

www.phoronix-test-suite.com

Blender 3.3 AMD Radeon HIP

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (4006 BIOS) and AMD Radeon RX 6400 4GB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

RX Vega 56

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: AMD Radeon RX 56/64 8GB (1590/800MHz), Audio: AMD Vega 10 HDMI 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

Radeon VII

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: AMD Radeon VII 16GB (1801/1000MHz), Audio: AMD Vega 20 HDMI 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 5700 XT

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: AMD Radeon RX 5700 XT 8GB (2100/875MHz), Audio: AMD Navi 10 HDMI 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 6400

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: AMD Radeon RX 6400 4GB (2320/1000MHz), Audio: AMD Device ab28, 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 6500 XT

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: Sapphire AMD Radeon RX 6500 XT 4GB (2975/1124MHz), Audio: AMD Device ab28, 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 6600

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: Gigabyte AMD Radeon RX 6600 8GB (2750/875MHz), Audio: AMD Device ab28, 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 6600 XT

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: AMD Radeon RX 6600 XT 8GB (2900/1000MHz), Audio: AMD Device ab28, 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 6700 XT

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: AMD Radeon RX 6700 XT 12GB (2855/1000MHz), Audio: AMD Device ab28, 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 6750 XT

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: AMD Radeon RX 6750 XT 12GB (2880/1124MHz), Audio: AMD Device ab28, 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 6800

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: AMD Radeon RX 6800 16GB (2475/1000MHz), Audio: AMD Device ab28, 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, 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

RX 6800 XT

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: AMD Radeon RX 6800 XT 16GB (2575/1000MHz), Audio: AMD Device ab28, 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, OpenGL: 4.6 Mesa 21.2.6 (LLVM 12.0.0), OpenCL: OpenCL 2.1 AMD-APP (3452.0), Vulkan: 1.2.182, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 3840x2160

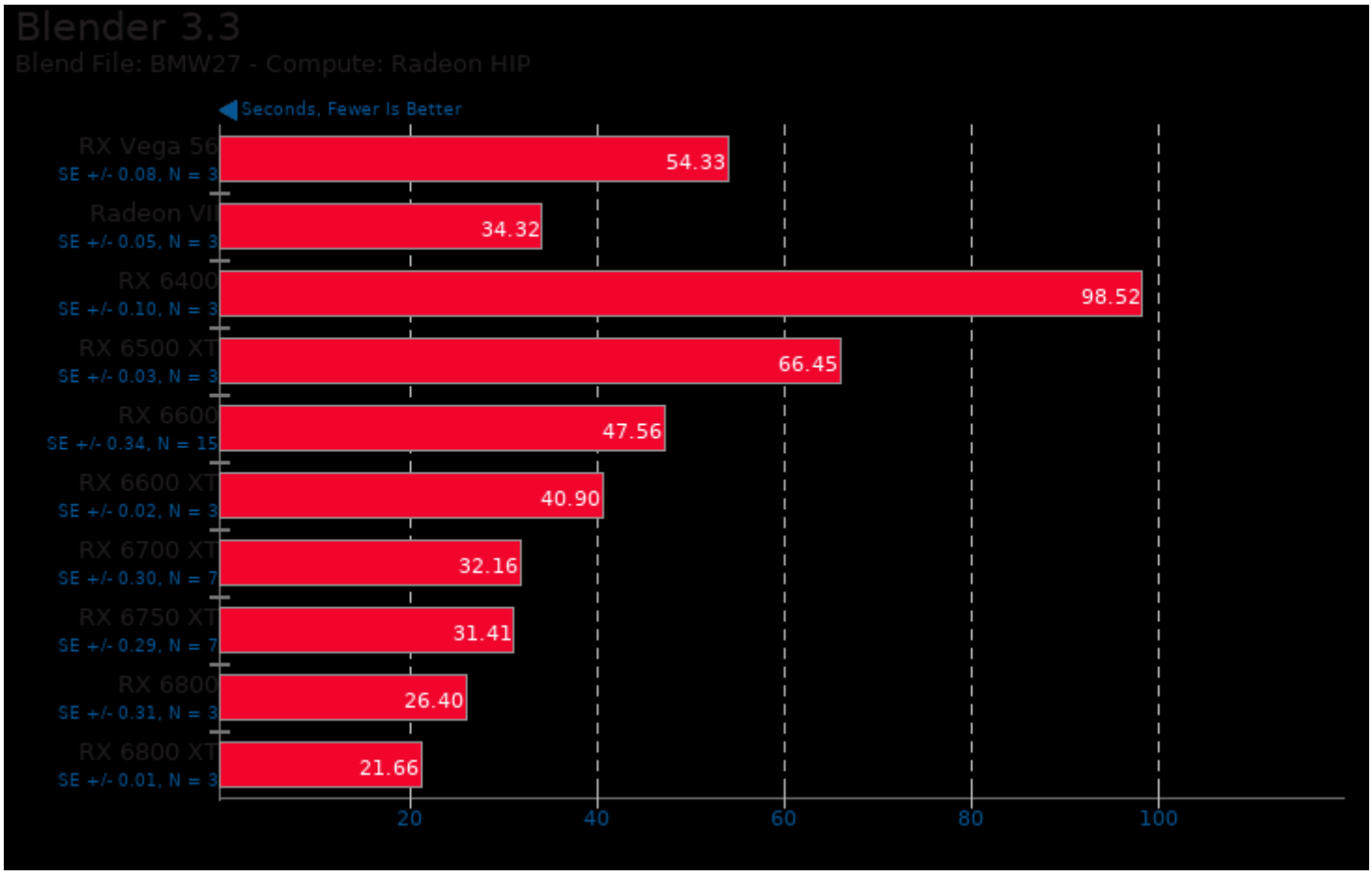
Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq ondemand (Boost: Enabled) - CPU Microcode: 0xa201016

Blender 3.3 AMD Radeon HIP

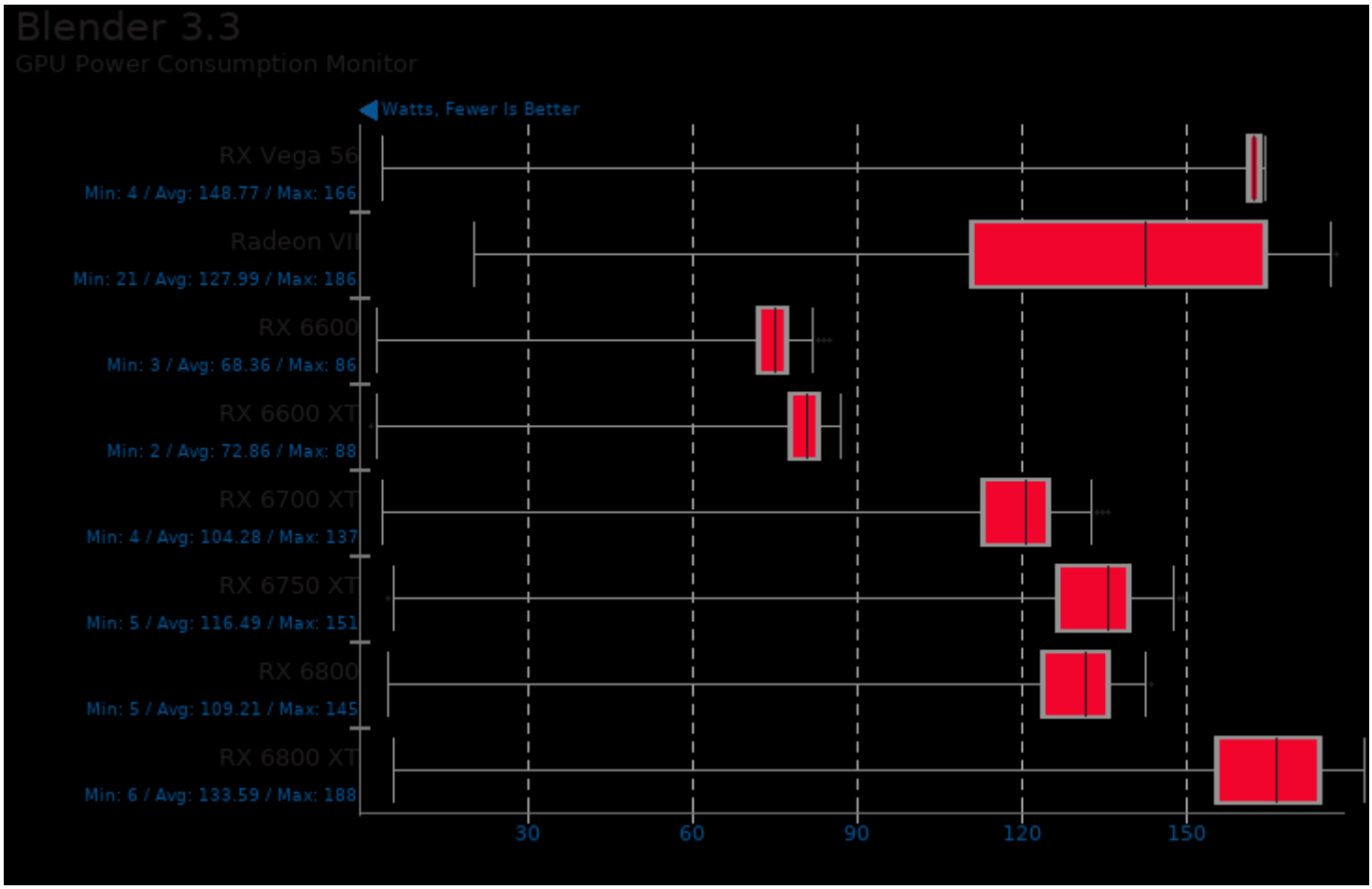
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	RX Vega 56	Radeon VII	RX 5700 XT	RX 6400	RX 6500 XT	RX 6600	RX 6600 XT	RX 6700 XT	RX 6750 XT	RX 6800	RX 6800 XT
Blender - BMW27 - Radeon HIP	54.33	34.32		**98.52**	66.45	47.56	40.90	32.16	31.41	26.40	**21.66**
Normalized	39.87%	63.11%		21.99%	32.6%	45.54%	52.96%	67.35%	68.96%	82.05%	100%
Standard Deviation	0.2%	0.2%		0.2%	0.1%	2.8%	0.1%	2.5%	2.4%	2%	0.1%
Blender - Classroom - Radeon HIP (sec)	104.04	58.72		**181.19**	133.12	85.43	74.72	53.63	52.55	42.79	**36.17**
Normalized	34.77%	61.6%		19.96%	27.17%	42.34%	48.41%	67.44%	68.83%	84.53%	100%
Standard Deviation	0.2%	0.1%		0%	0.1%	0.5%	2%	0.3%	0.1%	0.1%	0.2%
Blender - Fishy Cat - Radeon HIP		94.83	69.93	**174.40**	118.40	75.07	65.16	52.10	51.13	42.39	**35.07**
Normalized		36.98%	50.15%	20.11%	29.62%	46.72%	53.82%	67.31%	68.59%	82.73%	100%
Standard Deviation		0%	0.4%	0%	0.2%	0.1%	0.8%	0.3%	0.2%	0.1%	0.3%
Blender - Pabellon Barcelona - Radeon HIP (sec)		145.15		**402.43**	284.02	180.06	154.64	115.07	110.47	94.73	**76.80**
Normalized		52.91%		19.08%	27.04%	42.65%	49.66%	66.74%	69.52%	81.07%	100%
Standard Deviation		0%		0%	0.2%	1.2%	2.4%	2.1%	0.1%	0.6%	2.5%
Blender - Barbershop - Radeon HIP (sec)				**795.87**	585.81	368.08	330.24	229.80	225.26	180.38	**144.73**
Normalized				18.19%	24.71%	39.32%	43.83%	62.98%	64.25%	80.24%	100%
Standard Deviation				0.1%	0.1%	0.3%	1%	1.1%	1.5%	0.3%	2%

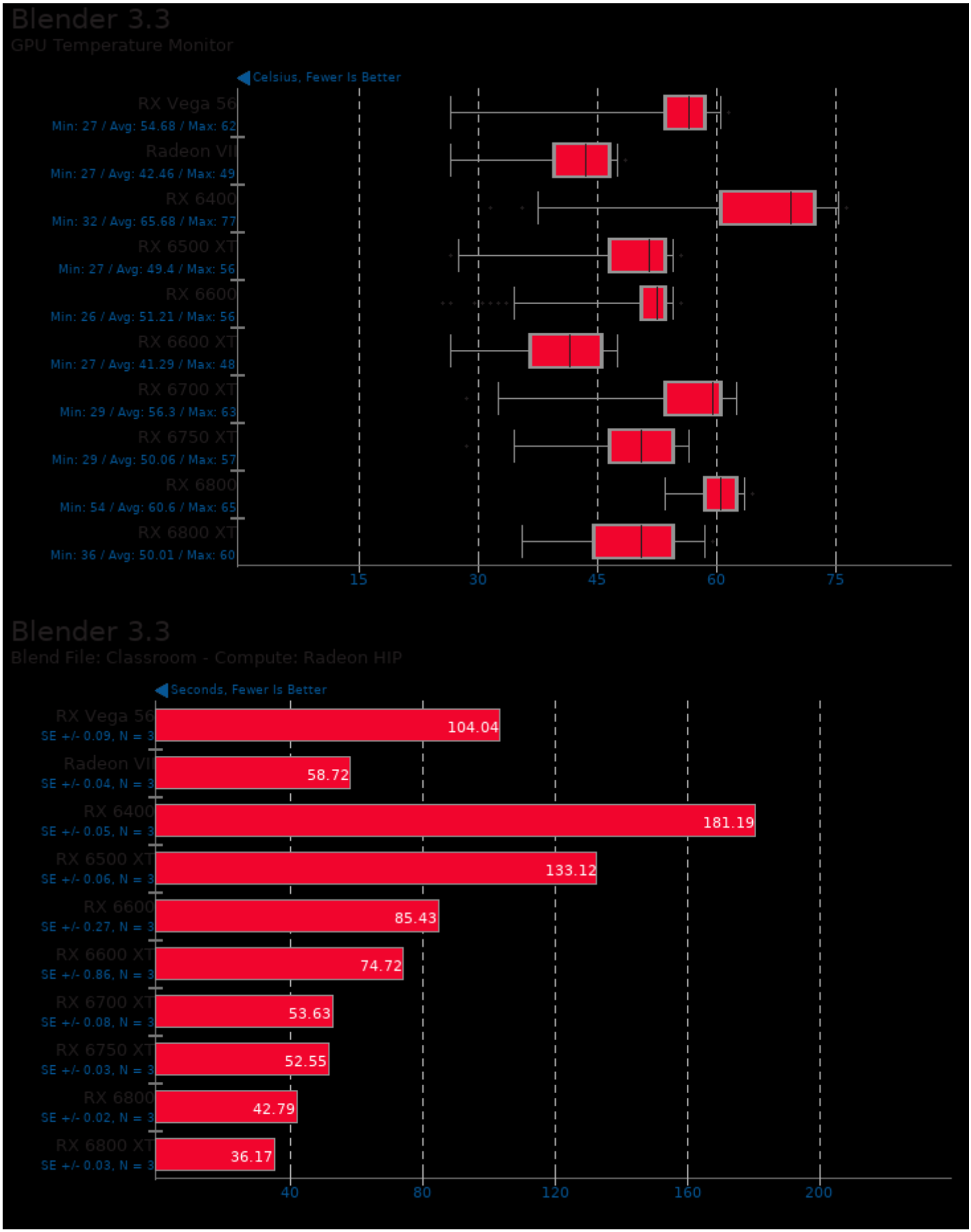
Blender 3.3 AMD Radeon HIP



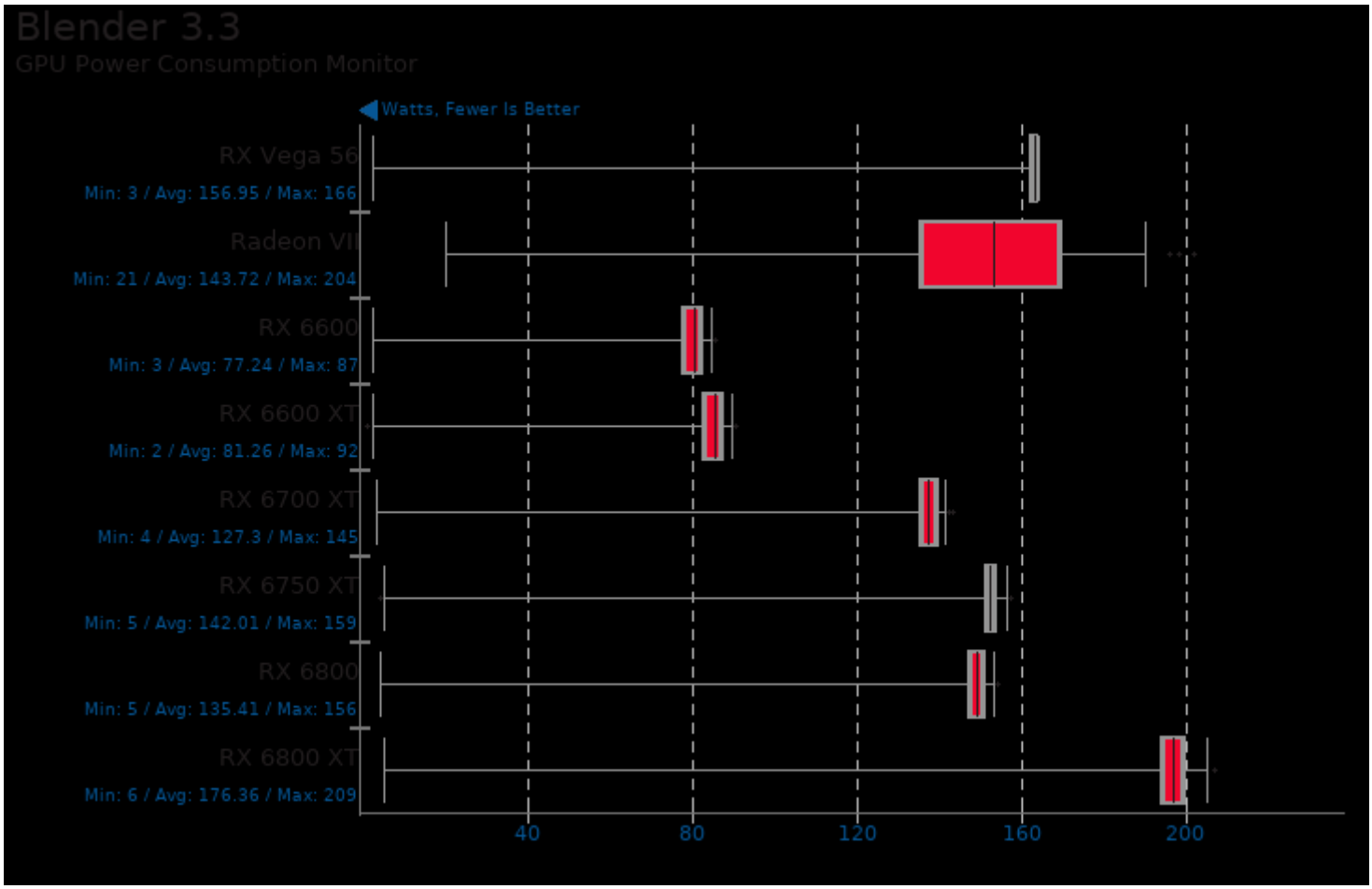
Blender 3.3 AMD Radeon HIP



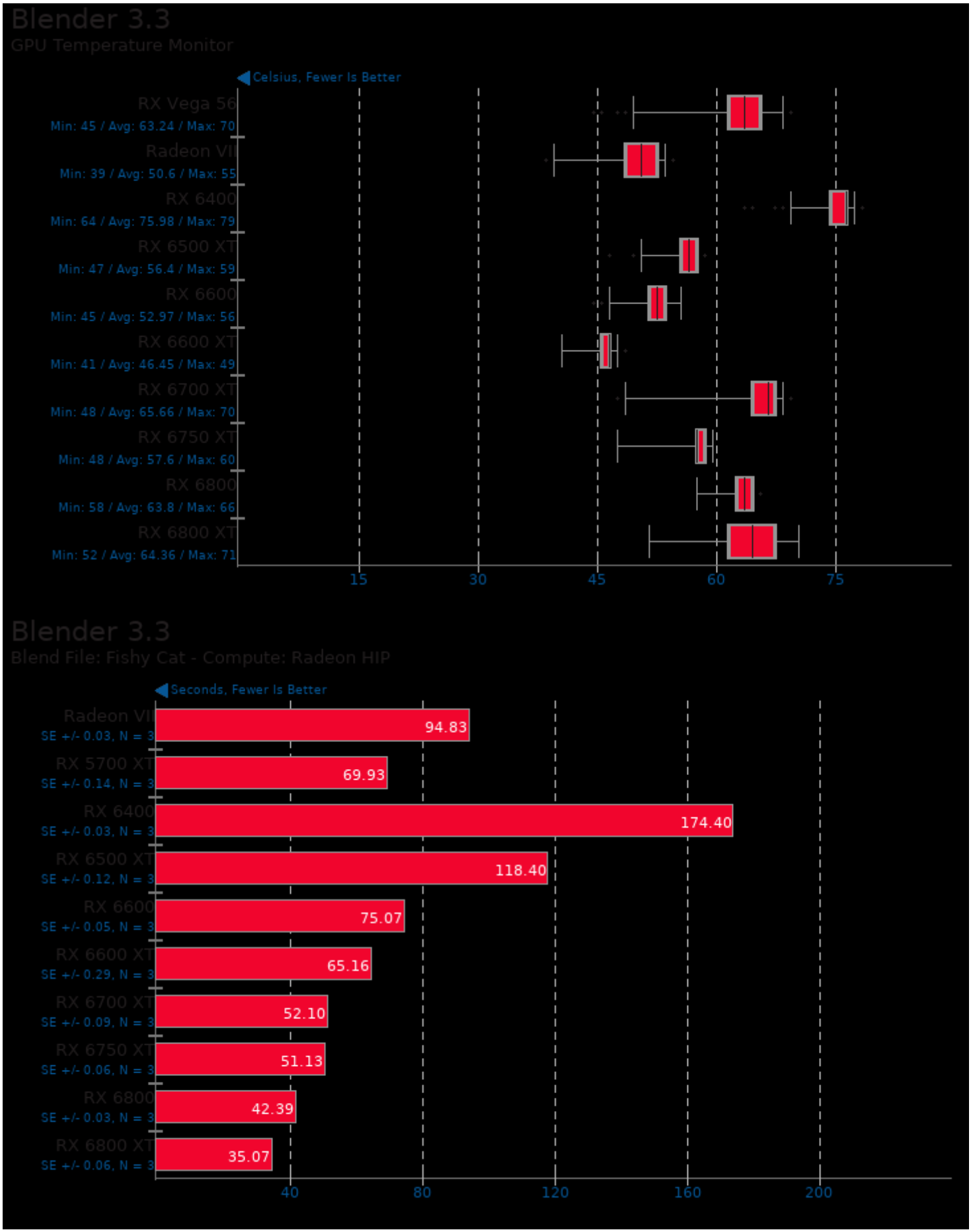
Blender 3.3 AMD Radeon HIP



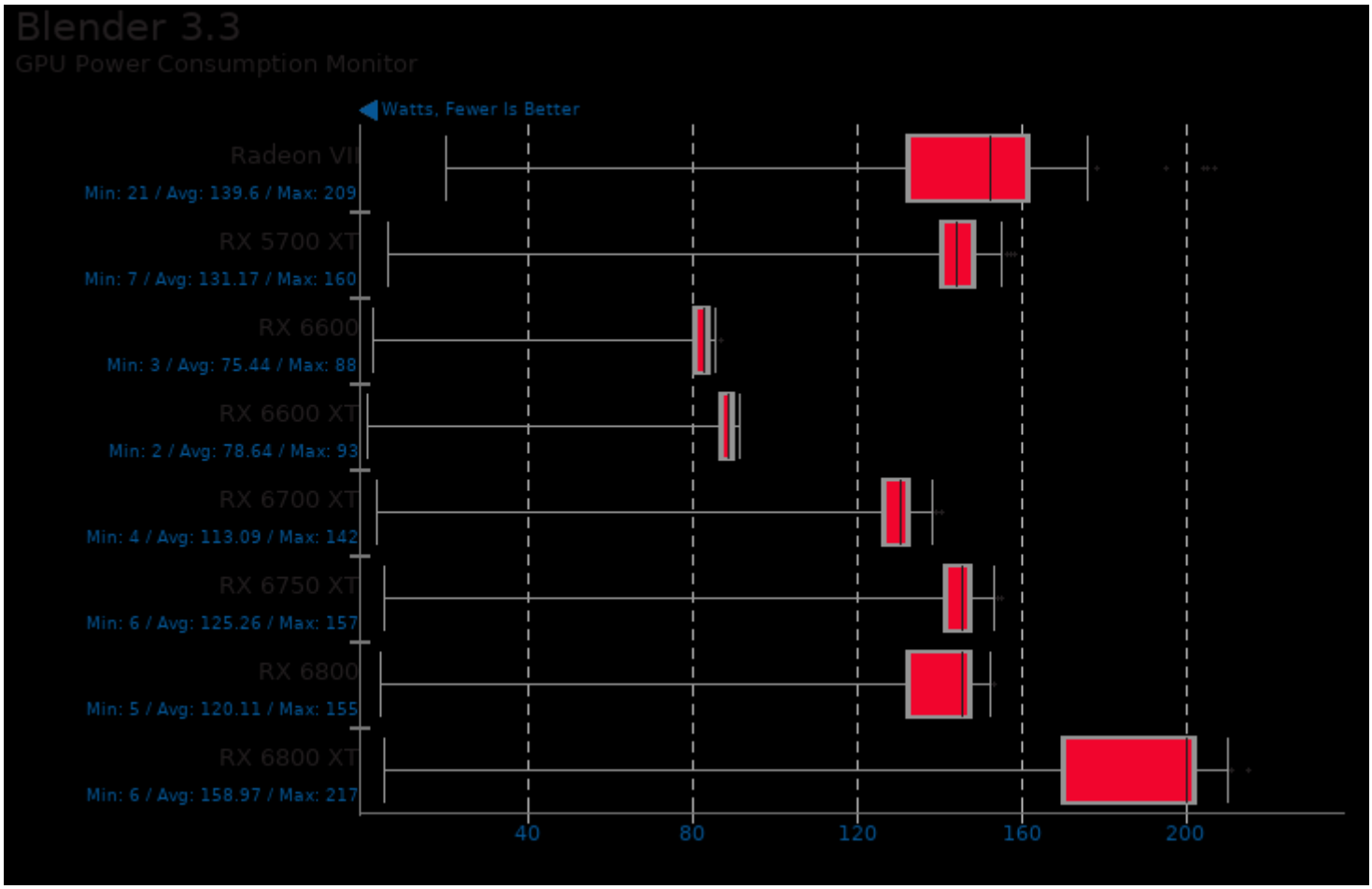
Blender 3.3 AMD Radeon HIP



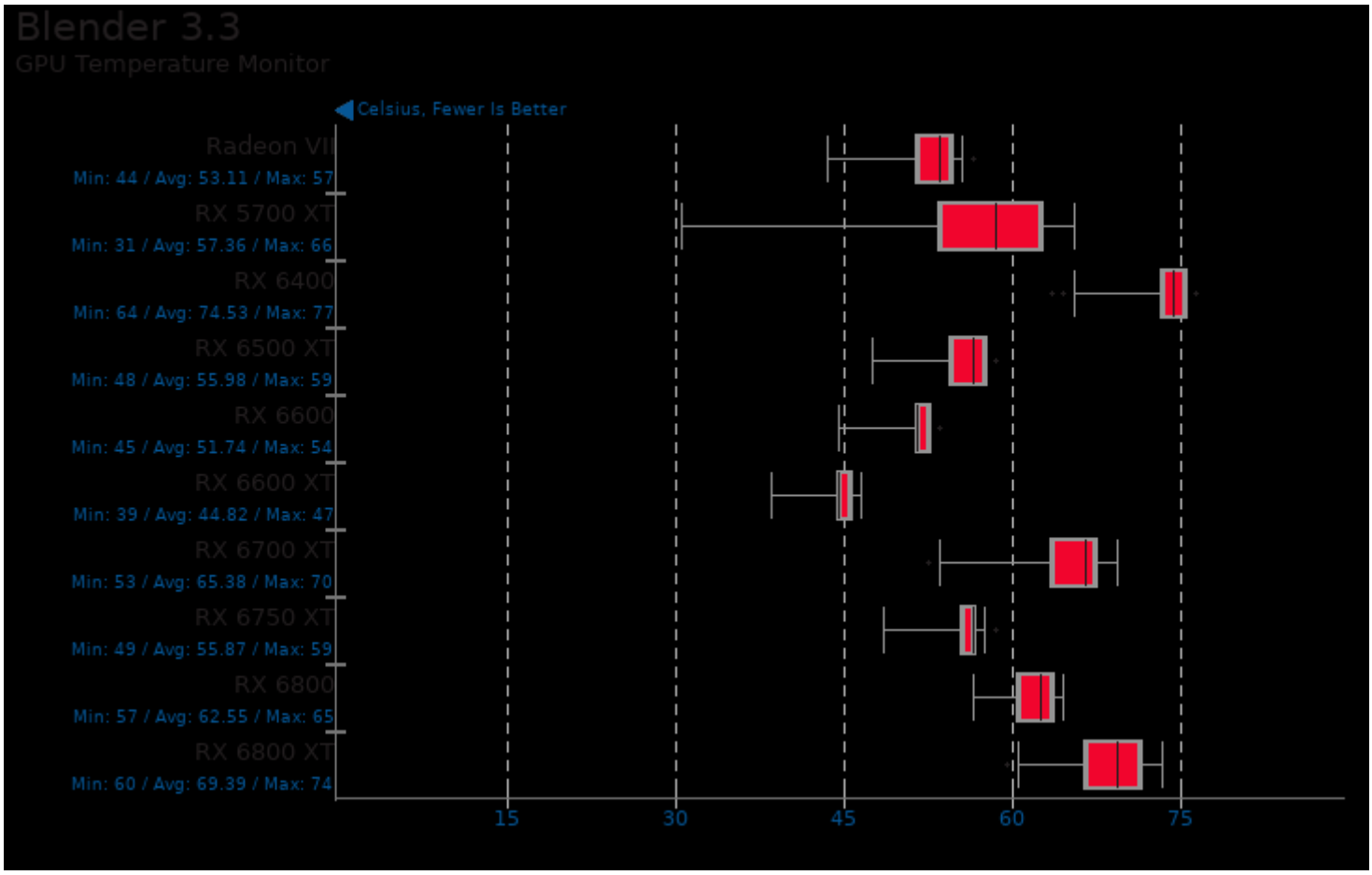
Blender 3.3 AMD Radeon HIP



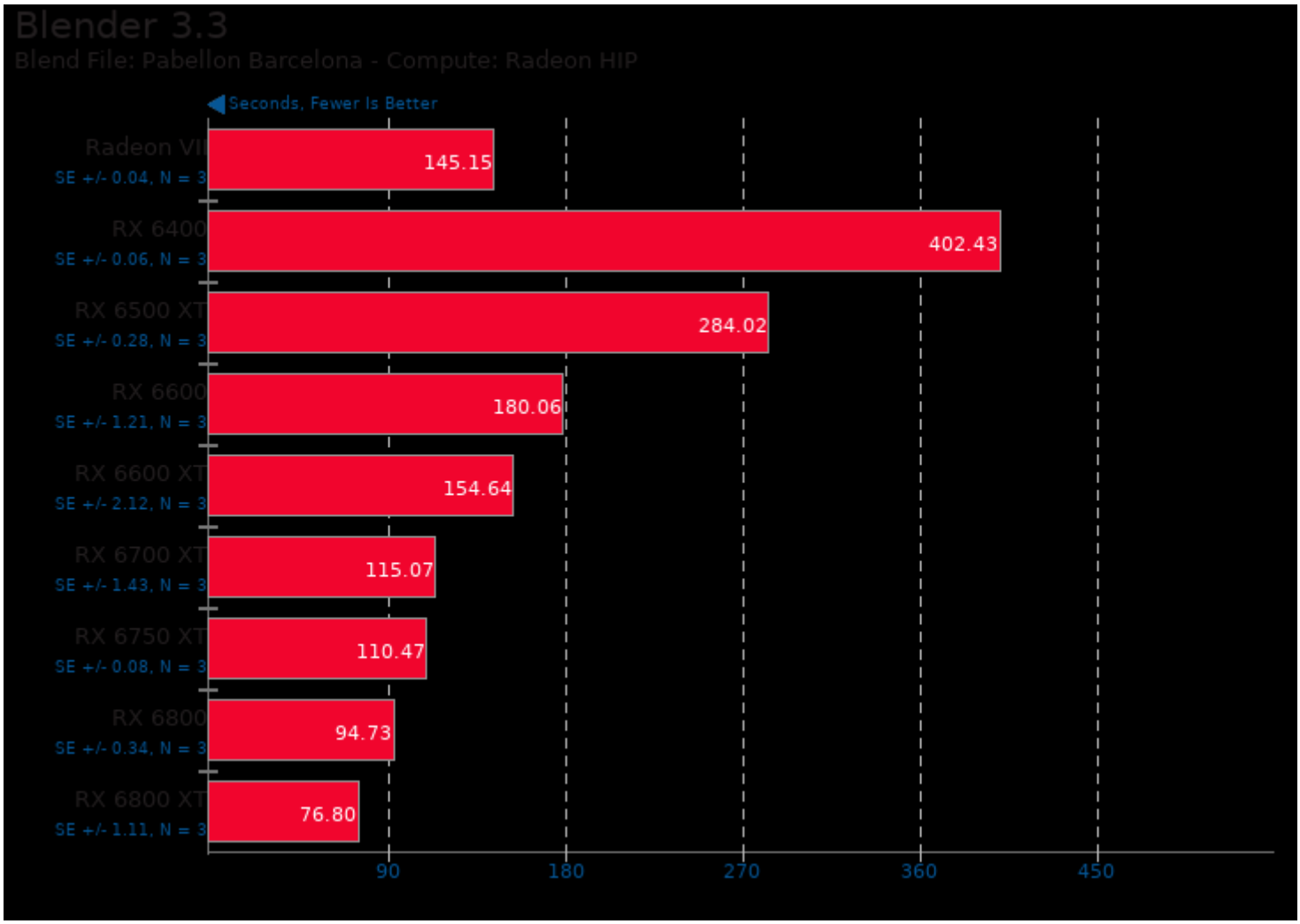
Blender 3.3 AMD Radeon HIP



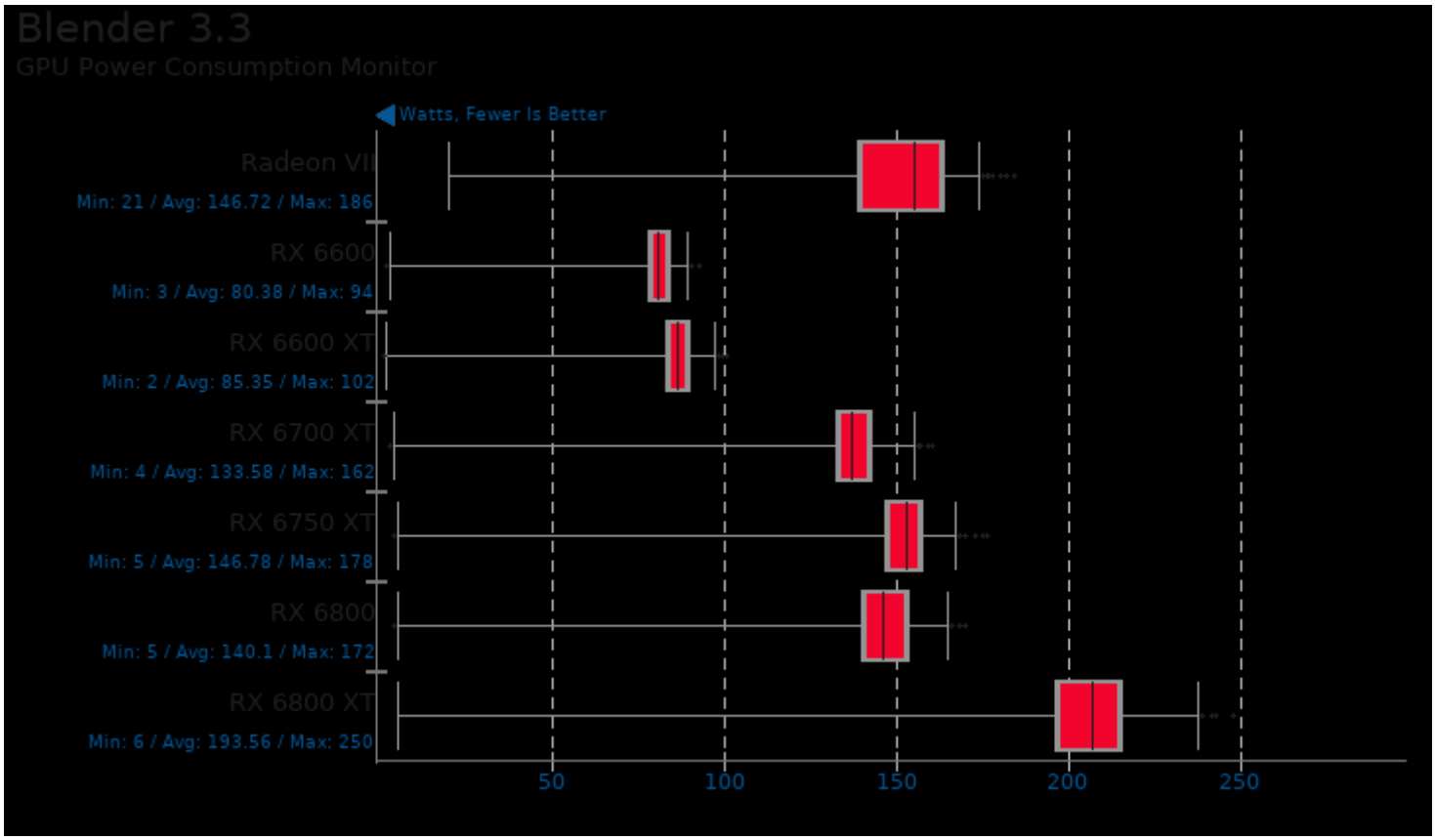
Blender 3.3 AMD Radeon HIP



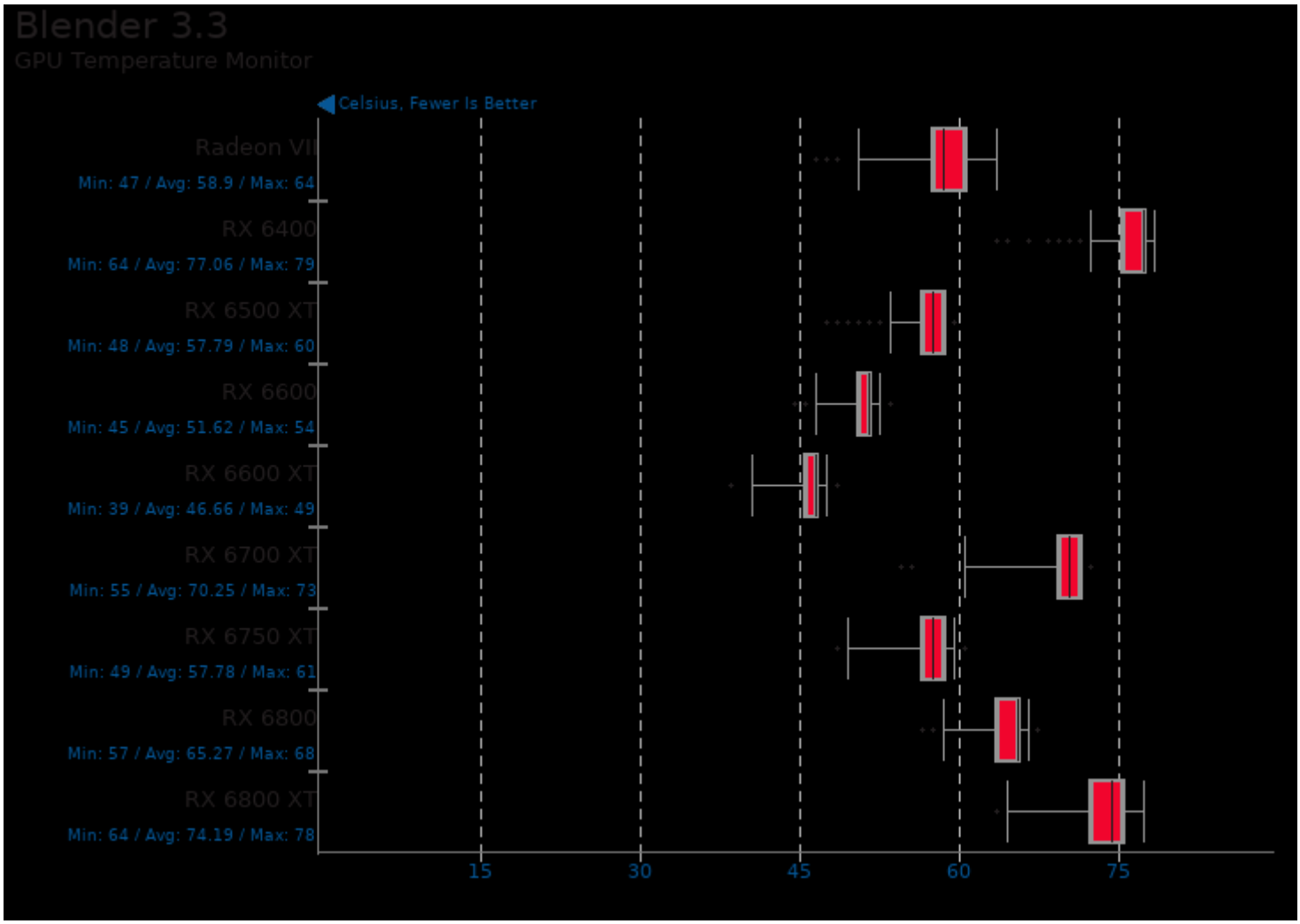
Blender 3.3 AMD Radeon HIP



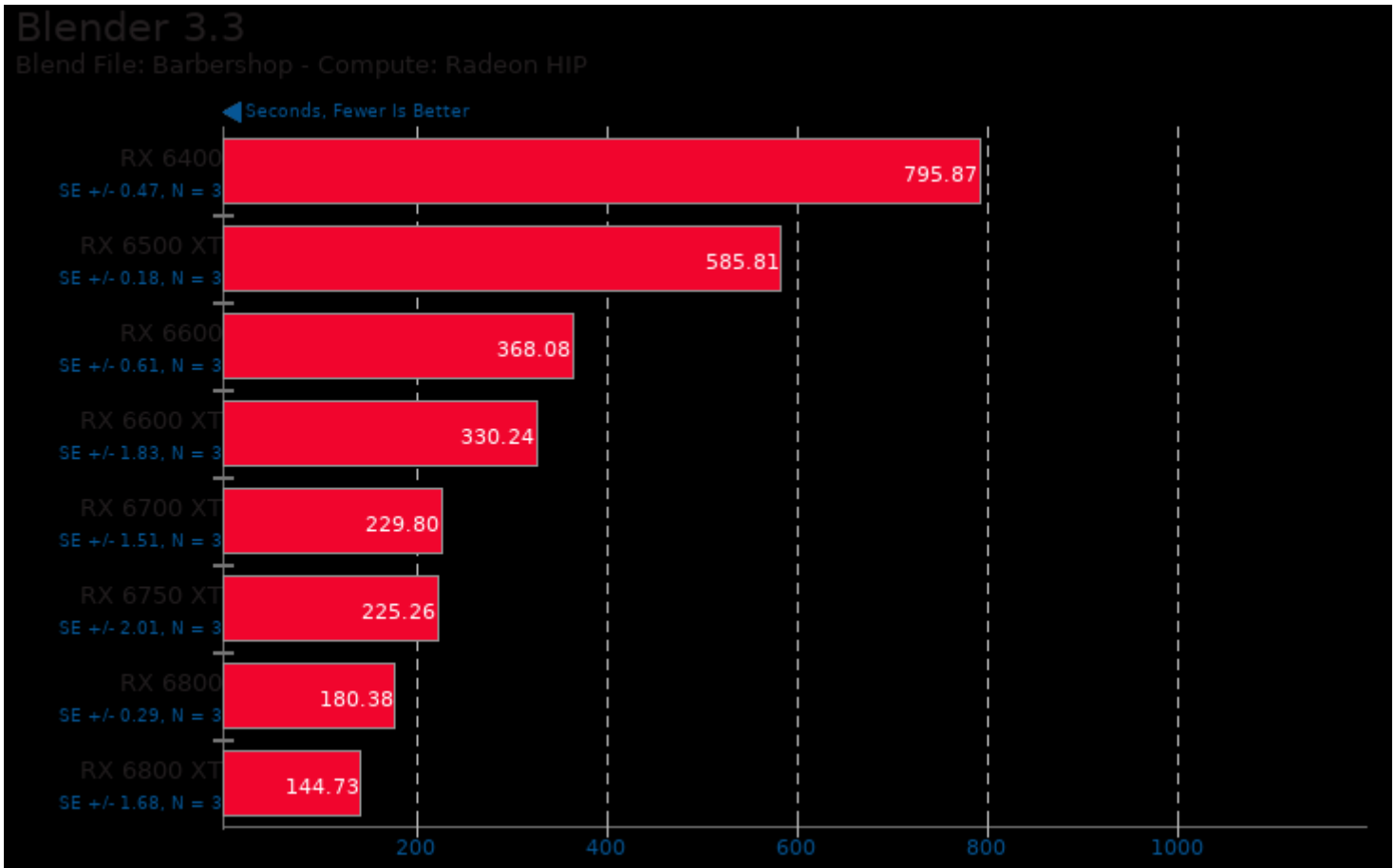
Blender 3.3 AMD Radeon HIP

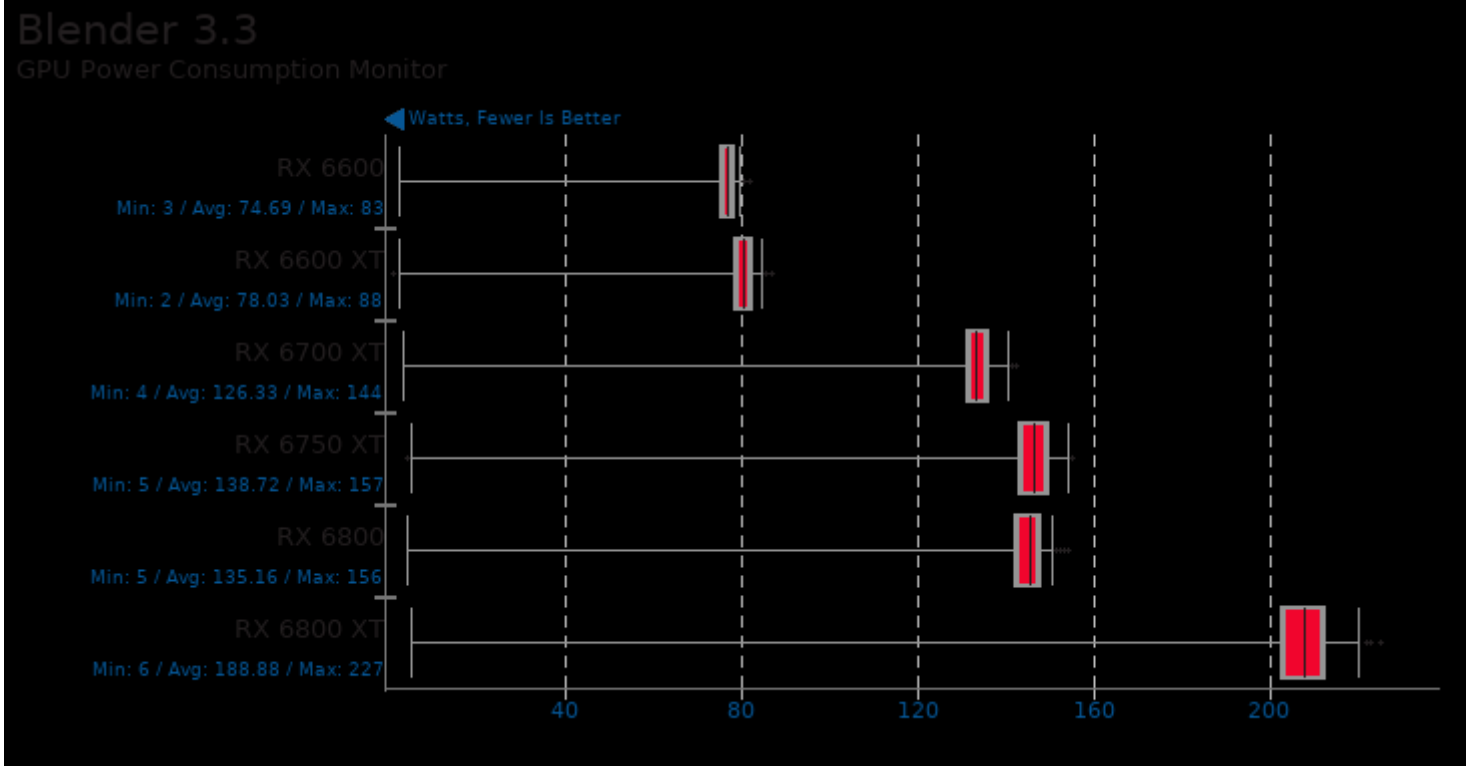


Blender 3.3 AMD Radeon HIP

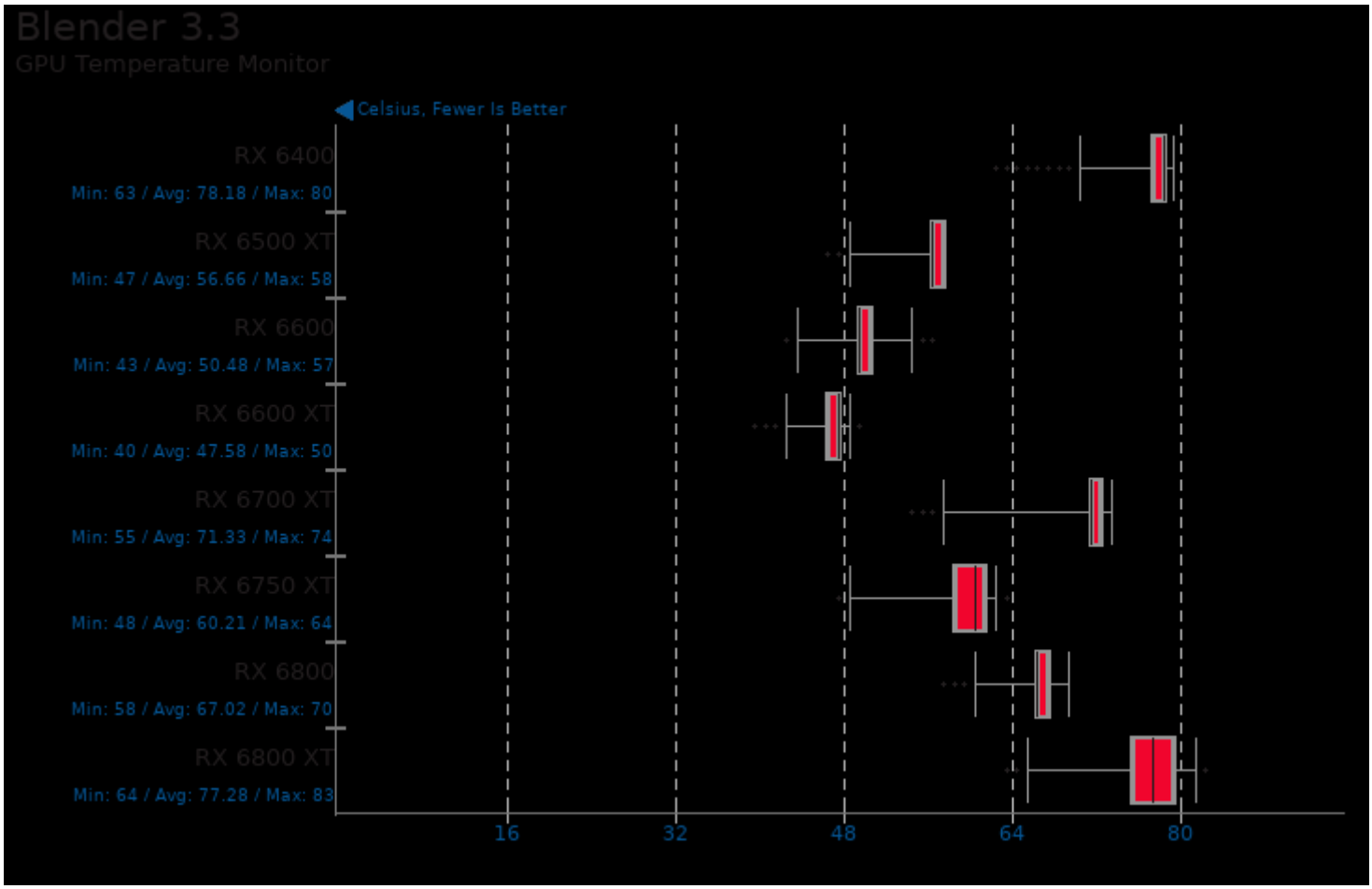


Blender 3.3 AMD Radeon HIP

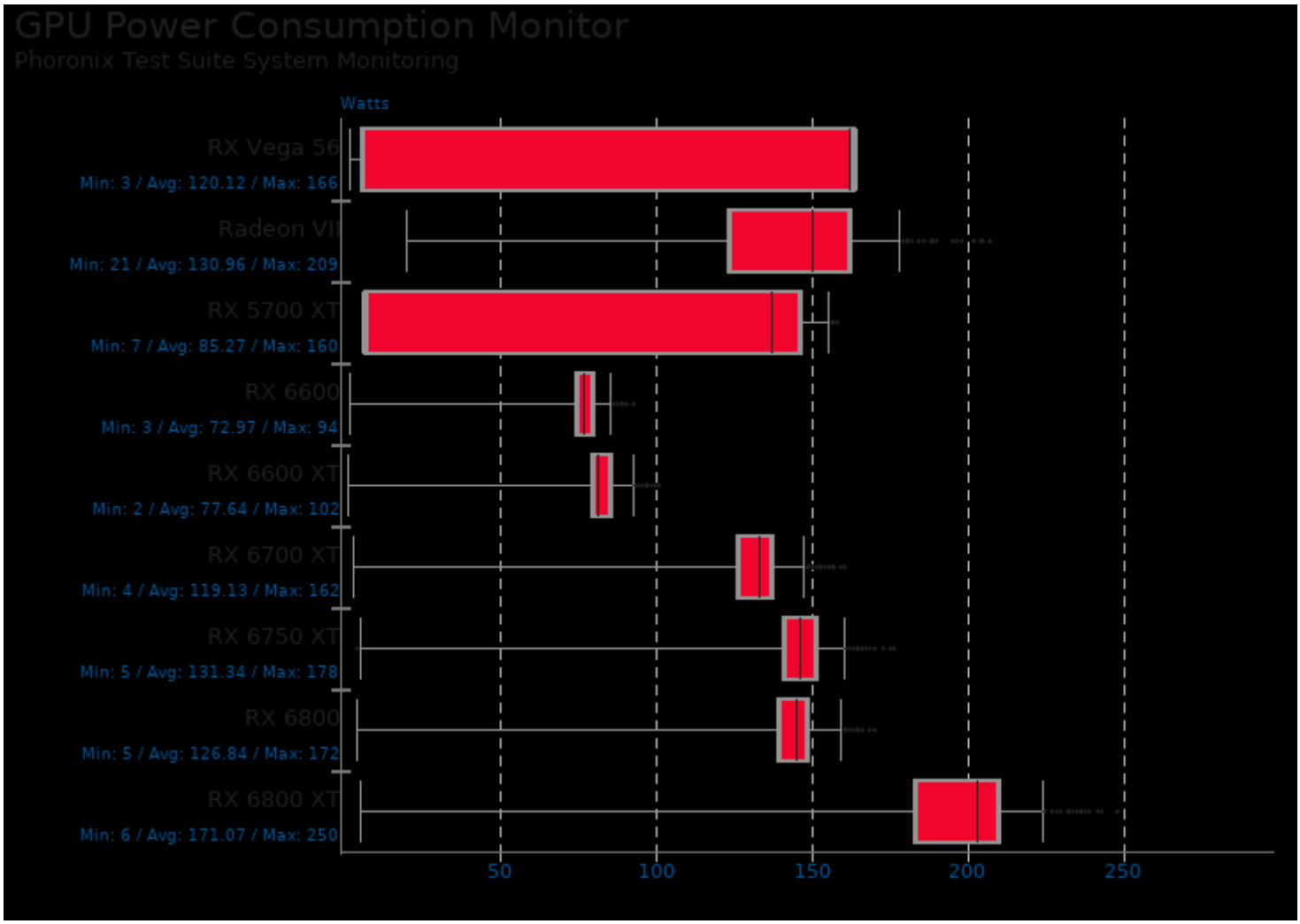




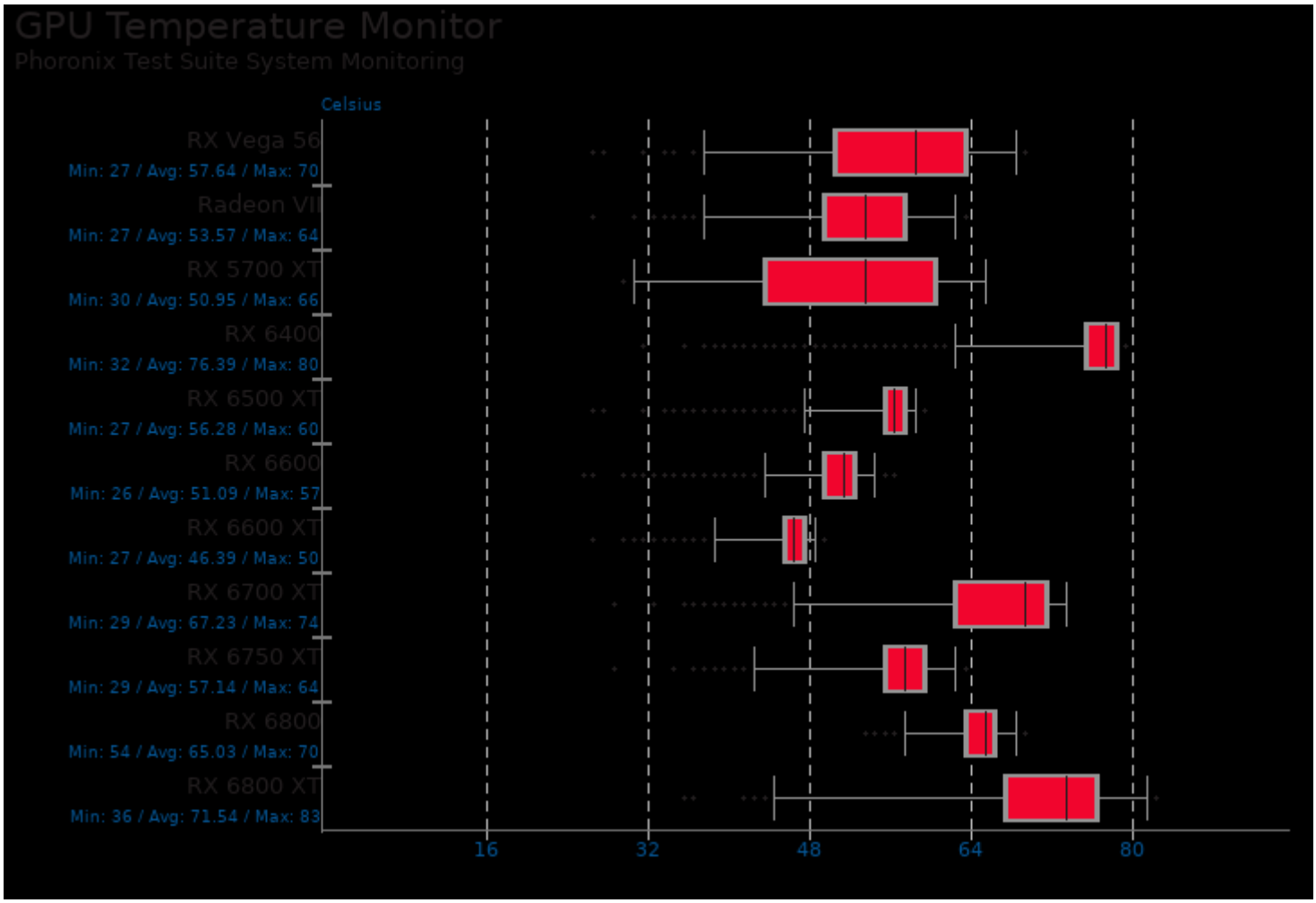
Blender 3.3 AMD Radeon HIP



Blender 3.3 AMD Radeon HIP



Blender 3.3 AMD Radeon HIP



This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 15:06.