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Blender 3.3 NVIDIA

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS) and NVIDIA GeForce RTX 3080 Ti 12GB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

RTX 2060

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 16384 MB DDR4-3600MT/s, Disk: 500GB Western Digital WDS500G3X0C-00SJG0, Graphics: NVIDIA GeForce RTX 2060 6GB, Audio: NVIDIA TU106 HD Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.04, Kernel: 5.15.0-46-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.13, Display Driver: NVIDIA 515.65.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.7.101, Vulkan: 1.3.205, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 3840x2160

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

Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: 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 Retpolines 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) (4006 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 16384 MB DDR4-3600MT/s, Disk: 500GB Western Digital WDS500G3X0C-00SJG0, 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 20.04, Kernel: 5.15.0-46-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.13, Display Driver: NVIDIA 515.65.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.7.101, Vulkan: 1.3.205, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 3840x2160

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RTX 2080 SUPER

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 16384 MB DDR4-3600MT/s, Disk: 500GB Western Digital WDS500G3X0C-00SJG0, 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 20.04, Kernel: 5.15.0-46-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.13, Display Driver: NVIDIA 515.65.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.7.101, Vulkan: 1.3.205, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 3840x2160

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RTX 3060

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 16384 MB DDR4-3600MT/s, Disk: 500GB Western Digital WDS500G3X0C-00SJG0, Graphics: eVGA NVIDIA GeForce RTX 3060 12GB, Audio: NVIDIA Device 228e, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.04, Kernel: 5.15.0-46-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.13, Display Driver: NVIDIA 515.65.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.7.101, Vulkan: 1.3.205, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 3840x2160

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RTX 3060 Ti

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 16384 MB DDR4-3600MT/s, Disk: 500GB Western Digital WDS500G3X0C-00SJG0, 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 20.04, Kernel: 5.15.0-46-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.13, Display Driver: NVIDIA 515.65.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.7.101, Vulkan: 1.3.205, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 3840x2160

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RTX 3070

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 16384 MB DDR4-3600MT/s, Disk: 500GB Western Digital WDS500G3X0C-00SJG0, Graphics: NVIDIA GeForce RTX 3070 8GB, Audio: NVIDIA Device 228b, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

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RTX 3070 Ti

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 16384 MB DDR4-3600MT/s, Disk: 500GB Western Digital WDS500G3X0C-00SJG0, Graphics: NVIDIA GeForce RTX 3070 Ti 8GB, Audio: NVIDIA Device 228b, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

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RTX 3080

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 16384 MB DDR4-3600MT/s, Disk: 500GB Western Digital WDS500G3X0C-00SJG0, 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 20.04, Kernel: 5.15.0-46-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.13, Display Driver: NVIDIA 515.65.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.7.101, Vulkan: 1.3.205, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 3840x2160

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RTX 3080 Ti

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RTX 3090

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OS: Ubuntu 20.04, Kernel: 5.15.0-46-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.13, Display Driver: NVIDIA 515.65.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.7.101, Vulkan: 1.3.205, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 3840x2160

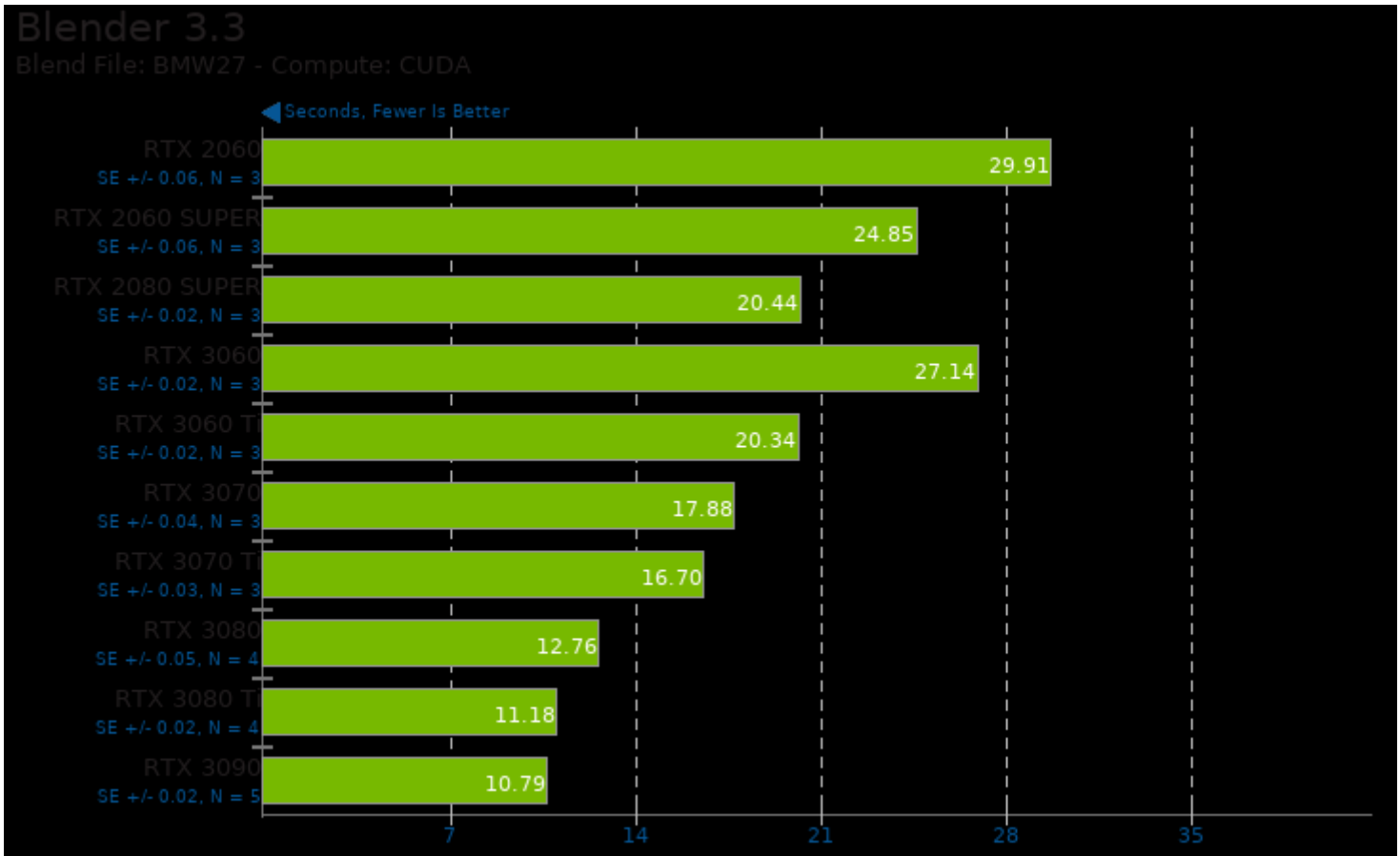
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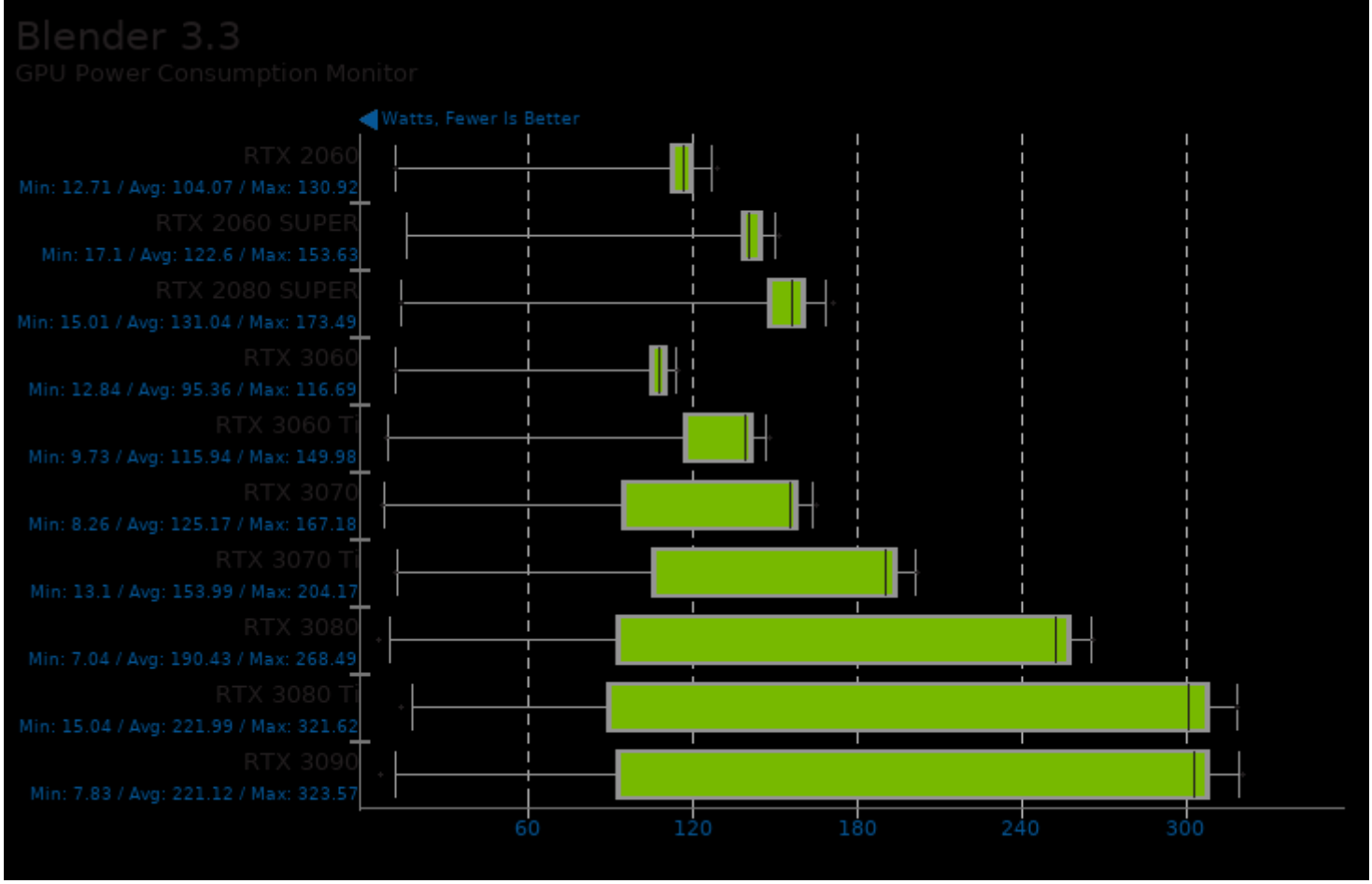
	RTX 2060	RTX 2060 SUPER	RTX 2080 SUPER	RTX 3060	RTX 3060 Ti	RTX 3070	RTX 3070 Ti	RTX 3080	RTX 3080 Ti	RTX 3090
Blender - BMW27 - CUDA (sec)	**29.91**	24.85	20.44	27.14	20.34	17.88	16.7	12.76	11.18	**10.79**
Normalized	36.07%	43.42%	52.79%	39.76%	53.05%	60.35%	64.61%	84.56%	96.51%	100%
Standard Deviation	0.3%	0.4%	0.1%	0.1%	0.1%	0.4%	0.3%	0.8%	0.4%	0.4%

Blender 3.3 NVIDIA

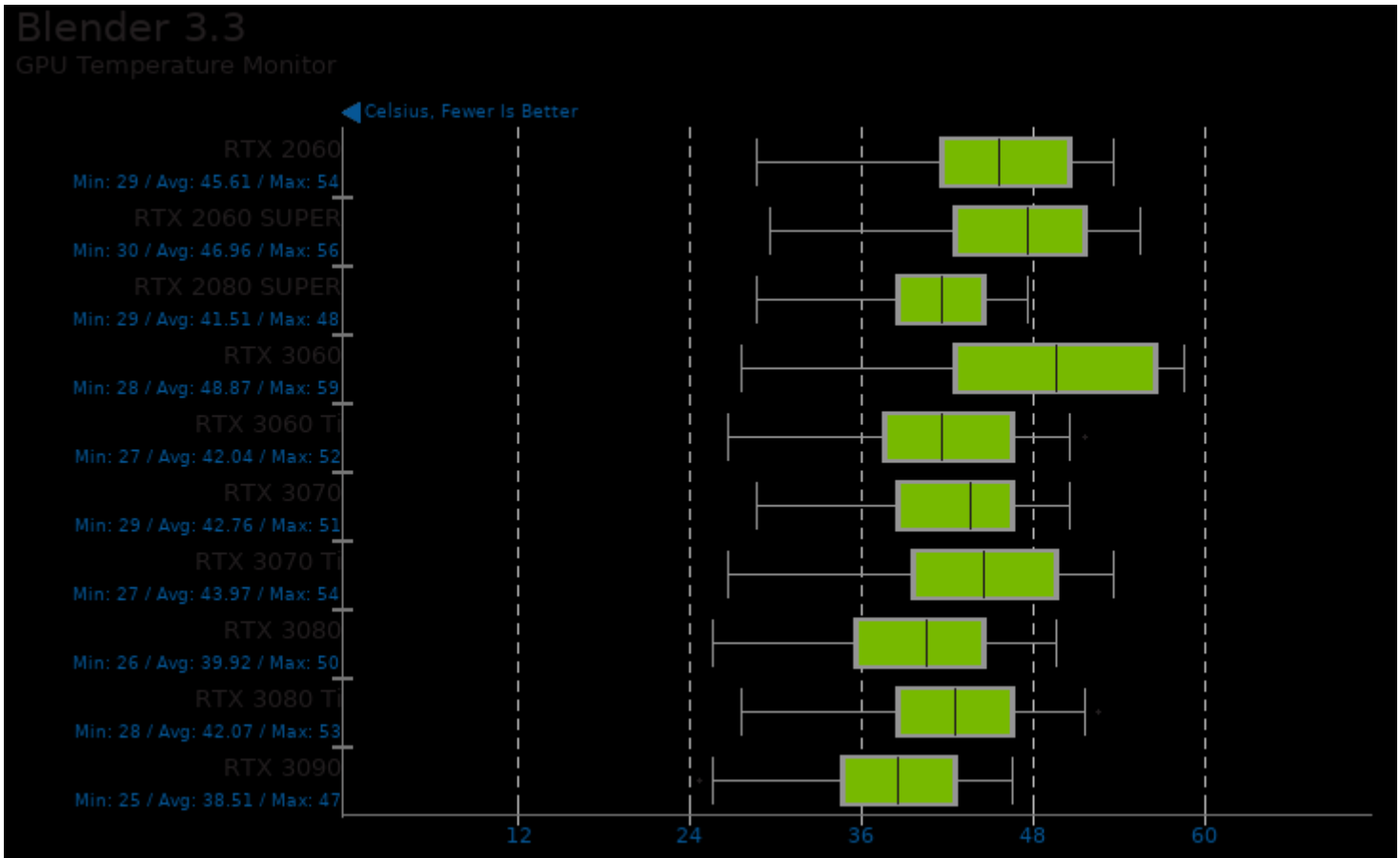
Blender - BMW27 - NVIDIA OptiX (sec)	**16.19**	13.13	12.02	13.76	10.93	10.07	9.09	7.43	6.52	**6.38**
Normalized	39.41%	48.59%	53.08%	46.37%	58.37%	63.36%	70.19%	85.87%	97.85%	100%
Standard Deviation	0.2%	2.5%	0.5%	0.3%	0.5%	2.4%	0.6%	0.6%	0.8%	0.5%
Blender - Classroom - CUDA	**67.10**	54.18	45.84	55.92	41.39	36.27	33.78	25.25	21.86	**21.10**
Normalized	31.45%	38.94%	46.03%	37.73%	50.98%	58.17%	62.46%	83.56%	96.52%	100%
Standard Deviation	0.4%	0.4%	0.2%	0.1%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%
Blender - Classroom - NVIDIA	**44.89**	35.21	32.56	35.86	27.40	24.85	22.76	17.71	15.46	**15.01**
Normalized	33.44%	42.63%	46.1%	41.86%	54.78%	60.4%	65.95%	84.75%	97.09%	100%
Standard Deviation	0.1%	0.1%	0.2%	0.1%	0.1%	0.3%	0.5%	0.1%	0.3%	0.4%
Blender - Fishy Cat - CUDA (sec)	**64.85**	55.12	42.09	58.74	43.33	36.91	35.42	26.30	23.28	**22.36**
Normalized	34.48%	40.57%	53.12%	38.07%	51.6%	60.58%	63.13%	85.02%	96.05%	100%
Standard Deviation	0.1%	0.2%	0.3%	0%	0.1%	0.1%	0.1%	0.3%	0.3%	0.2%
Blender - Fishy Cat - NVIDIA OptiX	**31.57**	27.44	21.49	27.55	20.62	18.17	17.05	12.76	11.33	**10.90**
Normalized	34.53%	39.72%	50.72%	39.56%	52.86%	59.99%	63.93%	85.42%	96.2%	100%
Standard Deviation	0%	1.9%	0.2%	0.2%	0.1%	2.4%	0.1%	0.2%	0.4%	0.1%
Blender - Pabellon Barcelona - CUDA (sec)	**182.88**	141.75	117.43	148.33	107.23	90.95	85.35	62.20	52.81	**50.79**
Normalized	27.77%	35.83%	43.25%	34.24%	47.37%	55.84%	59.51%	81.66%	96.17%	100%
Standard Deviation	0%	0.1%	0.4%	0.2%	0.1%	0.1%	0.1%	0.2%	0%	0%
Blender - Pabellon Barcelona - NVIDIA OptiX (sec)	**54.88**	42.23	39.07	39.97	30.44	27.67	25.41	20.32	17.41	**16.97**
Normalized	30.92%	40.18%	43.43%	42.46%	55.75%	61.33%	66.78%	83.51%	97.47%	100%
Standard Deviation	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%
Blender - Barbershop - CUDA (sec)	**289.45**	235.54	200.13	239.77	179.04	156.41	146.38	109.32	95.20	**91.79**
Normalized	31.71%	38.97%	45.87%	38.28%	51.27%	58.69%	62.71%	83.96%	96.42%	100%
Standard Deviation	0.1%	0.1%	0.1%	0%	0.1%	0.1%	0.1%	0%	0.1%	0.1%
Blender - Barbershop - NVIDIA OptiX (sec)	**177.81**	145.93	128.10	131.80	100.87	90.79	84.82	66.52	58.13	**56.37**
Normalized	31.7%	38.63%	44%	42.77%	55.88%	62.09%	66.46%	84.74%	96.97%	100%
Standard Deviation	0.2%	0.1%	0.2%	0%	0.1%	0.1%	0.1%	0.2%	0.2%	0%

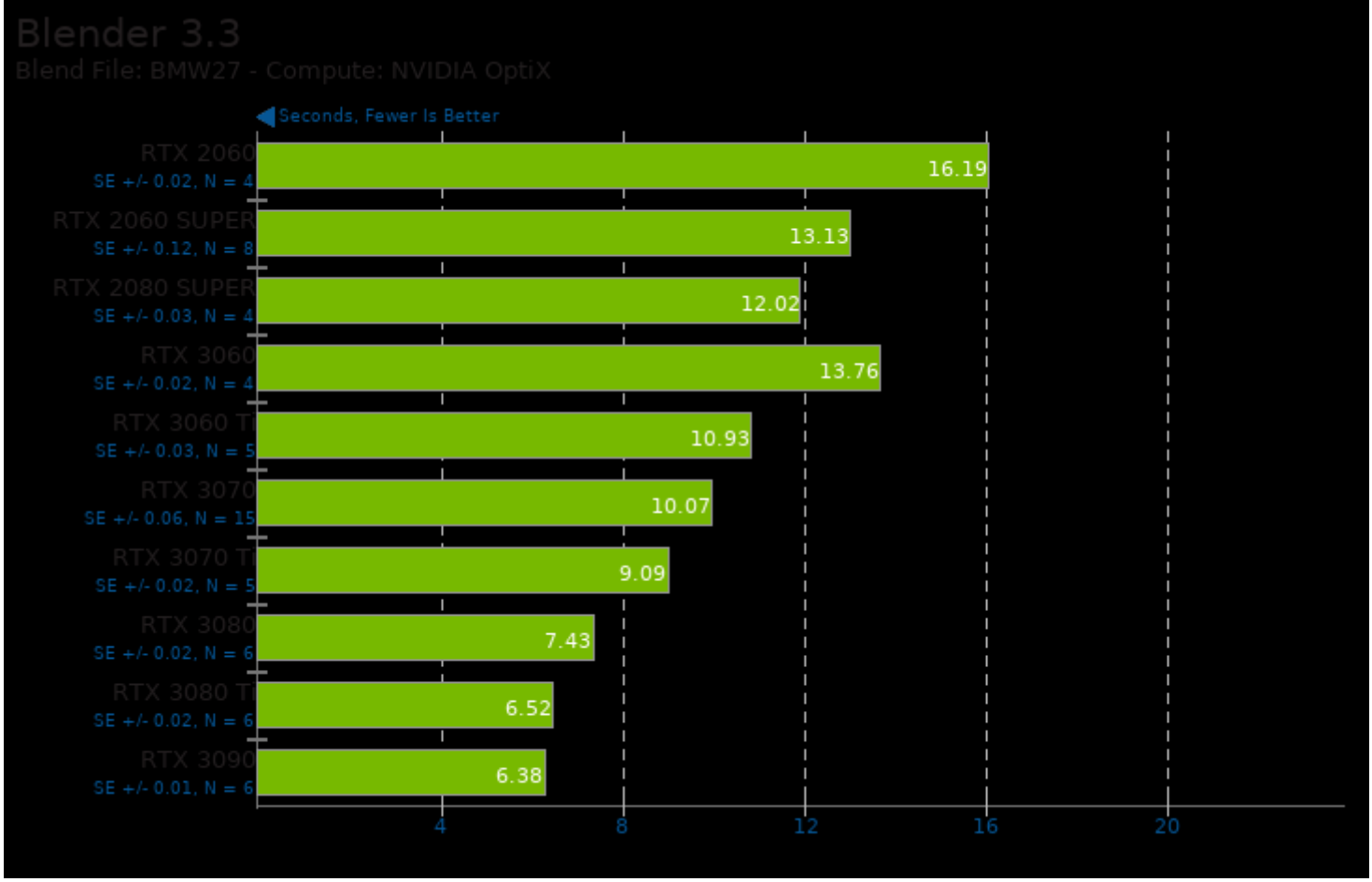
Blender 3.3 NVIDIA



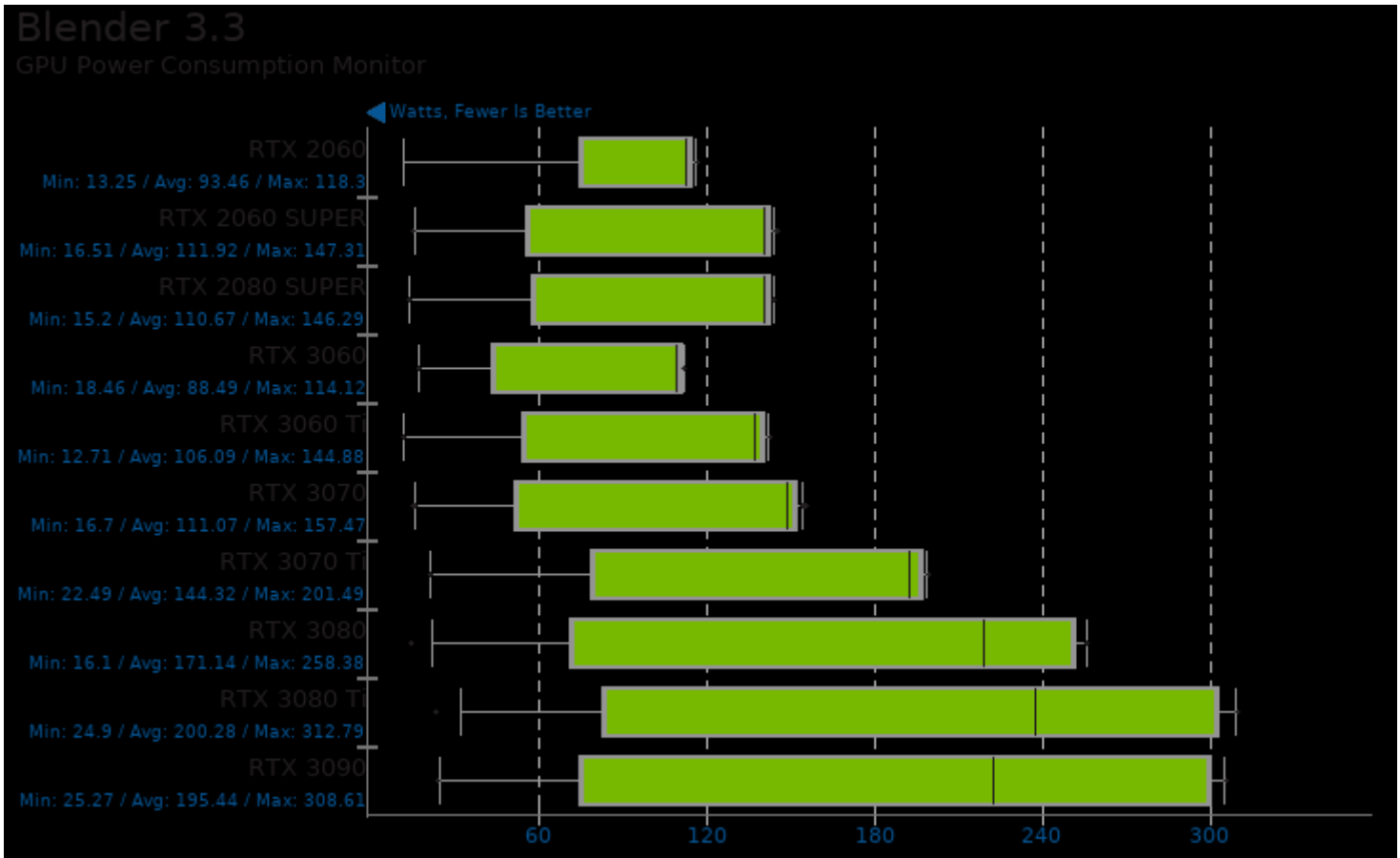


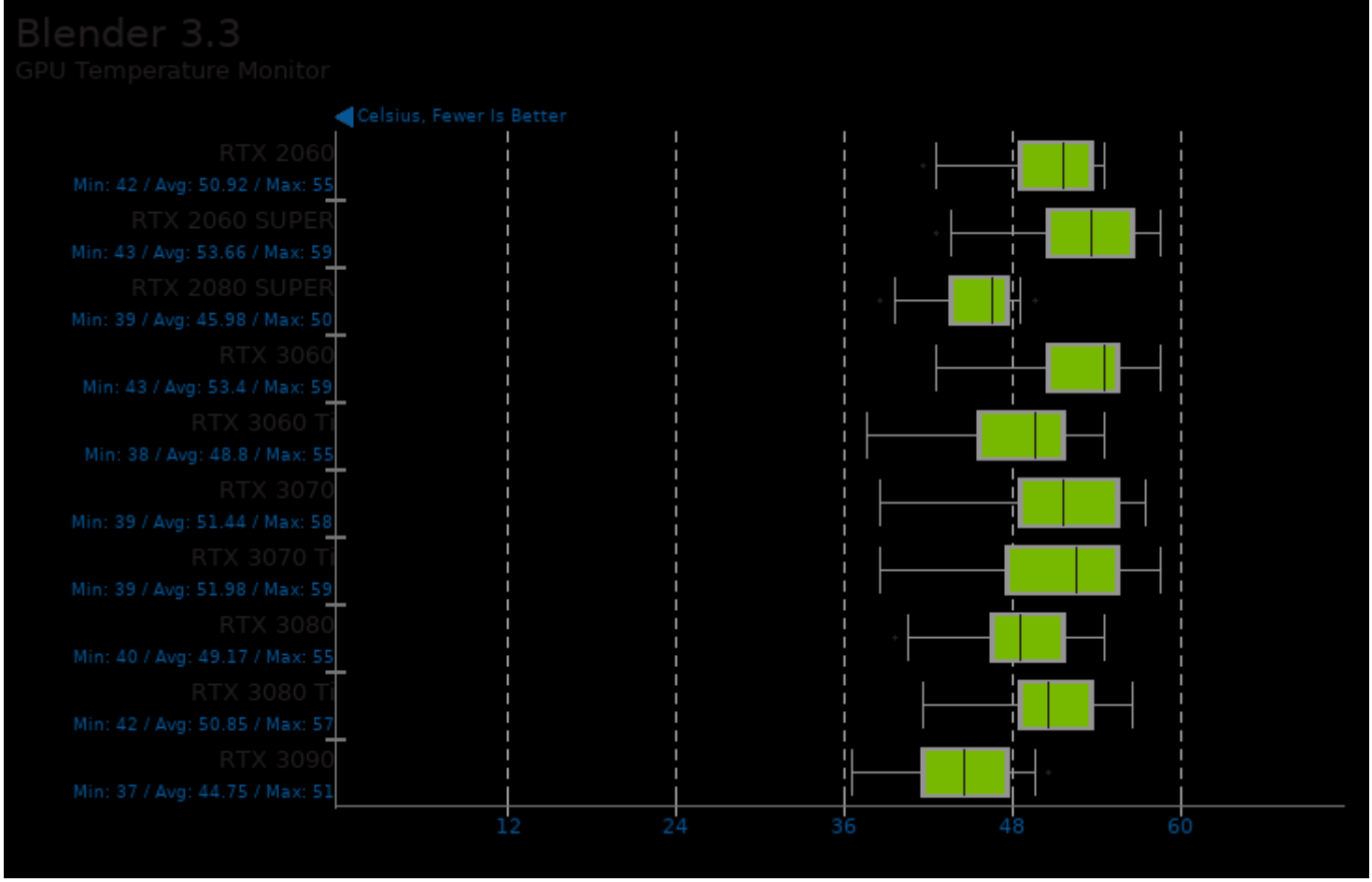
Blender 3.3 NVIDIA



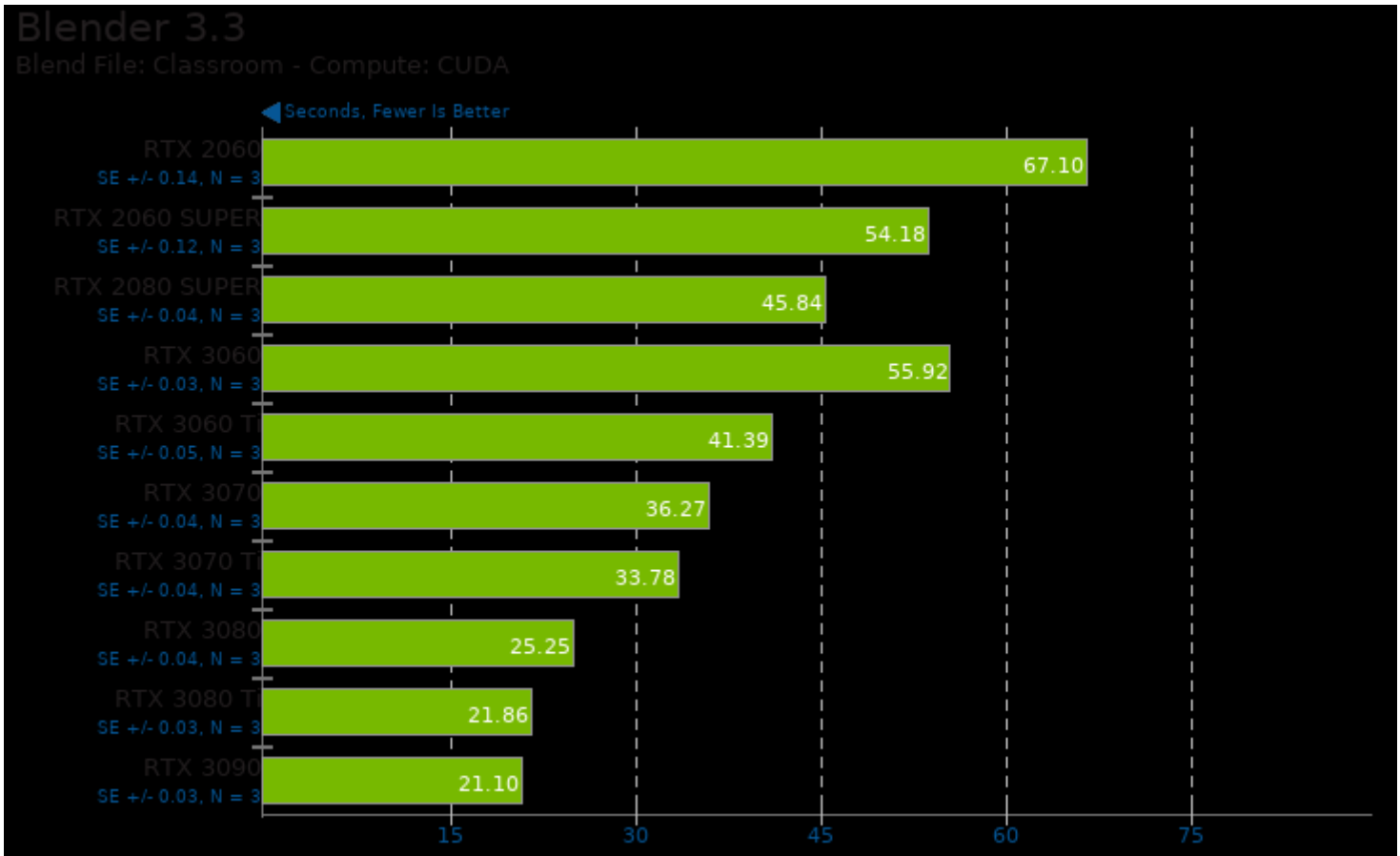


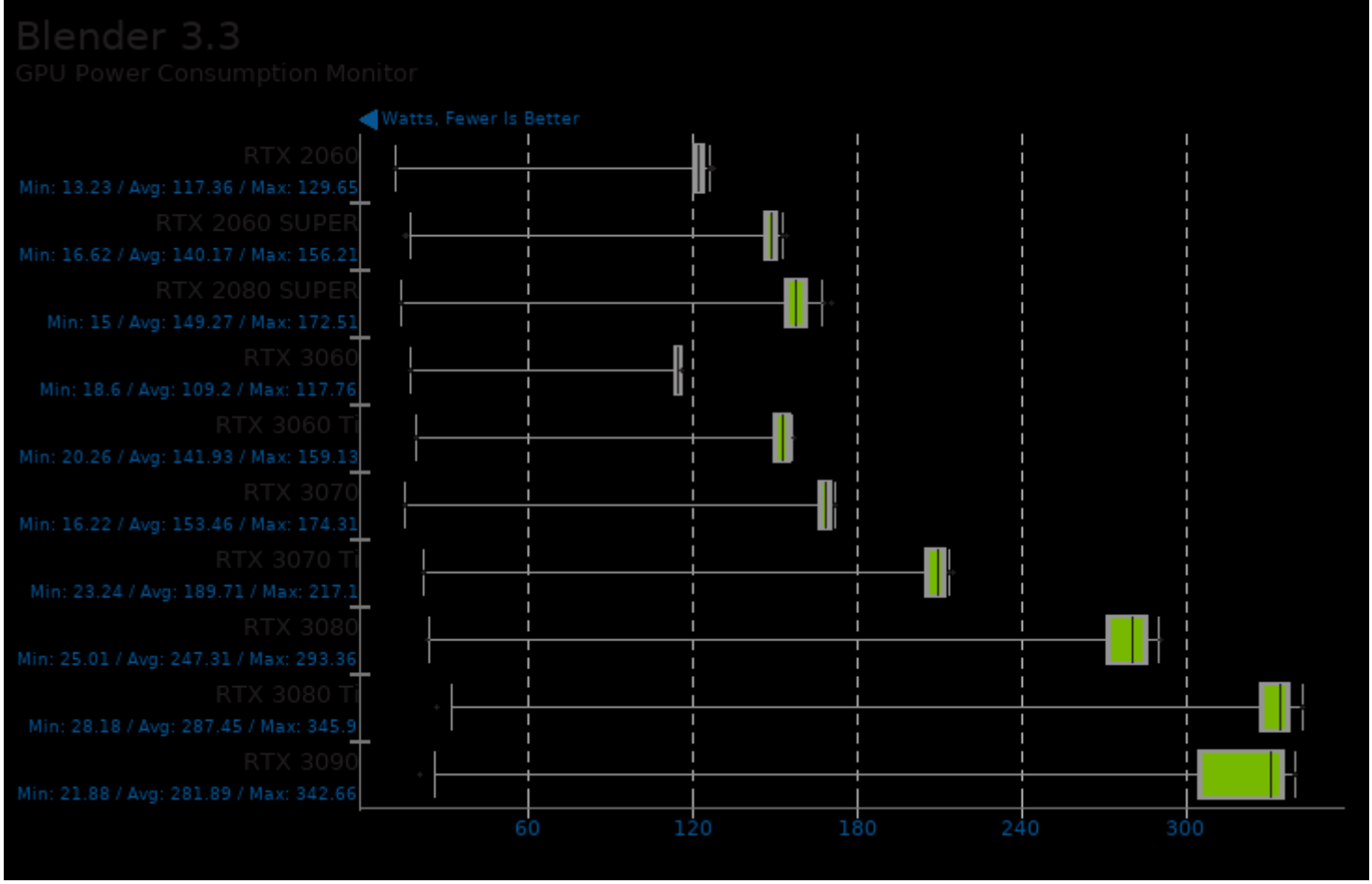
Blender 3.3 NVIDIA



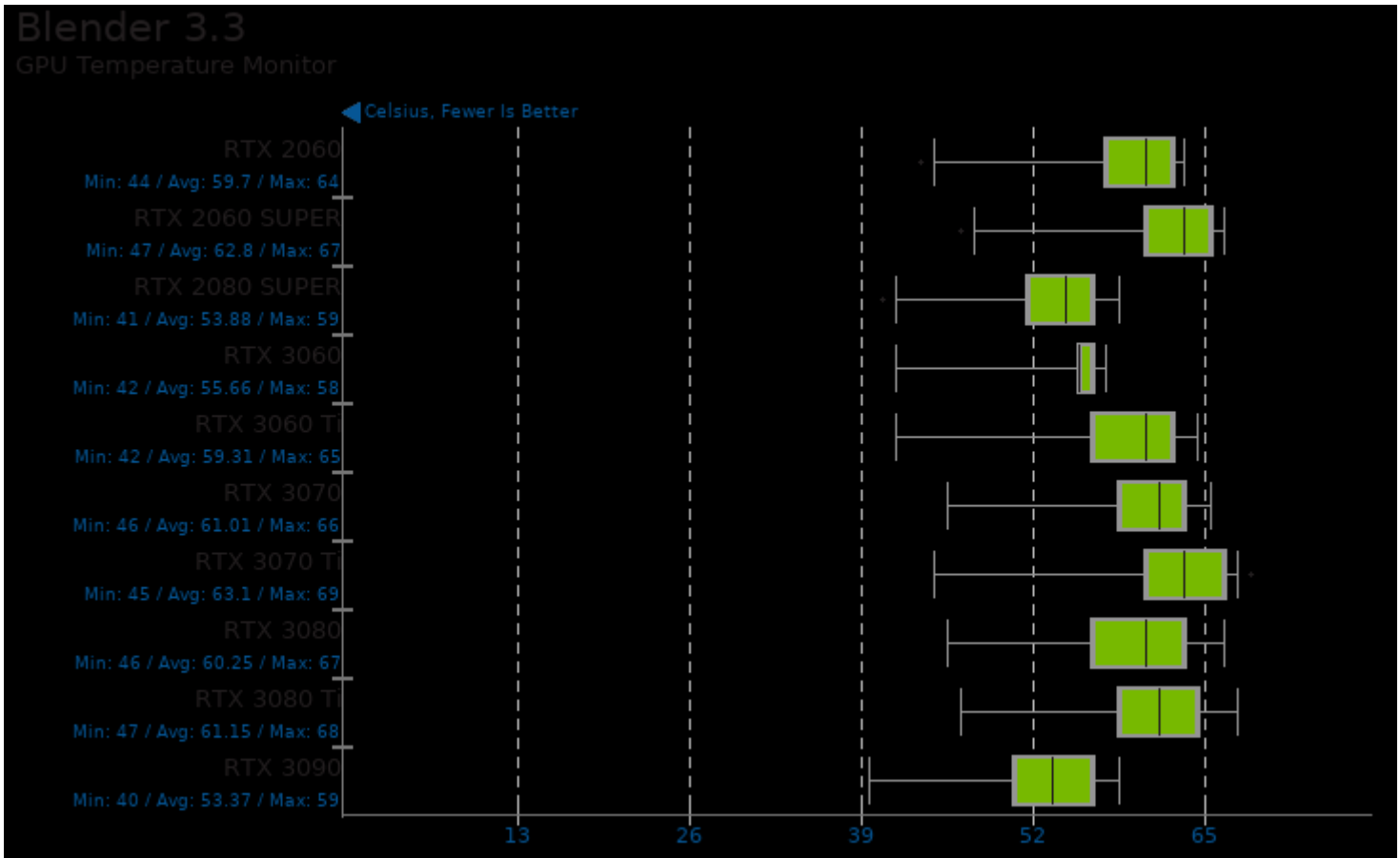


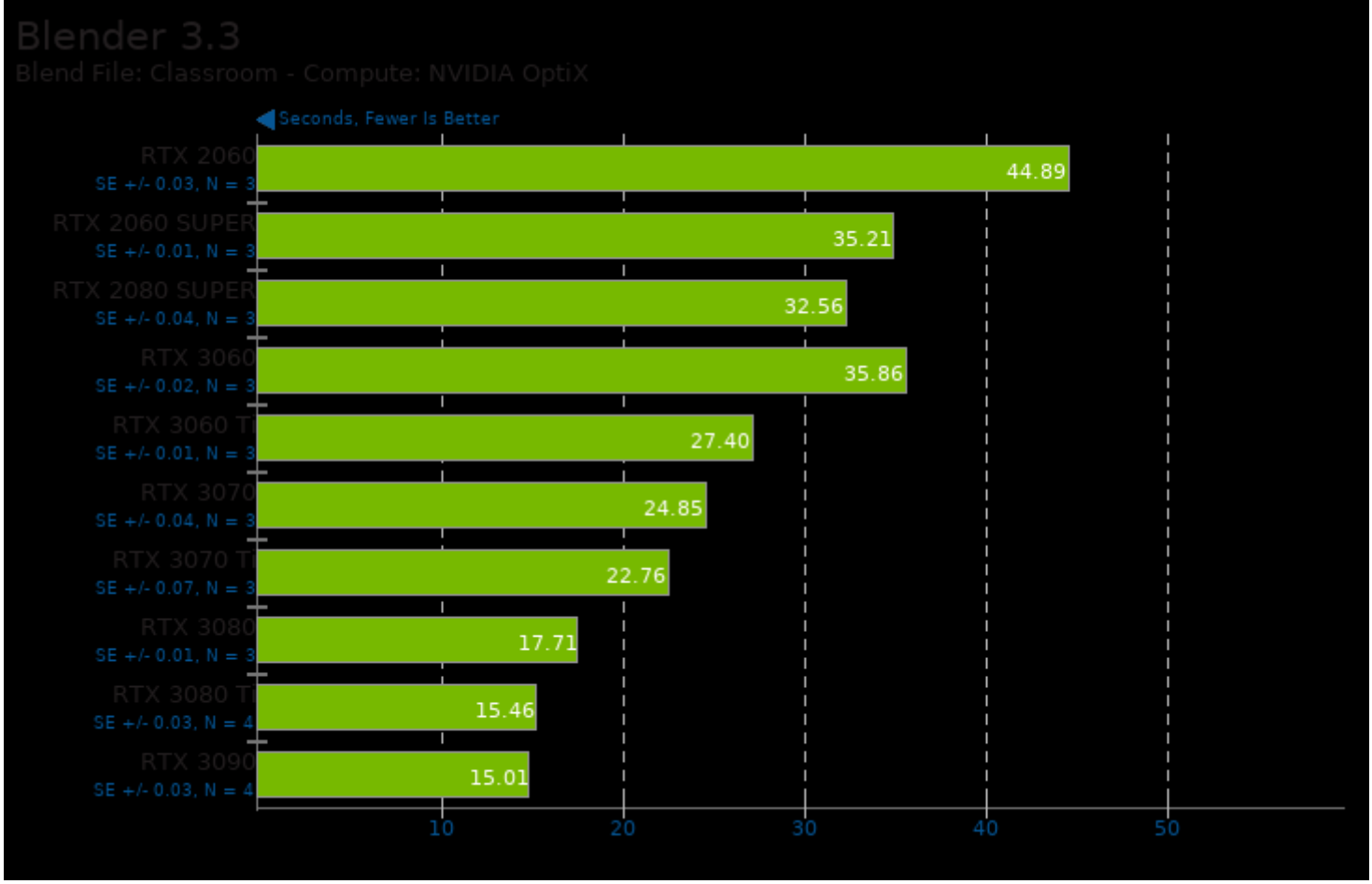
Blender 3.3 NVIDIA



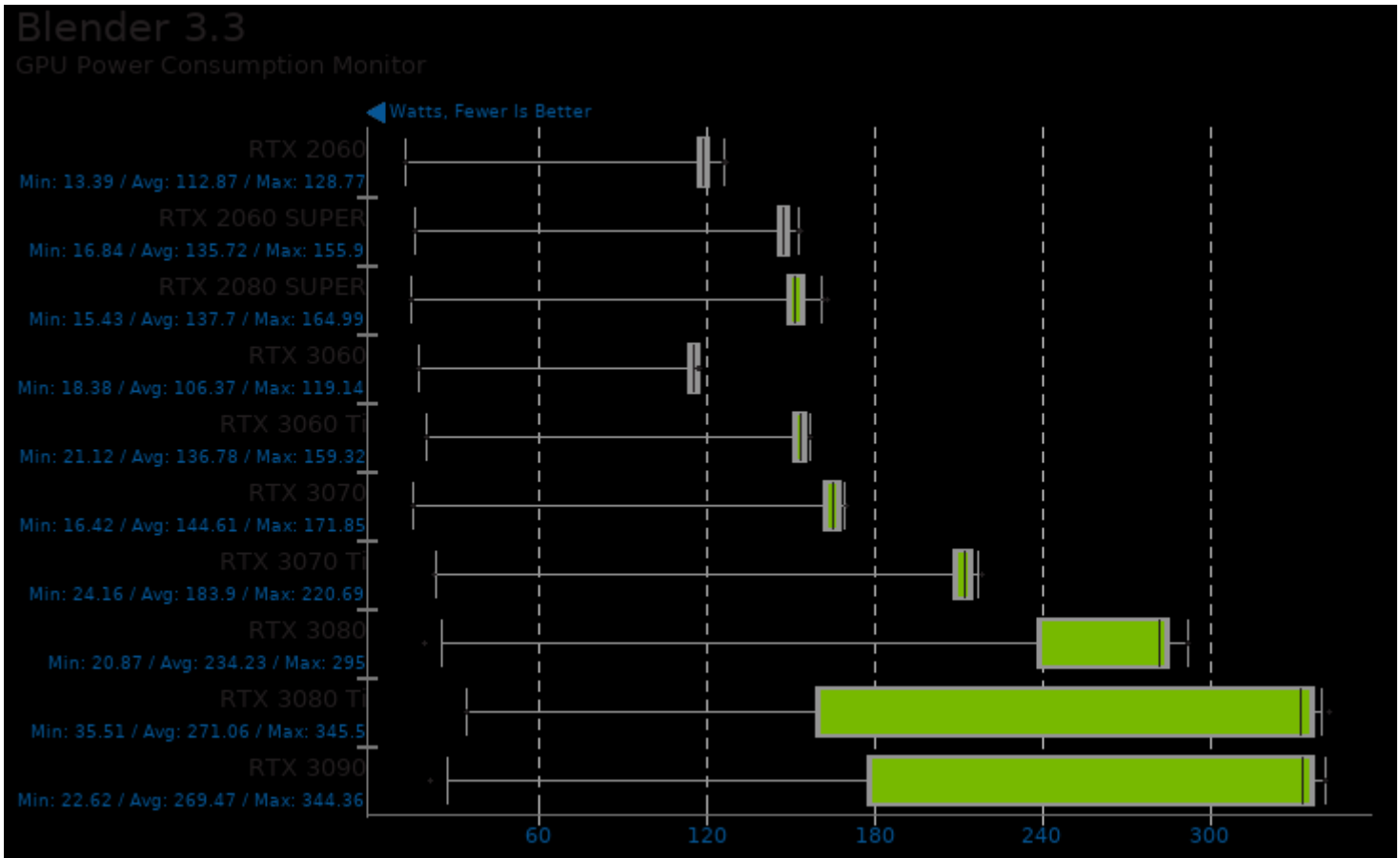


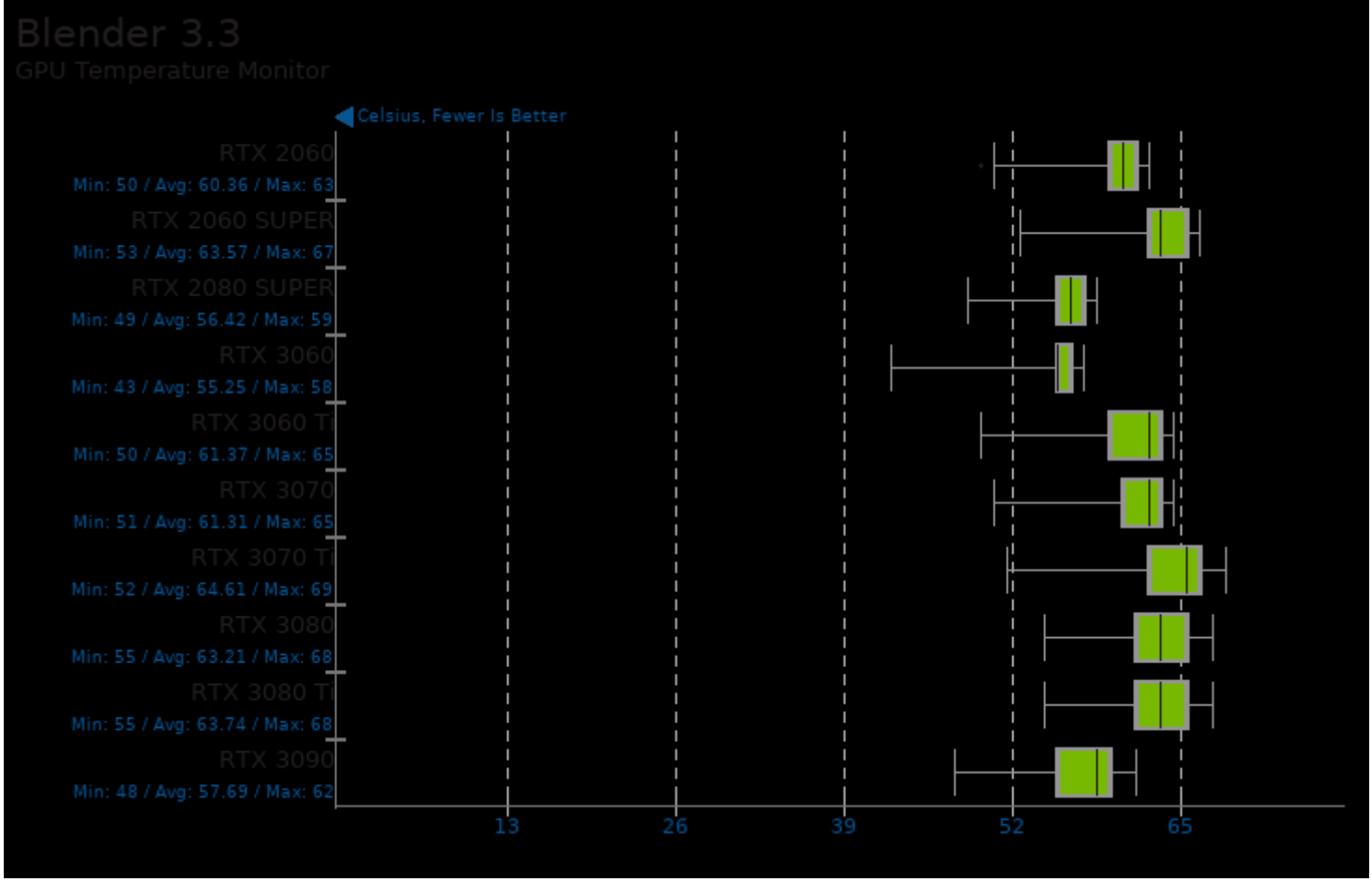
Blender 3.3 NVIDIA



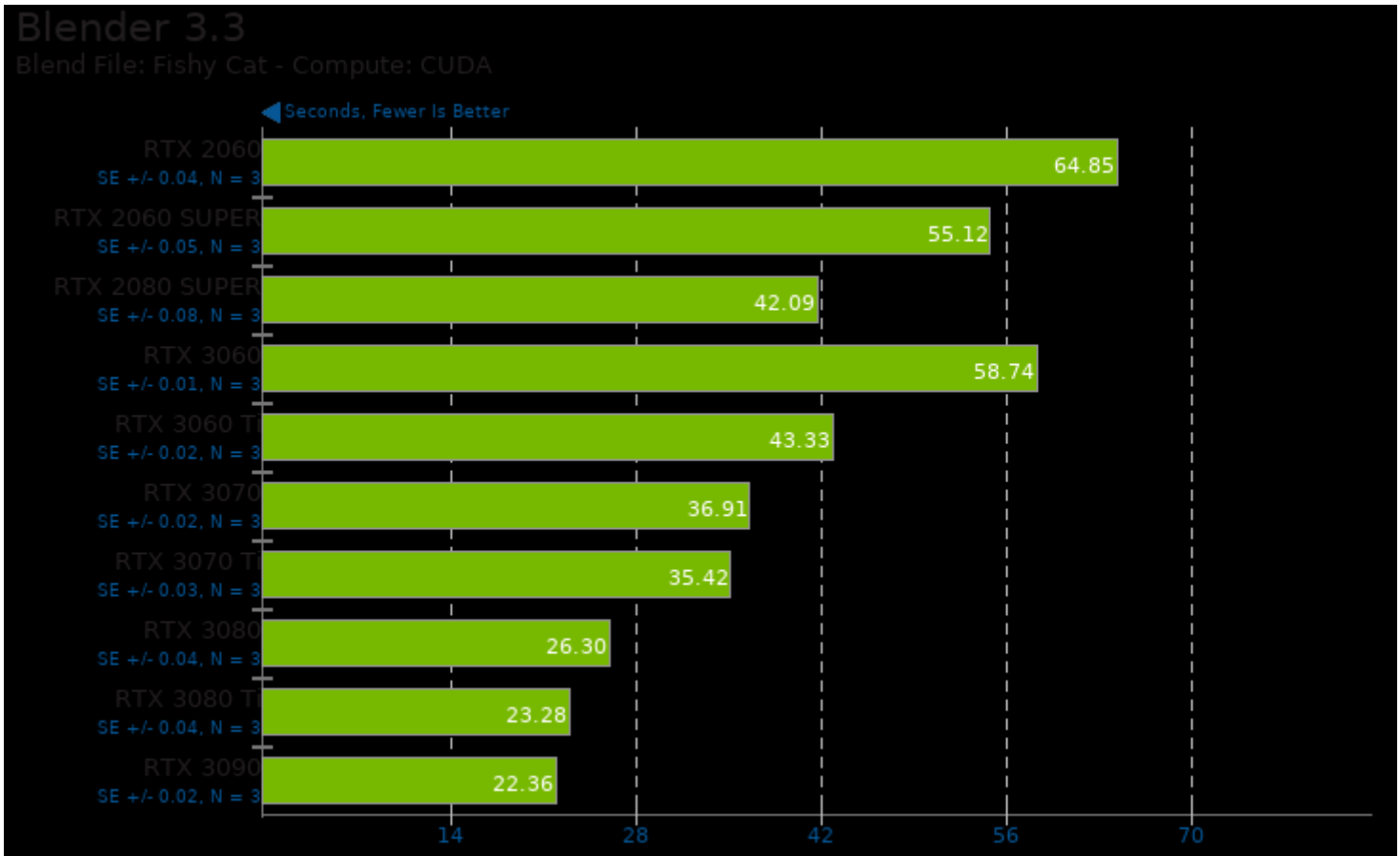


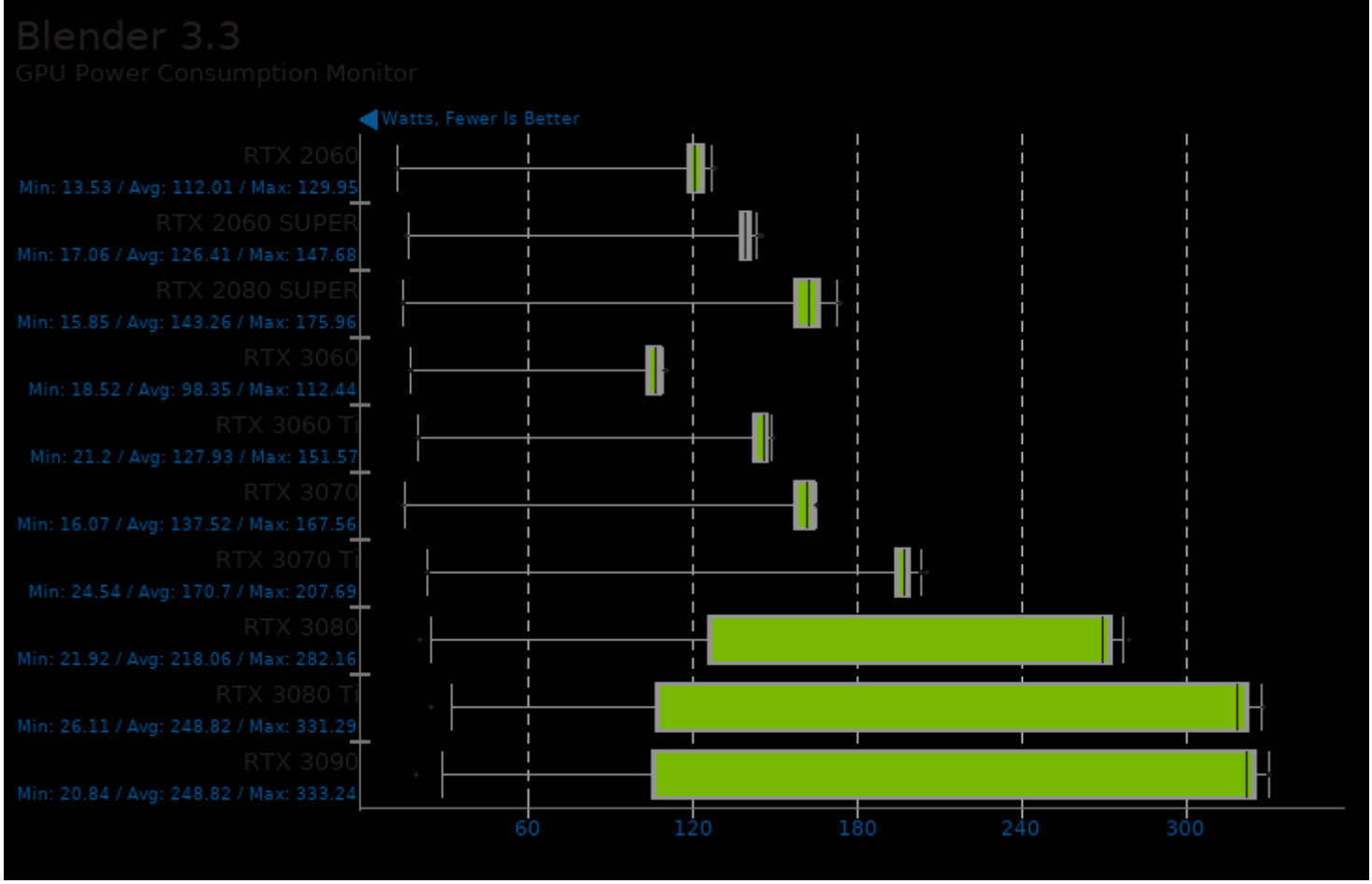
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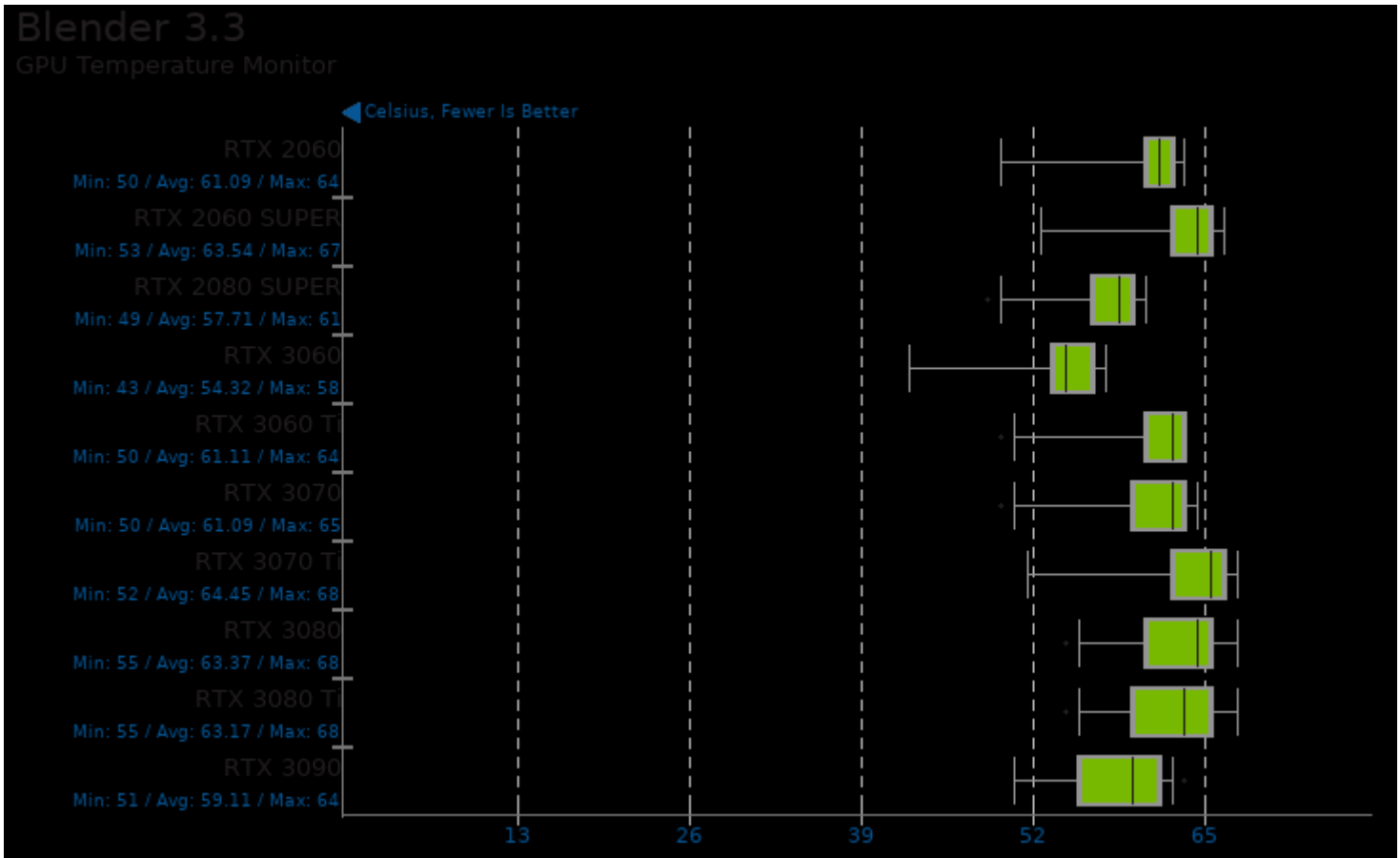


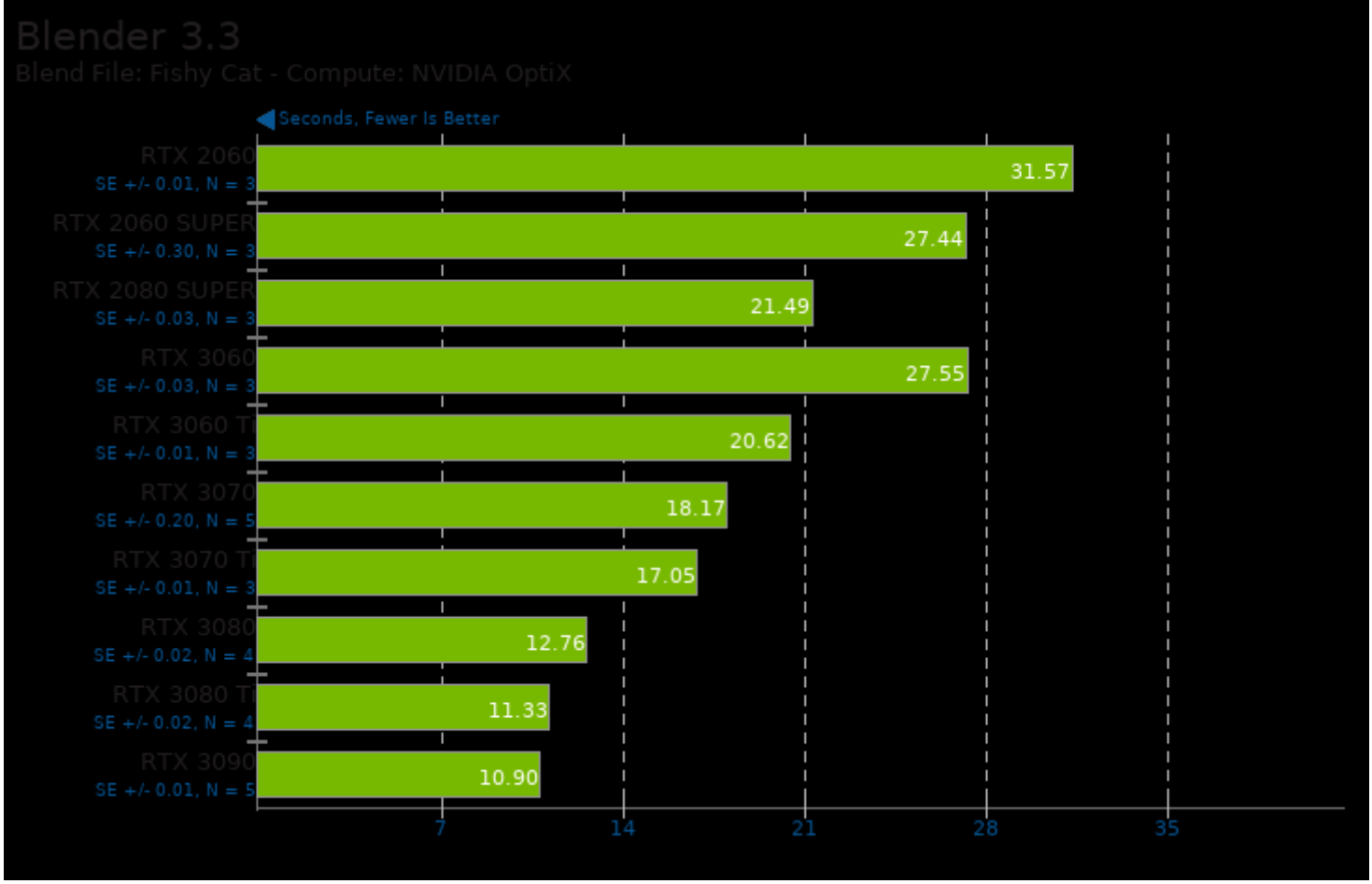
Blender 3.3 NVIDIA



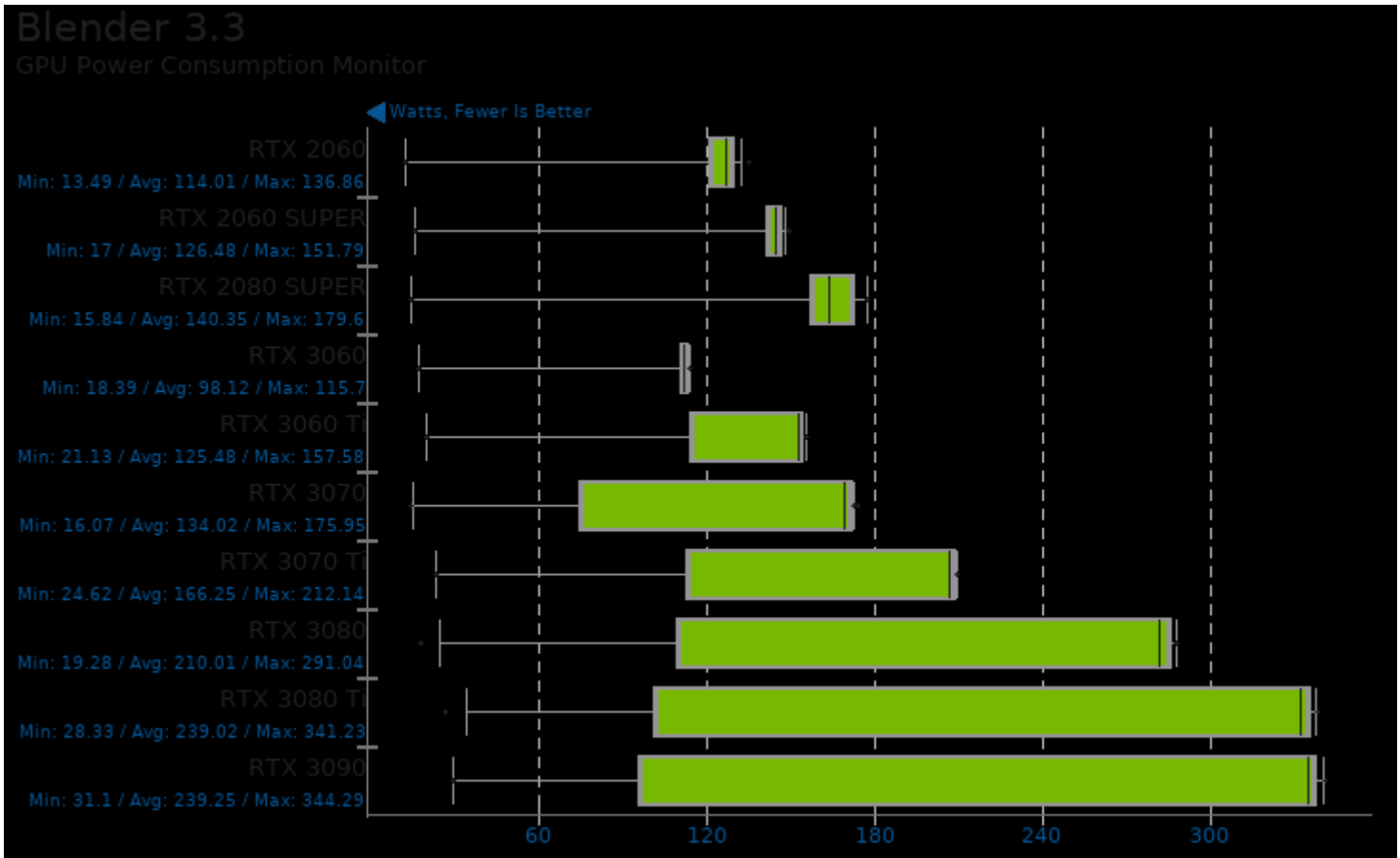


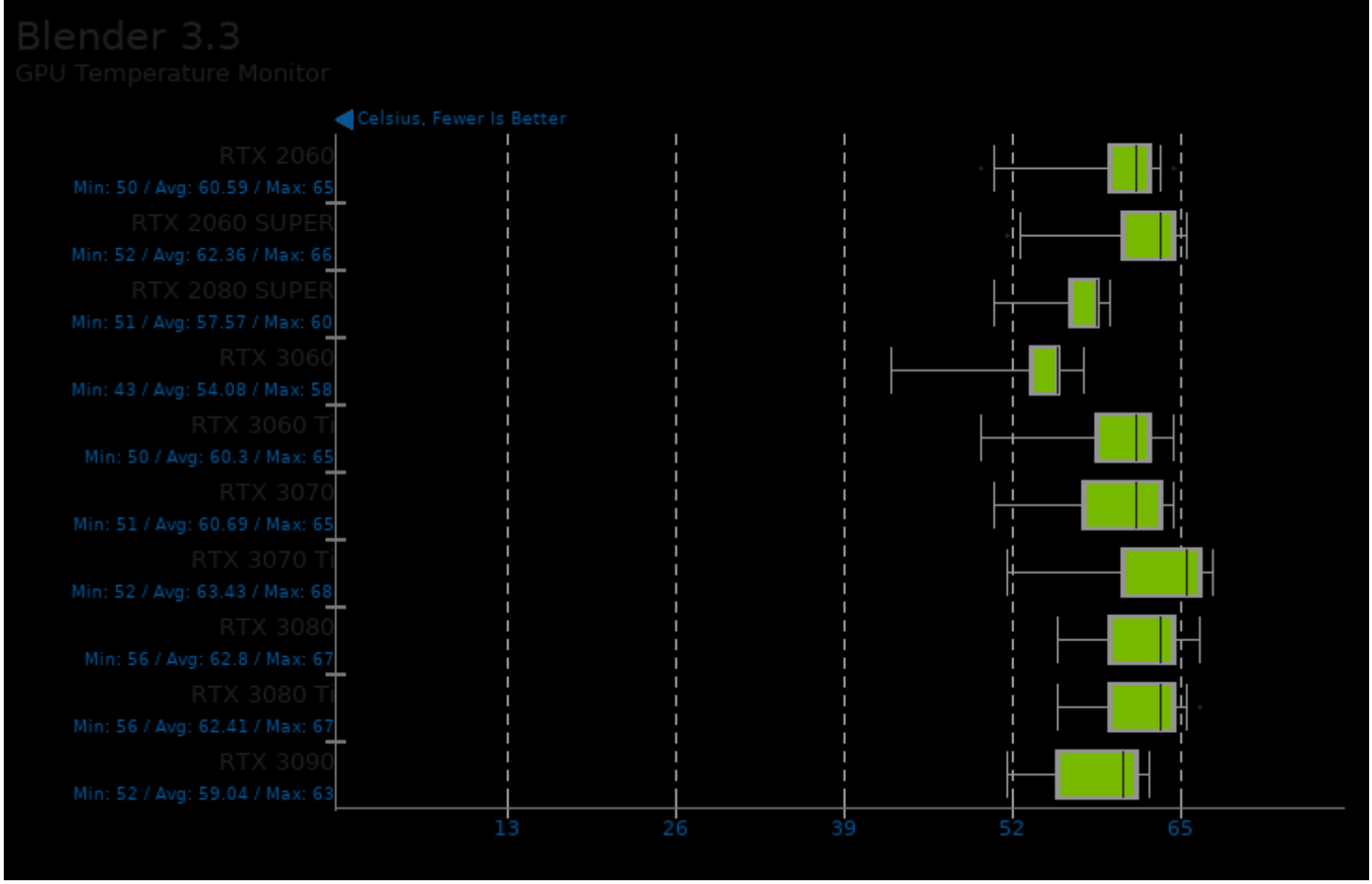
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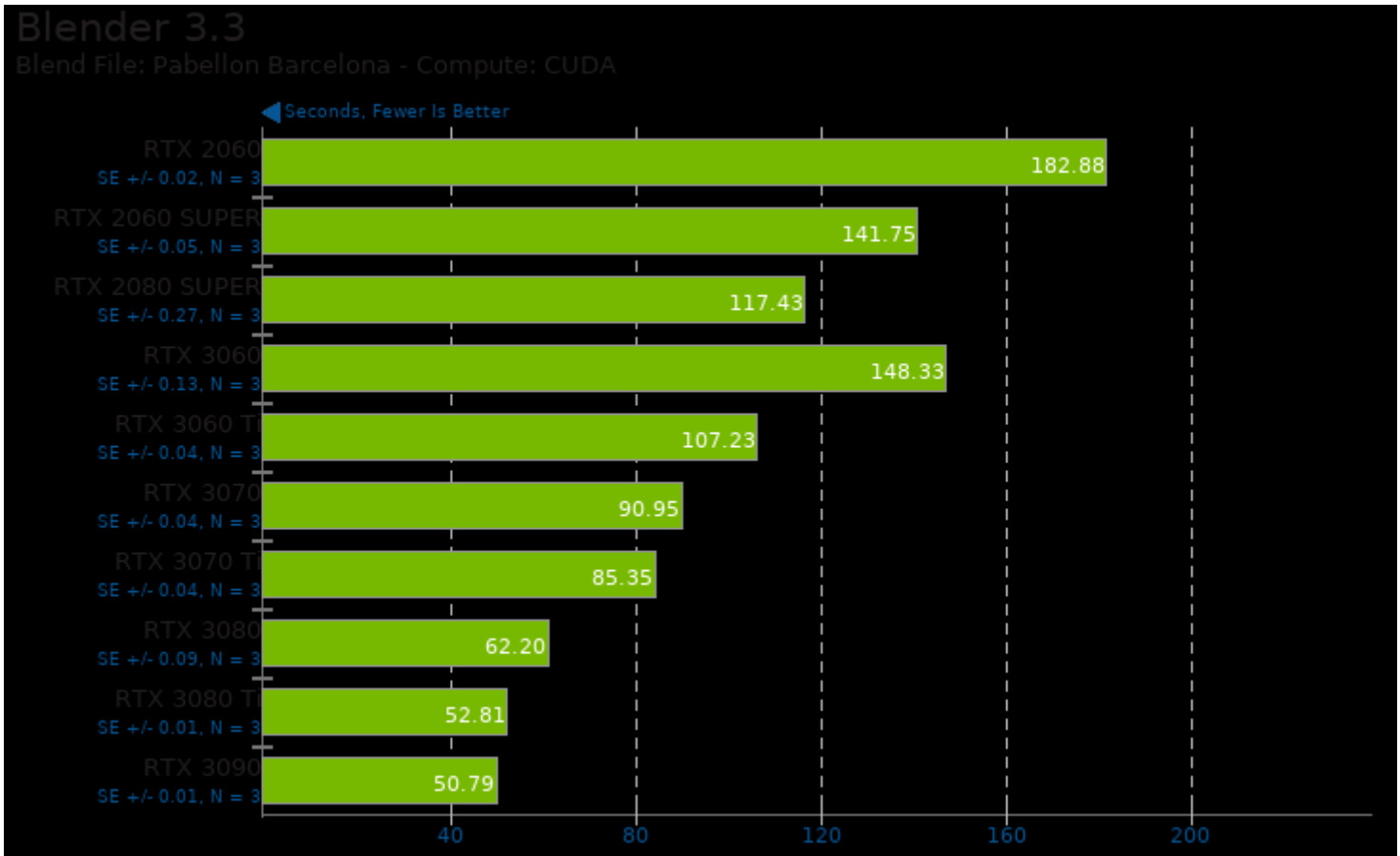


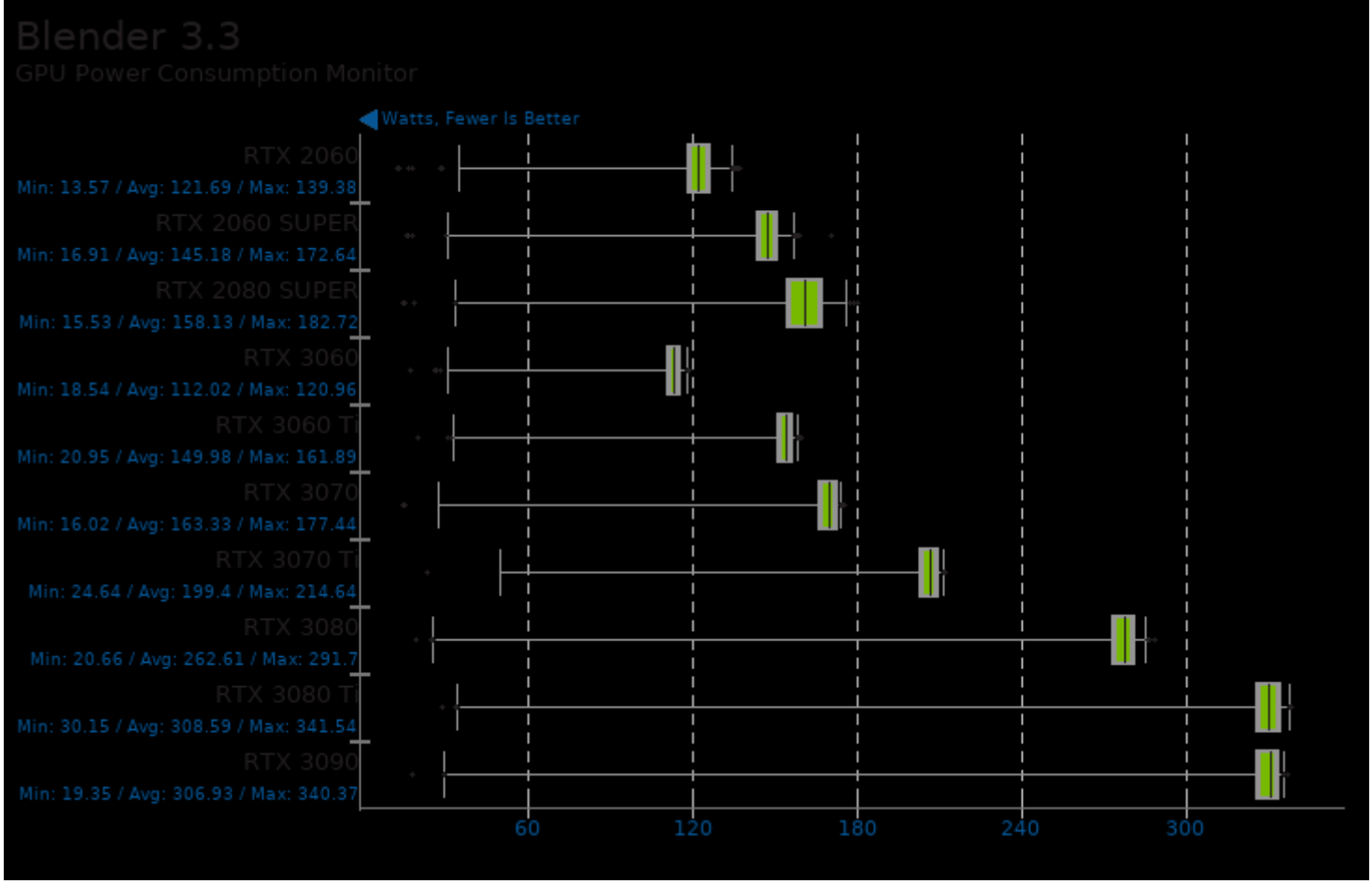
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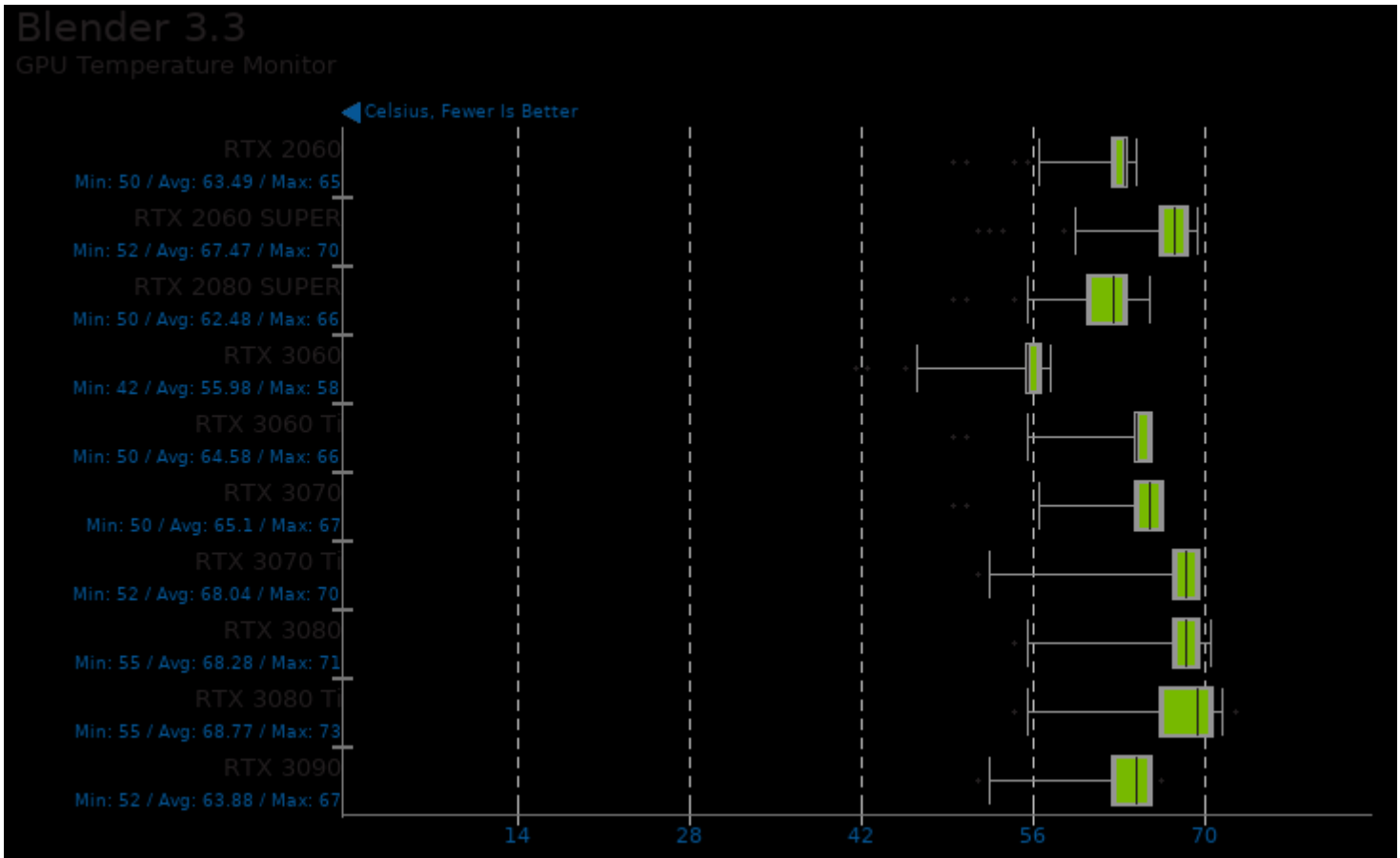


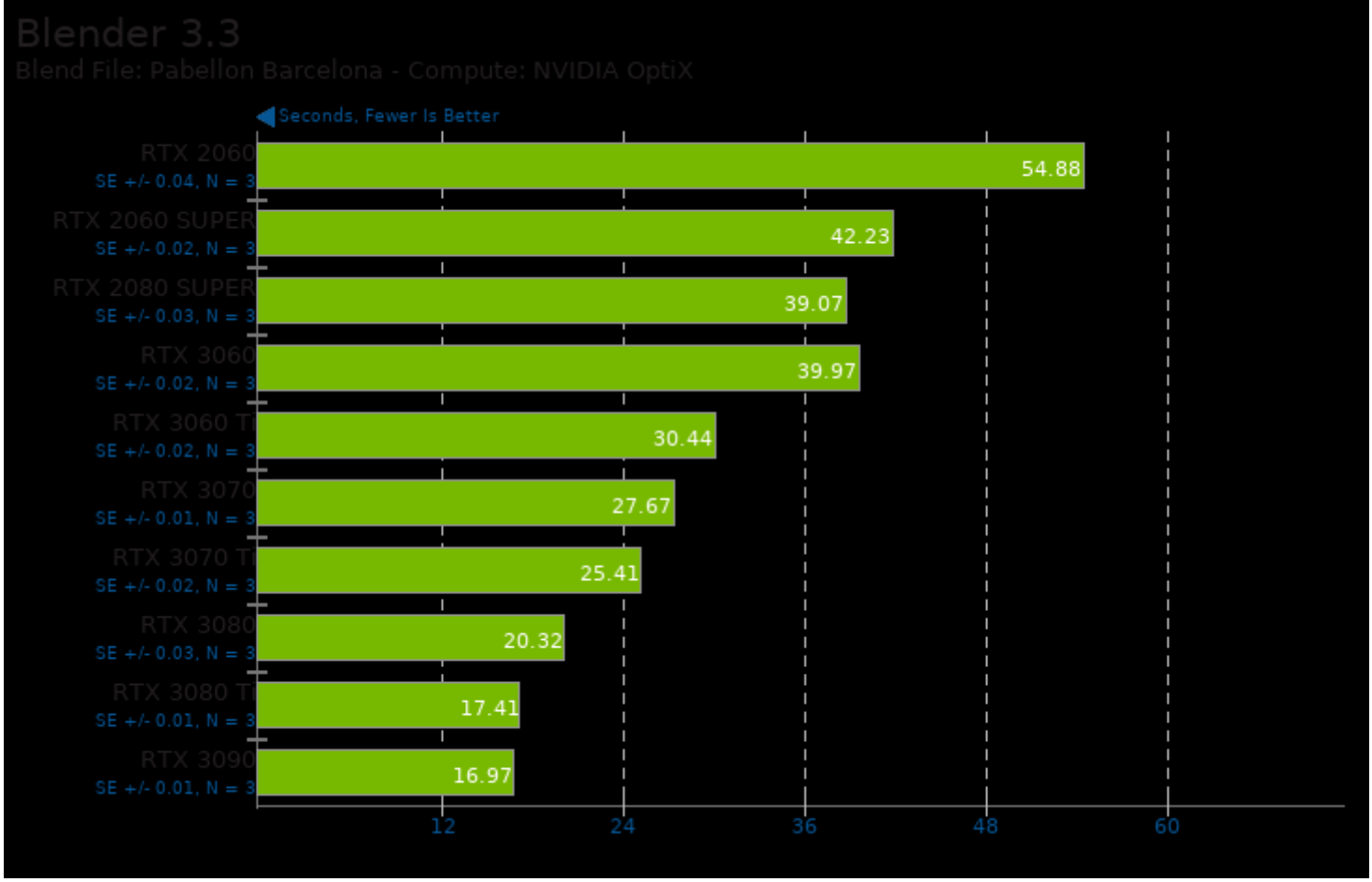
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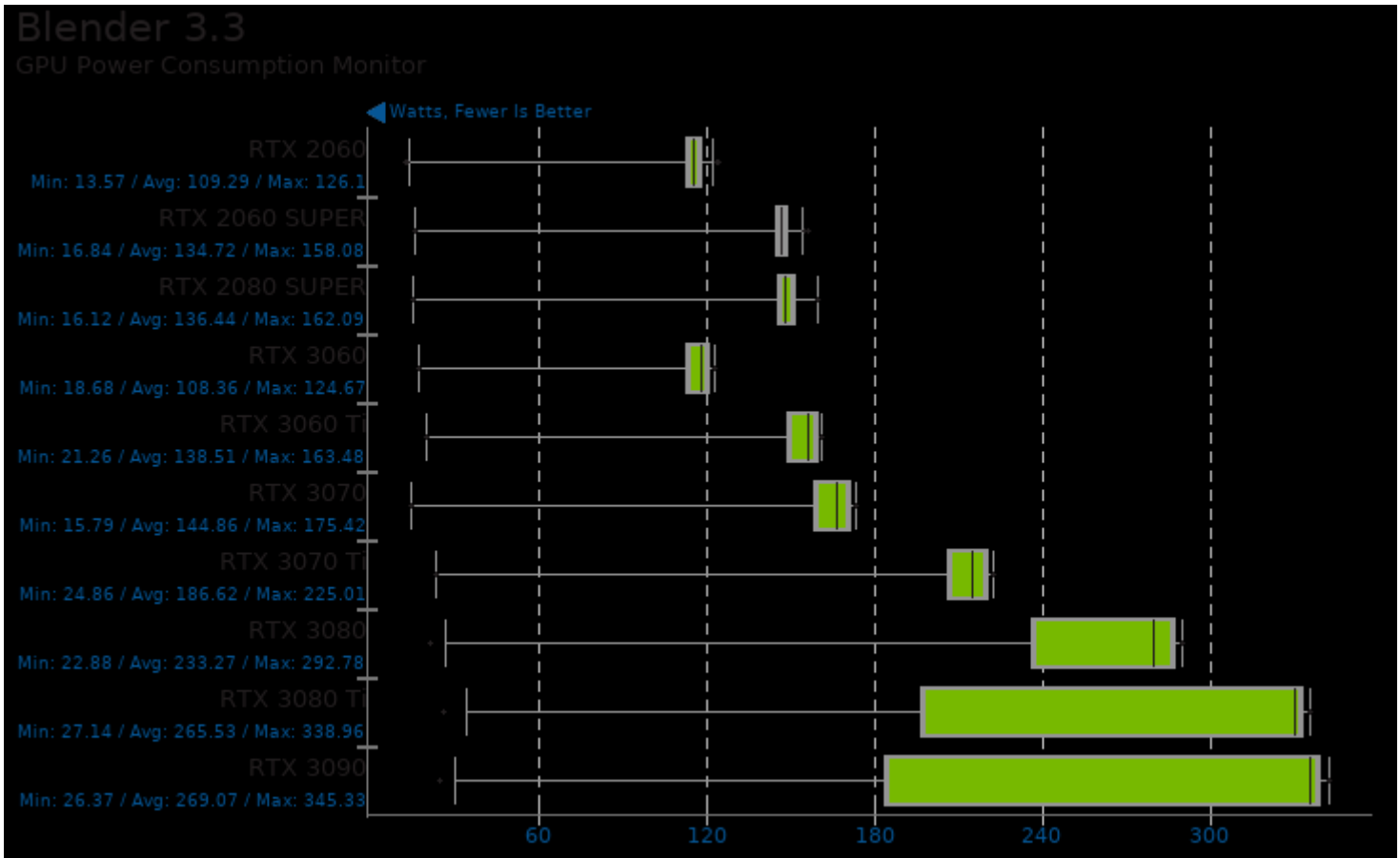


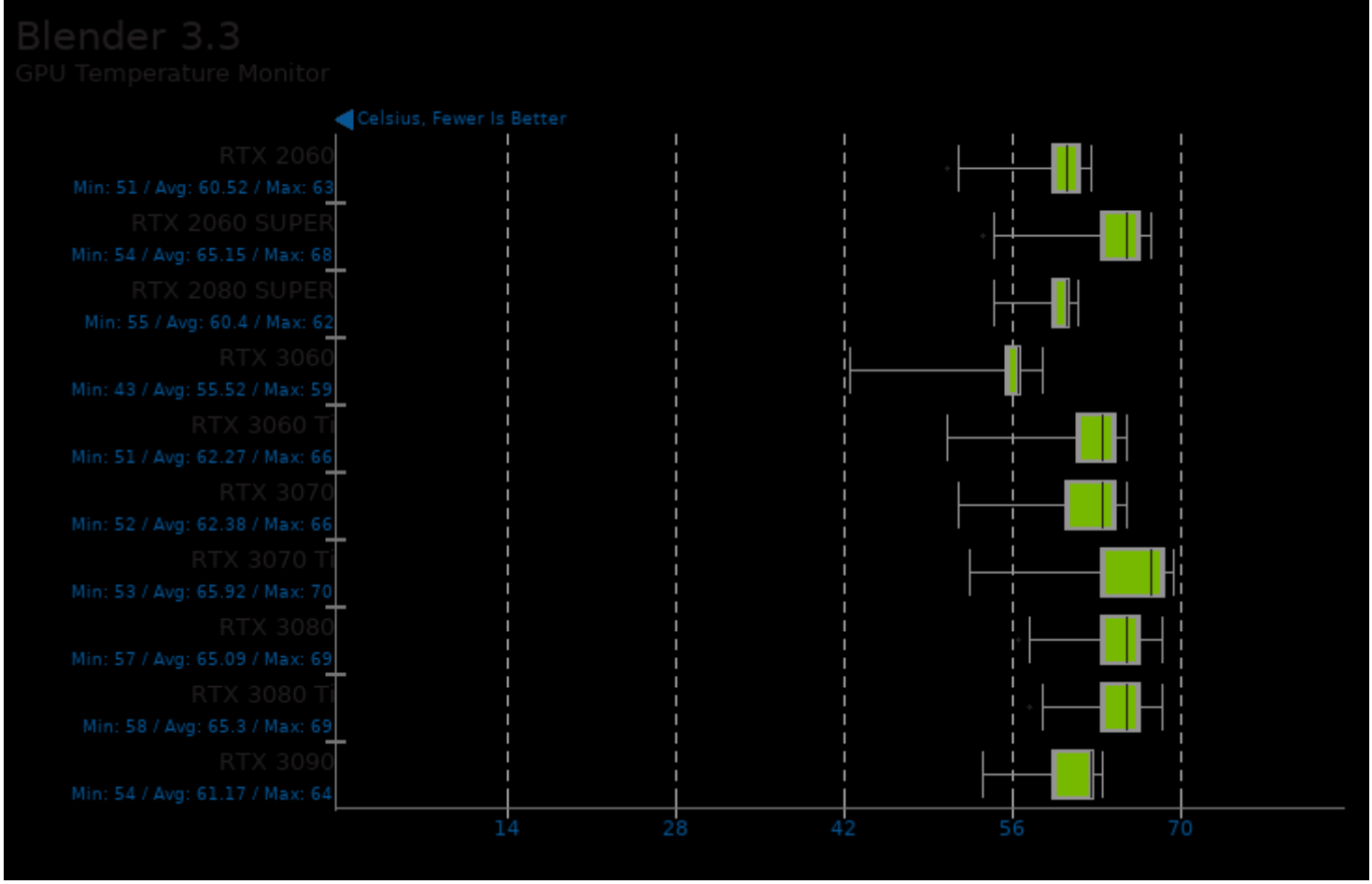
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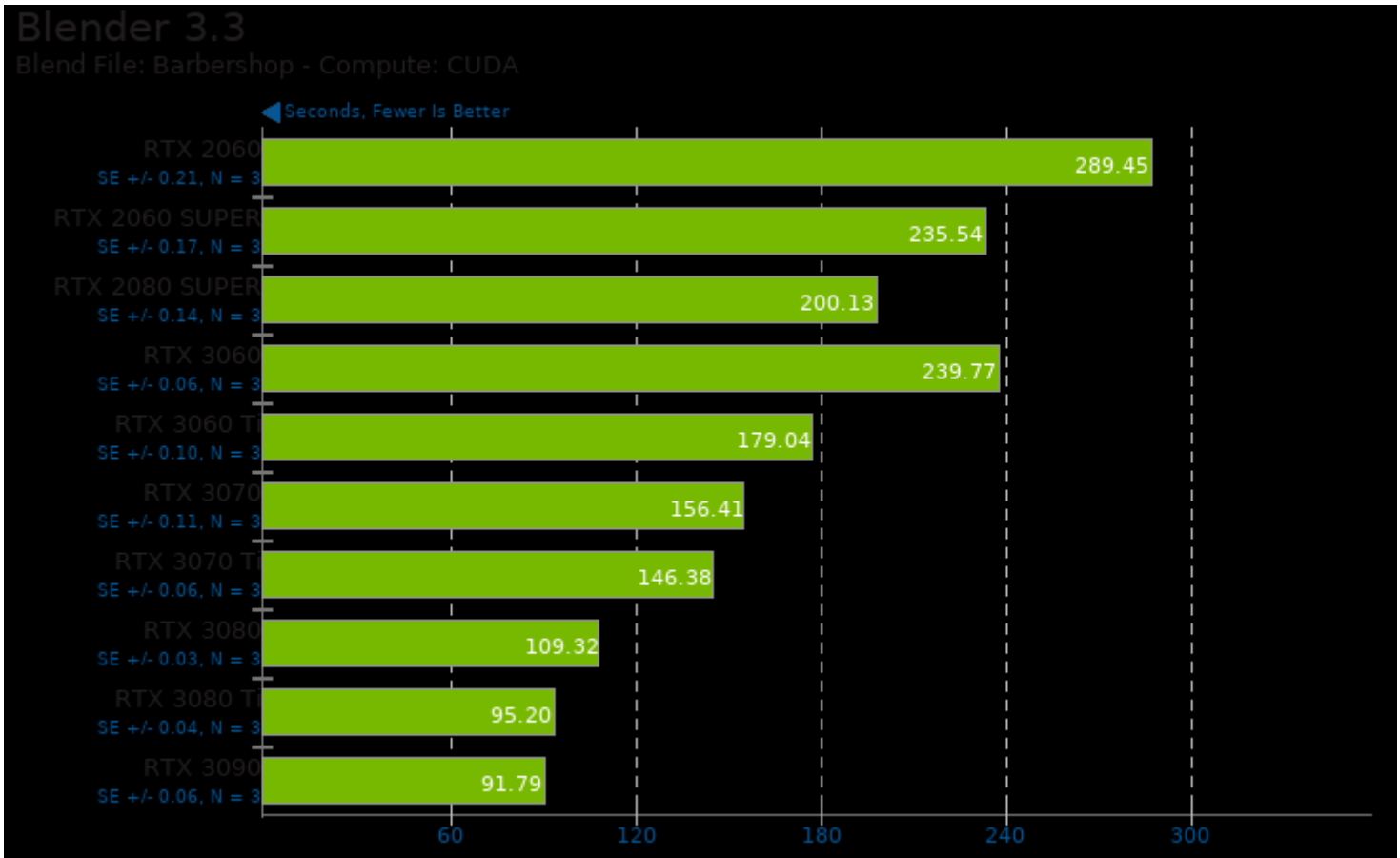


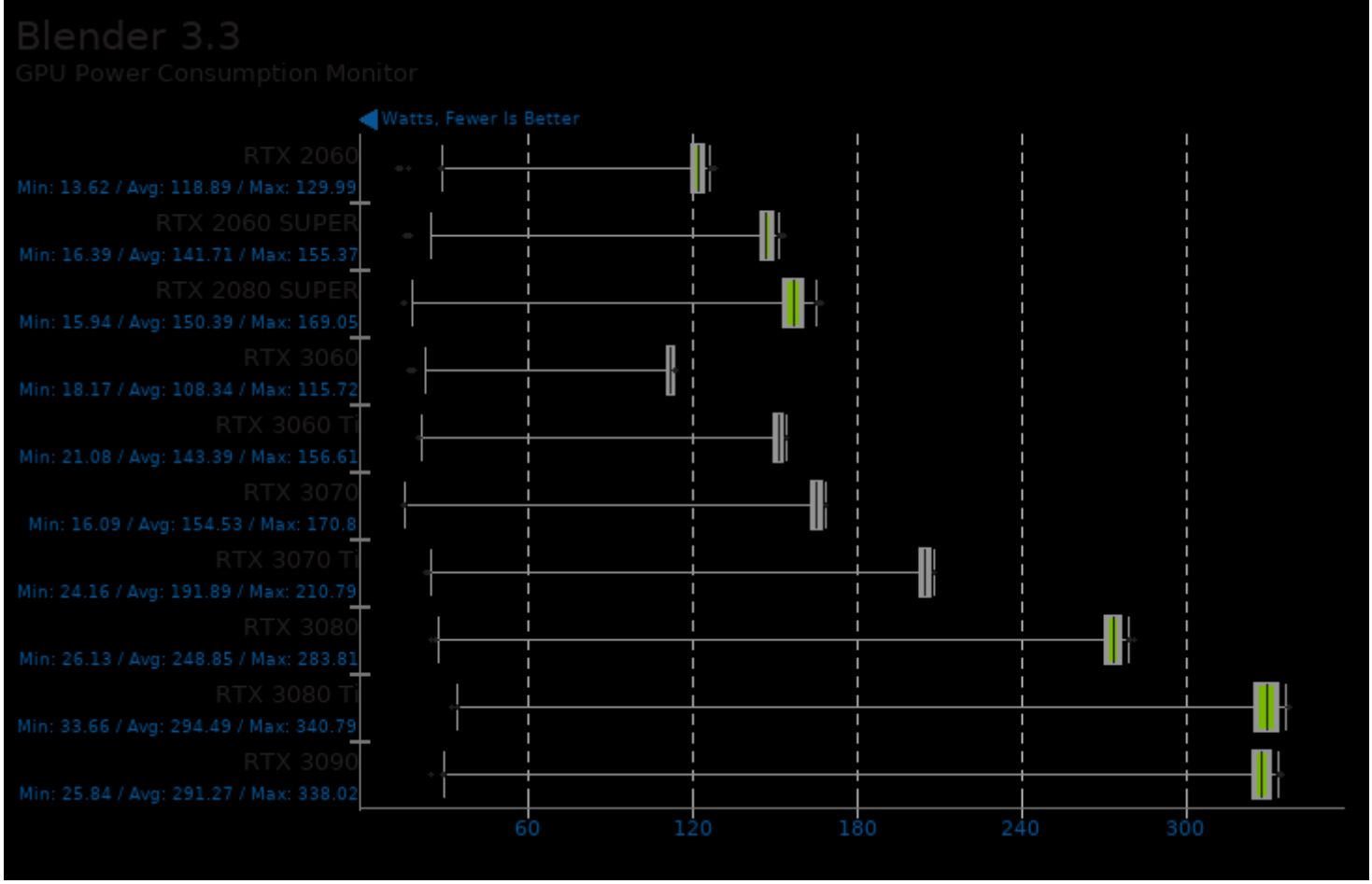
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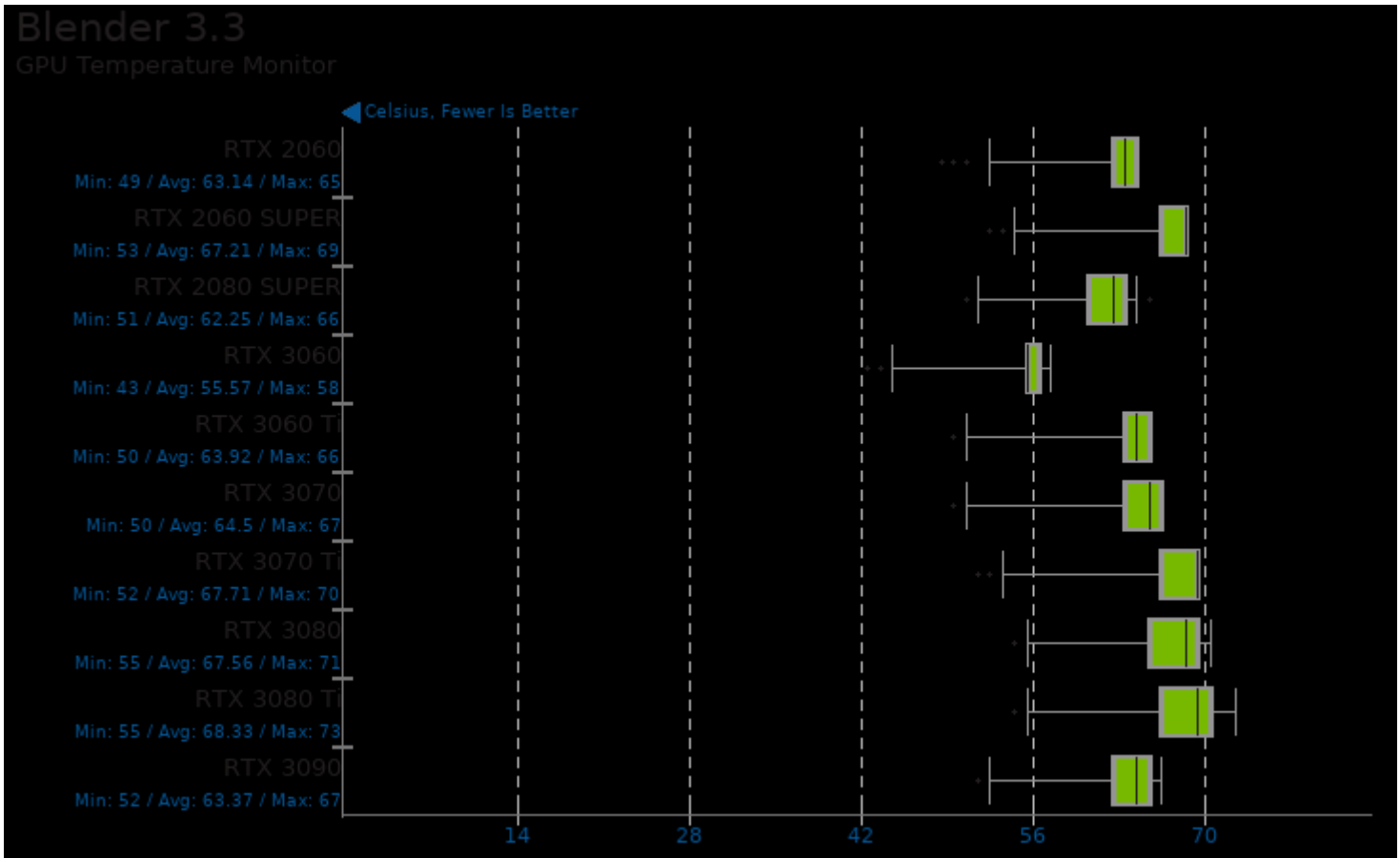


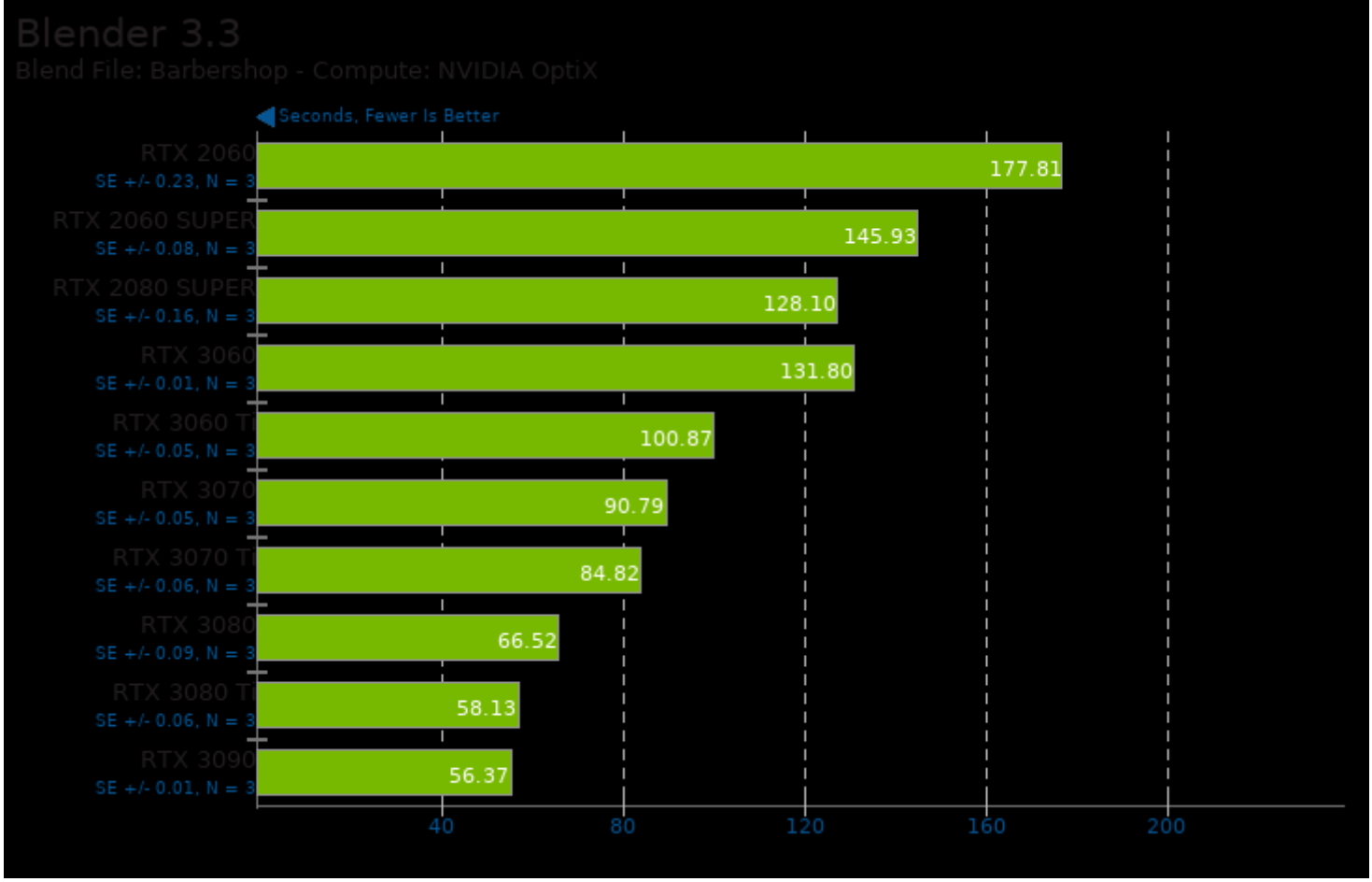
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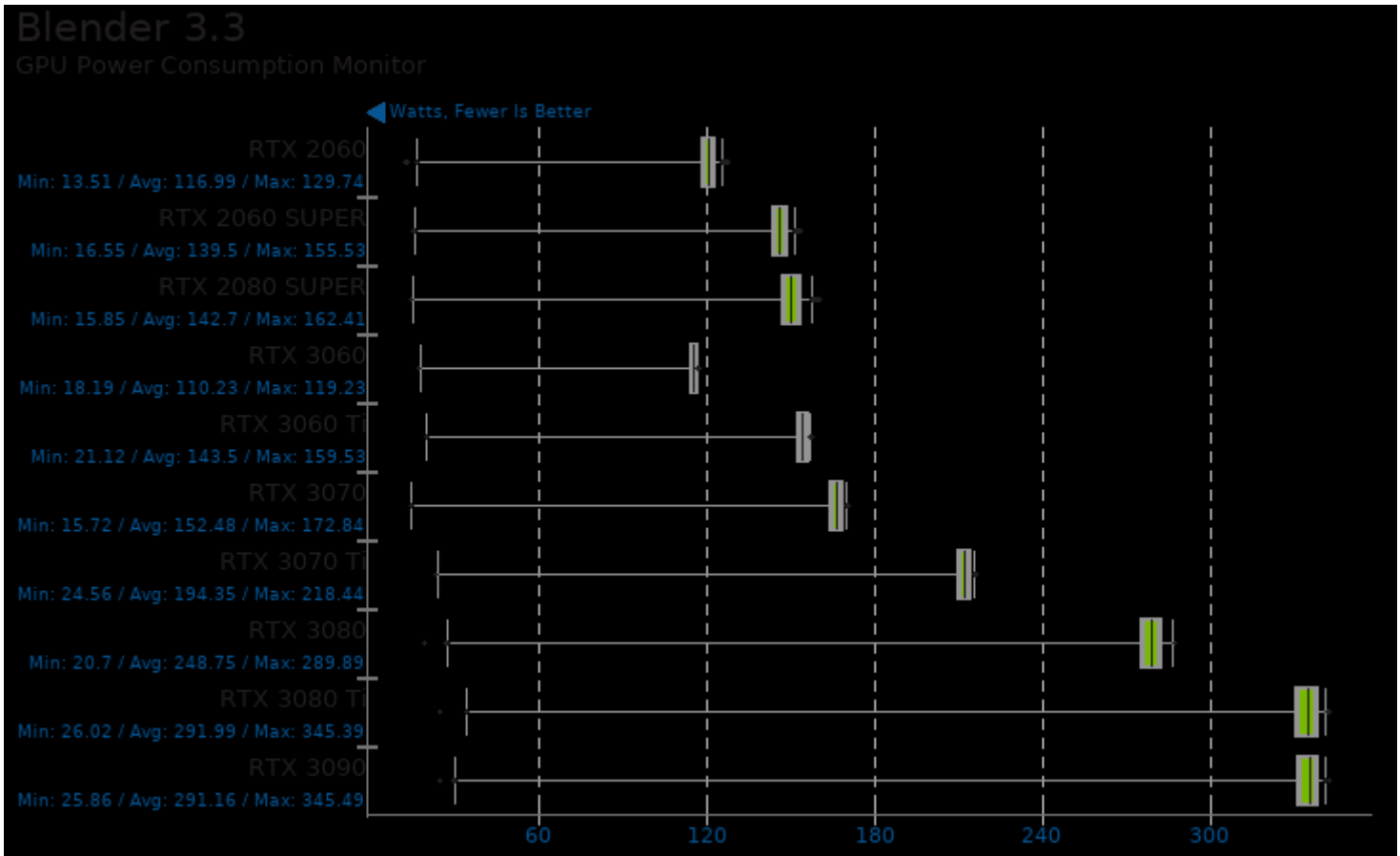


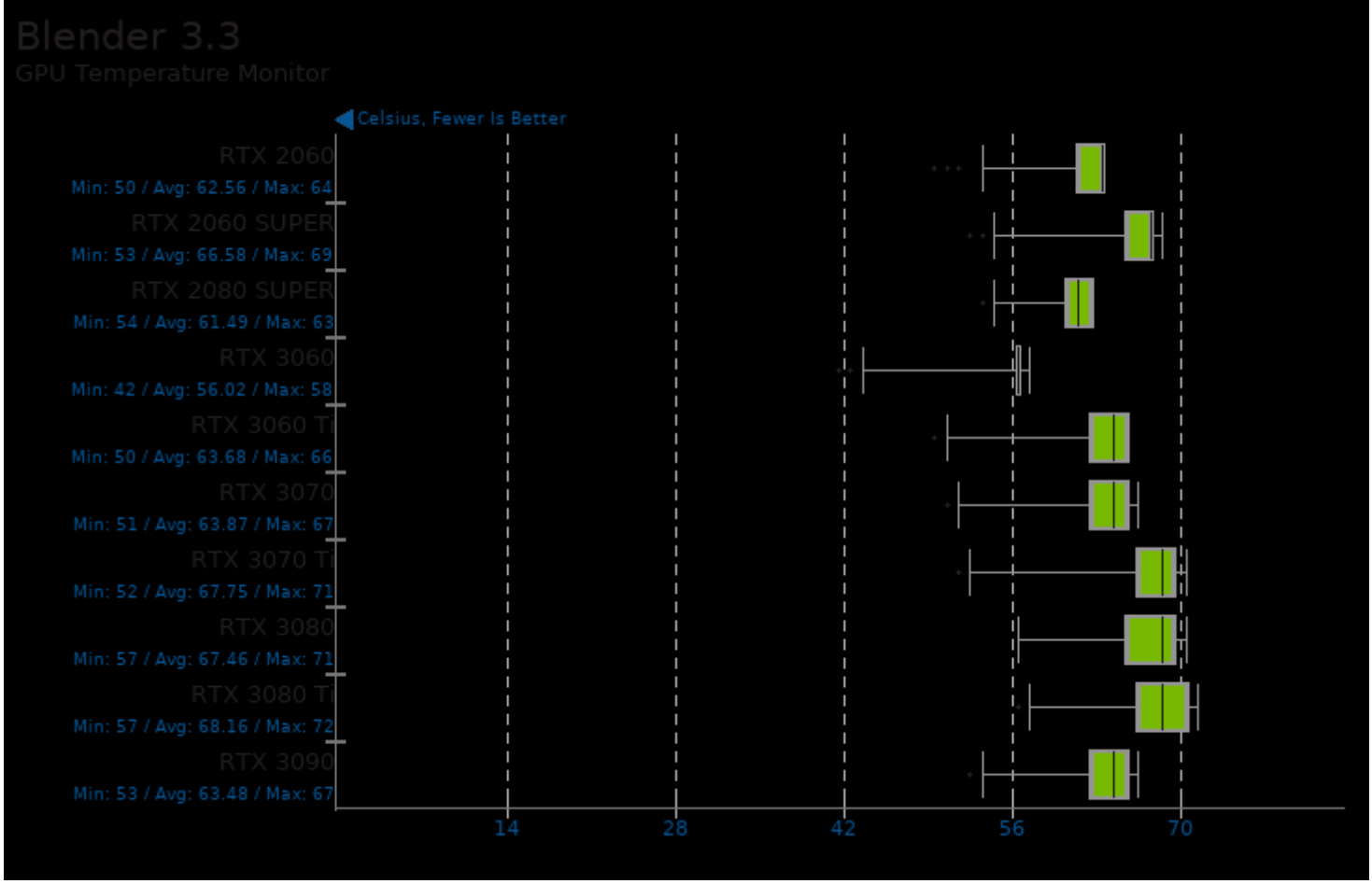
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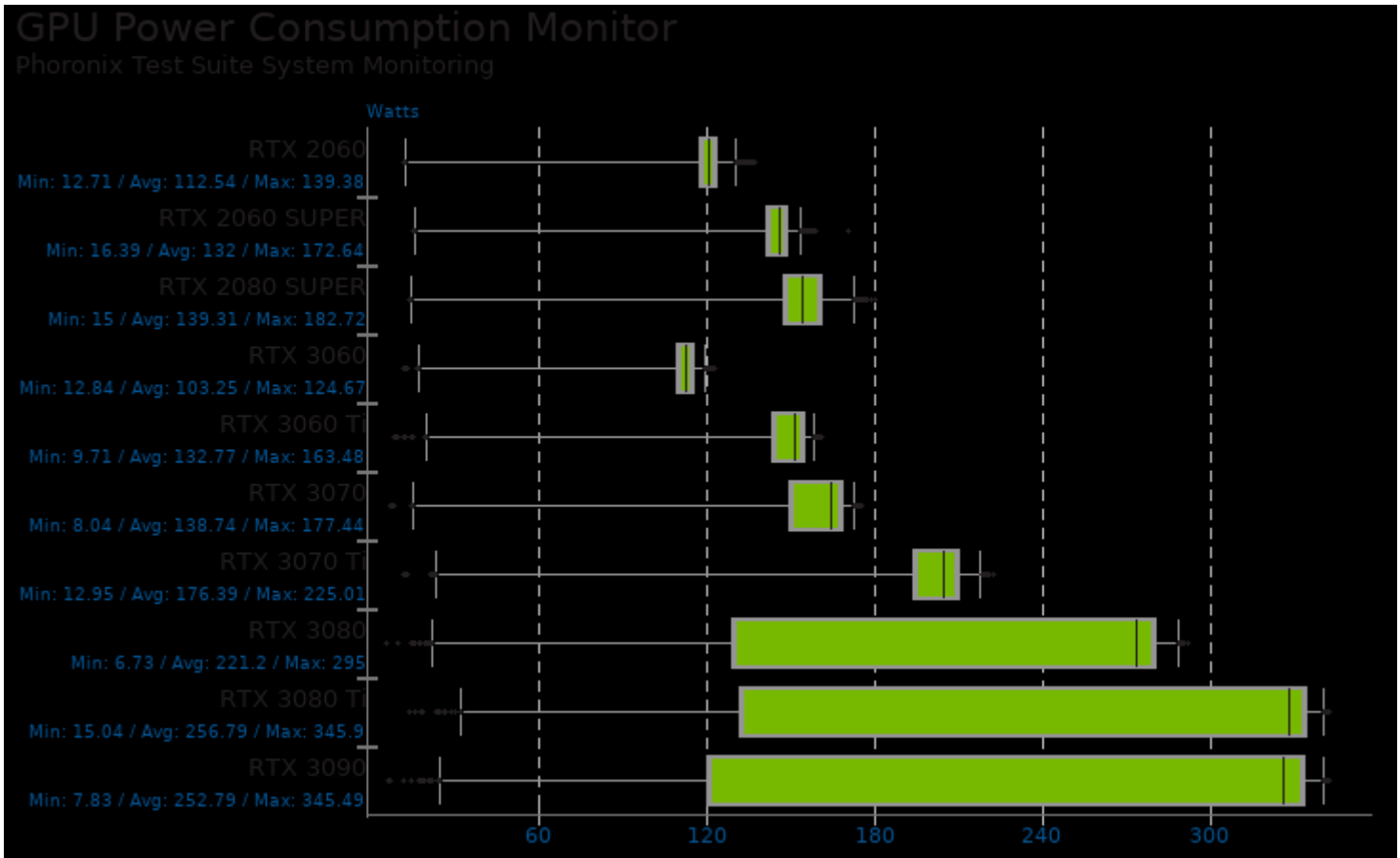


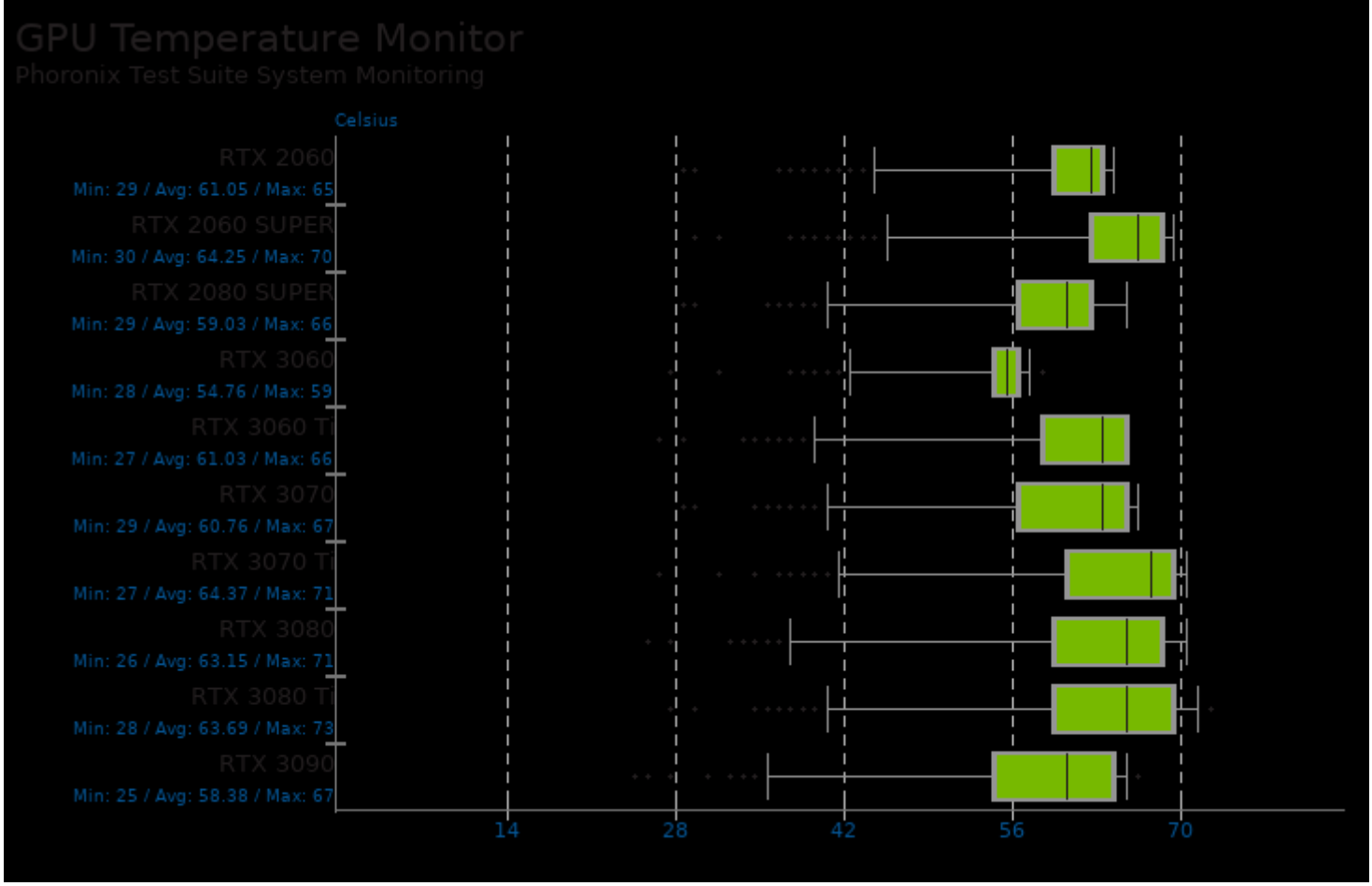
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Blender 3.3 NVIDIA





Blender 3.3 NVIDIA

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