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Ethminer Comparison

Ether ethminer Linux benchmarks of different GPUs for a future article on Phoronix.com.

Test Systems:

Radeon R9 290

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: XFX AMD Radeon R9 290/390 4096MB, Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: modesetting 1.18.4, OpenCL: OpenCL 2.0 AMD-APP (2348.3), Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

Radeon RX 480

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: AMD Radeon RX 470/480 8192MB, Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: amdgpu 1.2.99, OpenCL: OpenCL 2.0 AMD-APP (2348.3), Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

Radeon RX 560

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: AMD Baffin [Polaris11] 4096MB, Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: amdgpu 1.2.99, OpenCL: OpenCL 2.0 AMD-APP (2348.3), Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

Radeon RX 580

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: MSI AMD Radeon RX 470/480 8192MB, Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: modesetting 1.18.4, OpenCL: OpenCL 2.0 AMD-APP (2348.3), Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

Radeon R9 Fury

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: Sapphire AMD Radeon R9 FURY / NANO 4096MB, Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: modesetting 1.18.4, OpenCL: OpenCL 2.0 AMD-APP (2348.3), Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 780 Ti

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 780 Ti 3072MB (875/3500MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 960

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: eVGA NVIDIA GeForce GTX 960 2048MB (1277/3505MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 970

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: eVGA NVIDIA GeForce GTX 970 4096MB (135/324MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 980

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 980 4096MB (1126/3505MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 980 Ti

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 980 Ti 6144MB (999/3505MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 1050 Ti

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: eVGA NVIDIA GeForce GTX 1050 Ti 4096MB (1341/3504MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 1060

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 1060 6GB 6144MB (1506/4006MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 1070

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 1070 8192MB (1504/4006MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 1080

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 1080 8192MB (1602/5005MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

GeForce GTX 1080 Ti

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel

Ethminer Comparison

Device 591f + Z270, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 1080 Ti 11264MB (1472/5508MHz), Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate powersave

Core i7 7700K

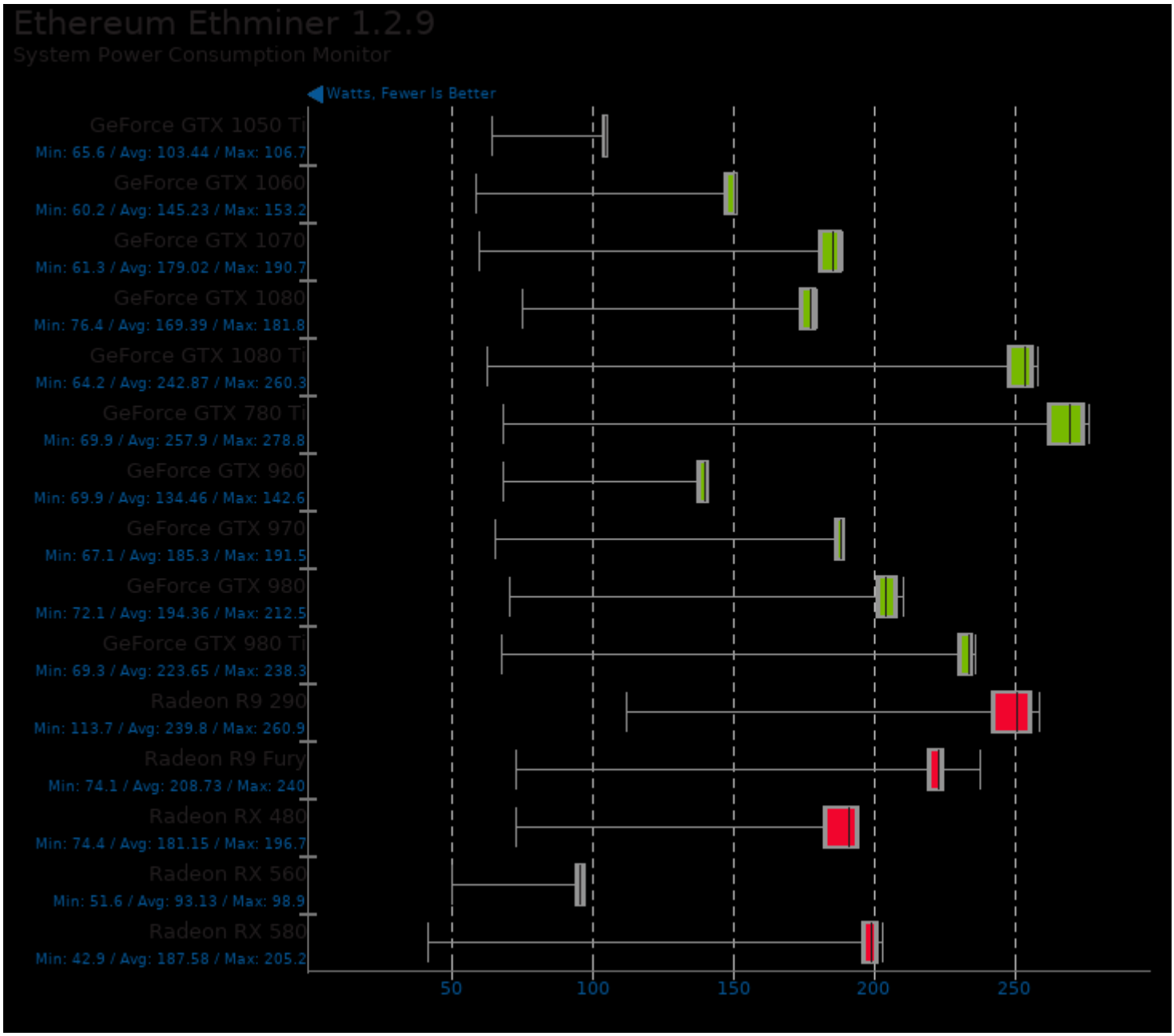
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OS: Ubuntu 16.04, Kernel: 4.8.0-53-generic (x86_64), Desktop: Unity 7.4.0, Display Server: X Server 1.18.4, Display Driver: NVIDIA 381.22, OpenCL: OpenCL 1.2 CUDA 8.0.0, Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 3840x2160

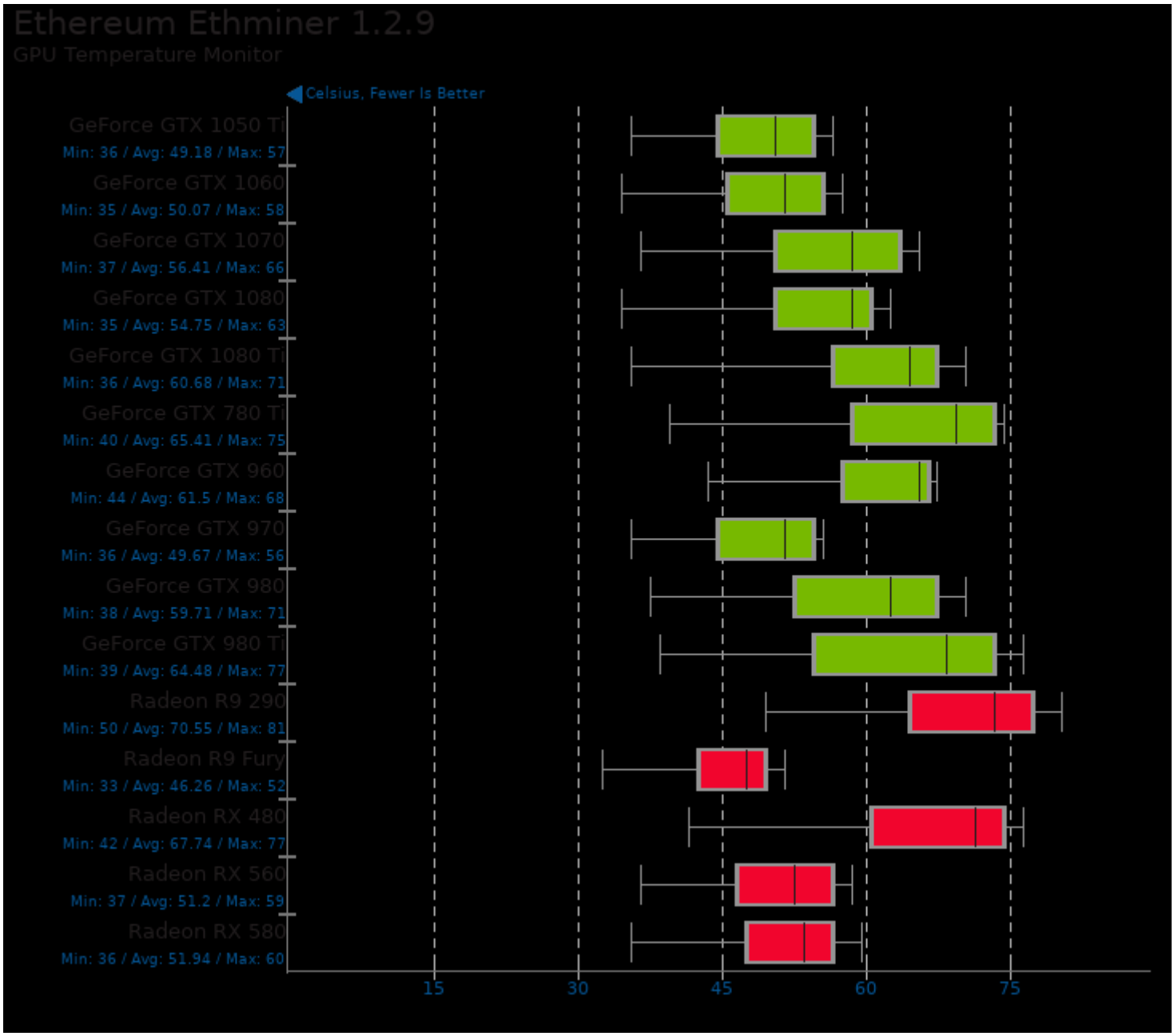
Processor Notes: Scaling Governor: intel_pstate powersave

	Radeon R9 290	Radeon RX 480	Radeon RX 560	Radeon RX 580	Radeon R9 Fury	GeForce GTX 780 Ti	GeForce GTX 960	GeForce GTX 970	GeForce GTX 980	GeForce GTX 980 Ti	GeForce GTX 1050 Ti	GeForce GTX 1060	GeForce GTX 1070	GeForce GTX 1080	GeForce GTX 1080 Ti	Core i7 7700K
Ethereum Ethminer - GPU OpenCL	96198	121054	118875	117926	118859	61275	76815	96897	101803	80855	112548	128805	141406	122256	129972	
Normalized	68.03%	85.61%	84.07%	83.39%	84.06%	43.33%	54.32%	68.52%	71.99%	57.18%	79.59%	91.09%	100%	86.46%	91.91%	
Ethereum Ethminer - Performance / Cost - GPU OpenCL (H/s/Dollar)			101571	85408	45189						83158	75128	66793	36396	45160	
Normalized			100%	84.09%	44.49%						81.87%	73.97%	65.76%	35.83%	44.46%	
Ethereum Ethminer - GPU OpenCL	23068671	21928345	11071214	22120584	24809016	15802913	10328473	17955407	19786046	18083566	11642106	18706886	25314371	20709376	31566506	456579
Normalized	73.08%	69.47%	35.07%	70.08%	78.59%	50.06%	32.72%	56.88%	62.68%	57.29%	36.88%	59.26%	80.19%	65.61%	100%	1.45%
Standard Deviation	1.2%	0.5%	0.4%	0.3%	0.3%	0.9%	0.4%	0.4%	0.4%	0.4%	0.9%	0.3%	0.3%	0.3%	0.4%	0.1%

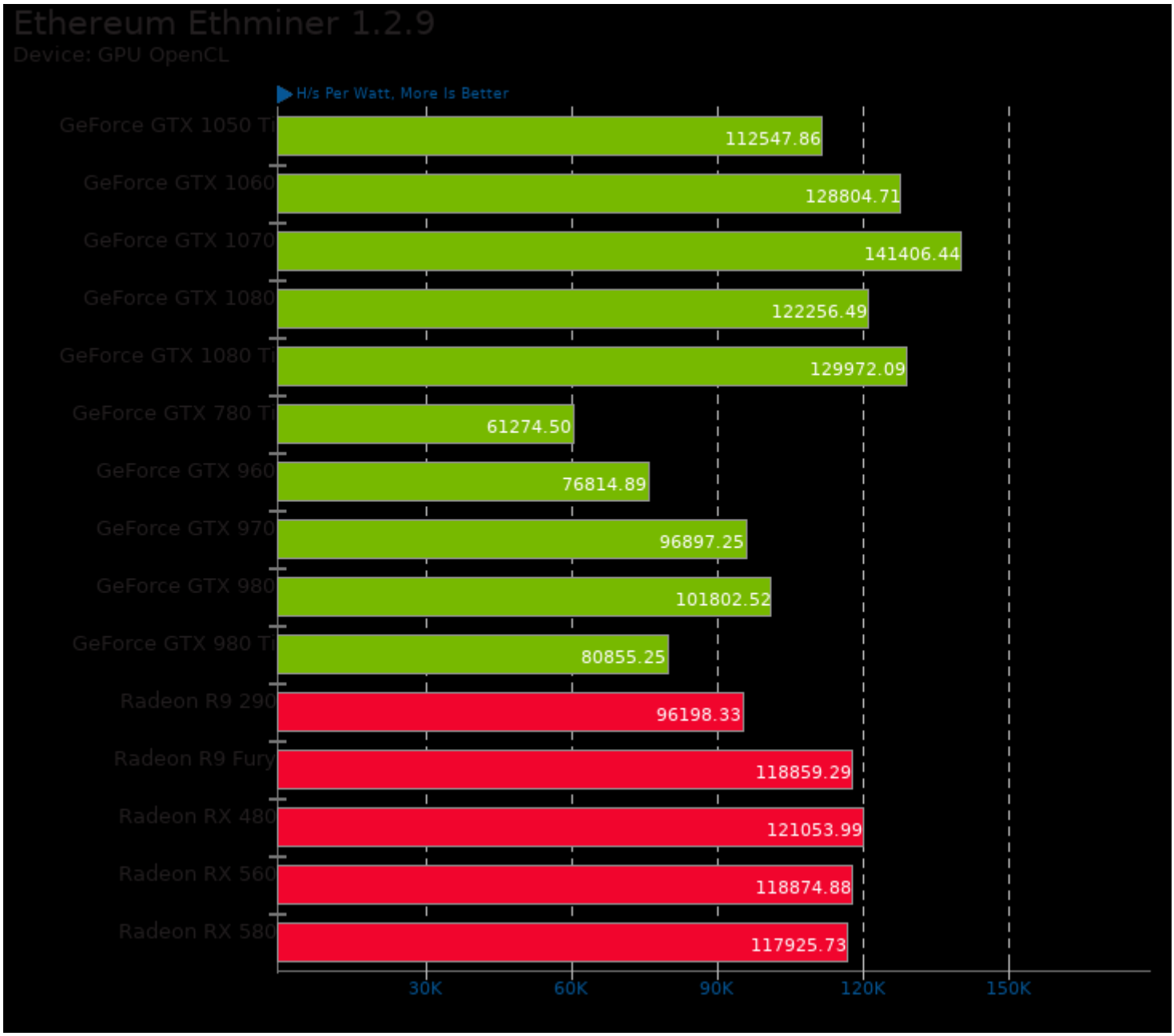
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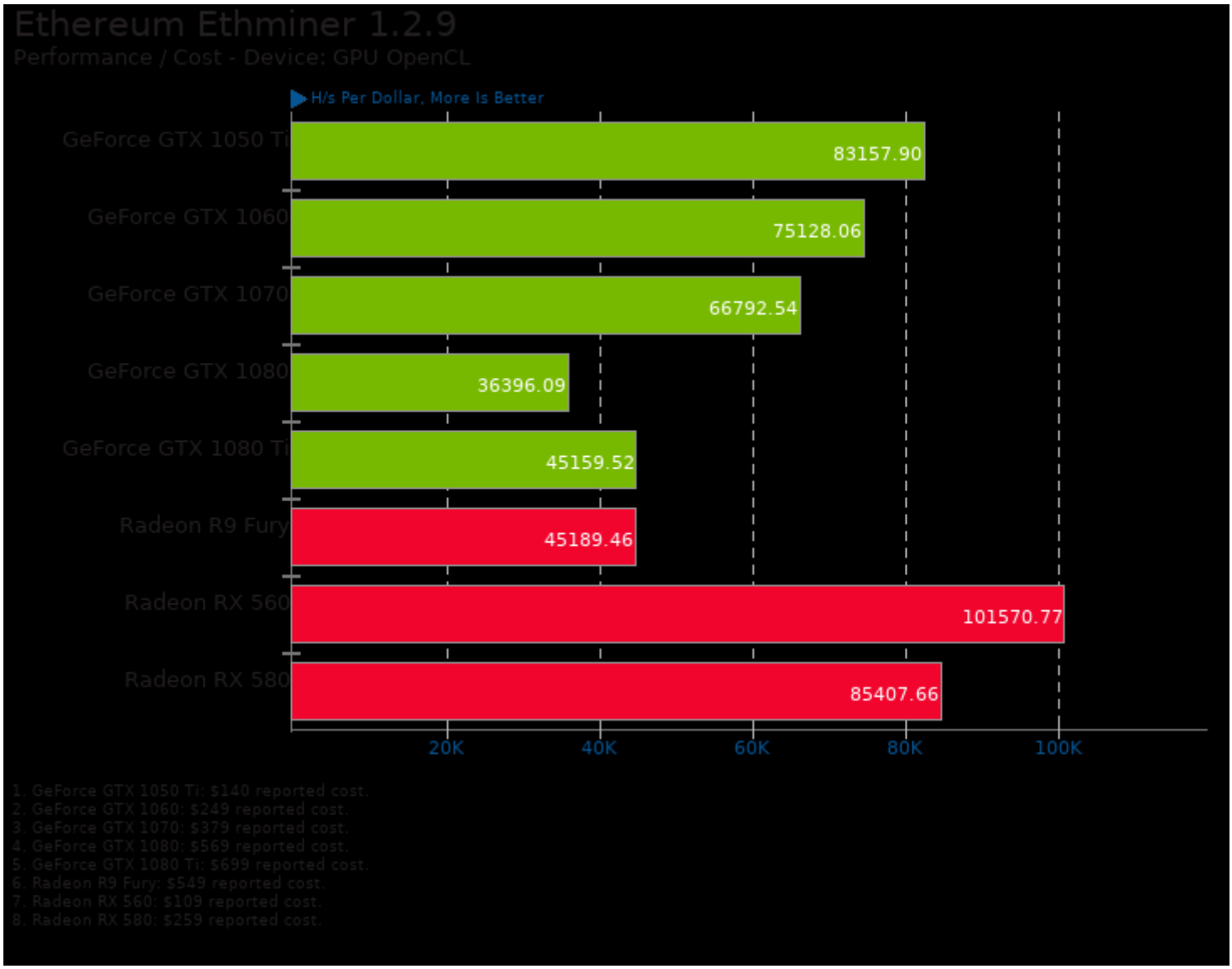
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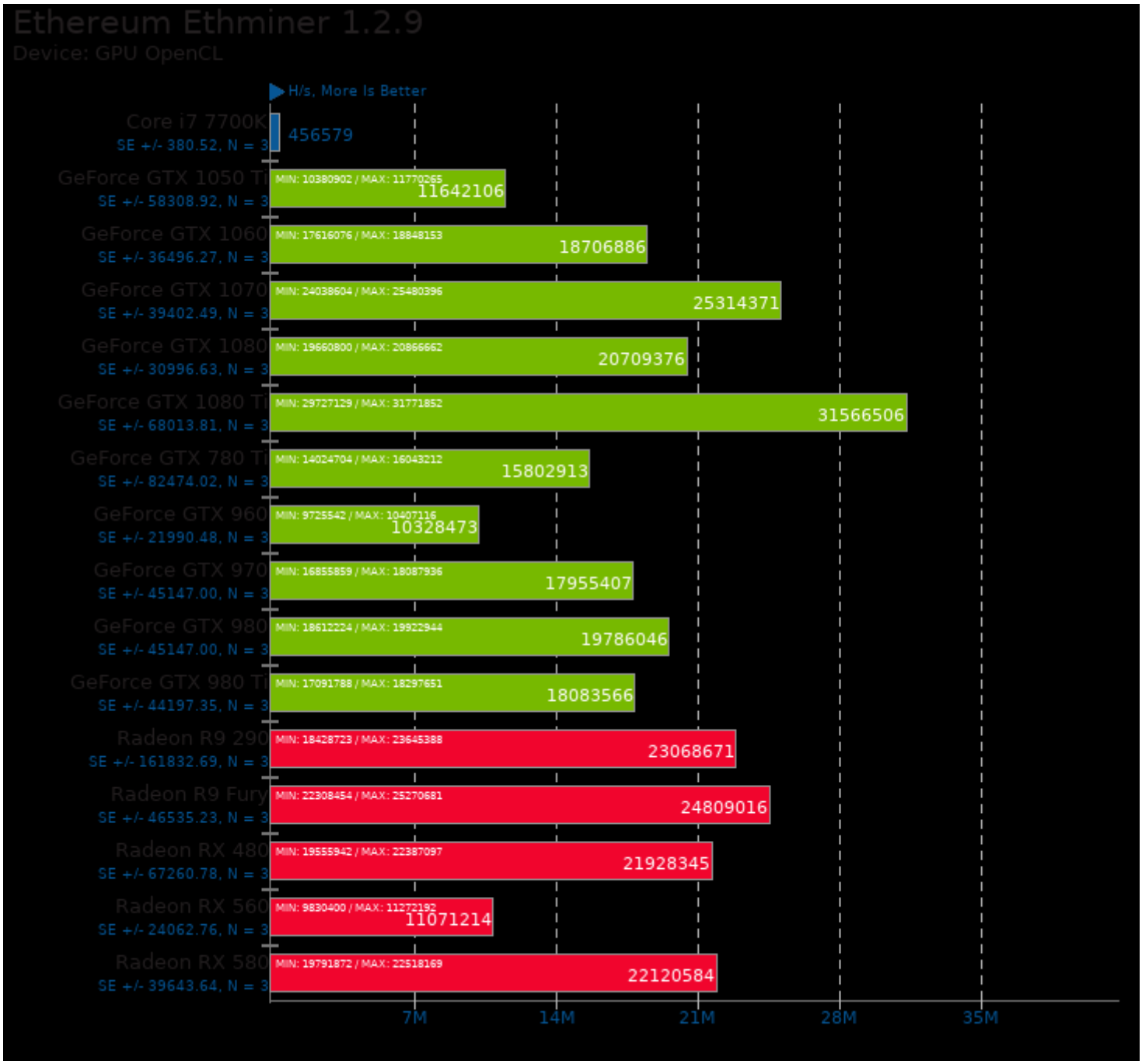
Ethminer Comparison



Ethminer Comparison



Ethminer Comparison



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