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4K AMD Catalyst Perf Per Dollar

Benchmark results by Michael Larabel for a future article on Phoronix.

Automated Executive Summary

Sapphire Radeon R9 Fury had the most wins, coming in first place for 90% of the tests.

Based on the geometric mean of all complete results, the fastest (Sapphire Radeon R9 Fury) was 1.871x the speed of the slowest (MSI Radeon R7 370 4G). Diamond Radeon R9 290 was 0.861x the speed of Sapphire Radeon R9 Fury, Sapphire Radeon R9 285 was 0.621x the speed of Diamond Radeon R9 290, MSI Radeon R7 370 4G was 0.999x the speed of Sapphire Radeon R9 285.

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

Civilization: Beyond Earth (Resolution: 3840 x 2160 - Total Frame Time) at 21.96x
Metro: Last Light Redux (System Power Consumption Monitor) at 6.525x
Unigine Valley (System Power Consumption Monitor) at 6.194x
Civilization: Beyond Earth (System Power Consumption Monitor) at 5.842x
Counter-Strike: Global Offensive (System Power Consumption Monitor) at 5.505x
Metro 2033 Redux (System Power Consumption Monitor) at 5.481x
Xonotic (System Power Consumption Monitor) at 5.41x
Tesseract (System Power Consumption Monitor) at 4.789x

Team Fortress 2 (System Power Consumption Monitor) at 4.752x
SuperTuxKart (System Power Consumption Monitor) at 4.633x.

Test Systems:

Diamond Radeon R9 290

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: Supported device 67B1 4096MB (947/1250MHz), Audio: Intel C610/X99, Monitor: SE39UY04, 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: fglrx 15.20.3, OpenGL: 4.4.13397, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: LIBGL_DRIVERS_PATH=/usr/lib/i386-linux-gnu/dri:/usr/lib/x86_64-linux-gnu/dri
Processor Notes: Scaling Governor: intel_pstate powersave

MSI Radeon R7 370 4G

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: MSI AMD Radeon R7 370 4096MB (1030/1400MHz), Audio: Intel C610/X99, Monitor: SE39UY04, 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: fglrx 15.20.3, OpenGL: 4.4.13397, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: LIBGL_DRIVERS_PATH=/usr/lib/i386-linux-gnu/dri:/usr/lib/x86_64-linux-gnu/dri
Processor Notes: Scaling Governor: intel_pstate powersave

Sapphire Radeon R9 285

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: Supported device 6939 2048MB (918/1375MHz), Audio: Intel C610/X99, Monitor: SE39UY04, 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: fglrx 15.20.3, OpenGL: 4.4.13397, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: LIBGL_DRIVERS_PATH=/usr/lib/i386-linux-gnu/dri:/usr/lib/x86_64-linux-gnu/dri
Processor Notes: Scaling Governor: intel_pstate powersave

Sapphire Radeon R9 Fury

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: Sapphire AMD Radeon R9 Fury 4096MB (1000/500MHz), Audio: Intel C610/X99, Monitor: SE39UY04, 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

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Driver: fglrx 15.20.3, OpenGL: 4.4.13397, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: LIBGL_DRIVERS_PATH=/usr/lib/i386-linux-gnu/dri:/usr/lib/x86_64-linux-gnu/dri
Processor Notes: Scaling Governor: intel_pstate powersave

	Diamond Radeon R9 290	MSI Radeon R7 370 4G	Sapphire Radeon R9 285	Sapphire Radeon R9 Fury
Team Fortress 2 - 3840 x 2160 (FPS)	**122.05**	84.63	**77.61**	116.22
Normalized	100%	69.34%	63.59%	95.22%
Standard Deviation	4%	0.9%	11.8%	6.2%
Team Fortress 2 - Performance / Cost - 3840 x 2160 (FPS/Dollar)	**0.49**	0.47	0.32	**0.21**
Normalized	100%	95.92%	65.31%	42.86%
Team Fortress 2 - 3840 x 2160 (FPS/Watt)	0.90	0.71	**0.58**	**0.96**
Normalized	93.75%	73.96%	60.42%	100%
Counter-Strike: Global Offensive - 3840 x 2160 (FPS)	90.04	**55.86**	66.61	**96.03**
Normalized	93.76%	58.17%	69.36%	100%
Standard Deviation	2.4%	0.7%	0.2%	2.9%
Counter-Strike: Global Offensive - Performance / Cost - 3840 x 2160 (FPS/Dollar)	**0.36**	0.31	0.28	**0.17**
Normalized	100%	86.11%	77.78%	47.22%
Counter-Strike: Global Offensive - 3840 x 2160 (FPS/Watt)	0.38	0.35	**0.34**	**0.46**
Normalized	82.61%	76.09%	73.91%	100%
Xonotic - 3840 x 2160 - Ultimate (FPS)	116.50	**79.04**	99.73	**134.63**
Normalized	86.53%	58.71%	74.08%	100%
Standard Deviation	1.5%	1%	0.5%	1.2%
Xonotic - Performance / Cost - 3840 x 2160 - Ultimate (FPS/Dollar)	**0.47**	0.44	0.41	**0.24**
Normalized	100%	93.62%	87.23%	51.06%
Xonotic - 3840 x 2160 - Ultimate (FPS/Watt)	**0.52**	**0.52**	0.56	**0.65**
Normalized	80%	80%	86.15%	100%
Metro: Last Light Redux - P.T.S.v.0.0 (FPS)	47.23	**26.43**	32.49	**61.14**
Normalized	77.25%	43.23%	53.14%	100%
Standard Deviation	0.4%	0.4%	0.7%	0.2%
Metro: Last Light Redux - Performance / Cost - P.T.S.v.0.0	**0.19**	0.15	0.13	**0.11**
Normalized	100%	78.95%	68.42%	57.89%
Metro: Last Light Redux - P.T.S.v.0.0 (FPS/Watt)	0.15	**0.13**	0.14	**0.20**
Normalized	75%	65%	70%	100%
Metro 2033 Redux - P.T.S.v.0.0 (FPS)	48.03	**30.18**	35.75	**55.43**
Normalized	86.65%	54.45%	64.5%	100%
Standard Deviation	5%	3.4%	1%	5.9%

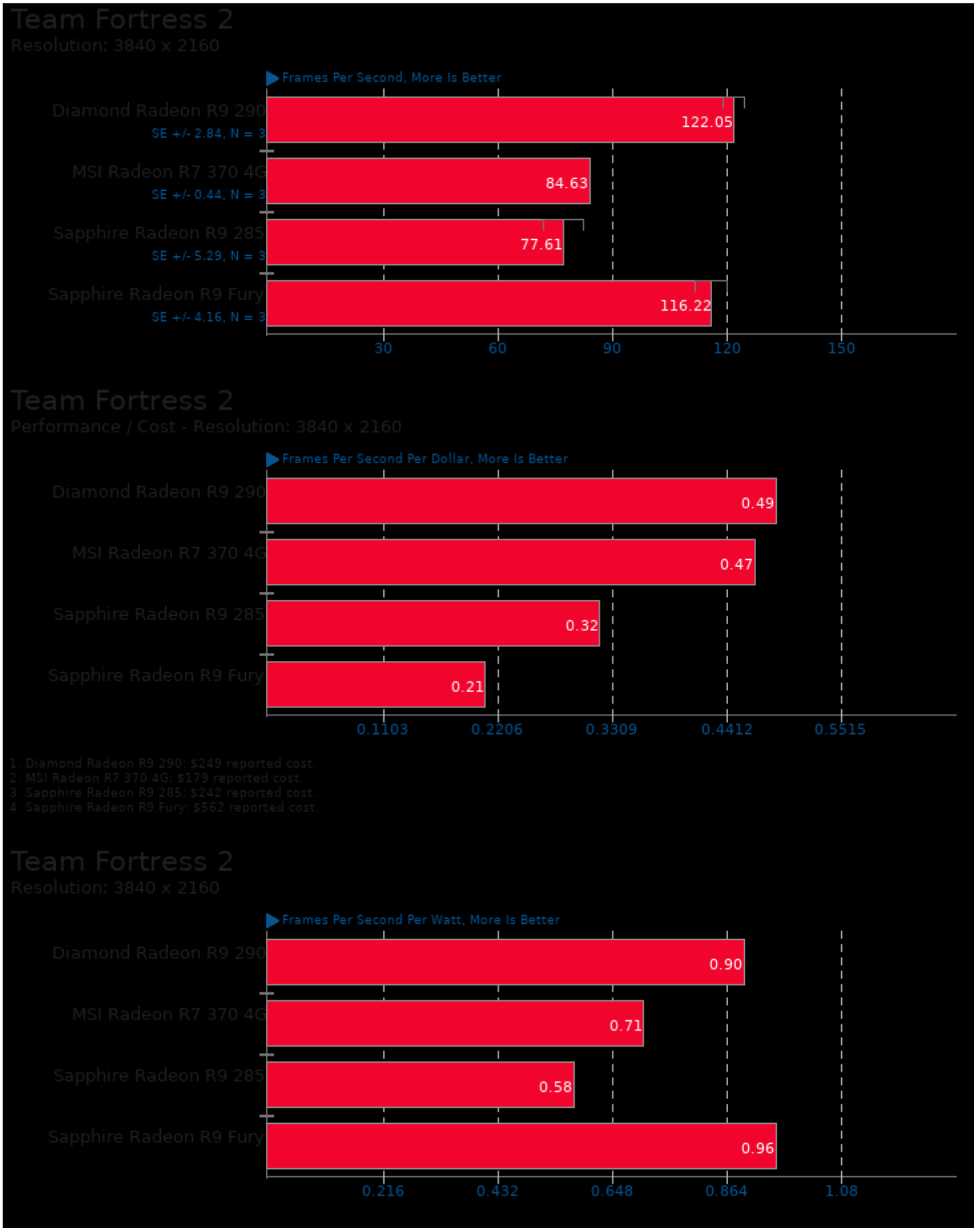
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Metro 2033 Redux - Performance / Cost - P.T.S.v.0.0 (FPS/Dollar)	**0.19**	0.17	0.15	**0.10**
Normalized	100%	89.47%	78.95%	52.63%
Metro 2033 Redux - P.T.S.v.0.0 (FPS/Watt)	0.21	**0.18**	0.19	**0.26**
Normalized	80.77%	69.23%	73.08%	100%
Civilization: Beyond Earth - 3840 x 2160 (FPS)	49.91	**28.92**	30.51	**55.71**
Normalized	89.59%	51.91%	54.77%	100%
Standard Deviation	2.2%	2.3%	3.2%	3.1%
Civilization: Beyond Earth - Performance / Cost - 3840 x 2160	**0.20**	0.16	0.13	**0.10**
Normalized	100%	80%	65%	50%
Civilization: Beyond Earth - 3840 x 2160 (FPS/Watt)	0.21	0.19	**0.17**	**0.26**
Normalized	80.77%	73.08%	65.38%	100%
BioShock Infinite - 3840 x 2160 - Very High (FPS)	29.06	18.42	**6.90**	**30.85**
Normalized	94.2%	59.71%	22.37%	100%
Standard Deviation	0.4%	0.3%	1.2%	0.3%
BioShock Infinite - Performance / Cost - 3840 x 2160 - Very High (FPS/Dollar)	**0.12**	0.10	**0.03**	0.05
Normalized	100%	83.33%	25%	41.67%
BioShock Infinite - 3840 x 2160 - Very High (FPS/Watt)	0.13	0.12	**0.04**	**0.15**
Normalized	86.67%	80%	26.67%	100%
SuperTuxKart - 3840 x 2160 (FPS)	42.33	30.49	**24.16**	**50.46**
Normalized	83.89%	60.42%	47.88%	100%
Standard Deviation	1.9%	2.4%	10.4%	2.7%
SuperTuxKart - Performance / Cost - 3840 x 2160 (FPS/Dollar)	**0.17**	**0.17**	0.10	**0.09**
Normalized	100%	100%	58.82%	52.94%
SuperTuxKart - 3840 x 2160	0.22	0.21	**0.15**	**0.29**
Normalized	75.86%	72.41%	51.72%	100%
Tesseract - 3840 x 2160 (FPS)	115.81	**75.89**	90.65	**154.15**
Normalized	75.13%	49.23%	58.81%	100%
Standard Deviation	2.9%	0.7%	1.6%	2.5%
Tesseract - Performance / Cost - 3840 x 2160 (FPS/Dollar)	**0.47**	0.42	0.37	**0.27**
Normalized	100%	89.36%	78.72%	57.45%
Tesseract - 3840 x 2160 (FPS/Watt)	0.55	0.50	**0.49**	**0.70**
Normalized	78.57%	71.43%	70%	100%
Unigine Valley - 3840 x 2160 - Fullscreen (FPS)	21.52	**10.24**	13.82	**29.07**
Normalized	74.03%	35.23%	47.54%	100%
Standard Deviation	0.1%	0.1%	0.1%	0.1%
Unigine Valley - Performance / Cost - 3840 x 2160 - Fullscreen (FPS/Dollar)	**0.09**	0.06	0.06	**0.05**
Normalized	100%	66.67%	66.67%	55.56%
Unigine Valley - 3840 x 2160 - Fullscreen (FPS/Watt)	0.07	**0.06**	**0.06**	**0.09**
Normalized	77.78%	66.67%	66.67%	100%

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Meta Performance Per Dollar - P.P.D (Performance/Dollar)	**0.275**	0.245	0.198	**0.139**
Normalized	100%	89.09%	72%	50.55%
Meta Performance Per Watt - P.P.W (Performance/Watt)	0.334	0.297	**0.272**	**0.402**
Normalized	83.08%	73.88%	67.66%	100%

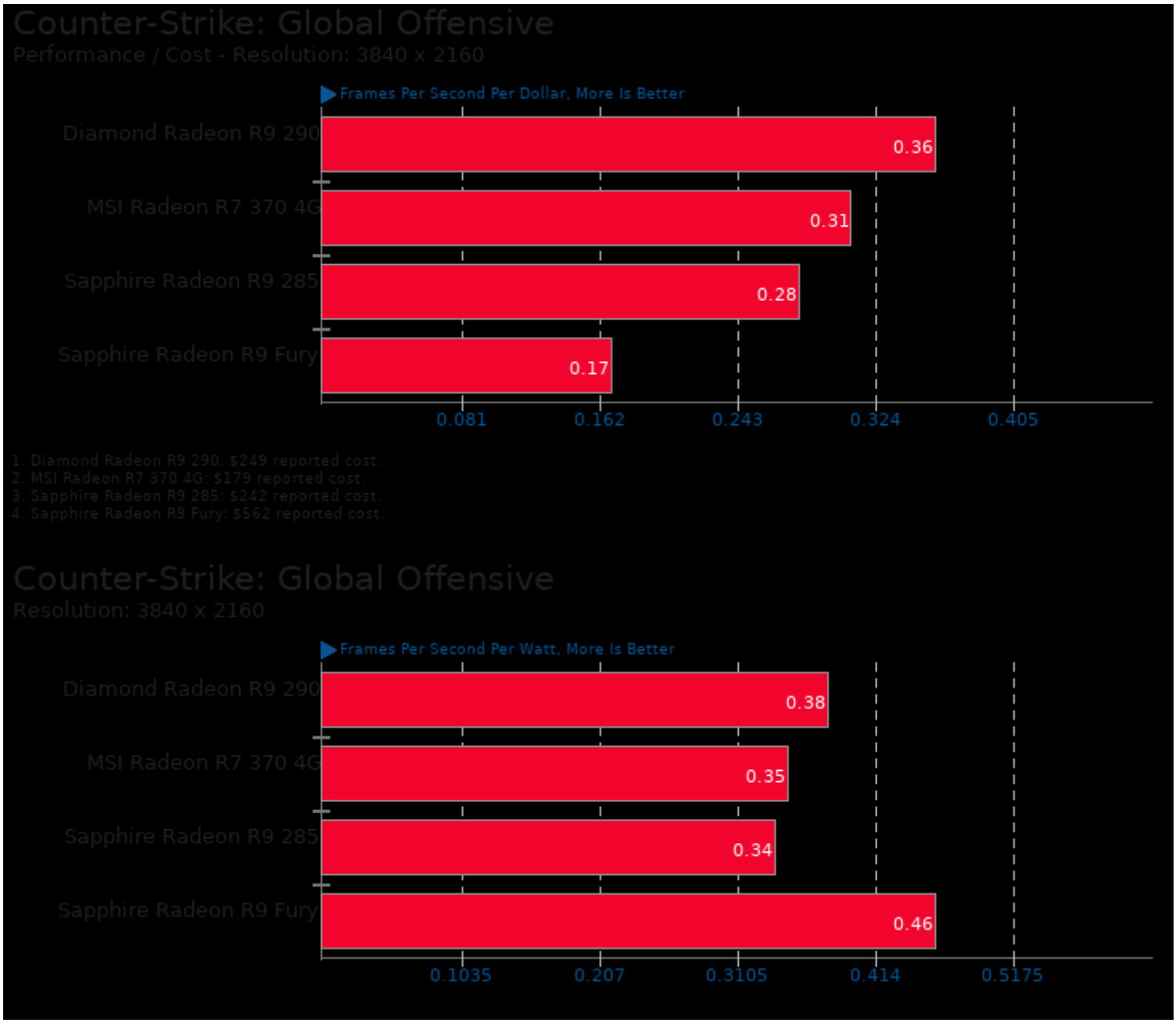
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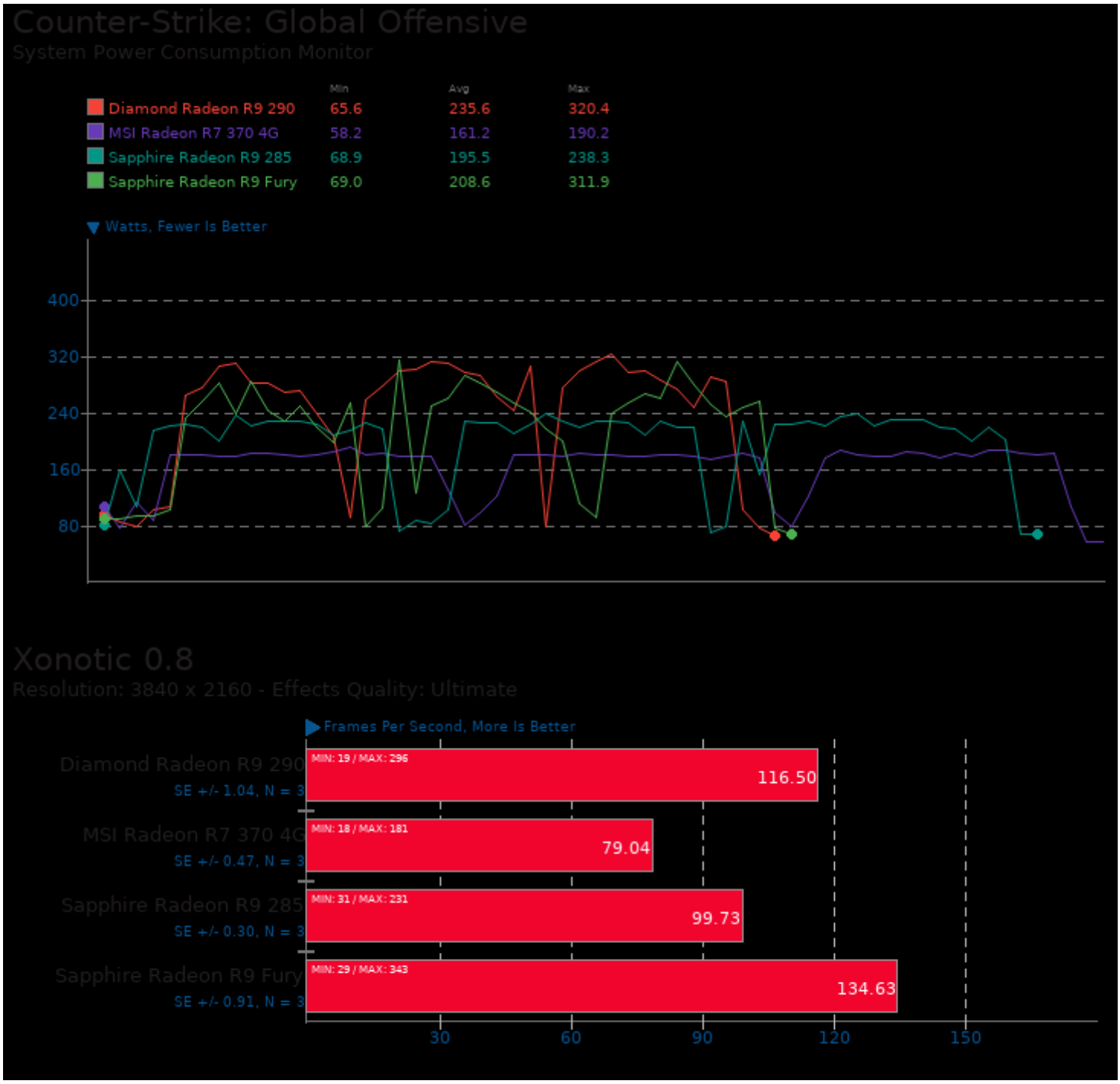
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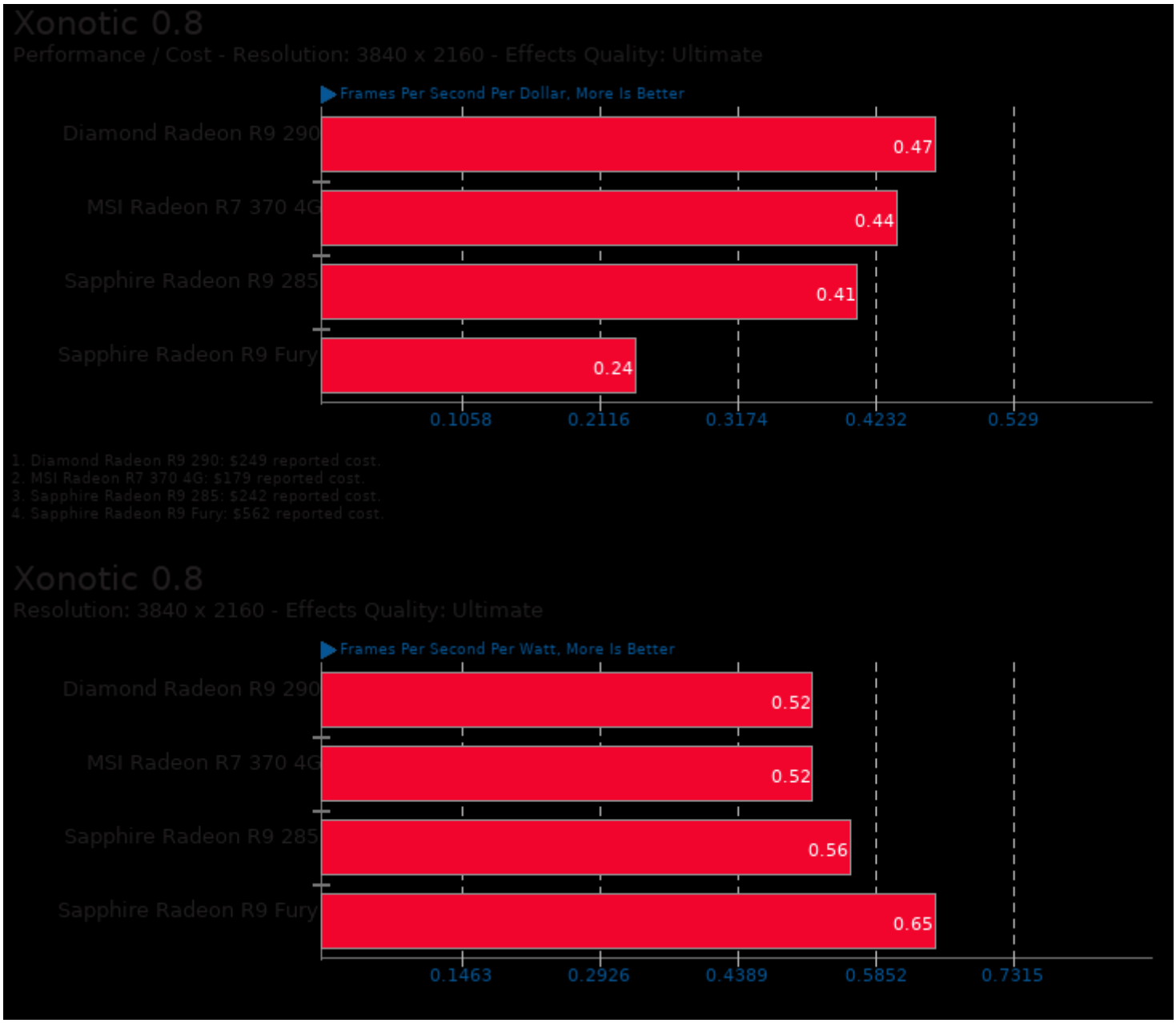
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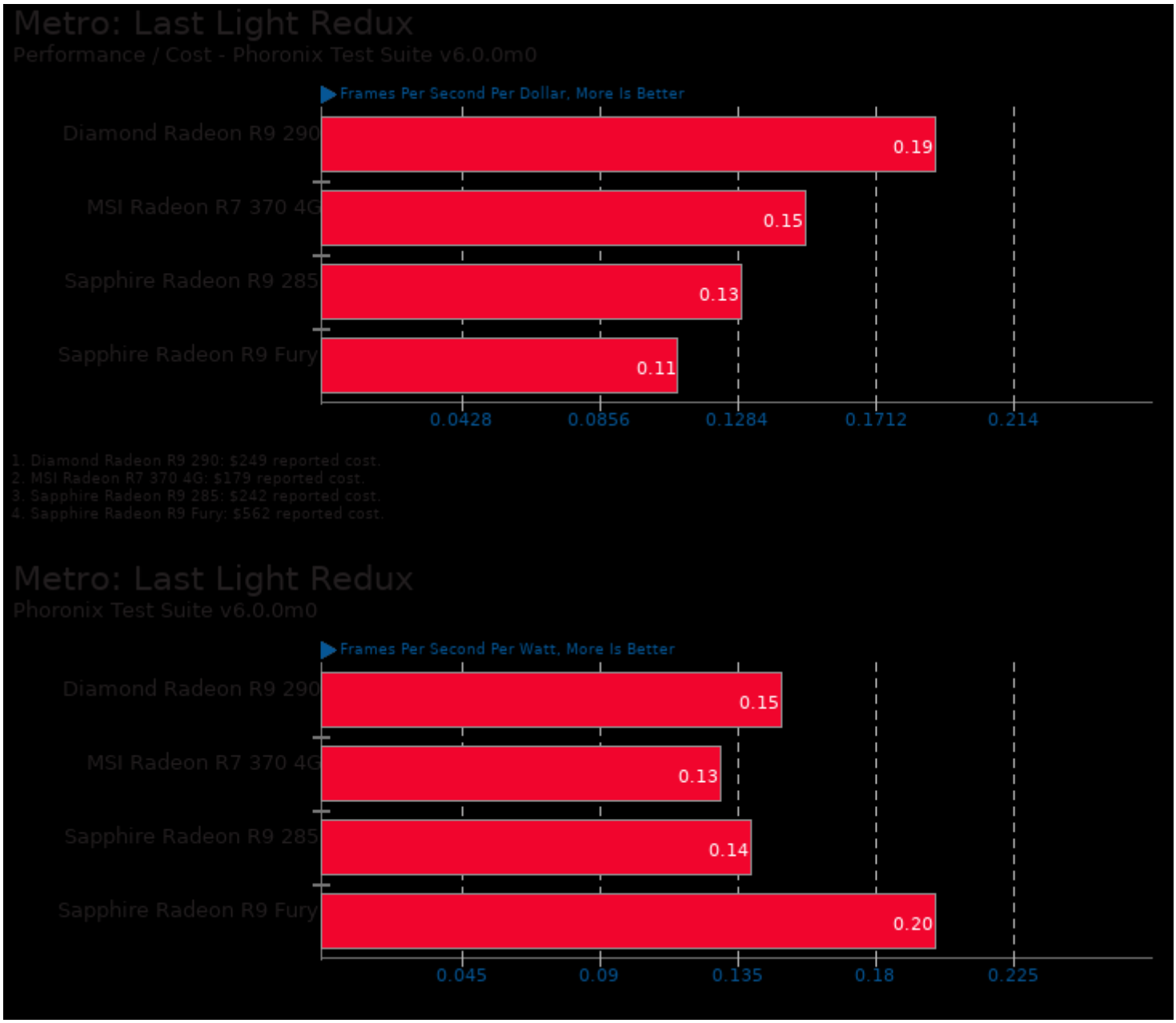
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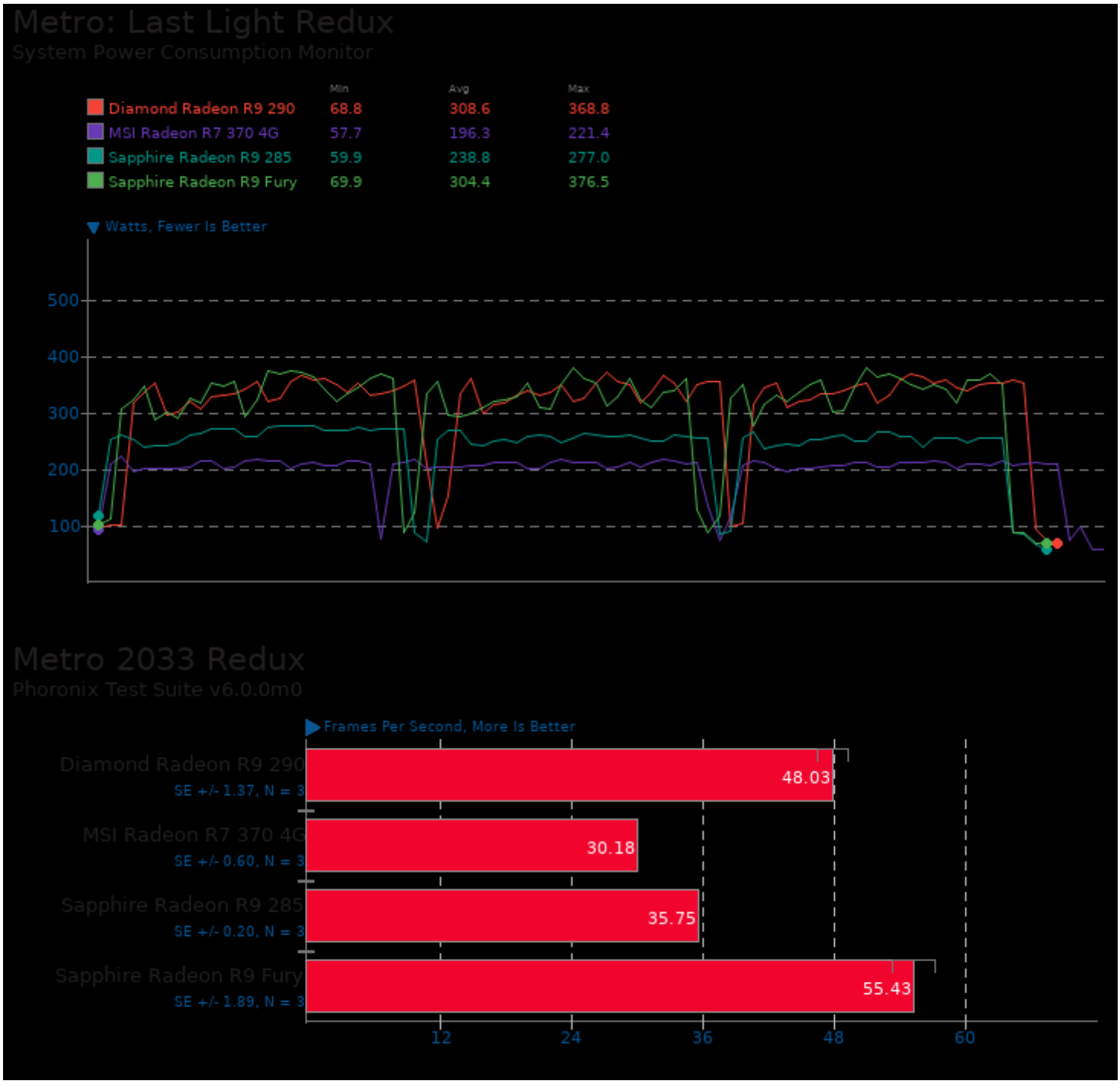
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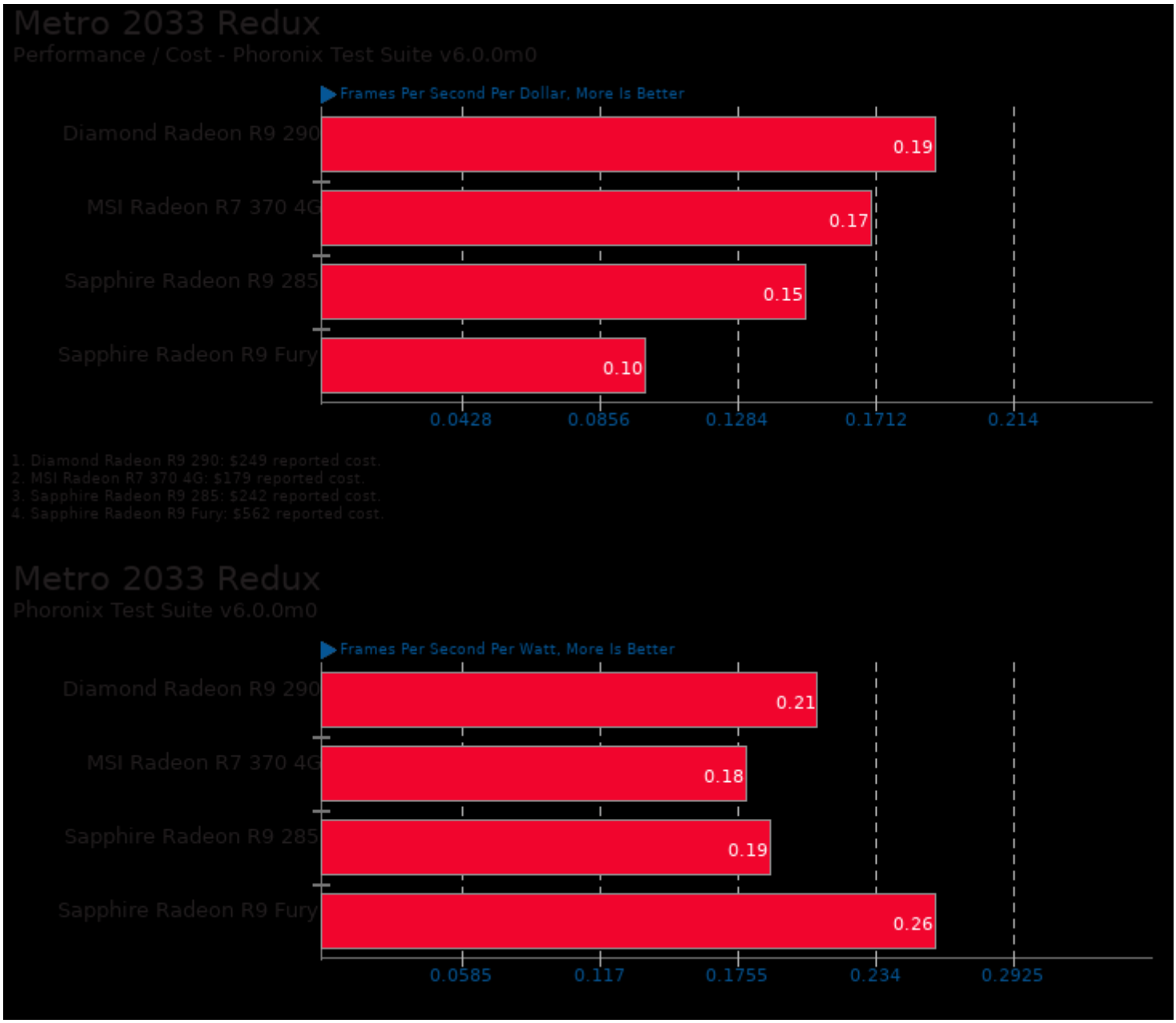
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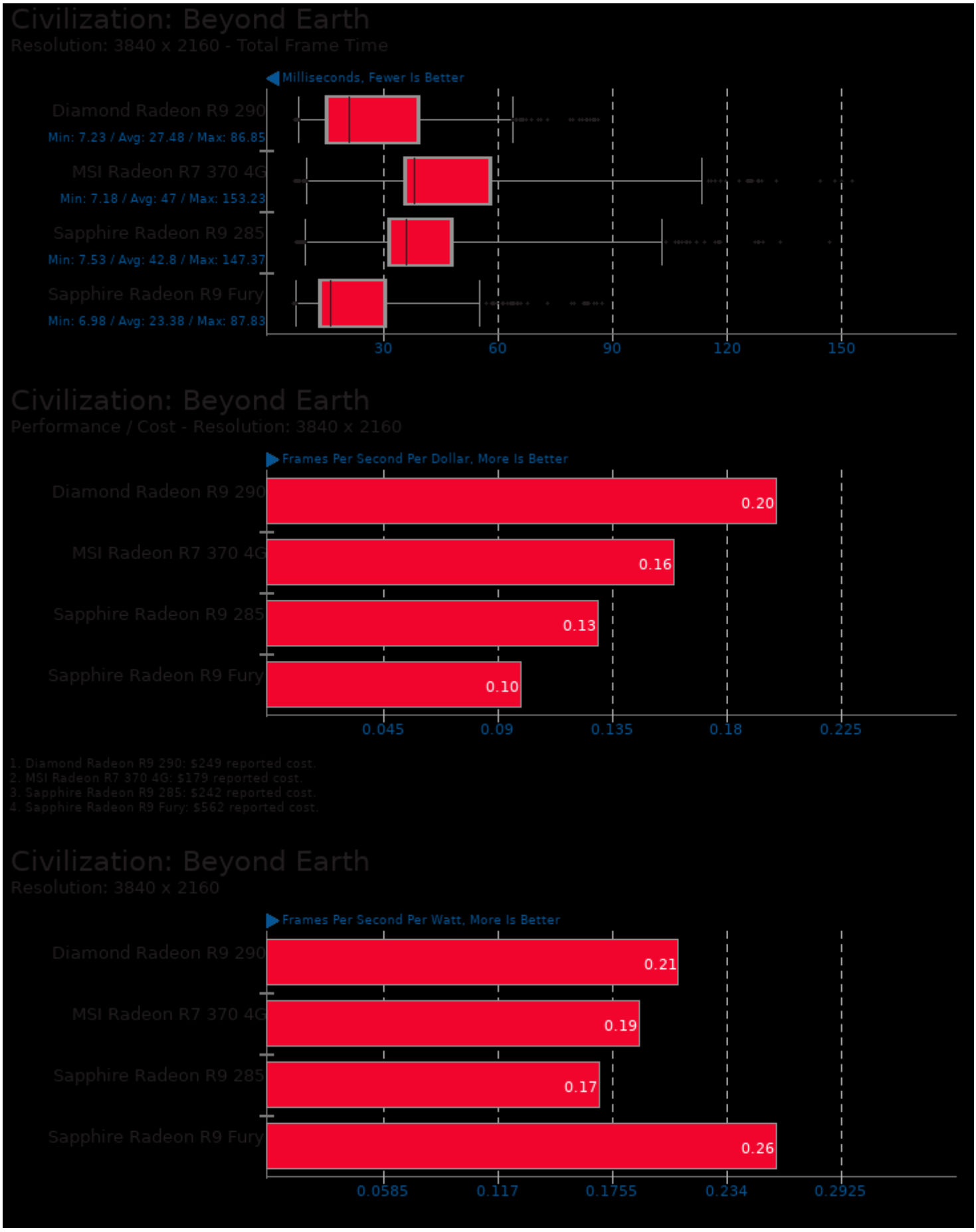
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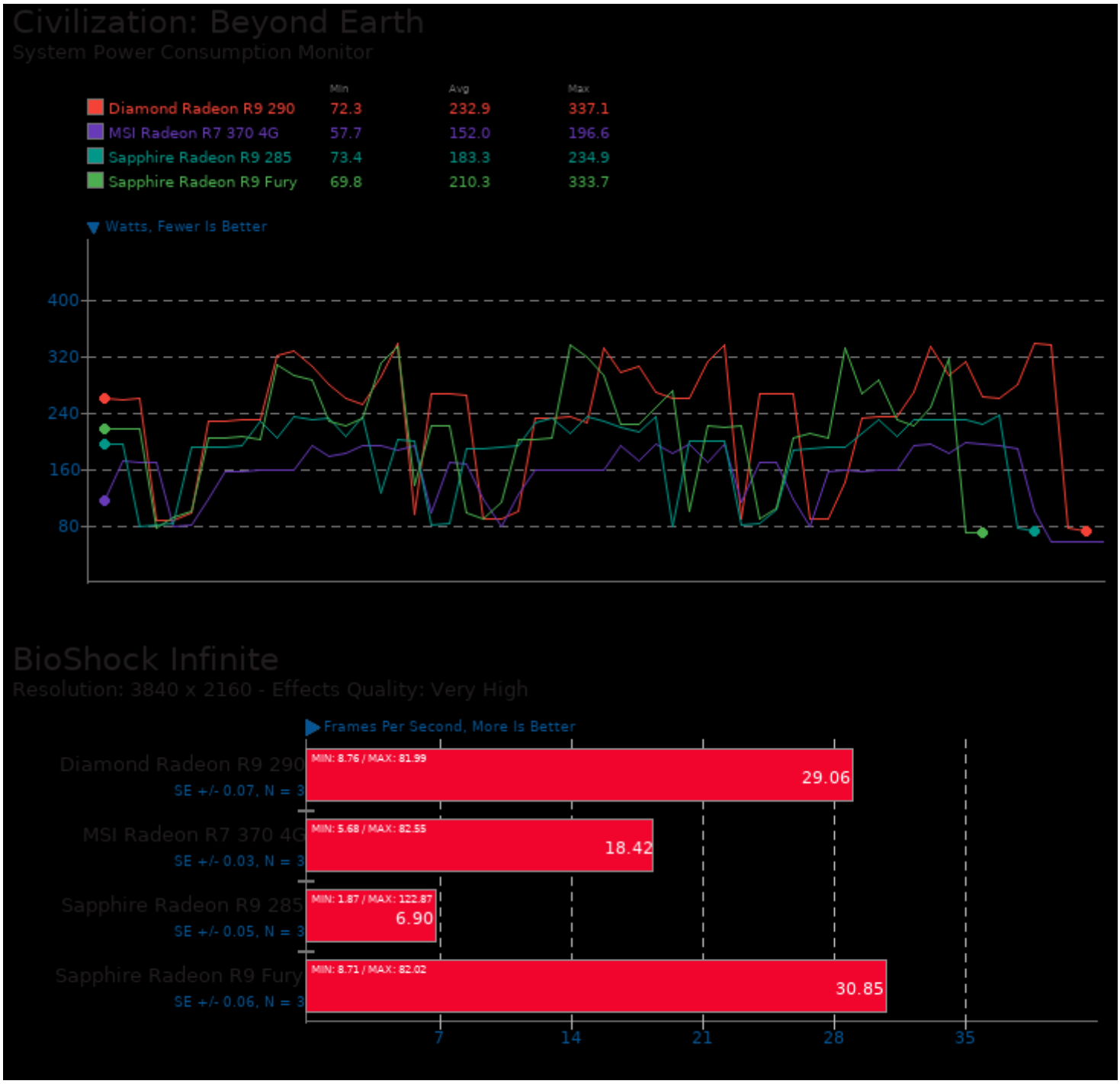
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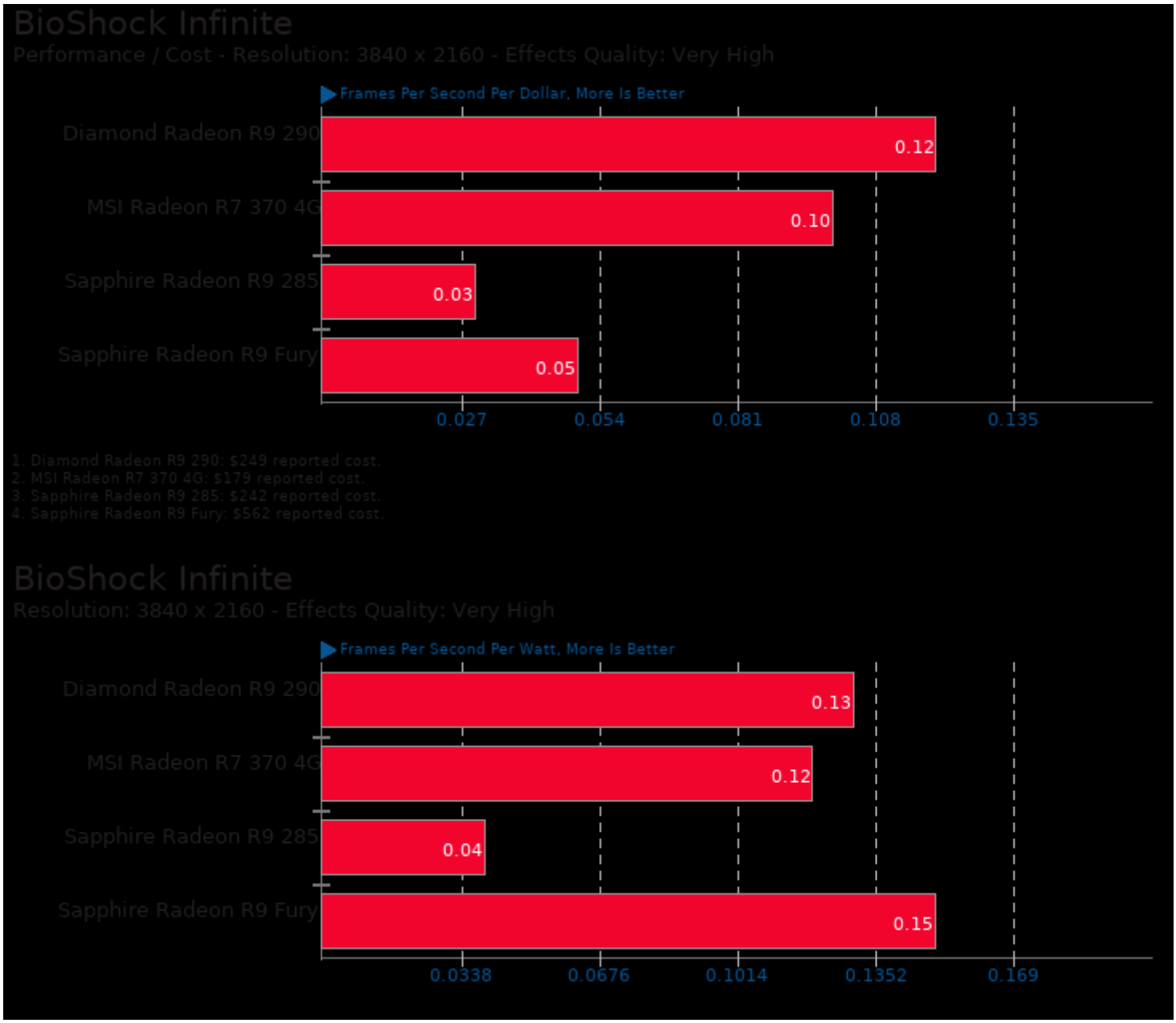
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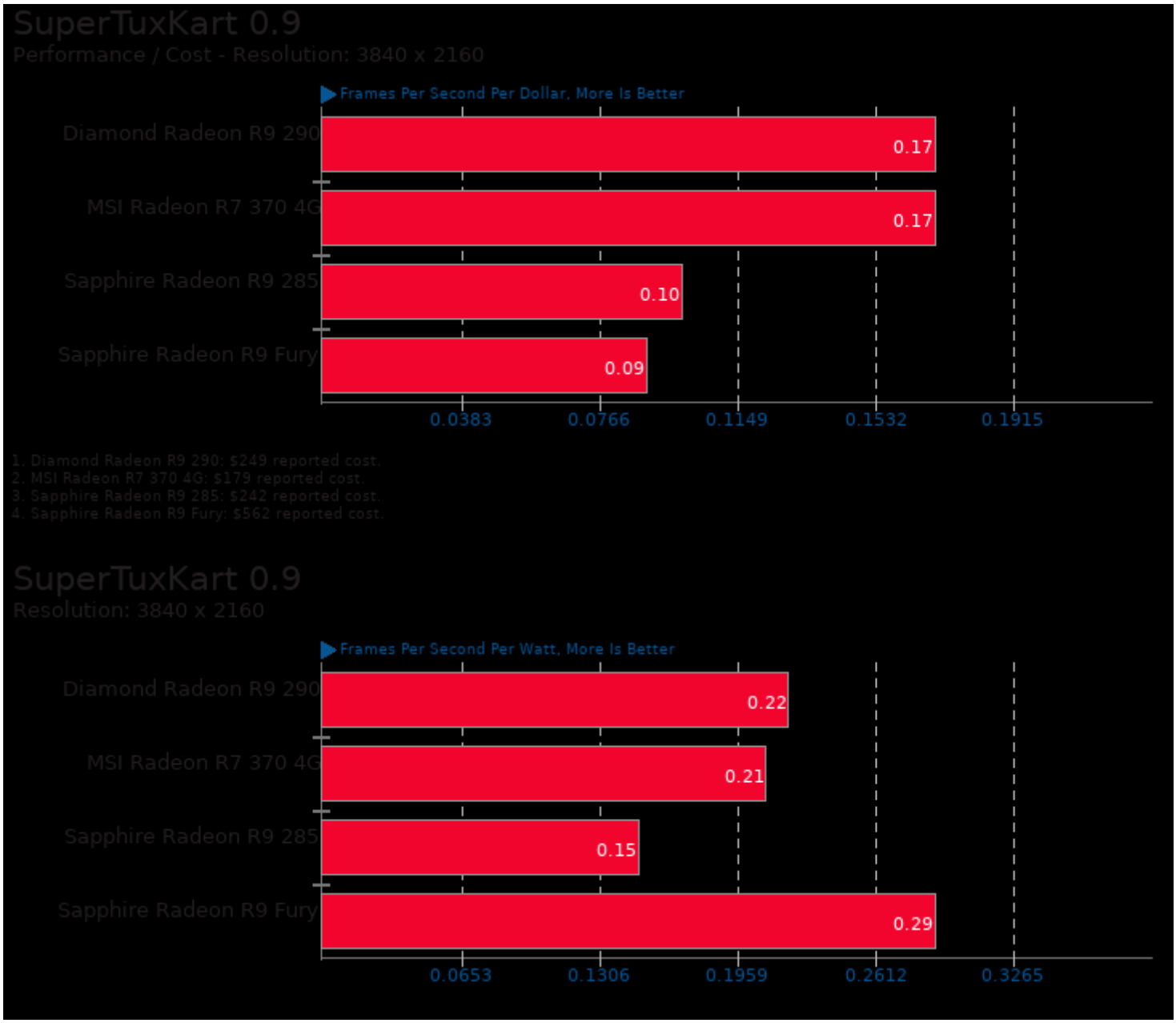
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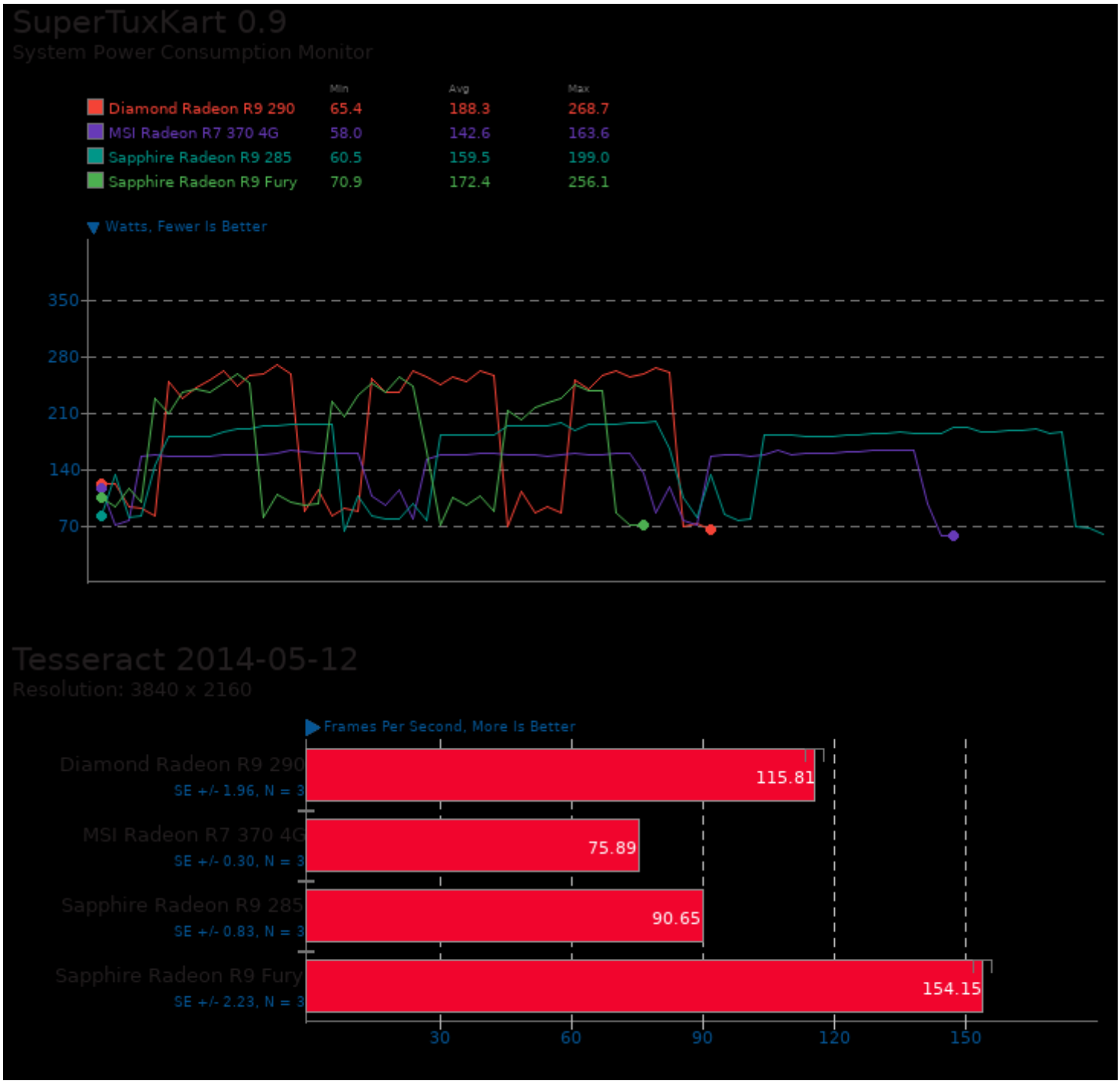
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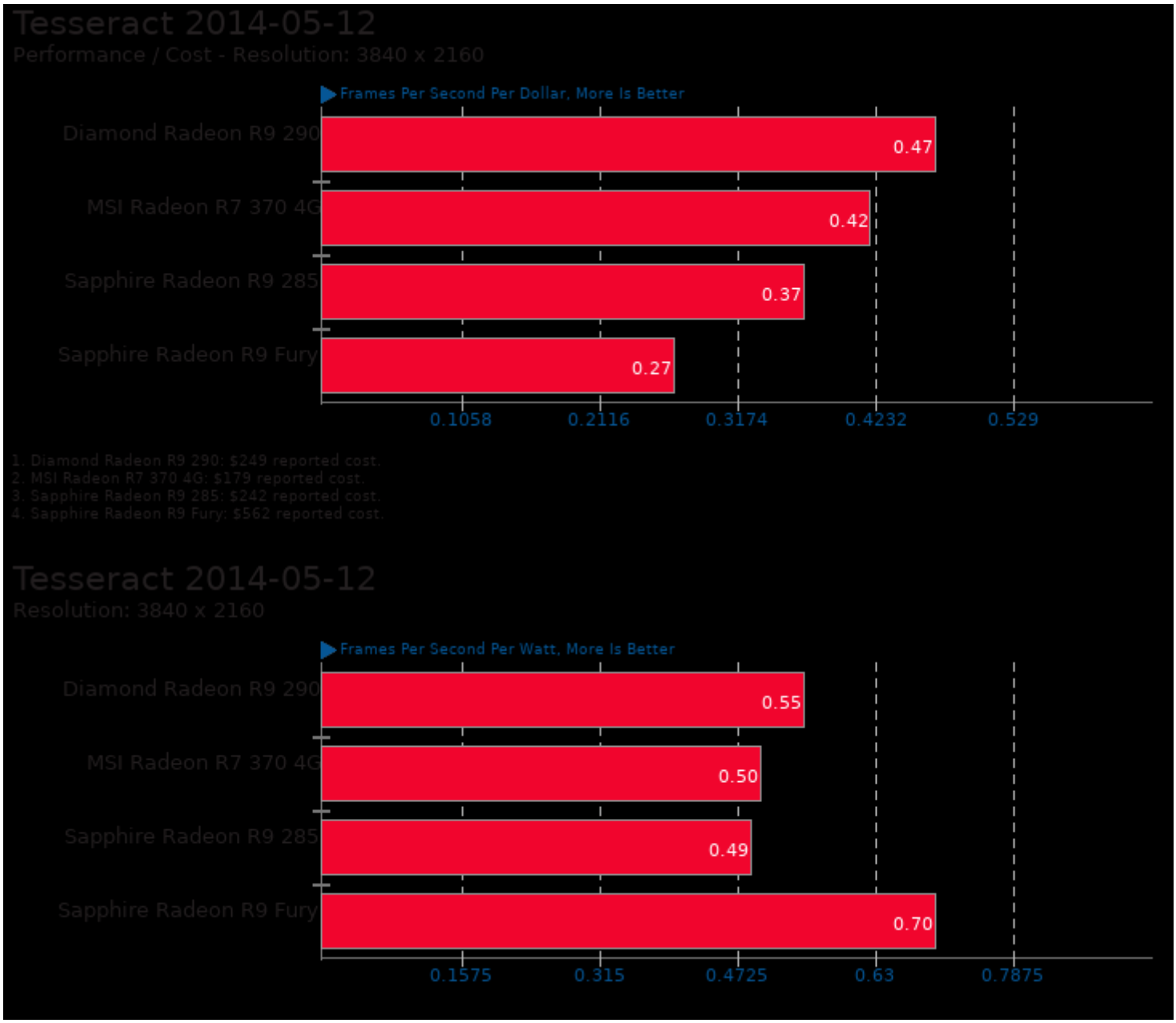
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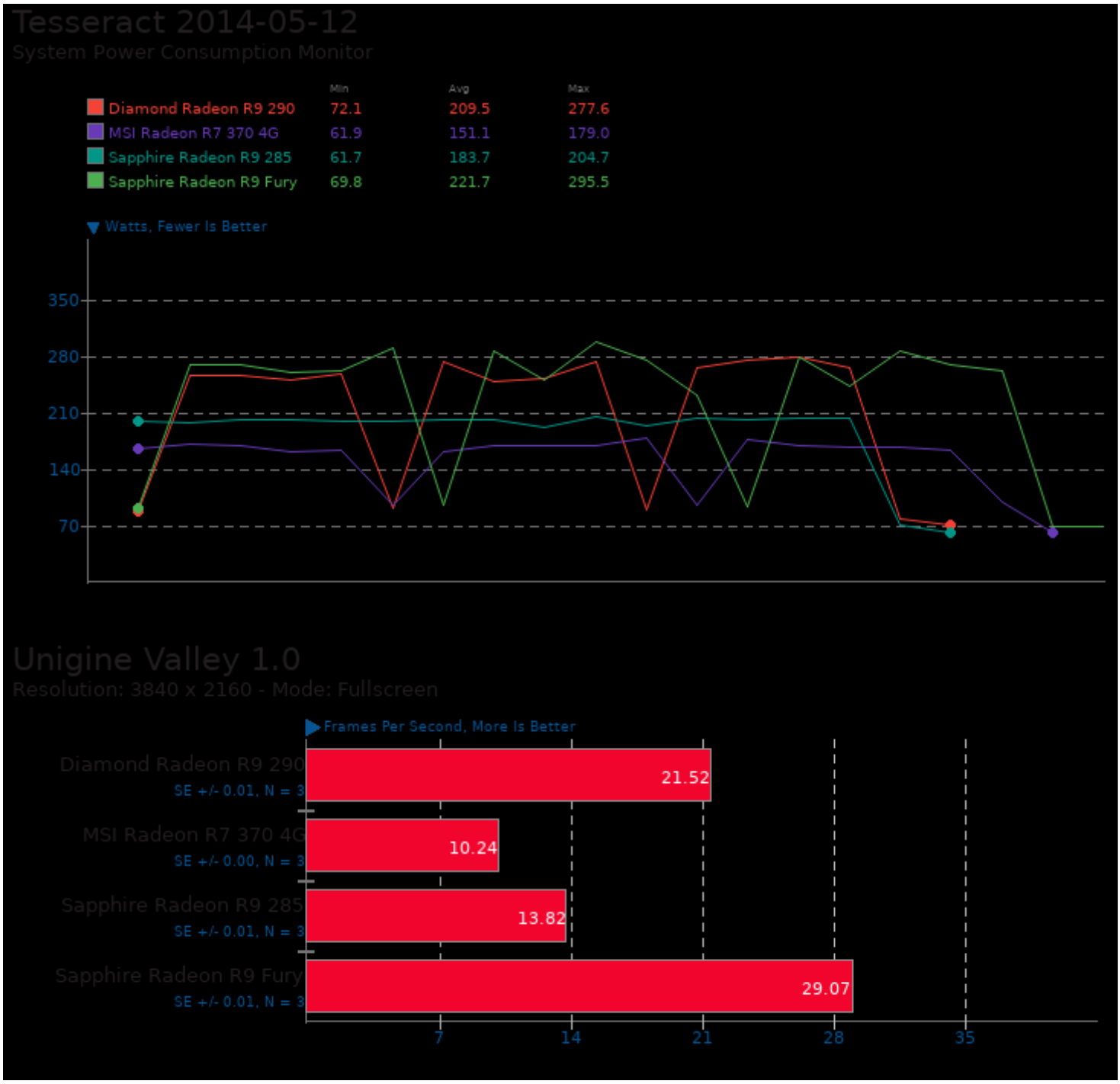
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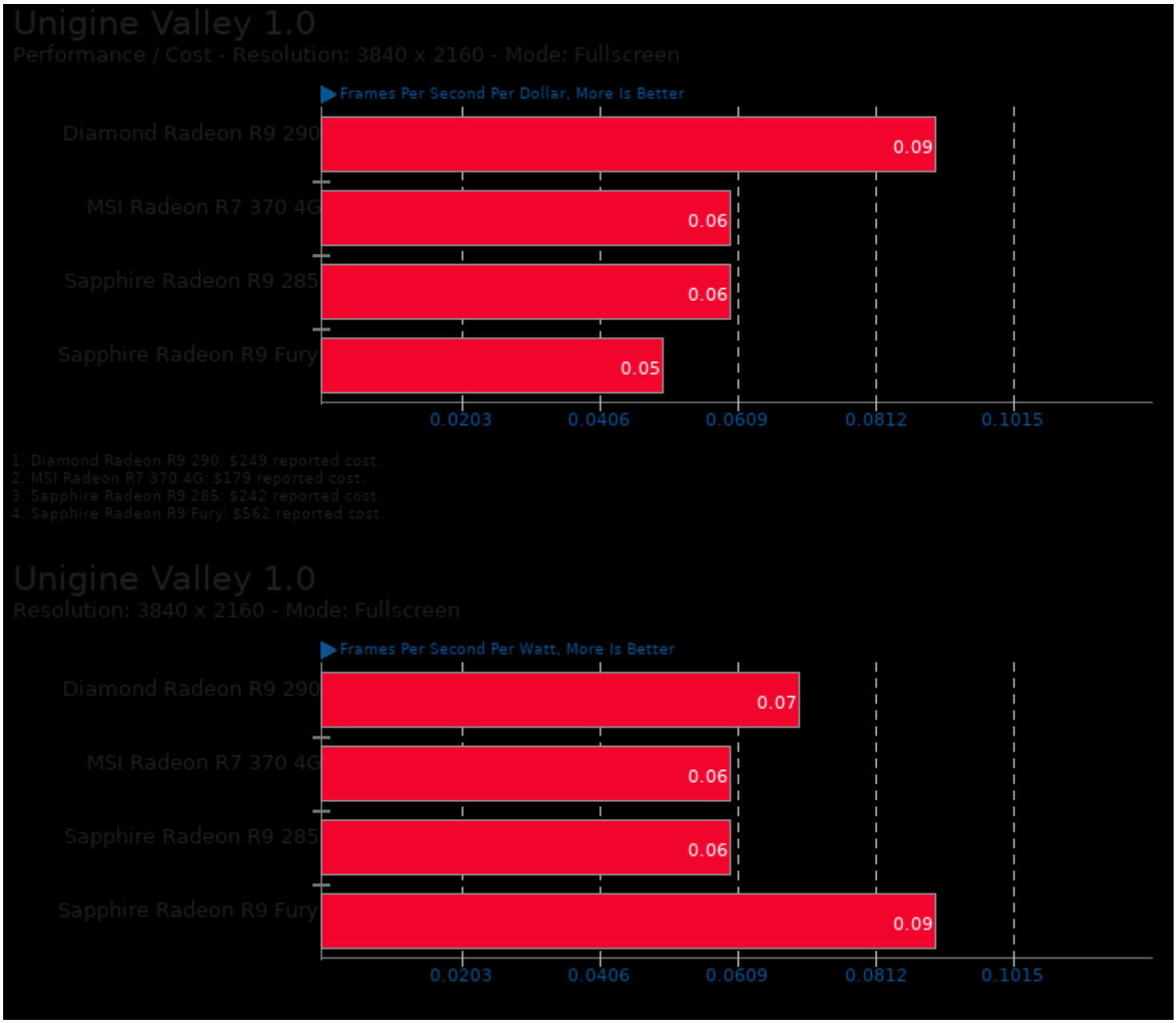
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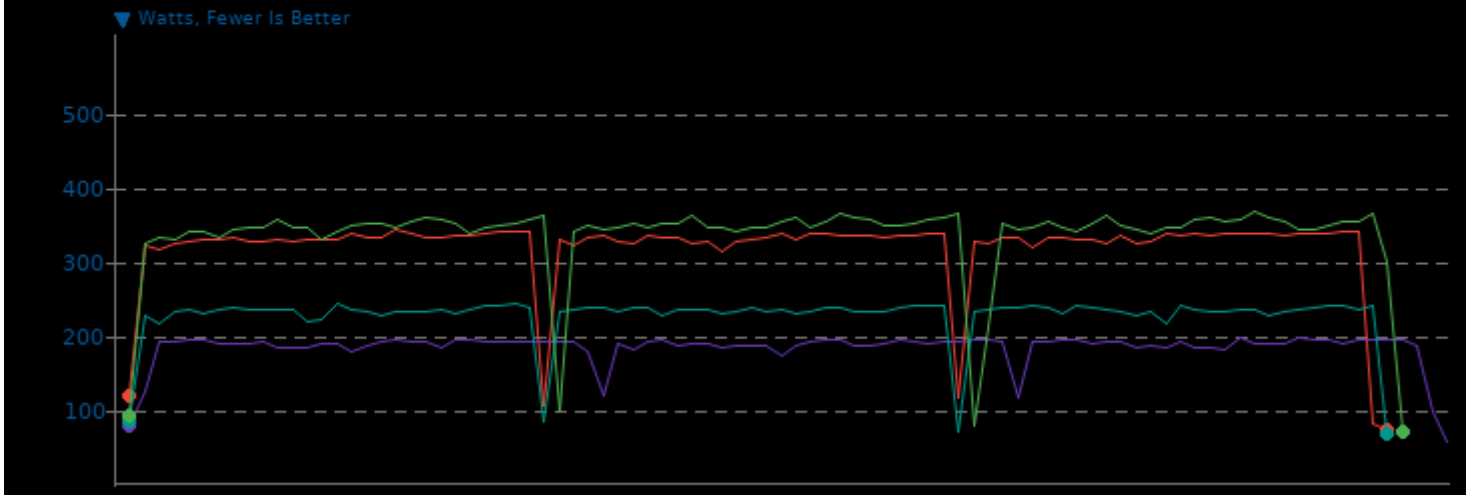


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Unigine Valley 1.0

System Power Consumption Monitor

	Min	Avg	Max
Diamond Radeon R9 290	76.0	318.4	341.7
MSI Radeon R7 370 4G	59.2	184.7	198.2
Sapphire Radeon R9 285	68.5	227.6	242.9
Sapphire Radeon R9 Fury	71.8	334.6	366.7



Meta Performance Per Dollar

Performance Per Dollar



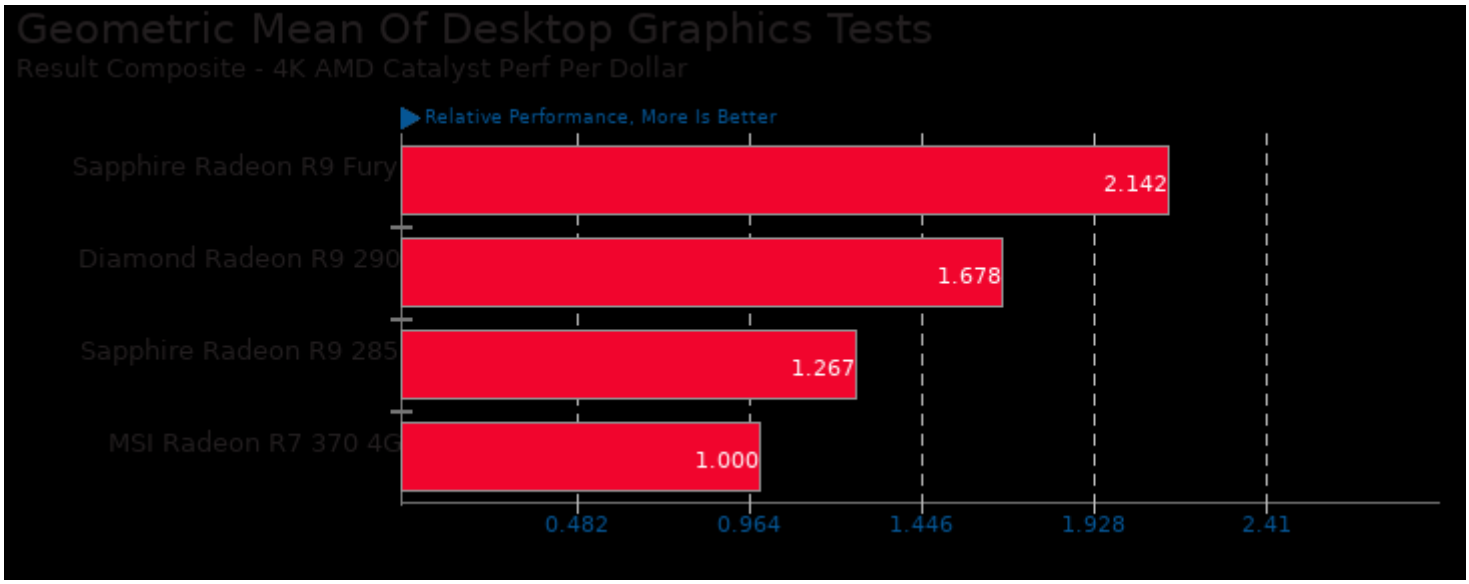
1. Diamond Radeon R9 290: $249 reported cost.
2. MSI Radeon R7 370 4G: $179 reported cost.
3. Sapphire Radeon R9 285: $242 reported cost.
4. Sapphire Radeon R9 Fury: $562 reported cost.

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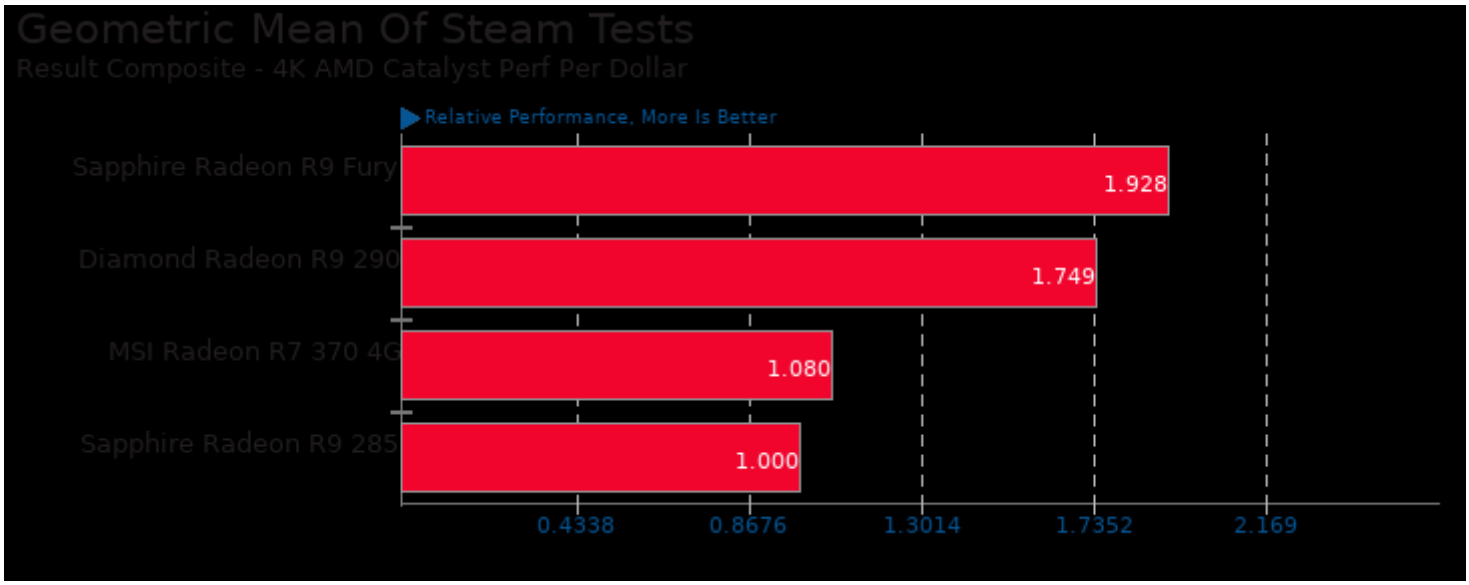


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These geometric means are based upon test groupings / test suites for this result file.



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



Geometric mean based upon tests: pts/bioshock-infinite, pts/civbe, pts/csgo, 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 03:14.