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AMD Radeon RX Vega 2019

Intel Core i9-9900K testing with a ASUS PRIME Z390-A (0602 BIOS) and AMD Radeon RX 64 8GB on Ubuntu 18.10 via the Phoronix Test Suite.

Test Systems:

RX Vega 56: 2019

Processor: Intel Core i9-9900K @ 5.00GHz (8 Cores / 16 Threads), Motherboard: ASUS PRIME Z390-A (0602 BIOS), Chipset: Intel Cannon Lake PCH Shared SRAM, Memory: 16384MB, Disk: Samsung SSD 970 EVO 250GB + 2000GB SABRENT, Graphics: AMD Radeon RX 64 8GB (1590/800MHz), Audio: Realtek ALC1220, Monitor: Acer B286HK, Network: Intel I219-V

OS: Ubuntu 18.10, Kernel: 5.0.0-999-generic (x86_64) 20190118, Desktop: GNOME Shell 3.30.1, Display Server: X Server 1.20.1, Display Driver: amdgpu 18.1.0, OpenGL: 4.5 Mesa 19.0.0-devel padoka PPA (LLVM 8.0.0), Compiler: GCC 8.2.0, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance
Graphics Notes: GLAMOR

Python Notes: Python 2.7.15+ + Python 3.6.7
Security Notes: __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + SSB disabled via prctl and seccomp

RX Vega 64: 2019

Processor: Intel Core i9-9900K @ 5.00GHz (8 Cores / 16 Threads), Motherboard: ASUS PRIME Z390-A (0602 BIOS), Chipset: Intel Cannon Lake PCH Shared SRAM, Memory: 16384MB, Disk: Samsung SSD 970 EVO 250GB + 2000GB SABRENT, Graphics: AMD Radeon RX 64 8GB (1630/945MHz), Audio: Realtek ALC1220, Monitor: Acer B286HK, Network: Intel I219-V

OS: Ubuntu 18.10, Kernel: 5.0.0-999-generic (x86_64) 20190118, Desktop: GNOME Shell 3.30.1, Display Server: X Server 1.20.1, Display Driver: amdgpu 18.1.0, OpenGL: 4.5 Mesa 19.0.0-devel padoka PPA (LLVM 8.0.0), Compiler: GCC 8.2.0, File-System: ext4, Screen Resolution: 3840x2160

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	RX Vega 56: 2019	RX Vega 64: 2019
BioShock Infinite - 3840 x 2160 - Ultra (FPS)	**137**	**144**
Normalized	95.14%	100%
Standard Deviation	0%	1.4%
BioShock Infinite - 3840 x 2160 - Ultra (FPS/Watt)	**0.48**	**0.41**
Normalized	100%	85.42%
Dawn of War III - 2560 x 1440 - High - Vulkan (FPS)	**80.51**	**87.11**
Normalized	92.42%	100%
Standard Deviation	0.8%	0%
Dawn of War III - 2560 x 1440 - High - Vulkan	**0.50**	**0.46**
Normalized	100%	92%
Dawn of War III - 2560 x 1440 - High - OpenGL (FPS)	**74.33**	**87.85**
Normalized	84.61%	100%
Standard Deviation	1.7%	0.4%
Dawn of War III - 2560 x 1440 - High - OpenGL (FPS/Watt)	**0.37**	**0.36**
Normalized	100%	97.3%
Deus Ex: Mankind Divided - 1920 x 1080 - Low Quality (FPS)	**91.47**	**98.23**
Normalized	93.12%	100%
Standard Deviation	3.2%	1.5%
Deus Ex: Mankind Divided - 1920 x 1080 - Low Quality (FPS/Watt)	**0.36**	**0.32**
Normalized	100%	88.89%
Deus Ex: Mankind Divided - 1920 x 1080 - High Quality (FPS)	**66.50**	**71.27**
Normalized	93.31%	100%
Standard Deviation	1.7%	1.8%
Deus Ex: Mankind Divided - 1920 x 1080 - High Quality (FPS/Watt)	**0.22**	**0.20**
Normalized	100%	90.91%

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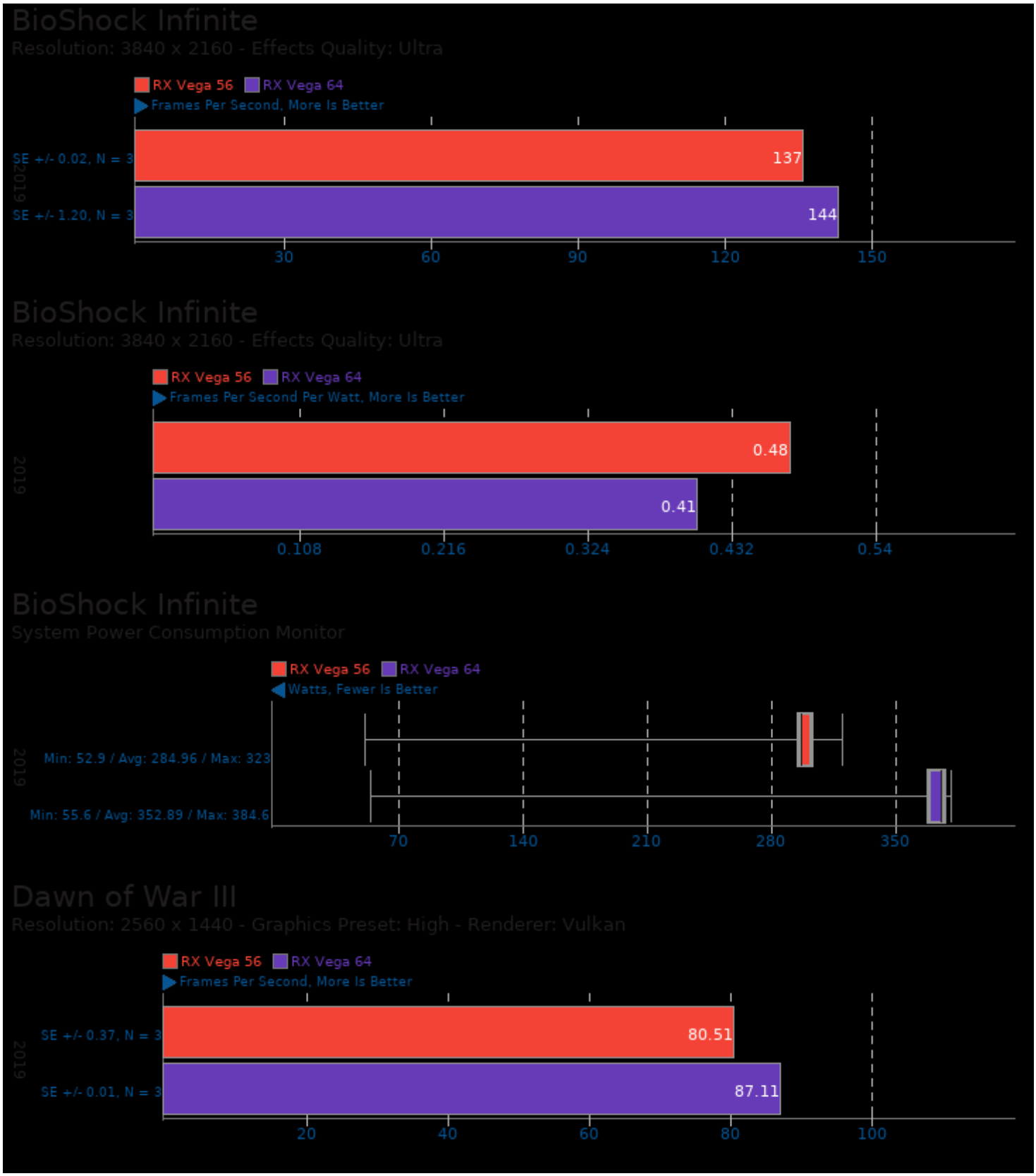
DiRT Rally - 2560 x 1440 - Ultra (FPS)	**143**	**150**
Normalized	95.33%	100%
Standard Deviation	0.3%	0.5%
DiRT Showdown - 2560 x 1440 - High - 2x MSAA (FPS)	**266**	**269**
Normalized	98.88%	100%
Standard Deviation	2.7%	0.7%
DiRT Showdown - 2560 x 1440 - High - 2x MSAA (FPS/Watt)	**1.41**	**1.39**
Normalized	100%	98.58%
Dota 2 - 3840 x 2160 - OpenGL (FPS)	**98.60**	**109.47**
Normalized	90.07%	100%
Standard Deviation	0.8%	0.4%
Dota 2 - 3840 x 2160 - OpenGL (FPS/Watt)	**0.62**	**0.57**
Normalized	100%	91.94%
Dota 2 - 3840 x 2160 - Vulkan (FPS)	**98.43**	**113.60**
Normalized	86.65%	100%
Standard Deviation	5.6%	0.3%
Dota 2 - 3840 x 2160 - Vulkan (FPS/Watt)	**0.45**	**0.47**
Normalized	95.74%	100%
ET: Legacy - Renderer2 - 3840 x 2160 (FPS)	**255**	**265**
Normalized	96.23%	100%
Standard Deviation	6.7%	2.7%
ET: Legacy - Renderer2 - 3840 x 2160 (FPS/Watt)	**1.19**	**1.15**
Normalized	100%	96.64%
GeeXLab - 3840 x 2160 - GL3 Mesh Exploder (FPS)	**3379**	**3680**
Normalized	91.82%	100%
Standard Deviation	0.2%	0.2%
GeeXLab - 3840 x 2160 - GL3 Vertex Pool (FPS)	**6413**	**6926**
Normalized	92.59%	100%
Standard Deviation	0.1%	0%
GLmark2 - 3840 x 2160 (Score)	**2275**	**2430**
Normalized	93.62%	100%
GLmark2 - 3840 x 2160 (Score/Watt)	**8.43**	**7.37**
Normalized	100%	87.43%
HITMAN - 2560 x 1440 - Ultra (FPS)	**81.80**	**90.02**
Normalized	90.87%	100%
HITMAN - 3840 x 2160 - Ultra (FPS)	**47.30**	**55.49**
Normalized	85.24%	100%
Mad Max - 2560 x 1440 - High - Vulkan - Camp Hollow Point (FPS)	**95.18**	**104.49**
Normalized	91.09%	100%
Mad Max - 2560 x 1440 - High - Vulkan - Stronghold (FPS)	**84.55**	**89.76**
Normalized	94.2%	100%
Mad Max - 2560 x 1440 - High - Vulkan - H.G.a.D.i.D (FPS)	**93.76**	**105.63**
Normalized	88.76%	100%
Mad Max - 2560 x 1440 - High - Vulkan - Landmover (FPS)	**106**	**119**
Normalized	89.08%	100%
Mad Max - 2560 x 1440 - High - Vulkan - Landmover (FPS/Watt)	**0.38**	**0.34**
Normalized	100%	89.47%

Mad Max - 2560 x 1440 - High - OpenGL - Camp Hollow Point (FPS)	**103**	**134**
Normalized	76.87%	100%
Mad Max - 2560 x 1440 - High - OpenGL - Stronghold (FPS)	**88.00**	**101.20**
Normalized	86.96%	100%
Mad Max - 2560 x 1440 - High - OpenGL - H.G.a.D.i.D (FPS)	**101**	**113**
Normalized	89.38%	100%
Mad Max - 2560 x 1440 - High - OpenGL - Landmover (FPS)	**116**	**126**
Normalized	92.06%	100%
Mad Max - 2560 x 1440 - High - OpenGL - Landmover (FPS/Watt)	**0.42**	**0.37**
Normalized	100%	88.1%
Meta Performance Per Watt - P.P.W	**173.0690**	**181.0161**
Normalized	95.61%	100%
Metro: Last Light Redux - 3840 x 2160 (FPS)	**86.31**	**92.60**
Normalized	93.21%	100%
Standard Deviation	0.3%	0.8%
Metro: Last Light Redux - 3840 x 2160 (FPS/Watt)	**0.29**	**0.25**
Normalized	100%	86.21%
OpenArena - 2560 x 1440 (FPS)	**382**	**401**
Normalized	95.26%	100%
Standard Deviation	1.4%	1.1%
ParaView - Many Spheres - 3840 x 2160 (Frames / Sec)	**37.51**	**40.05**
Normalized	93.66%	100%
Standard Deviation	0.8%	0.1%
ParaView - Many Spheres - 3840 x 2160 (MiPolys /	**3760**	**4015**
Normalized	93.65%	100%
Standard Deviation	0.8%	0.1%
ParaView - Wavelet Contour - 3840 x 2160 (Frames / Sec)	**132**	**147**
Normalized	89.8%	100%
Standard Deviation	0.9%	0.6%
ParaView - Wavelet Contour - 3840 x 2160 (MiPolys / Sec)	**1372**	**1529**
Normalized	89.73%	100%
Standard Deviation	0.9%	0.6%
ParaView - Wavelet Volume - 3840 x 2160 (Frames /	**153**	**157**
Normalized	97.45%	100%
Standard Deviation	3.6%	4.1%
ParaView - Wavelet Volume - 3840 x 2160 (MiVoxels / Sec)	**2446**	**2512**
Normalized	97.37%	100%
Standard Deviation	3.6%	4.1%
Portal - 3840 x 2160 (FPS)	**422**	**488**
Normalized	86.48%	100%
Standard Deviation	0.1%	0.2%
Portal - 3840 x 2160 (FPS/Watt)	**2.80**	**3.14**
Normalized	89.17%	100%

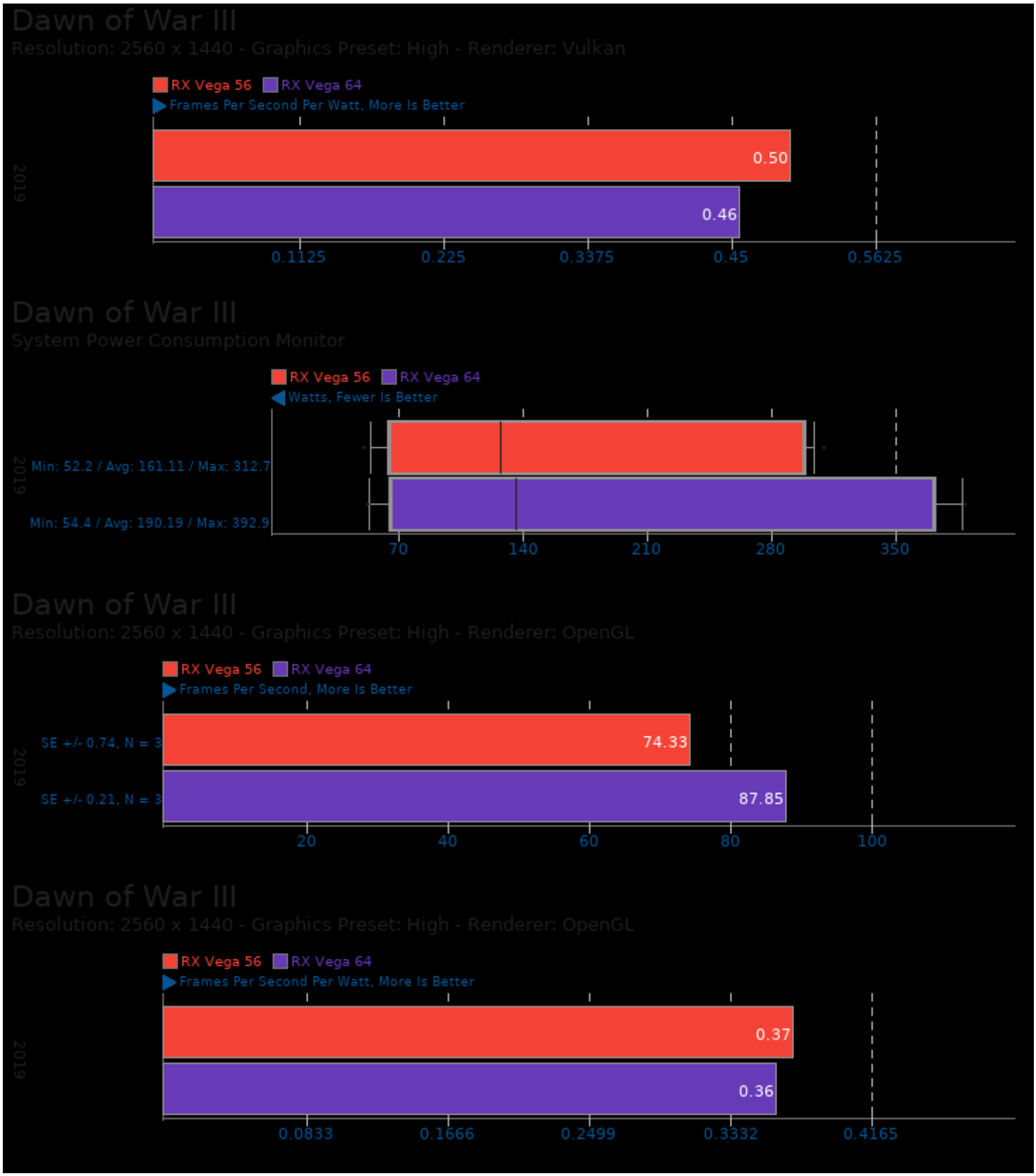
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SuperTuxKart - 3840 x 2160 - Fullscreen - Ultimate - 6 - Candela City (FPS)	**49.96**	**58.83**
Normalized	84.92%	100%
Standard Deviation	0.4%	0.6%
SuperTuxKart - 3840 x 2160 - Fullscreen - Ultimate - 6 - Candela City (FPS/Watt)	**0.18**	**0.17**
Normalized	100%	94.44%
SuperTuxKart - 3840 x 2160 - Fullscreen - Ultimate - 6 - Cocoa Temple (FPS)	**46.93**	**54.99**
Normalized	85.34%	100%
Standard Deviation	0.4%	0.7%
SuperTuxKart - 3840 x 2160 - Fullscreen - Ultimate - 6 - Cocoa Temple (FPS/Watt)	**0.17**	**0.16**
Normalized	100%	94.12%
Tesseract - 3840 x 2160 (FPS)	**302**	**354**
Normalized	85.31%	100%
Standard Deviation	0.7%	0.9%
Tesseract - 3840 x 2160 (FPS/Watt)	**1.20**	**1.11**
Normalized	100%	92.5%
The Talos Principle - OpenGL - 3840 x 2160 (FPS)	**55.93**	**60.93**
Normalized	91.79%	100%
Standard Deviation	0.8%	2.4%
The Talos Principle - Vulkan - 3840 x 2160 (FPS)	**68.03**	**78.30**
Normalized	86.88%	100%
Standard Deviation	0.1%	0.1%
Tomb Raider - 3840 x 2160 - High (FPS)	**73.53**	**82.10**
Normalized	89.56%	100%
Standard Deviation	0.2%	0.7%
Tomb Raider - 3840 x 2160 - High (FPS/Watt)	**0.28**	**0.26**
Normalized	100%	92.86%
Unigine Heaven - 2560 x 1440 - Fullscreen - OpenGL (FPS)	**102**	**118**
Normalized	86.44%	100%
Standard Deviation	0%	0.6%
Unigine Heaven - 2560 x 1440 - Fullscreen - OpenGL (FPS/Watt)	**0.38**	**0.34**
Normalized	100%	89.47%
Unigine Superposition - 1920 x 1080 - Fullscreen - High - OpenGL (FPS)	**55.60**	**62.77**
Normalized	88.58%	100%
Standard Deviation	0.2%	0.3%
Unigine Superposition - 1920 x 1080 - Fullscreen - High - OpenGL (FPS/Watt)	**0.21**	**0.19**
Normalized	100%	90.48%
Unigine Valley - 2560 x 1440 - Fullscreen - OpenGL (FPS)	**110**	**128**
Normalized	85.94%	100%
Standard Deviation	0%	0.3%
Unigine Valley - 2560 x 1440 - Fullscreen - OpenGL (FPS/Watt)	**0.40**	**0.36**
Normalized	100%	90%

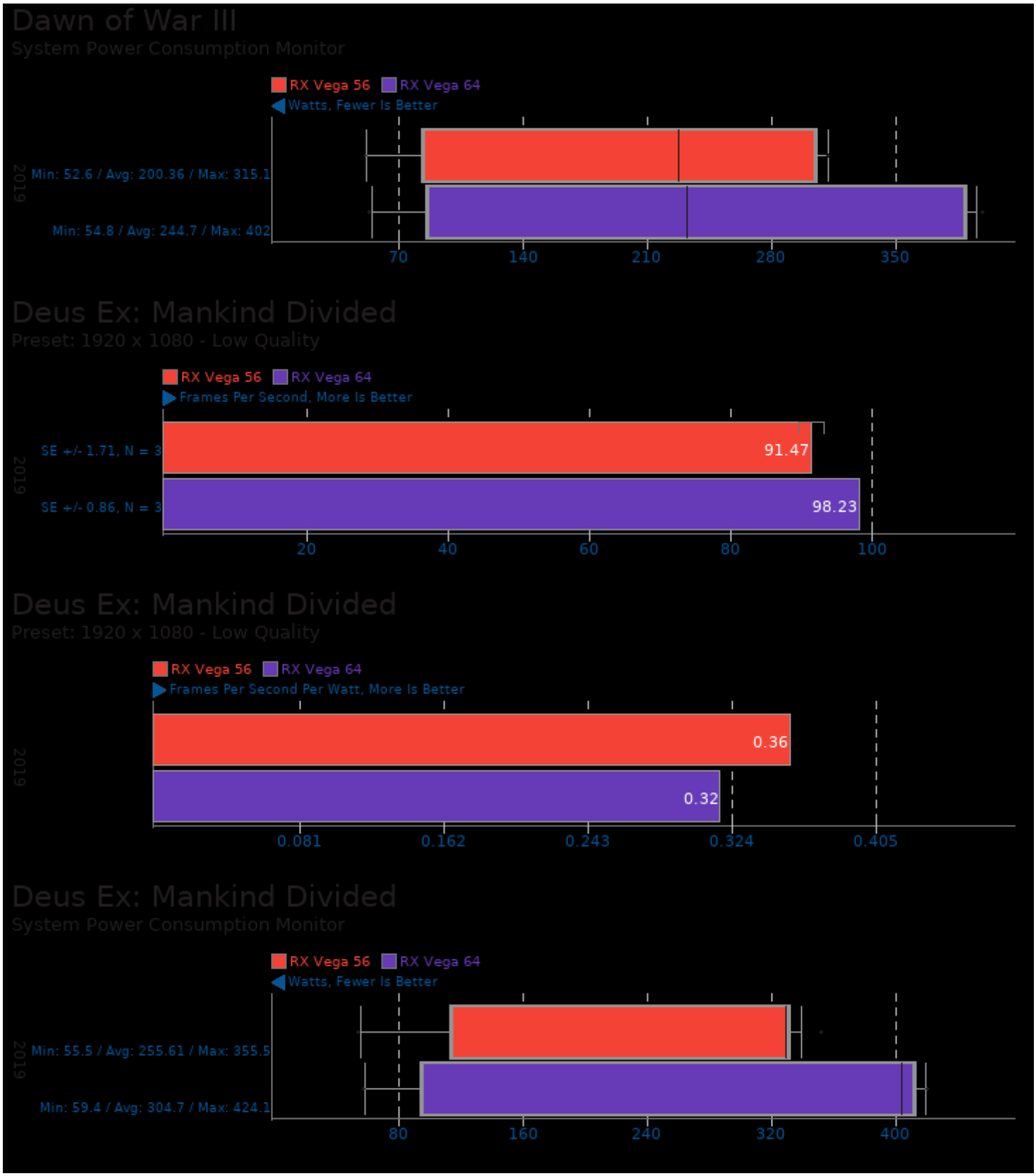
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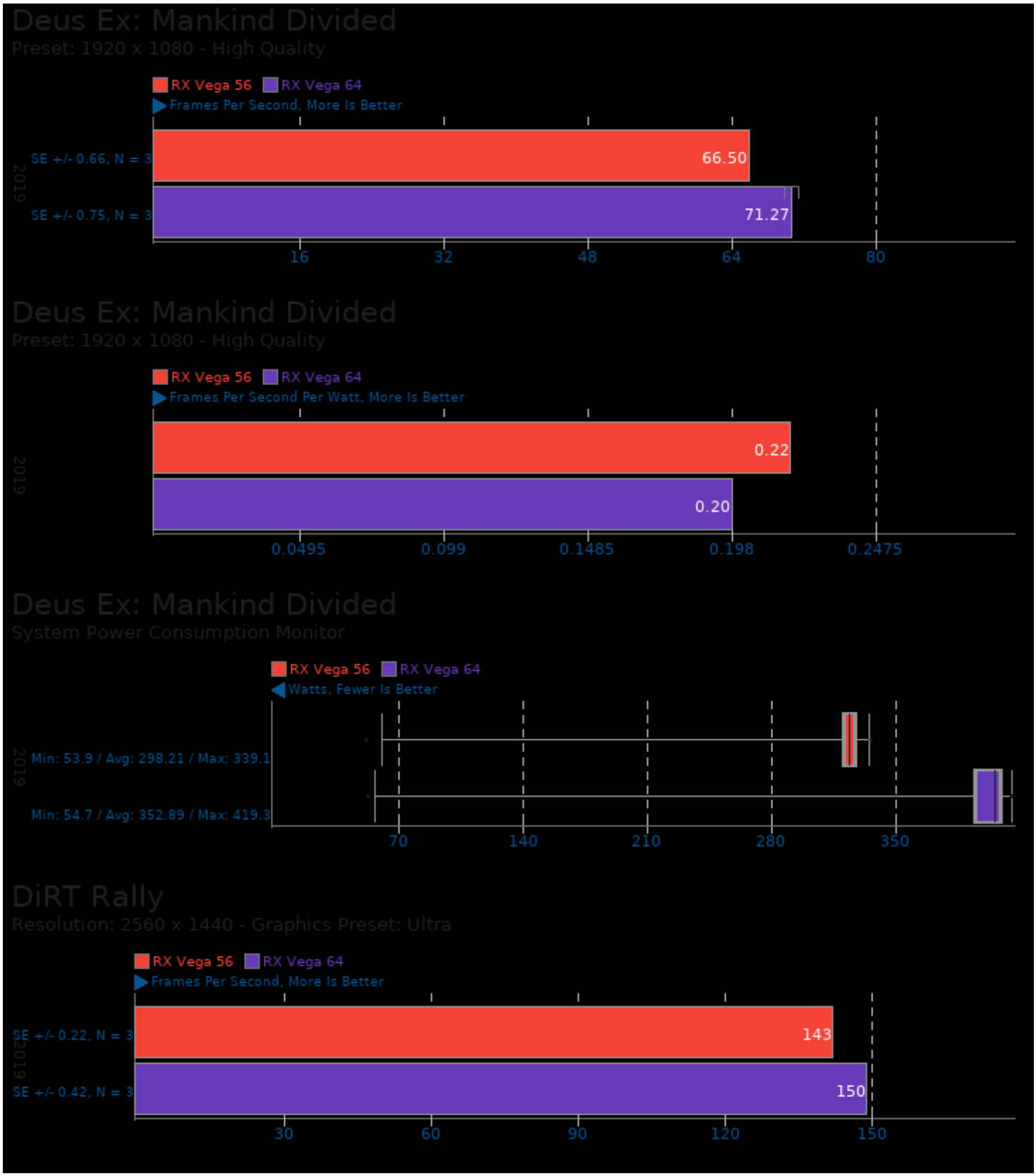
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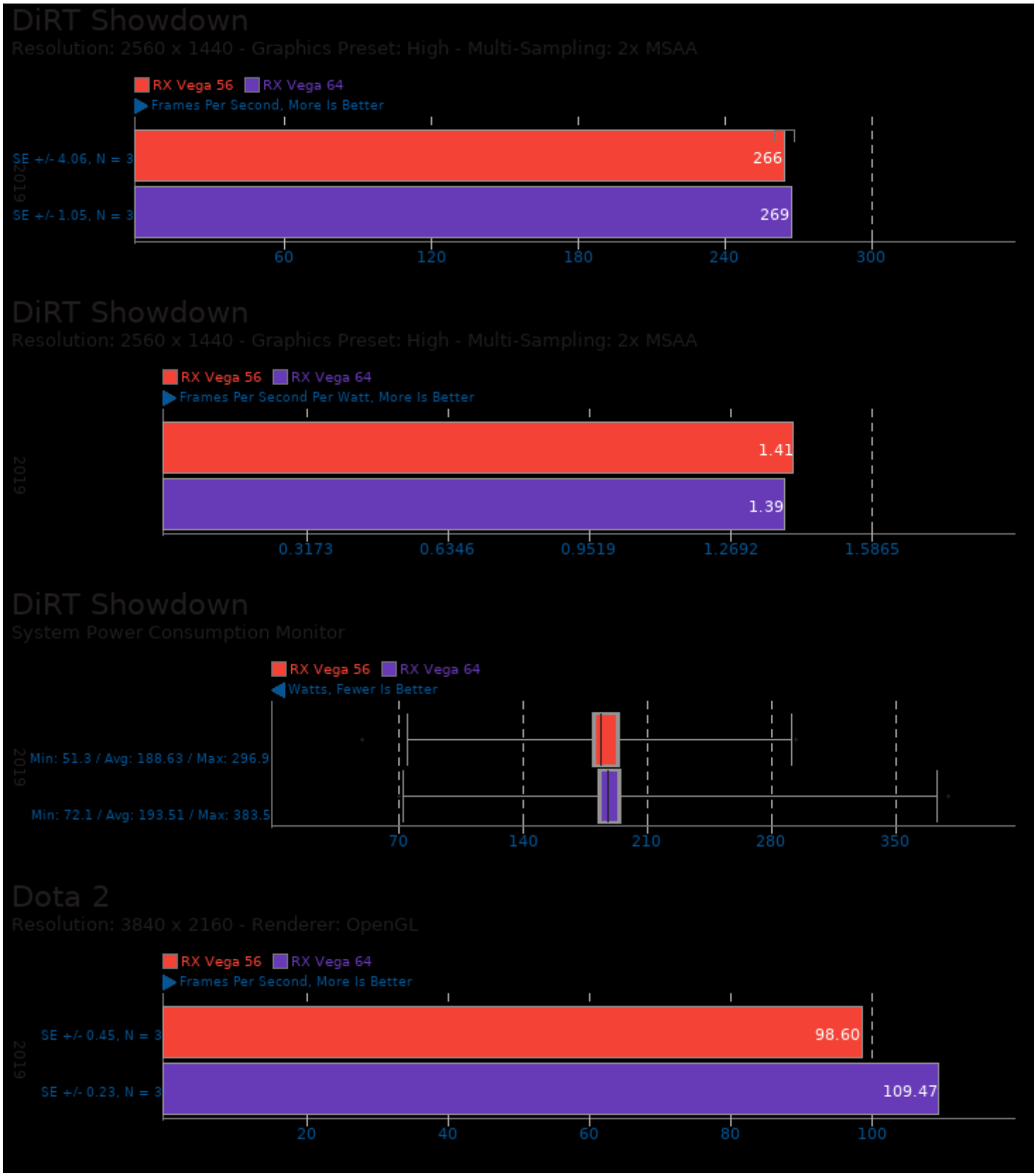
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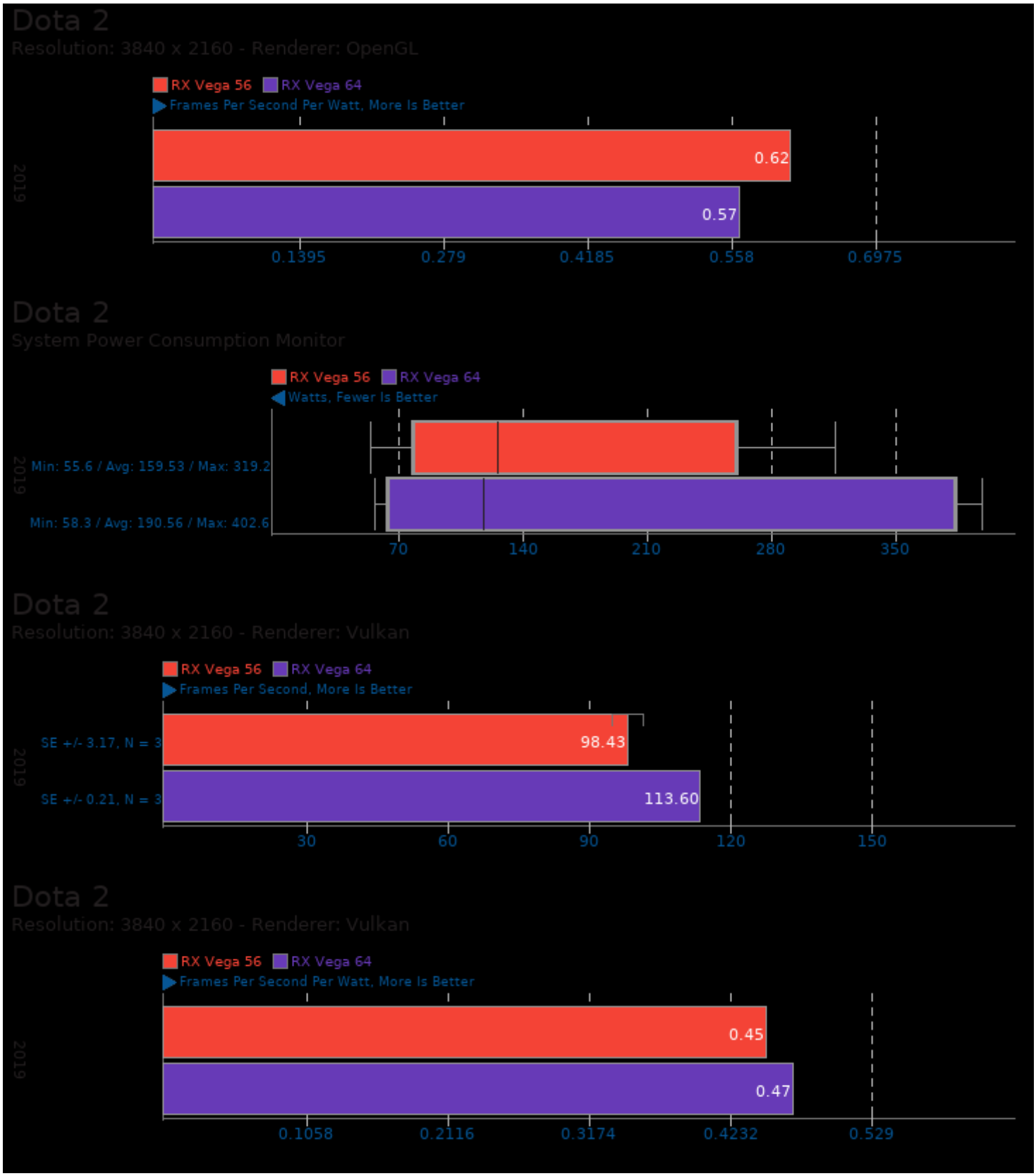
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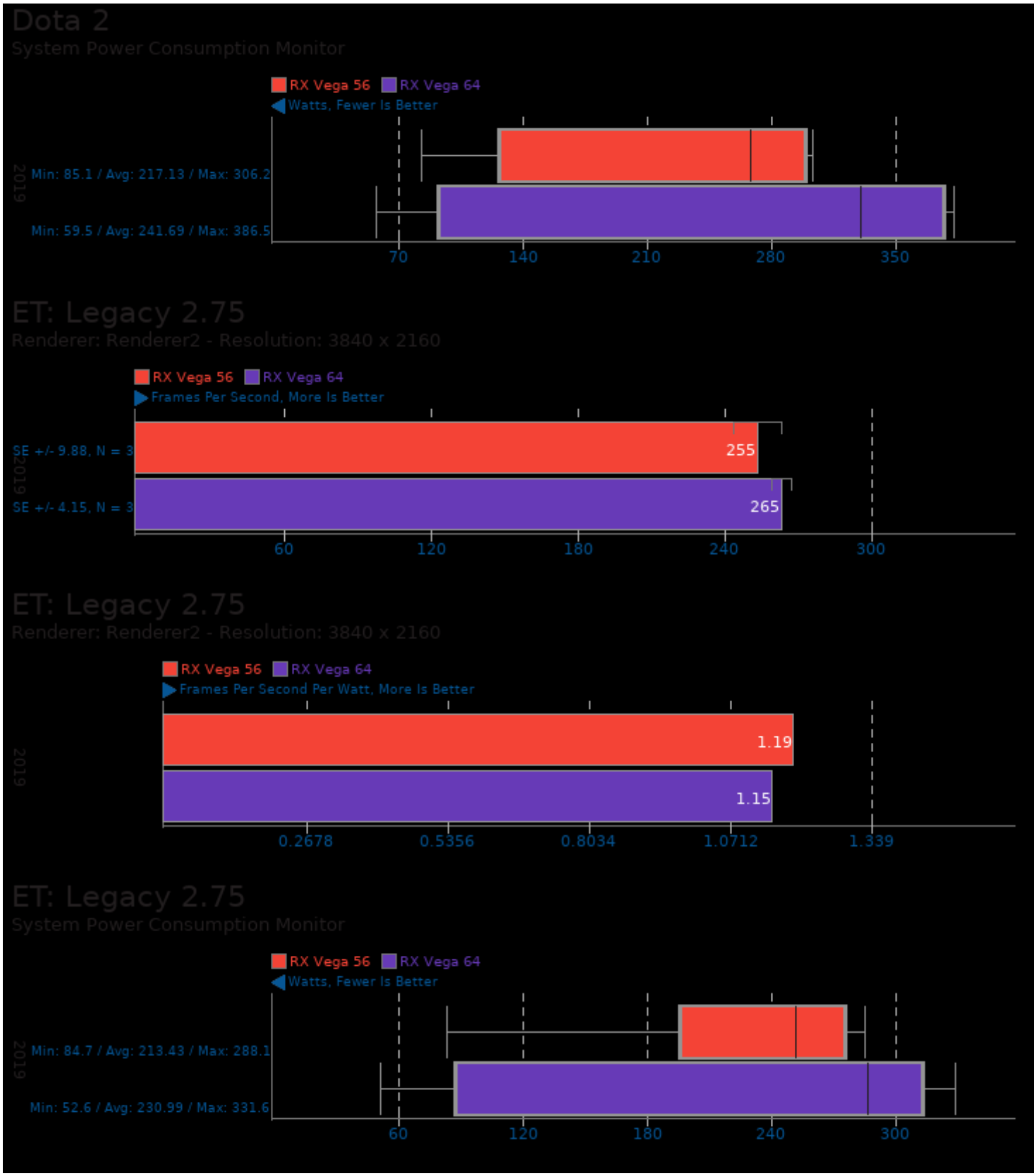
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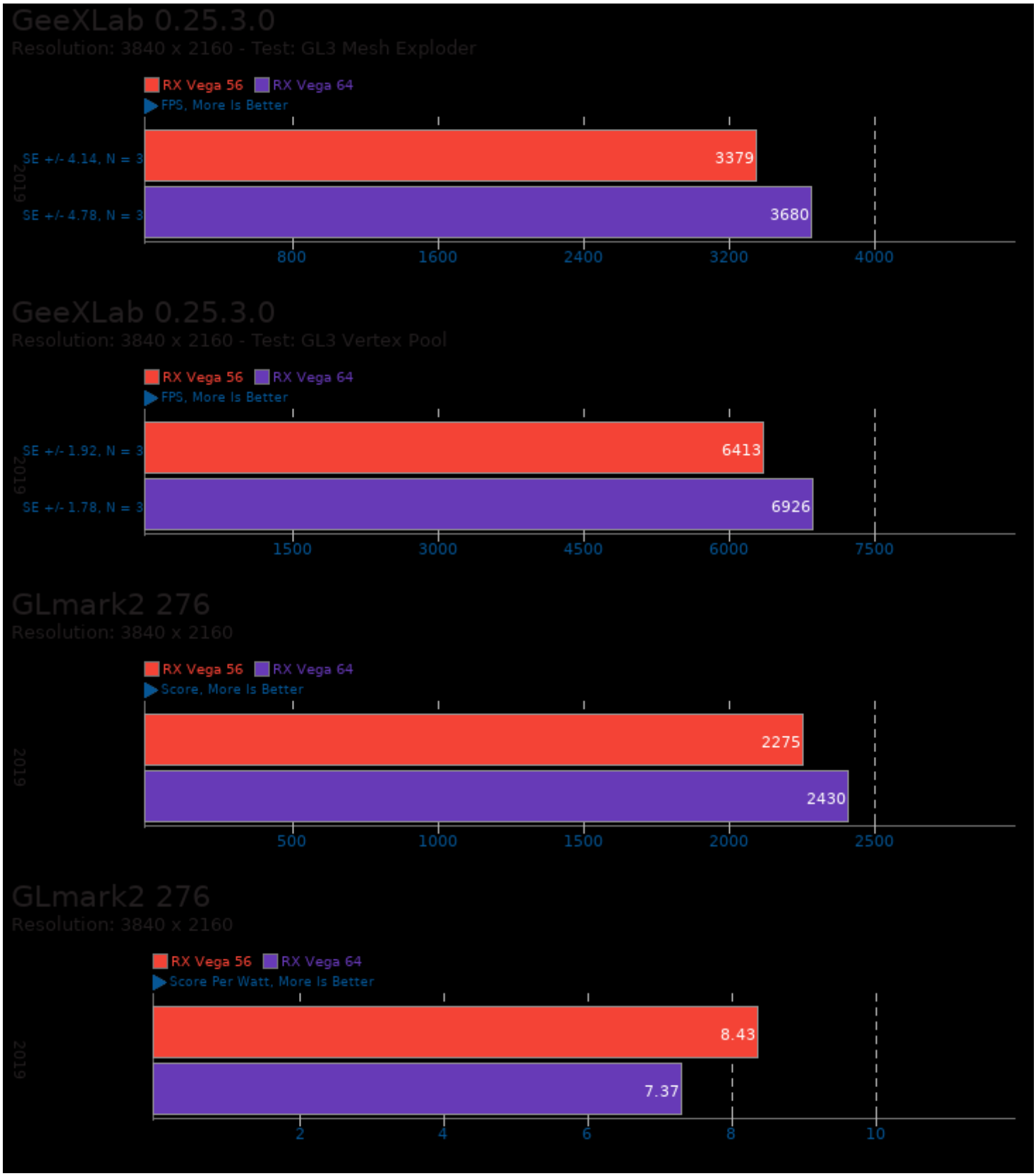
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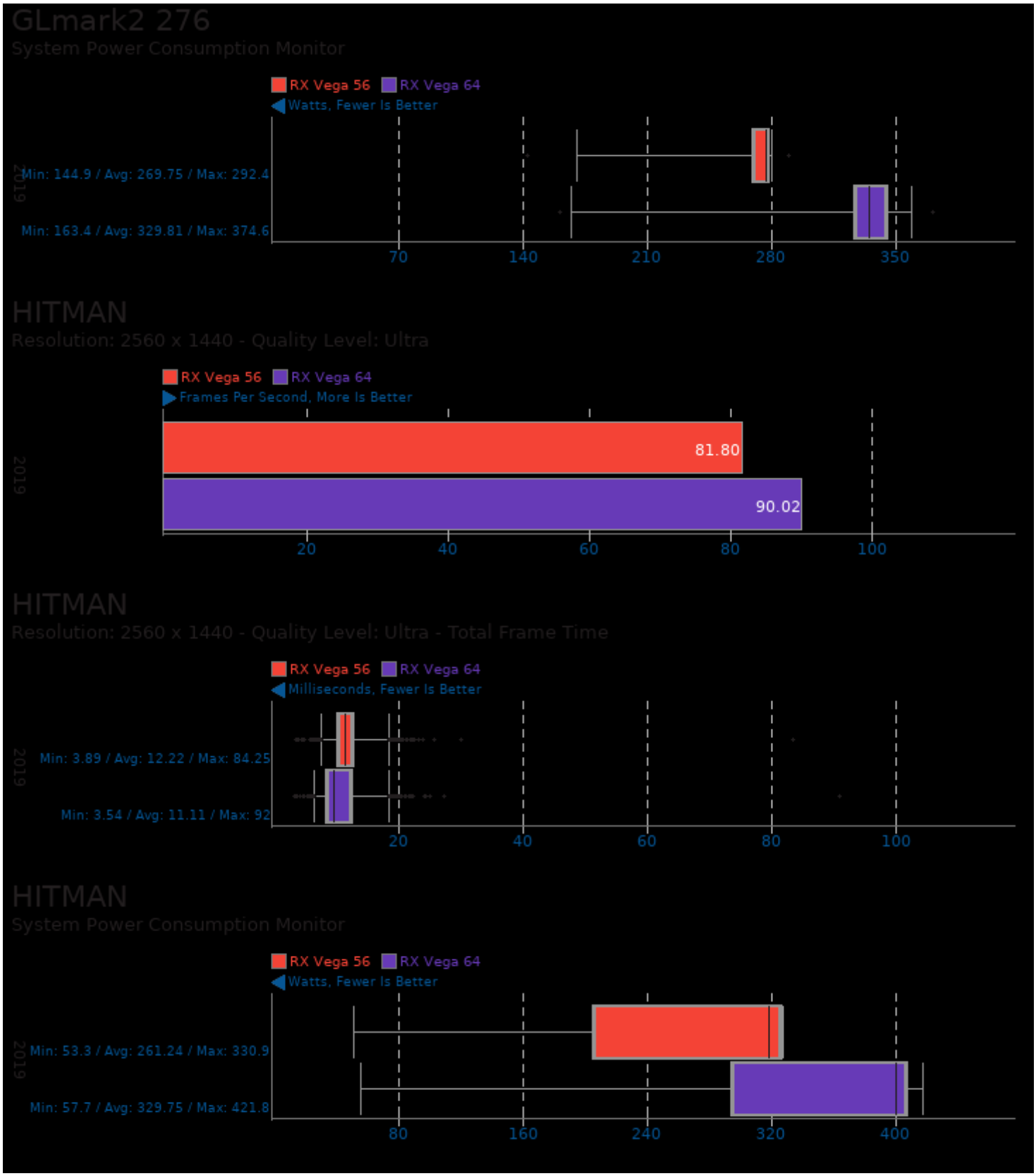
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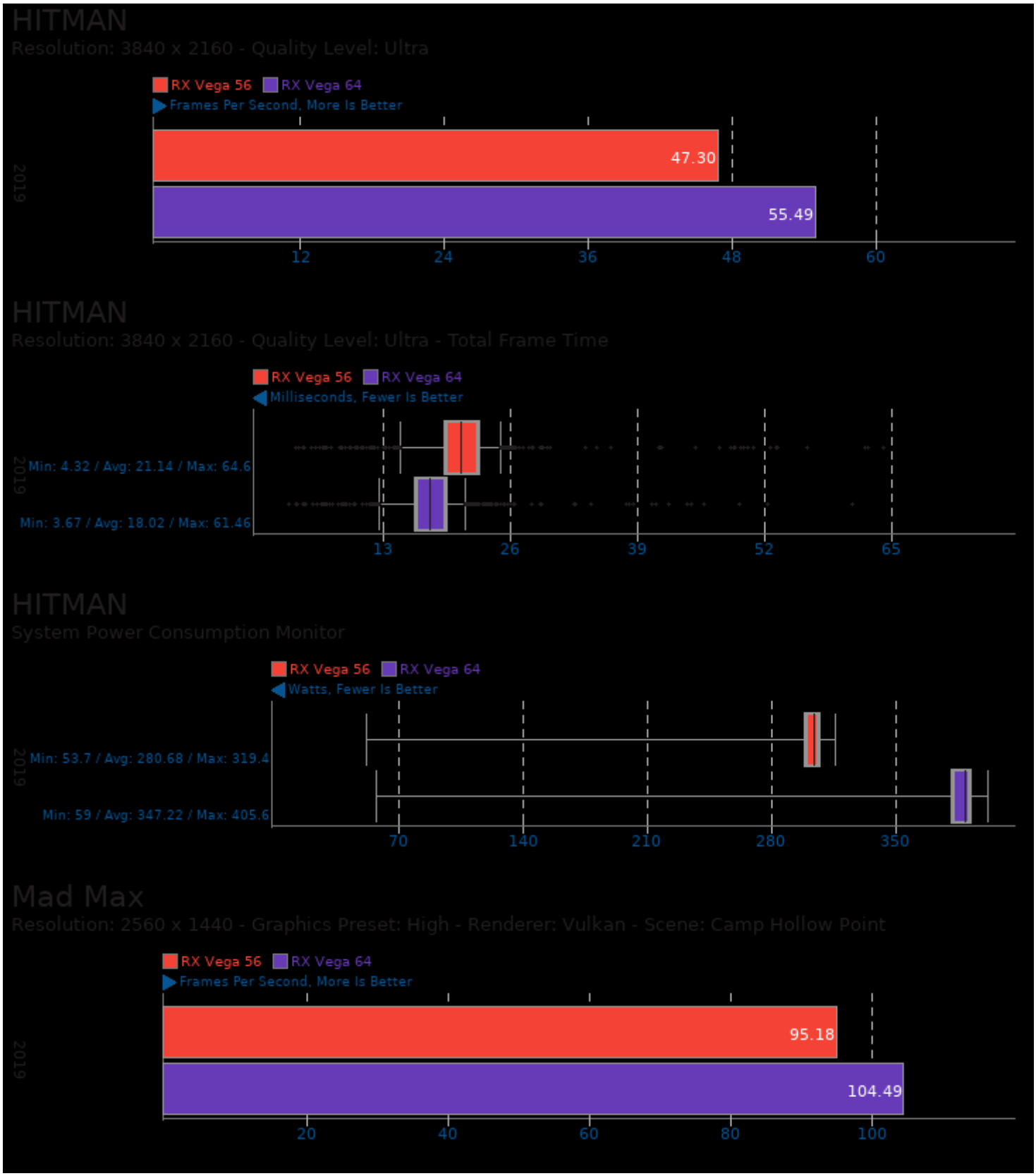
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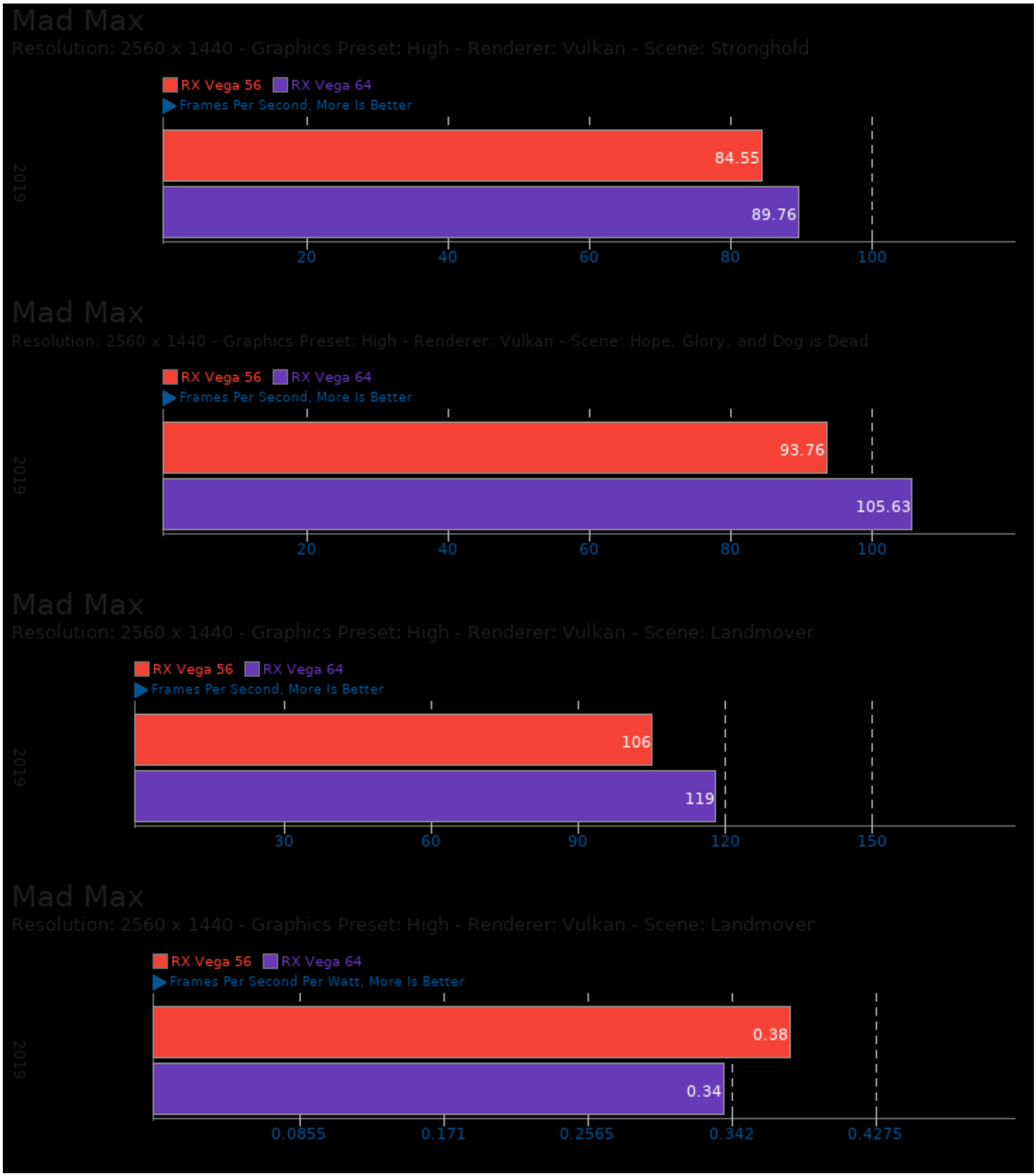
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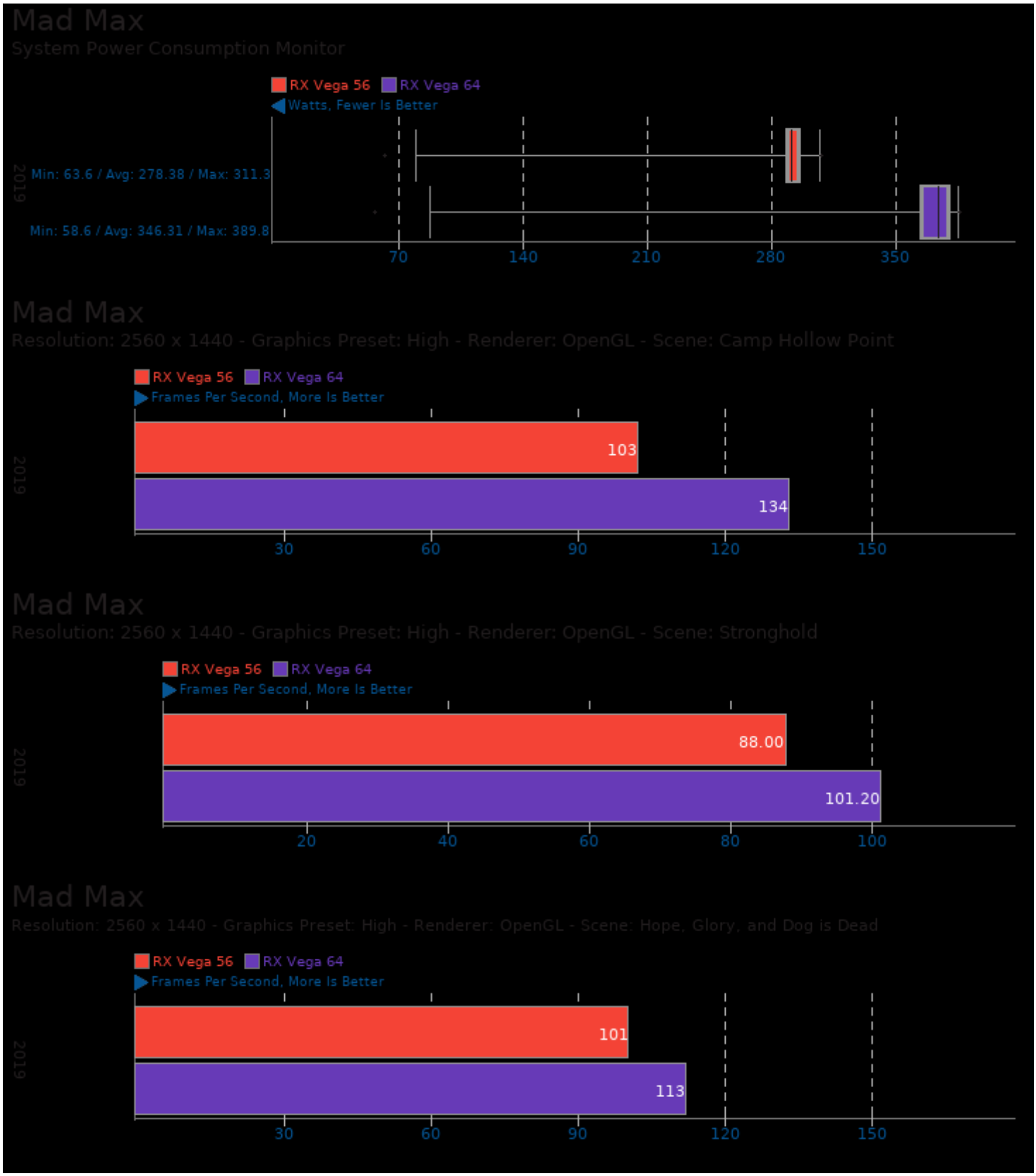
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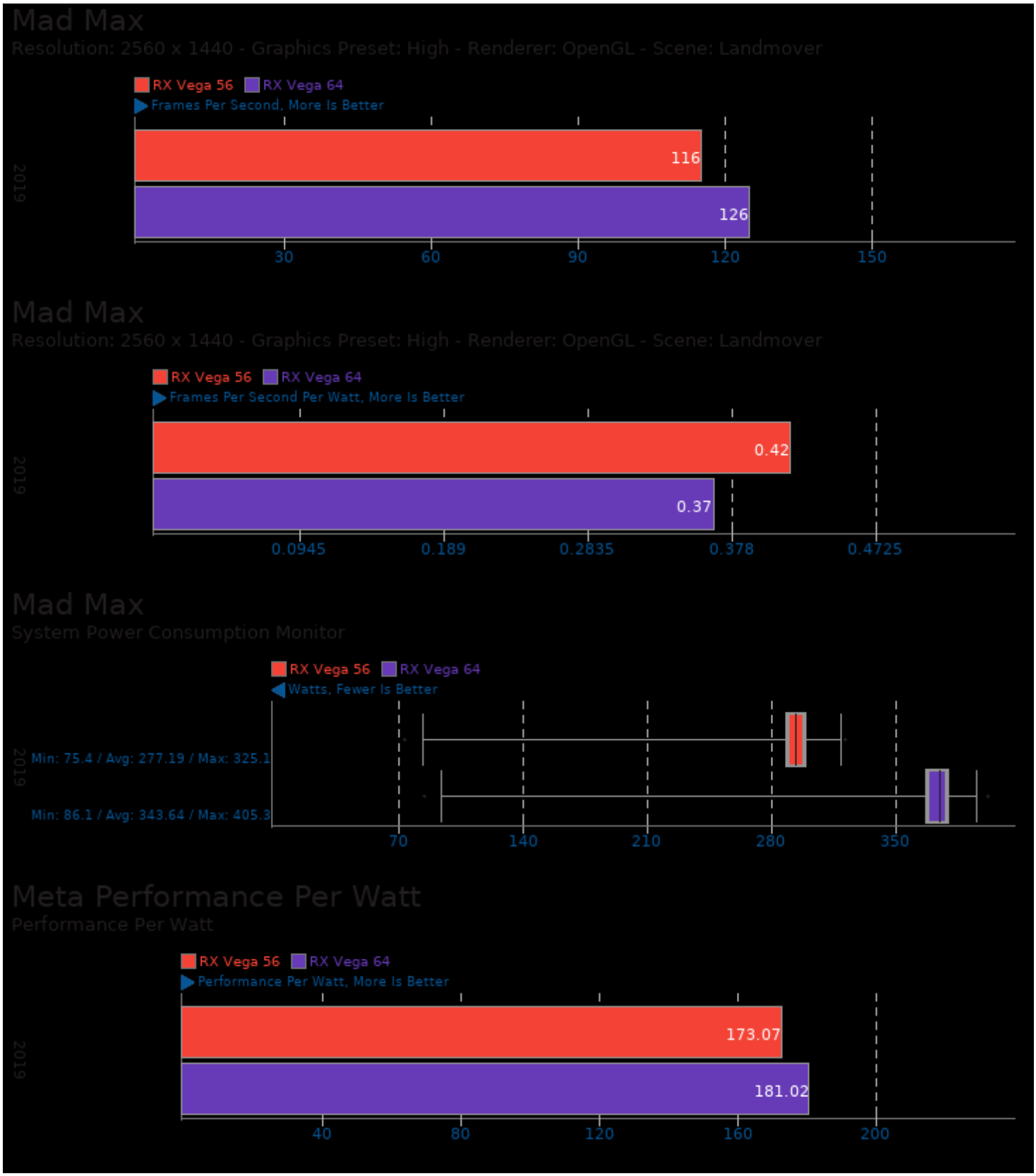
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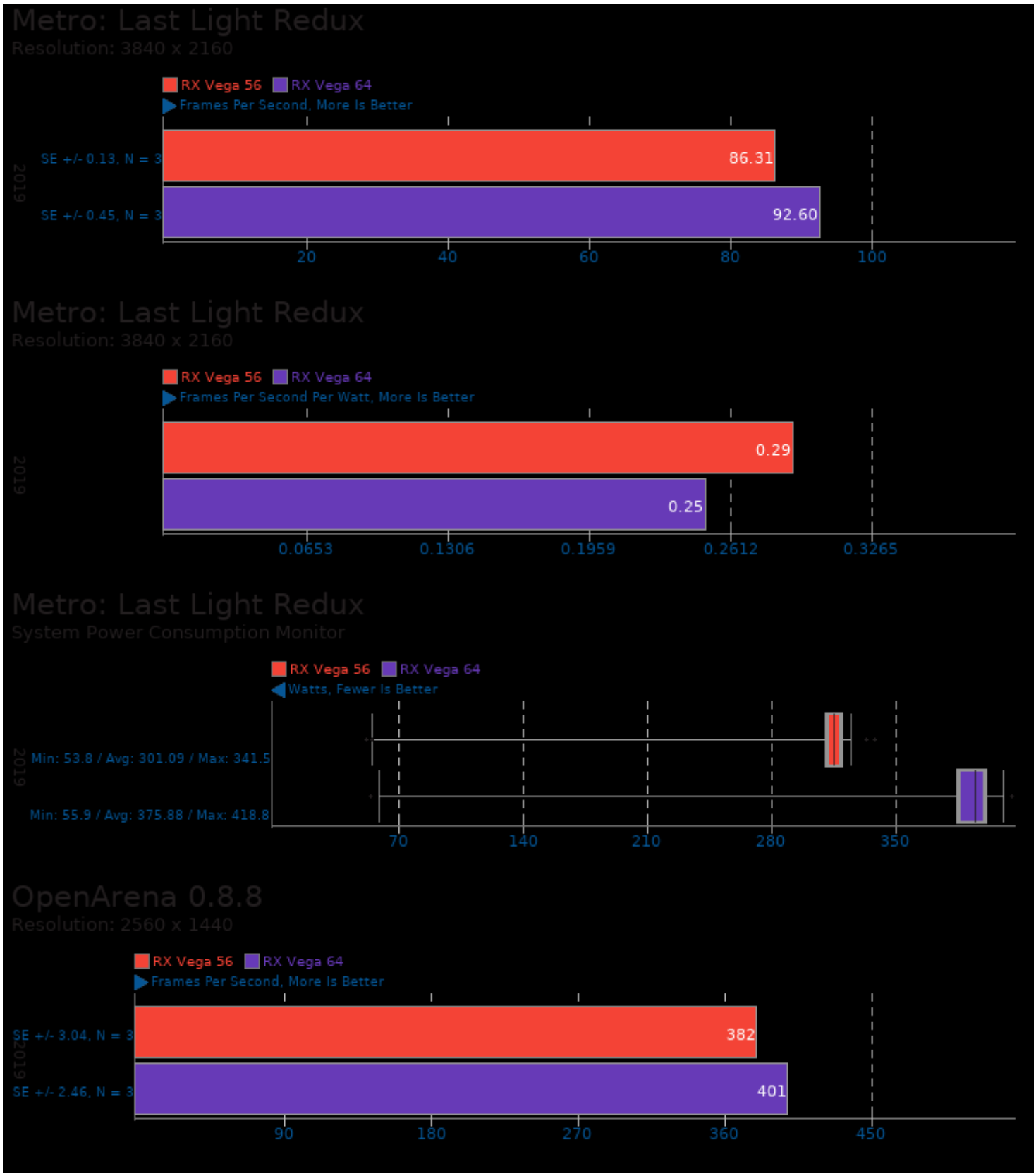
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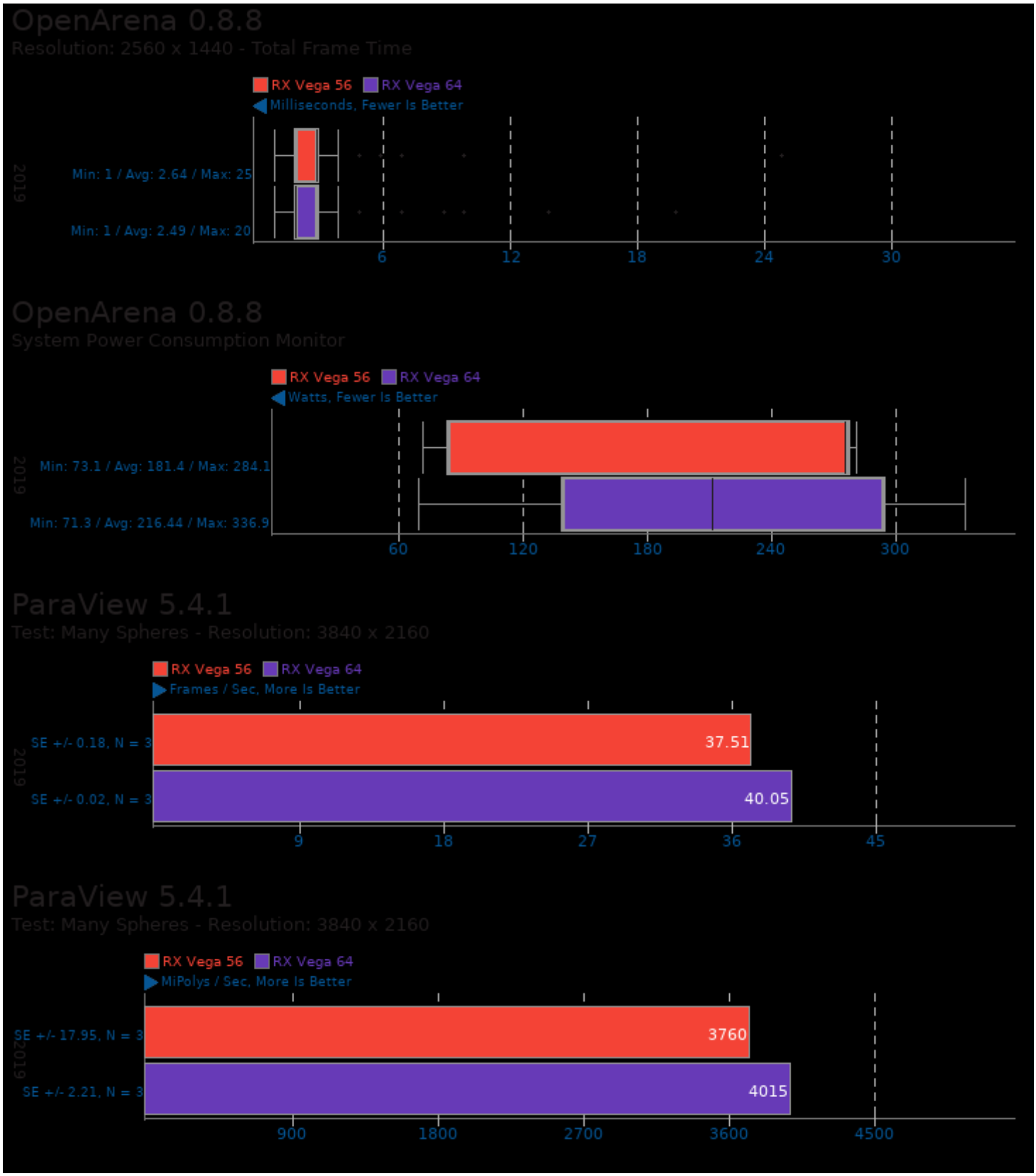
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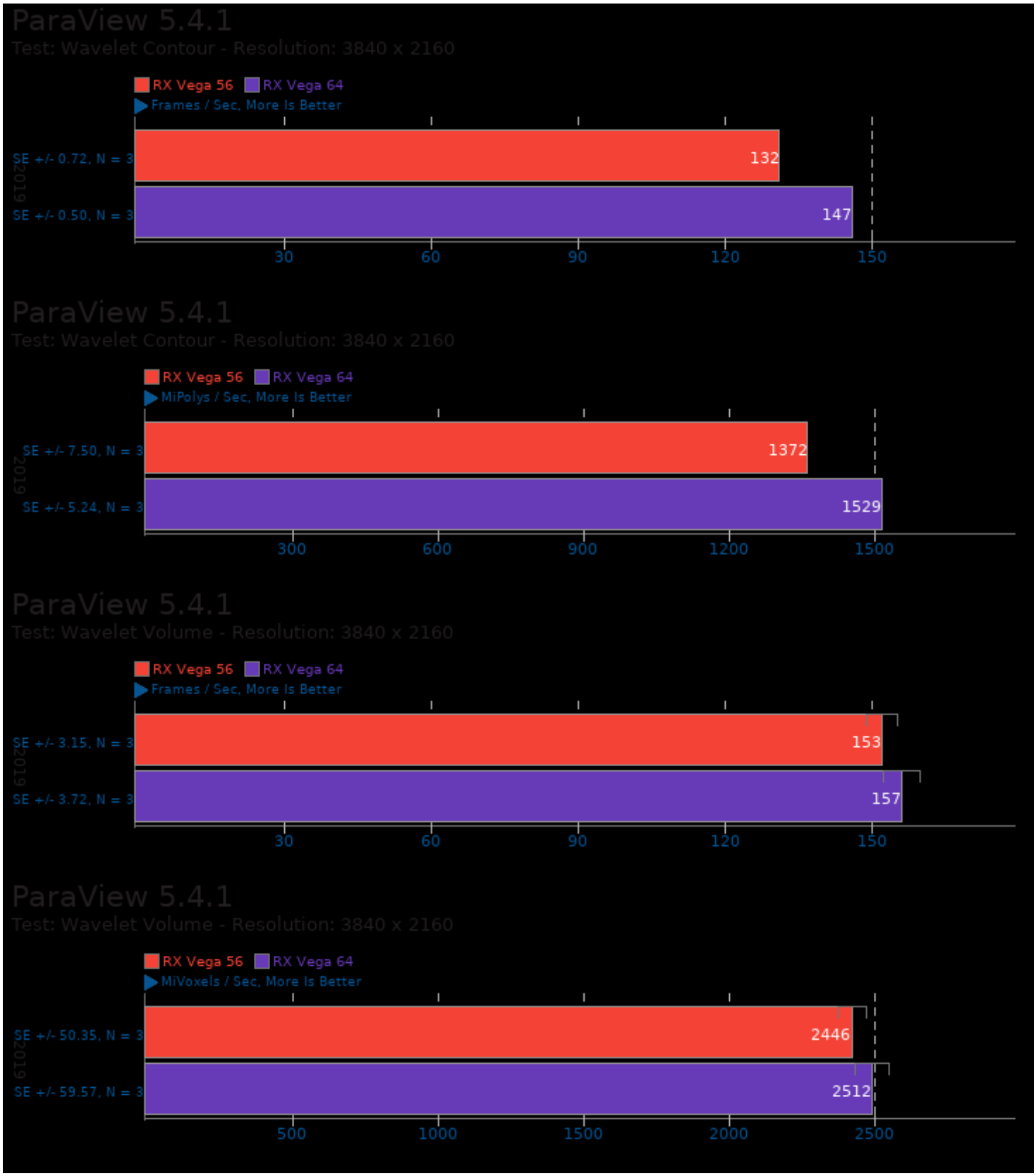
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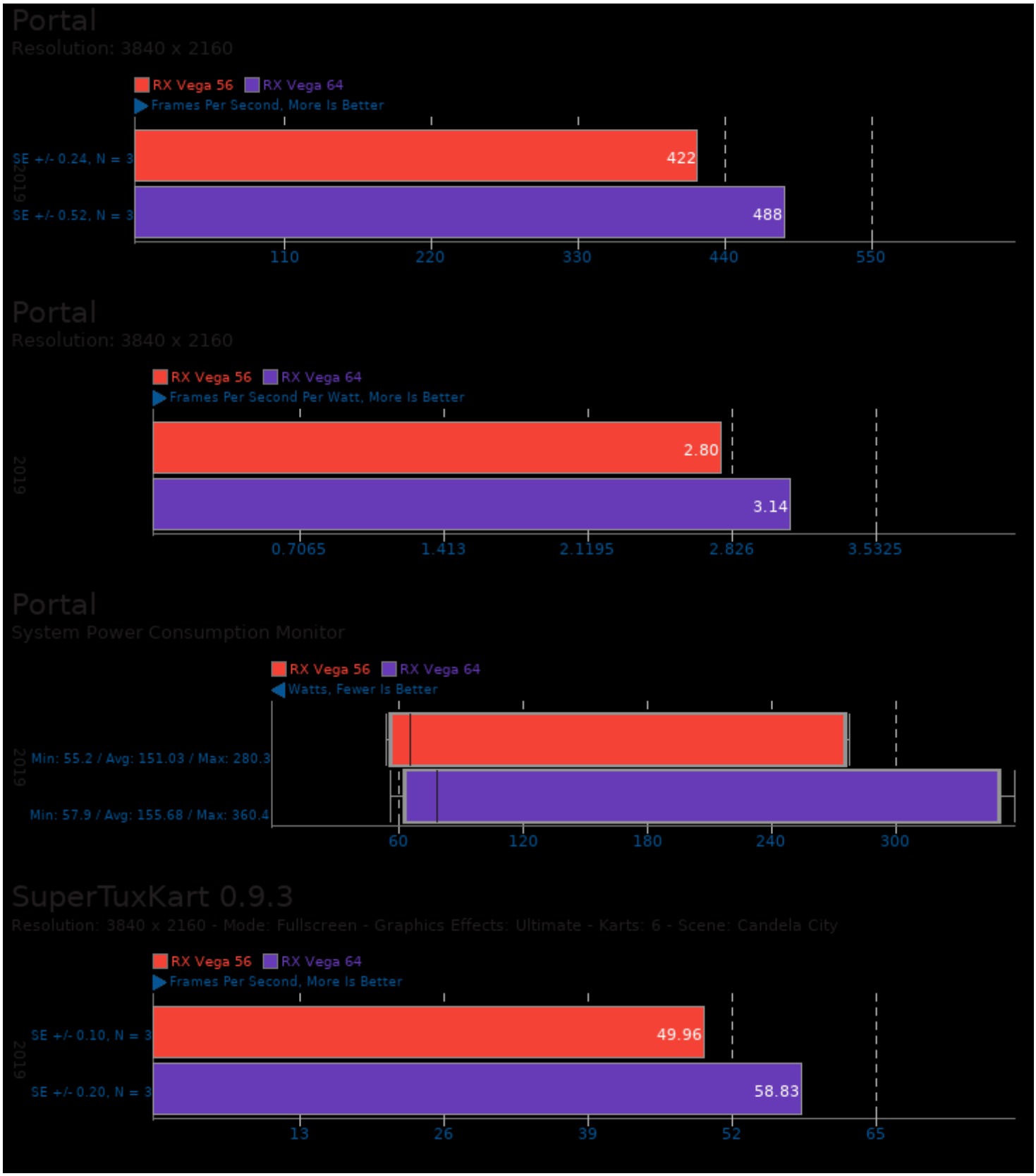
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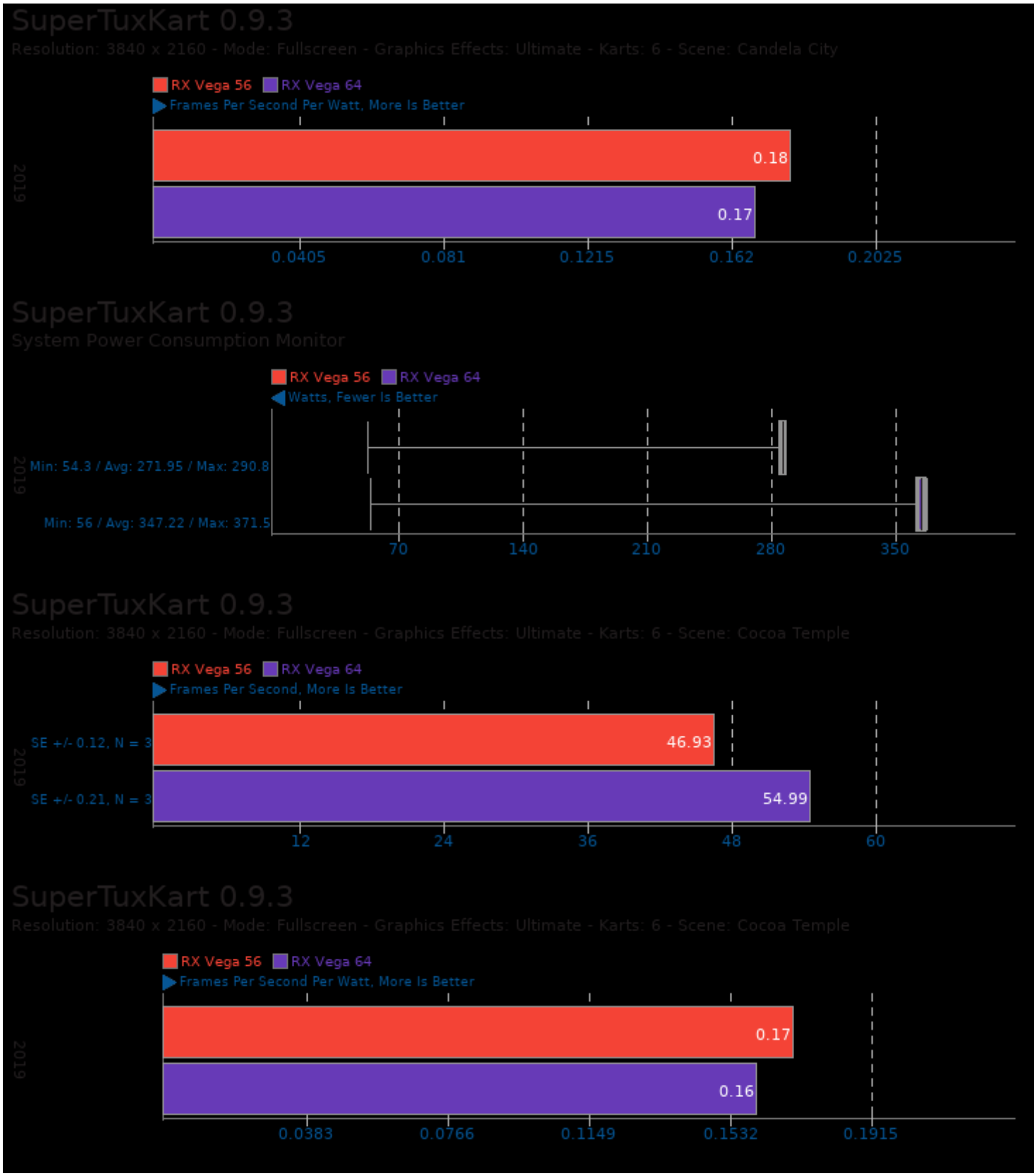
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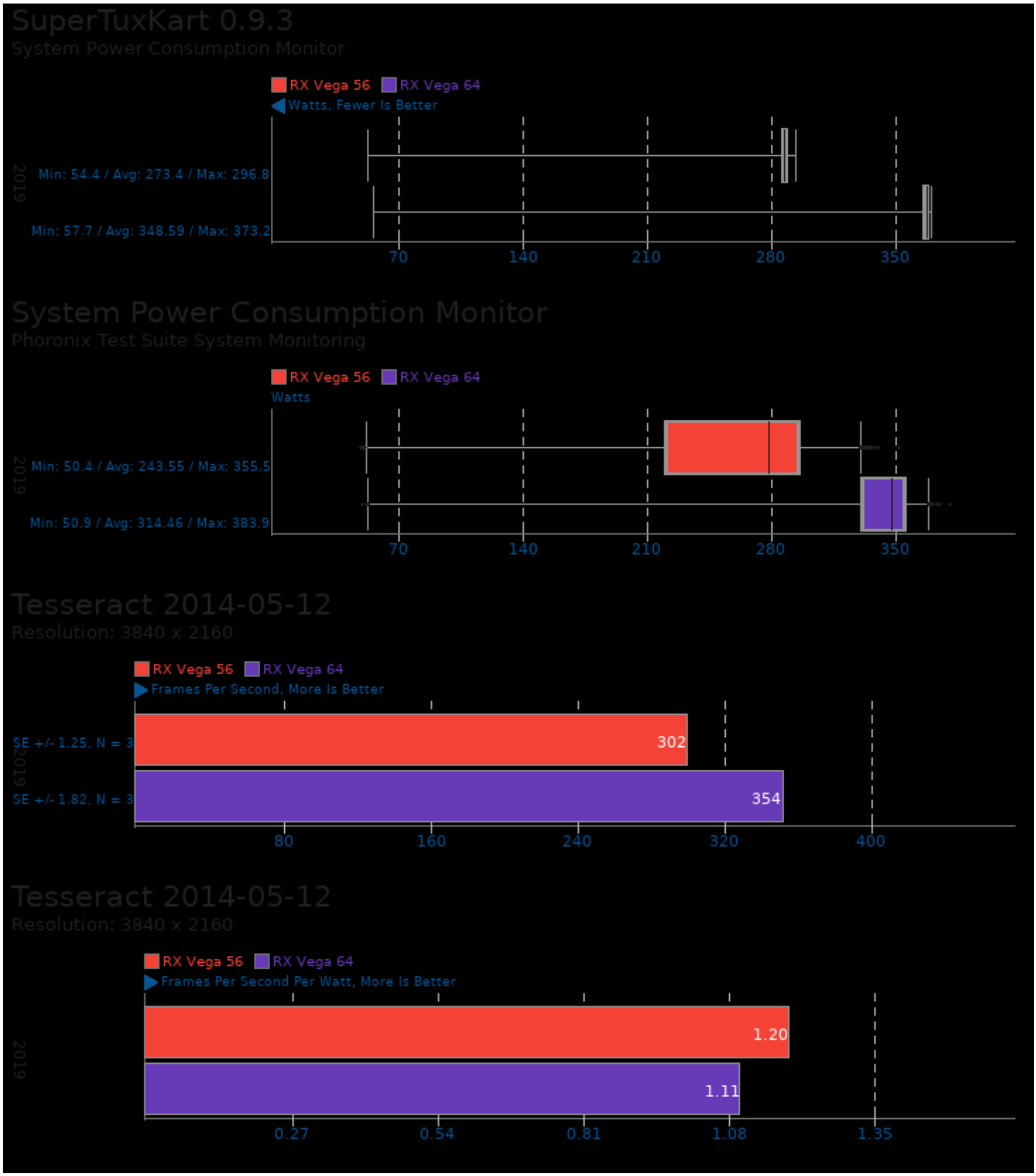
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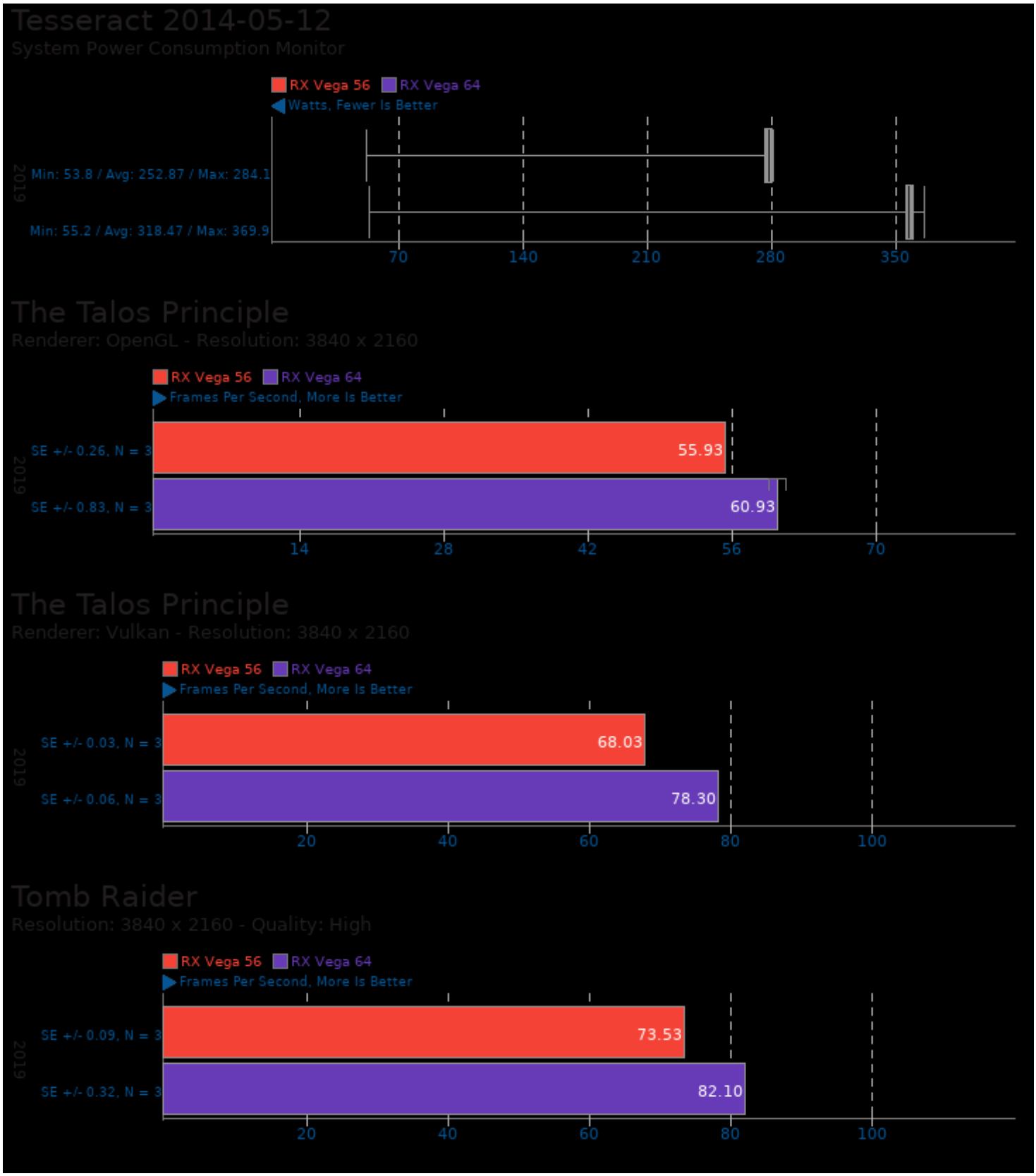
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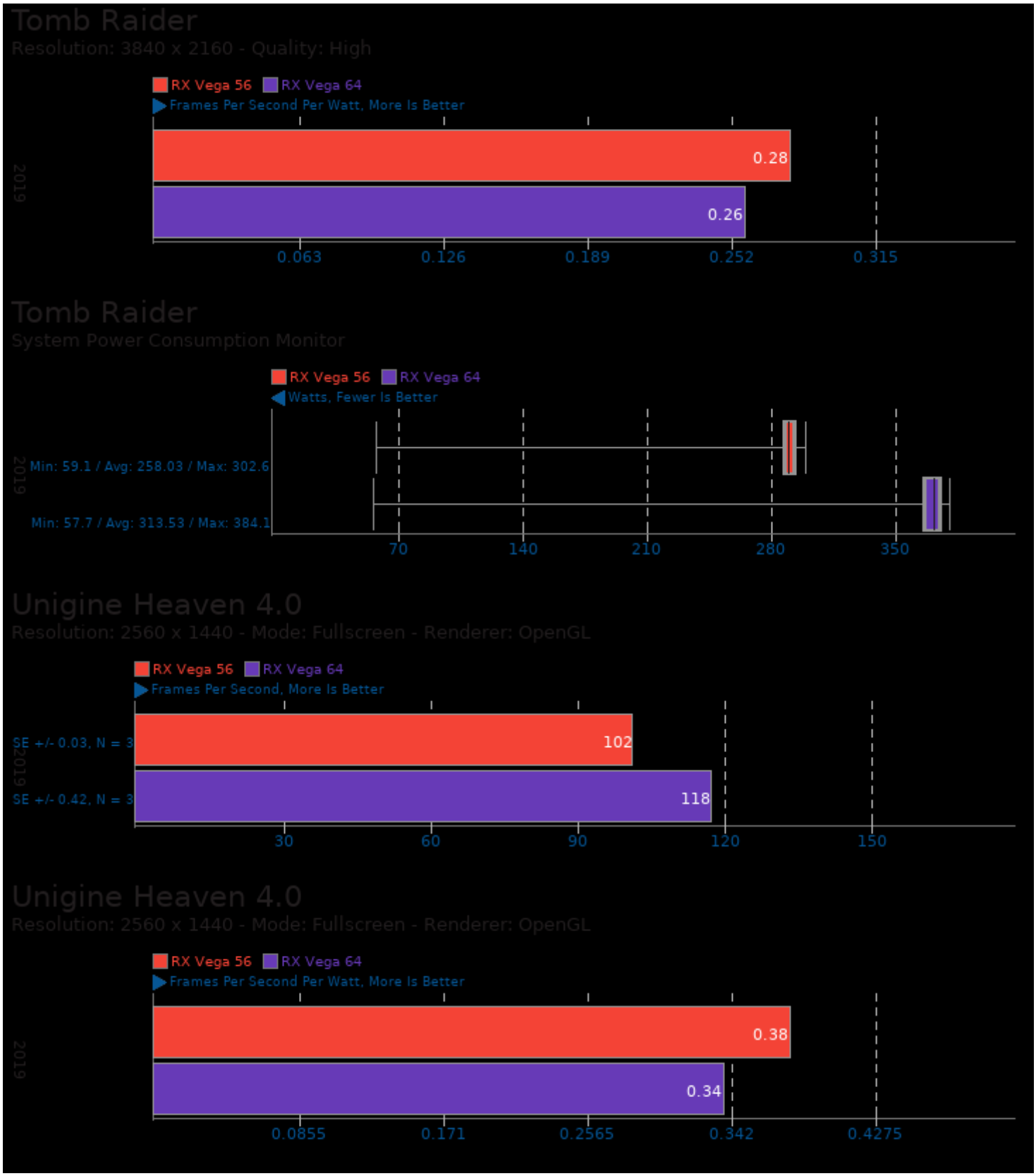
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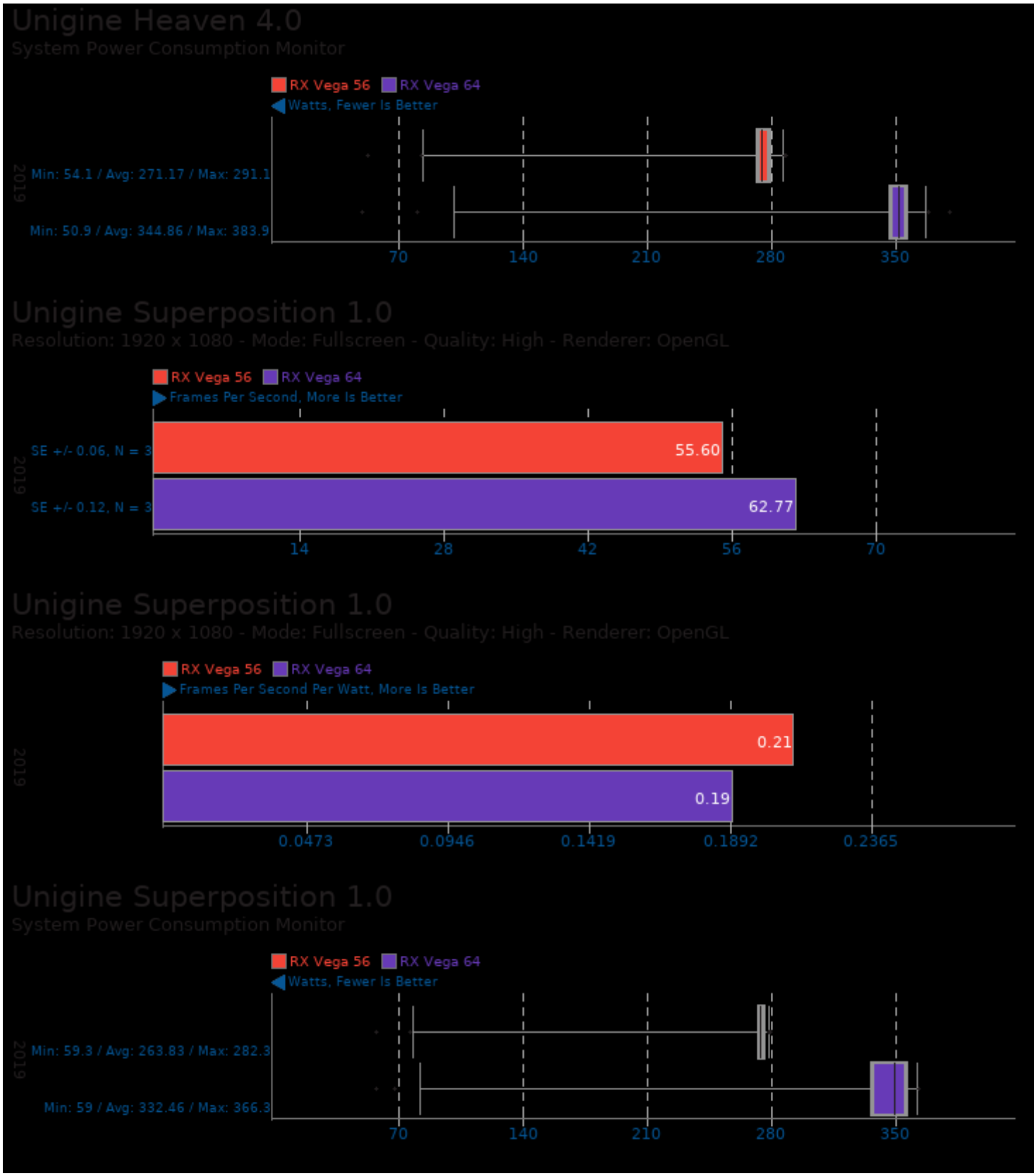
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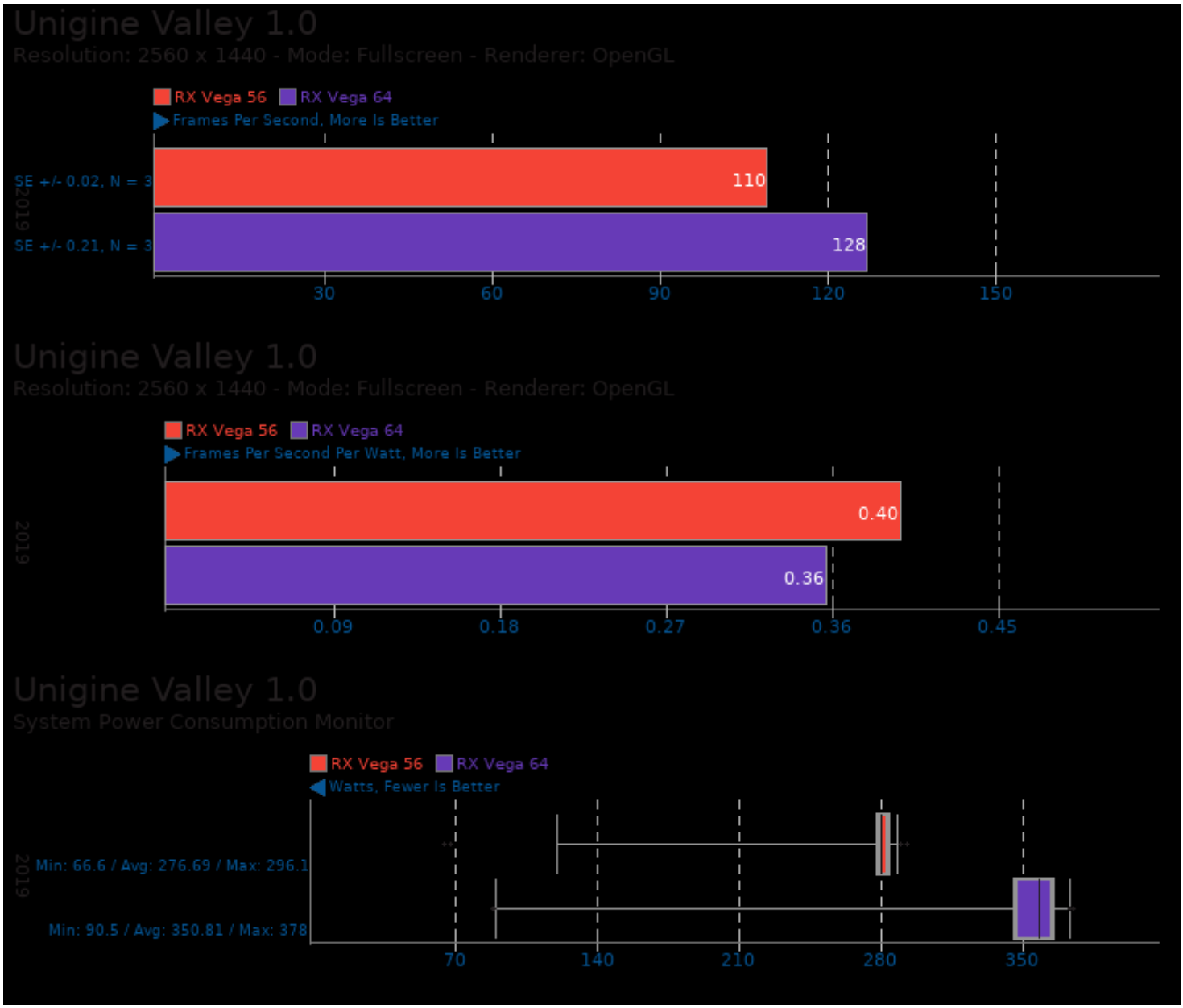
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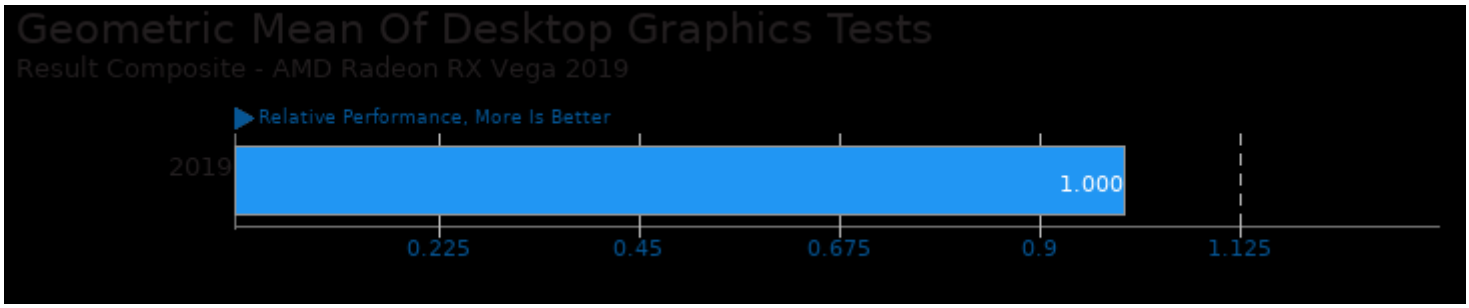


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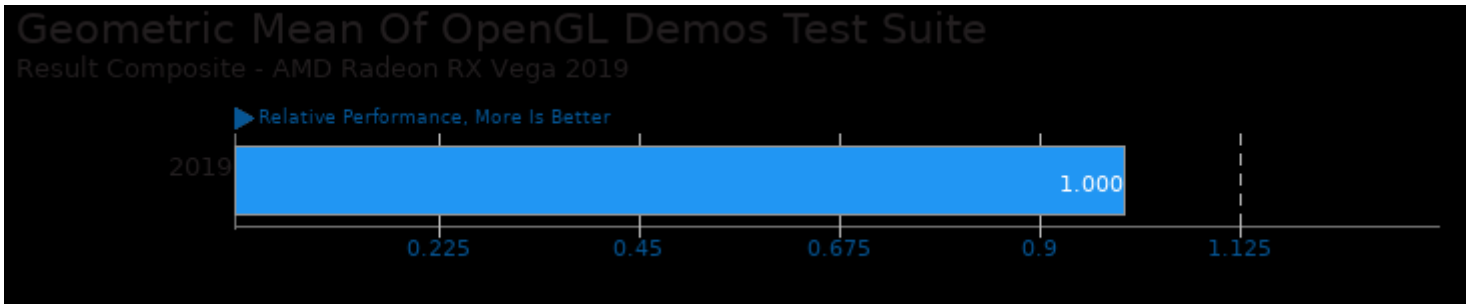


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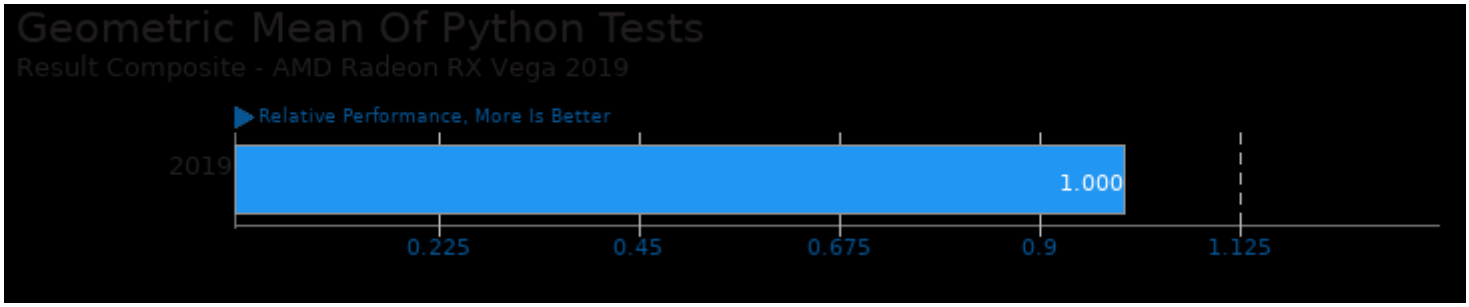
These geometric means are based upon test groupings / test suites for this result file.



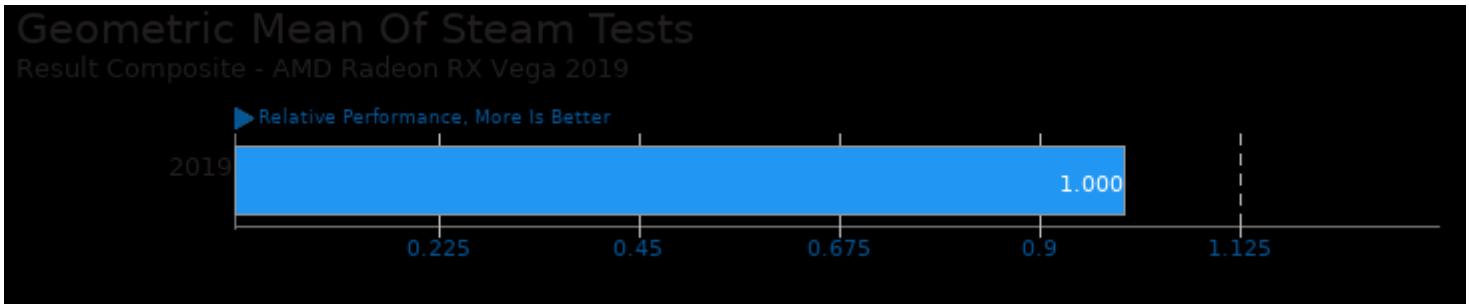
Geometric mean based upon tests: pts/openarena, pts/tesseract, pts/paraview, pts/unigine-valley, pts/unigine-heaven and pts/glmark2



Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven and pts/unigine-super

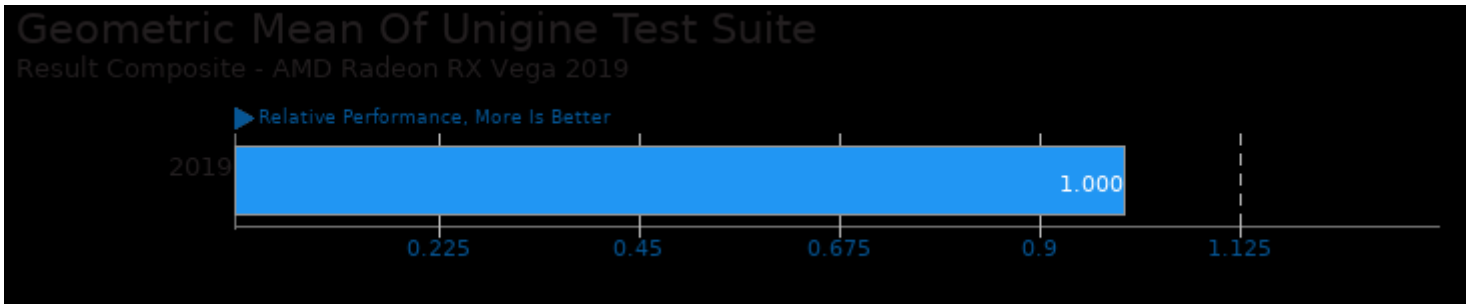


Geometric mean based upon tests: pts/glmark2 and pts/paraview



Geometric mean based upon tests: pts/bioshock-infinite, pts/dirt-rally, pts/dirt-showdown, pts/dota2, pts/dow3, pts/hitman, pts/metroll-redux, pts/portal, pts/talos-principle, pts/tomb-raider and pts/deus-exmd

AMD Radeon RX Vega 2019



Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven and pts/unigine-super

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