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EO November 2020

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (2311 BIOS) and AMD SIENNA_CICHLID 16GB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

RX 6800 XT

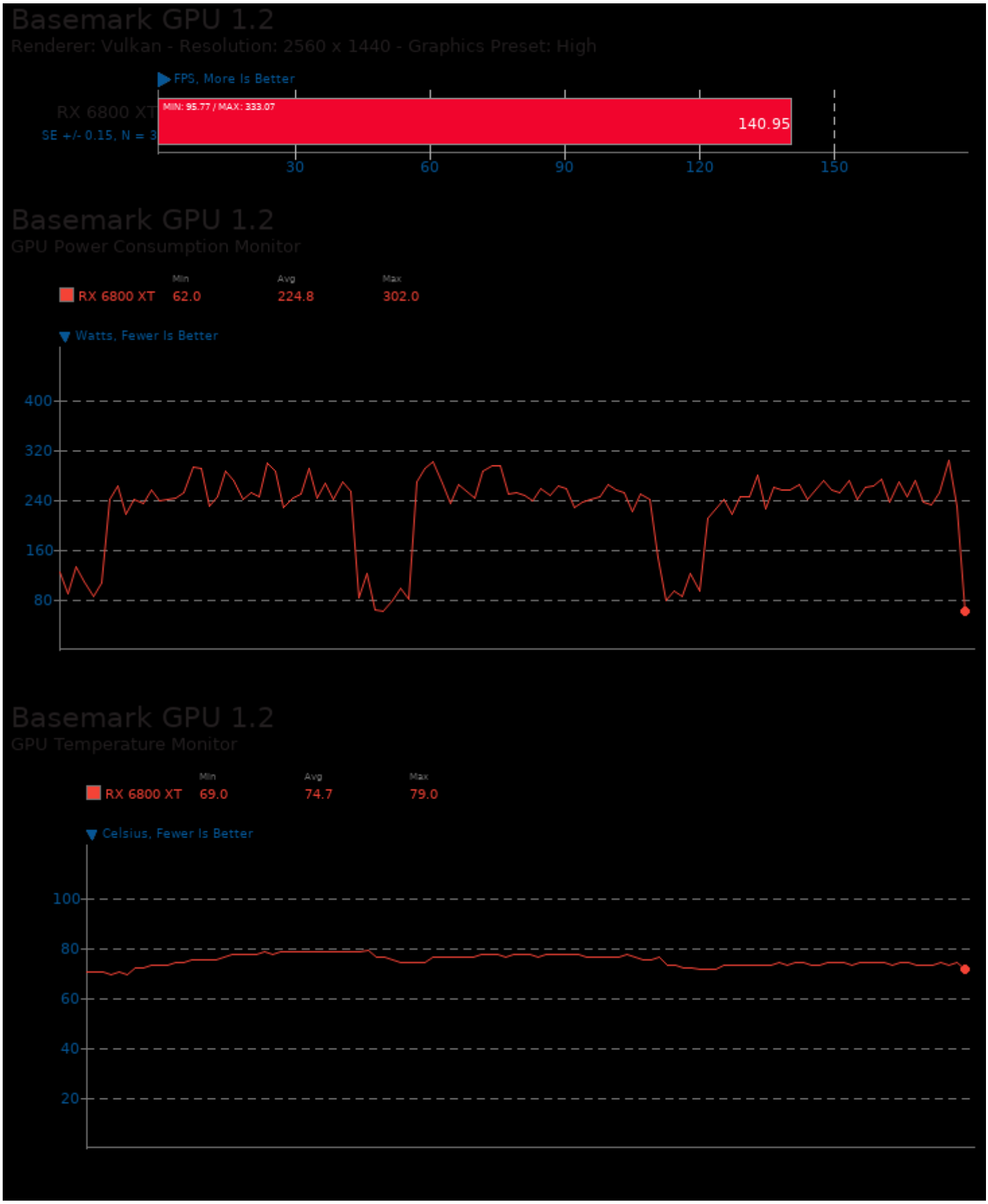
Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (2311 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: AMD SIENNA_CICHLID 16GB (2575/1000MHz), Audio: AMD Device ab28, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

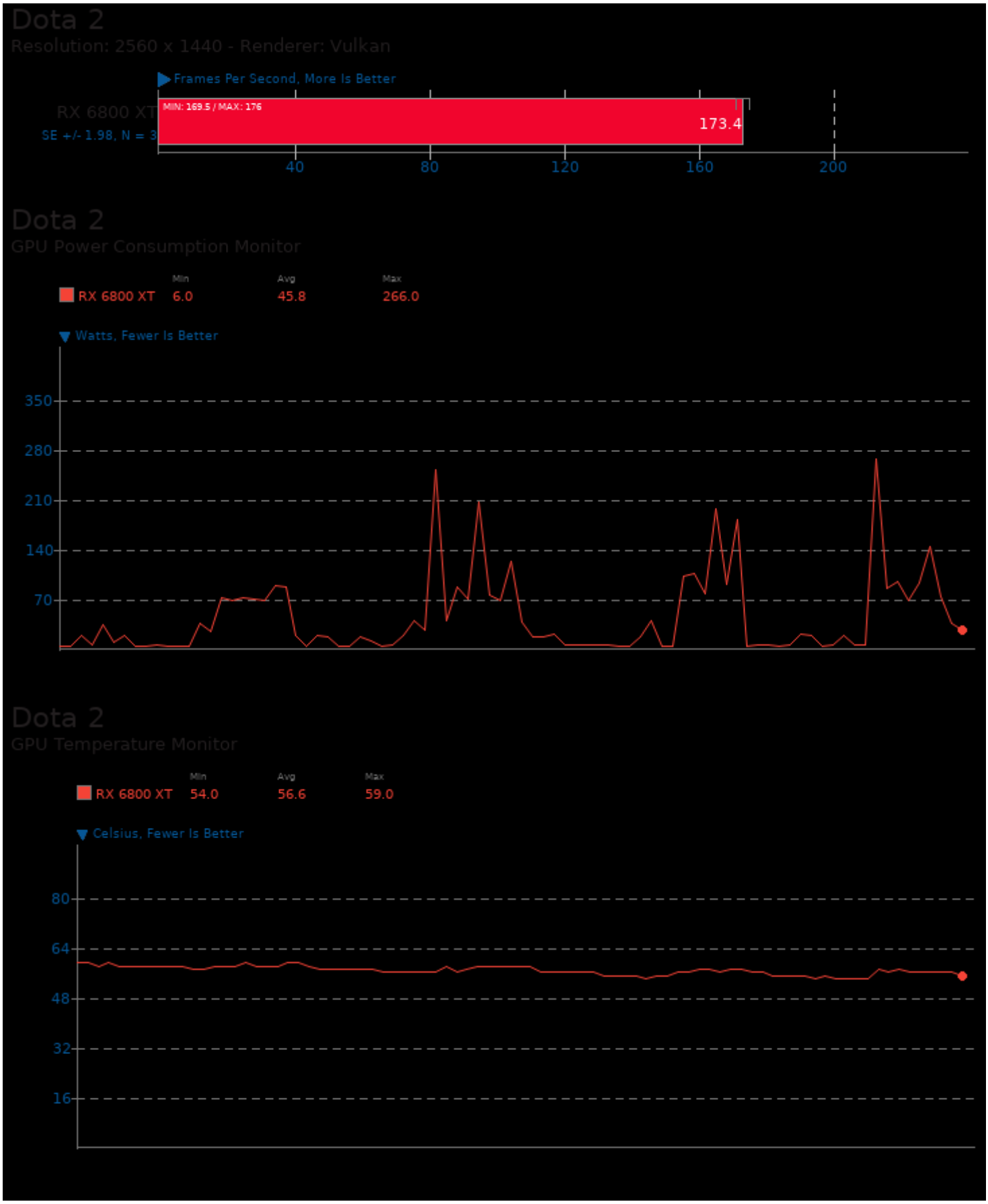
OS: Ubuntu 20.04, Kernel: 5.10.0-051000rc4daily20201119-generic (x86_64) 20201118, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 21.0.0-devel (git-54e8138 2020-11-20 focal-oibaf-ppa) (LLVM 11.0.0), Vulkan: 1.2.145, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

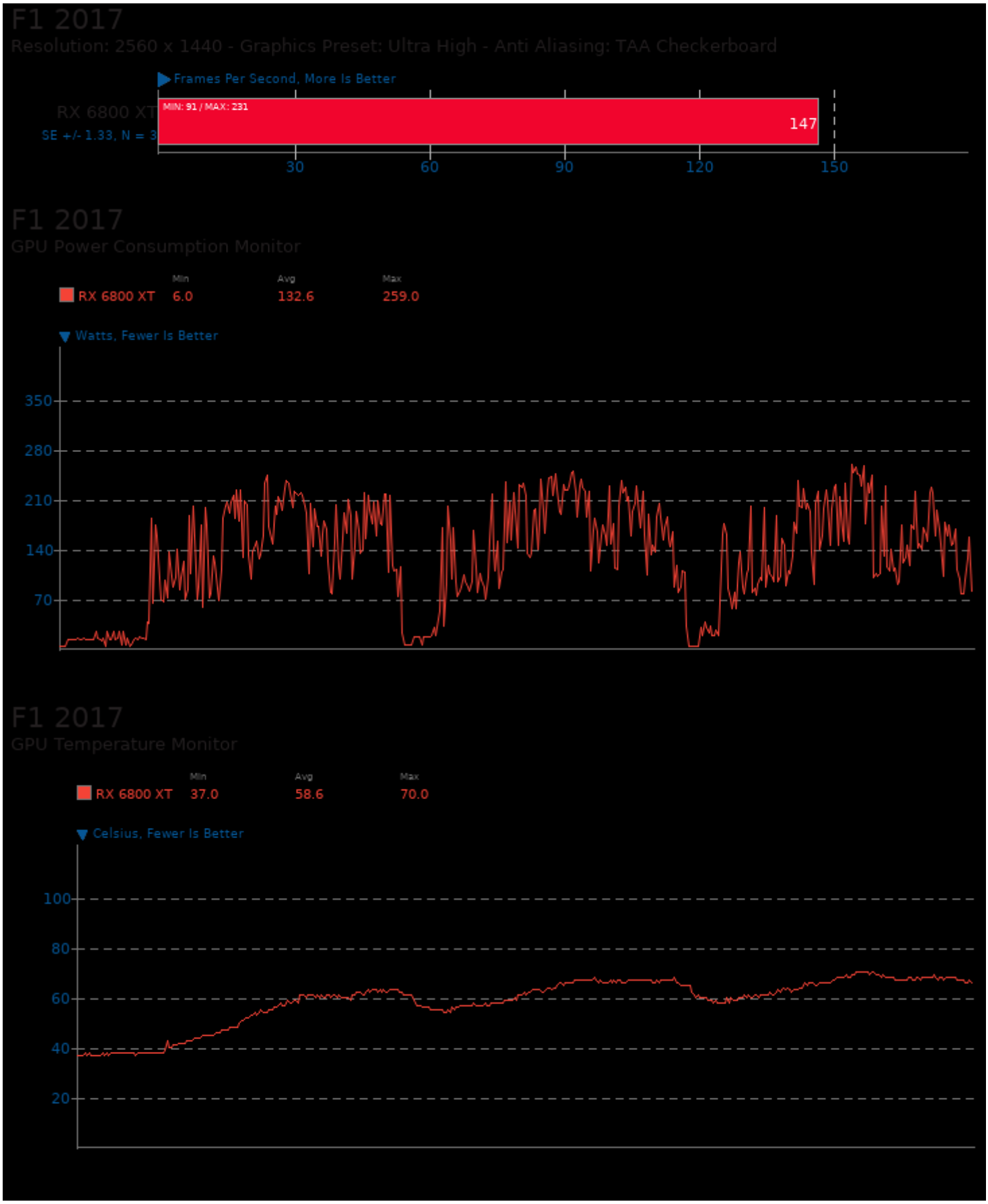
EO November 2020

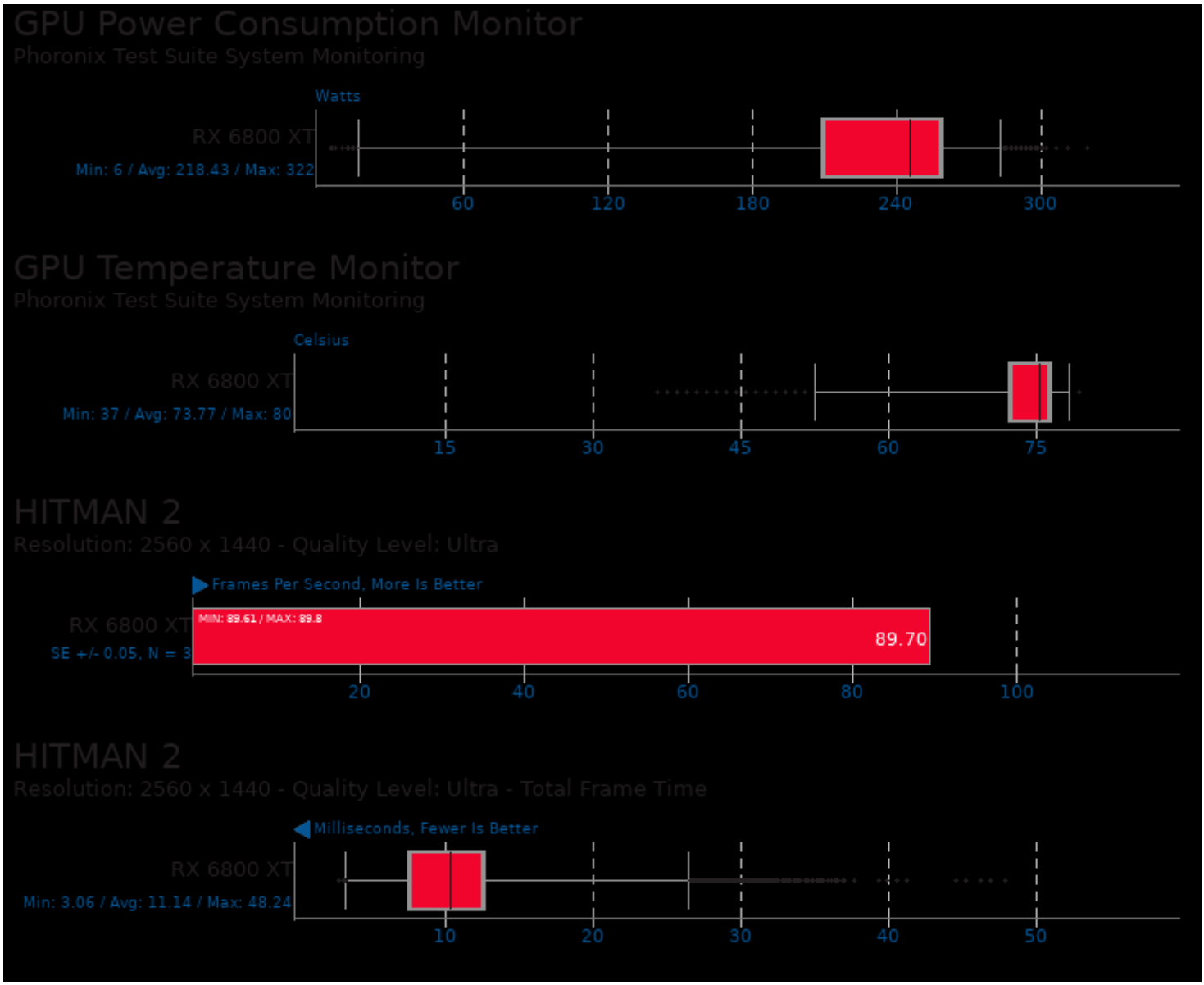
Processor Notes: Scaling Governor: acpi-cpufreq performance - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

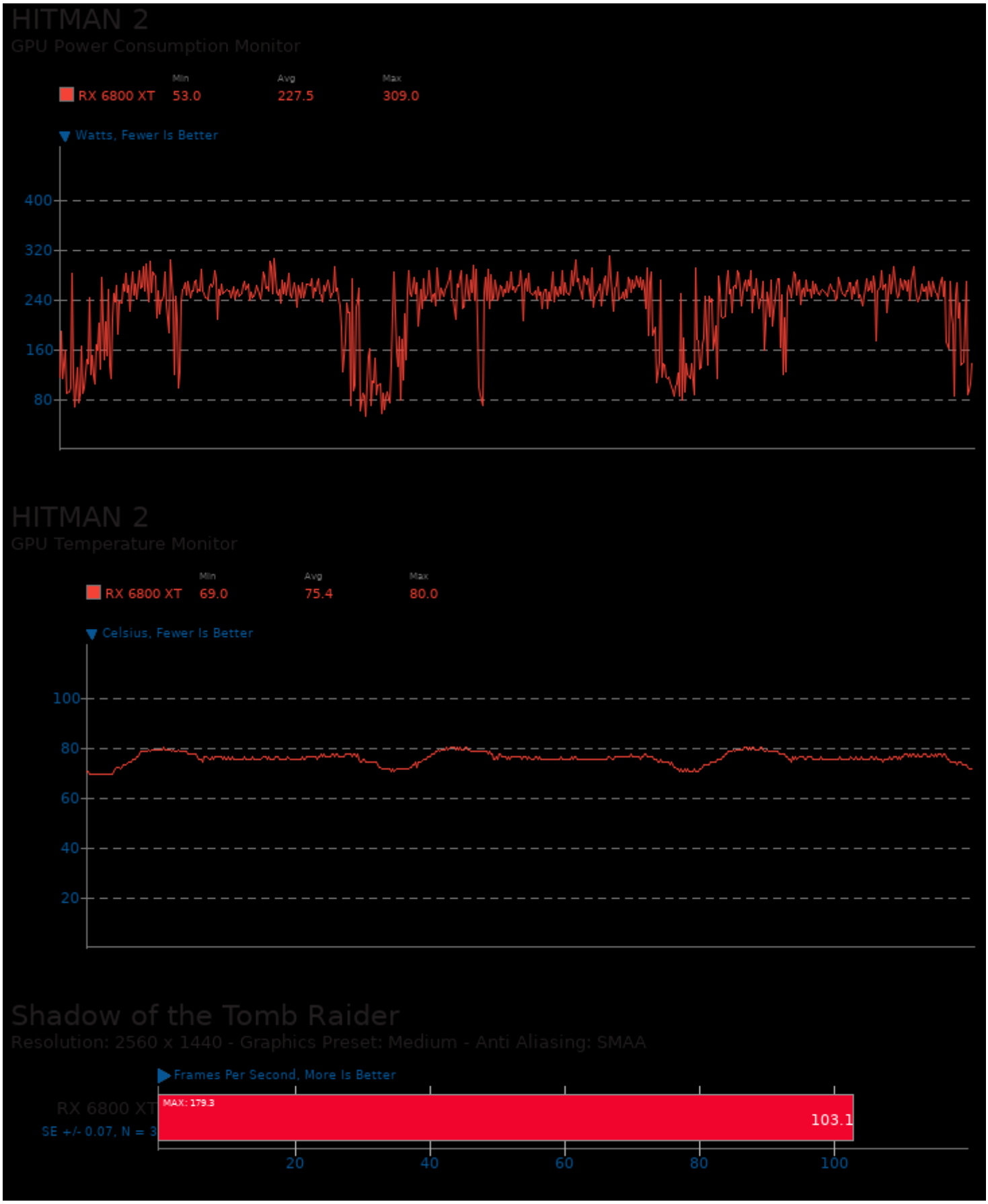
	RX 6800 XT
Basemark GPU - Vulkan - 2560 x 1440 - High (FPS)	140.95
Standard Deviation	0.2%
Dota 2 - 2560 x 1440 - Vulkan (FPS)	173.4
Standard Deviation	2%
F1 2017 - 2560 x 1440 - Ultra High - TAA Checkerboard (FPS)	147
Standard Deviation	1.6%
HITMAN 2 - 2560 x 1440 - Ultra (FPS)	89.70
Standard Deviation	0.1%
Shadow of the Tomb Raider - 2560 x 1440 - Medium - SMAA (FPS)	103.1
Standard Deviation	0.1%
Shadow of the Tomb Raider - 2560 x 1440 - Highest - SMAA (FPS)	94.1
Standard Deviation	0.1%
Strange Brigade - 2560 x 1440 - Ultra (FPS)	144.7
Standard Deviation	6.2%
Strange Brigade - 3840 x 2160 - Ultra (FPS)	85.8
Standard Deviation	0.6%
Total War: Three Kingdoms - 2560 x 1440 - Ultra - Battle Benchmark (FPS)	64.1
Standard Deviation	0.4%
Total War: WARHAMMER II - 2560 x 1440 - Ultra - F.G.B (FPS)	79.3
Standard Deviation	0.7%
Unigine Heaven - 2560 x 1440 - Fullscreen - OpenGL (FPS)	129.349
Standard Deviation	0.3%
Unigine Superposition - 2560 x 1440 - Fullscreen - Medium - OpenGL (FPS)	96.2
Standard Deviation	0.1%
Unigine Superposition - 2560 x 1440 - Fullscreen - High - OpenGL (FPS)	72.1
Standard Deviation	0.2%
Unigine Superposition - 2560 x 1440 - Fullscreen - Ultra - OpenGL (FPS)	33.9
Standard Deviation	0.2%
Unigine Valley - 2560 x 1440 - Fullscreen - OpenGL (FPS)	141.929
Standard Deviation	0.1%
X-Plane - 2560 x 1440 - Extreme - Vulkan (FPS)	61.58
Standard Deviation	1.9%


Basemark GPU 1.2
Renderer: Vulkan - Resolution: 2560 x 1440 - Graphics Preset: High
FPS, More Is Better
RX 6800 XT
SE +/- 0.15, N = 3
MIN: 95.77 / MAX: 333.07
140.95
30
60
90
120
150
Basemark GPU 1.2
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
62.0
224.8
302.0
Watts, Fewer Is Better
400
320
240
160
80
Basemark GPU 1.2
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
69.0
74.7
79.0
Celsius, Fewer Is Better
100
80
60
40
20


Dota 2
Resolution: 2560 x 1440 - Renderer: Vulkan
Frames Per Second, More Is Better
RX 6800 XT
SE +/- 1.98, N = 3
MIN: 169.5 / MAX: 176
173.4
40
80
120
160
200
Dota 2
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
6.0
45.8
266.0
Watts, Fewer Is Better
350
280
210
140
70
Dota 2
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
54.0
56.6
59.0
Celsius, Fewer Is Better
80
64
48
32
16


F1 2017
Resolution: 2560 x 1440 - Graphics Preset: Ultra High - Anti Aliasing: TAA Checkerboard
Frames Per Second, More Is Better
RX 6800 XT
SE +/- 1.33, N = 3
MIN: 91 / MAX: 231
147
30
60
90
120
150
F1 2017
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
6.0
132.6
259.0
Watts, Fewer Is Better
350
280
210
140
70
F1 2017
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
37.0
58.6
70.0
Celsius, Fewer Is Better
100
80
60
40
20

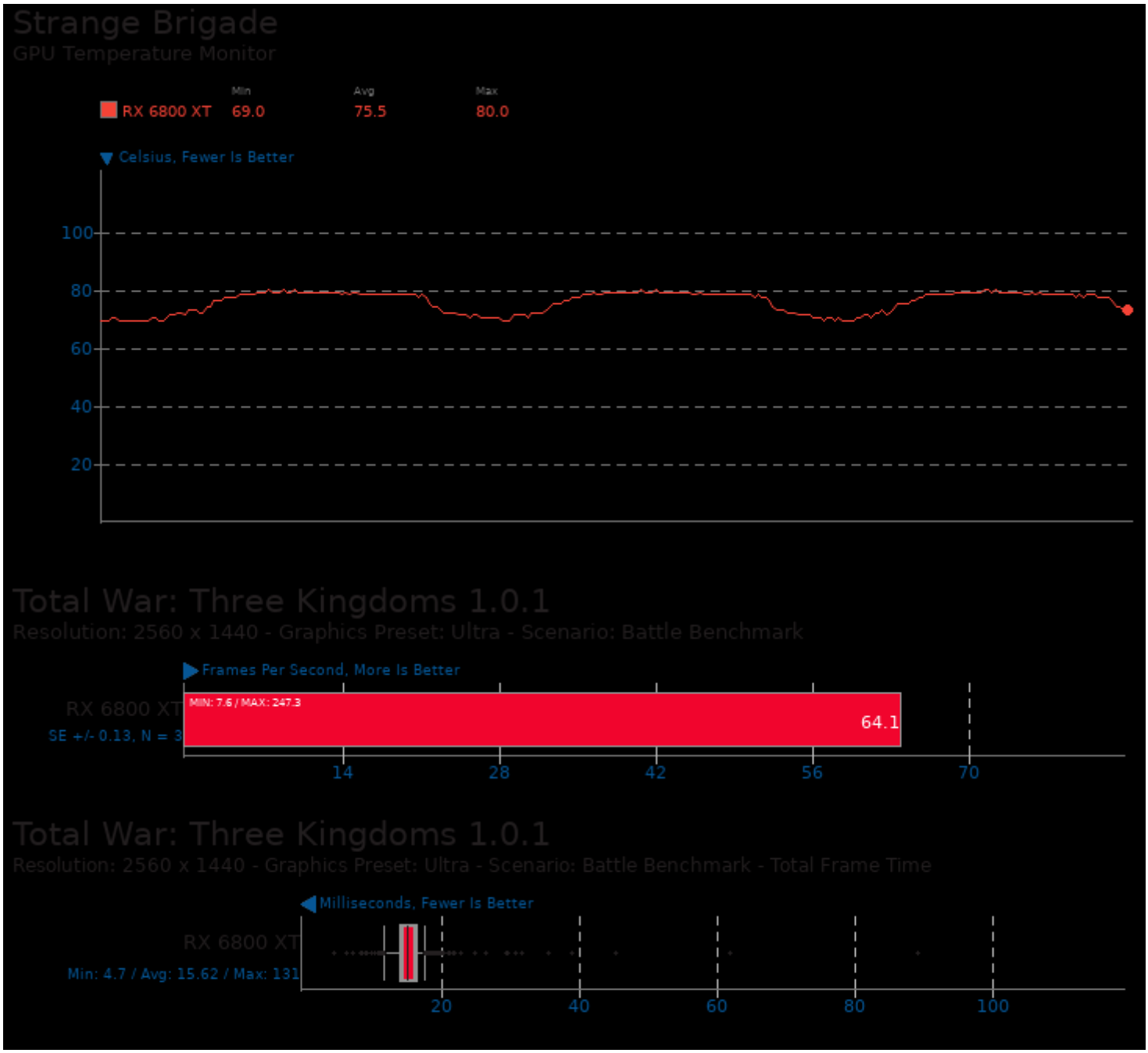

GPU Power Consumption Monitor
Phoronix Test Suite System Monitoring
Watts
RX 6800 XT
Min: 6 / Avg: 218.43 / Max: 322
60
120
180
240
300
GPU Temperature Monitor
Phoronix Test Suite System Monitoring
Celsius
RX 6800 XT
Min: 37 / Avg: 73.77 / Max: 80
15
30
45
60
75
HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Ultra
Frames Per Second, More Is Better
RX 6800 XT
MIN: 89.61 / MAX: 89.8
89.70
20
40
60
80
100
HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Ultra - Total Frame Time
Milliseconds, Fewer Is Better
RX 6800 XT
Min: 3.06 / Avg: 11.14 / Max: 48.24
10
20
30
40
50


HITMAN 2
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
53.0
227.5
309.0
Watts, Fewer Is Better
400
320
240
160
80
HITMAN 2
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
69.0
75.4
80.0
Celsius, Fewer Is Better
100
80
60
40
20
Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Medium - Anti Aliasing: SMAA
Frames Per Second, More Is Better
RX 6800 XT
SE +/- 0.07, N = 3
MAX: 179.3
103.1
20
40
60
80
100

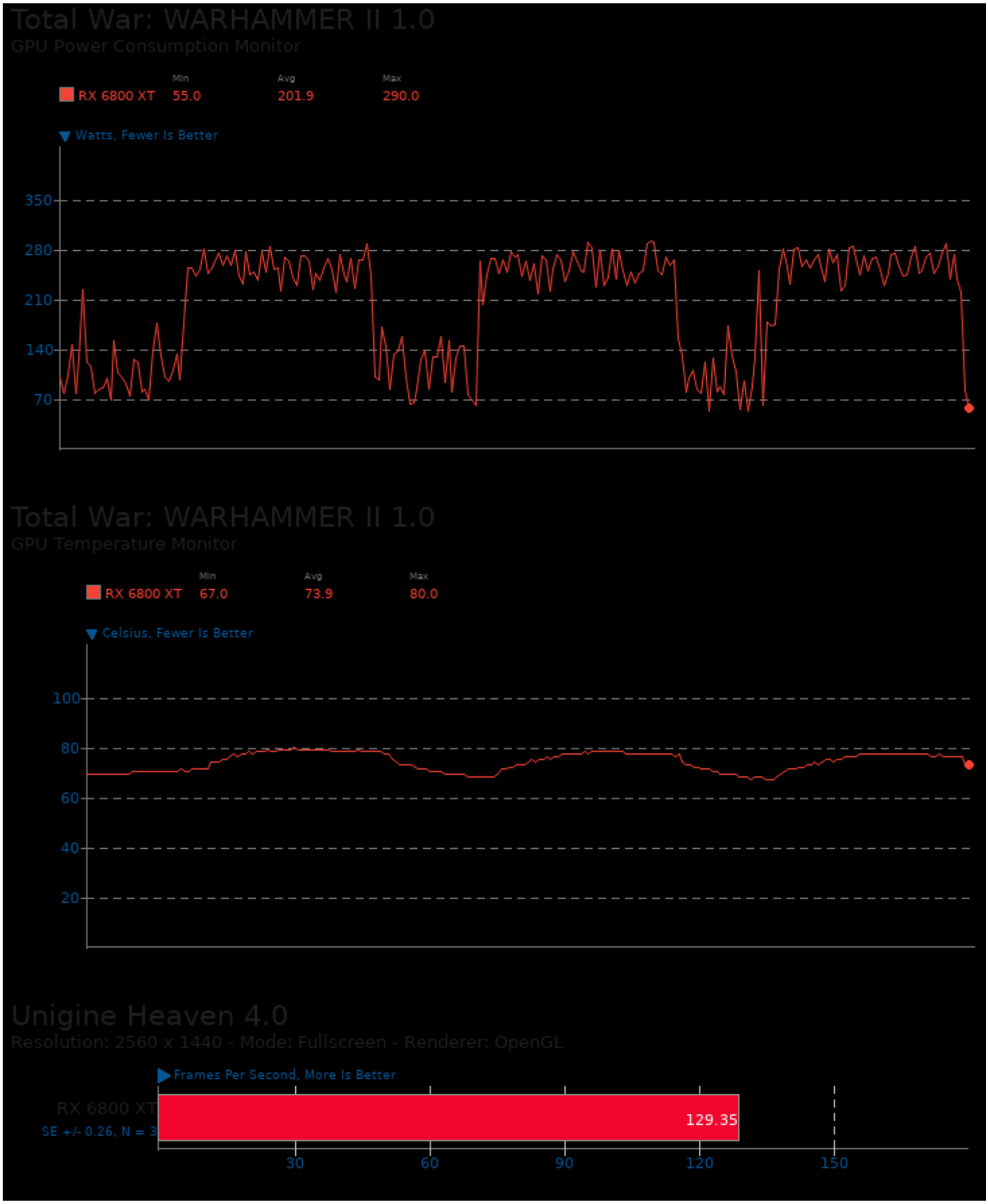

Shadow of the Tomb Raider
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
40.0
236.0
303.0
Watts, Fewer Is Better
400
320
240
160
80
Shadow of the Tomb Raider
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
69.0
76.1
80.0
Celsius, Fewer Is Better
100
80
60
40
20
Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Highest - Anti Aliasing: SMAA
Frames Per Second, More Is Better
RX 6800 XT
MAX: 149.9
94.1
SE +/- 0.03, N = 3
20
40
60
80
100

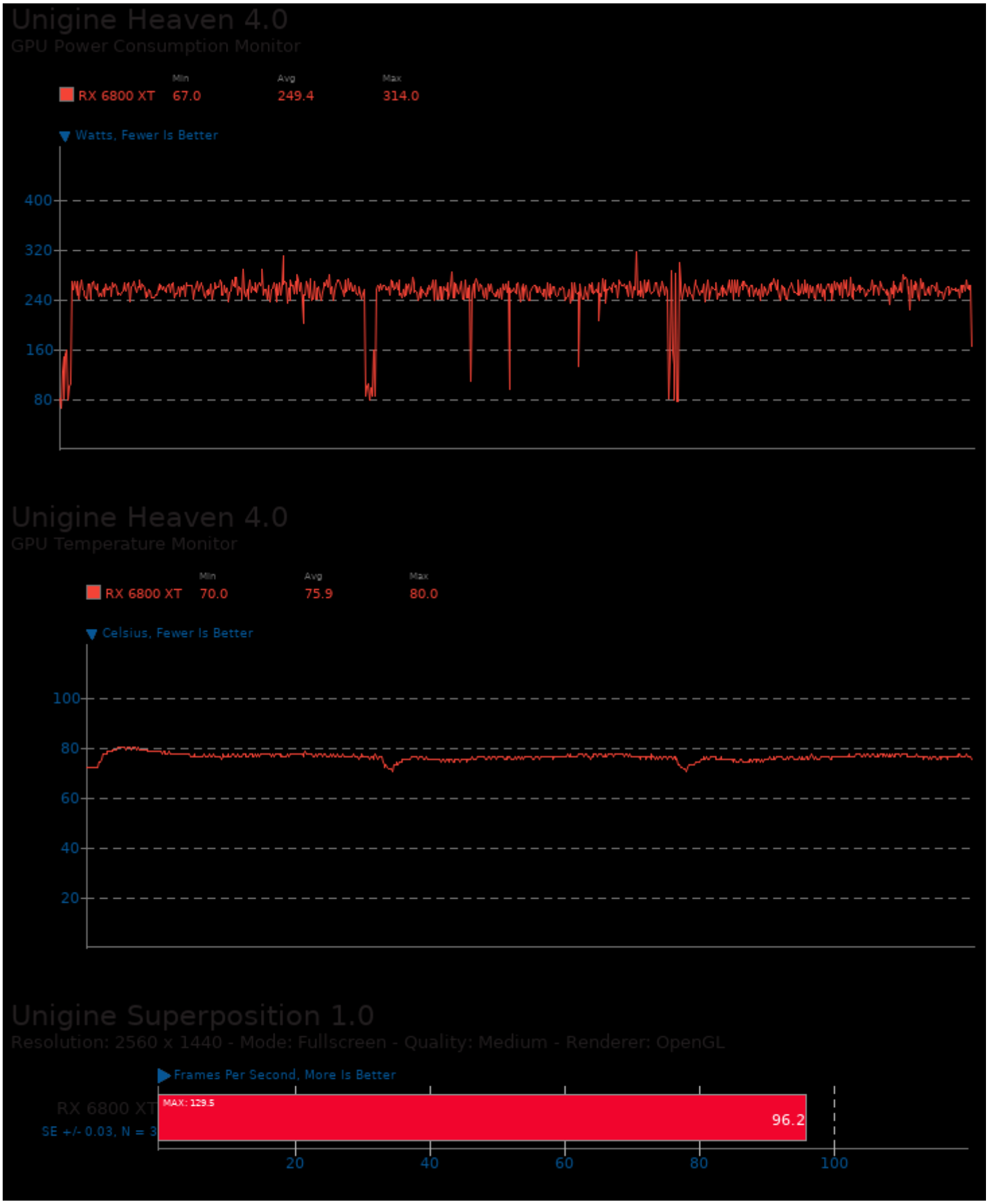

Shadow of the Tomb Raider
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
46.0
237.5
300.0
Watts, Fewer Is Better
400
320
240
160
80
Shadow of the Tomb Raider
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
69.0
76.1
80.0
Celsius, Fewer Is Better
100
80
60
40
20
Strange Brigade
Resolution: 2560 x 1440 - Graphics Setting: Ultra
Frames Per Second, More Is Better
RX 6800 XT
SE +/- 2.31, N = 15
MIN: 28.5 / MAX: 241.5
144.7
30
60
90
120
150

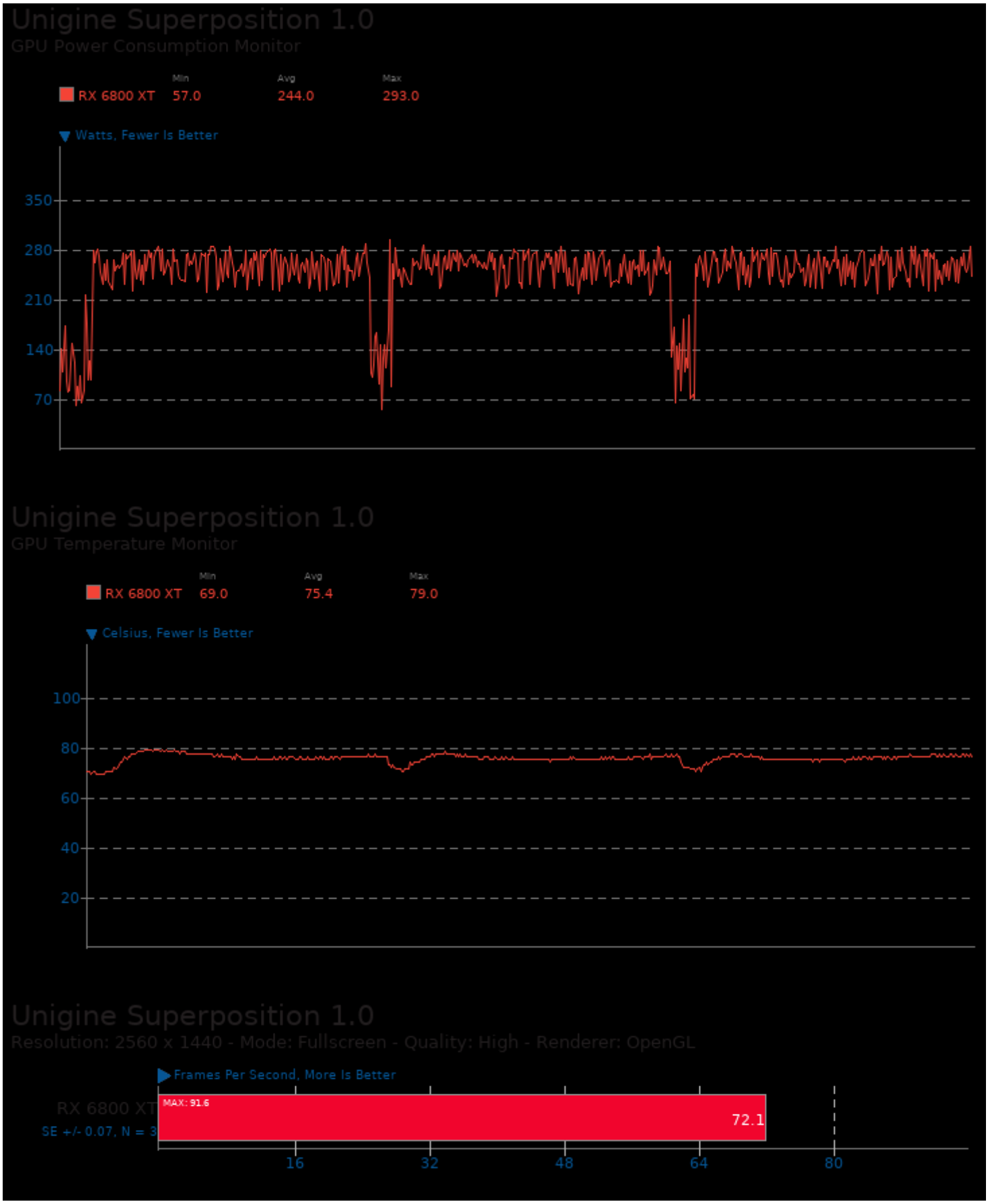

Strange Brigade
GPU Power Consumption Monitor
Watts, Fewer Is Better
RX 6800 XT
Min: 6 / Avg: 201.43 / Max: 303
50
100
150
200
250
Strange Brigade
GPU Temperature Monitor
Celsius, Fewer Is Better
RX 6800 XT
Min: 49 / Avg: 72.76 / Max: 80
15
30
45
60
75
Strange Brigade
Resolution: 3840 x 2160 - Graphics Setting: Ultra
Frames Per Second, More Is Better
RX 6800 XT
SE +/- 0.29, N = 3
MIN: 27.4 / MAX: 196.7
85.8
20
40
60
80
100
Strange Brigade
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
54.0
210.5
293.0
Watts, Fewer Is Better
350
280
210
140
70

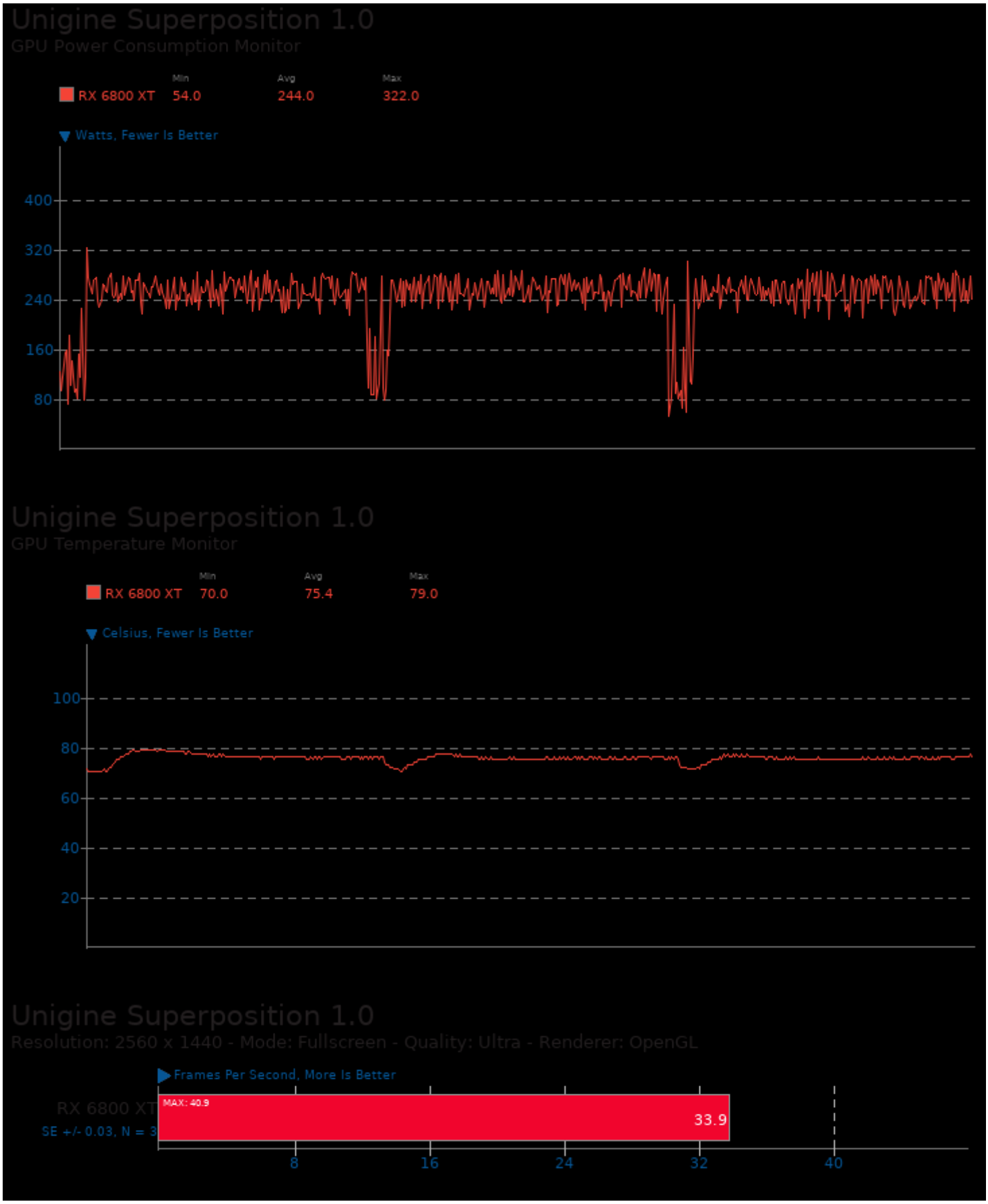

Strange Brigade
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
69.0
75.5
80.0
Celsius, Fewer Is Better
100
80
60
40
20
Total War: Three Kingdoms 1.0.1
Resolution: 2560 x 1440 - Graphics Preset: Ultra - Scenario: Battle Benchmark
Frames Per Second, More Is Better
RX 6800 XT
MIN: 7.6 / MAX: 247.3
64.1
SE +/- 0.13, N = 3
14
28
42
56
70
Total War: Three Kingdoms 1.0.1
Resolution: 2560 x 1440 - Graphics Preset: Ultra - Scenario: Battle Benchmark - Total Frame Time
Milliseconds, Fewer Is Better
RX 6800 XT
Min: 4.7 / Avg: 15.62 / Max: 131
20
40
60
80
100


Total War: Three Kingdoms 1.0.1
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
56.0
225.3
296.0
Watts, Fewer Is Better
350
280
210
140
70
Total War: Three Kingdoms 1.0.1
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
69.0
75.7
80.0
Celsius, Fewer Is Better
100
80
60
40
20
Total War: WARHAMMER II 1.0
Resolution: 2560 x 1440 - Graphics Preset: Ultra - Scenario: Fallen Gates Battle
Frames Per Second, More Is Better
RX 6800 XT
MIN: 17.1 / MAX: 217.3
79.3
SE +/- 0.32, N = 3
20
40
60
80
100

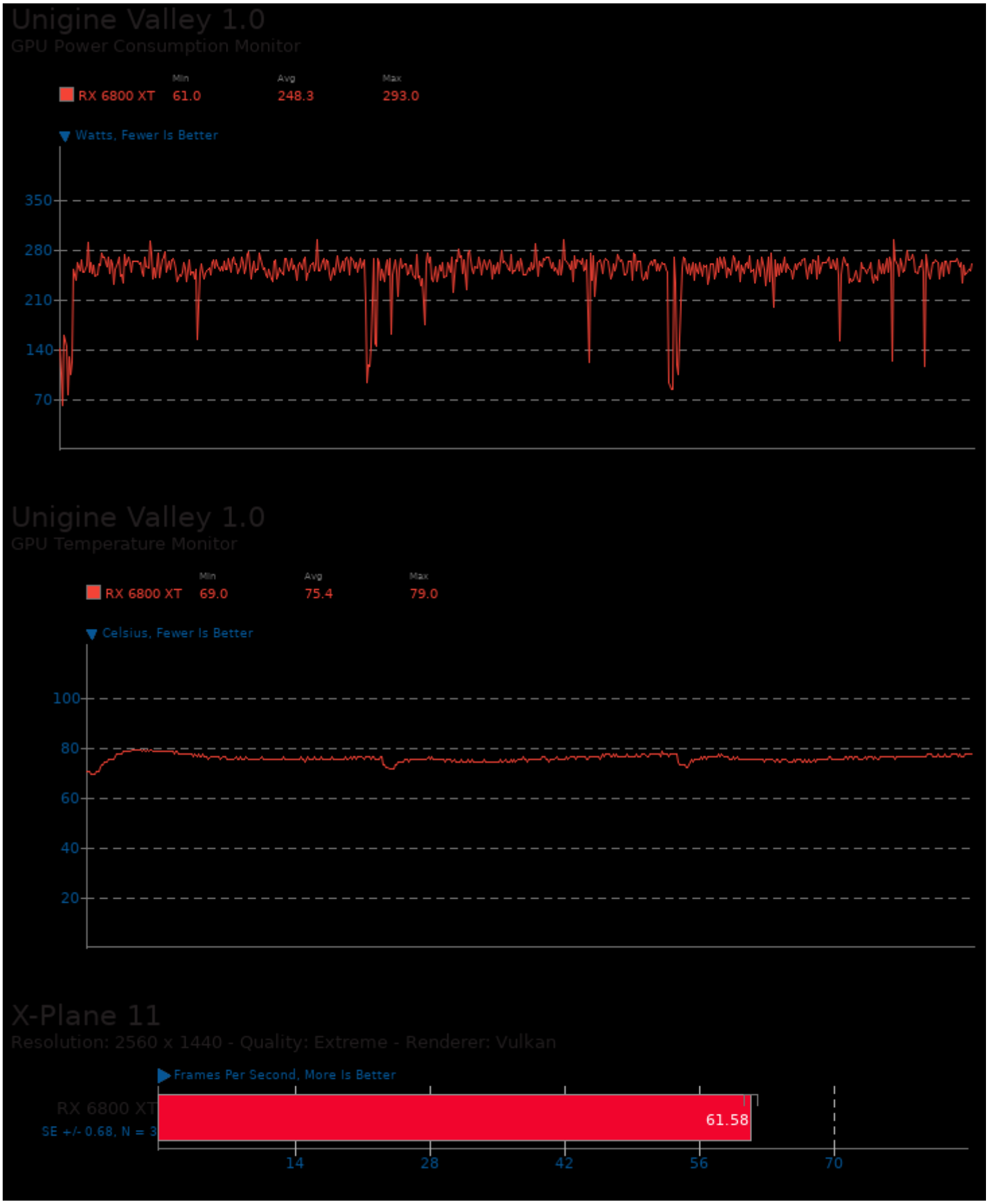

Total War: WARHAMMER II 1.0
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
55.0
201.9
290.0
Watts, Fewer Is Better
350
280
210
140
70
Total War: WARHAMMER II 1.0
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
67.0
73.9
80.0
Celsius, Fewer Is Better
100
80
60
40
20
Unigine Heaven 4.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
RX 6800 XT
SE +/- 0.26, N = 3
129.35
30
60
90
120
150

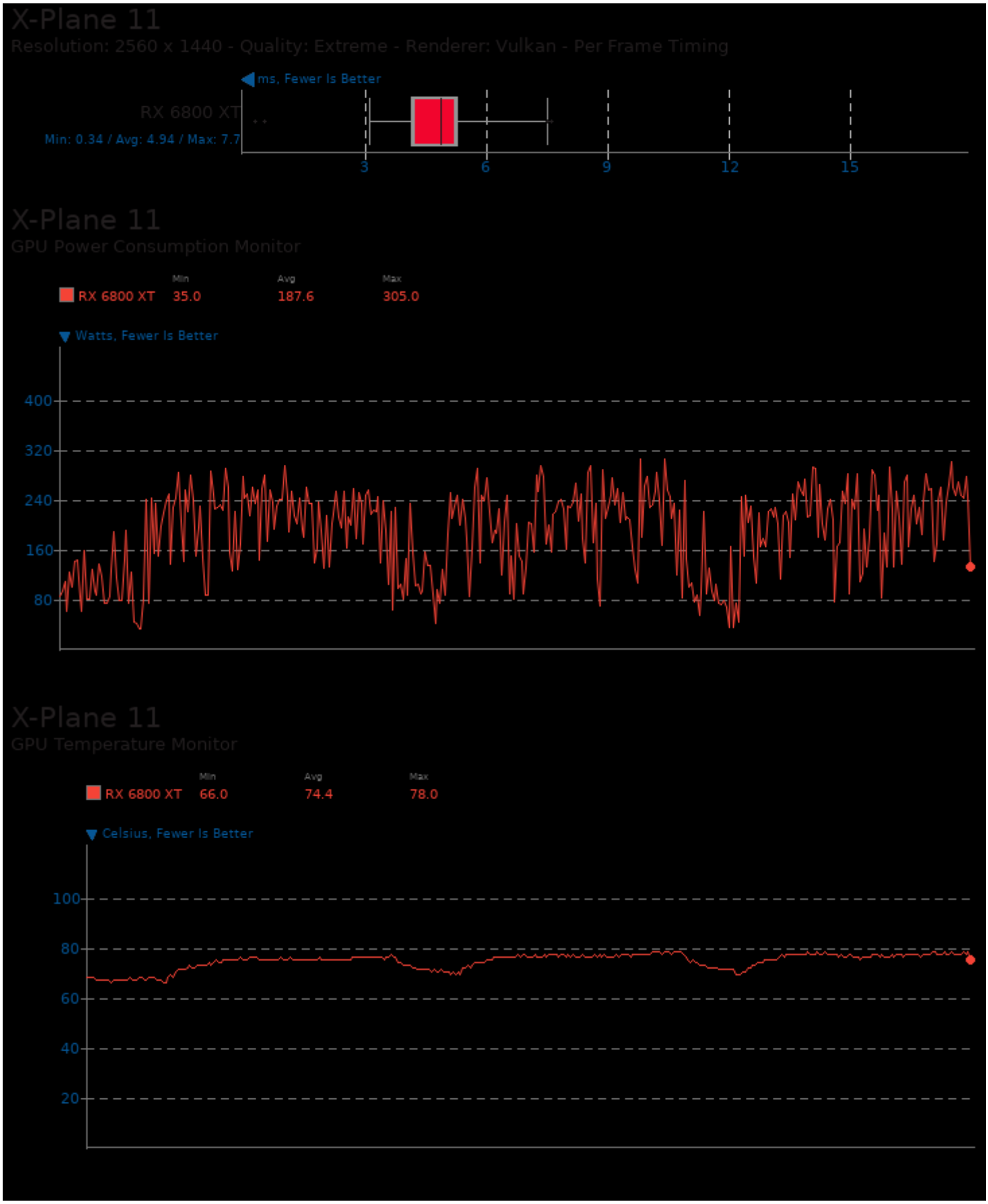

Unigine Heaven 4.0
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
67.0
249.4
314.0
Watts, Fewer Is Better
400
320
240
160
80
Unigine Heaven 4.0
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
70.0
75.9
80.0
Celsius, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Quality: Medium - Renderer: OpenGL
Frames Per Second, More Is Better
RX 6800 XT
MAX: 129.5
96.2
SE +/- 0.03, N = 3
20
40
60
80
100


Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
57.0
244.0
293.0
Watts, Fewer Is Better
350
280
210
140
70
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
69.0
75.4
79.0
Celsius, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Quality: High - Renderer: OpenGL
Frames Per Second, More Is Better
RX 6800 XT
MAX: 91.6
72.1
16
32
48
64
80


Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
54.0
244.0
322.0
Watts, Fewer Is Better
400
320
240
160
80
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
70.0
75.4
79.0
Celsius, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Quality: Ultra - Renderer: OpenGL
Frames Per Second, More Is Better
RX 6800 XT
MAX: 40.9
33.9
8
16
24
32
40


Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
57.0
246.7
293.0
Watts, Fewer Is Better
350
280
210
140
70
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
68.0
75.3
79.0
Celsius, Fewer Is Better
100
80
60
40
20
Unigine Valley 1.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
RX 6800 XT
SE +/- 0.10, N = 3
141.93
30
60
90
120
150


Unigine Valley 1.0
GPU Power Consumption Monitor
Min
Avg
Max
RX 6800 XT
61.0
248.3
293.0
Watts, Fewer Is Better
350
280
210
140
70
Unigine Valley 1.0
GPU Temperature Monitor
Min
Avg
Max
RX 6800 XT
69.0
75.4
79.0
Celsius, Fewer Is Better
100
80
60
40
20
X-Plane 11
Resolution: 2560 x 1440 - Quality: Extreme - Renderer: Vulkan
Frames Per Second, More Is Better
RX 6800 XT
SE +/- 0.68, N = 3
61.58
14
28
42
56
70



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