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1080p NVIDIA Linux Perf Per Dollar

NVIDIA Linux benchmarks. Tests by Michael Larabel for a future article on Phoronix.com.

Automated Executive Summary

NVIDIA GeForce GTX 980 had the most wins, coming in first place for 36% of the tests.

Based on the geometric mean of all complete results, the fastest (NVIDIA GeForce GTX TITAN X) was 1.652x the speed of the slowest (NVIDIA GeForce GTX 750 Ti). NVIDIA GeForce GTX 980 Ti was 0.989x the speed of NVIDIA GeForce GTX TITAN X, NVIDIA GeForce GTX 980 was 0.984x the speed of NVIDIA GeForce GTX 980 Ti, NVIDIA GeForce GTX 970 was 0.982x the speed of NVIDIA GeForce GTX 980, EVGA GeForce GTX 960 was 0.881x the speed of NVIDIA GeForce GTX 970, EVGA GeForce GTX 950 FTW was 0.933x the speed of EVGA GeForce GTX 960, NVIDIA GeForce GTX 750 Ti was 0.77x the speed of EVGA GeForce GTX 950 FTW.

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

Civilization: Beyond Earth (Resolution: 1920 x 1080 - Total Frame Time) at 10.827x
Team Fortress 2 (Performance / Cost - Resolution: 1920 x 1080) at 8.083x
SuperTuxKart (Performance / Cost - Resolution: 1920 x 1080) at 6.6x
Metro 2033 Redux (Performance / Cost - Phoronix Test Suite v6.0.0m0) at 6.308x
Unigine Valley (System Power Consumption Monitor) at 5.942x
Metro: Last Light Redux (System Power Consumption Monitor) at 5.822x

BioShock Infinite (System Power Consumption Monitor) at 5.524x
DiRT Showdown (Performance / Cost - Resolution: 1920 x 1080 - Graphics Preset: Ultra - Multi-Sampling: 8x MSAA) at 5.4x
Tesseract (Performance / Cost - Resolution: 1920 x 1080) at 5.31x
Meta Performance Per Dollar (Performance Per Dollar) at 5.194x.

Test Systems:

NVIDIA GeForce GTX 750 Ti

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E5 v3/Core, Memory: 16384MB, Disk: 240GB OCZ VERTEX3, Graphics: NVIDIA GeForce GTX 750 Ti 2048MB (1019/2700MHz), Audio: Intel C610/X99, Network: Intel Connection

OS: Ubuntu 15.04, Kernel: 3.19.0-25-generic (x86_64), Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: NVIDIA 355.06, OpenGL: 4.4.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate powersave

EVGA GeForce GTX 950 FTW

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E5 v3/Core, Memory: 16384MB, Disk: 240GB OCZ VERTEX3, Graphics: Device 2048MB (1201/3304MHz), Audio: Intel C610/X99, Network: Intel Connection

OS: Ubuntu 15.04, Kernel: 3.19.0-25-generic (x86_64), Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: NVIDIA 355.06, OpenGL: 4.4.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate powersave

EVGA GeForce GTX 960

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E5 v3/Core, Memory: 16384MB, Disk: 240GB OCZ VERTEX3, Graphics: eVGA NVIDIA GeForce GTX 960 2048MB (1277/3505MHz), Audio: Intel C610/X99, Network: Intel Connection

OS: Ubuntu 15.04, Kernel: 3.19.0-25-generic (x86_64), Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: NVIDIA 355.06, OpenGL: 4.4.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate powersave

NVIDIA GeForce GTX 970

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E5 v3/Core, Memory: 16384MB, Disk: 240GB OCZ VERTEX3, Graphics: eVGA NVIDIA GeForce GTX 970 4096MB (1163/3505MHz), Audio: Intel C610/X99, Network: Intel Connection

OS: Ubuntu 15.04, Kernel: 3.19.0-25-generic (x86_64), Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: NVIDIA 355.06, OpenGL: 4.4.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate powersave

NVIDIA GeForce GTX 980

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E5 v3/Core, Memory: 16384MB, Disk: 240GB OCZ VERTEX3, Graphics: NVIDIA GeForce GTX 980 4096MB (1126/3505MHz), Audio: Intel C610/X99, Network: Intel Connection

OS: Ubuntu 15.04, Kernel: 3.19.0-25-generic (x86_64), Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: NVIDIA 355.06, OpenGL: 4.4.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate powersave

NVIDIA GeForce GTX 980 Ti

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E5 v3/Core, Memory: 16384MB, Disk: 240GB OCZ VERTEX3, Graphics: NVIDIA GeForce GTX 980 Ti 6144MB (999/3505MHz), Audio: Intel C610/X99, Network: Intel Connection

OS: Ubuntu 15.04, Kernel: 3.19.0-25-generic (x86_64), Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: NVIDIA 355.06, OpenGL: 4.4.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate powersave

NVIDIA GeForce GTX TITAN X

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E5 v3/Core, Memory: 16384MB, Disk: 240GB OCZ VERTEX3, Graphics: NVIDIA GeForce GTX TITAN X 12288MB (1001/3505MHz), Audio: Intel C610/X99, Network: Intel Connection

OS: Ubuntu 15.04, Kernel: 3.19.0-25-generic (x86_64), Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: NVIDIA 355.06, OpenGL: 4.4.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate powersave

	NVIDIA GeForce GTX 750 Ti	EVGA GeForce GTX 950 FTW	EVGA GeForce GTX 960	NVIDIA GeForce GTX 970	NVIDIA GeForce GTX 980	NVIDIA GeForce GTX 980 Ti	NVIDIA GeForce GTX TITAN X
Team Fortress 2 - 1920 x 1080 (FPS)	**115.64**	118.05	119.57	123.02	**123.95**	115.66	122.94
Normalized	93.3%	95.24%	96.47%	99.25%	100%	93.31%	99.19%
Standard Deviation	7.5%	7%	4.1%	3.4%	2.4%	5.1%	2%

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Team Fortress 2 - Performance / Cost - 1920 x 1080 (FPS/Dollar)	**0.97**	0.66	0.60	0.37	0.25	0.18	**0.12**
Normalized	100%	68.04%	61.86%	38.14%	25.77%	18.56%	12.37%
Team Fortress 2 - 1920 x 1080 (FPS/Watt)	**1.31**	1.11	1.15	1.07	1.06	**0.82**	0.83
Normalized	100%	84.73%	87.79%	81.68%	80.92%	62.6%	63.36%
Counter-Strike: Global Offensive - 1920 x 1080 (FPS)	**104.05**	158.14	180.95	205.05	198.01	**206.67**	205.90
Normalized	50.35%	76.52%	87.56%	99.22%	95.81%	100%	99.63%
Standard Deviation	1.6%	0.7%	1.9%	5.4%	5.4%	2%	2.4%
Counter-Strike: Global Offensive - Performance / Cost - 1920 x 1080 (FPS/Dollar)	0.87	0.88	**0.91**	0.62	0.40	0.32	**0.21**
Normalized	95.6%	96.7%	100%	68.13%	43.96%	35.16%	23.08%
Counter-Strike: Global Offensive - 1920 x 1080 (FPS/Watt)	**0.91**	1.13	1.28	**1.29**	1.23	1.12	1.02
Normalized	70.54%	87.6%	99.22%	100%	95.35%	86.82%	79.07%
Xonotic - 1920 x 1080 - Ultimate (FPS)	**110.15**	137.05	149.19	168.25	174.18	**182.57**	181.22
Normalized	60.33%	75.07%	81.72%	92.16%	95.4%	100%	99.26%
Standard Deviation	0.3%	0.8%	0.4%	1.5%	1.8%	3.2%	0.2%
Xonotic - Performance / Cost - 1920 x 1080 - Ultimate (FPS/Dollar)	**0.93**	0.76	0.75	0.51	0.35	0.28	**0.18**
Normalized	100%	81.72%	80.65%	54.84%	37.63%	30.11%	19.35%
Xonotic - 1920 x 1080 - Ultimate (FPS/Watt)	1.15	1.12	**1.22**	1.13	1.12	**1.01**	1.02
Normalized	94.26%	91.8%	100%	92.62%	91.8%	82.79%	83.61%
Metro: Last Light Redux - P.T.S.v.0.0 (FPS)	**87.13**	124.75	137.24	153.68	**156.83**	156.53	156.36
Normalized	55.56%	79.54%	87.51%	97.99%	100%	99.81%	99.7%
Standard Deviation	0.2%	0.6%	0.6%	3.7%	1.6%	0.7%	0.3%
Metro: Last Light Redux - Performance / Cost - P.T.S.v.0.0 (FPS/Dollar)	**0.73**	0.69	0.69	0.47	0.31	0.24	**0.16**
Normalized	100%	94.52%	94.52%	64.38%	42.47%	32.88%	21.92%
Metro: Last Light Redux - P.T.S.v.0.0 (FPS/Watt)	**0.57**	0.63	0.65	**0.67**	0.66	0.59	**0.57**
Normalized	85.07%	94.03%	97.01%	100%	98.51%	88.06%	85.07%
Metro 2033 Redux - P.T.S.v.0.0 (FPS)	**98.14**	124.75	129.35	132.25	134.77	**136.66**	134.31
Normalized	71.81%	91.28%	94.65%	96.77%	98.62%	100%	98.28%
Standard Deviation	0.5%	0.8%	0.8%	3.8%	1.5%	1%	0.9%

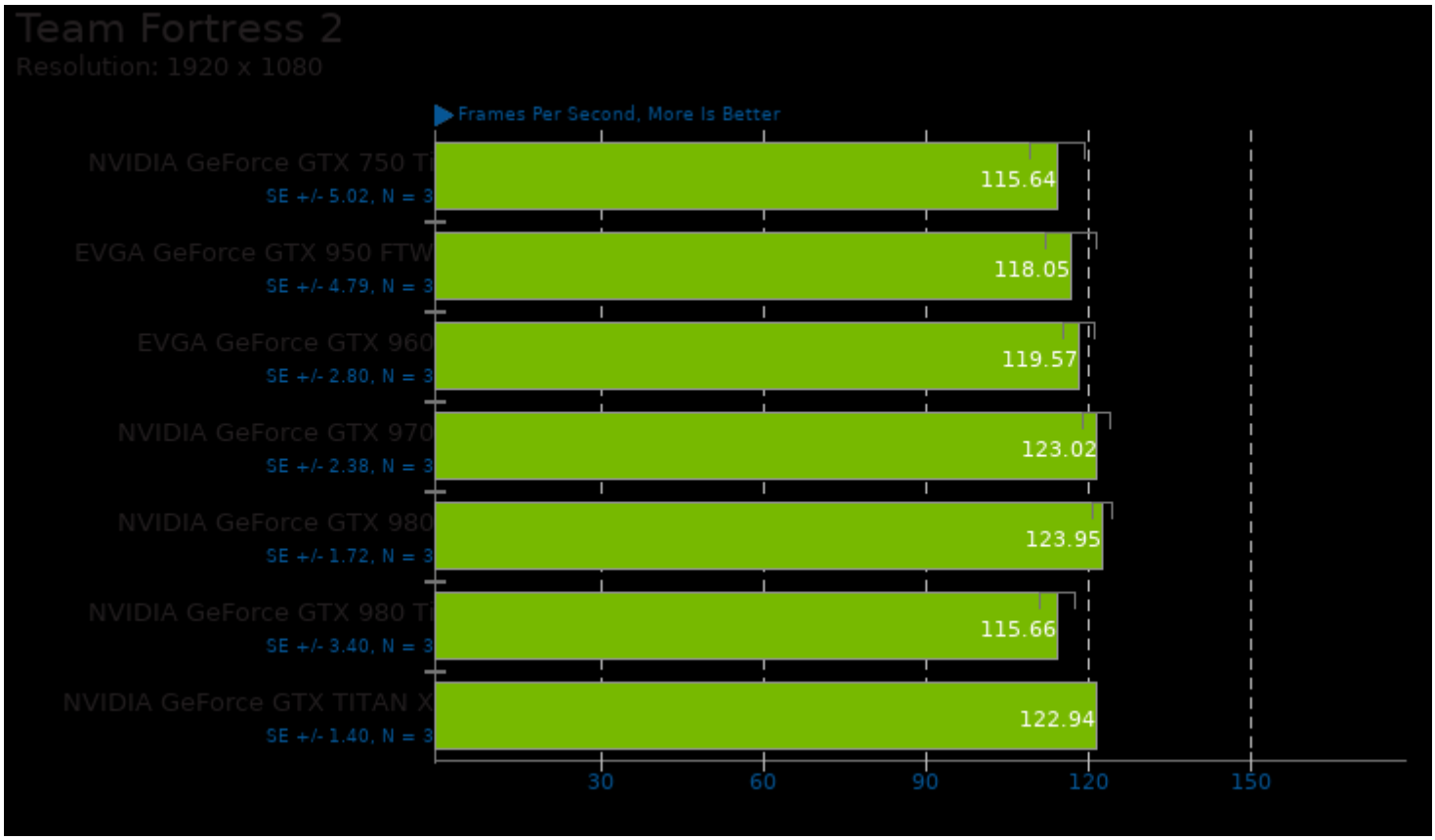
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Metro 2033 Redux - Performance / Cost - P.T.S.v.0.0 (FPS/Dollar)	**0.82**	0.69	0.65	0.40	0.27	0.21	**0.13**
Normalized	100%	84.15%	79.27%	48.78%	32.93%	25.61%	15.85%
Metro 2033 Redux - P.T.S.v.0.0 (FPS/Watt)	0.73	0.78	**0.79**	0.75	0.74	0.63	**0.62**
Normalized	92.41%	98.73%	100%	94.94%	93.67%	79.75%	78.48%
Civilization: Beyond Earth - 1920 x 1080 (FPS)	**29.18**	37.76	41.88	46.21	**47.18**	44.69	46.54
Normalized	61.85%	80.03%	88.77%	97.94%	100%	94.72%	98.64%
Standard Deviation	1.2%		4%	3.3%	3.6%	3.9%	4.8%
Civilization: Beyond Earth - Performance / Cost - 1920 x 1080 (FPS/Dollar)	**0.25**	0.21	0.21	0.14	0.09	0.07	**0.05**
Normalized	100%	84%	84%	56%	36%	28%	20%
Civilization: Beyond Earth - 1920 x 1080 (FPS/Watt)	0.28	**0.31**	**0.31**	**0.31**	**0.31**	**0.24**	**0.24**
Normalized	90.32%	100%	100%	100%	100%	77.42%	77.42%
BioShock Infinite - 1920 x 1080 - Very High (FPS)	**53.98**	69.68	75.97	94.49	98.41	104.22	**104.44**
Normalized	51.69%	66.72%	72.74%	90.47%	94.23%	99.79%	100%
Standard Deviation	0.5%	0.2%	0.9%	1.5%	0.5%	1%	0.8%
BioShock Infinite - Performance / Cost - 1920 x 1080 - Very High (FPS/Dollar)	**0.45**	0.39	0.38	0.29	0.20	0.16	**0.10**
Normalized	100%	86.67%	84.44%	64.44%	44.44%	35.56%	22.22%
BioShock Infinite - 1920 x 1080 - Very High (FPS/Watt)	**0.47**	0.48	0.51	**0.56**	0.55	0.51	0.49
Normalized	83.93%	85.71%	91.07%	100%	98.21%	91.07%	87.5%
SuperTuxKart - 1920 x 1080 (FPS)	**78.33**	92.19	92.61	102.12	**102.95**	102.29	102.13
Normalized	76.09%	89.55%	89.96%	99.19%	100%	99.36%	99.2%
Standard Deviation	0.9%	2.1%	3.7%	0.7%	2.8%	4.3%	1.7%
SuperTuxKart - Performance / Cost - 1920 x 1080 (FPS/Dollar)	**0.66**	0.51	0.47	0.31	0.21	0.16	**0.10**
Normalized	100%	77.27%	71.21%	46.97%	31.82%	24.24%	15.15%
SuperTuxKart - 1920 x 1080 (FPS/Watt)	**0.79**	0.75	0.72	0.73	0.67	0.59	**0.57**
Normalized	100%	94.94%	91.14%	92.41%	84.81%	74.68%	72.15%
Tesseract - 1920 x 1080 (FPS)	**183.36**	218.03	224.65	268.99	278.78	286.40	**289.58**
Normalized	63.32%	75.29%	77.58%	92.89%	96.27%	98.9%	100%
Standard Deviation	1.7%	2%	1.4%	0.7%	1.4%	1.2%	0.9%
Tesseract - Performance / Cost - 1920 x 1080 (FPS/Dollar)	**1.54**	1.21	1.13	0.82	0.56	0.44	**0.29**
Normalized	100%	78.57%	73.38%	53.25%	36.36%	28.57%	18.83%

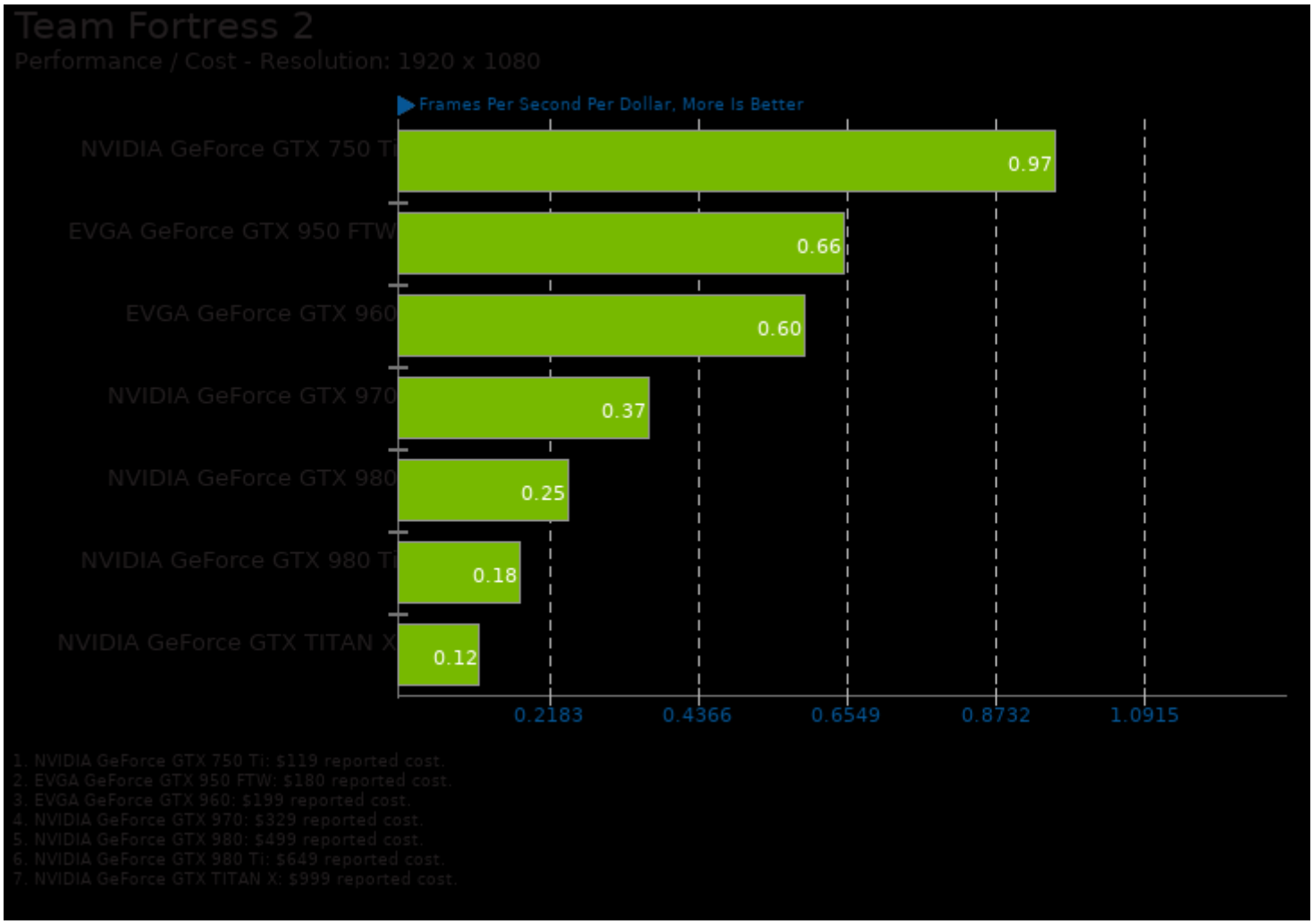
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Tesseract - 1920 x 1080 (FPS/Watt)	**1.85**	1.78	1.78	1.83	1.80	1.57	**1.54**
Normalized	100%	96.22%	96.22%	98.92%	97.3%	84.86%	83.24%
Unigine Valley - 1920 x 1080 - Fullscreen (FPS)	**34.76**	52.81	60.92	86.48	91.37	103.39	**107.35**
Normalized	32.38%	49.19%	56.75%	80.56%	85.11%	96.31%	100%
Standard Deviation	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%
Unigine Valley - Performance / Cost - 1920 x 1080 - Fullscreen (FPS/Dollar)	0.29	0.29	**0.31**	0.26	0.18	0.16	**0.11**
Normalized	93.55%	93.55%	100%	83.87%	58.06%	51.61%	35.48%
Unigine Valley - 1920 x 1080 - Fullscreen (FPS/Watt)	**0.27**	0.32	0.33	0.38	**0.40**	0.38	0.38
Normalized	67.5%	80%	82.5%	95%	100%	95%	95%
DiRT Showdown - 1920 x 1080 - Ultra - 8x MSAA (FPS)	**63.85**	90.65	93.50	**97.08**	96.87	96.34	95.97
Normalized	65.77%	93.38%	96.31%	100%	99.78%	99.24%	98.86%
Standard Deviation	0.1%	0.5%	0.4%	0.3%	1.1%	1%	1.7%
DiRT Showdown - Performance / Cost - 1920 x 1080 - Ultra - 8x MSAA (FPS/Dollar)	**0.54**	0.50	0.47	0.30	0.19	0.15	**0.10**
Normalized	100%	92.59%	87.04%	55.56%	35.19%	27.78%	18.52%
DiRT Showdown - 1920 x 1080 - Ultra - 8x MSAA (FPS/Watt)	0.55	**0.61**	0.60	0.57	0.54	0.47	**0.44**
Normalized	90.16%	100%	98.36%	93.44%	88.52%	77.05%	72.13%
Meta Performance Per Dollar - P.P.D (Performance/Dollar)	**0.731818181 81818**	0.617272727 27273	0.597272727 27273	0.408181818 18182	0.273636363 63636	0.215454545 45455	**0.140909090 90909**
Normalized	100%	84.35%	81.61%	55.78%	37.39%	29.44%	19.25%
Meta Performance Per Watt - P.P.W	0.807272727 27273	0.82	**0.849090909 09091**	0.844545454 54545	0.825454545 45455	0.720909090 90909	**0.701818181 81818**
Normalized	95.07%	96.57%	100%	99.46%	97.22%	84.9%	82.66%

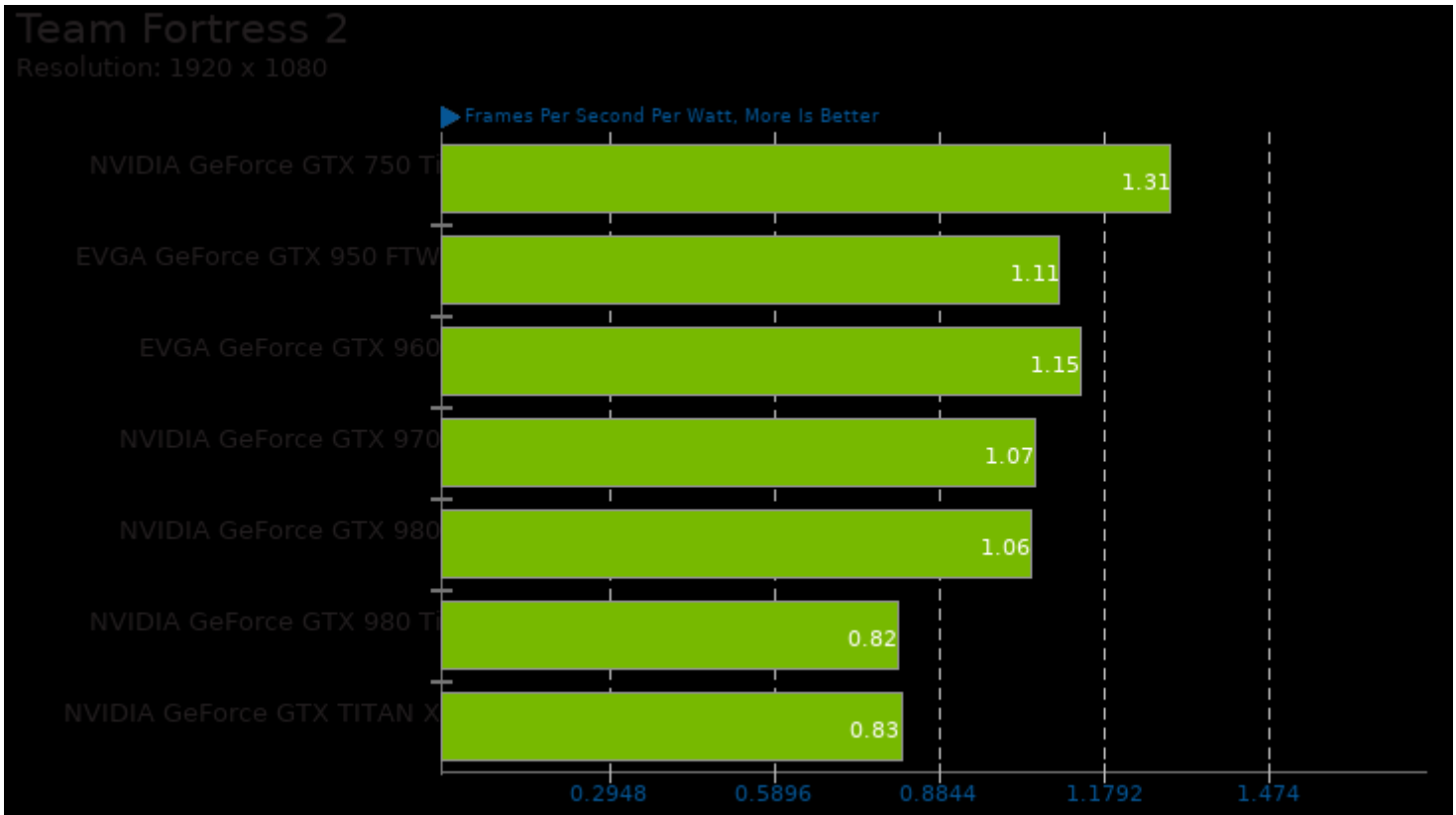
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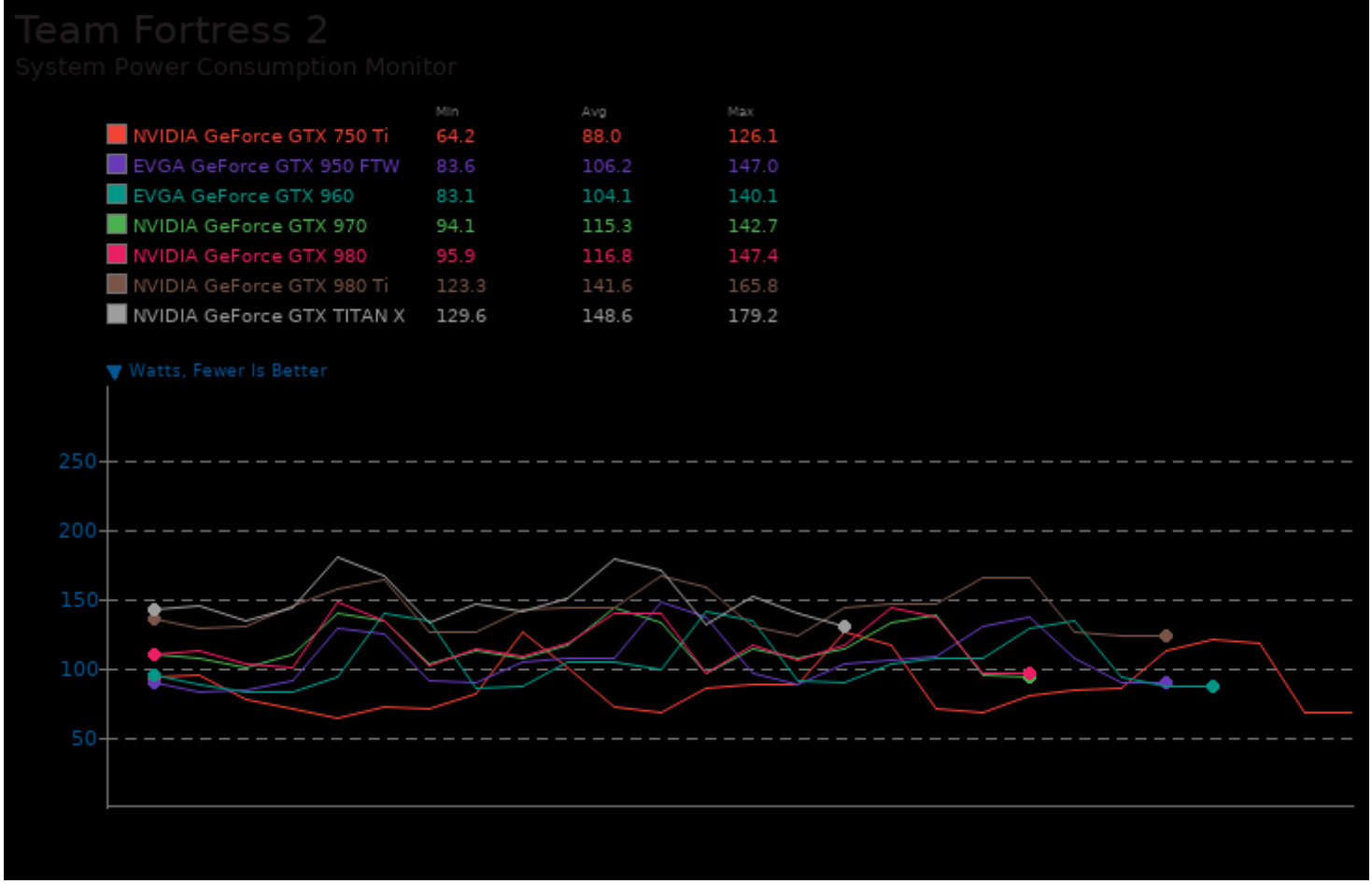


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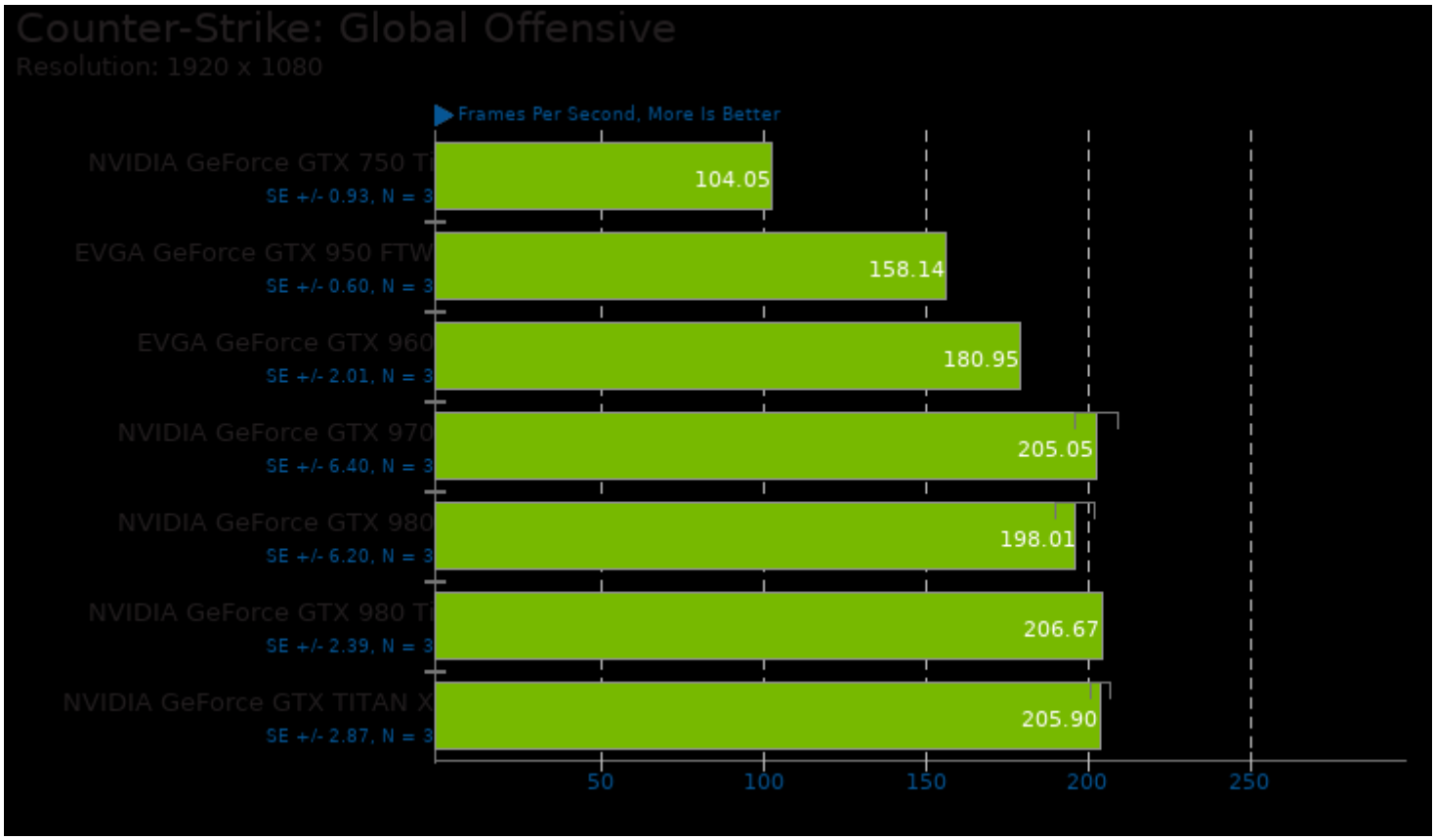


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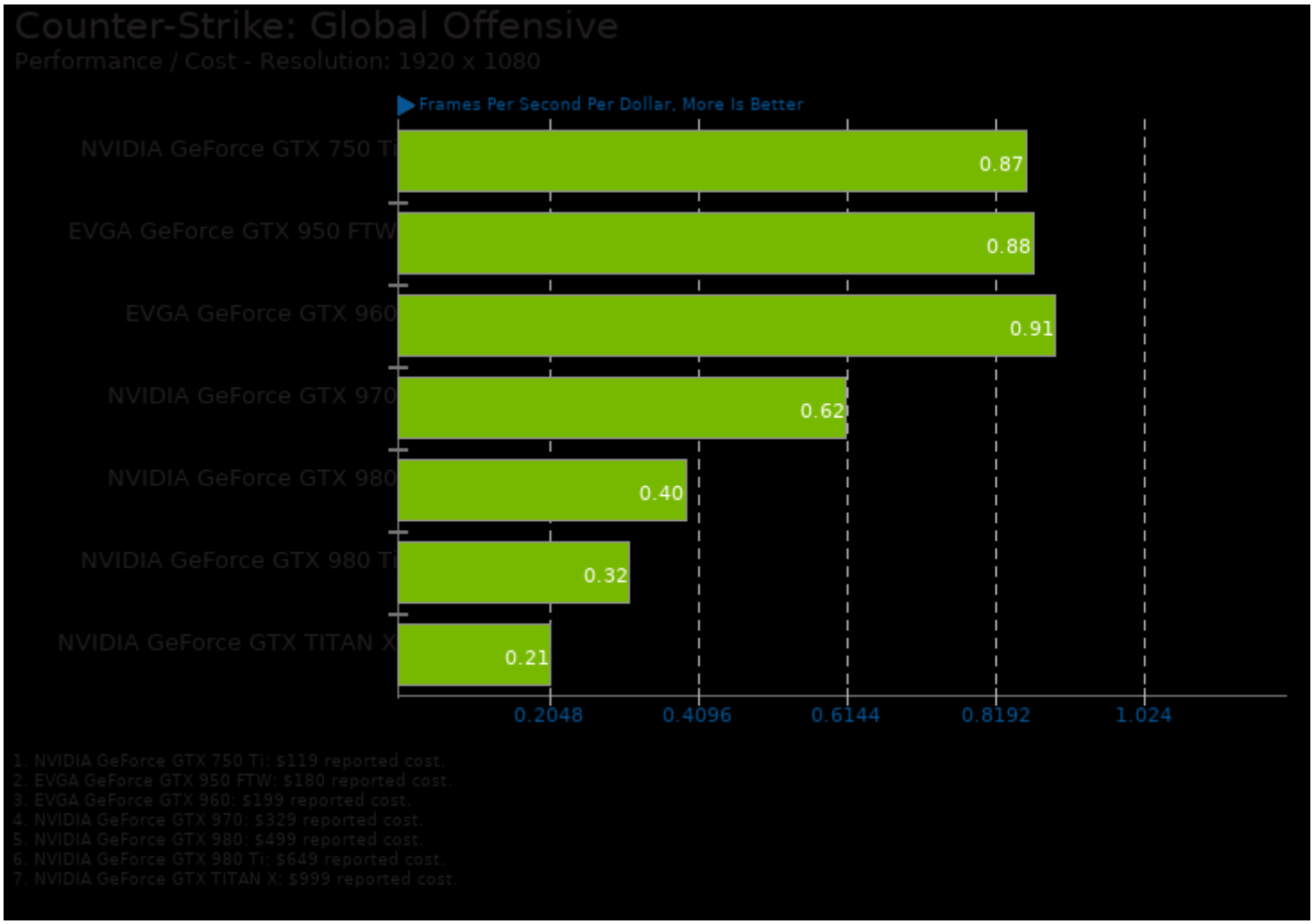




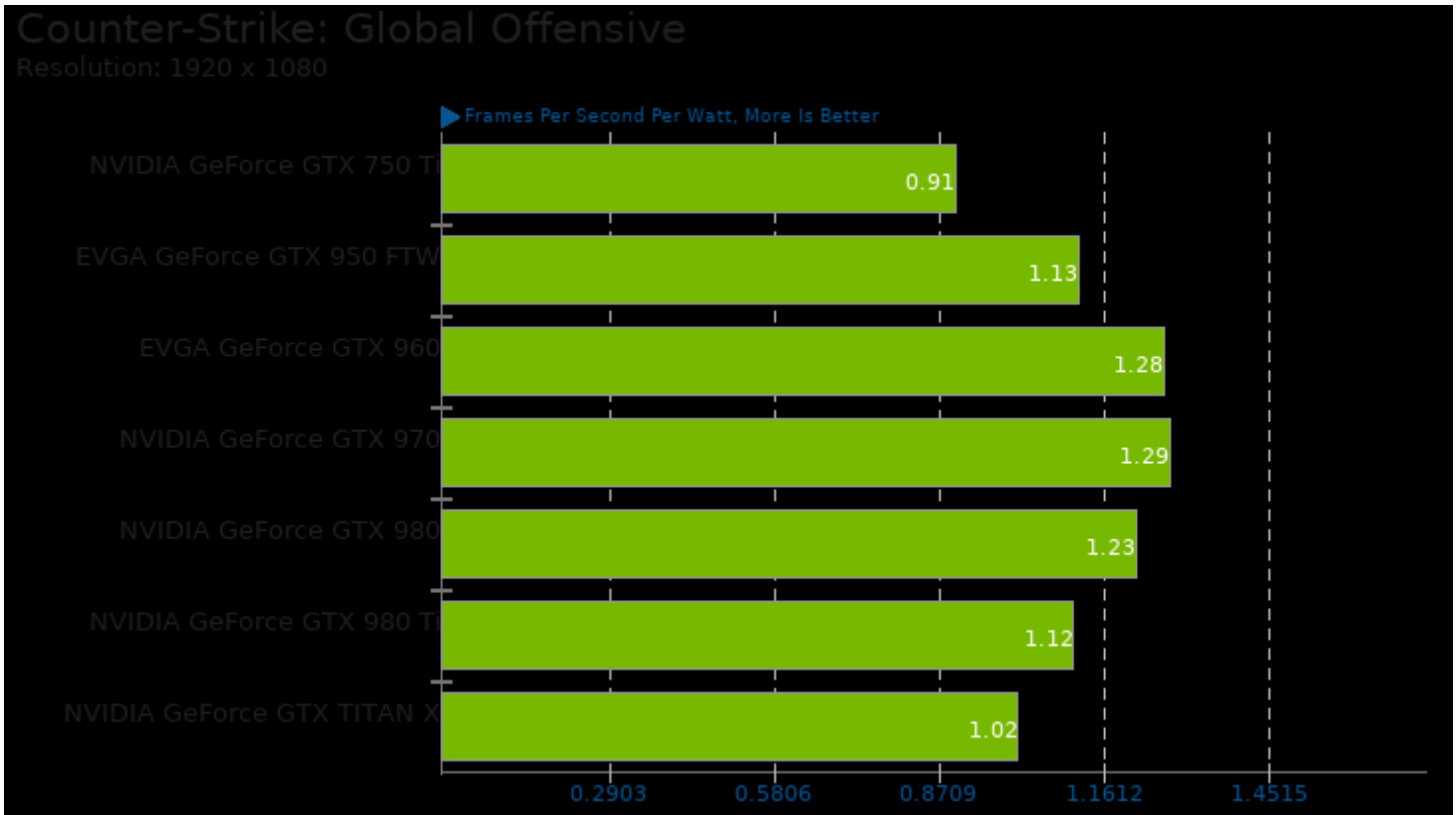
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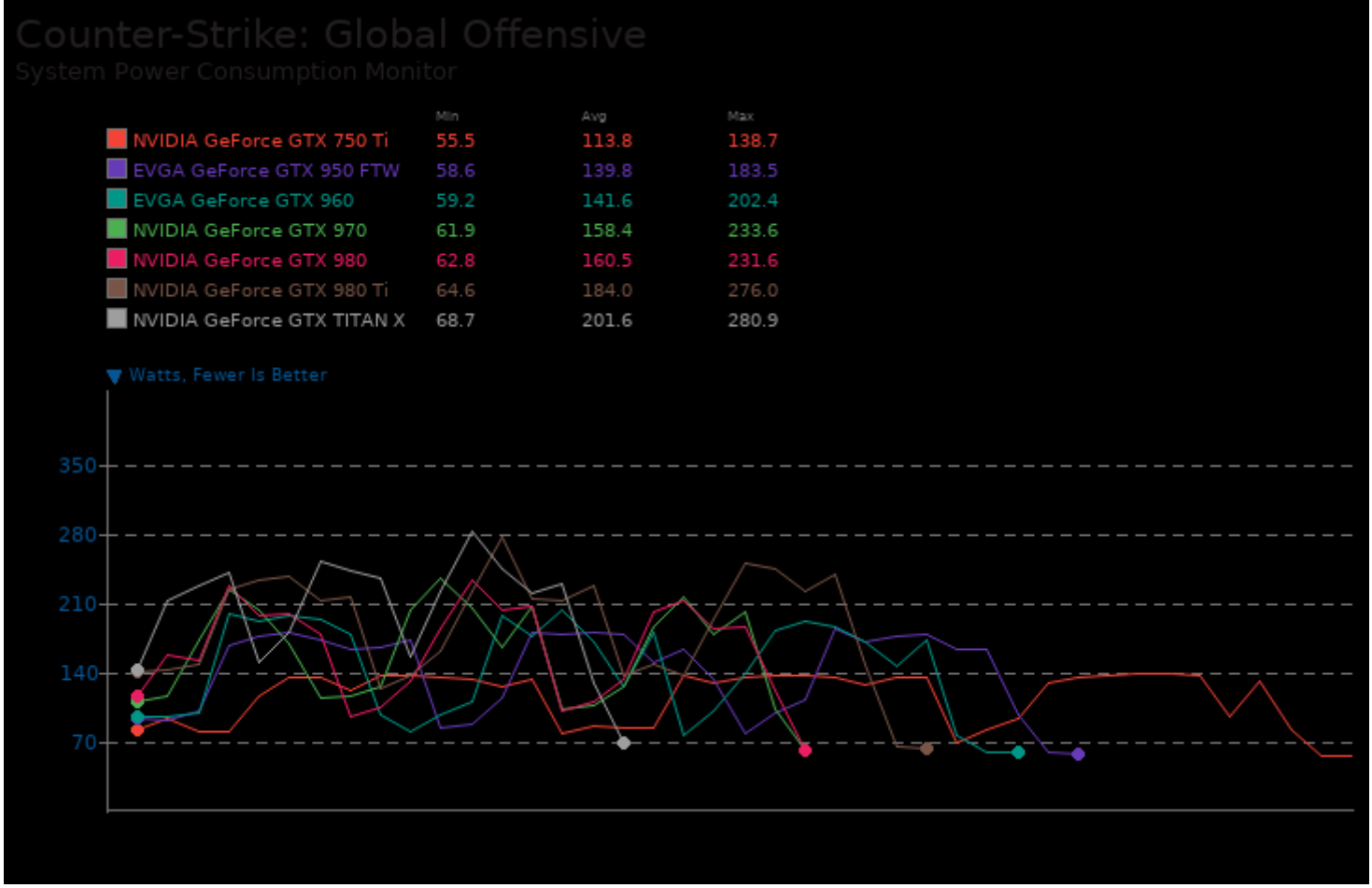


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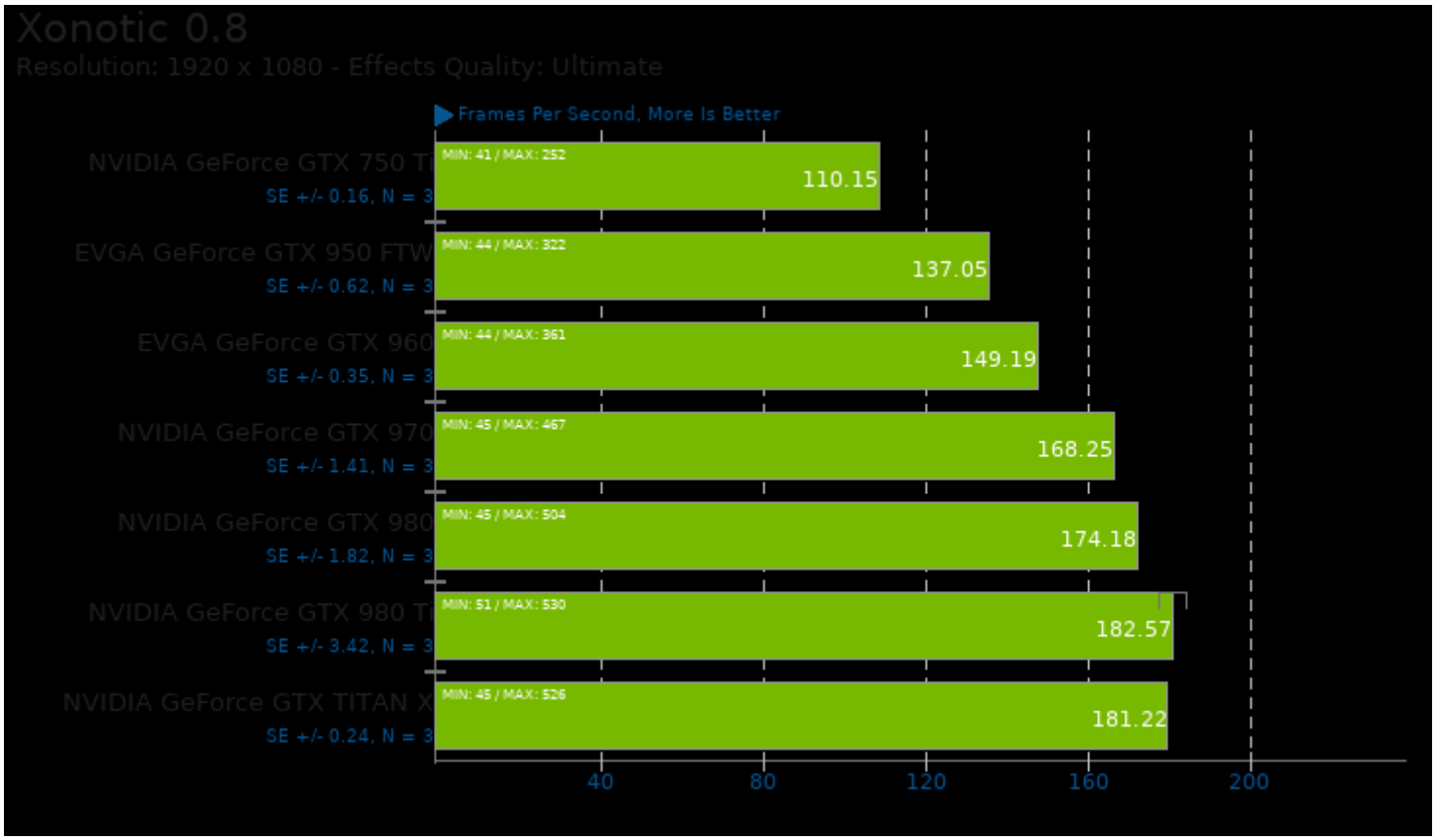


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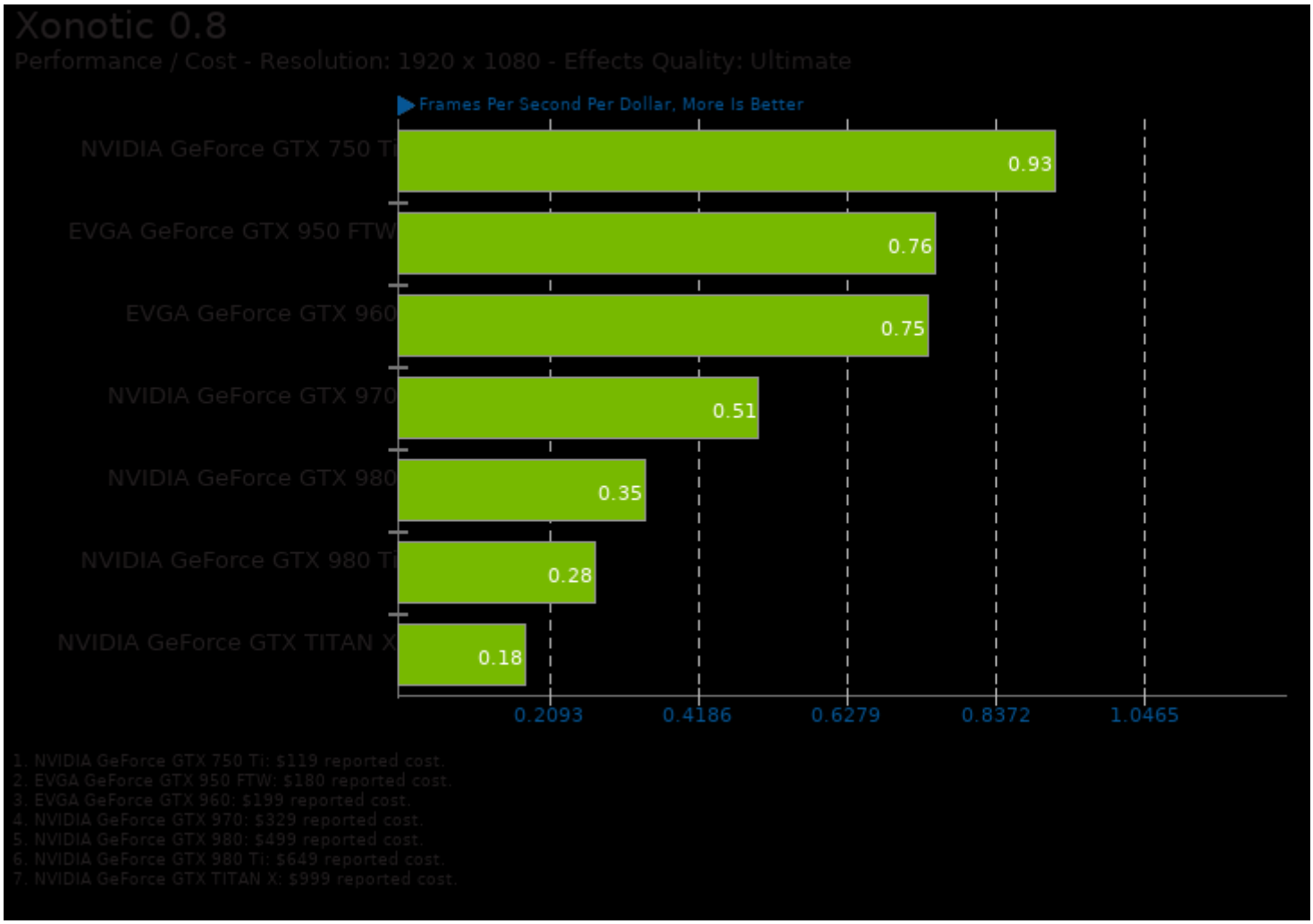




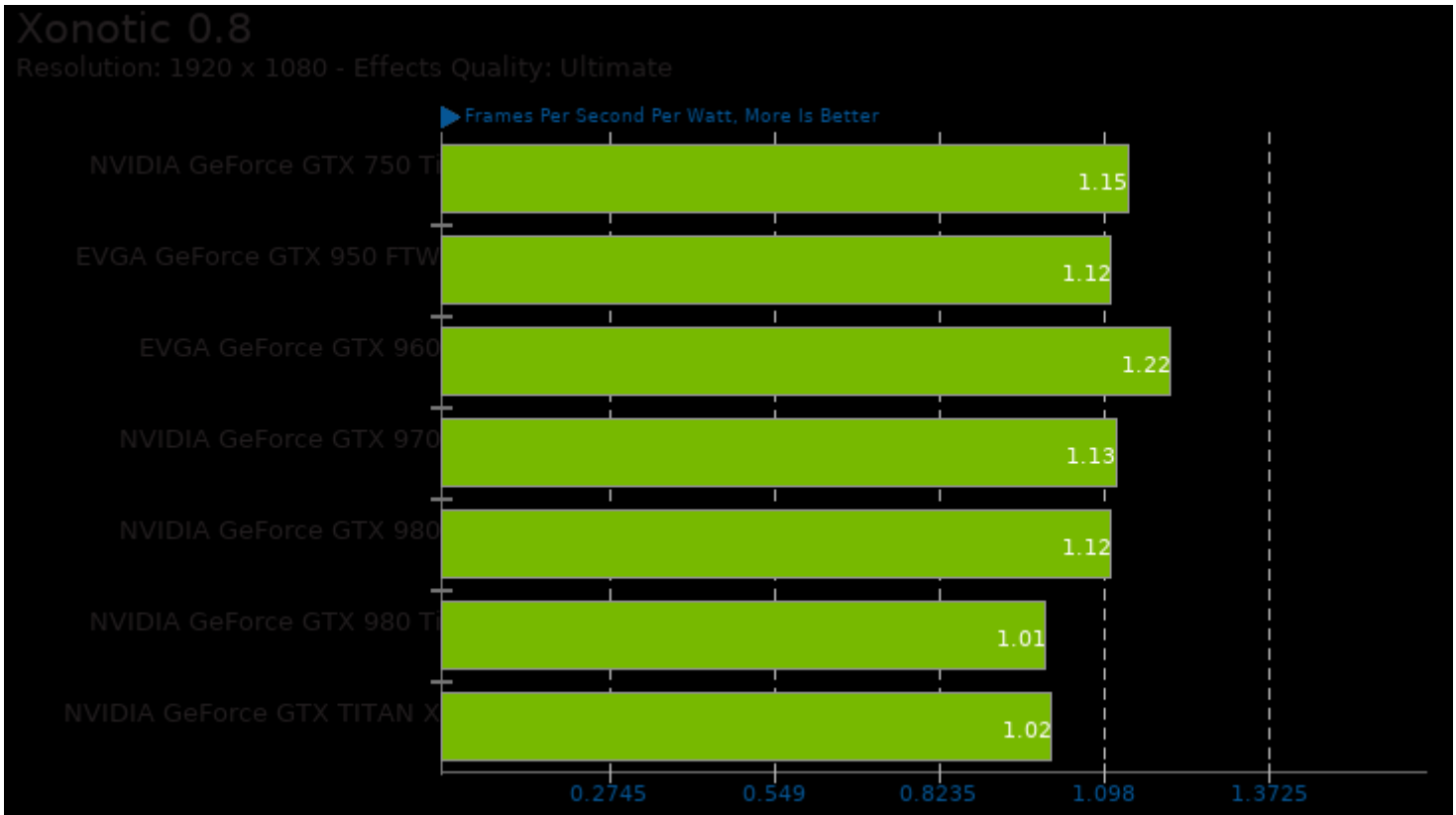
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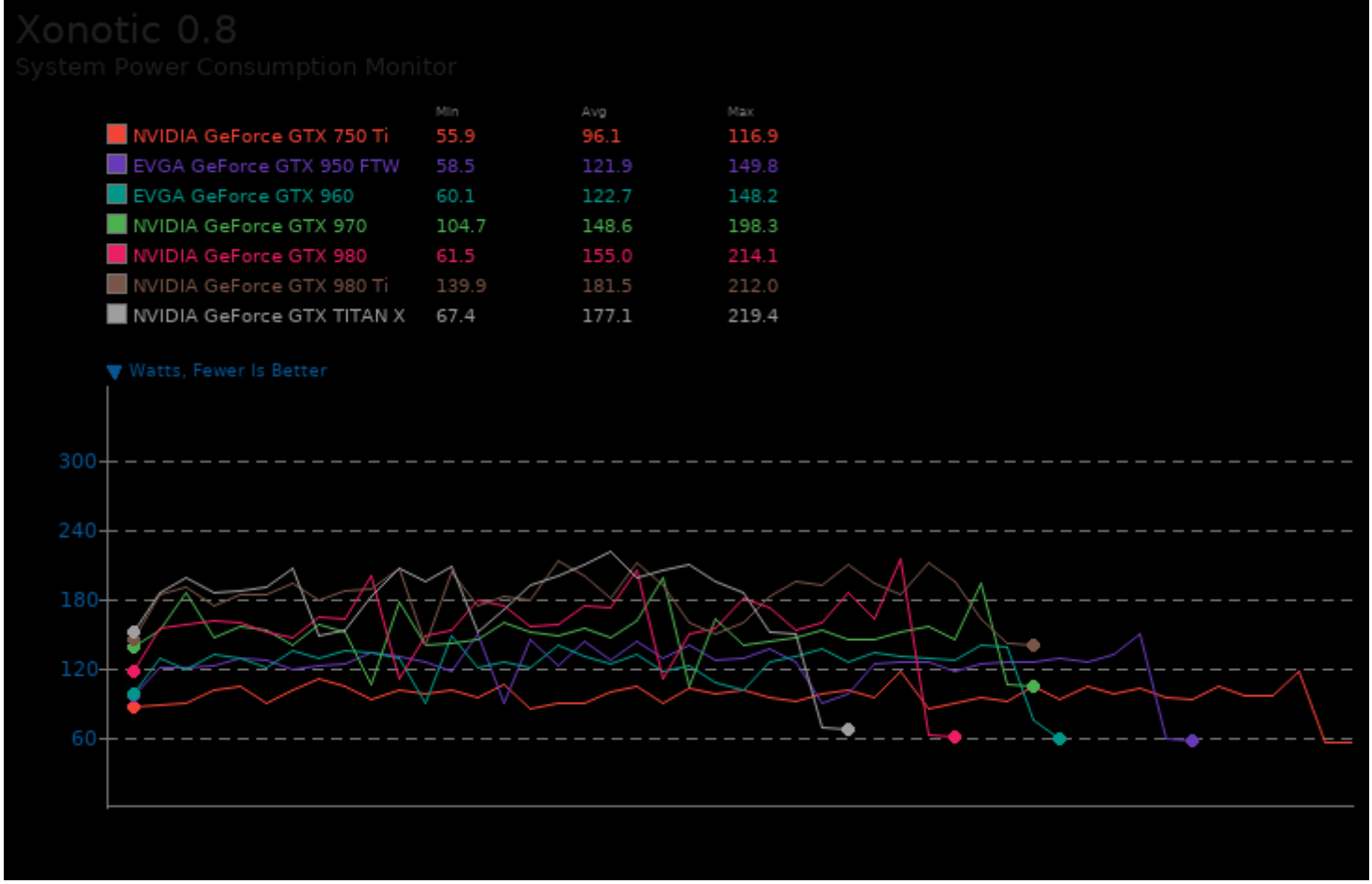


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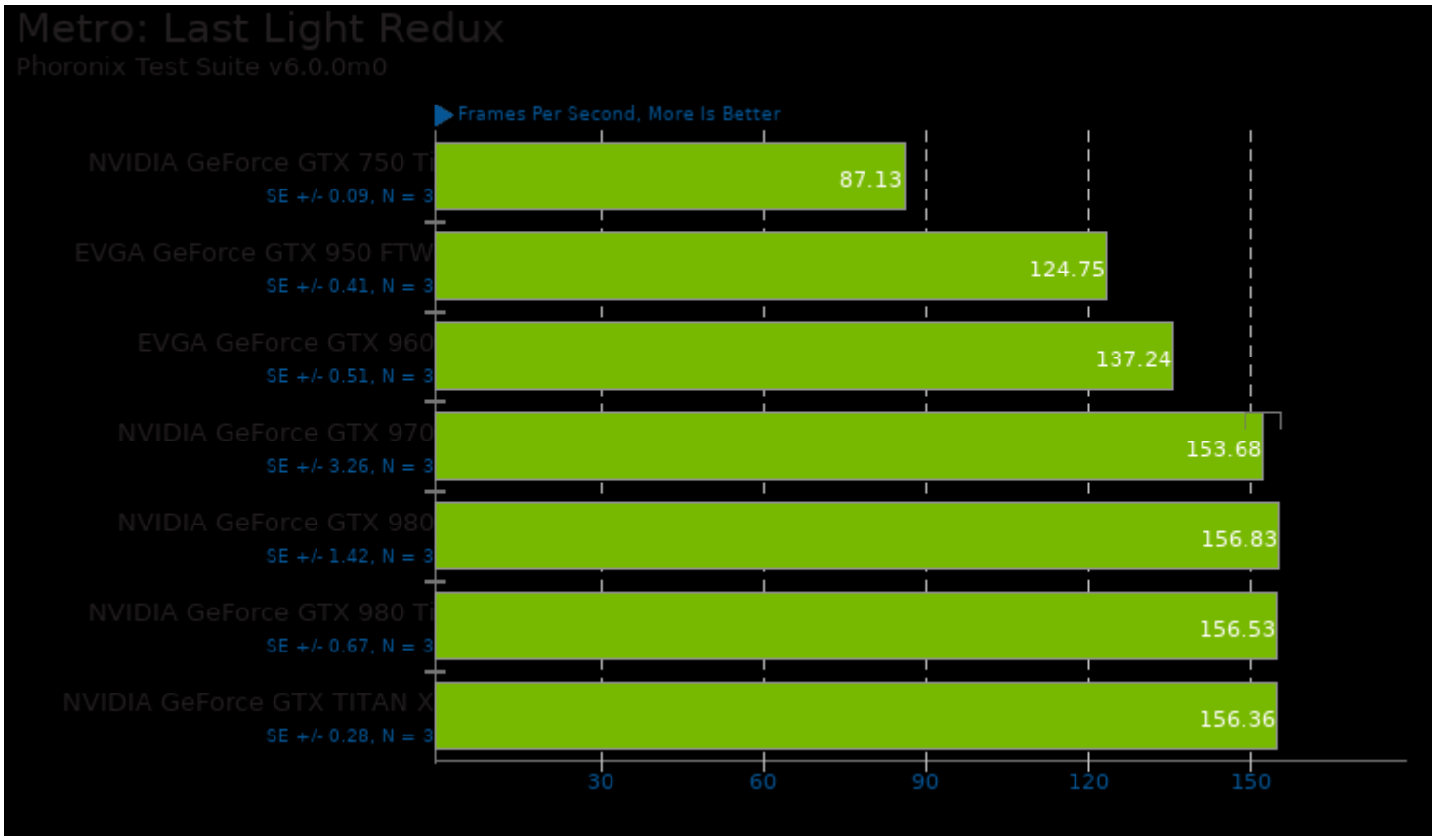


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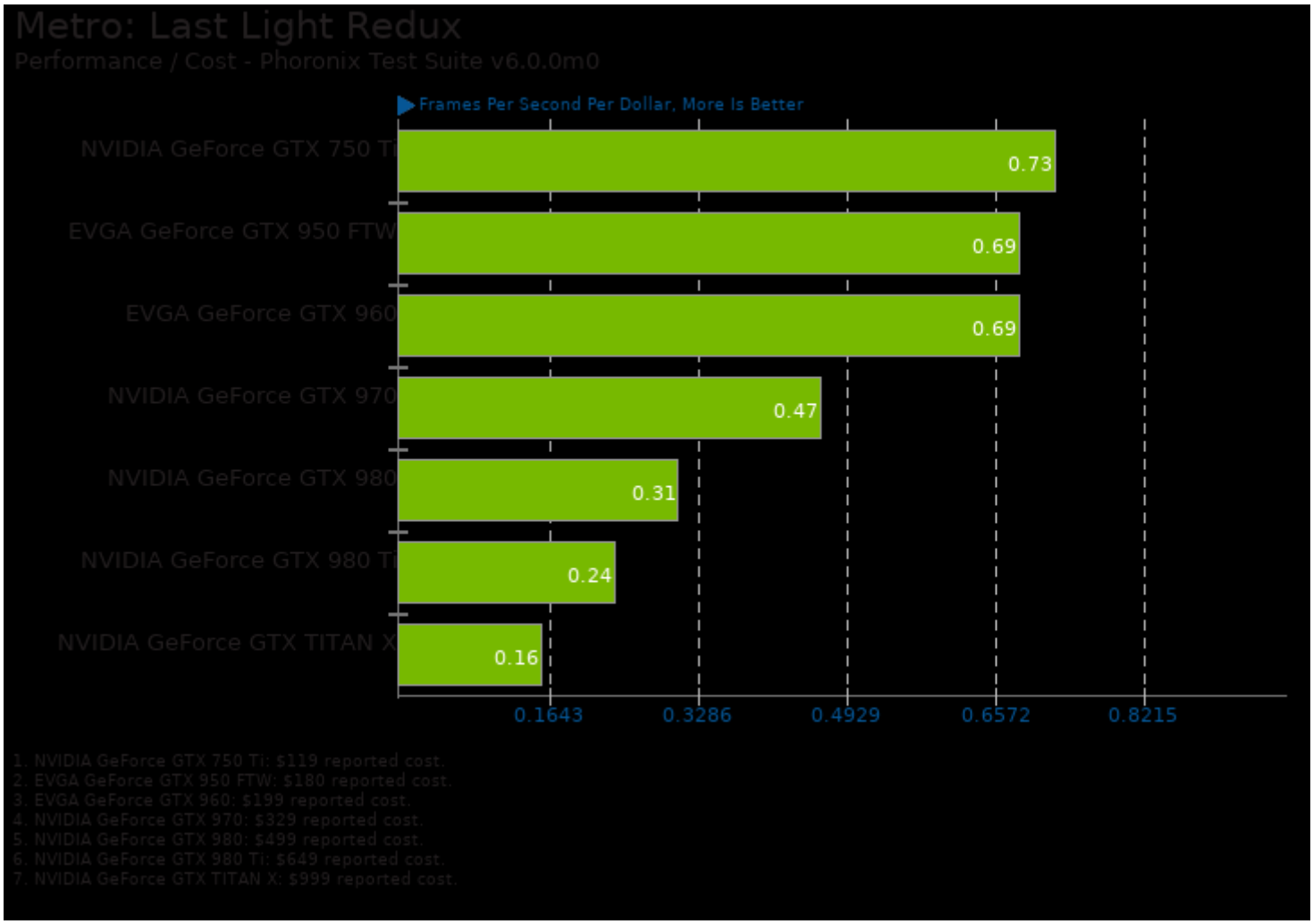




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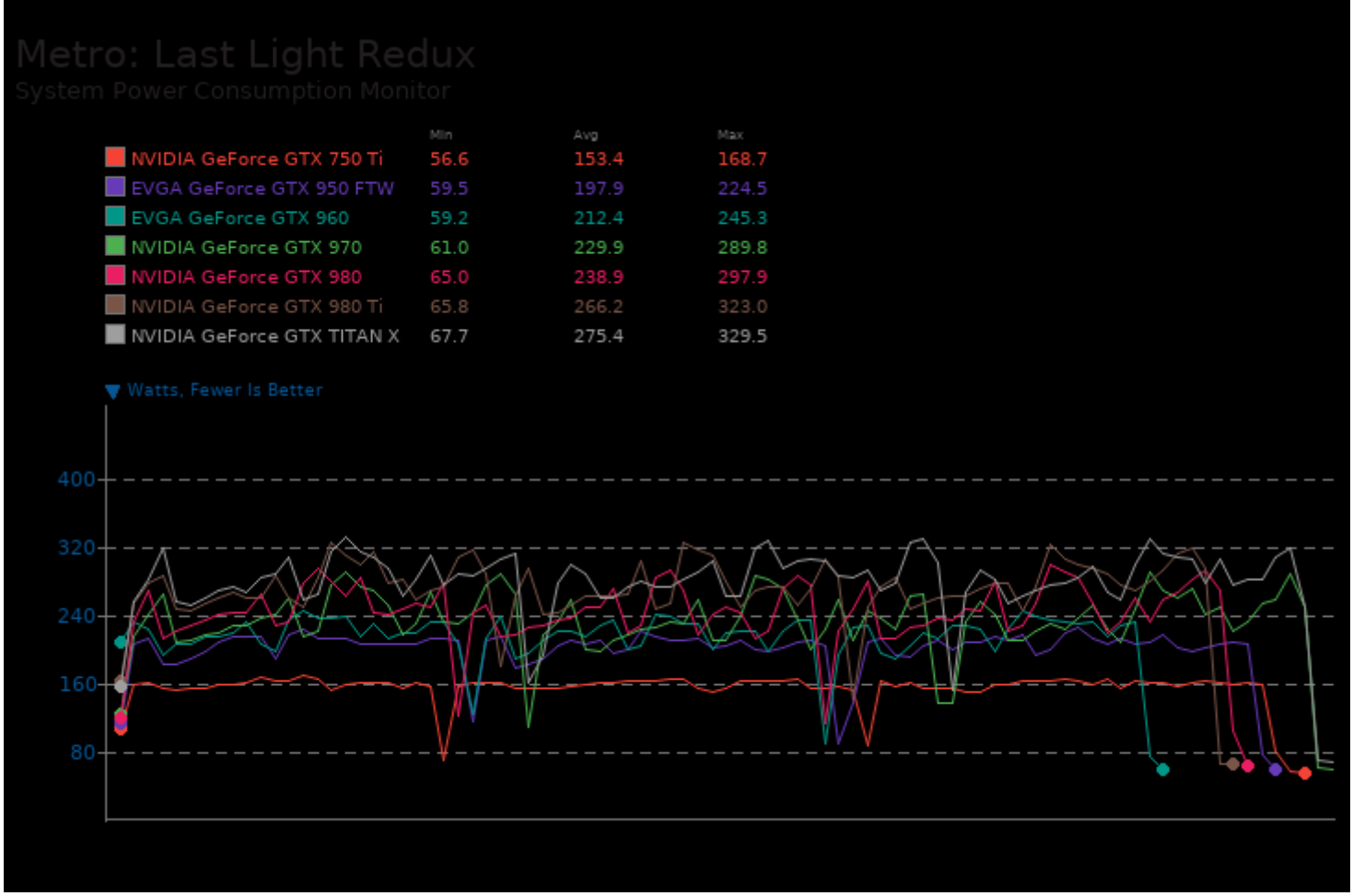


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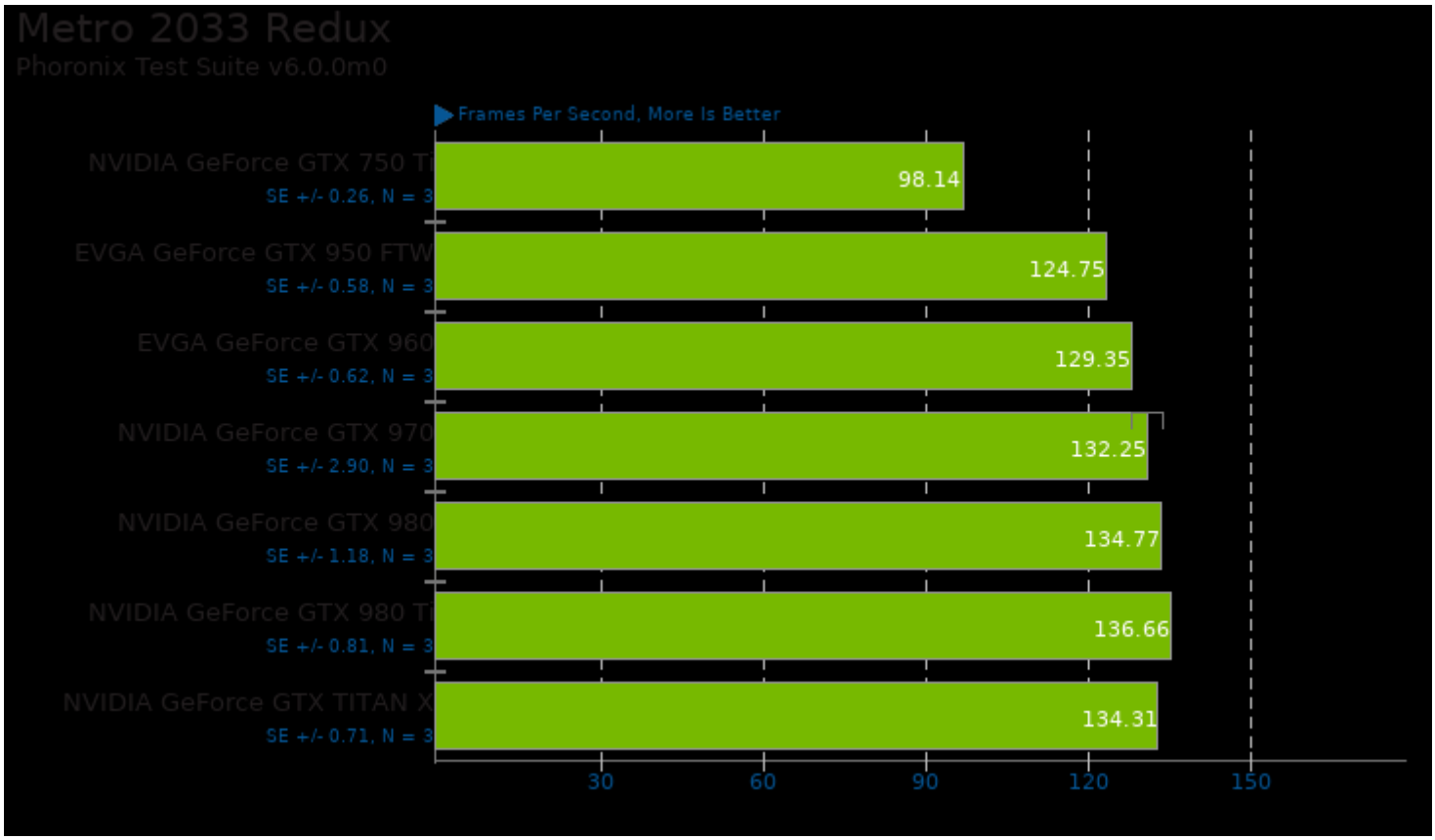


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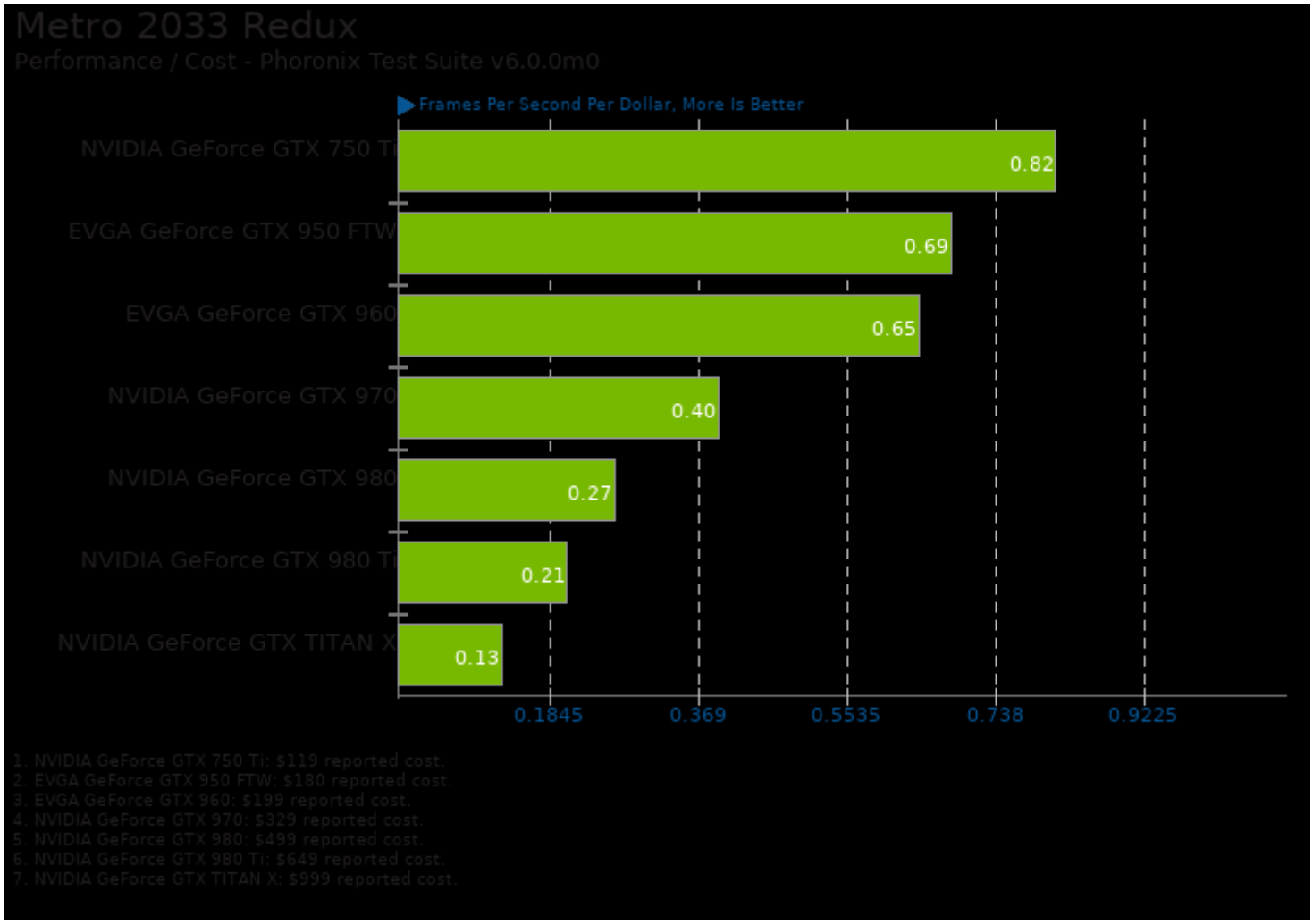




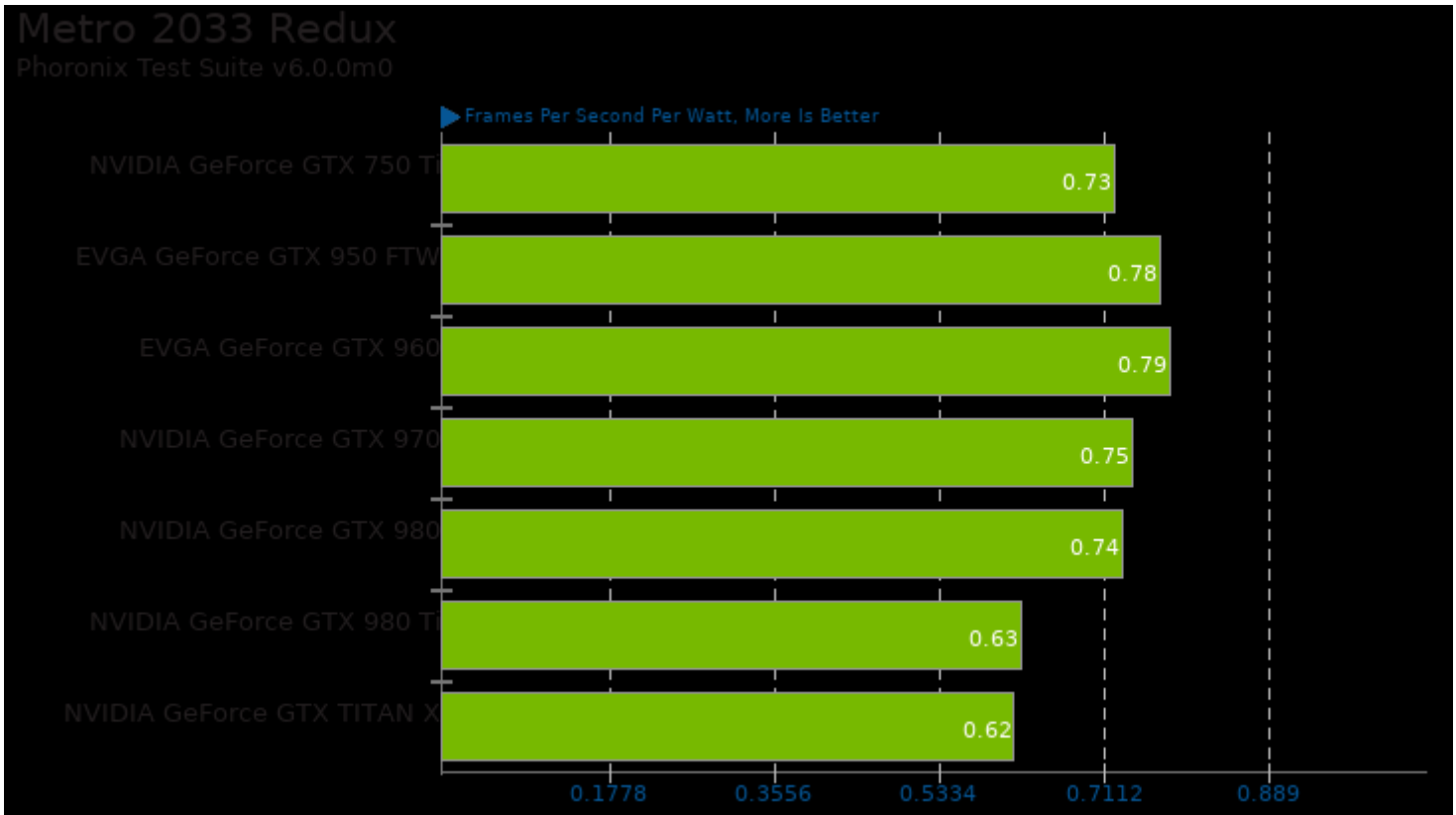
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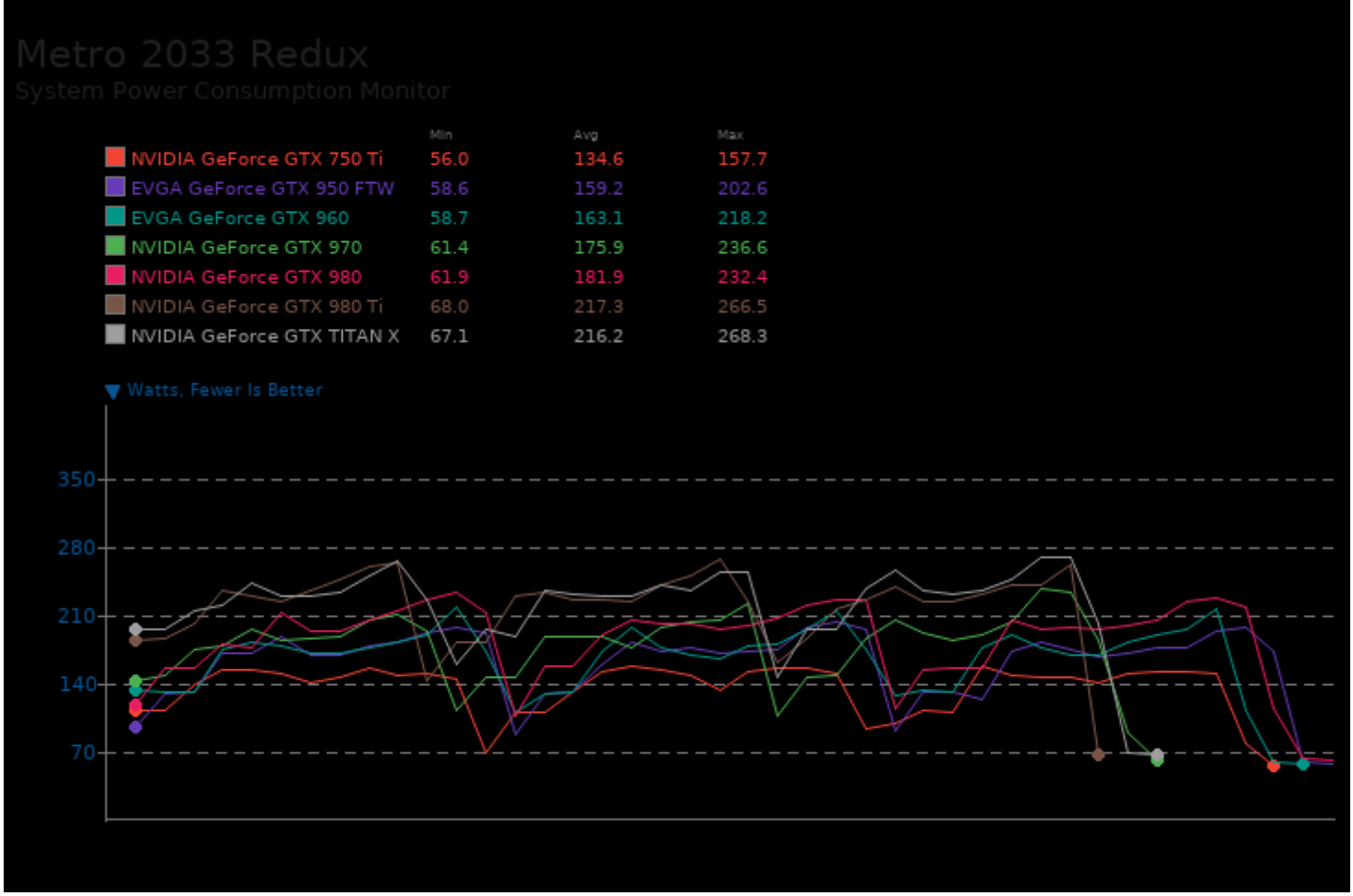


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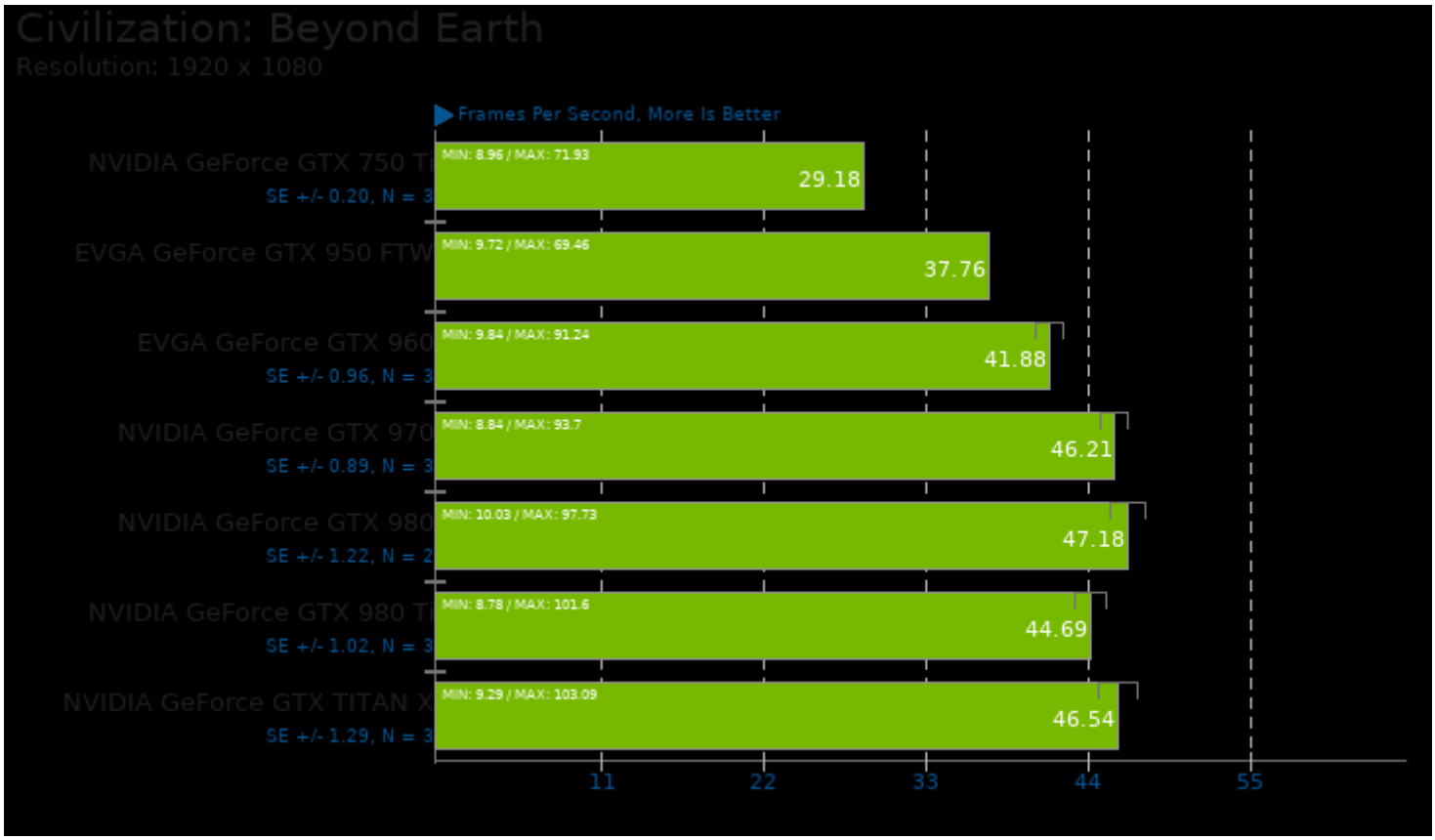


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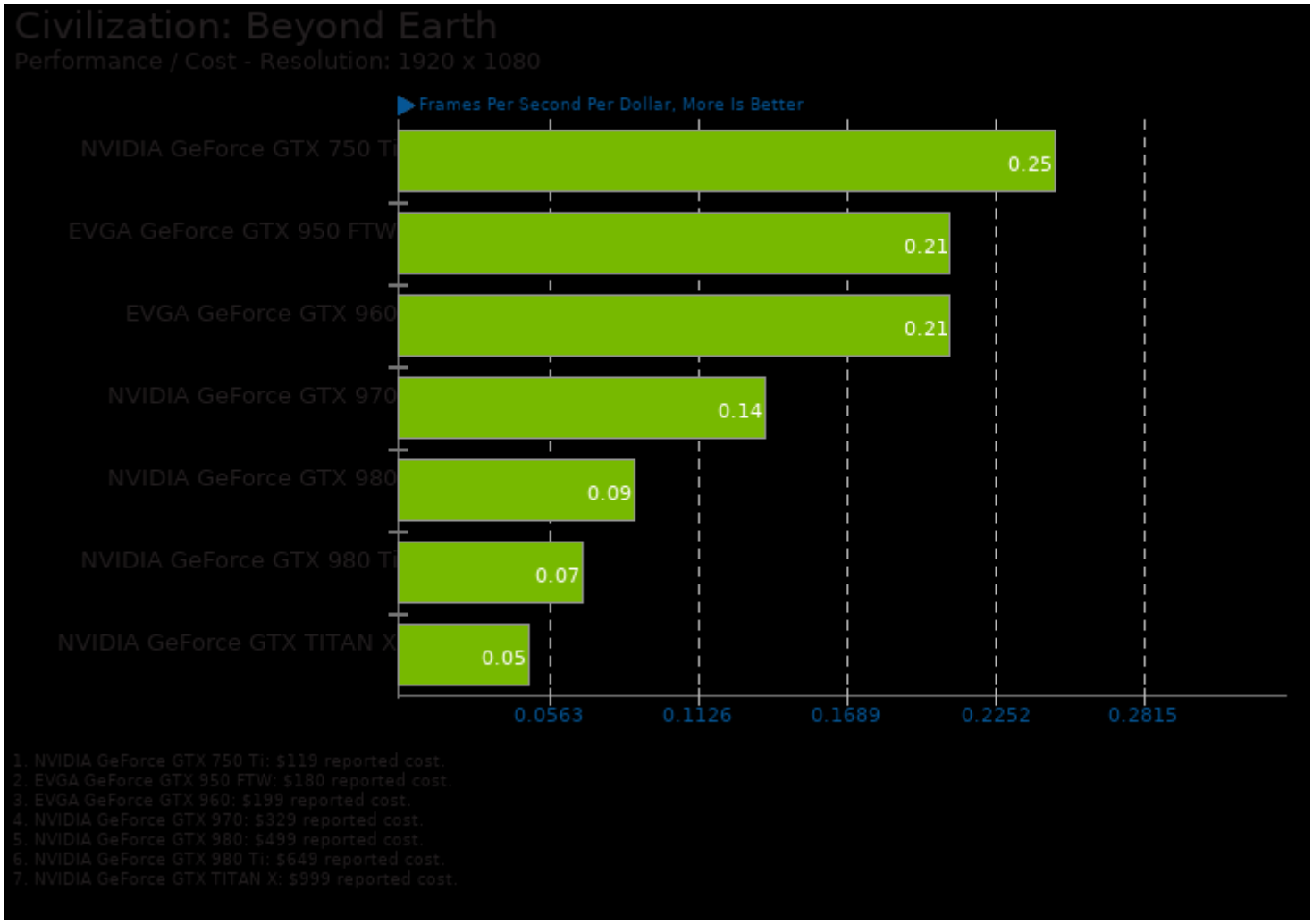




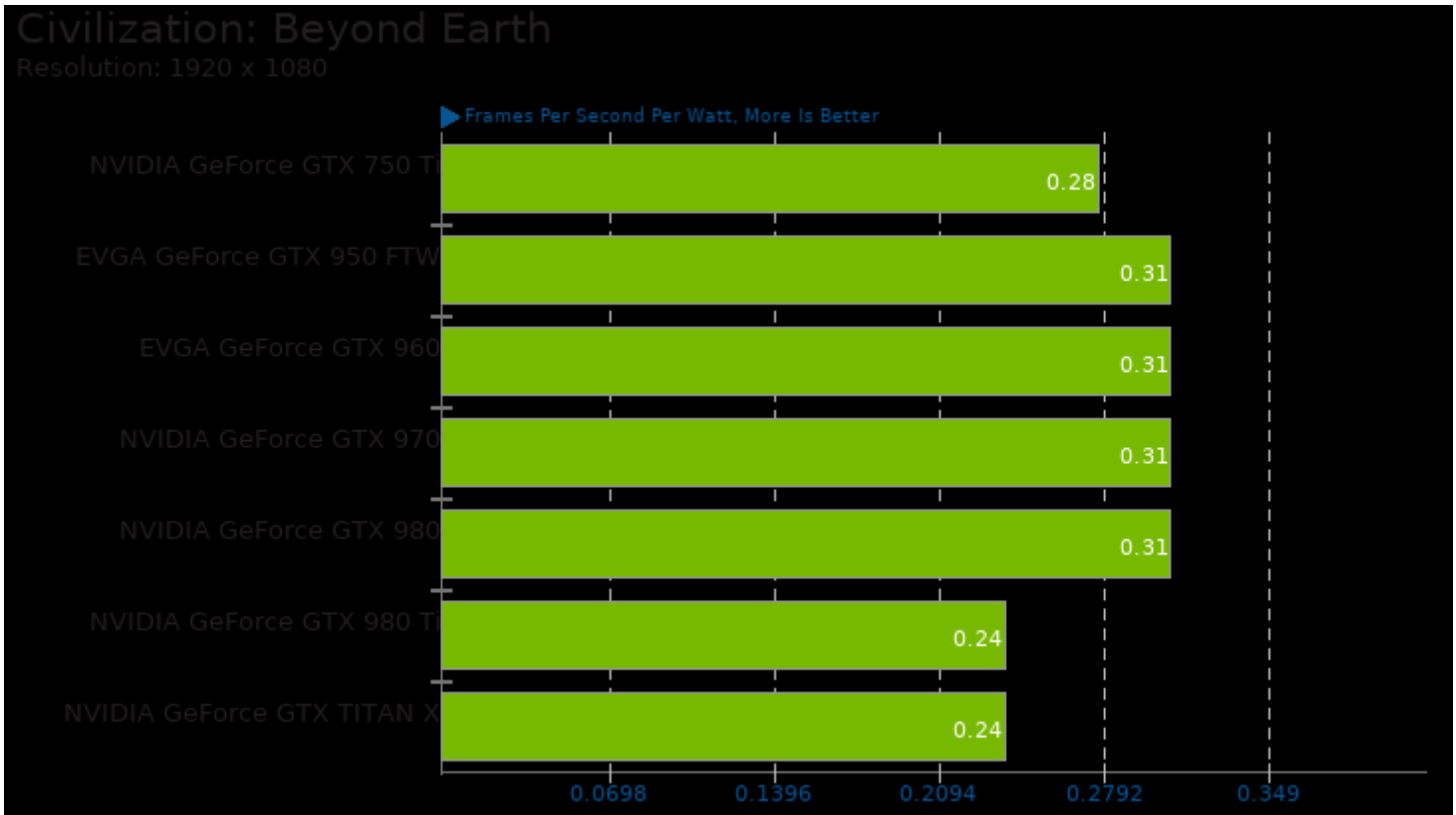
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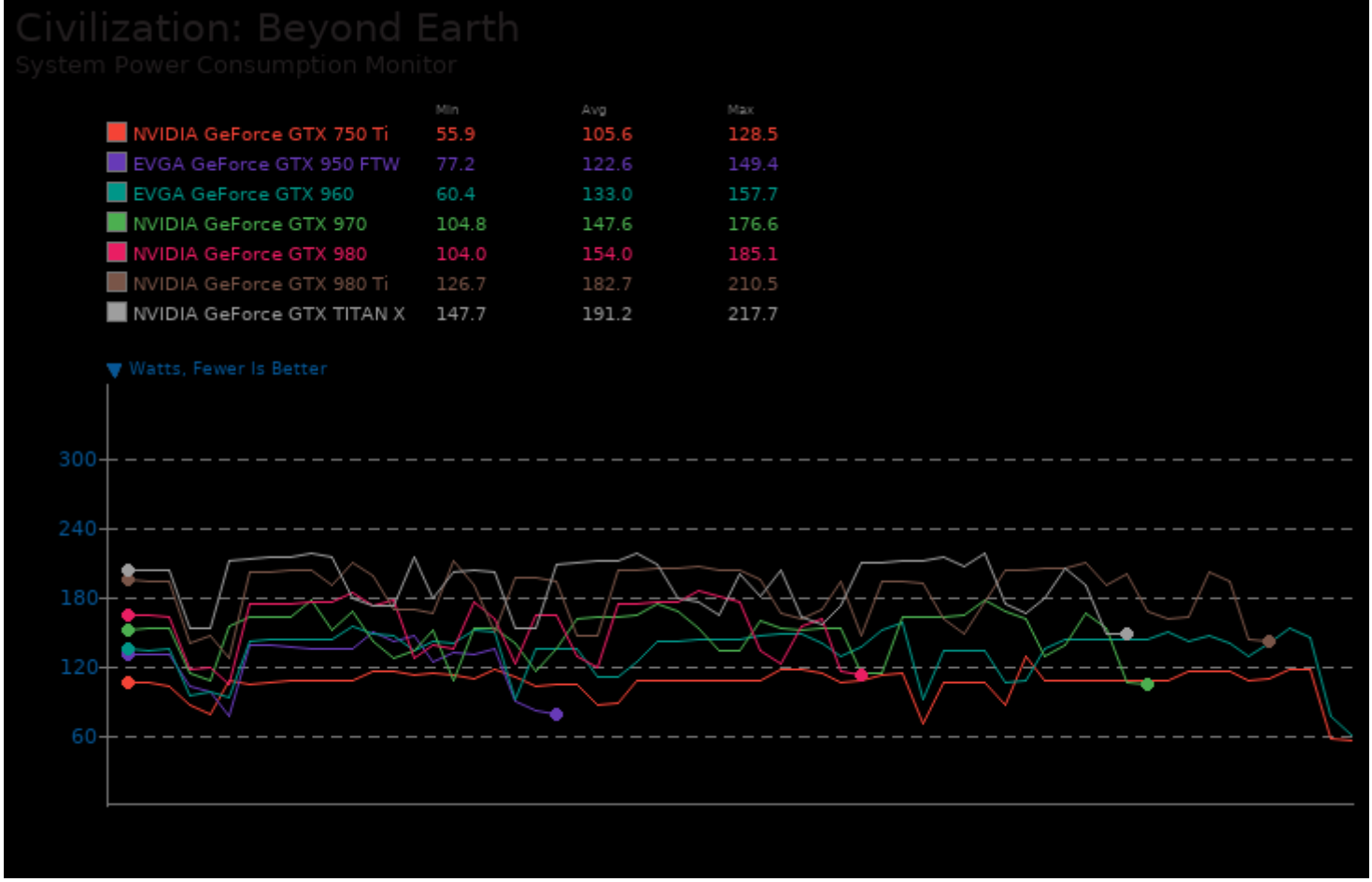


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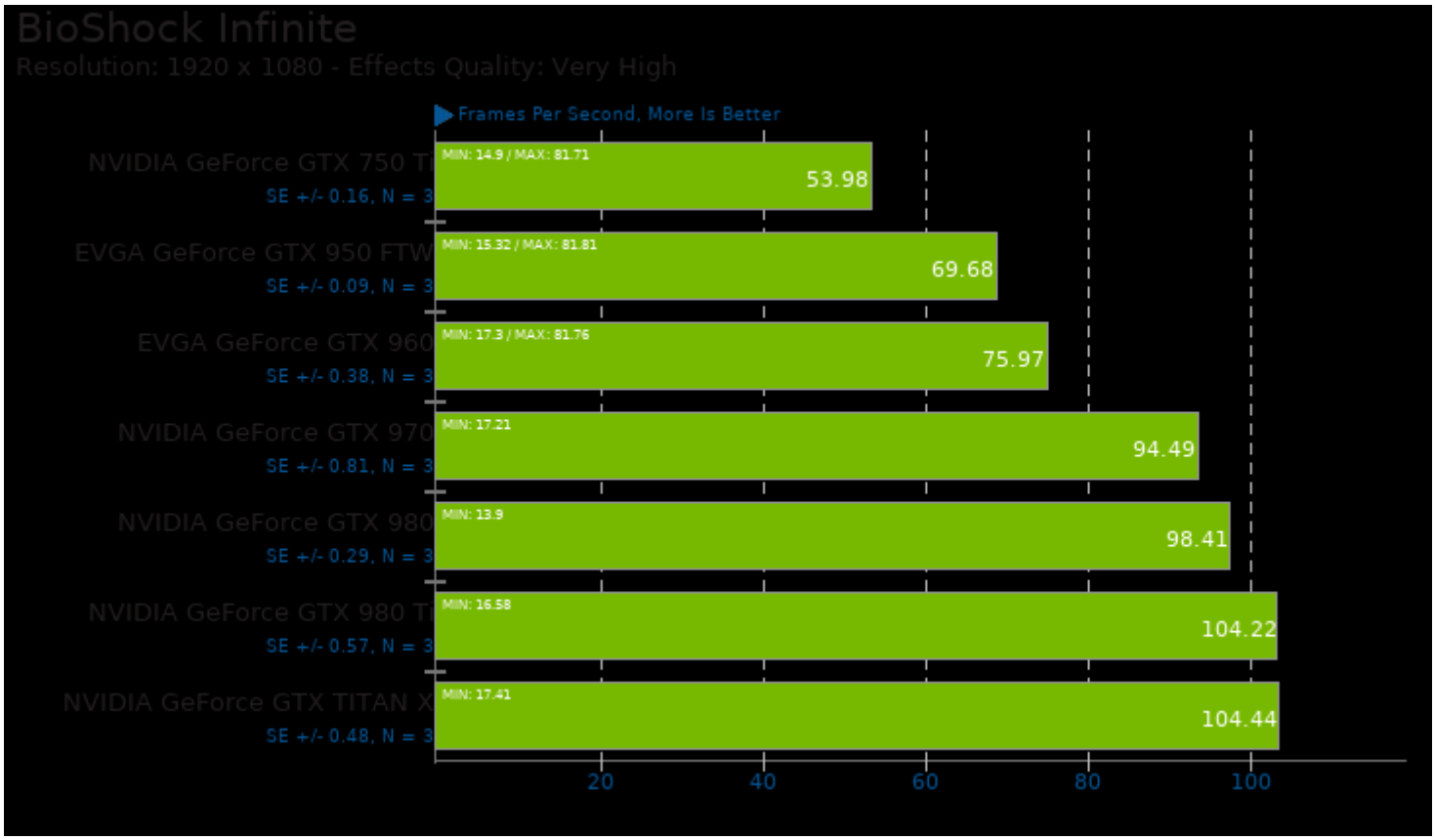


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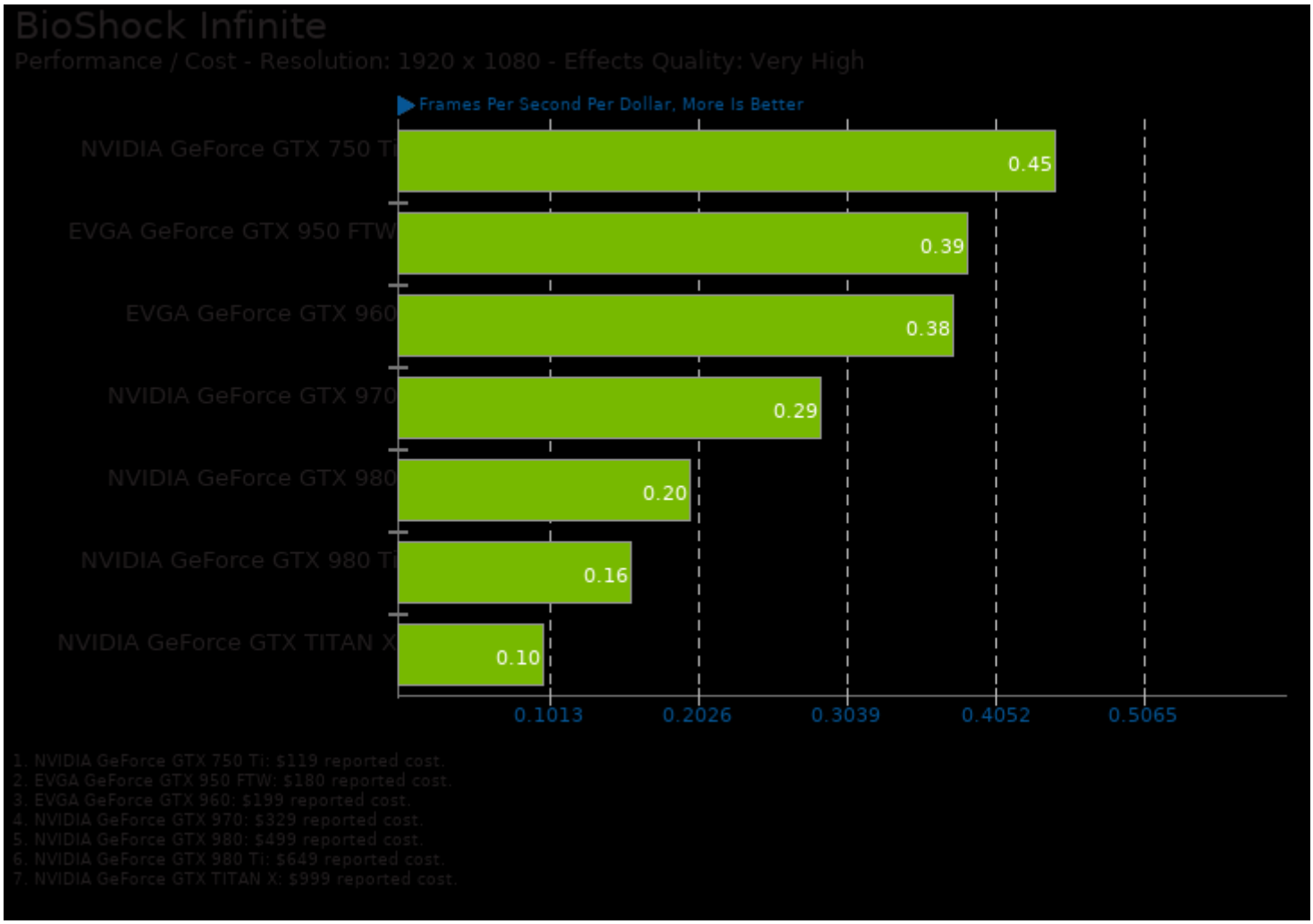




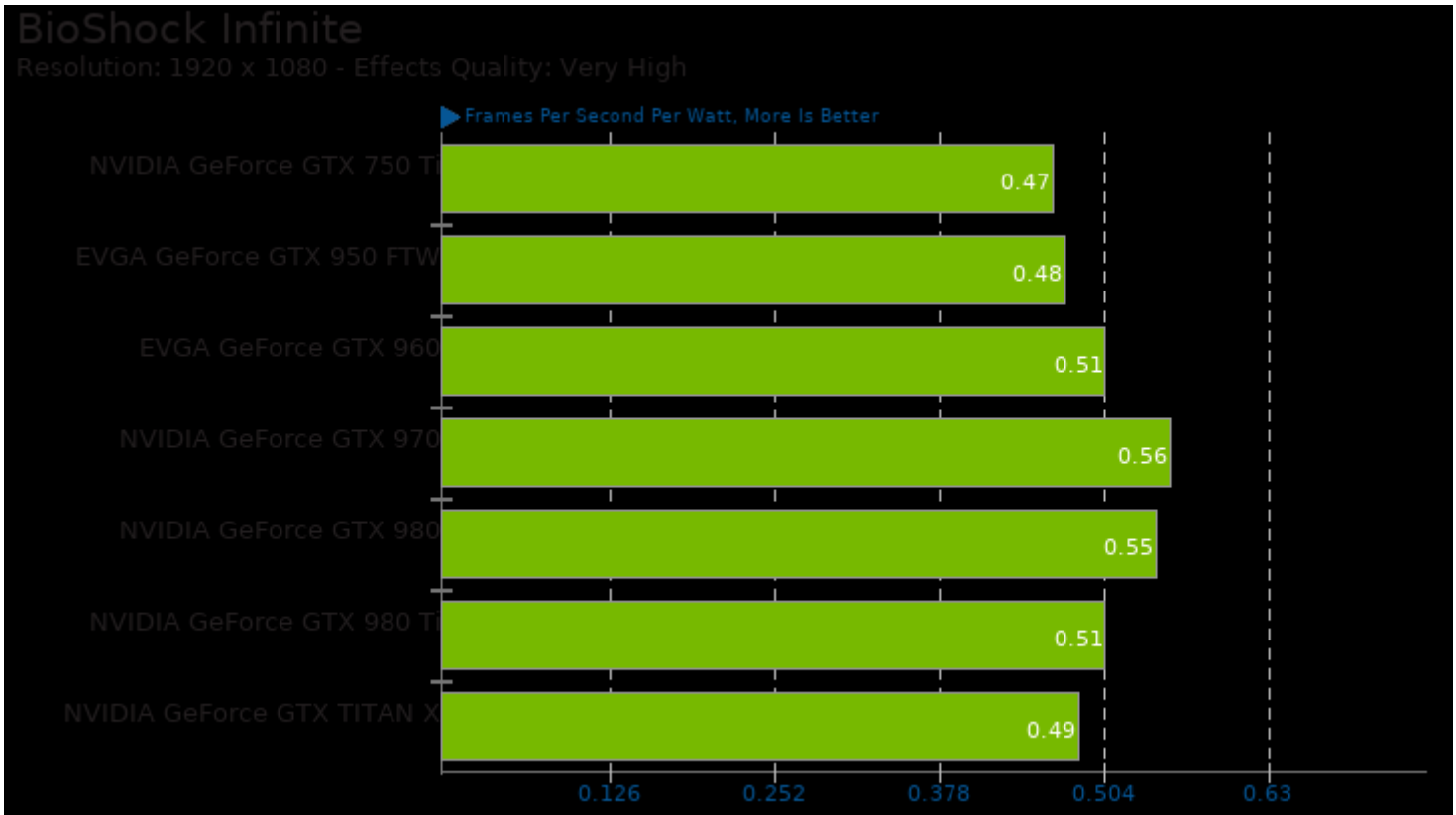
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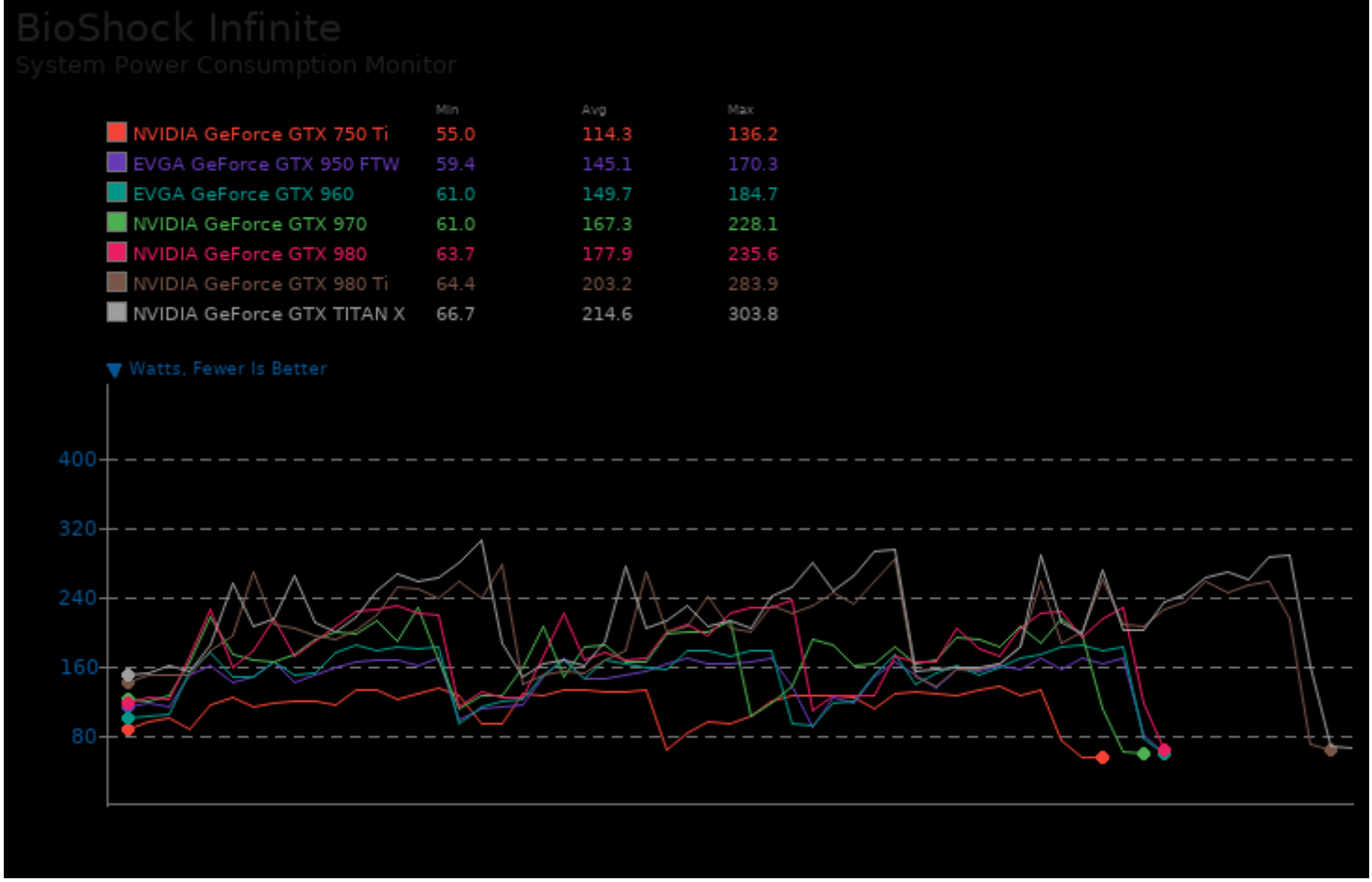


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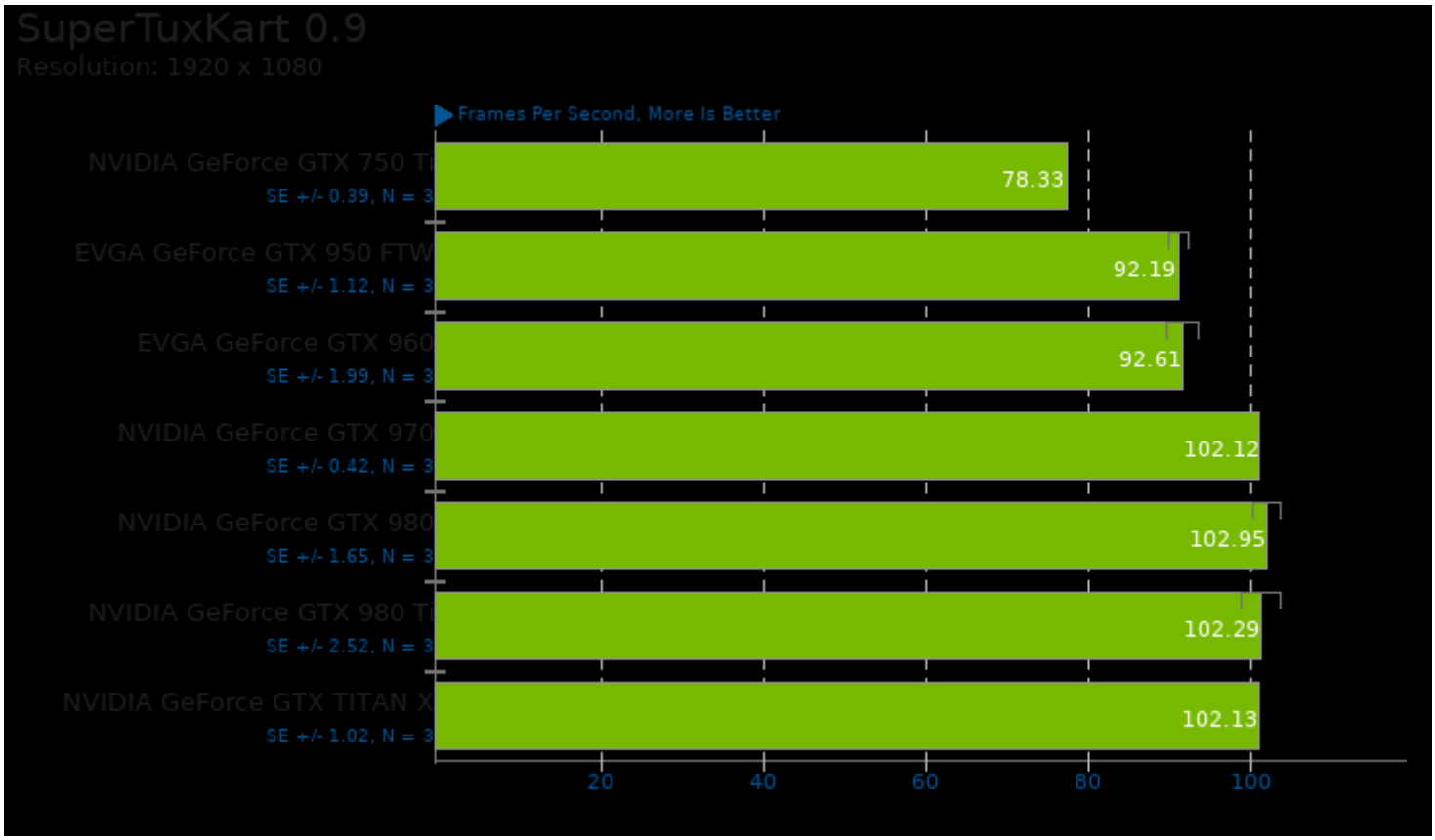


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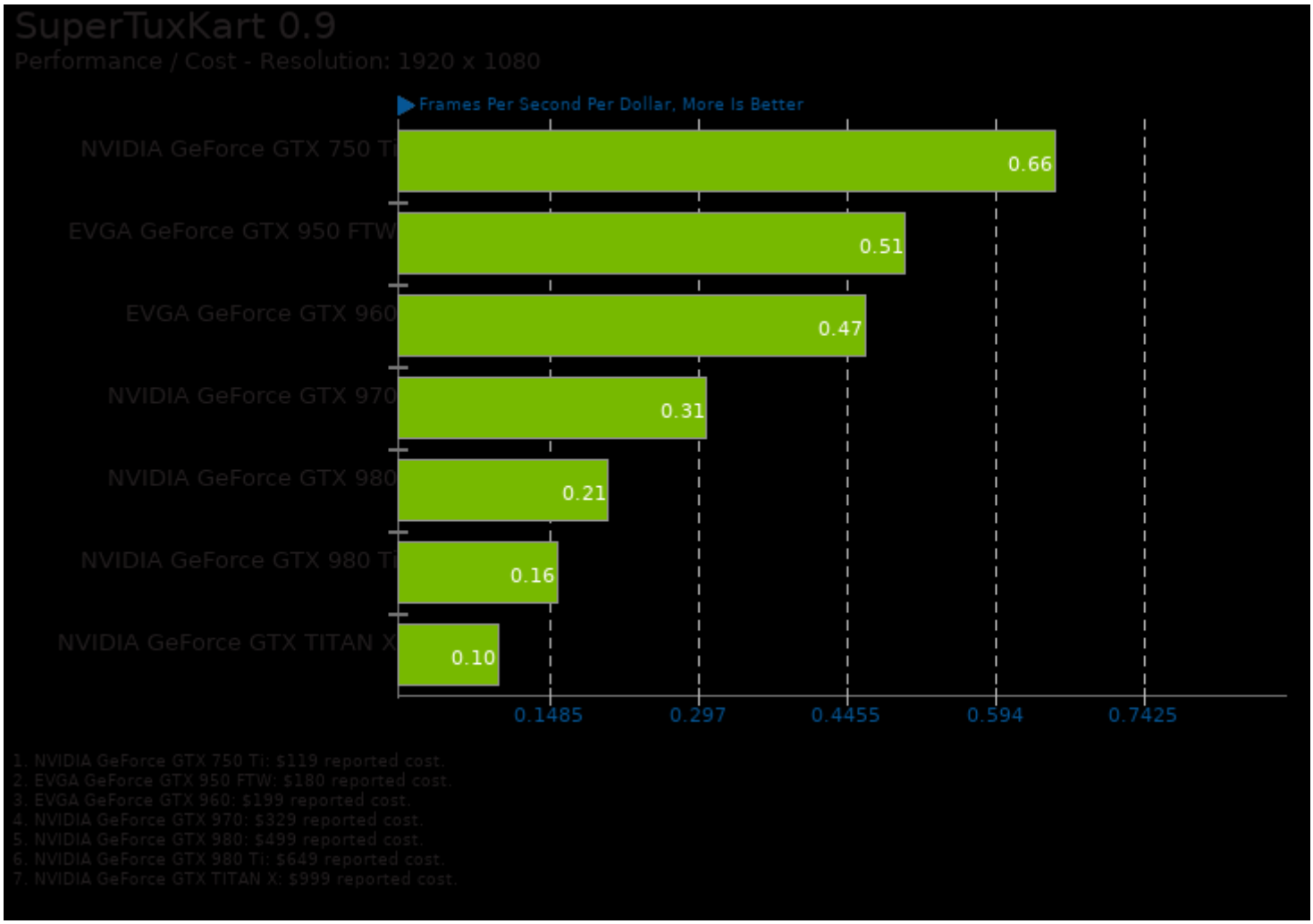




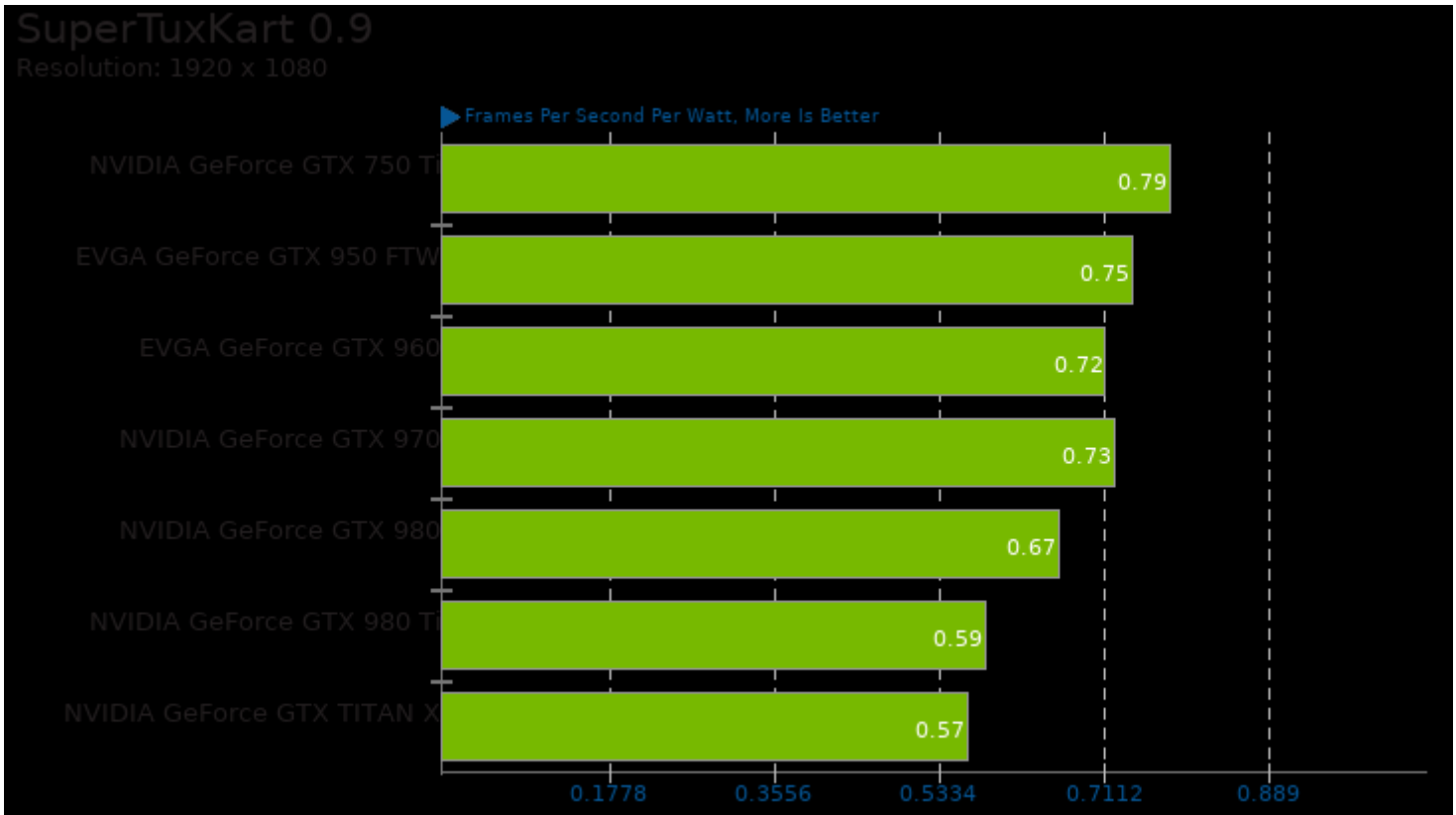
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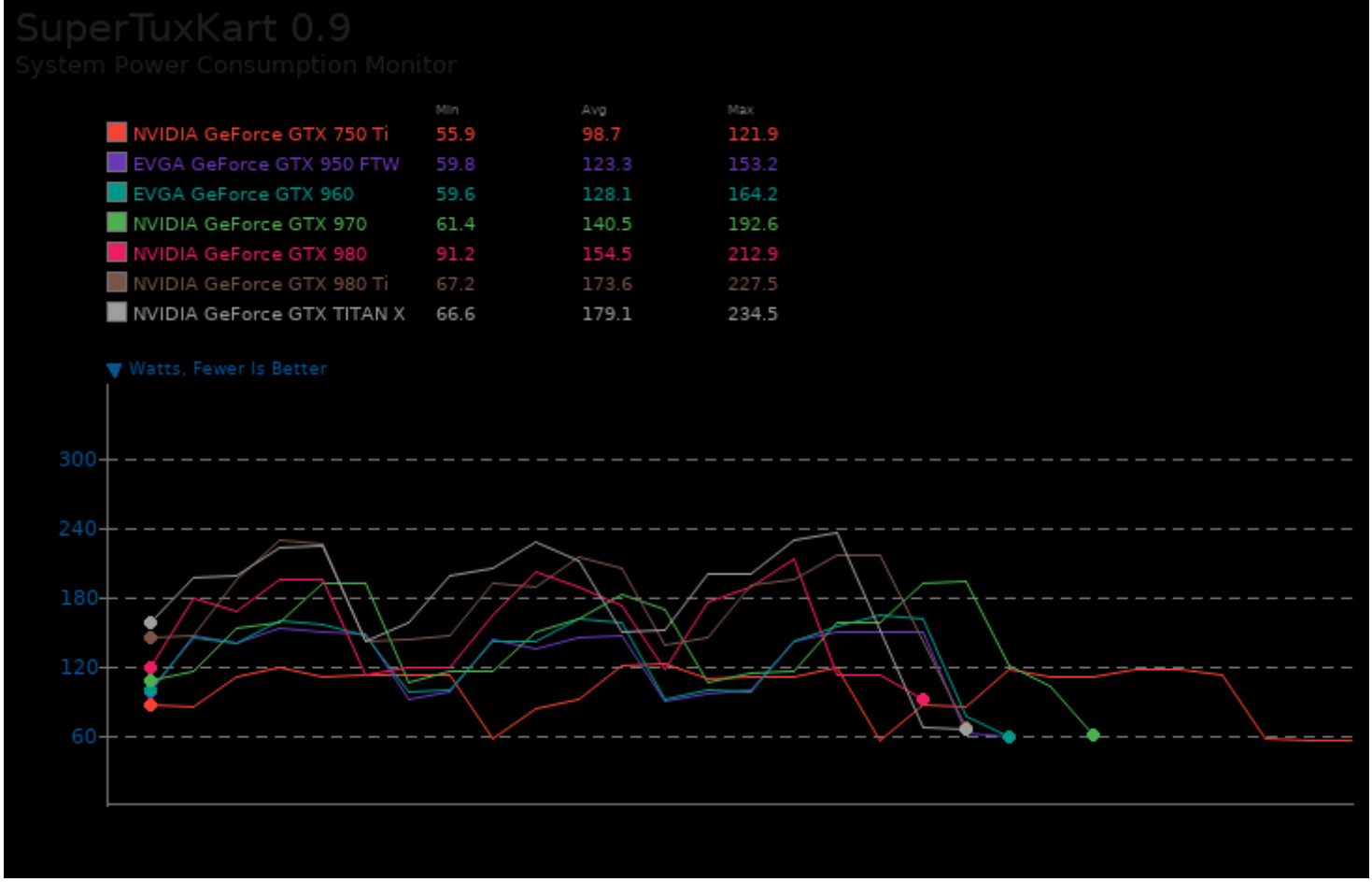


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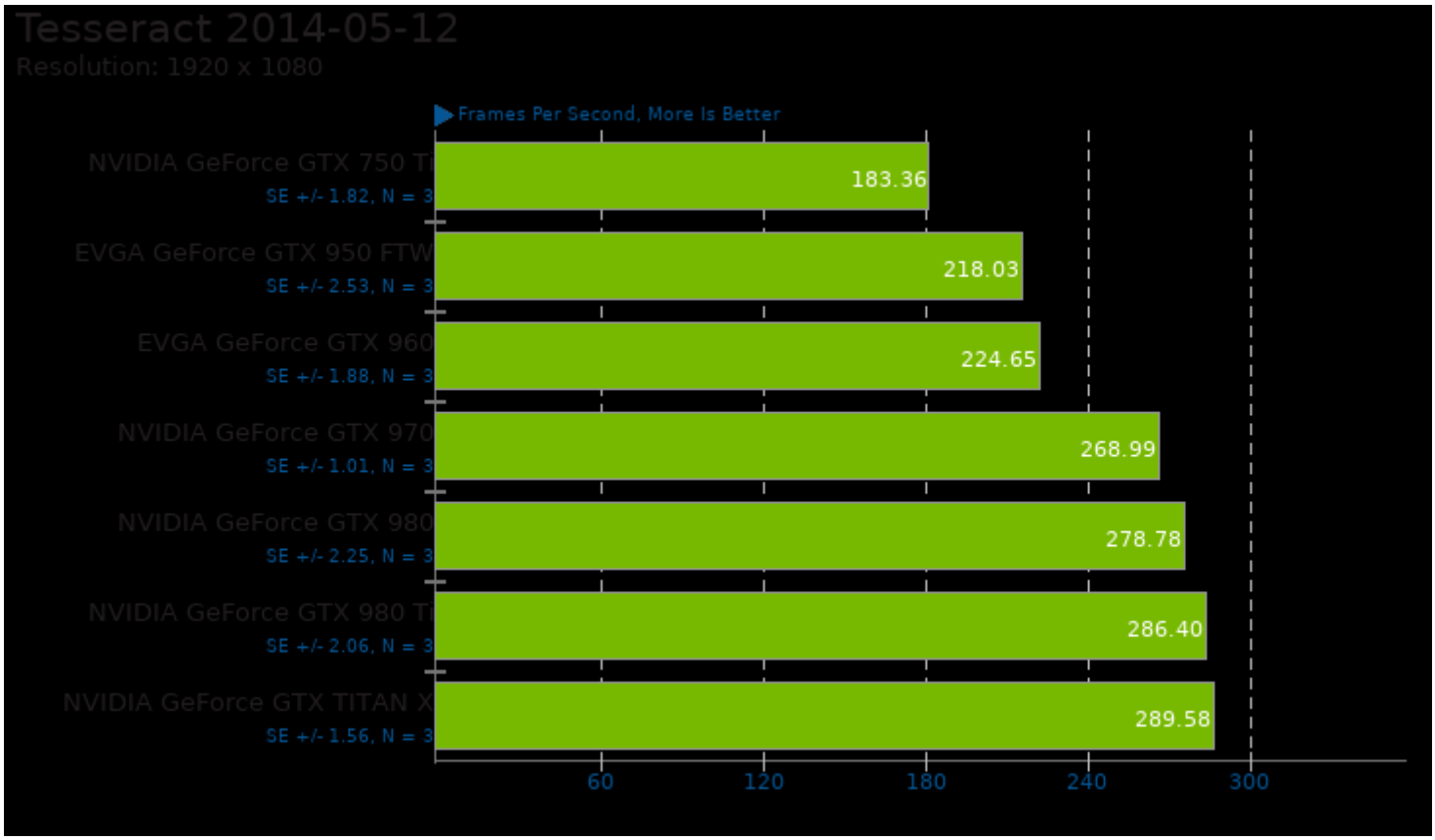


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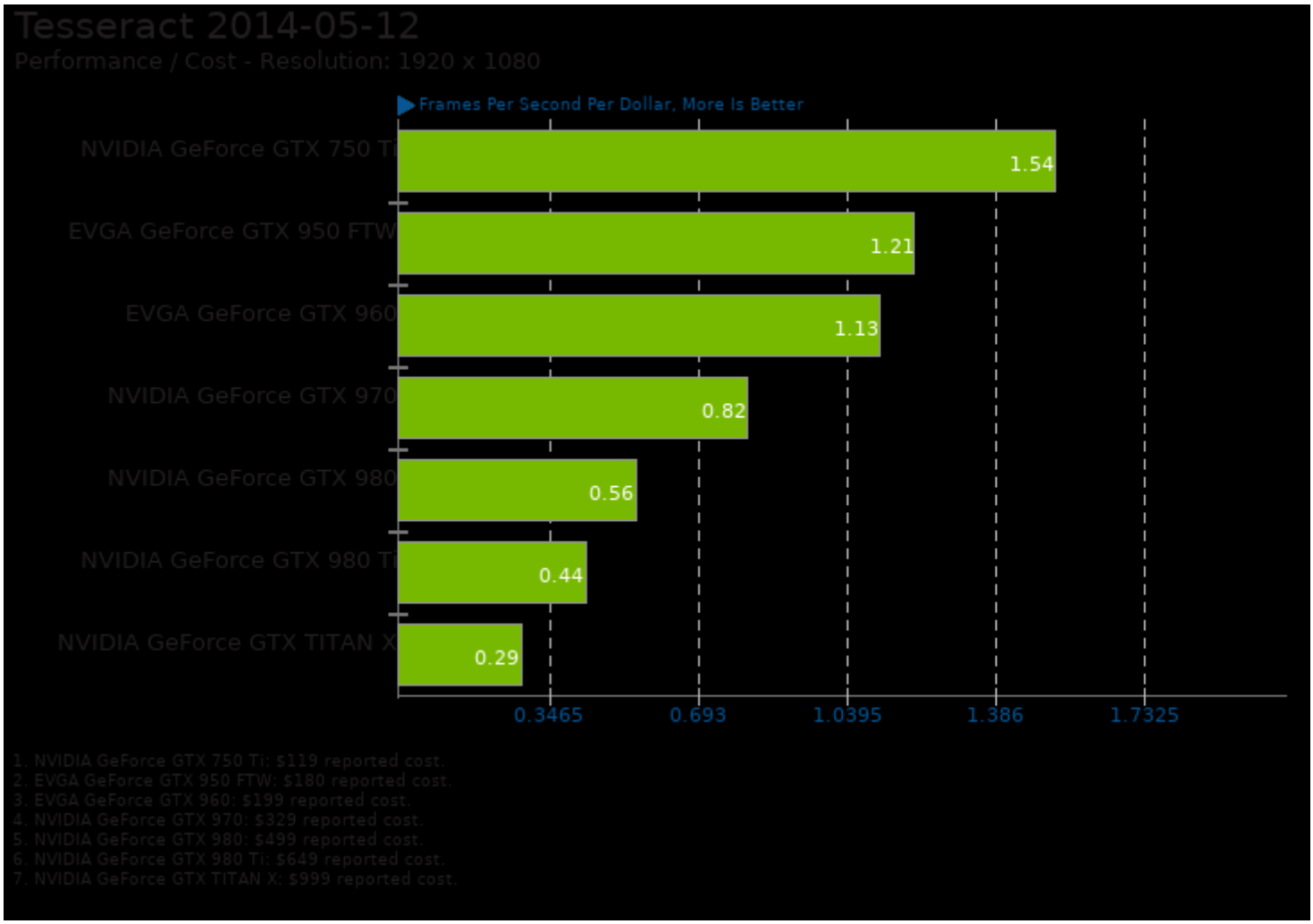




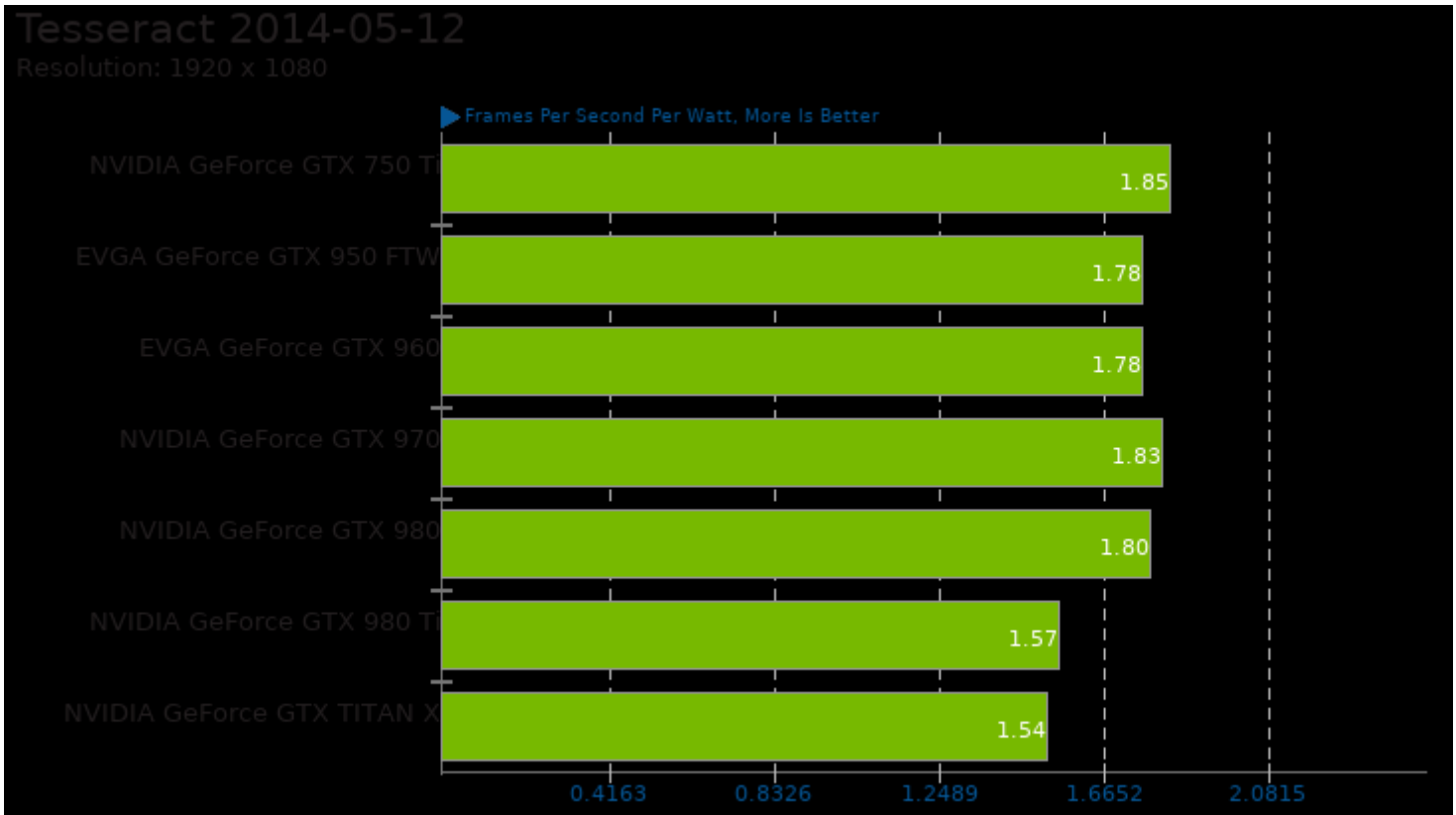
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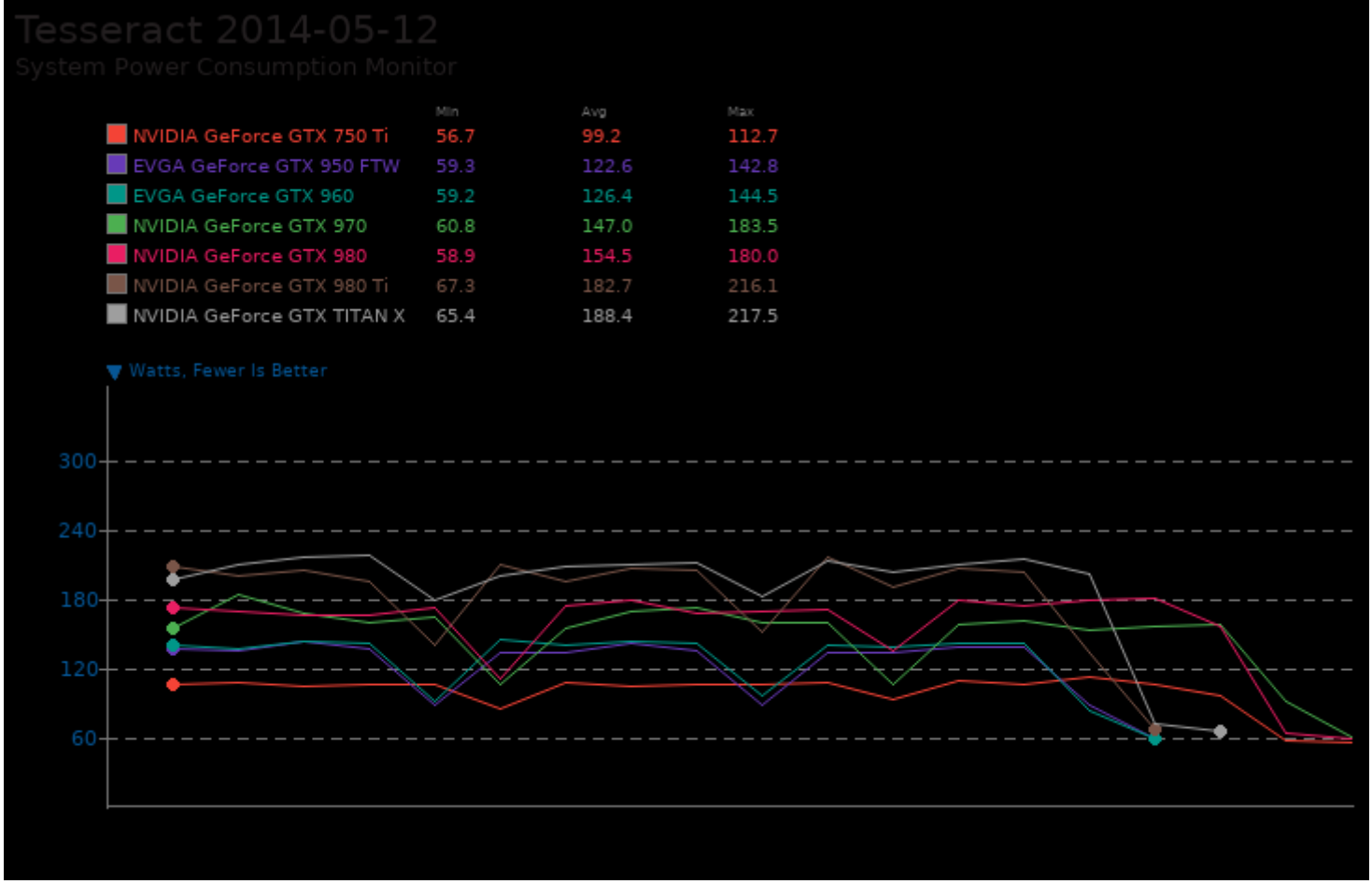


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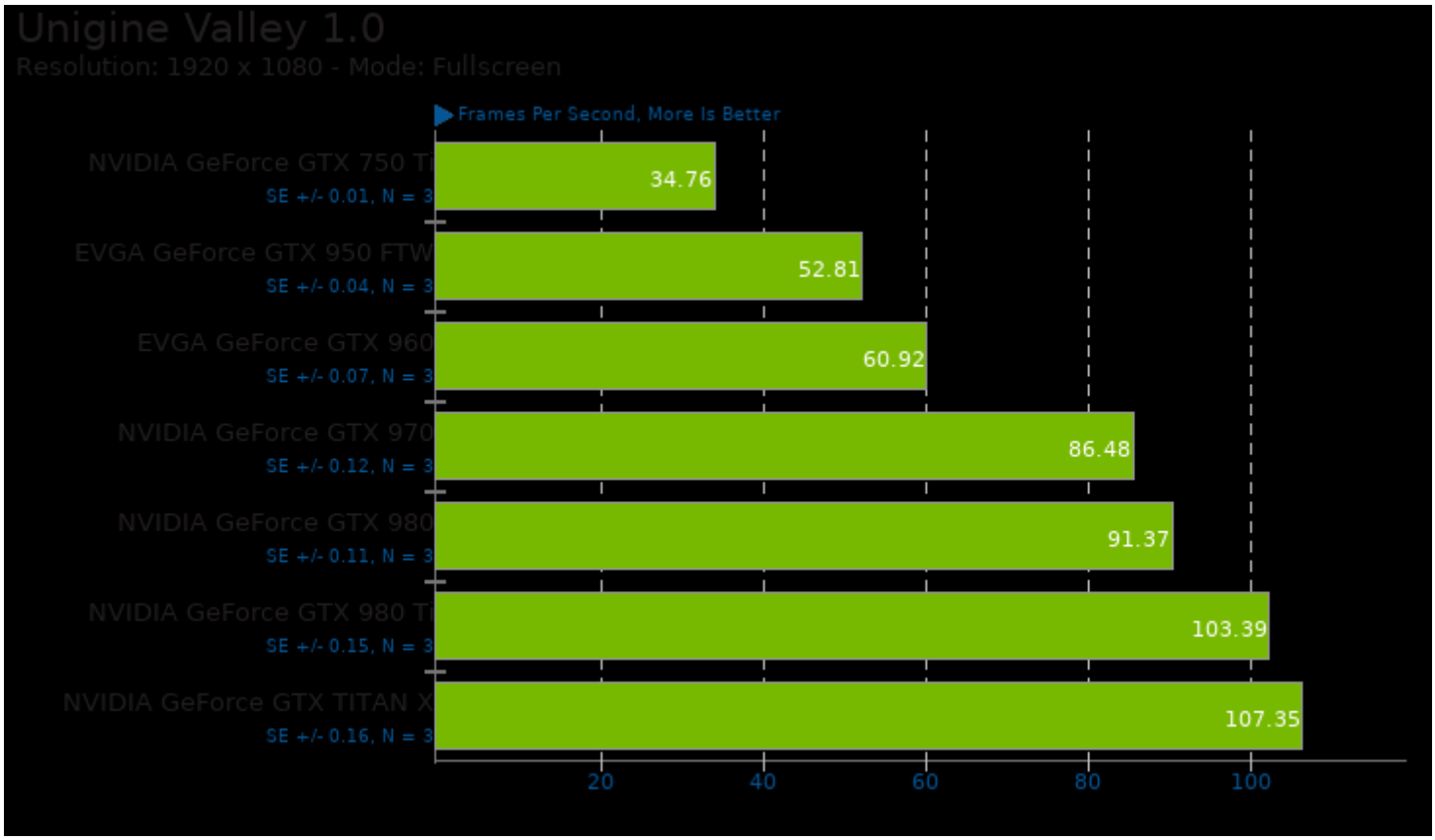


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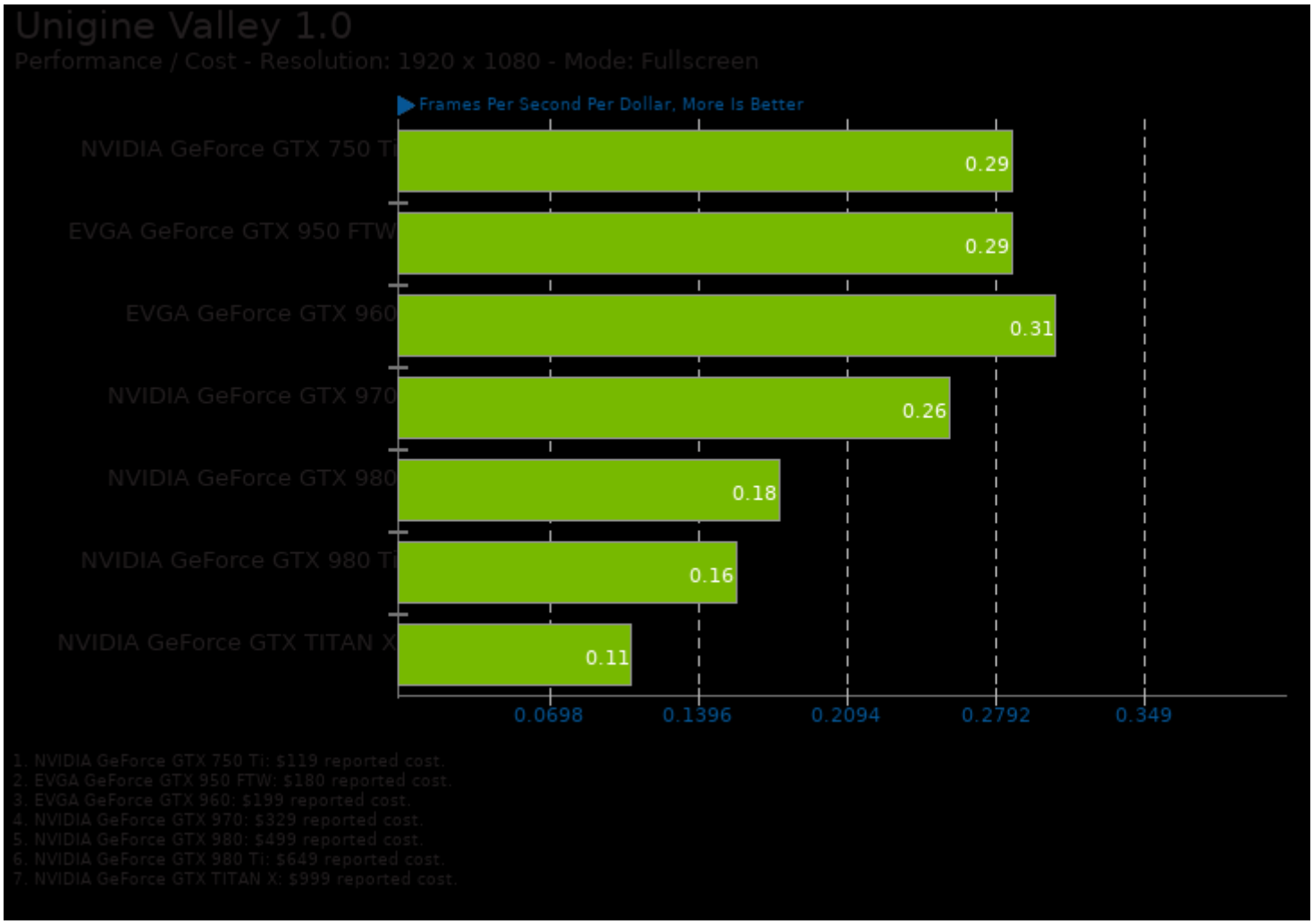




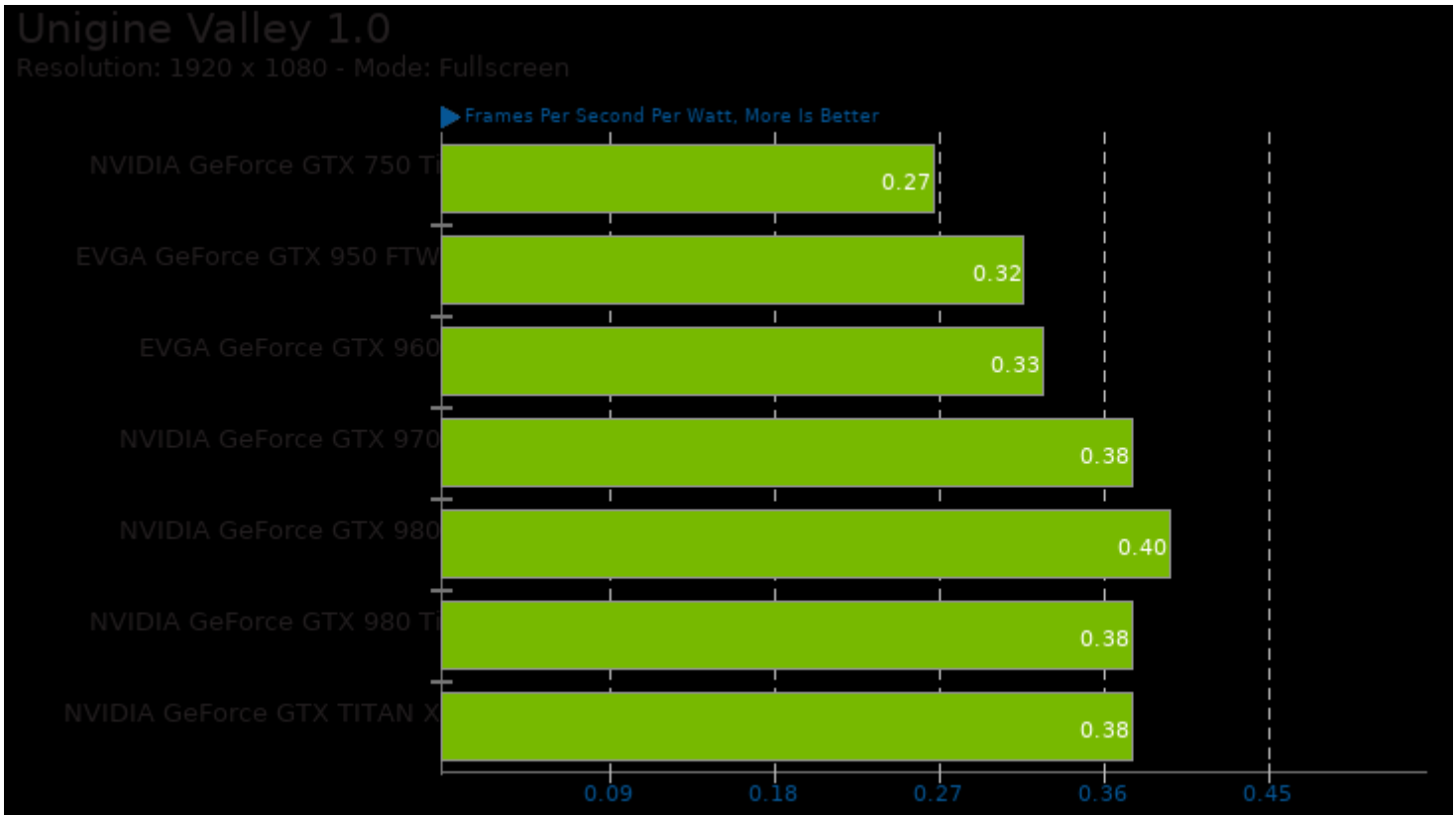
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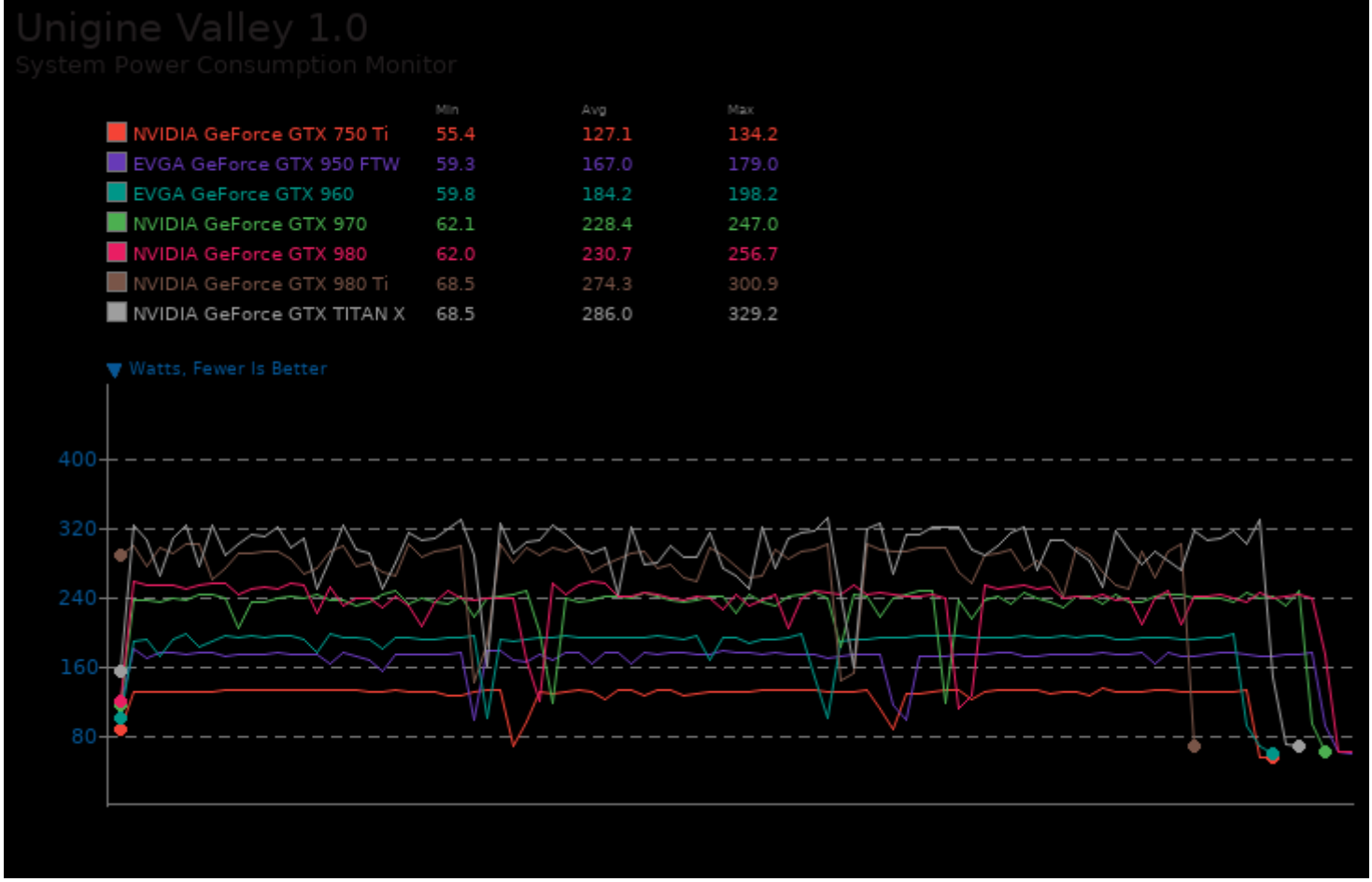


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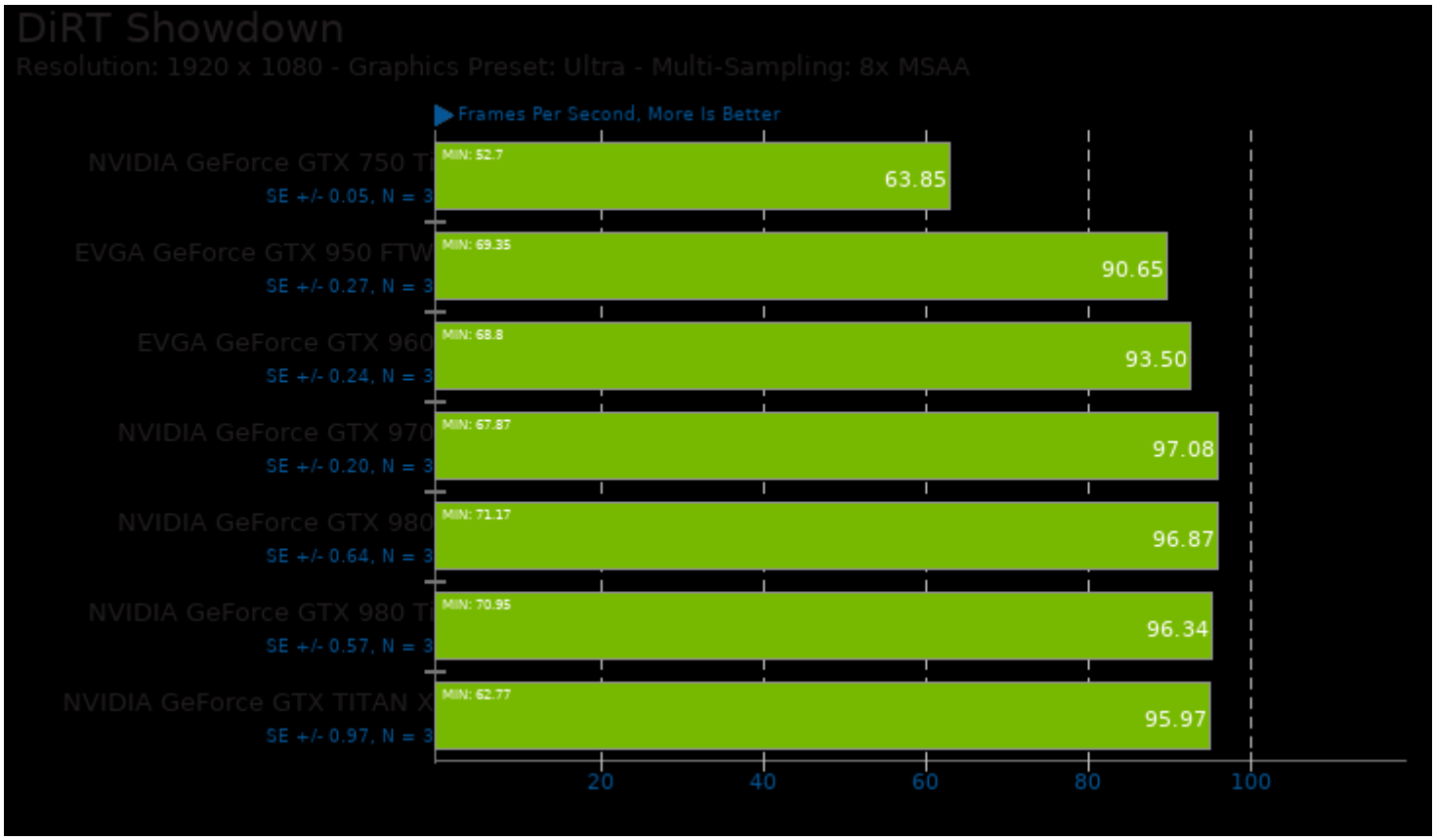


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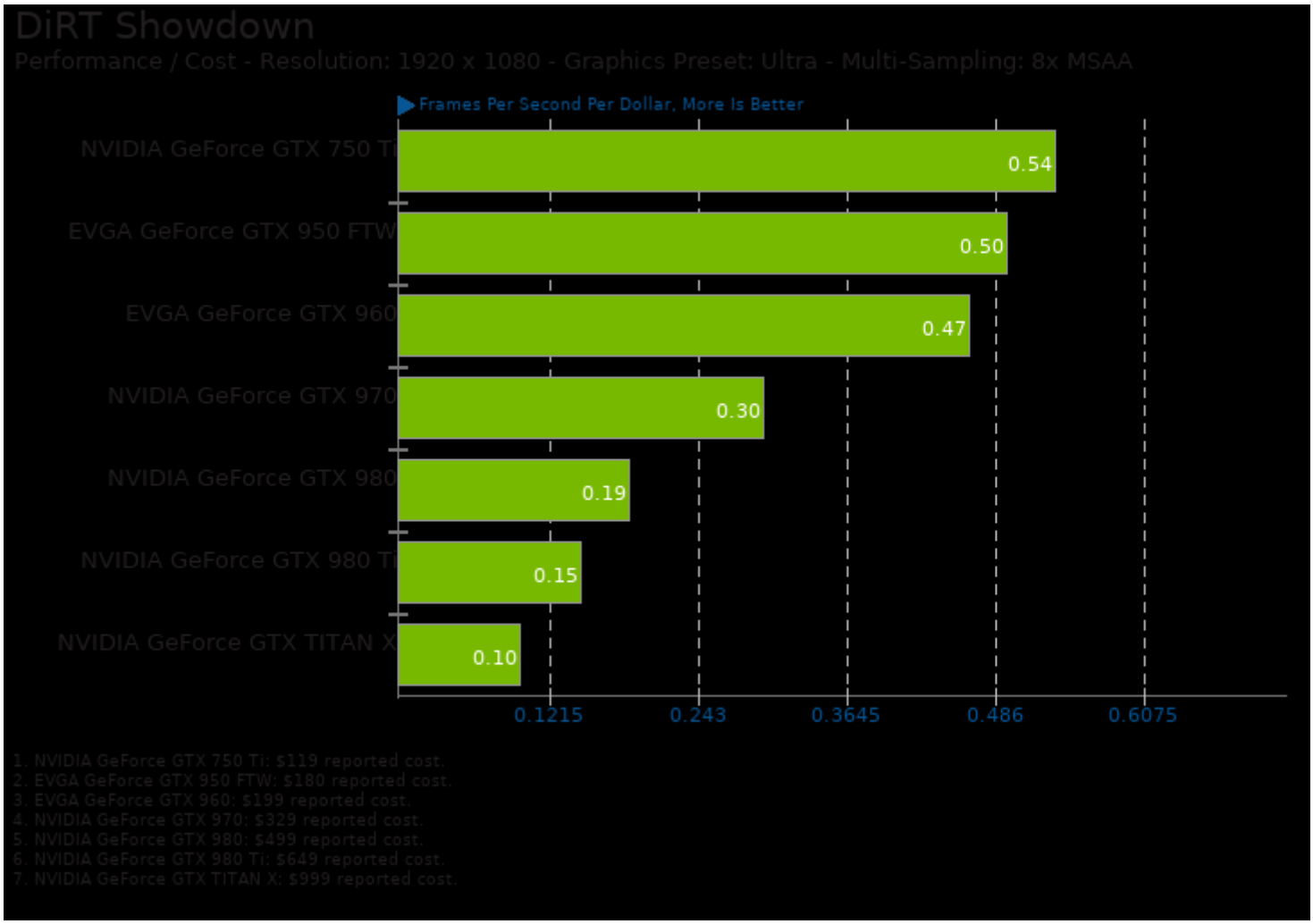




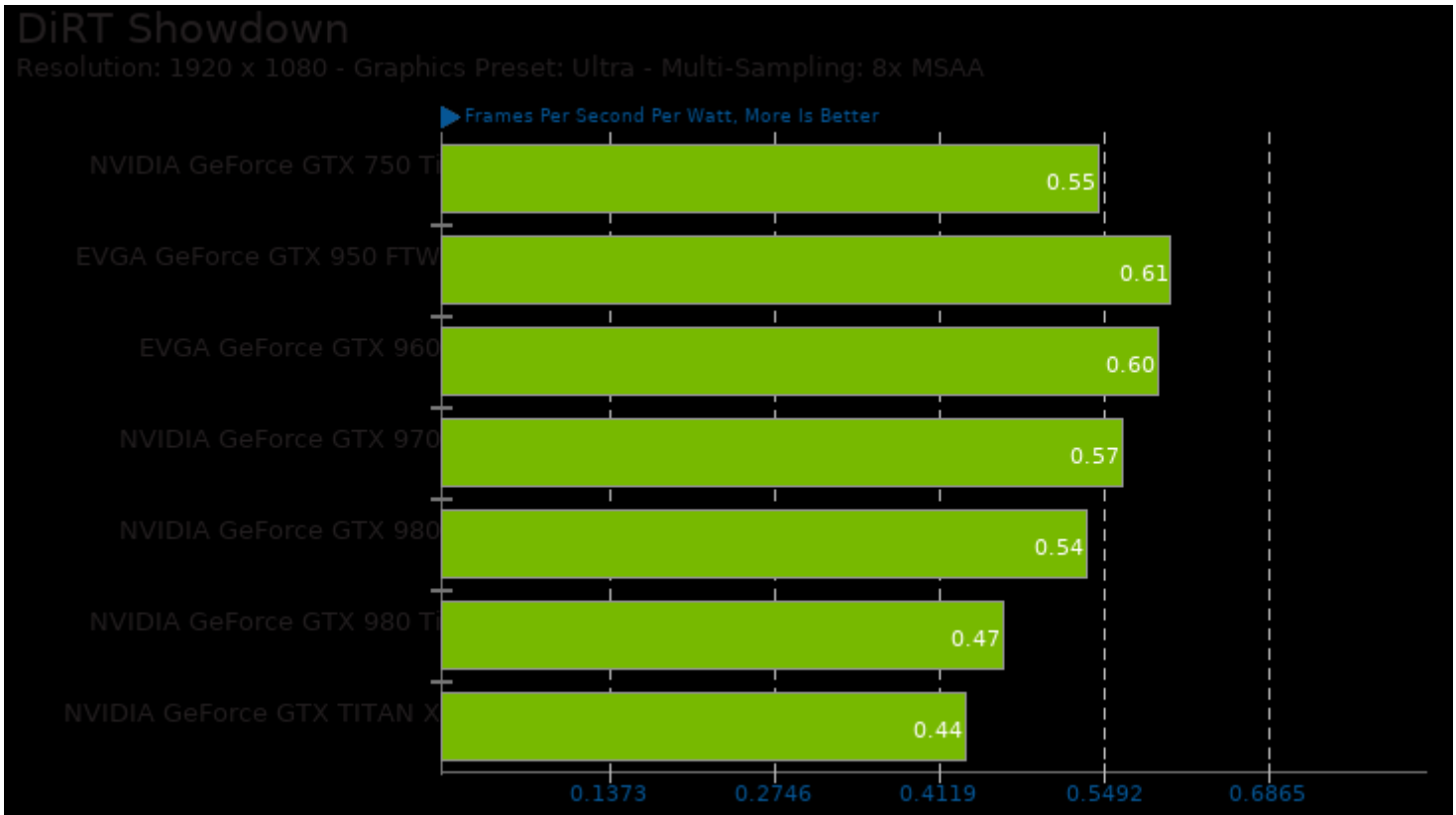
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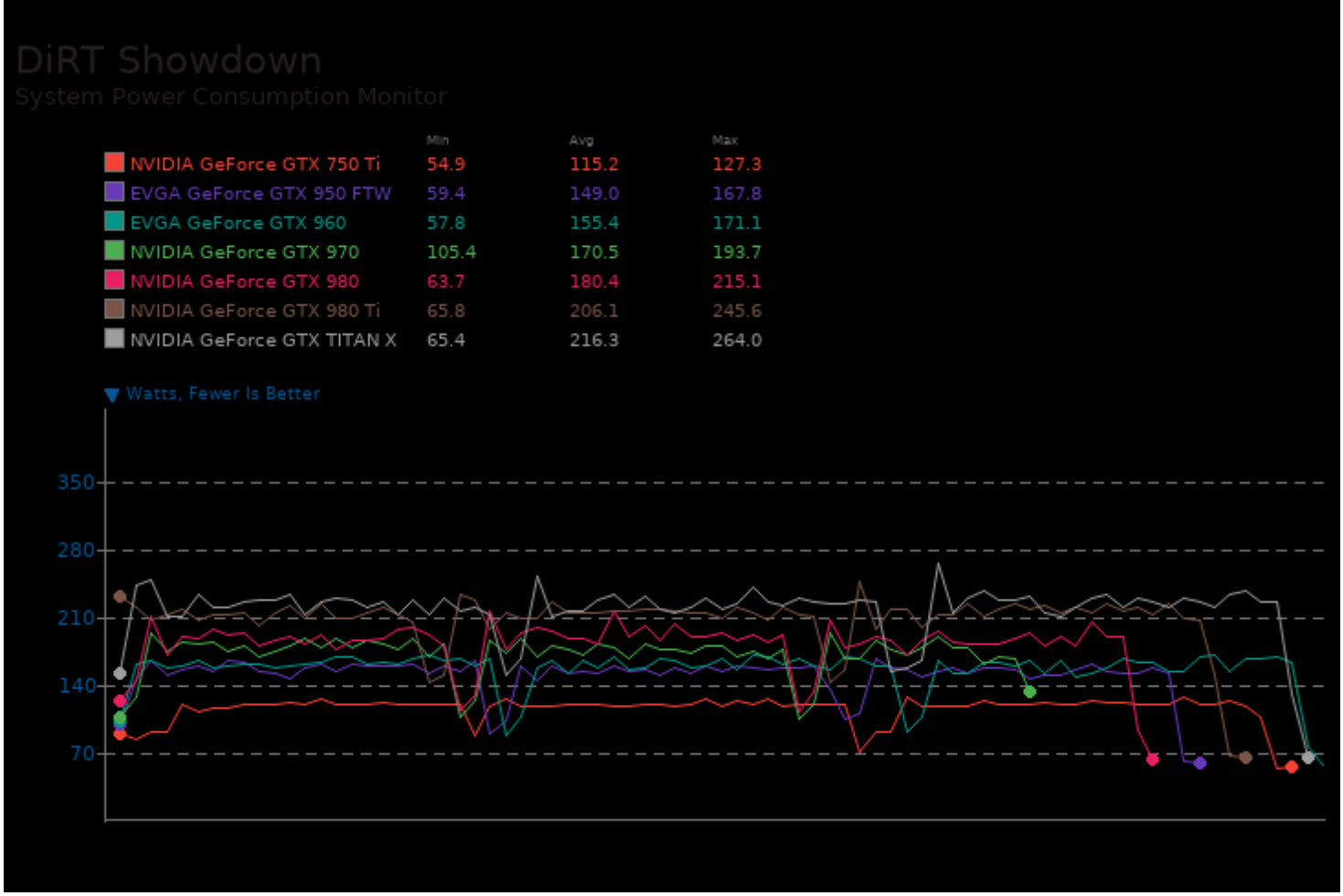


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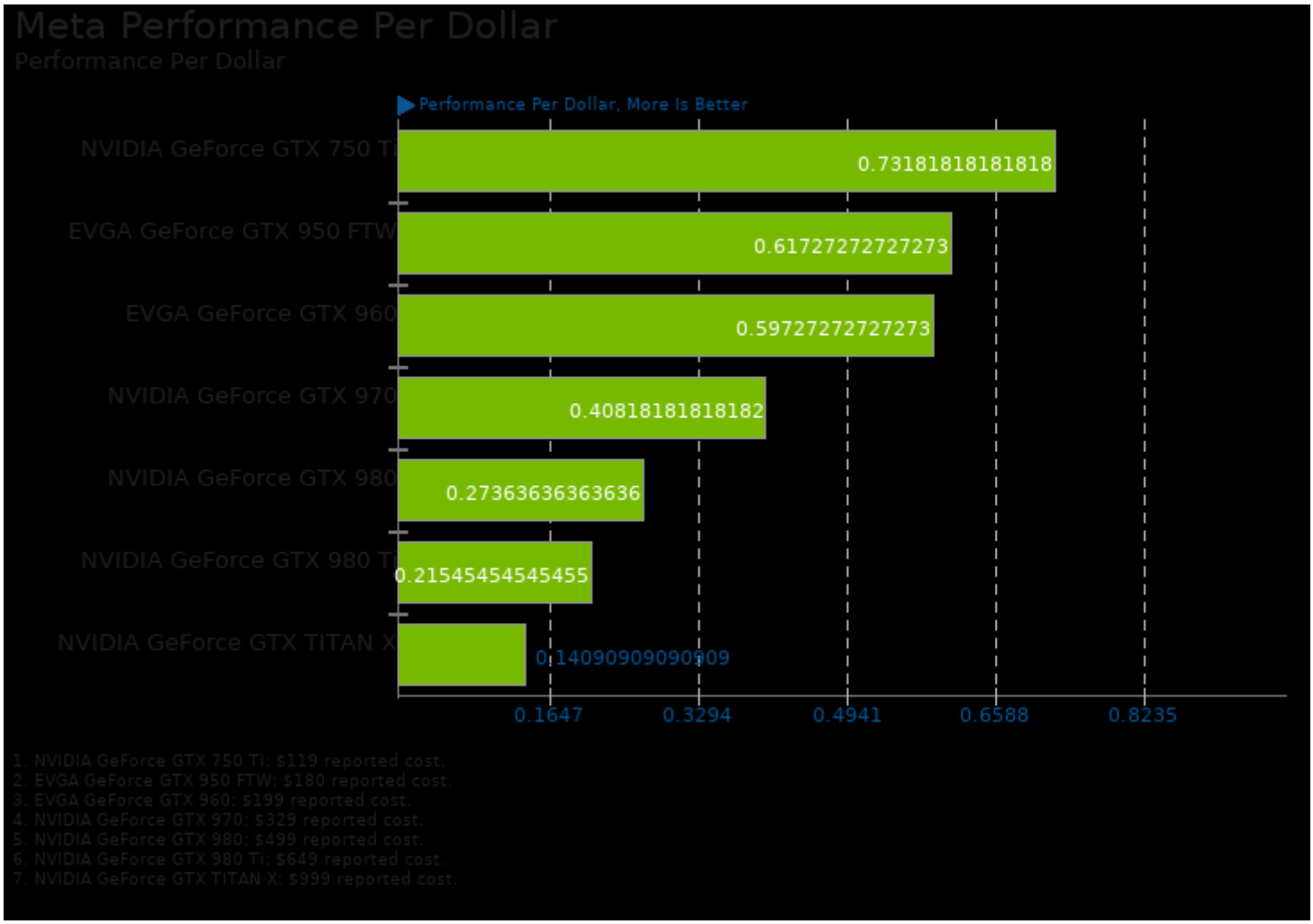


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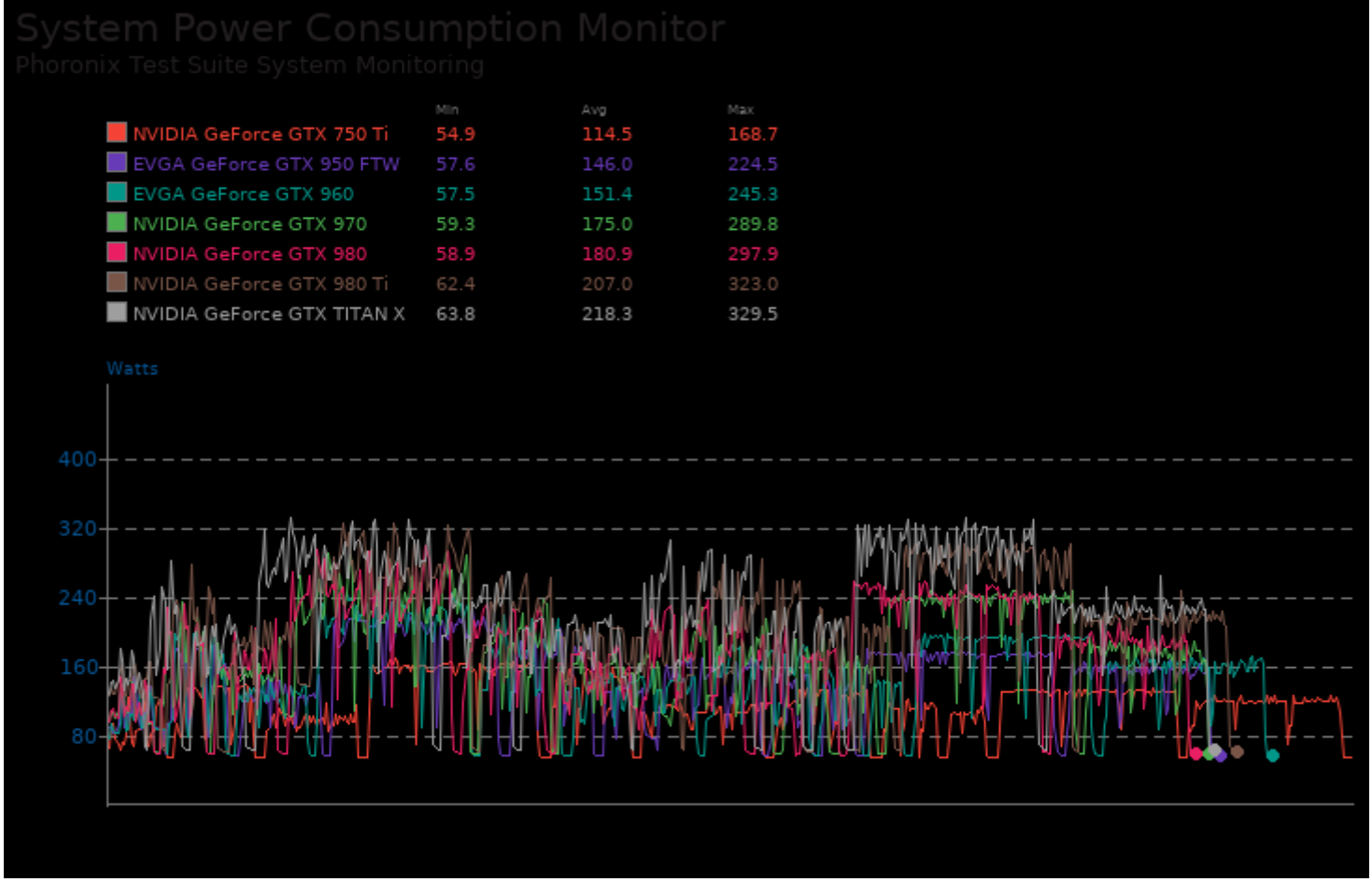


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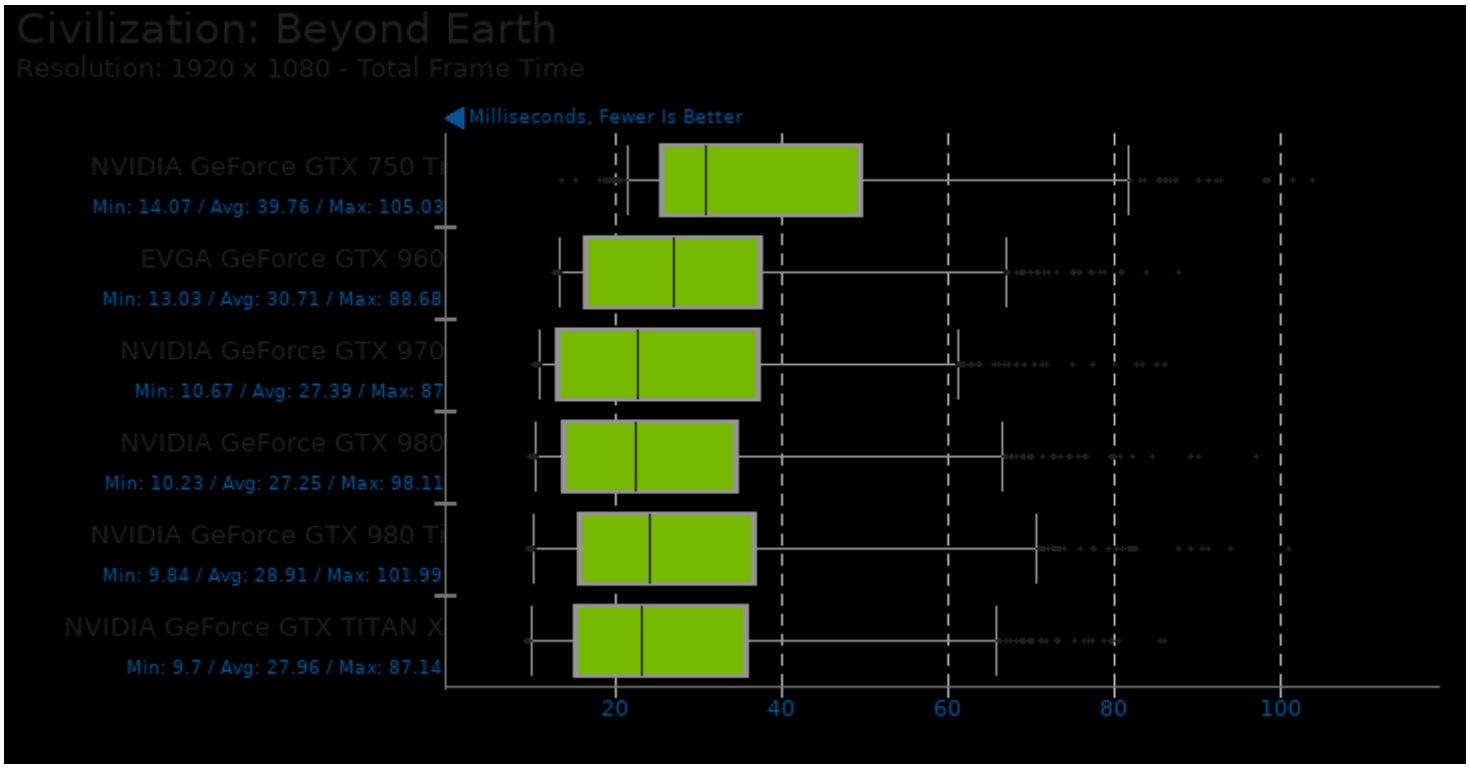


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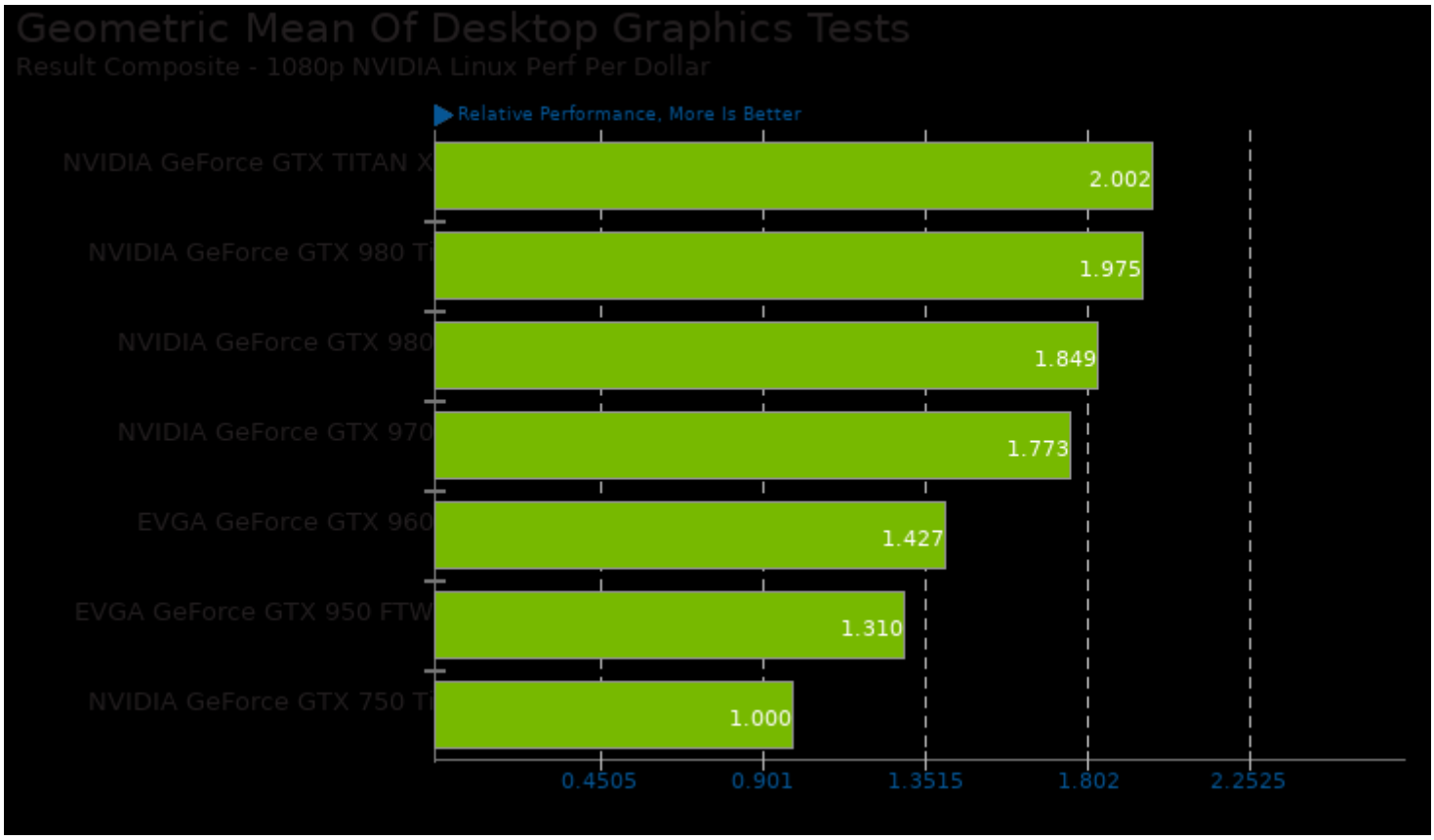


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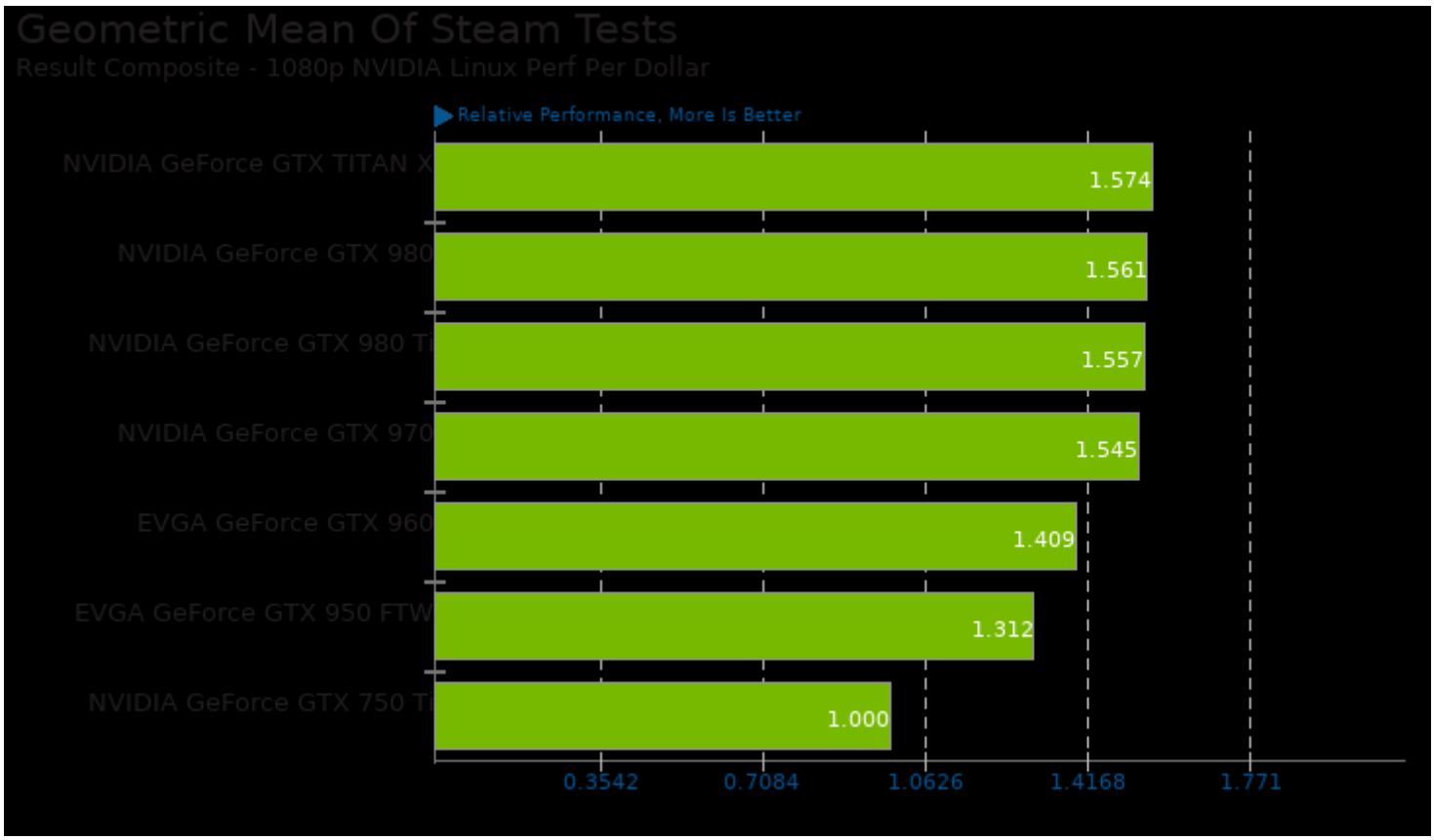


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These geometric means are based upon test groupings / test suites for this result file.



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



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Geometric mean based upon tests: pts/bioshock-infinite, pts/civbe, pts/csgo, pts/dirt-showdown, pts/metro2033-redux, pts/metroll-redux and pts/tf2

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 09:01.