

www.phoronix-test-suite.com

Portal 2 Updated

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3202 BIOS) and Sapphire AMD Radeon RX 470/480/570/570X/580/580X/590 8GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

RX 6800 XT had the most wins, coming in first place for 33% of the tests.

Based on the geometric mean of all complete results, the fastest (RX 6800 XT) was 1.621x the speed of the slowest (RX 590). RX 6800 was 0.979x the speed of RX 6800 XT, Radeon VII was 0.906x the speed of RX 6800, RX 5700 XT was 0.954x the speed of Radeon VII, RX 590 was 0.729x the speed of RX 5700 XT.

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

Portal 2 (Resolution: 3840 x 2160 - Renderer: Vulkan) at 3.069x
Portal 2 (Resolution: 3840 x 2160 - Renderer: OpenGL) at 2.896x
Portal 2 (Resolution: 2560 x 1440 - Renderer: Vulkan) at 2.142x
ET: Legacy (Resolution: 3840 x 2160) at 1.761x
Portal 2 (Resolution: 2560 x 1440 - Renderer: OpenGL) at 1.499x
Portal 2 (Resolution: 1920 x 1080 - Renderer: Vulkan) at 1.47x
Portal 2 (Resolution: 1920 x 1080 - Renderer: OpenGL) at 1.061x
ET: Legacy (Resolution: 2560 x 1440) at 1.036x

ET: Legacy (Resolution: 1920 x 1080) at 1.014x
GPU Usage Monitor (Phoronix Test Suite System Monitoring) at -1x.

Test Systems:

RX 590

Processor: AMD Ryzen 9 5950X 16-Core @ 6.92GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: Sapphire AMD Radeon RX 470/480/570/570X/580/580X/590 8GB (1560/2100MHz), Audio: AMD Ellesmere HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.11.0-051100-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.1.0-devel (git-bf535c0 2021-02-19 groovy-oibaf-ppa) (LLVM 11.0.1), Vulkan: 1.2.168, 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

Radeon VII

Processor: AMD Ryzen 9 5950X 16-Core @ 6.92GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, 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 20.10, Kernel: 5.11.0-051100-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.1.0-devel (git-bf535c0 2021-02-19 groovy-oibaf-ppa) (LLVM 11.0.1), Vulkan: 1.2.168, 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

RX 5700 XT

Processor: AMD Ryzen 9 5950X 16-Core @ 6.92GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 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 20.10, Kernel: 5.11.0-051100-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.1.0-devel (git-bf535c0 2021-02-19 groovy-oibaf-ppa) (LLVM 11.0.1), Vulkan: 1.2.168, 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

RX 6800

Processor: AMD Ryzen 9 5950X 16-Core @ 6.92GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, 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 20.10, Kernel: 5.11.0-051100-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.1.0-devel (git-bf535c0 2021-02-19 groovy-oibaf-ppa) (LLVM 11.0.1), Vulkan: 1.2.168, 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

RX 6800 XT

Processor: AMD Ryzen 9 5950X 16-Core @ 6.92GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, 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 20.10, Kernel: 5.11.0-051100-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.1.0-devel (git-bf535c0 2021-02-19 groovy-oibaf-ppa) (LLVM 11.0.1), Vulkan: 1.2.168, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

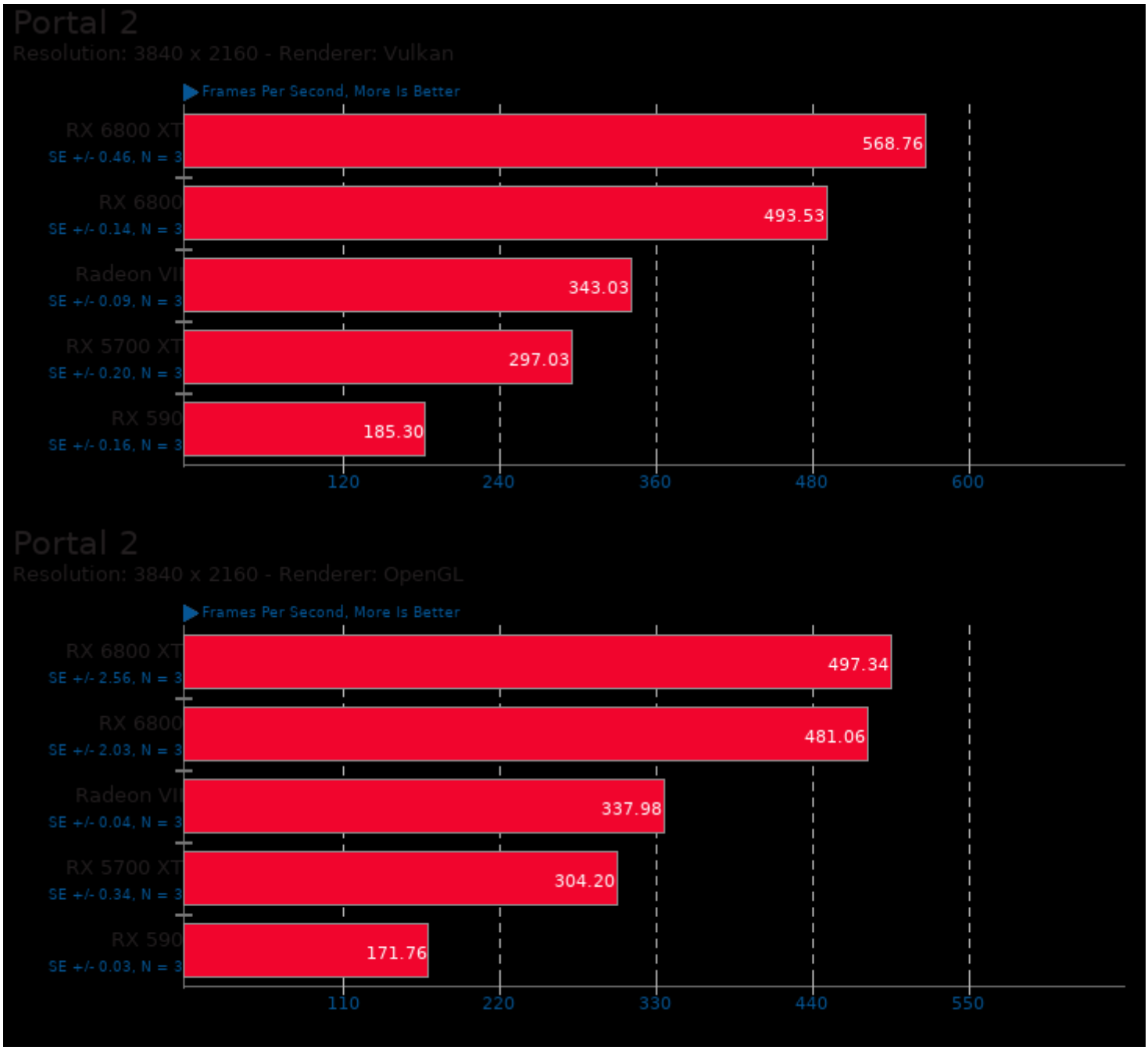
Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled 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

	RX 590	Radeon VII	RX 5700 XT	RX 6800	RX 6800 XT
Portal 2 - 3840 x 2160 - Vulkan (FPS)	**185.30**	343.03	297.03	493.53	**568.76**
Normalized	32.58%	60.31%	52.22%	86.77%	100%
Standard Deviation	0.1%	0%	0.1%	0%	0.1%
Portal 2 - 3840 x 2160 - OpenGL (FPS)	**171.76**	337.98	304.20	481.06	**497.34**
Normalized	34.54%	67.96%	61.17%	96.73%	100%
Standard Deviation	0%	0%	0.2%	0.7%	0.9%
Portal 2 - 2560 x 1440 - Vulkan (FPS)	**350.66**	598.88	543.98	750.20	**751.14**
Normalized	46.68%	79.73%	72.42%	99.87%	100%

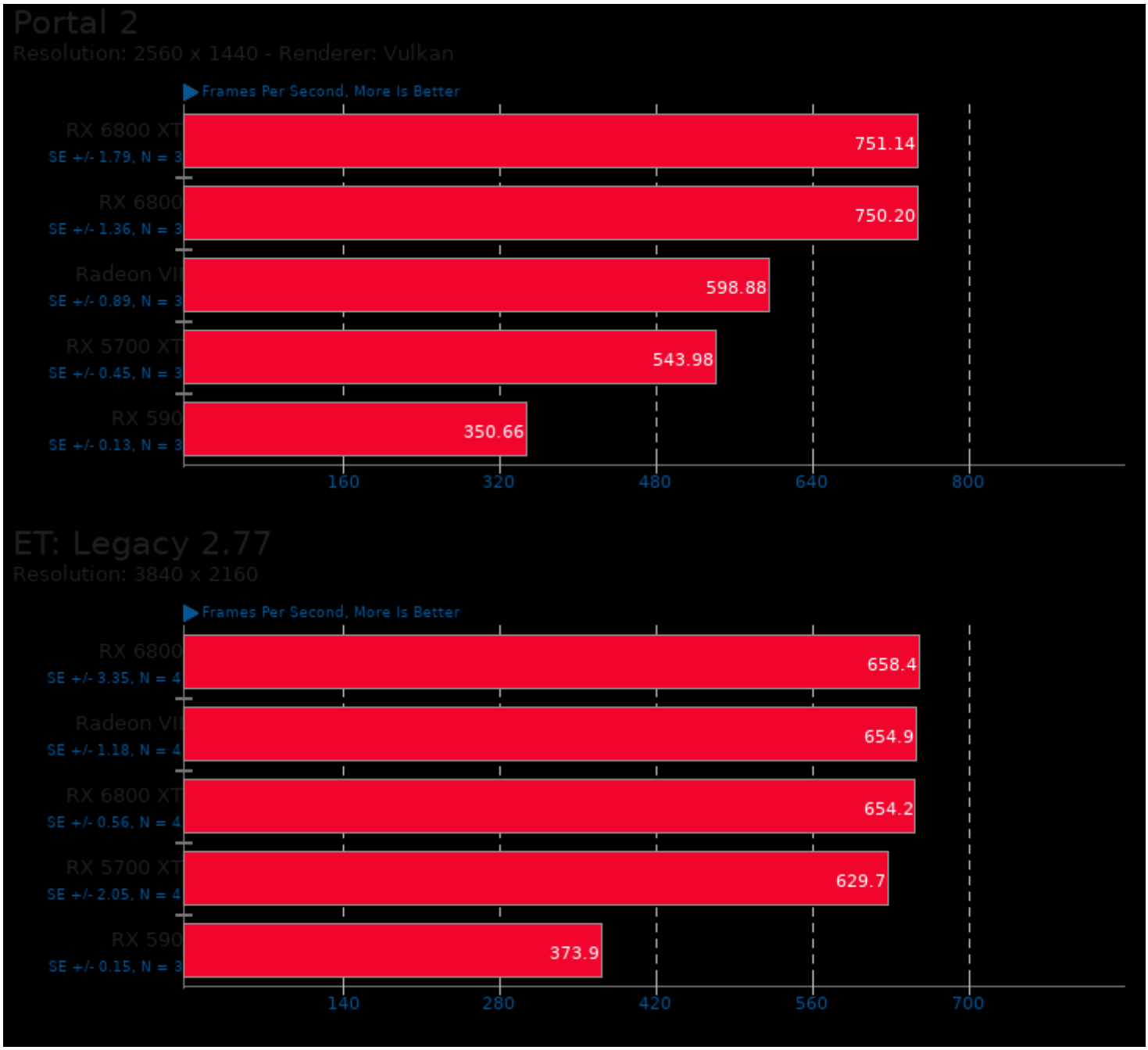
Portal 2 Updated

Standard Deviation	0.1%	0.3%	0.1%	0.3%	0.4%
ET: Legacy - 3840 x 2160 (FPS)	**373.9**	654.9	629.7	**658.4**	654.2
Normalized	56.79%	99.47%	95.64%	100%	99.36%
Standard Deviation	0.1%	0.4%	0.7%	1%	0.2%
Portal 2 - 2560 x 1440 - OpenGL (FPS)	**337.63**	**506.08**	496.14	495.41	504.53
Normalized	66.71%	100%	98.04%	97.89%	99.69%
Standard Deviation	0.1%	0.6%	0.2%	2%	1%
Portal 2 - 1920 x 1080 - Vulkan (FPS)	**513.24**	746.75	727.56	**754.52**	747.19
Normalized	68.02%	98.97%	96.43%	100%	99.03%
Standard Deviation	0.2%	0.7%	1.1%	1.2%	0.5%
Portal 2 - 1920 x 1080 - OpenGL (FPS)	**481.40**	510.16	**510.55**	495.43	493.66
Normalized	94.29%	99.92%	100%	97.04%	96.69%
Standard Deviation	0.3%	0.7%	0.4%	1.6%	0.1%
ET: Legacy - 2560 x 1440 (FPS)	**635.7**	**658.8**	658.4	653.5	656.3
Normalized	96.49%	100%	99.94%	99.2%	99.62%
Standard Deviation	0.6%	0.9%	0.6%	0.5%	0.4%
ET: Legacy - 1920 x 1080 (FPS)	655.6	658.3	**662.7**	**653.4**	659.3
Normalized	98.93%	99.34%	100%	98.6%	99.49%
Standard Deviation	0.6%	0.7%	0.8%	0.5%	0.7%

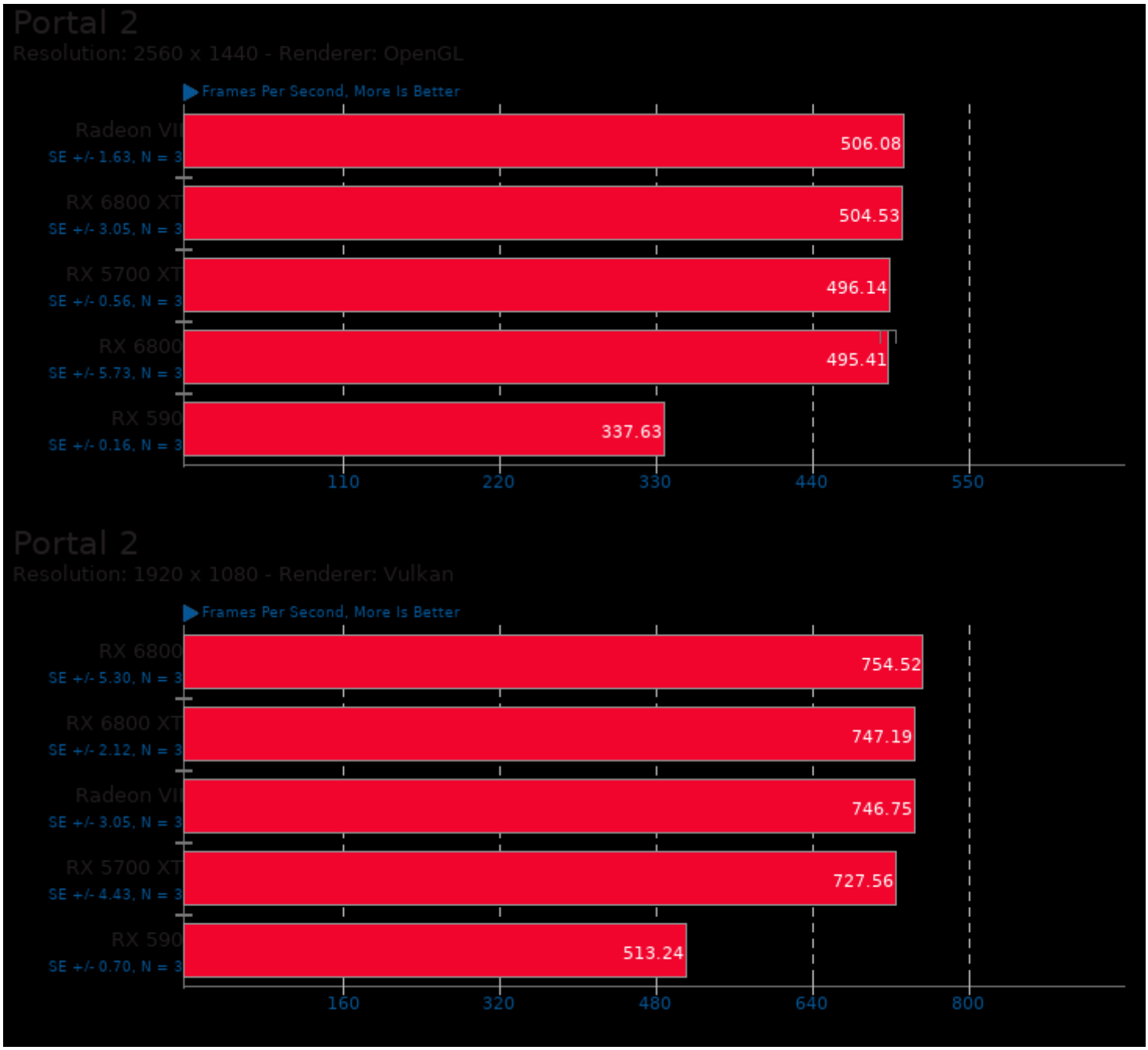
Portal 2 Updated



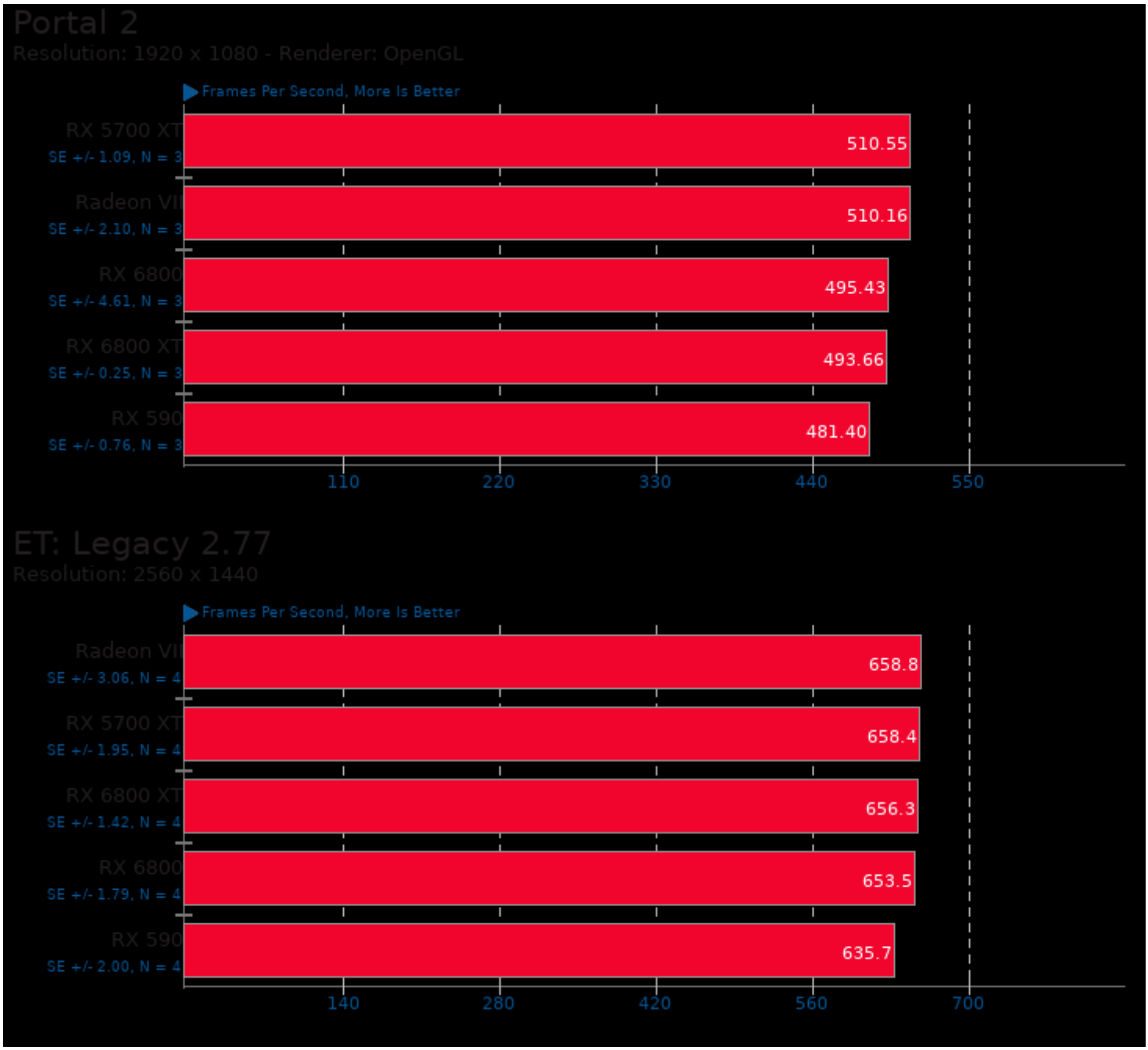
Portal 2 Updated



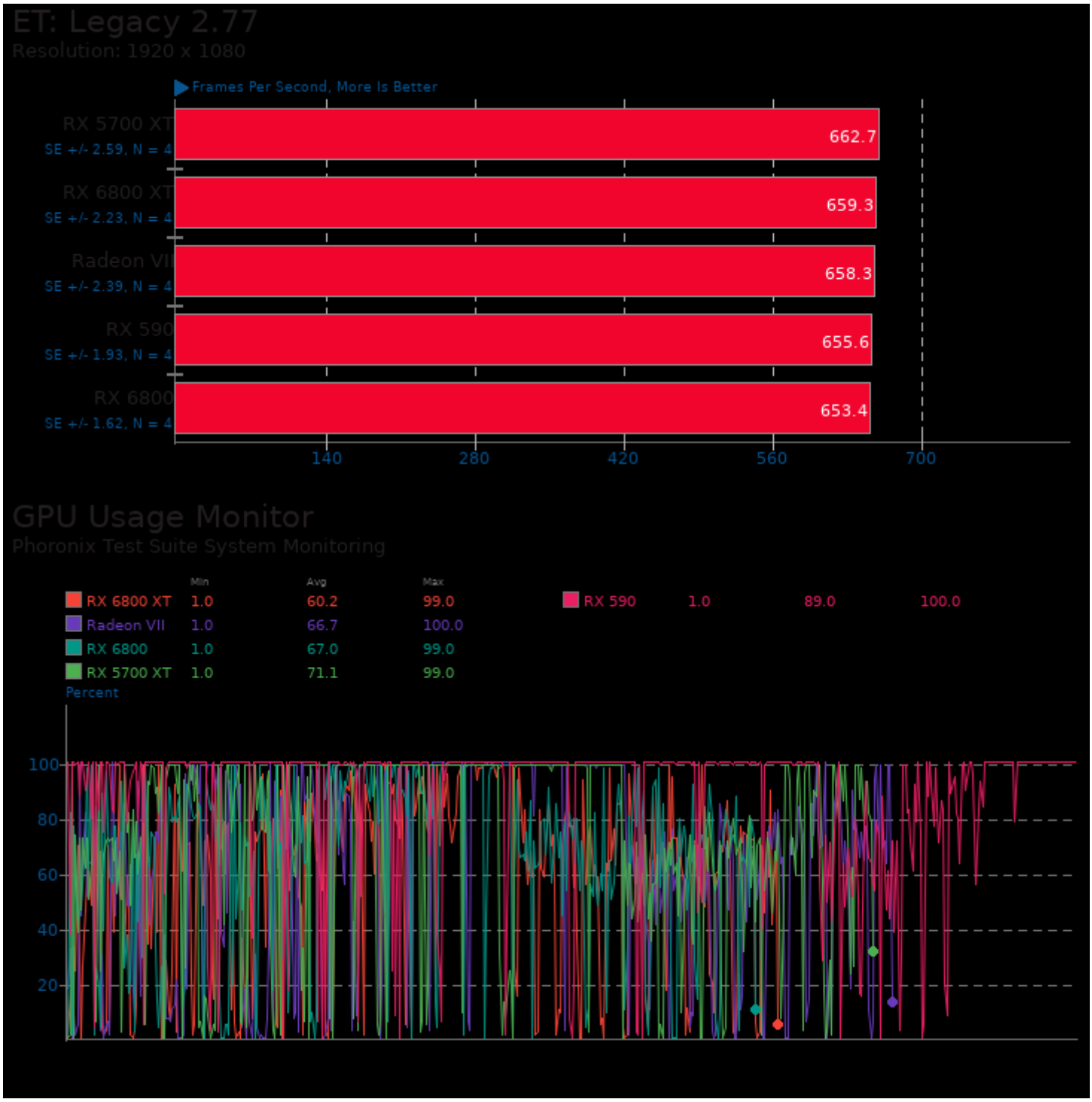
Portal 2 Updated



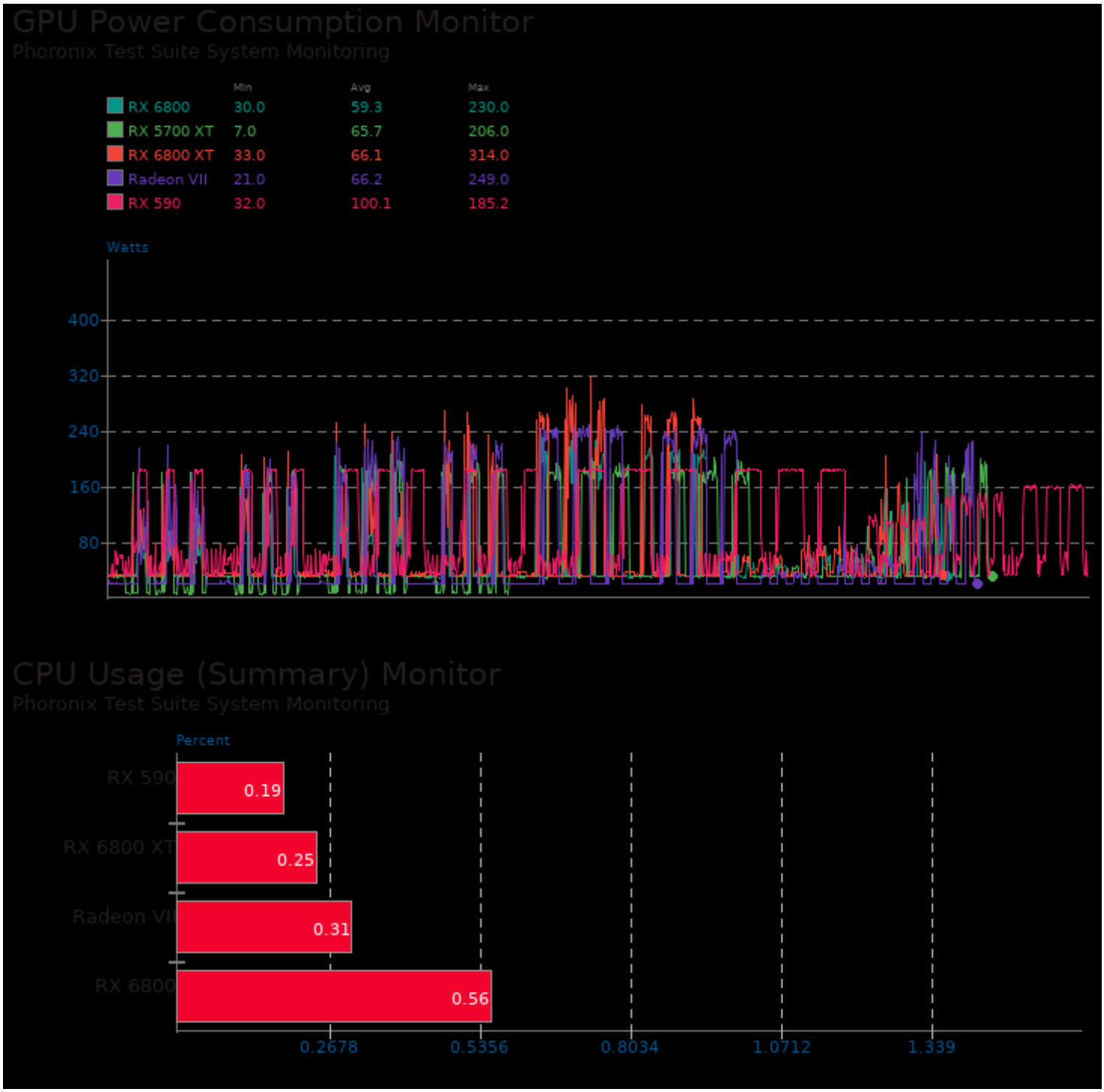
Portal 2 Updated



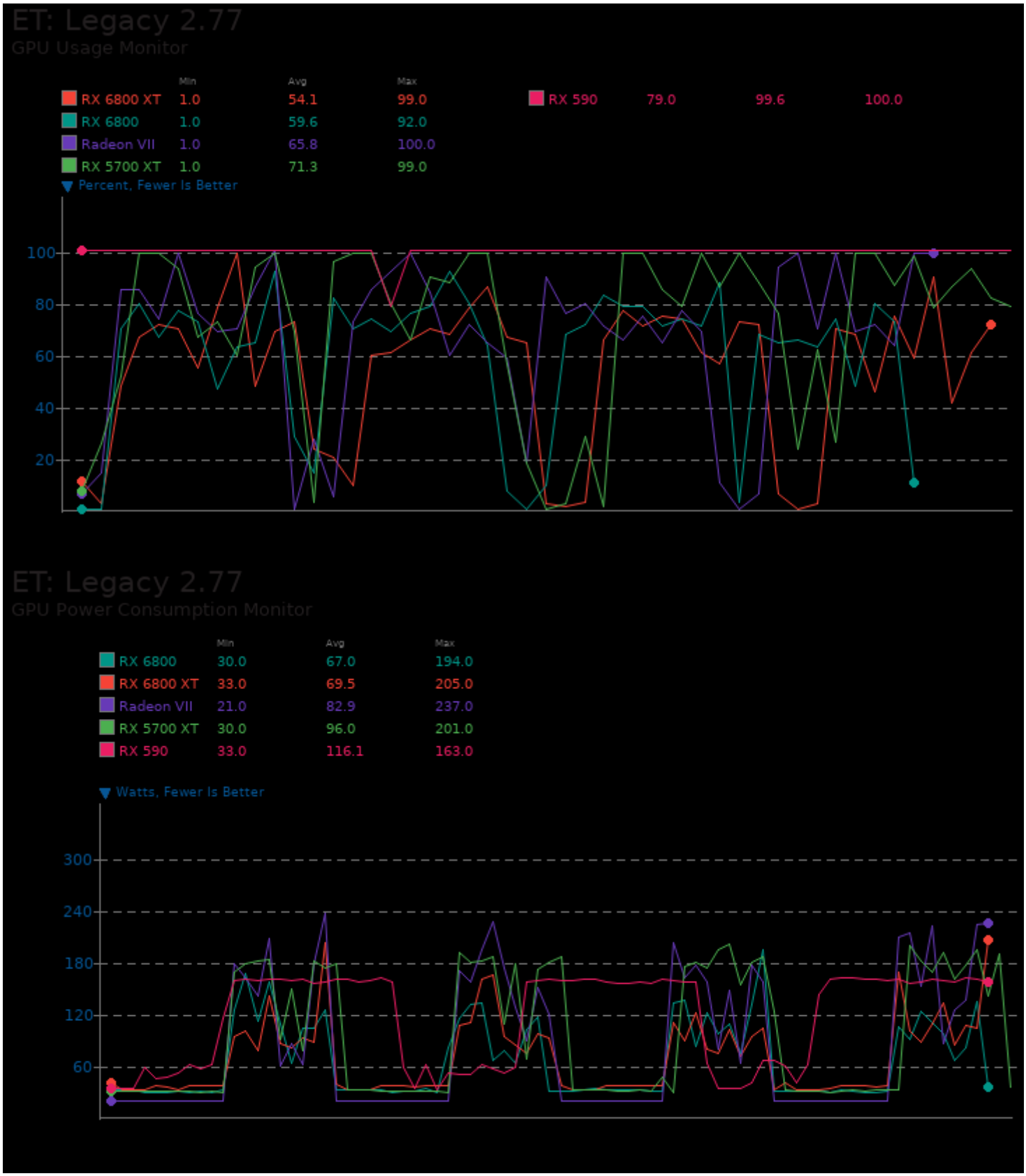
Portal 2 Updated



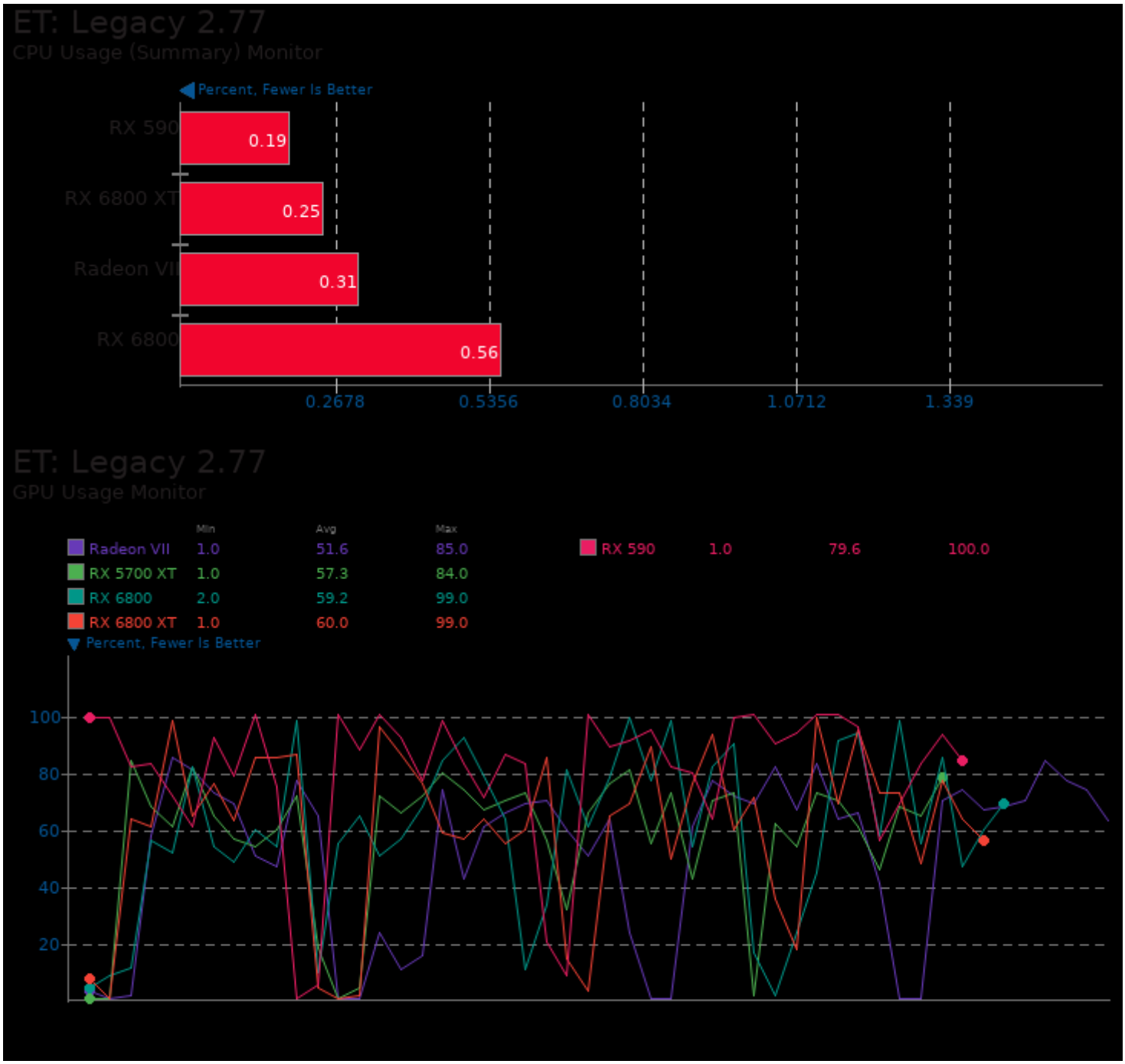
Portal 2 Updated



Portal 2 Updated



Portal 2 Updated



Portal 2 Updated



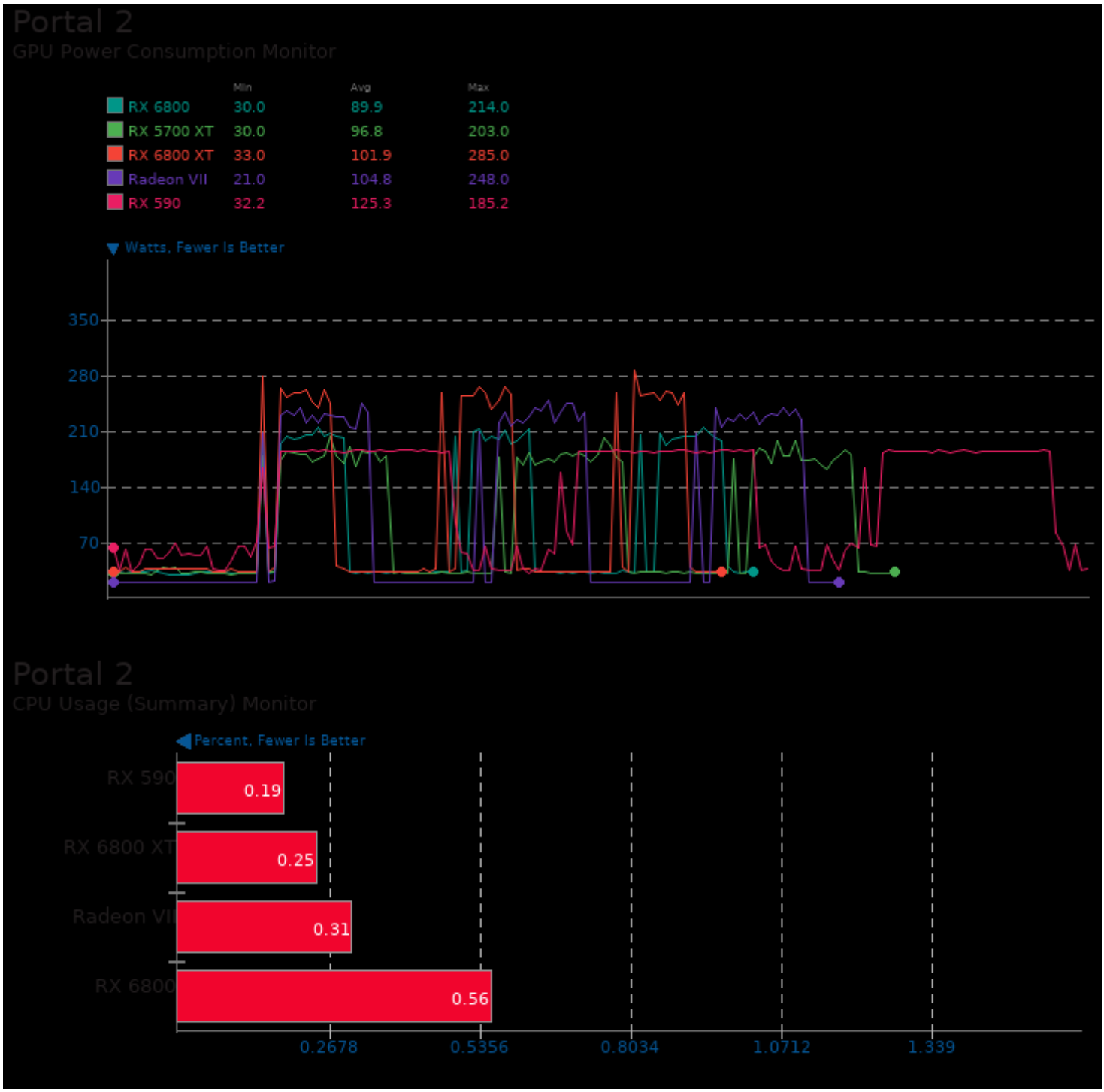
Portal 2 Updated



Portal 2 Updated



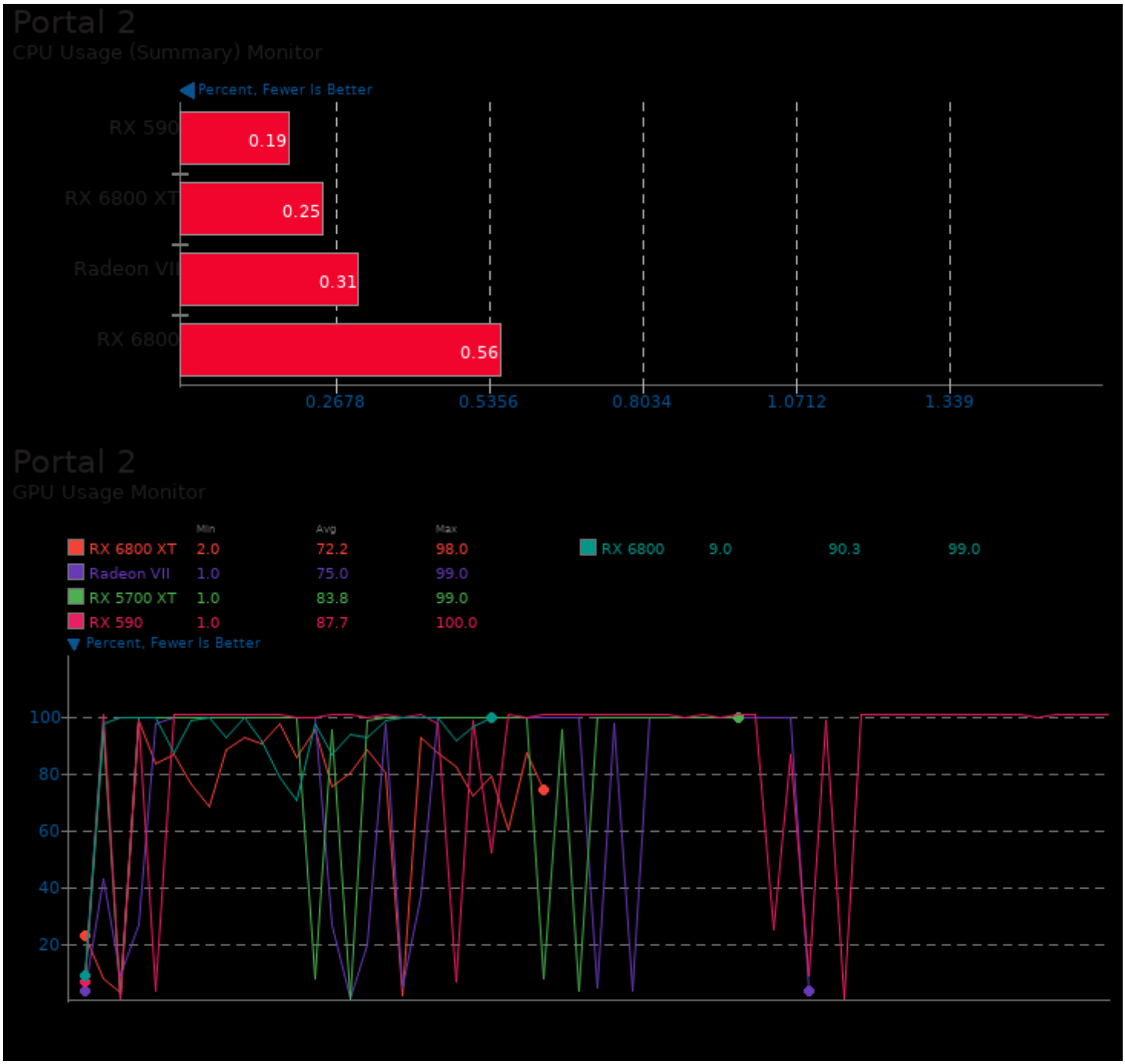
Portal 2 Updated



Portal 2 Updated



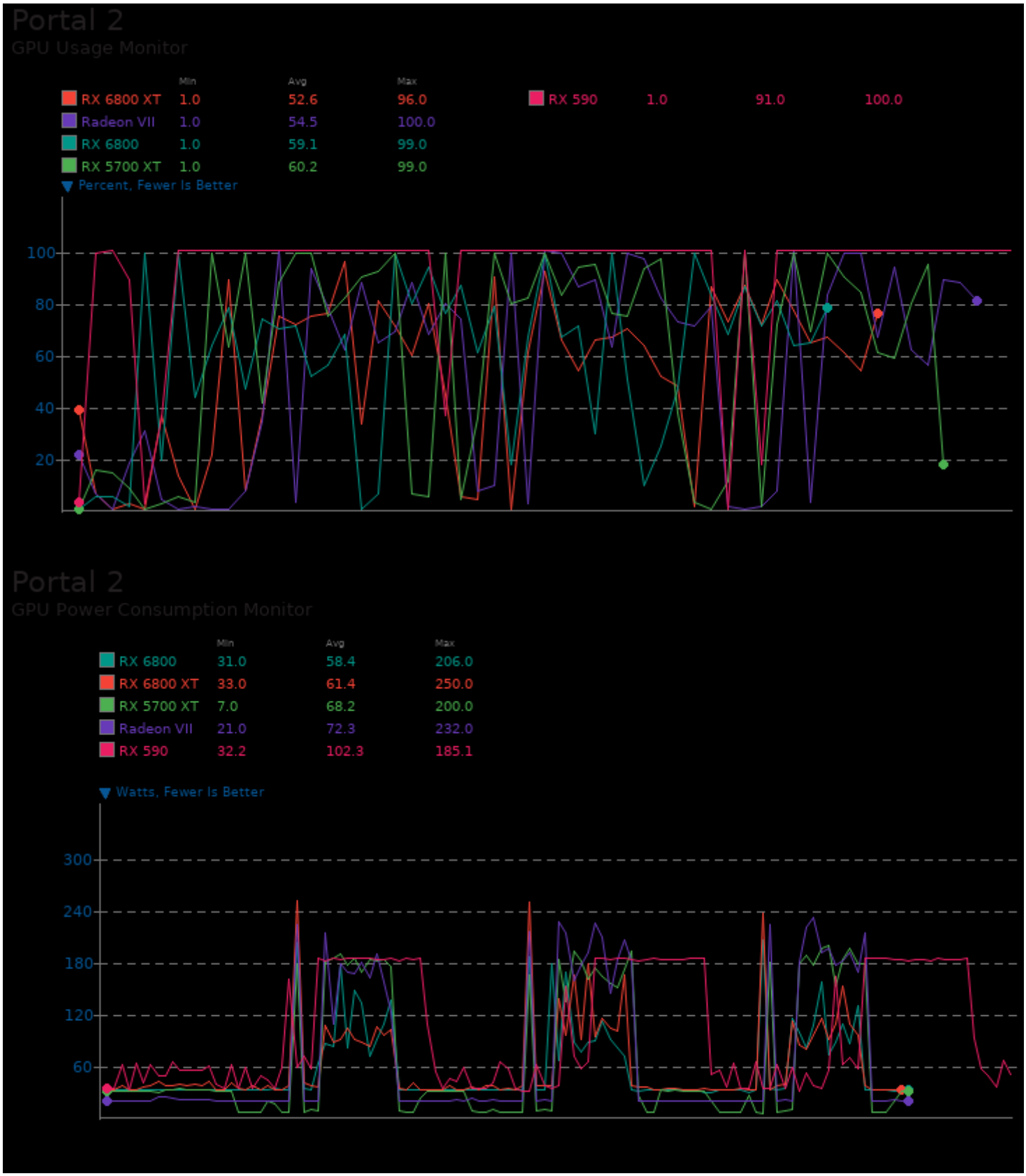
Portal 2 Updated



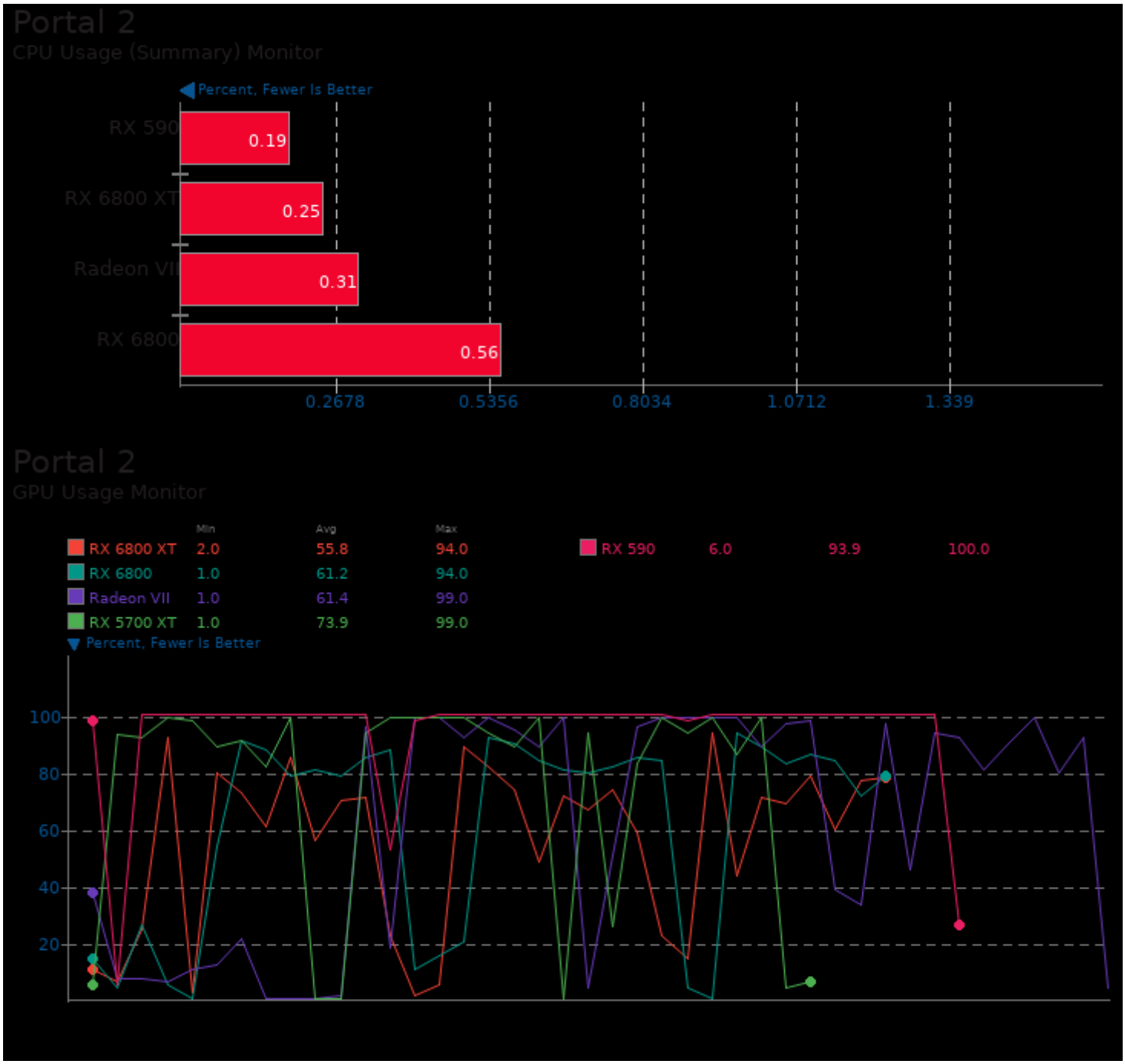
Portal 2 Updated



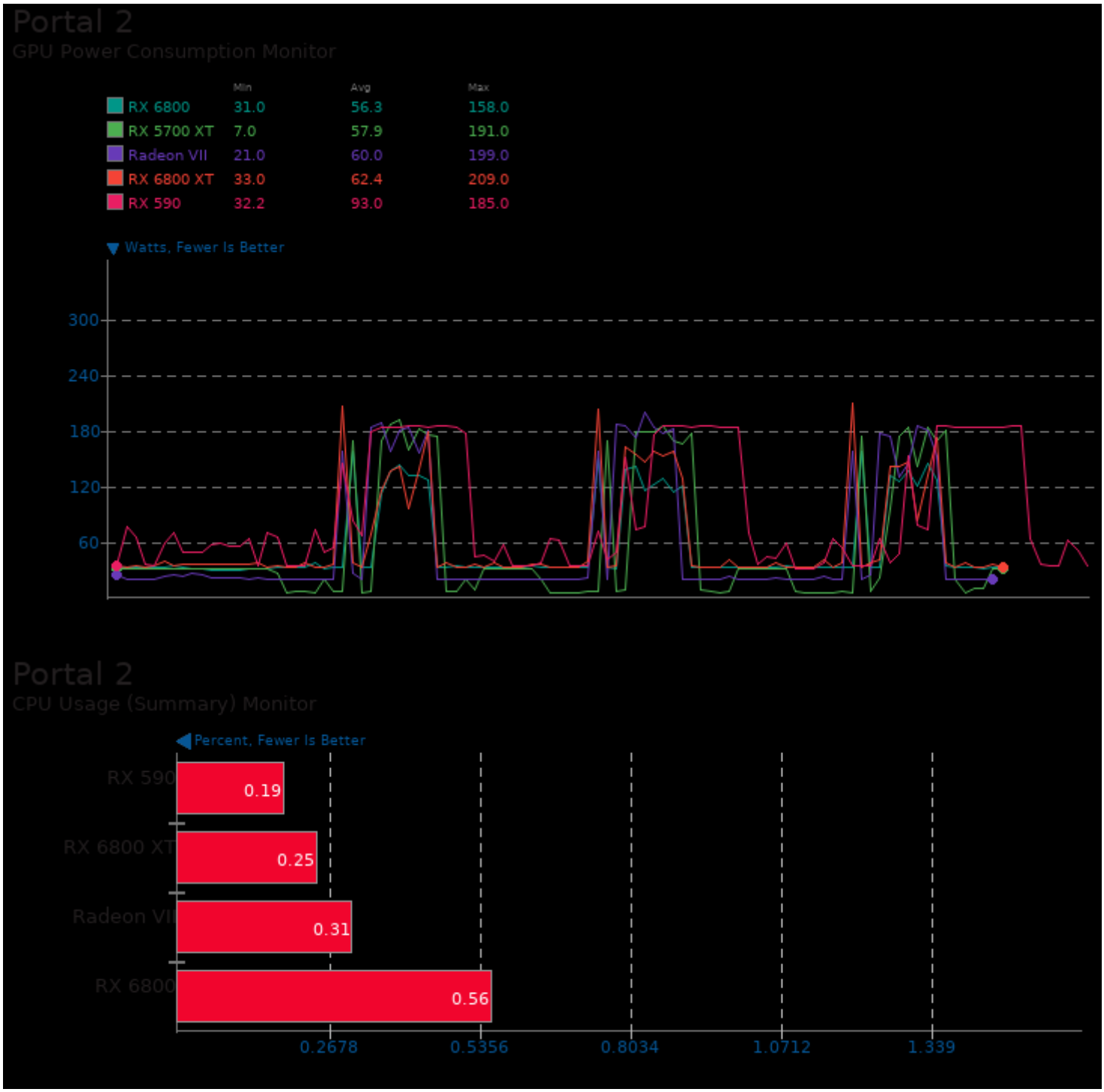
Portal 2 Updated



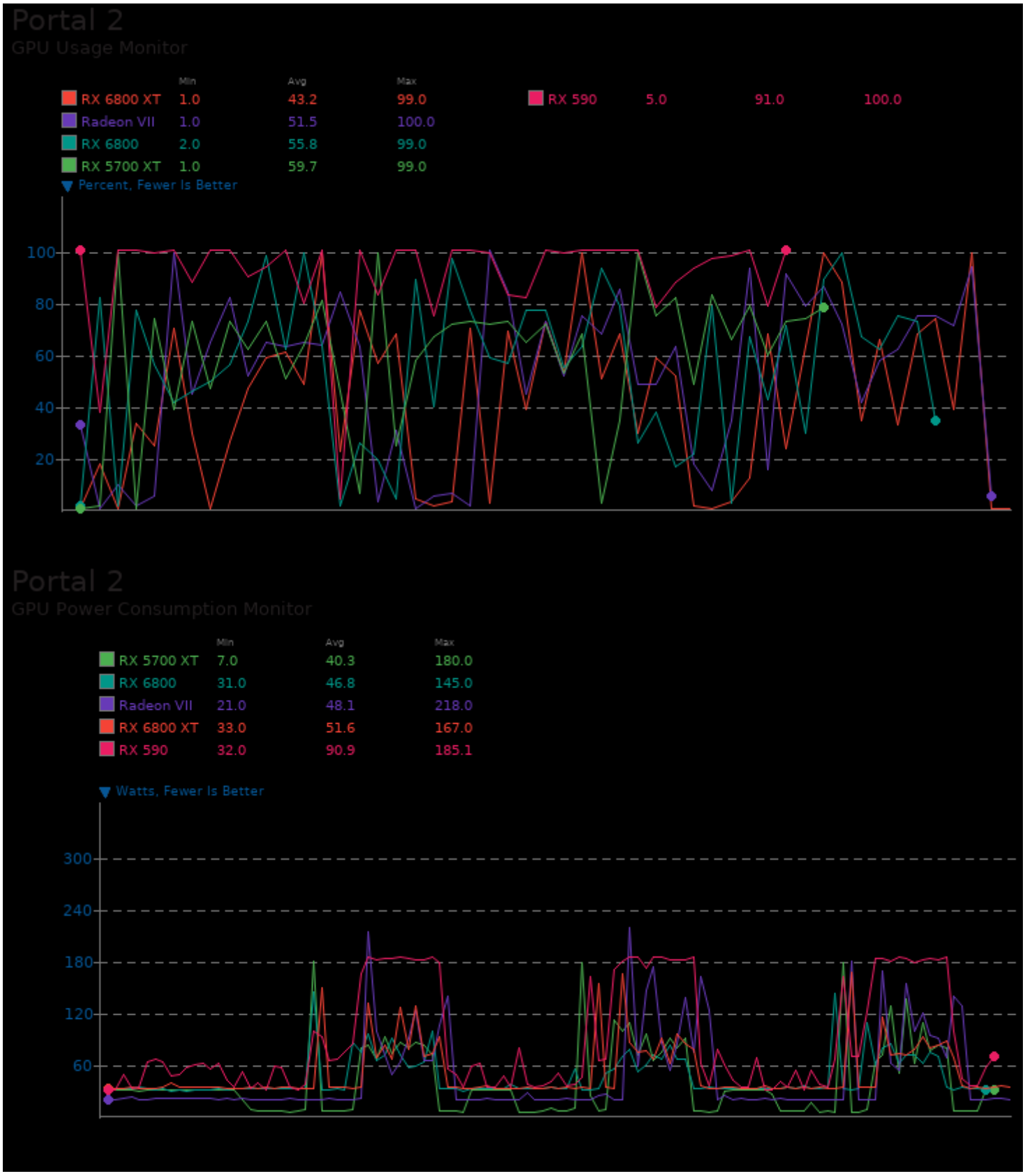
Portal 2 Updated



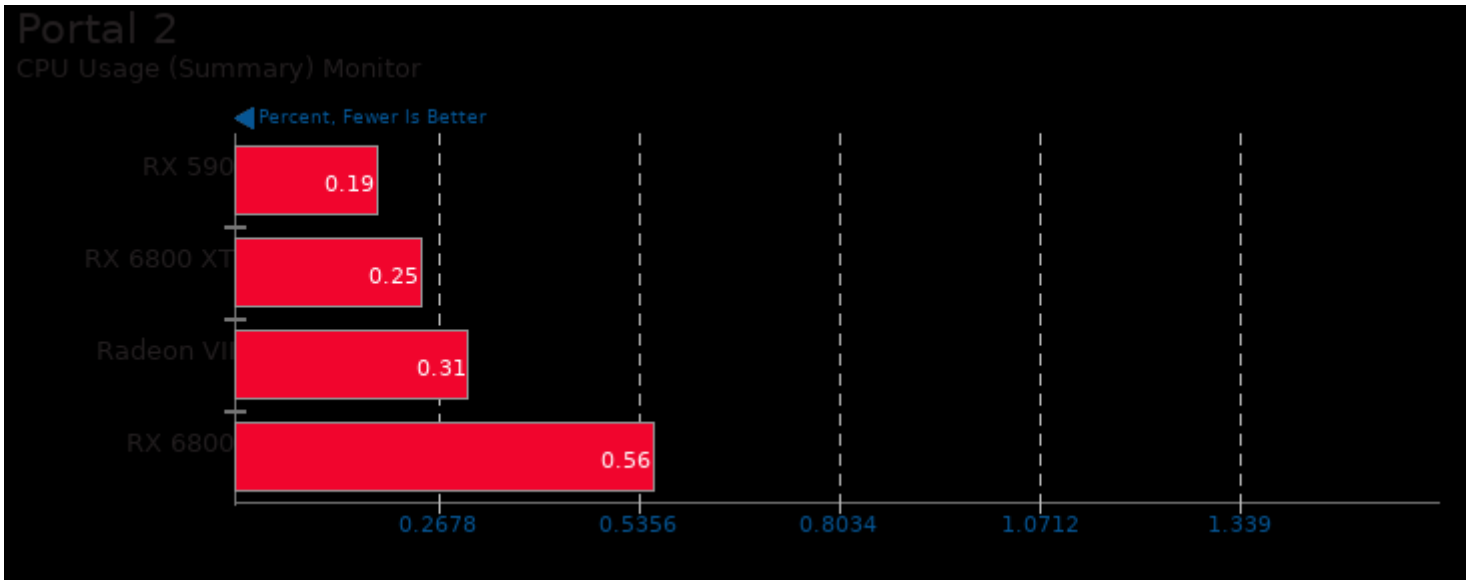
Portal 2 Updated



Portal 2 Updated



Portal 2 Updated



This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 12:29.