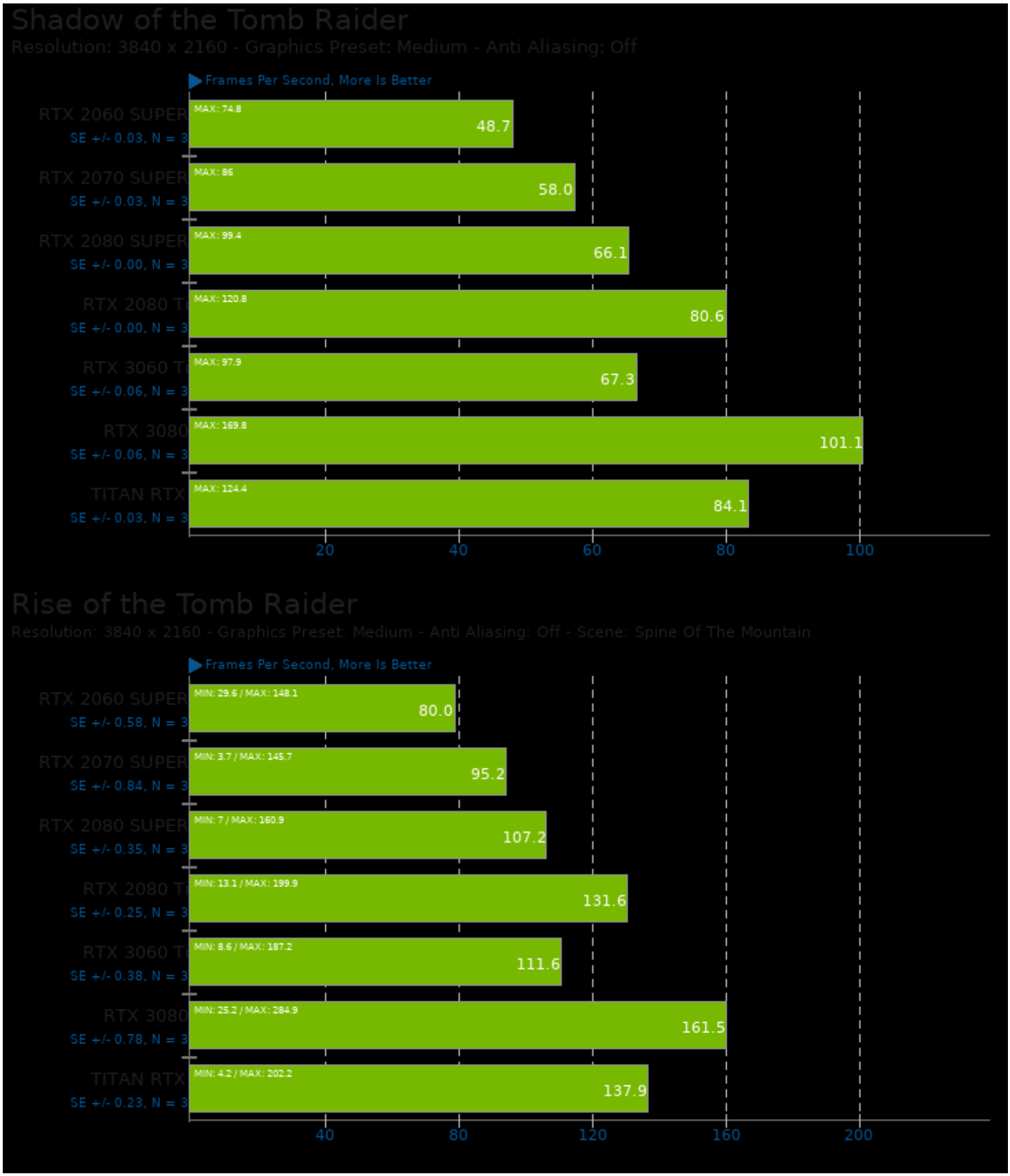
Unigine Heaven - 2560 x 1440 - Fullscreen - OpenGL (FPS/Watt)	**0.70**	0.66	0.68	0.66	**0.59**	0.60	0.61
Normalized	100%	94.29%	97.14%	94.29%	84.29%	85.71%	87.14%
Shadow of the Tomb Raider - 2560 x 1440 - Highest - SMAA	**0.59**	0.54	0.54	0.52	**0.49**	**0.49**	0.50
Normalized	100%	91.53%	91.53%	88.14%	83.05%	83.05%	84.75%
Rise of the Tomb Raider - 2560 x 1440 - Very High - FXAA - Geothermal Valley (FPS/Watt)	**0.79**	**0.67**	0.72	0.70	0.70	0.69	0.69
Normalized	100%	84.81%	91.14%	88.61%	88.61%	87.34%	87.34%
F1 2017 - 2560 x 1440 - Ultra High - Off (FPS/Watt)	**0.94**	**0.69**	0.71	0.72	0.84	0.81	0.83
Normalized	100%	73.4%	75.53%	76.6%	89.36%	86.17%	88.3%
Dawn of War III - 2560 x 1440 - Ultra - Vulkan (FPS/Watt)	**0.96**	**0.71**	0.77	0.76	0.84	0.84	0.87
Normalized	100%	73.96%	80.21%	79.17%	87.5%	87.5%	90.63%
Deus Ex: Mankind Divided - 2560 x 1440 - High Quality (FPS/Watt)	**0.49**	**0.38**	0.41	0.39	0.44	0.43	0.40
Normalized	100%	77.55%	83.67%	79.59%	89.8%	87.76%	81.63%
Xonotic - 3840 x 2160 - Ultimate (FPS/Watt)	**1.71**	**1.49**	1.53	1.60	**1.71**	1.61	**1.49**
Normalized	100%	87.13%	89.47%	93.57%	100%	94.15%	87.13%
Unigine Superposition - 3840 x 2160 - Fullscreen - Low - OpenGL (FPS/Watt)	**0.65**	0.59	0.61	0.58	**0.53**	**0.53**	0.54
Normalized	100%	90.77%	93.85%	89.23%	81.54%	81.54%	83.08%
Unigine Heaven - 3840 x 2160 - Fullscreen - OpenGL (FPS/Watt)	**0.30**	**0.30**	**0.30**	0.26	**0.24**	**0.24**	0.25
Normalized	100%	100%	100%	86.67%	80%	80%	83.33%
Tesseract - 3840 x 2160 (FPS/Watt)	**2.70**	2.18	2.23	**2.13**	2.40	2.28	2.27
Normalized	100%	80.74%	82.59%	78.89%	88.89%	84.44%	84.07%
The Talos Principle - Vulkan - 3840 x 2160	**0.95**	0.85	0.84	0.82	0.75	0.71	**0.68**
Normalized	100%	89.47%	88.42%	86.32%	78.95%	74.74%	71.58%
Shadow of the Tomb Raider - 3840 x 2160 - Medium - Off (FPS/Watt)	**0.37**	0.35	0.35	0.34	**0.30**	**0.30**	0.31
Normalized	100%	94.59%	94.59%	91.89%	81.08%	81.08%	83.78%

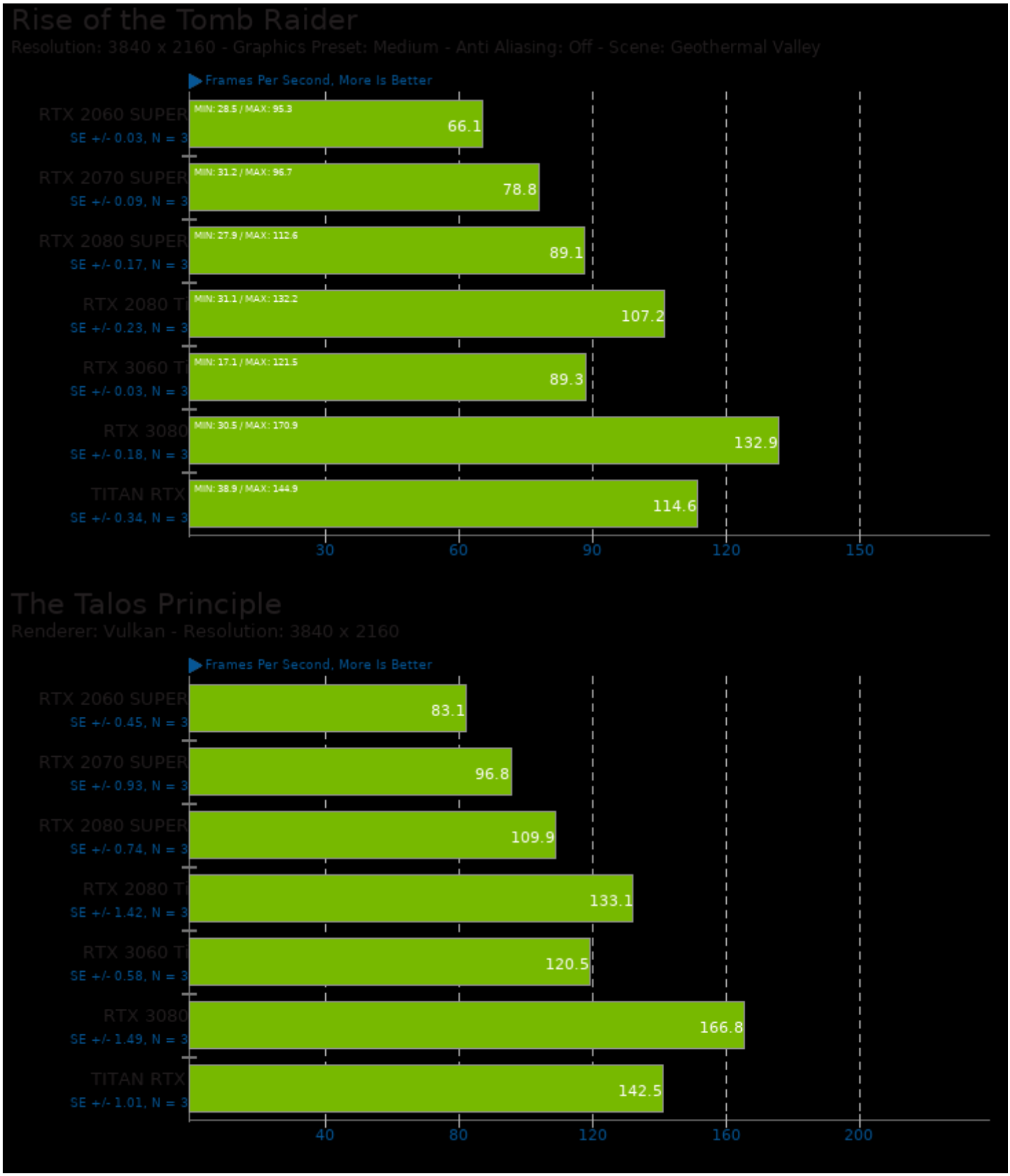
march-2021-linux-gaming

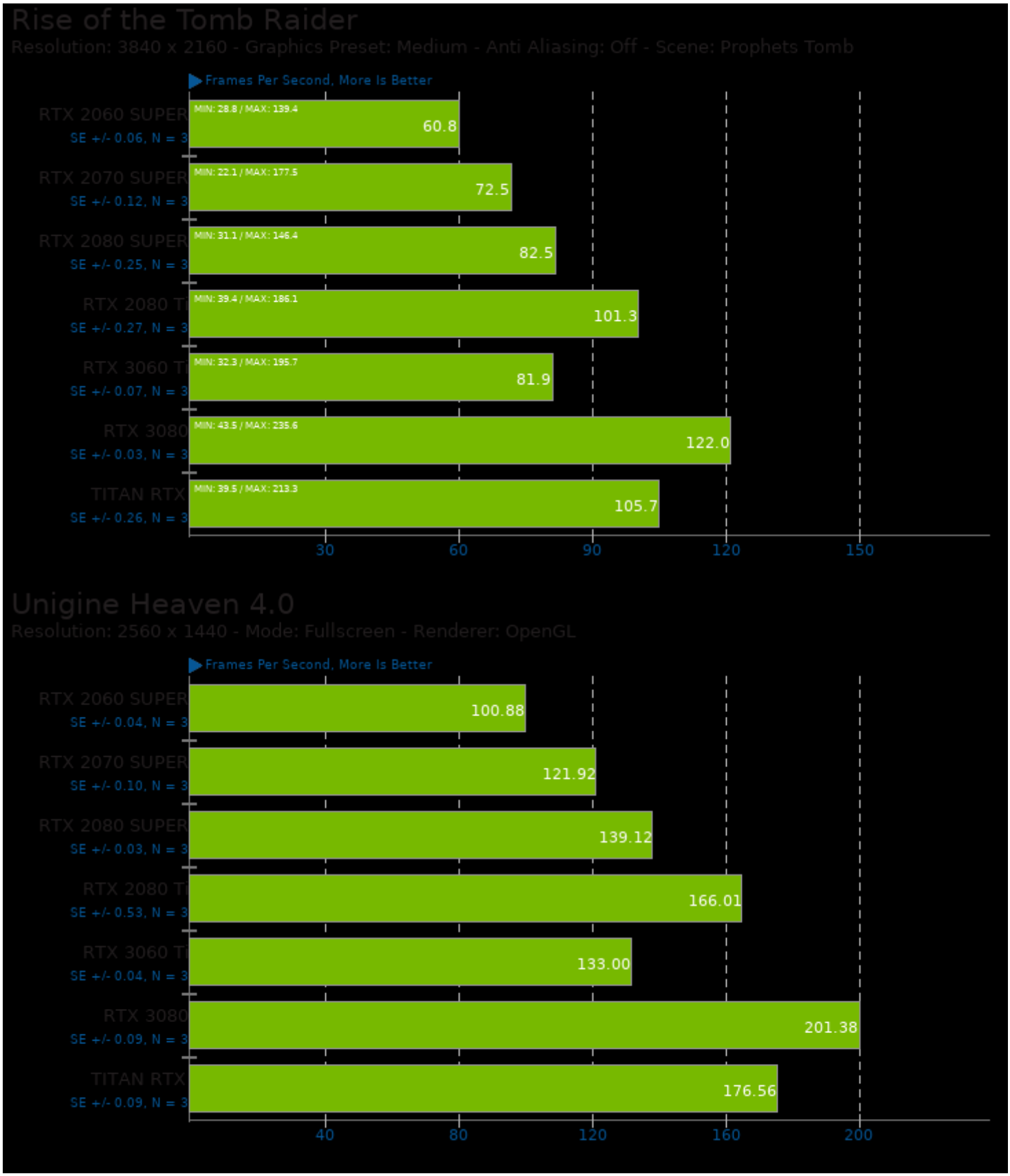
Rise of the Tomb Raider - 3840 x 2160 - Medium - Off - Geothermal Valley (FPS/Watt)	**0.56**	0.52	0.51	0.51	**0.46**	0.47	0.47
Normalized	100%	92.86%	91.07%	91.07%	82.14%	83.93%	83.93%
Portal 2 - 3840 x 2160 - OpenGL (FPS/Watt)	2.27	2.07	**2.28**	2.19	2.21	2.03	**1.83**
Normalized	99.56%	90.79%	100%	96.05%	96.93%	89.04%	80.26%
F1 2017 - 3840 x 2160 - Medium - Off (FPS/Watt)	**0.87**	0.70	0.80	0.71	**0.69**	0.70	0.71
Normalized	100%	80.46%	91.95%	81.61%	79.31%	80.46%	81.61%
Dawn of War III - 3840 x 2160 - Ultra - Vulkan (FPS/Watt)	**0.61**	0.50	0.52	0.51	0.47	**0.46**	**0.46**
Normalized	100%	81.97%	85.25%	83.61%	77.05%	75.41%	75.41%
Dawn of War III - 3840 x 2160 - High - Vulkan (FPS/Watt)	**0.67**	0.54	0.56	0.54	0.52	0.51	**0.50**
Normalized	100%	80.6%	83.58%	80.6%	77.61%	76.12%	74.63%
Dota 2 - 3840 x 2160 - Vulkan (FPS/Watt)	**1.88**	**1.28**	1.36	1.40	1.48	1.44	1.39
Normalized	100%	68.09%	72.34%	74.47%	78.72%	76.6%	73.94%
Deus Ex: Mankind Divided - 3840 x 2160 - Low Quality (FPS/Watt)	0.38	**0.32**	0.33	**0.54**	0.34	0.33	0.50
Normalized	70.37%	59.26%	61.11%	100%	62.96%	61.11%	92.59%

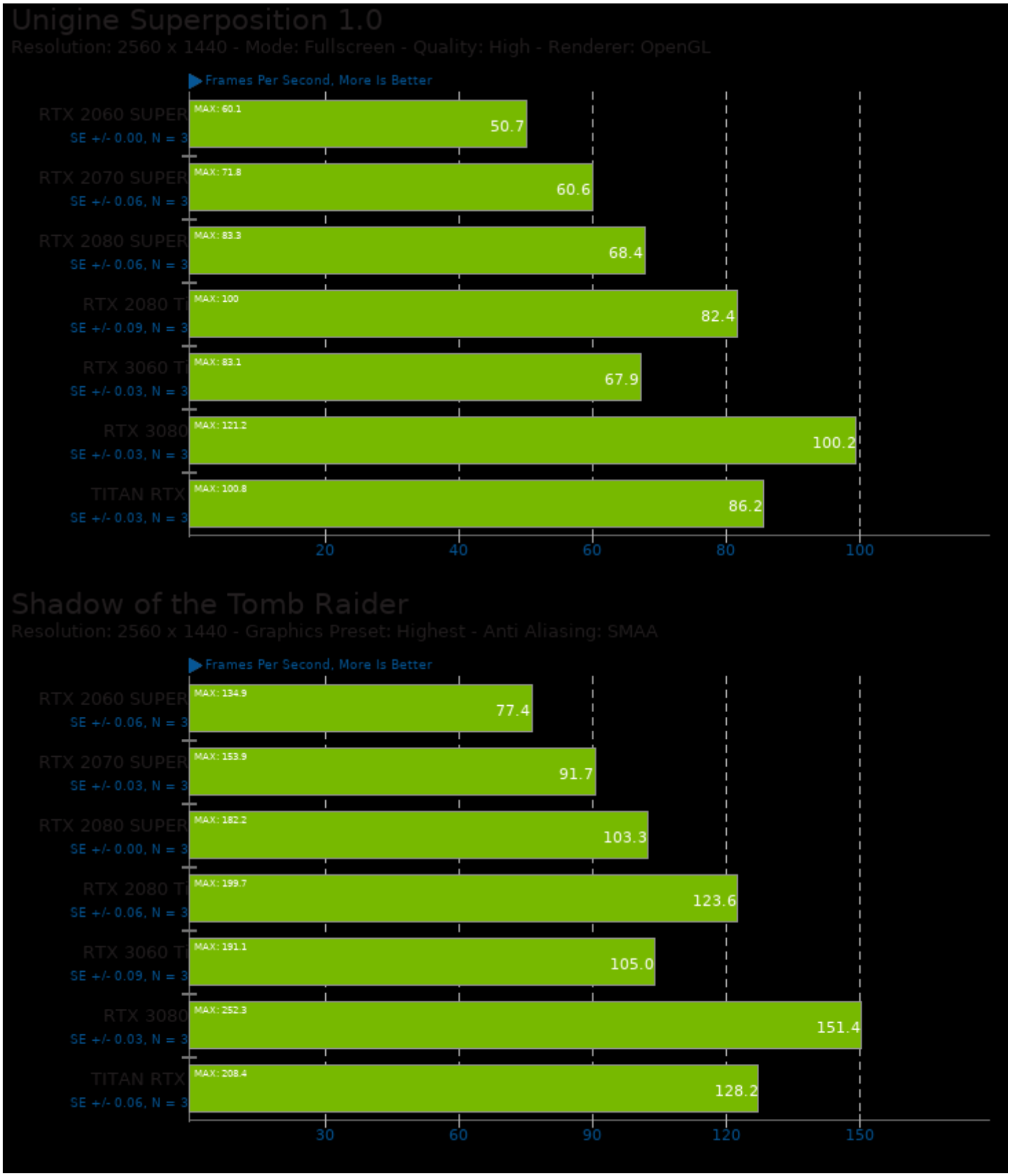

HITMAN
Resolution: 3840 x 2160 - Quality Level: Medium - Total Frame Time
Milliseconds, Fewer Is Better
RTX 2060 SUPER
Min: 3.14 / Avg: 21.39 / Max: 95.15
RTX 2070 SUPER
Min: 3.06 / Avg: 18.3 / Max: 85.54
RTX 2080 SUPER
Min: 3.54 / Avg: 16.15 / Max: 88.81
RTX 2080 Ti
Min: 3.11 / Avg: 13.12 / Max: 92.68
RTX 3060 Ti
Min: 3.67 / Avg: 13.36 / Max: 90.09
RTX 3080
Min: 3.2 / Avg: 9.68 / Max: 204.92
TITAN RTX
Min: 3.88 / Avg: 12.5 / Max: 84.39
40
80
120
160
200
HITMAN
Resolution: 2560 x 1440 - Quality Level: Ultra - Total Frame Time
Milliseconds, Fewer Is Better
RTX 2060 SUPER
Min: 4.37 / Avg: 14.06 / Max: 89.45
RTX 2070 SUPER
Min: 4.07 / Avg: 12.66 / Max: 88.89
RTX 2080 SUPER
Min: 4.13 / Avg: 11.54 / Max: 97.85
RTX 2080 Ti
Min: 2.85 / Avg: 10.73 / Max: 89.29
RTX 3060 Ti
Min: 3.67 / Avg: 10.37 / Max: 86.28
RTX 3080
Min: 2.65 / Avg: 9.03 / Max: 86.81
TITAN RTX
Min: 2.6 / Avg: 9.93 / Max: 90.09
20
40
60
80
100

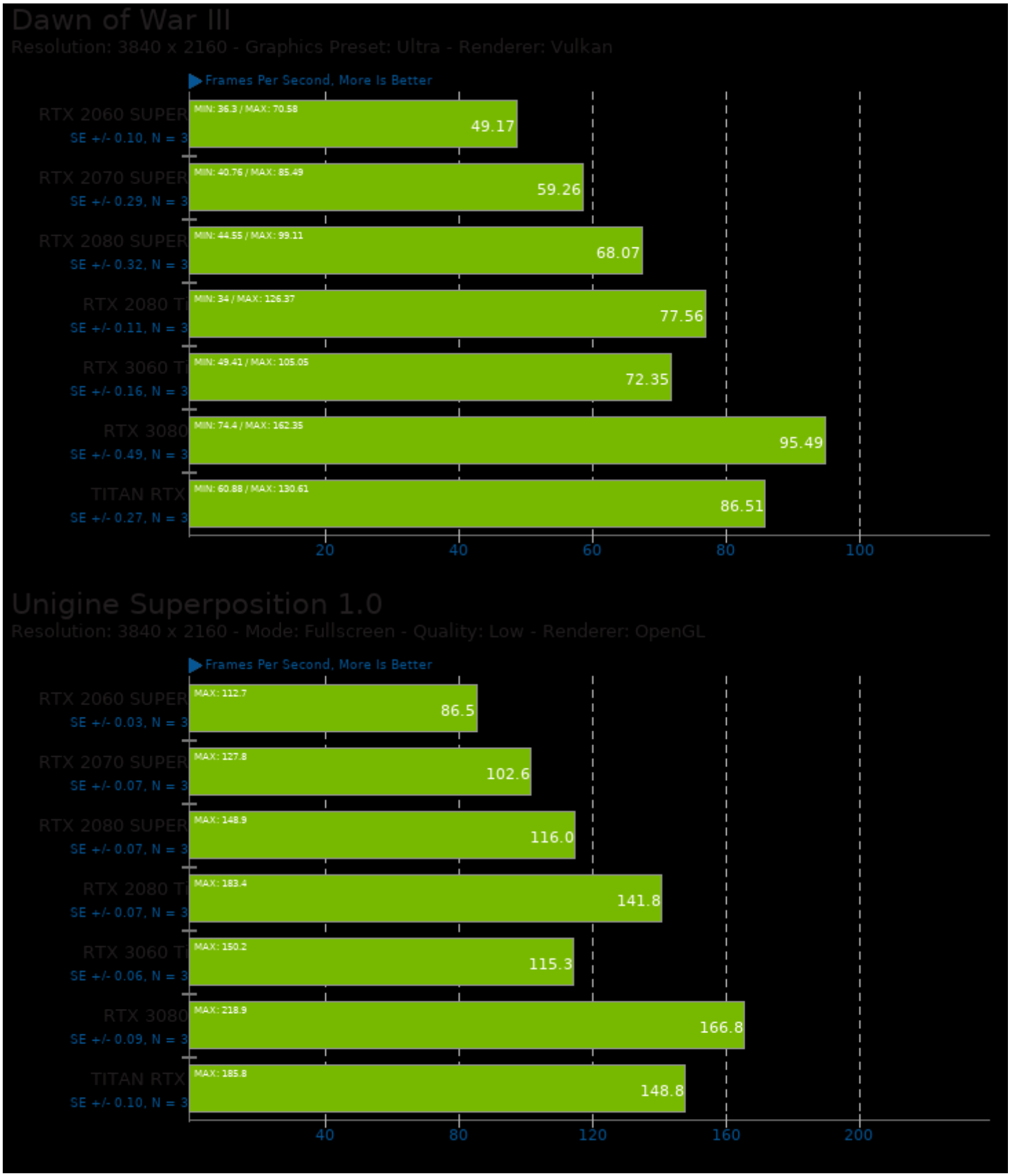

HITMAN
Resolution: 3840 x 2160 - Quality Level: Medium
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.08, N = 3
MIN: 46.75 / MAX: 47
46.90
RTX 2070 SUPER
SE +/- 0.04, N = 3
MIN: 54.53 / MAX: 54.64
54.60
RTX 2080 SUPER
SE +/- 0.01, N = 3
MIN: 61.87 / MAX: 61.91
61.89
RTX 2080 Ti
SE +/- 0.10, N = 3
MIN: 76.2 / MAX: 76.54
76.35
RTX 3060 Ti
SE +/- 0.10, N = 3
MIN: 74.5 / MAX: 74.83
74.66
RTX 3080
SE +/- 0.10, N = 3
MIN: 103.04 / MAX: 103.35
103.24
TITAN RTX
SE +/- 0.11, N = 3
MIN: 79.97 / MAX: 80.33
80.20
20
40
60
80
100
Unigine Heaven 4.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.05, N = 3
41.47
RTX 2070 SUPER
SE +/- 0.02, N = 3
49.35
RTX 2080 SUPER
SE +/- 0.03, N = 3
56.42
RTX 2080 Ti
SE +/- 0.07, N = 3
74.20
RTX 3060 Ti
SE +/- 0.05, N = 3
56.54
RTX 3080
SE +/- 0.01, N = 3
90.95
TITAN RTX
SE +/- 0.15, N = 3
70.17
20
40
60
80
100

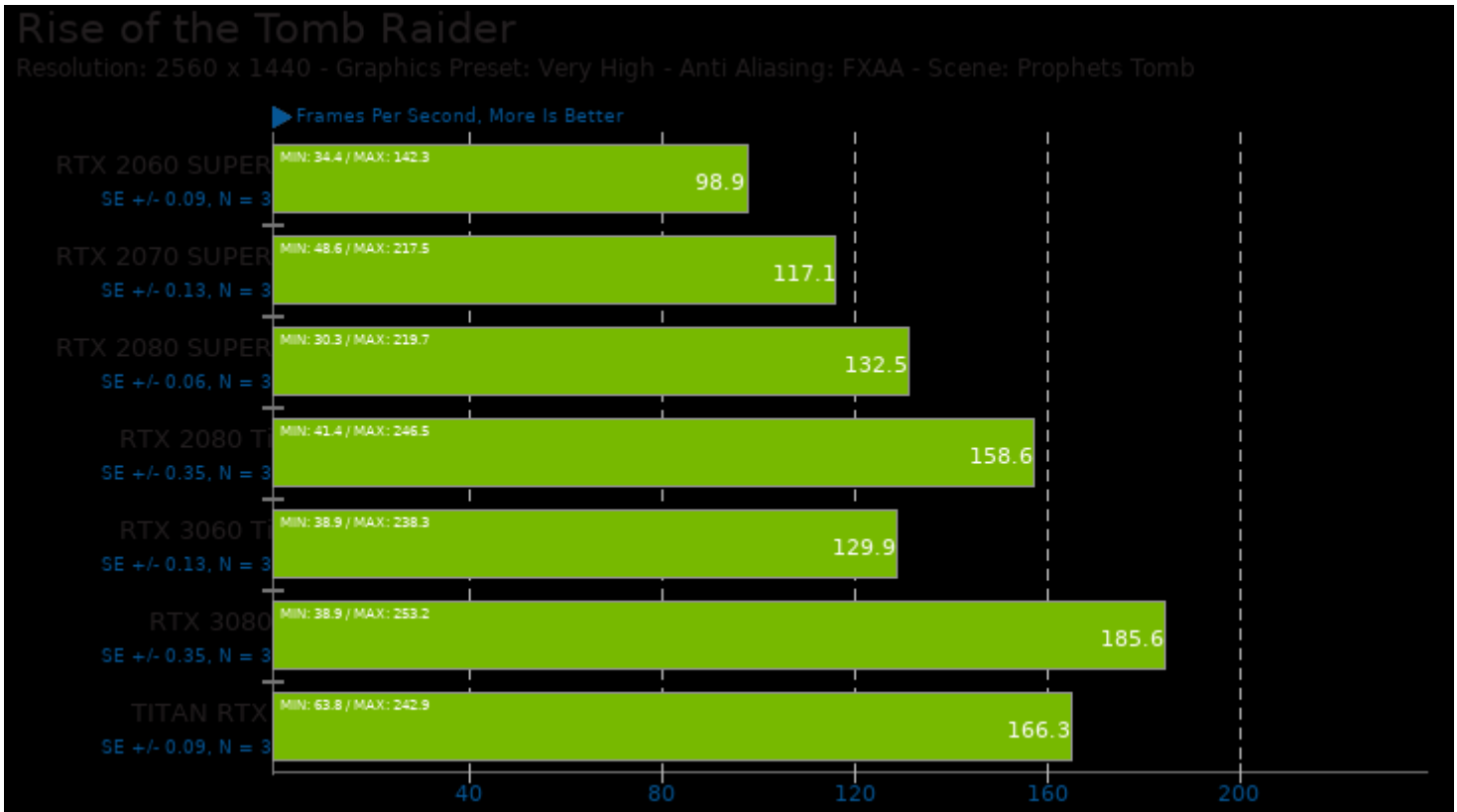

Shadow of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.03, N = 3
MAX: 74.8
48.7
RTX 2070 SUPER
SE +/- 0.03, N = 3
MAX: 86
58.0
RTX 2080 SUPER
SE +/- 0.00, N = 3
MAX: 99.4
66.1
RTX 2080 Ti
SE +/- 0.00, N = 3
MAX: 120.8
80.6
RTX 3060 Ti
SE +/- 0.06, N = 3
MAX: 97.9
67.3
RTX 3080
SE +/- 0.06, N = 3
MAX: 169.8
101.1
TITAN RTX
SE +/- 0.03, N = 3
MAX: 124.4
84.1
20
40
60
80
100
Rise of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off - Scene: Spine Of The Mountain
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.58, N = 3
MIN: 29.6 / MAX: 148.1
80.0
RTX 2070 SUPER
SE +/- 0.84, N = 3
MIN: 3.7 / MAX: 145.7
95.2
RTX 2080 SUPER
SE +/- 0.35, N = 3
MIN: 7 / MAX: 160.9
107.2
RTX 2080 Ti
SE +/- 0.25, N = 3
MIN: 13.1 / MAX: 199.9
131.6
RTX 3060 Ti
SE +/- 0.38, N = 3
MIN: 8.6 / MAX: 187.2
111.6
RTX 3080
SE +/- 0.78, N = 3
MIN: 25.2 / MAX: 284.9
161.5
TITAN RTX
SE +/- 0.23, N = 3
MIN: 4.2 / MAX: 202.2
137.9
40
80
120
160
200

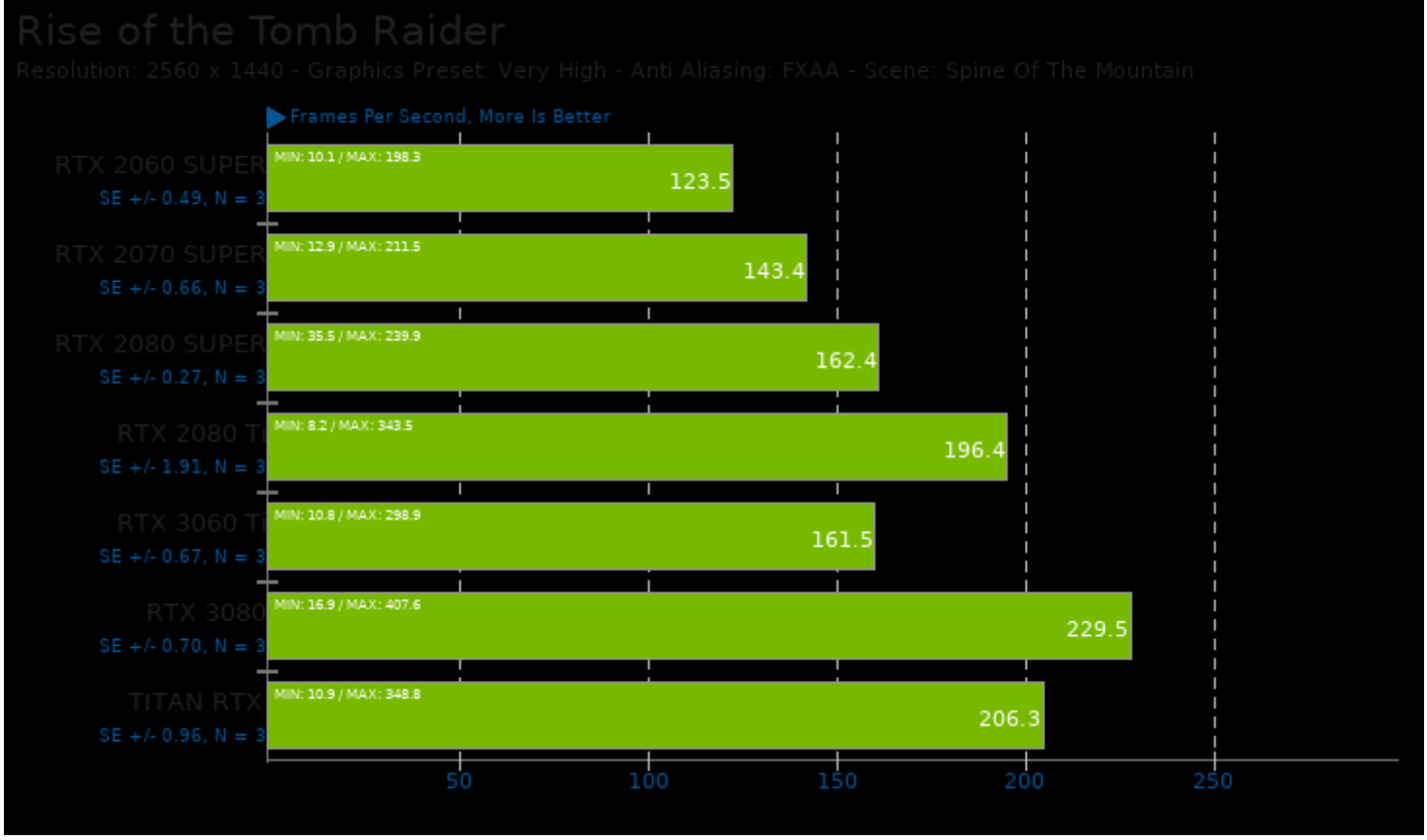

Rise of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off - Scene: Geothermal Valley
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.03, N = 3
MIN: 28.5 / MAX: 95.3
66.1
RTX 2070 SUPER
SE +/- 0.09, N = 3
MIN: 31.2 / MAX: 96.7
78.8
RTX 2080 SUPER
SE +/- 0.17, N = 3
MIN: 27.9 / MAX: 112.6
89.1
RTX 2080 Ti
SE +/- 0.23, N = 3
MIN: 31.1 / MAX: 132.2
107.2
RTX 3060 Ti
SE +/- 0.03, N = 3
MIN: 17.1 / MAX: 121.5
89.3
RTX 3080
SE +/- 0.18, N = 3
MIN: 30.5 / MAX: 170.9
132.9
TITAN RTX
SE +/- 0.34, N = 3
MIN: 38.9 / MAX: 144.9
114.6
30
60
90
120
150
The Talos Principle
Renderer: Vulkan - Resolution: 3840 x 2160
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.45, N = 3
83.1
RTX 2070 SUPER
SE +/- 0.93, N = 3
96.8
RTX 2080 SUPER
SE +/- 0.74, N = 3
109.9
RTX 2080 Ti
SE +/- 1.42, N = 3
133.1
RTX 3060 Ti
SE +/- 0.58, N = 3
120.5
RTX 3080
SE +/- 1.49, N = 3
166.8
TITAN RTX
SE +/- 1.01, N = 3
142.5
40
80
120
160
200

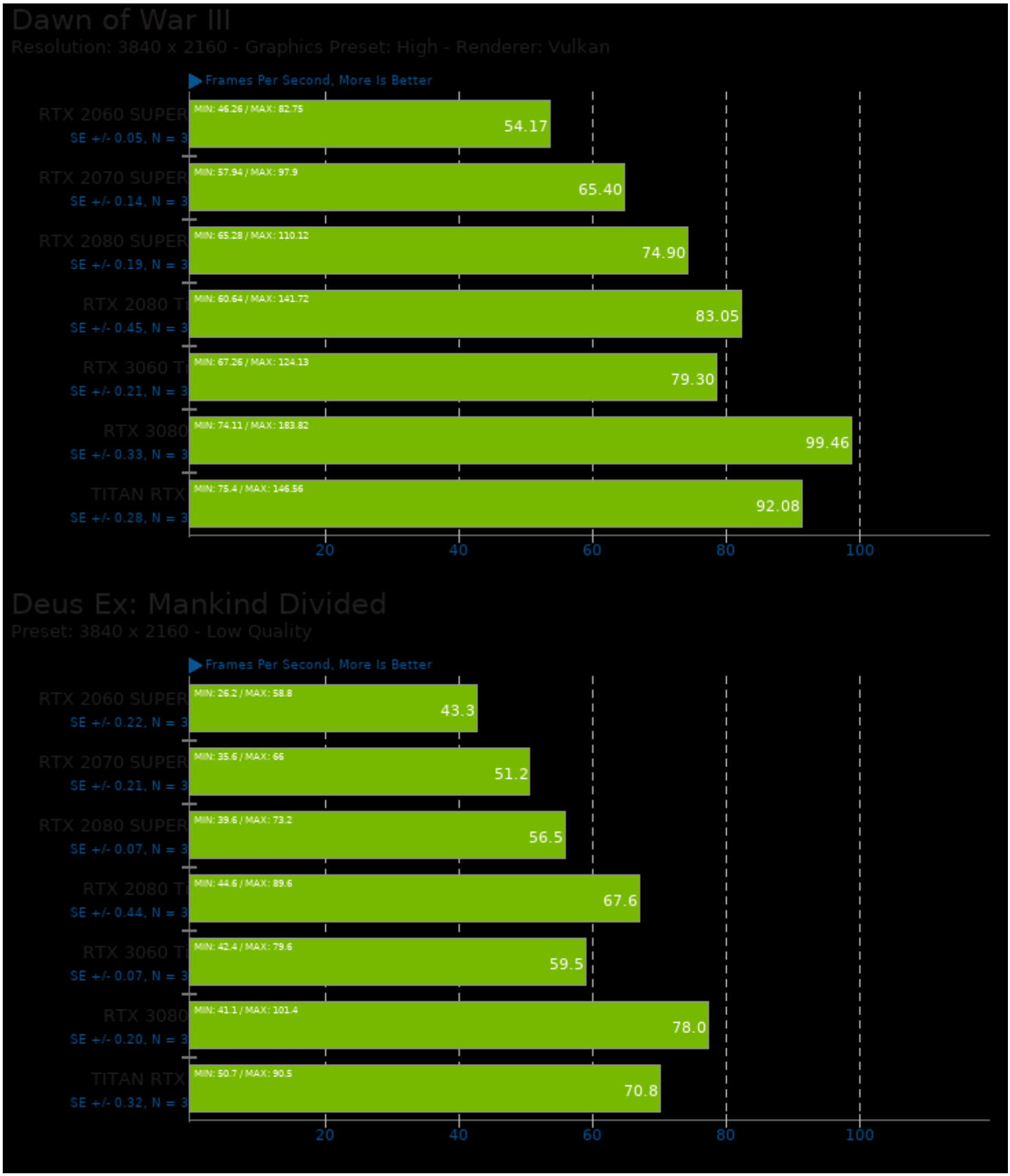

Rise of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off - Scene: Prophets Tomb
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.06, N = 3
MIN: 28.8 / MAX: 139.4
60.8
RTX 2070 SUPER
SE +/- 0.12, N = 3
MIN: 22.1 / MAX: 177.5
72.5
RTX 2080 SUPER
SE +/- 0.25, N = 3
MIN: 31.1 / MAX: 146.4
82.5
RTX 2080 Ti
SE +/- 0.27, N = 3
MIN: 39.4 / MAX: 186.1
101.3
RTX 3060 Ti
SE +/- 0.07, N = 3
MIN: 32.3 / MAX: 195.7
81.9
RTX 3080
SE +/- 0.03, N = 3
MIN: 43.5 / MAX: 235.6
122.0
TITAN RTX
SE +/- 0.26, N = 3
MIN: 39.5 / MAX: 213.3
105.7
30
60
90
120
150
Unigine Heaven 4.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.04, N = 3
100.88
RTX 2070 SUPER
SE +/- 0.10, N = 3
121.92
RTX 2080 SUPER
SE +/- 0.03, N = 3
139.12
RTX 2080 Ti
SE +/- 0.53, N = 3
166.01
RTX 3060 Ti
SE +/- 0.04, N = 3
133.00
RTX 3080
SE +/- 0.09, N = 3
201.38
TITAN RTX
SE +/- 0.09, N = 3
176.56
40
80
120
160
200

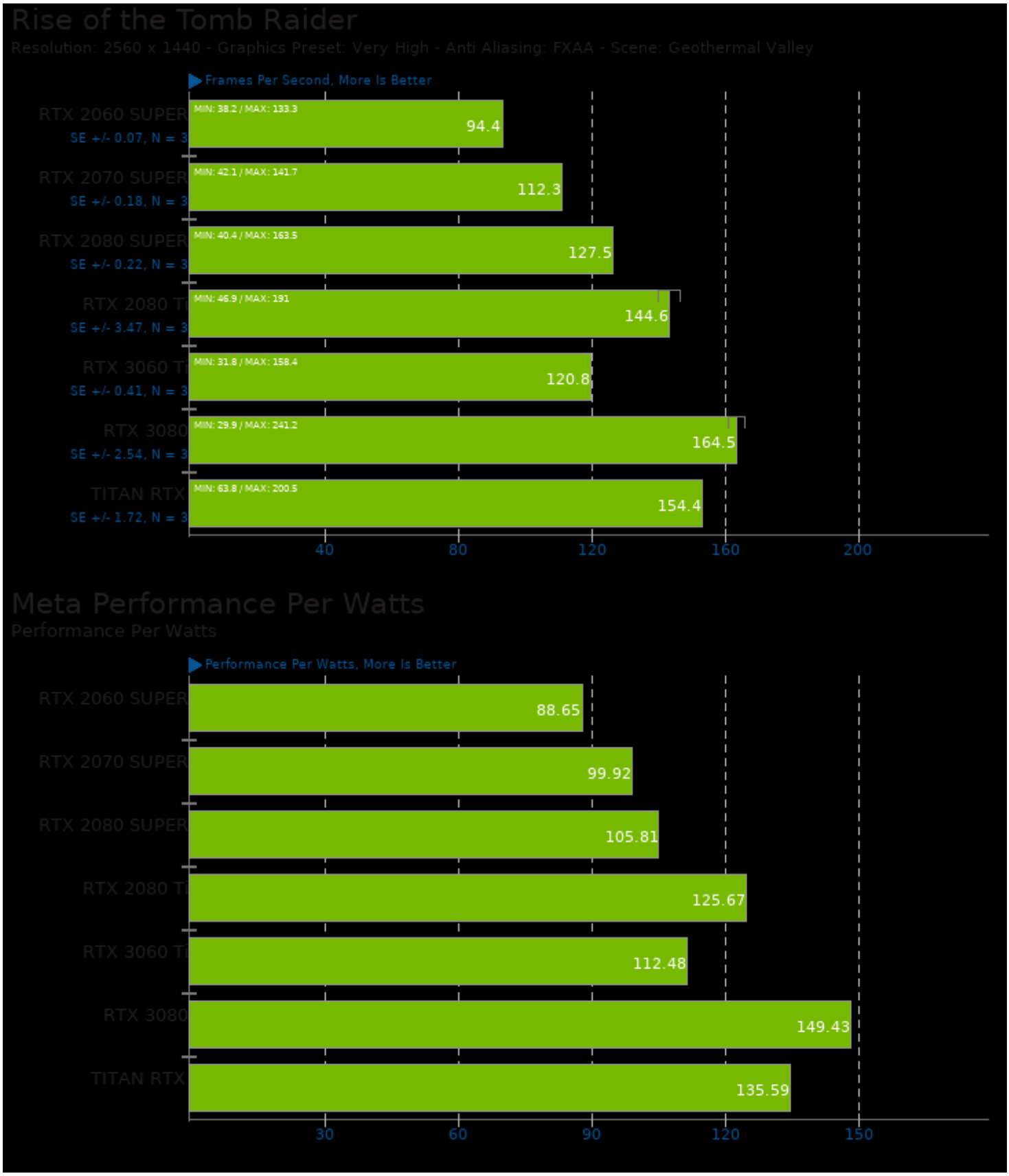

Unigine Superposition 1.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Quality: High - Renderer: OpenGL
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.00, N = 3
MAX: 60.1
50.7
RTX 2070 SUPER
SE +/- 0.06, N = 3
MAX: 71.8
60.6
RTX 2080 SUPER
SE +/- 0.06, N = 3
MAX: 83.3
68.4
RTX 2080 Ti
SE +/- 0.09, N = 3
MAX: 100
82.4
RTX 3060 Ti
SE +/- 0.03, N = 3
MAX: 83.1
67.9
RTX 3080
SE +/- 0.03, N = 3
MAX: 121.2
100.2
TITAN RTX
SE +/- 0.03, N = 3
MAX: 100.8
86.2
20
40
60
80
100
Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Highest - Anti Aliasing: SMAA
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.06, N = 3
MAX: 134.9
77.4
RTX 2070 SUPER
SE +/- 0.03, N = 3
MAX: 153.9
91.7
RTX 2080 SUPER
SE +/- 0.00, N = 3
MAX: 182.2
103.3
RTX 2080 Ti
SE +/- 0.06, N = 3
MAX: 199.7
123.6
RTX 3060 Ti
SE +/- 0.09, N = 3
MAX: 191.1
105.0
RTX 3080
SE +/- 0.03, N = 3
MAX: 252.3
151.4
TITAN RTX
SE +/- 0.06, N = 3
MAX: 208.4
128.2
30
60
90
120
150

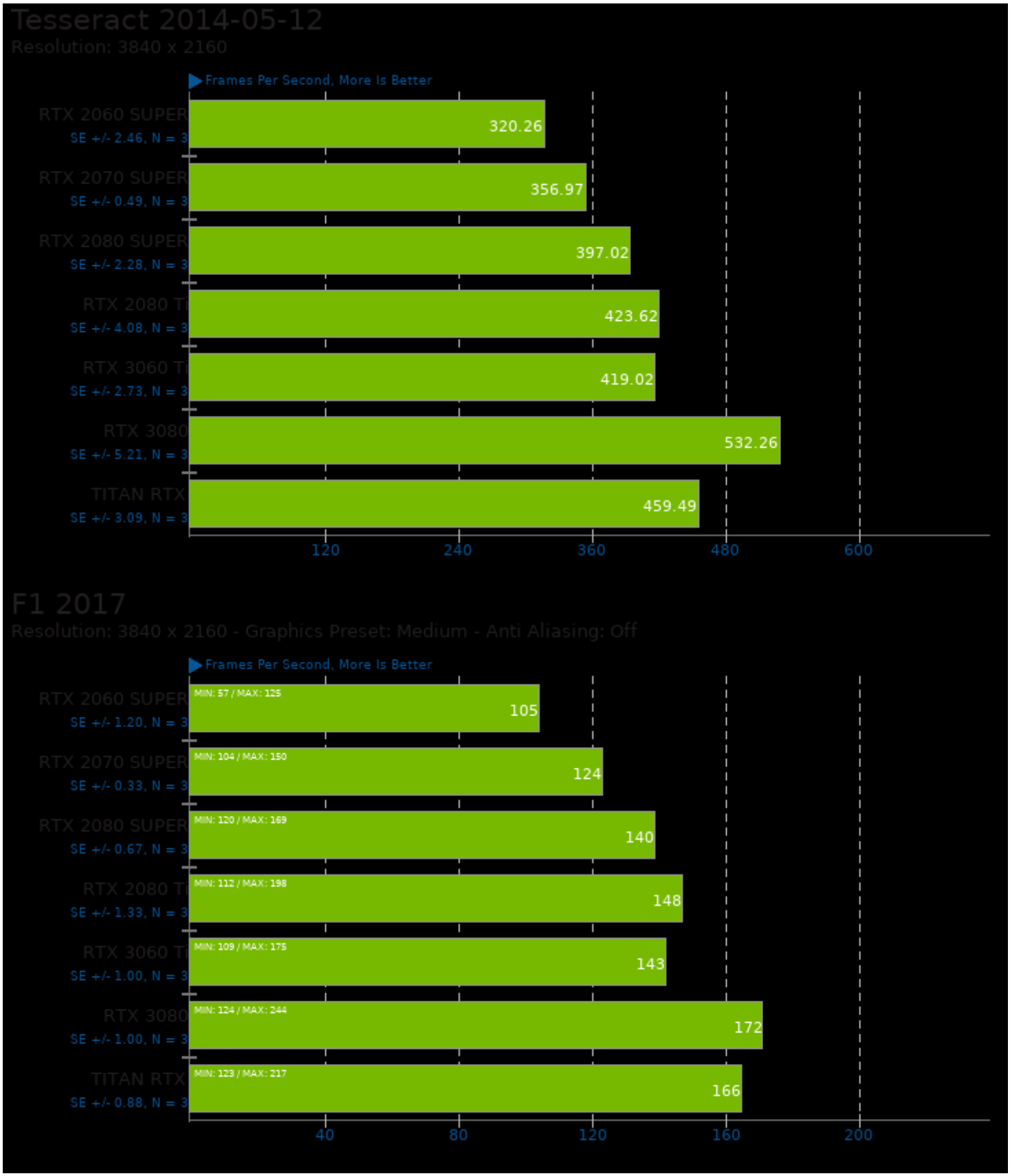

Dawn of War III
Resolution: 3840 x 2160 - Graphics Preset: Ultra - Renderer: Vulkan
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.10, N = 3
MIN: 36.3 / MAX: 70.58
49.17
RTX 2070 SUPER
SE +/- 0.29, N = 3
MIN: 40.76 / MAX: 85.49
59.26
RTX 2080 SUPER
SE +/- 0.32, N = 3
MIN: 44.55 / MAX: 99.11
68.07
RTX 2080 Ti
SE +/- 0.11, N = 3
MIN: 34 / MAX: 126.37
77.56
RTX 3060 Ti
SE +/- 0.16, N = 3
MIN: 49.41 / MAX: 105.05
72.35
RTX 3080
SE +/- 0.49, N = 3
MIN: 74.4 / MAX: 162.35
95.49
TITAN RTX
SE +/- 0.27, N = 3
MIN: 60.88 / MAX: 130.61
86.51
20
40
60
80
100
Unigine Superposition 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Quality: Low - Renderer: OpenGL
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.03, N = 3
MAX: 112.7
86.5
RTX 2070 SUPER
SE +/- 0.07, N = 3
MAX: 127.8
102.6
RTX 2080 SUPER
SE +/- 0.07, N = 3
MAX: 148.9
116.0
RTX 2080 Ti
SE +/- 0.07, N = 3
MAX: 183.4
141.8
RTX 3060 Ti
SE +/- 0.06, N = 3
MAX: 150.2
115.3
RTX 3080
SE +/- 0.09, N = 3
MAX: 218.9
166.8
TITAN RTX
SE +/- 0.10, N = 3
MAX: 185.8
148.8
40
80
120
160
200

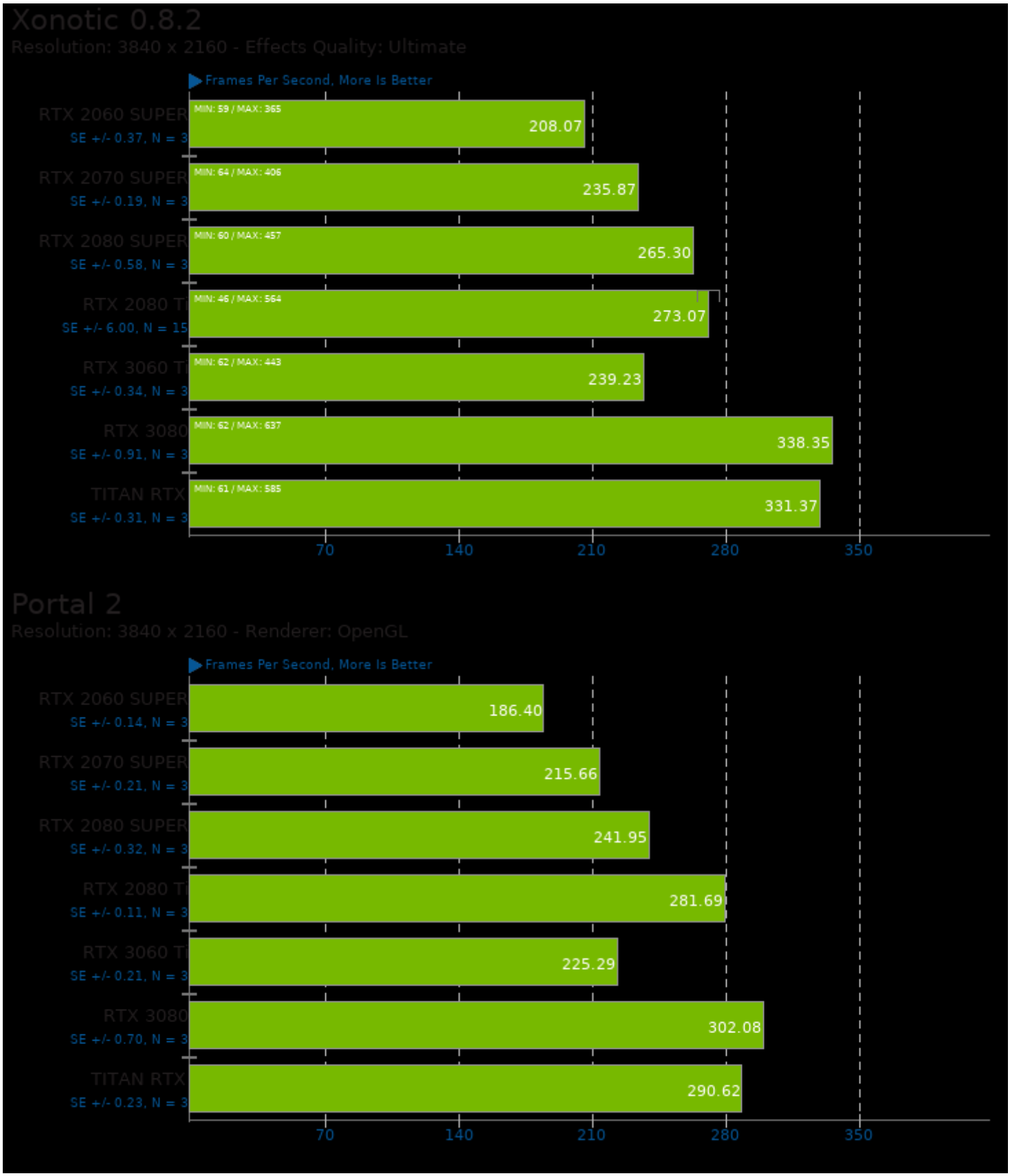

Rise of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Very High - Anti Aliasing: FXAA - Scene: Prophets Tomb
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.09, N = 3
MIN: 34.4 / MAX: 142.3
98.9
RTX 2070 SUPER
SE +/- 0.13, N = 3
MIN: 48.6 / MAX: 217.5
117.1
RTX 2080 SUPER
SE +/- 0.06, N = 3
MIN: 30.3 / MAX: 219.7
132.5
RTX 2080 T
SE +/- 0.35, N = 3
MIN: 41.4 / MAX: 246.5
158.6
RTX 3060 T
SE +/- 0.13, N = 3
MIN: 38.9 / MAX: 238.3
129.9
RTX 3080
SE +/- 0.35, N = 3
MIN: 38.9 / MAX: 253.2
185.6
TITAN RTX
SE +/- 0.09, N = 3
MIN: 63.8 / MAX: 242.9
166.3
40
80
120
160
200

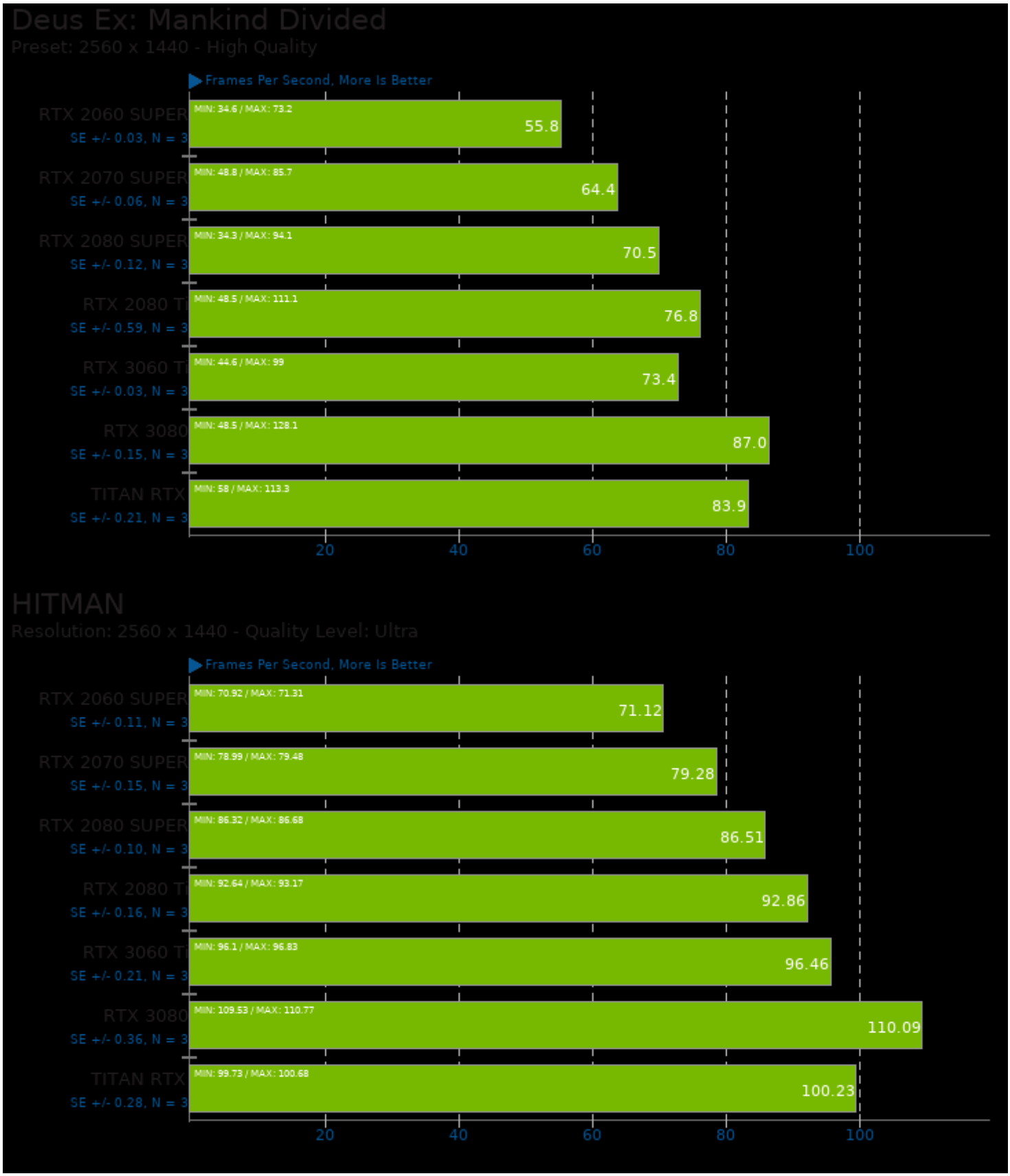

Rise of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Very High - Anti Aliasing: FXAA - Scene: Spine Of The Mountain
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.49, N = 3
MIN: 10.1 / MAX: 198.3
123.5
RTX 2070 SUPER
SE +/- 0.66, N = 3
MIN: 12.9 / MAX: 211.5
143.4
RTX 2080 SUPER
SE +/- 0.27, N = 3
MIN: 35.5 / MAX: 239.9
162.4
RTX 2080 T
SE +/- 1.91, N = 3
MIN: 8.2 / MAX: 343.5
196.4
RTX 3060 T
SE +/- 0.67, N = 3
MIN: 10.8 / MAX: 298.9
161.5
RTX 3080
SE +/- 0.70, N = 3
MIN: 16.9 / MAX: 407.6
229.5
TITAN RTX
SE +/- 0.96, N = 3
MIN: 10.9 / MAX: 348.8
206.3
50
100
150
200
250

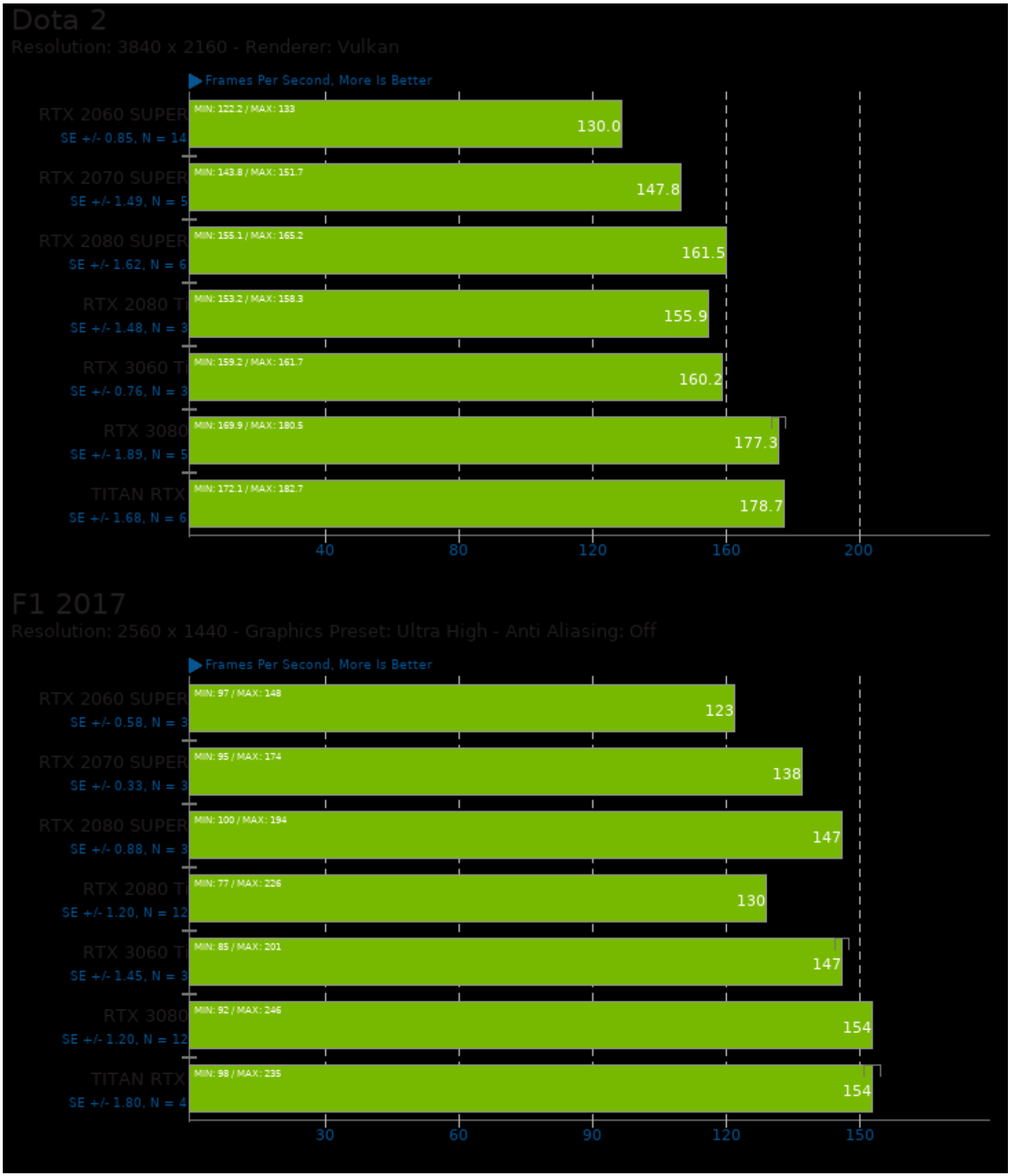

Dawn of War III
Resolution: 3840 x 2160 - Graphics Preset: High - Renderer: Vulkan
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.05, N = 3
MIN: 46.26 / MAX: 82.75
54.17
RTX 2070 SUPER
SE +/- 0.14, N = 3
MIN: 57.94 / MAX: 97.9
65.40
RTX 2080 SUPER
SE +/- 0.19, N = 3
MIN: 65.28 / MAX: 110.12
74.90
RTX 2080 Ti
SE +/- 0.45, N = 3
MIN: 60.64 / MAX: 141.72
83.05
RTX 3060 Ti
SE +/- 0.21, N = 3
MIN: 67.26 / MAX: 124.13
79.30
RTX 3080
SE +/- 0.33, N = 3
MIN: 74.11 / MAX: 183.82
99.46
TITAN RTX
SE +/- 0.28, N = 3
MIN: 75.4 / MAX: 146.56
92.08
20
40
60
80
100
Deus Ex: Mankind Divided
Preset: 3840 x 2160 - Low Quality
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.22, N = 3
MIN: 26.2 / MAX: 58.8
43.3
RTX 2070 SUPER
SE +/- 0.21, N = 3
MIN: 35.6 / MAX: 66
51.2
RTX 2080 SUPER
SE +/- 0.07, N = 3
MIN: 39.6 / MAX: 73.2
56.5
RTX 2080 Ti
SE +/- 0.44, N = 3
MIN: 44.6 / MAX: 89.6
67.6
RTX 3060 Ti
SE +/- 0.07, N = 3
MIN: 42.4 / MAX: 79.6
59.5
RTX 3080
SE +/- 0.20, N = 3
MIN: 41.1 / MAX: 101.4
78.0
TITAN RTX
SE +/- 0.32, N = 3
MIN: 50.7 / MAX: 90.5
70.8
20
40
60
80
100

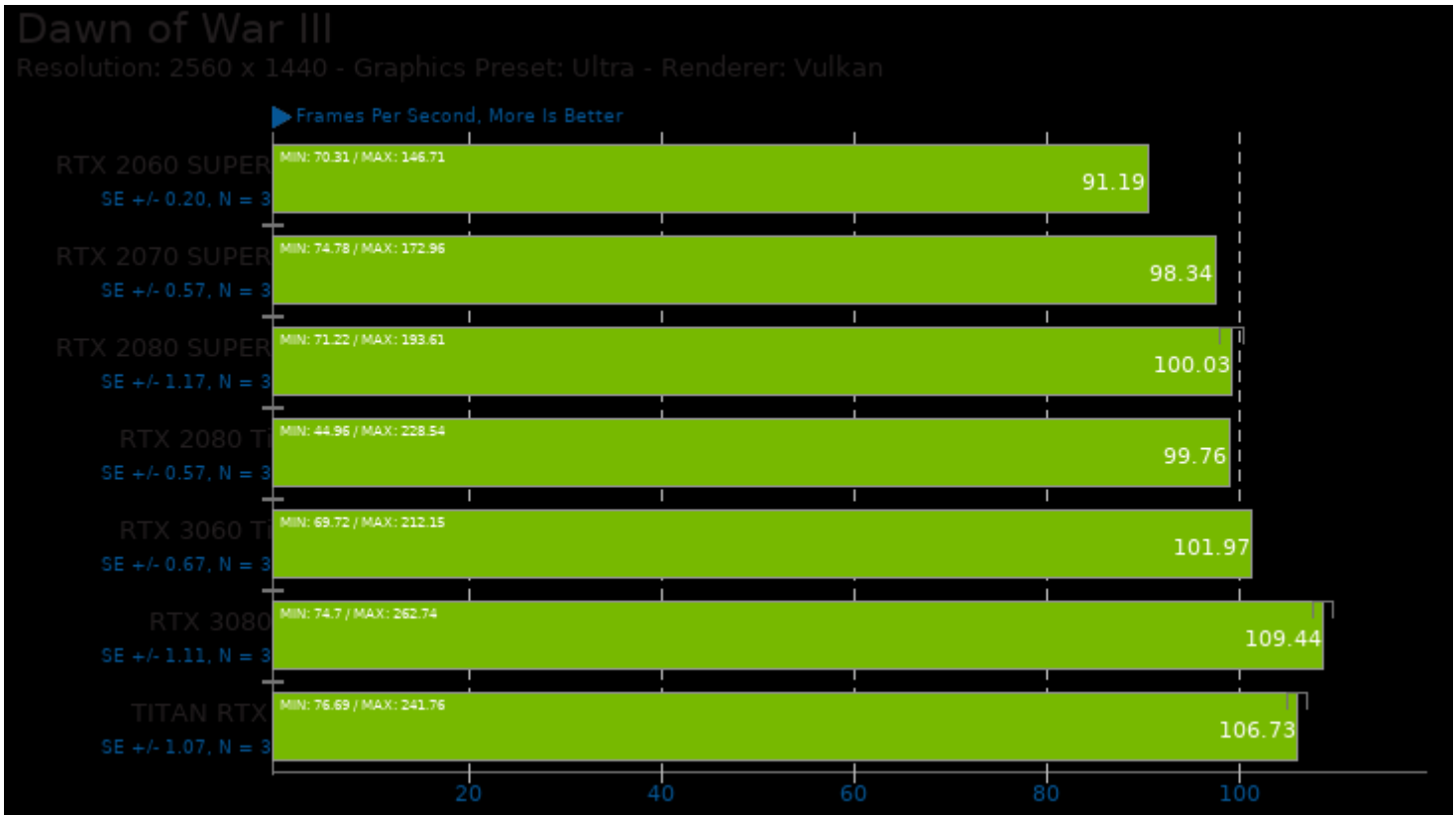

Rise of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Very High - Anti Aliasing: FXAA - Scene: Geothermal Valley
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.07, N = 3
MIN: 38.2 / MAX: 133.3
94.4
RTX 2070 SUPER
SE +/- 0.18, N = 3
MIN: 42.1 / MAX: 141.7
112.3
RTX 2080 SUPER
SE +/- 0.22, N = 3
MIN: 40.4 / MAX: 163.5
127.5
RTX 2080 Ti
SE +/- 3.47, N = 3
MIN: 46.9 / MAX: 191
144.6
RTX 3060 Ti
SE +/- 0.41, N = 3
MIN: 31.8 / MAX: 158.4
120.8
RTX 3080
SE +/- 2.54, N = 3
MIN: 29.9 / MAX: 241.2
164.5
TITAN RTX
SE +/- 1.72, N = 3
MIN: 63.8 / MAX: 200.5
154.4
40
80
120
160
200
Meta Performance Per Watts
Performance Per Watts
Performance Per Watts, More Is Better
RTX 2060 SUPER
88.65
RTX 2070 SUPER
99.92
RTX 2080 SUPER
105.81
RTX 2080 Ti
125.67
RTX 3060 Ti
112.48
RTX 3080
149.43
TITAN RTX
135.59
30
60
90
120
150

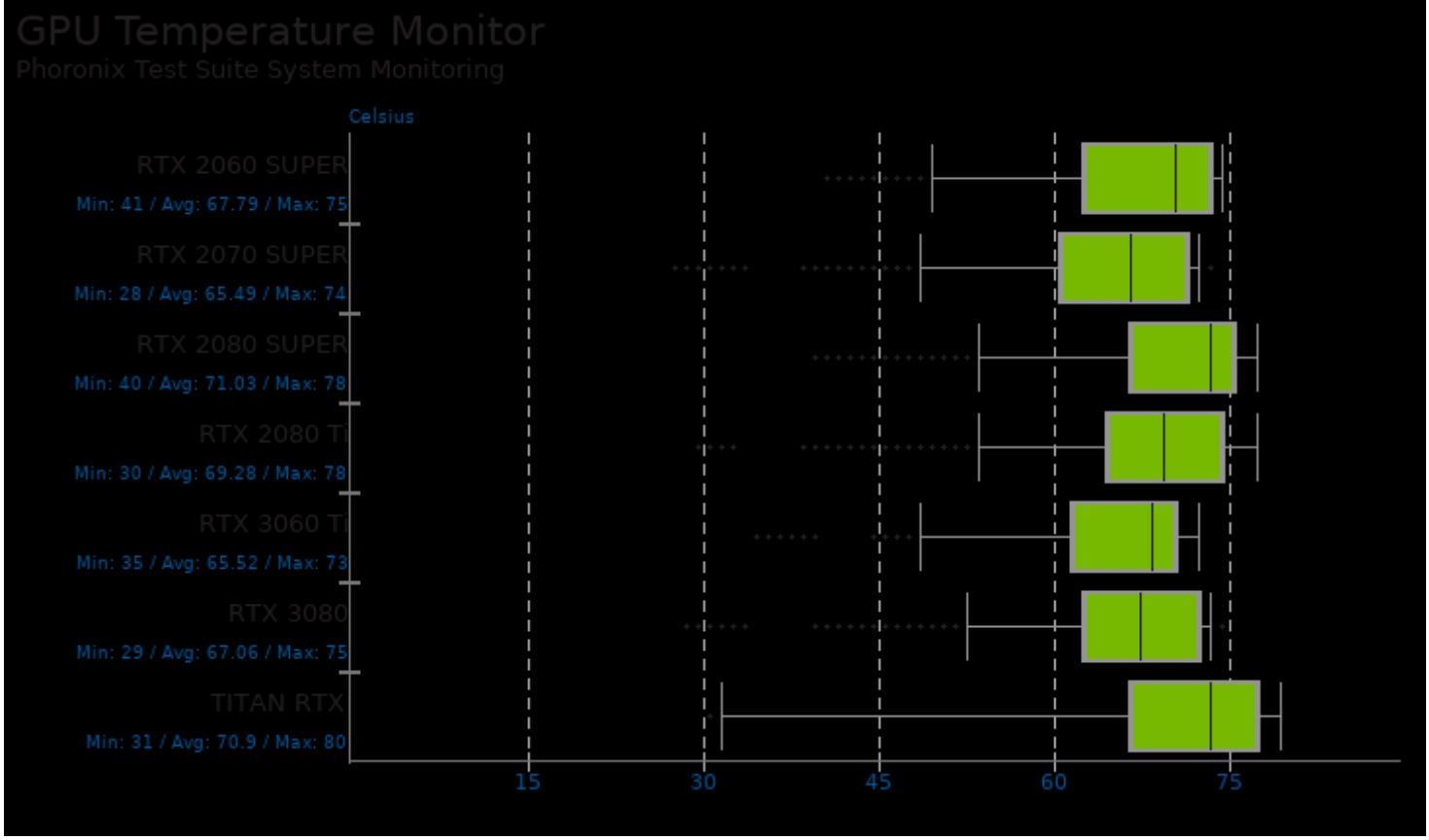

Tesseract 2014-05-12
Resolution: 3840 x 2160
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 2.46, N = 3
320.26
RTX 2070 SUPER
SE +/- 0.49, N = 3
356.97
RTX 2080 SUPER
SE +/- 2.28, N = 3
397.02
RTX 2080 Ti
SE +/- 4.08, N = 3
423.62
RTX 3060 Ti
SE +/- 2.73, N = 3
419.02
RTX 3080
SE +/- 5.21, N = 3
532.26
TITAN RTX
SE +/- 3.09, N = 3
459.49
120
240
360
480
600
F1 2017
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 1.20, N = 3
MIN: 57 / MAX: 125
105
RTX 2070 SUPER
SE +/- 0.33, N = 3
MIN: 104 / MAX: 150
124
RTX 2080 SUPER
SE +/- 0.67, N = 3
MIN: 120 / MAX: 169
140
RTX 2080 Ti
SE +/- 1.33, N = 3
MIN: 112 / MAX: 198
148
RTX 3060 Ti
SE +/- 1.00, N = 3
MIN: 109 / MAX: 175
143
RTX 3080
SE +/- 1.00, N = 3
MIN: 124 / MAX: 244
172
TITAN RTX
SE +/- 0.88, N = 3
MIN: 123 / MAX: 217
166
40
80
120
160
200

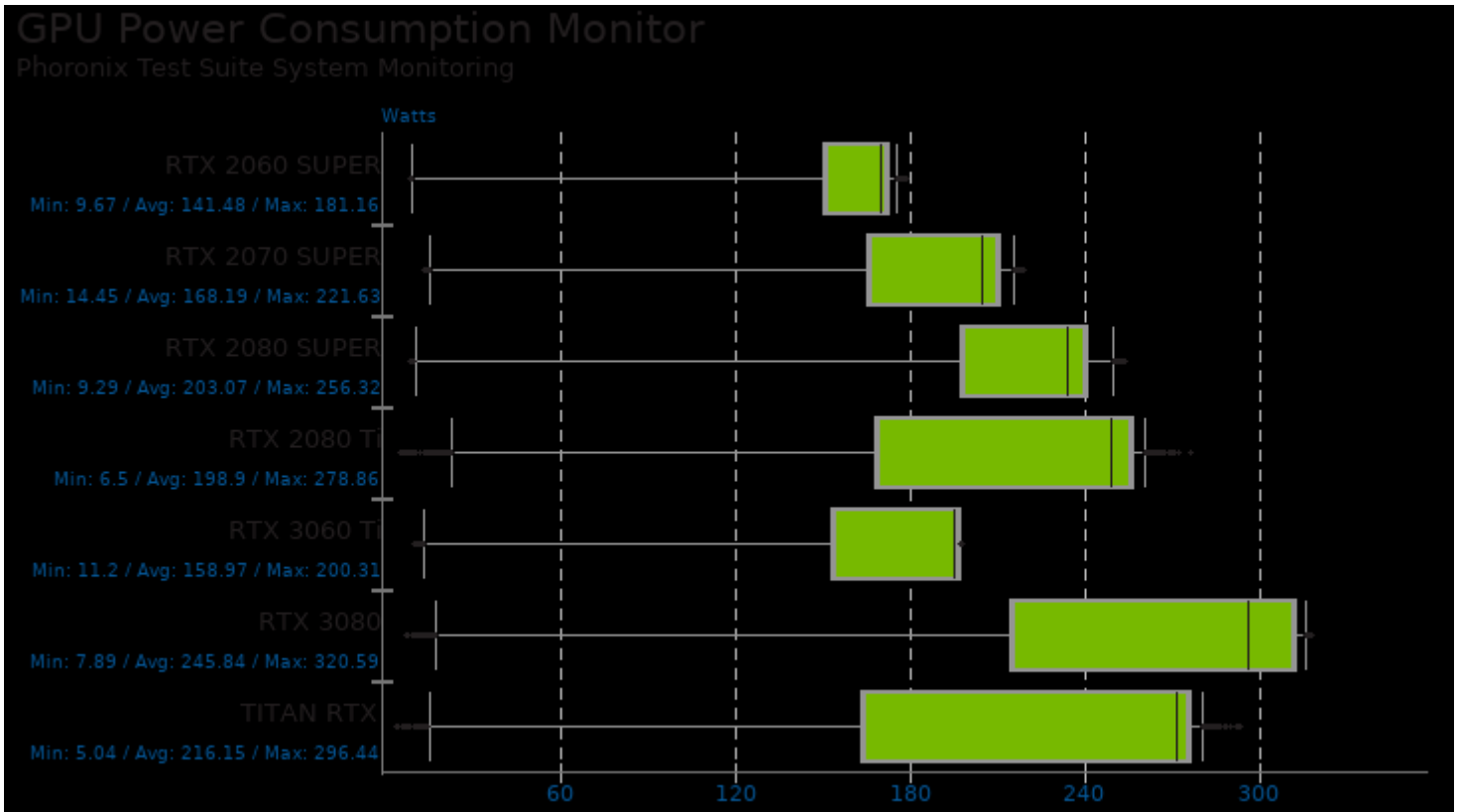

Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultimate
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.37, N = 3
MIN: 59 / MAX: 365
208.07
RTX 2070 SUPER
SE +/- 0.19, N = 3
MIN: 64 / MAX: 406
235.87
RTX 2080 SUPER
SE +/- 0.58, N = 3
MIN: 60 / MAX: 457
265.30
RTX 2080 Ti
SE +/- 6.00, N = 15
MIN: 46 / MAX: 564
273.07
RTX 3060 Ti
SE +/- 0.34, N = 3
MIN: 62 / MAX: 443
239.23
RTX 3080
SE +/- 0.91, N = 3
MIN: 62 / MAX: 637
338.35
TITAN RTX
SE +/- 0.31, N = 3
MIN: 61 / MAX: 585
331.37
70
140
210
280
350
Portal 2
Resolution: 3840 x 2160 - Renderer: OpenGL
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.14, N = 3
186.40
RTX 2070 SUPER
SE +/- 0.21, N = 3
215.66
RTX 2080 SUPER
SE +/- 0.32, N = 3
241.95
RTX 2080 Ti
SE +/- 0.11, N = 3
281.69
RTX 3060 Ti
SE +/- 0.21, N = 3
225.29
RTX 3080
SE +/- 0.70, N = 3
302.08
TITAN RTX
SE +/- 0.23, N = 3
290.62
70
140
210
280
350

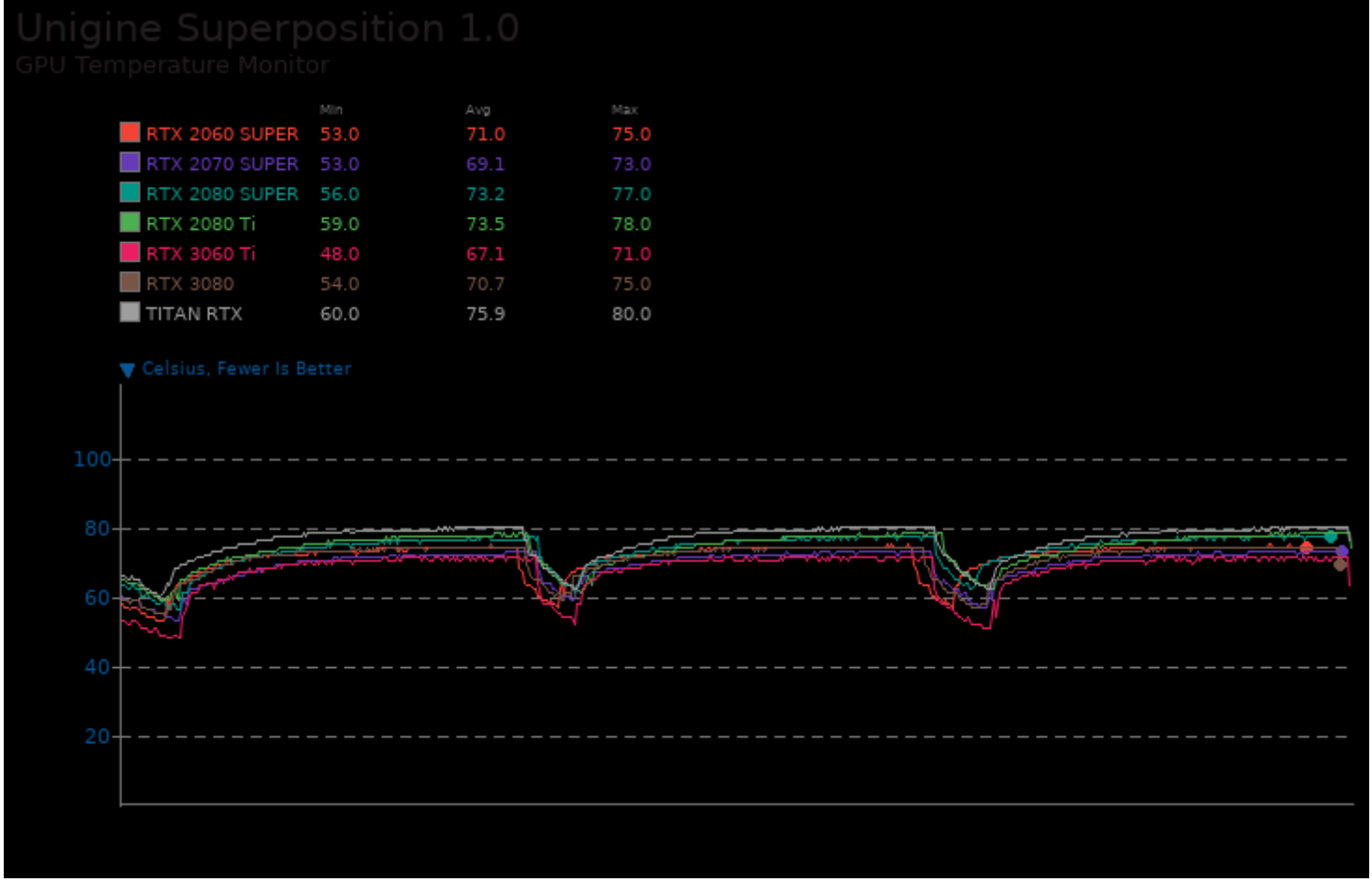

Deus Ex: Mankind Divided
Preset: 2560 x 1440 - High Quality
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.03, N = 3
MIN: 34.6 / MAX: 73.2
55.8
RTX 2070 SUPER
SE +/- 0.06, N = 3
MIN: 48.8 / MAX: 85.7
64.4
RTX 2080 SUPER
SE +/- 0.12, N = 3
MIN: 34.3 / MAX: 94.1
70.5
RTX 2080 Ti
SE +/- 0.59, N = 3
MIN: 48.5 / MAX: 111.1
76.8
RTX 3060 Ti
SE +/- 0.03, N = 3
MIN: 44.6 / MAX: 99
73.4
RTX 3080
SE +/- 0.15, N = 3
MIN: 48.5 / MAX: 128.1
87.0
TITAN RTX
SE +/- 0.21, N = 3
MIN: 58 / MAX: 113.3
83.9
20
40
60
80
100
HITMAN
Resolution: 2560 x 1440 - Quality Level: Ultra
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.11, N = 3
MIN: 70.92 / MAX: 71.31
71.12
RTX 2070 SUPER
SE +/- 0.15, N = 3
MIN: 78.99 / MAX: 79.48
79.28
RTX 2080 SUPER
SE +/- 0.10, N = 3
MIN: 86.32 / MAX: 86.68
86.51
RTX 2080 Ti
SE +/- 0.16, N = 3
MIN: 92.64 / MAX: 93.17
92.86
RTX 3060 Ti
SE +/- 0.21, N = 3
MIN: 96.1 / MAX: 96.83
96.46
RTX 3080
SE +/- 0.36, N = 3
MIN: 109.53 / MAX: 110.77
110.09
TITAN RTX
SE +/- 0.28, N = 3
MIN: 99.73 / MAX: 100.68
100.23
20
40
60
80
100

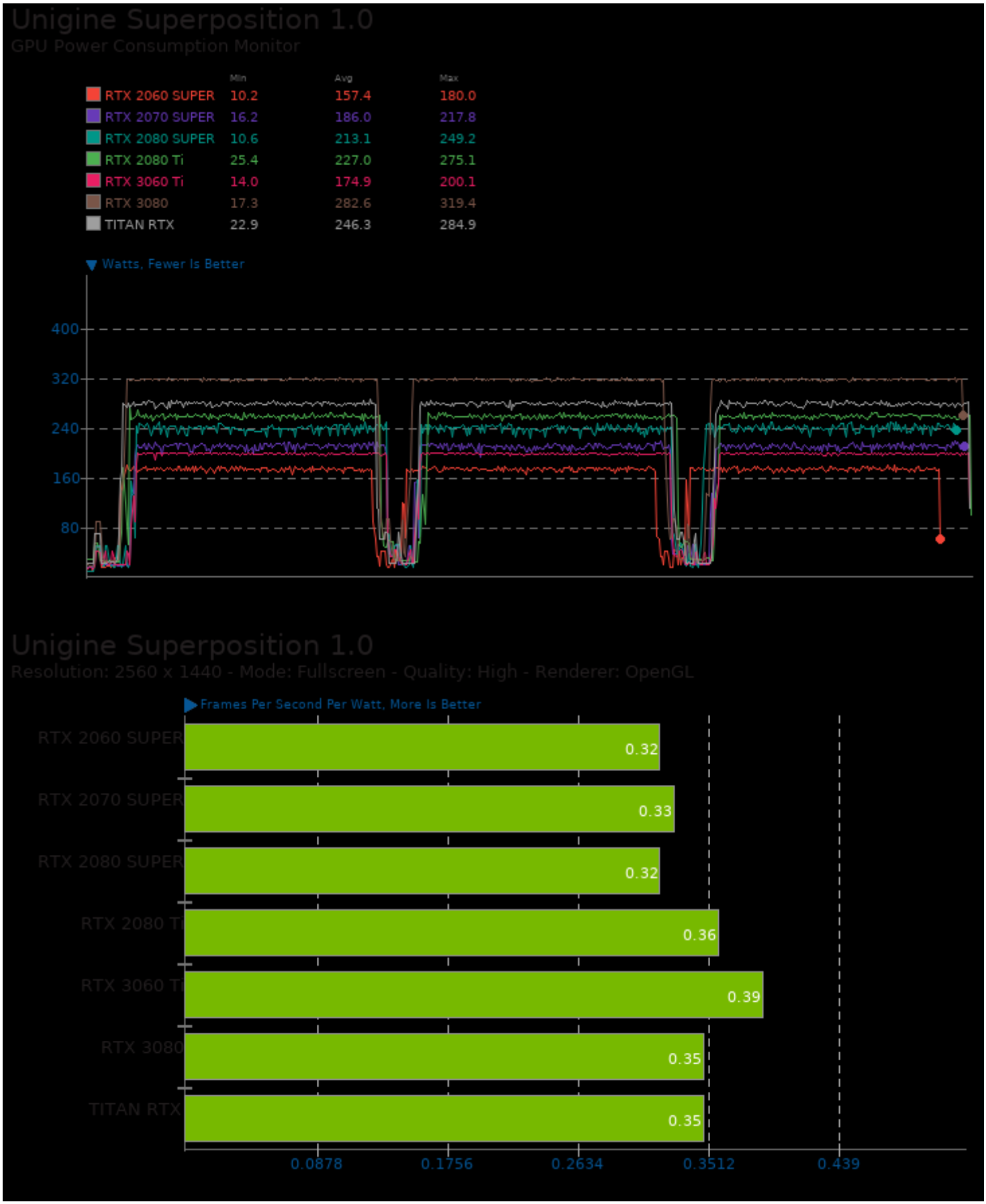

Dota 2
Resolution: 3840 x 2160 - Renderer: Vulkan
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.85, N = 14
MIN: 122.2 / MAX: 133
130.0
RTX 2070 SUPER
SE +/- 1.49, N = 5
MIN: 143.8 / MAX: 151.7
147.8
RTX 2080 SUPER
SE +/- 1.62, N = 6
MIN: 155.1 / MAX: 165.2
161.5
RTX 2080 Ti
SE +/- 1.48, N = 3
MIN: 153.2 / MAX: 158.3
155.9
RTX 3060 Ti
SE +/- 0.76, N = 3
MIN: 159.2 / MAX: 161.7
160.2
RTX 3080
SE +/- 1.89, N = 5
MIN: 169.9 / MAX: 180.5
177.3
TITAN RTX
SE +/- 1.68, N = 6
MIN: 172.1 / MAX: 182.7
178.7
40
80
120
160
200
F1 2017
Resolution: 2560 x 1440 - Graphics Preset: Ultra High - Anti Aliasing: Off
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.58, N = 3
MIN: 97 / MAX: 148
123
RTX 2070 SUPER
SE +/- 0.33, N = 3
MIN: 95 / MAX: 174
138
RTX 2080 SUPER
SE +/- 0.88, N = 3
MIN: 100 / MAX: 194
147
RTX 2080 Ti
SE +/- 1.20, N = 12
MIN: 77 / MAX: 226
130
RTX 3060 Ti
SE +/- 1.45, N = 3
MIN: 85 / MAX: 201
147
RTX 3080
SE +/- 1.20, N = 12
MIN: 92 / MAX: 246
154
TITAN RTX
SE +/- 1.80, N = 4
MIN: 98 / MAX: 235
154
30
60
90
120
150

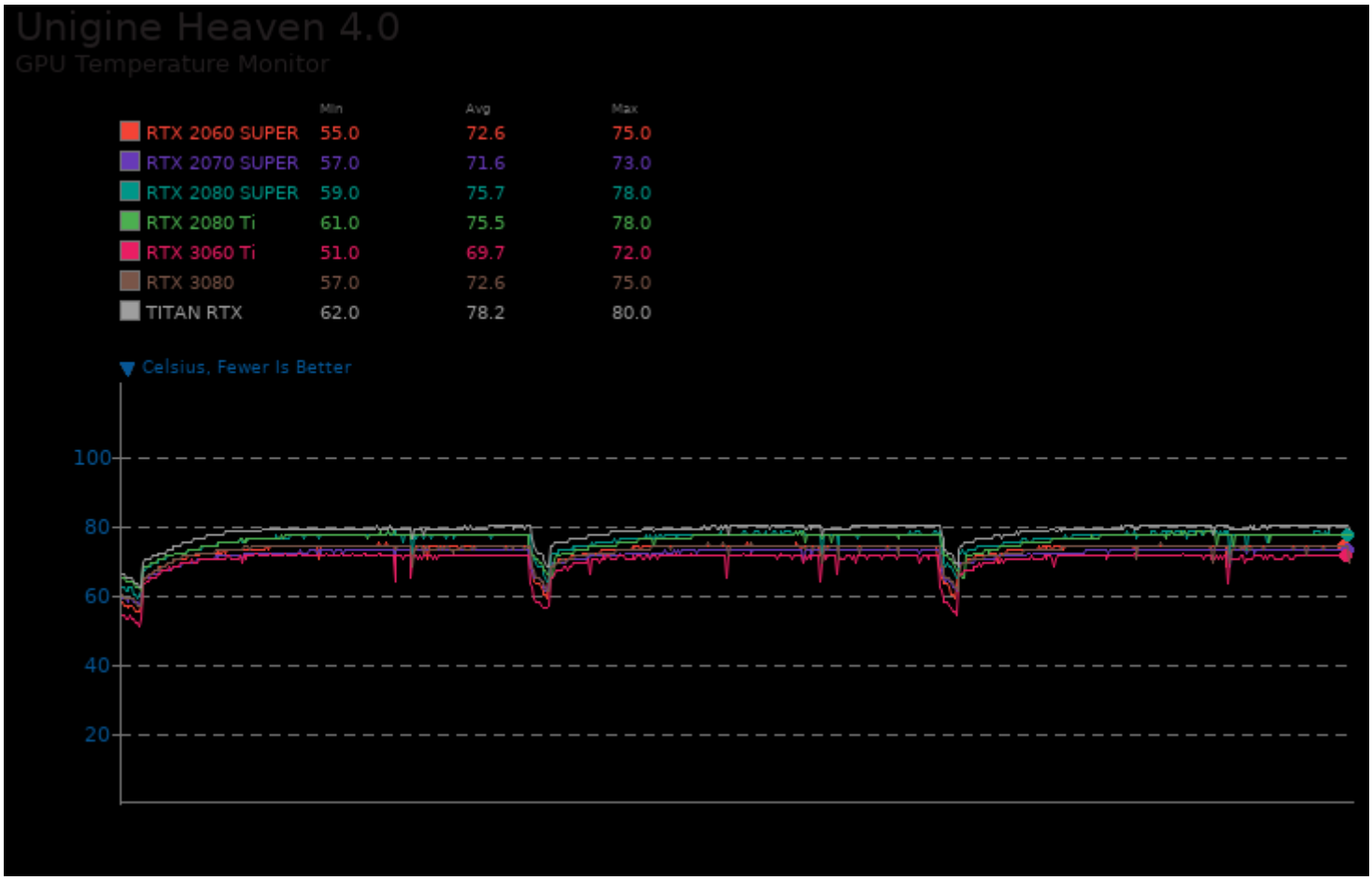

Dawn of War III
Resolution: 2560 x 1440 - Graphics Preset: Ultra - Renderer: Vulkan
Frames Per Second, More Is Better
RTX 2060 SUPER
SE +/- 0.20, N = 3
MIN: 70.31 / MAX: 146.71
91.19
RTX 2070 SUPER
SE +/- 0.57, N = 3
MIN: 74.78 / MAX: 172.96
98.34
RTX 2080 SUPER
SE +/- 1.17, N = 3
MIN: 71.22 / MAX: 193.61
100.03
RTX 2080 Ti
SE +/- 0.57, N = 3
MIN: 44.96 / MAX: 228.54
99.76
RTX 3060 Ti
SE +/- 0.67, N = 3
MIN: 69.72 / MAX: 212.15
101.97
RTX 3080
SE +/- 1.11, N = 3
MIN: 74.7 / MAX: 262.74
109.44
TITAN RTX
SE +/- 1.07, N = 3
MIN: 76.69 / MAX: 241.76
106.73
20
40
60
80
100


GPU Temperature Monitor
Phoronix Test Suite System Monitoring
Celsius
RTX 2060 SUPER
Min: 41 / Avg: 67.79 / Max: 75
RTX 2070 SUPER
Min: 28 / Avg: 65.49 / Max: 74
RTX 2080 SUPER
Min: 40 / Avg: 71.03 / Max: 78
RTX 2080 Ti
Min: 30 / Avg: 69.28 / Max: 78
RTX 3060 Ti
Min: 35 / Avg: 65.52 / Max: 73
RTX 3080
Min: 29 / Avg: 67.06 / Max: 75
TITAN RTX
Min: 31 / Avg: 70.9 / Max: 80
15
30
45
60
75

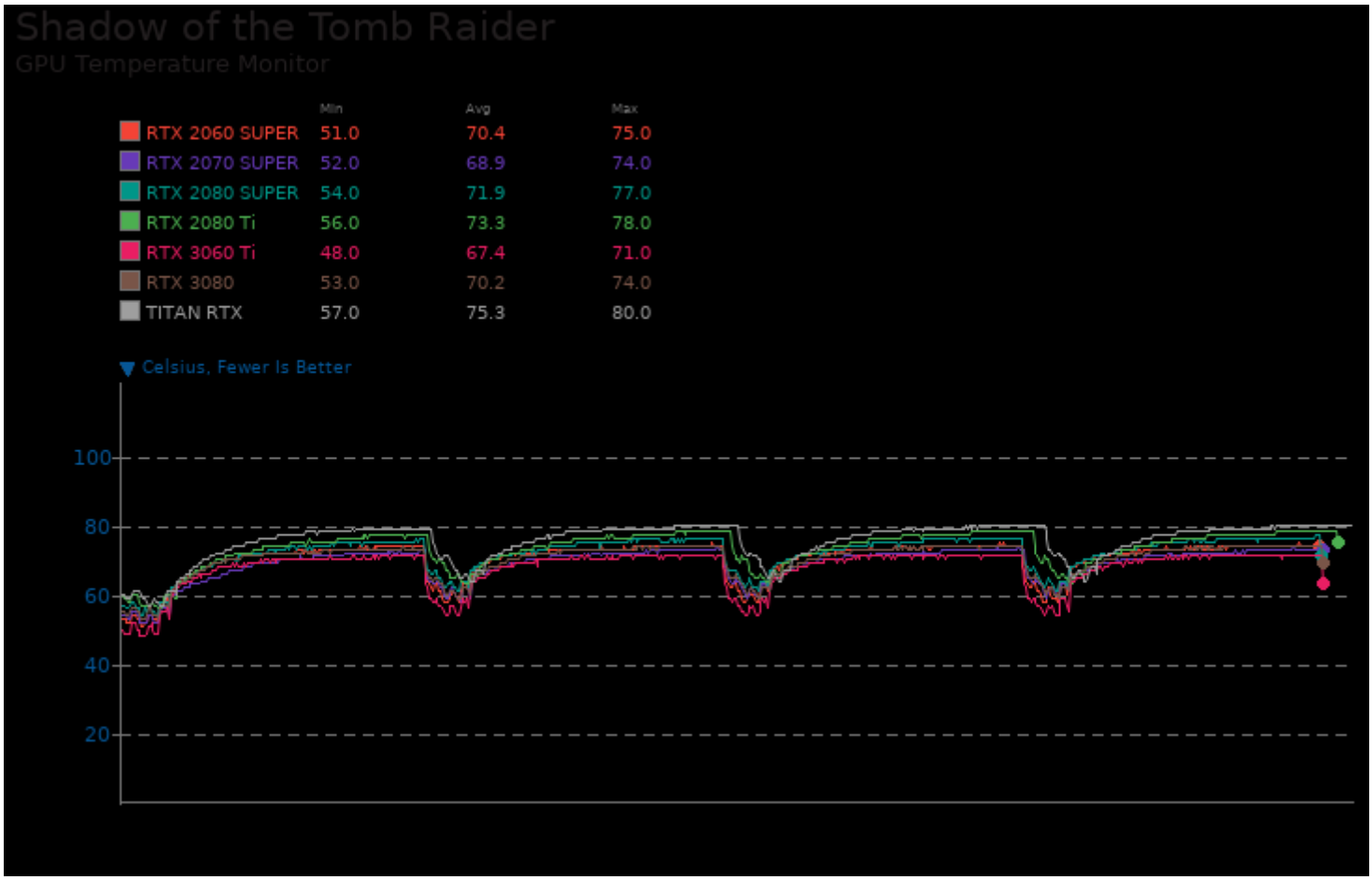

GPU Power Consumption Monitor
Phoronix Test Suite System Monitoring
Watts
RTX 2060 SUPER
Min: 9.67 / Avg: 141.48 / Max: 181.16
RTX 2070 SUPER
Min: 14.45 / Avg: 168.19 / Max: 221.63
RTX 2080 SUPER
Min: 9.29 / Avg: 203.07 / Max: 256.32
RTX 2080 Ti
Min: 6.5 / Avg: 198.9 / Max: 278.86
RTX 3060 Ti
Min: 11.2 / Avg: 158.97 / Max: 200.31
RTX 3080
Min: 7.89 / Avg: 245.84 / Max: 320.59
TITAN RTX
Min: 5.04 / Avg: 216.15 / Max: 296.44
60
120
180
240
300


Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 53.0 71.0 75.0
RTX 2070 SUPER 53.0 69.1 73.0
RTX 2080 SUPER 56.0 73.2 77.0
RTX 2080 Ti 59.0 73.5 78.0
RTX 3060 Ti 48.0 67.1 71.0
RTX 3080 54.0 70.7 75.0
TITAN RTX 60.0 75.9 80.0
Celsius, Fewer Is Better
100
80
60
40
20


Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.2 157.4 180.0
RTX 2070 SUPER 16.2 186.0 217.8
RTX 2080 SUPER 10.6 213.1 249.2
RTX 2080 Ti 25.4 227.0 275.1
RTX 3060 Ti 14.0 174.9 200.1
RTX 3080 17.3 282.6 319.4
TITAN RTX 22.9 246.3 284.9
Watts, Fewer Is Better
400
320
240
160
80
Unigine Superposition 1.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Quality: High - Renderer: OpenGL
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.32
RTX 2070 SUPER
0.33
RTX 2080 SUPER
0.32
RTX 2080 Ti
0.36
RTX 3060 Ti
0.39
RTX 3080
0.35
TITAN RTX
0.35
0.0878
0.1756
0.2634
0.3512
0.439


Unigine Heaven 4.0
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 55.0 72.6 75.0
RTX 2070 SUPER 57.0 71.6 73.0
RTX 2080 SUPER 59.0 75.7 78.0
RTX 2080 Ti 61.0 75.5 78.0
RTX 3060 Ti 51.0 69.7 72.0
RTX 3080 57.0 72.6 75.0
TITAN RTX 62.0 78.2 80.0
Celsius, Fewer Is Better
100
80
60
40
20

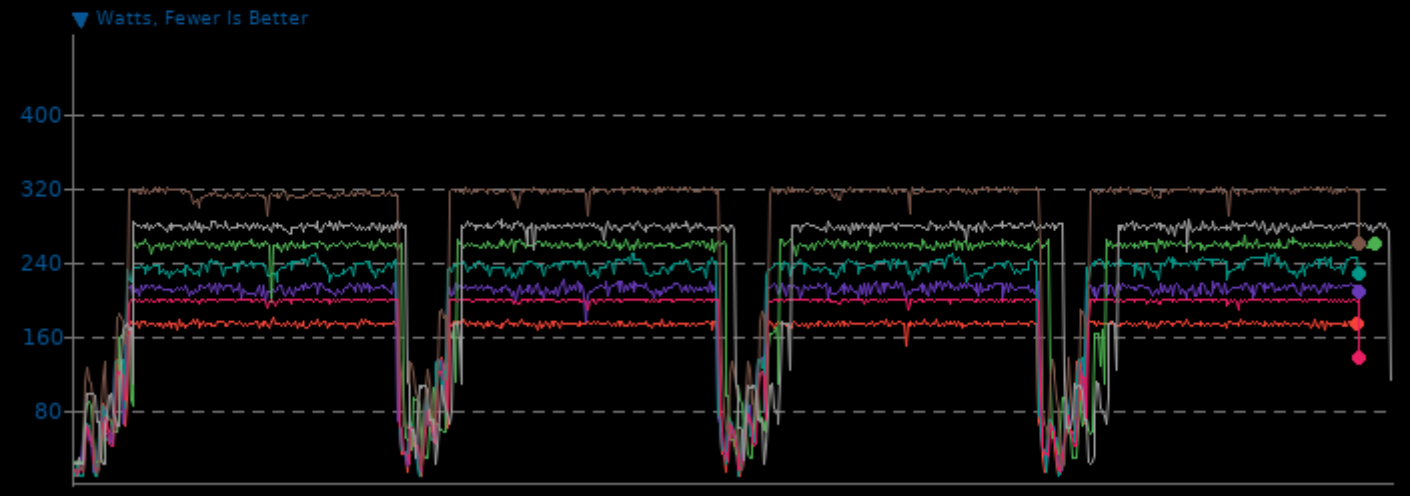

Unigine Heaven 4.0
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.1 165.9 179.3
RTX 2070 SUPER 16.4 202.9 220.5
RTX 2080 SUPER 10.7 234.1 256.3
RTX 2080 Ti 26.3 243.7 266.7
RTX 3060 Ti 14.3 189.7 200.3
RTX 3080 12.7 303.6 320.6
TITAN RTX 23.2 266.1 290.9
Watts, Fewer Is Better
400
320
240
160
80
Unigine Heaven 4.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.61
RTX 2070 SUPER
0.60
RTX 2080 SUPER
0.59
RTX 2080 Ti
0.68
RTX 3060 Ti
0.70
RTX 3080
0.66
TITAN RTX
0.66
0.1575
0.315
0.4725
0.63
0.7875


Shadow of the Tomb Raider
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 51.0 70.4 75.0
RTX 2070 SUPER 52.0 68.9 74.0
RTX 2080 SUPER 54.0 71.9 77.0
RTX 2080 Ti 56.0 73.3 78.0
RTX 3060 Ti 48.0 67.4 71.0
RTX 3080 53.0 70.2 74.0
TITAN RTX 57.0 75.3 80.0
Celsius, Fewer Is Better
100
80
60
40
20

Shadow of the Tomb Raider

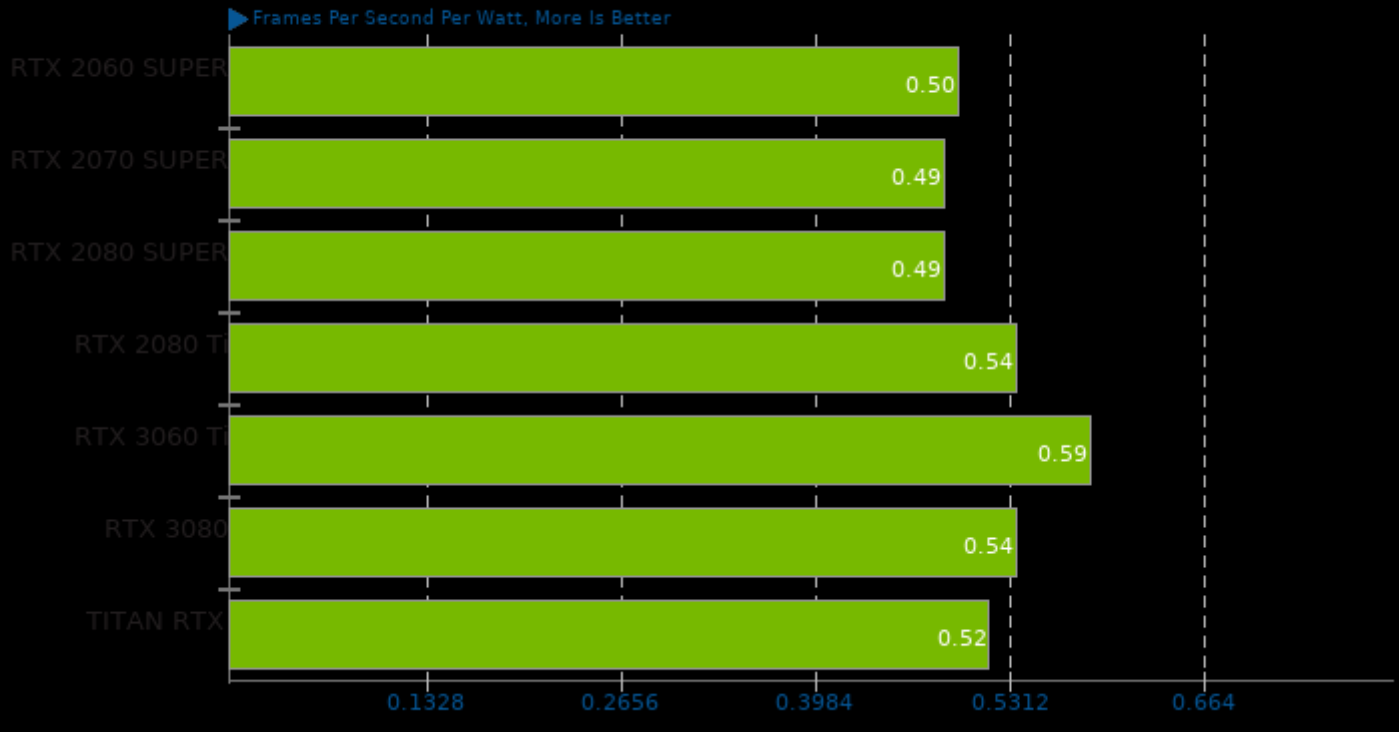
GPU Power Consumption Monitor

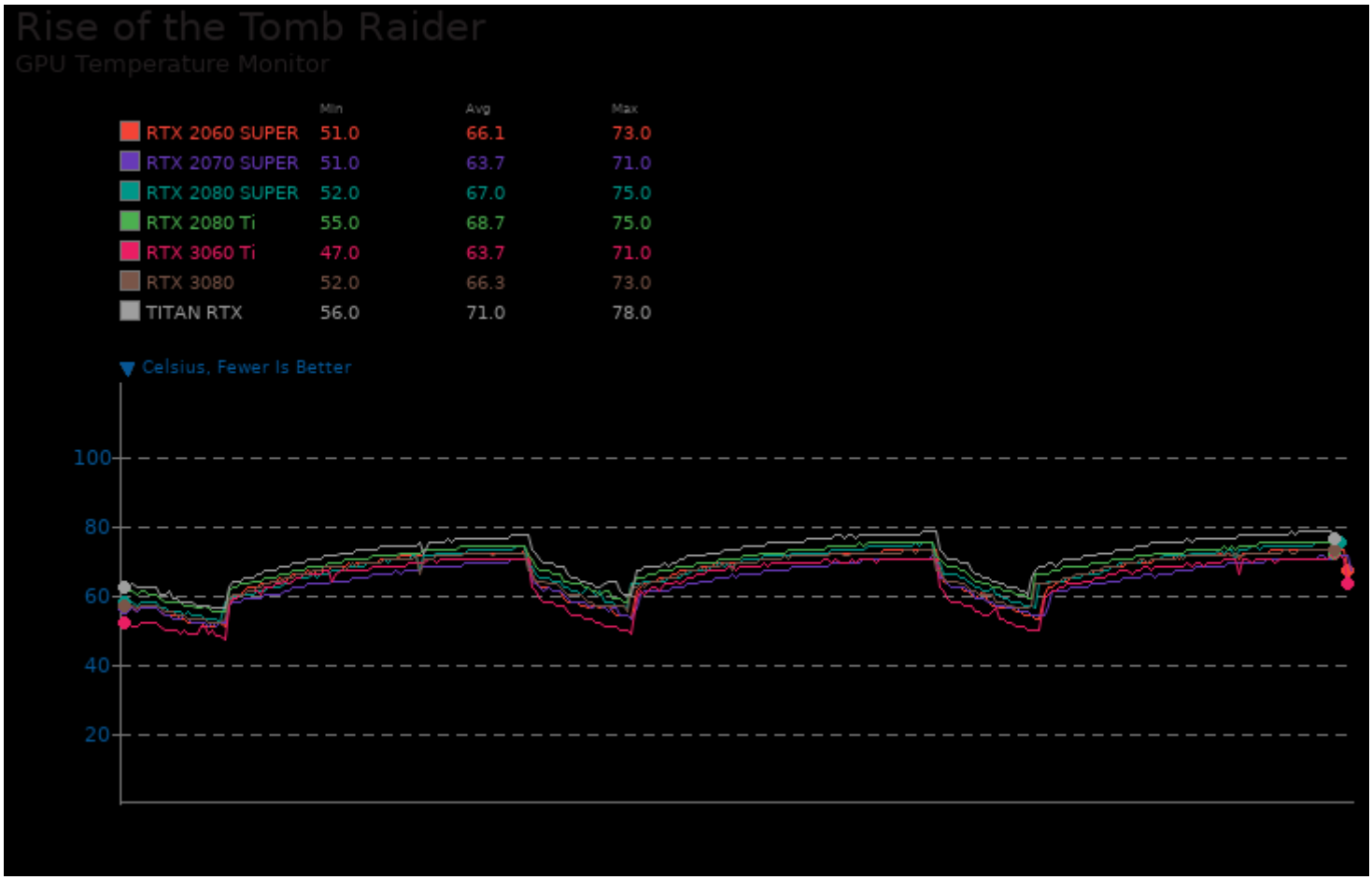
	Min	Avg	Max
RTX 2060 SUPER	10.1	156.0	179.4
RTX 2070 SUPER	15.7	188.8	219.8
RTX 2080 SUPER	9.7	209.1	249.6
RTX 2080 Ti	25.3	227.7	267.2
RTX 3060 Ti	13.5	176.8	200.1
RTX 3080	13.9	281.3	319.7
TITAN RTX	22.9	245.1	286.0



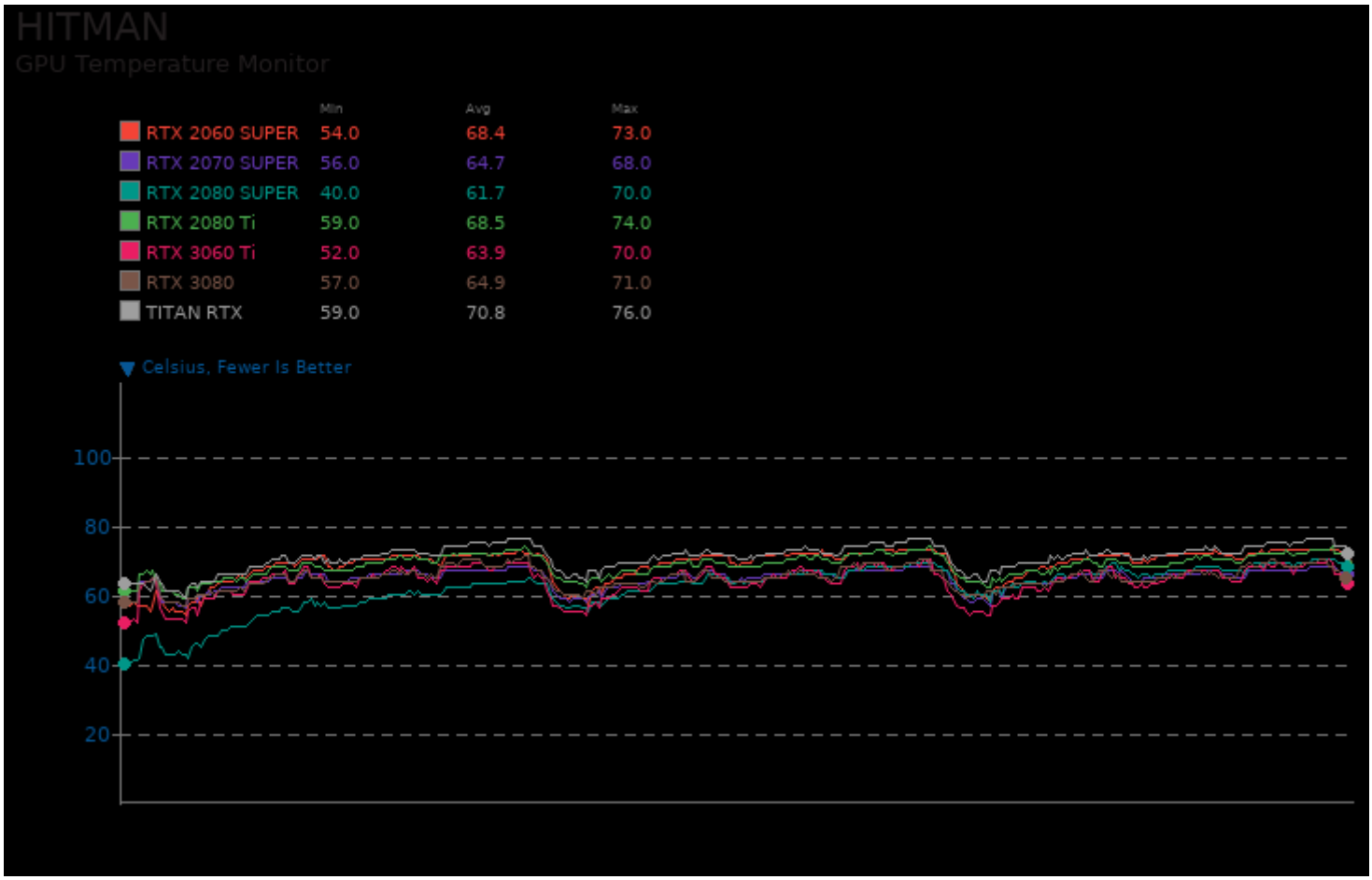
Shadow of the Tomb Raider

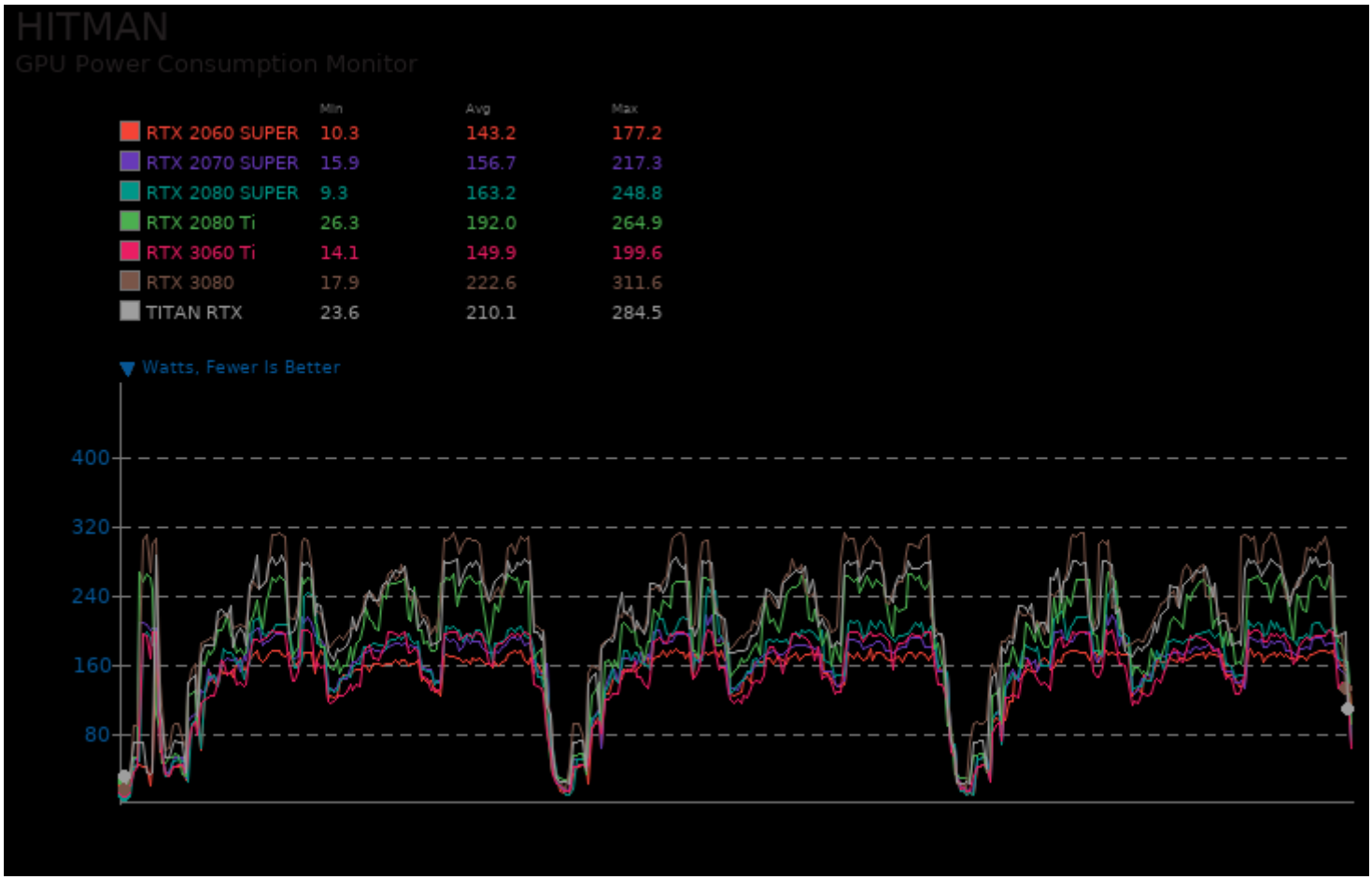
Resolution: 2560 x 1440 - Graphics Preset: Highest - Anti Aliasing: SMAA

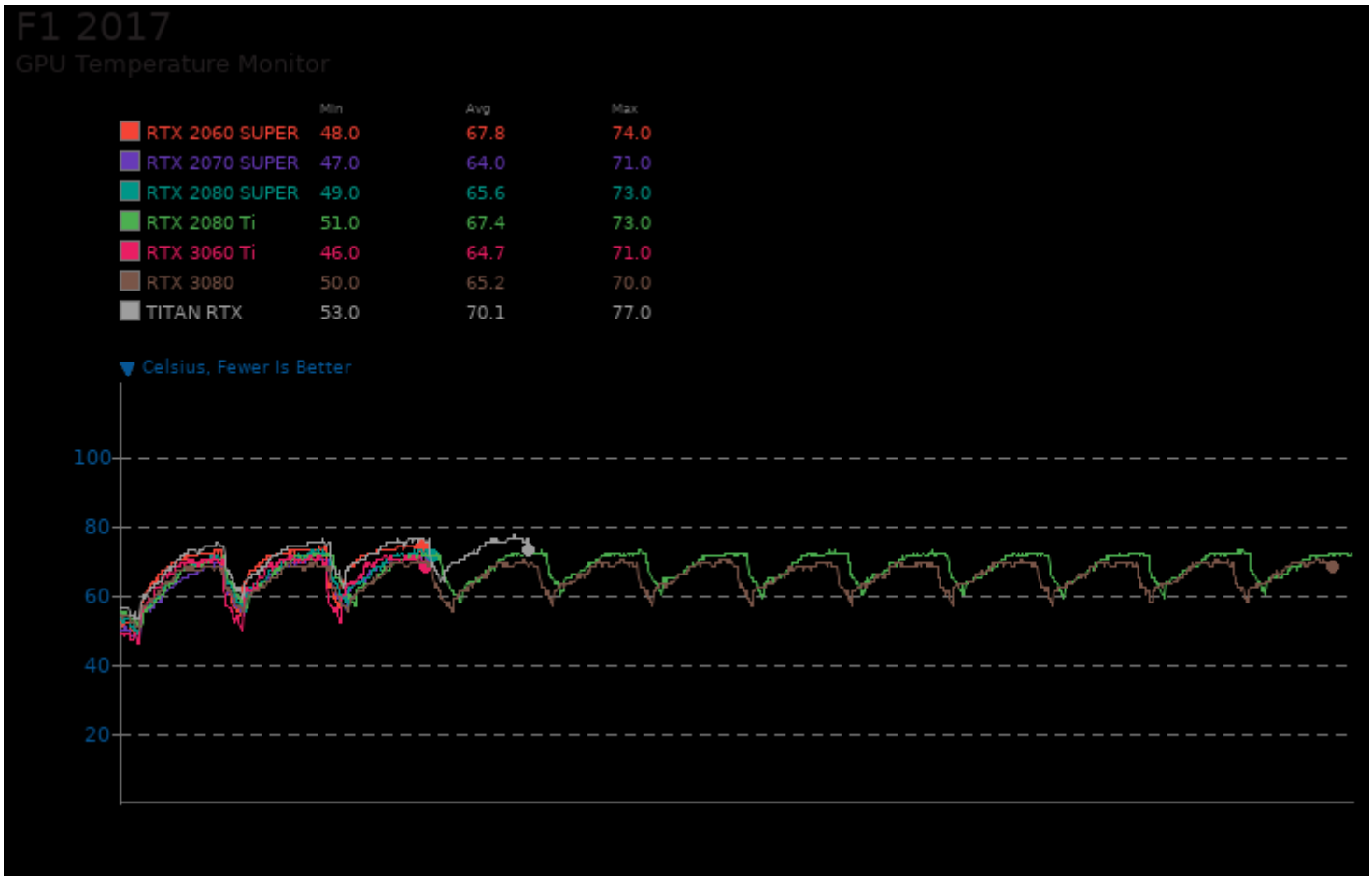



Rise of the Tomb Raider
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 51.0 66.1 73.0
RTX 2070 SUPER 51.0 63.7 71.0
RTX 2080 SUPER 52.0 67.0 75.0
RTX 2080 Ti 55.0 68.7 75.0
RTX 3060 Ti 47.0 63.7 71.0
RTX 3080 52.0 66.3 73.0
TITAN RTX 56.0 71.0 78.0
Celsius, Fewer Is Better
100
80
60
40
20

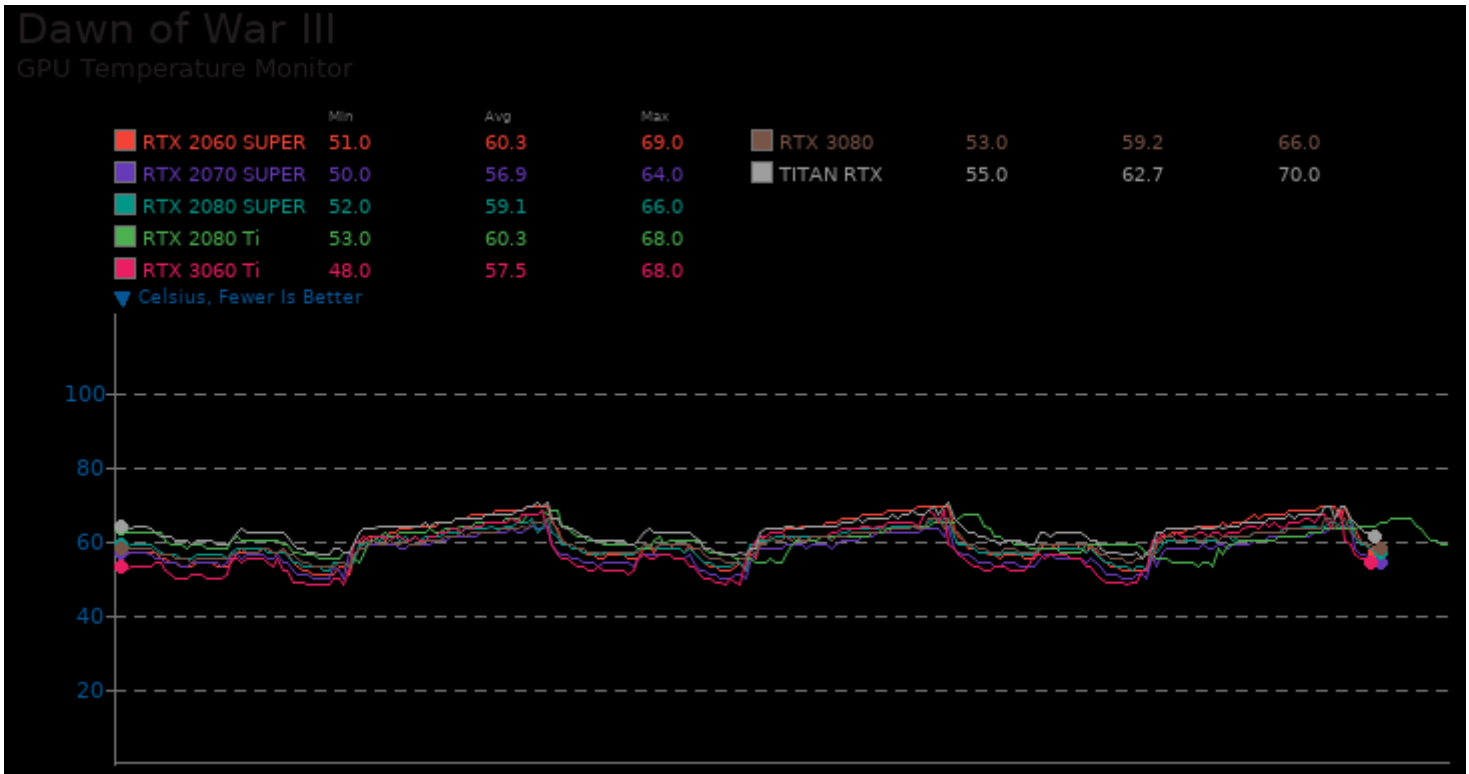

Rise of the Tomb Raider
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.2 136.2 179.9
RTX 2070 SUPER 16.2 161.9 219.7
RTX 2080 SUPER 9.9 182.4 253.7
RTX 2080 Ti 26.4 200.5 268.3
RTX 3060 Ti 13.7 153.7 200.0
RTX 3080 17.7 246.0 318.4
TITAN RTX 23.6 219.9 295.2
Watts, Fewer Is Better
400
320
240
160
80
Rise of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Very High - Anti Aliasing: FXAA - Scene: Geothermal Valley
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.69
RTX 2070 SUPER
0.69
RTX 2080 SUPER
0.70
RTX 2080 Ti
0.72
RTX 3060 Ti
0.79
RTX 3080
0.67
TITAN RTX
0.70
0.1778
0.3556
0.5334
0.7112
0.889

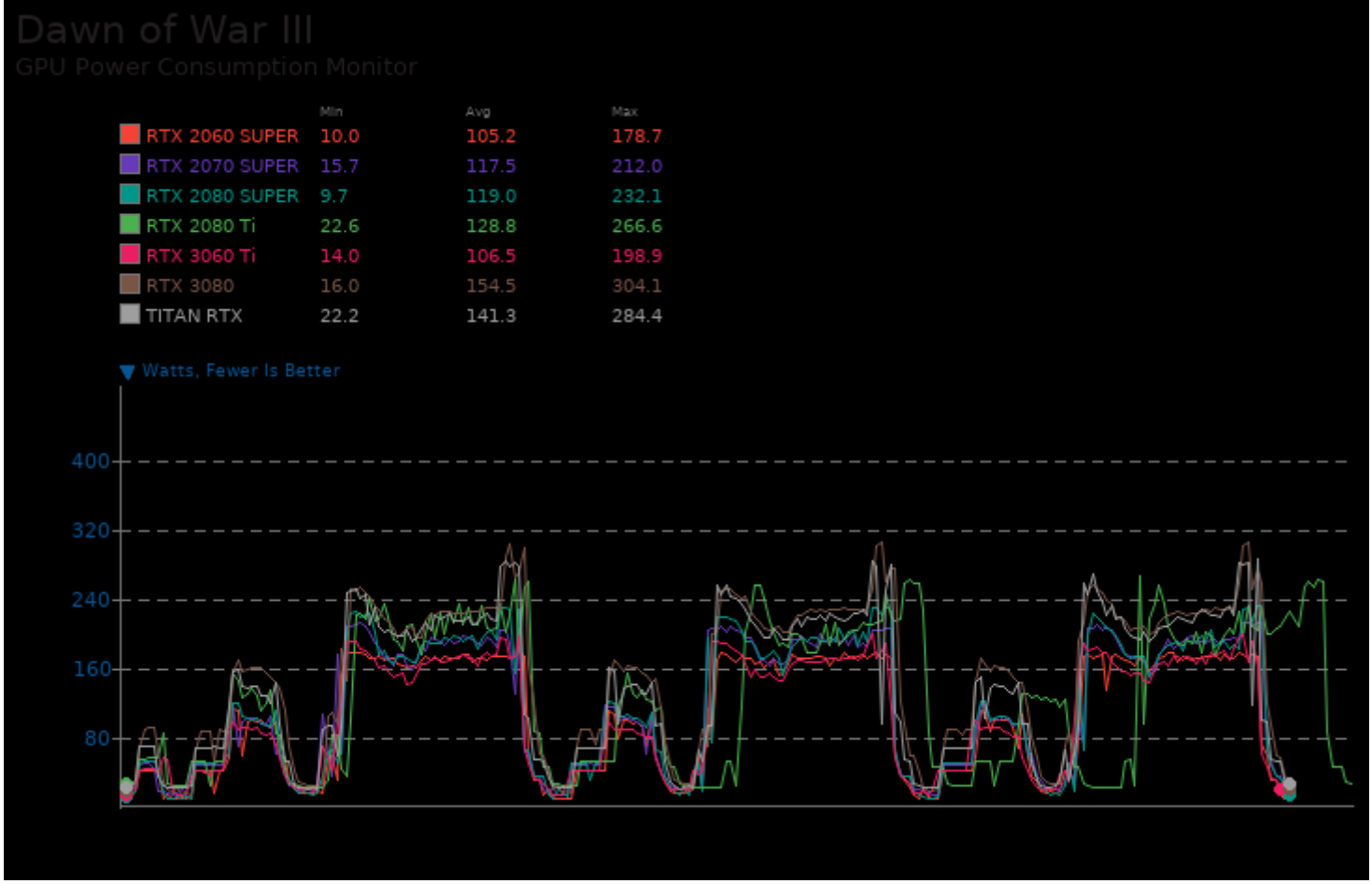

HITMAN
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 54.0 68.4 73.0
RTX 2070 SUPER 56.0 64.7 68.0
RTX 2080 SUPER 40.0 61.7 70.0
RTX 2080 Ti 59.0 68.5 74.0
RTX 3060 Ti 52.0 63.9 70.0
RTX 3080 57.0 64.9 71.0
TITAN RTX 59.0 70.8 76.0
Celsius, Fewer Is Better
100
80
60
40
20

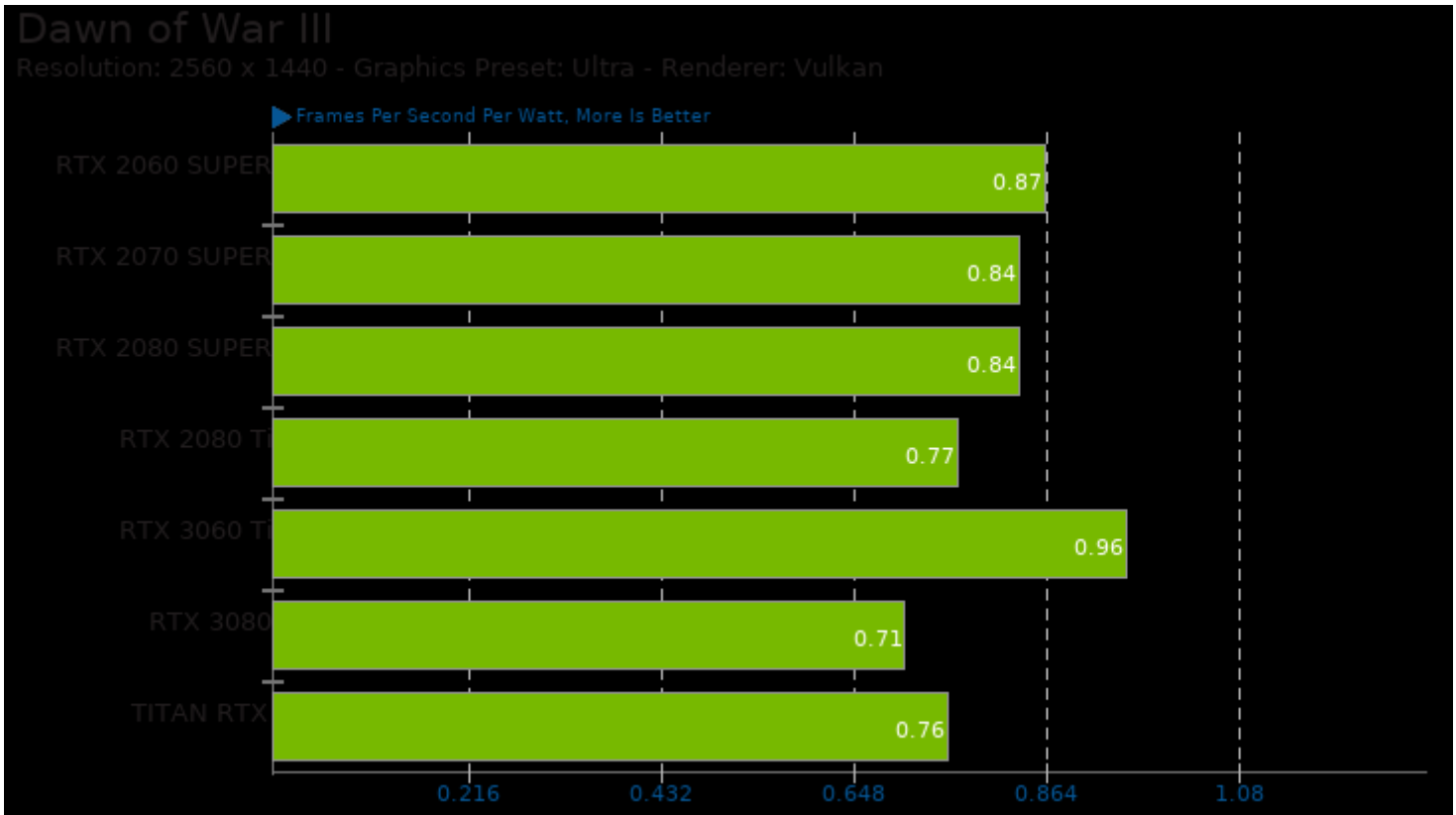

HITMAN
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.3 143.2 177.2
RTX 2070 SUPER 15.9 156.7 217.3
RTX 2080 SUPER 9.3 163.2 248.8
RTX 2080 Ti 26.3 192.0 264.9
RTX 3060 Ti 14.1 149.9 199.6
RTX 3080 17.9 222.6 311.6
TITAN RTX 23.6 210.1 284.5
Watts, Fewer Is Better
400
320
240
160
80

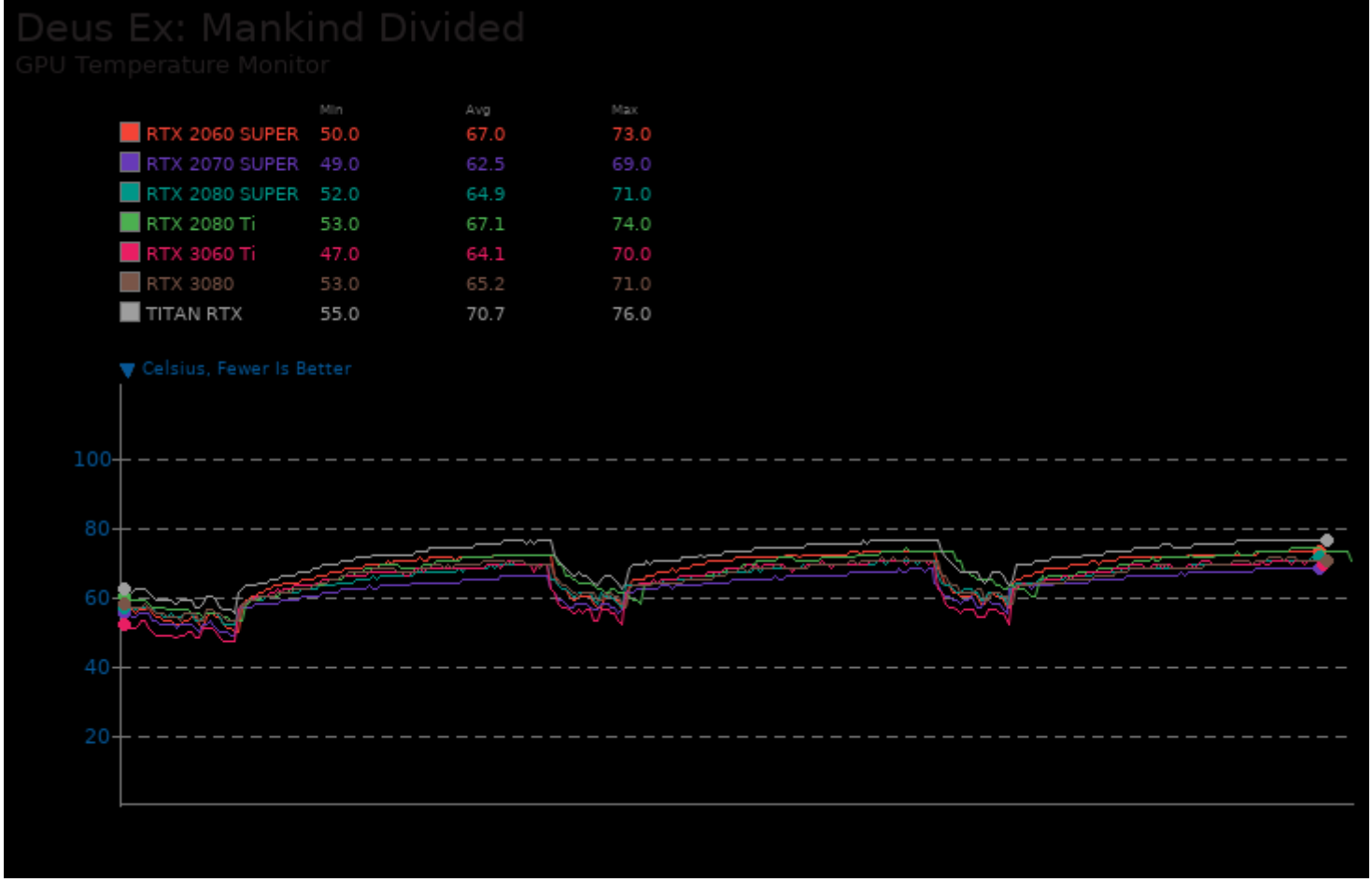

F1 2017
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 48.0 67.8 74.0
RTX 2070 SUPER 47.0 64.0 71.0
RTX 2080 SUPER 49.0 65.6 73.0
RTX 2080 Ti 51.0 67.4 73.0
RTX 3060 Ti 46.0 64.7 71.0
RTX 3080 50.0 65.2 70.0
TITAN RTX 53.0 70.1 77.0
Celsius, Fewer Is Better
100
80
60
40
20

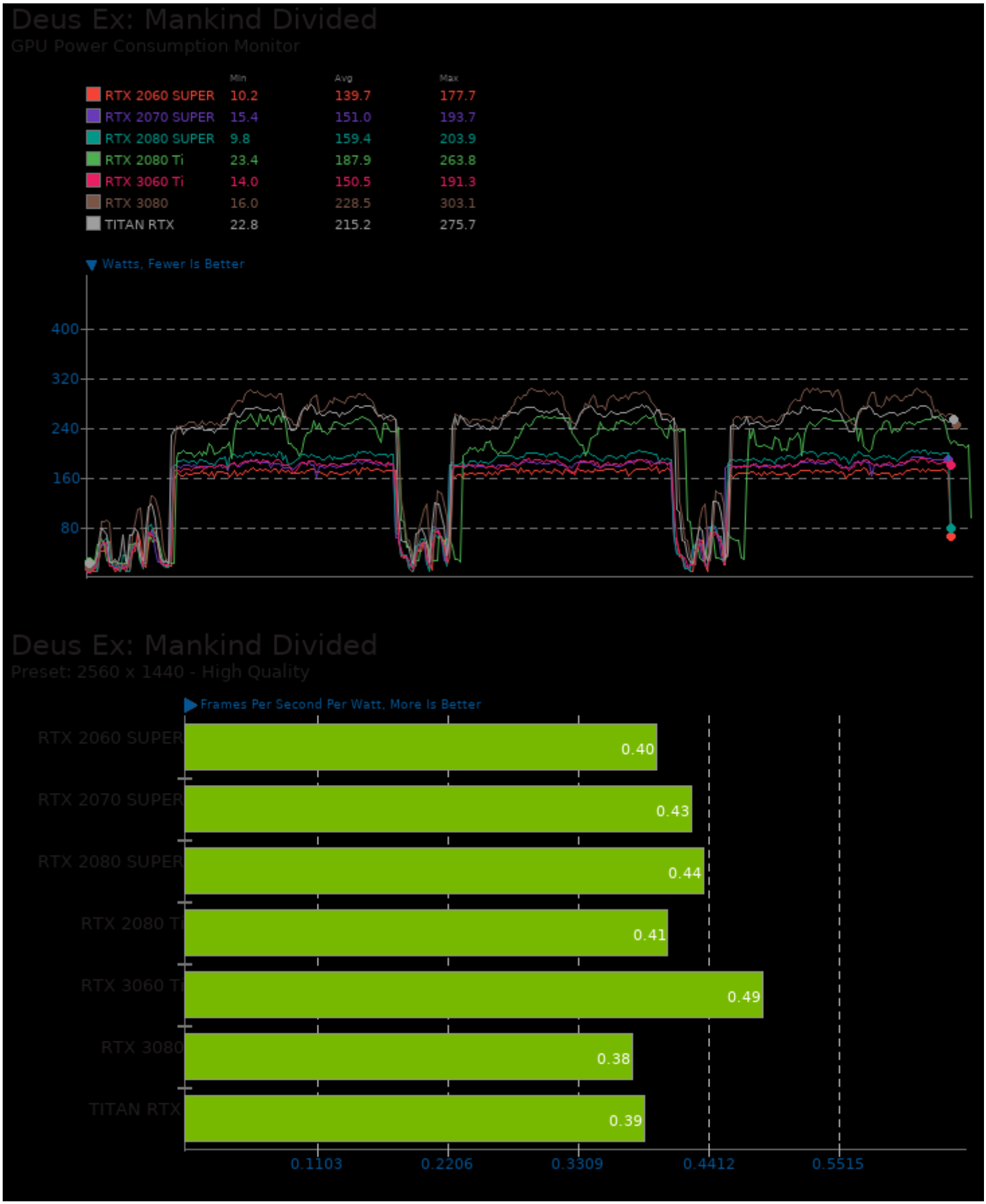

F1 2017
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.1 147.4 178.3
RTX 2070 SUPER 15.3 169.6 215.9
RTX 2080 SUPER 9.5 175.3 240.0
RTX 2080 Ti 23.9 184.2 264.4
RTX 3060 Ti 13.7 157.0 199.8
RTX 3080 16.1 222.9 310.7
TITAN RTX 22.2 213.8 283.3
Watts, Fewer Is Better
400
320
240
160
80
F1 2017
Resolution: 2560 x 1440 - Graphics Preset: Ultra High - Anti Aliasing: Off
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.83
RTX 2070 SUPER
0.81
RTX 2080 SUPER
0.84
RTX 2080 Ti
0.71
RTX 3060 Ti
0.94
RTX 3080
0.69
TITAN RTX
0.72
0.2115
0.423
0.6345
0.846
1.0575

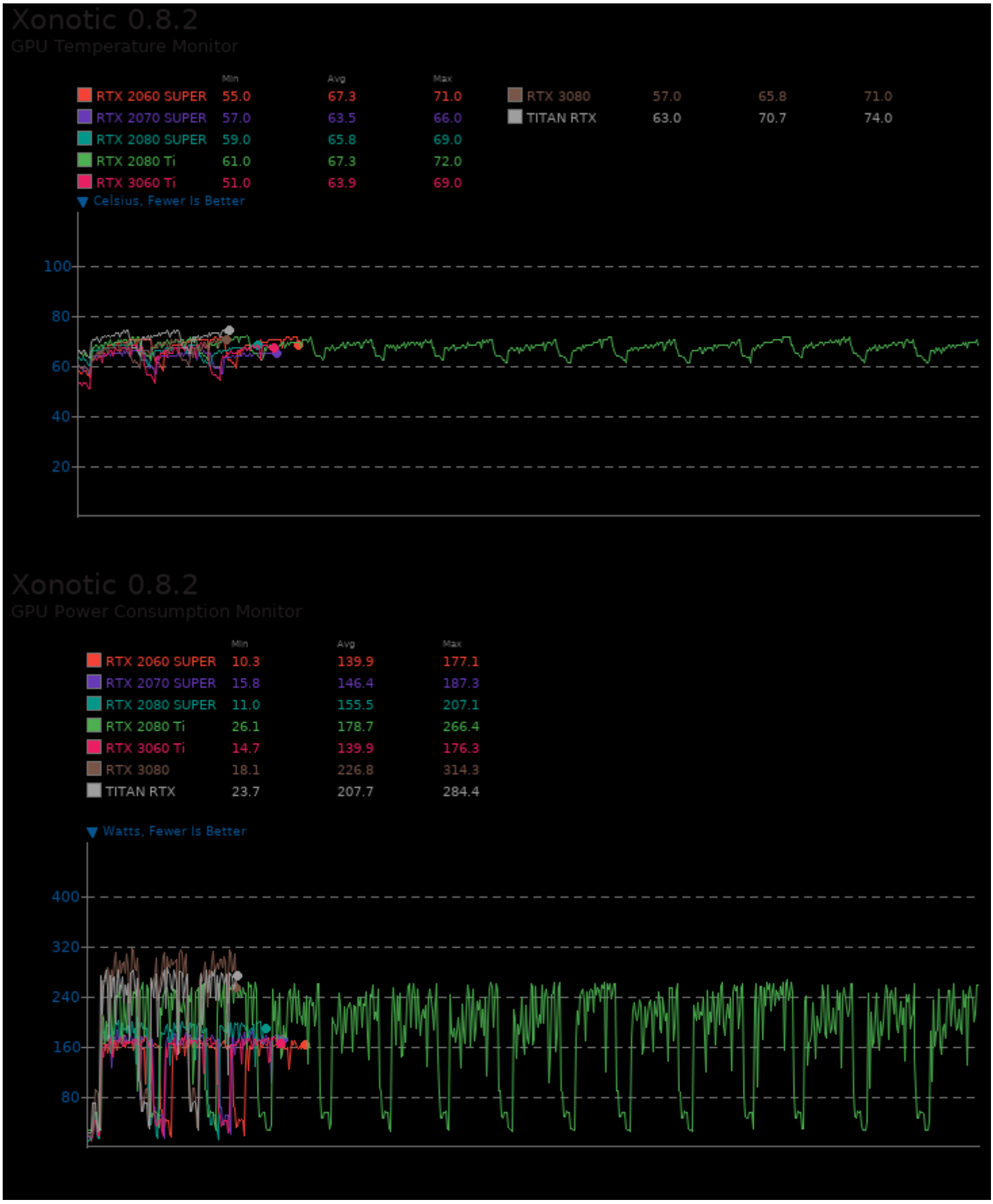

Dawn of War III
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 51.0 60.3 69.0
RTX 2070 SUPER 50.0 56.9 64.0
RTX 2080 SUPER 52.0 59.1 66.0
RTX 2080 Ti 53.0 60.3 68.0
RTX 3060 Ti 48.0 57.5 68.0
RTX 3080 53.0 59.2 66.0
TITAN RTX 55.0 62.7 70.0
Celsius, Fewer Is Better
100
80
60
40
20

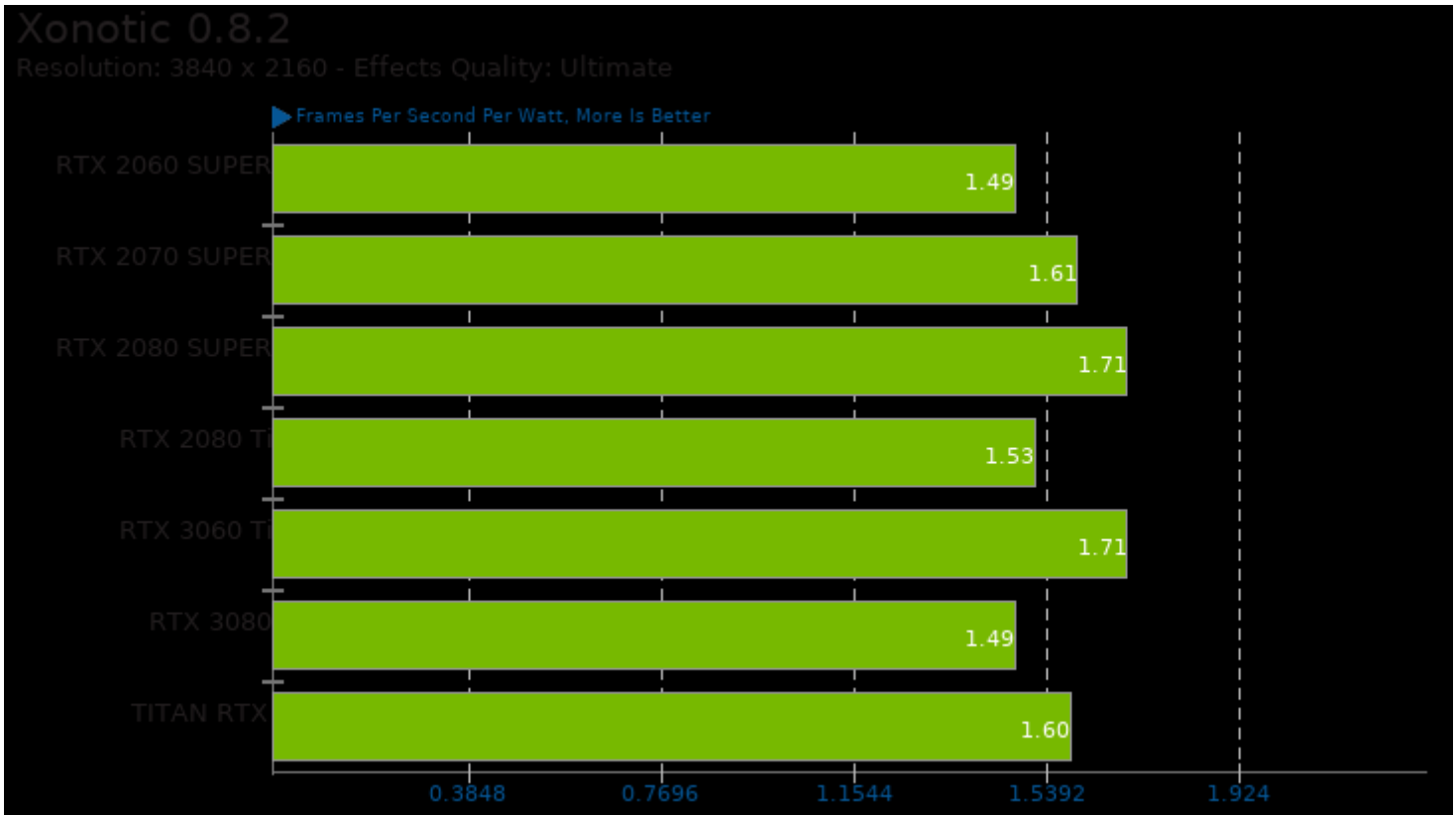

Dawn of War III
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.0 105.2 178.7
RTX 2070 SUPER 15.7 117.5 212.0
RTX 2080 SUPER 9.7 119.0 232.1
RTX 2080 Ti 22.6 128.8 266.6
RTX 3060 Ti 14.0 106.5 198.9
RTX 3080 16.0 154.5 304.1
TITAN RTX 22.2 141.3 284.4
Watts, Fewer Is Better
400
320
240
160
80

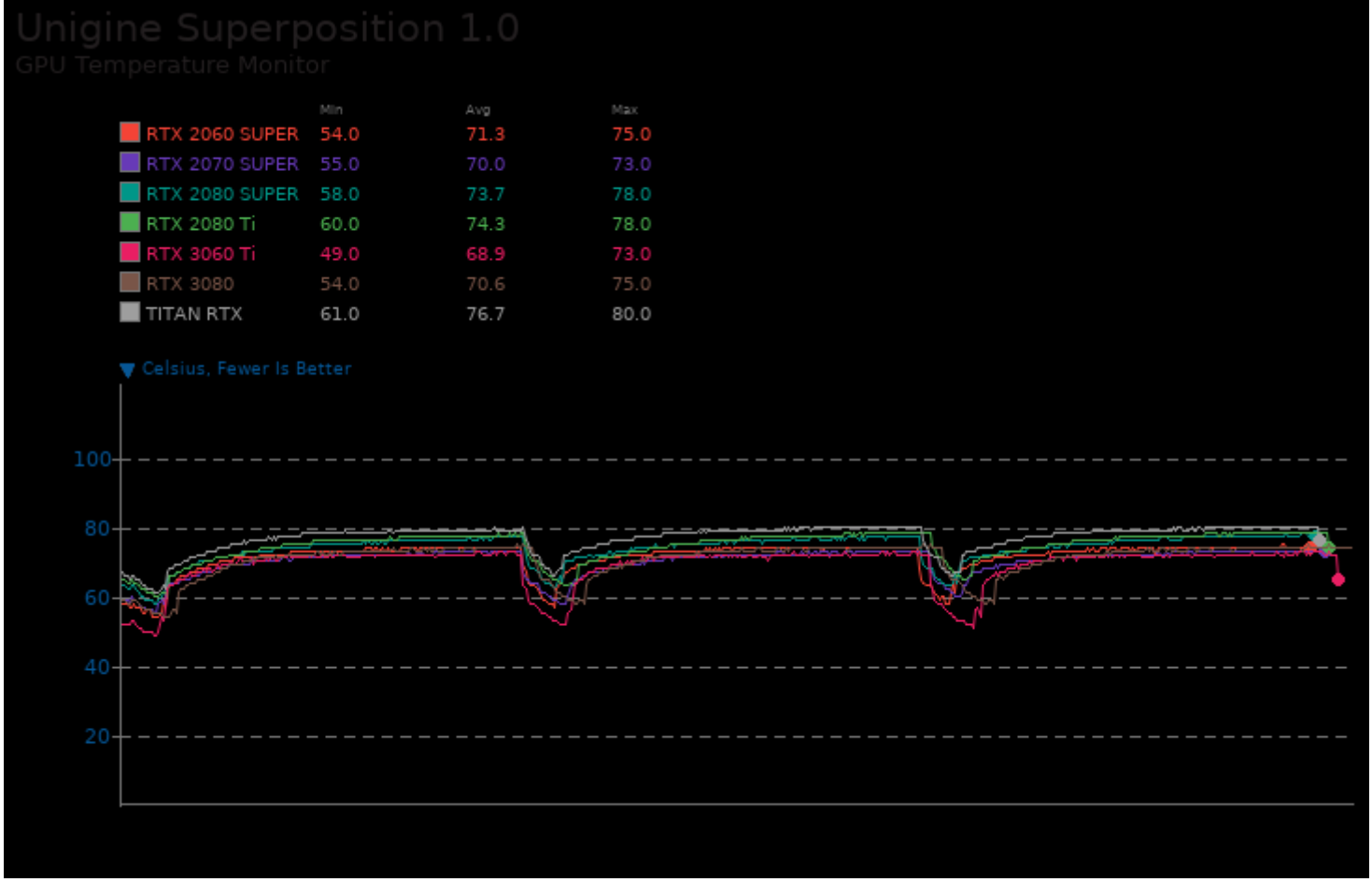

Dawn of War III
Resolution: 2560 x 1440 - Graphics Preset: Ultra - Renderer: Vulkan
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.87
RTX 2070 SUPER
0.84
RTX 2080 SUPER
0.84
RTX 2080 Ti
0.77
RTX 3060 Ti
0.96
RTX 3080
0.71
TITAN RTX
0.76
0.216
0.432
0.648
0.864
1.08

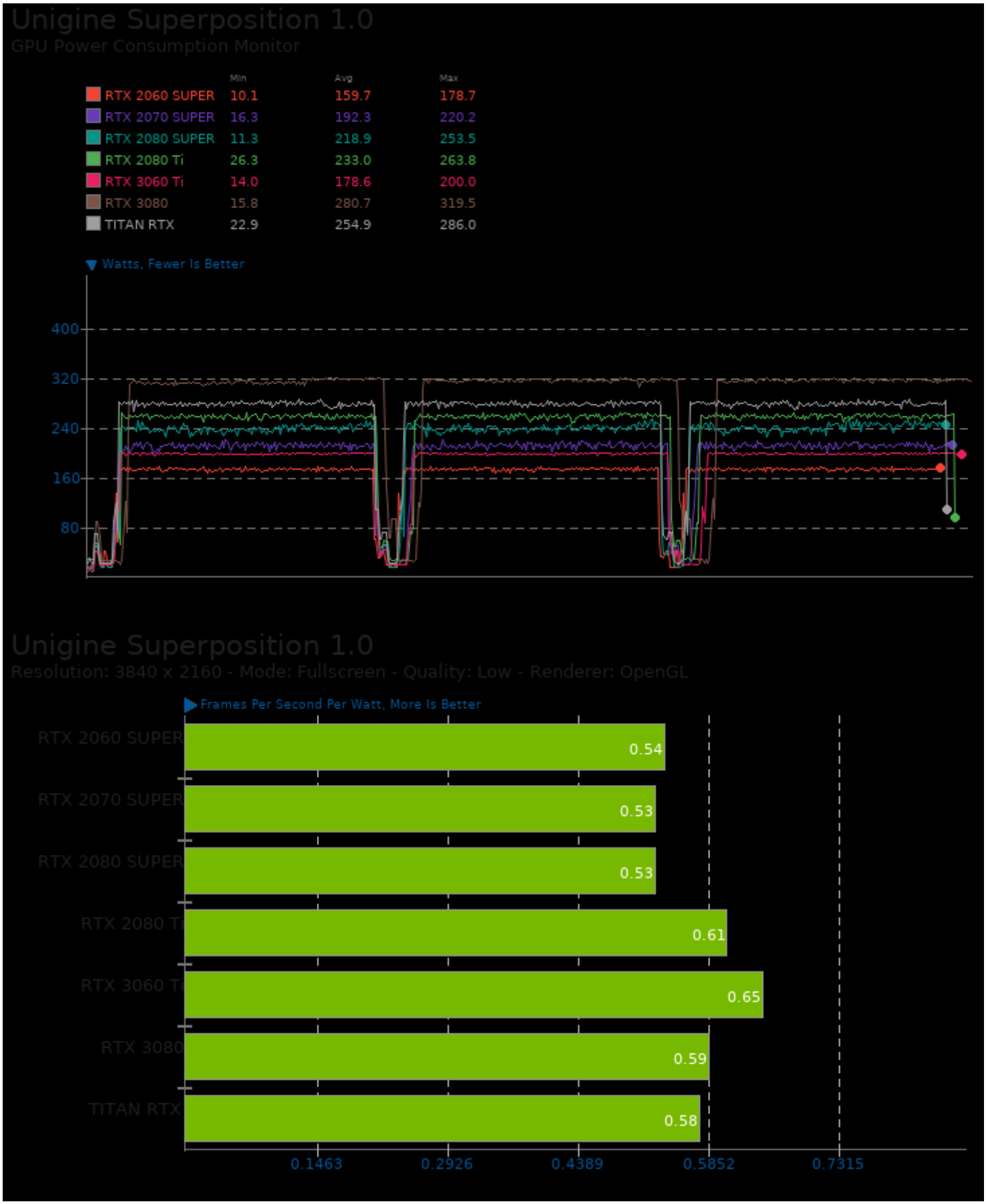

Deus Ex: Mankind Divided
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 50.0 67.0 73.0
RTX 2070 SUPER 49.0 62.5 69.0
RTX 2080 SUPER 52.0 64.9 71.0
RTX 2080 Ti 53.0 67.1 74.0
RTX 3060 Ti 47.0 64.1 70.0
RTX 3080 53.0 65.2 71.0
TITAN RTX 55.0 70.7 76.0
Celsius, Fewer Is Better
100
80
60
40
20

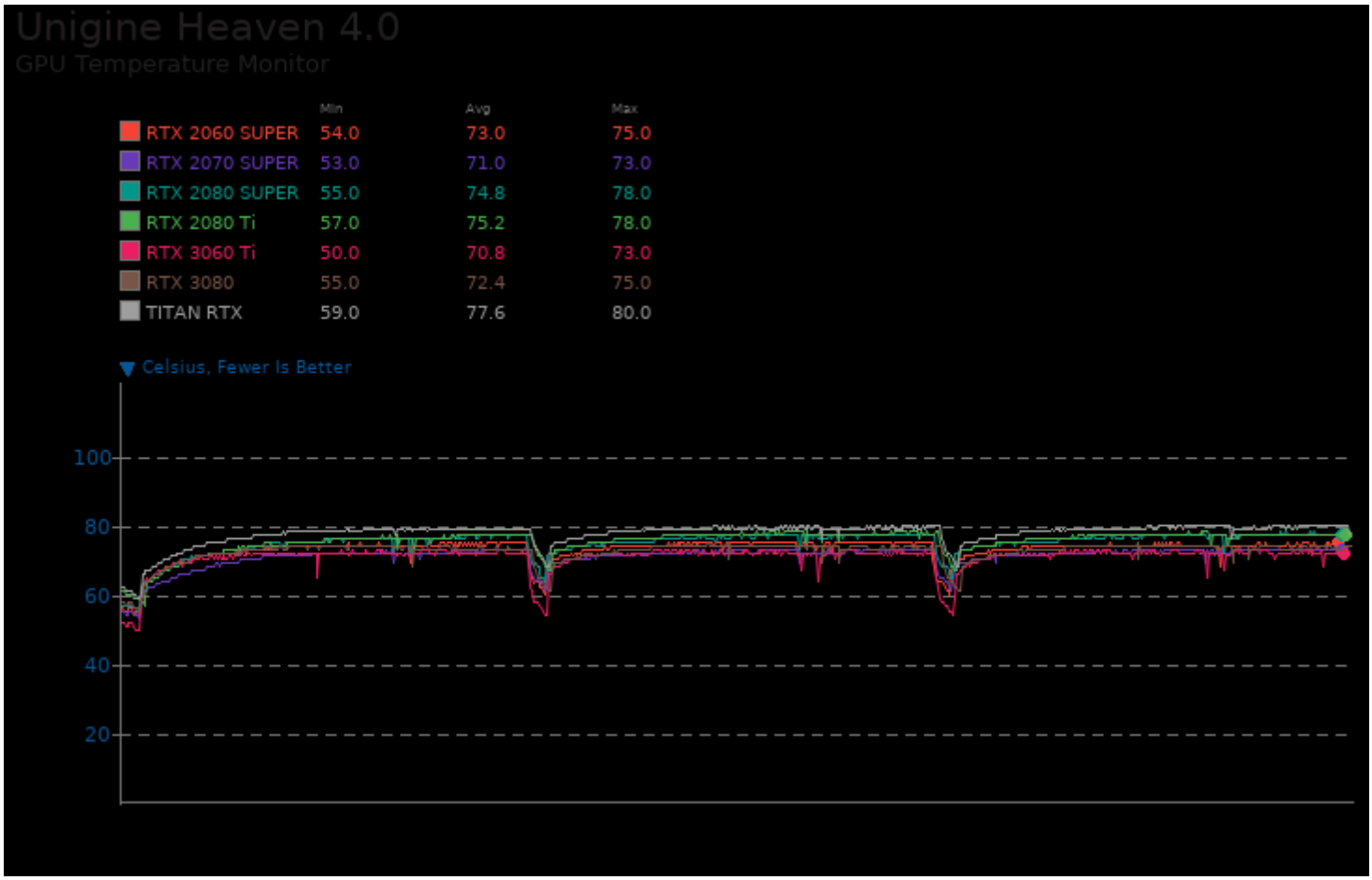

Deus Ex: Mankind Divided
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.2 139.7 177.7
RTX 2070 SUPER 15.4 151.0 193.7
RTX 2080 SUPER 9.8 159.4 203.9
RTX 2080 Ti 23.4 187.9 263.8
RTX 3060 Ti 14.0 150.5 191.3
RTX 3080 16.0 228.5 303.1
TITAN RTX 22.8 215.2 275.7
Watts, Fewer Is Better
400
320
240
160
80
Deus Ex: Mankind Divided
Preset: 2560 x 1440 - High Quality
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.40
RTX 2070 SUPER
0.43
RTX 2080 SUPER
0.44
RTX 2080 Ti
0.41
RTX 3060 Ti
0.49
RTX 3080
0.38
TITAN RTX
0.39
0.1103
0.2206
0.3309
0.4412
0.5515


Xonotic 0.8.2
GPU Temperature Monitor
Min Avg Max
RTX 2060 SUPER 55.0 67.3 71.0
RTX 2070 SUPER 57.0 63.5 66.0
RTX 2080 SUPER 59.0 65.8 69.0
RTX 2080 Ti 61.0 67.3 72.0
RTX 3060 Ti 51.0 63.9 69.0
RTX 3080 57.0 65.8 71.0
TITAN RTX 63.0 70.7 74.0
Celsius, Fewer Is Better
100
80
60
40
20
Xonotic 0.8.2
GPU Power Consumption Monitor
Min Avg Max
RTX 2060 SUPER 10.3 139.9 177.1
RTX 2070 SUPER 15.8 146.4 187.3
RTX 2080 SUPER 11.0 155.5 207.1
RTX 2080 Ti 26.1 178.7 266.4
RTX 3060 Ti 14.7 139.9 176.3
RTX 3080 18.1 226.8 314.3
TITAN RTX 23.7 207.7 284.4
Watts, Fewer Is Better
400
320
240
160
80

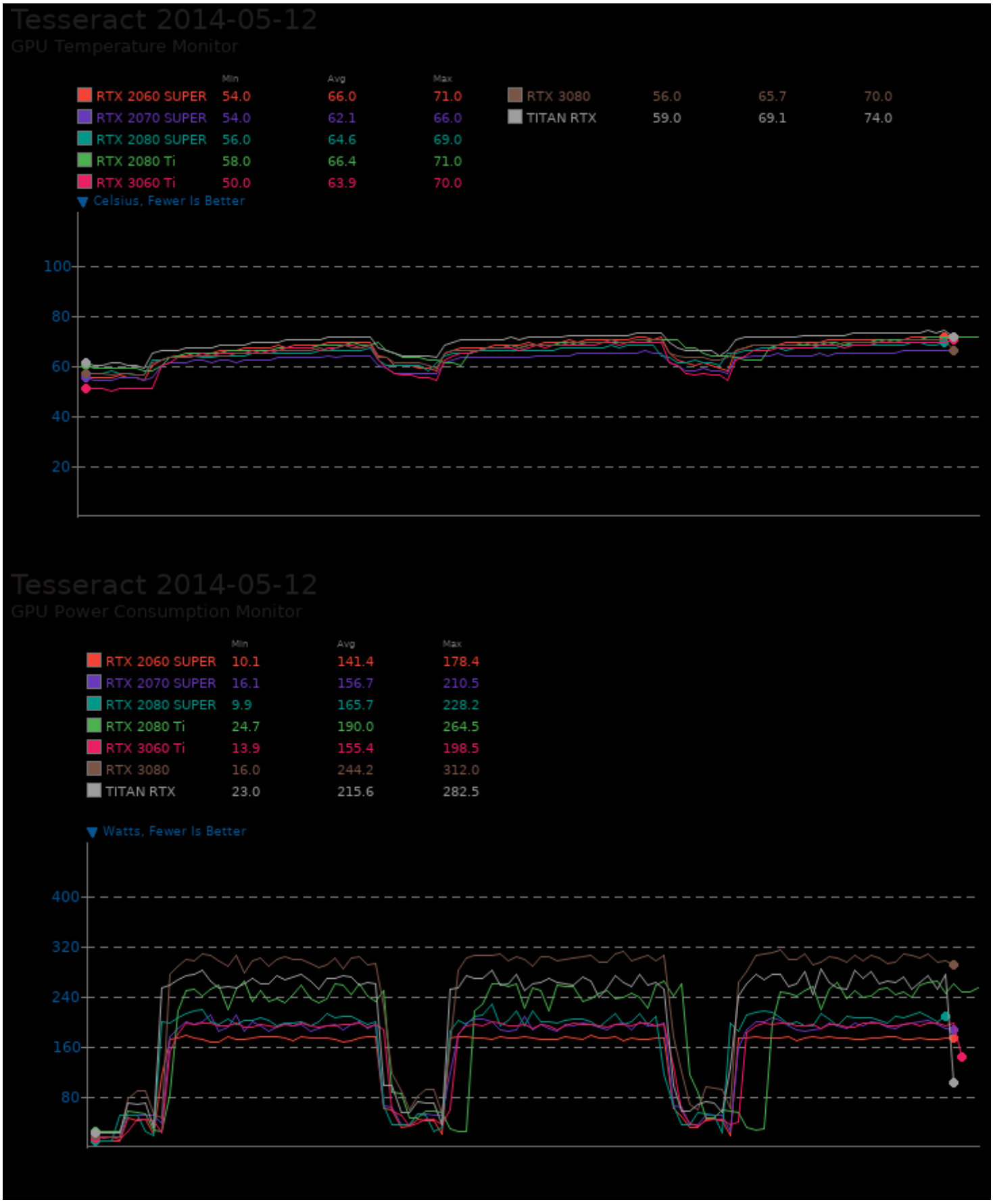

Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultimate
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
RTX 2070 SUPER
RTX 2080 SUPER
RTX 2080 Ti
RTX 3060 Ti
RTX 3080
TITAN RTX
1.49
1.61
1.71
1.53
1.71
1.49
1.60
0.3848
0.7696
1.1544
1.5392
1.924

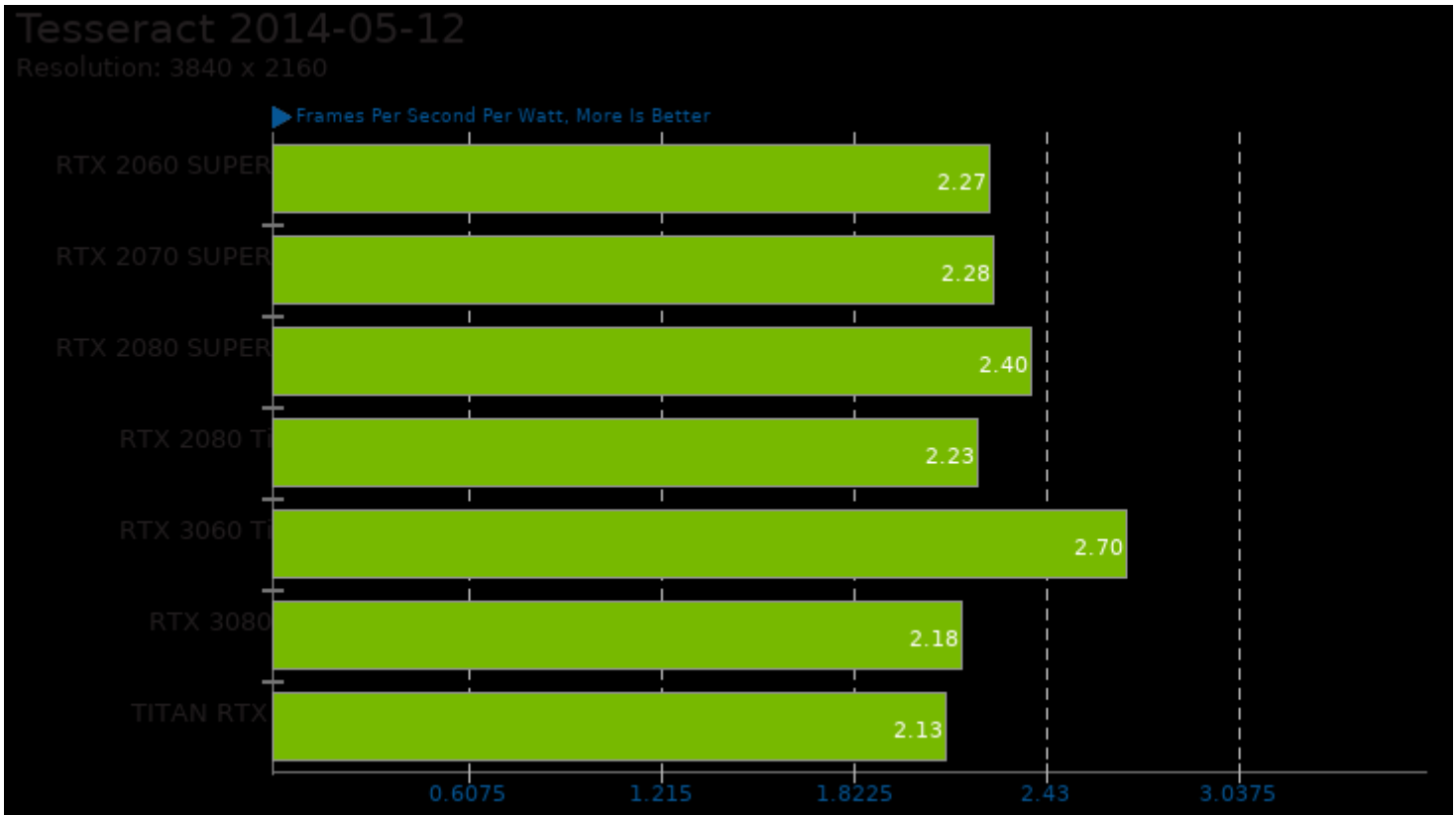

Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 54.0 71.3 75.0
RTX 2070 SUPER 55.0 70.0 73.0
RTX 2080 SUPER 58.0 73.7 78.0
RTX 2080 Ti 60.0 74.3 78.0
RTX 3060 Ti 49.0 68.9 73.0
RTX 3080 54.0 70.6 75.0
TITAN RTX 61.0 76.7 80.0
Celsius, Fewer Is Better
100
80
60
40
20

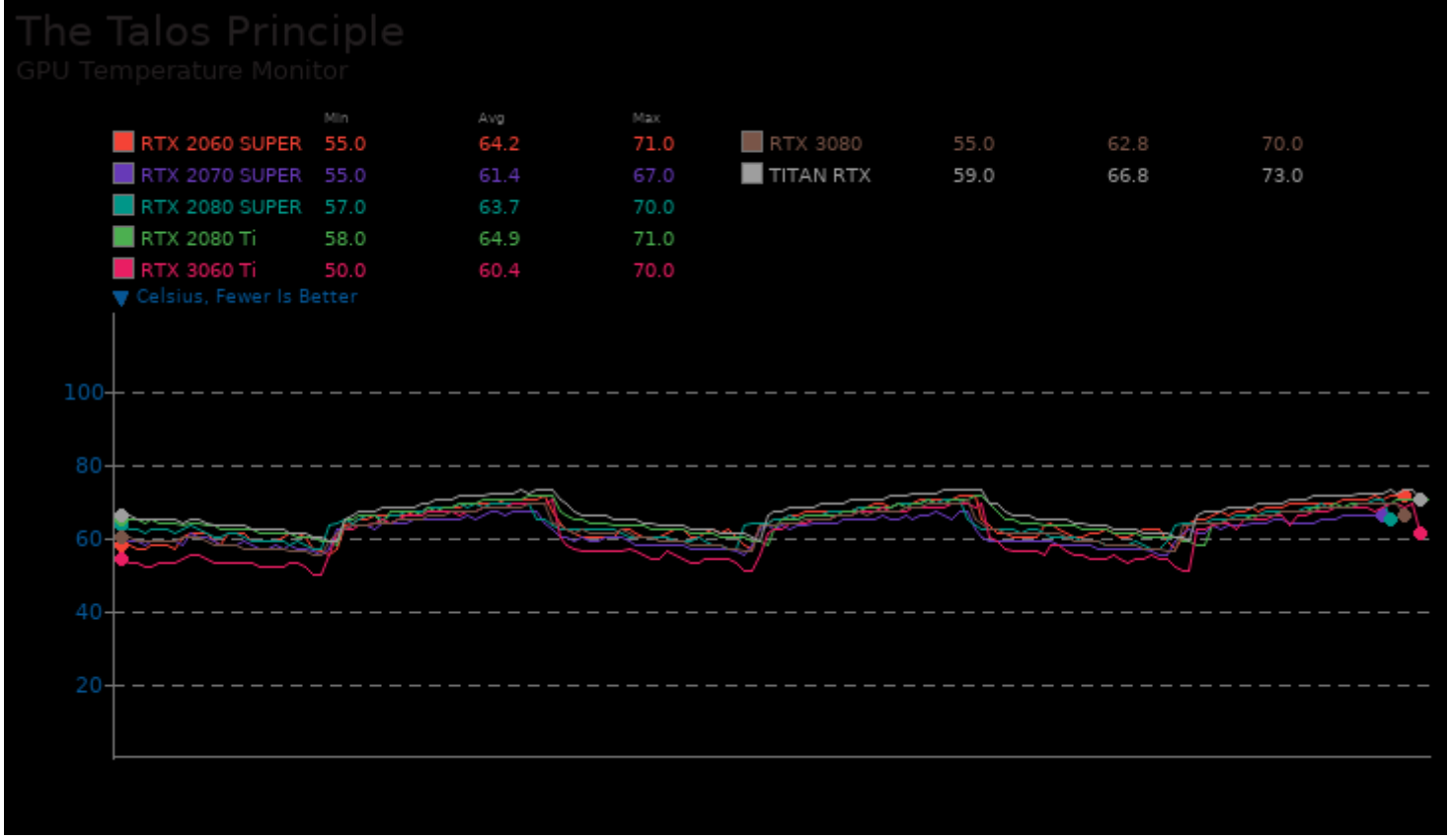

Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.1 159.7 178.7
RTX 2070 SUPER 16.3 192.3 220.2
RTX 2080 SUPER 11.3 218.9 253.5
RTX 2080 Ti 26.3 233.0 263.8
RTX 3060 Ti 14.0 178.6 200.0
RTX 3080 15.8 280.7 319.5
TITAN RTX 22.9 254.9 286.0
Watts, Fewer Is Better
400
320
240
160
80
Unigine Superposition 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Quality: Low - Renderer: OpenGL
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
RTX 2070 SUPER
RTX 2080 SUPER
RTX 2080 Ti
RTX 3060 Ti
RTX 3080
TITAN RTX
0.54
0.53
0.53
0.61
0.65
0.59
0.58
0.1463
0.2926
0.4389
0.5852
0.7315

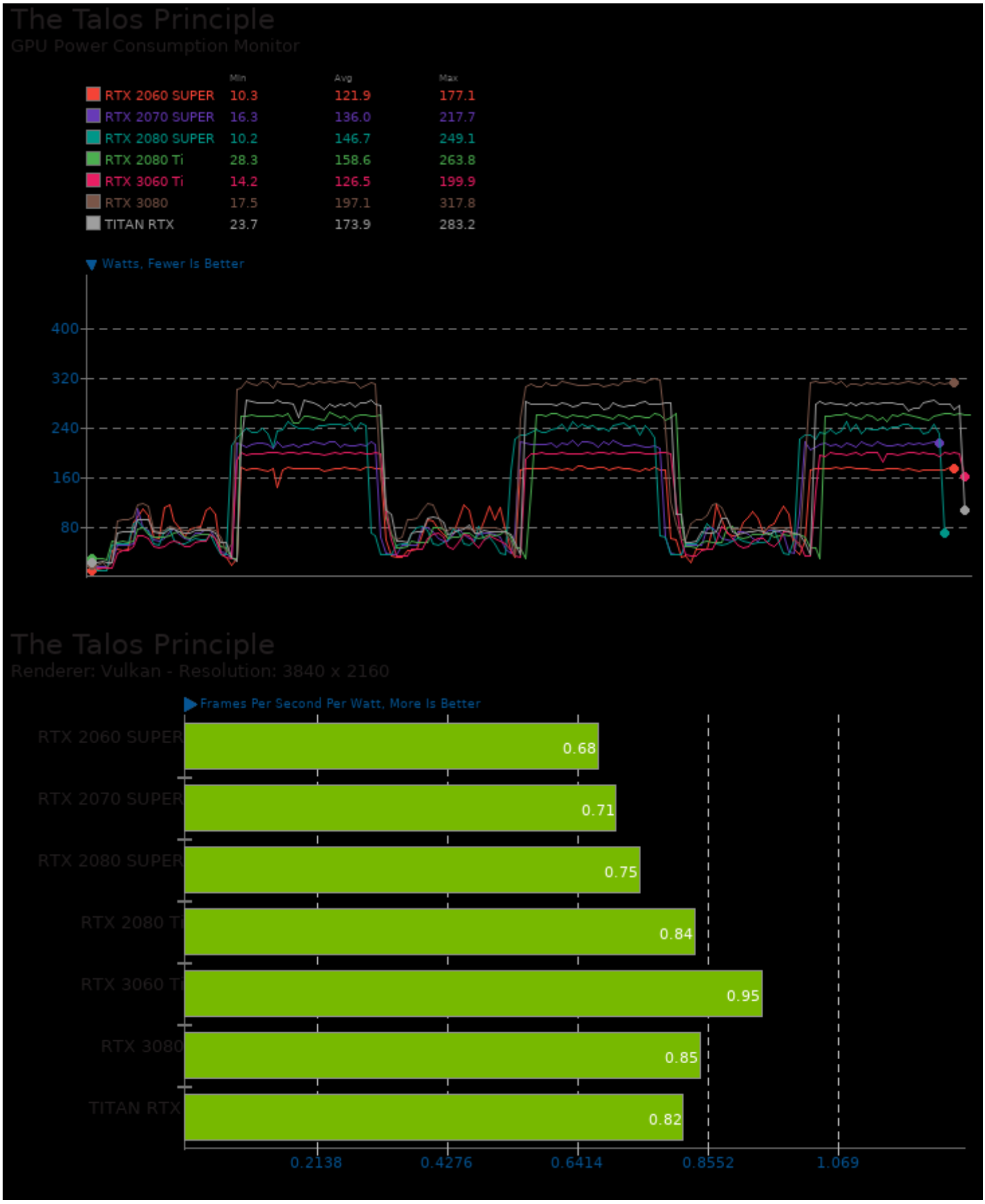

Unigine Heaven 4.0
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 54.0 73.0 75.0
RTX 2070 SUPER 53.0 71.0 73.0
RTX 2080 SUPER 55.0 74.8 78.0
RTX 2080 Ti 57.0 75.2 78.0
RTX 3060 Ti 50.0 70.8 73.0
RTX 3080 55.0 72.4 75.0
TITAN RTX 59.0 77.6 80.0
Celsius, Fewer Is Better
100
80
60
40
20

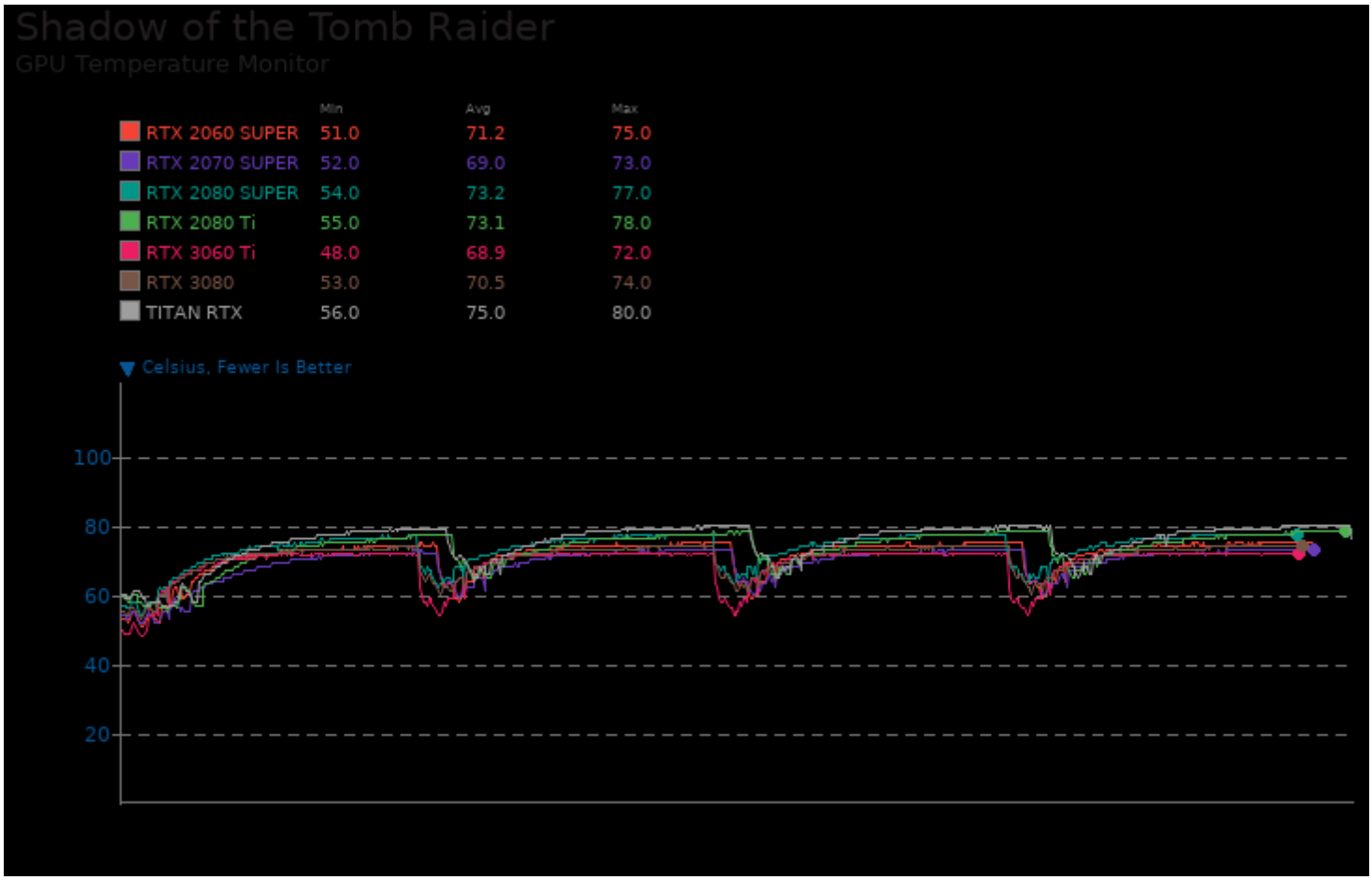

Unigine Heaven 4.0
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.4 166.7 179.5
RTX 2070 SUPER 16.0 203.5 220.4
RTX 2080 SUPER 9.9 231.5 255.9
RTX 2080 Ti 24.5 246.3 278.9
RTX 3060 Ti 14.0 190.0 200.2
RTX 3080 16.8 303.2 320.4
TITAN RTX 22.8 267.0 287.6
Watts, Fewer Is Better
400
320
240
160
80
Unigine Heaven 4.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER 0.25
RTX 2070 SUPER 0.24
RTX 2080 SUPER 0.24
RTX 2080 Ti 0.30
RTX 3060 Ti 0.30
RTX 3080 0.30
TITAN RTX 0.26
0.0675
0.135
0.2025
0.27
0.3375


Tesseract 2014-05-12
GPU Temperature Monitor
Min Avg Max
RTX 2060 SUPER 54.0 66.0 71.0
RTX 2070 SUPER 54.0 62.1 66.0
RTX 2080 SUPER 56.0 64.6 69.0
RTX 2080 Ti 58.0 66.4 71.0
RTX 3060 Ti 50.0 63.9 70.0
RTX 3080 56.0 65.7 70.0
TITAN RTX 59.0 69.1 74.0
Celsius, Fewer Is Better
100
80
60
40
20
Tesseract 2014-05-12
GPU Power Consumption Monitor
Min Avg Max
RTX 2060 SUPER 10.1 141.4 178.4
RTX 2070 SUPER 16.1 156.7 210.5
RTX 2080 SUPER 9.9 165.7 228.2
RTX 2080 Ti 24.7 190.0 264.5
RTX 3060 Ti 13.9 155.4 198.5
RTX 3080 16.0 244.2 312.0
TITAN RTX 23.0 215.6 282.5
Watts, Fewer Is Better
400
320
240
160
80

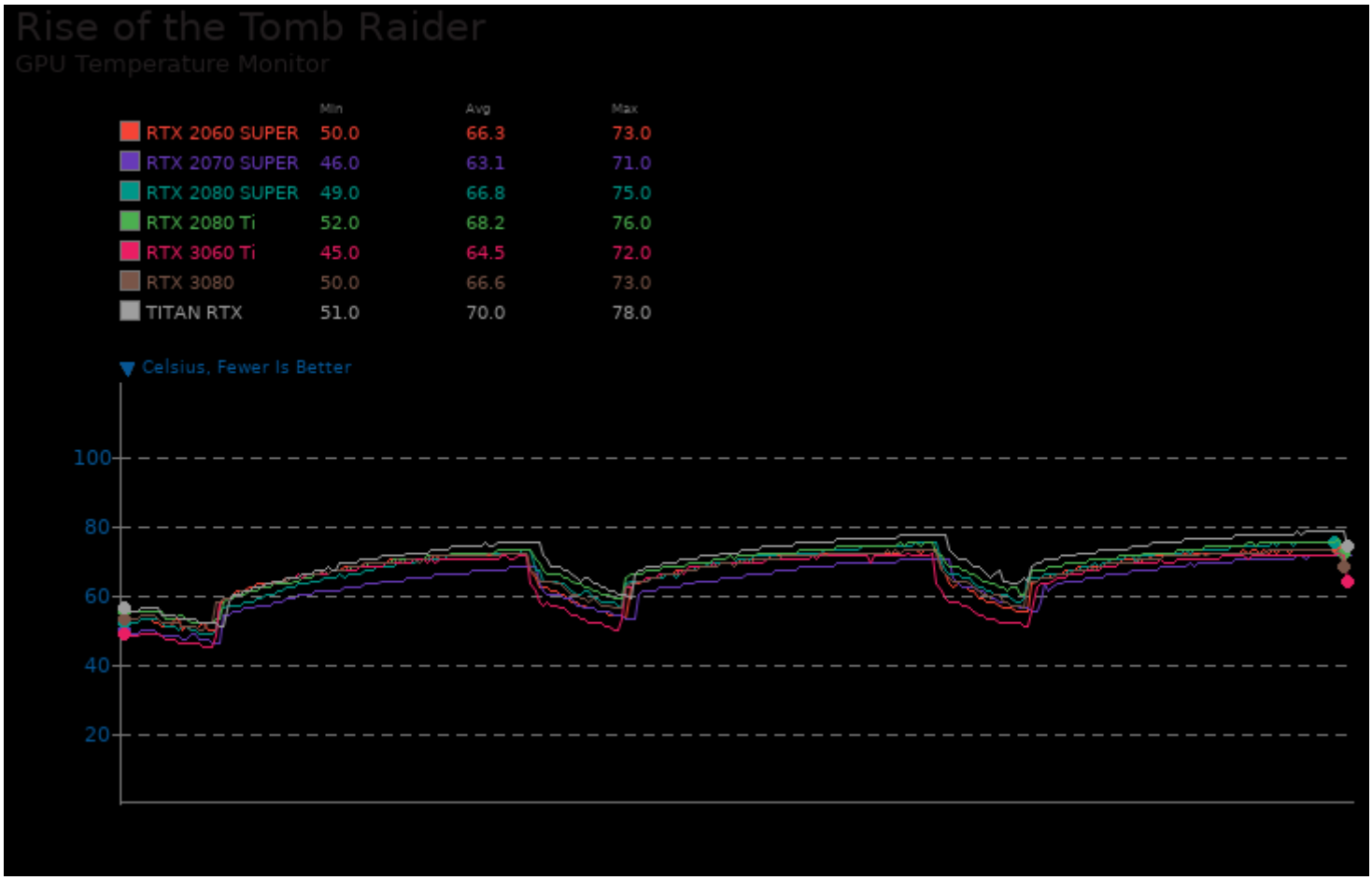

Tesseract 2014-05-12
Resolution: 3840 x 2160
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
RTX 2070 SUPER
RTX 2080 SUPER
RTX 2080 Ti
RTX 3060 Ti
RTX 3080
TITAN RTX
2.27
2.28
2.40
2.23
2.70
2.18
2.13
0.6075
1.215
1.8225
2.43
3.0375

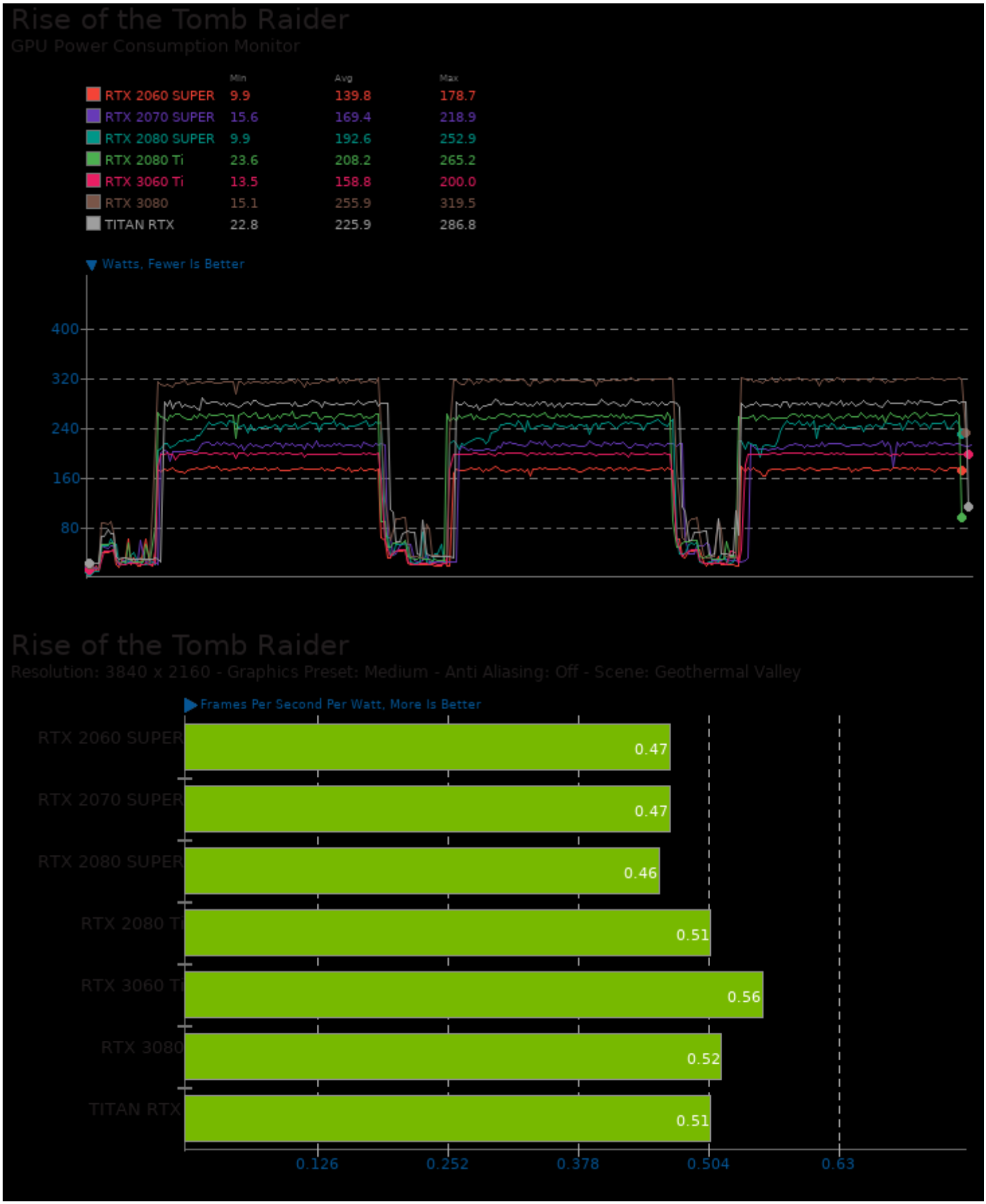

The Talos Principle
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 55.0 64.2 71.0
RTX 2070 SUPER 55.0 61.4 67.0
RTX 2080 SUPER 57.0 63.7 70.0
RTX 2080 Ti 58.0 64.9 71.0
RTX 3060 Ti 50.0 60.4 70.0
RTX 3080 55.0 62.8 70.0
TITAN RTX 59.0 66.8 73.0
Celsius, Fewer Is Better
100
80
60
40
20

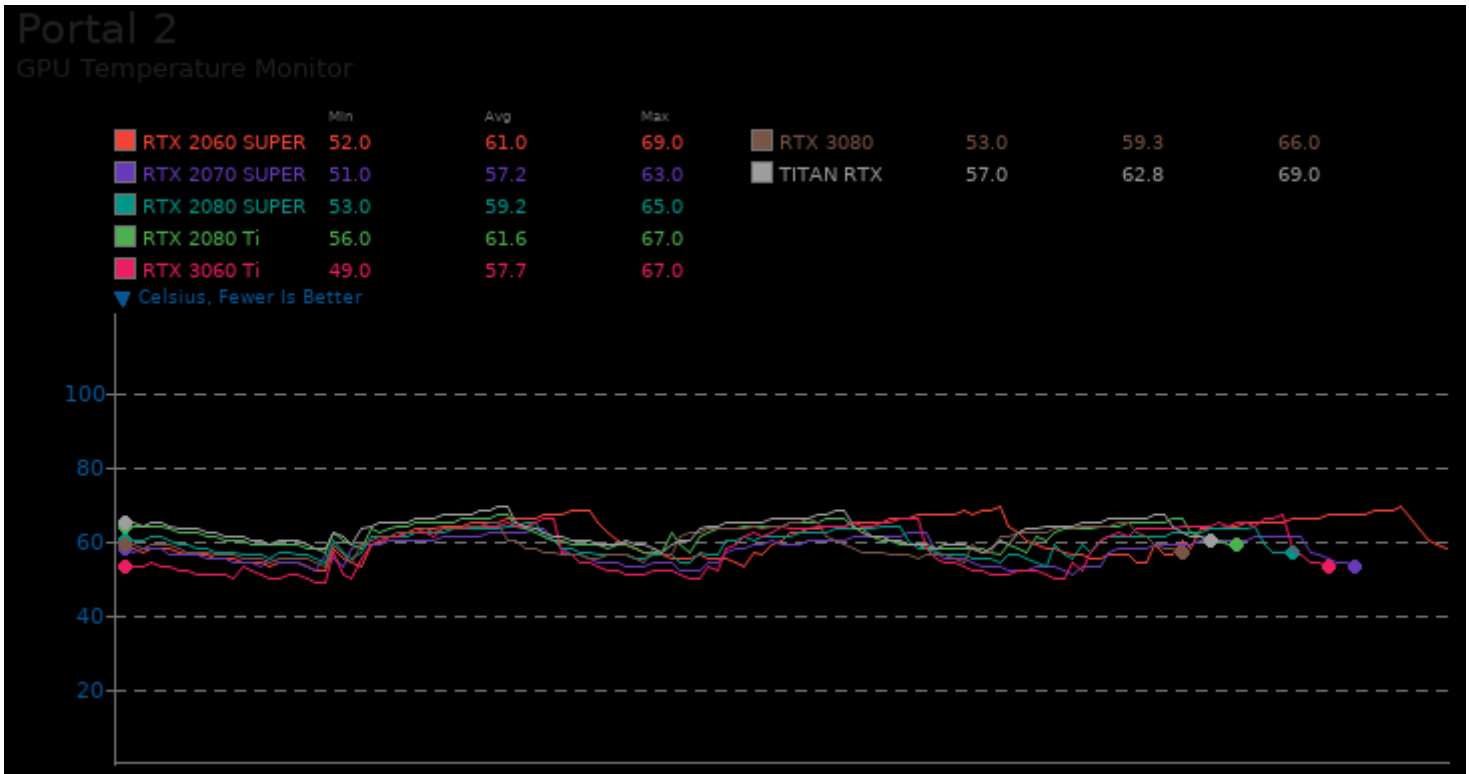

The Talos Principle
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.3 121.9 177.1
RTX 2070 SUPER 16.3 136.0 217.7
RTX 2080 SUPER 10.2 146.7 249.1
RTX 2080 Ti 28.3 158.6 263.8
RTX 3060 Ti 14.2 126.5 199.9
RTX 3080 17.5 197.1 317.8
TITAN RTX 23.7 173.9 283.2
Watts, Fewer Is Better
400
320
240
160
80
The Talos Principle
Renderer: Vulkan - Resolution: 3840 x 2160
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.68
RTX 2070 SUPER
0.71
RTX 2080 SUPER
0.75
RTX 2080 Ti
0.84
RTX 3060 Ti
0.95
RTX 3080
0.85
TITAN RTX
0.82
0.2138
0.4276
0.6414
0.8552
1.069

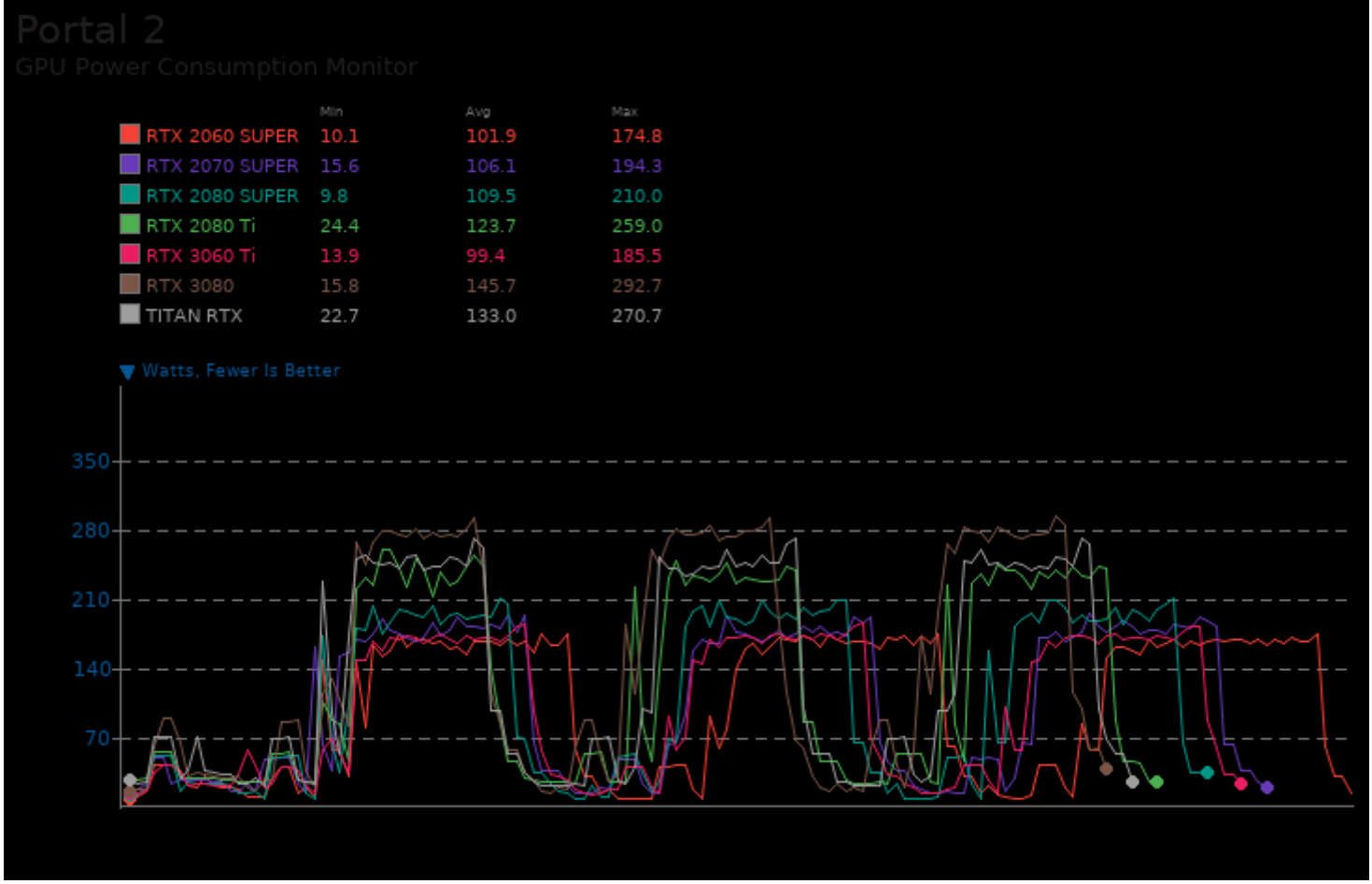

Shadow of the Tomb Raider
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 51.0 71.2 75.0
RTX 2070 SUPER 52.0 69.0 73.0
RTX 2080 SUPER 54.0 73.2 77.0
RTX 2080 Ti 55.0 73.1 78.0
RTX 3060 Ti 48.0 68.9 72.0
RTX 3080 53.0 70.5 74.0
TITAN RTX 56.0 75.0 80.0
Celsius, Fewer Is Better
100
80
60
40
20

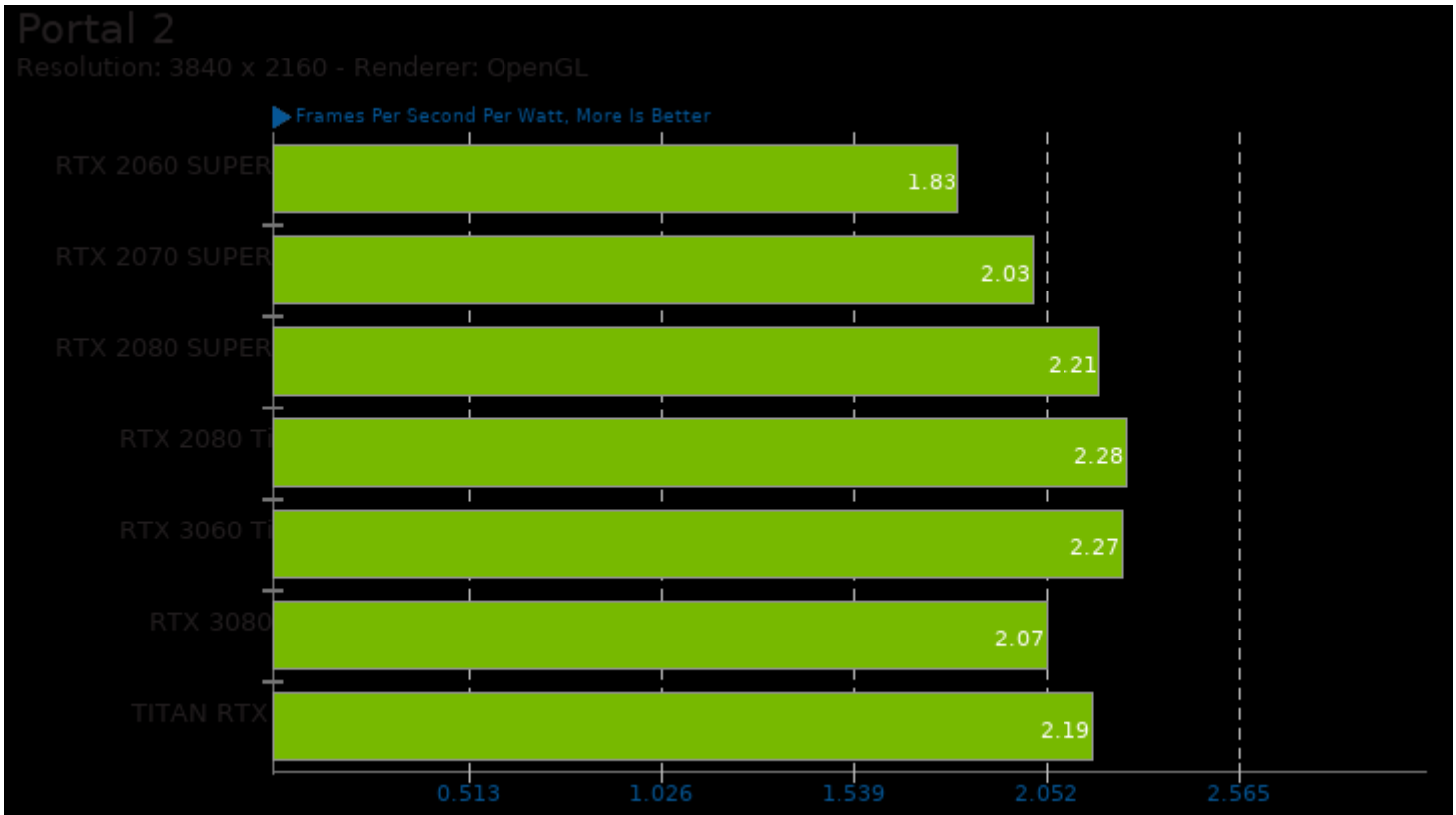

Shadow of the Tomb Raider
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 9.8 157.9 180.2
RTX 2070 SUPER 15.8 190.6 221.6
RTX 2080 SUPER 9.6 219.1 252.3
RTX 2080 Ti 25.2 228.7 266.9
RTX 3060 Ti 13.8 180.4 200.0
RTX 3080 16.2 285.3 318.8
TITAN RTX 23.0 245.7 291.2
Watts, Fewer Is Better
400
320
240
160
80
Shadow of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.31
RTX 2070 SUPER
0.30
RTX 2080 SUPER
0.30
RTX 2080 Ti
0.35
RTX 3060 Ti
0.37
RTX 3080
0.35
TITAN RTX
0.34
0.0833
0.1666
0.2499
0.3332
0.4165

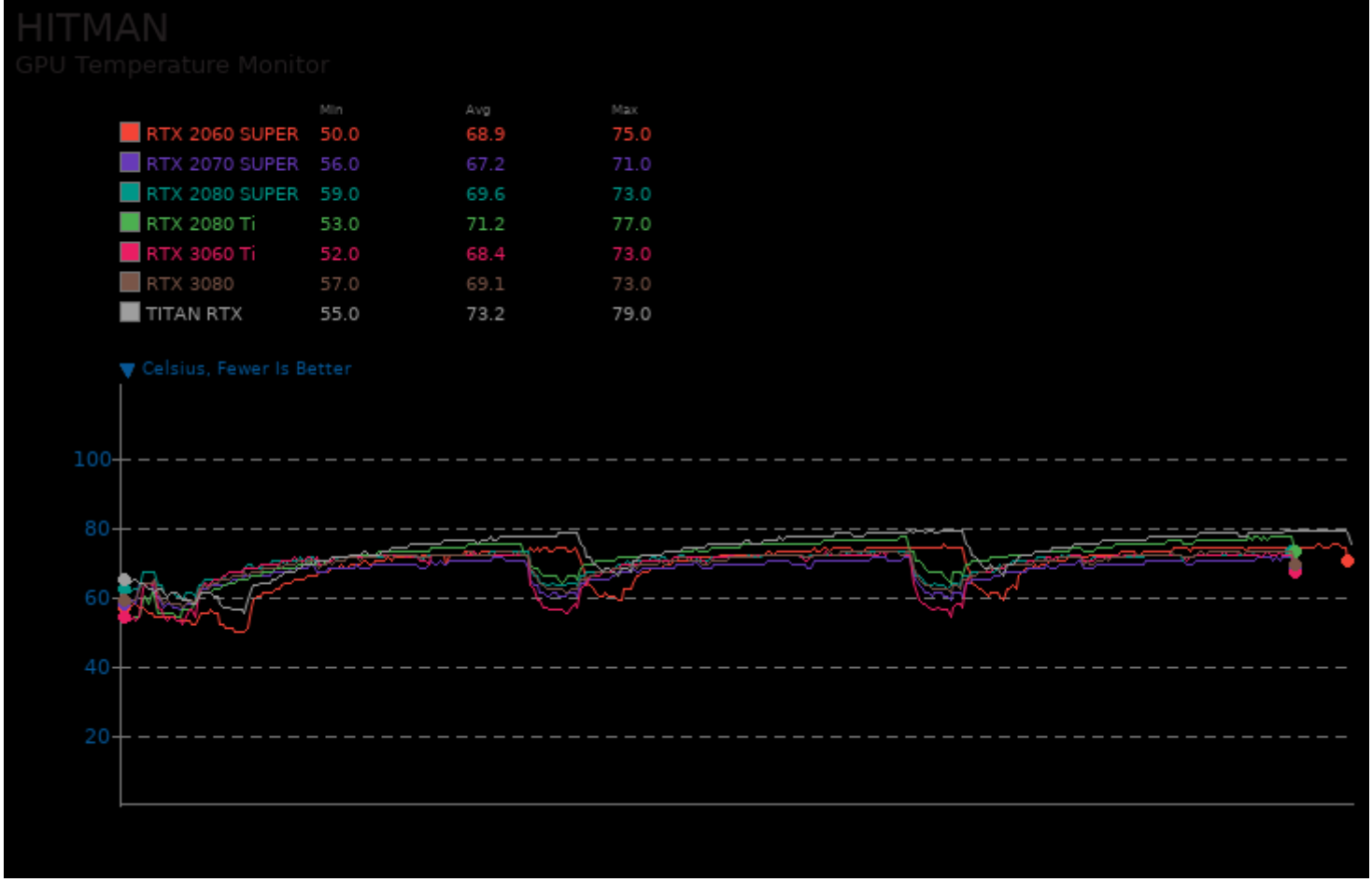

Rise of the Tomb Raider
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 50.0 66.3 73.0
RTX 2070 SUPER 46.0 63.1 71.0
RTX 2080 SUPER 49.0 66.8 75.0
RTX 2080 Ti 52.0 68.2 76.0
RTX 3060 Ti 45.0 64.5 72.0
RTX 3080 50.0 66.6 73.0
TITAN RTX 51.0 70.0 78.0
Celsius, Fewer Is Better
100
80
60
40
20

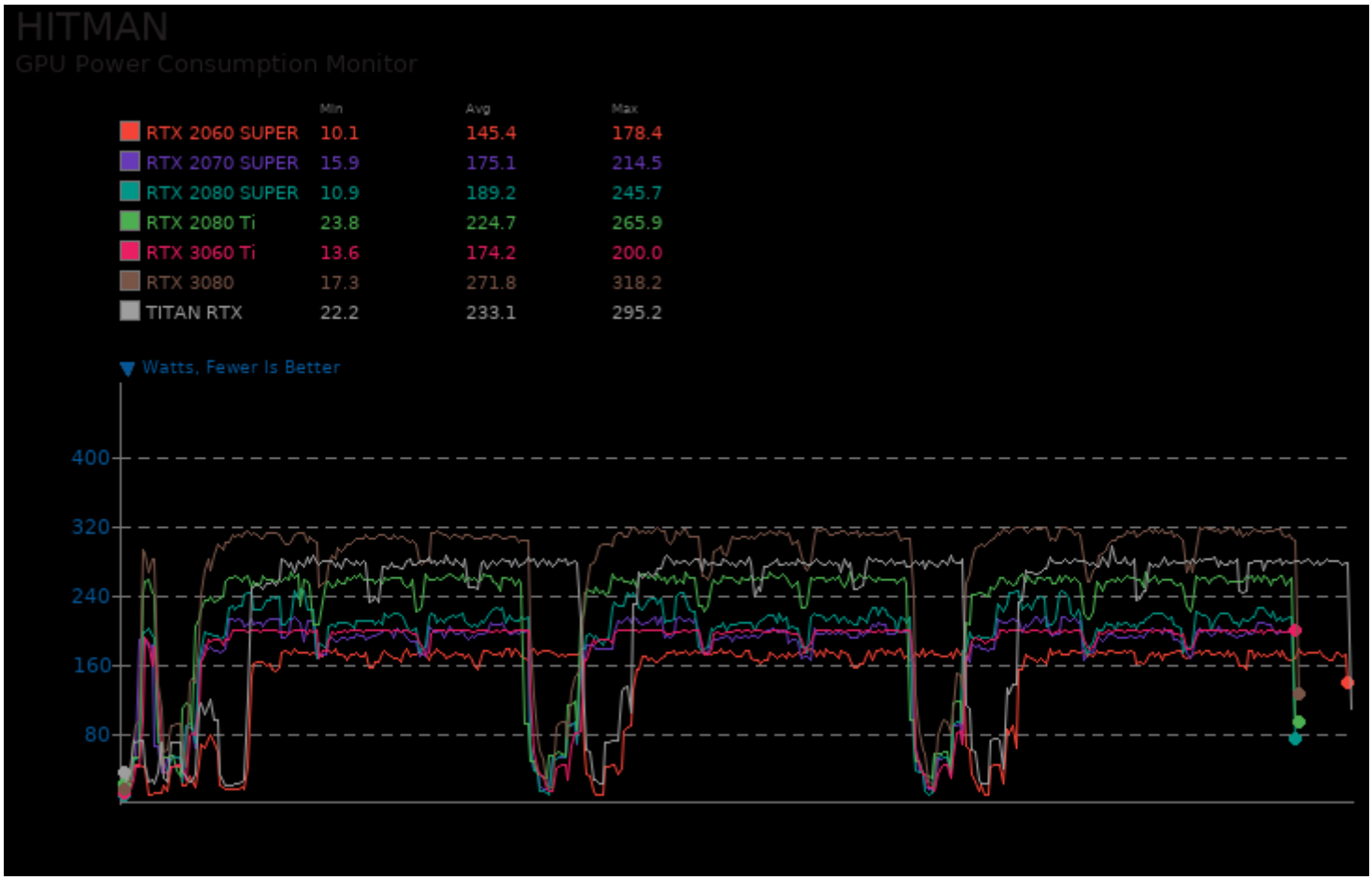

Rise of the Tomb Raider
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 9.9 139.8 178.7
RTX 2070 SUPER 15.6 169.4 218.9
RTX 2080 SUPER 9.9 192.6 252.9
RTX 2080 Ti 23.6 208.2 265.2
RTX 3060 Ti 13.5 158.8 200.0
RTX 3080 15.1 255.9 319.5
TITAN RTX 22.8 225.9 286.8
Watts, Fewer Is Better
400
320
240
160
80
Rise of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off - Scene: Geothermal Valley
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.47
RTX 2070 SUPER
0.47
RTX 2080 SUPER
0.46
RTX 2080 Ti
0.51
RTX 3060 Ti
0.56
RTX 3080
0.52
TITAN RTX
0.51
0.126
0.252
0.378
0.504
0.63

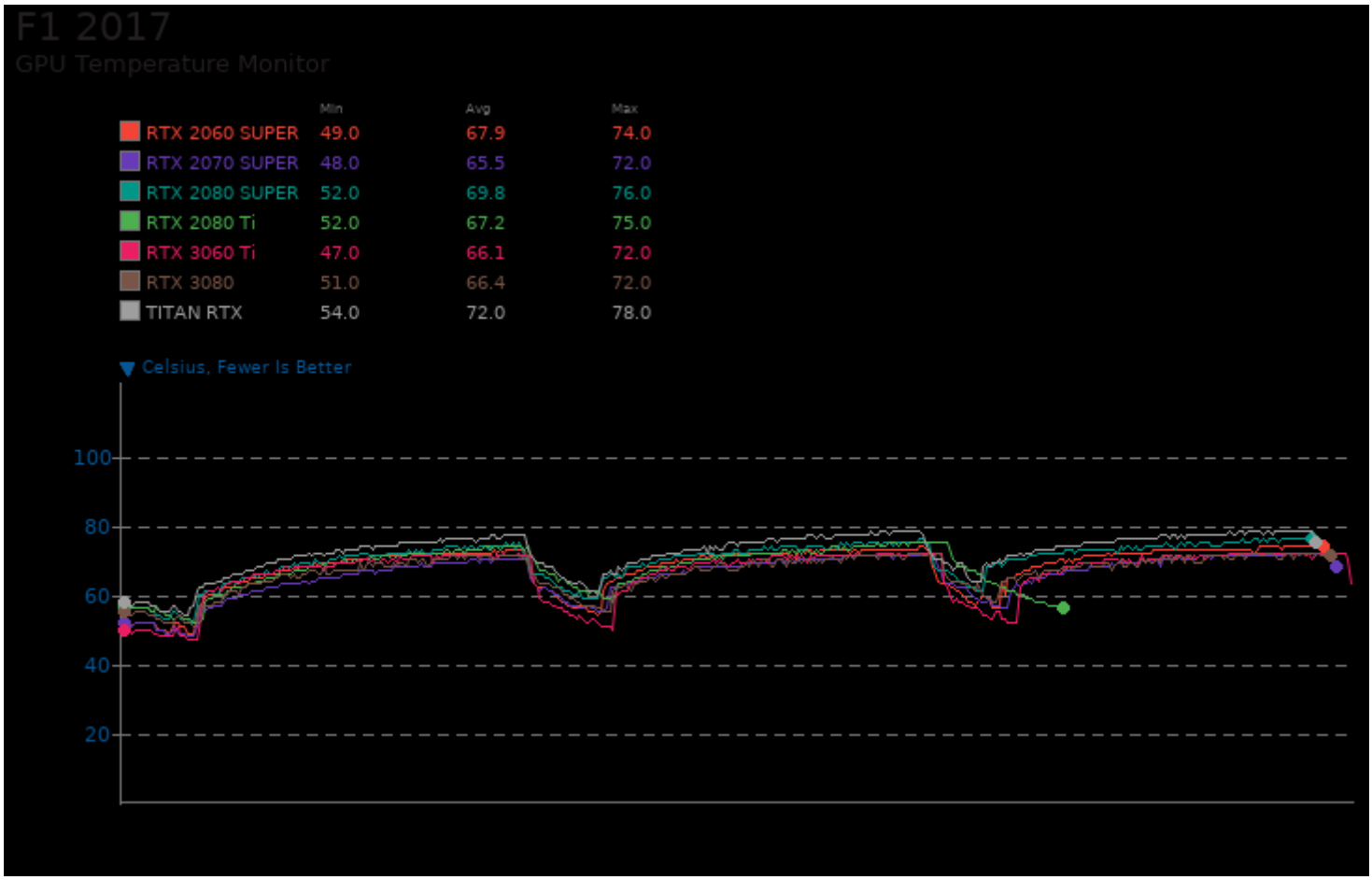

Portal 2
GPU Temperature Monitor
Min Avg Max
RTX 2060 SUPER 52.0 61.0 69.0
RTX 2070 SUPER 51.0 57.2 63.0
RTX 2080 SUPER 53.0 59.2 65.0
RTX 2080 Ti 56.0 61.6 67.0
RTX 3060 Ti 49.0 57.7 67.0
RTX 3080 53.0 59.3 66.0
TITAN RTX 57.0 62.8 69.0
Celsius, Fewer Is Better
100
80
60
40
20


Portal 2
GPU Power Consumption Monitor
Min Avg Max
RTX 2060 SUPER 10.1 101.9 174.8
RTX 2070 SUPER 15.6 106.1 194.3
RTX 2080 SUPER 9.8 109.5 210.0
RTX 2080 Ti 24.4 123.7 259.0
RTX 3060 Ti 13.9 99.4 185.5
RTX 3080 15.8 145.7 292.7
TITAN RTX 22.7 133.0 270.7
Watts, Fewer Is Better
350
280
210
140
70


Portal 2
Resolution: 3840 x 2160 - Renderer: OpenGL
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
1.83
RTX 2070 SUPER
2.03
RTX 2080 SUPER
2.21
RTX 2080 Ti
2.28
RTX 3060 Ti
2.27
RTX 3080
2.07
TITAN RTX
2.19
0.513
1.026
1.539
2.052
2.565

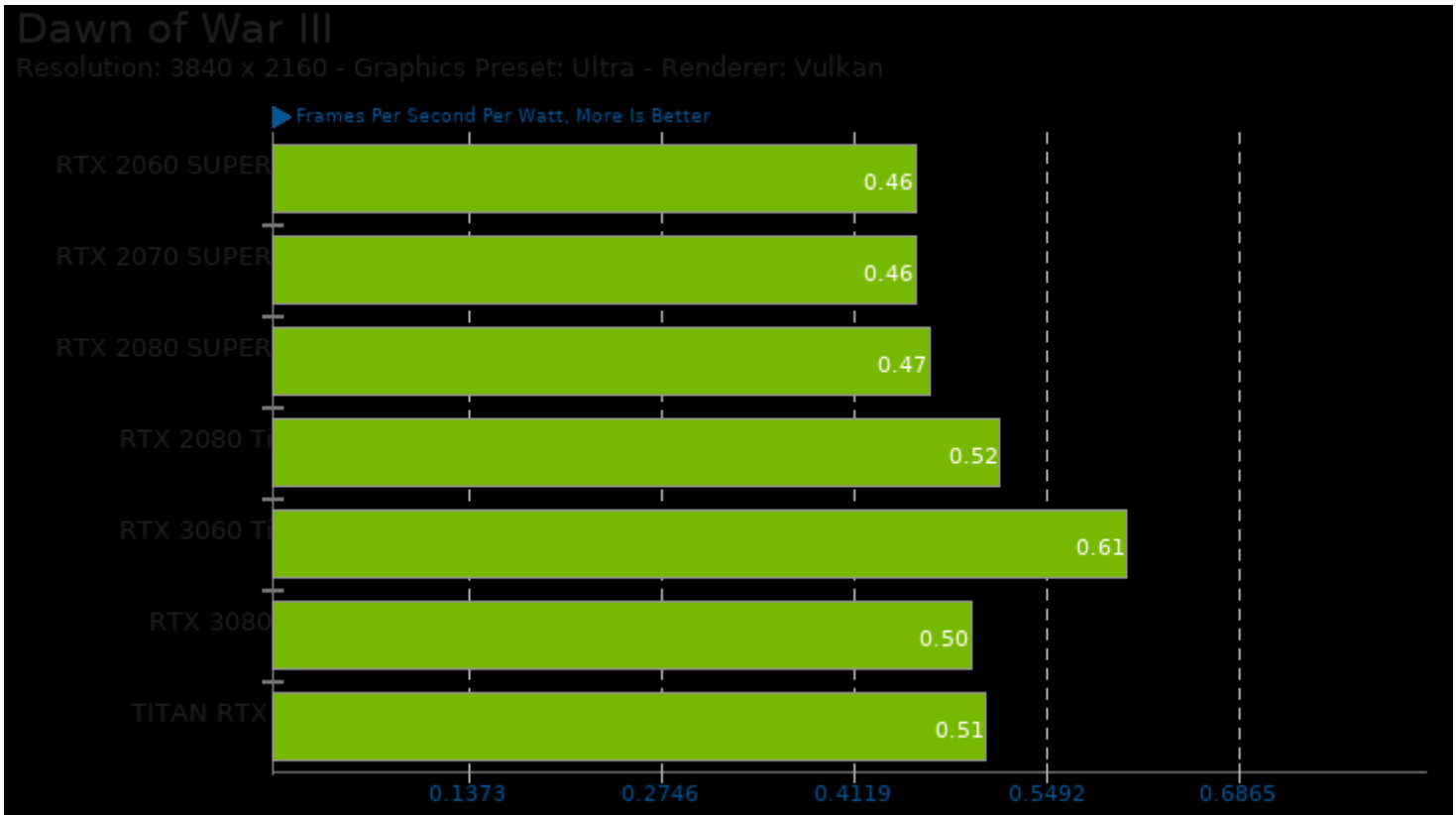

HITMAN
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 50.0 68.9 75.0
RTX 2070 SUPER 56.0 67.2 71.0
RTX 2080 SUPER 59.0 69.6 73.0
RTX 2080 Ti 53.0 71.2 77.0
RTX 3060 Ti 52.0 68.4 73.0
RTX 3080 57.0 69.1 73.0
TITAN RTX 55.0 73.2 79.0
Celsius, Fewer Is Better
100
80
60
40
20

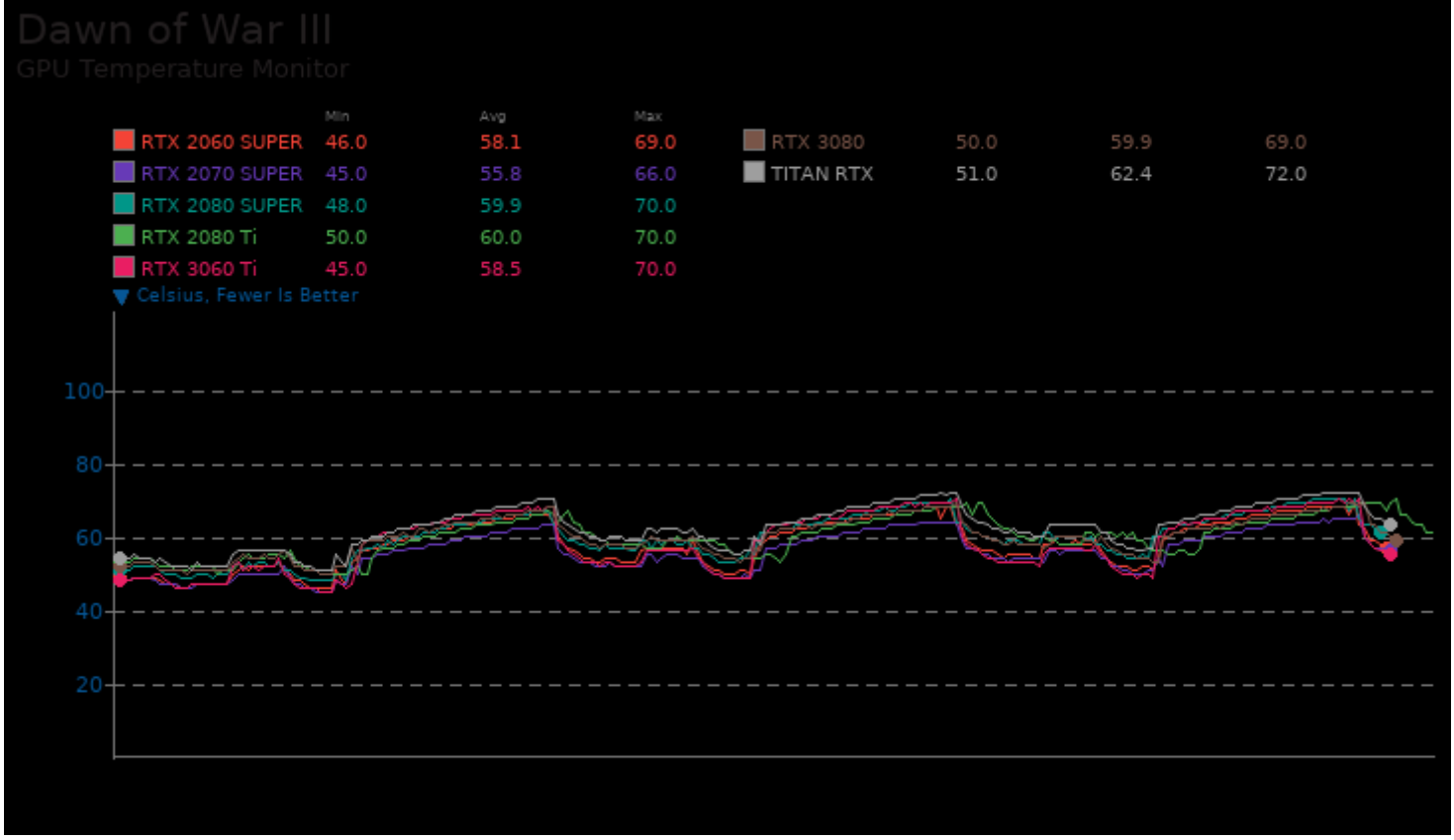

HITMAN
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.1 145.4 178.4
RTX 2070 SUPER 15.9 175.1 214.5
RTX 2080 SUPER 10.9 189.2 245.7
RTX 2080 Ti 23.8 224.7 265.9
RTX 3060 Ti 13.6 174.2 200.0
RTX 3080 17.3 271.8 318.2
TITAN RTX 22.2 233.1 295.2
Watts, Fewer Is Better
400
320
240
160
80

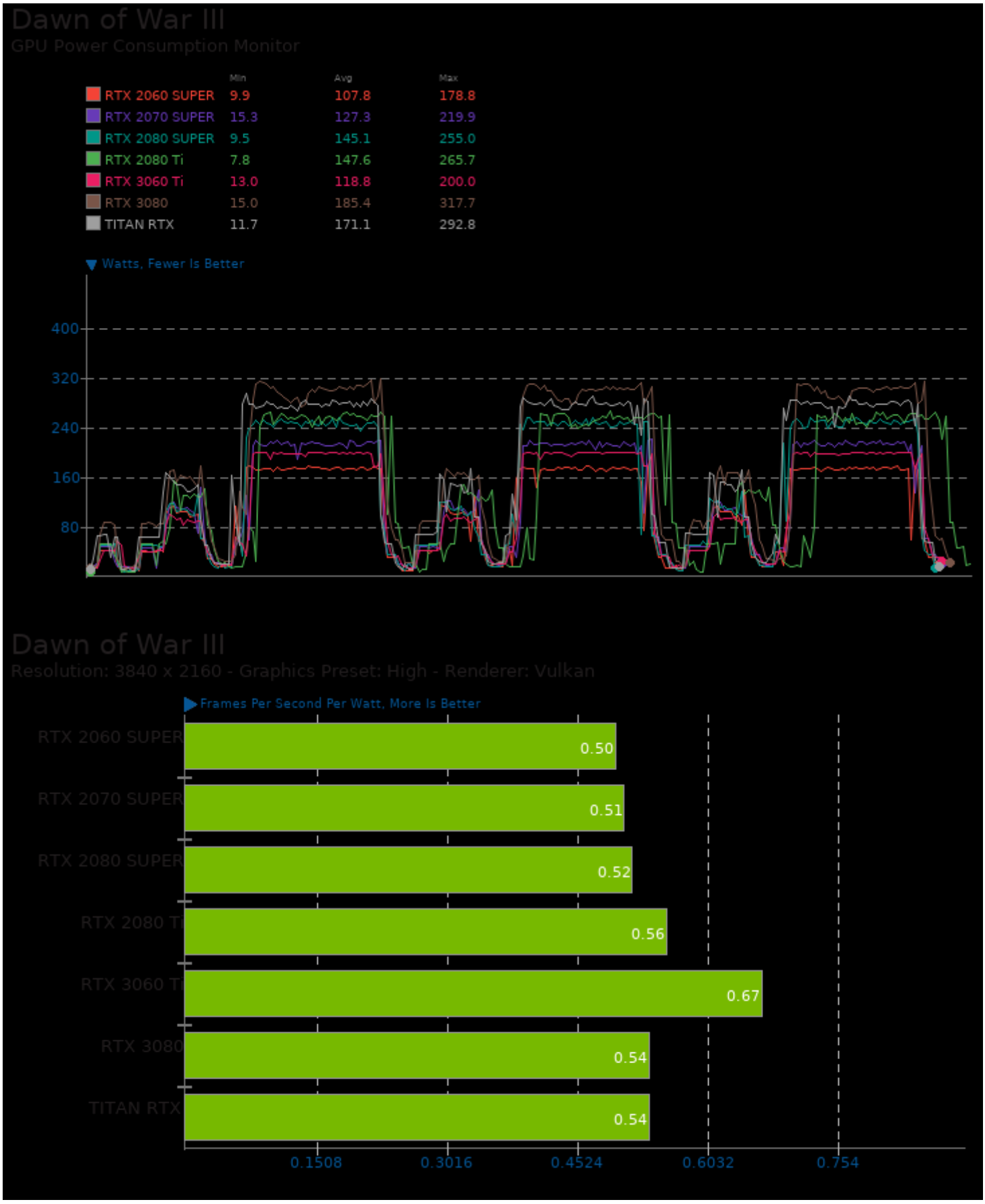

F1 2017
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 49.0 67.9 74.0
RTX 2070 SUPER 48.0 65.5 72.0
RTX 2080 SUPER 52.0 69.8 76.0
RTX 2080 Ti 52.0 67.2 75.0
RTX 3060 Ti 47.0 66.1 72.0
RTX 3080 51.0 66.4 72.0
TITAN RTX 54.0 72.0 78.0
Celsius, Fewer Is Better
100
80
60
40
20


F1 2017
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 10.1 147.5 179.6
RTX 2070 SUPER 15.6 177.6 220.1
RTX 2080 SUPER 10.3 203.5 254.4
RTX 2080 Ti 7.8 184.3 273.2
RTX 3060 Ti 13.5 163.7 200.1
RTX 3080 13.6 246.5 314.1
TITAN RTX 13.3 232.9 296.4
Watts, Fewer Is Better
400
320
240
160
80
F1 2017
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.71
RTX 2070 SUPER
0.70
RTX 2080 SUPER
0.69
RTX 2080 Ti
0.80
RTX 3060 Ti
0.87
RTX 3080
0.70
TITAN RTX
0.71
0.1958
0.3916
0.5874
0.7832
0.979

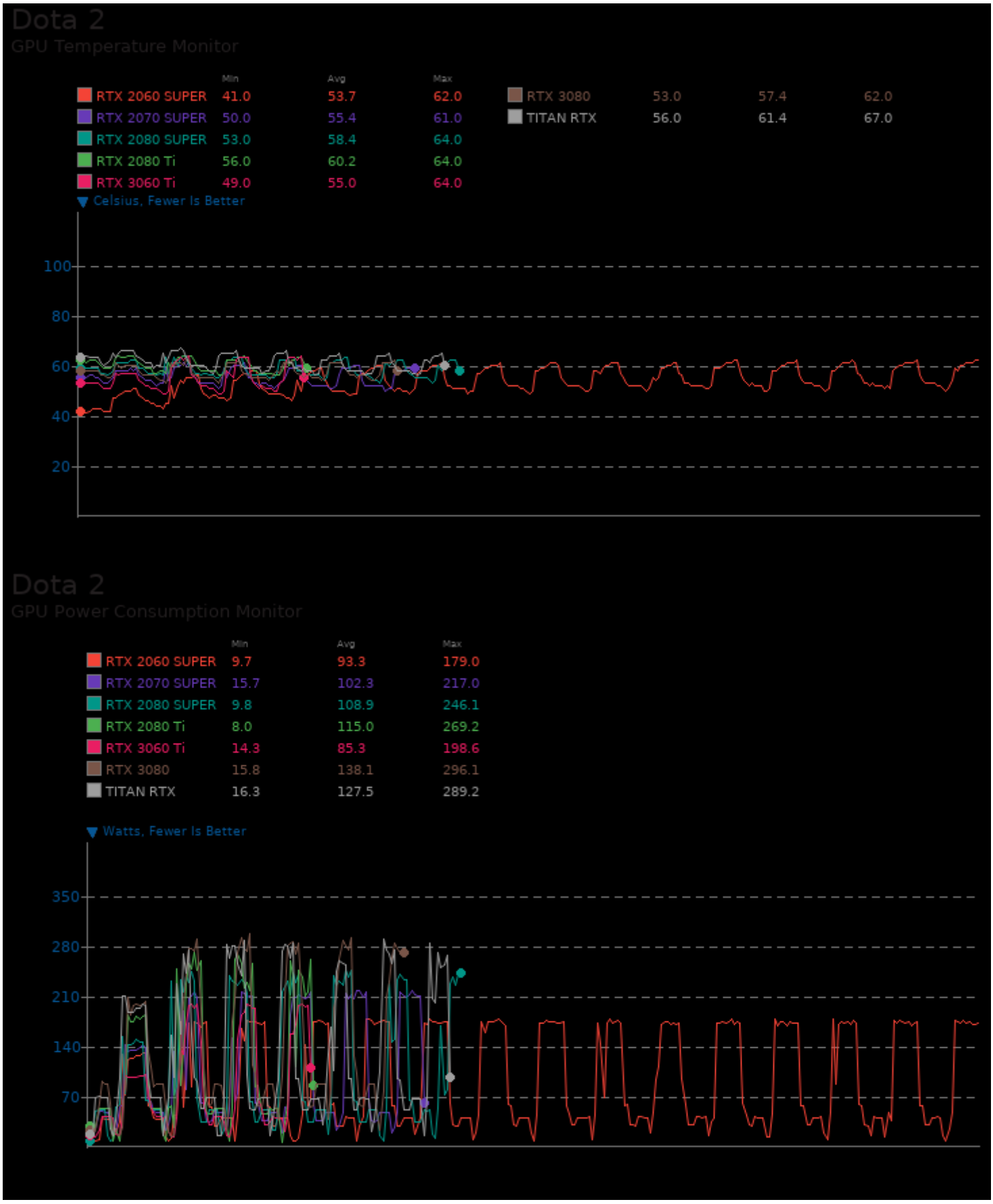

Dawn of War III
GPU Temperature Monitor
Min Avg Max
RTX 2060 SUPER 48.0 59.1 69.0
RTX 2070 SUPER 47.0 57.0 66.0
RTX 2080 SUPER 51.0 61.3 71.0
RTX 2080 Ti 51.0 60.7 70.0
RTX 3060 Ti 46.0 59.2 70.0
RTX 3080 51.0 60.7 69.0
TITAN RTX 53.0 63.6 73.0
Celsius, Fewer Is Better
100
80
60
40
20
Dawn of War III
GPU Power Consumption Monitor
Min Avg Max
RTX 2060 SUPER 9.9 107.6 181.2
RTX 2070 SUPER 15.3 129.3 221.1
RTX 2080 SUPER 9.6 144.2 254.4
RTX 2080 Ti 8.1 148.4 268.6
RTX 3060 Ti 13.5 118.7 200.2
RTX 3080 15.2 190.0 316.3
TITAN RTX 12.2 168.5 288.3
Watts, Fewer Is Better
400
320
240
160
80


Dawn of War III
Resolution: 3840 x 2160 - Graphics Preset: Ultra - Renderer: Vulkan
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.46
RTX 2070 SUPER
0.46
RTX 2080 SUPER
0.47
RTX 2080 Ti
0.52
RTX 3060 Ti
0.61
RTX 3080
0.50
TITAN RTX
0.51
0.1373
0.2746
0.4119
0.5492
0.6865


Dawn of War III
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 46.0 58.1 69.0
RTX 2070 SUPER 45.0 55.8 66.0
RTX 2080 SUPER 48.0 59.9 70.0
RTX 2080 Ti 50.0 60.0 70.0
RTX 3060 Ti 45.0 58.5 70.0
RTX 3080 50.0 59.9 69.0
TITAN RTX 51.0 62.4 72.0
Celsius, Fewer Is Better
100
80
60
40
20

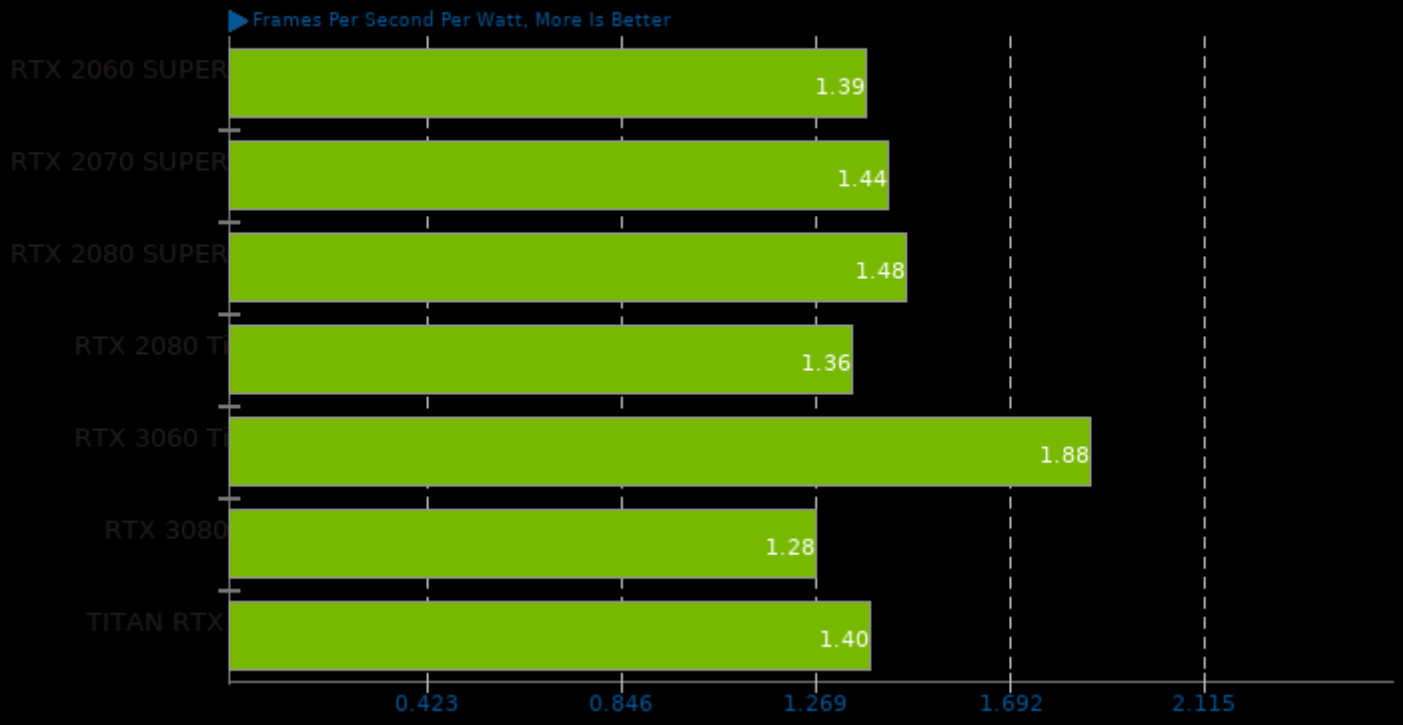

Dawn of War III
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 9.9 107.8 178.8
RTX 2070 SUPER 15.3 127.3 219.9
RTX 2080 SUPER 9.5 145.1 255.0
RTX 2080 Ti 7.8 147.6 265.7
RTX 3060 Ti 13.0 118.8 200.0
RTX 3080 15.0 185.4 317.7
TITAN RTX 11.7 171.1 292.8
Watts, Fewer Is Better
400
320
240
160
80

Dawn of War III
Resolution: 3840 x 2160 - Graphics Preset: High - Renderer: Vulkan
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.50
RTX 2070 SUPER
0.51
RTX 2080 SUPER
0.52
RTX 2080 Ti
0.56
RTX 3060 Ti
0.67
RTX 3080
0.54
TITAN RTX
0.54
0.1508
0.3016
0.4524
0.6032
0.754


Dota 2
GPU Temperature Monitor
Min
Avg
Max
RTX 2060 SUPER 41.0 53.7 62.0
RTX 2070 SUPER 50.0 55.4 61.0
RTX 2080 SUPER 53.0 58.4 64.0
RTX 2080 Ti 56.0 60.2 64.0
RTX 3060 Ti 49.0 55.0 64.0
RTX 3080 53.0 57.4 62.0
TITAN RTX 56.0 61.4 67.0
Celsius, Fewer Is Better
100
80
60
40
20
Dota 2
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 9.7 93.3 179.0
RTX 2070 SUPER 15.7 102.3 217.0
RTX 2080 SUPER 9.8 108.9 246.1
RTX 2080 Ti 8.0 115.0 269.2
RTX 3060 Ti 14.3 85.3 198.6
RTX 3080 15.8 138.1 296.1
TITAN RTX 16.3 127.5 289.2
Watts, Fewer Is Better
350
280
210
140
70

Dota 2

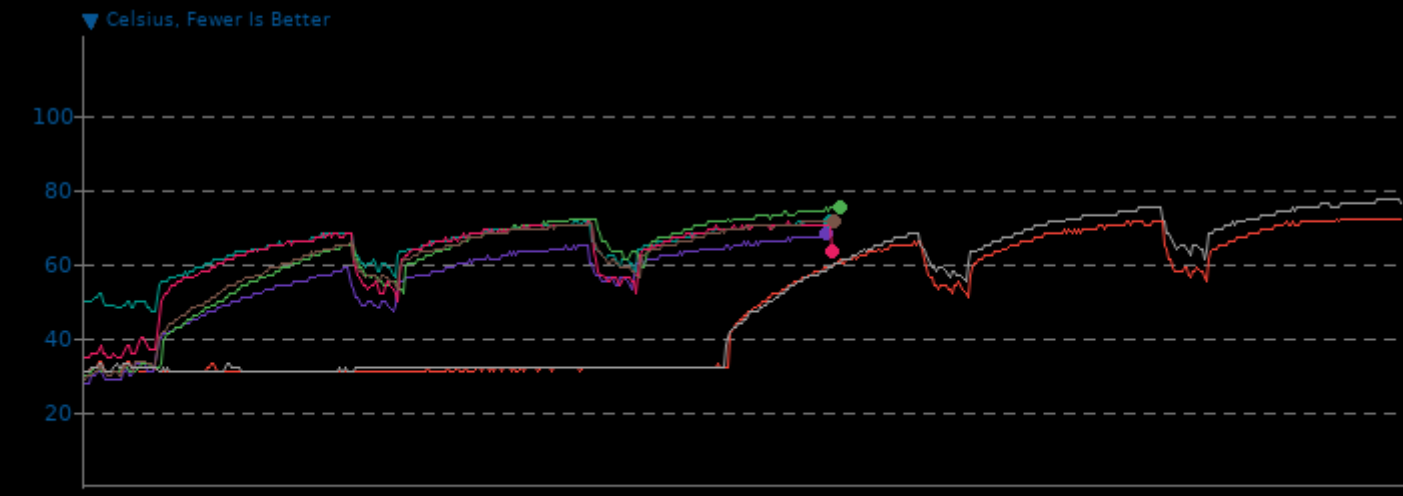
Resolution: 3840 x 2160 - Renderer: Vulkan

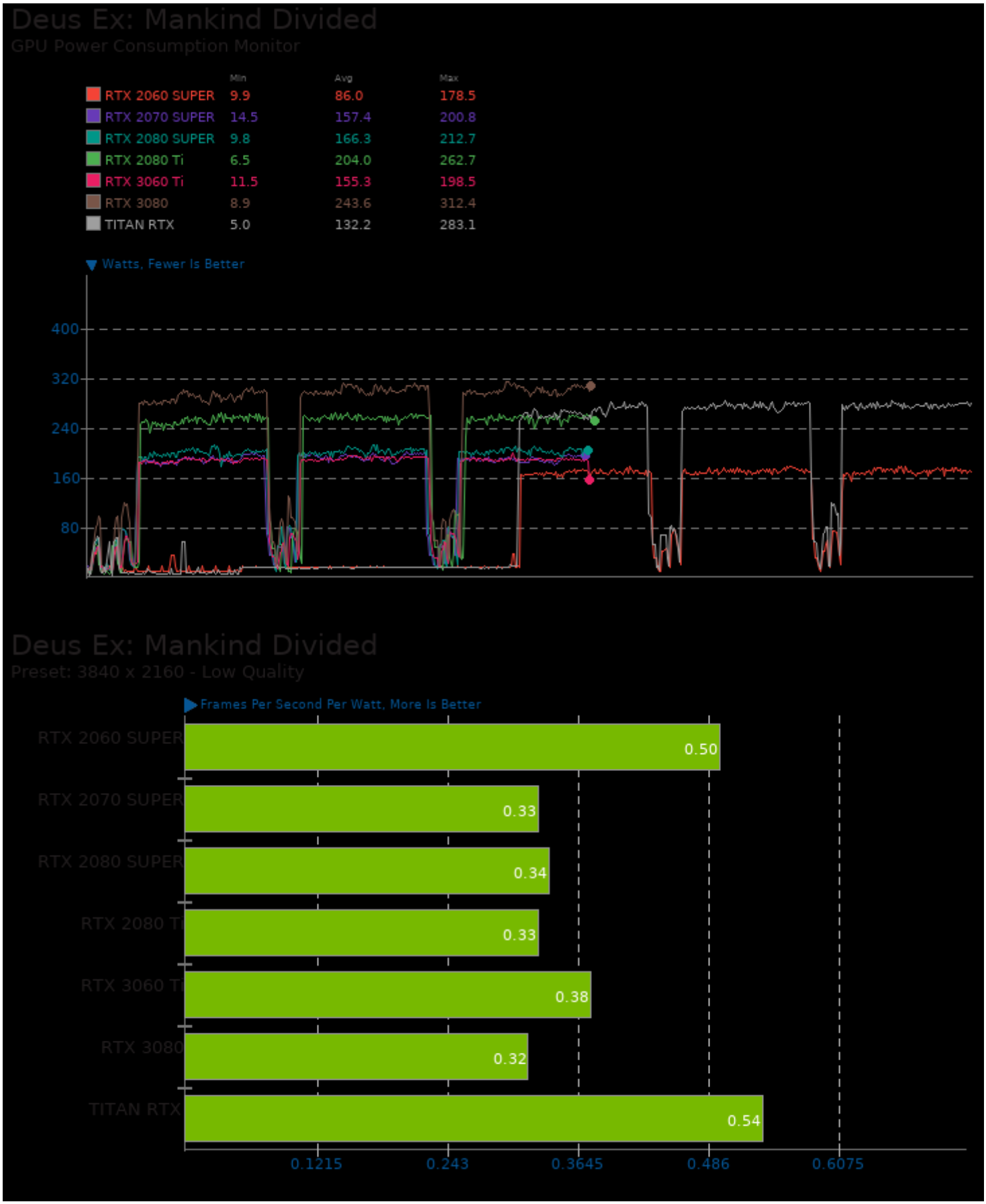


Deus Ex: Mankind Divided

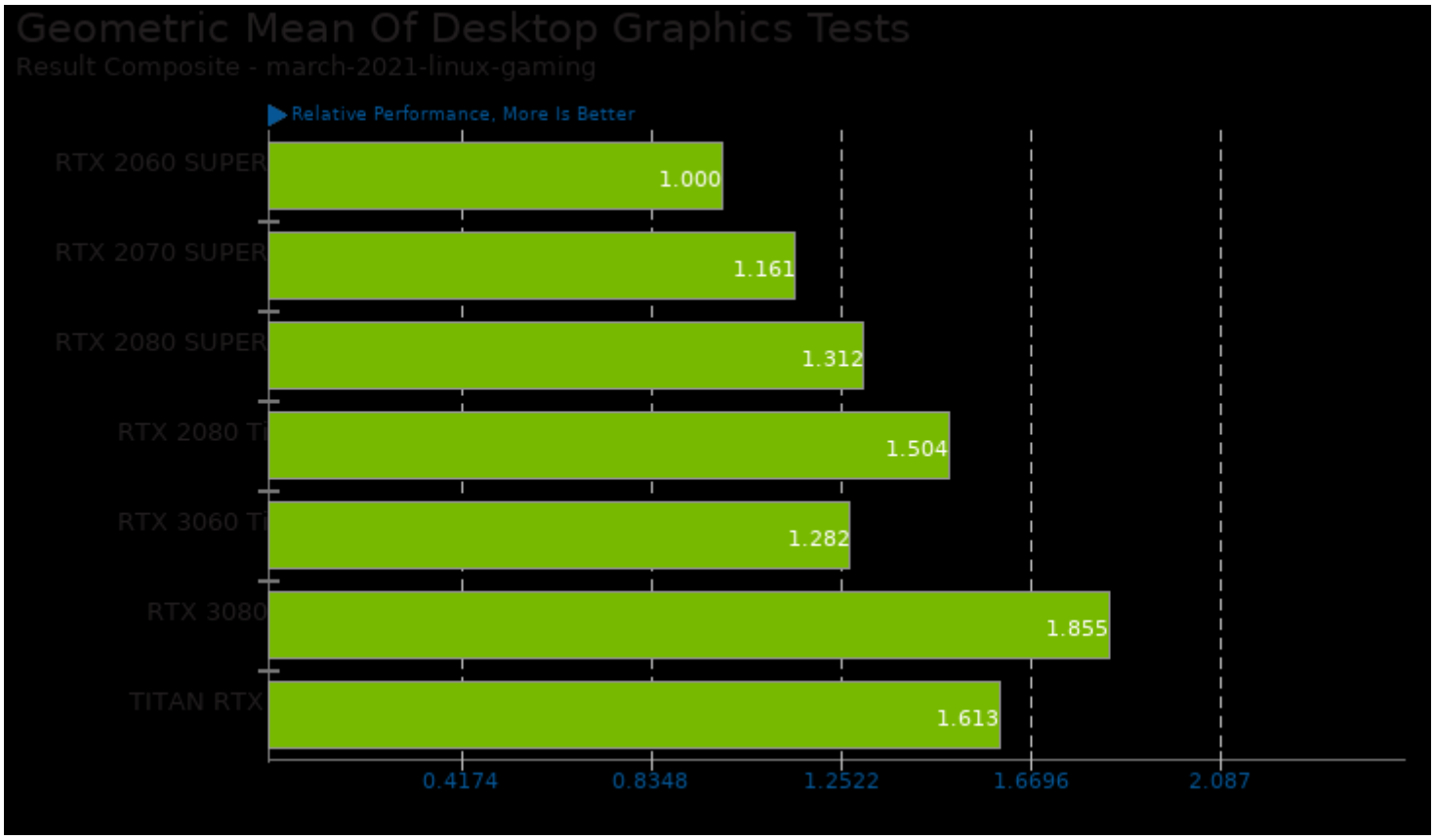
GPU Temperature Monitor

	Min	Avg	Max
RTX 2060 SUPER	31.0	47.9	72.0
RTX 2070 SUPER	28.0	55.2	68.0
RTX 2080 SUPER	47.0	64.1	71.0
RTX 2080 Ti	30.0	60.5	75.0
RTX 3060 Ti	35.0	61.8	71.0
RTX 3080	29.0	59.8	71.0
TITAN RTX	31.0	49.6	77.0

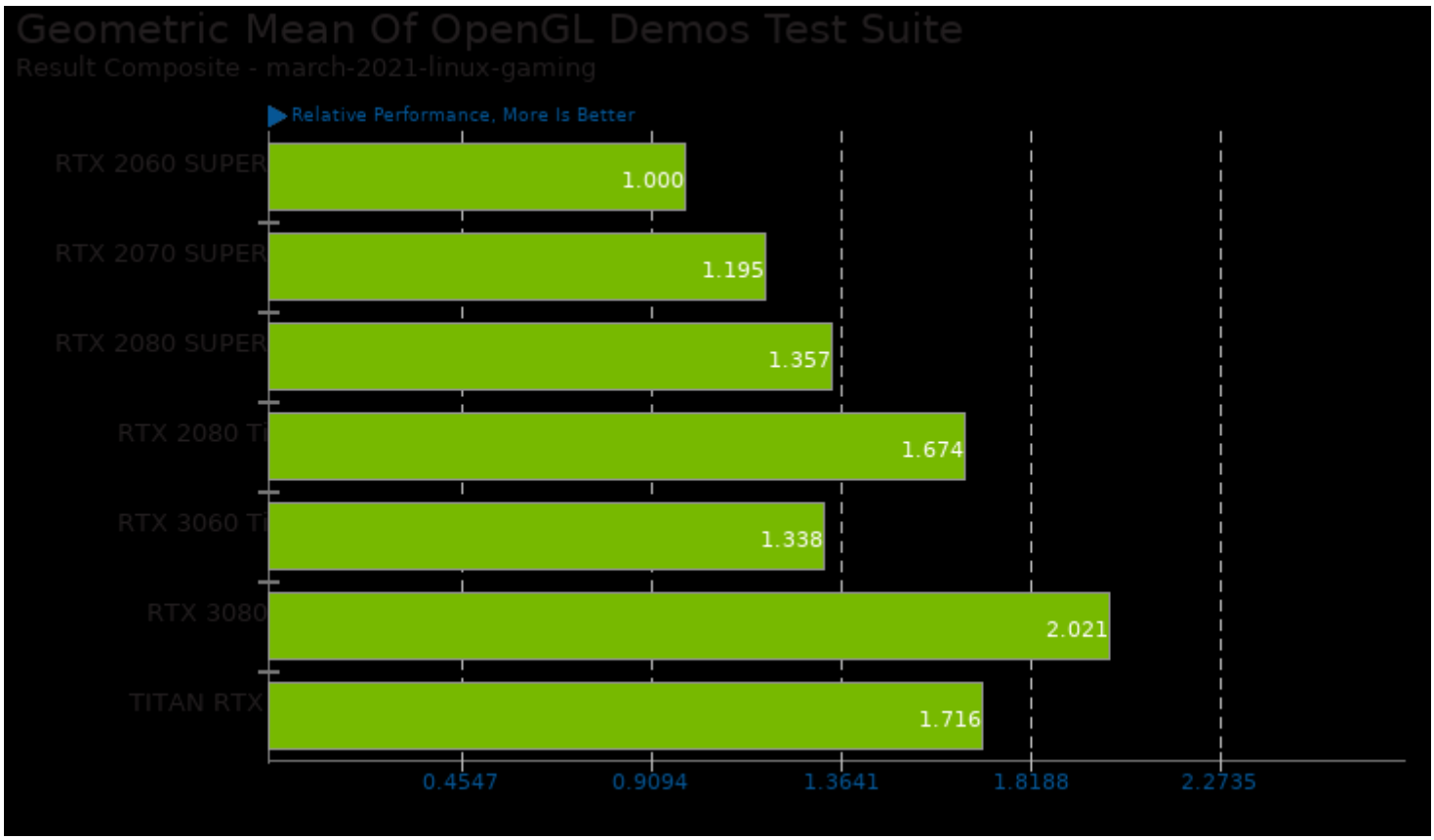



Deus Ex: Mankind Divided
GPU Power Consumption Monitor
Min
Avg
Max
RTX 2060 SUPER 9.9 86.0 178.5
RTX 2070 SUPER 14.5 157.4 200.8
RTX 2080 SUPER 9.8 166.3 212.7
RTX 2080 Ti 6.5 204.0 262.7
RTX 3060 Ti 11.5 155.3 198.5
RTX 3080 8.9 243.6 312.4
TITAN RTX 5.0 132.2 283.1
Watts, Fewer Is Better
400
320
240
160
80
Deus Ex: Mankind Divided
Preset: 3840 x 2160 - Low Quality
Frames Per Second Per Watt, More Is Better
RTX 2060 SUPER
0.50
RTX 2070 SUPER
0.33
RTX 2080 SUPER
0.34
RTX 2080 Ti
0.33
RTX 3060 Ti
0.38
RTX 3080
0.32
TITAN RTX
0.54
0.1215
0.243
0.3645
0.486
0.6075

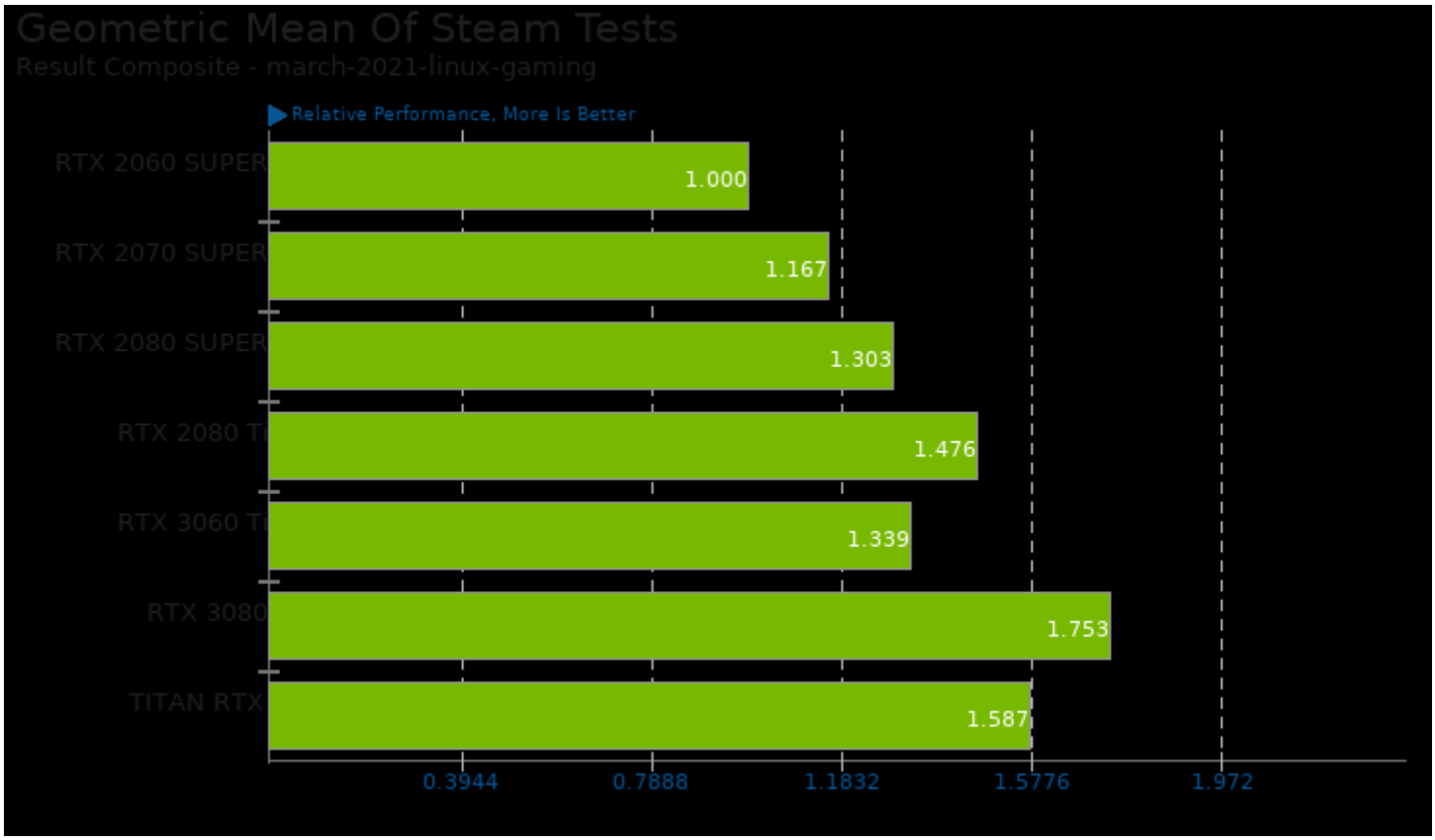
These geometric means are based upon test groupings / test suites for this result file.



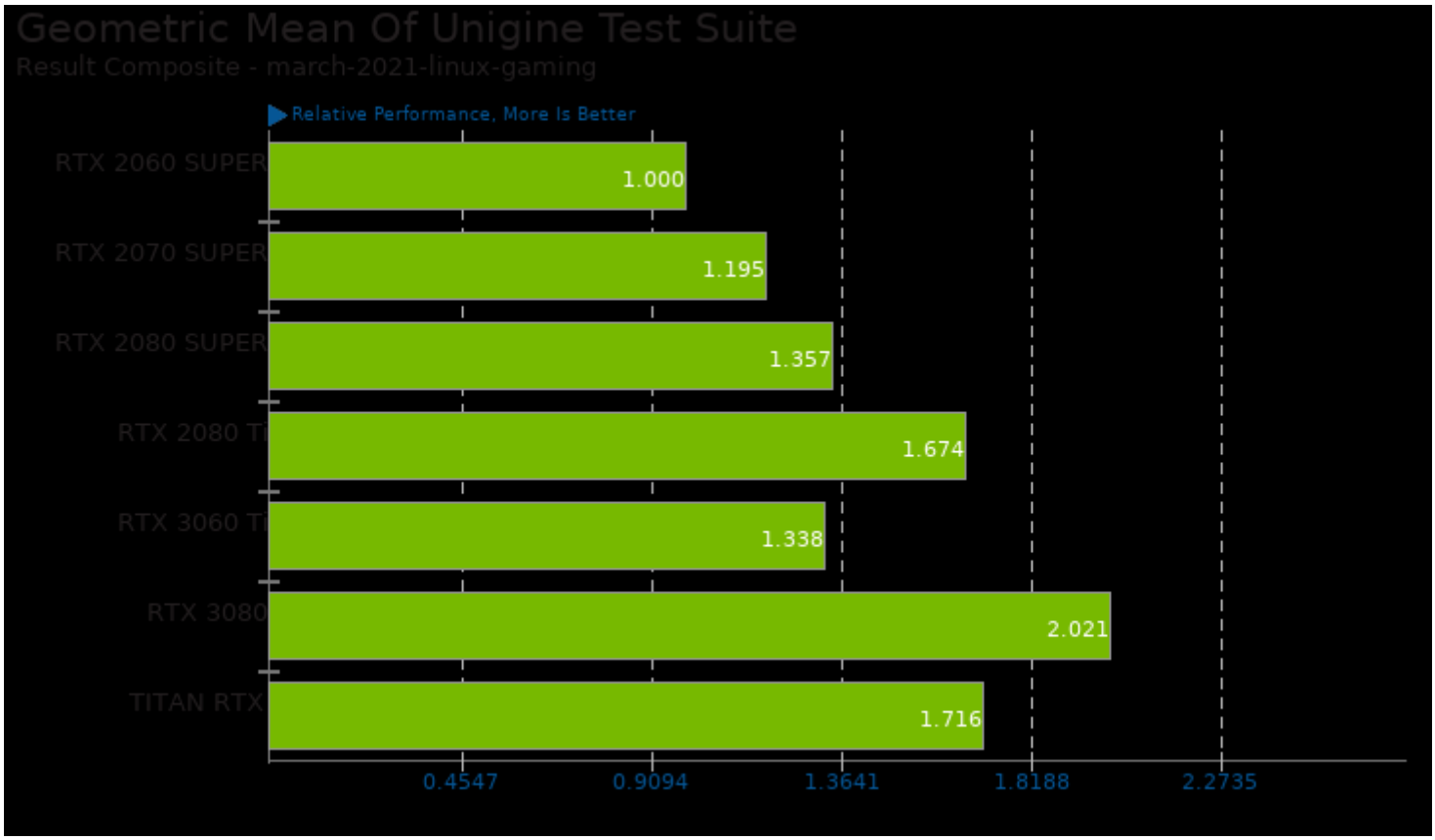
Geometric mean based upon tests: pts/xonotic, pts/tesseract and pts/unigine-heaven



Geometric mean based upon tests: pts/unigine-heaven and pts/unigine-super



Geometric mean based upon tests: pts/dota2, pts/dow3, pts/f12017, pts/hitman, pts/portal2, pts/riseofthetombraider, pts/shadowofthetombraider, pts/talos-principle and pts/deus-exmd



Geometric mean based upon tests: pts/unigine-heaven and pts/unigine-super

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 20:40.