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Ryzen 3 2200G Radeon Vega Initial Linux Benchmarks

AMD Ryzen 3 2200G testing for a future article on Phoronix.

Automated Executive Summary

Ryzen 5 2400G - Vega 11 had the most wins, coming in first place for 66% of the tests.

Based on the geometric mean of all complete results, the fastest (Ryzen 5 2400G - Vega 11) was 2.195x the speed of the slowest (Core i5 6600K - HD 530). HAL9006-1 was 0.981x the speed of Ryzen 5 2400G - Vega 11, Ryzen 3 2200G - Vega 8 was 0.957x the speed of HAL9006-1, Core i7 5775C - Iris Pro 6200 was 0.846x the speed of Ryzen 3 2200G - Vega 8, A10-7870K - Radeon R7 was 0.696x the speed of Core i7 5775C - Iris Pro 6200, Core i7 8700K - UHD 630 was 0.982x the speed of A10-7870K - Radeon R7, Core i5 8400 - UHD 630 was 0.91x the speed of Core i7 8700K - UHD 630, Core i3 8100 - UHD 630 was 0.93x the speed of Core i5 8400 - UHD 630, Core i5 6600K - HD 530 was 0.993x the speed of Core i3 8100 - UHD 630.

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

GpuTest (Test: Triangle - Resolution: 1920 x 1080 - Mode: Fullscreen) at 5.22x
Serious Sam 3: BFE (Resolution: 1920 x 1080 - Quality: High - Renderer: Vulkan) at 2.94x
Dota 2 (Resolution: 1920 x 1080 - Renderer: Vulkan) at 2.905x
Dota 2 (Resolution: 1920 x 1080 - Renderer: OpenGL) at 2.707x
Mad Max (Resolution: 1920 x 1080 - Graphics Preset: Low - Renderer: Vulkan - Scene: Hope, Glory, and Dog is Dead)

at 2.269x
Mad Max (Resolution: 1920 x 1080 - Graphics Preset: Low - Renderer: Vulkan - Scene: Camp Hollow Point) at 2.25x
The Talos Principle (Renderer: Vulkan - Resolution: 1920 x 1080) at 2.169x
Xonotic (Resolution: 1920 x 1080 - Effects Quality: Ultimate) at 2.158x
Unigine Valley (Resolution: 1280 x 1024 - Mode: Fullscreen) at 2.128x
Mad Max (Resolution: 1920 x 1080 - Graphics Preset: Low - Renderer: Vulkan - Scene: Landmover) at 2.121x.

Test Systems:

A10-7870K - Radeon R7

Processor: AMD A10-7870K Radeon R7 12 Compute Cores 4C+8G @ 3.90GHz (2 Cores / 4 Threads), Motherboard: ASUS A88XM-E (2001 BIOS), Chipset: AMD Family 15h, Memory: 15360MB, Disk: 525GB SABRENT + 250GB Samsung SSD 850, Graphics: ASUS AMD Radeon R7 1024MB, Audio: AMD Kaveri HDMI/DP, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 17.10, Kernel: 4.15.2-041502-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, OpenGL: 4.5 Mesa 18.1.0-devel- padoka PPA (LLVM 7.0.0), Vulkan: 1.0.61, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: radeon.si_support=0 radeon.cik_support=0 amdgpu.si_support=1 amdgpu.cik_support=1
Processor Notes: Scaling Governor: acpi-cpufreq performance
Python Notes: Python 2.7.14 + Python 3.6.3
Security Notes: __user pointer sanitization + Full AMD retpoline Protection

Core i3 8100 - UHD 630

Processor: Intel Core i3-8100 @ 3.60GHz (4 Cores), Motherboard: ASRock Z370M-ITX/ac (P1.20 BIOS), Chipset: Intel Device 3e1f, Memory: 8192MB, Disk: 525GB SABRENT + 60GB DREVO X1 SSD, Graphics: Intel HD 3072MB (1100MHz), Audio: Realtek ALC892, Monitor: DELL S2409W, Network: Intel Connection + Intel Device 24fb

OS: Ubuntu 17.10, Kernel: 4.15.2-041502-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, OpenGL: 4.5 Mesa 18.1.0-devel- padoka PPA, Vulkan: 1.0.61, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline Protection

Core i5 6600K - HD 530

Processor: Intel Core i5-6600K @ 3.90GHz (4 Cores), Motherboard: MSI Z170A GAMING PRO (MS-7984) v1.0 (1.00 BIOS), Chipset: Intel Skylake, Memory: 15360MB, Disk: 525GB SABRENT + 256GB TS256GSSD370S, Graphics: Intel HD 530 3072MB (1150MHz), Audio: Realtek ALC1150, Monitor: Acer B286HK, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.15.2-041502-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, OpenGL: 4.5 Mesa 18.1.0-devel- padoka PPA, Vulkan: 1.0.61, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline Protection

Core i5 8400 - UHD 630

Processor: Intel Core i5-8400 @ 4.00GHz (6 Cores), Motherboard: MSI Z370M MORTAR (MS-7B54) v1.0 (1.10 BIOS), Chipset: Intel Device 3ec2, Memory: 8192MB, Disk: 525GB SABRENT + 128GB ADATA SX6000NP, Graphics: Intel HD 3072MB (1050MHz), Audio: Realtek ALC892, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.15.2-041502-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, OpenGL: 4.5 Mesa 18.1.0-devel- padoka PPA, Vulkan: 1.0.61, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate performance
Python Notes: Python 2.7.14 + Python 3.6.3
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline Protection

Core i7 8700K - UHD 630

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0606 BIOS), Chipset: Intel Device 3ec2, Memory: 15360MB, Disk: 525GB SABRENT + Samsung SSD 950 PRO 256GB, Graphics: Intel HD 3072MB (1200MHz), Audio: Realtek ALC1220, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.15.2-041502-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, OpenGL: 4.5 Mesa 18.1.0-devel- padoka PPA, Vulkan: 1.0.61, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate performance
Python Notes: Python 2.7.14 + Python 3.6.3
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline Protection

Core i7 5775C - Iris Pro 6200

Processor: Intel Core i7-5775C @ 3.70GHz (4 Cores / 8 Threads), Motherboard: MSI Z97-G45 GAMING (MS-7821) v1.0 (V2.9 BIOS), Chipset: Intel Broadwell-U- DMI, Memory: 16384MB, Disk: 120GB CT120BX100SSD1 + 525GB SABRENT, Graphics: Intel Iris Pro 6200 3072MB (1150MHz), Audio: Intel Broadwell-U Audio, Monitor: DELL S2409W, Network: Qualcomm Atheros Killer E220x Gigabit

OS: Ubuntu 17.10, Kernel: 4.15.2-041502-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, OpenGL: 4.5 Mesa 18.1.0-devel- padoka PPA, Vulkan: 1.0.61, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: intel_pstate performance
Python Notes: Python 2.7.14 + Python 3.6.3
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline Protection

Ryzen 3 2200G - Vega 8

Processor: AMD Ryzen 3 2200G @ 3.50GHz (4 Cores), Motherboard: MSI X370 XPOWER GAMING TITANIUM (MS-7A31) v1.0 (1.C0 BIOS), Chipset: AMD Device 15d0, Memory: 14336MB, Disk: 525GB SABRENT + 525GB Crucial_CT525MX3 + 120GB Force MP500, Graphics: MSI AMD Radeon Vega 8 Mobile 2048MB, Audio: AMD Device 15de, Monitor: DELL P2415Q, Network: Intel I211 Gigabit Connection

OS: Ubuntu 17.10, Kernel: 4.15.2-041502-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, OpenGL: 4.5 Mesa 18.1.0-devel- padoka PPA (LLVM 7.0.0), Vulkan: 1.0.61, Compiler: GCC 7.2.0, File-System:

ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: acpi-cpufreq performance
Graphics Notes: GLAMOR
Security Notes: __user pointer sanitization + Full AMD retpoline IBPB Protection

Ryzen 5 2400G - Vega 11

Processor: AMD Ryzen 5 2400G @ 3.60GHz (4 Cores / 8 Threads), Motherboard: MSI X370 XPOWER GAMING TITANIUM (MS-7A31) v1.0 (1.C0 BIOS), Chipset: AMD Device 15d0, Memory: 14336MB, Disk: 525GB SABRENT + 525GB Crucial_CT525MX3 + 120GB Force MP500, Graphics: MSI AMD Radeon Vega 8 Mobile 2048MB, Audio: AMD Device 15de, Monitor: DELL P2415Q, Network: Intel I211 Gigabit Connection

OS: Ubuntu 17.10, Kernel: 4.15.2-041502-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, OpenGL: 4.5 Mesa 18.1.0-devel- padoka PPA (LLVM 7.0.0), Vulkan: 1.0.61, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: acpi-cpufreq performance
Graphics Notes: GLAMOR
Python Notes: Python 2.7.14 + Python 3.6.3
Security Notes: __user pointer sanitization + Full AMD retpoline IBPB Protection

HAL9006-1

Processor: AMD Ryzen 3 2200G @ 3.90GHz (4 Cores), Motherboard: ASRock B450 Gaming-ITX/ac (P1.70 BIOS), Chipset: AMD Raven/Raven2, Memory: 14336MB, Disk: 256GB Crucial_CT256MX1 + Transcend 16GB, Graphics: AMD Radeon Vega / Mobile 2GB (42949666/1600MHz), Audio: AMD Raven/Raven2/Fenghuang, Monitor: Philips FTV, Network: Intel I211 + Intel Dual Band-AC 3168NGW

OS: Debian testing, Kernel: 4.19.0-2-amd64 (x86_64), Desktop: GNOME Shell 3.30.1, Display Server: X Server 1.20.3 + Wayland, Display Driver: modesetting 1.20.3, OpenGL: 4.5 Mesa 18.3.2 (LLVM 7.0.1), Compiler: GCC 8.2.0 + Clang 7.0.1-6 + LLVM 7.0.1, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Security Notes: __user pointer sanitization + Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling + SSB disabled via prctl and seccomp

	A10-7870K - Radeon R7	Core i3 8100 - UHD 630	Core i5 6600K - HD 530	Core i5 8400 - UHD 630	Core i7 8700K - UHD 630	Core i7 5775C - Iris Pro 6200	Ryzen 3 2200G - Vega 8	Ryzen 5 2400G - Vega 11	HAL9006-1
ET: Legacy - Renderer2 - 1920 x 1080 (FPS)	**81.87**	90.13	89.47	103.97	105.07	116.17	127.63	131.90	**133.10**
Normalized	61.51%	67.72%	67.22%	78.11%	78.94%	87.28%	95.89%	99.1%	100%
Standard Deviation	3.5%	0.1%	0.3%	0.3%	4.4%	0.2%	0.7%	0.2%	1.2%

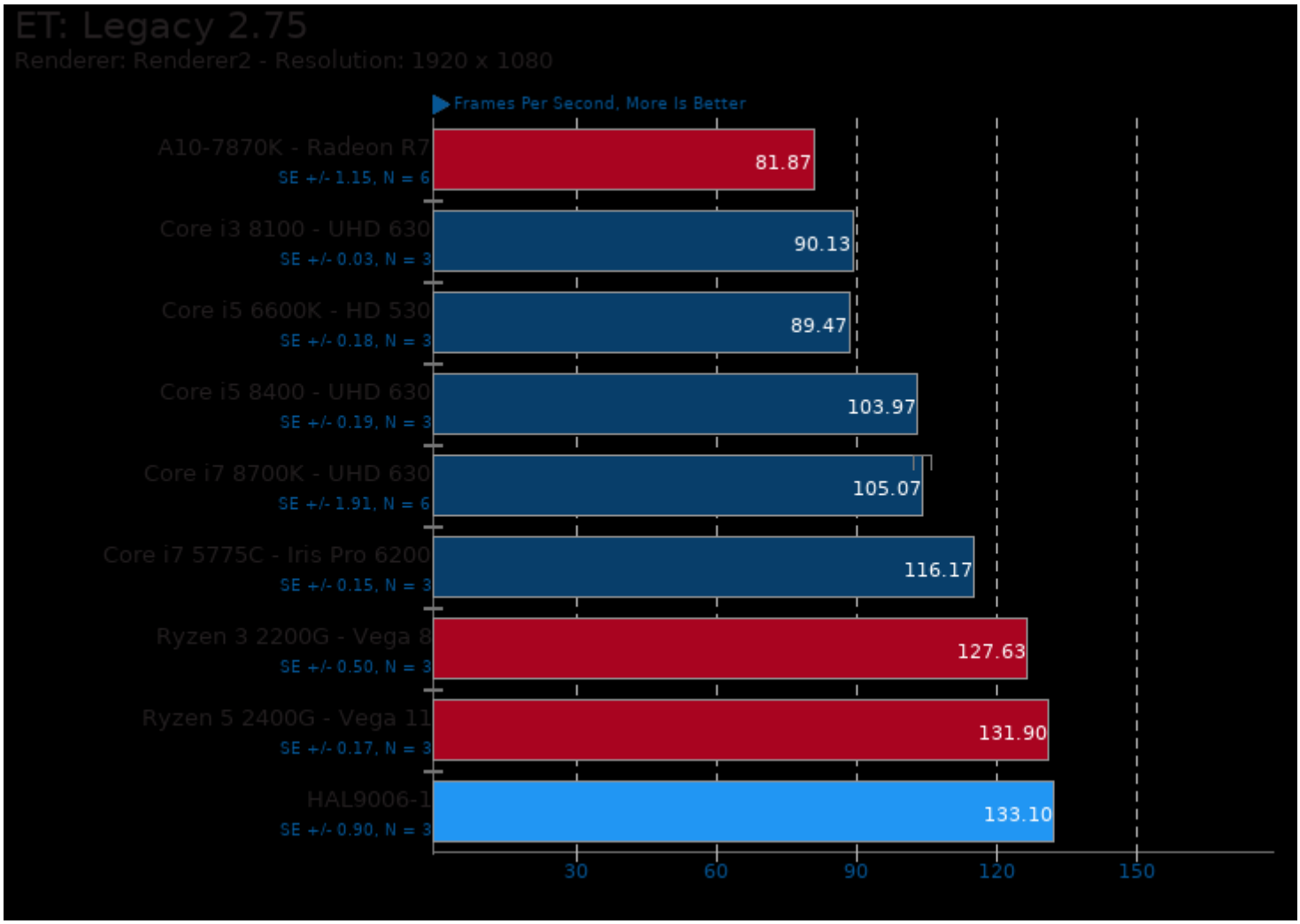
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Unigine Valley - 1280 x 1024 - Fullscreen (FPS)		15.19	15.81	**14.82**	17.56	22.66	25.66	**31.53**	20.32
Normalized		48.18%	50.14%	47%	55.69%	71.87%	81.38%	100%	64.45%
Standard Deviation					0.7%	0%	0.2%	0.1%	0.7%
Xonotic - 1920 x 1080 - High (FPS)	126	125	**123**	135	147	**213**	196	205	**213**
Normalized	59.15%	58.69%	57.75%	63.38%	69.01%	100%	92.02%	96.24%	100%
Standard Deviation	0.2%	0%	0%	0.3%	2.8%	0.8%	0.2%	1.1%	0.3%
Xonotic - 1920 x 1080 - Ultra (FPS)	109.40	**98.11**	98.74	102.47	115.41	173.85	174.22	**184.72**	184.40
Normalized	59.22%	53.11%	53.45%	55.47%	62.48%	94.12%	94.32%	100%	99.83%
Standard Deviation	0.6%	0.2%	0%	0.1%	0.5%	0.8%	0.2%	0.1%	0%
Xonotic - 1920 x 1080 - Ultimate (FPS)	79.31	**70.31**	71.38	71.39	80.65	124.04	134.88	**151.71**	143.51
Normalized	52.28%	46.35%	47.05%	47.06%	53.16%	81.76%	88.91%	100%	94.59%
Standard Deviation	0.2%	0%	0%	0.1%	1%	0.1%	0.2%	0.2%	0.4%
GpuTest - Triangle - 1920 x 1080 - Fullscreen (Points)	84939	38733	**37466**	42191	48293	87540	183779	**195563**	179828
Normalized	43.43%	19.81%	19.16%	21.57%	24.69%	44.76%	93.97%	100%	91.95%
Standard Deviation	0%	0.3%		0.3%	3.1%	0.5%	0.1%	0%	0.4%
BioShock Infinite - 1920 x 1080 - Low (FPS)		33.58	**33.03**	36.92	40.53	50.93			**67.16**
Normalized		50%	49.18%	54.97%	60.35%	75.83%			100%
Standard Deviation		0.1%	0.7%	0.2%	0.6%	0.8%			1.4%
Dota 2 - 1920 x 1080 - OpenGL (FPS)	23.60	20.30	20.93	**19.63**	22.37	31.57		**53.13**	
Normalized	44.42%	38.21%	39.39%	36.95%	42.1%	59.42%		100%	
Standard Deviation	1.8%	0.9%	0.6%	0.6%	0.3%	1.6%		3.3%	
Dota 2 - 1920 x 1080 - Vulkan (FPS)		17.90	18.57	**17.10**	19.47	28.93	43.80	**49.67**	
Normalized		36.04%	37.39%	34.43%	39.2%	58.24%	88.18%	100%	
Standard Deviation		0%	0.3%	0%	0.3%	0.9%	0.2%	3.9%	
Serious Sam 3: BFE - 1920 x 1080 - Low - Vulkan (FPS)		**33.57**	34.50	38.73	44.07	62.95	92.87	**107.38**	
Normalized		31.26%	32.13%	36.07%	41.04%	58.62%	86.49%	100%	
Standard Deviation		3.9%	3.3%	0.8%	7.7%	12.6%	2.5%	9.6%	
Serious Sam 3: BFE - 1920 x 1080 - High - Vulkan (FPS)		**18.07**	18.60	24.27	23.27	24.12	47.43	**53.12**	
Normalized		34.02%	35.02%	45.69%	43.81%	45.41%	89.29%	100%	
Standard Deviation		3%	1.4%	1.3%	2%	4.6%	1.2%	6.9%	
The Talos Principle - Vulkan - 1920 x 1080 (FPS)		**14.73**	**14.73**	16.03	18.97	20.47	28.77	**31.95**	
Normalized		46.1%	46.1%	50.17%	59.37%	64.07%	90.05%	100%	
Standard Deviation		0.8%	0.4%	3.2%	30.1%	2%	1.3%	6.6%	

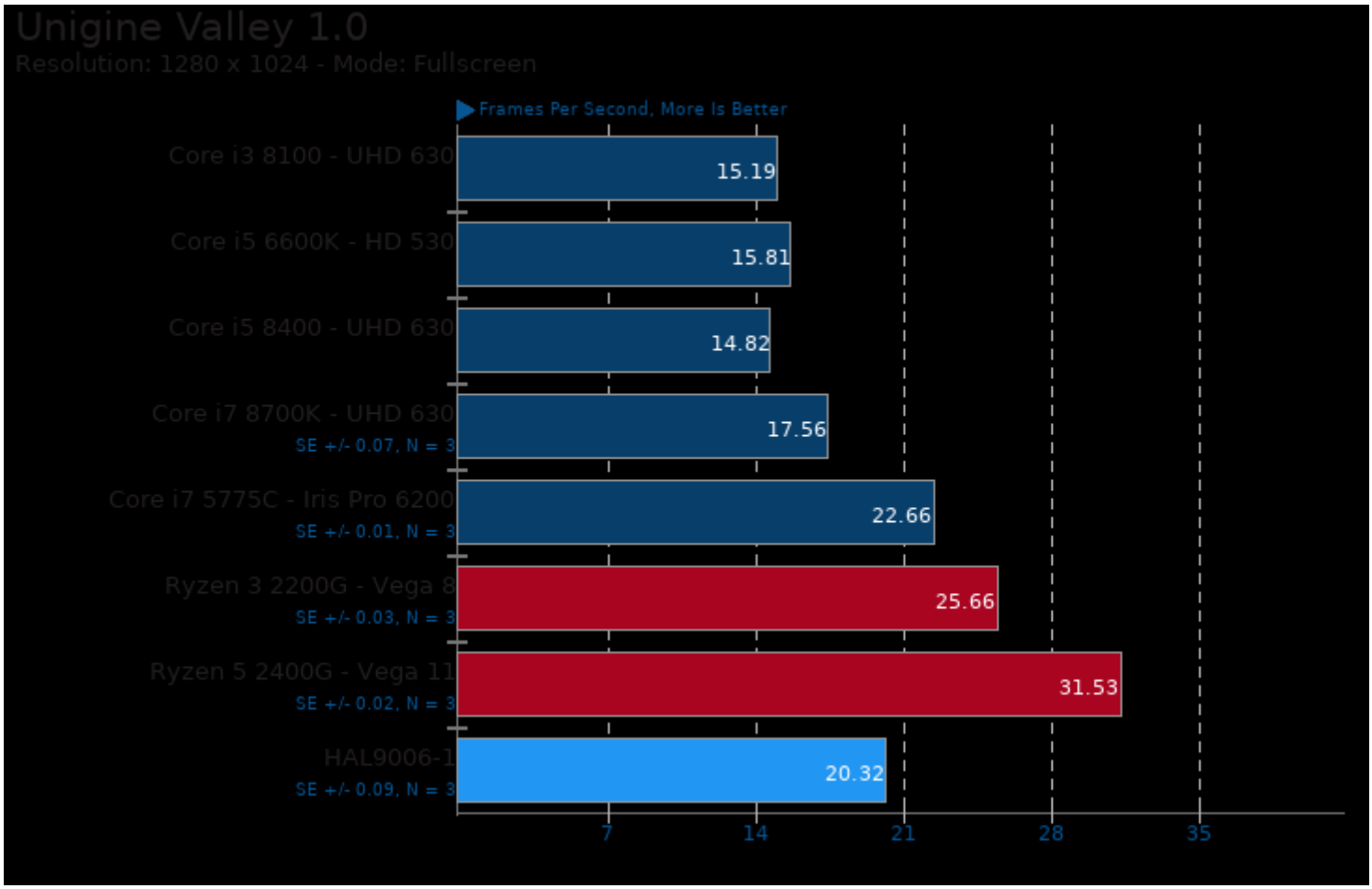
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Tomb Raider - 1920 x 1080 - Low (FPS)	31.00	32.23	**30.60**	35.43	**56.20**		
Normalized	55.16%	57.35%	54.45%	63.04%	100%		
Standard Deviation	0.9%	2.9%	0.6%	1.8%	1.7%		
Mad Max - 1920 x 1080 - Low - Vulkan - Camp Hollow Point (FPS)	21.20	**20.60**	21.84	25.34		43.05	**46.34**
Normalized	45.75%	44.45%	47.13%	54.68%		92.9%	100%
Mad Max - 1920 x 1080 - Low - Vulkan - Stronghold (FPS)	**19.79**	20.31	19.80	22.83		33.45	**33.74**
Normalized	58.65%	60.2%	58.68%	67.66%		99.14%	100%
Mad Max - 1920 x 1080 - Low - Vulkan - H.G.a.D.i.D (FPS)	**19.94**	20.52	19.98	23.29		38.58	**45.24**
Normalized	44.08%	45.36%	44.16%	51.48%		85.28%	100%
Mad Max - 1920 x 1080 - Low - Vulkan - Landmover (FPS)	**24.89**	25.60	25.63	29.28		46.21	**52.78**
Normalized	47.16%	48.5%	48.56%	55.48%		87.55%	100%
Portal - 1920 x 1080 (FPS)	**108.63**	109.32	116.96	130.20	**205.02**		
Normalized	52.99%	53.32%	57.05%	63.51%	100%		
Standard Deviation	0.2%	0.1%	0.2%	0.7%	0.4%		

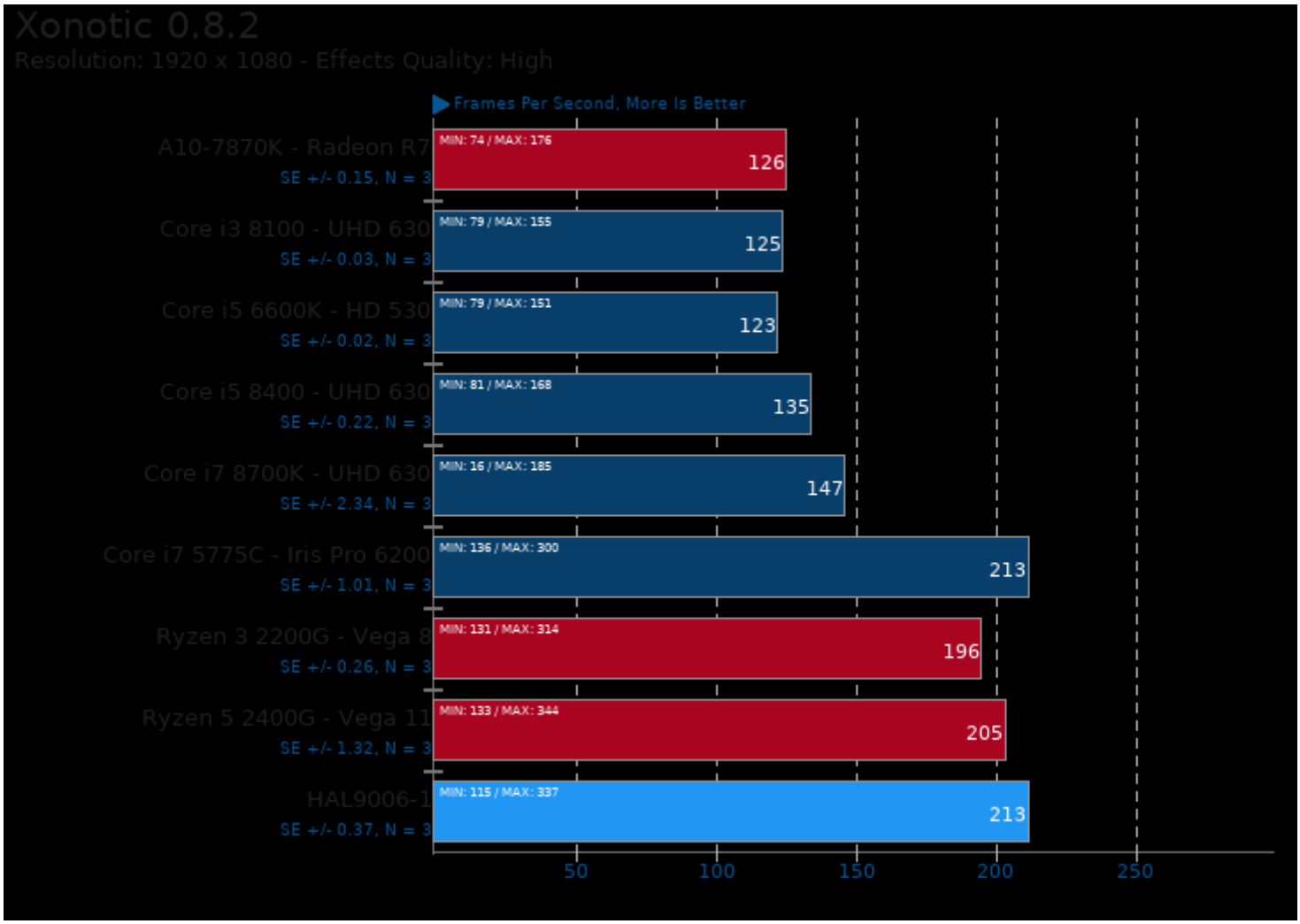
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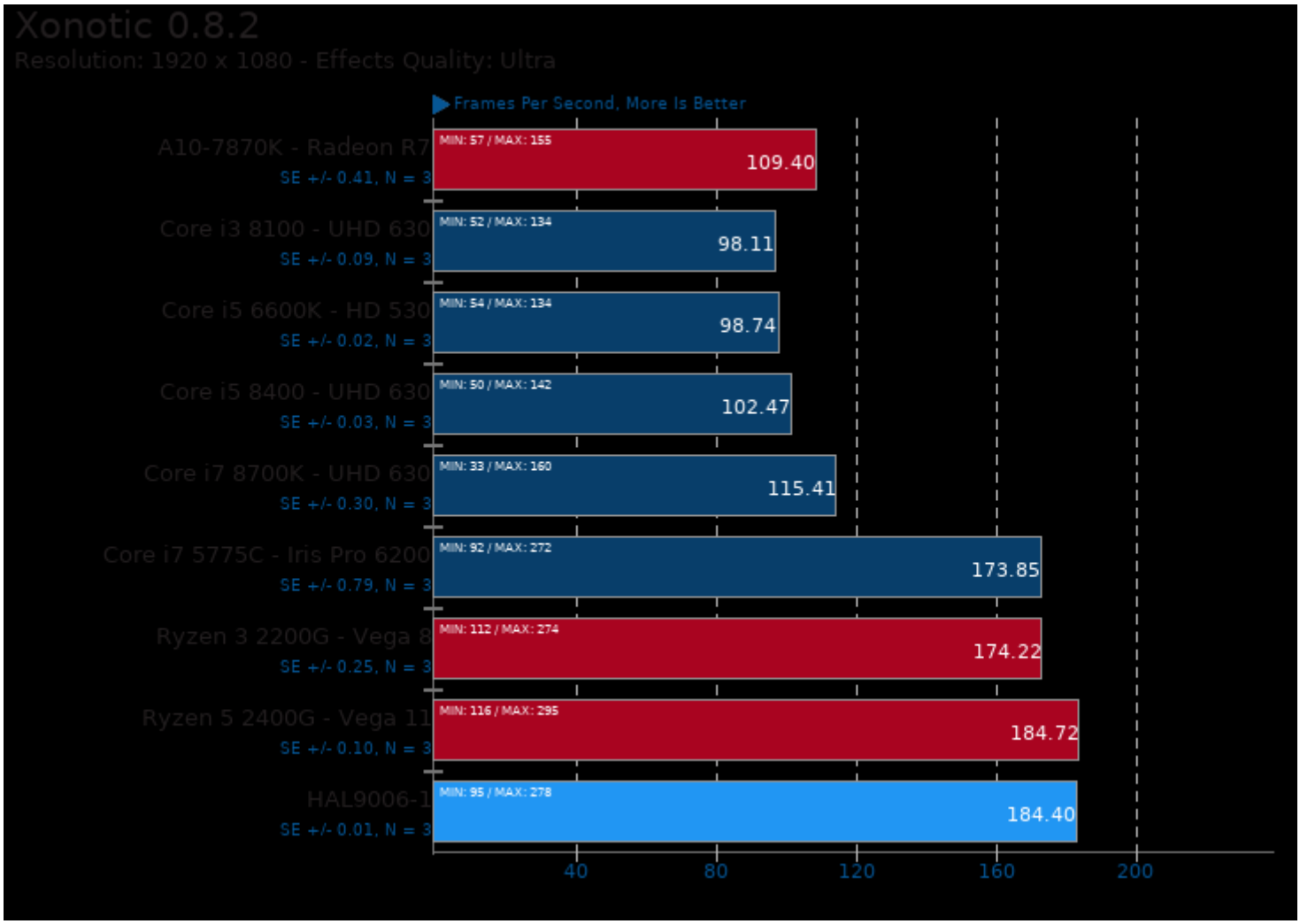
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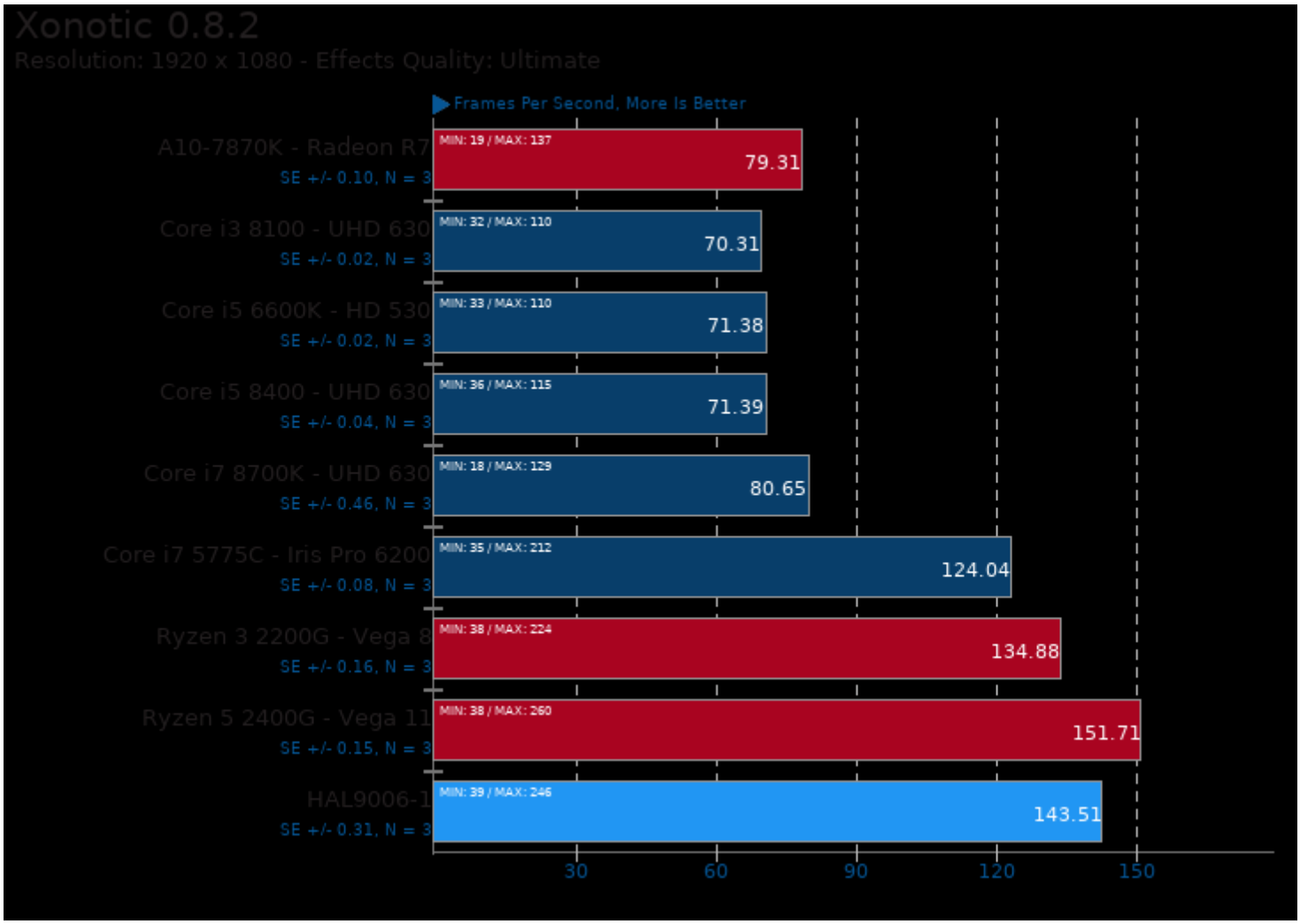
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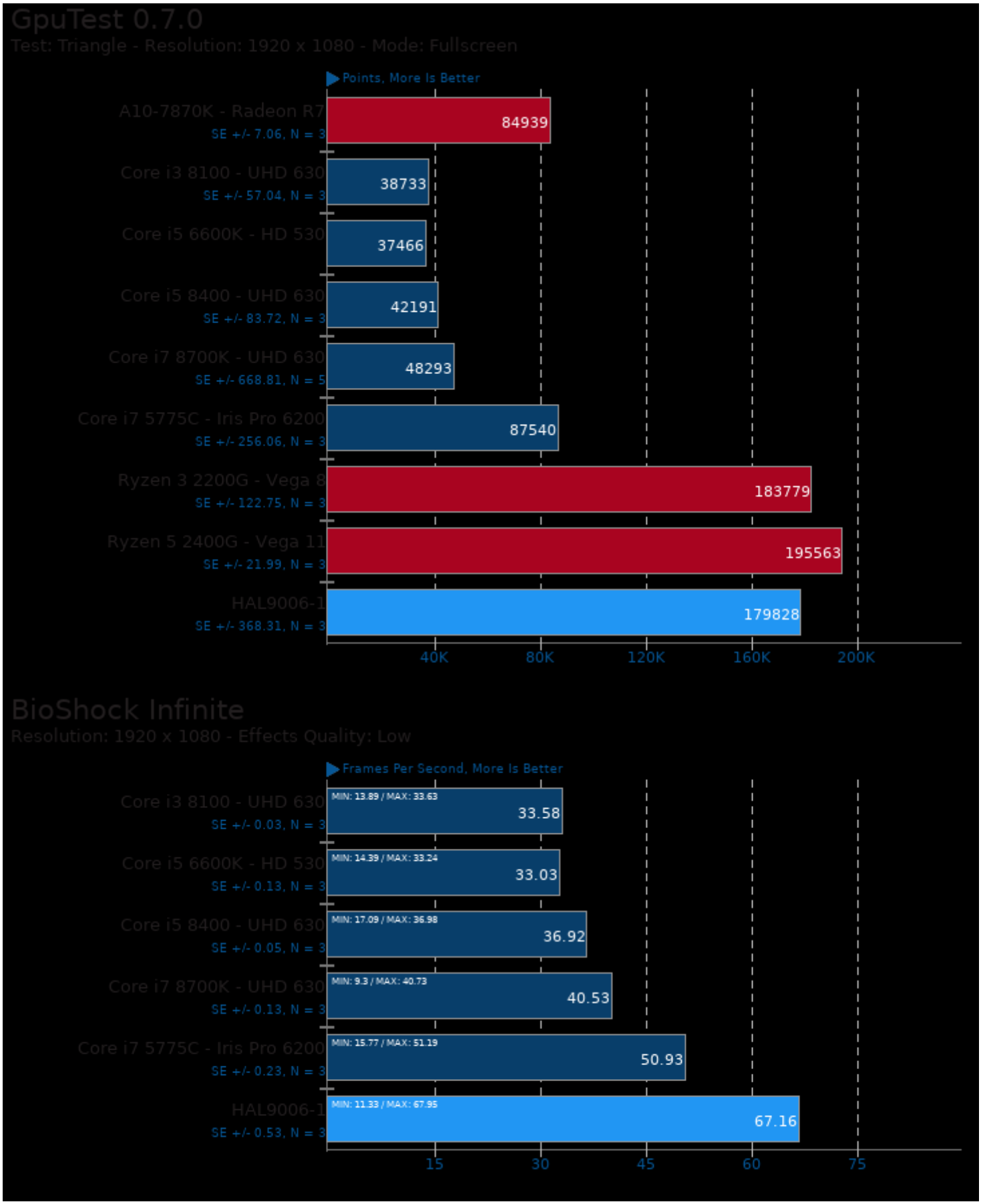
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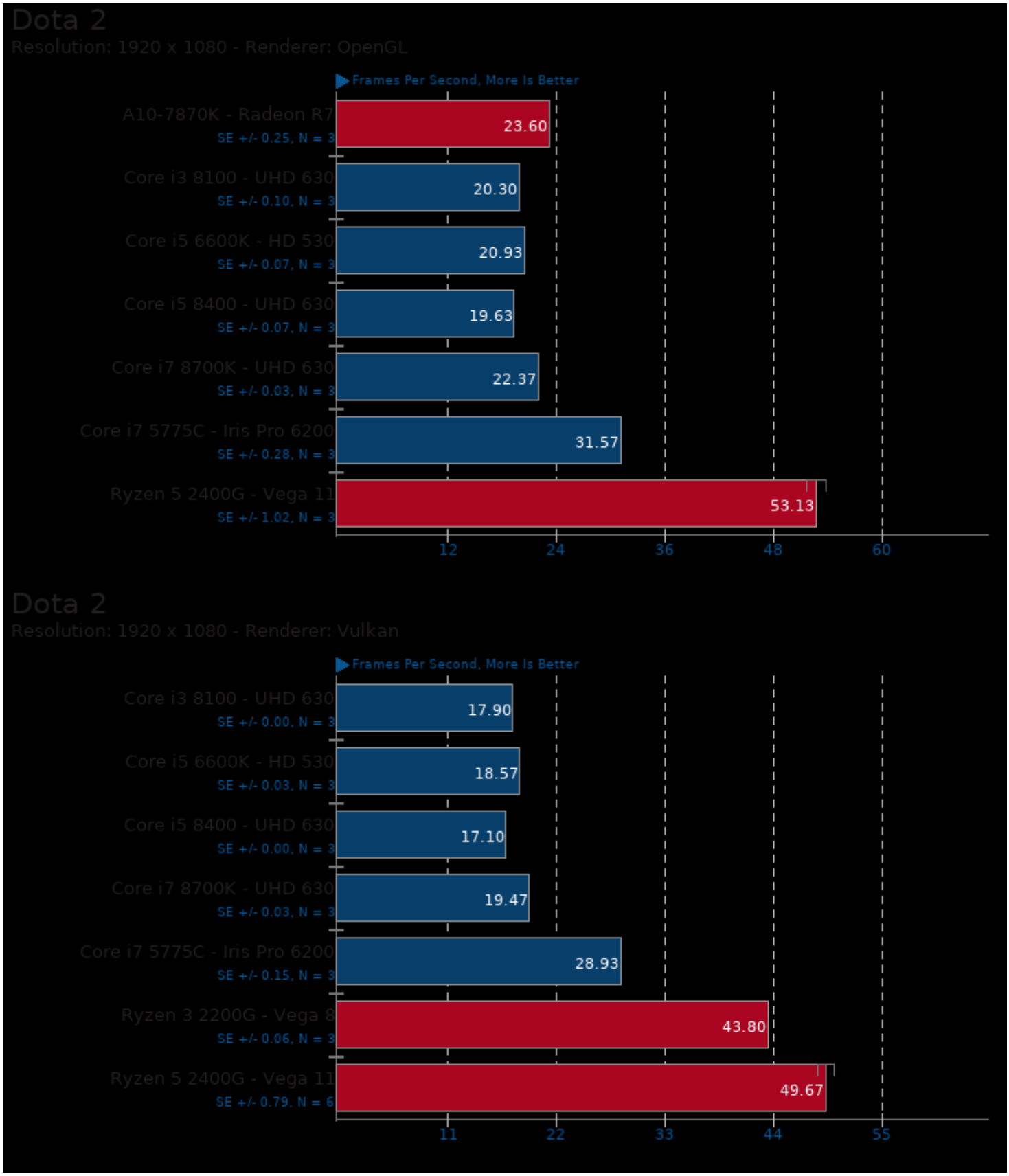
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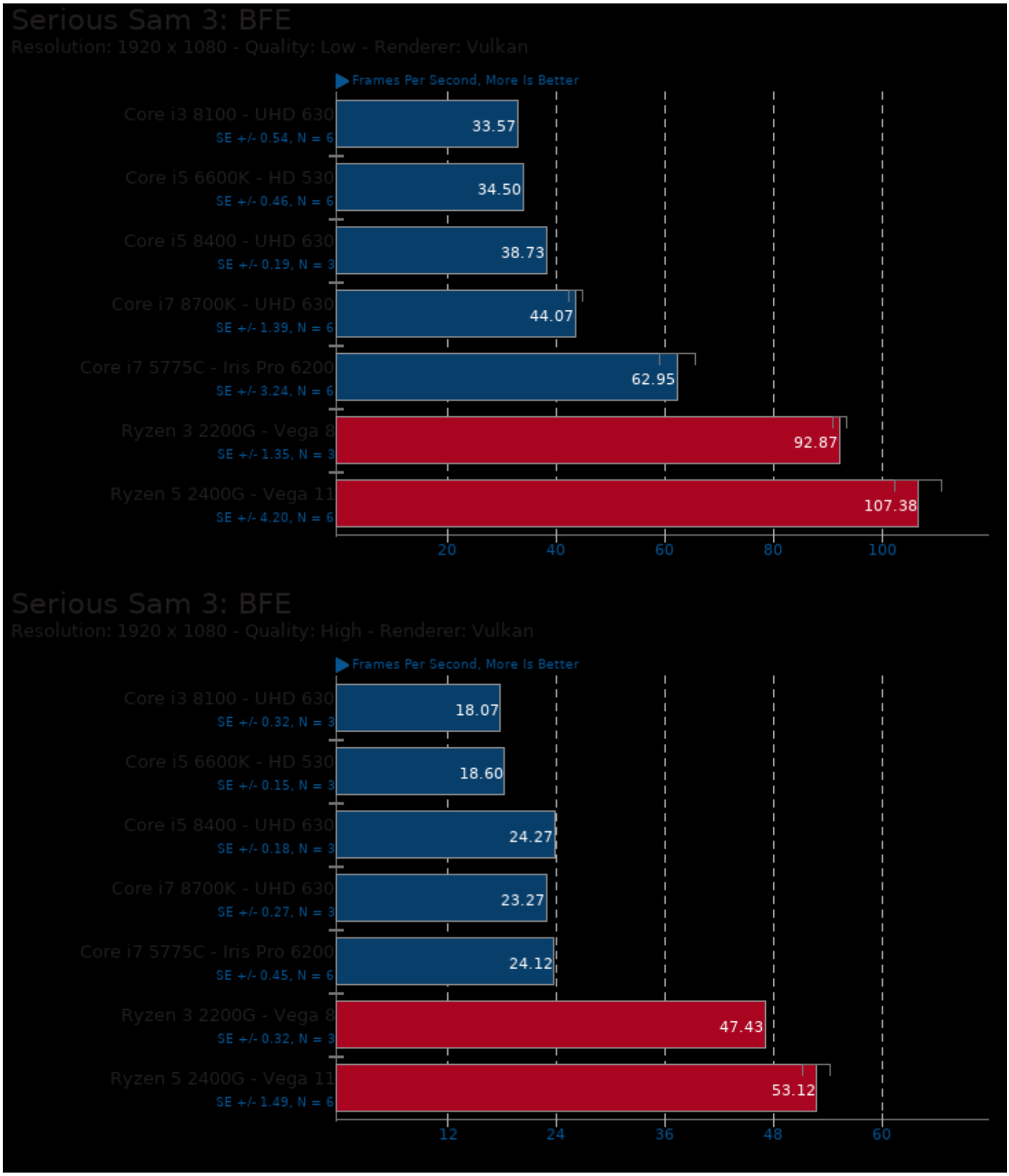
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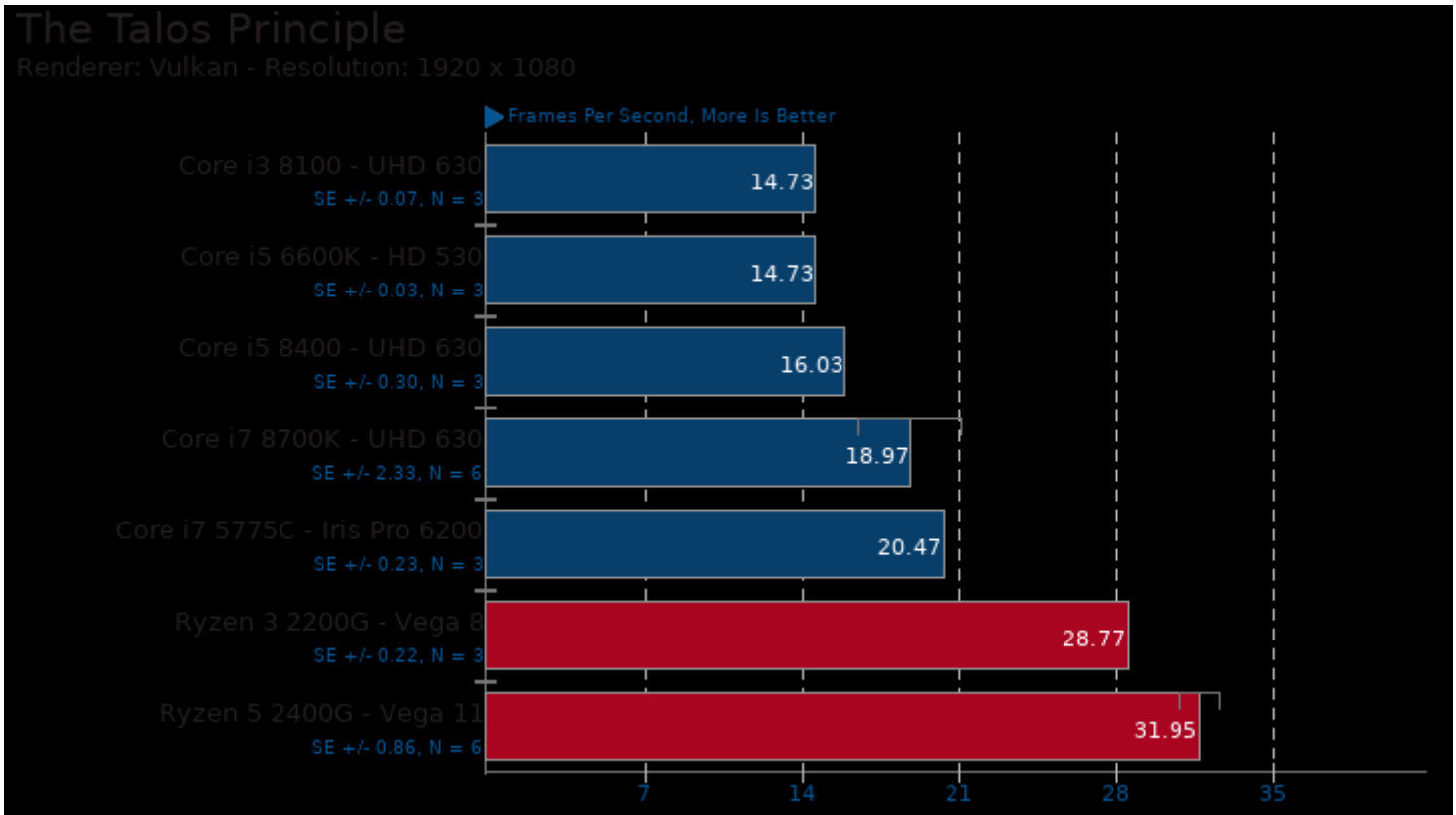
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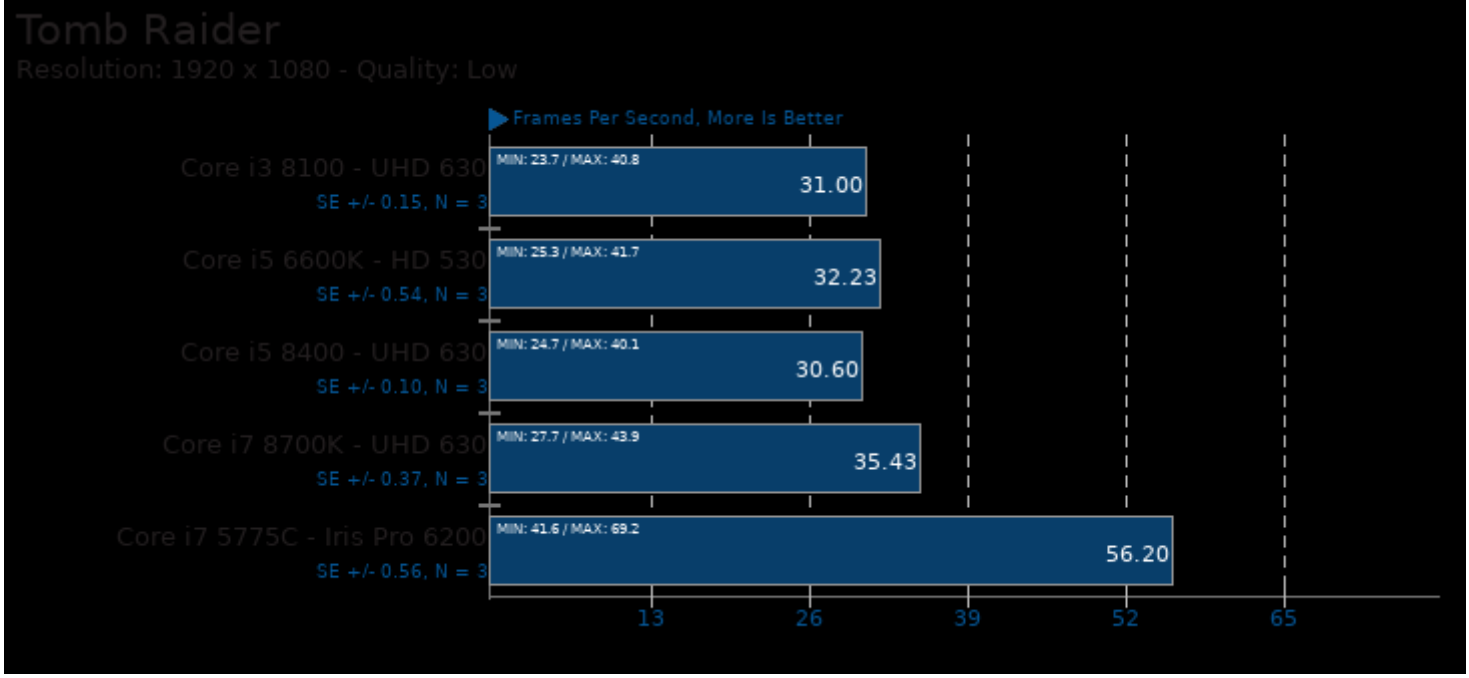


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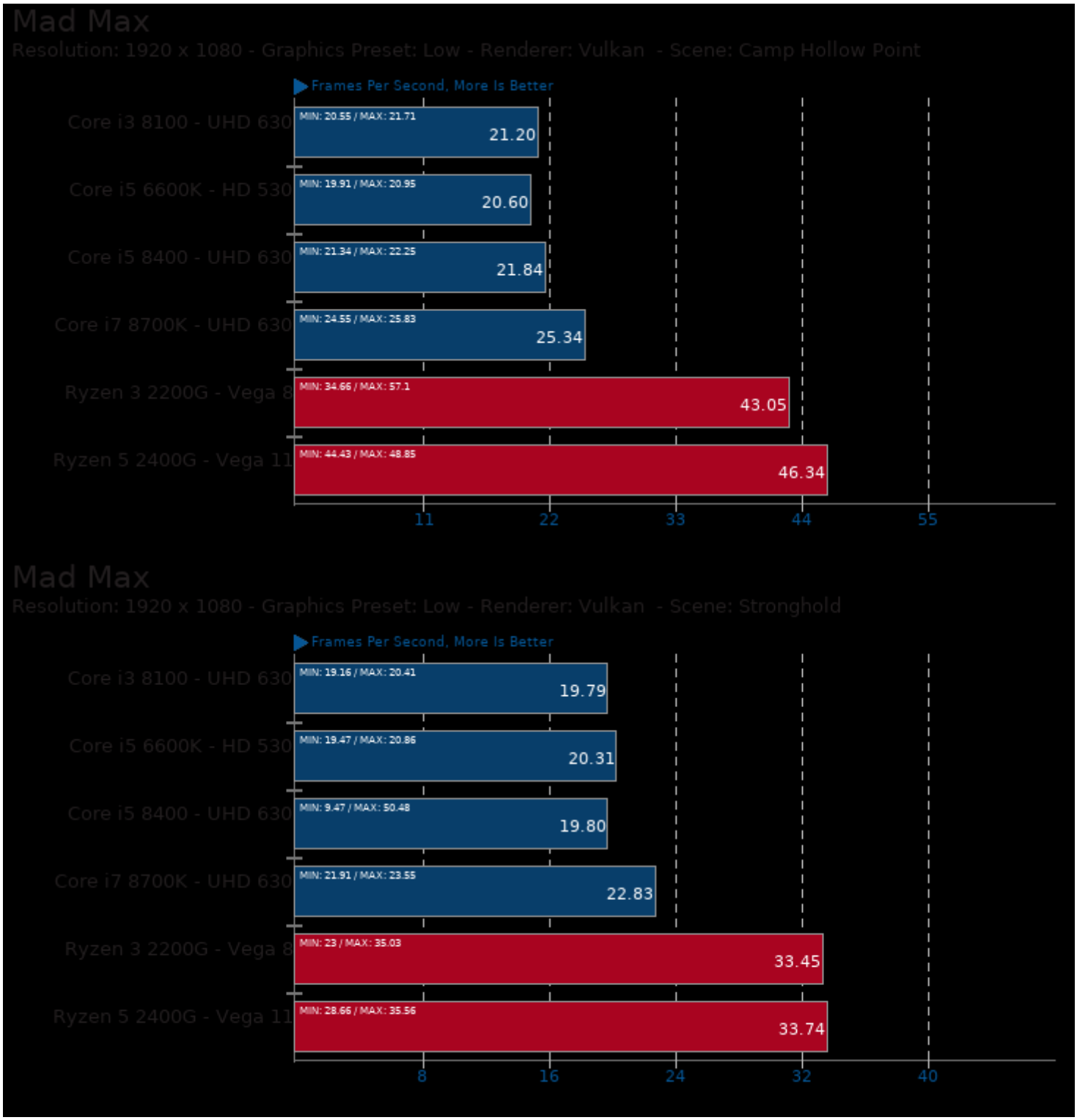


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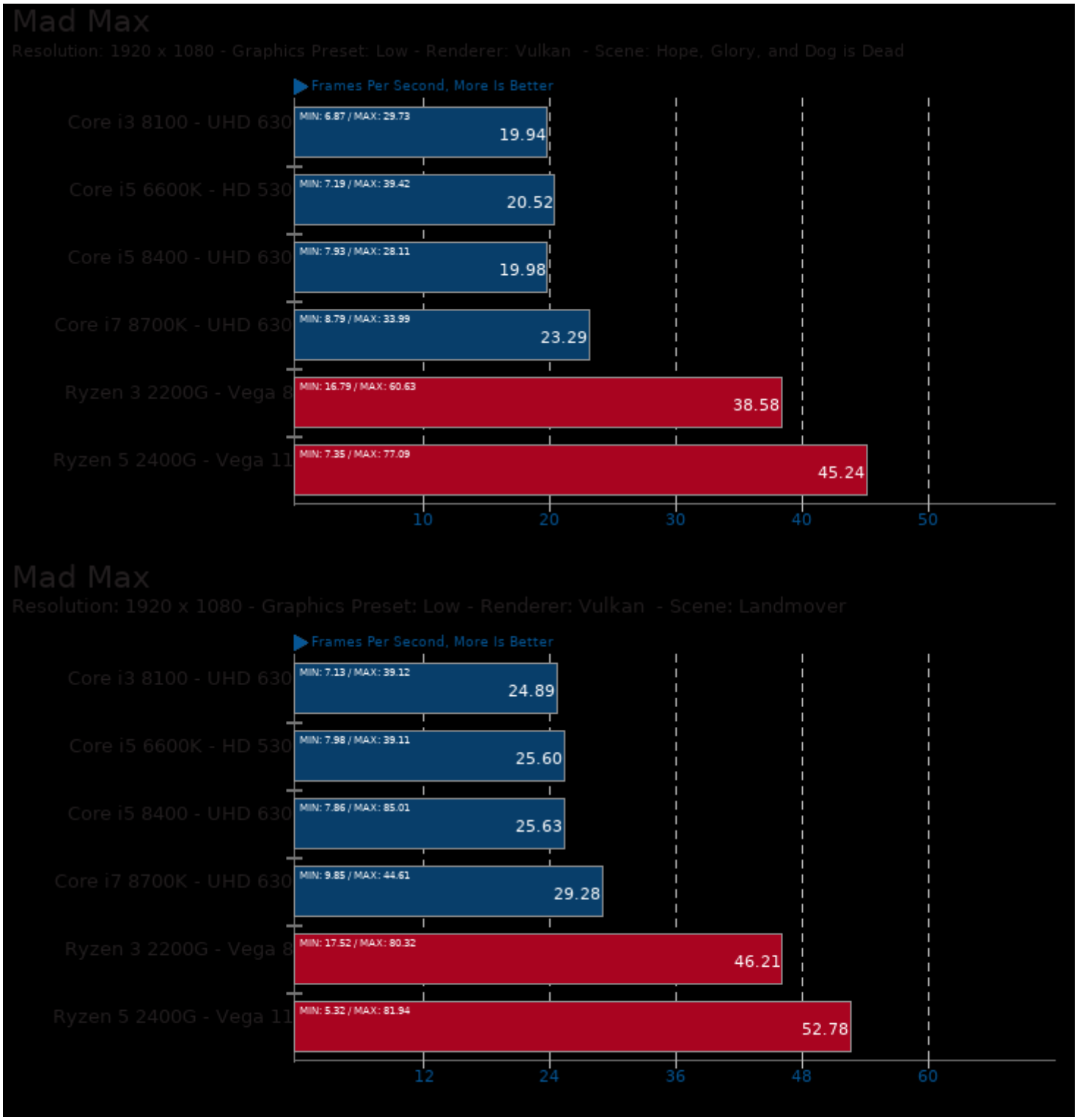


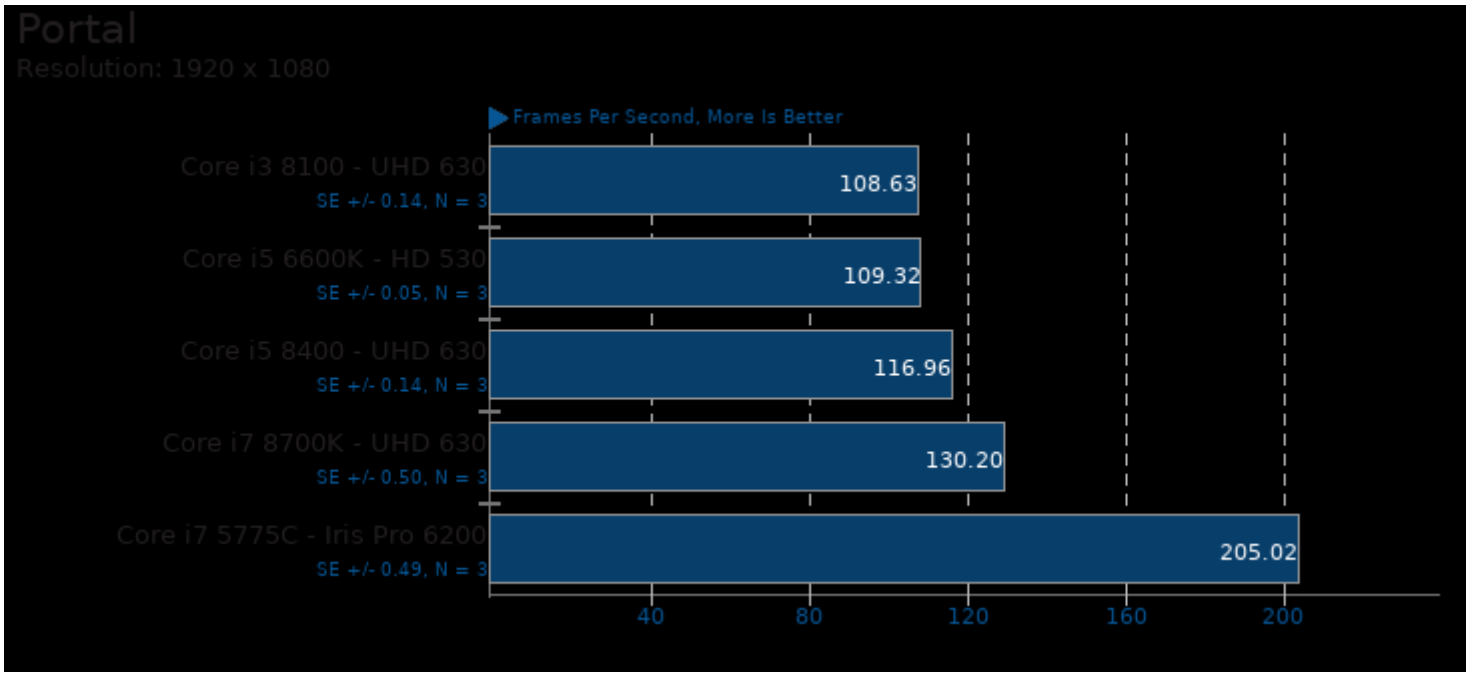


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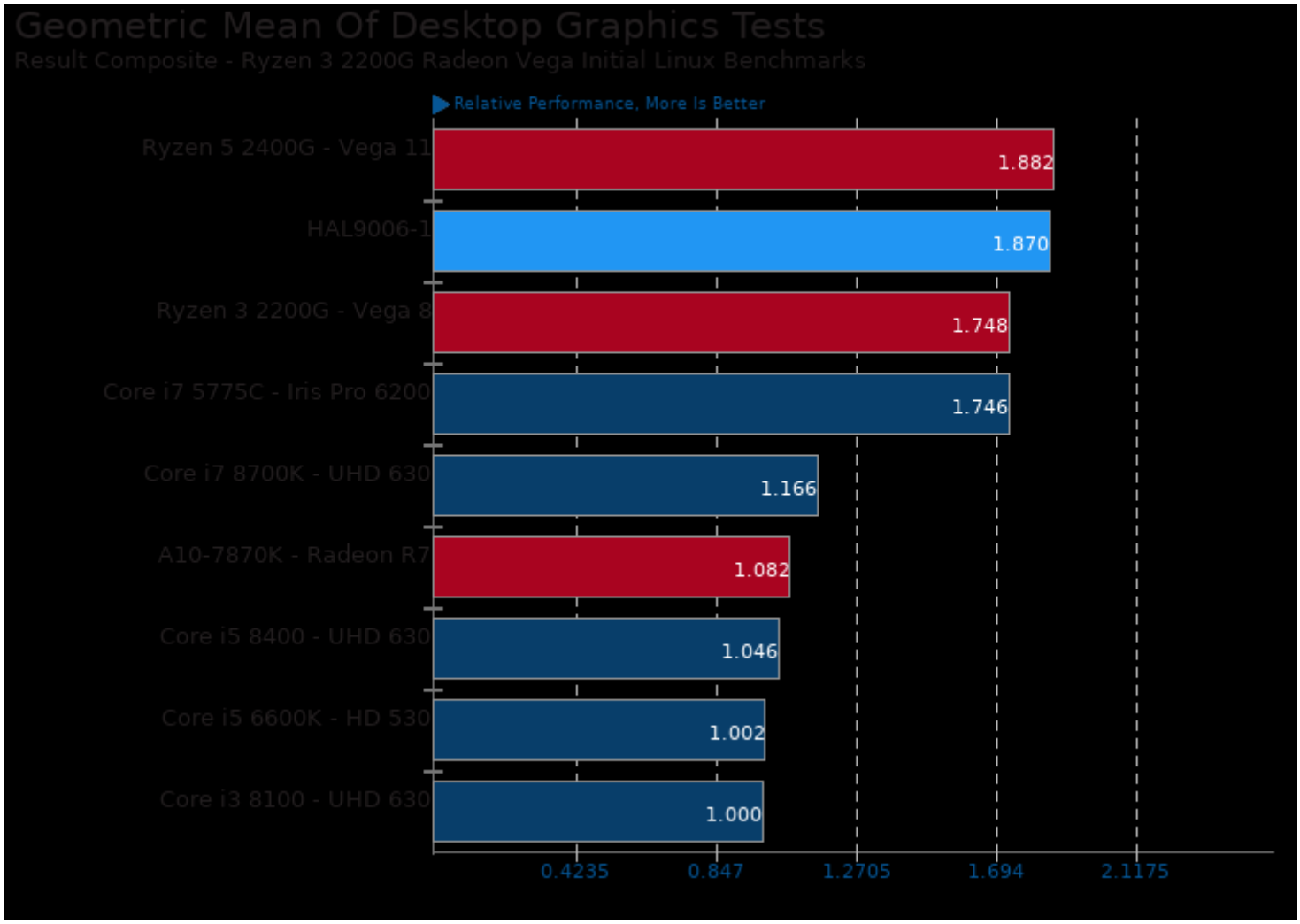
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Portal
Resolution: 1920 x 1080
Frames Per Second, More Is Better
Core i3 8100 - UHD 630
SE +/- 0.14, N = 3
108.63
Core i5 6600K - HD 530
SE +/- 0.05, N = 3
109.32
Core i5 8400 - UHD 630
SE +/- 0.14, N = 3
116.96
Core i7 8700K - UHD 630
SE +/- 0.50, N = 3
130.20
Core i7 5775C - Iris Pro 6200
SE +/- 0.49, N = 3
205.02
40
80
120
160
200

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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 and pts/unigine-valley

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 05:04.