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Zotac GeForce GTX 1070 Ti Mini - NVIDIA Linux Performance

Tests for a future article.

Automated Executive Summary

GeForce GTX 1080 Ti had the most wins, coming in first place for 98% of the tests.

Based on the geometric mean of all complete results, the fastest (GeForce GTX 1080 Ti) was 2.001x the speed of the slowest (GeForce GTX 1060). GeForce GTX 1080 was 0.808x the speed of GeForce GTX 1080 Ti, Zotac GTX 1070 Ti Mini was 0.947x the speed of GeForce GTX 1080, GeForce GTX 1070 was 0.886x the speed of Zotac GTX 1070 Ti Mini, GeForce GTX 1060 was 0.737x the speed of GeForce GTX 1070.

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

BioShock Infinite (GPU Usage Monitor) at 100x
Deus Ex: Mankind Divided (GPU Usage Monitor) at 100x
Dota 2 (GPU Usage Monitor) at 100x
Mad Max (GPU Usage Monitor) at 100x
Mad Max (GPU Usage Monitor) at 100x
Serious Sam 3: BFE (GPU Usage Monitor) at 100x
Serious Sam 3: BFE (GPU Usage Monitor) at 100x
Serious Sam 3: BFE (GPU Usage Monitor) at 100x

Serious Sam 3: BFE (GPU Usage Monitor) at 100x
Tomb Raider (GPU Usage Monitor) at 100x.

Test Systems:

GeForce GTX 1060

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A, Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 1060 6GB 6144MB (1506/4006MHz), Audio: Realtek Generic, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 17.04, Kernel: 4.10.0-38-generic (x86_64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.3, Display Driver: NVIDIA 384.98, OpenGL: 4.5.0, Vulkan: 1.0.42, Compiler: GCC 6.3.0 20170406, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance

GeForce GTX 1070

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A, Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 1070 8192MB (1506/4006MHz), Audio: Realtek Generic, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 17.04, Kernel: 4.10.0-38-generic (x86_64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.3, Display Driver: NVIDIA 384.98, OpenGL: 4.5.0, Vulkan: 1.0.42, Compiler: GCC 6.3.0 20170406, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance

Zotac GTX 1070 Ti Mini

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A, Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: Zotac NVIDIA GeForce GTX 1070 Ti 8192MB (1607/4006MHz), Audio: Realtek Generic, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 17.04, Kernel: 4.10.0-38-generic (x86_64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.3, Display Driver: NVIDIA 384.98, OpenGL: 4.5.0, Vulkan: 1.0.42, Compiler: GCC 6.3.0 20170406, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance

GeForce GTX 1080

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A, Chipset: Intel

Device 3ec2, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 1080 8192MB (1607/5005MHz), Audio: Realtek Generic, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 17.04, Kernel: 4.10.0-38-generic (x86_64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.3, Display Driver: NVIDIA 384.98, OpenGL: 4.5.0, Vulkan: 1.0.42, Compiler: GCC 6.3.0 20170406, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance

GeForce GTX 1080 Ti

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A, Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: NVIDIA GeForce GTX 1080 Ti 11264MB (1480/5508MHz), Audio: Realtek Generic, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 17.04, Kernel: 4.10.0-38-generic (x86_64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.3, Display Driver: NVIDIA 384.98, OpenGL: 4.5.0, Vulkan: 1.0.42, Compiler: GCC 6.3.0 20170406, File-System: ext4, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: intel_pstate performance

	GeForce GTX 1060	GeForce GTX 1070	Zotac GTX 1070 Ti Mini	GeForce GTX 1080	GeForce GTX 1080 Ti
BioShock Infinite - 3840 x 2160 - Medium (FPS)	**75.89**	98.16	103.20	113.74	**136.30**
Normalized	55.68%	72.02%	75.72%	83.45%	100%
Standard Deviation	3.3%	0%	1%	1.4%	0.2%
Counter-Strike: Global Offensive - 3840 x 2160 (FPS)	**133.01**	185.80	246.02		**280.55**
Normalized	47.41%	66.23%	87.69%		100%
Standard Deviation	0.4%	0.4%	0%		0.5%
Deus Ex: Mankind Divided - 1920 x 1080 - Ultra Quality (FPS)	**35.17**	48.13	54.23	58.43	**72.87**
Normalized	48.26%	66.05%	74.42%	80.18%	100%
Standard Deviation	0.6%	0.5%	0.1%	0.6%	0.6%
Deus Ex: Mankind Divided - 2560 x 1440 - High Quality (FPS)	**32.37**	44.33	50.13	53.53	**68.77**
Normalized	47.07%	64.46%	72.9%	77.84%	100%
Standard Deviation	0.2%	0.1%	0.1%	0.1%	0.2%
Deus Ex: Mankind Divided - 3840 x 2160 - Low Quality (FPS)	**23.40**	32.63	37.77	39.70	**53.07**
Normalized	44.09%	61.48%	71.17%	74.81%	100%
Standard Deviation	0%	0.2%	0.2%	0.3%	0.2%

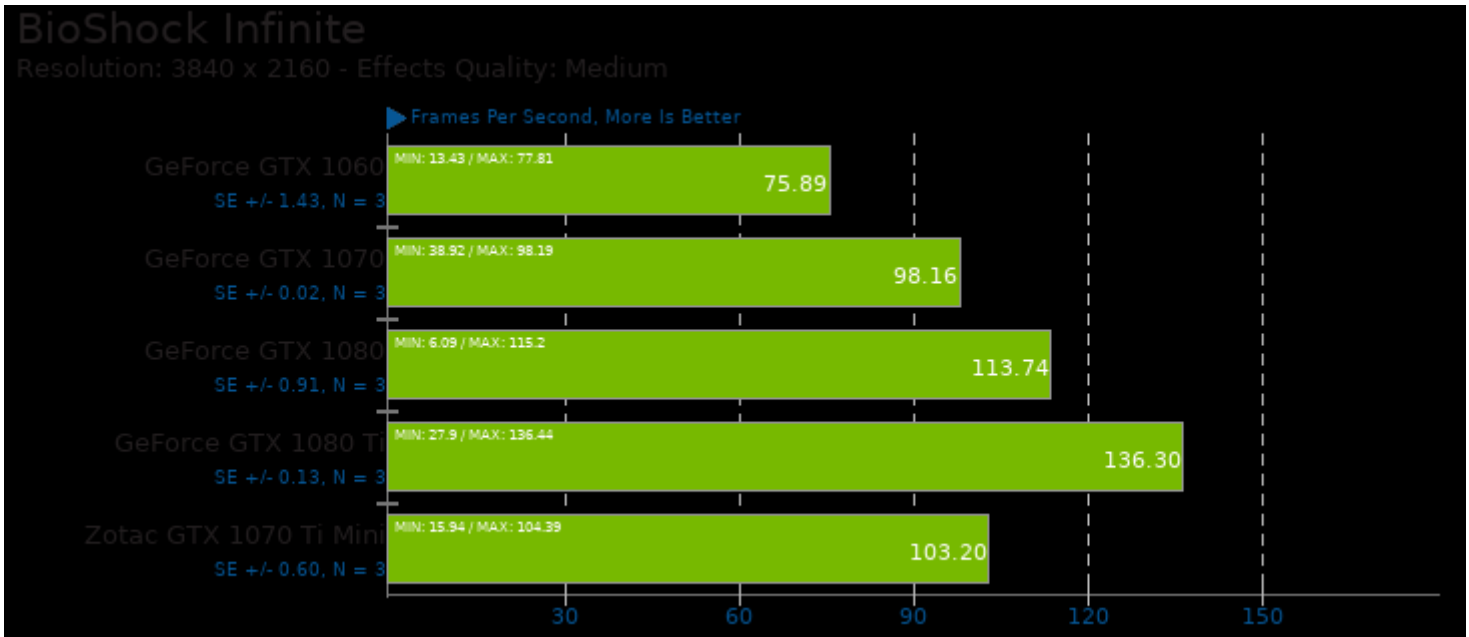
Dota 2 - 3840 x 2160 - OpenGL (FPS)	71.23	94.63	101.30	103.13	110.13
Normalized	64.68%	85.93%	91.98%	93.64%	100%
Standard Deviation	0.1%	0.2%	1.9%	1%	0.9%
Dota 2 - 3840 x 2160 - Vulkan (FPS)	71.00	94.17	103.23	105.63	108.97
Normalized	65.16%	86.42%	94.73%	96.93%	100%
Standard Deviation	4%	5.5%	5.8%	5.4%	4.1%
F1 2017 - 1920 x 1080 - High - TAA (FPS)	107	139	147	149	151
Normalized	70.86%	92.05%	97.35%	98.68%	100%
Standard Deviation			1.4%		
F1 2017 - 1920 x 1080 - Ultra High - Off (FPS)	72	99	114	118	124
Normalized	58.06%	79.84%	91.94%	95.16%	100%
F1 2017 - 1920 x 1080 - Ultra High - TAA (FPS)	69	95	112	115	125
Normalized	55.2%	76%	89.6%	92%	100%
F1 2017 - 3840 x 2160 - Ultra Low - Off (FPS)	61	85	102	108	140
Normalized	43.57%	60.71%	72.86%	77.14%	100%
Standard Deviation			0.6%		
F1 2017 - 3840 x 2160 - Low - Off (FPS)	57	79	95	99	128
Normalized	44.53%	61.72%	74.22%	77.34%	100%
F1 2017 - 3840 x 2160 - Medium - Off (FPS)	50	69	83	87	111
Normalized	45.05%	62.16%	74.77%	78.38%	100%
F1 2017 - 3840 x 2160 - High - Off (FPS)	45	63	76	79	104
Normalized	43.27%	60.58%	73.08%	75.96%	100%
F1 2017 - 3840 x 2160 - Ultra High - Off (FPS)	35	50	61	64	83
Normalized	42.17%	60.24%	73.49%	77.11%	100%
Mad Max - 1920 x 1080 - Default - Vulkan - Camp Hollow Point	210.12	271.10	305.94	342.86	347.49
Normalized	60.47%	78.02%	88.04%	98.67%	100%
Mad Max - 1920 x 1080 - Default - Vulkan - Stronghold (FPS)	123.06	124.46	123.32	125.88	120.00
Normalized	97.76%	98.87%	97.97%	100%	95.33%
Mad Max - 1920 x 1080 - Default - Vulkan - H.G.a.D.i.D (FPS)	187.14	250.31	294.73	304.39	363.06
Normalized	51.55%	68.94%	81.18%	83.84%	100%
Mad Max - 1920 x 1080 - Default - Vulkan - Landmover (FPS)	222.33	286.68	332.80	332.66	395.91
Normalized	56.16%	72.41%	84.06%	84.02%	100%
Mad Max - 1920 x 1080 - Default - OpenGL - Camp Hollow Point (FPS)	180.52	234.14	255.20	277.19	340.69
Normalized	52.99%	68.73%	74.91%	81.36%	100%

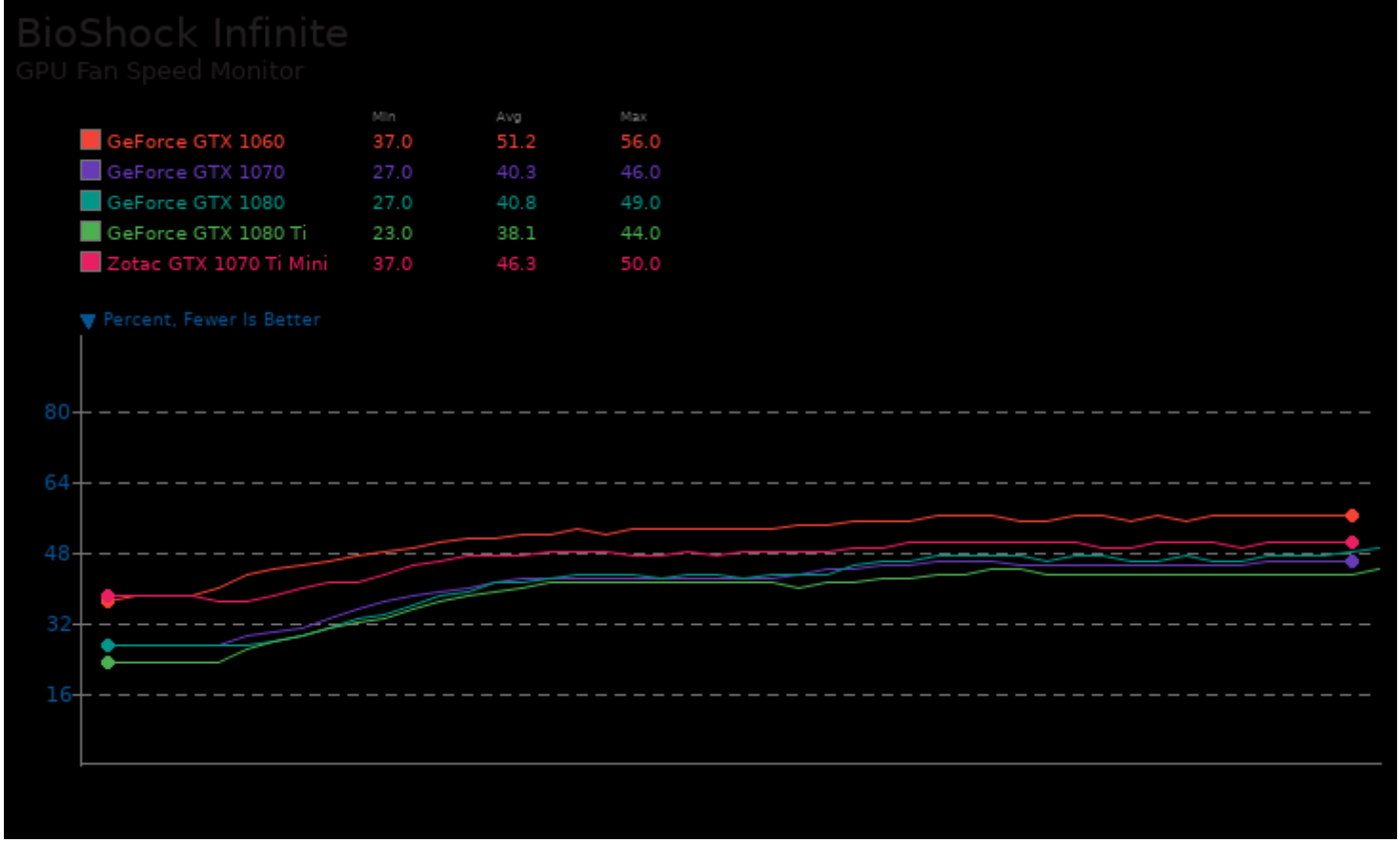
Mad Max - 1920 x 1080 - Default - OpenGL - Stronghold (FPS)	123.00	120.80	123.07	123.58	122.23
Normalized	99.53%	97.75%	99.59%	100%	98.91%
Mad Max - 1920 x 1080 - Default - OpenGL - H.G.a.D.i.D (FPS)	173.66	234.84	261.00	285.45	359.09
Normalized	48.36%	65.4%	72.68%	79.49%	100%
Mad Max - 1920 x 1080 - Default - OpenGL - Landmover (FPS)	208.14	277.05	303.69	322.19	405.36
Normalized	51.35%	68.35%	74.92%	79.48%	100%
Mad Max - 3840 x 2160 - Default - Vulkan - Camp Hollow Point	76.86	107.29	114.96	124.76	169.13
Normalized	45.44%	63.44%	67.97%	73.77%	100%
Mad Max - 3840 x 2160 - Default - Vulkan - Stronghold (FPS)	77.22	106.17	116.79	124.00	124.29
Normalized	62.13%	85.42%	93.97%	99.77%	100%
Mad Max - 3840 x 2160 - Default - Vulkan - H.G.a.D.i.D (FPS)	68.41	93.91	105.28	118.39	157.33
Normalized	43.48%	59.69%	66.92%	75.25%	100%
Mad Max - 3840 x 2160 - Default - Vulkan - Landmover (FPS)	82.92	113.53	126.28	142.42	184.77
Normalized	44.88%	61.44%	68.34%	77.08%	100%
Mad Max - 3840 x 2160 - Default - OpenGL - Camp Hollow Point (FPS)	63.35	85.28	93.14	102.82	138.34
Normalized	45.79%	61.65%	67.33%	74.32%	100%
Mad Max - 3840 x 2160 - Default - OpenGL - Stronghold (FPS)	65.25	88.34	97.36	106.44	119.90
Normalized	54.42%	73.68%	81.2%	88.77%	100%
Mad Max - 3840 x 2160 - Default - OpenGL - H.G.a.D.i.D (FPS)	59.91	82.96	92.53	102.14	134.90
Normalized	44.41%	61.5%	68.59%	75.72%	100%
Mad Max - 3840 x 2160 - Default - OpenGL - Landmover (FPS)	73.44	100.12	110.19	121.89	160.37
Normalized	45.79%	62.43%	68.71%	76.01%	100%
Metro: Last Light Redux - 3840 x 2160 (FPS)	69.20	93.70	101.83	112.47	133.92
Normalized	51.67%	69.97%	76.04%	83.98%	100%
Standard Deviation	0.6%	0.3%	0.2%	0.3%	0.9%
Metro 2033 Redux (FPS)	78.19	97.60	102.53	110.62	135.61
Normalized	57.66%	71.97%	75.61%	81.57%	100%
Standard Deviation	0.3%	0.5%	0.7%	0.7%	11.8%
Portal - 3840 x 2160 (FPS)	250.02	345.81	398.44	440.83	576.96
Normalized	43.33%	59.94%	69.06%	76.41%	100%
Standard Deviation	0.3%	0.2%	0.4%	0.3%	0.6%
Serious Sam 3: BFE - 3840 x 2160 - Low - OpenGL (FPS)	91.20	118.60	124.30	127.43	150.50
Normalized	60.6%	78.8%	82.59%	84.67%	100%
Standard Deviation	7.1%	7.3%	7.4%	10.1%	5.7%
Serious Sam 3: BFE - 3840 x 2160 - Low - Vulkan (FPS)	113.53	148.10	162.30	181.07	233.07
Normalized	48.71%	63.54%	69.64%	77.69%	100%
Standard Deviation	4.2%	2.2%	5.9%	2.3%	3.1%

Serious Sam 3: BFE - 3840 x 2160 - High - OpenGL (FPS)	**49.37**	67.23	71.33	77.30	**93.53**
Normalized	52.79%	71.88%	76.26%	82.65%	100%
Standard Deviation	0.4%	3.5%	2.8%	3.1%	8.6%
Serious Sam 3: BFE - 3840 x 2160 - High - Vulkan (FPS)	**53.13**	74.10	81.63	88.70	**122.47**
Normalized	43.38%	60.5%	66.65%	72.43%	100%
Standard Deviation	3.1%	3.4%	2%	2.8%	3.4%
Serious Sam 3: BFE - 3840 x 2160 - Ultra - OpenGL (FPS)	**39.60**	53.83	58.20	61.07	**78.47**
Normalized	50.47%	68.6%	74.17%	77.83%	100%
Standard Deviation	2.8%	3.1%	6.7%	2.1%	5.6%
Serious Sam 3: BFE - 3840 x 2160 - Ultra - Vulkan (FPS)	**42.43**	58.70	63.60	69.63	**93.87**
Normalized	45.2%	62.53%	67.75%	74.18%	100%
Standard Deviation	1%	1.1%	1.9%	0.5%	4.6%
Tomb Raider - 3840 x 2160 - Normal (FPS)	**61.13**	82.23	92.30	98.97	**124.60**
Normalized	49.06%	66%	74.08%	79.43%	100%
Standard Deviation	0.2%	0.3%	0.1%	0.4%	0.6%
Civilization VI - Highest - 3840 x 2160 (FPS)	**31.75**	32.06	32.15	**32.28**	32.21
Normalized	98.36%	99.32%	99.6%	100%	99.78%
Standard Deviation	1.2%	1.8%	0.3%	1.1%	1.1%
Dawn of War III - 3840 x 2160 - Ultra - Vulkan (FPS)	**23.35**	32.68	41.22	41.62	**55.35**
Normalized	42.19%	59.04%	74.47%	75.19%	100%
Standard Deviation	8.8%	8.4%	1.6%	7.5%	8.8%
Dawn of War III - 3840 x 2160 - Ultra - OpenGL (FPS)	**22.53**	31.59	37.94	39.15	**52.37**
Normalized	43.02%	60.32%	72.45%	74.76%	100%
Standard Deviation	5.3%	4.5%	0.6%	4.1%	4.9%
Tesseract - 3840 x 2160 (FPS)	**193.83**	253.02	266.80	281.06	**340.26**
Normalized	56.97%	74.36%	78.41%	82.6%	100%
Standard Deviation	1.8%	1.5%	0.9%	1.4%	0.4%
Xonotic - 3840 x 2160 - High	**258.16**	317.42	325.71	348.55	**367.35**
Normalized	70.28%	86.41%	88.66%	94.88%	100%
Standard Deviation	0%	0.6%	0.2%	0.4%	0.6%
Xonotic - 3840 x 2160 - Ultra	**190.50**	250.61	267.98	291.16	**323.22**
Normalized	58.94%	77.54%	82.91%	90.08%	100%
Standard Deviation	0.1%	0.3%	0.1%	0.3%	0.2%
Xonotic - 3840 x 2160 - Ultimate (FPS)	**131.79**	178.53	197.73	213.85	**247.76**
Normalized	53.19%	72.06%	79.81%	86.31%	100%
Standard Deviation	0.1%	0.5%	0.3%	0.5%	0.2%
GpuTest - Furmark - 3840 x 2160 - Fullscreen (Points)	**2043**	2793	2882	3515	**4848**
Normalized	42.14%	57.61%	59.45%	72.5%	100%
Standard Deviation	0.3%	0.2%	0.1%	0.1%	0.2%
GpuTest - TessMark - 3840 x 2160 - Fullscreen (Points)	**9340**	12828	15633	16046	**20229**
Normalized	46.17%	63.41%	77.28%	79.32%	100%
Standard Deviation	0.2%	0.3%	0.2%	0.7%	1.3%

GpuTest - GiMark - 3840 x 2160 - Fullscreen (Points)	**4360**	6086	7366	7460	**9403**
Normalized	46.37%	64.72%	78.34%	79.34%	100%
Standard Deviation	0.4%	0.4%	0.2%	0.7%	1.5%
GpuTest - Pixmark Piano - 3840 x 2160 - Fullscreen (Points)	**383**	557	727	736	**999**
Normalized	38.34%	55.76%	72.77%	73.67%	100%
Standard Deviation		0.6%	0.3%	1.1%	1.5%
GpuTest - Pixmark Volplosion - 3840 x 2160 - Fullscreen (Points)	**1210**	1738	2260	2290	**3097**
Normalized	39.07%	56.12%	72.97%	73.94%	100%
Standard Deviation	0.6%	0.8%	0.1%	1.2%	1.9%
GpuTest - Triangle - 3840 x 2160 - Fullscreen (Points)	**133567**	169744	169303	210349	**298517**
Normalized	44.74%	56.86%	56.71%	70.46%	100%
Standard Deviation	0.2%	0%	0.2%	0.3%	0.1%
GpuTest - Plot3D - 3840 x 2160 - Fullscreen (Points)	**62220**	84840	82786	87581	**109063**
Normalized	57.05%	77.79%	75.91%	80.3%	100%
Standard Deviation	0.4%	0.4%	1.7%	0.3%	0.4%
ParaView - Many Spheres - 1920 x 1080 (Frames / Sec)	**27.30**	39.80	50.58	52.37	**57.08**
Normalized	47.83%	69.73%	88.61%	91.75%	100%
Standard Deviation	0.2%	0.3%	0.2%	0.8%	0.4%
ParaView - Many Spheres - 1920 x 1080 (MiPolys / Sec)	**2738**	3991	5071	5251	**5722**
Normalized	47.84%	69.74%	88.61%	91.76%	100%
Standard Deviation	0.2%	0.3%	0.2%	0.8%	0.4%
ParaView - Wavelet Contour - 1920 x 1080 (Frames / Sec)	**131.14**	166.03	206.61	208.71	**264.07**
Normalized	49.66%	62.87%	78.24%	79.04%	100%
Standard Deviation	3.3%	1.9%	4.5%	4.3%	9.1%
ParaView - Wavelet Contour - 1920 x 1080 (MiPolys / Sec)	**1367**	1730	2153	2175	**2752**
Normalized	49.66%	62.87%	78.24%	79.03%	100%
Standard Deviation	3.3%	1.9%	4.5%	4.3%	9.1%
ParaView - Wavelet Volume - 1920 x 1080 (Frames / Sec)	**271.96**	326.74	361.68	379.53	**429.08**
Normalized	63.38%	76.15%	84.29%	88.45%	100%
Standard Deviation	0.8%	1.9%	3.8%	1.5%	0.5%
ParaView - Wavelet Volume - 1920 x 1080 (MiVoxels / Sec)	**4351**	5228	5787	6073	**6865**
Normalized	63.38%	76.15%	84.29%	88.45%	100%
Standard Deviation	0.8%	1.9%	3.8%	1.5%	0.5%
Unigine Superposition - 1920 x 1080 - Fullscreen - Low (FPS)	**120.70**	166.10	183.50	183.20	**192.90**
Normalized	62.57%	86.11%	95.13%	94.97%	100%
Unigine Superposition - 1920 x 1080 - Fullscreen - Medium (FPS)	**59.20**	83	95.40	101.10	**133.70**
Normalized	44.28%	62.08%	71.35%	75.62%	100%

Unigine Superposition - 1920 x 1080 - Fullscreen - High (FPS)	**42.10**	58.80	67	70.70	**91.40**
Normalized	46.06%	64.33%	73.3%	77.35%	100%
Unigine Superposition - 1920 x 1080 - Fullscreen - Ultra (FPS)	**14.70**	22.10	25.30	24.40	**35.50**
Normalized	41.41%	62.25%	71.27%	68.73%	100%
Unigine Superposition - 1920 x 1080 - Fullscreen - Extreme	**70.80**	98.40	111.60	118.70	**154.30**
Normalized	45.88%	63.77%	72.33%	76.93%	100%
Unigine Superposition - 3840 x 2160 - Fullscreen - Low (FPS)	**49.30**	69.30	80.90	85.90	**115.60**
Normalized	42.65%	59.95%	69.98%	74.31%	100%
Unigine Superposition - 3840 x 2160 - Fullscreen - Medium (FPS)	**19.80**	28.10	32.90	34.60	**45.50**
Normalized	43.52%	61.76%	72.31%	76.04%	100%
Unigine Superposition - 3840 x 2160 - Fullscreen - High (FPS)	**12.80**	18.10	20.60	21.60	**28.20**
Normalized	45.39%	64.18%	73.05%	76.6%	100%
Unigine Superposition - 3840 x 2160 - Fullscreen - Extreme	**25.50**	35.90	41.60	44	**58.70**
Normalized	43.44%	61.16%	70.87%	74.96%	100%
Unigine Heaven - 1920 x 1080 - Fullscreen (FPS)	**98.21**	138.97	158.17	163.32	**198.60**
Normalized	49.45%	69.97%	79.64%	82.24%	100%
Standard Deviation	0.1%	0.1%	0.3%	0.6%	0.2%
Unigine Heaven - 3840 x 2160 - Fullscreen (FPS)	**21.04**	30.71	35.58	34.69	**49.05**
Normalized	42.9%	62.61%	72.54%	70.72%	100%
Standard Deviation	0.1%	0.2%	0%	0.3%	0.1%
Unigine Valley - 1920 x 1080 - Fullscreen (FPS)	**96.73**	128.44	140.92	144.25	**158.43**
Normalized	61.06%	81.07%	88.95%	91.05%	100%
Standard Deviation	0.1%	0%	0.2%	0.3%	0.5%
Unigine Valley - 3840 x 2160 - Fullscreen (FPS)	**27.16**	38.14	44.40	46.68	**60.18**
Normalized	45.13%	63.38%	73.78%	77.57%	100%
Standard Deviation	0.1%	0.1%	0.2%	0.3%	0.3%


BioShock Infinite
Resolution: 3840 x 2160 - Effects Quality: Medium
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 1.43, N = 3
MIN: 13.43 / MAX: 77.81
75.89
GeForce GTX 1070
SE +/- 0.02, N = 3
MIN: 38.92 / MAX: 98.19
98.16
GeForce GTX 1080
SE +/- 0.91, N = 3
MIN: 6.09 / MAX: 115.2
113.74
GeForce GTX 1080 Ti
SE +/- 0.13, N = 3
MIN: 27.9 / MAX: 136.44
136.30
Zotac GTX 1070 Ti Mini
SE +/- 0.60, N = 3
MIN: 15.94 / MAX: 104.39
103.20
30
60
90
120
150

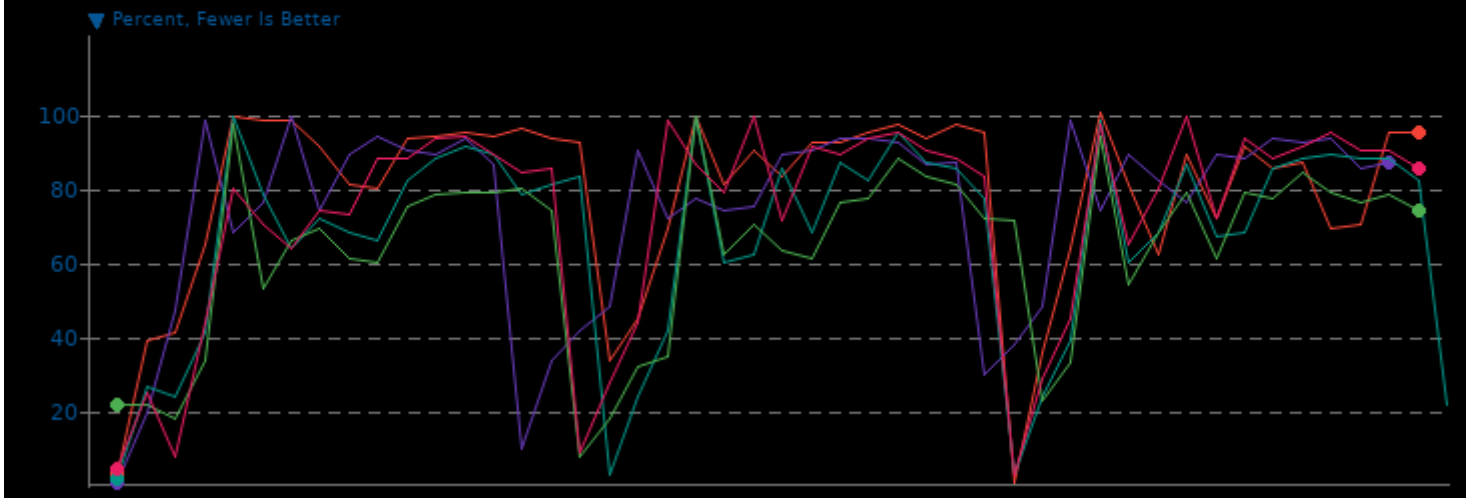

BioShock Infinite
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 37.0 51.2 56.0
GeForce GTX 1070 27.0 40.3 46.0
GeForce GTX 1080 27.0 40.8 49.0
GeForce GTX 1080 Ti 23.0 38.1 44.0
Zotac GTX 1070 Ti Mini 37.0 46.3 50.0
Percent, Fewer Is Better
80
64
48
32
16


BioShock Infinite
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 26.3 87.7 108.2
GeForce GTX 1070 35.4 111.2 148.5
GeForce GTX 1080 40.8 119.7 175.1
GeForce GTX 1080 Ti 63.2 170.3 248.0
Zotac GTX 1070 Ti Mini 43.8 122.0 163.1
Watts, Fewer Is Better
300
240
180
120
60
BioShock Infinite
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 31.0 54.9 64.0
GeForce GTX 1070 37.0 61.8 72.0
GeForce GTX 1080 34.0 61.8 74.0
GeForce GTX 1080 Ti 41.0 65.6 76.0
Zotac GTX 1070 Ti Mini 34.0 53.5 60.0
Celsius, Fewer Is Better
100
80
60
40
20

BioShock Infinite

GPU Usage Monitor

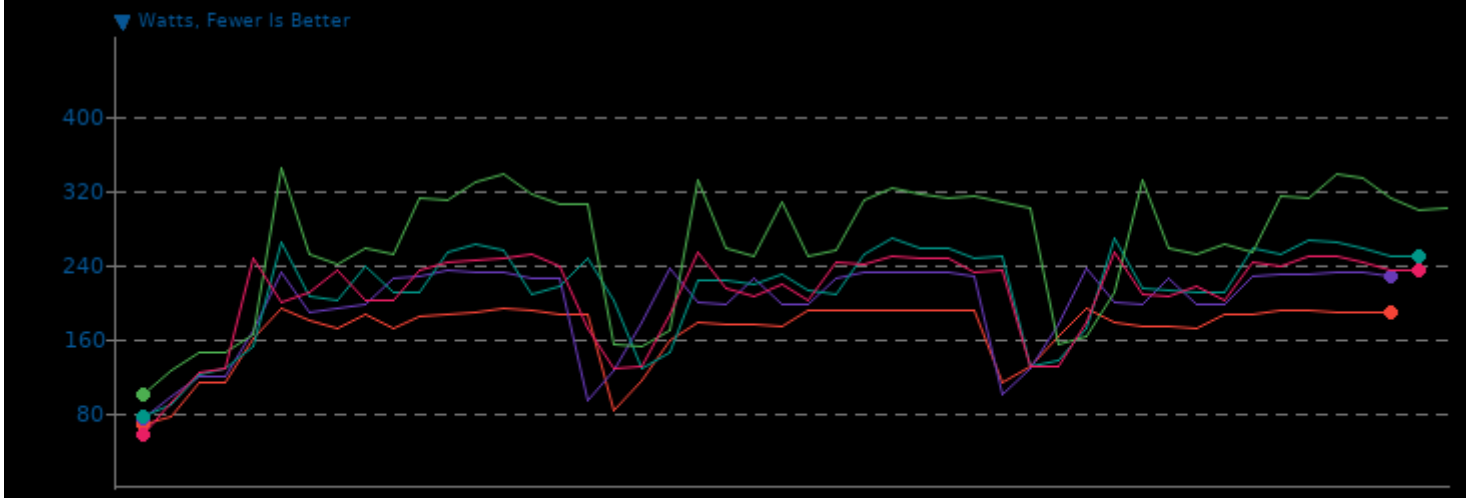
	Min	Avg	Max
GeForce GTX 1060	1.0	78.5	100.0
GeForce GTX 1070	1.0	74.2	99.0
GeForce GTX 1080	2.0	66.9	99.0
GeForce GTX 1080 Ti	8.0	63.5	99.0
Zotac GTX 1070 Ti Mini	3.0	72.4	99.0

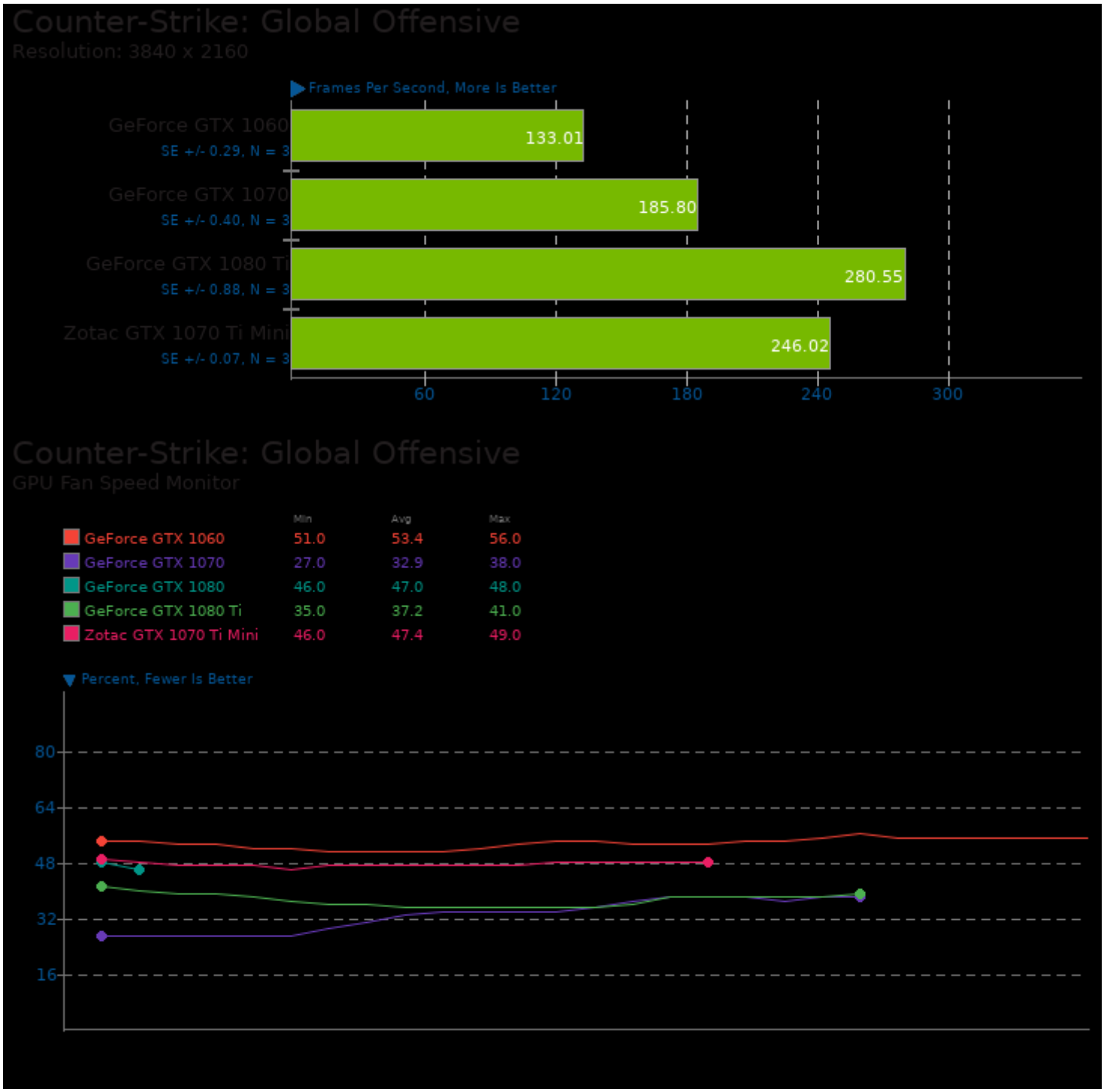


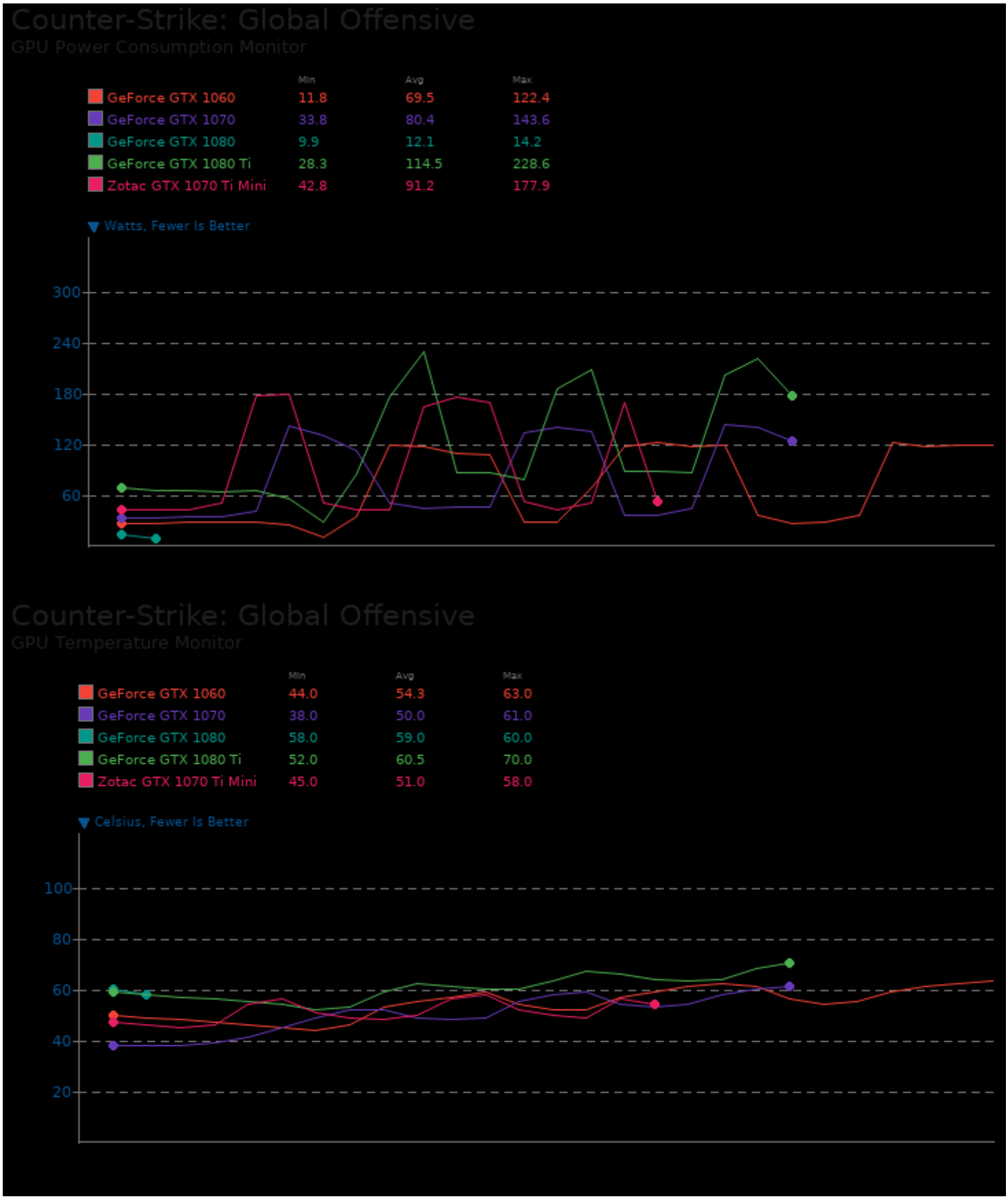
BioShock Infinite

System Power Consumption Monitor

	Min	Avg	Max
GeForce GTX 1060	67.7	168.8	193.4
GeForce GTX 1070	75.1	196.9	236.1
GeForce GTX 1080	77.4	212.8	267.9
GeForce GTX 1080 Ti	100.0	262.8	342.1
Zotac GTX 1070 Ti Mini	57.7	207.5	252.7



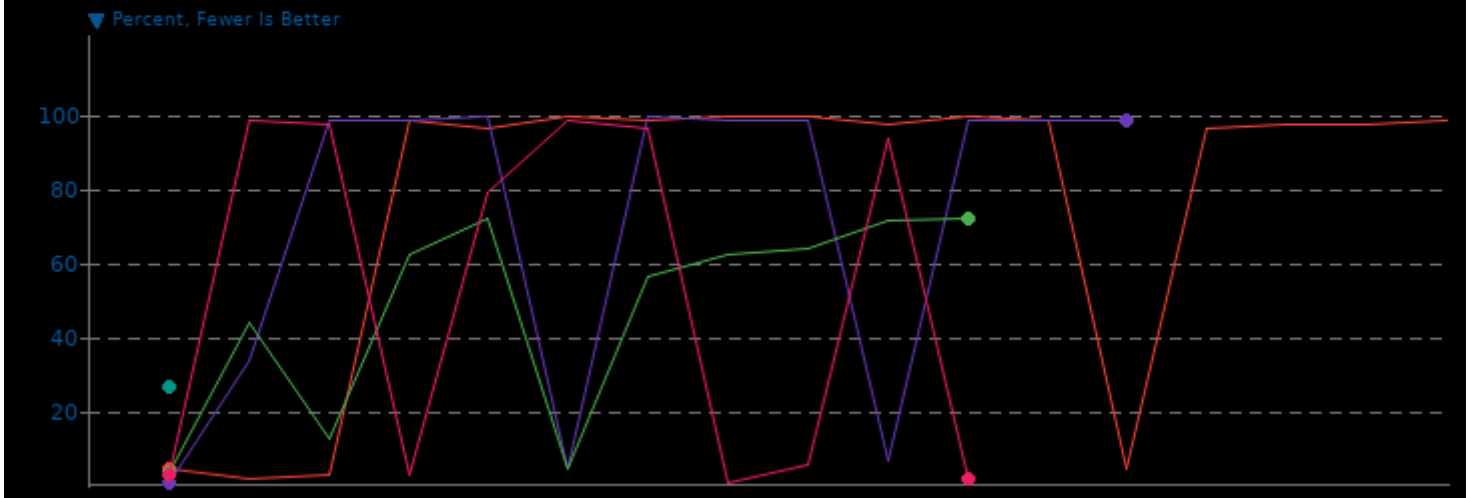

Counter-Strike: Global Offensive
Resolution: 3840 x 2160
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.29, N = 3
133.01
GeForce GTX 1070
SE +/- 0.40, N = 3
185.80
GeForce GTX 1080 Ti
SE +/- 0.88, N = 3
280.55
Zotac GTX 1070 Ti Mini
SE +/- 0.07, N = 3
246.02
60
120
180
240
300
Counter-Strike: Global Offensive
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 51.0 53.4 56.0
GeForce GTX 1070 27.0 32.9 38.0
GeForce GTX 1080 46.0 47.0 48.0
GeForce GTX 1080 Ti 35.0 37.2 41.0
Zotac GTX 1070 Ti Mini 46.0 47.4 49.0
Percent, Fewer Is Better
80
64
48
32
16


Counter-Strike: Global Offensive
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 11.8 69.5 122.4
GeForce GTX 1070 33.8 80.4 143.6
GeForce GTX 1080 9.9 12.1 14.2
GeForce GTX 1080 Ti 28.3 114.5 228.6
Zotac GTX 1070 Ti Mini 42.8 91.2 177.9
Watts, Fewer Is Better
300
240
180
120
60
Counter-Strike: Global Offensive
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 44.0 54.3 63.0
GeForce GTX 1070 38.0 50.0 61.0
GeForce GTX 1080 58.0 59.0 60.0
GeForce GTX 1080 Ti 52.0 60.5 70.0
Zotac GTX 1070 Ti Mini 45.0 51.0 58.0
Celsius, Fewer Is Better
100
80
60
40
20

Counter-Strike: Global Offensive

GPU Usage Monitor

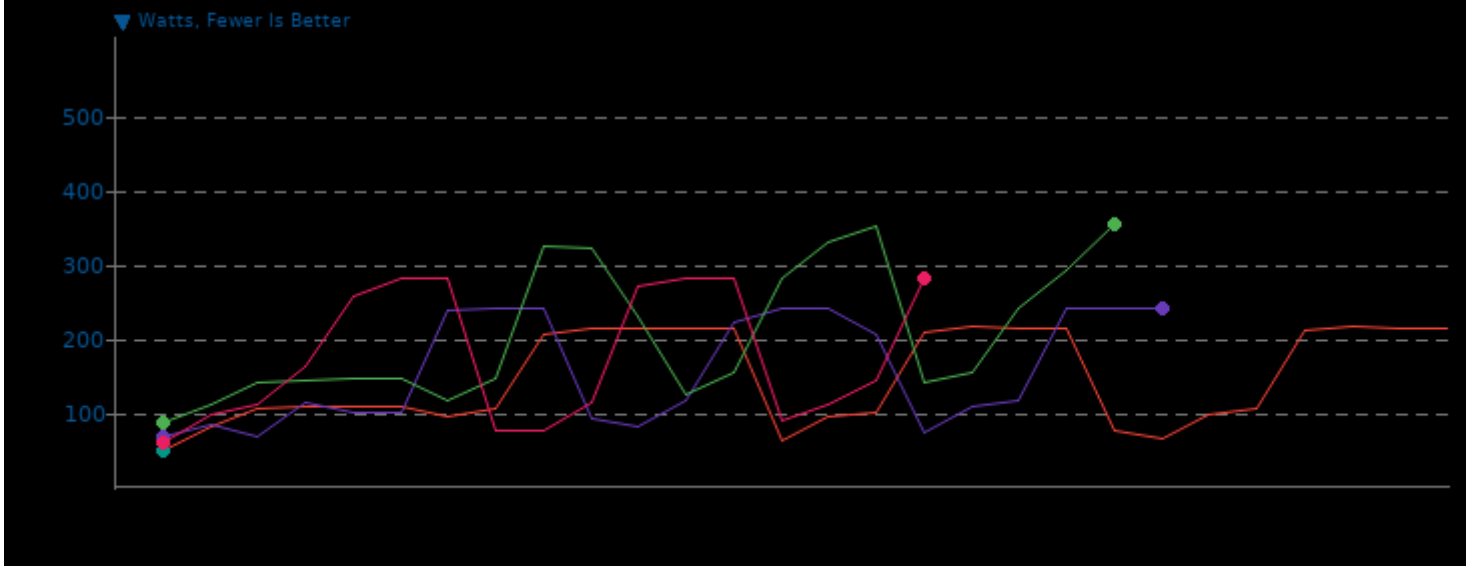
	Min	Avg	Max
GeForce GTX 1060	2.0	75.6	99.0
GeForce GTX 1070	1.0	71.6	99.0
GeForce GTX 1080	27.0	27.0	27.0
GeForce GTX 1080 Ti	4.0	47.7	72.0
Zotac GTX 1070 Ti Mini	1.0	52.4	98.0

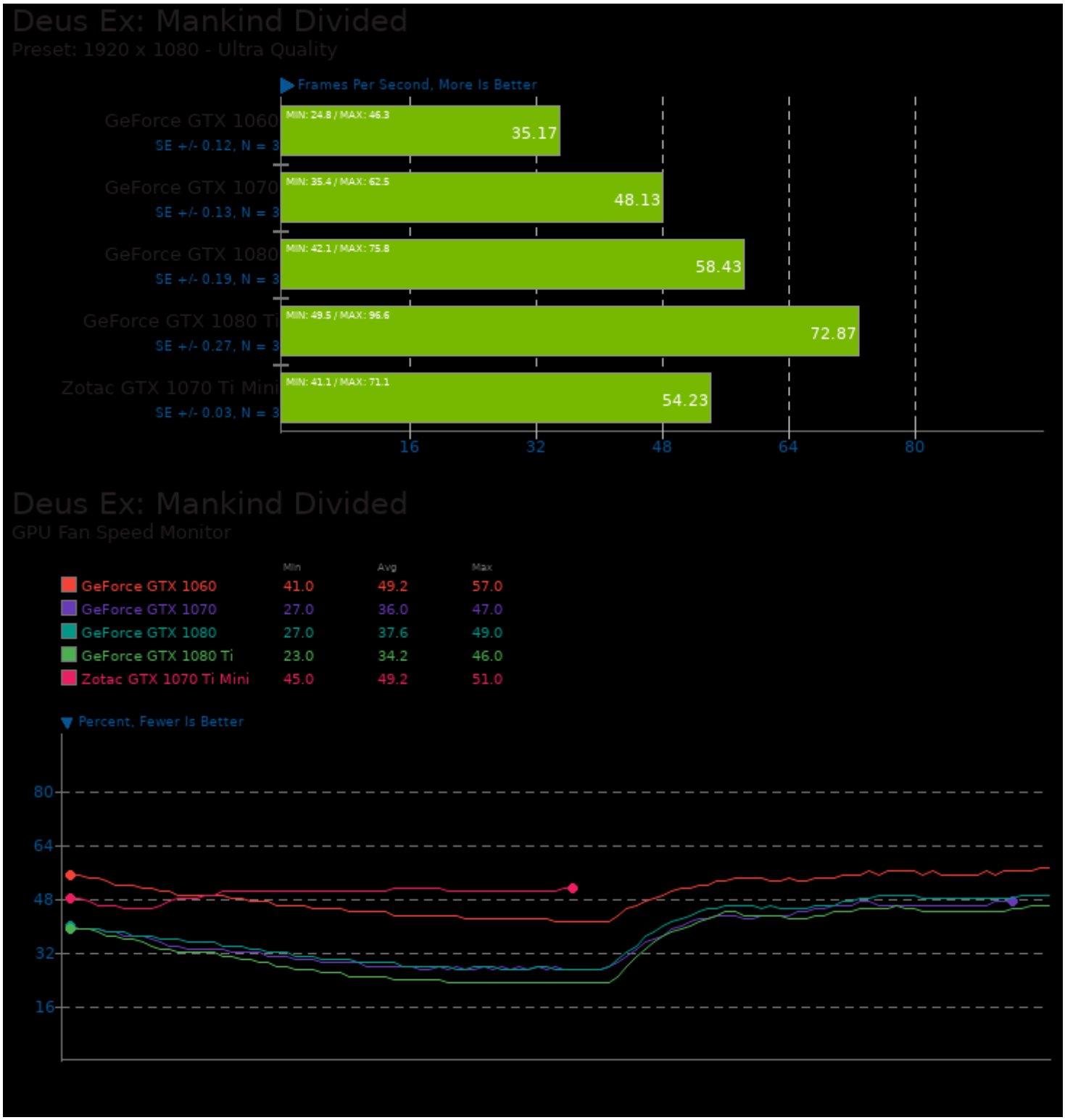


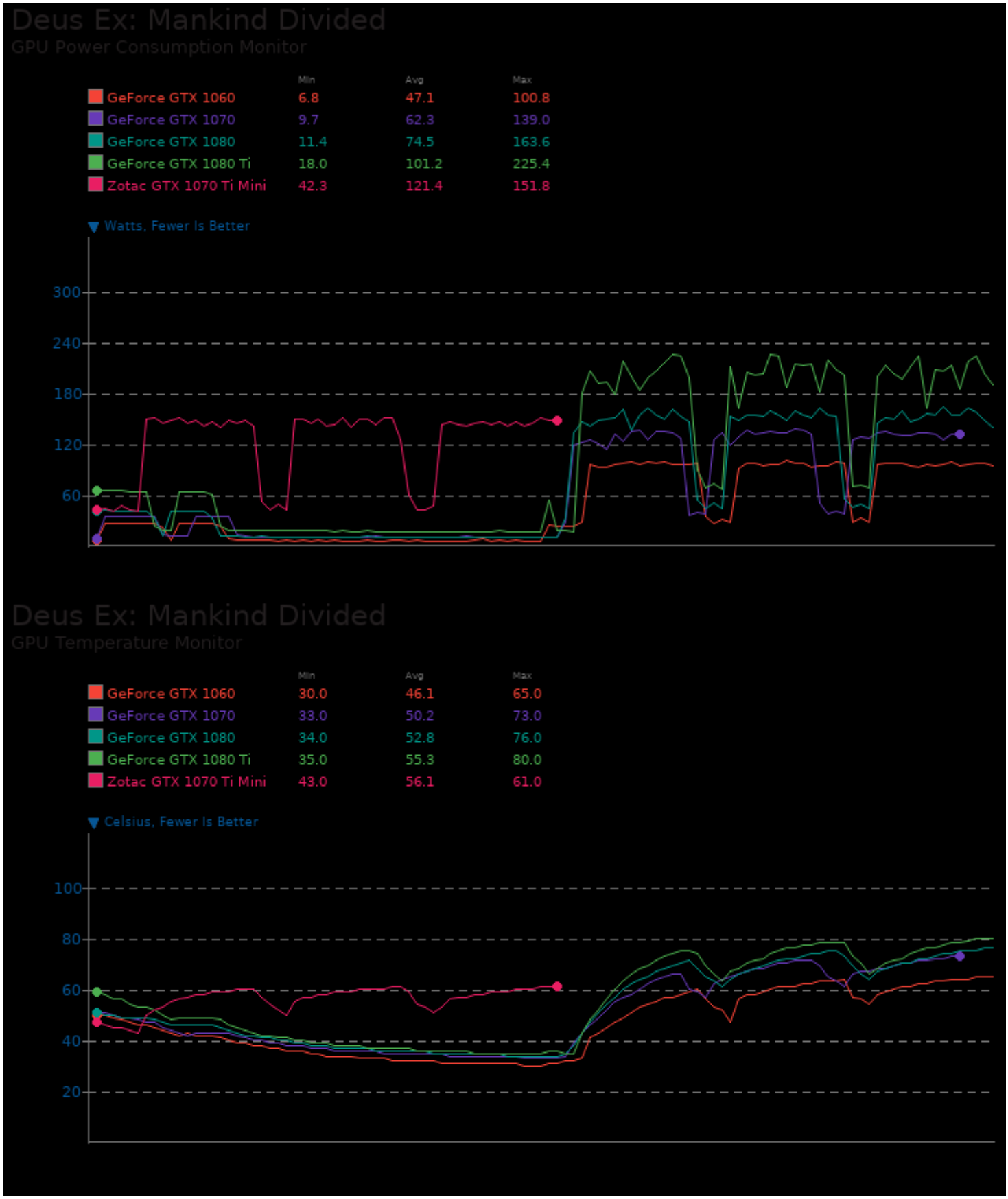
Counter-Strike: Global Offensive

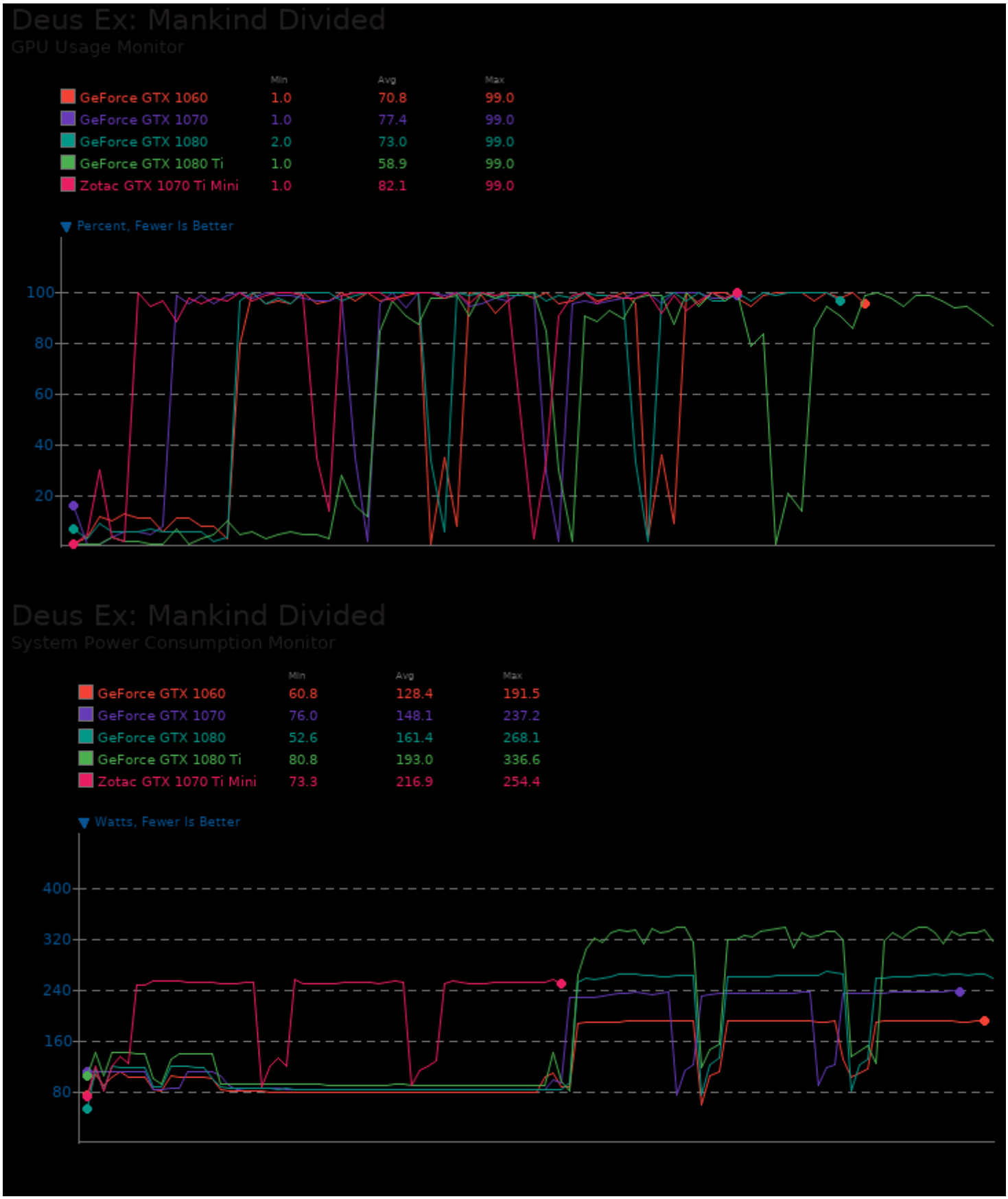
System Power Consumption Monitor

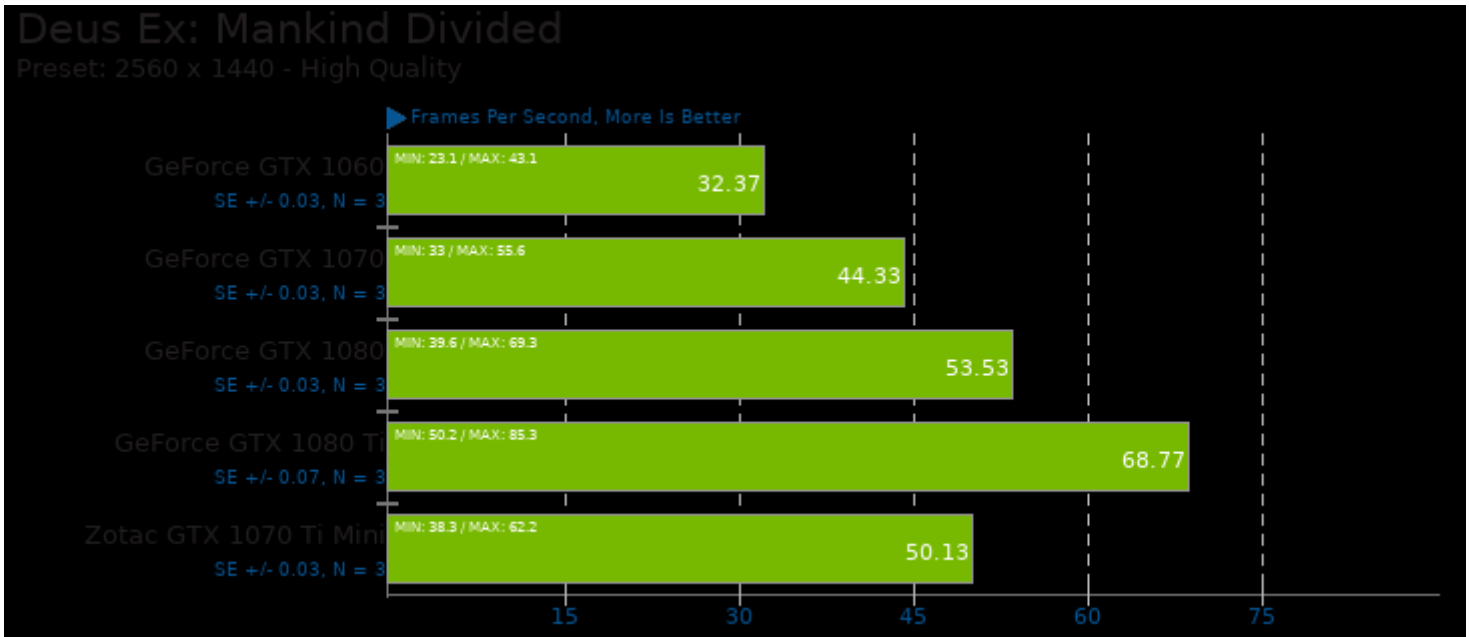
	Min	Avg	Max
GeForce GTX 1060	50.0	148.8	217.3
GeForce GTX 1070	70.1	159.0	241.9
GeForce GTX 1080	50.8	50.8	50.8
GeForce GTX 1080 Ti	89.6	207.2	354.9
Zotac GTX 1070 Ti Mini	62.0	176.3	282.5

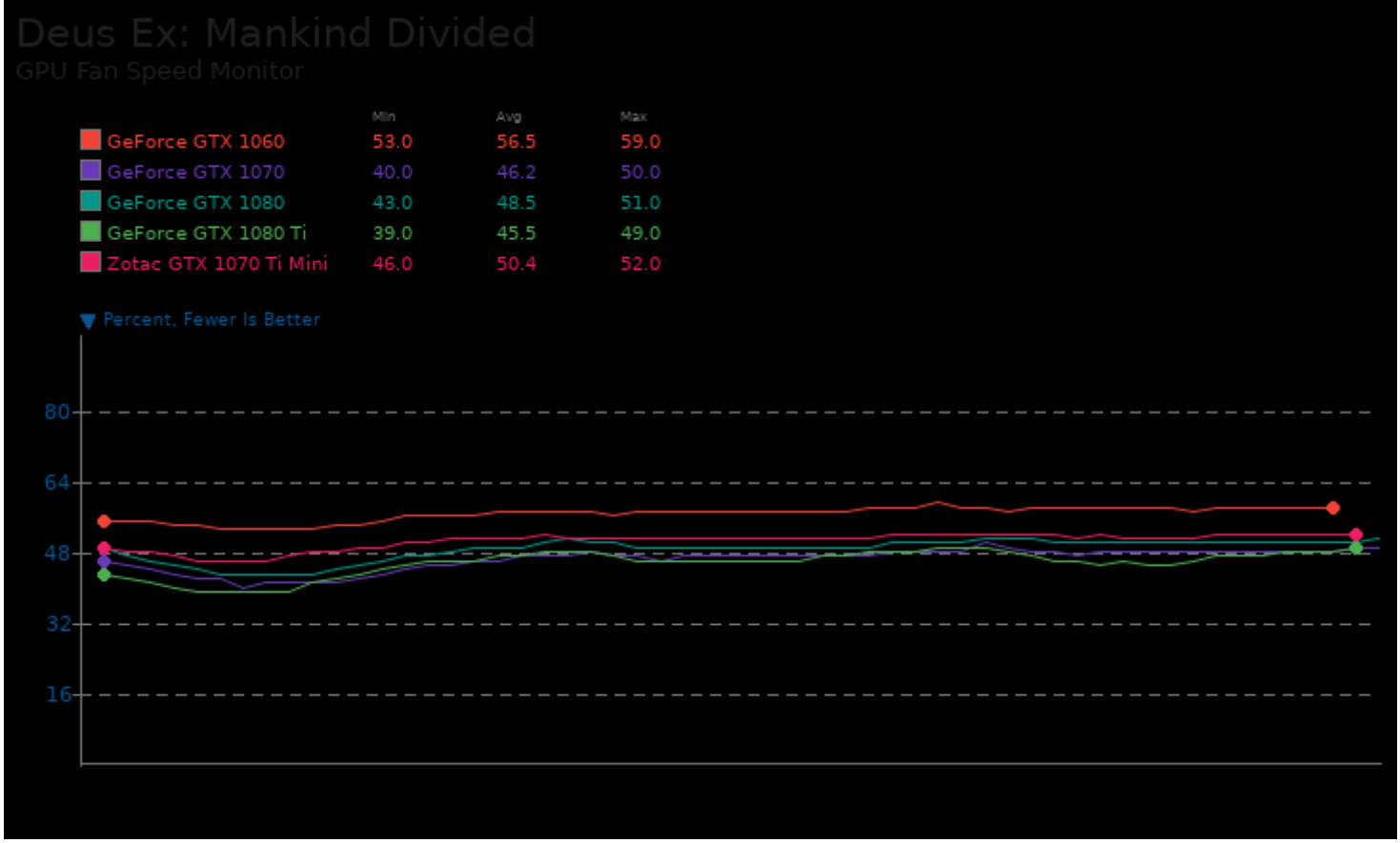



Deus Ex: Mankind Divided
Preset: 1920 x 1080 - Ultra Quality
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.12, N = 3
MIN: 24.8 / MAX: 46.3
35.17
GeForce GTX 1070
SE +/- 0.13, N = 3
MIN: 35.4 / MAX: 62.5
48.13
GeForce GTX 1080
SE +/- 0.19, N = 3
MIN: 42.1 / MAX: 75.8
58.43
GeForce GTX 1080 Ti
SE +/- 0.27, N = 3
MIN: 49.5 / MAX: 96.6
72.87
Zotac GTX 1070 Ti Mini
SE +/- 0.03, N = 3
MIN: 41.1 / MAX: 71.1
54.23
16
32
48
64
80
Deus Ex: Mankind Divided
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 41.0 49.2 57.0
GeForce GTX 1070 27.0 36.0 47.0
GeForce GTX 1080 27.0 37.6 49.0
GeForce GTX 1080 Ti 23.0 34.2 46.0
Zotac GTX 1070 Ti Mini 45.0 49.2 51.0
Percent, Fewer Is Better
80
64
48
32
16

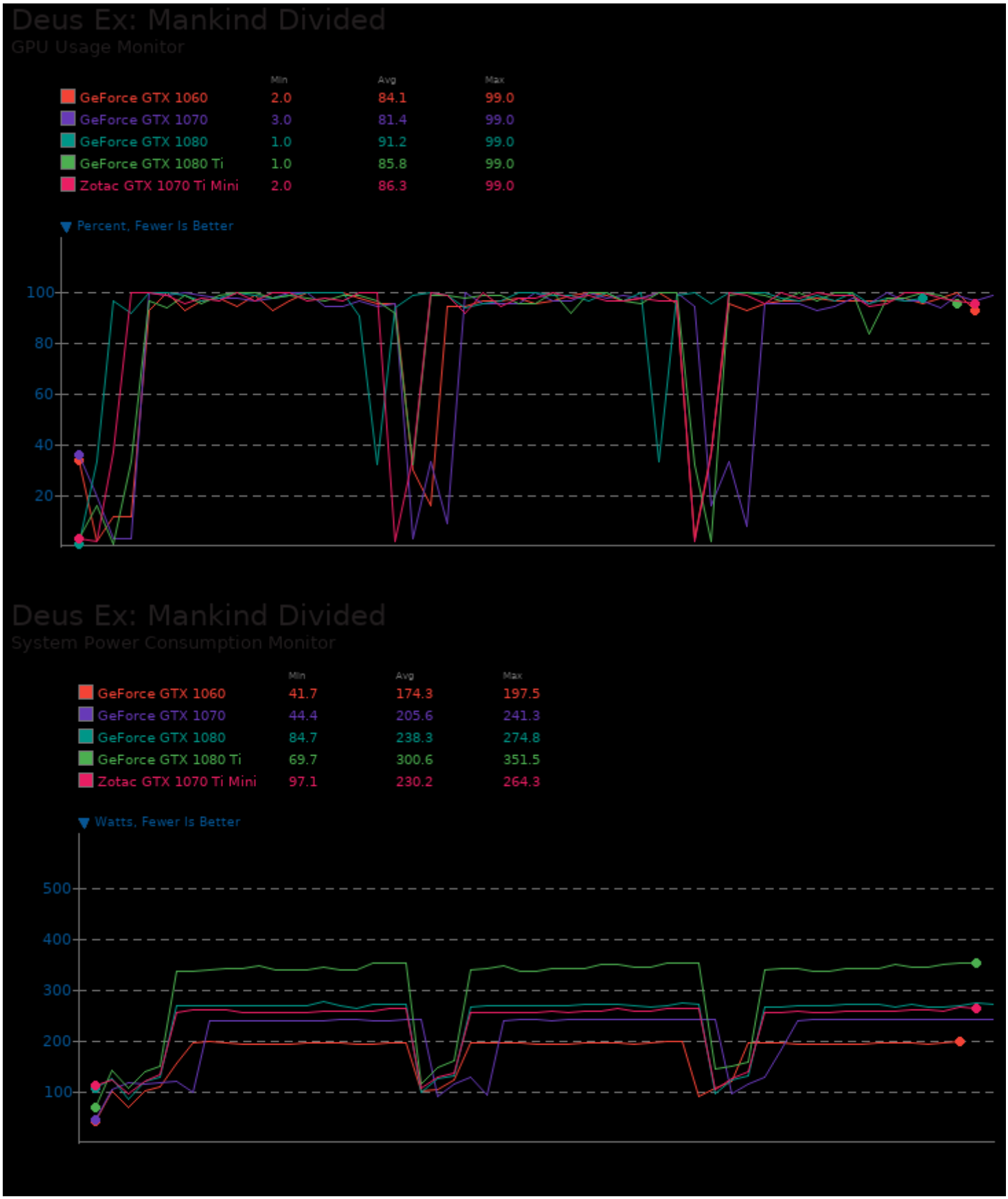

Deus Ex: Mankind Divided
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 6.8 47.1 100.8
GeForce GTX 1070 9.7 62.3 139.0
GeForce GTX 1080 11.4 74.5 163.6
GeForce GTX 1080 Ti 18.0 101.2 225.4
Zotac GTX 1070 Ti Mini 42.3 121.4 151.8
Watts, Fewer Is Better
300
240
180
120
60
Deus Ex: Mankind Divided
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 30.0 46.1 65.0
GeForce GTX 1070 33.0 50.2 73.0
GeForce GTX 1080 34.0 52.8 76.0
GeForce GTX 1080 Ti 35.0 55.3 80.0
Zotac GTX 1070 Ti Mini 43.0 56.1 61.0
Celsius, Fewer Is Better
100
80
60
40
20

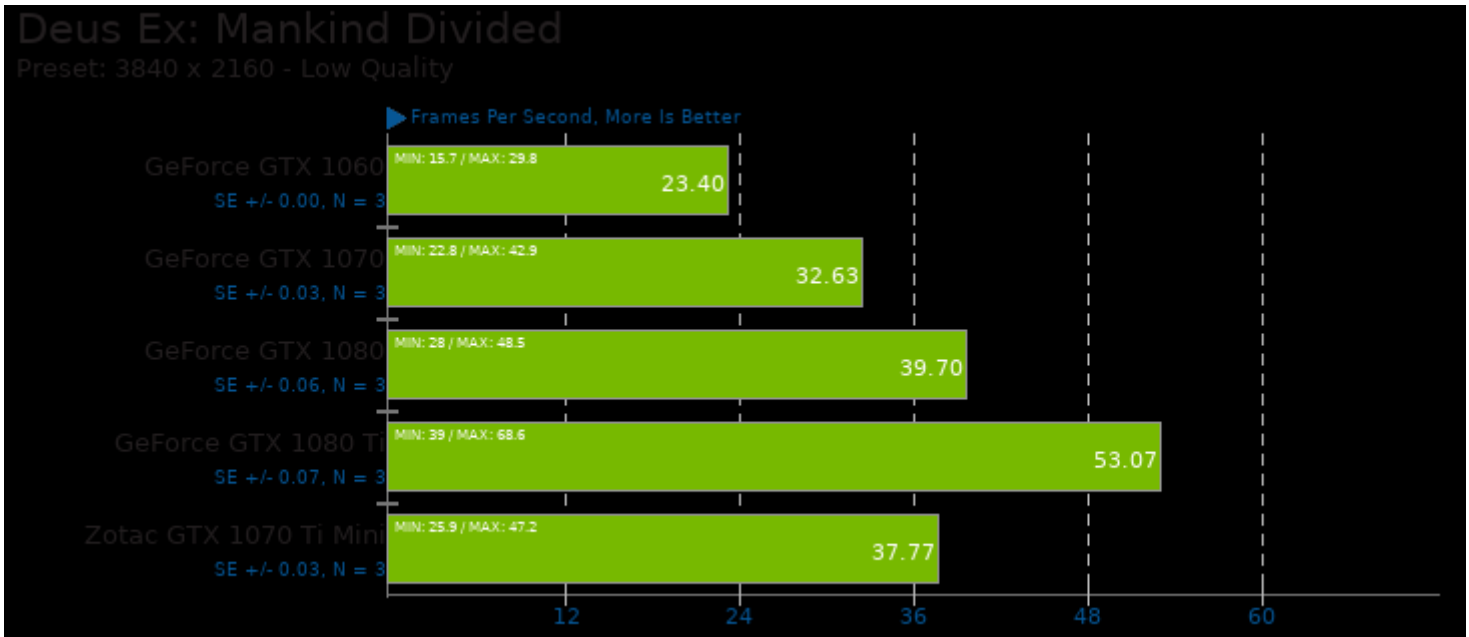

Deus Ex: Mankind Divided
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 70.8 99.0
GeForce GTX 1070 1.0 77.4 99.0
GeForce GTX 1080 2.0 73.0 99.0
GeForce GTX 1080 Ti 1.0 58.9 99.0
Zotac GTX 1070 Ti Mini 1.0 82.1 99.0
Percent, Fewer Is Better
100
80
60
40
20
Deus Ex: Mankind Divided
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 60.8 128.4 191.5
GeForce GTX 1070 76.0 148.1 237.2
GeForce GTX 1080 52.6 161.4 268.1
GeForce GTX 1080 Ti 80.8 193.0 336.6
Zotac GTX 1070 Ti Mini 73.3 216.9 254.4
Watts, Fewer Is Better
400
320
240
160
80

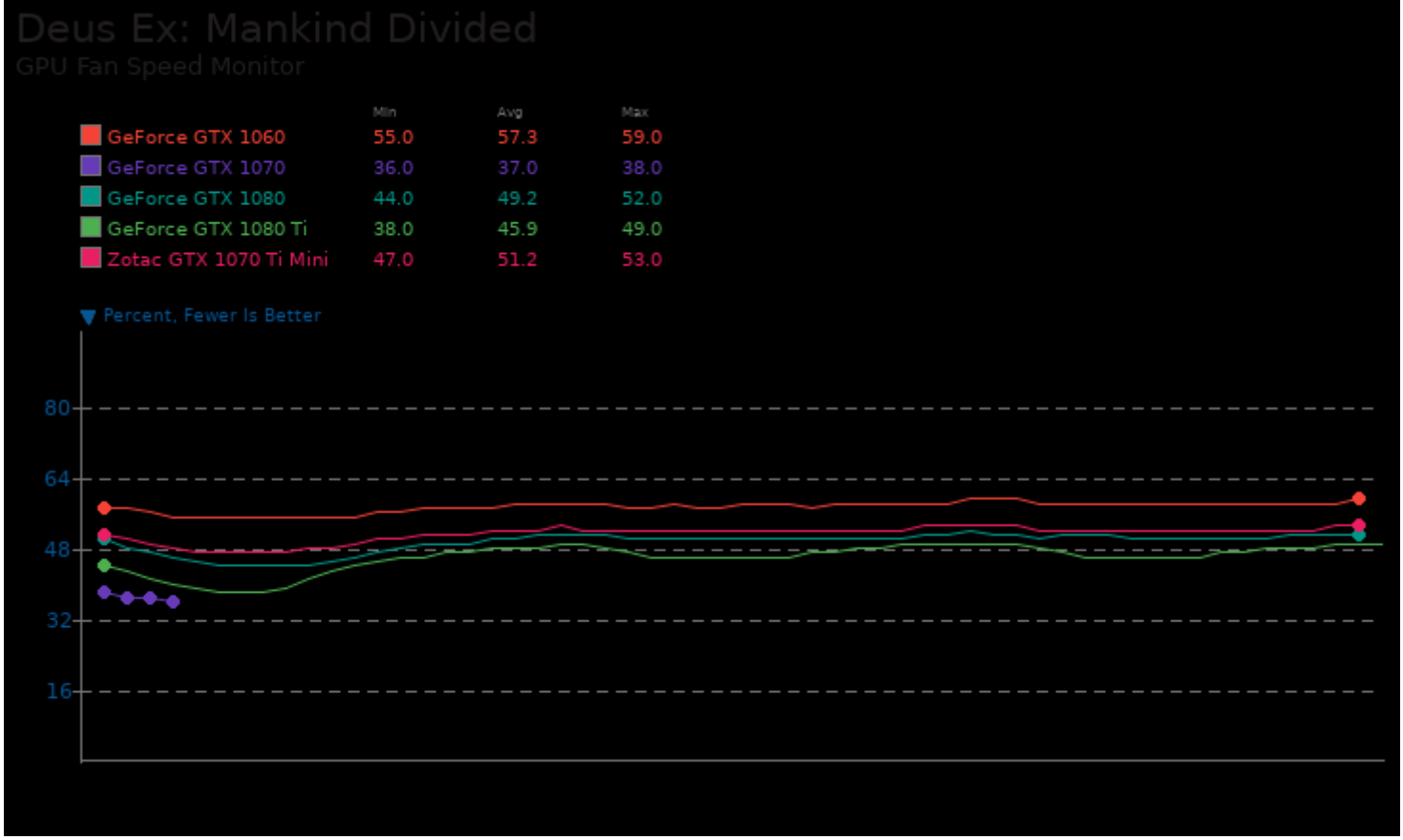

Deus Ex: Mankind Divided
Preset: 2560 x 1440 - High Quality
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.03, N = 3
MIN: 23.1 / MAX: 43.1
32.37
GeForce GTX 1070
SE +/- 0.03, N = 3
MIN: 33 / MAX: 55.6
44.33
GeForce GTX 1080
SE +/- 0.03, N = 3
MIN: 39.6 / MAX: 69.3
53.53
GeForce GTX 1080 Ti
SE +/- 0.07, N = 3
MIN: 50.2 / MAX: 85.3
68.77
Zotac GTX 1070 Ti Mini
SE +/- 0.03, N = 3
MIN: 38.3 / MAX: 62.2
50.13
15
30
45
60
75

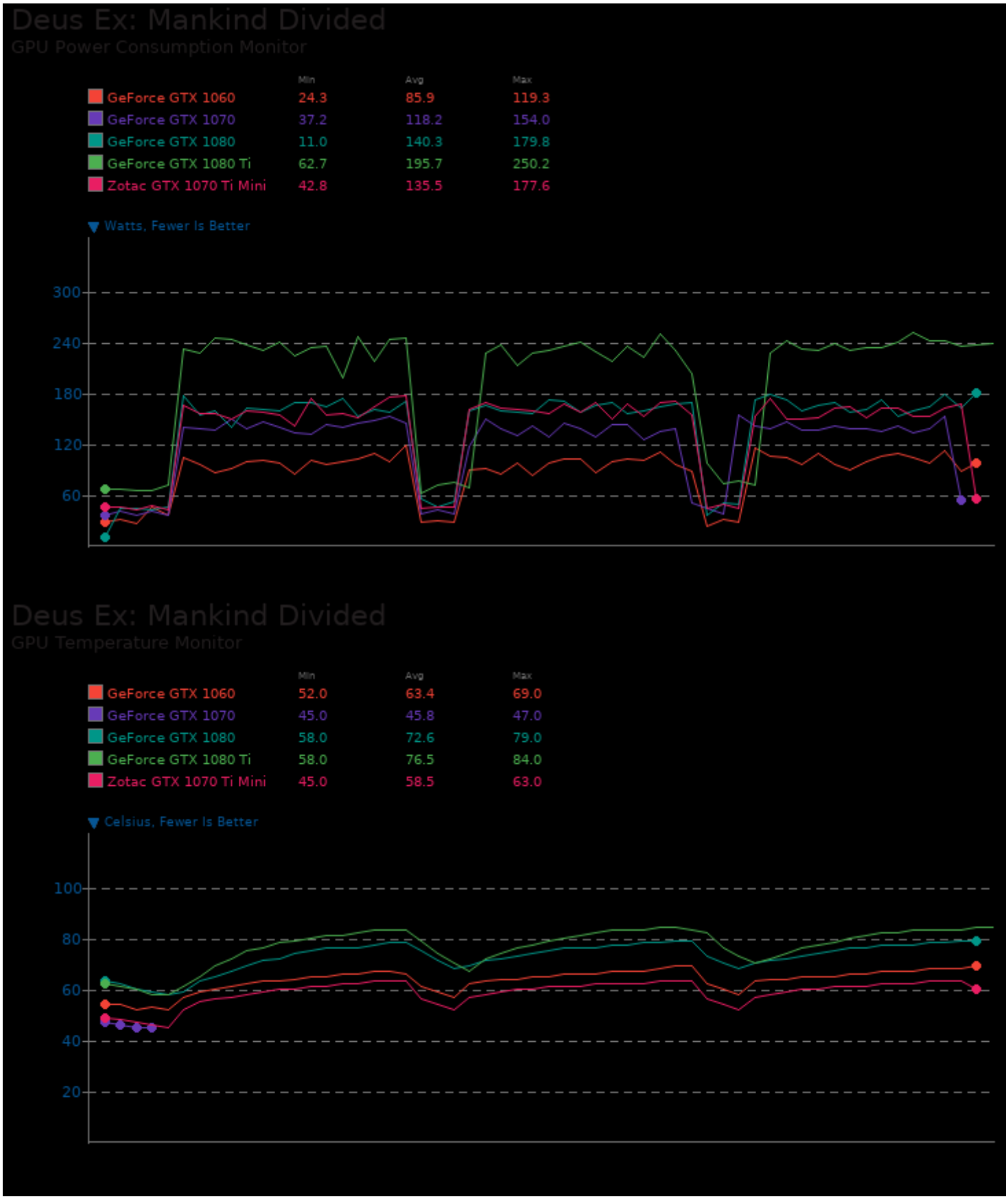

Deus Ex: Mankind Divided
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 53.0 56.5 59.0
GeForce GTX 1070 40.0 46.2 50.0
GeForce GTX 1080 43.0 48.5 51.0
GeForce GTX 1080 Ti 39.0 45.5 49.0
Zotac GTX 1070 Ti Mini 46.0 50.4 52.0
Percent, Fewer Is Better
80
64
48
32
16

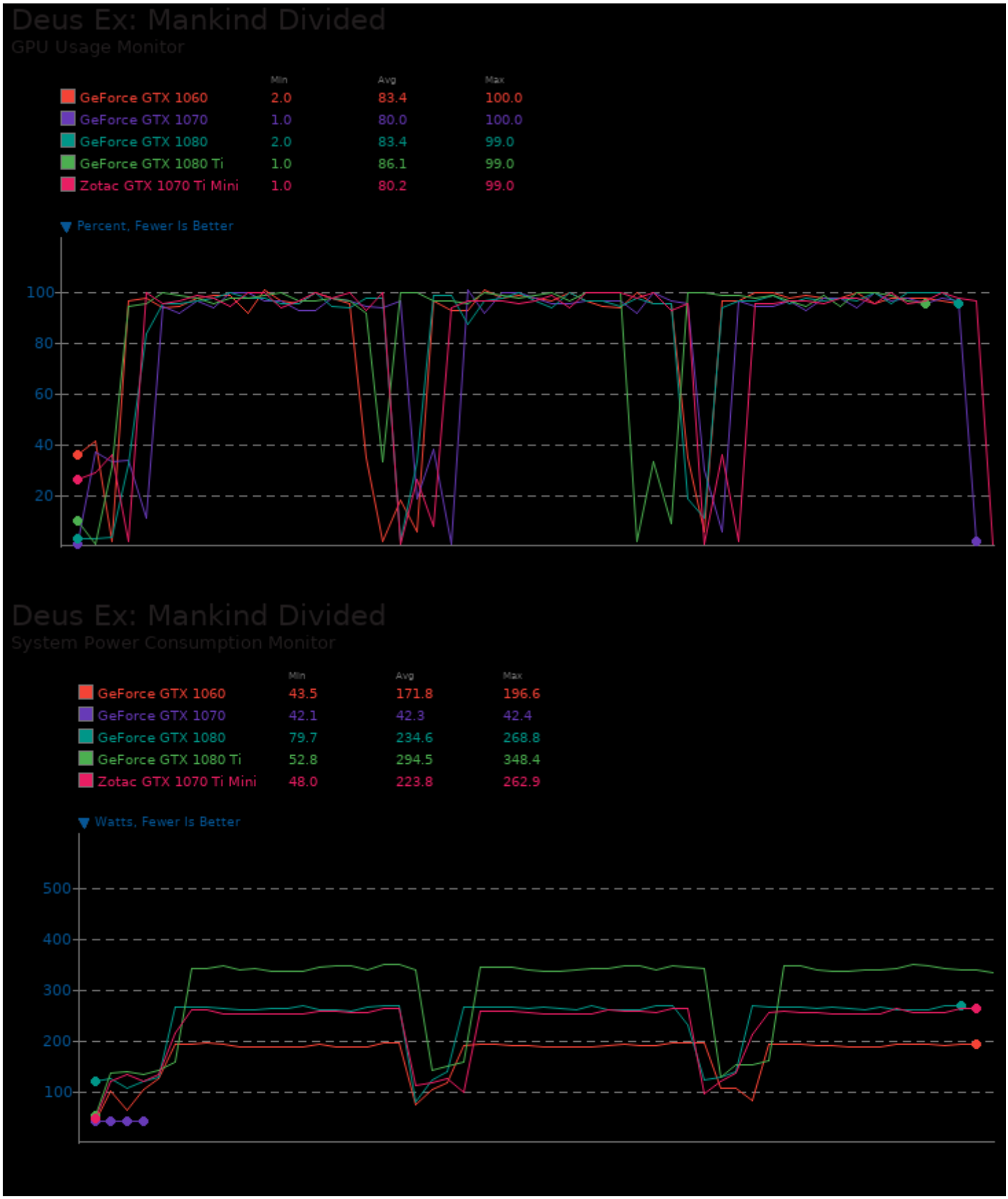

Deus Ex: Mankind Divided
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 24.1 89.6 109.2
GeForce GTX 1070 9.9 10.3 10.8
GeForce GTX 1080 10.5 136.8 172.2
GeForce GTX 1080 Ti 66.5 196.1 243.5
Zotac GTX 1070 Ti Mini 35.6 131.1 165.1
Watts, Fewer Is Better
300
240
180
120
60
Deus Ex: Mankind Divided
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 48.0 62.4 68.0
GeForce GTX 1070 53.0 68.3 75.0
GeForce GTX 1080 56.0 71.3 78.0
GeForce GTX 1080 Ti 58.0 75.8 83.0
Zotac GTX 1070 Ti Mini 45.0 58.0 63.0
Celsius, Fewer Is Better
100
80
60
40
20

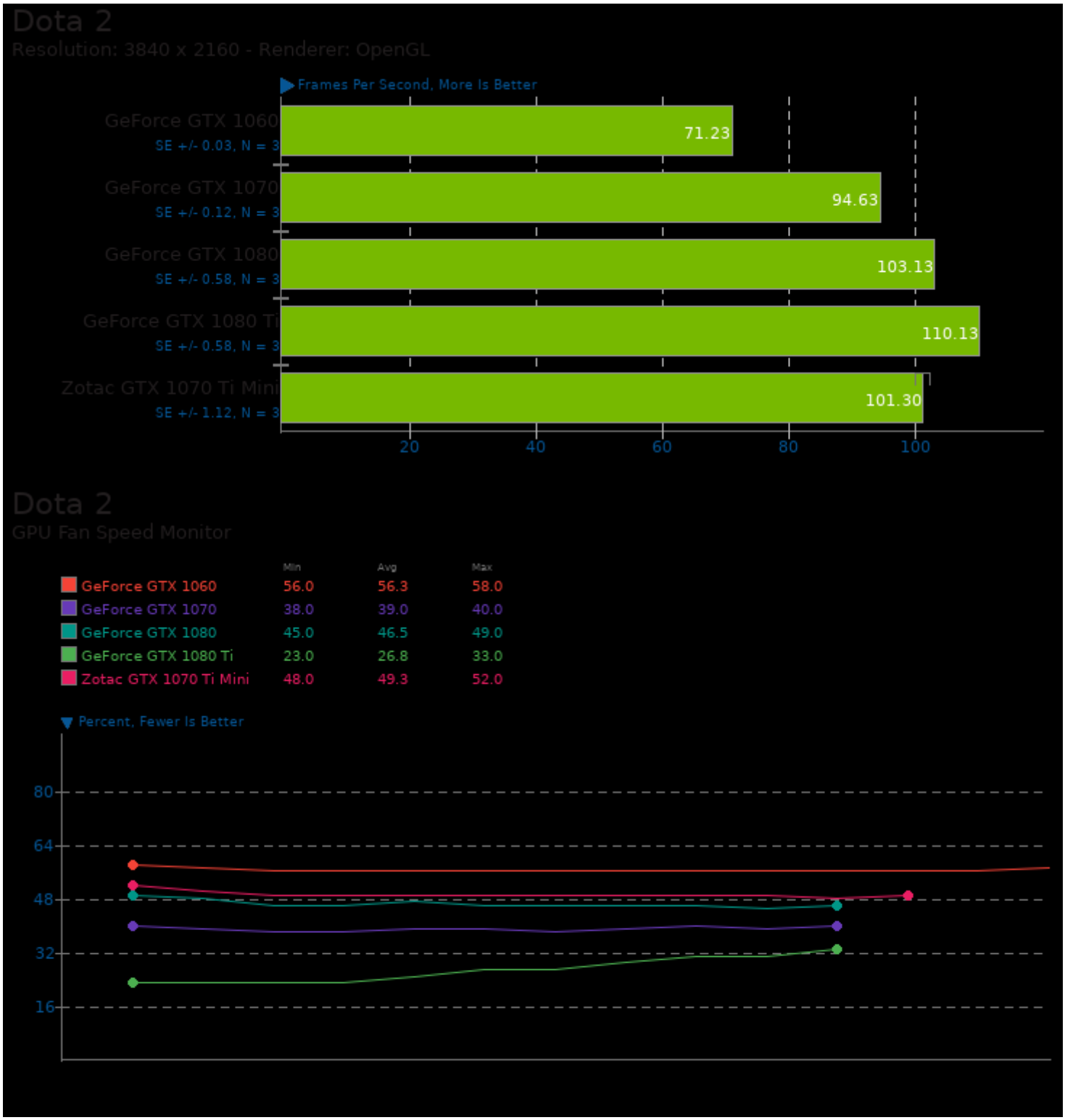

Deus Ex: Mankind Divided
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 2.0 84.1 99.0
GeForce GTX 1070 3.0 81.4 99.0
GeForce GTX 1080 1.0 91.2 99.0
GeForce GTX 1080 Ti 1.0 85.8 99.0
Zotac GTX 1070 Ti Mini 2.0 86.3 99.0
Percent, Fewer Is Better
100
80
60
40
20
Deus Ex: Mankind Divided
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 41.7 174.3 197.5
GeForce GTX 1070 44.4 205.6 241.3
GeForce GTX 1080 84.7 238.3 274.8
GeForce GTX 1080 Ti 69.7 300.6 351.5
Zotac GTX 1070 Ti Mini 97.1 230.2 264.3
Watts, Fewer Is Better
500
400
300
200
100


Deus Ex: Mankind Divided
Preset: 3840 x 2160 - Low Quality
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.00, N = 3
MIN: 15.7 / MAX: 29.8
23.40
GeForce GTX 1070
SE +/- 0.03, N = 3
MIN: 22.8 / MAX: 42.9
32.63
GeForce GTX 1080
SE +/- 0.06, N = 3
MIN: 28 / MAX: 48.5
39.70
GeForce GTX 1080 Ti
SE +/- 0.07, N = 3
MIN: 39 / MAX: 68.6
53.07
Zotac GTX 1070 Ti Mini
SE +/- 0.03, N = 3
MIN: 25.9 / MAX: 47.2
37.77
12
24
36
48
60


Deus Ex: Mankind Divided
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 57.3 59.0
GeForce GTX 1070 36.0 37.0 38.0
GeForce GTX 1080 44.0 49.2 52.0
GeForce GTX 1080 Ti 38.0 45.9 49.0
Zotac GTX 1070 Ti Mini 47.0 51.2 53.0
Percent, Fewer Is Better
80
64
48
32
16


Deus Ex: Mankind Divided
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 24.3 85.9 119.3
GeForce GTX 1070 37.2 118.2 154.0
GeForce GTX 1080 11.0 140.3 179.8
GeForce GTX 1080 Ti 62.7 195.7 250.2
Zotac GTX 1070 Ti Mini 42.8 135.5 177.6
Watts, Fewer Is Better
300
240
180
120
60
Deus Ex: Mankind Divided
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 52.0 63.4 69.0
GeForce GTX 1070 45.0 45.8 47.0
GeForce GTX 1080 58.0 72.6 79.0
GeForce GTX 1080 Ti 58.0 76.5 84.0
Zotac GTX 1070 Ti Mini 45.0 58.5 63.0
Celsius, Fewer Is Better
100
80
60
40
20

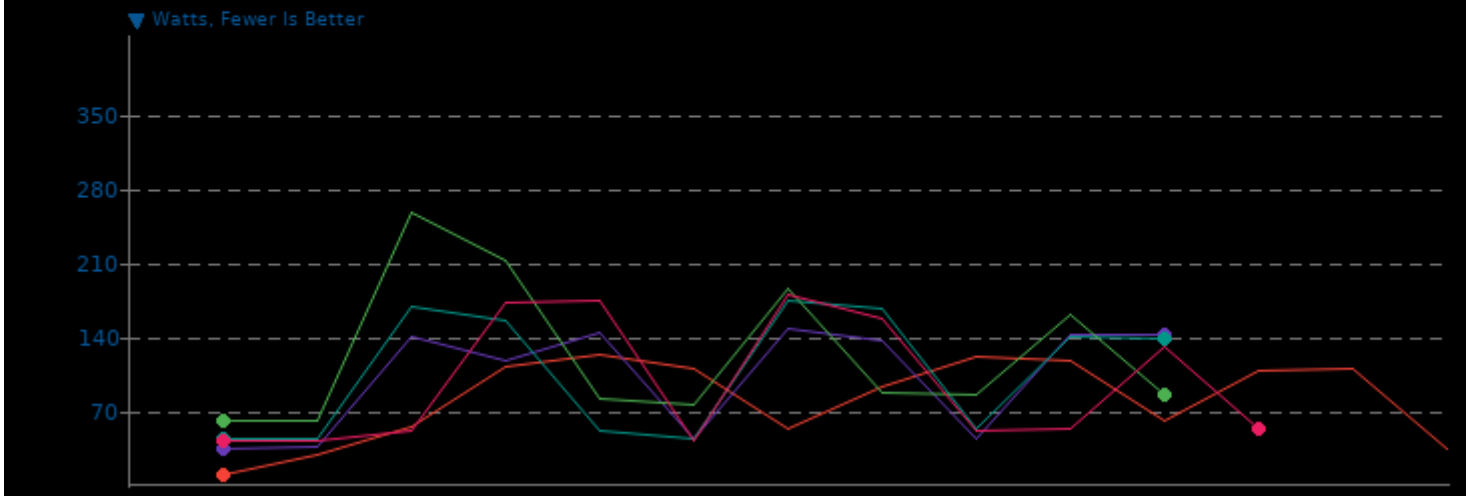

Deus Ex: Mankind Divided
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 2.0 83.4 100.0
GeForce GTX 1070 1.0 80.0 100.0
GeForce GTX 1080 2.0 83.4 99.0
GeForce GTX 1080 Ti 1.0 86.1 99.0
Zotac GTX 1070 Ti Mini 1.0 80.2 99.0
Percent, Fewer Is Better
100
80
60
40
20
Deus Ex: Mankind Divided
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 43.5 171.8 196.6
GeForce GTX 1070 42.1 42.3 42.4
GeForce GTX 1080 79.7 234.6 268.8
GeForce GTX 1080 Ti 52.8 294.5 348.4
Zotac GTX 1070 Ti Mini 48.0 223.8 262.9
Watts, Fewer Is Better
500
400
300
200
100


Dota 2
Resolution: 3840 x 2160 - Renderer: OpenGL
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.03, N = 3
71.23
GeForce GTX 1070
SE +/- 0.12, N = 3
94.63
GeForce GTX 1080
SE +/- 0.58, N = 3
103.13
GeForce GTX 1080 Ti
SE +/- 0.58, N = 3
110.13
Zotac GTX 1070 Ti Mini
SE +/- 1.12, N = 3
101.30
20
40
60
80
100
Dota 2
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 56.3 58.0
GeForce GTX 1070 38.0 39.0 40.0
GeForce GTX 1080 45.0 46.5 49.0
GeForce GTX 1080 Ti 23.0 26.8 33.0
Zotac GTX 1070 Ti Mini 48.0 49.3 52.0
Percent, Fewer Is Better
80
64
48
32
16

Dota 2

GPU Power Consumption Monitor

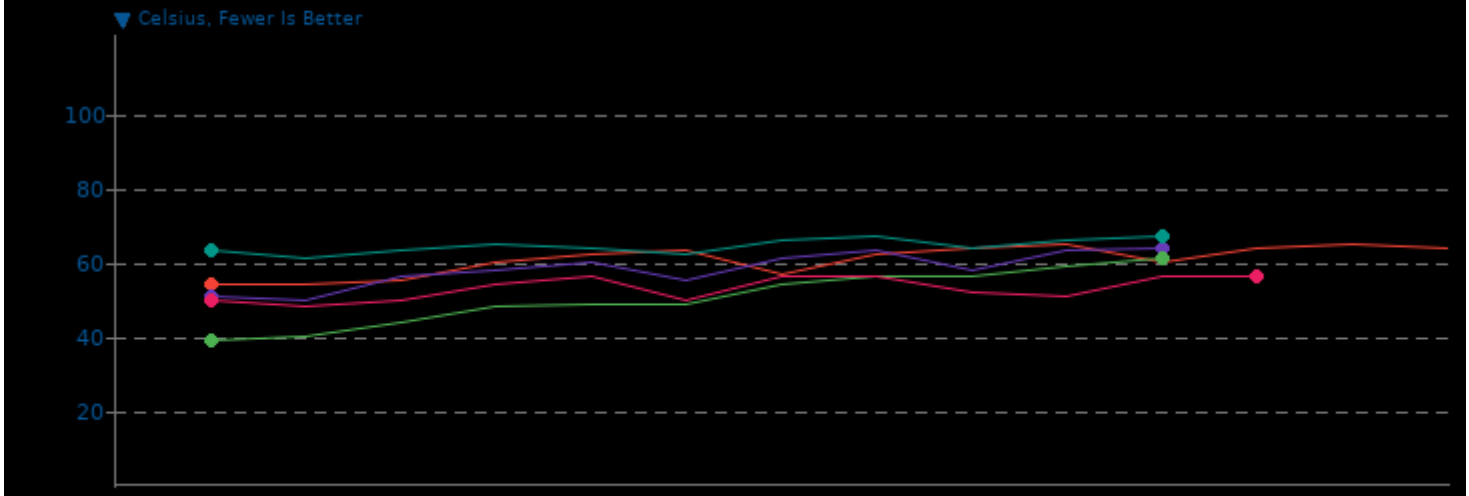
	Min	Avg	Max
GeForce GTX 1060	10.4	82.1	123.7
GeForce GTX 1070	36.2	103.1	147.2
GeForce GTX 1080	44.4	107.9	175.3
GeForce GTX 1080 Ti	61.4	123.7	256.5
Zotac GTX 1070 Ti Mini	43.0	96.7	180.7

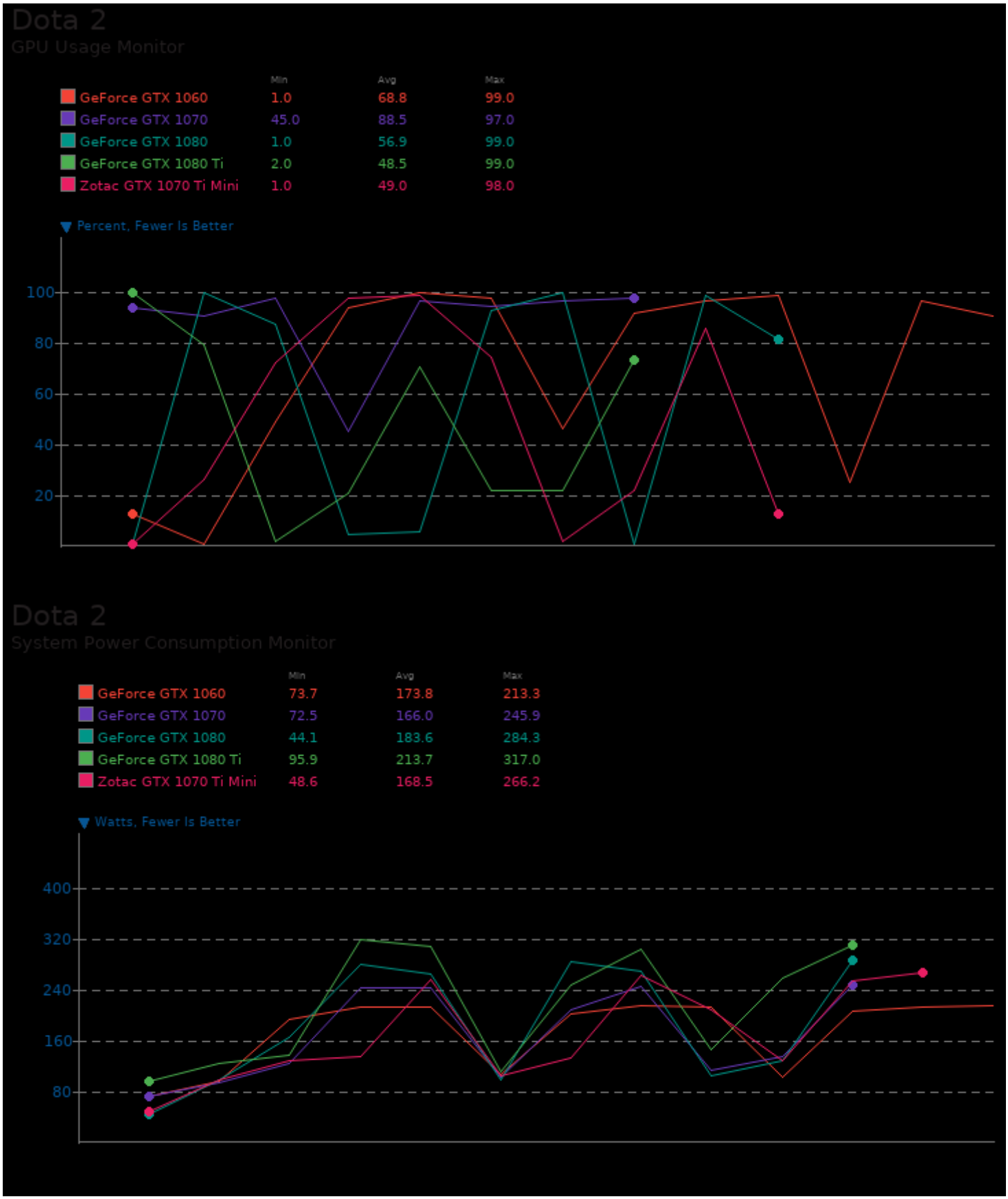


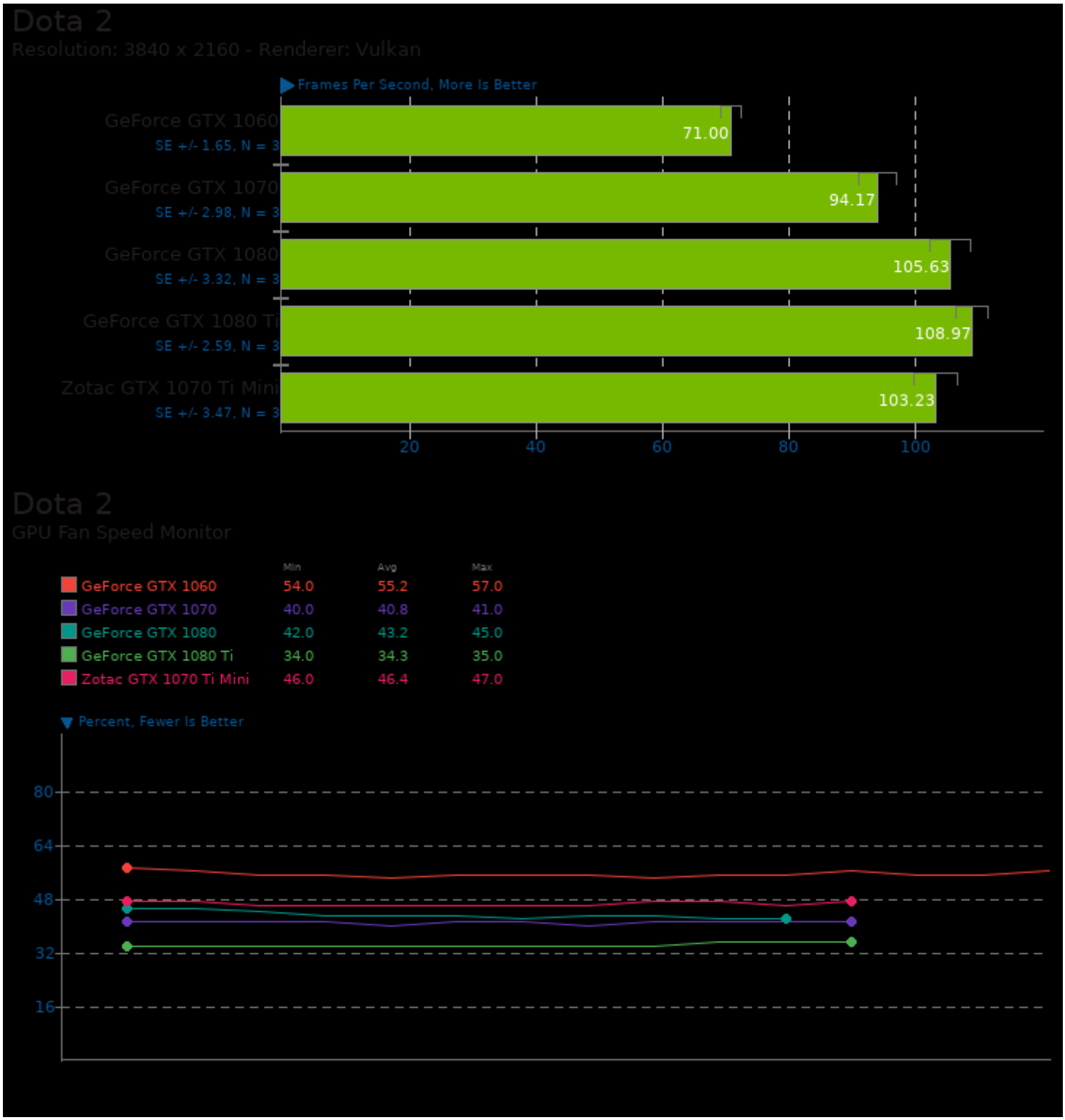
Dota 2

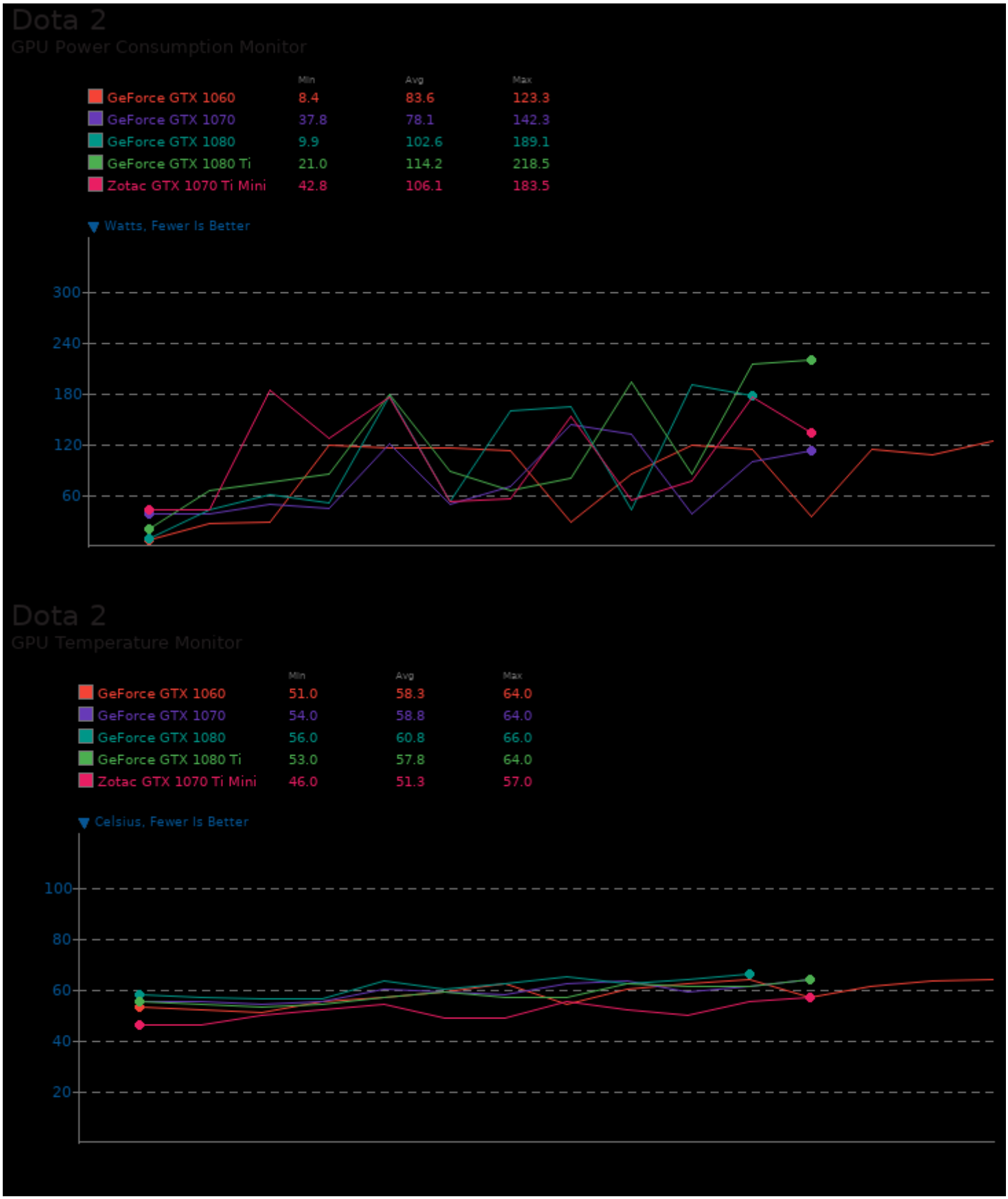
GPU Temperature Monitor

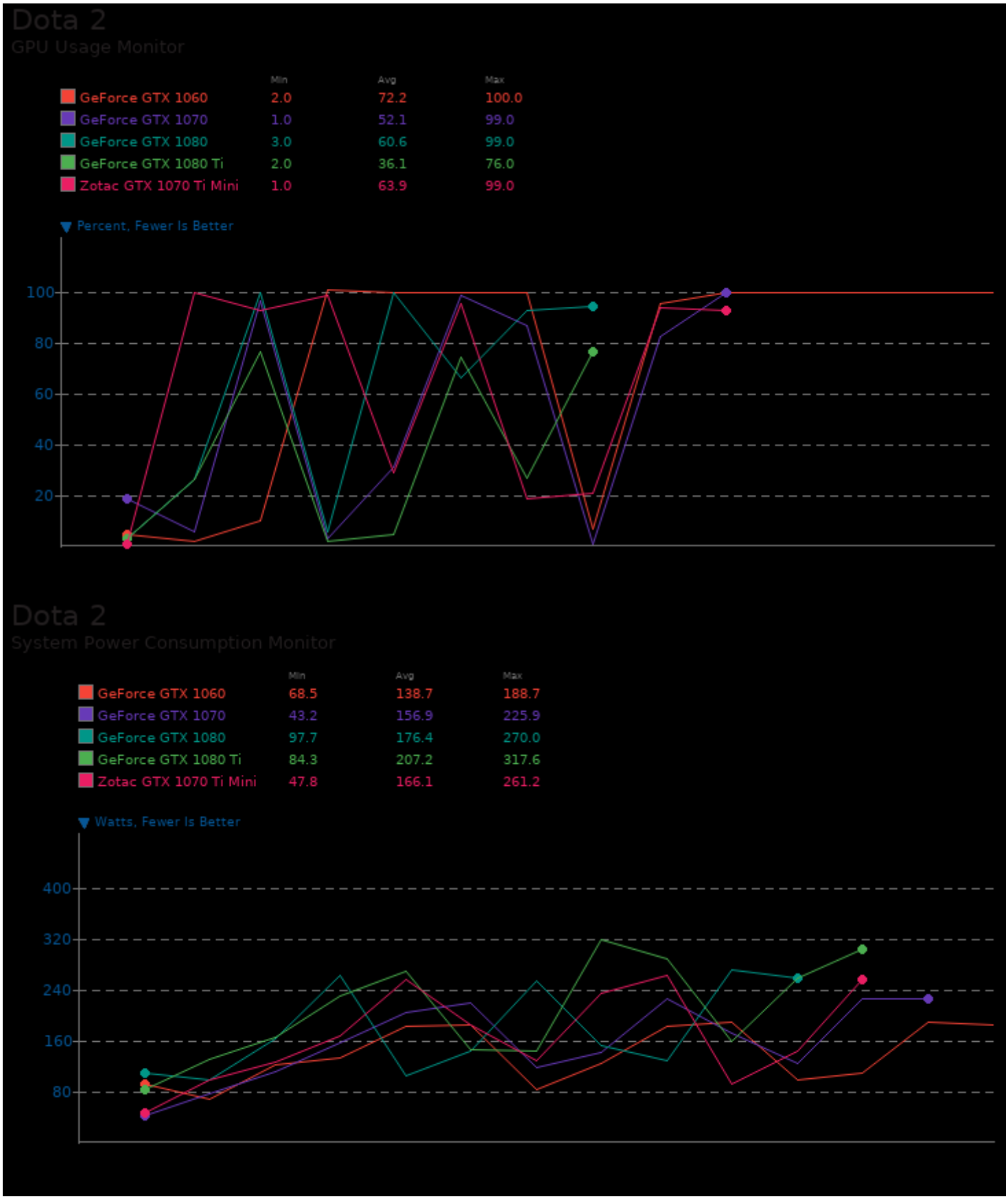
	Min	Avg	Max
GeForce GTX 1060	54.0	60.6	65.0
GeForce GTX 1070	50.0	58.1	64.0
GeForce GTX 1080	61.0	64.4	67.0
GeForce GTX 1080 Ti	39.0	50.5	61.0
Zotac GTX 1070 Ti Mini	48.0	52.9	56.0

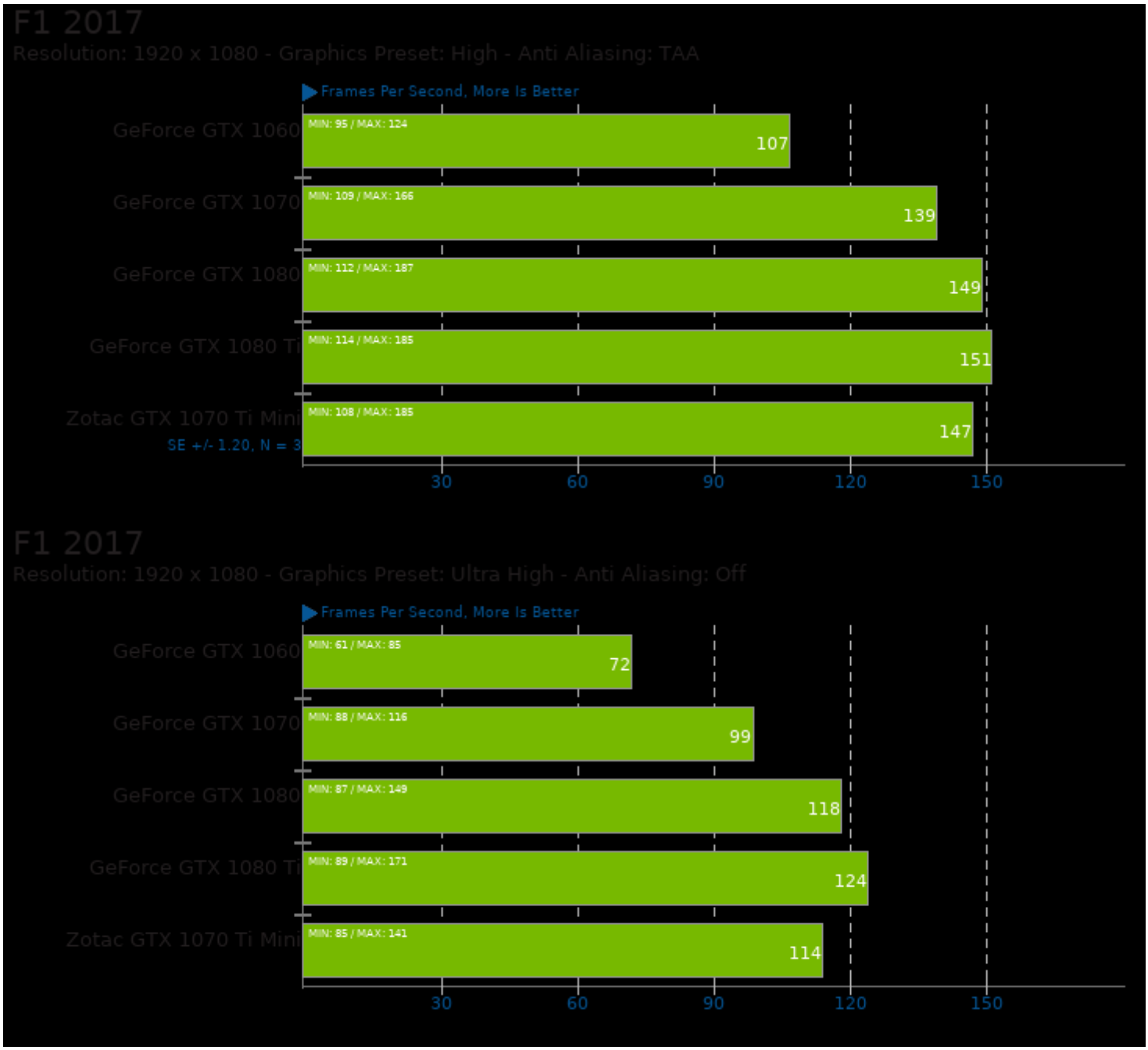


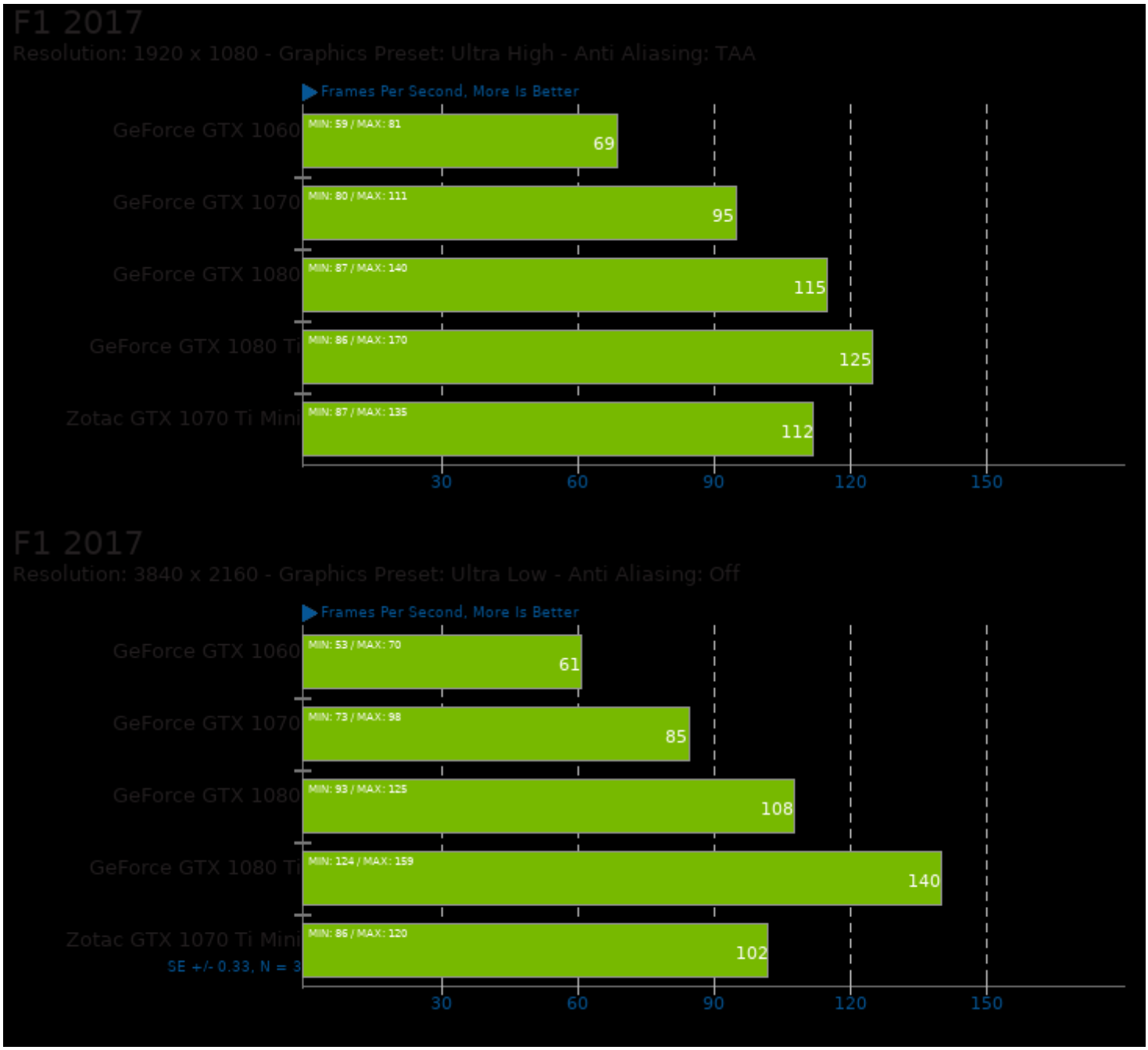

Dota 2
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 68.8 99.0
GeForce GTX 1070 45.0 88.5 97.0
GeForce GTX 1080 1.0 56.9 99.0
GeForce GTX 1080 Ti 2.0 48.5 99.0
Zotac GTX 1070 Ti Mini 1.0 49.0 98.0
Percent, Fewer Is Better
100
80
60
40
20
Dota 2
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 73.7 173.8 213.3
GeForce GTX 1070 72.5 166.0 245.9
GeForce GTX 1080 44.1 183.6 284.3
GeForce GTX 1080 Ti 95.9 213.7 317.0
Zotac GTX 1070 Ti Mini 48.6 168.5 266.2
Watts, Fewer Is Better
400
320
240
160
80

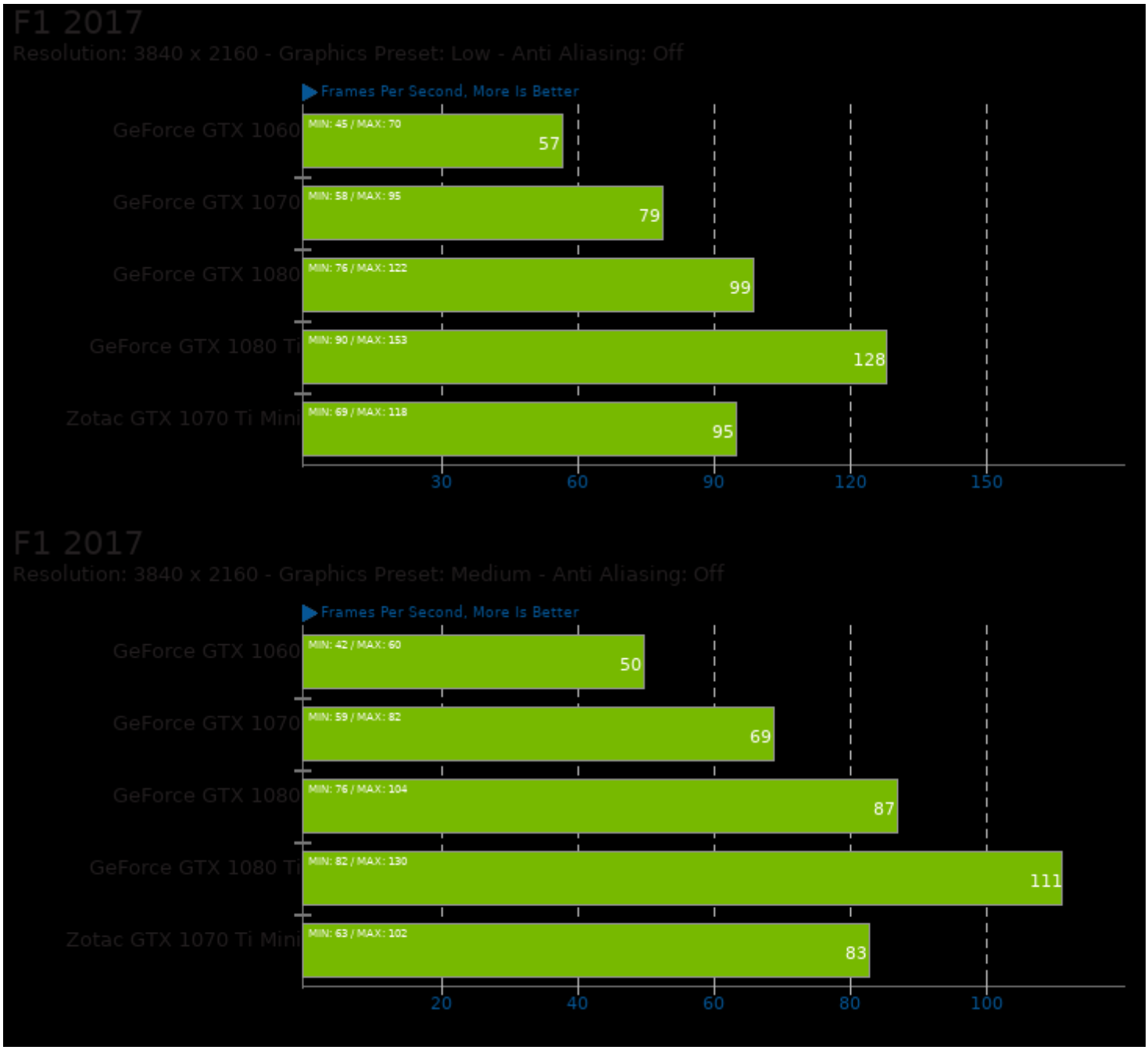

Dota 2
Resolution: 3840 x 2160 - Renderer: Vulkan
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 1.65, N = 3
71.00
GeForce GTX 1070
SE +/- 2.98, N = 3
94.17
GeForce GTX 1080
SE +/- 3.32, N = 3
105.63
GeForce GTX 1080 Ti
SE +/- 2.59, N = 3
108.97
Zotac GTX 1070 Ti Mini
SE +/- 3.47, N = 3
103.23
20
40
60
80
100
Dota 2
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 54.0 55.2 57.0
GeForce GTX 1070 40.0 40.8 41.0
GeForce GTX 1080 42.0 43.2 45.0
GeForce GTX 1080 Ti 34.0 34.3 35.0
Zotac GTX 1070 Ti Mini 46.0 46.4 47.0
Percent, Fewer Is Better
80
64
48
32
16

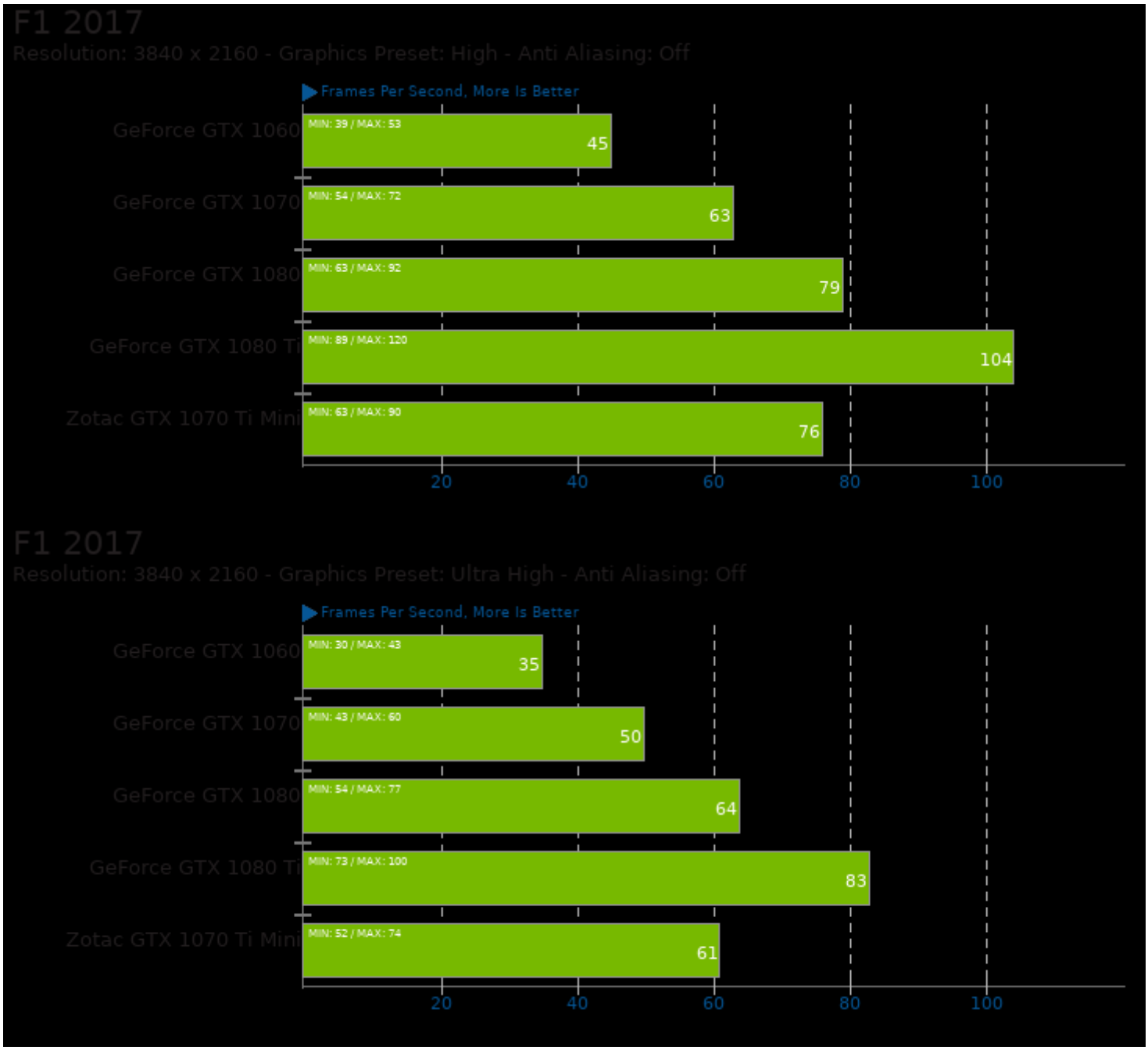

Dota 2
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 8.4 83.6 123.3
GeForce GTX 1070 37.8 78.1 142.3
GeForce GTX 1080 9.9 102.6 189.1
GeForce GTX 1080 Ti 21.0 114.2 218.5
Zotac GTX 1070 Ti Mini 42.8 106.1 183.5
Watts, Fewer Is Better
300
240
180
120
60
Dota 2
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 51.0 58.3 64.0
GeForce GTX 1070 54.0 58.8 64.0
GeForce GTX 1080 56.0 60.8 66.0
GeForce GTX 1080 Ti 53.0 57.8 64.0
Zotac GTX 1070 Ti Mini 46.0 51.3 57.0
Celsius, Fewer Is Better
100
80
60
40
20

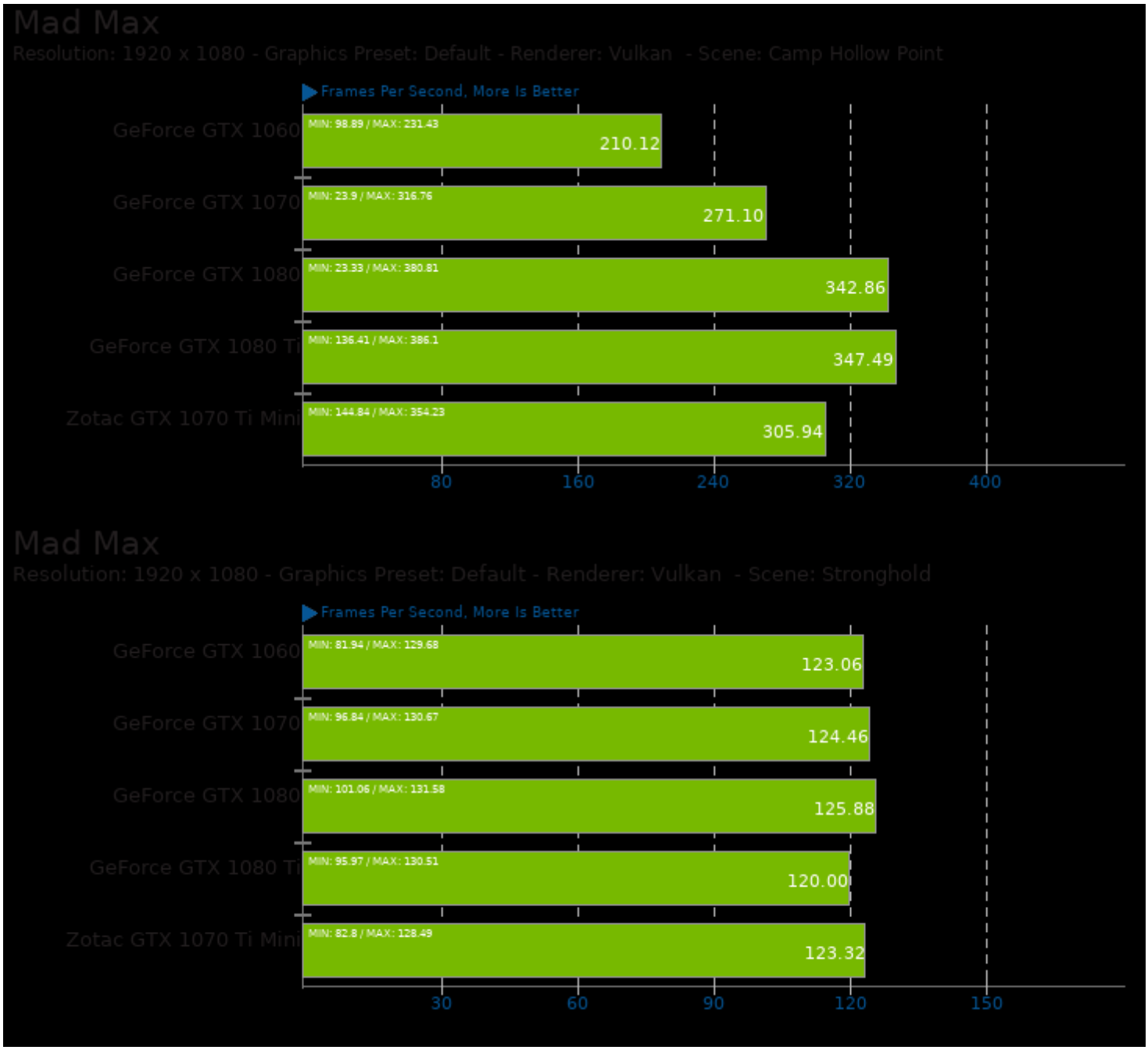

Dota 2
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 2.0 72.2 100.0
GeForce GTX 1070 1.0 52.1 99.0
GeForce GTX 1080 3.0 60.6 99.0
GeForce GTX 1080 Ti 2.0 36.1 76.0
Zotac GTX 1070 Ti Mini 1.0 63.9 99.0
Percent, Fewer Is Better
100
80
60
40
20
Dota 2
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 68.5 138.7 188.7
GeForce GTX 1070 43.2 156.9 225.9
GeForce GTX 1080 97.7 176.4 270.0
GeForce GTX 1080 Ti 84.3 207.2 317.6
Zotac GTX 1070 Ti Mini 47.8 166.1 261.2
Watts, Fewer Is Better
400
320
240
160
80

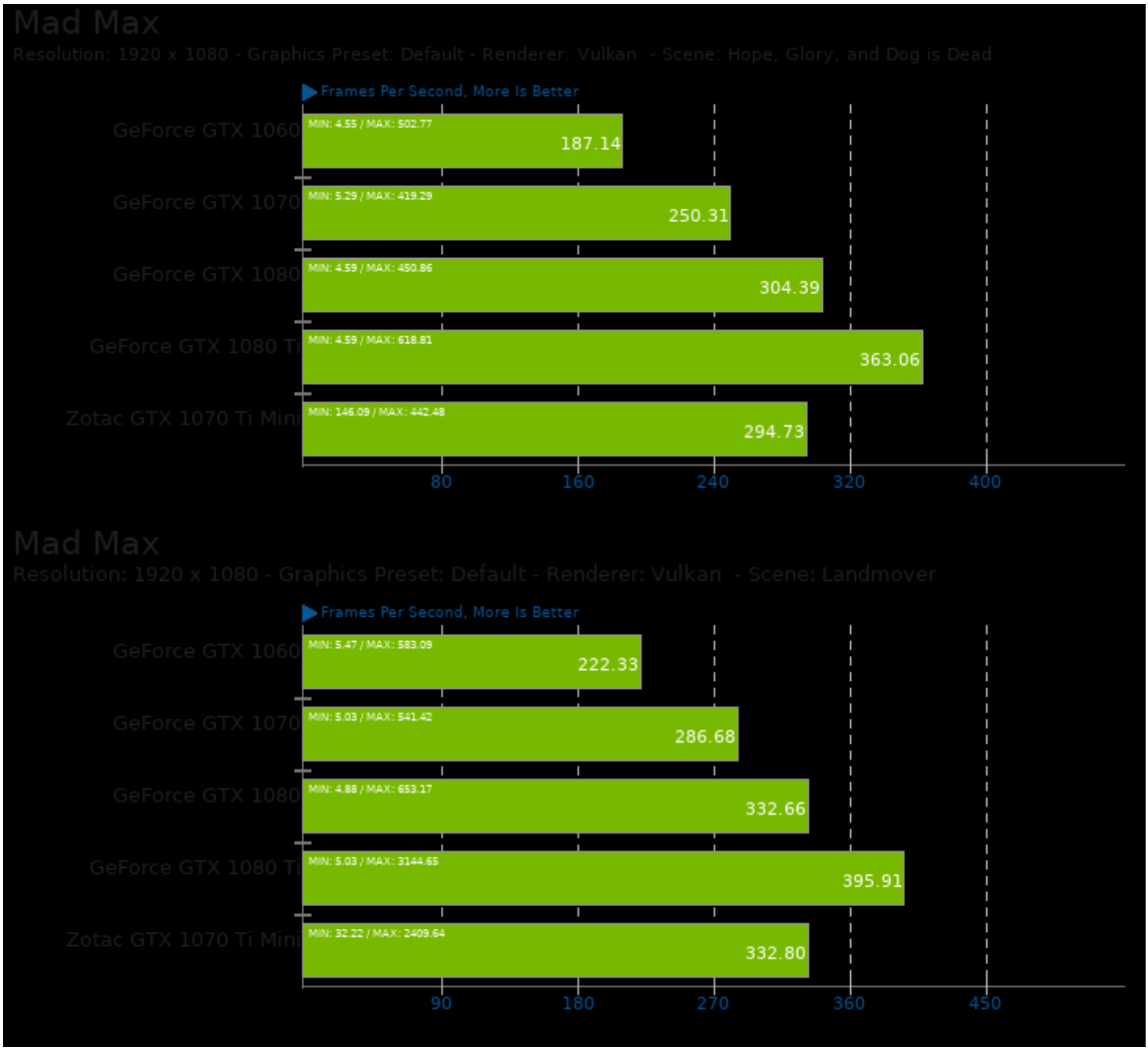

F1 2017
Resolution: 1920 x 1080 - Graphics Preset: High - Anti Aliasing: TAA
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 95 / MAX: 124
107
GeForce GTX 1070
MIN: 109 / MAX: 166
139
GeForce GTX 1080
MIN: 112 / MAX: 187
149
GeForce GTX 1080 Ti
MIN: 114 / MAX: 185
151
Zotac GTX 1070 Ti Mini
MIN: 108 / MAX: 185
147
SE +/- 1.20, N = 3
30
60
90
120
150
F1 2017
Resolution: 1920 x 1080 - Graphics Preset: Ultra High - Anti Aliasing: Off
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 61 / MAX: 85
72
GeForce GTX 1070
MIN: 88 / MAX: 116
99
GeForce GTX 1080
MIN: 87 / MAX: 149
118
GeForce GTX 1080 Ti
MIN: 89 / MAX: 171
124
Zotac GTX 1070 Ti Mini
MIN: 85 / MAX: 141
114
30
60
90
120
150

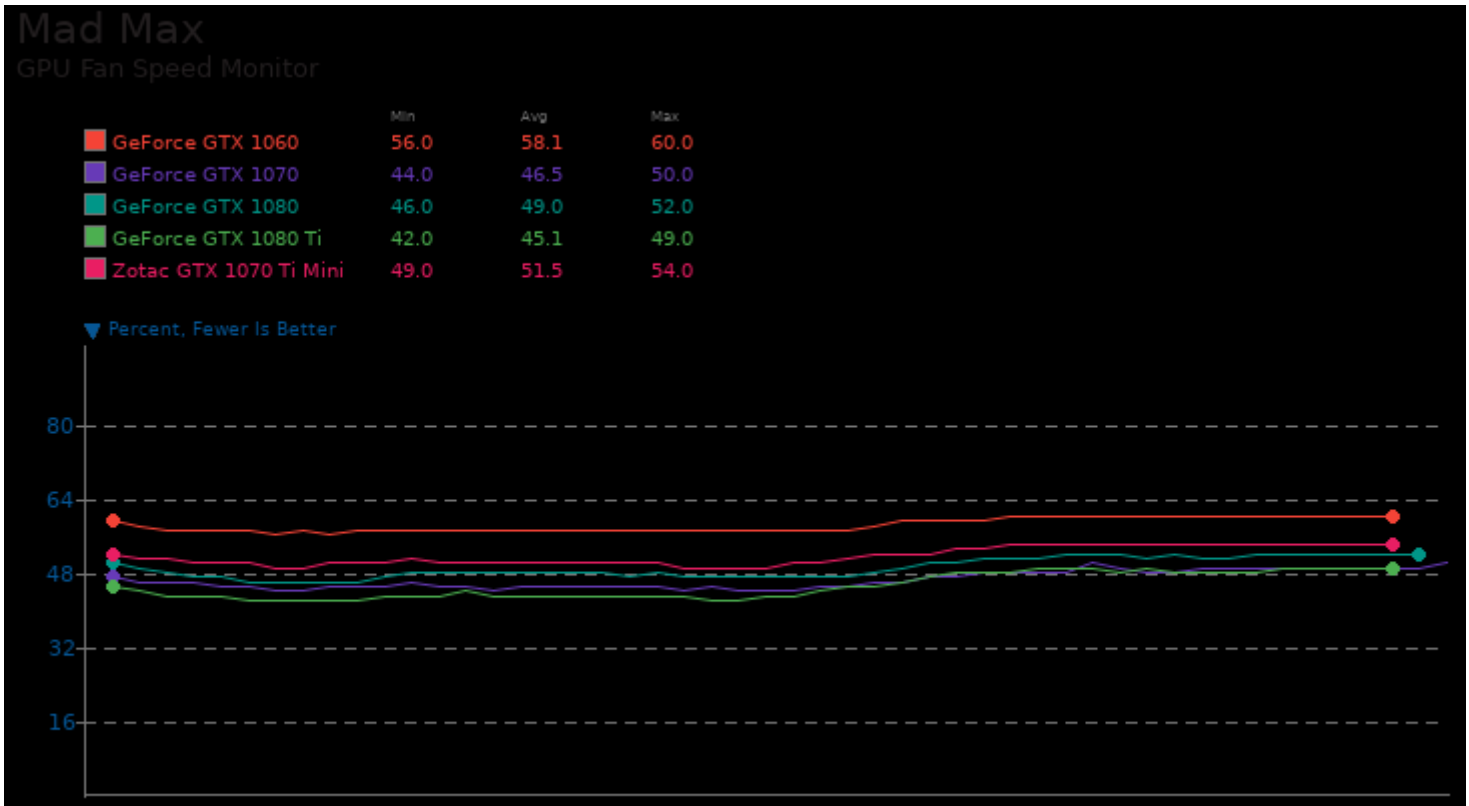

F1 2017
Resolution: 1920 x 1080 - Graphics Preset: Ultra High - Anti Aliasing: TAA
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 59 / MAX: 81
69
GeForce GTX 1070
MIN: 80 / MAX: 111
95
GeForce GTX 1080
MIN: 87 / MAX: 140
115
GeForce GTX 1080 Ti
MIN: 86 / MAX: 170
125
Zotac GTX 1070 Ti Mini
MIN: 87 / MAX: 135
112
30
60
90
120
150
F1 2017
Resolution: 3840 x 2160 - Graphics Preset: Ultra Low - Anti Aliasing: Off
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 53 / MAX: 70
61
GeForce GTX 1070
MIN: 73 / MAX: 98
85
GeForce GTX 1080
MIN: 93 / MAX: 125
108
GeForce GTX 1080 Ti
MIN: 124 / MAX: 159
140
Zotac GTX 1070 Ti Mini
MIN: 86 / MAX: 120
102
SE +/- 0.33, N = 3
30
60
90
120
150


F1 2017
Resolution: 3840 x 2160 - Graphics Preset: Low - Anti Aliasing: Off
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 45 / MAX: 70
57
GeForce GTX 1070
MIN: 58 / MAX: 95
79
GeForce GTX 1080
MIN: 76 / MAX: 122
99
GeForce GTX 1080 Ti
MIN: 90 / MAX: 153
128
Zotac GTX 1070 Ti Mini
MIN: 69 / MAX: 118
95
30
60
90
120
150
F1 2017
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 42 / MAX: 60
50
GeForce GTX 1070
MIN: 59 / MAX: 82
69
GeForce GTX 1080
MIN: 76 / MAX: 104
87
GeForce GTX 1080 Ti
MIN: 82 / MAX: 130
111
Zotac GTX 1070 Ti Mini
MIN: 63 / MAX: 102
83
20
40
60
80
100

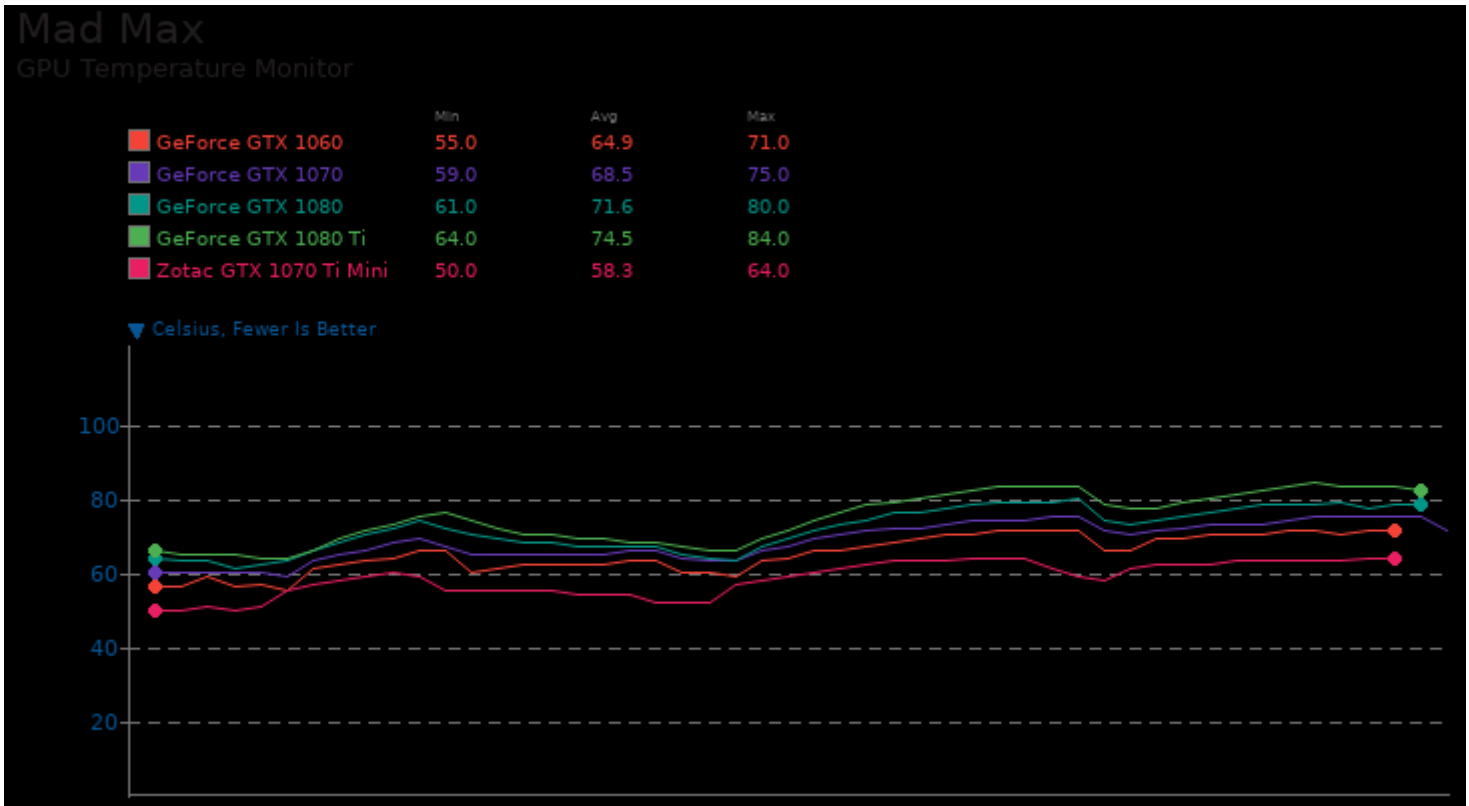

F1 2017
Resolution: 3840 x 2160 - Graphics Preset: High - Anti Aliasing: Off
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 39 / MAX: 53
45
GeForce GTX 1070
MIN: 54 / MAX: 72
63
GeForce GTX 1080
MIN: 63 / MAX: 92
79
GeForce GTX 1080 Ti
MIN: 89 / MAX: 120
104
Zotac GTX 1070 Ti Mini
MIN: 63 / MAX: 90
76
20
40
60
80
100
F1 2017
Resolution: 3840 x 2160 - Graphics Preset: Ultra High - Anti Aliasing: Off
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 30 / MAX: 43
35
GeForce GTX 1070
MIN: 43 / MAX: 60
50
GeForce GTX 1080
MIN: 54 / MAX: 77
64
GeForce GTX 1080 Ti
MIN: 73 / MAX: 100
83
Zotac GTX 1070 Ti Mini
MIN: 52 / MAX: 74
61
20
40
60
80
100

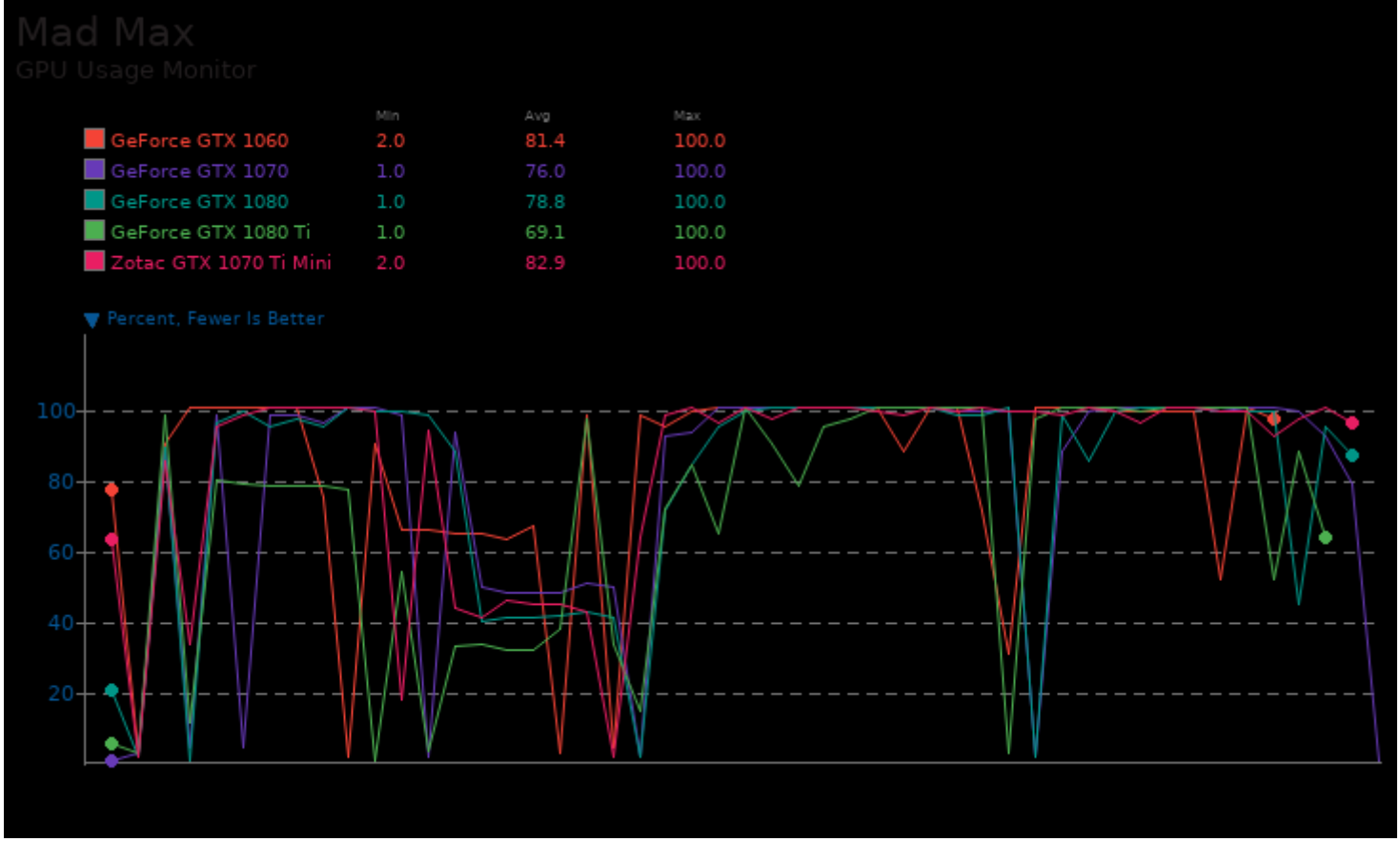

Mad Max
Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: Vulkan - Scene: Camp Hollow Point
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 98.89 / MAX: 231.43
210.12
GeForce GTX 1070
MIN: 23.9 / MAX: 316.76
271.10
GeForce GTX 1080
MIN: 23.33 / MAX: 380.81
342.86
GeForce GTX 1080 Ti
MIN: 136.41 / MAX: 386.1
347.49
Zotac GTX 1070 Ti Mini
MIN: 144.84 / MAX: 354.23
305.94
80
160
240
320
400
Mad Max
Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: Vulkan - Scene: Stronghold
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 81.94 / MAX: 129.68
123.06
GeForce GTX 1070
MIN: 96.84 / MAX: 130.67
124.46
GeForce GTX 1080
MIN: 101.06 / MAX: 131.58
125.88
GeForce GTX 1080 Ti
MIN: 95.97 / MAX: 130.51
120.00
Zotac GTX 1070 Ti Mini
MIN: 82.8 / MAX: 128.49
123.32
30
60
90
120
150

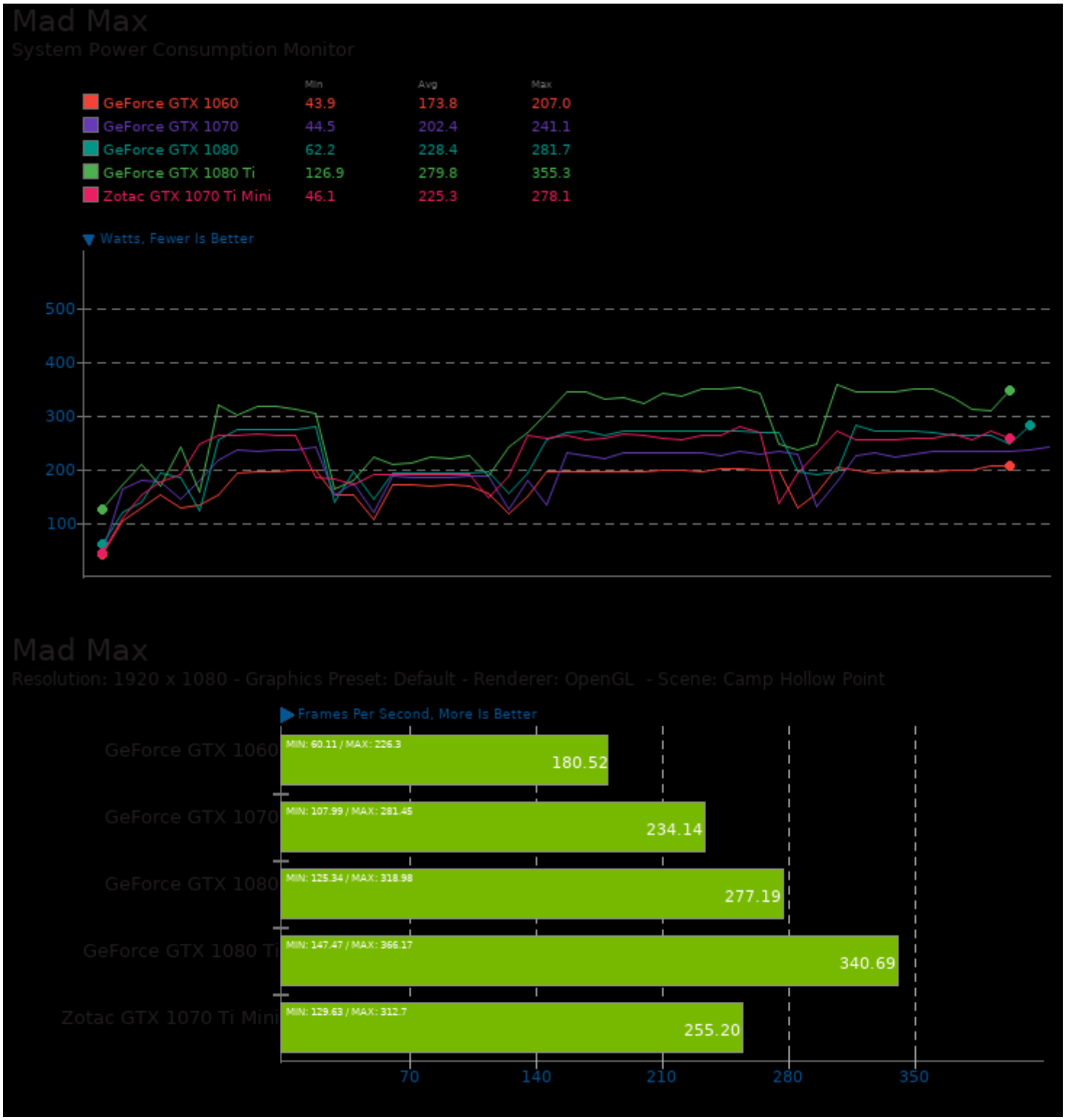

Mad Max
Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: Vulkan - Scene: Hope, Glory, and Dog is Dead
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 4.55 / MAX: 502.77
187.14
GeForce GTX 1070
MIN: 5.29 / MAX: 419.29
250.31
GeForce GTX 1080
MIN: 4.59 / MAX: 450.86
304.39
GeForce GTX 1080 Ti
MIN: 4.59 / MAX: 618.81
363.06
Zotac GTX 1070 Ti Mini
MIN: 146.09 / MAX: 442.48
294.73
80
160
240
320
400
Mad Max
Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: Vulkan - Scene: Landmover
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 5.47 / MAX: 583.09
222.33
GeForce GTX 1070
MIN: 5.03 / MAX: 541.42
286.68
GeForce GTX 1080
MIN: 4.88 / MAX: 653.17
332.66
GeForce GTX 1080 Ti
MIN: 5.03 / MAX: 3144.65
395.91
Zotac GTX 1070 Ti Mini
MIN: 32.22 / MAX: 2409.64
332.80
90
180
270
360
450

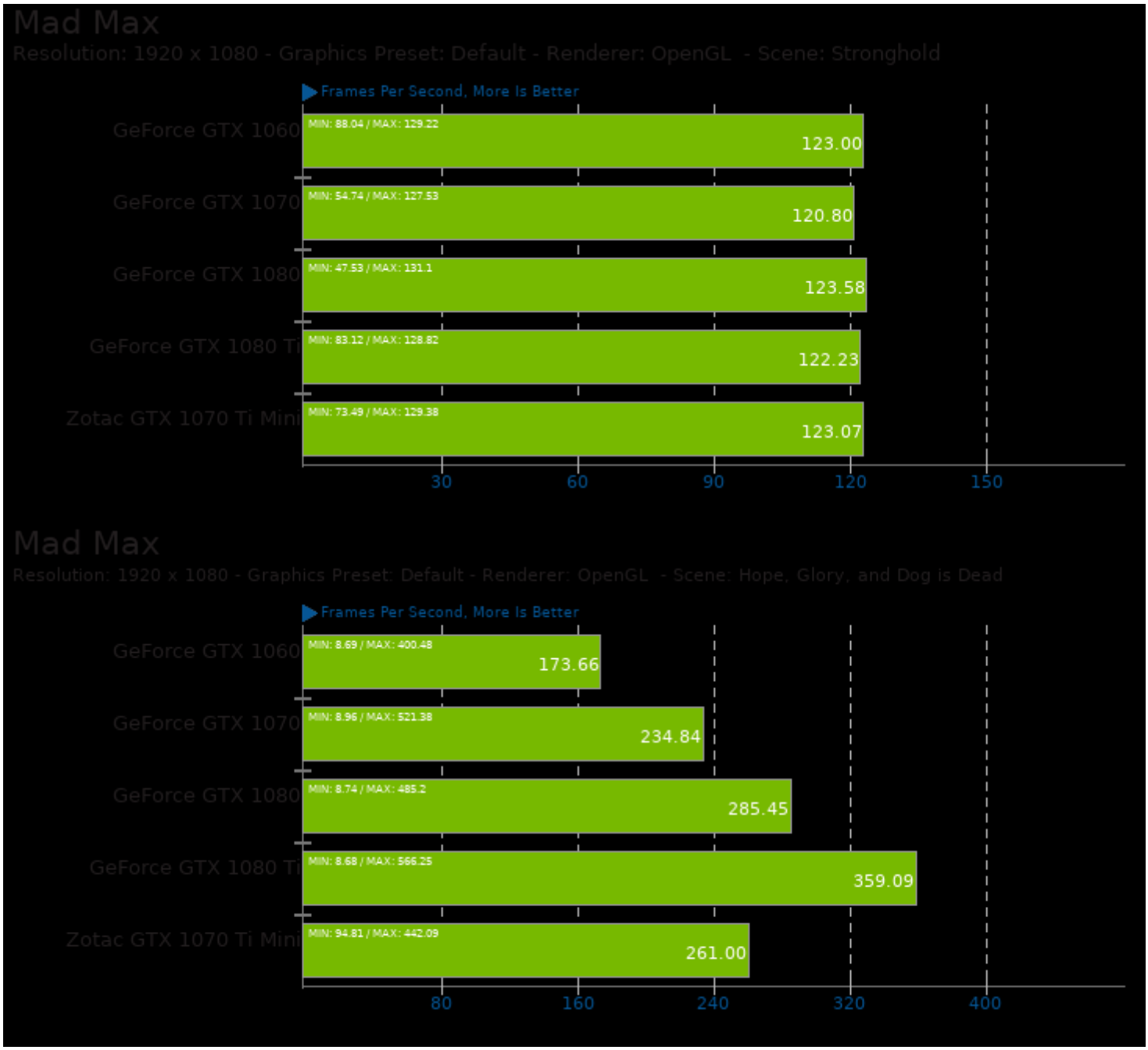

Mad Max
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 58.1 60.0
GeForce GTX 1070 44.0 46.5 50.0
GeForce GTX 1080 46.0 49.0 52.0
GeForce GTX 1080 Ti 42.0 45.1 49.0
Zotac GTX 1070 Ti Mini 49.0 51.5 54.0
Percent, Fewer Is Better
80
64
48
32
16

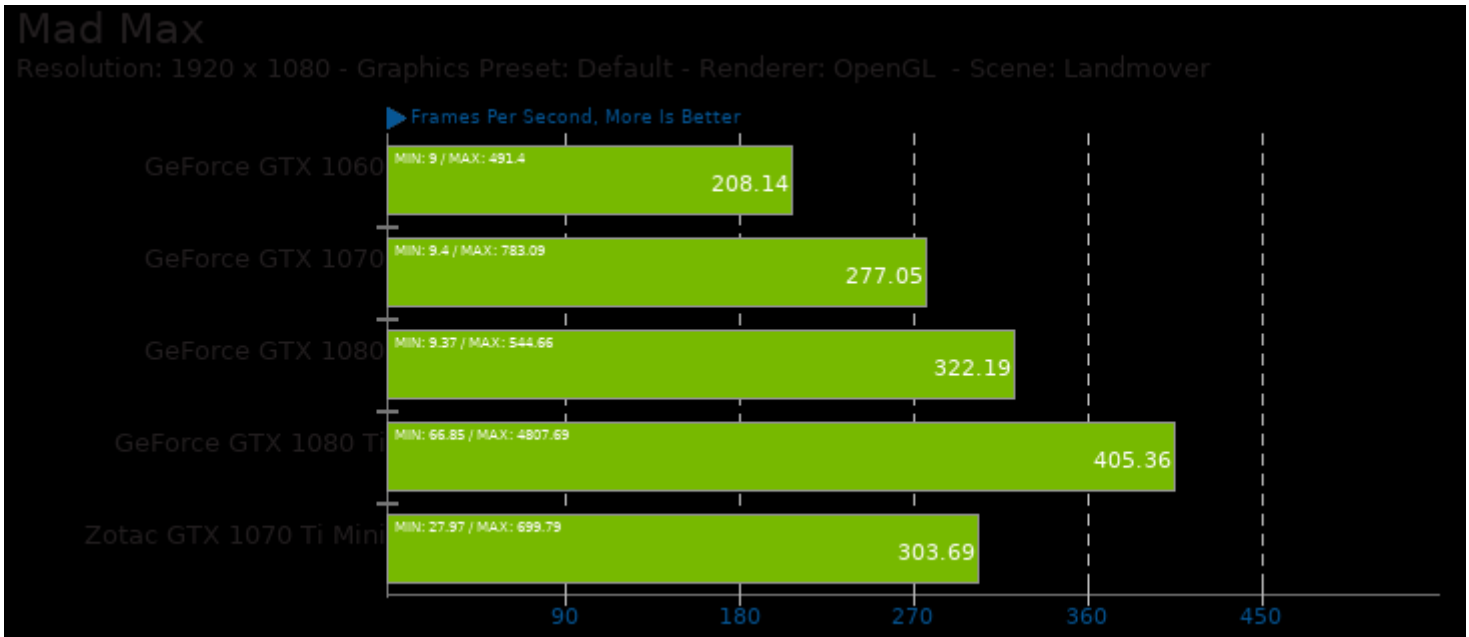

Mad Max
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.1 86.6 120.9
GeForce GTX 1070 37.5 111.9 149.5
GeForce GTX 1080 47.1 129.7 184.6
GeForce GTX 1080 Ti 17.5 173.4 252.3
Zotac GTX 1070 Ti Mini 51.4 128.5 177.6
Watts, Fewer Is Better
350
280
210
140
70

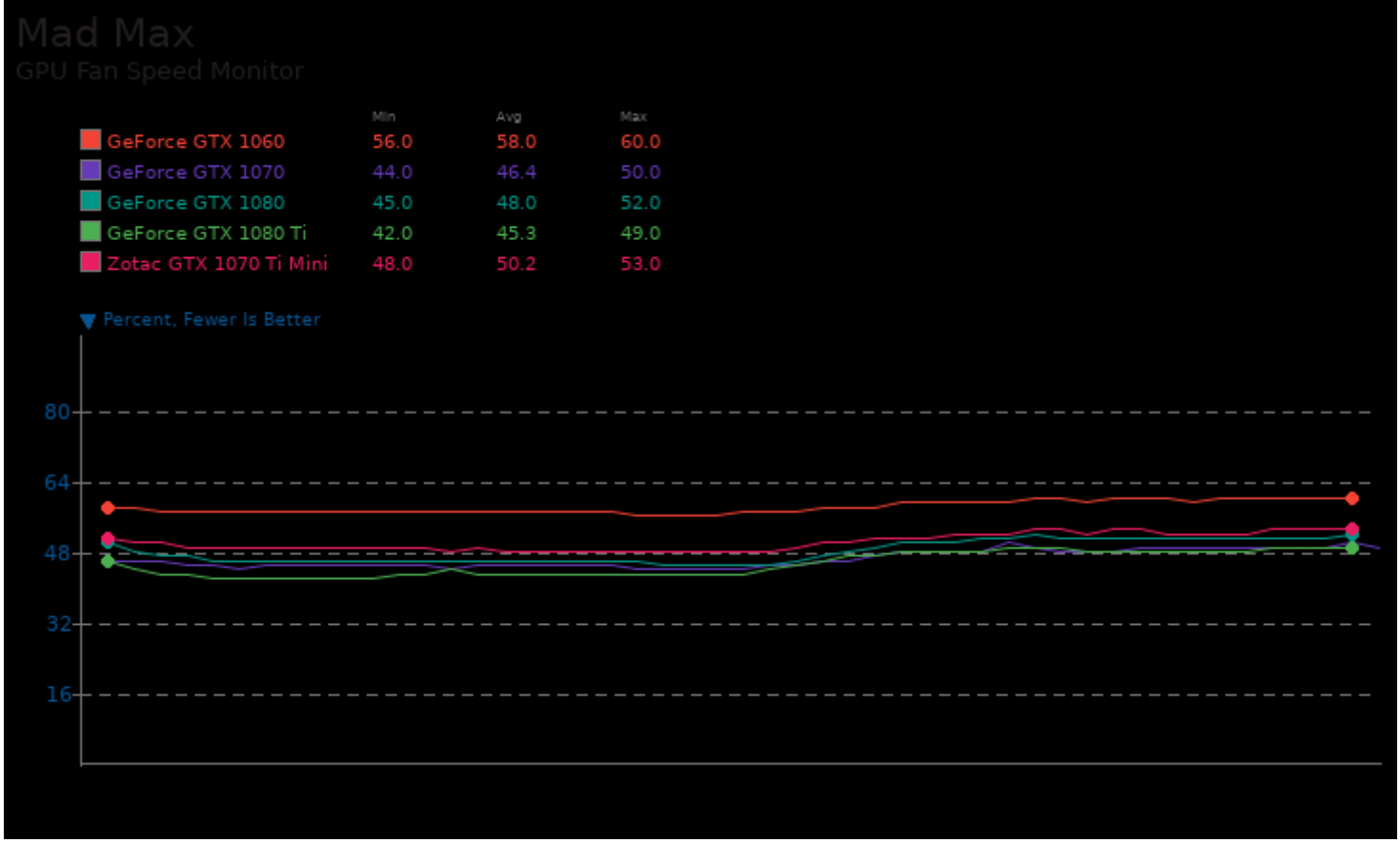

Mad Max
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 64.9 71.0
GeForce GTX 1070 59.0 68.5 75.0
GeForce GTX 1080 61.0 71.6 80.0
GeForce GTX 1080 Ti 64.0 74.5 84.0
Zotac GTX 1070 Ti Mini 50.0 58.3 64.0
Celsius, Fewer Is Better
100
80
60
40
20

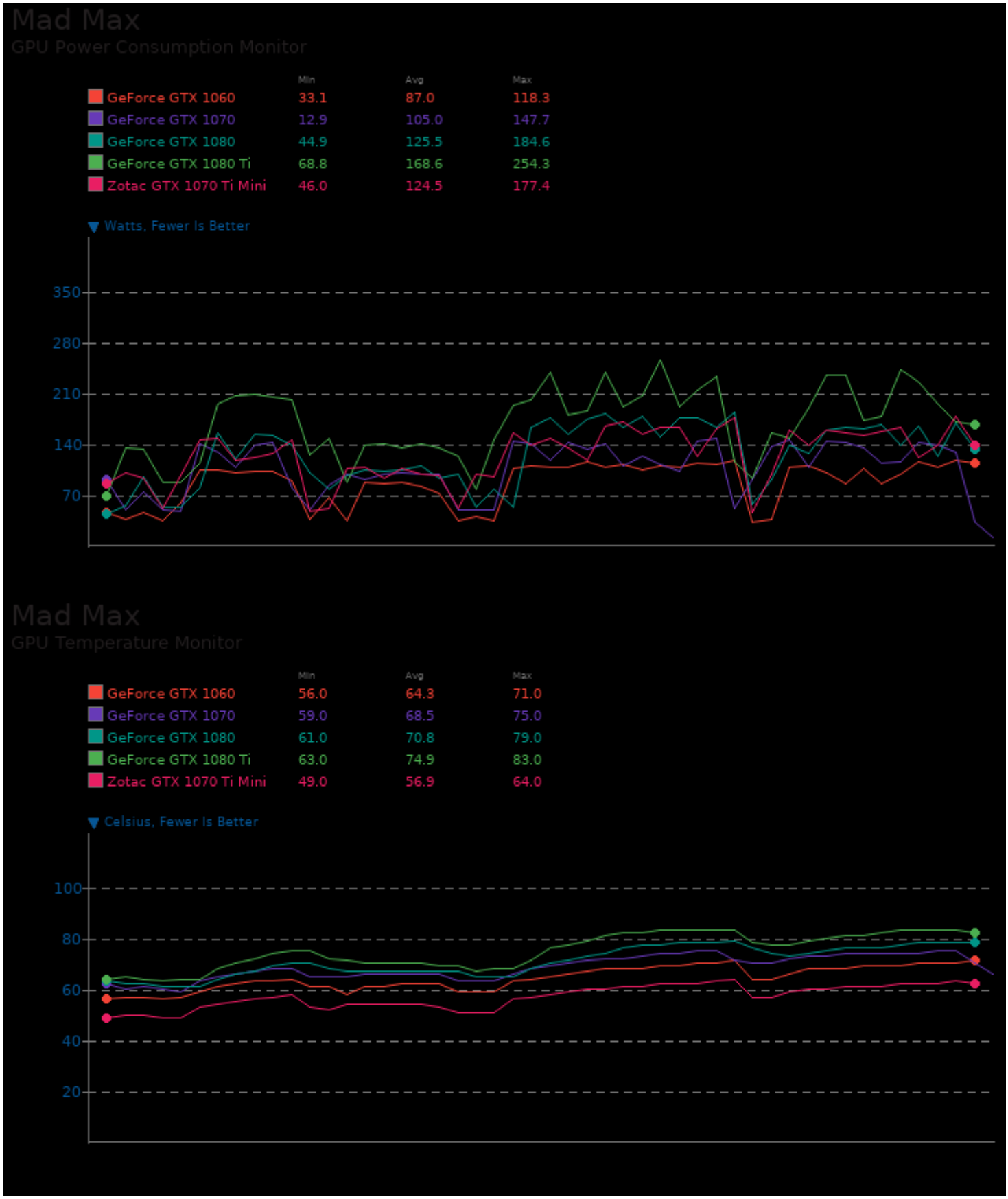

Mad Max
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 2.0 81.4 100.0
GeForce GTX 1070 1.0 76.0 100.0
GeForce GTX 1080 1.0 78.8 100.0
GeForce GTX 1080 Ti 1.0 69.1 100.0
Zotac GTX 1070 Ti Mini 2.0 82.9 100.0
Percent, Fewer Is Better
100
80
60
40
20

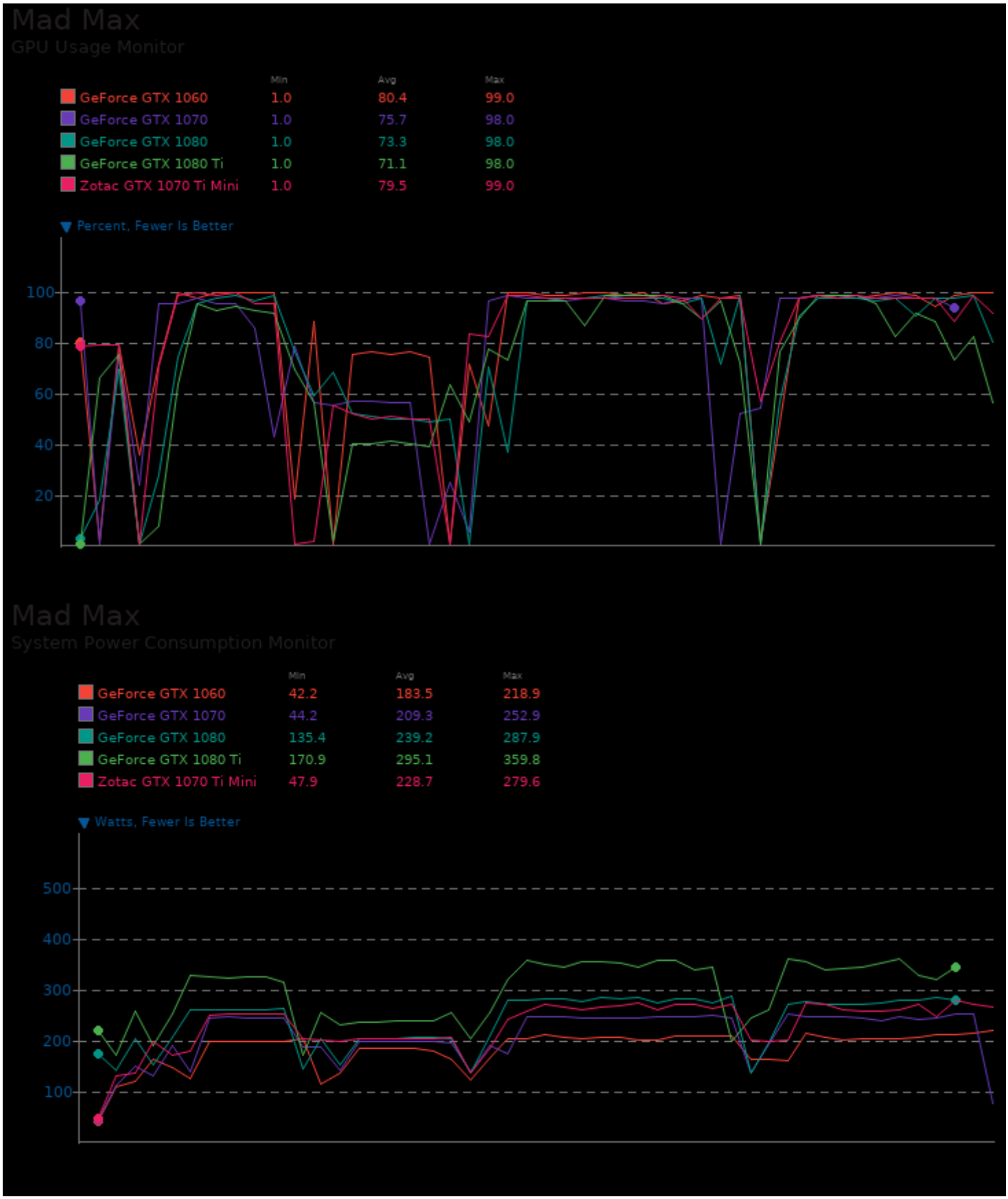

Mad Max
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 43.9 173.8 207.0
GeForce GTX 1070 44.5 202.4 241.1
GeForce GTX 1080 62.2 228.4 281.7
GeForce GTX 1080 Ti 126.9 279.8 355.3
Zotac GTX 1070 Ti Mini 46.1 225.3 278.1
Watts, Fewer Is Better
500
400
300
200
100
Mad Max
Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: OpenGL - Scene: Camp Hollow Point
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 60.11 / MAX: 226.3
180.52
GeForce GTX 1070
MIN: 107.99 / MAX: 281.45
234.14
GeForce GTX 1080
MIN: 125.34 / MAX: 318.98
277.19
GeForce GTX 1080 Ti
MIN: 147.47 / MAX: 366.17
340.69
Zotac GTX 1070 Ti Mini
MIN: 129.63 / MAX: 312.7
255.20
70
140
210
280
350

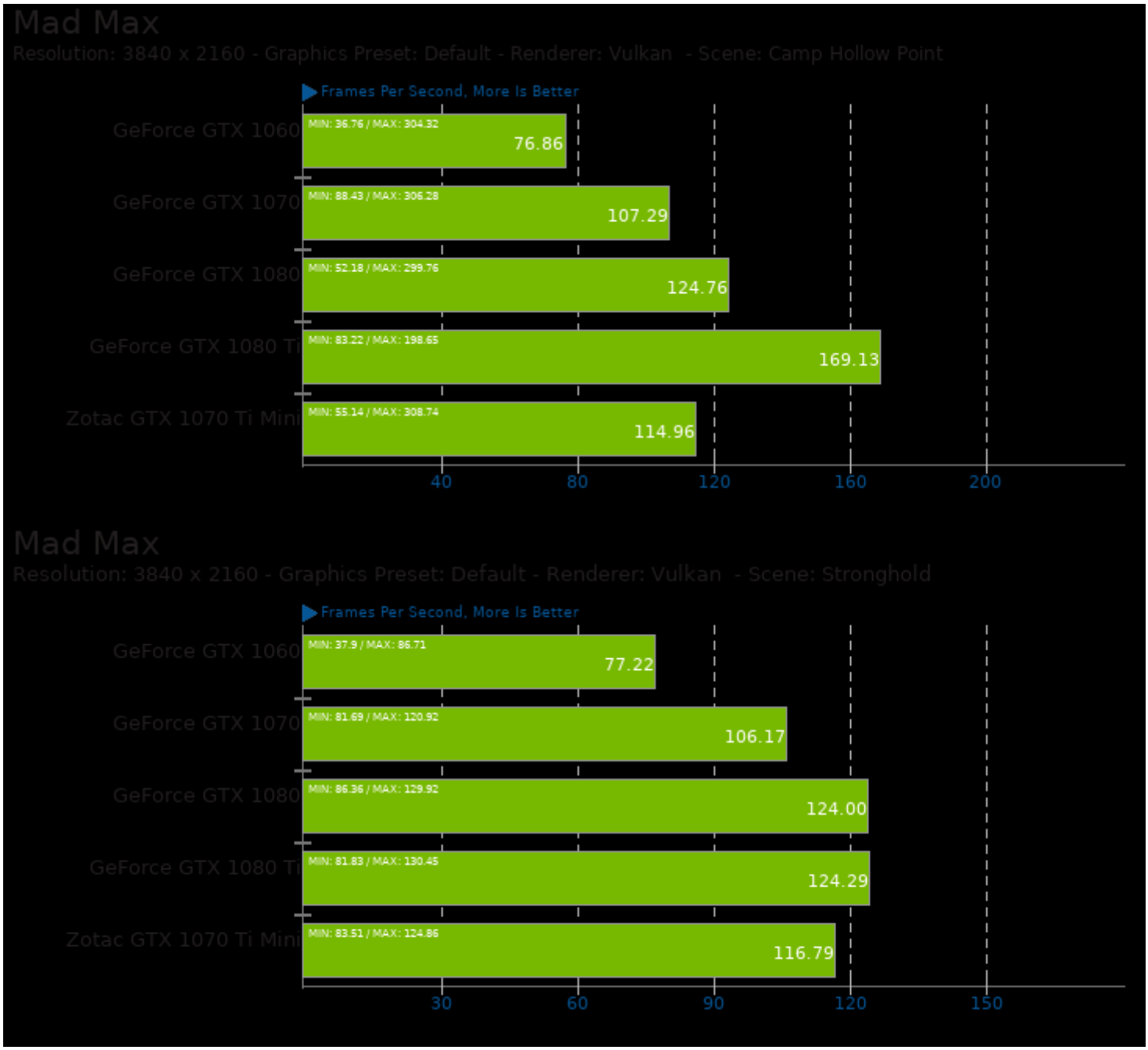

Mad Max
Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: OpenGL - Scene: Stronghold
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 88.04 / MAX: 129.22
123.00
GeForce GTX 1070
MIN: 54.74 / MAX: 127.53
120.80
GeForce GTX 1080
MIN: 47.53 / MAX: 131.1
123.58
GeForce GTX 1080 Ti
MIN: 83.12 / MAX: 128.82
122.23
Zotac GTX 1070 Ti Mini
MIN: 73.49 / MAX: 129.38
123.07
30
60
90
120
150
Mad Max
Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: OpenGL - Scene: Hope, Glory, and Dog is Dead
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 8.69 / MAX: 400.48
173.66
GeForce GTX 1070
MIN: 8.96 / MAX: 521.38
234.84
GeForce GTX 1080
MIN: 8.74 / MAX: 485.2
285.45
GeForce GTX 1080 Ti
MIN: 8.68 / MAX: 566.25
359.09
Zotac GTX 1070 Ti Mini
MIN: 94.81 / MAX: 442.09
261.00
80
160
240
320
400

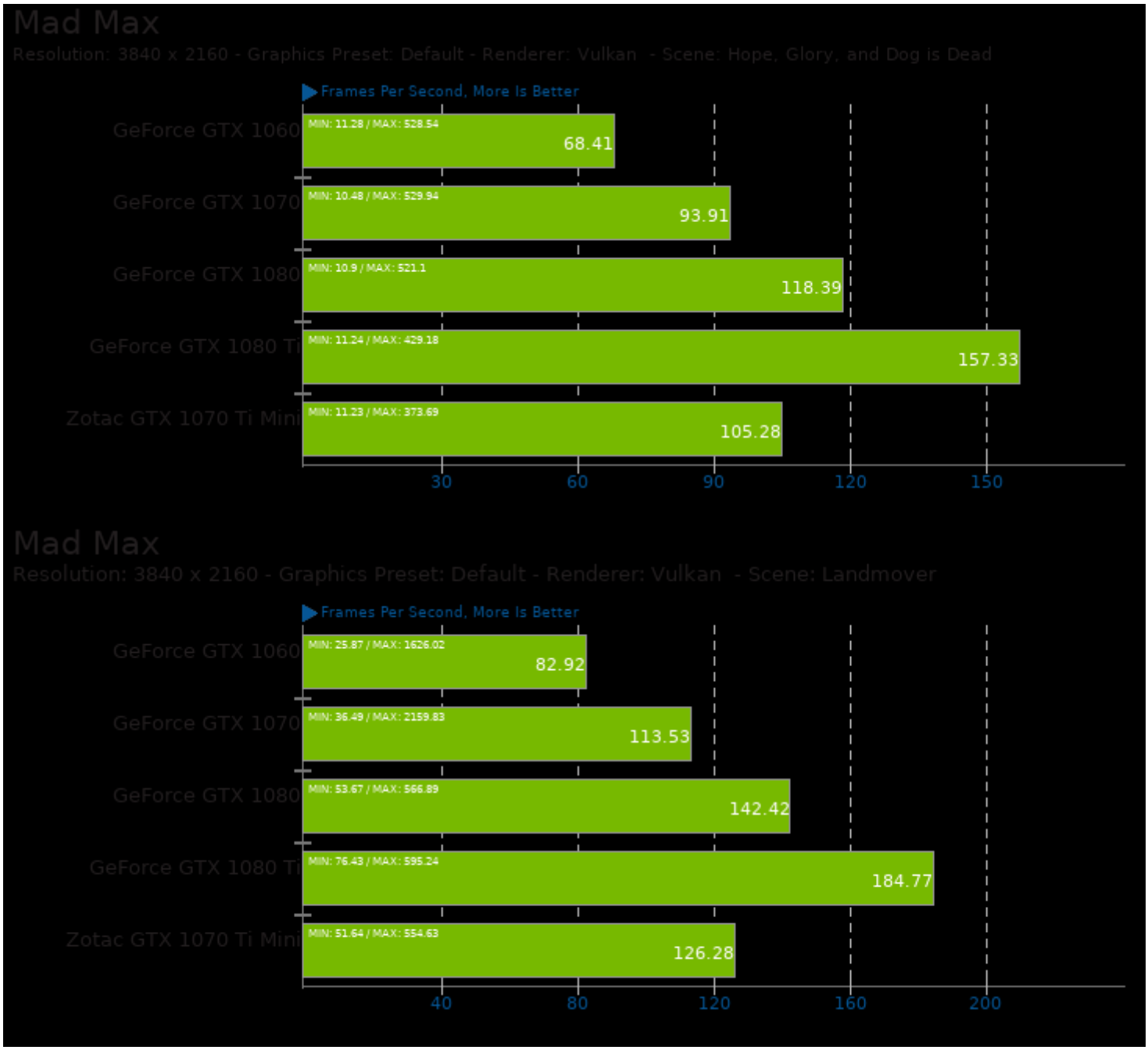

Mad Max
Resolution: 1920 x 1080 - Graphics Preset: Default - Renderer: OpenGL - Scene: Landmover
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 9 / MAX: 491.4
208.14
GeForce GTX 1070
MIN: 9.4 / MAX: 783.09
277.05
GeForce GTX 1080
MIN: 9.37 / MAX: 544.66
322.19
GeForce GTX 1080 Ti
MIN: 66.85 / MAX: 4807.69
405.36
Zotac GTX 1070 Ti Mini
MIN: 27.97 / MAX: 699.79
303.69
90
180
270
360
450

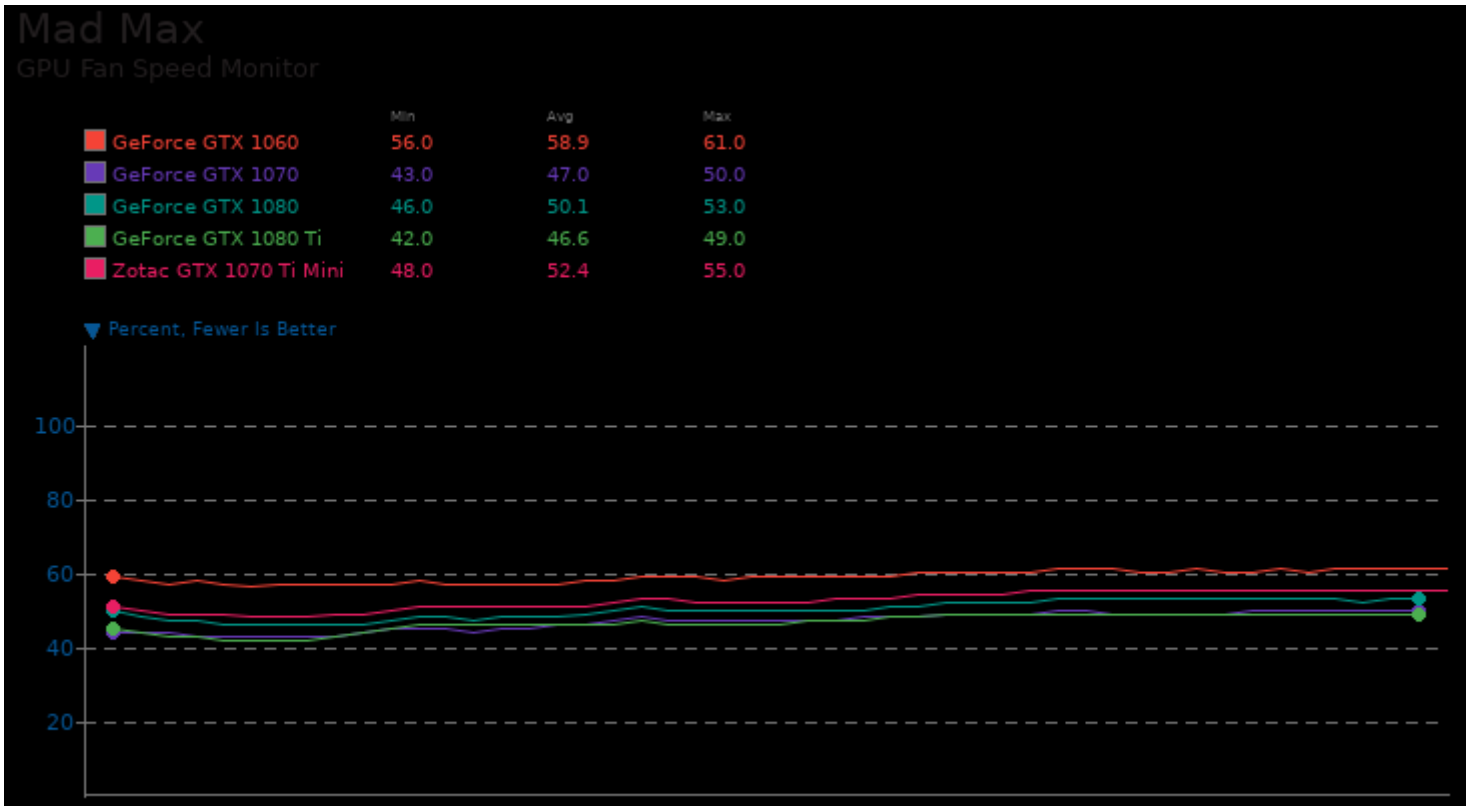

Mad Max
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 58.0 60.0
GeForce GTX 1070 44.0 46.4 50.0
GeForce GTX 1080 45.0 48.0 52.0
GeForce GTX 1080 Ti 42.0 45.3 49.0
Zotac GTX 1070 Ti Mini 48.0 50.2 53.0
Percent, Fewer Is Better
80
64
48
32
16


Mad Max
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 33.1 87.0 118.3
GeForce GTX 1070 12.9 105.0 147.7
GeForce GTX 1080 44.9 125.5 184.6
GeForce GTX 1080 Ti 68.8 168.6 254.3
Zotac GTX 1070 Ti Mini 46.0 124.5 177.4
Watts, Fewer Is Better
350
280
210
140
70
Mad Max
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 64.3 71.0
GeForce GTX 1070 59.0 68.5 75.0
GeForce GTX 1080 61.0 70.8 79.0
GeForce GTX 1080 Ti 63.0 74.9 83.0
Zotac GTX 1070 Ti Mini 49.0 56.9 64.0
Celsius, Fewer Is Better
100
80
60
40
20

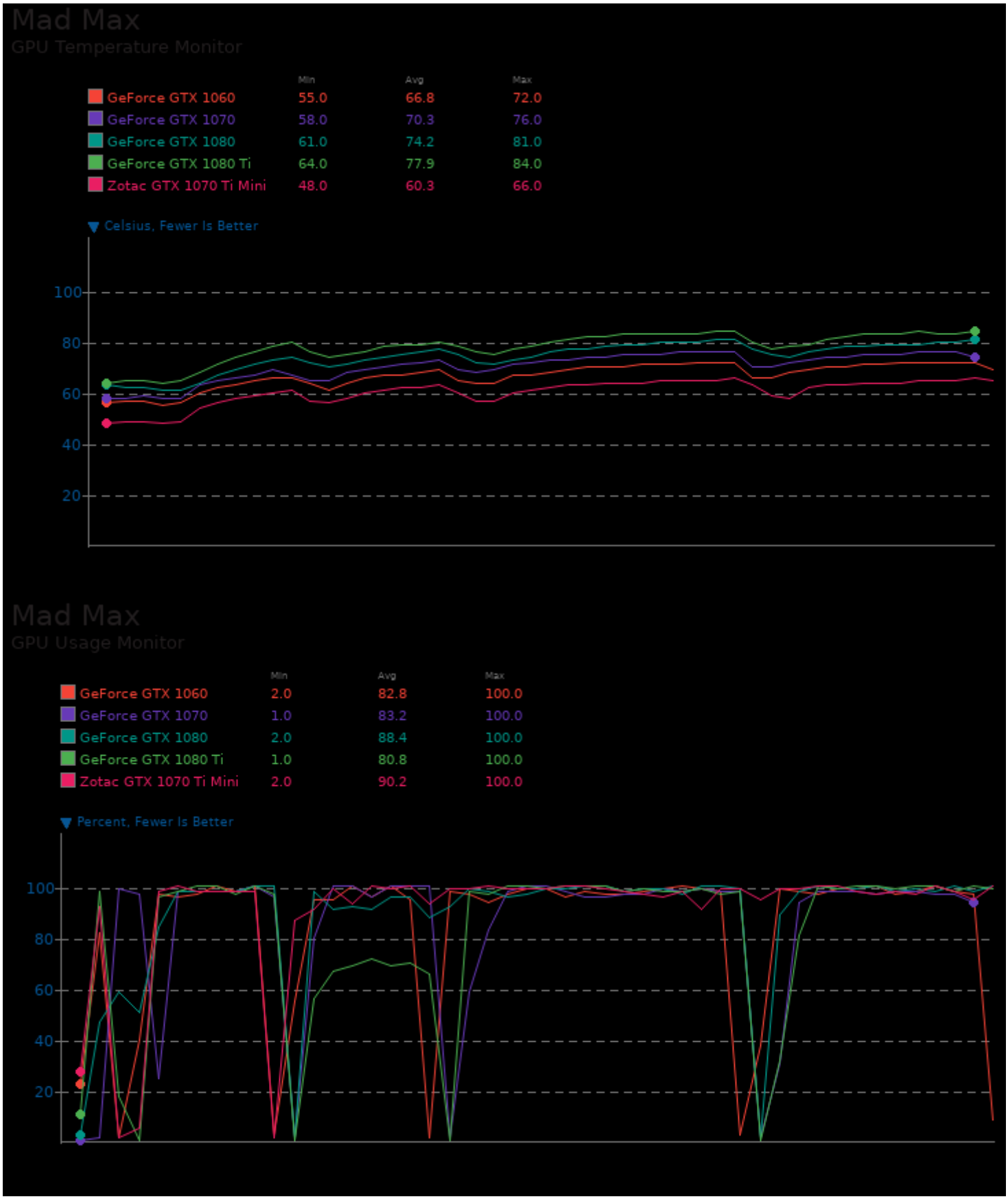

Mad Max
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 80.4 99.0
GeForce GTX 1070 1.0 75.7 98.0
GeForce GTX 1080 1.0 73.3 98.0
GeForce GTX 1080 Ti 1.0 71.1 98.0
Zotac GTX 1070 Ti Mini 1.0 79.5 99.0
Percent, Fewer Is Better
100
80
60
40
20
Mad Max
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 42.2 183.5 218.9
GeForce GTX 1070 44.2 209.3 252.9
GeForce GTX 1080 135.4 239.2 287.9
GeForce GTX 1080 Ti 170.9 295.1 359.8
Zotac GTX 1070 Ti Mini 47.9 228.7 279.6
Watts, Fewer Is Better
500
400
300
200
100

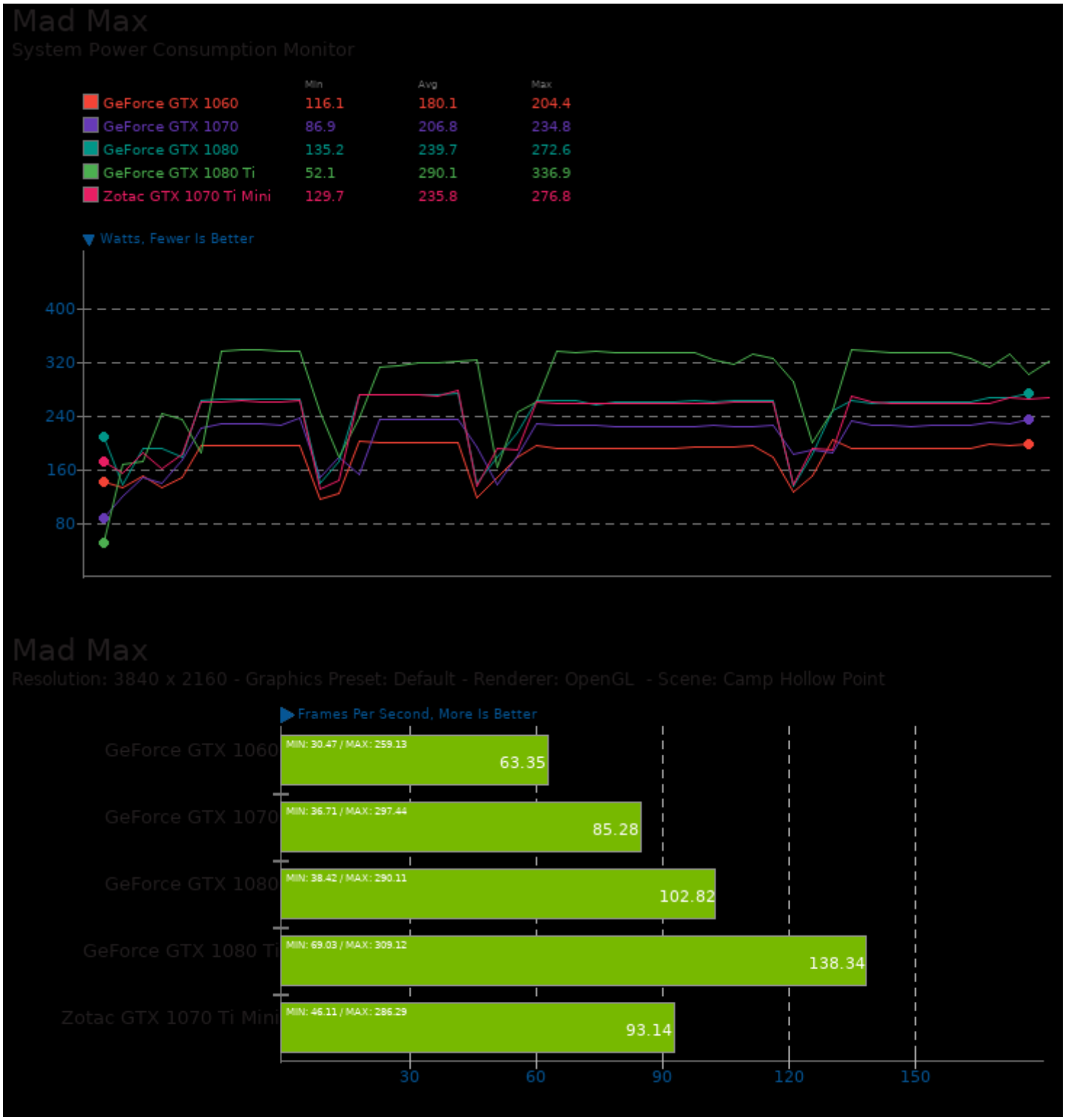

Mad Max
Resolution: 3840 x 2160 - Graphics Preset: Default - Renderer: Vulkan - Scene: Camp Hollow Point
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 36.76 / MAX: 304.32
76.86
GeForce GTX 1070
MIN: 88.43 / MAX: 306.28
107.29
GeForce GTX 1080
MIN: 52.18 / MAX: 299.76
124.76
GeForce GTX 1080 Ti
MIN: 83.22 / MAX: 198.65
169.13
Zotac GTX 1070 Ti Mini
MIN: 55.14 / MAX: 308.74
114.96
40
80
120
160
200
Mad Max
Resolution: 3840 x 2160 - Graphics Preset: Default - Renderer: Vulkan - Scene: Stronghold
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 37.9 / MAX: 86.71
77.22
GeForce GTX 1070
MIN: 81.69 / MAX: 120.92
106.17
GeForce GTX 1080
MIN: 86.36 / MAX: 129.92
124.00
GeForce GTX 1080 Ti
MIN: 81.83 / MAX: 130.45
124.29
Zotac GTX 1070 Ti Mini
MIN: 83.51 / MAX: 124.86
116.79
30
60
90
120
150

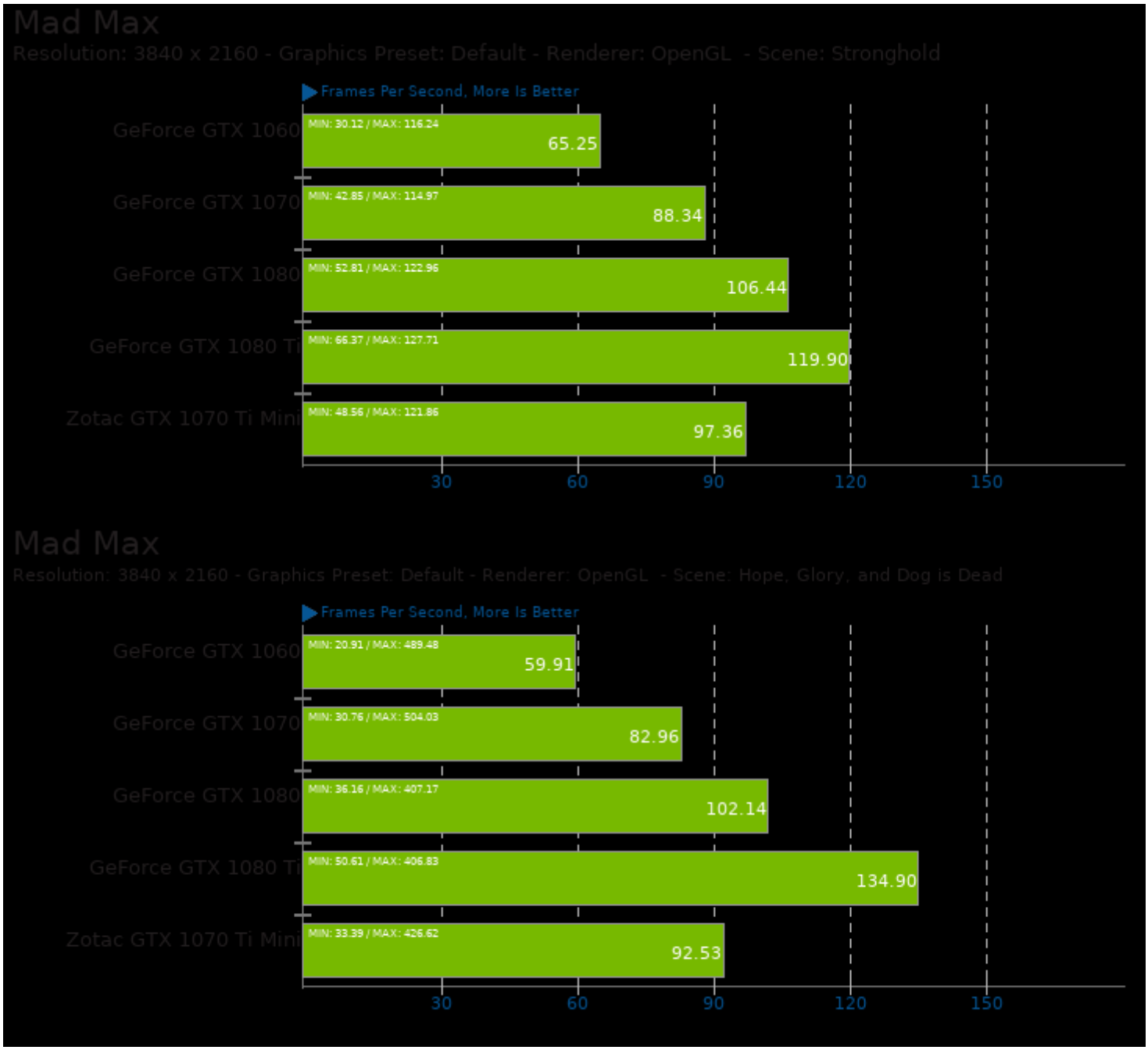

Mad Max
Resolution: 3840 x 2160 - Graphics Preset: Default - Renderer: Vulkan - Scene: Hope, Glory, and Dog is Dead
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 11.28 / MAX: 528.54
68.41
GeForce GTX 1070
MIN: 10.48 / MAX: 529.94
93.91
GeForce GTX 1080
MIN: 10.9 / MAX: 521.1
118.39
GeForce GTX 1080 Ti
MIN: 11.24 / MAX: 429.18
157.33
Zotac GTX 1070 Ti Mini
MIN: 11.23 / MAX: 373.69
105.28
30
60
90
120
150
Mad Max
Resolution: 3840 x 2160 - Graphics Preset: Default - Renderer: Vulkan - Scene: Landmover
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 25.87 / MAX: 1626.02
82.92
GeForce GTX 1070
MIN: 36.49 / MAX: 2159.83
113.53
GeForce GTX 1080
MIN: 53.67 / MAX: 566.89
142.42
GeForce GTX 1080 Ti
MIN: 76.43 / MAX: 595.24
184.77
Zotac GTX 1070 Ti Mini
MIN: 51.64 / MAX: 554.63
126.28
40
80
120
160
200

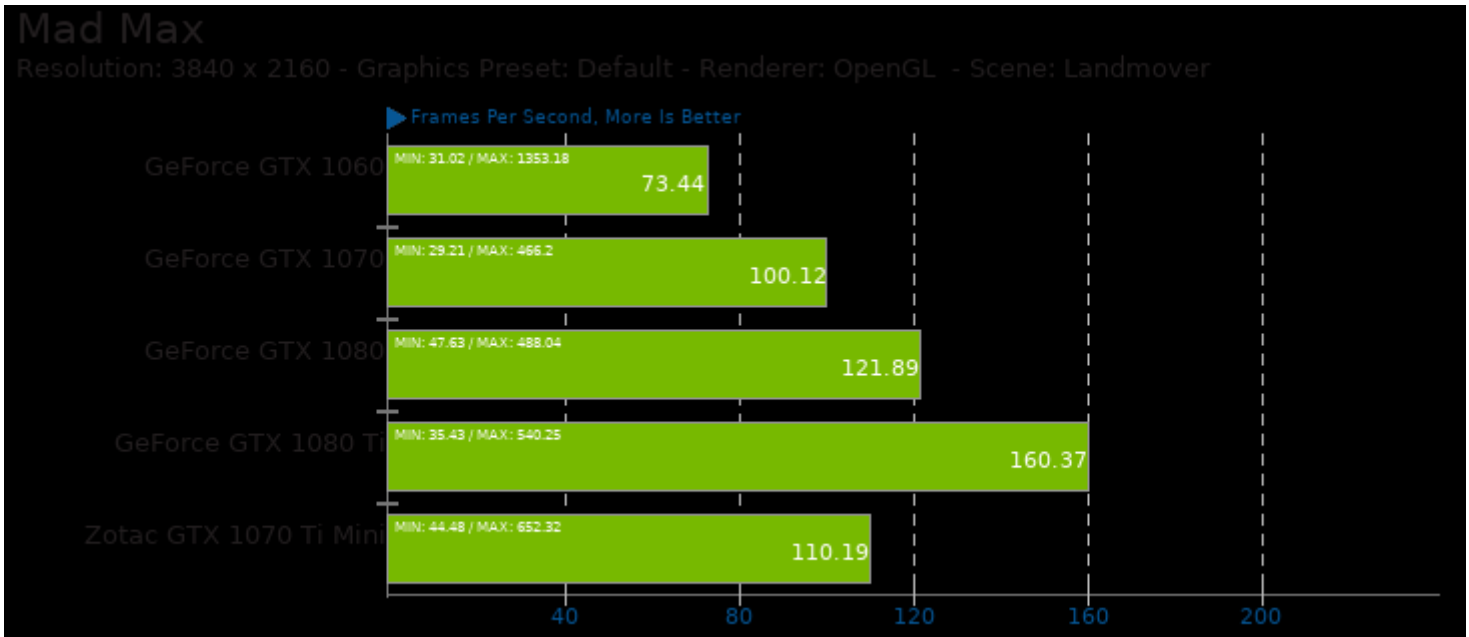

Mad Max
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 58.9 61.0
GeForce GTX 1070 43.0 47.0 50.0
GeForce GTX 1080 46.0 50.1 53.0
GeForce GTX 1080 Ti 42.0 46.6 49.0
Zotac GTX 1070 Ti Mini 48.0 52.4 55.0
Percent, Fewer Is Better
100
80
60
40
20

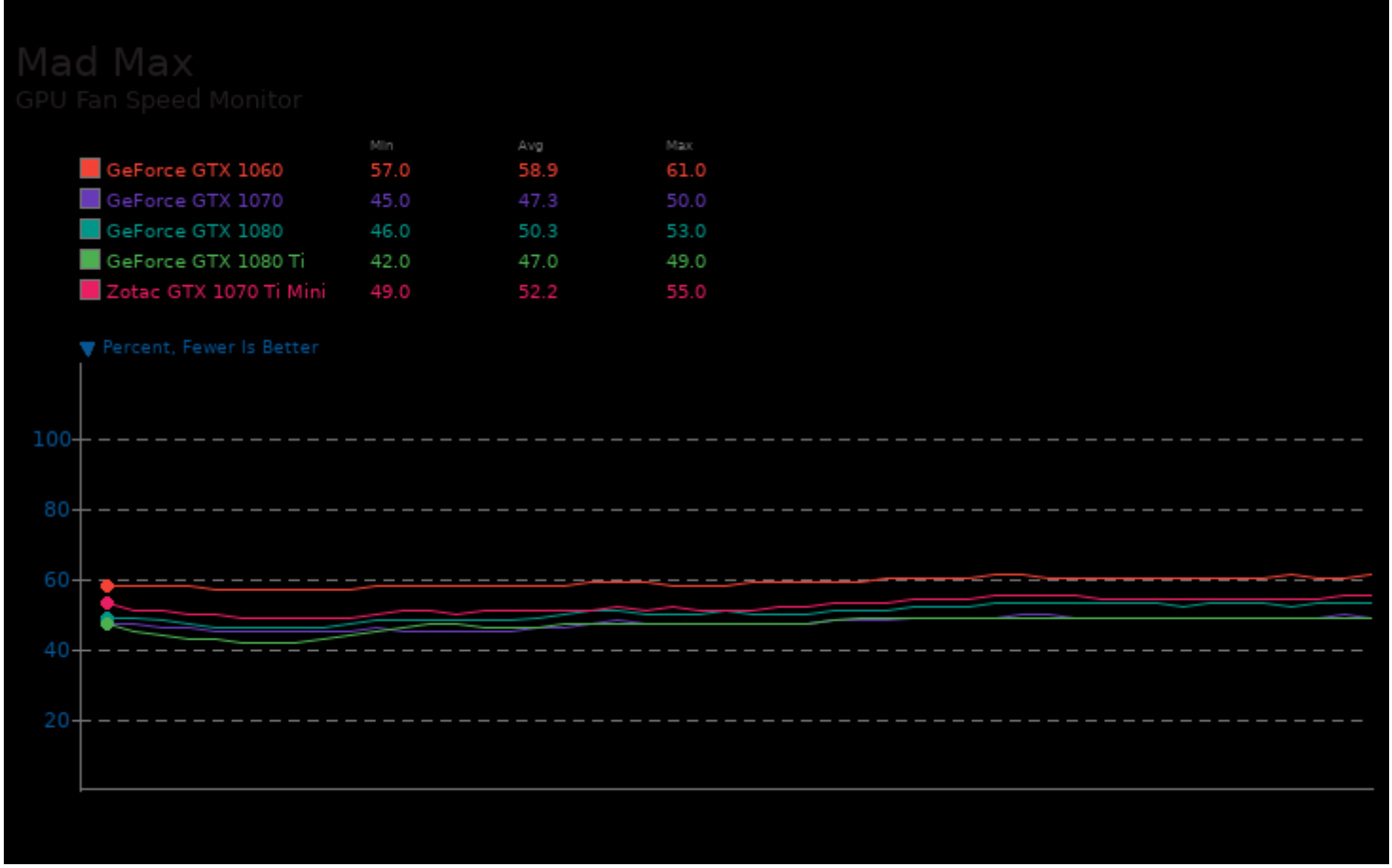

Mad Max
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 12.2 97.6 124.5
GeForce GTX 1070 45.3 120.1 153.5
GeForce GTX 1080 44.6 146.0 187.4
GeForce GTX 1080 Ti 68.5 195.7 259.9
Zotac GTX 1070 Ti Mini 18.2 147.0 186.5
Watts, Fewer Is Better
350
280
210
140
70

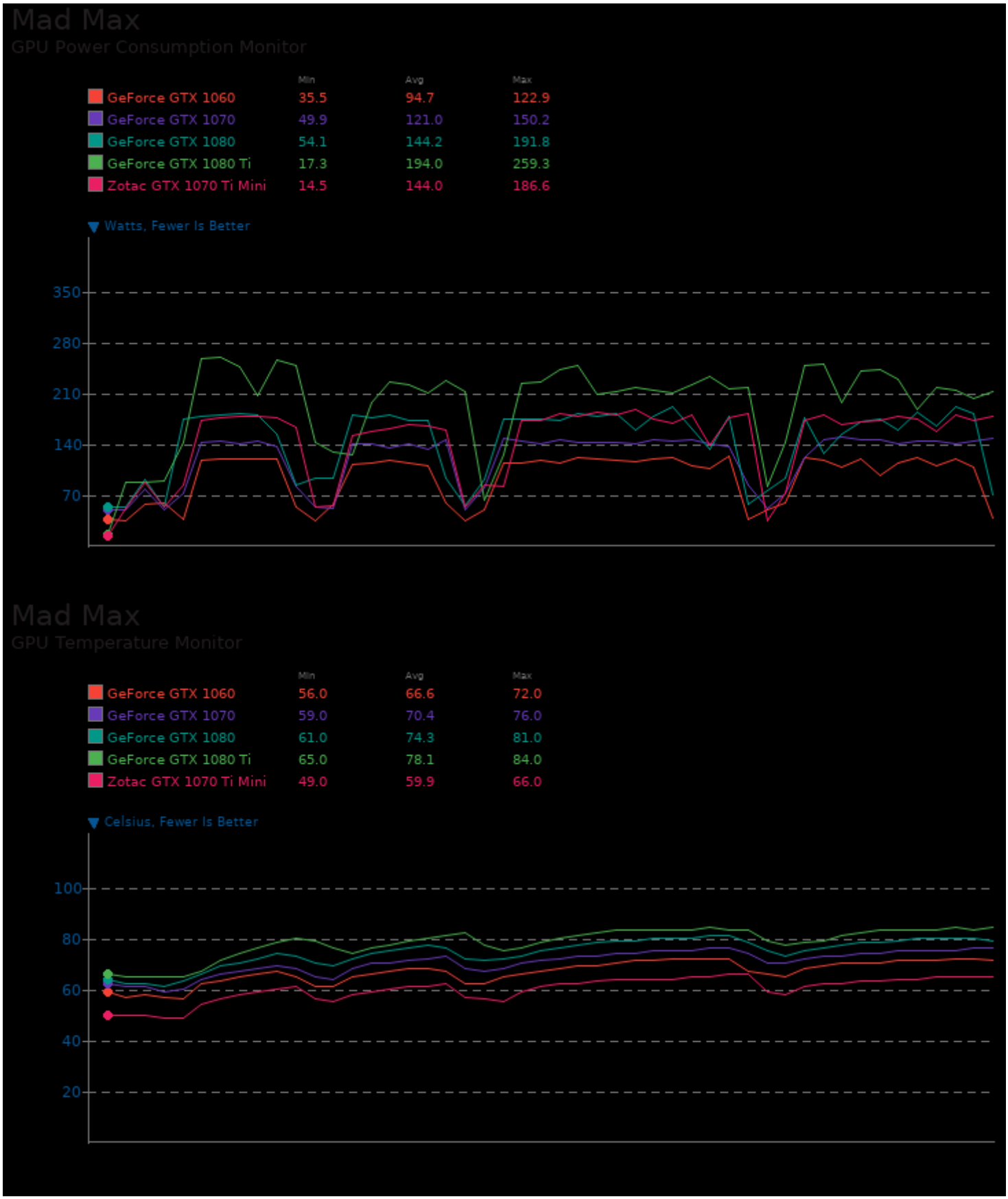

Mad Max
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 66.8 72.0
GeForce GTX 1070 58.0 70.3 76.0
GeForce GTX 1080 61.0 74.2 81.0
GeForce GTX 1080 Ti 64.0 77.9 84.0
Zotac GTX 1070 Ti Mini 48.0 60.3 66.0
Celsius, Fewer Is Better
100
80
60
40
20
Mad Max
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 2.0 82.8 100.0
GeForce GTX 1070 1.0 83.2 100.0
GeForce GTX 1080 2.0 88.4 100.0
GeForce GTX 1080 Ti 1.0 80.8 100.0
Zotac GTX 1070 Ti Mini 2.0 90.2 100.0
Percent, Fewer Is Better
100
80
60
40
20

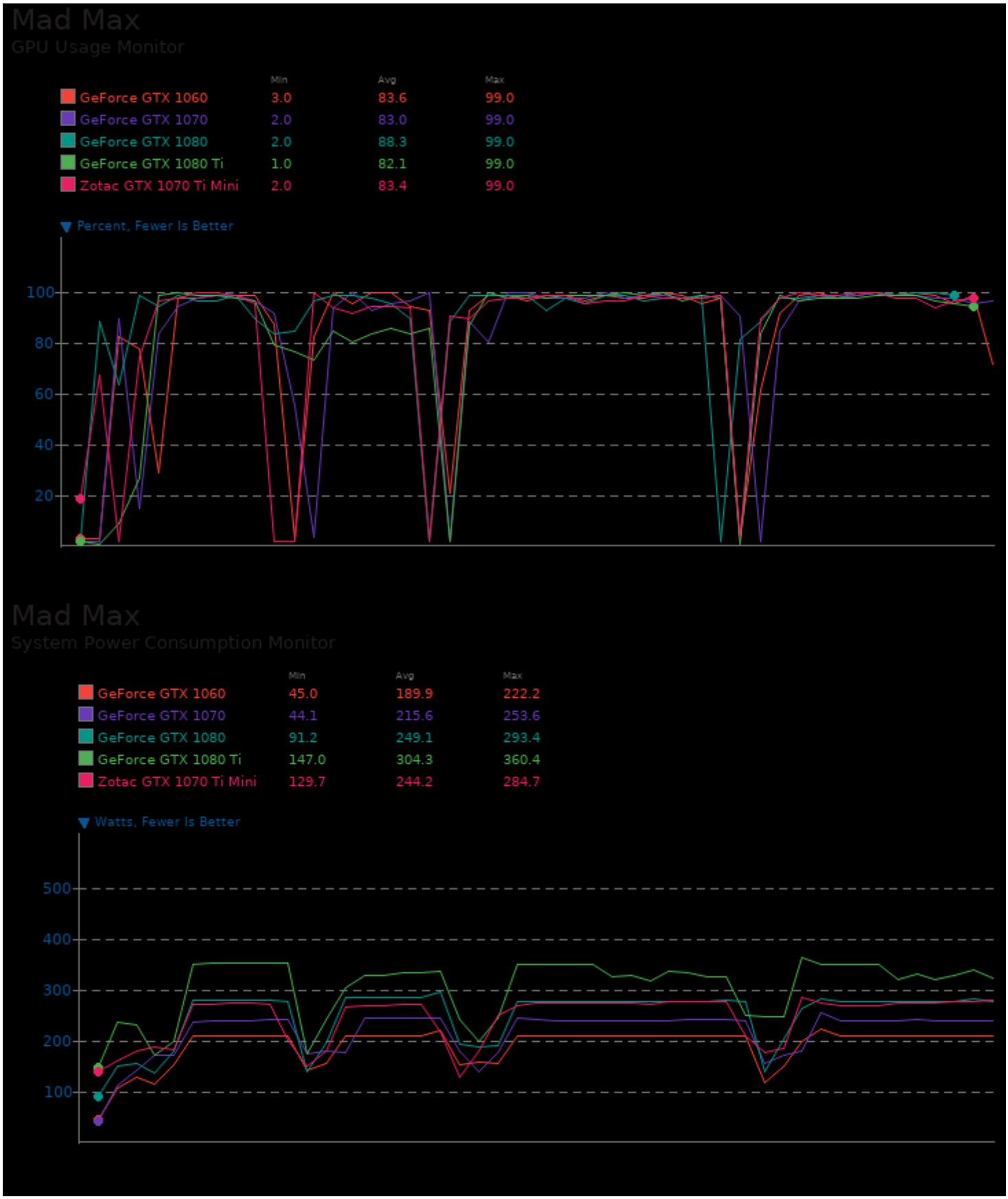

Mad Max
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 116.1 180.1 204.4
GeForce GTX 1070 86.9 206.8 234.8
GeForce GTX 1080 135.2 239.7 272.6
GeForce GTX 1080 Ti 52.1 290.1 336.9
Zotac GTX 1070 Ti Mini 129.7 235.8 276.8
Watts, Fewer Is Better
400
320
240
160
80
Mad Max
Resolution: 3840 x 2160 - Graphics Preset: Default - Renderer: OpenGL - Scene: Camp Hollow Point
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 30.47 / MAX: 259.13
63.35
GeForce GTX 1070
MIN: 36.71 / MAX: 297.44
85.28
GeForce GTX 1080
MIN: 38.42 / MAX: 290.11
102.82
GeForce GTX 1080 Ti
MIN: 69.03 / MAX: 309.12
138.34
Zotac GTX 1070 Ti Mini
MIN: 46.11 / MAX: 286.29
93.14
30
60
90
120
150

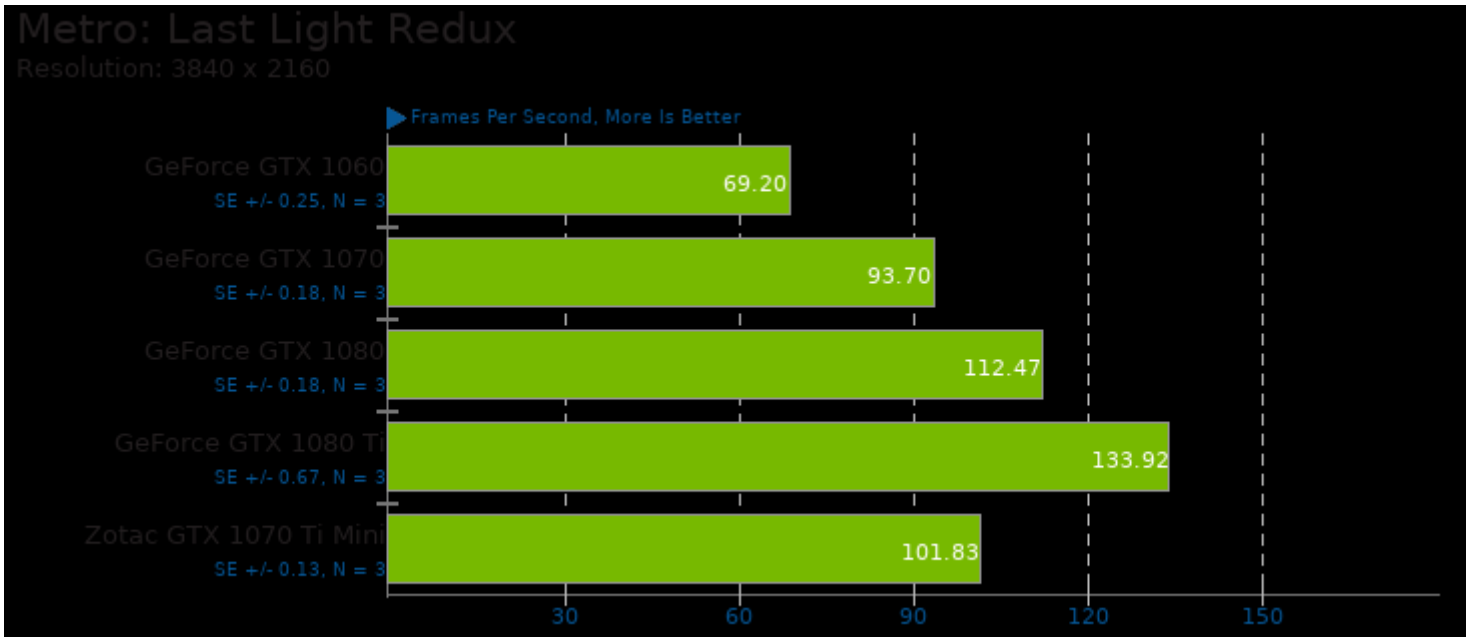

Mad Max
Resolution: 3840 x 2160 - Graphics Preset: Default - Renderer: OpenGL - Scene: Stronghold
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 30.12 / MAX: 116.24
65.25
GeForce GTX 1070
MIN: 42.85 / MAX: 114.97
88.34
GeForce GTX 1080
MIN: 52.81 / MAX: 122.96
106.44
GeForce GTX 1080 Ti
MIN: 66.37 / MAX: 127.71
119.90
Zotac GTX 1070 Ti Mini
MIN: 48.56 / MAX: 121.86
97.36
30
60
90
120
150
Mad Max
Resolution: 3840 x 2160 - Graphics Preset: Default - Renderer: OpenGL - Scene: Hope, Glory, and Dog is Dead
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 20.91 / MAX: 489.48
59.91
GeForce GTX 1070
MIN: 30.76 / MAX: 504.03
82.96
GeForce GTX 1080
MIN: 36.16 / MAX: 407.17
102.14
GeForce GTX 1080 Ti
MIN: 50.61 / MAX: 406.83
134.90
Zotac GTX 1070 Ti Mini
MIN: 33.39 / MAX: 426.62
92.53
30
60
90
120
150

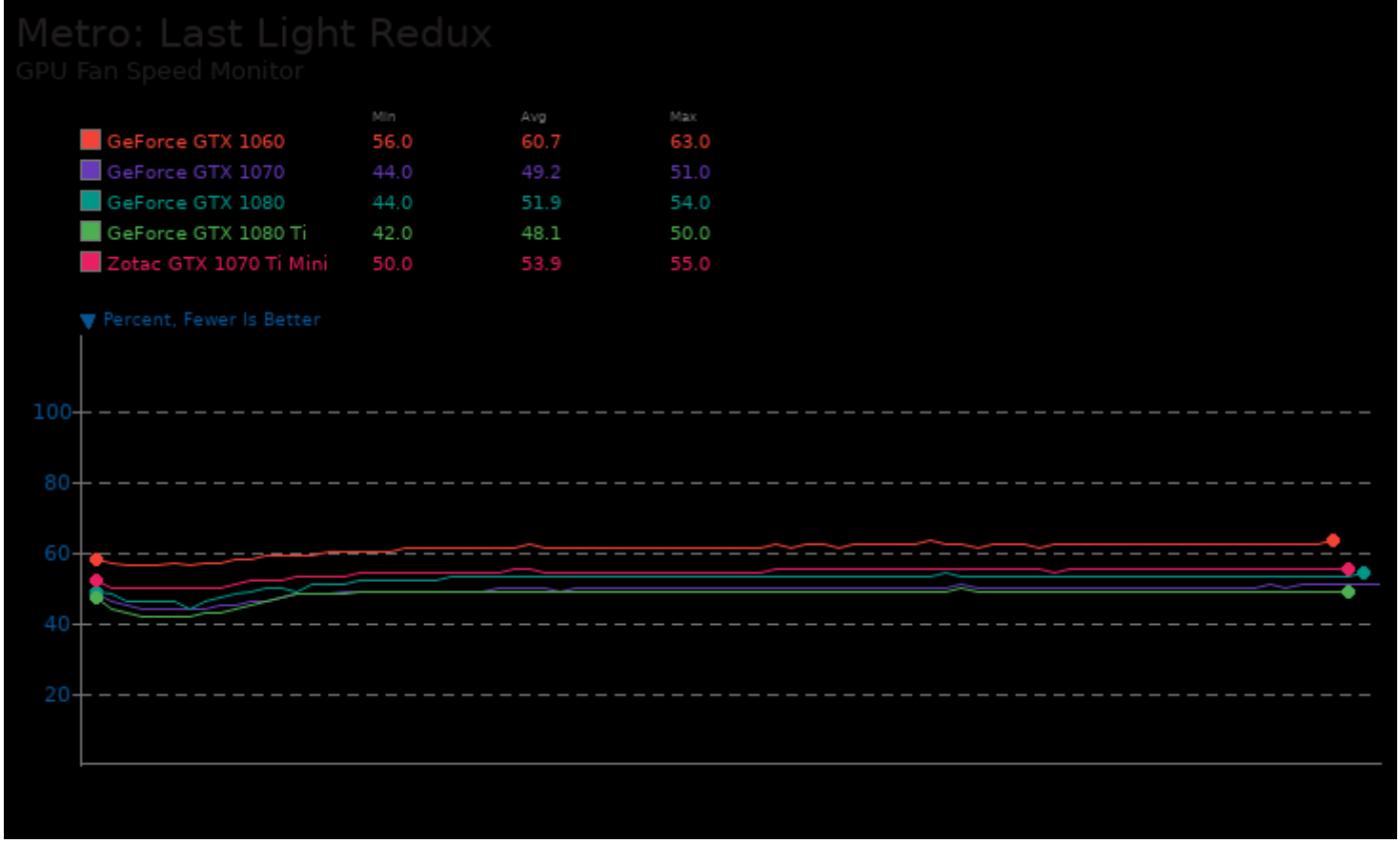

Mad Max
Resolution: 3840 x 2160 - Graphics Preset: Default - Renderer: OpenGL - Scene: Landmover
Frames Per Second, More Is Better
GeForce GTX 1060
MIN: 31.02 / MAX: 1353.18
73.44
GeForce GTX 1070
MIN: 29.21 / MAX: 466.2
100.12
GeForce GTX 1080
MIN: 47.63 / MAX: 488.04
121.89
GeForce GTX 1080 Ti
MIN: 35.43 / MAX: 540.25
160.37
Zotac GTX 1070 Ti Mini
MIN: 44.48 / MAX: 652.32
110.19
40
80
120
160
200


Mad Max
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 58.9 61.0
GeForce GTX 1070 45.0 47.3 50.0
GeForce GTX 1080 46.0 50.3 53.0
GeForce GTX 1080 Ti 42.0 47.0 49.0
Zotac GTX 1070 Ti Mini 49.0 52.2 55.0
Percent, Fewer Is Better
100
80
60
40
20


Mad Max
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 35.5 94.7 122.9
GeForce GTX 1070 49.9 121.0 150.2
GeForce GTX 1080 54.1 144.2 191.8
GeForce GTX 1080 Ti 17.3 194.0 259.3
Zotac GTX 1070 Ti Mini 14.5 144.0 186.6
Watts, Fewer Is Better
350
280
210
140
70
Mad Max
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 66.6 72.0
GeForce GTX 1070 59.0 70.4 76.0
GeForce GTX 1080 61.0 74.3 81.0
GeForce GTX 1080 Ti 65.0 78.1 84.0
Zotac GTX 1070 Ti Mini 49.0 59.9 66.0
Celsius, Fewer Is Better
100
80
60
40
20


Mad Max
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 3.0 83.6 99.0
GeForce GTX 1070 2.0 83.0 99.0
GeForce GTX 1080 2.0 88.3 99.0
GeForce GTX 1080 Ti 1.0 82.1 99.0
Zotac GTX 1070 Ti Mini 2.0 83.4 99.0
Percent, Fewer Is Better
100
80
60
40
20
Mad Max
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 45.0 189.9 222.2
GeForce GTX 1070 44.1 215.6 253.6
GeForce GTX 1080 91.2 249.1 293.4
GeForce GTX 1080 Ti 147.0 304.3 360.4
Zotac GTX 1070 Ti Mini 129.7 244.2 284.7
Watts, Fewer Is Better
500
400
300
200
100


Metro: Last Light Redux
Resolution: 3840 x 2160
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.25, N = 3
69.20
GeForce GTX 1070
SE +/- 0.18, N = 3
93.70
GeForce GTX 1080
SE +/- 0.18, N = 3
112.47
GeForce GTX 1080 Ti
SE +/- 0.67, N = 3
133.92
Zotac GTX 1070 Ti Mini
SE +/- 0.13, N = 3
101.83
30
60
90
120
150

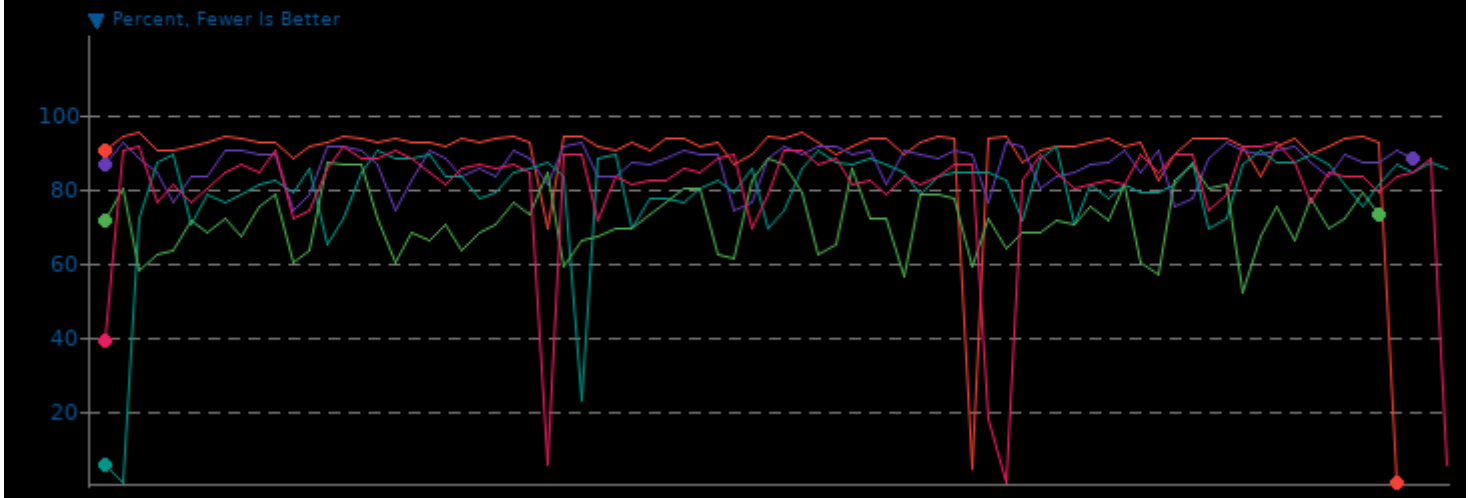

Metro: Last Light Redux
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 60.7 63.0
GeForce GTX 1070 44.0 49.2 51.0
GeForce GTX 1080 44.0 51.9 54.0
GeForce GTX 1080 Ti 42.0 48.1 50.0
Zotac GTX 1070 Ti Mini 50.0 53.9 55.0
Percent, Fewer Is Better
100
80
60
40
20


Metro: Last Light Redux
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 8.1 106.7 129.1
GeForce GTX 1070 11.0 131.2 152.7
GeForce GTX 1080 10.8 153.1 189.3
GeForce GTX 1080 Ti 17.2 202.0 249.3
Zotac GTX 1070 Ti Mini 14.4 153.0 183.8
Watts, Fewer Is Better
300
240
180
120
60
Metro: Last Light Redux
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 70.8 74.0
GeForce GTX 1070 58.0 74.0 77.0
GeForce GTX 1080 61.0 77.7 82.0
GeForce GTX 1080 Ti 62.0 80.9 84.0
Zotac GTX 1070 Ti Mini 49.0 62.7 65.0
Celsius, Fewer Is Better
100
80
60
40
20

Metro: Last Light Redux

GPU Usage Monitor

	Min	Avg	Max
GeForce GTX 1060	1.0	89.0	95.0
GeForce GTX 1070	74.0	86.3	92.0
GeForce GTX 1080	1.0	79.0	91.0
GeForce GTX 1080 Ti	52.0	71.5	88.0
Zotac GTX 1070 Ti Mini	1.0	79.5	92.0

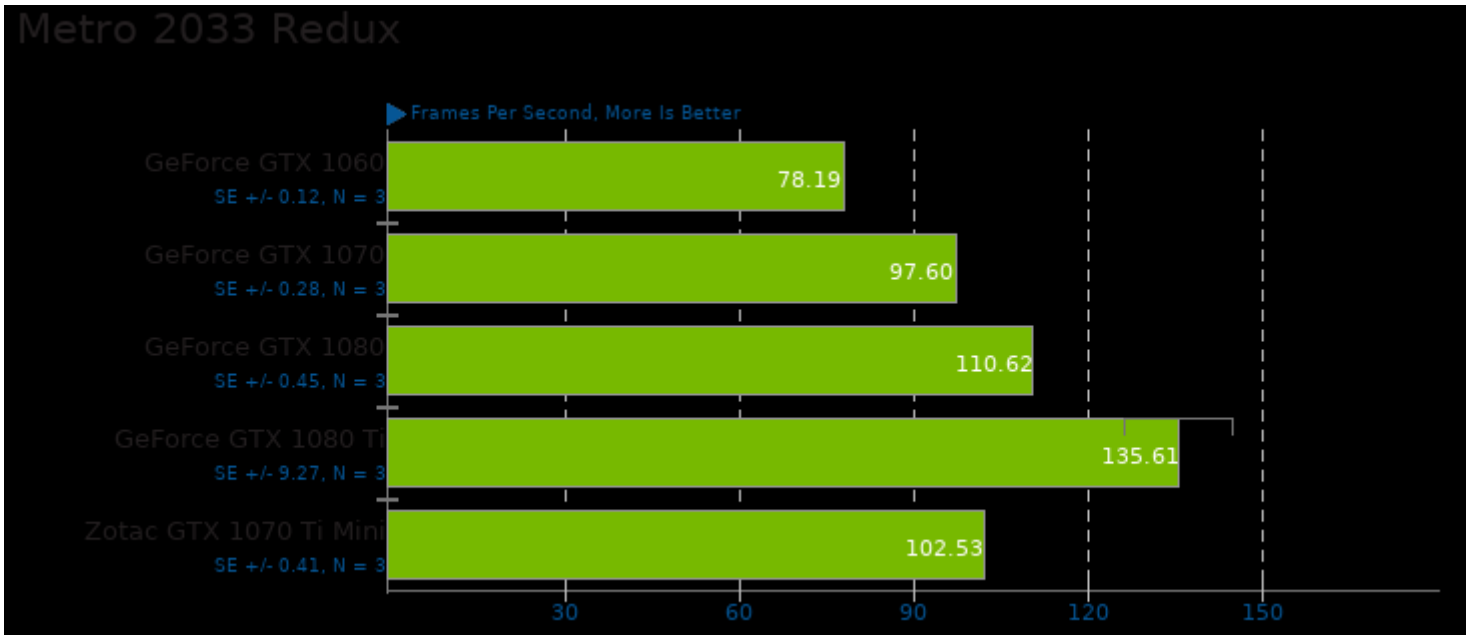


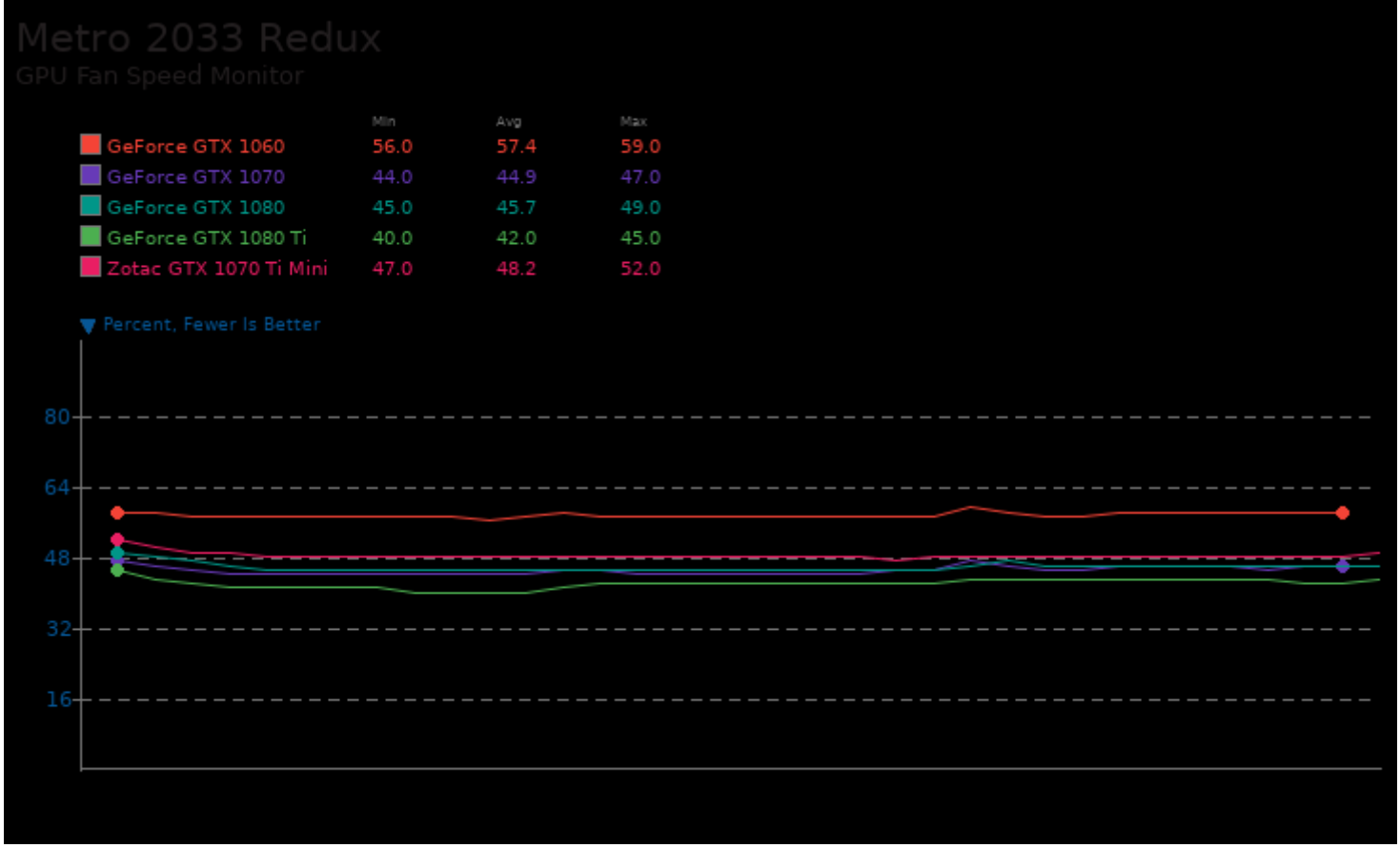
Metro: Last Light Redux

System Power Consumption Monitor

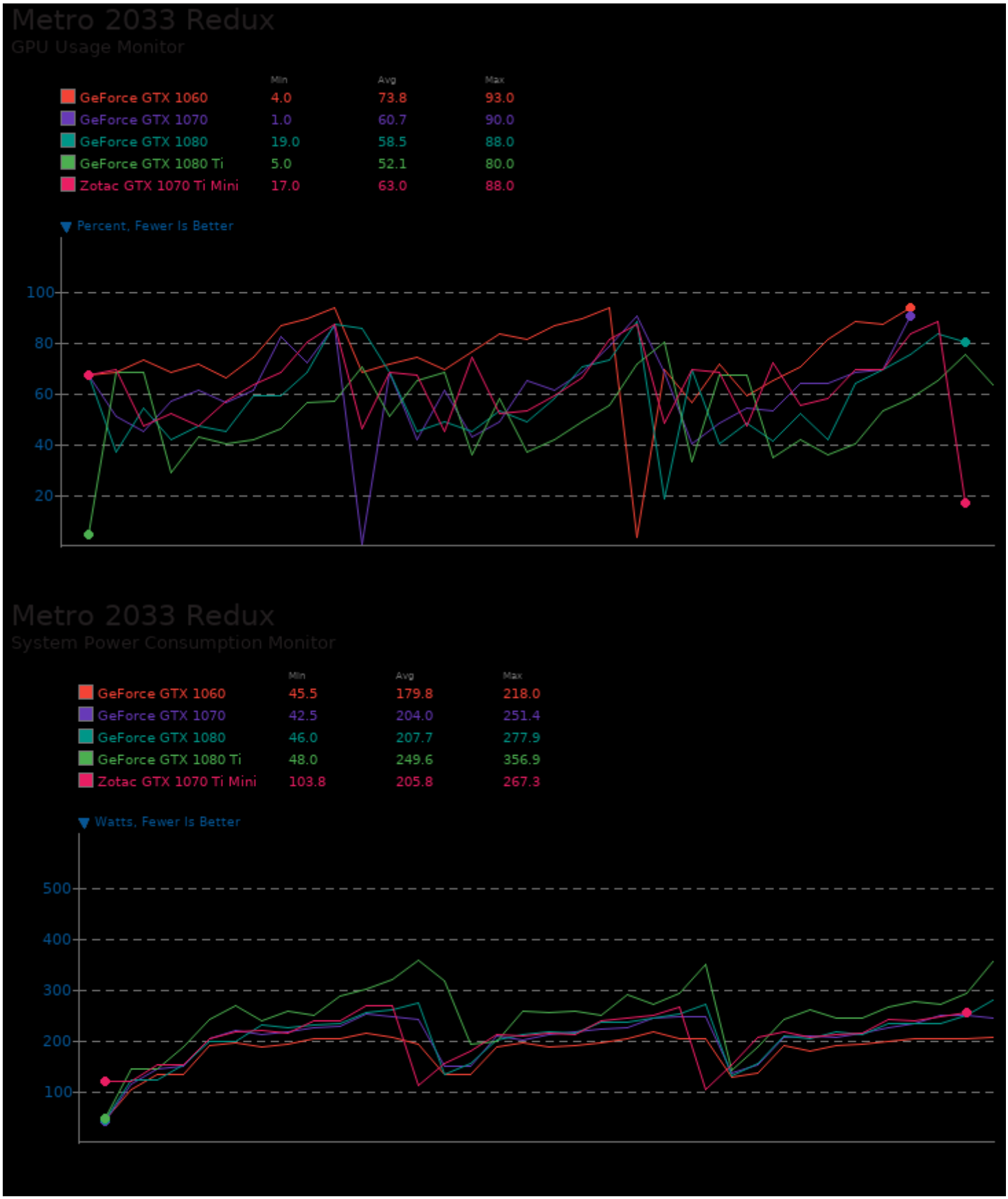
	Min	Avg	Max
GeForce GTX 1060	44.1	200.5	217.2
GeForce GTX 1070	44.0	232.6	258.2
GeForce GTX 1080	53.3	267.9	289.0
GeForce GTX 1080 Ti	49.4	317.6	367.9
Zotac GTX 1070 Ti Mini	46.7	263.0	286.1

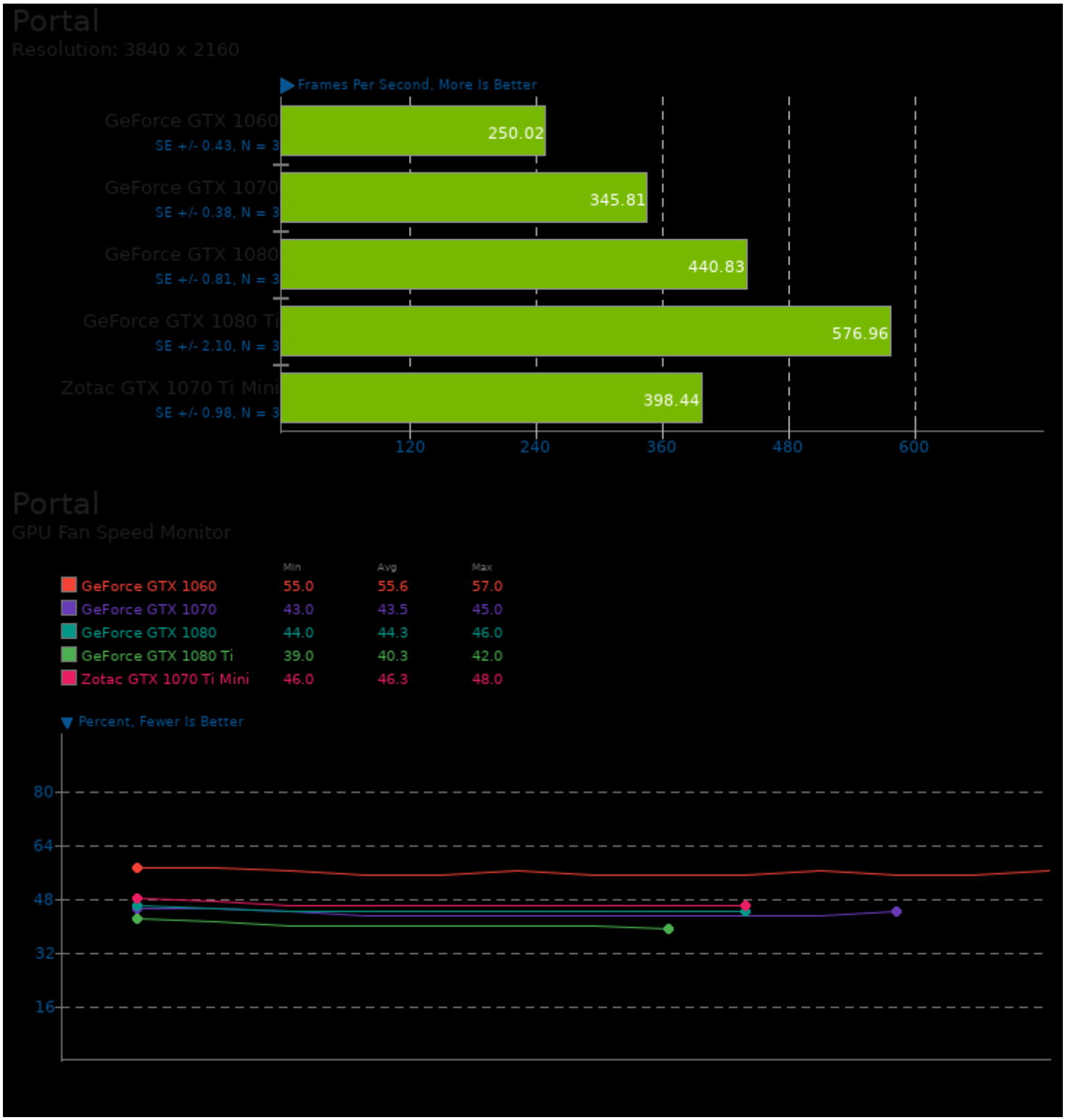


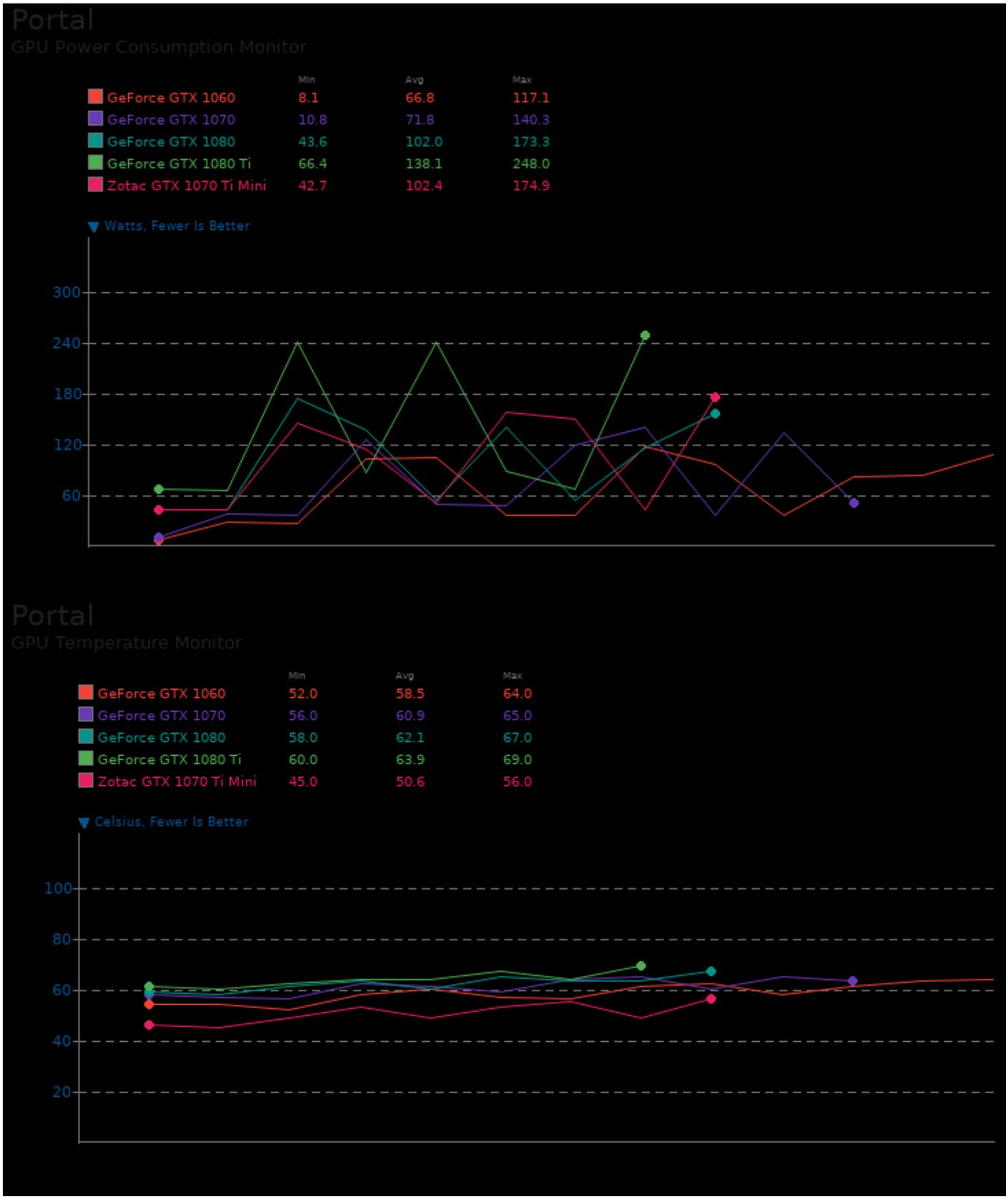

Metro 2033 Redux
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.12, N = 3
78.19
GeForce GTX 1070
SE +/- 0.28, N = 3
97.60
GeForce GTX 1080
SE +/- 0.45, N = 3
110.62
GeForce GTX 1080 Ti
SE +/- 9.27, N = 3
135.61
Zotac GTX 1070 Ti Mini
SE +/- 0.41, N = 3
102.53
30
60
90
120
150

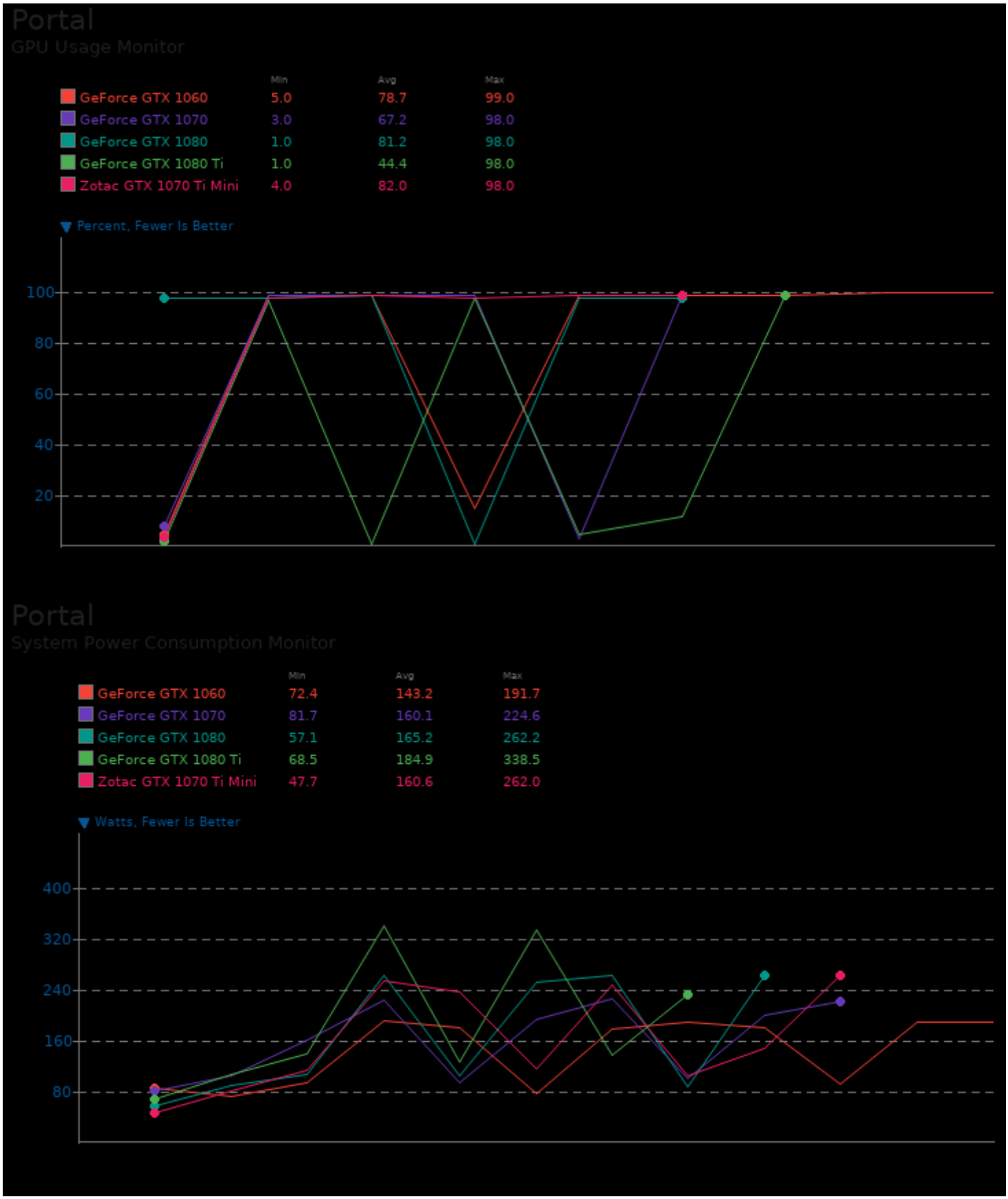

Metro 2033 Redux
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 57.4 59.0
GeForce GTX 1070 44.0 44.9 47.0
GeForce GTX 1080 45.0 45.7 49.0
GeForce GTX 1080 Ti 40.0 42.0 45.0
Zotac GTX 1070 Ti Mini 47.0 48.2 52.0
Percent, Fewer Is Better
80
64
48
32
16

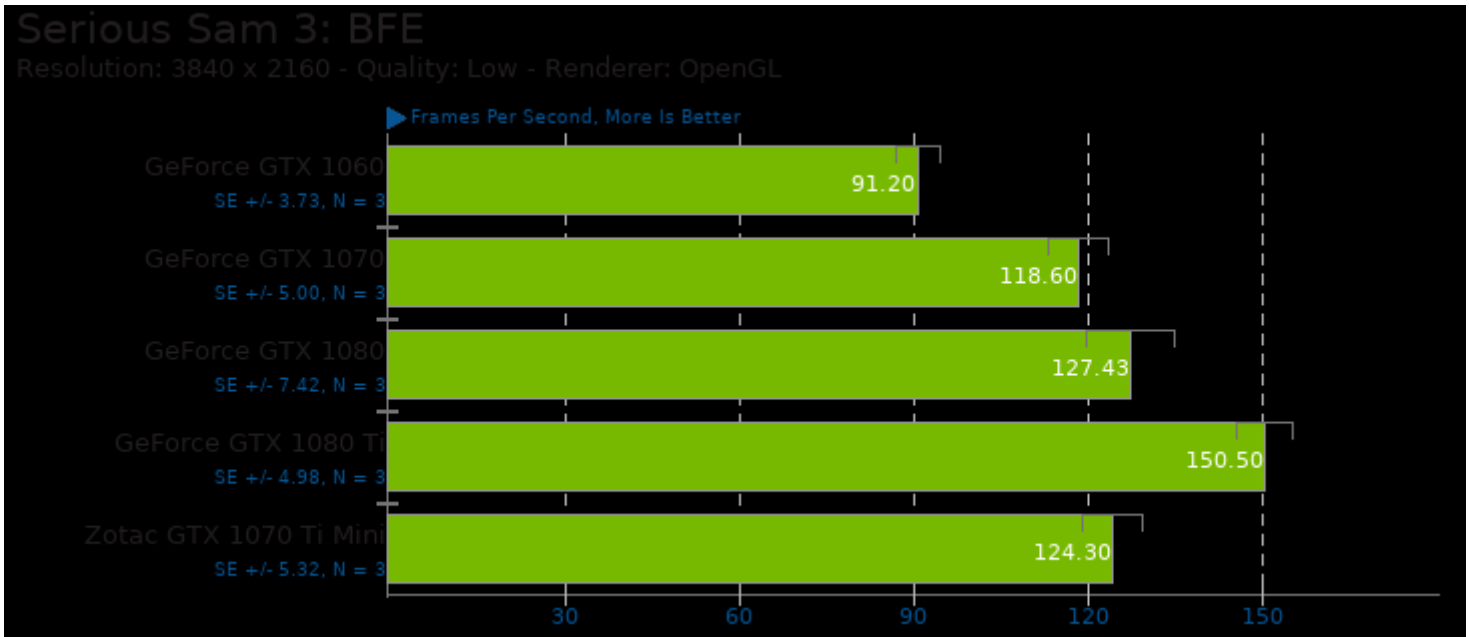

Metro 2033 Redux
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.8 78.4 112.4
GeForce GTX 1070 38.1 98.3 148.5
GeForce GTX 1080 44.5 113.1 185.2
GeForce GTX 1080 Ti 67.7 151.3 240.8
Zotac GTX 1070 Ti Mini 14.3 102.1 166.7
Watts, Fewer Is Better
300
240
180
120
60
Metro 2033 Redux
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 62.5 67.0
GeForce GTX 1070 59.0 65.4 71.0
GeForce GTX 1080 60.0 66.5 72.0
GeForce GTX 1080 Ti 62.0 69.0 75.0
Zotac GTX 1070 Ti Mini 48.0 53.4 58.0
Celsius, Fewer Is Better
100
80
60
40
20

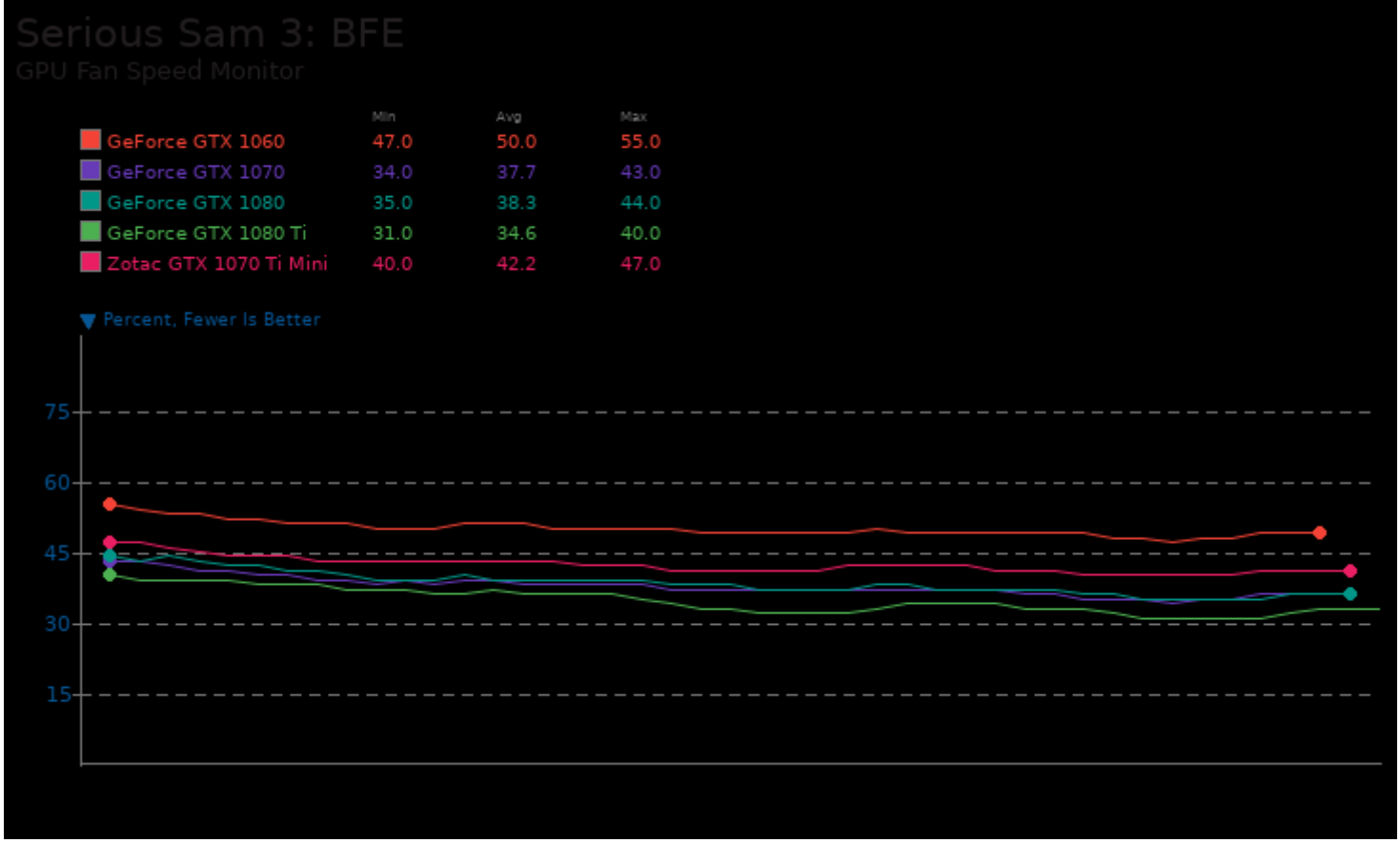

Metro 2033 Redux
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 4.0 73.8 93.0
GeForce GTX 1070 1.0 60.7 90.0
GeForce GTX 1080 19.0 58.5 88.0
GeForce GTX 1080 Ti 5.0 52.1 80.0
Zotac GTX 1070 Ti Mini 17.0 63.0 88.0
Percent, Fewer Is Better
100
80
60
40
20
Metro 2033 Redux
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 45.5 179.8 218.0
GeForce GTX 1070 42.5 204.0 251.4
GeForce GTX 1080 46.0 207.7 277.9
GeForce GTX 1080 Ti 48.0 249.6 356.9
Zotac GTX 1070 Ti Mini 103.8 205.8 267.3
Watts, Fewer Is Better
500
400
300
200
100

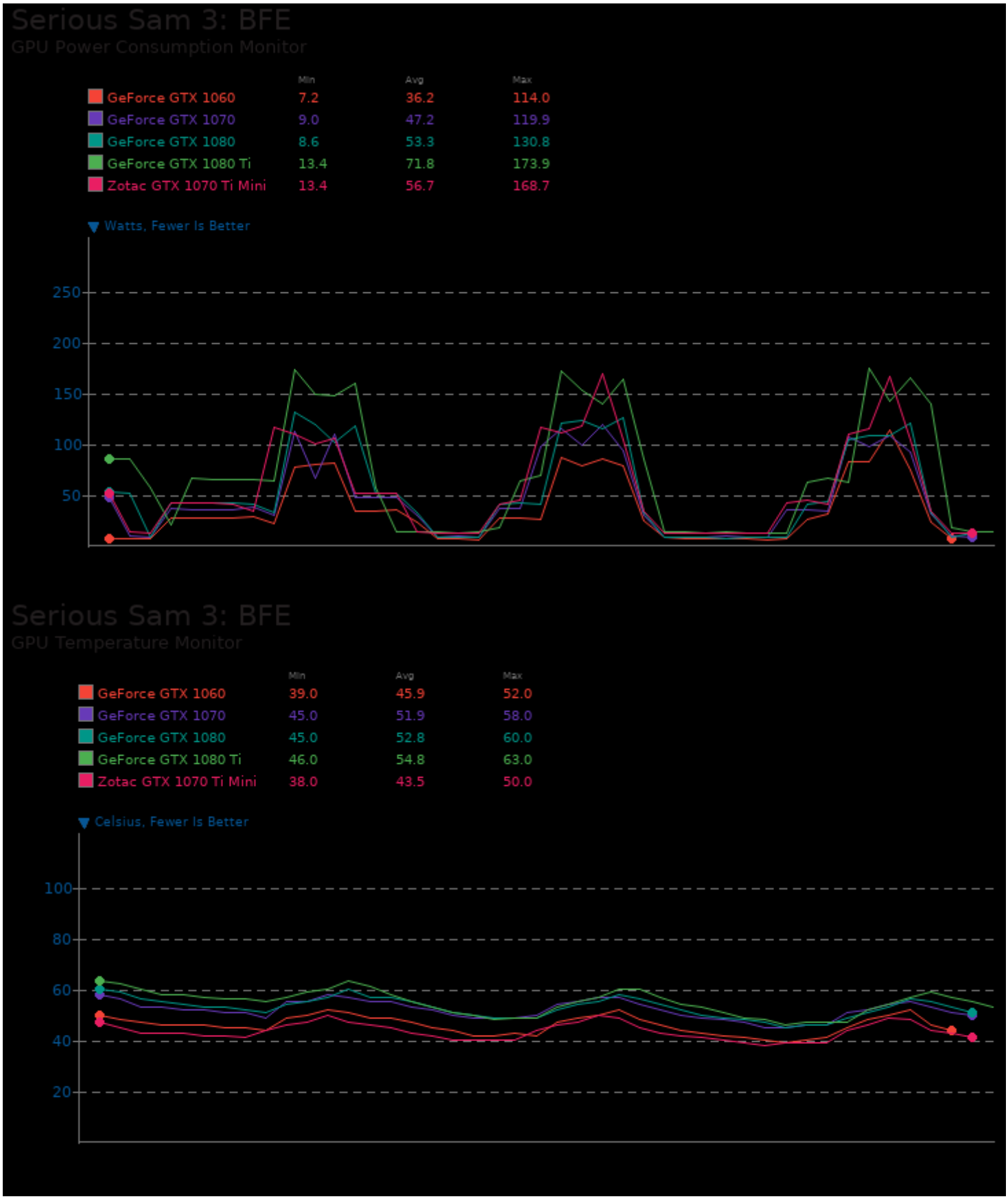

Portal
Resolution: 3840 x 2160
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.43, N = 3
250.02
GeForce GTX 1070
SE +/- 0.38, N = 3
345.81
GeForce GTX 1080
SE +/- 0.81, N = 3
440.83
GeForce GTX 1080 Ti
SE +/- 2.10, N = 3
576.96
Zotac GTX 1070 Ti Mini
SE +/- 0.98, N = 3
398.44
120
240
360
480
600
Portal
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 55.6 57.0
GeForce GTX 1070 43.0 43.5 45.0
GeForce GTX 1080 44.0 44.3 46.0
GeForce GTX 1080 Ti 39.0 40.3 42.0
Zotac GTX 1070 Ti Mini 46.0 46.3 48.0
Percent, Fewer Is Better
80
64
48
32
16

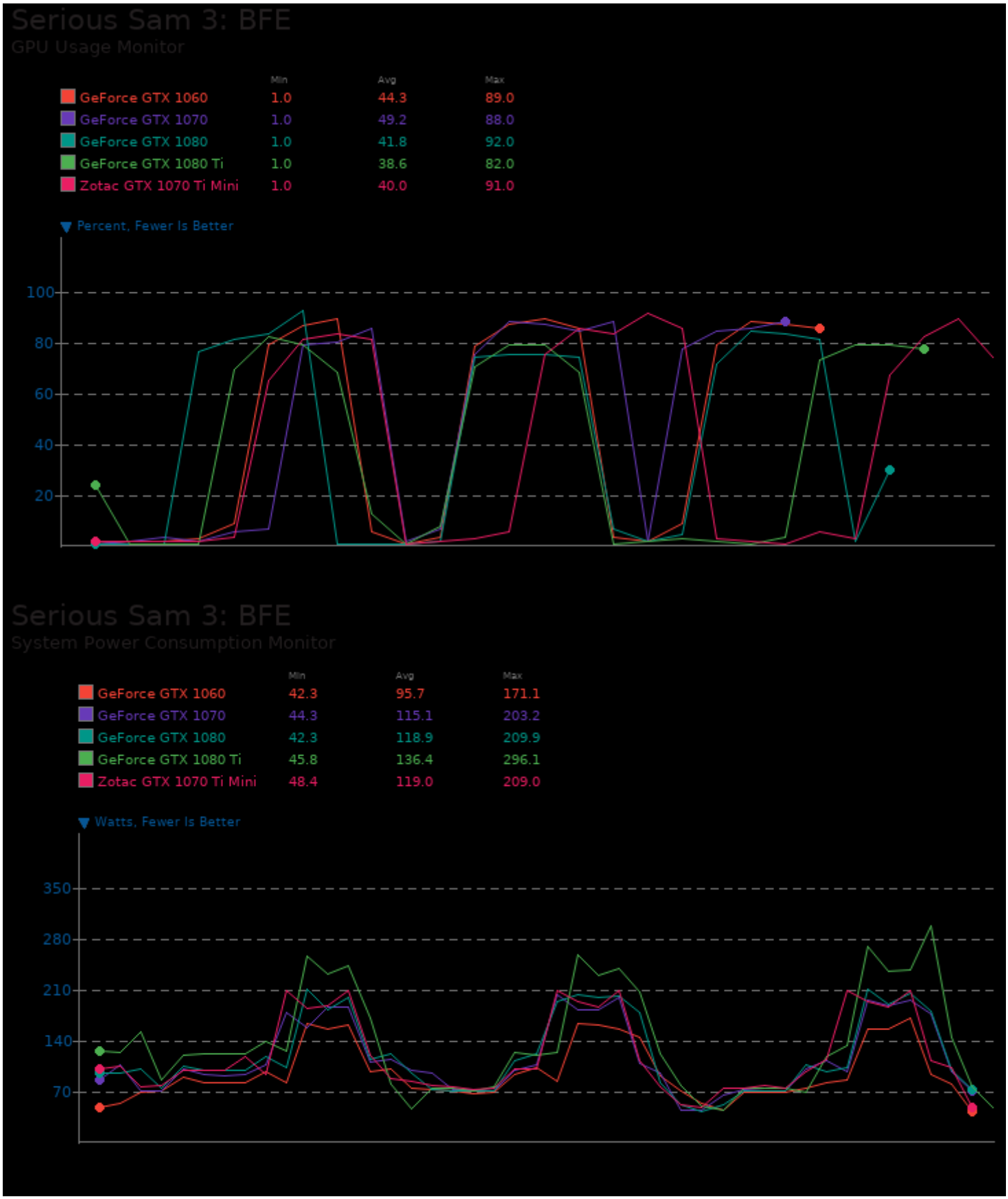

Portal
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 8.1 66.8 117.1
GeForce GTX 1070 10.8 71.8 140.3
GeForce GTX 1080 43.6 102.0 173.3
GeForce GTX 1080 Ti 66.4 138.1 248.0
Zotac GTX 1070 Ti Mini 42.7 102.4 174.9
Watts, Fewer Is Better
300
240
180
120
60
Portal
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 52.0 58.5 64.0
GeForce GTX 1070 56.0 60.9 65.0
GeForce GTX 1080 58.0 62.1 67.0
GeForce GTX 1080 Ti 60.0 63.9 69.0
Zotac GTX 1070 Ti Mini 45.0 50.6 56.0
Celsius, Fewer Is Better
100
80
60
40
20

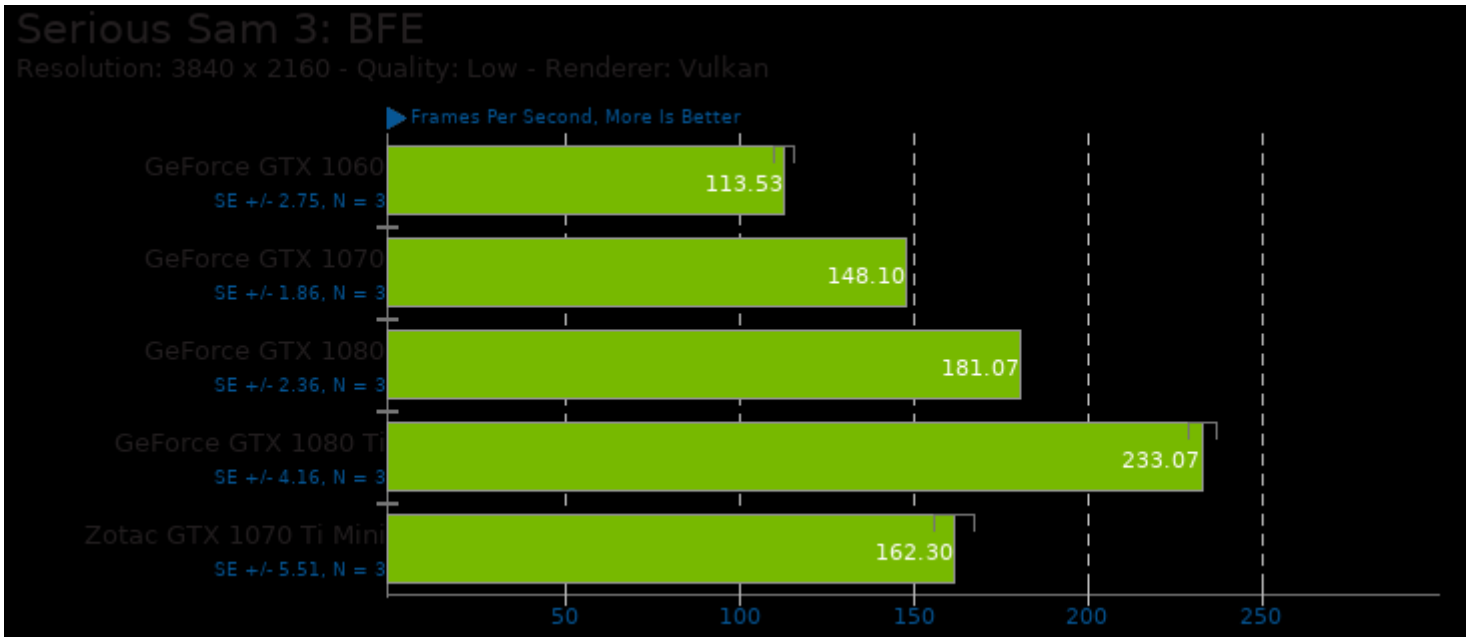

Portal
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 5.0 78.7 99.0
GeForce GTX 1070 3.0 67.2 98.0
GeForce GTX 1080 1.0 81.2 98.0
GeForce GTX 1080 Ti 1.0 44.4 98.0
Zotac GTX 1070 Ti Mini 4.0 82.0 98.0
Percent, Fewer Is Better
100
80
60
40
20
Portal
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 72.4 143.2 191.7
GeForce GTX 1070 81.7 160.1 224.6
GeForce GTX 1080 57.1 165.2 262.2
GeForce GTX 1080 Ti 68.5 184.9 338.5
Zotac GTX 1070 Ti Mini 47.7 160.6 262.0
Watts, Fewer Is Better
400
320
240
160
80

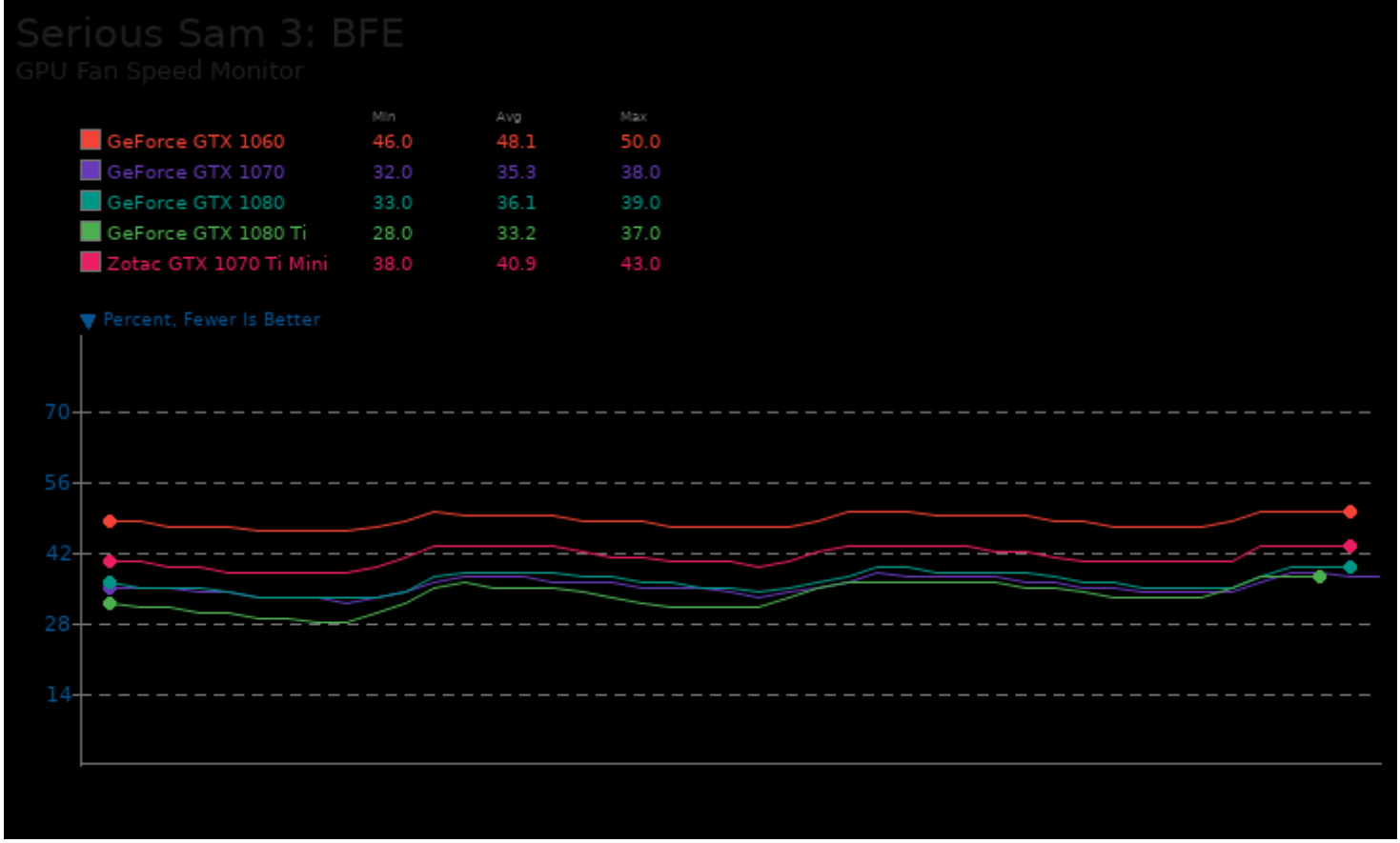

Serious Sam 3: BFE
Resolution: 3840 x 2160 - Quality: Low - Renderer: OpenGL
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 3.73, N = 3
91.20
GeForce GTX 1070
SE +/- 5.00, N = 3
118.60
GeForce GTX 1080
SE +/- 7.42, N = 3
127.43
GeForce GTX 1080 Ti
SE +/- 4.98, N = 3
150.50
Zotac GTX 1070 Ti Mini
SE +/- 5.32, N = 3
124.30
30
60
90
120
150

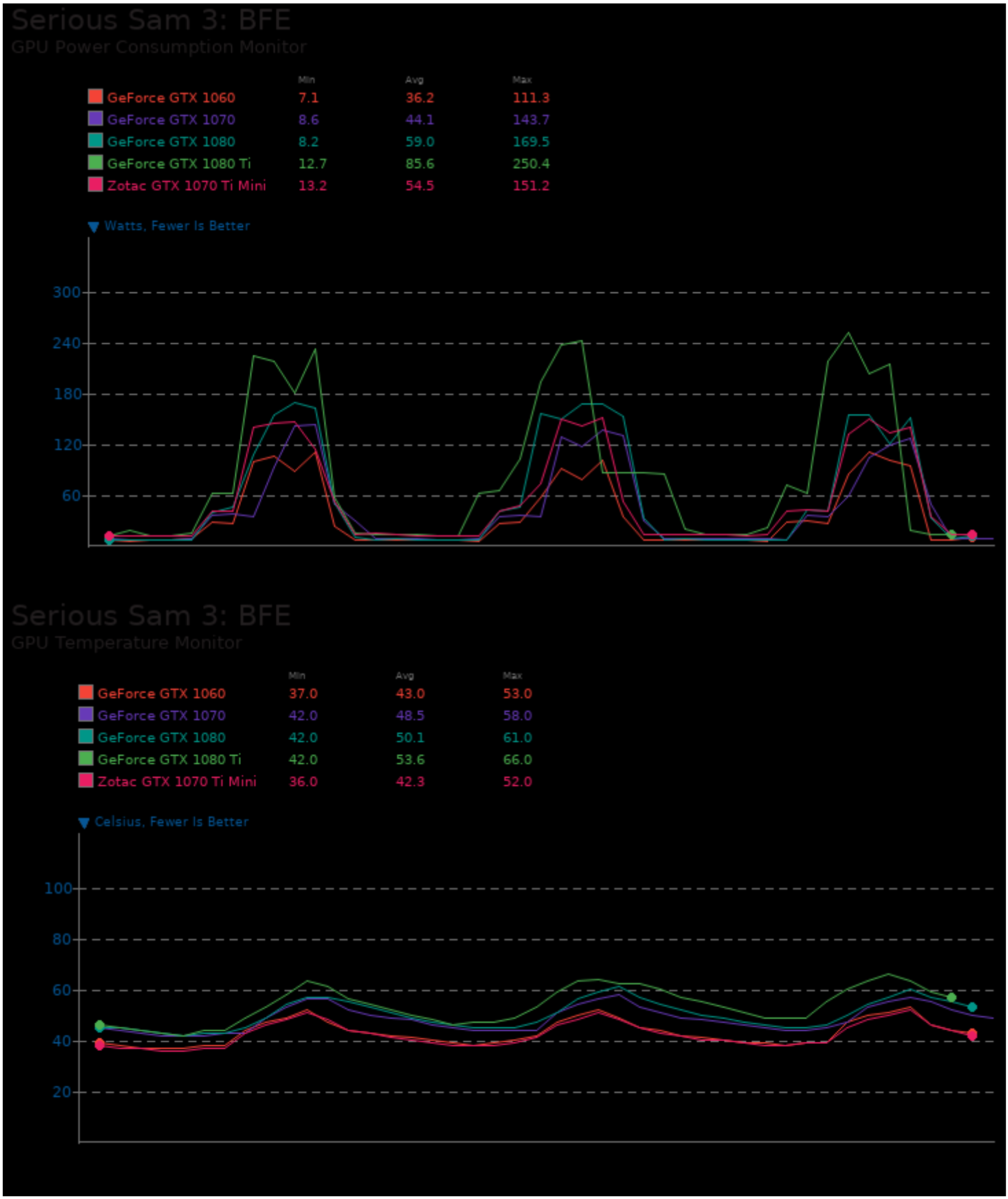

Serious Sam 3: BFE
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 47.0 50.0 55.0
GeForce GTX 1070 34.0 37.7 43.0
GeForce GTX 1080 35.0 38.3 44.0
GeForce GTX 1080 Ti 31.0 34.6 40.0
Zotac GTX 1070 Ti Mini 40.0 42.2 47.0
Percent, Fewer Is Better
75
60
45
30
15


Serious Sam 3: BFE
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 7.2 36.2 114.0
GeForce GTX 1070 9.0 47.2 119.9
GeForce GTX 1080 8.6 53.3 130.8
GeForce GTX 1080 Ti 13.4 71.8 173.9
Zotac GTX 1070 Ti Mini 13.4 56.7 168.7
Watts, Fewer Is Better
250
200
150
100
50
Serious Sam 3: BFE
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 39.0 45.9 52.0
GeForce GTX 1070 45.0 51.9 58.0
GeForce GTX 1080 45.0 52.8 60.0
GeForce GTX 1080 Ti 46.0 54.8 63.0
Zotac GTX 1070 Ti Mini 38.0 43.5 50.0
Celsius, Fewer Is Better
100
80
60
40
20


Serious Sam 3: BFE
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 44.3 89.0
GeForce GTX 1070 1.0 49.2 88.0
GeForce GTX 1080 1.0 41.8 92.0
GeForce GTX 1080 Ti 1.0 38.6 82.0
Zotac GTX 1070 Ti Mini 1.0 40.0 91.0
Percent, Fewer Is Better
100
80
60
40
20
Serious Sam 3: BFE
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 42.3 95.7 171.1
GeForce GTX 1070 44.3 115.1 203.2
GeForce GTX 1080 42.3 118.9 209.9
GeForce GTX 1080 Ti 45.8 136.4 296.1
Zotac GTX 1070 Ti Mini 48.4 119.0 209.0
Watts, Fewer Is Better
350
280
210
140
70


Serious Sam 3: BFE
Resolution: 3840 x 2160 - Quality: Low - Renderer: Vulkan
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 2.75, N = 3
113.53
GeForce GTX 1070
SE +/- 1.86, N = 3
148.10
GeForce GTX 1080
SE +/- 2.36, N = 3
181.07
GeForce GTX 1080 Ti
SE +/- 4.16, N = 3
233.07
Zotac GTX 1070 Ti Mini
SE +/- 5.51, N = 3
162.30
50
100
150
200
250

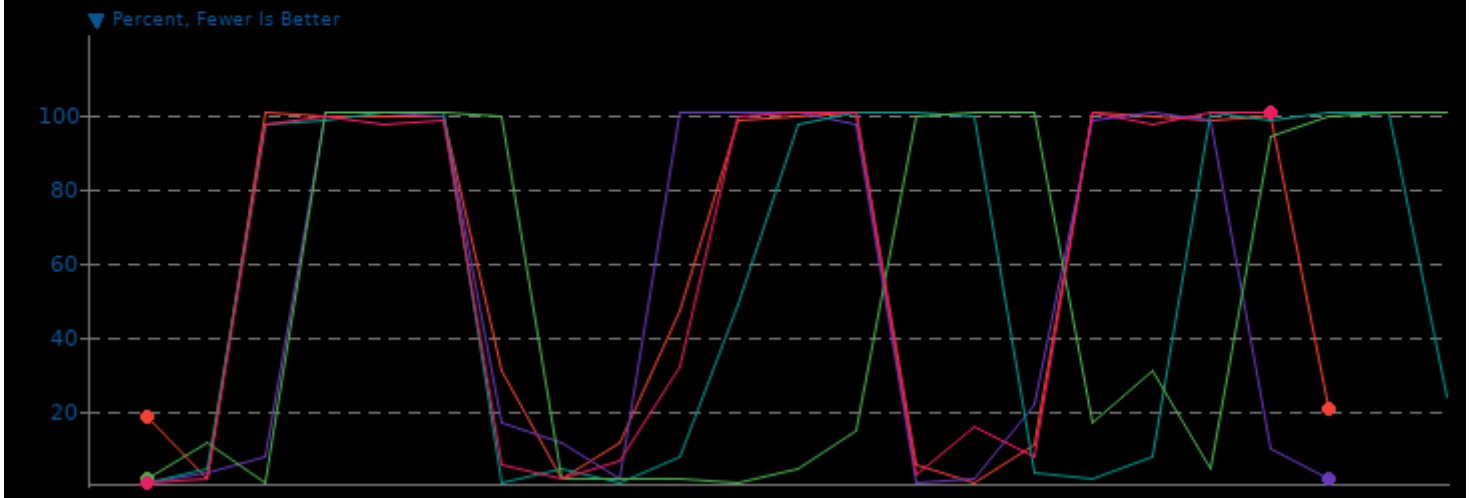

Serious Sam 3: BFE
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 46.0 48.1 50.0
GeForce GTX 1070 32.0 35.3 38.0
GeForce GTX 1080 33.0 36.1 39.0
GeForce GTX 1080 Ti 28.0 33.2 37.0
Zotac GTX 1070 Ti Mini 38.0 40.9 43.0
Percent, Fewer Is Better
70
56
42
28
14


Serious Sam 3: BFE
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 7.1 36.2 111.3
GeForce GTX 1070 8.6 44.1 143.7
GeForce GTX 1080 8.2 59.0 169.5
GeForce GTX 1080 Ti 12.7 85.6 250.4
Zotac GTX 1070 Ti Mini 13.2 54.5 151.2
Watts, Fewer Is Better
300
240
180
120
60
Serious Sam 3: BFE
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 37.0 43.0 53.0
GeForce GTX 1070 42.0 48.5 58.0
GeForce GTX 1080 42.0 50.1 61.0
GeForce GTX 1080 Ti 42.0 53.6 66.0
Zotac GTX 1070 Ti Mini 36.0 42.3 52.0
Celsius, Fewer Is Better
100
80
60
40
20

Serious Sam 3: BFE

GPU Usage Monitor

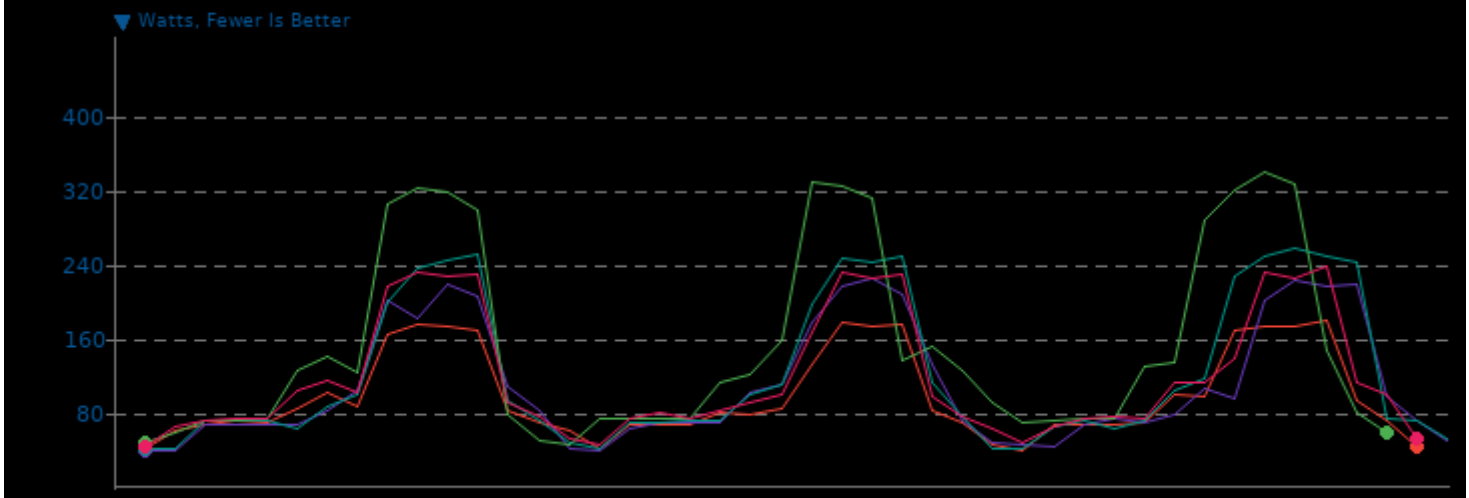
	Min	Avg	Max
GeForce GTX 1060	1.0	59.1	100.0
GeForce GTX 1070	1.0	51.1	100.0
GeForce GTX 1080	1.0	56.4	100.0
GeForce GTX 1080 Ti	1.0	51.6	100.0
Zotac GTX 1070 Ti Mini	1.0	58.2	100.0

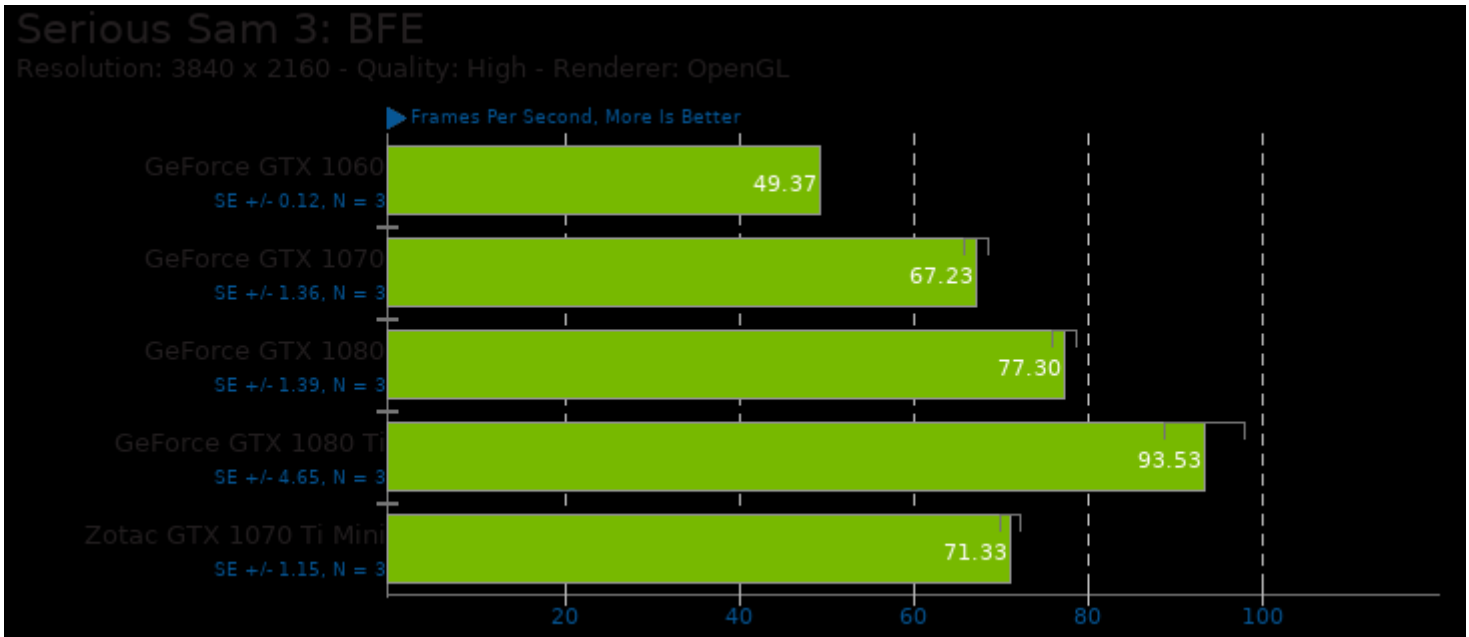


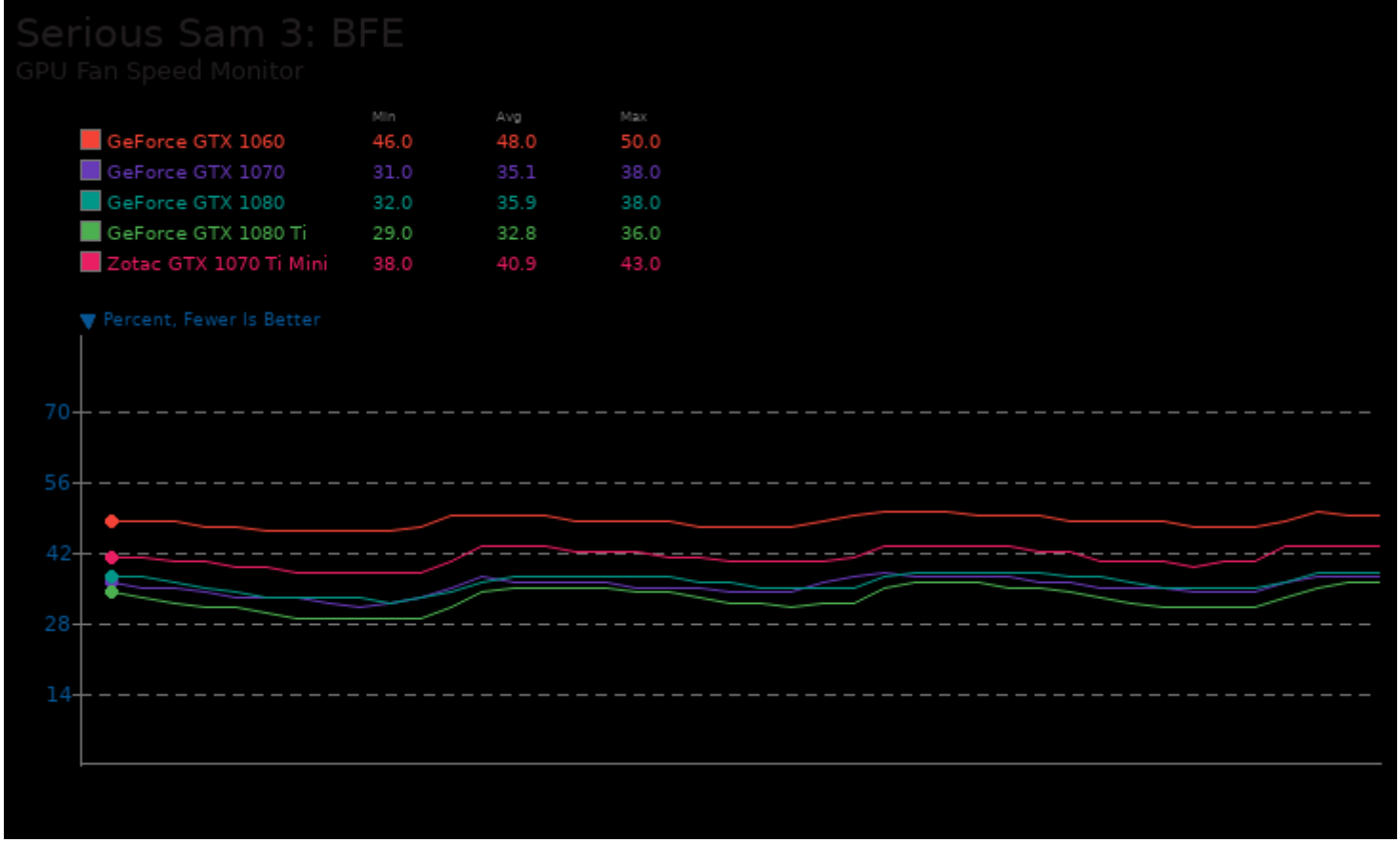
Serious Sam 3: BFE

System Power Consumption Monitor

	Min	Avg	Max
GeForce GTX 1060	40.6	99.6	180.9
GeForce GTX 1070	41.1	110.8	224.5
GeForce GTX 1080	42.0	122.2	257.2
GeForce GTX 1080 Ti	46.8	153.0	337.9
Zotac GTX 1070 Ti Mini	46.0	118.7	238.9



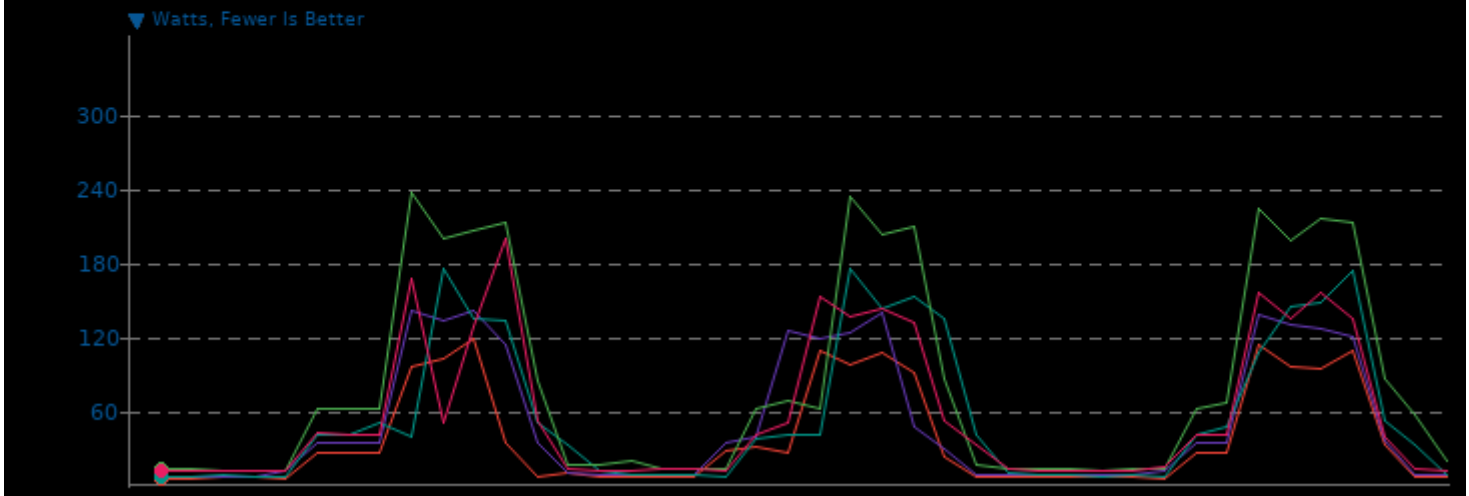

Serious Sam 3: BFE
Resolution: 3840 x 2160 - Quality: High - Renderer: OpenGL
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.12, N = 3
49.37
GeForce GTX 1070
SE +/- 1.36, N = 3
67.23
GeForce GTX 1080
SE +/- 1.39, N = 3
77.30
GeForce GTX 1080 Ti
SE +/- 4.65, N = 3
93.53
Zotac GTX 1070 Ti Mini
SE +/- 1.15, N = 3
71.33
20
40
60
80
100


Serious Sam 3: BFE
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 46.0 48.0 50.0
GeForce GTX 1070 31.0 35.1 38.0
GeForce GTX 1080 32.0 35.9 38.0
GeForce GTX 1080 Ti 29.0 32.8 36.0
Zotac GTX 1070 Ti Mini 38.0 40.9 43.0
Percent, Fewer Is Better
70
56
42
28
14

Serious Sam 3: BFE

GPU Power Consumption Monitor

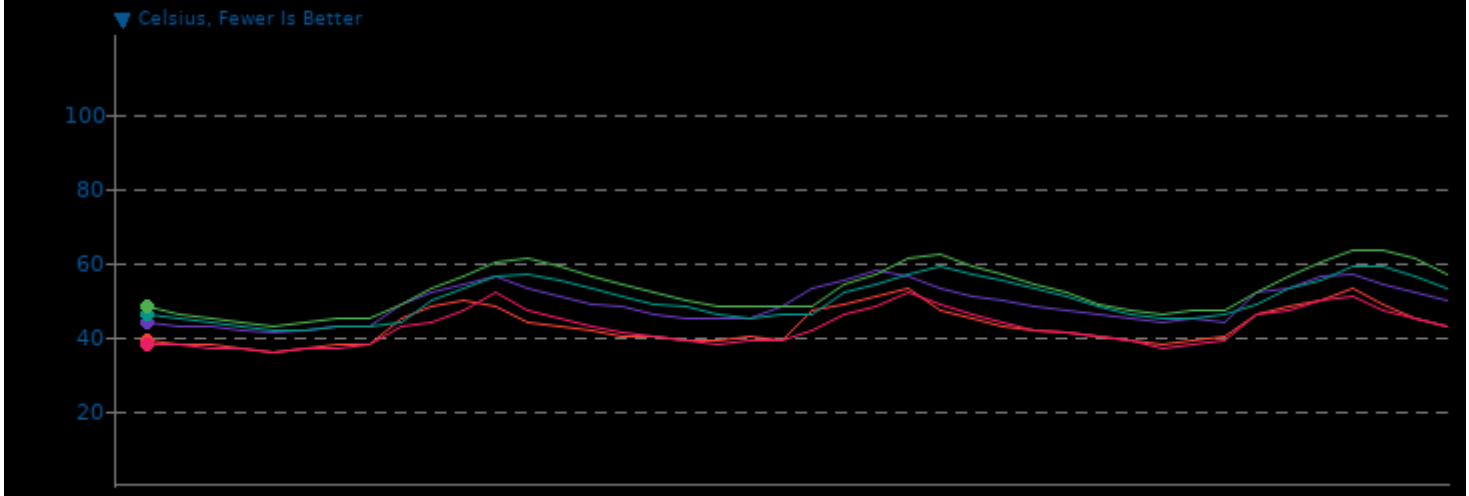
	Min	Avg	Max
GeForce GTX 1060	6.9	38.4	119.0
GeForce GTX 1070	8.4	51.0	142.2
GeForce GTX 1080	8.3	56.7	175.6
GeForce GTX 1080 Ti	12.9	82.4	235.5
Zotac GTX 1070 Ti Mini	13.2	58.1	199.7



Serious Sam 3: BFE

GPU Temperature Monitor

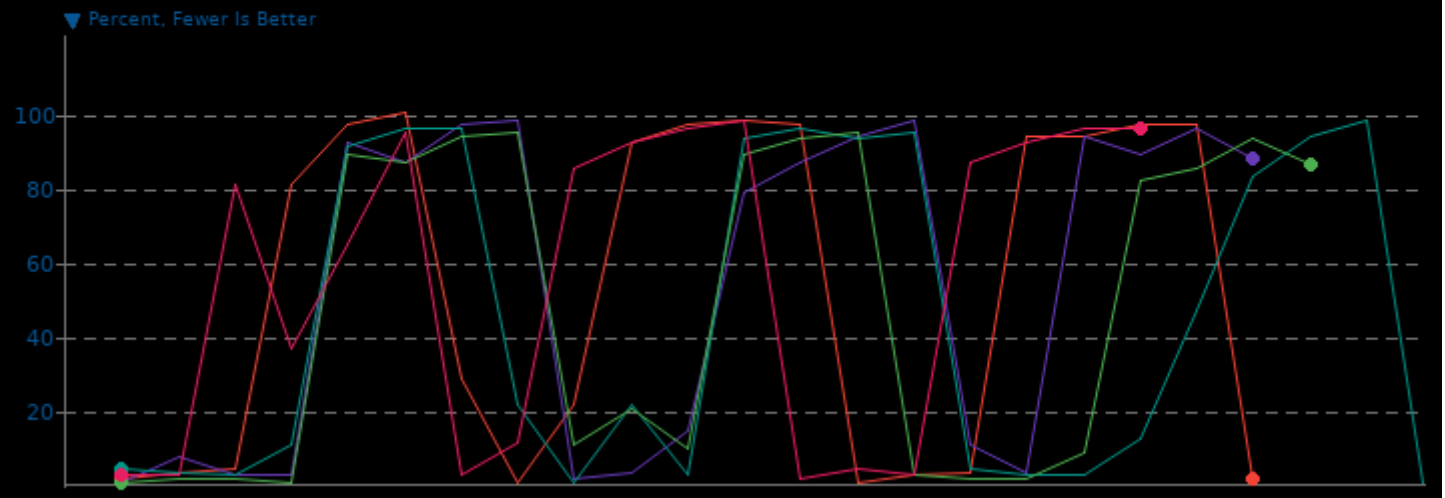
	Min	Avg	Max
GeForce GTX 1060	36.0	43.0	53.0
GeForce GTX 1070	41.0	48.8	58.0
GeForce GTX 1080	42.0	50.0	59.0
GeForce GTX 1080 Ti	43.0	52.5	63.0
Zotac GTX 1070 Ti Mini	36.0	42.5	52.0



Serious Sam 3: BFE

GPU Usage Monitor

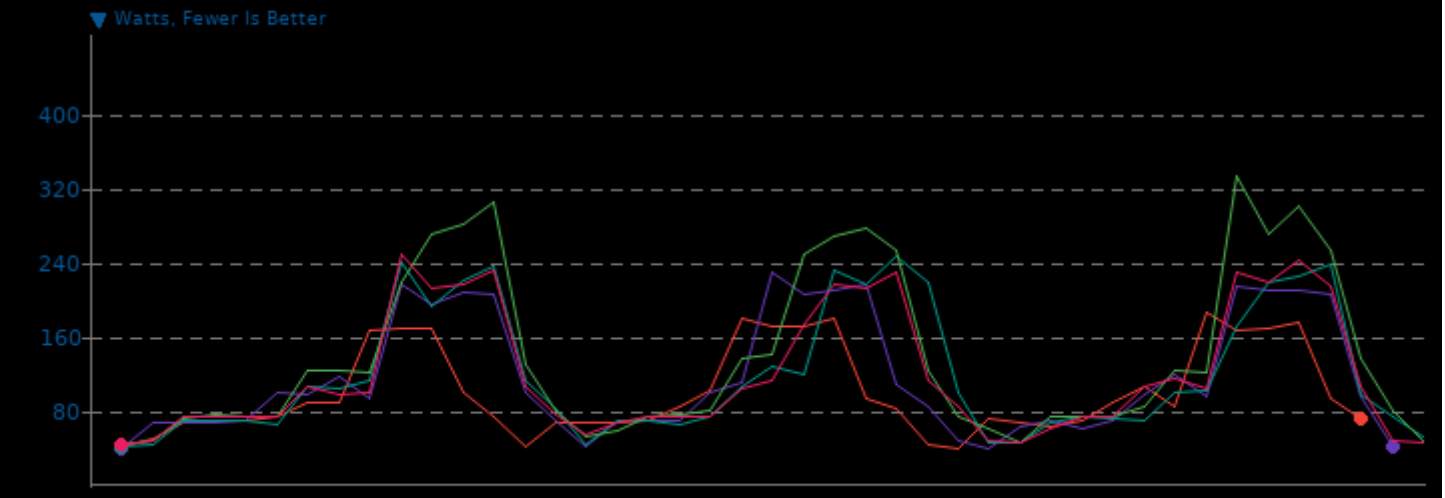
	Min	Avg	Max
GeForce GTX 1060	1.0	53.2	100.0
GeForce GTX 1070	1.0	54.8	98.0
GeForce GTX 1080	1.0	44.9	98.0
GeForce GTX 1080 Ti	1.0	47.8	95.0
Zotac GTX 1070 Ti Mini	2.0	55.3	98.0

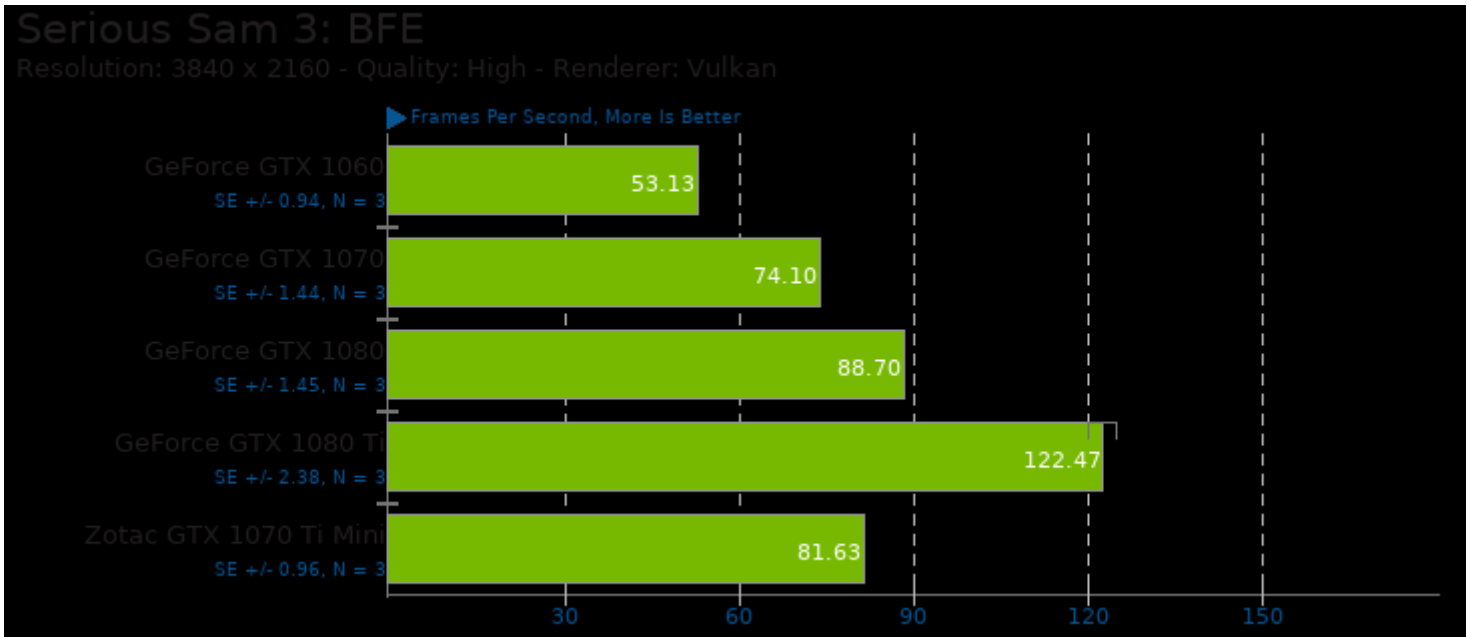


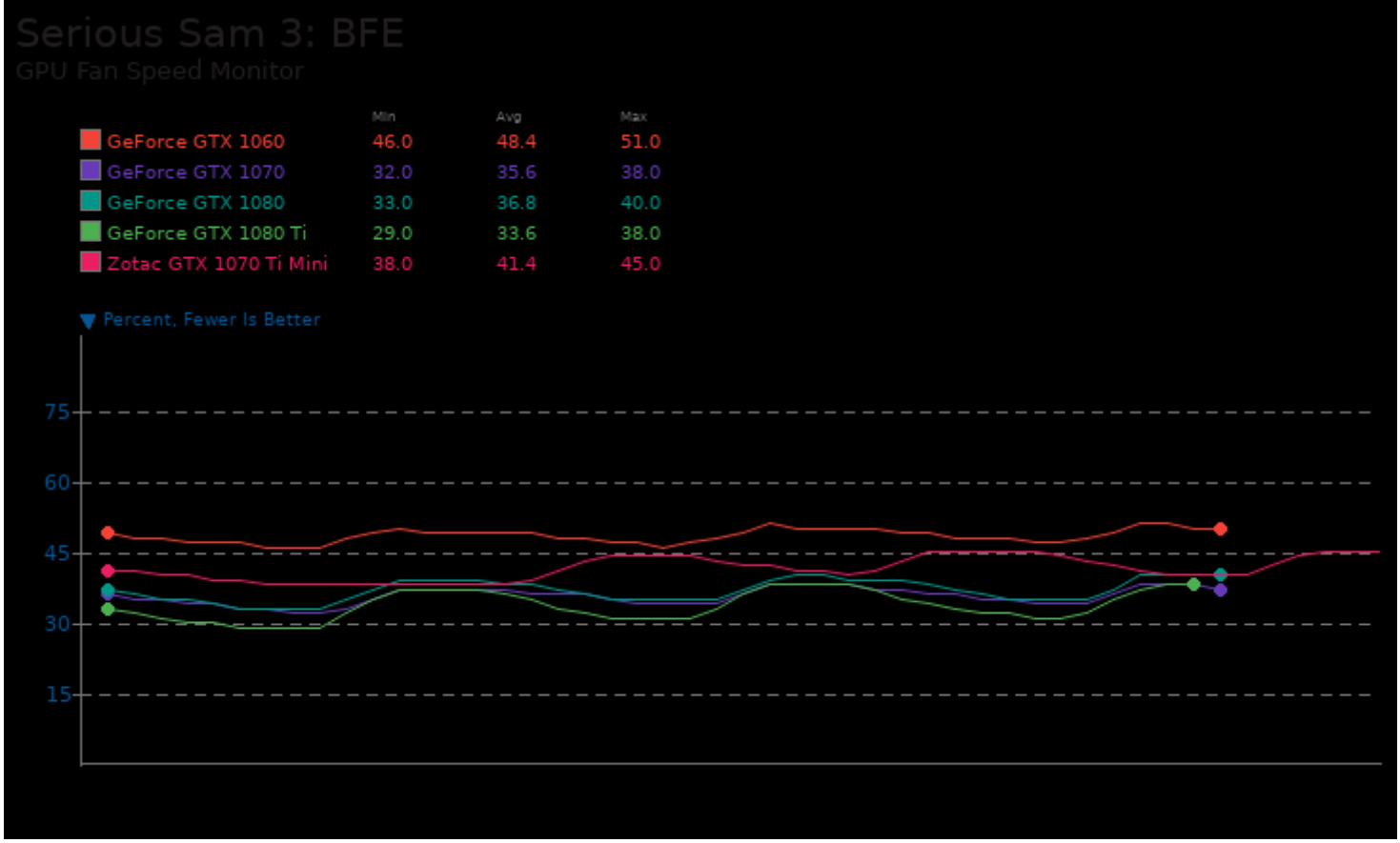
Serious Sam 3: BFE

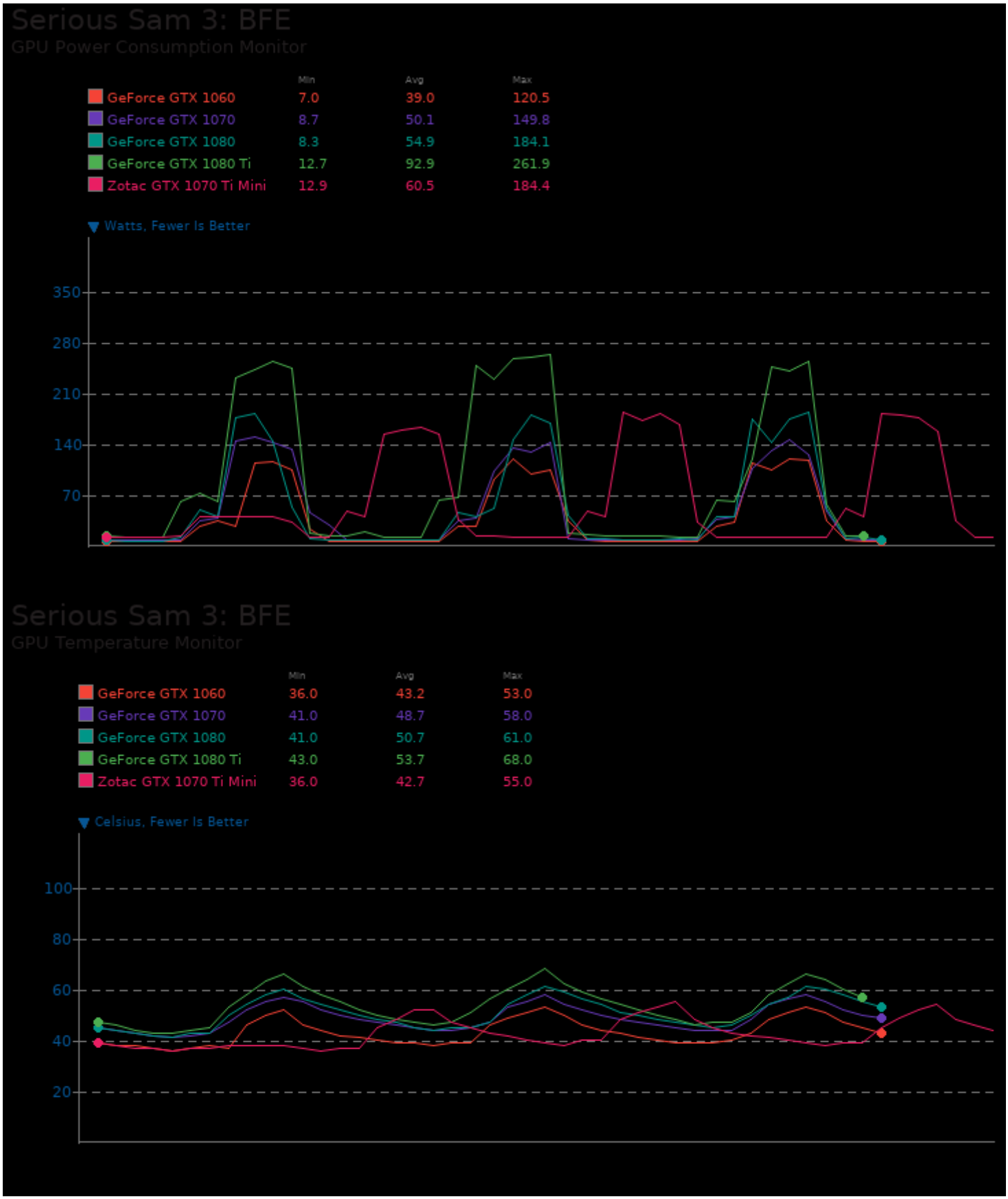
System Power Consumption Monitor

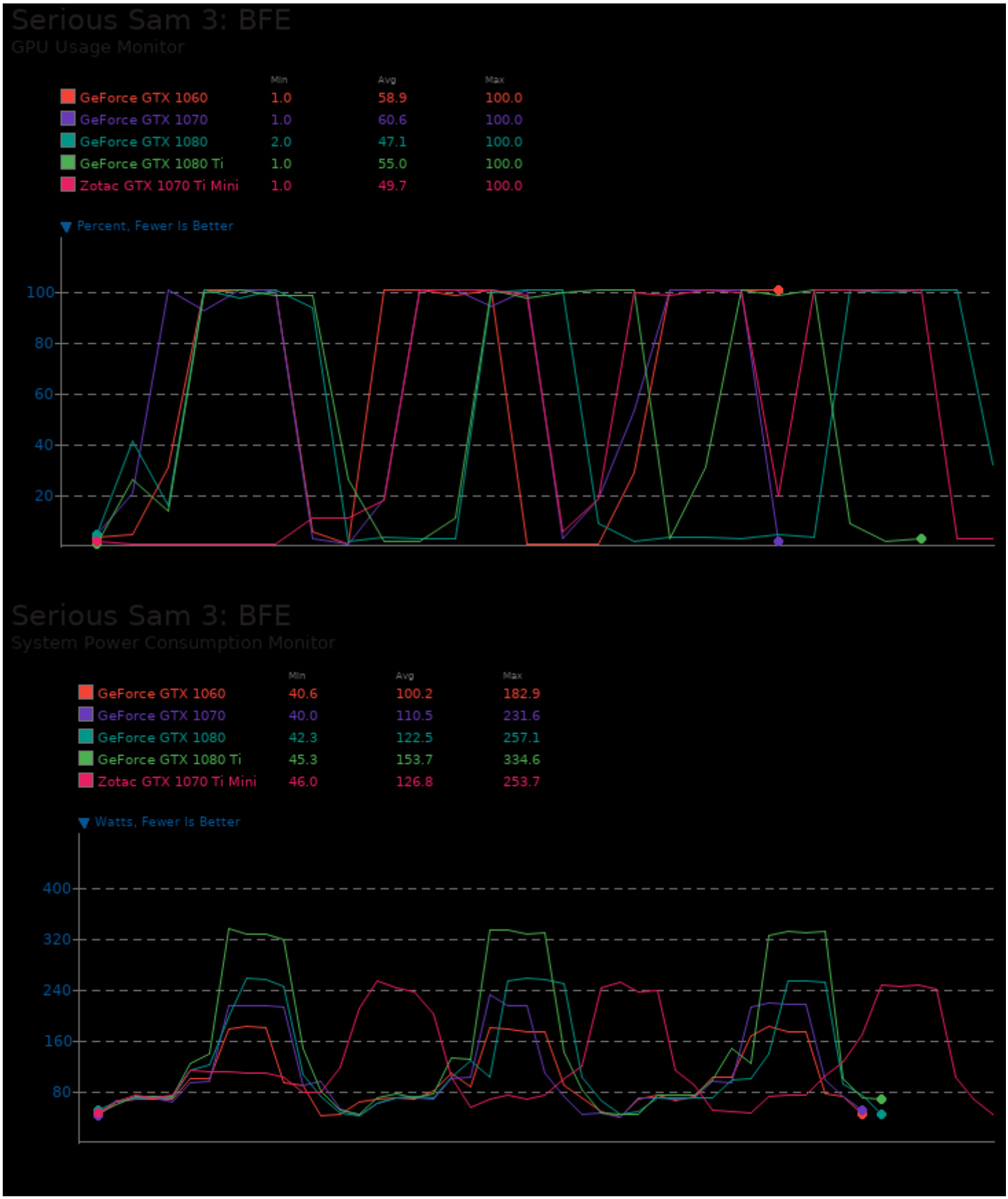
	Min	Avg	Max
GeForce GTX 1060	41.5	100.8	185.7
GeForce GTX 1070	41.3	116.6	228.5
GeForce GTX 1080	43.9	119.6	245.4
GeForce GTX 1080 Ti	45.6	139.8	333.1
Zotac GTX 1070 Ti Mini	45.1	119.2	248.8

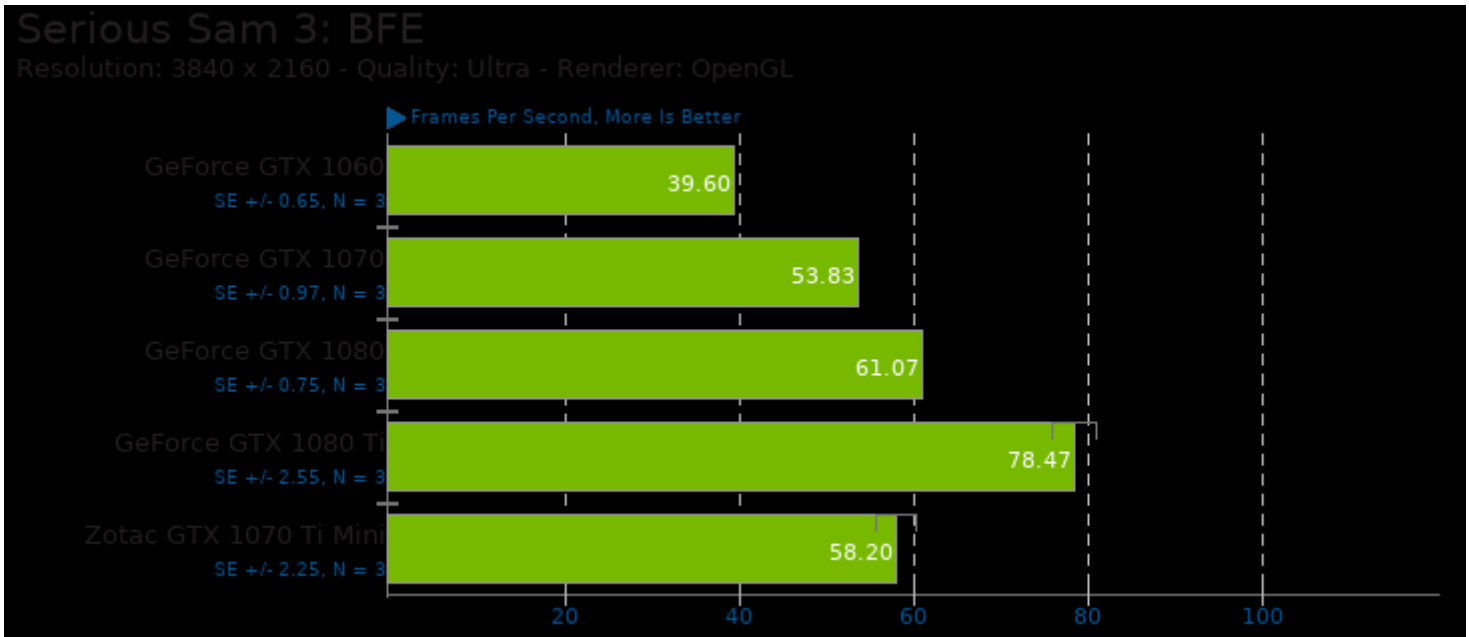


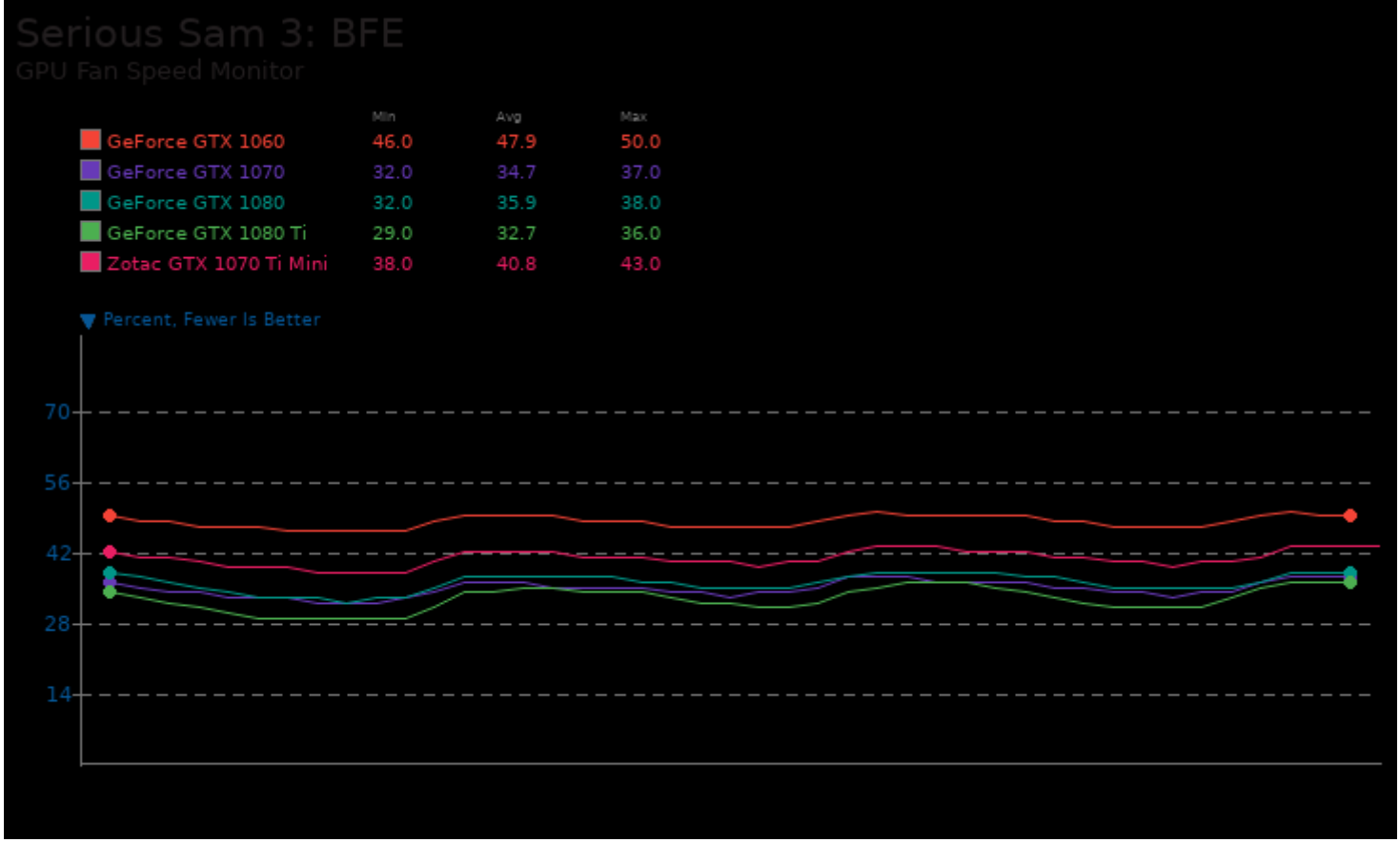

Serious Sam 3: BFE
Resolution: 3840 x 2160 - Quality: High - Renderer: Vulkan
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.94, N = 3
53.13
GeForce GTX 1070
SE +/- 1.44, N = 3
74.10
GeForce GTX 1080
SE +/- 1.45, N = 3
88.70
GeForce GTX 1080 Ti
SE +/- 2.38, N = 3
122.47
Zotac GTX 1070 Ti Mini
SE +/- 0.96, N = 3
81.63
30
60
90
120
150

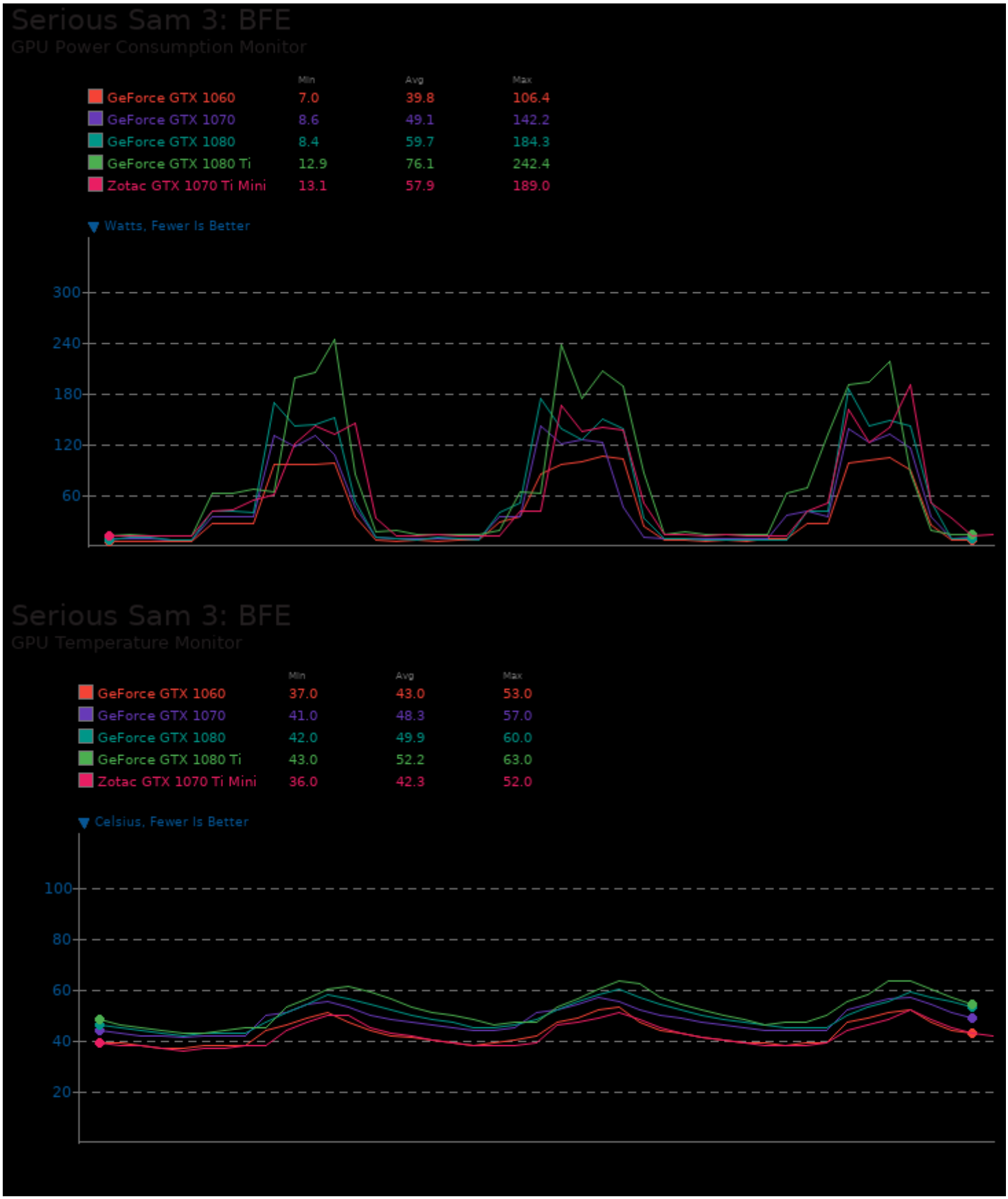

Serious Sam 3: BFE
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 46.0 48.4 51.0
GeForce GTX 1070 32.0 35.6 38.0
GeForce GTX 1080 33.0 36.8 40.0
GeForce GTX 1080 Ti 29.0 33.6 38.0
Zotac GTX 1070 Ti Mini 38.0 41.4 45.0
Percent, Fewer Is Better
75
60
45
30
15


Serious Sam 3: BFE
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 7.0 39.0 120.5
GeForce GTX 1070 8.7 50.1 149.8
GeForce GTX 1080 8.3 54.9 184.1
GeForce GTX 1080 Ti 12.7 92.9 261.9
Zotac GTX 1070 Ti Mini 12.9 60.5 184.4
Watts, Fewer Is Better
350
280
210
140
70
Serious Sam 3: BFE
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 36.0 43.2 53.0
GeForce GTX 1070 41.0 48.7 58.0
GeForce GTX 1080 41.0 50.7 61.0
GeForce GTX 1080 Ti 43.0 53.7 68.0
Zotac GTX 1070 Ti Mini 36.0 42.7 55.0
Celsius, Fewer Is Better
100
80
60
40
20


Serious Sam 3: BFE
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 58.9 100.0
GeForce GTX 1070 1.0 60.6 100.0
GeForce GTX 1080 2.0 47.1 100.0
GeForce GTX 1080 Ti 1.0 55.0 100.0
Zotac GTX 1070 Ti Mini 1.0 49.7 100.0
Percent, Fewer Is Better
100
80
60
40
20
Serious Sam 3: BFE
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 40.6 100.2 182.9
GeForce GTX 1070 40.0 110.5 231.6
GeForce GTX 1080 42.3 122.5 257.1
GeForce GTX 1080 Ti 45.3 153.7 334.6
Zotac GTX 1070 Ti Mini 46.0 126.8 253.7
Watts, Fewer Is Better
400
320
240
160
80


Serious Sam 3: BFE
Resolution: 3840 x 2160 - Quality: Ultra - Renderer: OpenGL
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.65, N = 3
39.60
GeForce GTX 1070
SE +/- 0.97, N = 3
53.83
GeForce GTX 1080
SE +/- 0.75, N = 3
61.07
GeForce GTX 1080 Ti
SE +/- 2.55, N = 3
78.47
Zotac GTX 1070 Ti Mini
SE +/- 2.25, N = 3
58.20
20
40
60
80
100

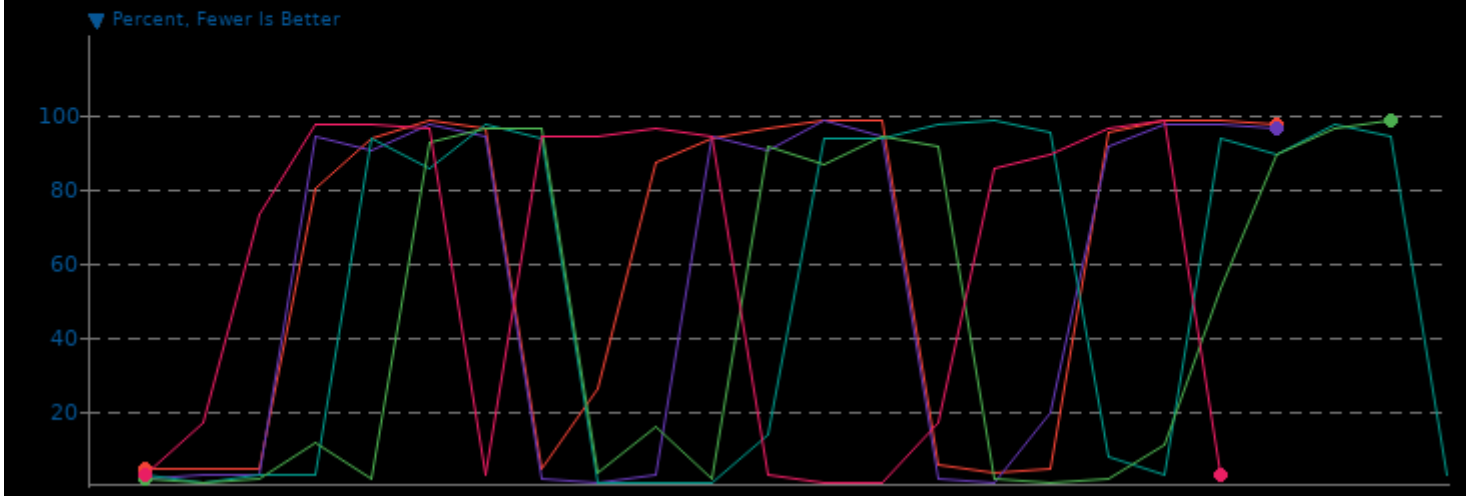

Serious Sam 3: BFE
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 46.0 47.9 50.0
GeForce GTX 1070 32.0 34.7 37.0
GeForce GTX 1080 32.0 35.9 38.0
GeForce GTX 1080 Ti 29.0 32.7 36.0
Zotac GTX 1070 Ti Mini 38.0 40.8 43.0
Percent, Fewer Is Better
70
56
42
28
14


Serious Sam 3: BFE
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 7.0 39.8 106.4
GeForce GTX 1070 8.6 49.1 142.2
GeForce GTX 1080 8.4 59.7 184.3
GeForce GTX 1080 Ti 12.9 76.1 242.4
Zotac GTX 1070 Ti Mini 13.1 57.9 189.0
Watts, Fewer Is Better
300
240
180
120
60
Serious Sam 3: BFE
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 37.0 43.0 53.0
GeForce GTX 1070 41.0 48.3 57.0
GeForce GTX 1080 42.0 49.9 60.0
GeForce GTX 1080 Ti 43.0 52.2 63.0
Zotac GTX 1070 Ti Mini 36.0 42.3 52.0
Celsius, Fewer Is Better
100
80
60
40
20

Serious Sam 3: BFE

GPU Usage Monitor

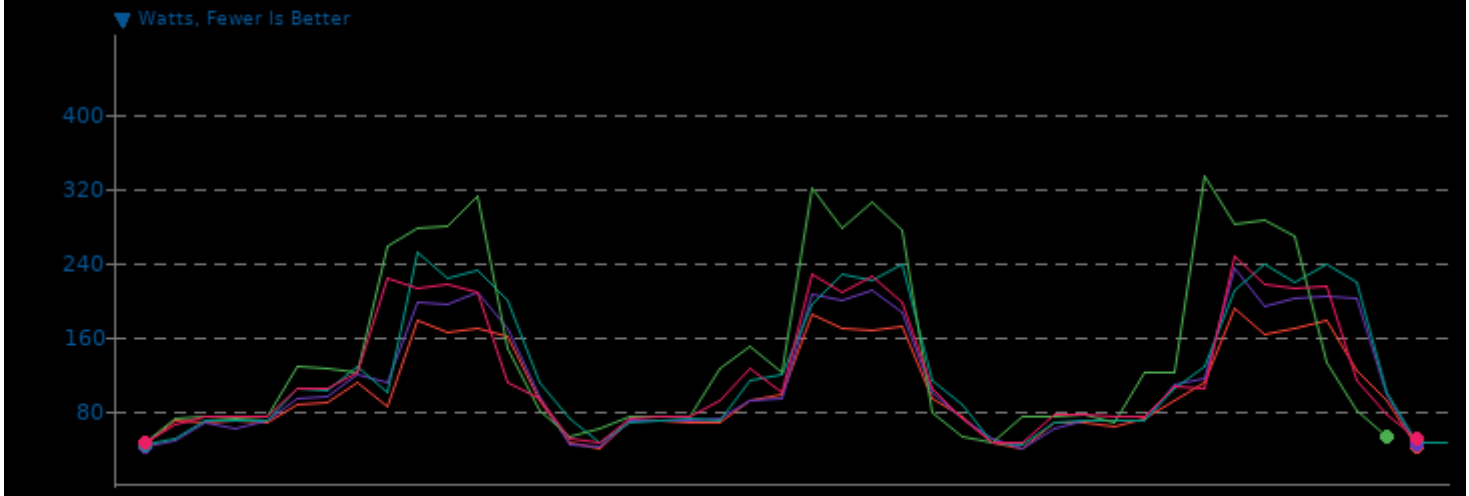
	Min	Avg	Max
GeForce GTX 1060	4.0	61.3	98.0
GeForce GTX 1070	1.0	55.7	98.0
GeForce GTX 1080	1.0	52.4	98.0
GeForce GTX 1080 Ti	1.0	45.2	98.0
Zotac GTX 1070 Ti Mini	1.0	57.9	98.0

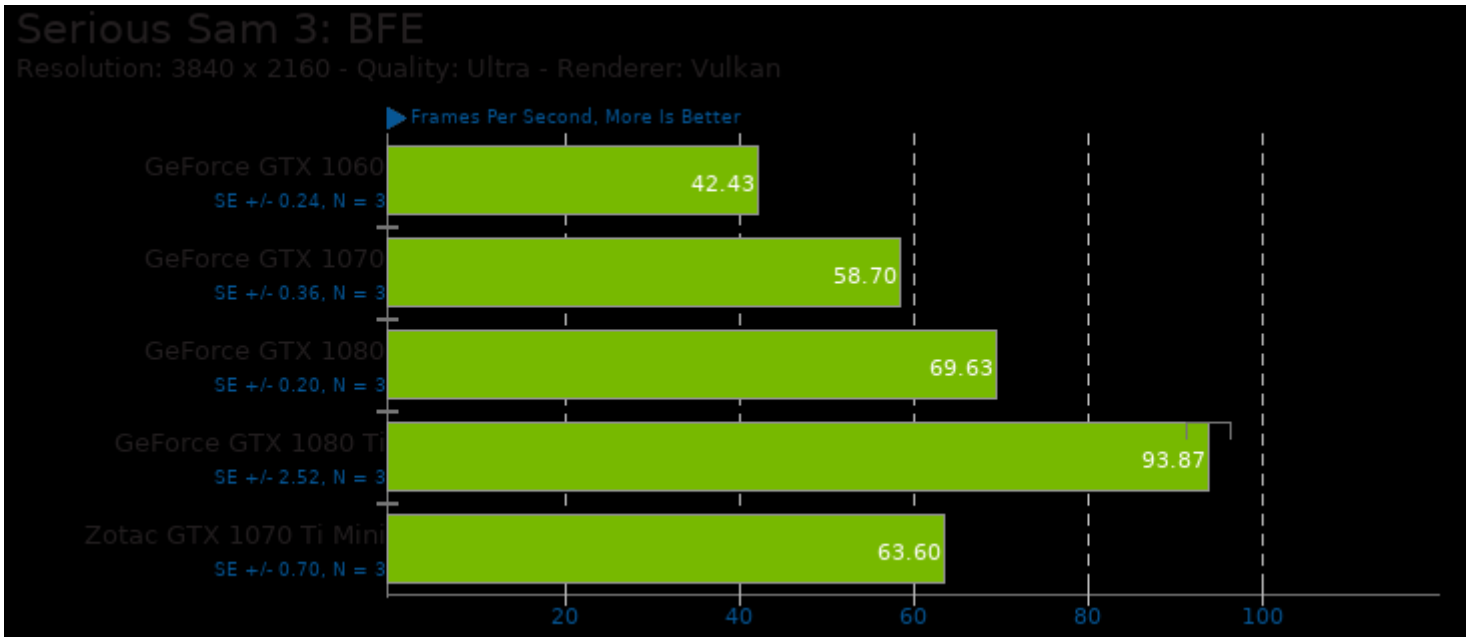


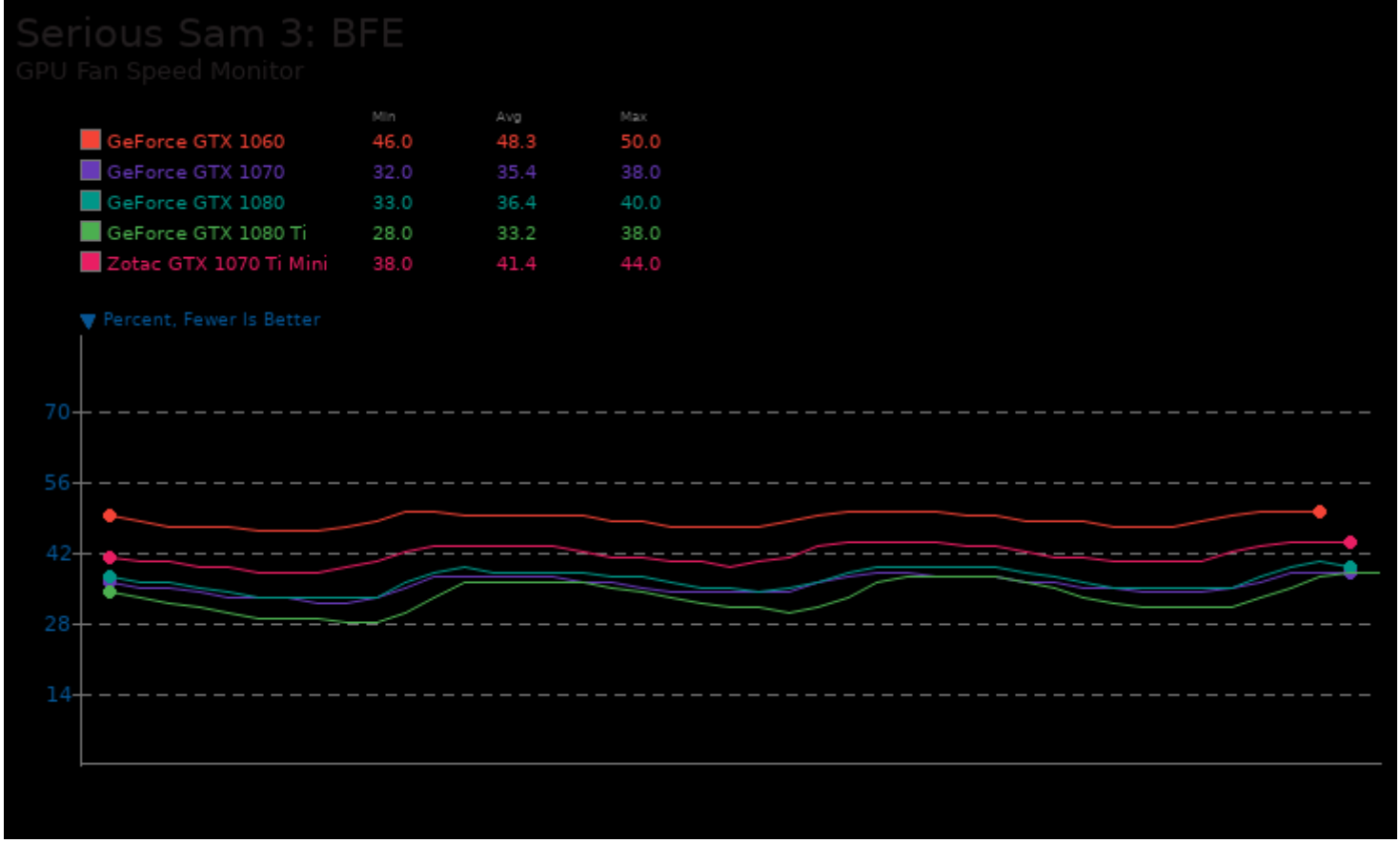
Serious Sam 3: BFE

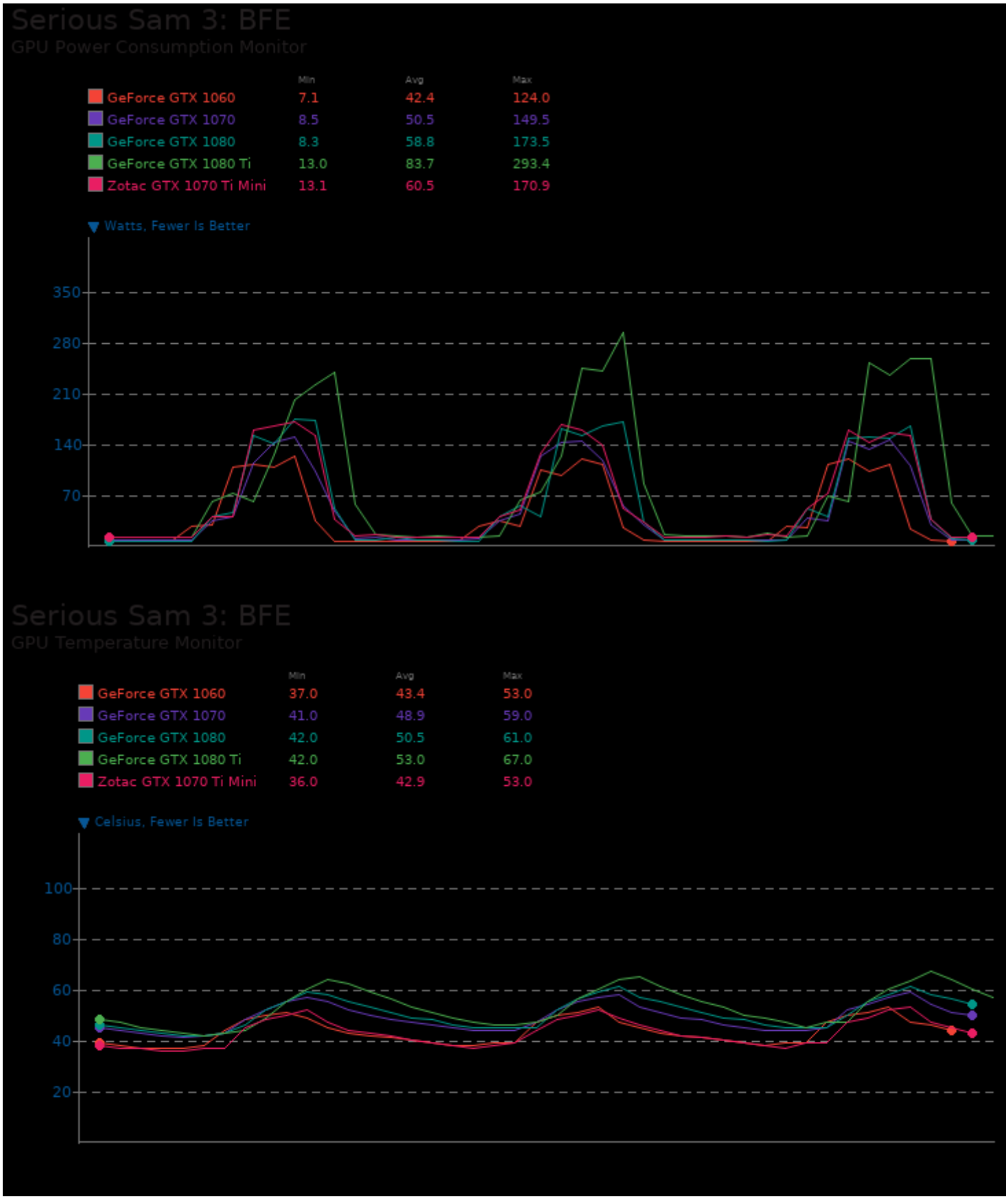
System Power Consumption Monitor

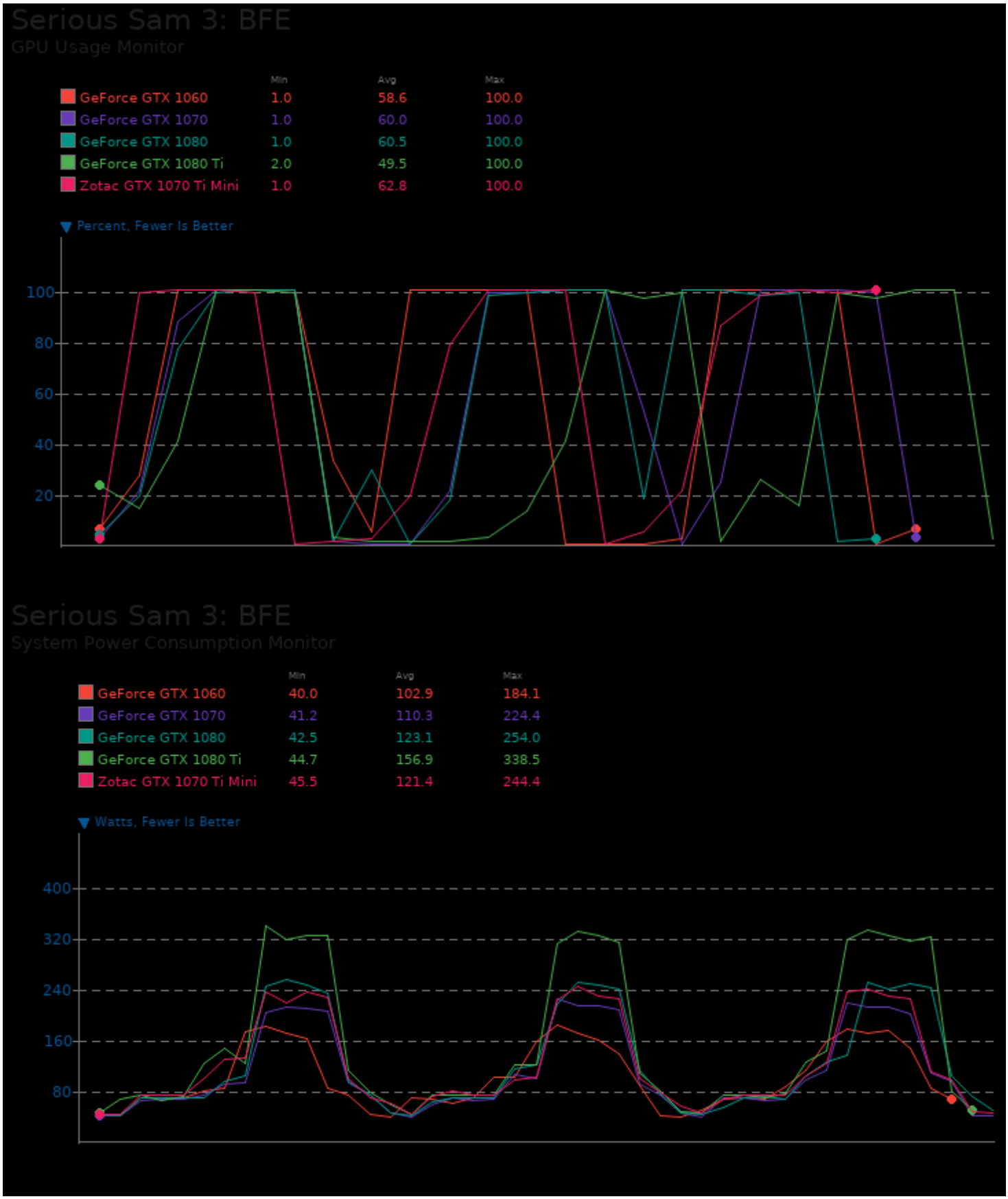
	Min	Avg	Max
GeForce GTX 1060	40.9	102.5	190.4
GeForce GTX 1070	41.5	113.7	232.6
GeForce GTX 1080	44.3	122.8	251.1
GeForce GTX 1080 Ti	46.1	146.2	333.2
Zotac GTX 1070 Ti Mini	46.1	119.7	247.0

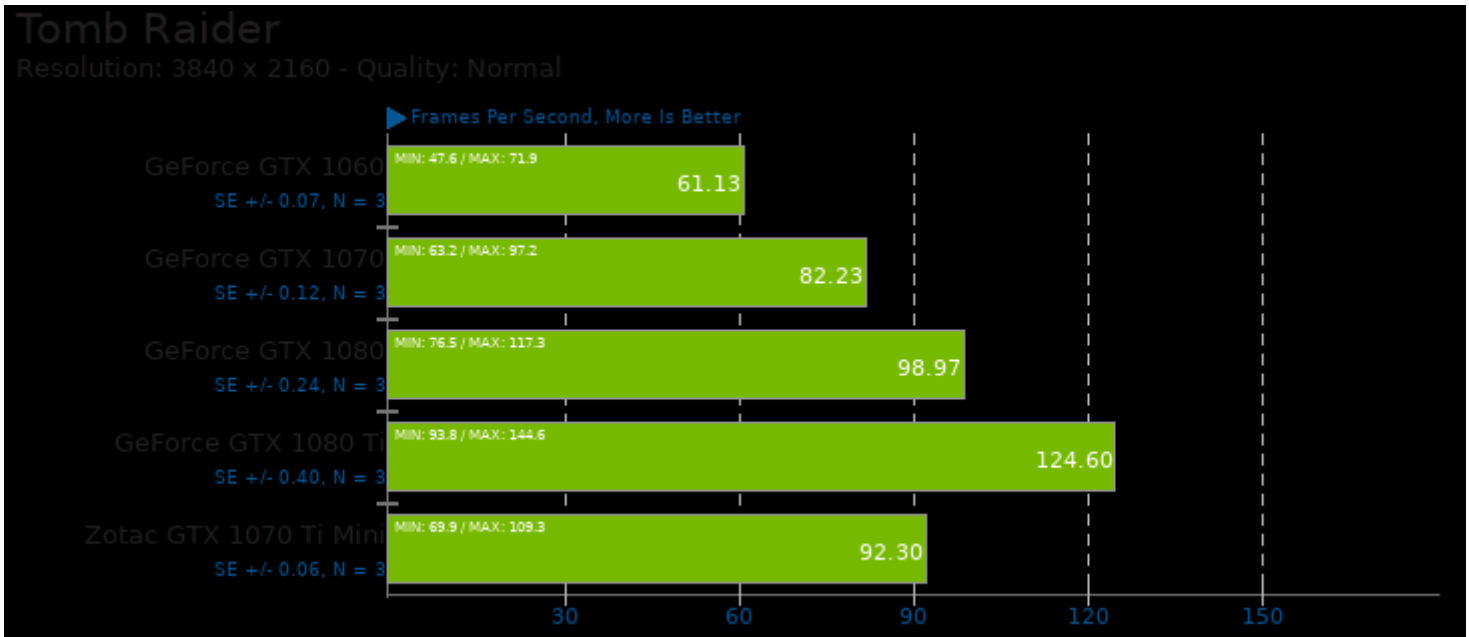


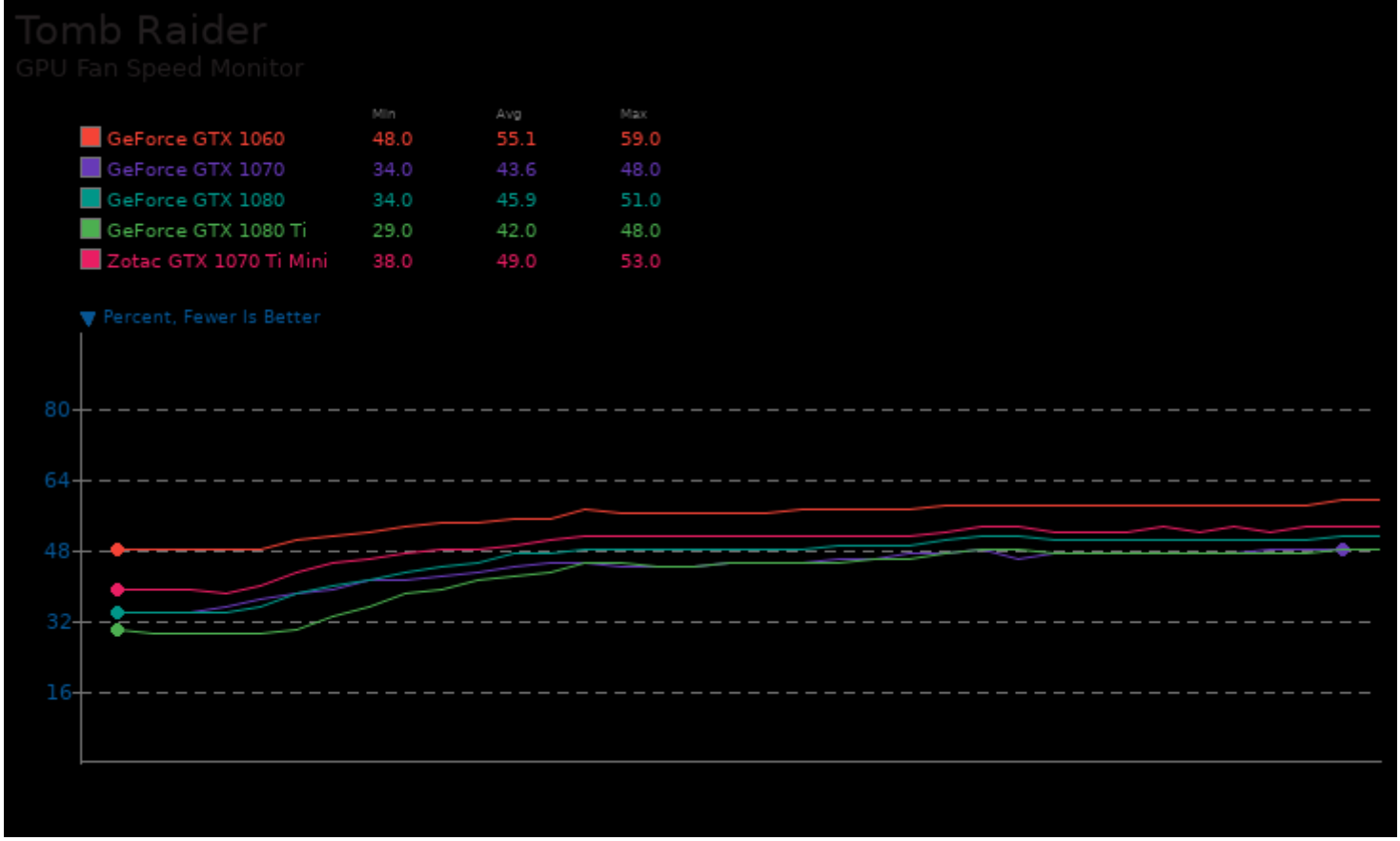

Serious Sam 3: BFE
Resolution: 3840 x 2160 - Quality: Ultra - Renderer: Vulkan
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.24, N = 3
42.43
GeForce GTX 1070
SE +/- 0.36, N = 3
58.70
GeForce GTX 1080
SE +/- 0.20, N = 3
69.63
GeForce GTX 1080 Ti
SE +/- 2.52, N = 3
93.87
Zotac GTX 1070 Ti Mini
SE +/- 0.70, N = 3
63.60
20
40
60
80
100

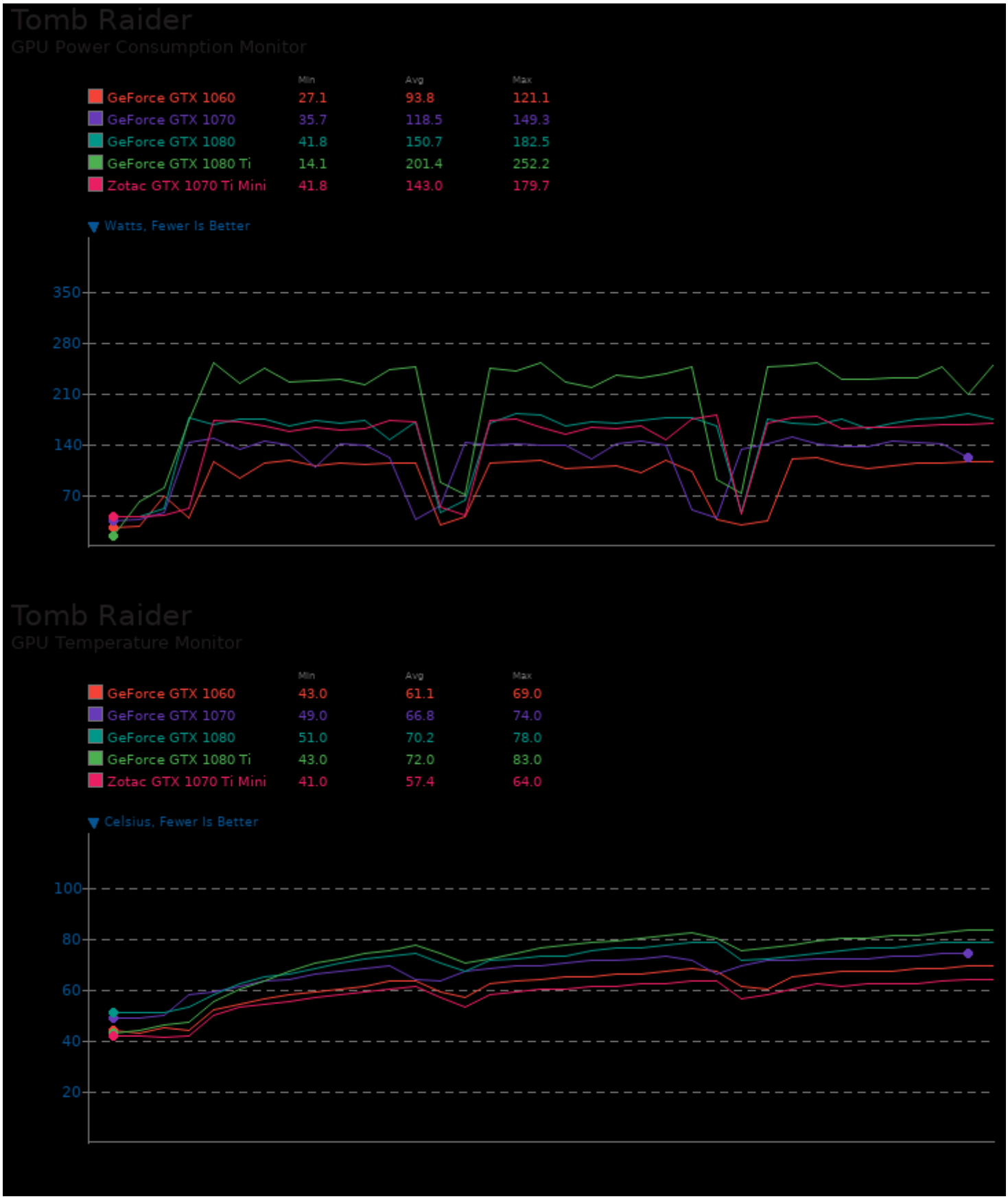

Serious Sam 3: BFE
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 46.0 48.3 50.0
GeForce GTX 1070 32.0 35.4 38.0
GeForce GTX 1080 33.0 36.4 40.0
GeForce GTX 1080 Ti 28.0 33.2 38.0
Zotac GTX 1070 Ti Mini 38.0 41.4 44.0
Percent, Fewer Is Better
70
56
42
28
14

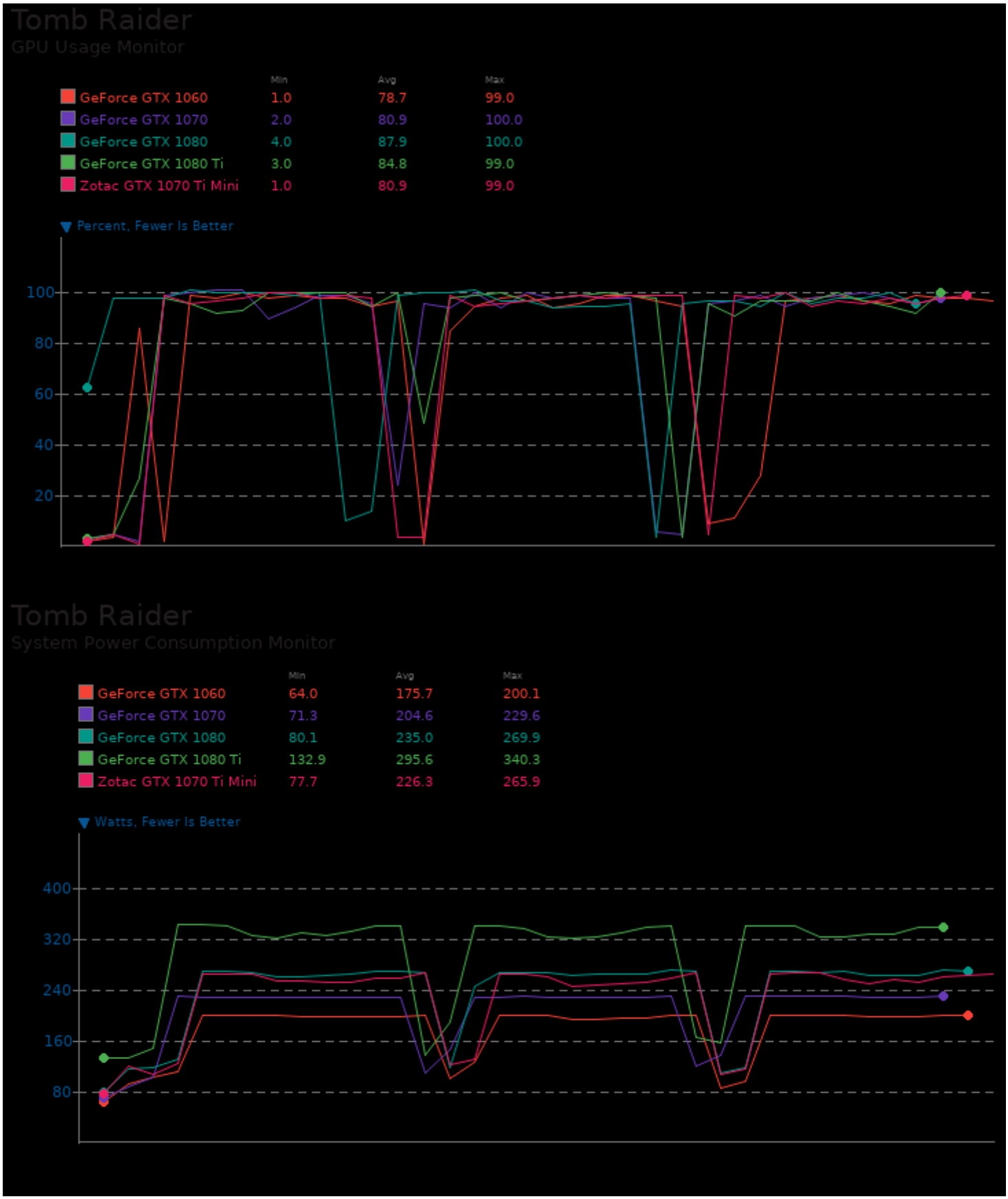

Serious Sam 3: BFE
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 7.1 42.4 124.0
GeForce GTX 1070 8.5 50.5 149.5
GeForce GTX 1080 8.3 58.8 173.5
GeForce GTX 1080 Ti 13.0 83.7 293.4
Zotac GTX 1070 Ti Mini 13.1 60.5 170.9
Watts, Fewer Is Better
350
280
210
140
70
Serious Sam 3: BFE
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 37.0 43.4 53.0
GeForce GTX 1070 41.0 48.9 59.0
GeForce GTX 1080 42.0 50.5 61.0
GeForce GTX 1080 Ti 42.0 53.0 67.0
Zotac GTX 1070 Ti Mini 36.0 42.9 53.0
Celsius, Fewer Is Better
100
80
60
40
20

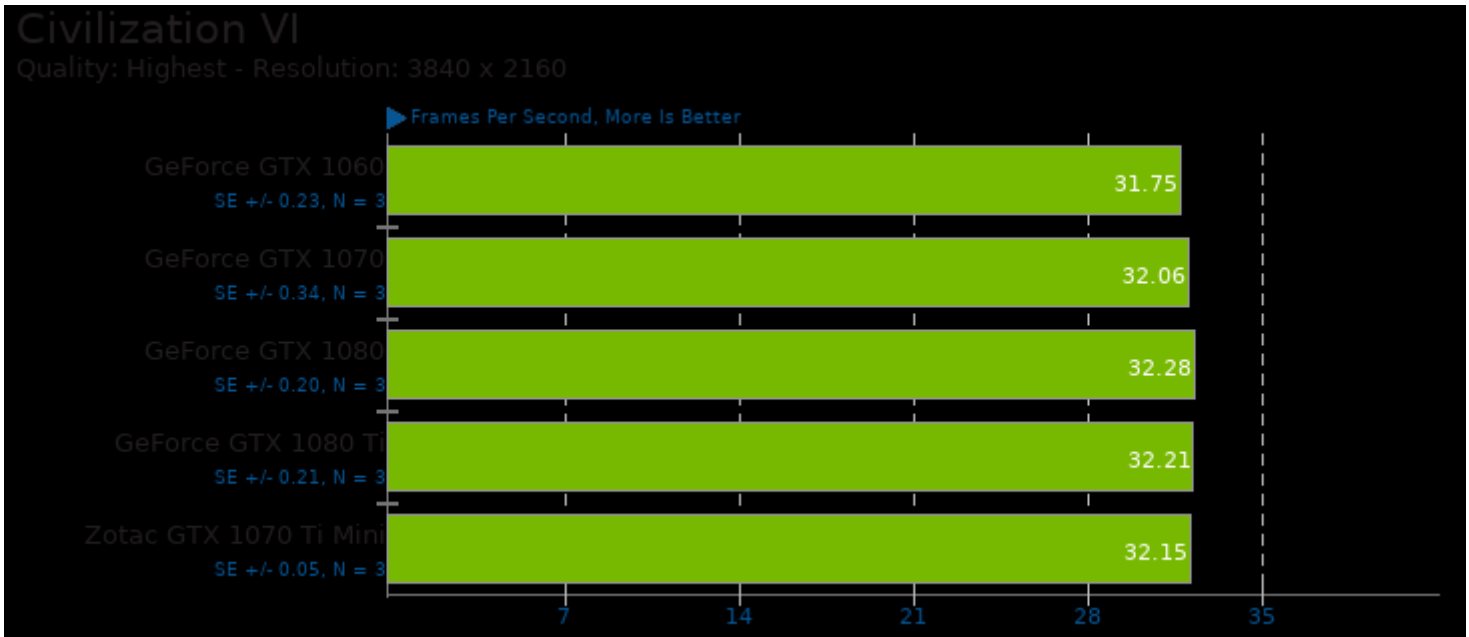

Serious Sam 3: BFE
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 58.6 100.0
GeForce GTX 1070 1.0 60.0 100.0
GeForce GTX 1080 1.0 60.5 100.0
GeForce GTX 1080 Ti 2.0 49.5 100.0
Zotac GTX 1070 Ti Mini 1.0 62.8 100.0
Percent, Fewer Is Better
100
80
60
40
20
Serious Sam 3: BFE
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 40.0 102.9 184.1
GeForce GTX 1070 41.2 110.3 224.4
GeForce GTX 1080 42.5 123.1 254.0
GeForce GTX 1080 Ti 44.7 156.9 338.5
Zotac GTX 1070 Ti Mini 45.5 121.4 244.4
Watts, Fewer Is Better
400
320
240
160
80

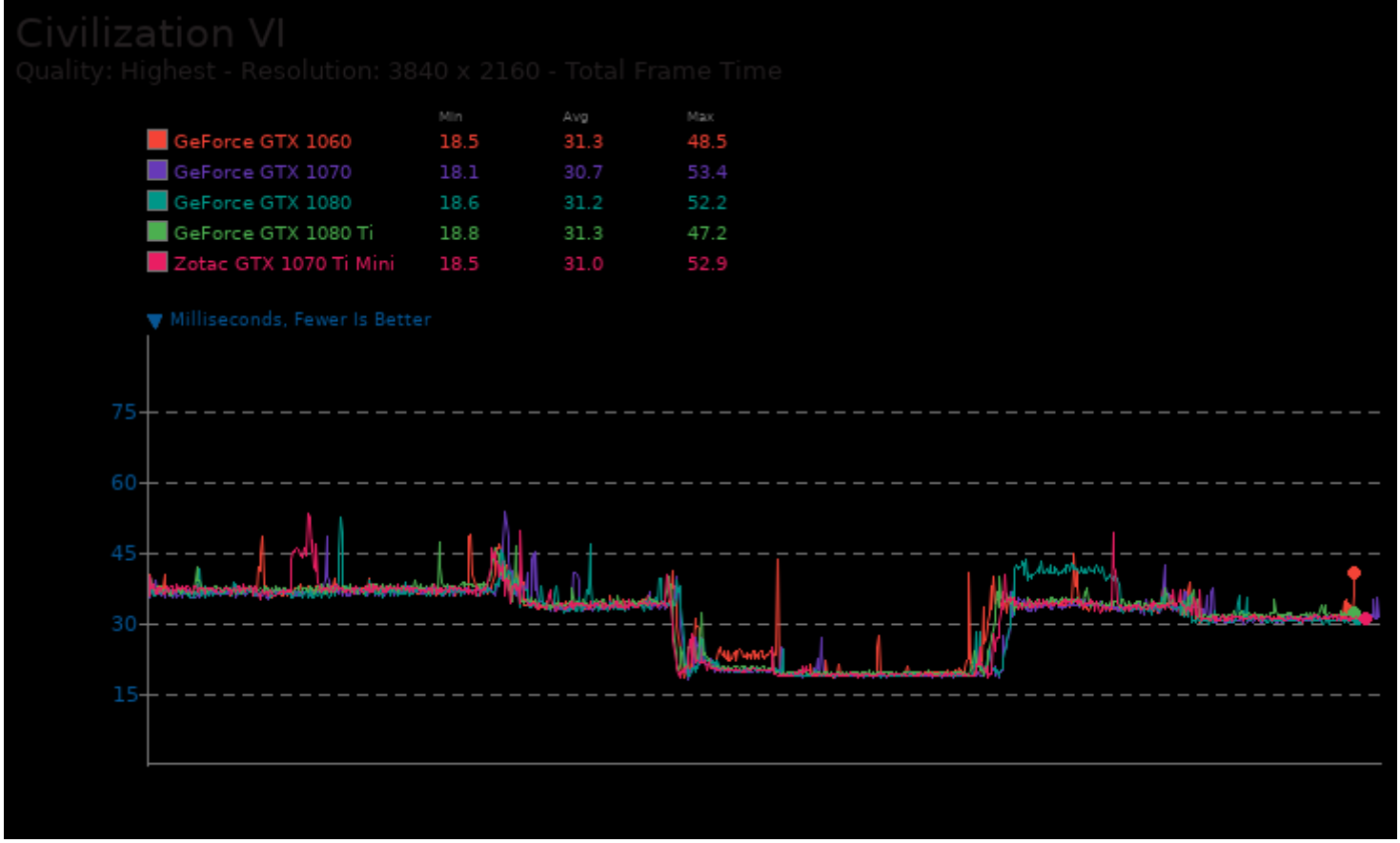

Tomb Raider
Resolution: 3840 x 2160 - Quality: Normal
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.07, N = 3
MIN: 47.6 / MAX: 71.9
61.13
GeForce GTX 1070
SE +/- 0.12, N = 3
MIN: 63.2 / MAX: 97.2
82.23
GeForce GTX 1080
SE +/- 0.24, N = 3
MIN: 76.5 / MAX: 117.3
98.97
GeForce GTX 1080 Ti
SE +/- 0.40, N = 3
MIN: 93.8 / MAX: 144.6
124.60
Zotac GTX 1070 Ti Mini
SE +/- 0.06, N = 3
MIN: 69.9 / MAX: 109.3
92.30
30
60
90
120
150

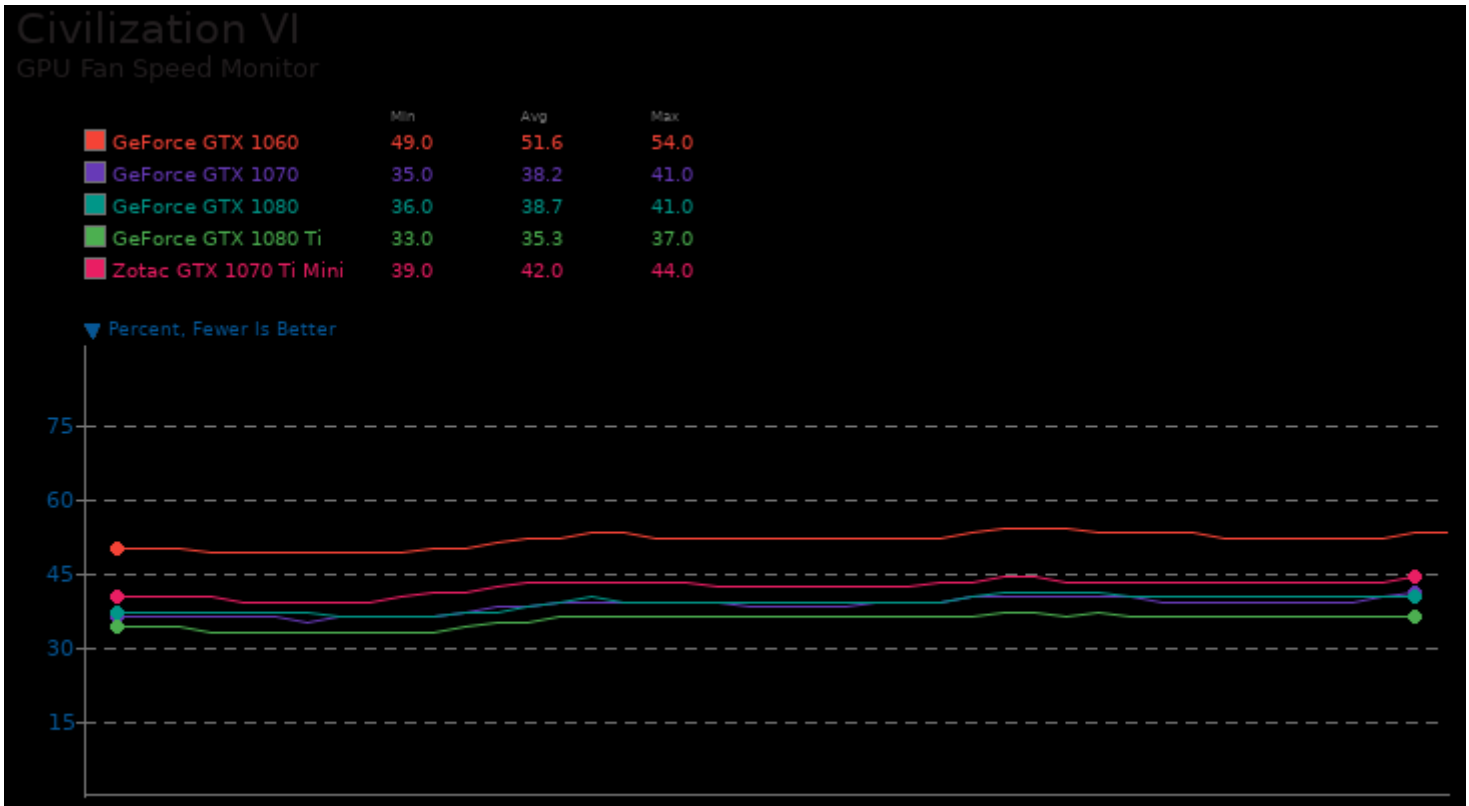

Tomb Raider
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 48.0 55.1 59.0
GeForce GTX 1070 34.0 43.6 48.0
GeForce GTX 1080 34.0 45.9 51.0
GeForce GTX 1080 Ti 29.0 42.0 48.0
Zotac GTX 1070 Ti Mini 38.0 49.0 53.0
Percent, Fewer Is Better
80
64
48
32
16


Tomb Raider
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 27.1 93.8 121.1
GeForce GTX 1070 35.7 118.5 149.3
GeForce GTX 1080 41.8 150.7 182.5
GeForce GTX 1080 Ti 14.1 201.4 252.2
Zotac GTX 1070 Ti Mini 41.8 143.0 179.7
Watts, Fewer Is Better
350
280
210
140
70
Tomb Raider
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 43.0 61.1 69.0
GeForce GTX 1070 49.0 66.8 74.0
GeForce GTX 1080 51.0 70.2 78.0
GeForce GTX 1080 Ti 43.0 72.0 83.0
Zotac GTX 1070 Ti Mini 41.0 57.4 64.0
Celsius, Fewer Is Better
100
80
60
40
20

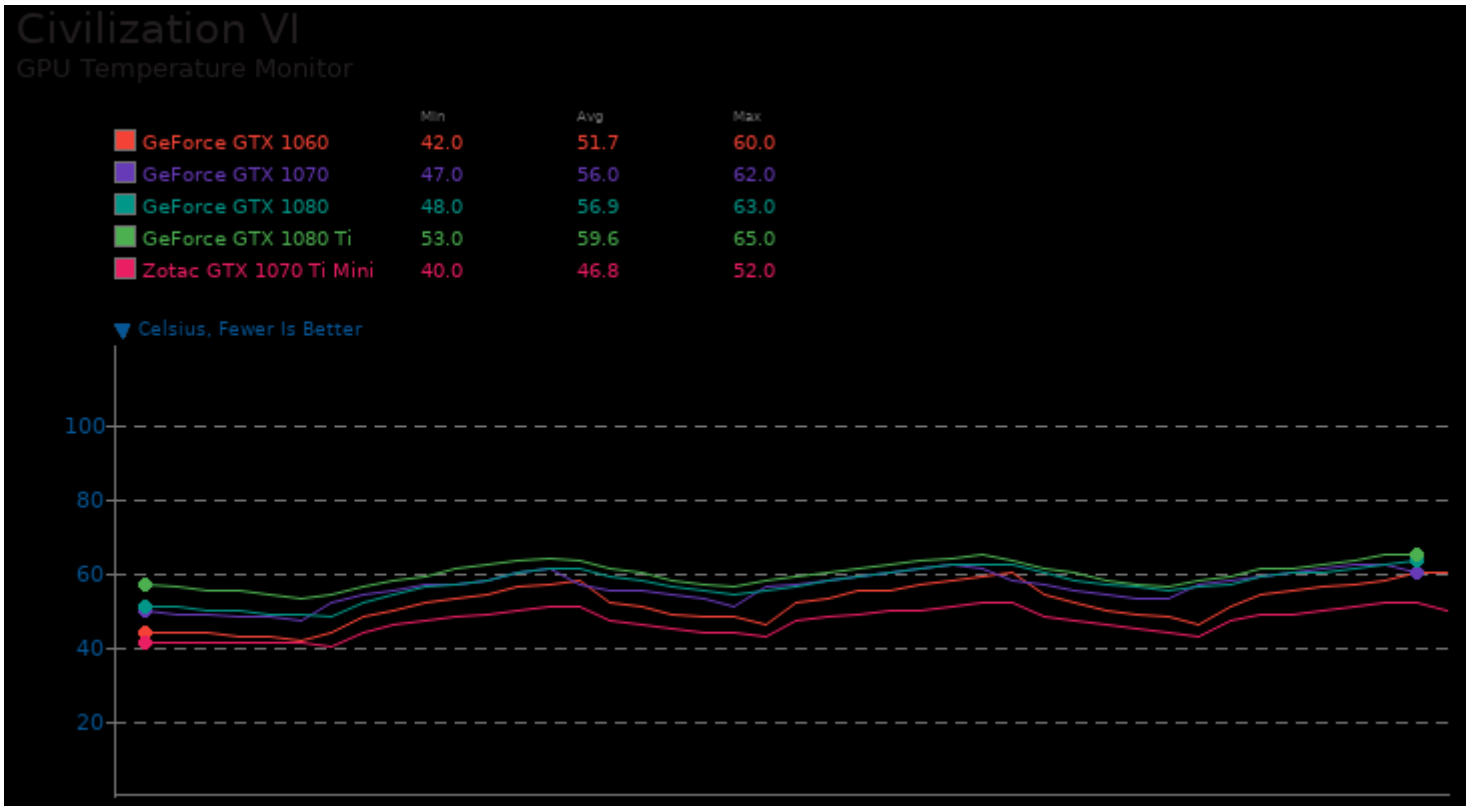

Tomb Raider
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 78.7 99.0
GeForce GTX 1070 2.0 80.9 100.0
GeForce GTX 1080 4.0 87.9 100.0
GeForce GTX 1080 Ti 3.0 84.8 99.0
Zotac GTX 1070 Ti Mini 1.0 80.9 99.0
Percent, Fewer Is Better
100
80
60
40
20
Tomb Raider
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 64.0 175.7 200.1
GeForce GTX 1070 71.3 204.6 229.6
GeForce GTX 1080 80.1 235.0 269.9
GeForce GTX 1080 Ti 132.9 295.6 340.3
Zotac GTX 1070 Ti Mini 77.7 226.3 265.9
Watts, Fewer Is Better
400
320
240
160
80

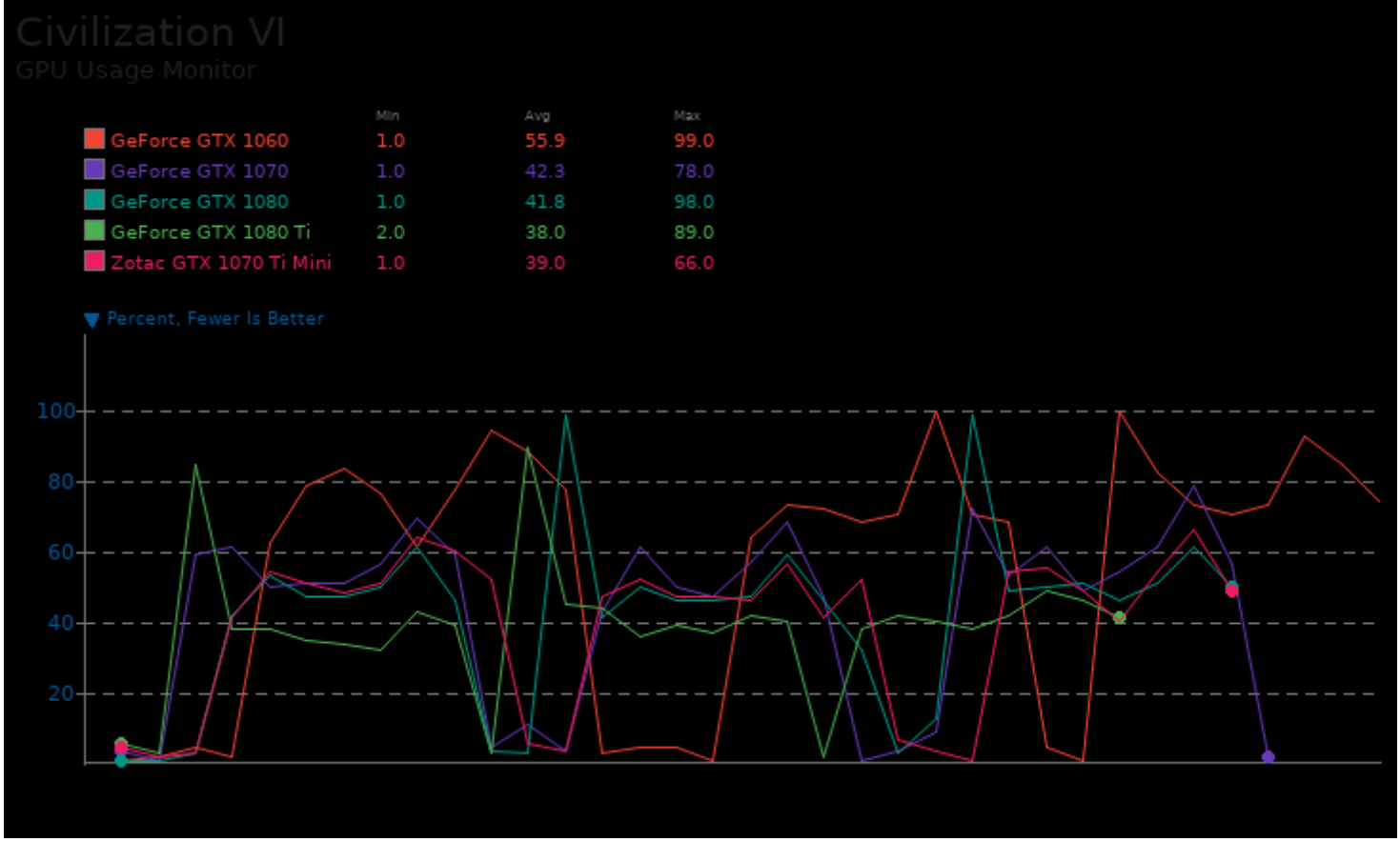

Civilization VI
Quality: Highest - Resolution: 3840 x 2160
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.23, N = 3
31.75
GeForce GTX 1070
SE +/- 0.34, N = 3
32.06
GeForce GTX 1080
SE +/- 0.20, N = 3
32.28
GeForce GTX 1080 Ti
SE +/- 0.21, N = 3
32.21
Zotac GTX 1070 Ti Mini
SE +/- 0.05, N = 3
32.15
7
14
21
28
35

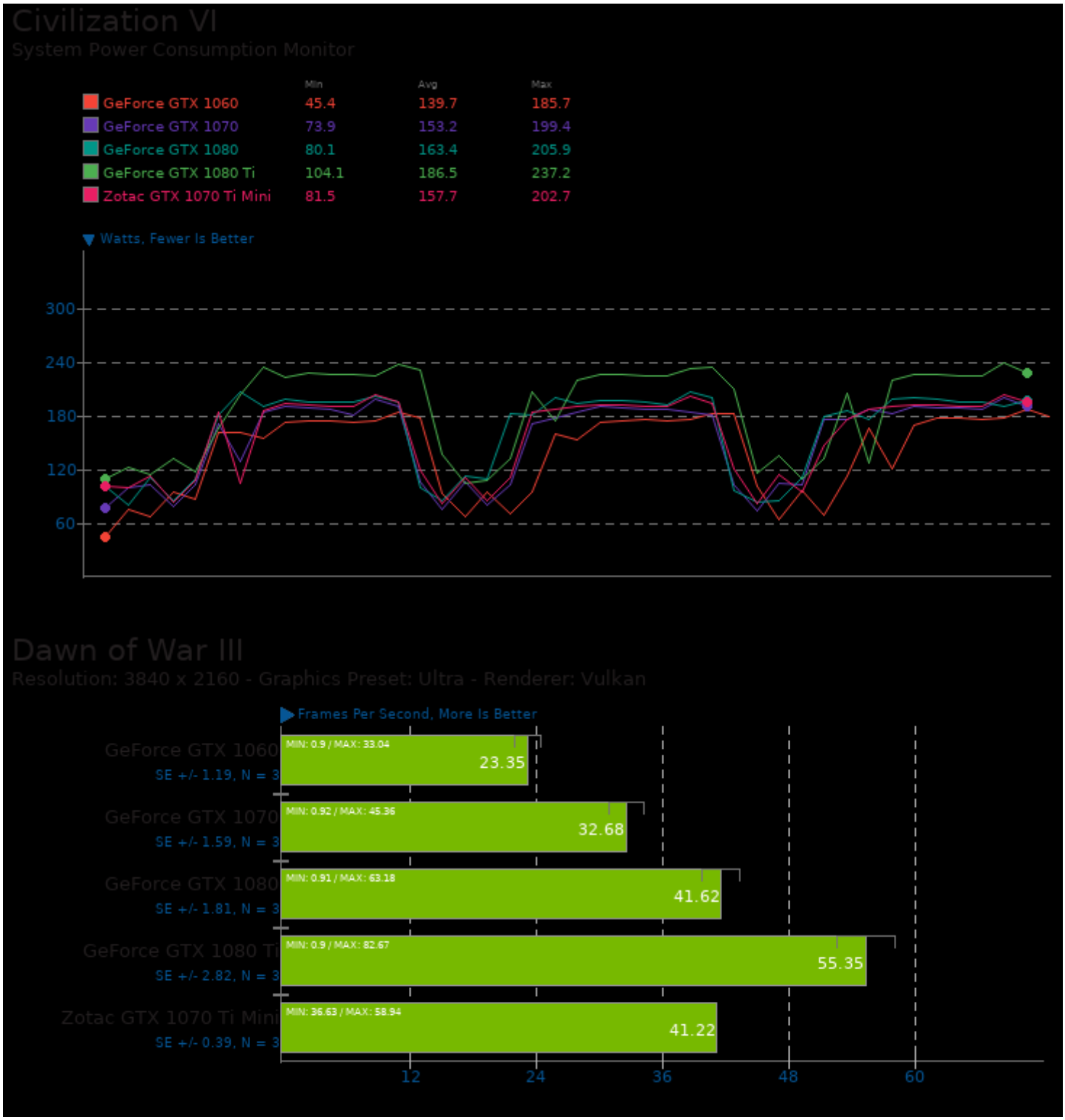

Civilization VI
Quality: Highest - Resolution: 3840 x 2160 - Total Frame Time
Min
Avg
Max
GeForce GTX 1060 18.5 31.3 48.5
GeForce GTX 1070 18.1 30.7 53.4
GeForce GTX 1080 18.6 31.2 52.2
GeForce GTX 1080 Ti 18.8 31.3 47.2
Zotac GTX 1070 Ti Mini 18.5 31.0 52.9
Milliseconds, Fewer Is Better
75
60
45
30
15

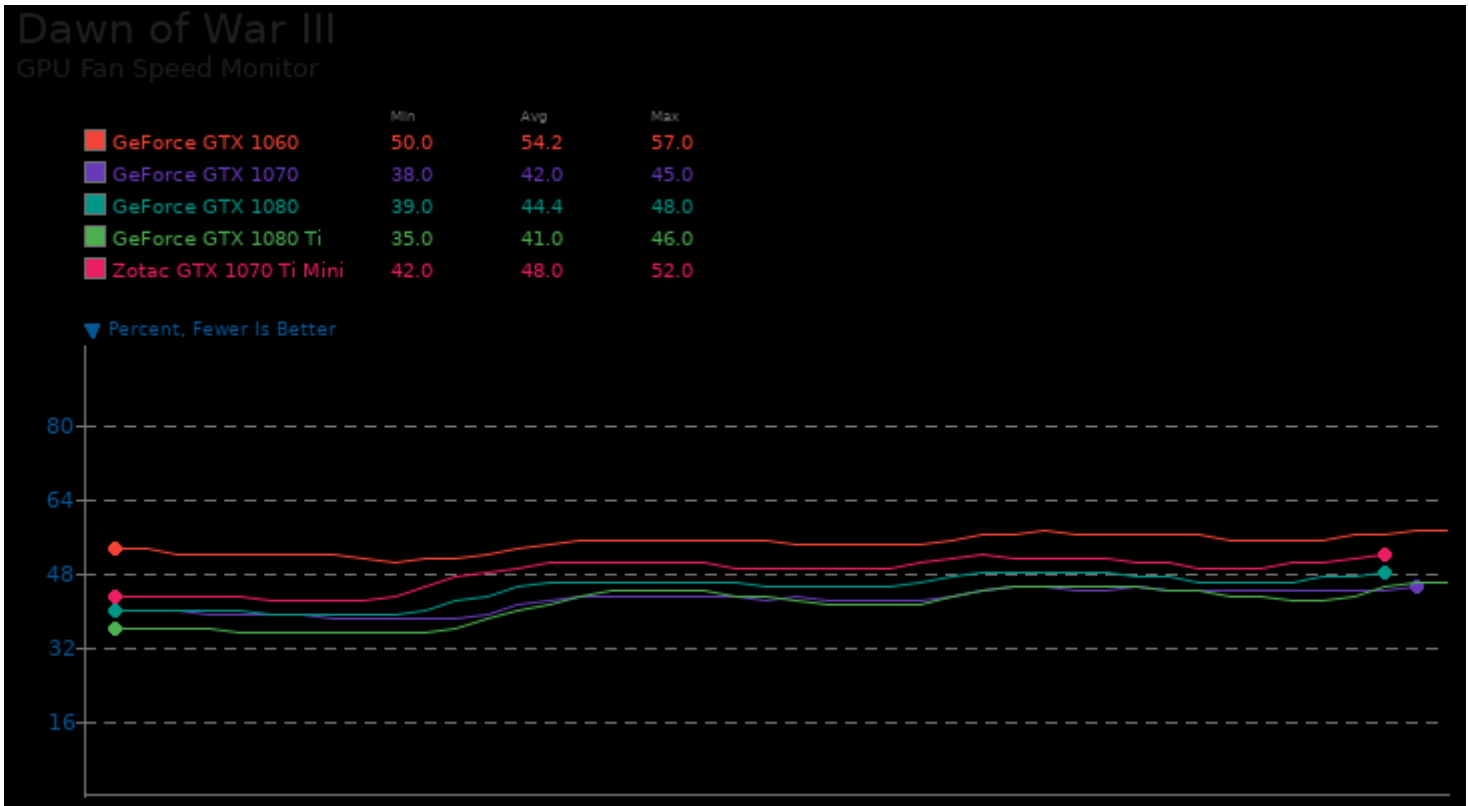

Civilization VI
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 49.0 51.6 54.0
GeForce GTX 1070 35.0 38.2 41.0
GeForce GTX 1080 36.0 38.7 41.0
GeForce GTX 1080 Ti 33.0 35.3 37.0
Zotac GTX 1070 Ti Mini 39.0 42.0 44.0
Percent, Fewer Is Better
75
60
45
30
15

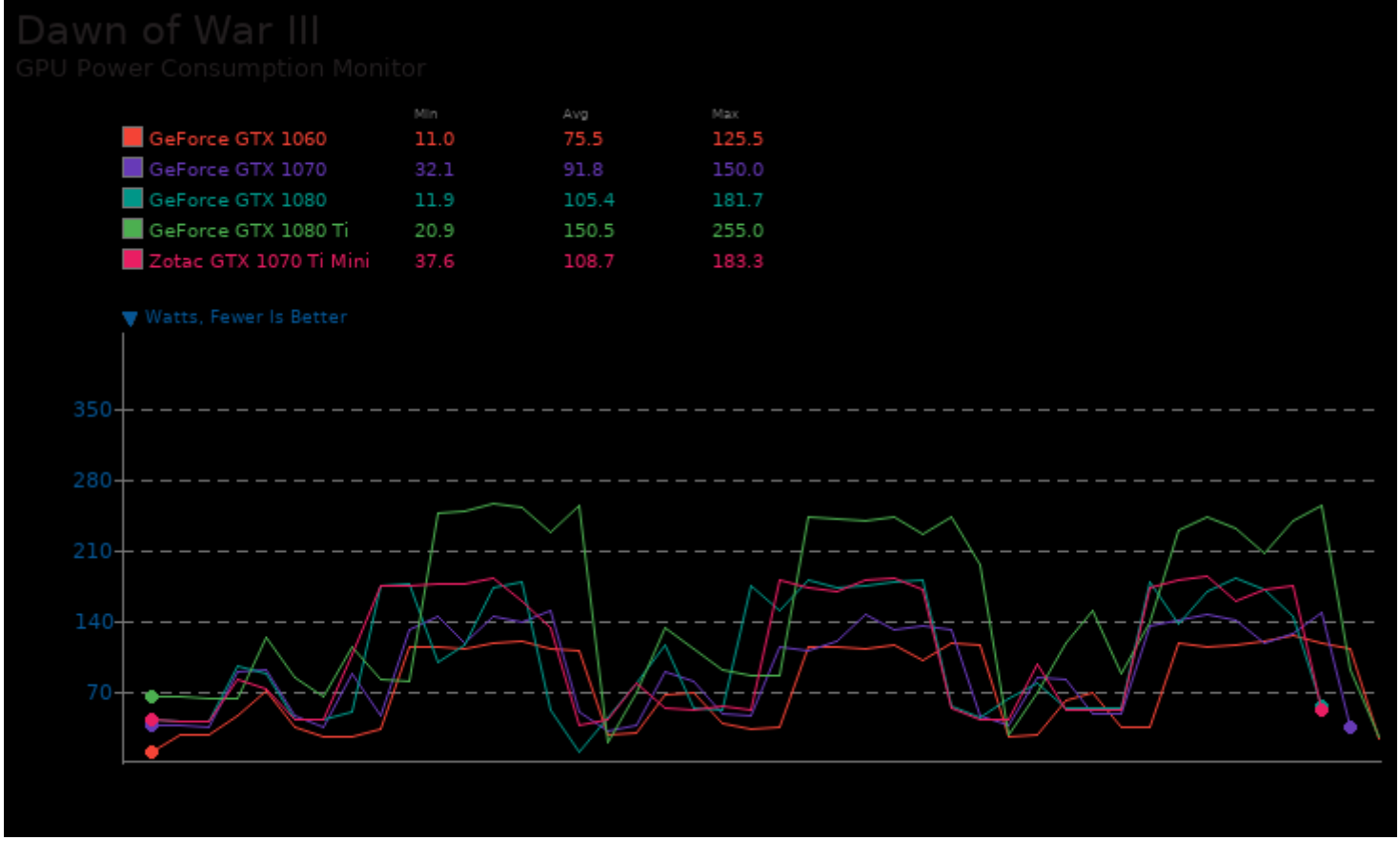

Civilization VI
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 23.5 62.4 107.6
GeForce GTX 1070 29.6 67.9 118.9
GeForce GTX 1080 33.5 78.1 136.1
GeForce GTX 1080 Ti 56.4 112.8 186.7
Zotac GTX 1070 Ti Mini 13.7 73.7 142.4
Watts, Fewer Is Better
250
200
150
100
50

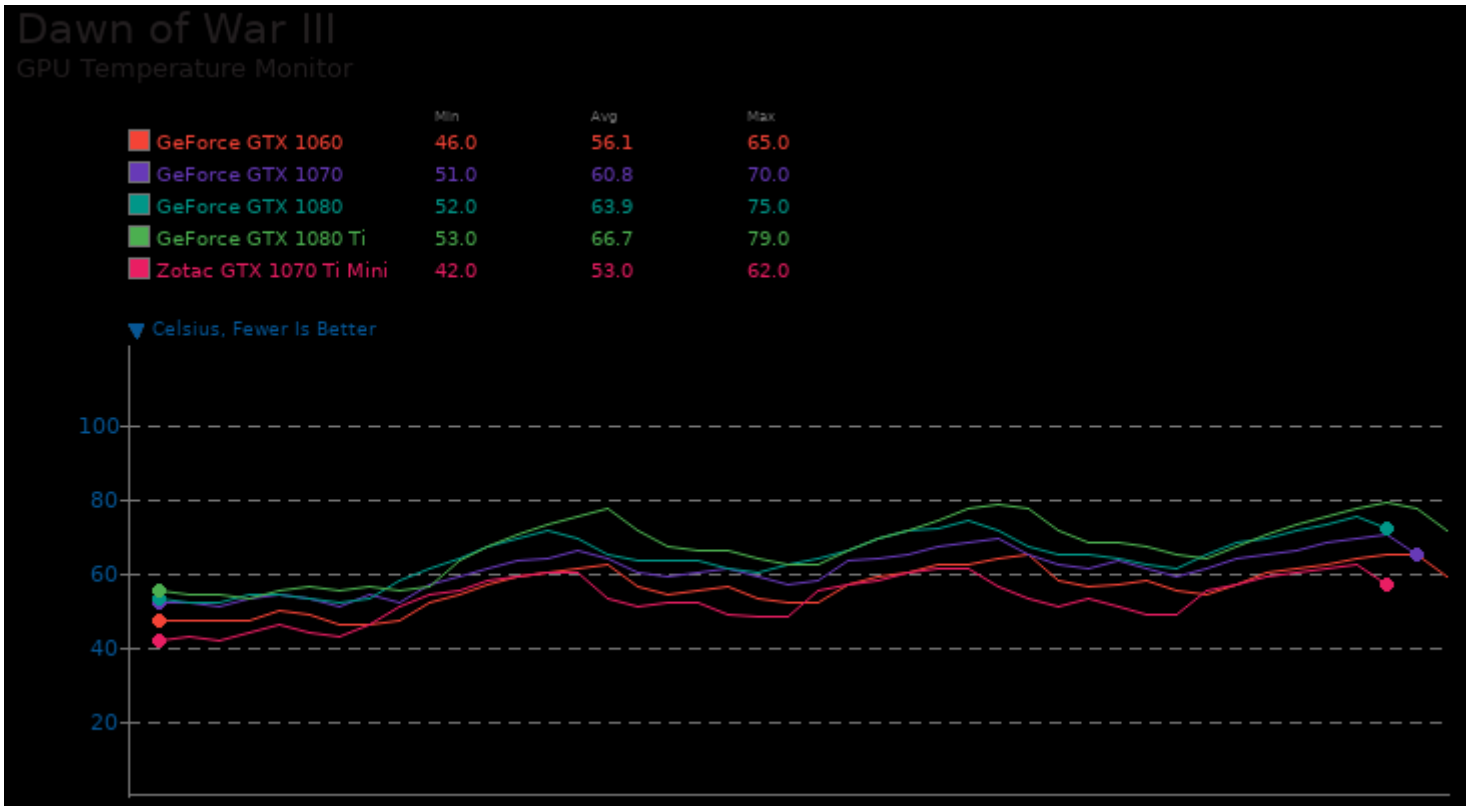

Civilization VI
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 42.0 51.7 60.0
GeForce GTX 1070 47.0 56.0 62.0
GeForce GTX 1080 48.0 56.9 63.0
GeForce GTX 1080 Ti 53.0 59.6 65.0
Zotac GTX 1070 Ti Mini 40.0 46.8 52.0
Celsius, Fewer Is Better
100
80
60
40
20

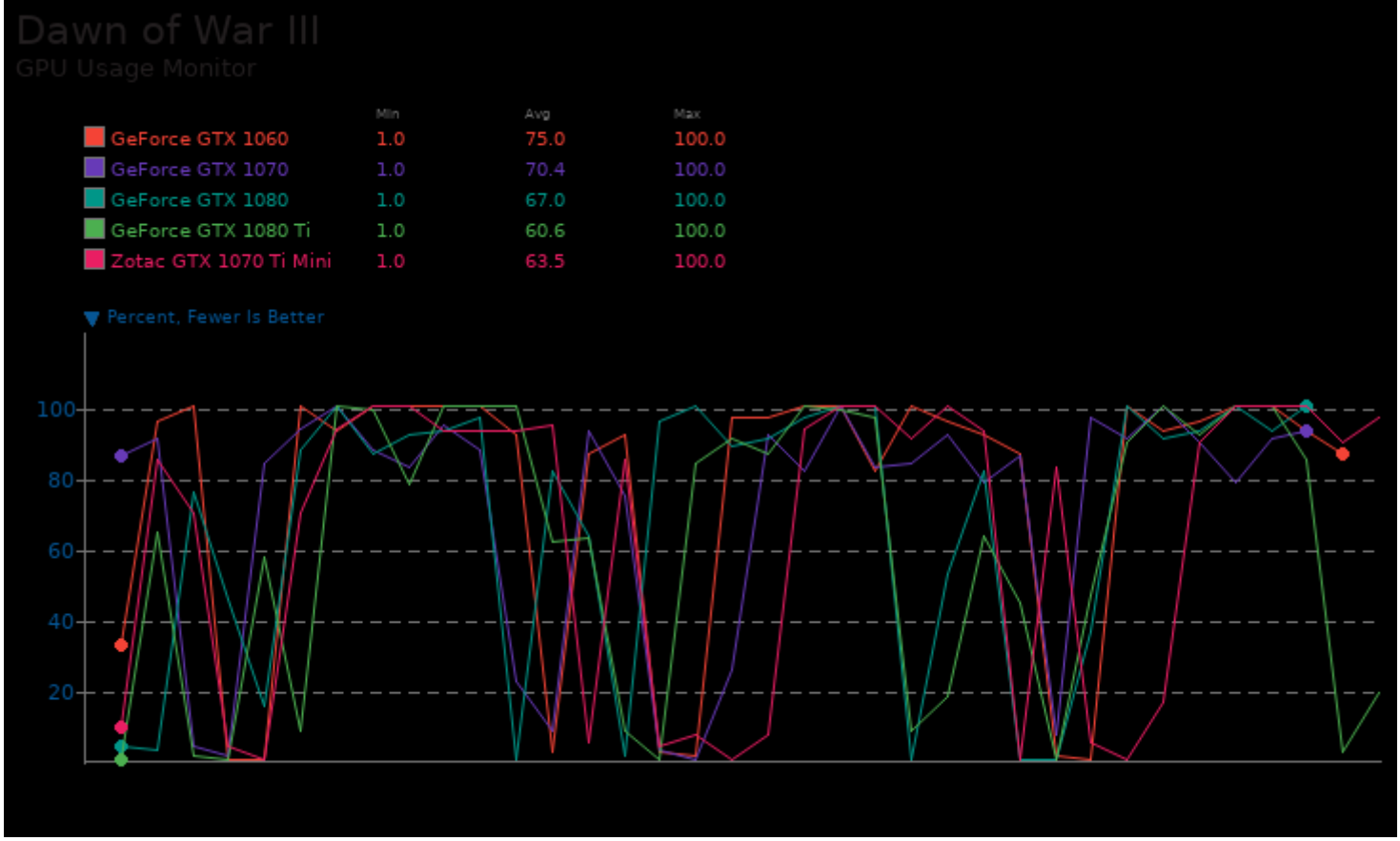

Civilization VI
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 55.9 99.0
GeForce GTX 1070 1.0 42.3 78.0
GeForce GTX 1080 1.0 41.8 98.0
GeForce GTX 1080 Ti 2.0 38.0 89.0
Zotac GTX 1070 Ti Mini 1.0 39.0 66.0
Percent, Fewer Is Better
100
80
60
40
20

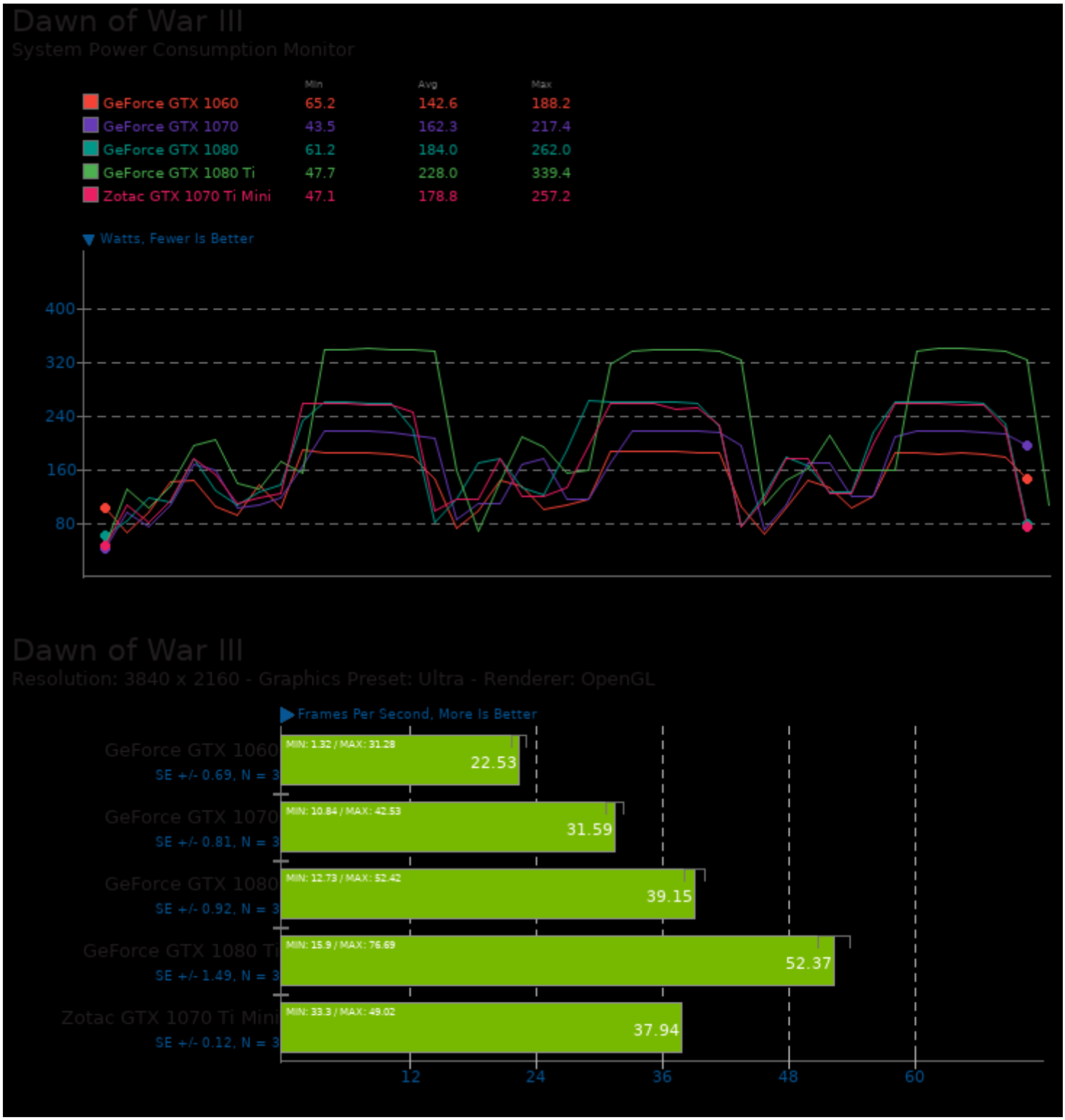

Civilization VI
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 45.4 139.7 185.7
GeForce GTX 1070 73.9 153.2 199.4
GeForce GTX 1080 80.1 163.4 205.9
GeForce GTX 1080 Ti 104.1 186.5 237.2
Zotac GTX 1070 Ti Mini 81.5 157.7 202.7
Watts, Fewer Is Better
300
240
180
120
60
Dawn of War III
Resolution: 3840 x 2160 - Graphics Preset: Ultra - Renderer: Vulkan
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 1.19, N = 3
MIN: 0.9 / MAX: 33.04
23.35
GeForce GTX 1070
SE +/- 1.59, N = 3
MIN: 0.92 / MAX: 45.36
32.68
GeForce GTX 1080
SE +/- 1.81, N = 3
MIN: 0.91 / MAX: 63.18
41.62
GeForce GTX 1080 Ti
SE +/- 2.82, N = 3
MIN: 0.9 / MAX: 82.67
55.35
Zotac GTX 1070 Ti Mini
SE +/- 0.39, N = 3
MIN: 36.63 / MAX: 58.94
41.22
12
24
36
48
60

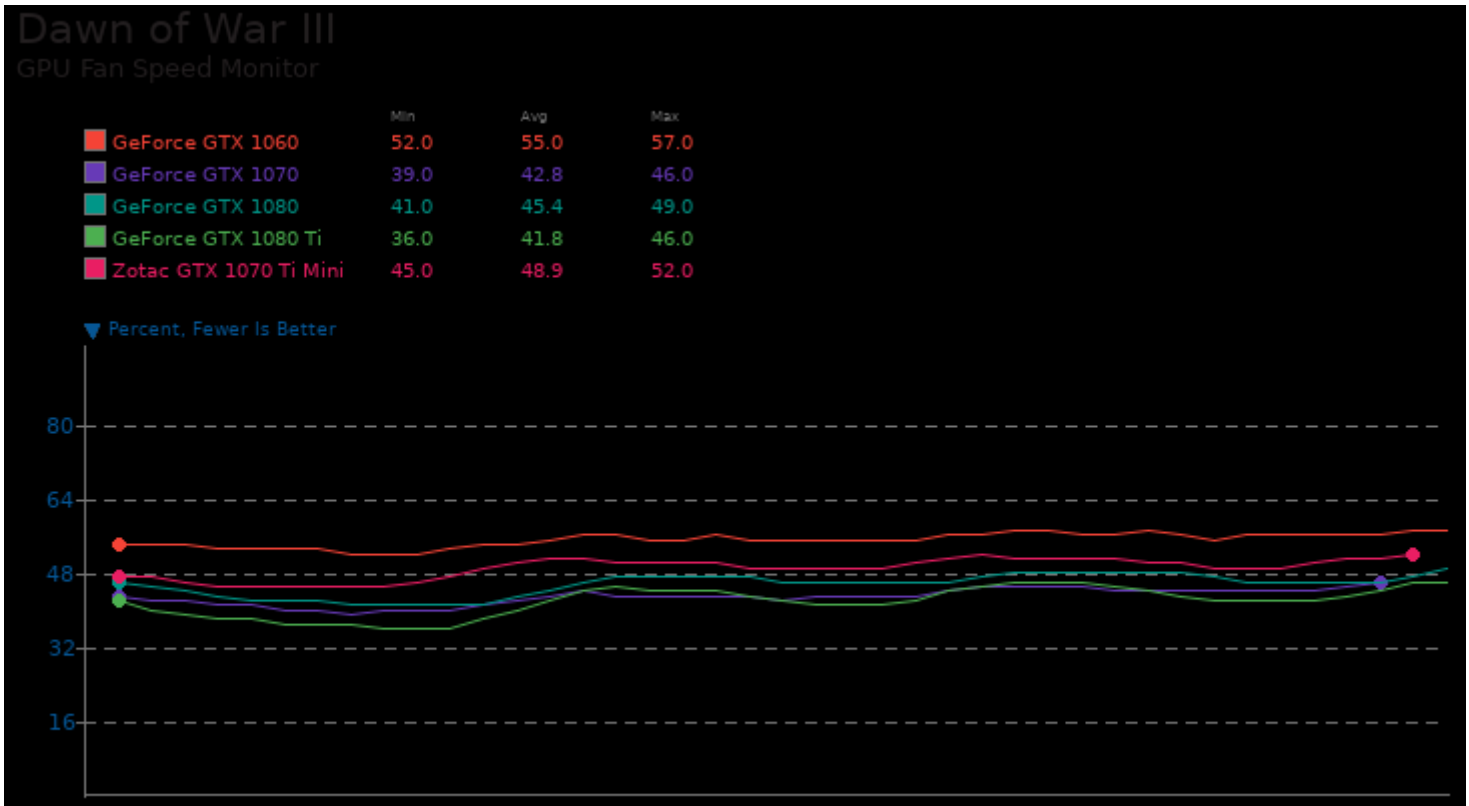

Dawn of War III
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 50.0 54.2 57.0
GeForce GTX 1070 38.0 42.0 45.0
GeForce GTX 1080 39.0 44.4 48.0
GeForce GTX 1080 Ti 35.0 41.0 46.0
Zotac GTX 1070 Ti Mini 42.0 48.0 52.0
Percent, Fewer Is Better
80
64
48
32
16

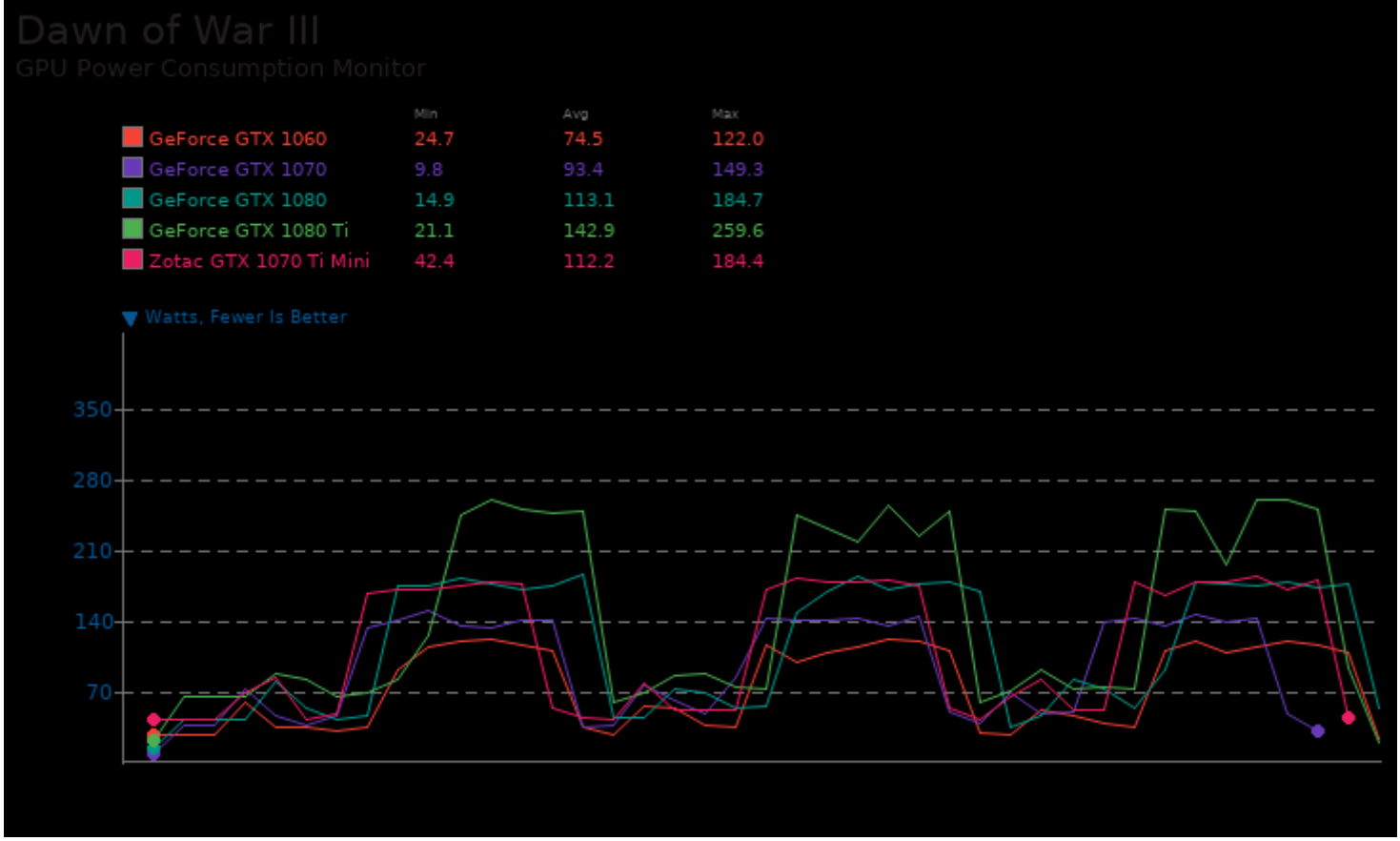

Dawn of War III
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 11.0 75.5 125.5
GeForce GTX 1070 32.1 91.8 150.0
GeForce GTX 1080 11.9 105.4 181.7
GeForce GTX 1080 Ti 20.9 150.5 255.0
Zotac GTX 1070 Ti Mini 37.6 108.7 183.3
Watts, Fewer Is Better
350
280
210
140
70

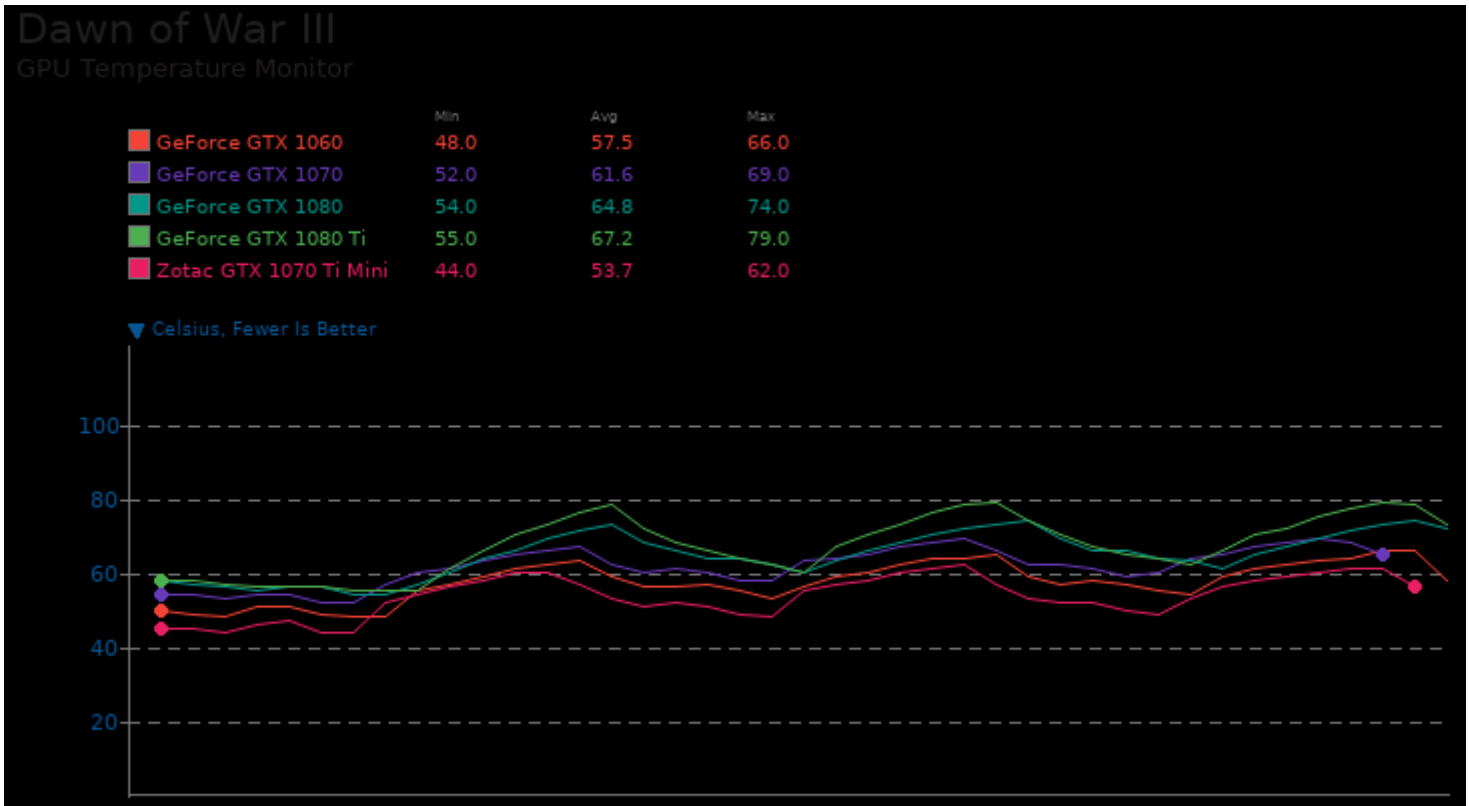

Dawn of War III
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 46.0 56.1 65.0
GeForce GTX 1070 51.0 60.8 70.0
GeForce GTX 1080 52.0 63.9 75.0
GeForce GTX 1080 Ti 53.0 66.7 79.0
Zotac GTX 1070 Ti Mini 42.0 53.0 62.0
Celsius, Fewer Is Better
100
80
60
40
20

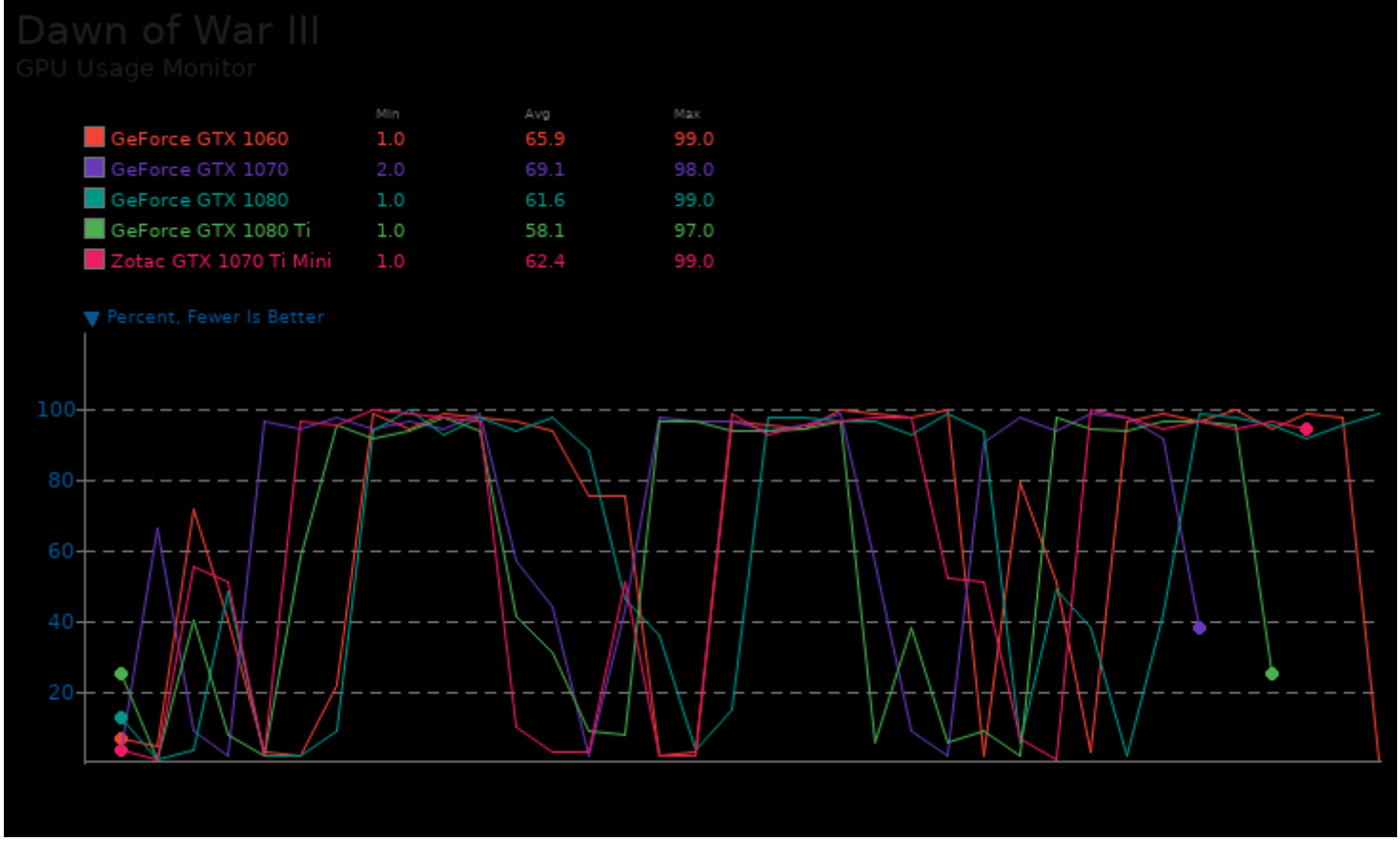

Dawn of War III
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 75.0 100.0
GeForce GTX 1070 1.0 70.4 100.0
GeForce GTX 1080 1.0 67.0 100.0
GeForce GTX 1080 Ti 1.0 60.6 100.0
Zotac GTX 1070 Ti Mini 1.0 63.5 100.0
Percent, Fewer Is Better
100
80
60
40
20


Dawn of War III
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 65.2 142.6 188.2
GeForce GTX 1070 43.5 162.3 217.4
GeForce GTX 1080 61.2 184.0 262.0
GeForce GTX 1080 Ti 47.7 228.0 339.4
Zotac GTX 1070 Ti Mini 47.1 178.8 257.2
Watts, Fewer Is Better
400
320
240
160
80
Dawn of War III
Resolution: 3840 x 2160 - Graphics Preset: Ultra - Renderer: OpenGL
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.69, N = 3
MIN: 1.32 / MAX: 31.28
22.53
GeForce GTX 1070
SE +/- 0.81, N = 3
MIN: 10.84 / MAX: 42.53
31.59
GeForce GTX 1080
SE +/- 0.92, N = 3
MIN: 12.73 / MAX: 52.42
39.15
GeForce GTX 1080 Ti
SE +/- 1.49, N = 3
MIN: 15.9 / MAX: 76.69
52.37
Zotac GTX 1070 Ti Mini
SE +/- 0.12, N = 3
MIN: 33.3 / MAX: 49.02
37.94
12
24
36
48
60


Dawn of War III
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 52.0 55.0 57.0
GeForce GTX 1070 39.0 42.8 46.0
GeForce GTX 1080 41.0 45.4 49.0
GeForce GTX 1080 Ti 36.0 41.8 46.0
Zotac GTX 1070 Ti Mini 45.0 48.9 52.0
Percent, Fewer Is Better
80
64
48
32
16


Dawn of War III
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 24.7 74.5 122.0
GeForce GTX 1070 9.8 93.4 149.3
GeForce GTX 1080 14.9 113.1 184.7
GeForce GTX 1080 Ti 21.1 142.9 259.6
Zotac GTX 1070 Ti Mini 42.4 112.2 184.4
Watts, Fewer Is Better
350
280
210
140
70

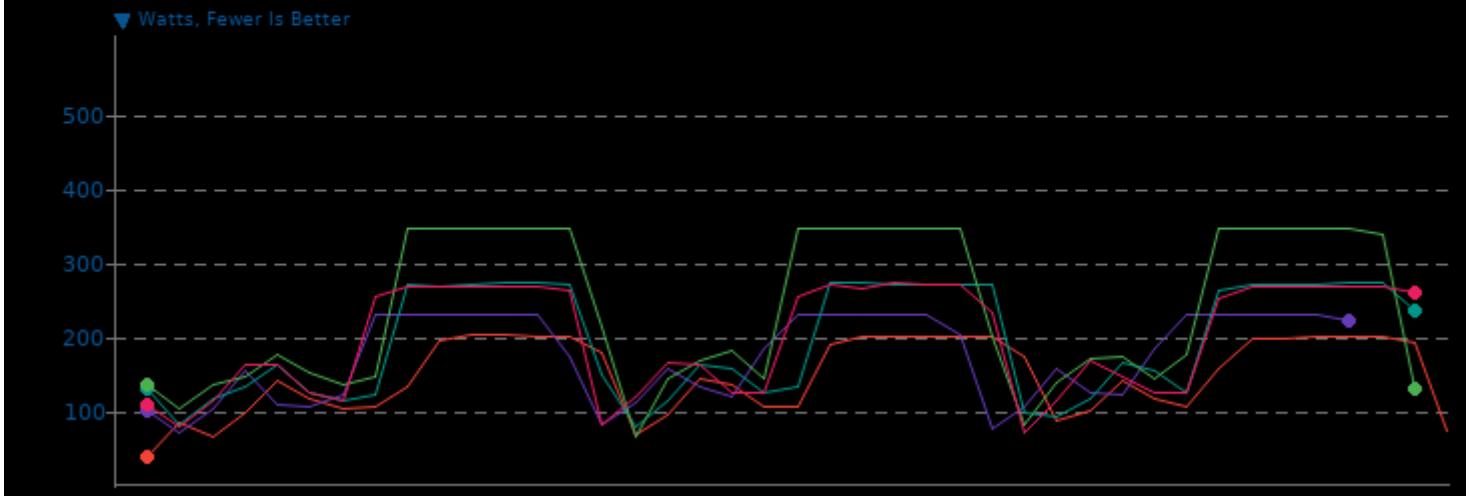

Dawn of War III
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 48.0 57.5 66.0
GeForce GTX 1070 52.0 61.6 69.0
GeForce GTX 1080 54.0 64.8 74.0
GeForce GTX 1080 Ti 55.0 67.2 79.0
Zotac GTX 1070 Ti Mini 44.0 53.7 62.0
Celsius, Fewer Is Better
100
80
60
40
20


Dawn of War III
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 65.9 99.0
GeForce GTX 1070 2.0 69.1 98.0
GeForce GTX 1080 1.0 61.6 99.0
GeForce GTX 1080 Ti 1.0 58.1 97.0
Zotac GTX 1070 Ti Mini 1.0 62.4 99.0
Percent, Fewer Is Better
100
80
60
40
20

Dawn of War III

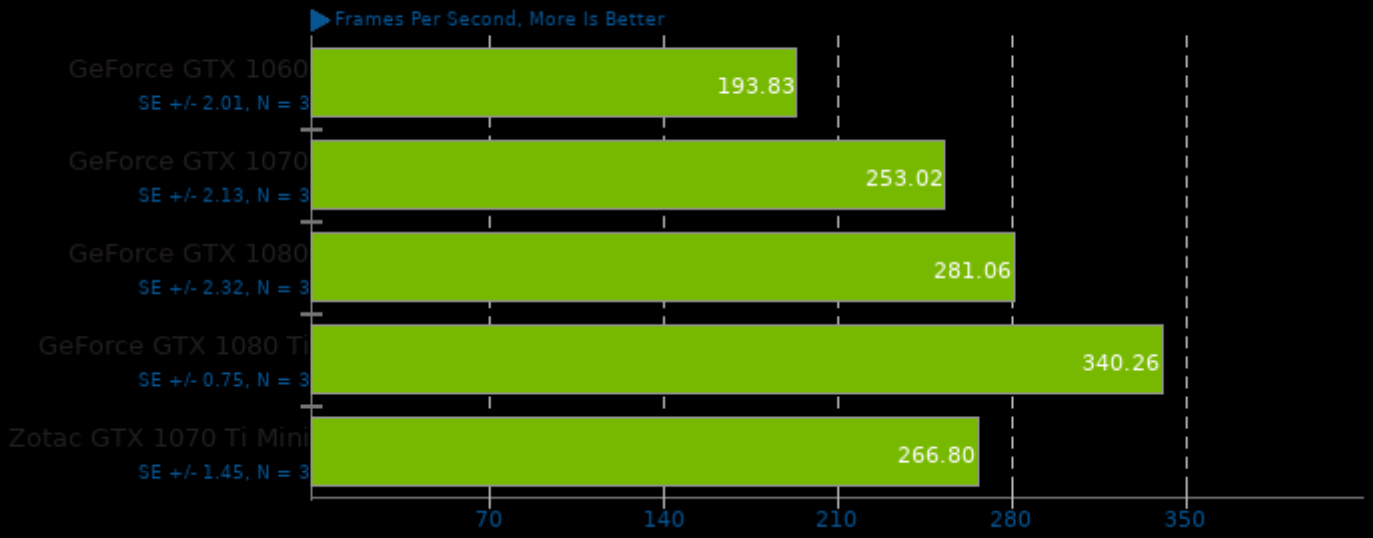
System Power Consumption Monitor

	Min	Avg	Max
GeForce GTX 1060	41.3	148.4	202.8
GeForce GTX 1070	73.0	174.4	230.9
GeForce GTX 1080	80.5	194.9	273.7
GeForce GTX 1080 Ti	65.8	237.3	346.4
Zotac GTX 1070 Ti Mini	72.3	199.1	272.3



Tesseract 2014-05-12

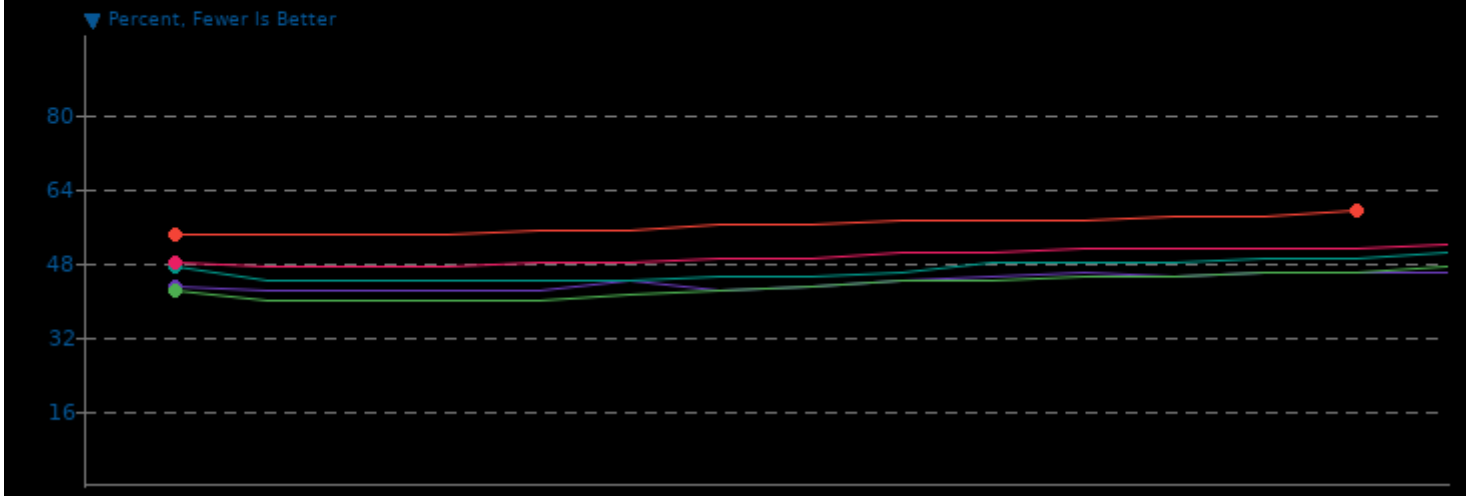
Resolution: 3840 x 2160



Tesseract 2014-05-12

GPU Fan Speed Monitor

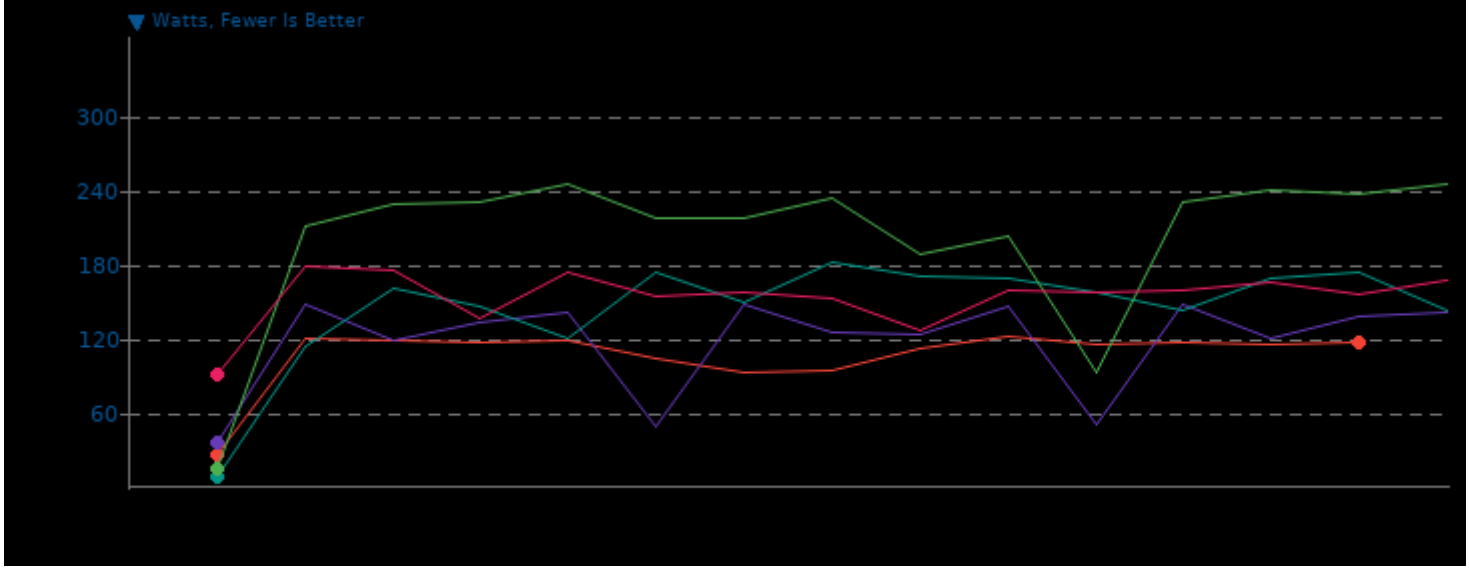
	Min	Avg	Max
GeForce GTX 1060	54.0	56.0	59.0
GeForce GTX 1070	42.0	43.9	46.0
GeForce GTX 1080	44.0	46.3	50.0
GeForce GTX 1080 Ti	40.0	43.0	47.0
Zotac GTX 1070 Ti Mini	47.0	49.3	52.0

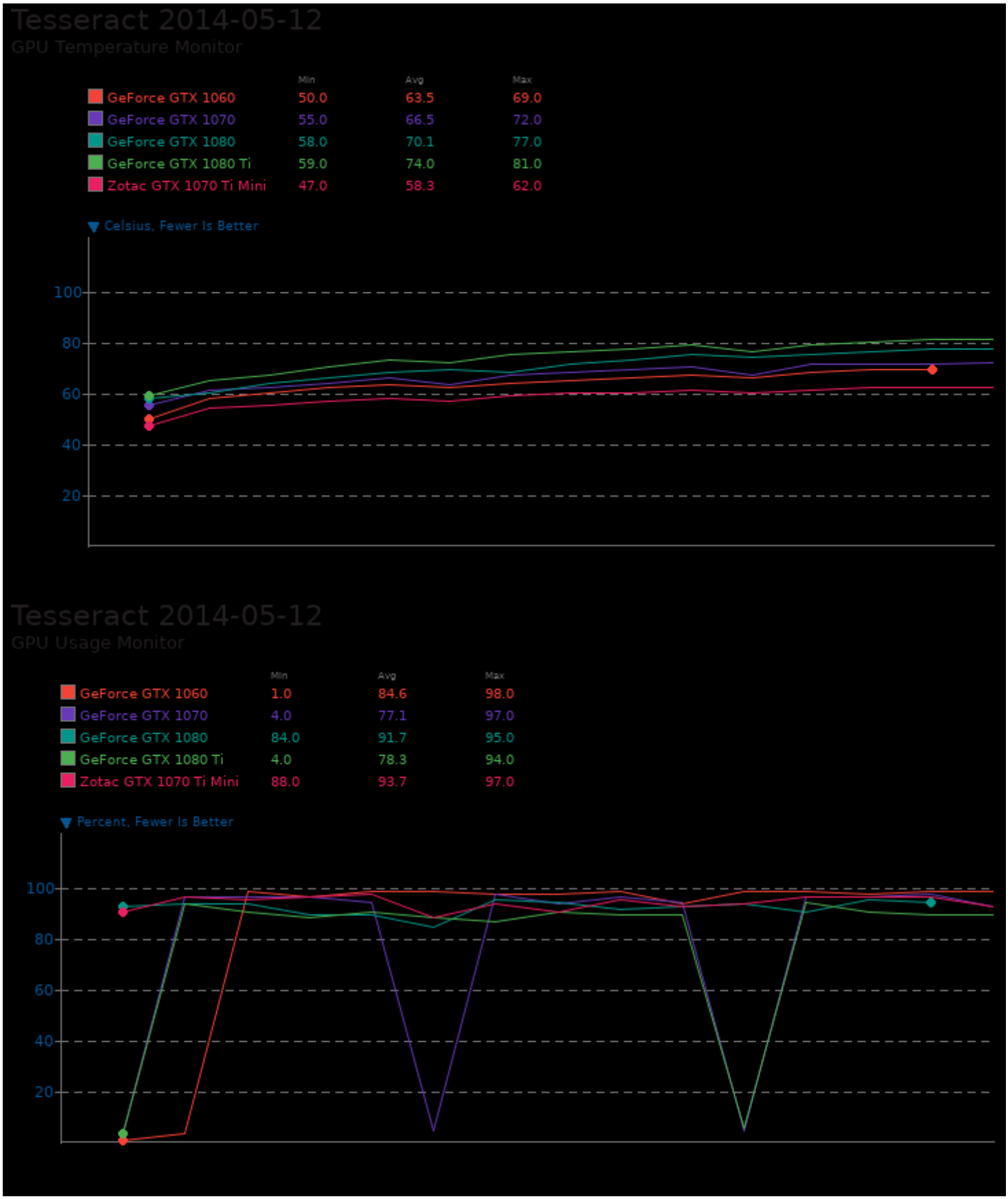


Tesseract 2014-05-12

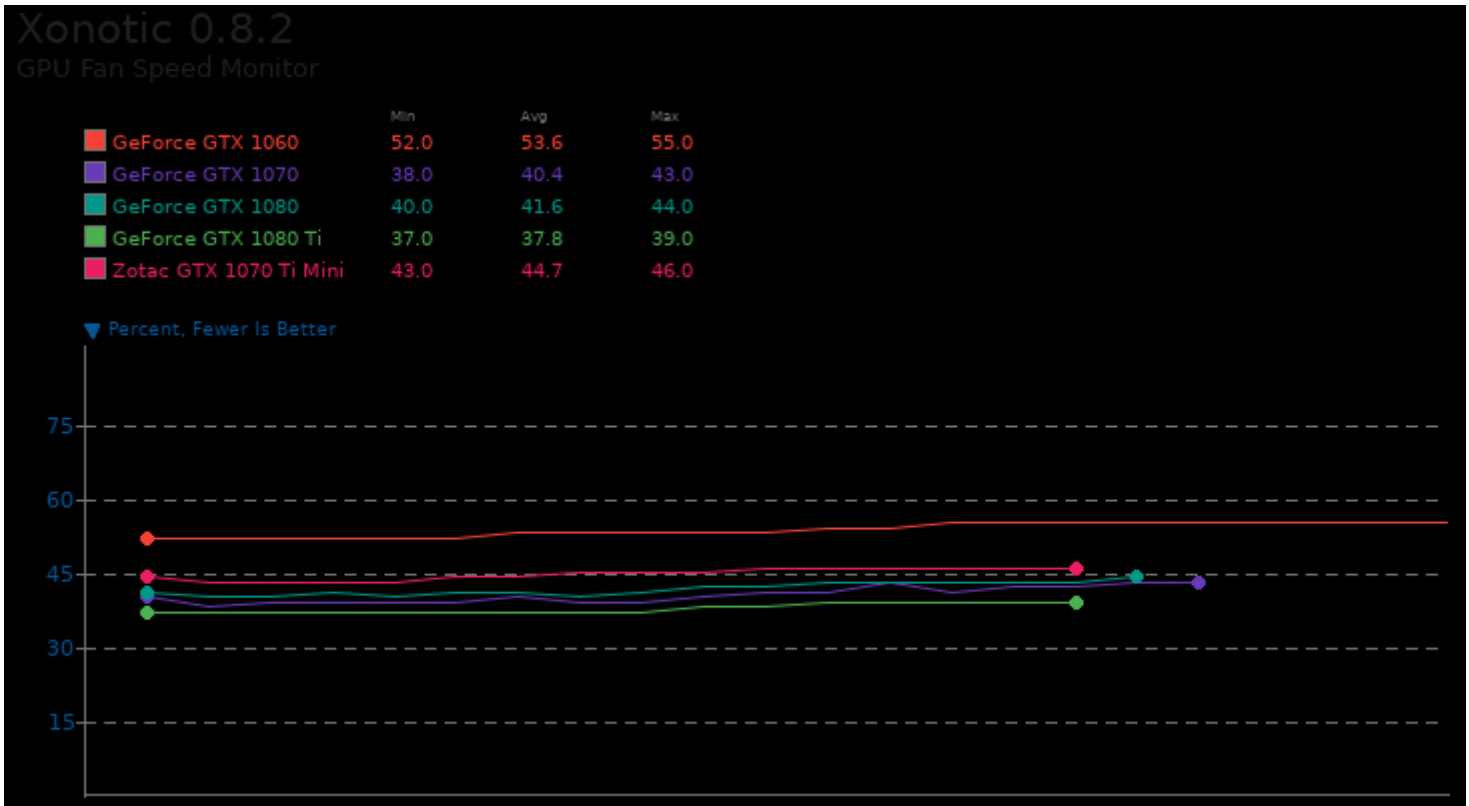
GPU Power Consumption Monitor

	Min	Avg	Max
GeForce GTX 1060	27.8	107.0	122.8
GeForce GTX 1070	36.7	118.1	148.0
GeForce GTX 1080	9.8	145.4	182.2
GeForce GTX 1080 Ti	15.8	201.9	244.9
Zotac GTX 1070 Ti Mini	91.4	153.9	177.9

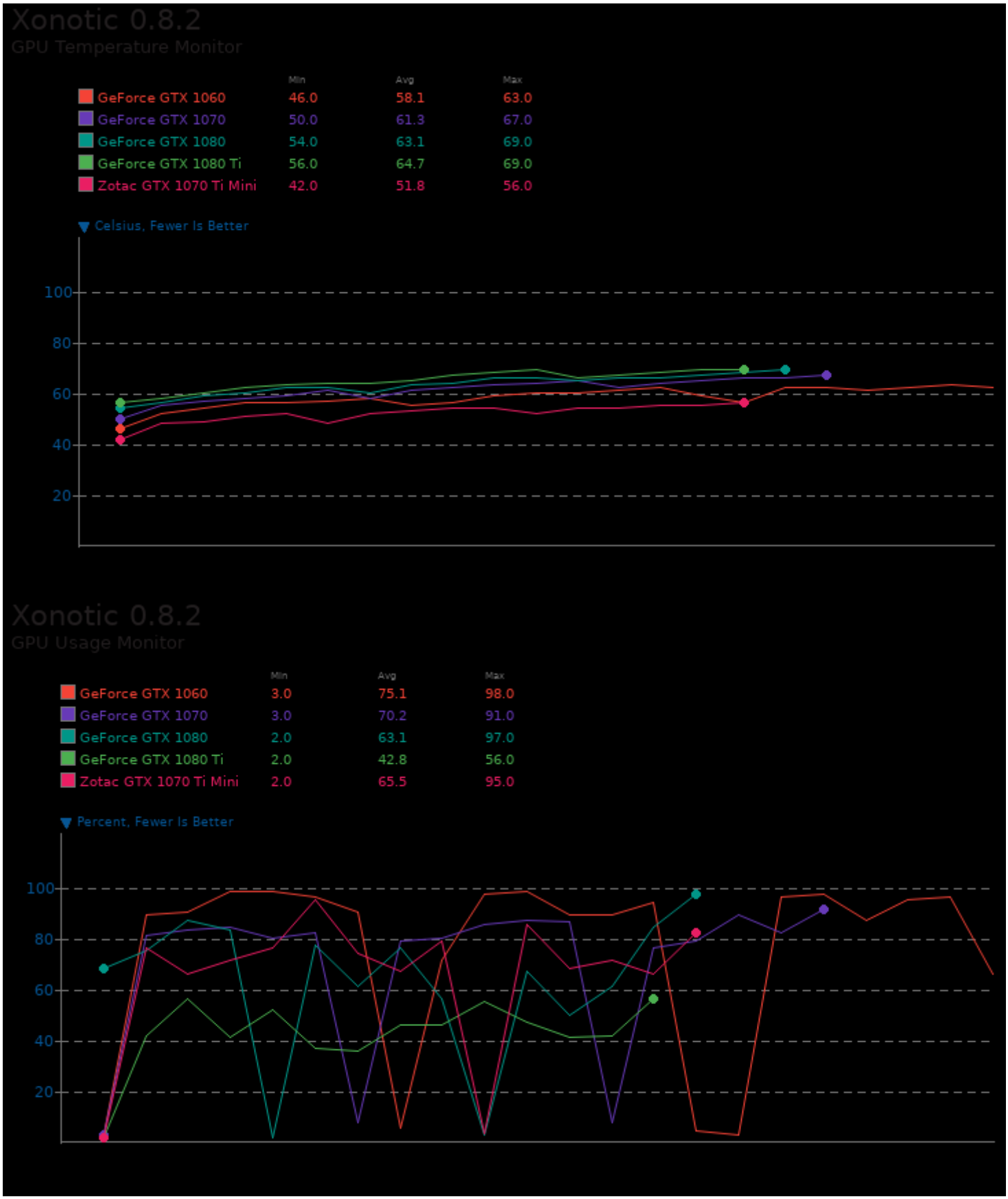


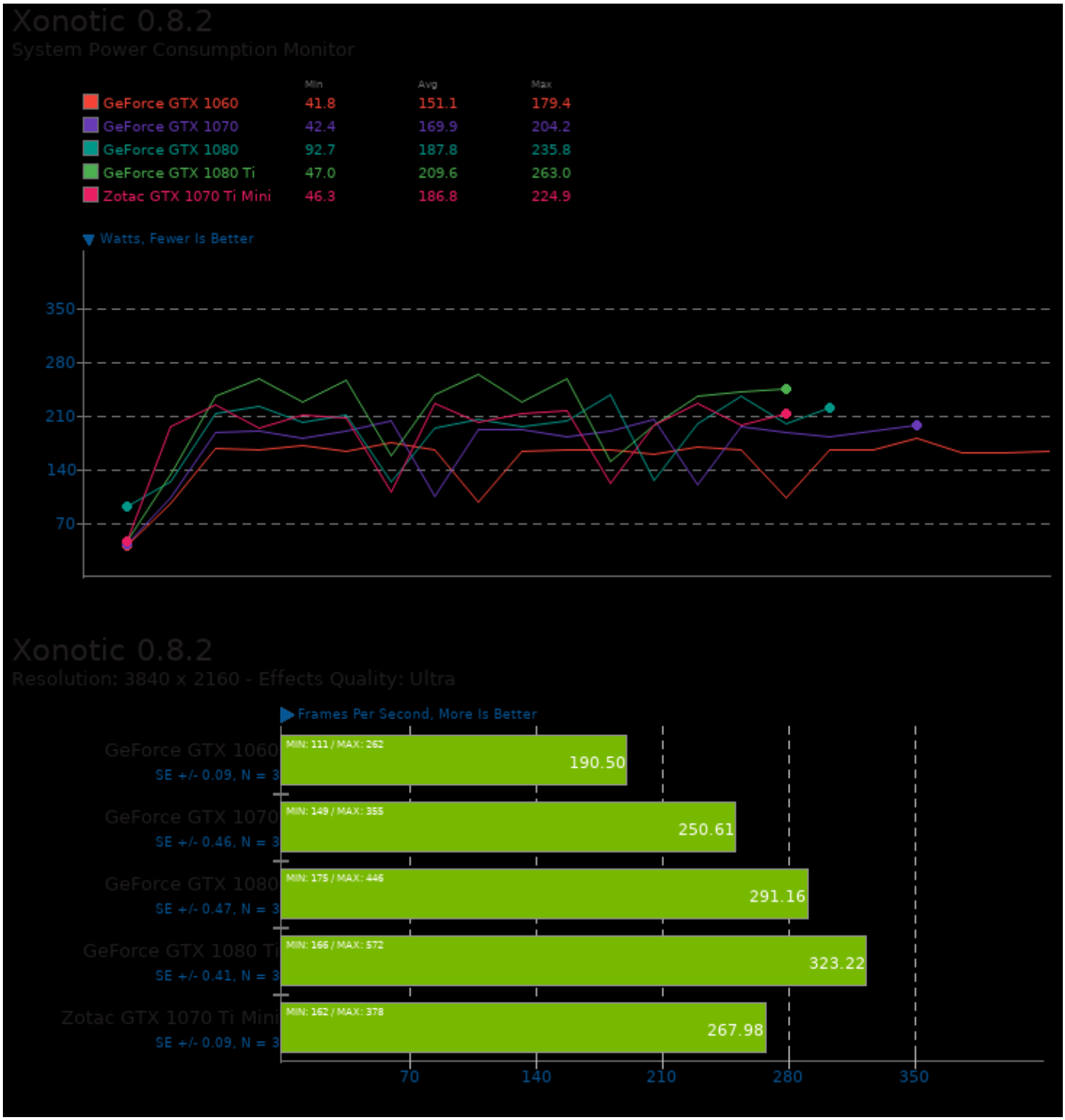

Tesseract 2014-05-12
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 50.0 63.5 69.0
GeForce GTX 1070 55.0 66.5 72.0
GeForce GTX 1080 58.0 70.1 77.0
GeForce GTX 1080 Ti 59.0 74.0 81.0
Zotac GTX 1070 Ti Mini 47.0 58.3 62.0
Celsius, Fewer Is Better
100
80
60
40
20
Tesseract 2014-05-12
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 84.6 98.0
GeForce GTX 1070 4.0 77.1 97.0
GeForce GTX 1080 84.0 91.7 95.0
GeForce GTX 1080 Ti 4.0 78.3 94.0
Zotac GTX 1070 Ti Mini 88.0 93.7 97.0
Percent, Fewer Is Better
100
80
60
40
20

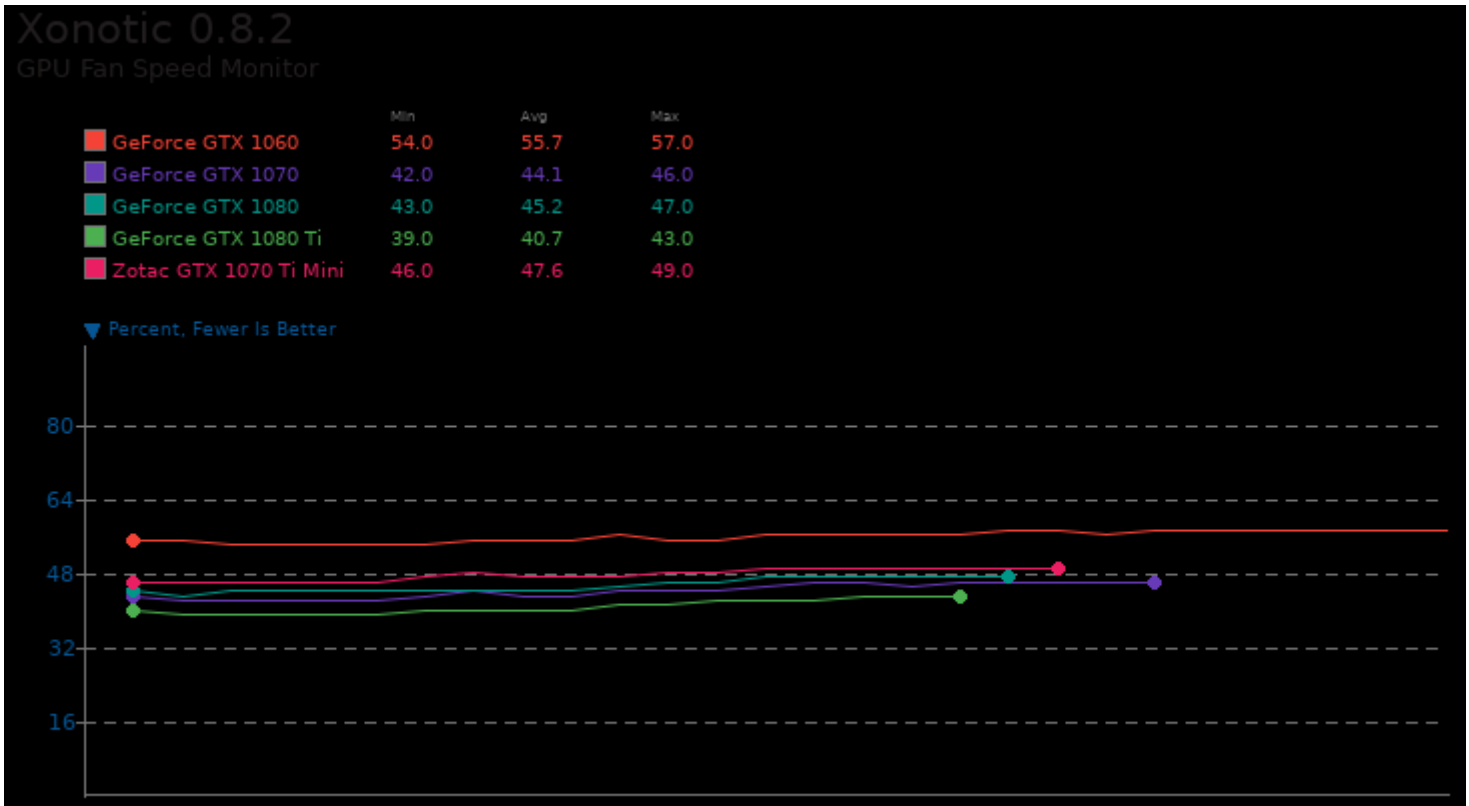

Tesseract 2014-05-12
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 50.0 157.1 174.5
GeForce GTX 1070 43.1 180.1 204.0
GeForce GTX 1080 113.1 219.2 243.8
GeForce GTX 1080 Ti 272.6 290.9 300.5
Zotac GTX 1070 Ti Mini 48.3 208.6 234.2
Watts, Fewer Is Better
400
320
240
160
80
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: High
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.04, N = 3
MIN: 175 / MAX: 319
258.16
GeForce GTX 1070
SE +/- 1.05, N = 3
MIN: 205 / MAX: 436
317.42
GeForce GTX 1080
SE +/- 0.78, N = 3
MIN: 204 / MAX: 560
348.55
GeForce GTX 1080 Ti
SE +/- 1.34, N = 3
MIN: 202 / MAX: 728
367.35
Zotac GTX 1070 Ti Mini
SE +/- 0.40, N = 3
MIN: 209 / MAX: 454
325.71
80
160
240
320
400

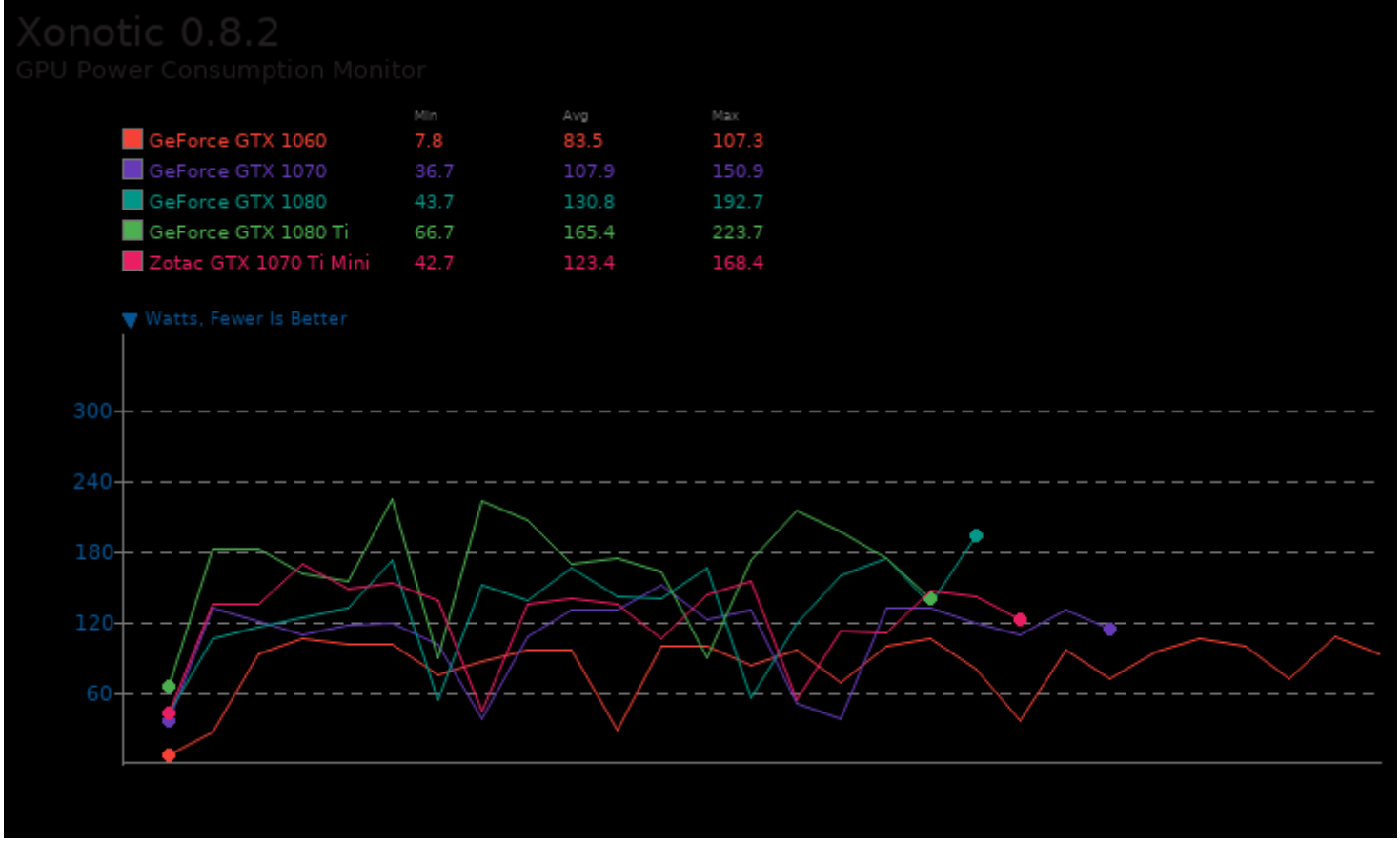

Xonotic 0.8.2
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 52.0 53.6 55.0
GeForce GTX 1070 38.0 40.4 43.0
GeForce GTX 1080 40.0 41.6 44.0
GeForce GTX 1080 Ti 37.0 37.8 39.0
Zotac GTX 1070 Ti Mini 43.0 44.7 46.0
Percent, Fewer Is Better
75
60
45
30
15

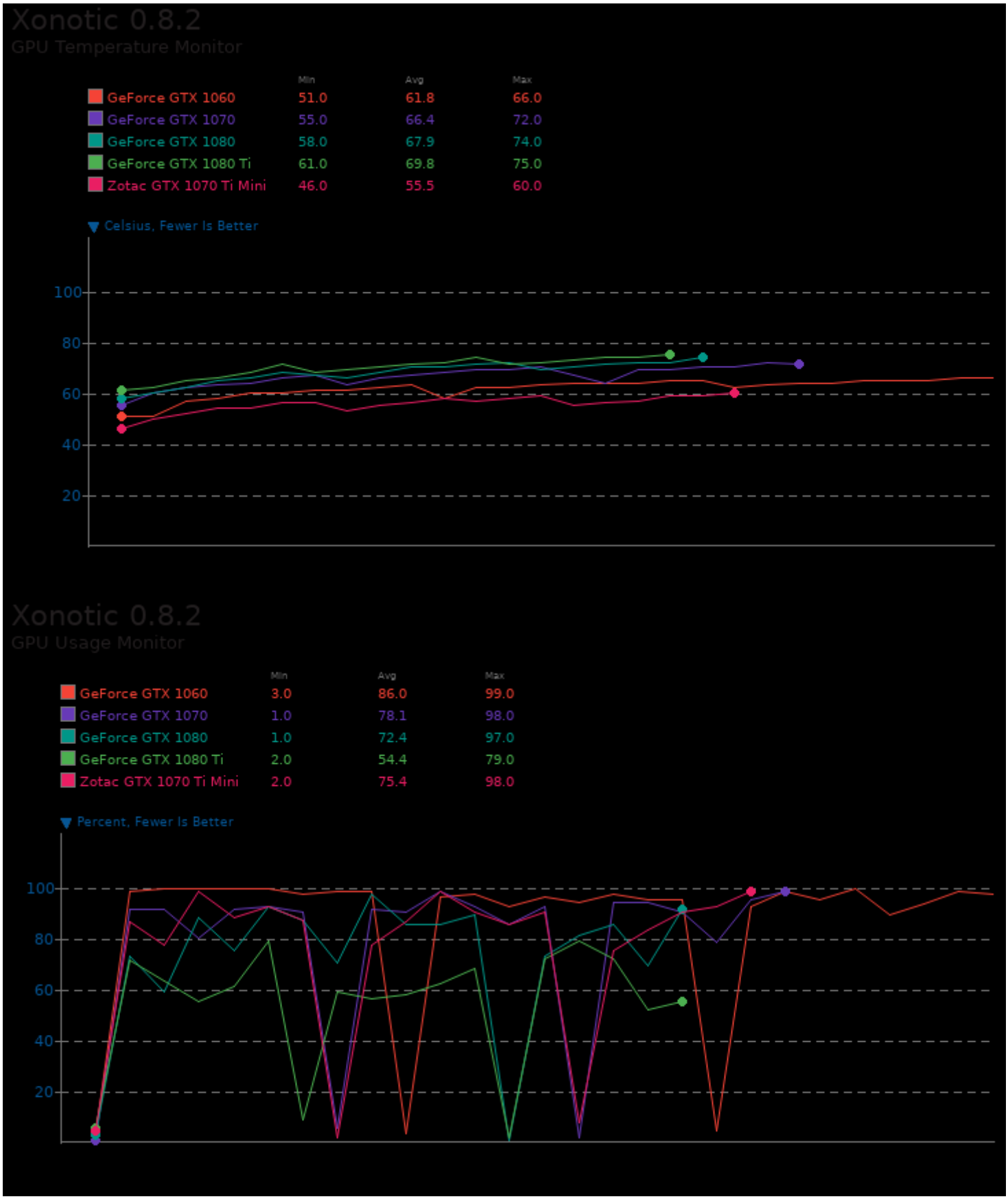

Xonotic 0.8.2
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.3 78.9 108.2
GeForce GTX 1070 35.8 100.6 138.8
GeForce GTX 1080 44.1 109.1 162.5
GeForce GTX 1080 Ti 66.4 134.0 190.1
Zotac GTX 1070 Ti Mini 42.3 98.2 132.0
Watts, Fewer Is Better
250
200
150
100
50

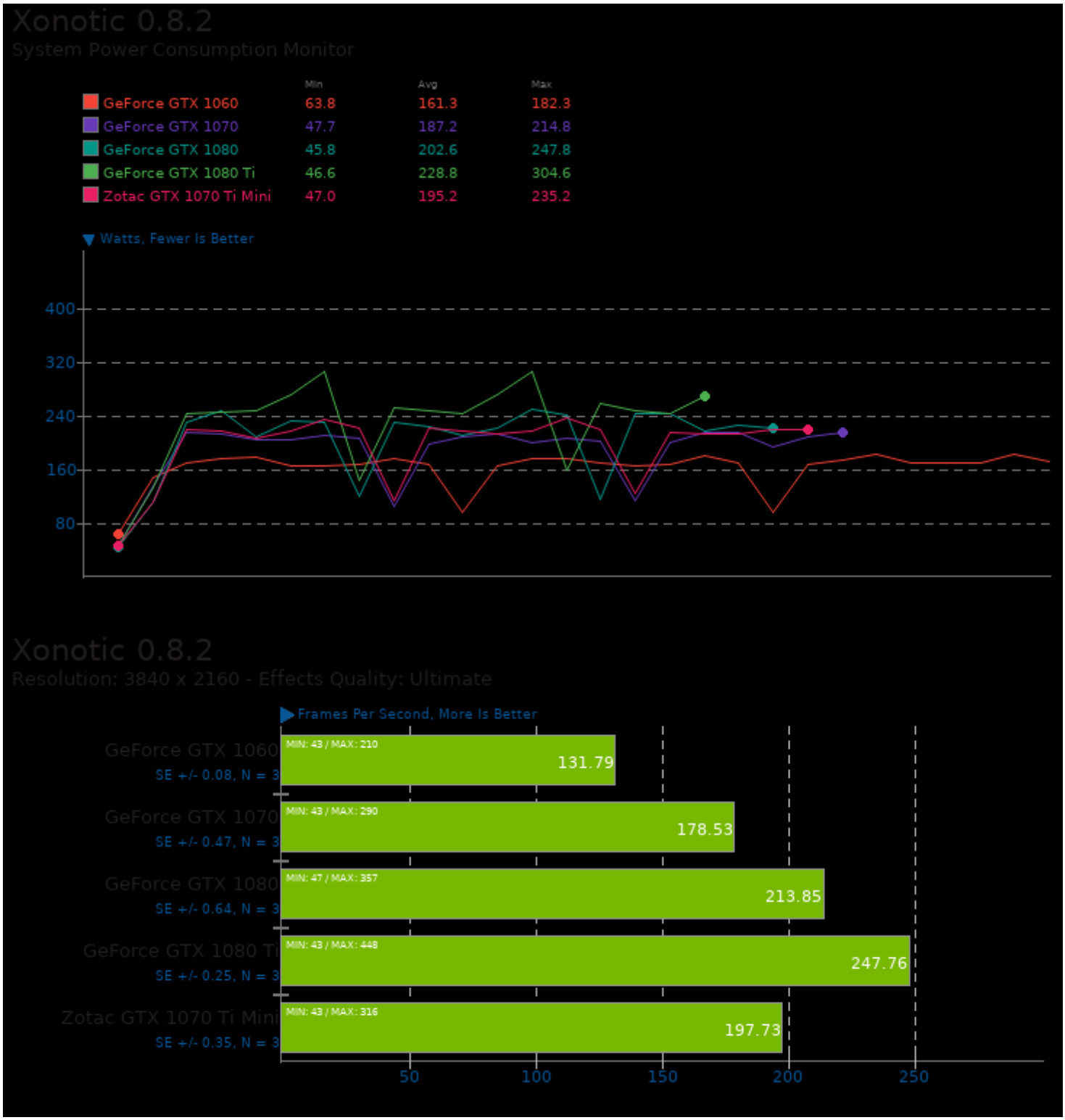

Xonotic 0.8.2
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 46.0 58.1 63.0
GeForce GTX 1070 50.0 61.3 67.0
GeForce GTX 1080 54.0 63.1 69.0
GeForce GTX 1080 Ti 56.0 64.7 69.0
Zotac GTX 1070 Ti Mini 42.0 51.8 56.0
Celsius, Fewer Is Better
100
80
60
40
20
Xonotic 0.8.2
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 3.0 75.1 98.0
GeForce GTX 1070 3.0 70.2 91.0
GeForce GTX 1080 2.0 63.1 97.0
GeForce GTX 1080 Ti 2.0 42.8 56.0
Zotac GTX 1070 Ti Mini 2.0 65.5 95.0
Percent, Fewer Is Better
100
80
60
40
20

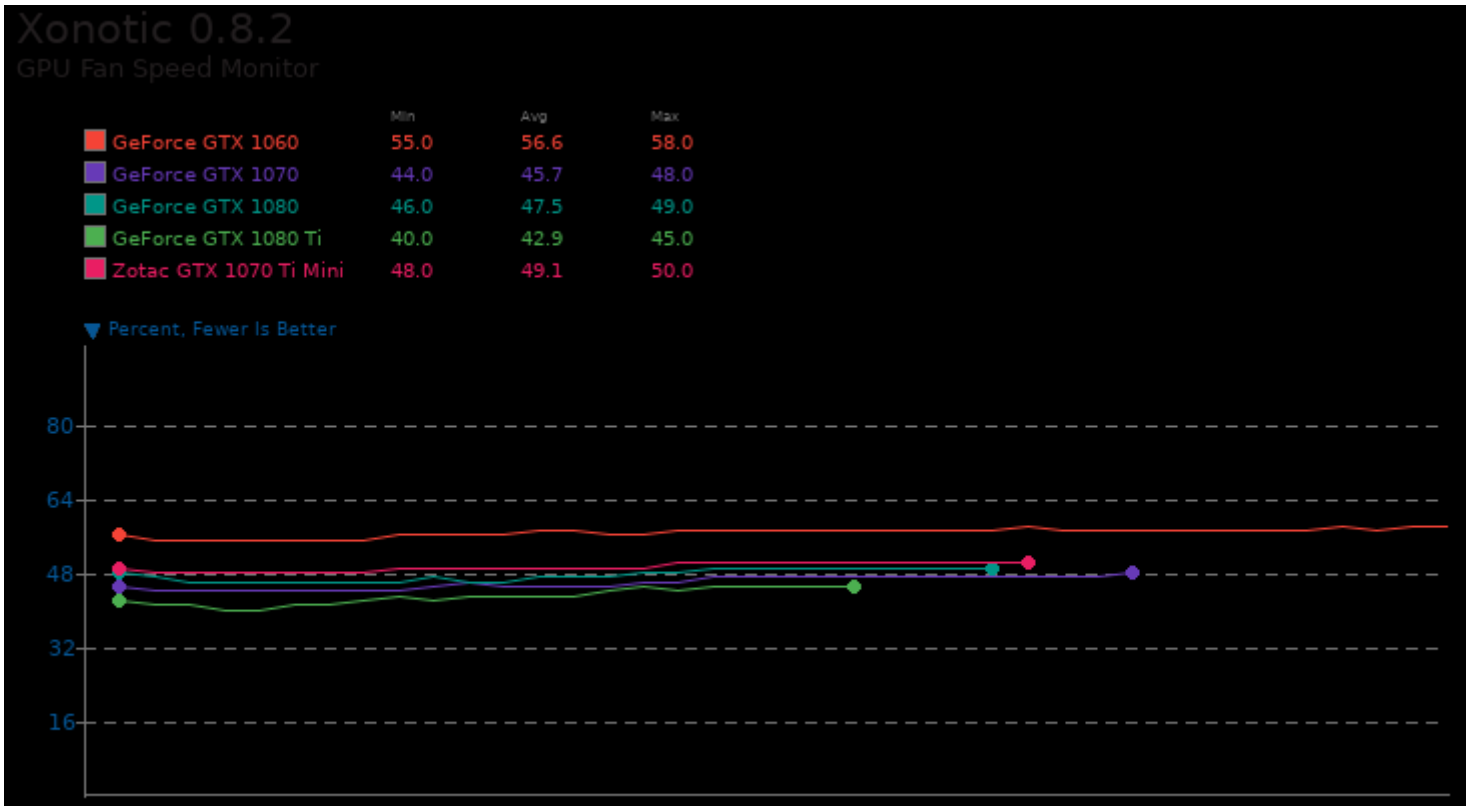

Xonotic 0.8.2
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 41.8 151.1 179.4
GeForce GTX 1070 42.4 169.9 204.2
GeForce GTX 1080 92.7 187.8 235.8
GeForce GTX 1080 Ti 47.0 209.6 263.0
Zotac GTX 1070 Ti Mini 46.3 186.8 224.9
Watts, Fewer Is Better
350
280
210
140
70
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultra
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.09, N = 3
MIN: 111 / MAX: 262
190.50
GeForce GTX 1070
SE +/- 0.46, N = 3
MIN: 149 / MAX: 355
250.61
GeForce GTX 1080
SE +/- 0.47, N = 3
MIN: 175 / MAX: 446
291.16
GeForce GTX 1080 Ti
SE +/- 0.41, N = 3
MIN: 166 / MAX: 572
323.22
Zotac GTX 1070 Ti Mini
SE +/- 0.09, N = 3
MIN: 162 / MAX: 378
267.98
70
140
210
280
350

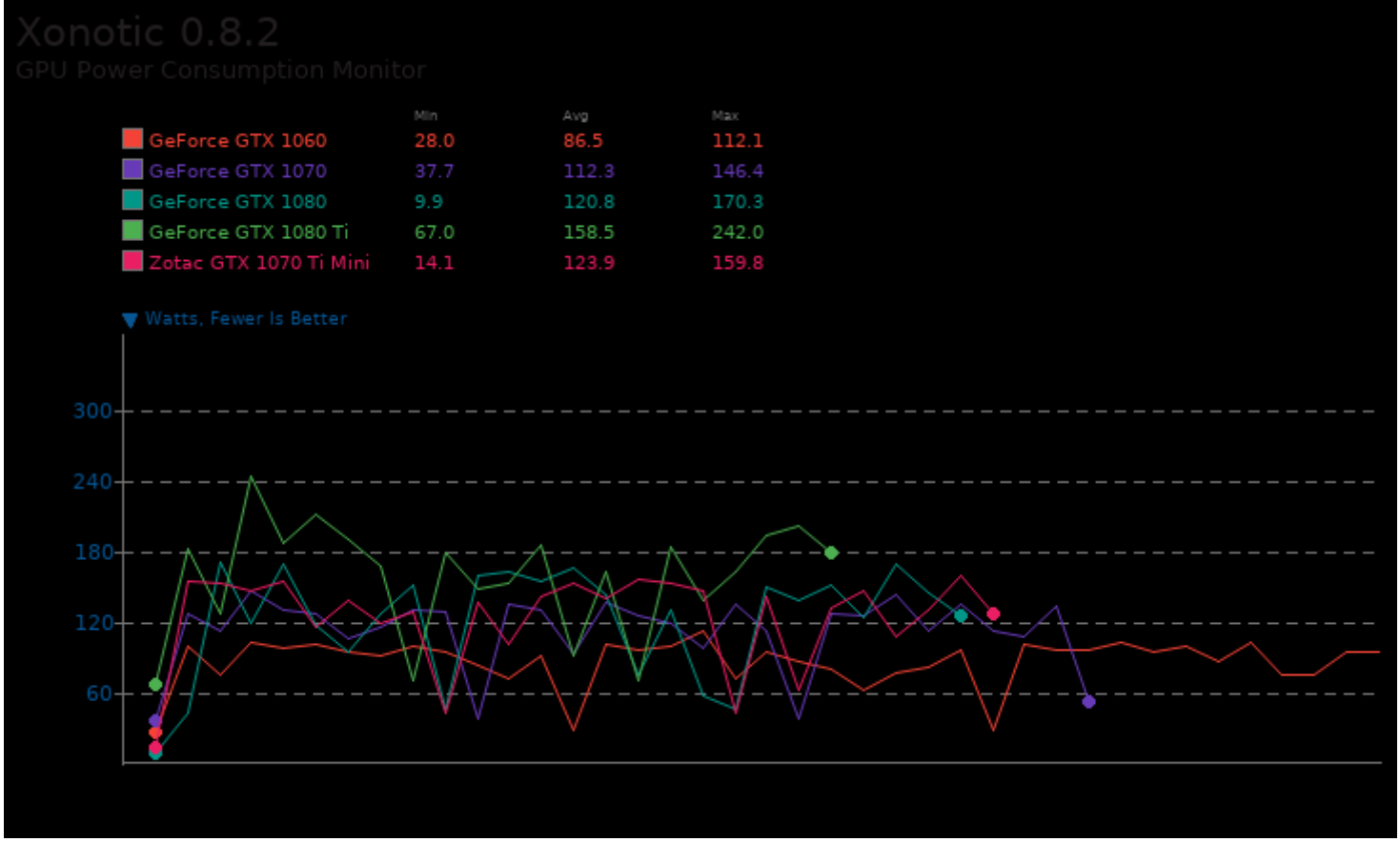

Xonotic 0.8.2
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 54.0 55.7 57.0
GeForce GTX 1070 42.0 44.1 46.0
GeForce GTX 1080 43.0 45.2 47.0
GeForce GTX 1080 Ti 39.0 40.7 43.0
Zotac GTX 1070 Ti Mini 46.0 47.6 49.0
Percent, Fewer Is Better
80
64
48
32
16

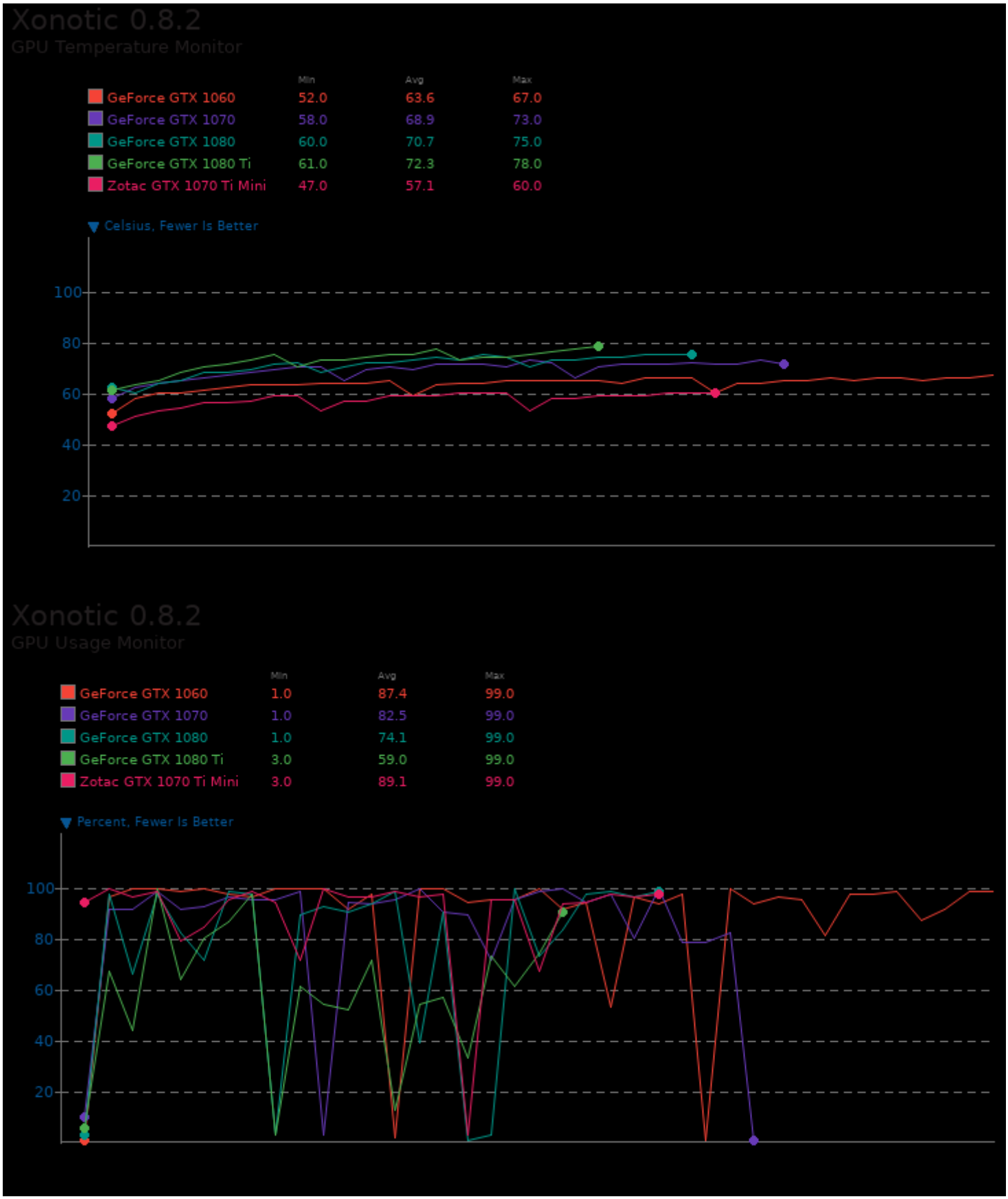

Xonotic 0.8.2
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 7.8 83.5 107.3
GeForce GTX 1070 36.7 107.9 150.9
GeForce GTX 1080 43.7 130.8 192.7
GeForce GTX 1080 Ti 66.7 165.4 223.7
Zotac GTX 1070 Ti Mini 42.7 123.4 168.4
Watts, Fewer Is Better
300
240
180
120
60


Xonotic 0.8.2
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 51.0 61.8 66.0
GeForce GTX 1070 55.0 66.4 72.0
GeForce GTX 1080 58.0 67.9 74.0
GeForce GTX 1080 Ti 61.0 69.8 75.0
Zotac GTX 1070 Ti Mini 46.0 55.5 60.0
Celsius, Fewer Is Better
100
80
60
40
20
Xonotic 0.8.2
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 3.0 86.0 99.0
GeForce GTX 1070 1.0 78.1 98.0
GeForce GTX 1080 1.0 72.4 97.0
GeForce GTX 1080 Ti 2.0 54.4 79.0
Zotac GTX 1070 Ti Mini 2.0 75.4 98.0
Percent, Fewer Is Better
100
80
60
40
20


Xonotic 0.8.2
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 63.8 161.3 182.3
GeForce GTX 1070 47.7 187.2 214.8
GeForce GTX 1080 45.8 202.6 247.8
GeForce GTX 1080 Ti 46.6 228.8 304.6
Zotac GTX 1070 Ti Mini 47.0 195.2 235.2
Watts, Fewer Is Better
400
320
240
160
80
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultimate
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.08, N = 3
MIN: 43 / MAX: 210
131.79
GeForce GTX 1070
SE +/- 0.47, N = 3
MIN: 43 / MAX: 290
178.53
GeForce GTX 1080
SE +/- 0.64, N = 3
MIN: 47 / MAX: 357
213.85
GeForce GTX 1080 Ti
SE +/- 0.25, N = 3
MIN: 43 / MAX: 448
247.76
Zotac GTX 1070 Ti Mini
SE +/- 0.35, N = 3
MIN: 43 / MAX: 316
197.73
50
100
150
200
250


Xonotic 0.8.2
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 56.6 58.0
GeForce GTX 1070 44.0 45.7 48.0
GeForce GTX 1080 46.0 47.5 49.0
GeForce GTX 1080 Ti 40.0 42.9 45.0
Zotac GTX 1070 Ti Mini 48.0 49.1 50.0
Percent, Fewer Is Better
80
64
48
32
16

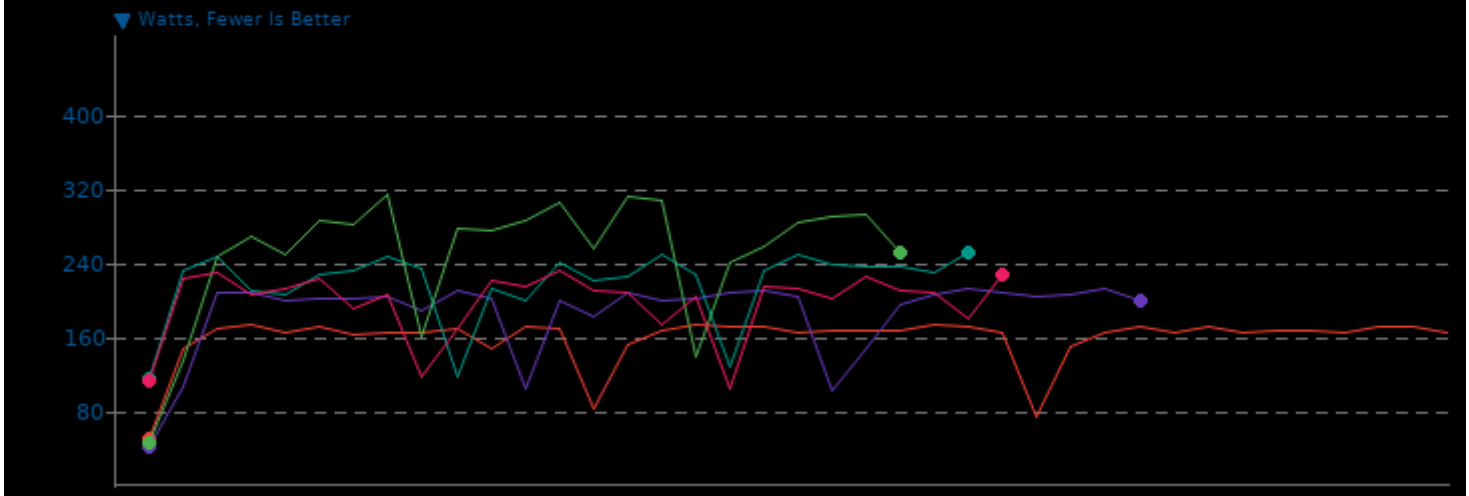

Xonotic 0.8.2
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.0 86.5 112.1
GeForce GTX 1070 37.7 112.3 146.4
GeForce GTX 1080 9.9 120.8 170.3
GeForce GTX 1080 Ti 67.0 158.5 242.0
Zotac GTX 1070 Ti Mini 14.1 123.9 159.8
Watts, Fewer Is Better
300
240
180
120
60


Xonotic 0.8.2
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 52.0 63.6 67.0
GeForce GTX 1070 58.0 68.9 73.0
GeForce GTX 1080 60.0 70.7 75.0
GeForce GTX 1080 Ti 61.0 72.3 78.0
Zotac GTX 1070 Ti Mini 47.0 57.1 60.0
Celsius, Fewer Is Better
100
80
60
40
20
Xonotic 0.8.2
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 87.4 99.0
GeForce GTX 1070 1.0 82.5 99.0
GeForce GTX 1080 1.0 74.1 99.0
GeForce GTX 1080 Ti 3.0 59.0 99.0
Zotac GTX 1070 Ti Mini 3.0 89.1 99.0
Percent, Fewer Is Better
100
80
60
40
20

Xonotic 0.8.2

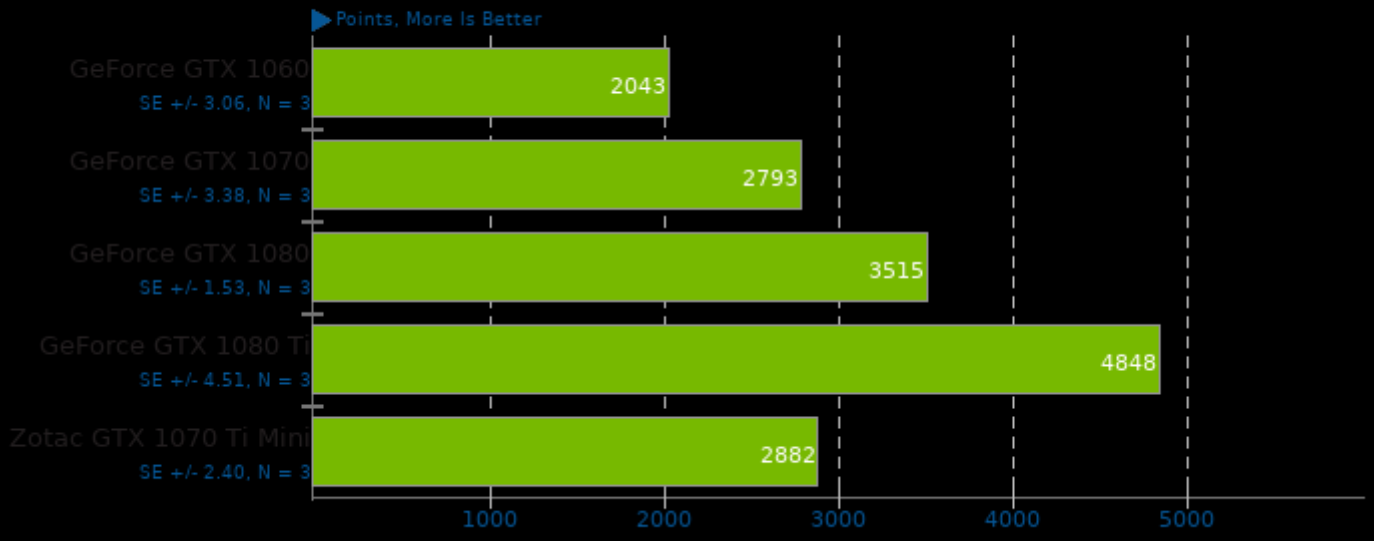
System Power Consumption Monitor

	Min	Avg	Max
GeForce GTX 1060	51.6	158.8	173.9
GeForce GTX 1070	43.5	186.0	212.1
GeForce GTX 1080	115.1	217.2	250.1
GeForce GTX 1080 Ti	48.1	250.0	313.4
Zotac GTX 1070 Ti Mini	105.4	197.5	231.6

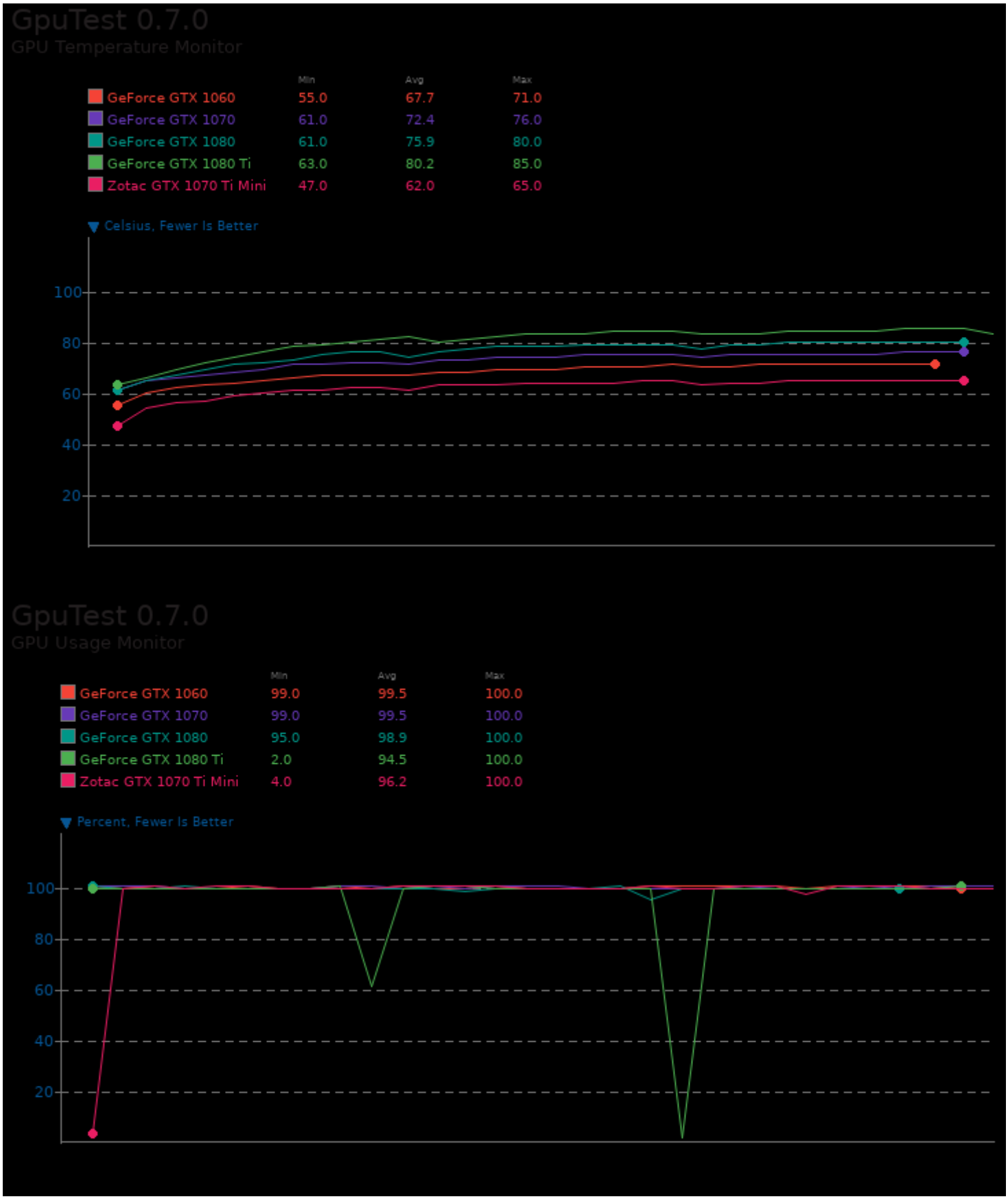


GpuTest 0.7.0

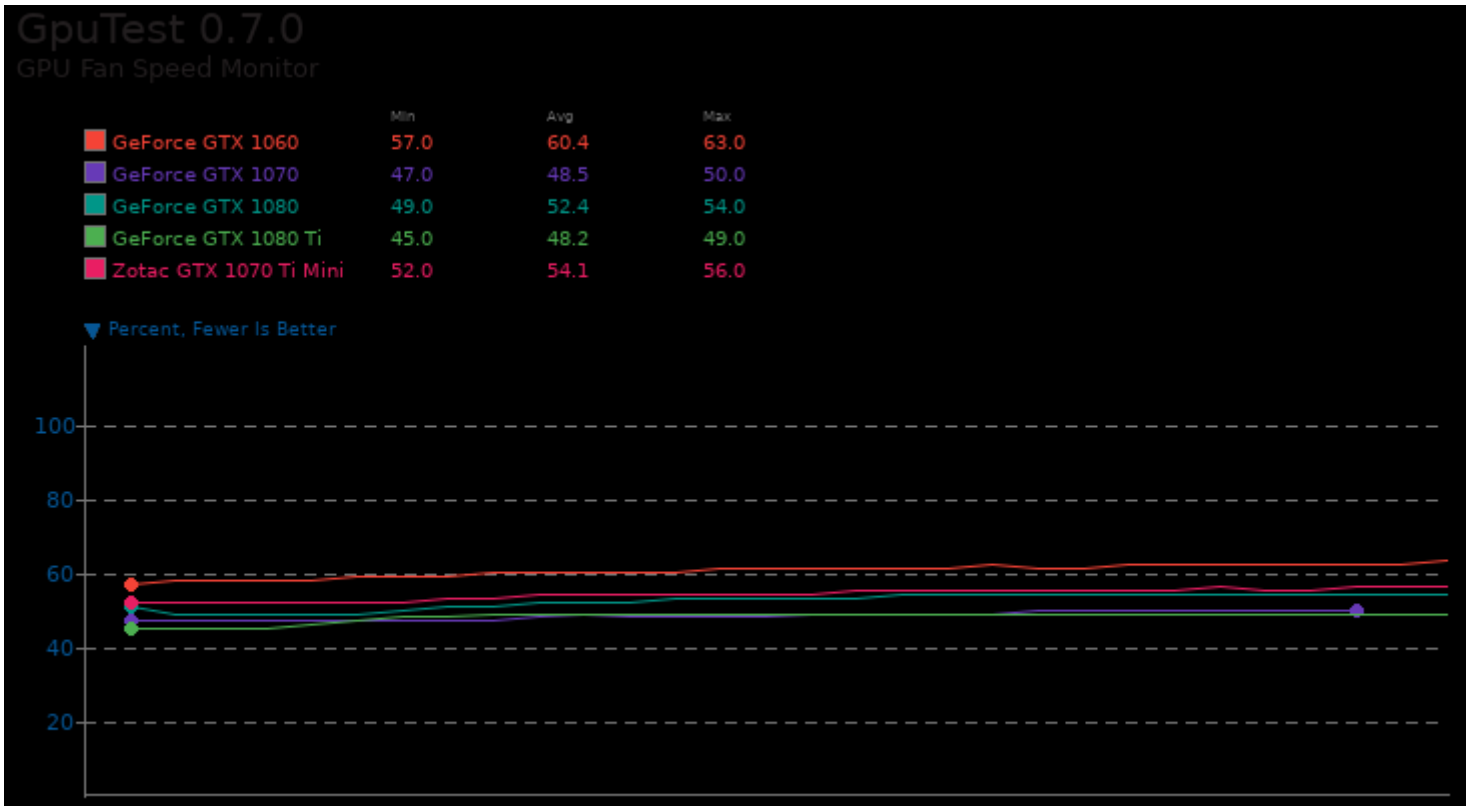
Test: Furmark - Resolution: 3840 x 2160 - Mode: Fullscreen



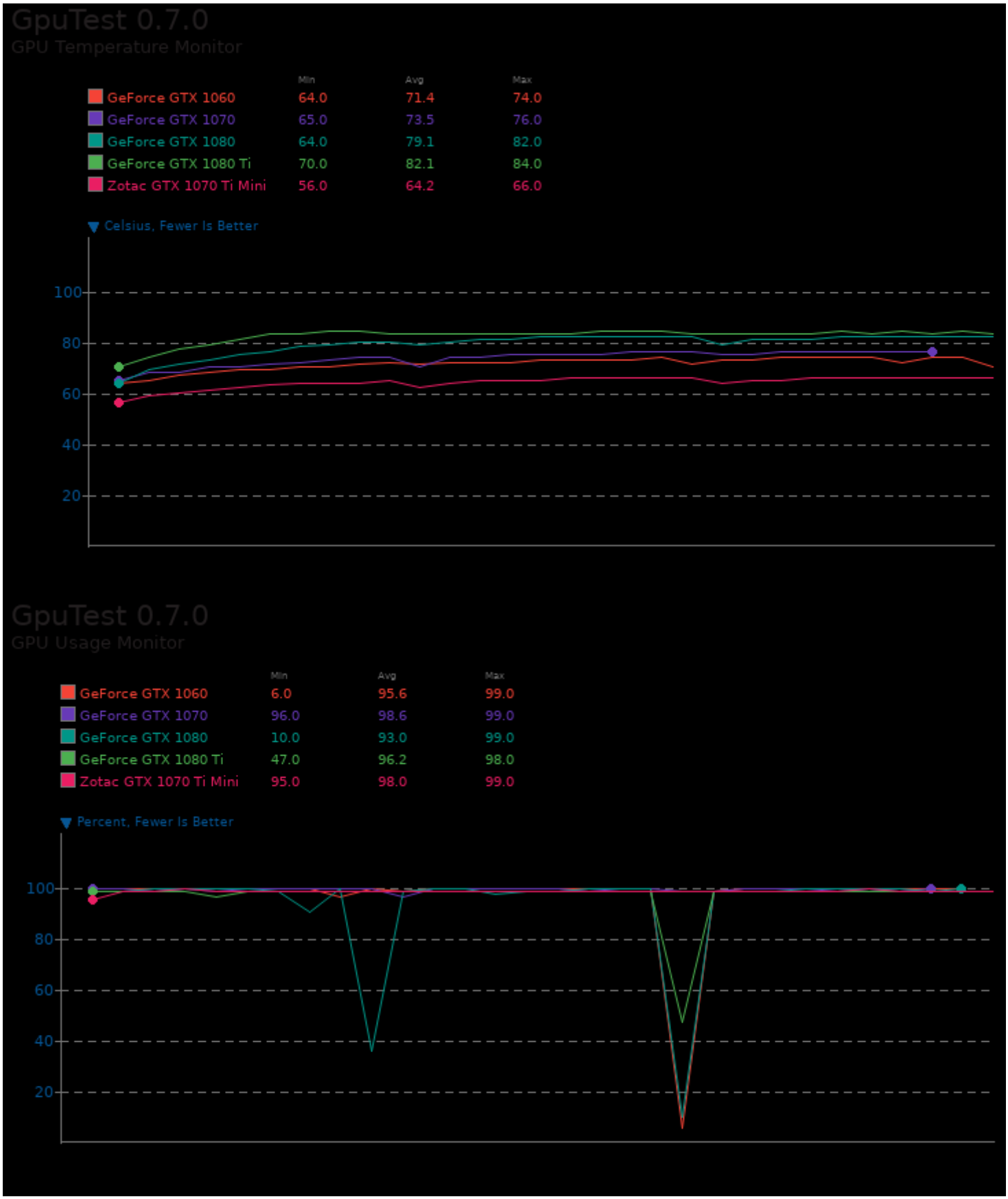

GpuTest 0.7.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 58.4 60.0
GeForce GTX 1070 45.0 47.4 49.0
GeForce GTX 1080 47.0 50.1 52.0
GeForce GTX 1080 Ti 42.0 46.9 50.0
Zotac GTX 1070 Ti Mini 48.0 52.2 55.0
Percent, Fewer Is Better
80
64
48
32
16
GpuTest 0.7.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 110.4 118.2 122.1
GeForce GTX 1070 122.9 145.0 150.2
GeForce GTX 1080 9.8 162.9 186.6
GeForce GTX 1080 Ti 16.4 221.2 253.0
Zotac GTX 1070 Ti Mini 46.3 169.1 184.0
Watts, Fewer Is Better
350
280
210
140
70

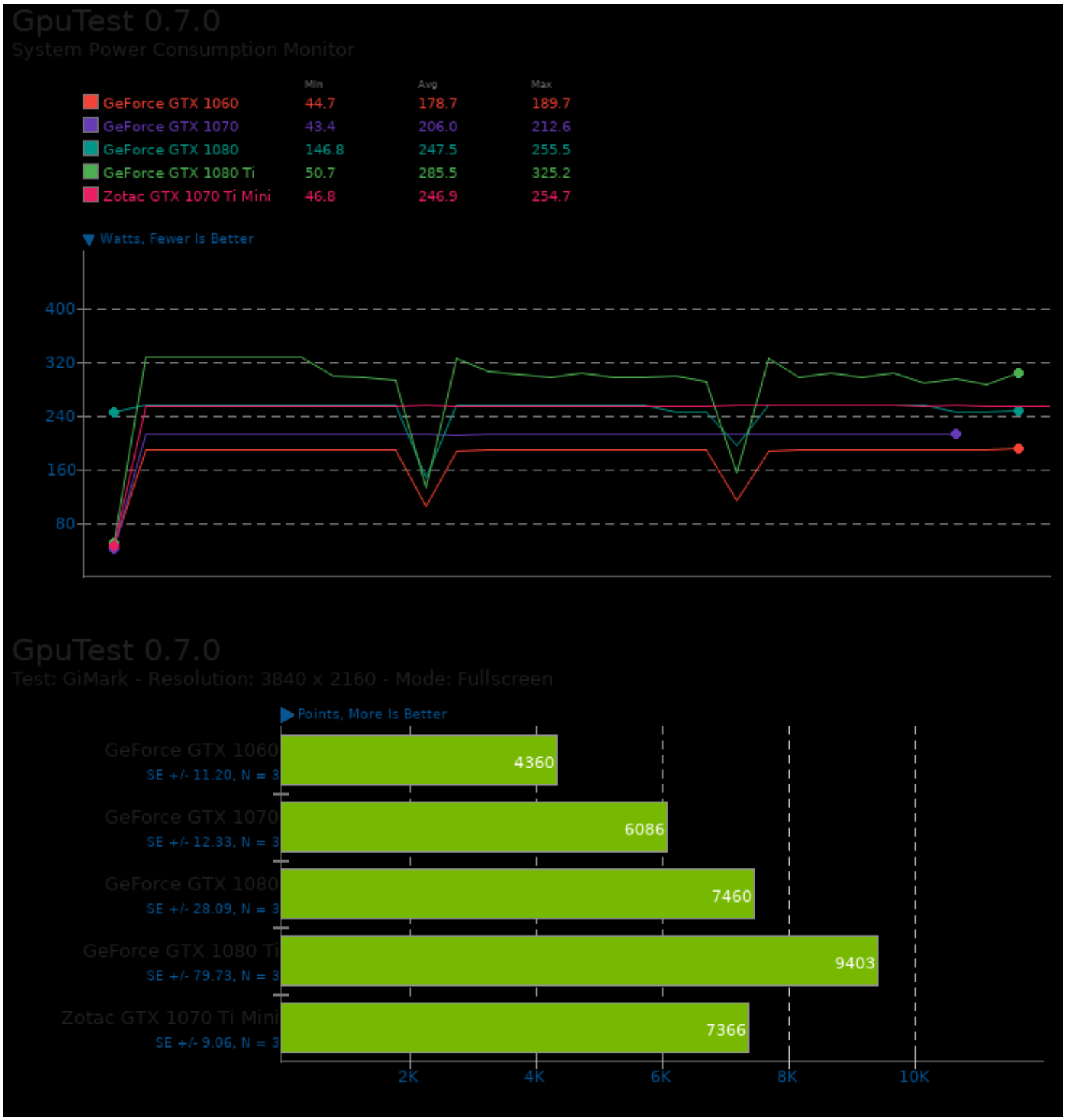

GpuTest 0.7.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 67.7 71.0
GeForce GTX 1070 61.0 72.4 76.0
GeForce GTX 1080 61.0 75.9 80.0
GeForce GTX 1080 Ti 63.0 80.2 85.0
Zotac GTX 1070 Ti Mini 47.0 62.0 65.0
Celsius, Fewer Is Better
100
80
60
40
20
GpuTest 0.7.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 99.0 99.5 100.0
GeForce GTX 1070 99.0 99.5 100.0
GeForce GTX 1080 95.0 98.9 100.0
GeForce GTX 1080 Ti 2.0 94.5 100.0
Zotac GTX 1070 Ti Mini 4.0 96.2 100.0
Percent, Fewer Is Better
100
80
60
40
20

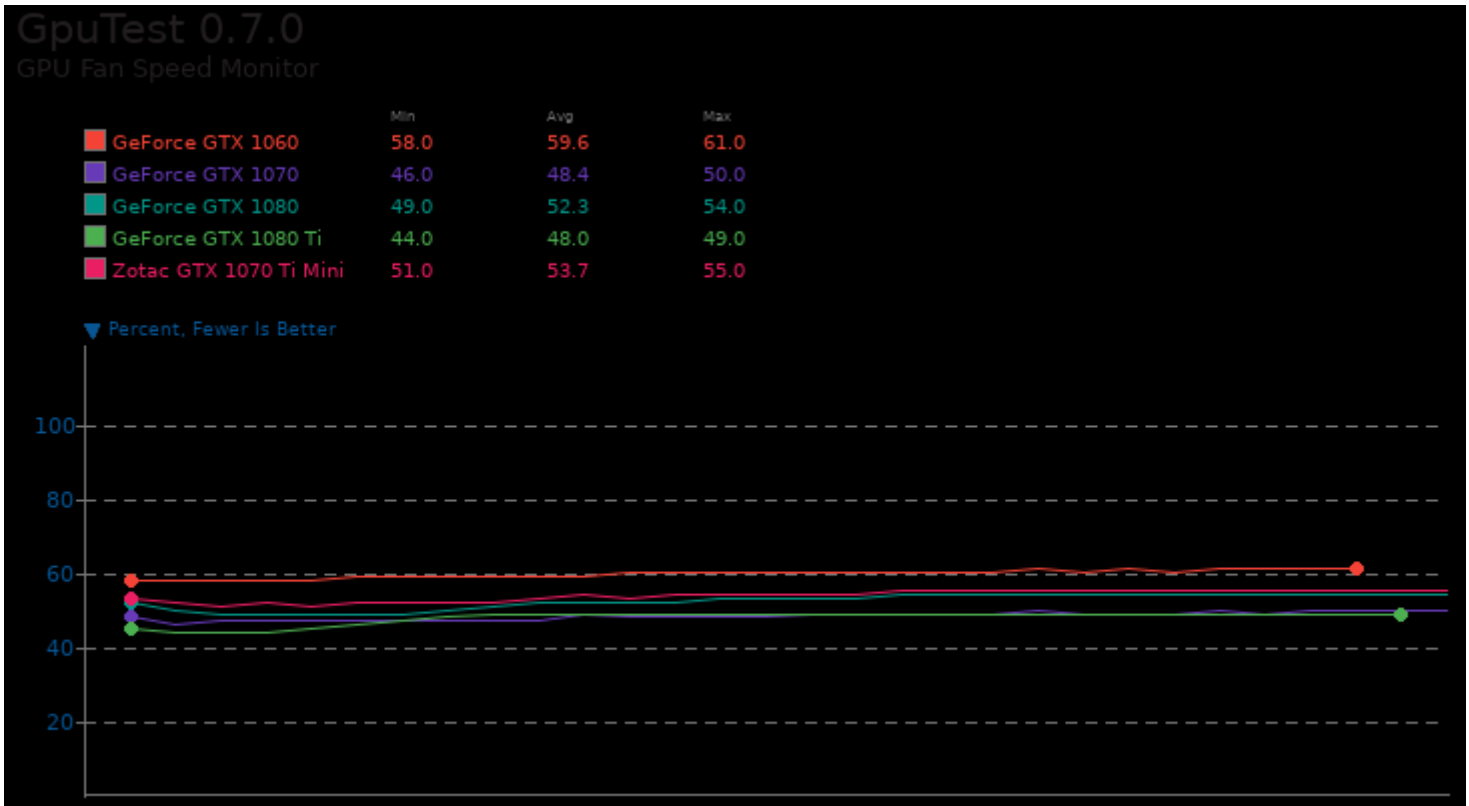

GpuTest 0.7.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 41.9 177.9 191.5
GeForce GTX 1070 43.8 215.0 221.8
GeForce GTX 1080 44.4 244.9 256.5
GeForce GTX 1080 Ti 49.8 303.9 325.3
Zotac GTX 1070 Ti Mini 47.1 246.7 254.6
Watts, Fewer Is Better
400
320
240
160
80
GpuTest 0.7.0
Test: TessMark - Resolution: 3840 x 2160 - Mode: Fullscreen
Points, More Is Better
GeForce GTX 1060
SE +/- 11.79, N = 3
9340
GeForce GTX 1070
SE +/- 23.67, N = 3
12828
GeForce GTX 1080
SE +/- 61.88, N = 3
16046
GeForce GTX 1080 Ti
SE +/- 146.83, N = 3
20229
Zotac GTX 1070 Ti Mini
SE +/- 16.29, N = 3
15633
4K
8K
12K
16K
20K

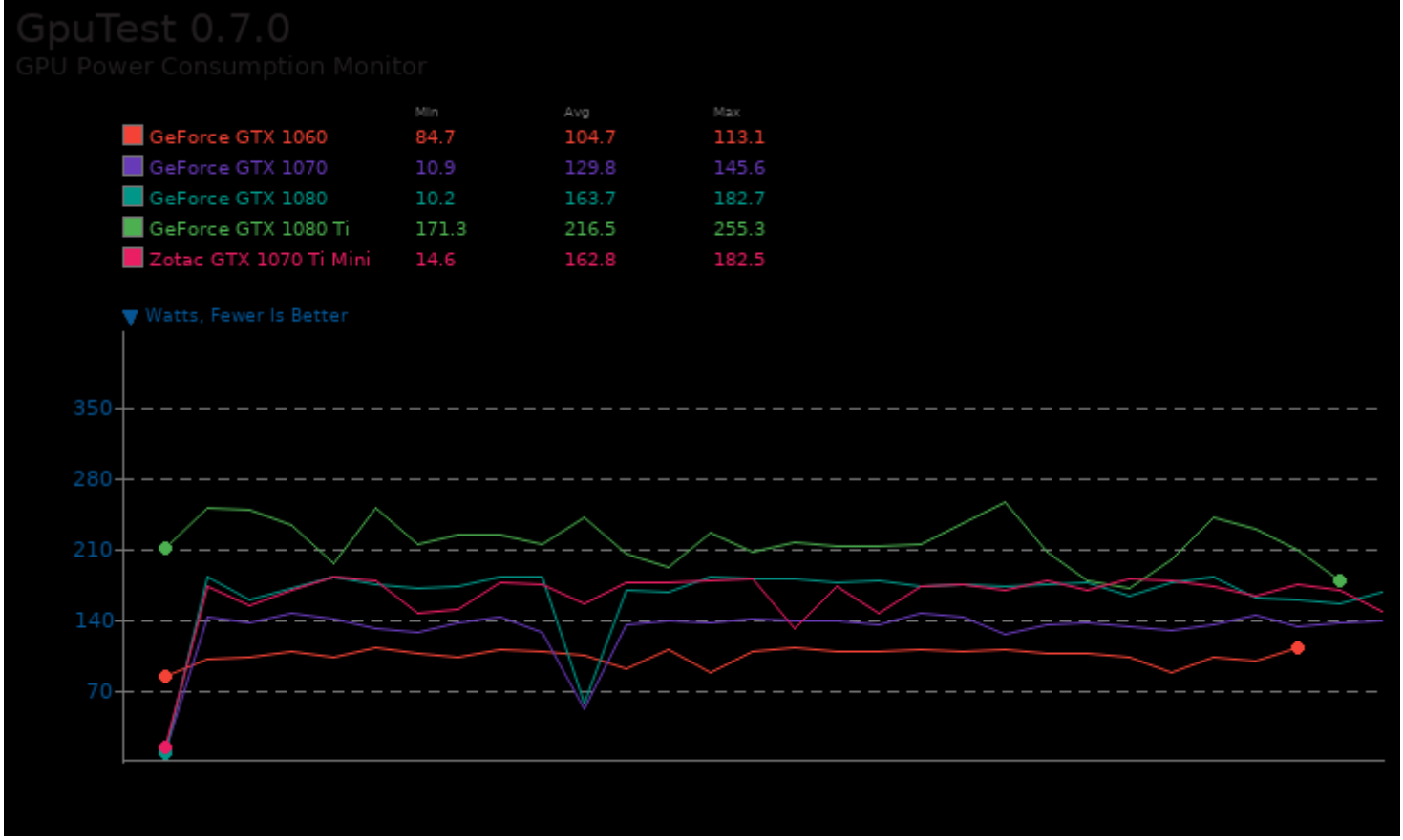

GpuTest 0.7.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 60.4 63.0
GeForce GTX 1070 47.0 48.5 50.0
GeForce GTX 1080 49.0 52.4 54.0
GeForce GTX 1080 Ti 45.0 48.2 49.0
Zotac GTX 1070 Ti Mini 52.0 54.1 56.0
Percent, Fewer Is Better
100
80
60
40
20

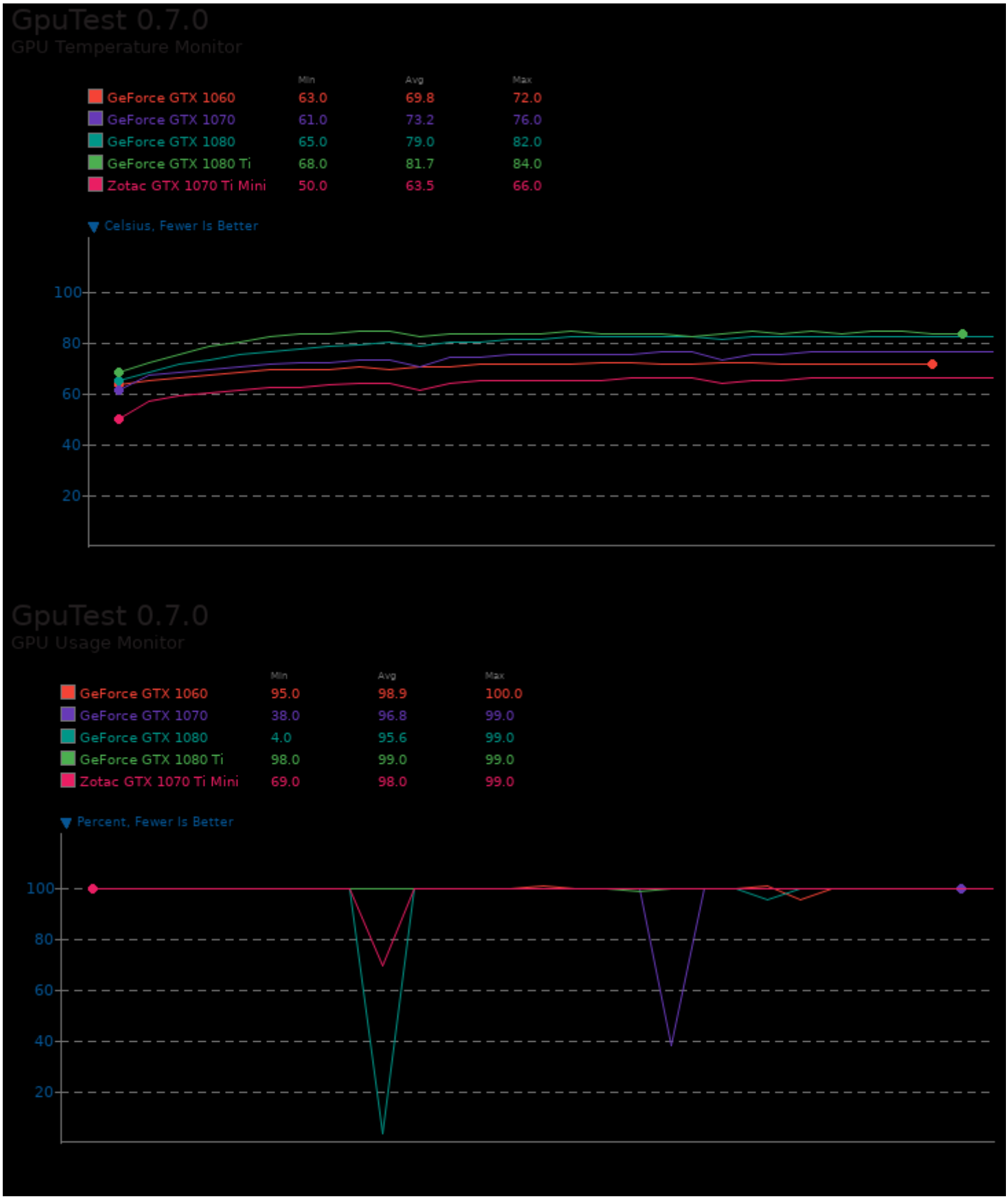

GpuTest 0.7.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 37.6 111.4 124.1
GeForce GTX 1070 85.2 133.0 143.3
GeForce GTX 1080 10.3 152.2 183.9
GeForce GTX 1080 Ti 97.6 215.1 256.5
Zotac GTX 1070 Ti Mini 142.4 171.9 187.3
Watts, Fewer Is Better
350
280
210
140
70

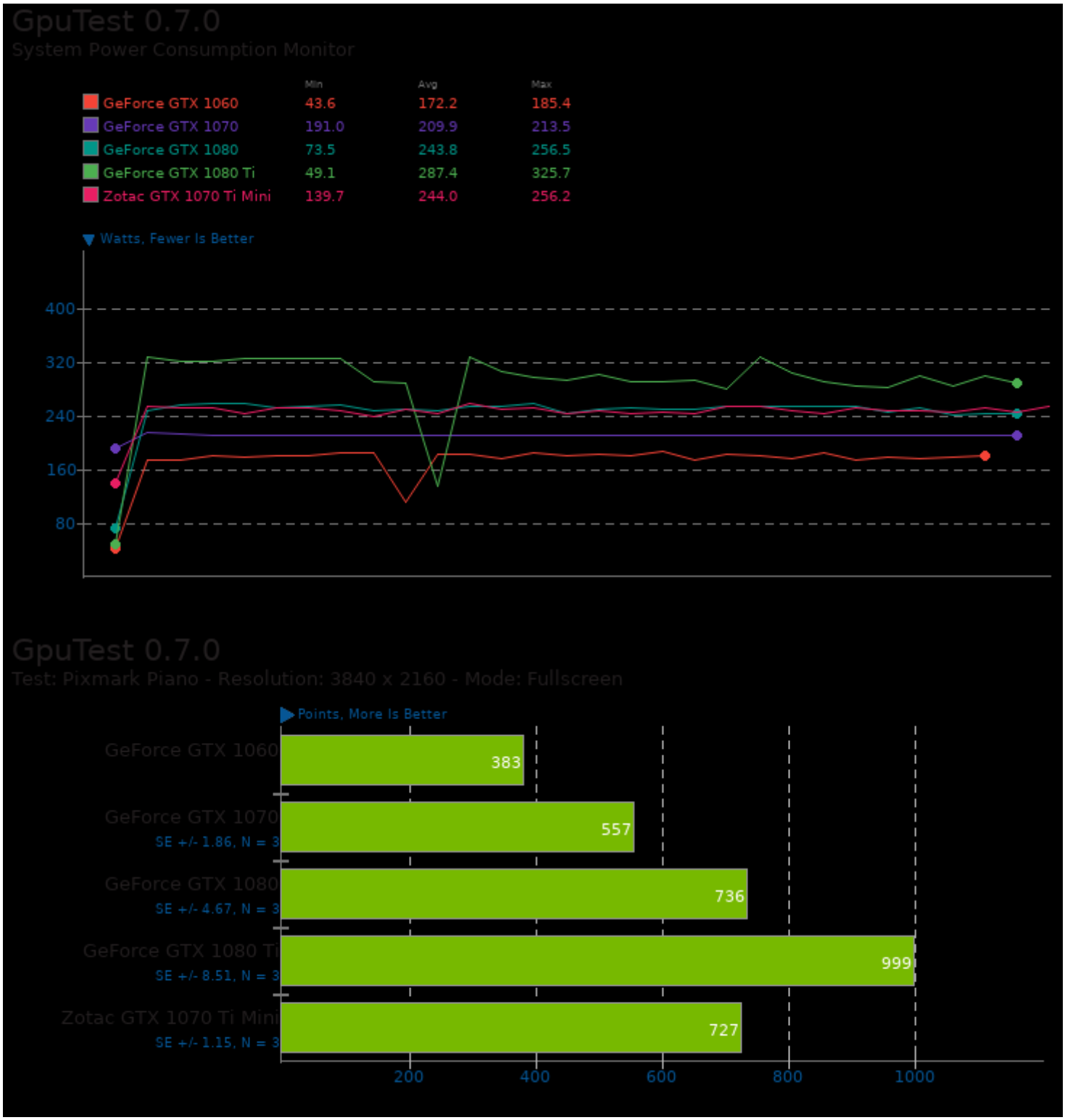

GpuTest 0.7.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 64.0 71.4 74.0
GeForce GTX 1070 65.0 73.5 76.0
GeForce GTX 1080 64.0 79.1 82.0
GeForce GTX 1080 Ti 70.0 82.1 84.0
Zotac GTX 1070 Ti Mini 56.0 64.2 66.0
Celsius, Fewer Is Better
100
80
60
40
20
GpuTest 0.7.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 6.0 95.6 99.0
GeForce GTX 1070 96.0 98.6 99.0
GeForce GTX 1080 10.0 93.0 99.0
GeForce GTX 1080 Ti 47.0 96.2 98.0
Zotac GTX 1070 Ti Mini 95.0 98.0 99.0
Percent, Fewer Is Better
100
80
60
40
20

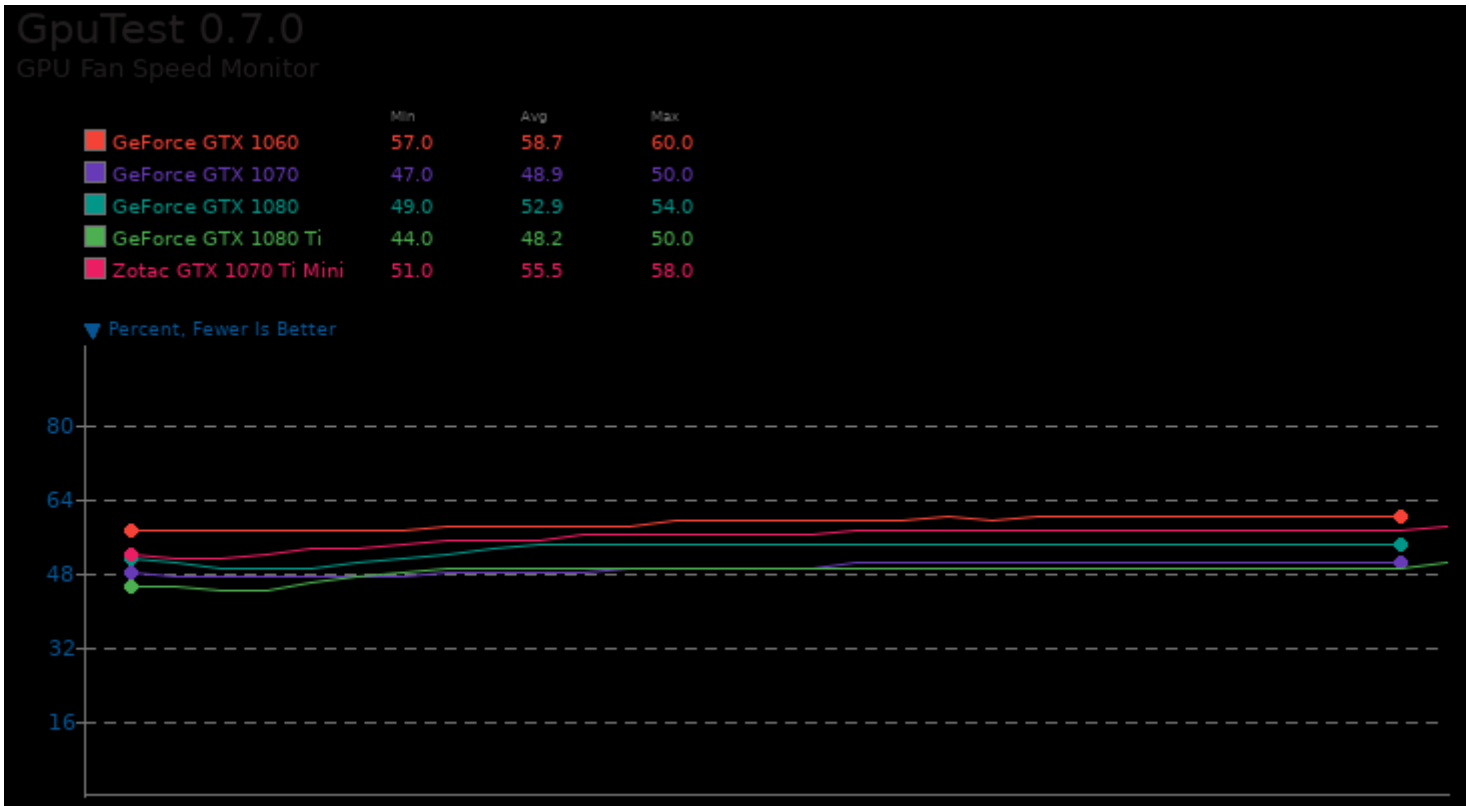

GpuTest 0.7.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 44.7 178.7 189.7
GeForce GTX 1070 43.4 206.0 212.6
GeForce GTX 1080 146.8 247.5 255.5
GeForce GTX 1080 Ti 50.7 285.5 325.2
Zotac GTX 1070 Ti Mini 46.8 246.9 254.7
Watts, Fewer Is Better
400
320
240
160
80
GpuTest 0.7.0
Test: GiMark - Resolution: 3840 x 2160 - Mode: Fullscreen
Points, More Is Better
GeForce GTX 1060
SE +/- 11.20, N = 3
4360
GeForce GTX 1070
SE +/- 12.33, N = 3
6086
GeForce GTX 1080
SE +/- 28.09, N = 3
7460
GeForce GTX 1080 Ti
SE +/- 79.73, N = 3
9403
Zotac GTX 1070 Ti Mini
SE +/- 9.06, N = 3
7366
2K
4K
6K
8K
10K

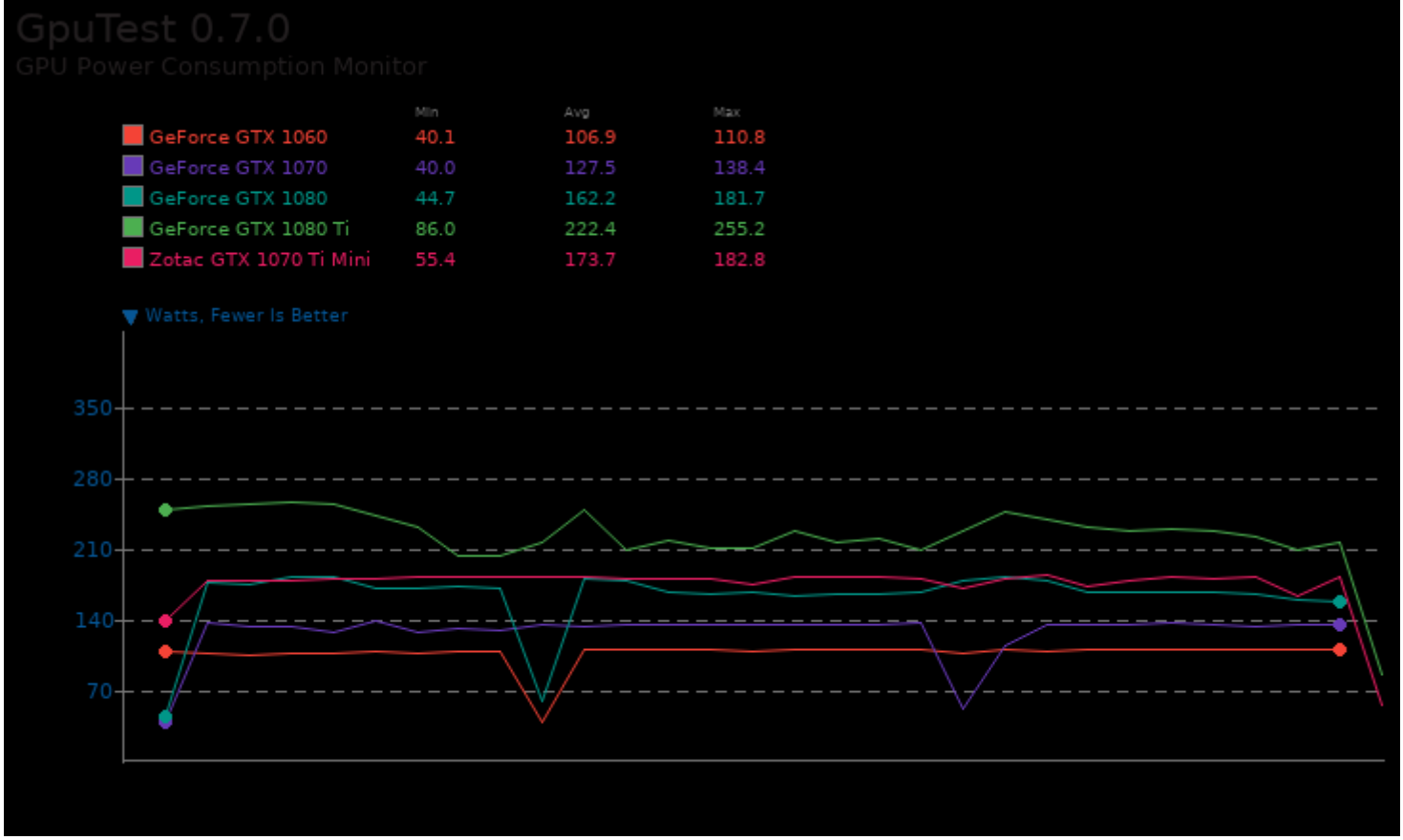

GpuTest 0.7.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 58.0 59.6 61.0
GeForce GTX 1070 46.0 48.4 50.0
GeForce GTX 1080 49.0 52.3 54.0
GeForce GTX 1080 Ti 44.0 48.0 49.0
Zotac GTX 1070 Ti Mini 51.0 53.7 55.0
Percent, Fewer Is Better
100
80
60
40
20

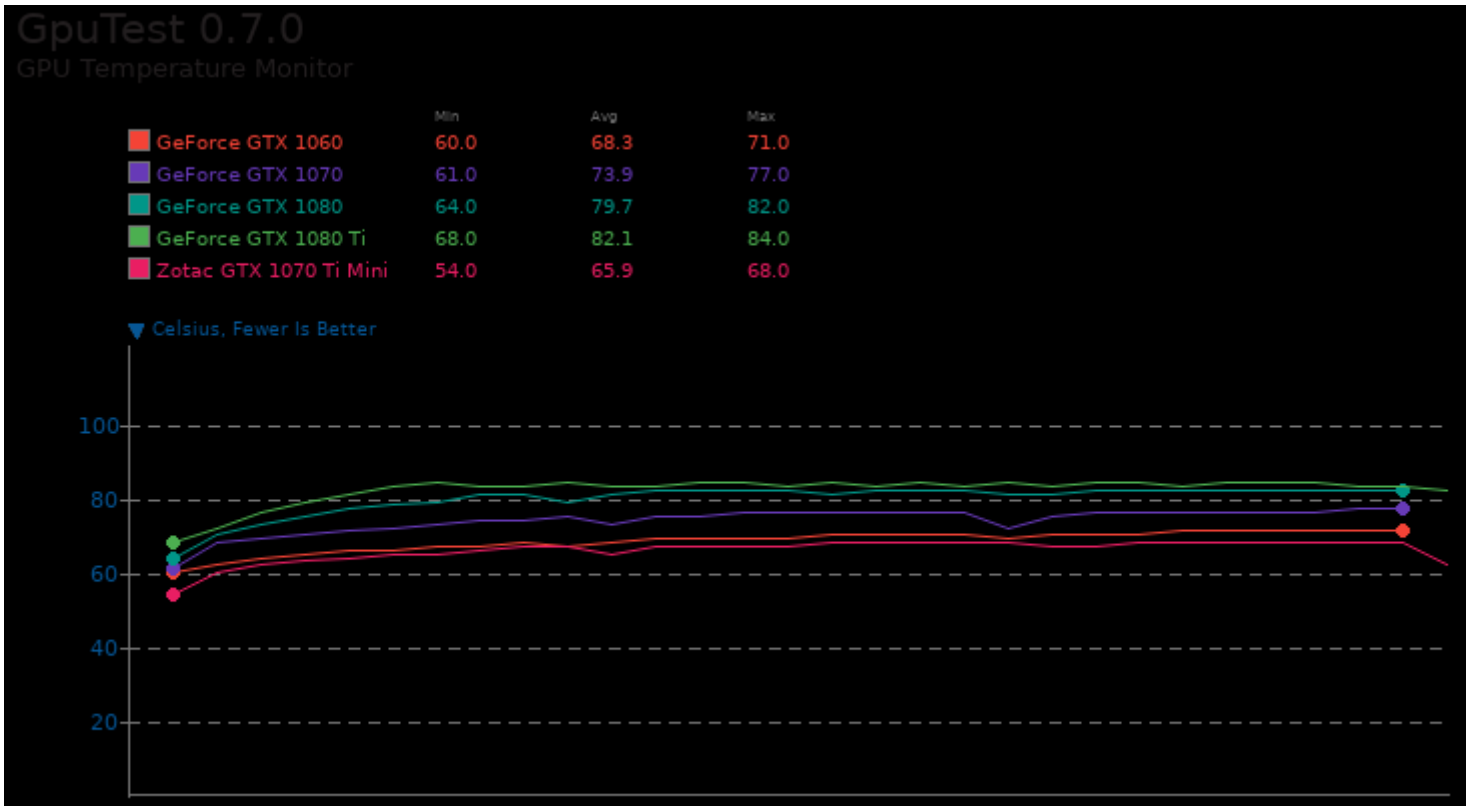

GpuTest 0.7.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 84.7 104.7 113.1
GeForce GTX 1070 10.9 129.8 145.6
GeForce GTX 1080 10.2 163.7 182.7
GeForce GTX 1080 Ti 171.3 216.5 255.3
Zotac GTX 1070 Ti Mini 14.6 162.8 182.5
Watts, Fewer Is Better
350
280
210
140
70

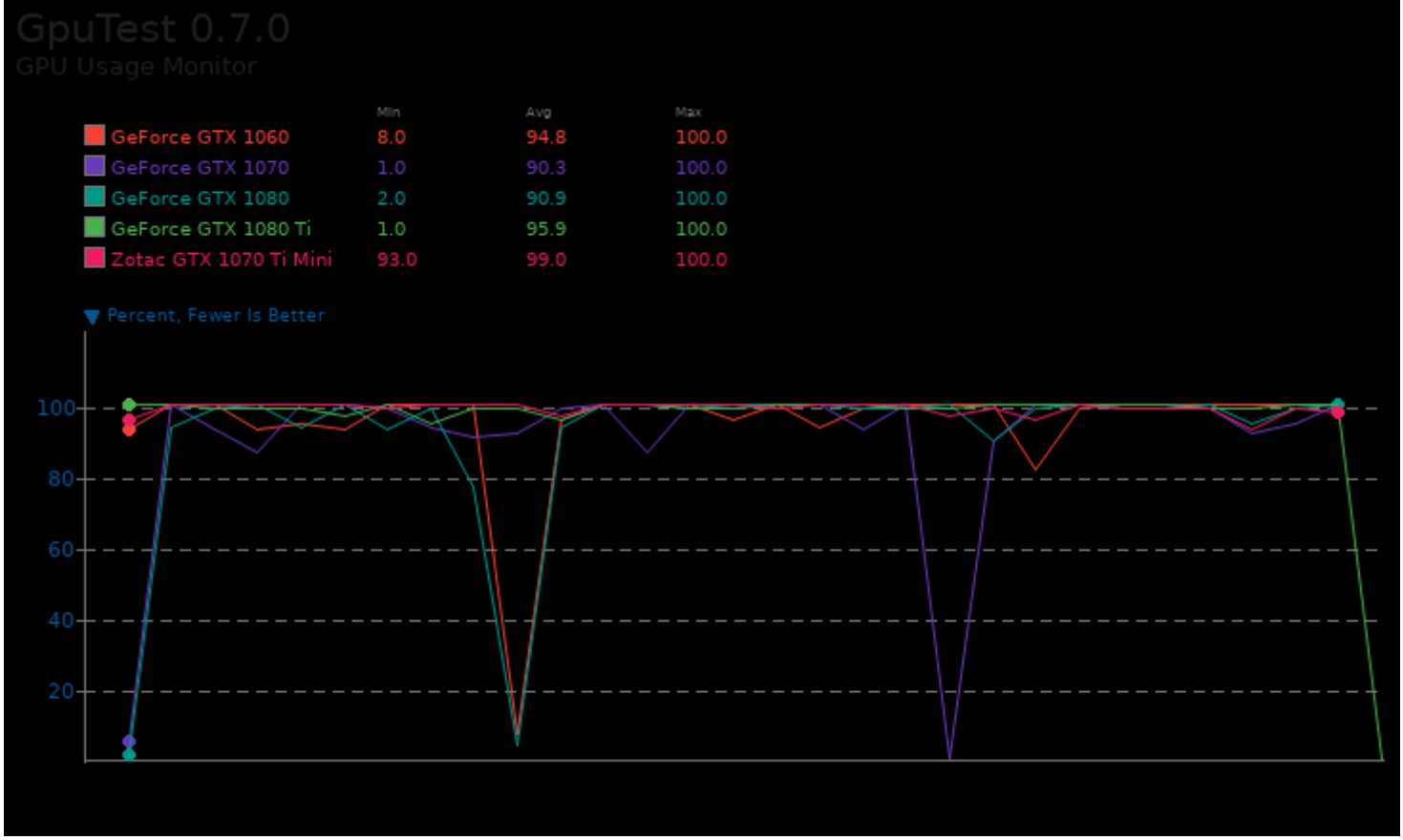

GpuTest 0.7.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 63.0 69.8 72.0
GeForce GTX 1070 61.0 73.2 76.0
GeForce GTX 1080 65.0 79.0 82.0
GeForce GTX 1080 Ti 68.0 81.7 84.0
Zotac GTX 1070 Ti Mini 50.0 63.5 66.0
Celsius, Fewer Is Better
100
80
60
40
20
GpuTest 0.7.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 95.0 98.9 100.0
GeForce GTX 1070 38.0 96.8 99.0
GeForce GTX 1080 4.0 95.6 99.0
GeForce GTX 1080 Ti 98.0 99.0 99.0
Zotac GTX 1070 Ti Mini 69.0 98.0 99.0
Percent, Fewer Is Better
100
80
60
40
20


GpuTest 0.7.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 43.6 172.2 185.4
GeForce GTX 1070 191.0 209.9 213.5
GeForce GTX 1080 73.5 243.8 256.5
GeForce GTX 1080 Ti 49.1 287.4 325.7
Zotac GTX 1070 Ti Mini 139.7 244.0 256.2
Watts, Fewer Is Better
400
320
240
160
80
GpuTest 0.7.0
Test: Pixmark Piano - Resolution: 3840 x 2160 - Mode: Fullscreen
Points, More Is Better
GeForce GTX 1060
383
GeForce GTX 1070
SE +/- 1.86, N = 3
557
GeForce GTX 1080
SE +/- 4.67, N = 3
736
GeForce GTX 1080 Ti
SE +/- 8.51, N = 3
999
Zotac GTX 1070 Ti Mini
SE +/- 1.15, N = 3
727
200
400
600
800
1000

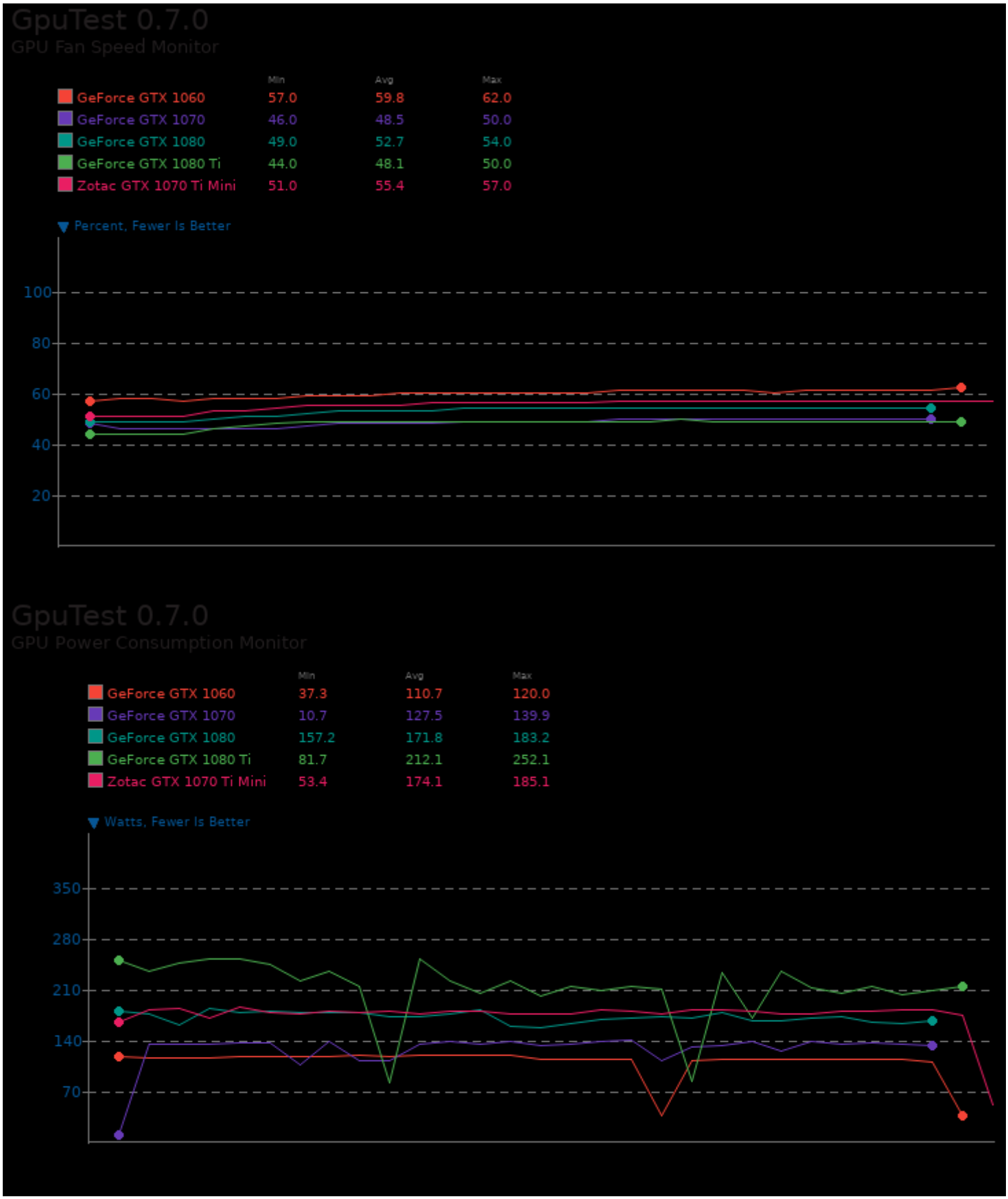

GpuTest 0.7.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 58.7 60.0
GeForce GTX 1070 47.0 48.9 50.0
GeForce GTX 1080 49.0 52.9 54.0
GeForce GTX 1080 Ti 44.0 48.2 50.0
Zotac GTX 1070 Ti Mini 51.0 55.5 58.0
Percent, Fewer Is Better
80
64
48
32
16


GpuTest 0.7.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 40.1 106.9 110.8
GeForce GTX 1070 40.0 127.5 138.4
GeForce GTX 1080 44.7 162.2 181.7
GeForce GTX 1080 Ti 86.0 222.4 255.2
Zotac GTX 1070 Ti Mini 55.4 173.7 182.8
Watts, Fewer Is Better
350
280
210
140
70

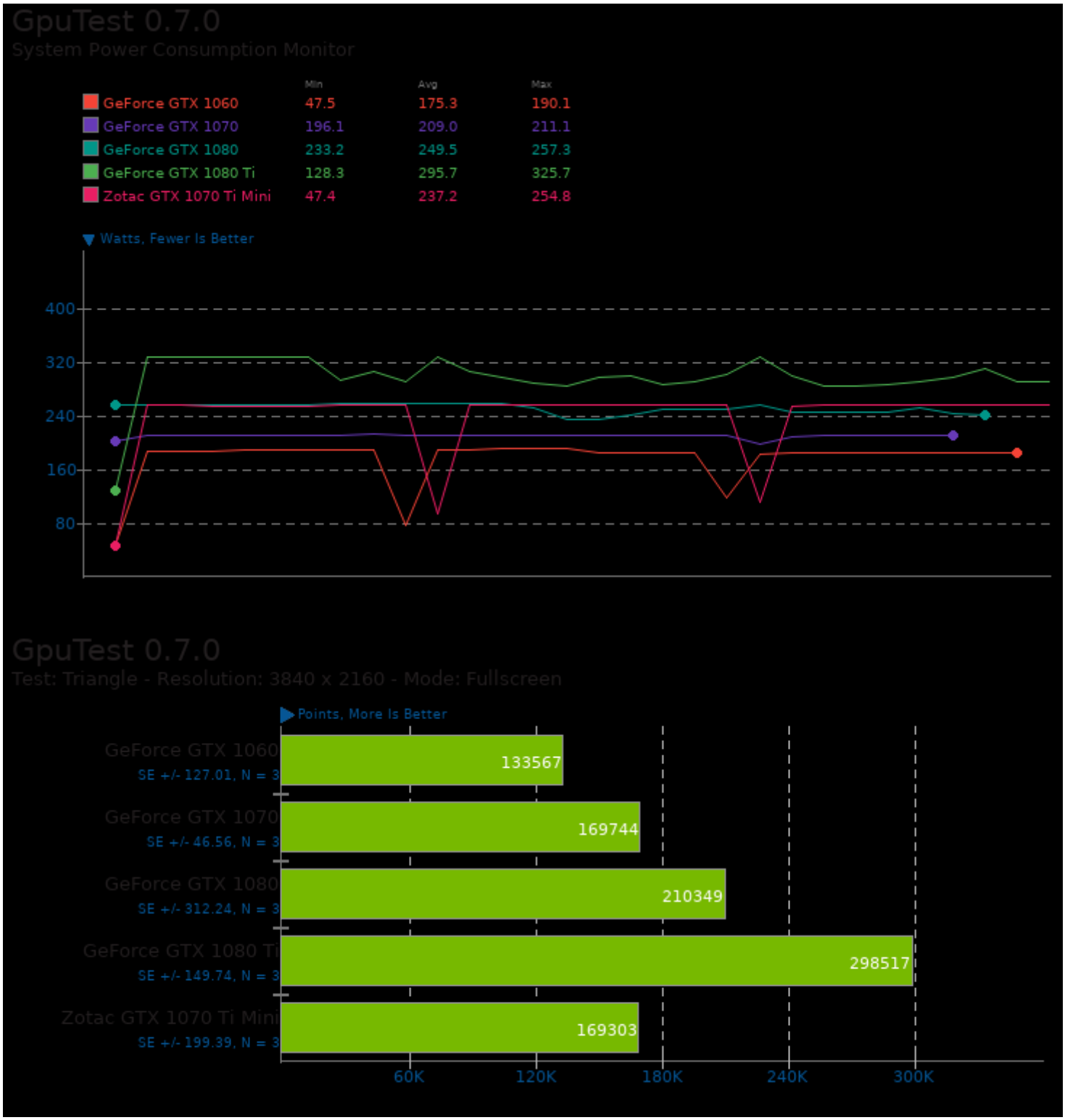

GpuTest 0.7.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 60.0 68.3 71.0
GeForce GTX 1070 61.0 73.9 77.0
GeForce GTX 1080 64.0 79.7 82.0
GeForce GTX 1080 Ti 68.0 82.1 84.0
Zotac GTX 1070 Ti Mini 54.0 65.9 68.0
Celsius, Fewer Is Better
100
80
60
40
20

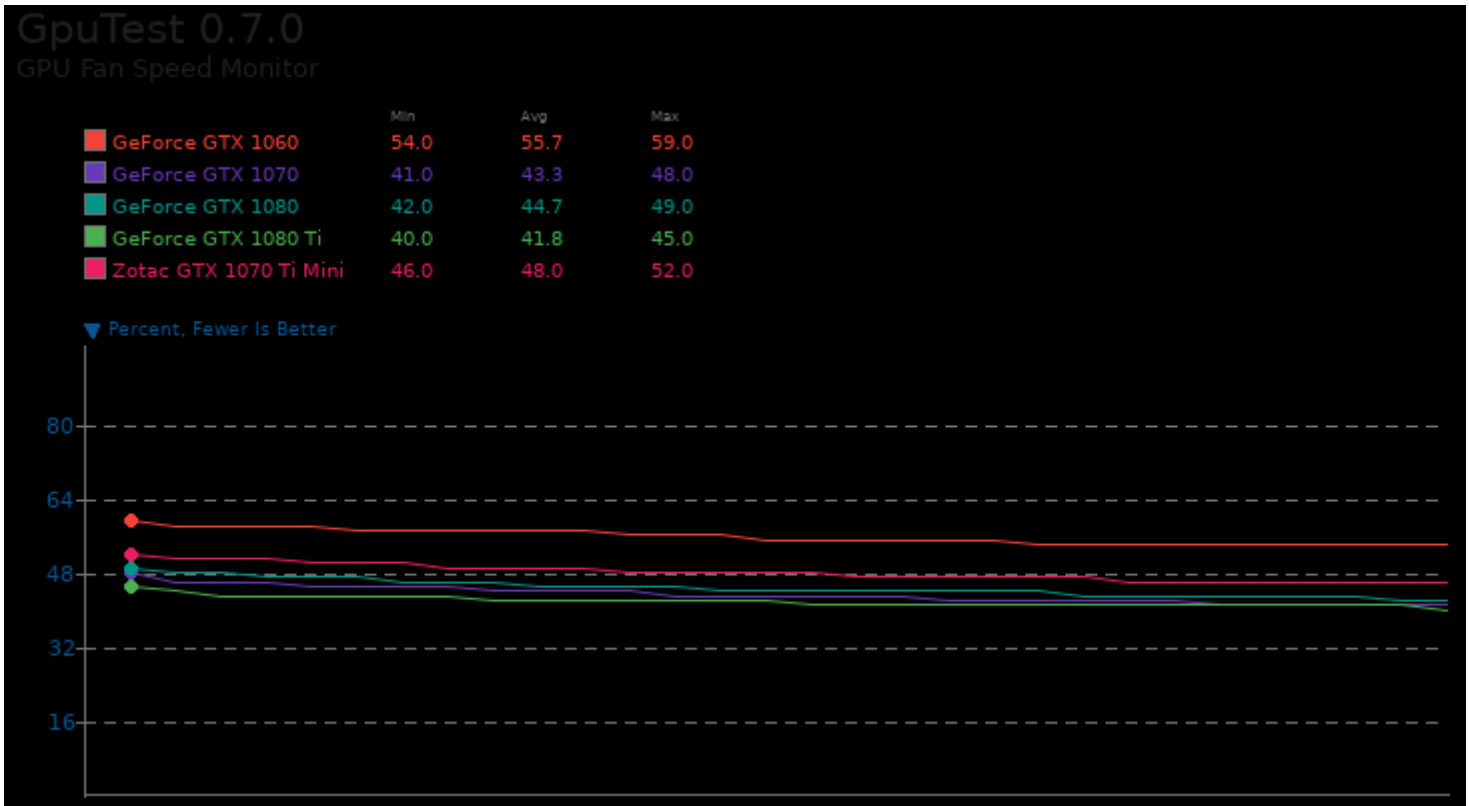

GpuTest 0.7.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 8.0 94.8 100.0
GeForce GTX 1070 1.0 90.3 100.0
GeForce GTX 1080 2.0 90.9 100.0
GeForce GTX 1080 Ti 1.0 95.9 100.0
Zotac GTX 1070 Ti Mini 93.0 99.0 100.0
Percent, Fewer Is Better
100
80
60
40
20

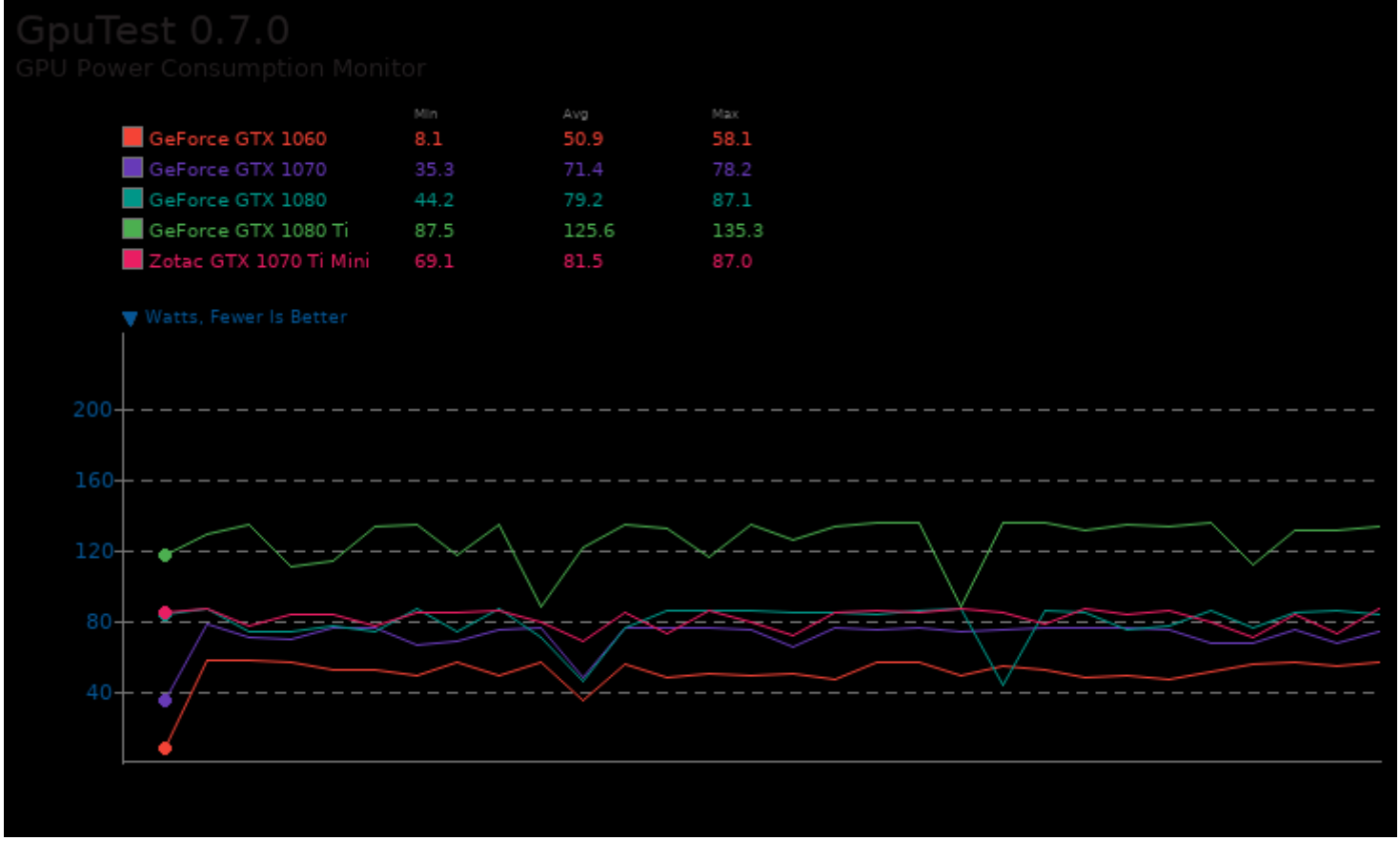

GpuTest 0.7.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 44.0 171.7 183.3
GeForce GTX 1070 44.2 201.5 211.3
GeForce GTX 1080 54.1 243.0 257.0
GeForce GTX 1080 Ti 48.7 281.9 326.9
Zotac GTX 1070 Ti Mini 47.3 242.6 258.5
Watts, Fewer Is Better
400
320
240
160
80
GpuTest 0.7.0
Test: Pixmark Volplosion - Resolution: 3840 x 2160 - Mode: Fullscreen
Points, More Is Better
GeForce GTX 1060
SE +/- 4.04, N = 3
1210
GeForce GTX 1070
SE +/- 8.41, N = 3
1738
GeForce GTX 1080
SE +/- 16.37, N = 3
2290
GeForce GTX 1080 Ti
SE +/- 33.75, N = 3
3097
Zotac GTX 1070 Ti Mini
SE +/- 1.76, N = 3
2260
700
1400
2100
2800
3500

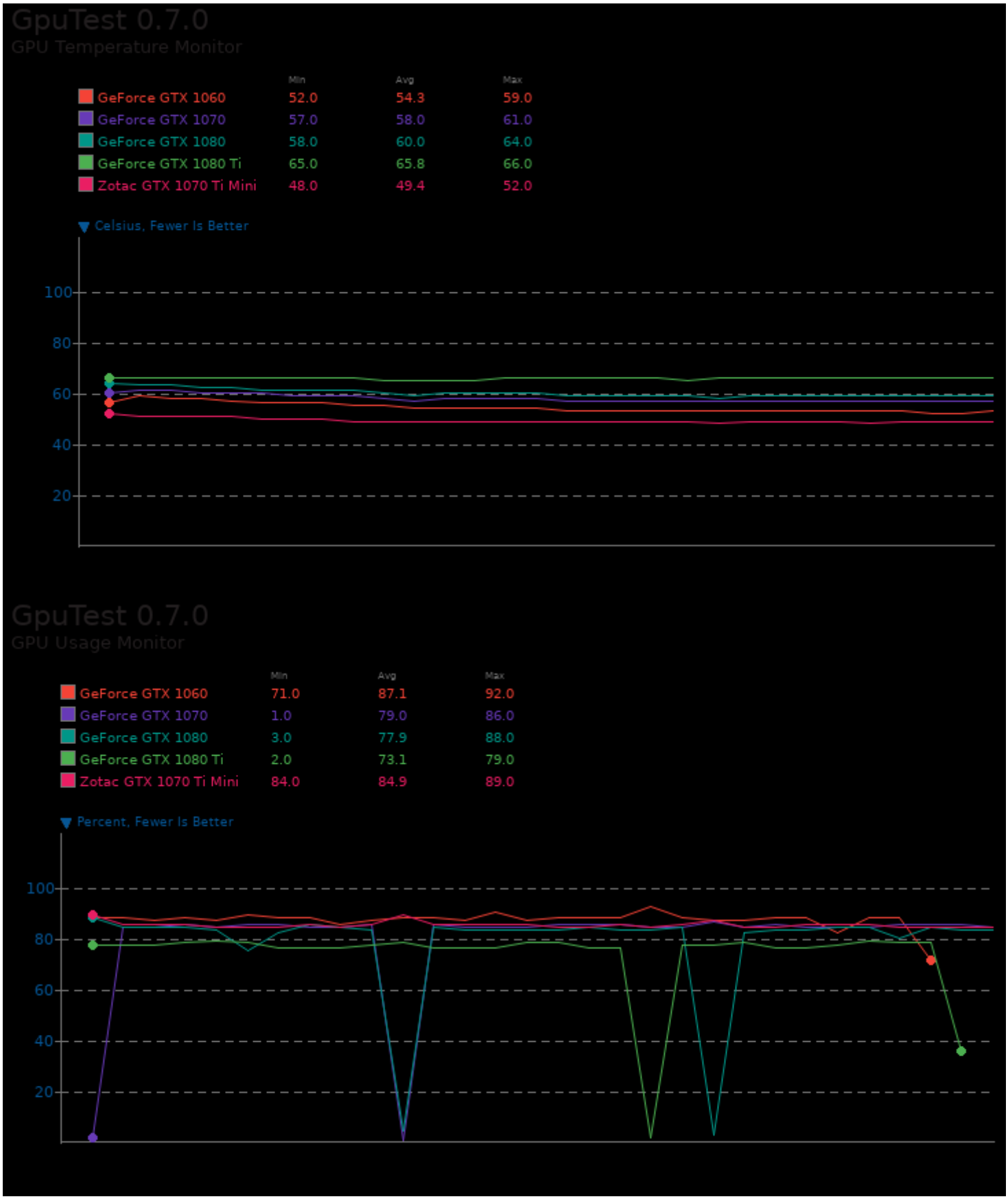

GpuTest 0.7.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 59.8 62.0
GeForce GTX 1070 46.0 48.5 50.0
GeForce GTX 1080 49.0 52.7 54.0
GeForce GTX 1080 Ti 44.0 48.1 50.0
Zotac GTX 1070 Ti Mini 51.0 55.4 57.0
Percent, Fewer Is Better
100
80
60
40
20
GpuTest 0.7.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 37.3 110.7 120.0
GeForce GTX 1070 10.7 127.5 139.9
GeForce GTX 1080 157.2 171.8 183.2
GeForce GTX 1080 Ti 81.7 212.1 252.1
Zotac GTX 1070 Ti Mini 53.4 174.1 185.1
Watts, Fewer Is Better
350
280
210
140
70

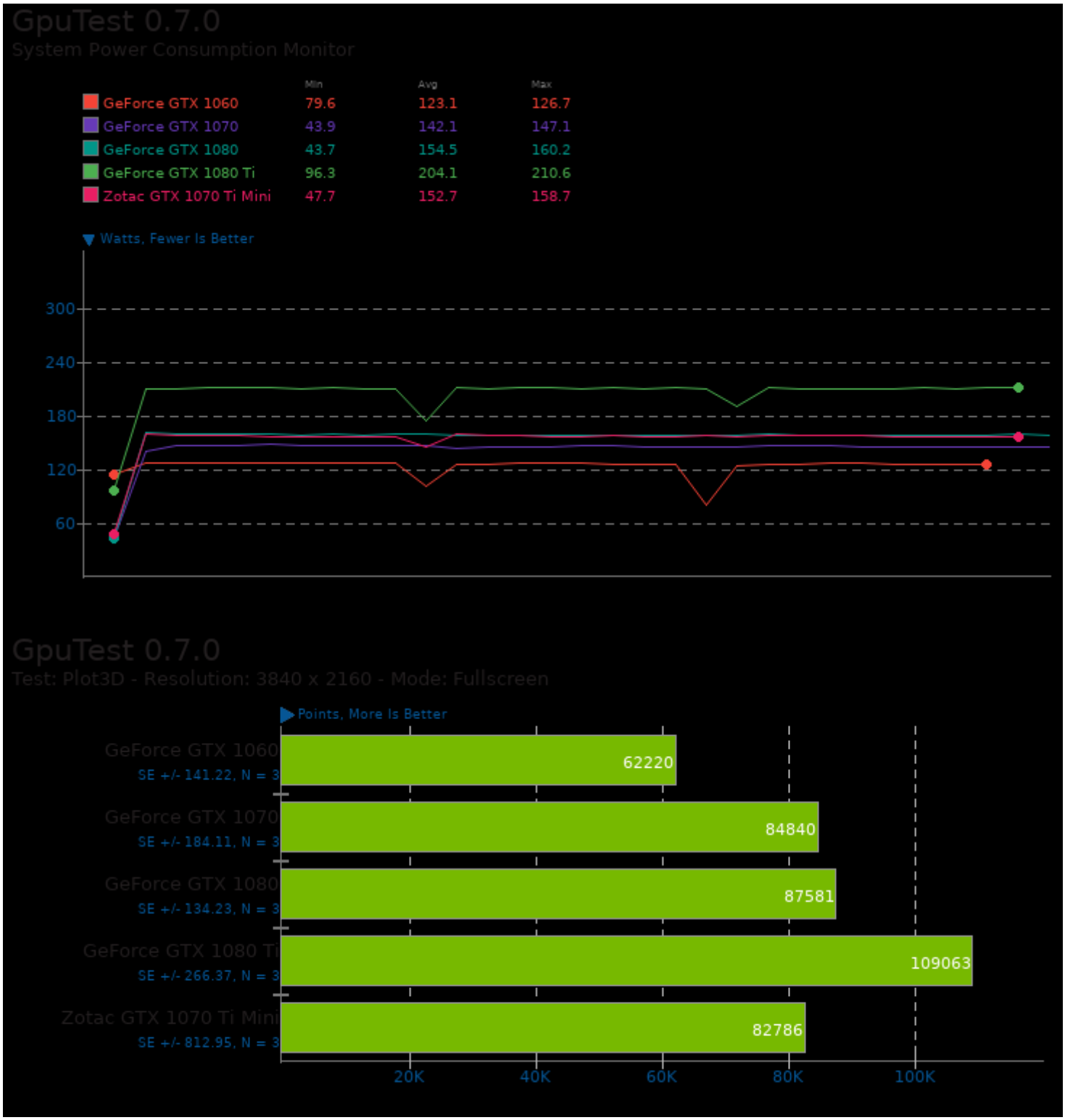

GpuTest 0.7.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 61.0 69.9 72.0
GeForce GTX 1070 60.0 73.6 77.0
GeForce GTX 1080 70.0 80.3 82.0
GeForce GTX 1080 Ti 70.0 81.8 84.0
Zotac GTX 1070 Ti Mini 58.0 66.1 68.0
Celsius, Fewer Is Better
100
80
60
40
20
GpuTest 0.7.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 94.3 100.0
GeForce GTX 1070 80.0 97.0 100.0
GeForce GTX 1080 91.0 98.2 100.0
GeForce GTX 1080 Ti 98.0 99.3 100.0
Zotac GTX 1070 Ti Mini 1.0 96.1 100.0
Percent, Fewer Is Better
100
80
60
40
20

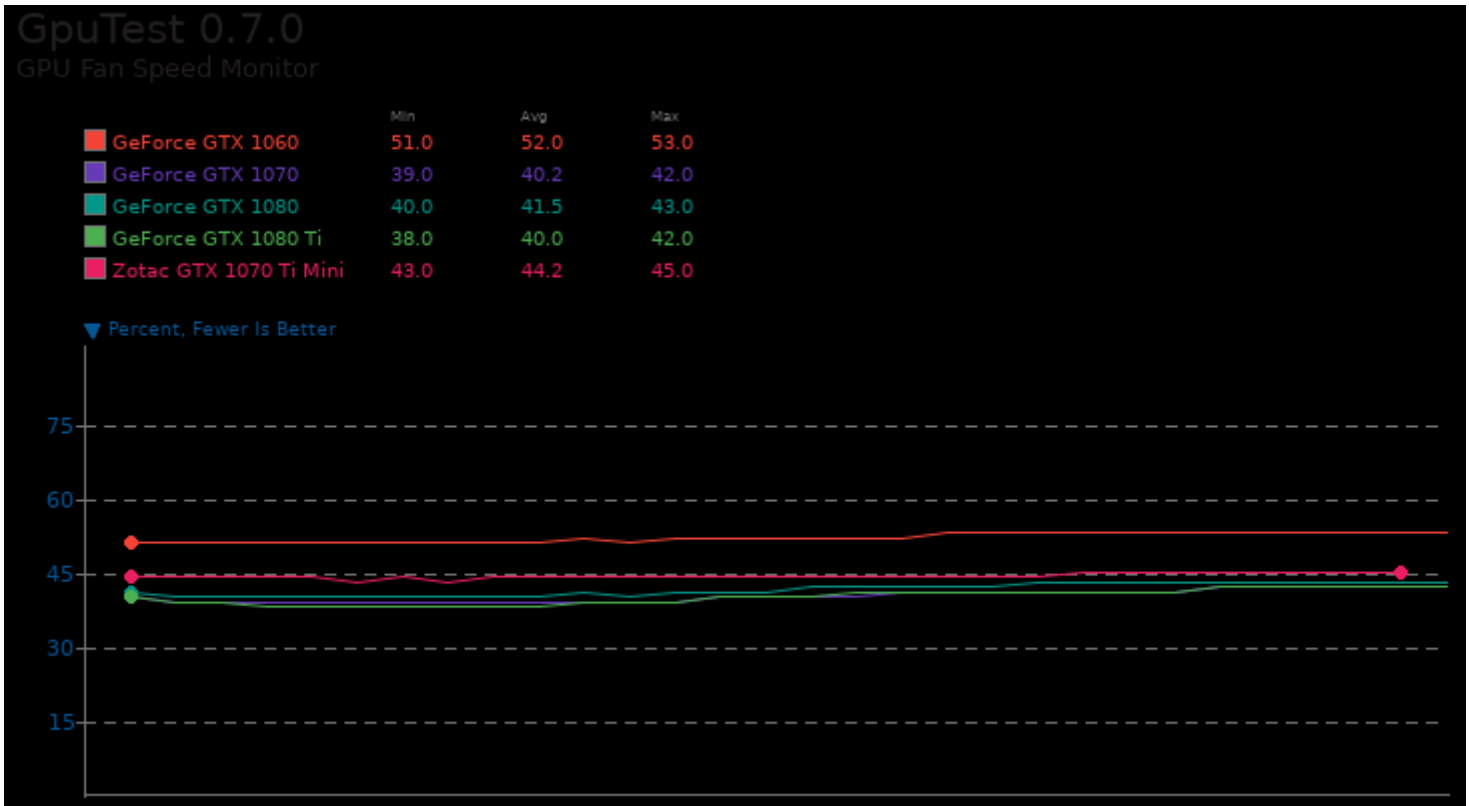

GpuTest 0.7.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 47.5 175.3 190.1
GeForce GTX 1070 196.1 209.0 211.1
GeForce GTX 1080 233.2 249.5 257.3
GeForce GTX 1080 Ti 128.3 295.7 325.7
Zotac GTX 1070 Ti Mini 47.4 237.2 254.8
Watts, Fewer Is Better
400
320
240
160
80
GpuTest 0.7.0
Test: Triangle - Resolution: 3840 x 2160 - Mode: Fullscreen
Points, More Is Better
GeForce GTX 1060
SE +/- 127.01, N = 3
133567
GeForce GTX 1070
SE +/- 46.56, N = 3
169744
GeForce GTX 1080
SE +/- 312.24, N = 3
210349
GeForce GTX 1080 Ti
SE +/- 149.74, N = 3
298517
Zotac GTX 1070 Ti Mini
SE +/- 199.39, N = 3
169303
60K
120K
180K
240K
300K


GpuTest 0.7.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 54.0 55.7 59.0
GeForce GTX 1070 41.0 43.3 48.0
GeForce GTX 1080 42.0 44.7 49.0
GeForce GTX 1080 Ti 40.0 41.8 45.0
Zotac GTX 1070 Ti Mini 46.0 48.0 52.0
Percent, Fewer Is Better
80
64
48
32
16

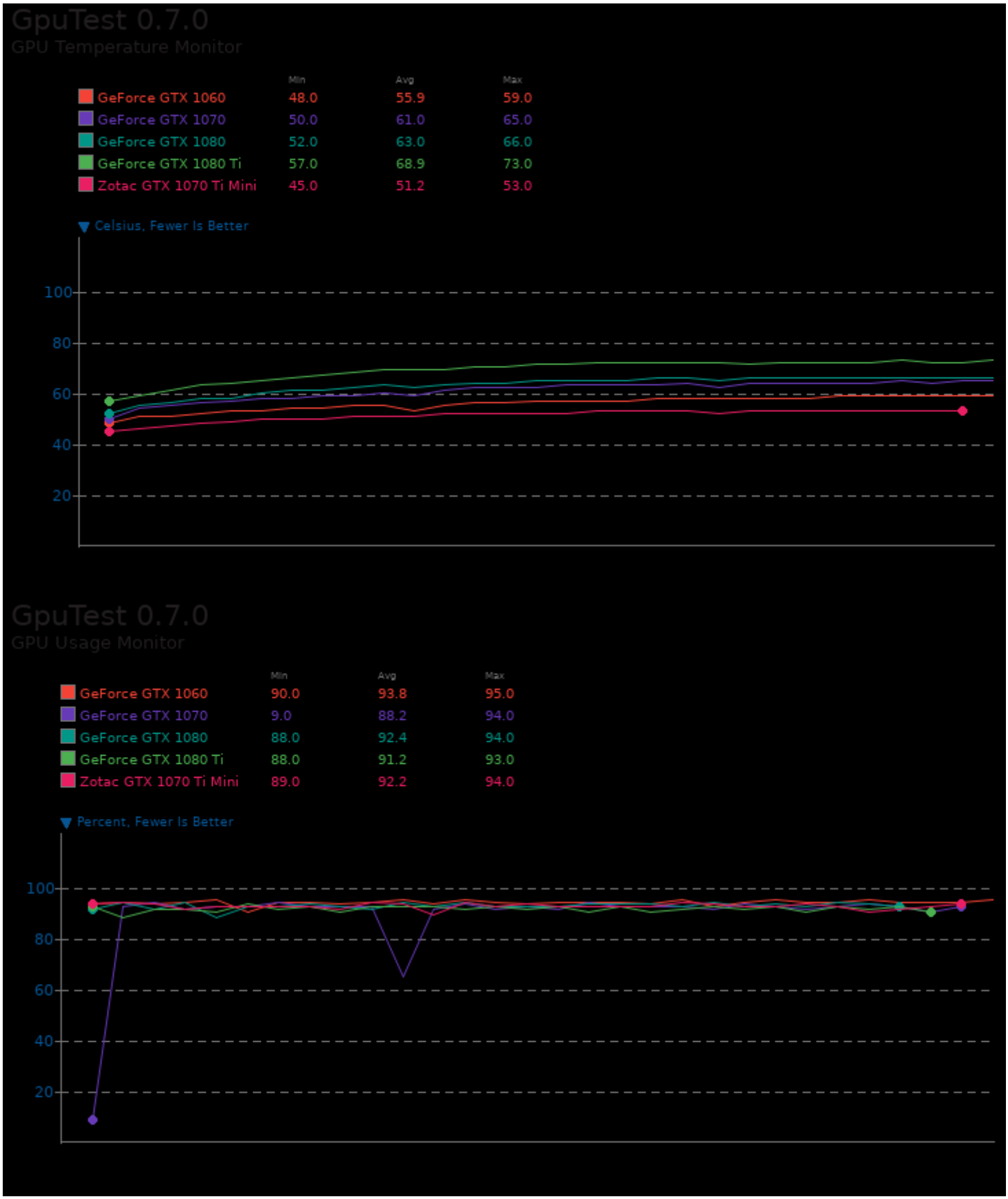

GpuTest 0.7.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 8.1 50.9 58.1
GeForce GTX 1070 35.3 71.4 78.2
GeForce GTX 1080 44.2 79.2 87.1
GeForce GTX 1080 Ti 87.5 125.6 135.3
Zotac GTX 1070 Ti Mini 69.1 81.5 87.0
Watts, Fewer Is Better
200
160
120
80
40

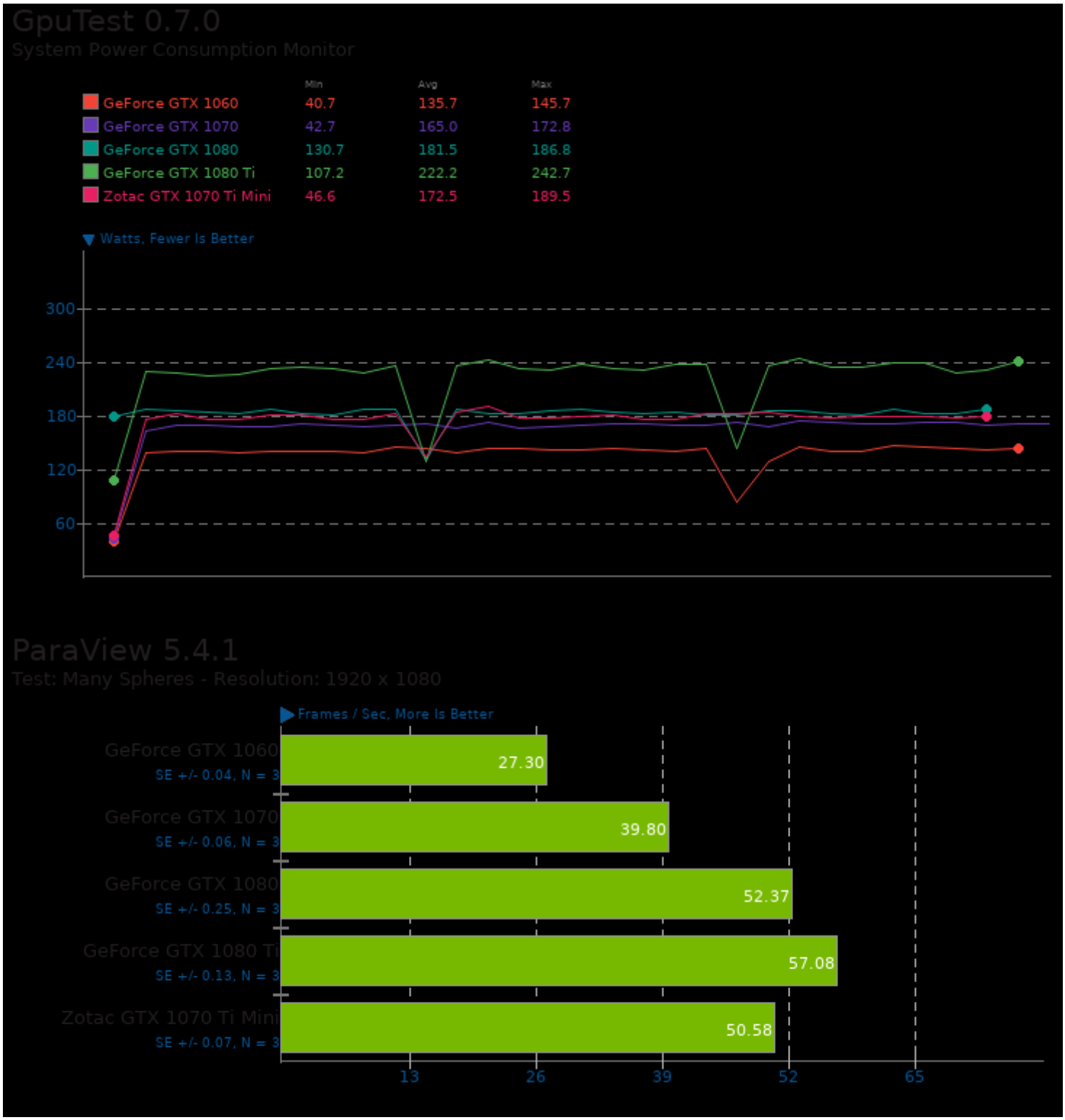

GpuTest 0.7.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 52.0 54.3 59.0
GeForce GTX 1070 57.0 58.0 61.0
GeForce GTX 1080 58.0 60.0 64.0
GeForce GTX 1080 Ti 65.0 65.8 66.0
Zotac GTX 1070 Ti Mini 48.0 49.4 52.0
Celsius, Fewer Is Better
100
80
60
40
20
GpuTest 0.7.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 71.0 87.1 92.0
GeForce GTX 1070 1.0 79.0 86.0
GeForce GTX 1080 3.0 77.9 88.0
GeForce GTX 1080 Ti 2.0 73.1 79.0
Zotac GTX 1070 Ti Mini 84.0 84.9 89.0
Percent, Fewer Is Better
100
80
60
40
20

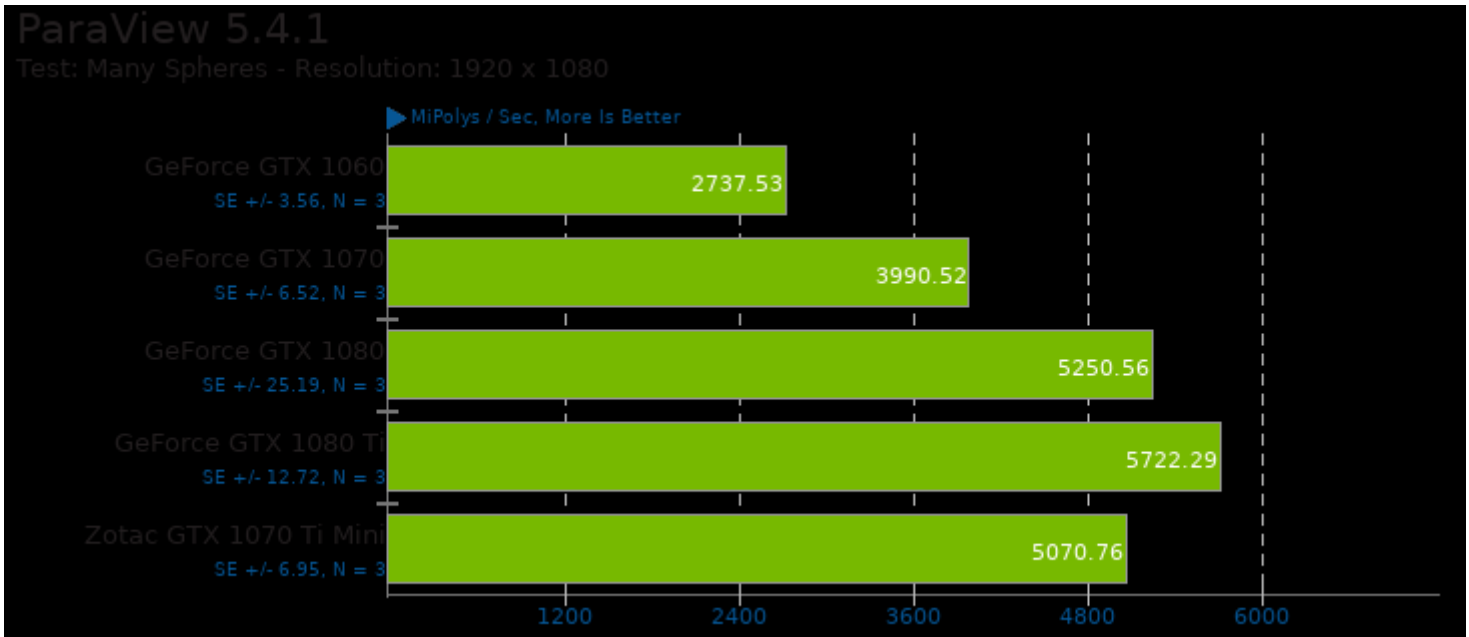

GpuTest 0.7.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 79.6 123.1 126.7
GeForce GTX 1070 43.9 142.1 147.1
GeForce GTX 1080 43.7 154.5 160.2
GeForce GTX 1080 Ti 96.3 204.1 210.6
Zotac GTX 1070 Ti Mini 47.7 152.7 158.7
Watts, Fewer Is Better
300
240
180
120
60
GpuTest 0.7.0
Test: Plot3D - Resolution: 3840 x 2160 - Mode: Fullscreen
Points, More Is Better
GeForce GTX 1060
SE +/- 141.22, N = 3
62220
GeForce GTX 1070
SE +/- 184.11, N = 3
84840
GeForce GTX 1080
SE +/- 134.23, N = 3
87581
GeForce GTX 1080 Ti
SE +/- 266.37, N = 3
109063
Zotac GTX 1070 Ti Mini
SE +/- 812.95, N = 3
82786
20K
40K
60K
80K
100K

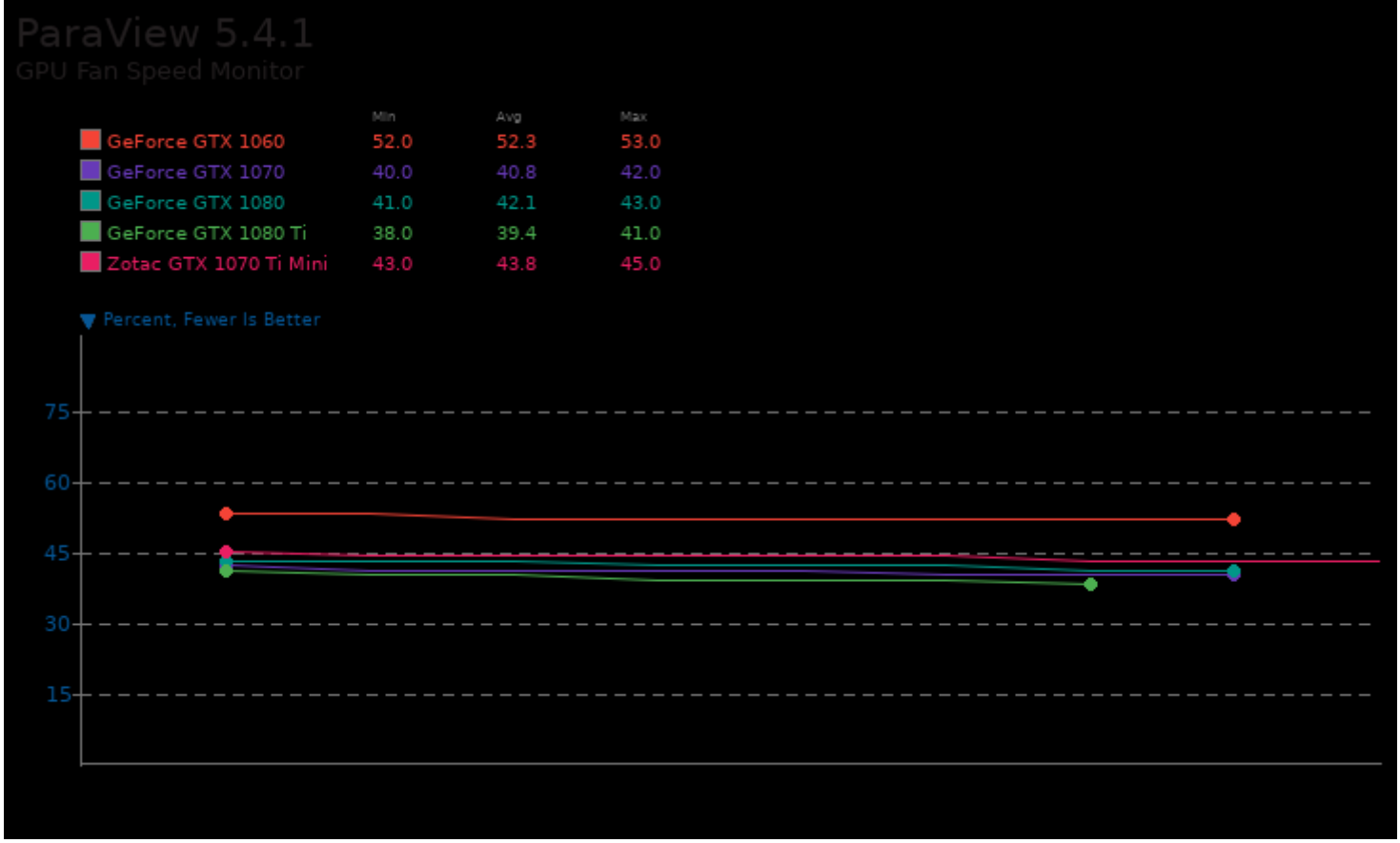

GpuTest 0.7.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 51.0 52.0 53.0
GeForce GTX 1070 39.0 40.2 42.0
GeForce GTX 1080 40.0 41.5 43.0
GeForce GTX 1080 Ti 38.0 40.0 42.0
Zotac GTX 1070 Ti Mini 43.0 44.2 45.0
Percent, Fewer Is Better
75
60
45
30
15

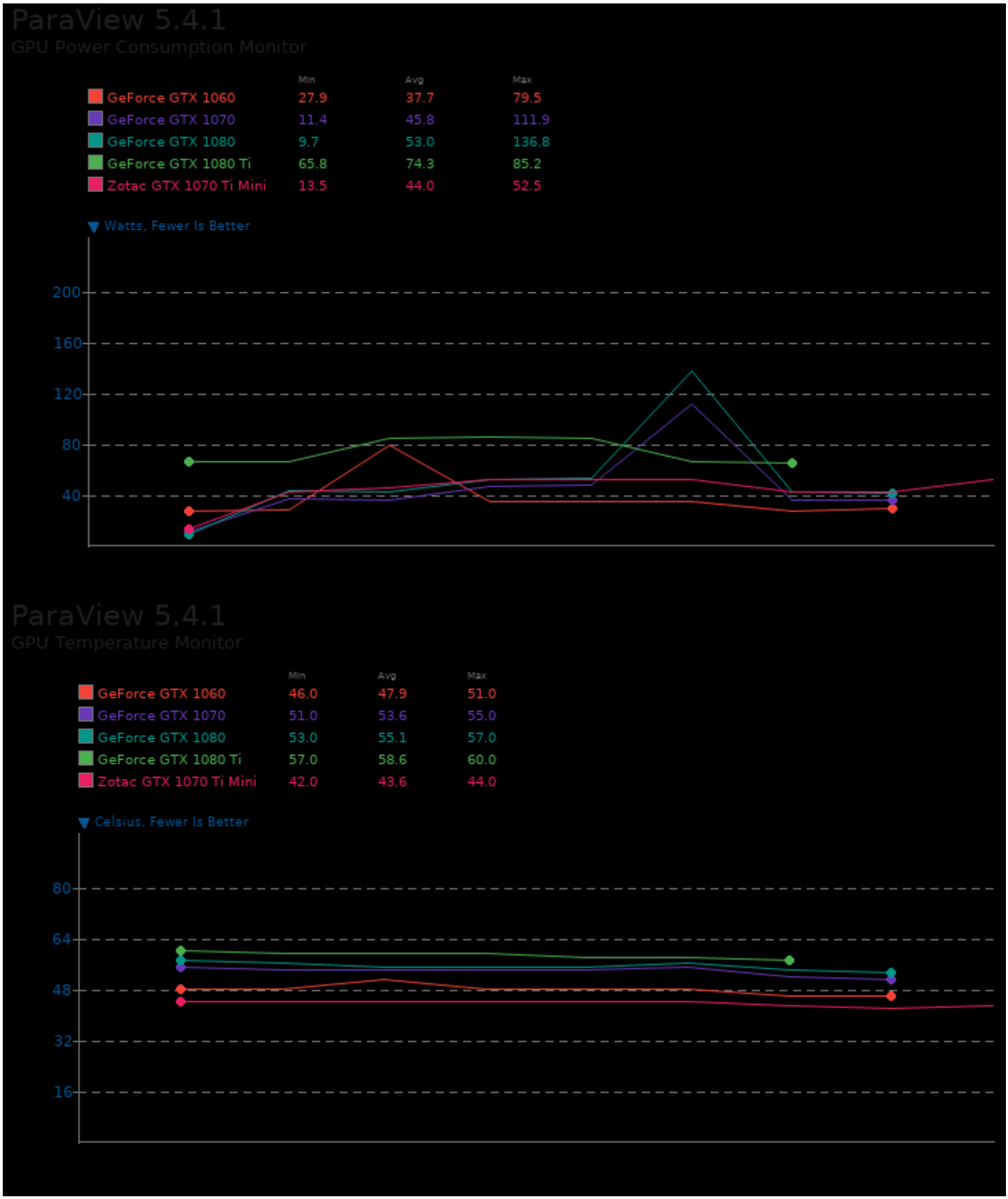

GpuTest 0.7.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 54.7 67.5 76.6
GeForce GTX 1070 33.6 88.9 105.3
GeForce GTX 1080 9.0 97.1 114.0
GeForce GTX 1080 Ti 14.7 144.2 169.6
Zotac GTX 1070 Ti Mini 85.2 101.9 117.8
Watts, Fewer Is Better
250
200
150
100
50

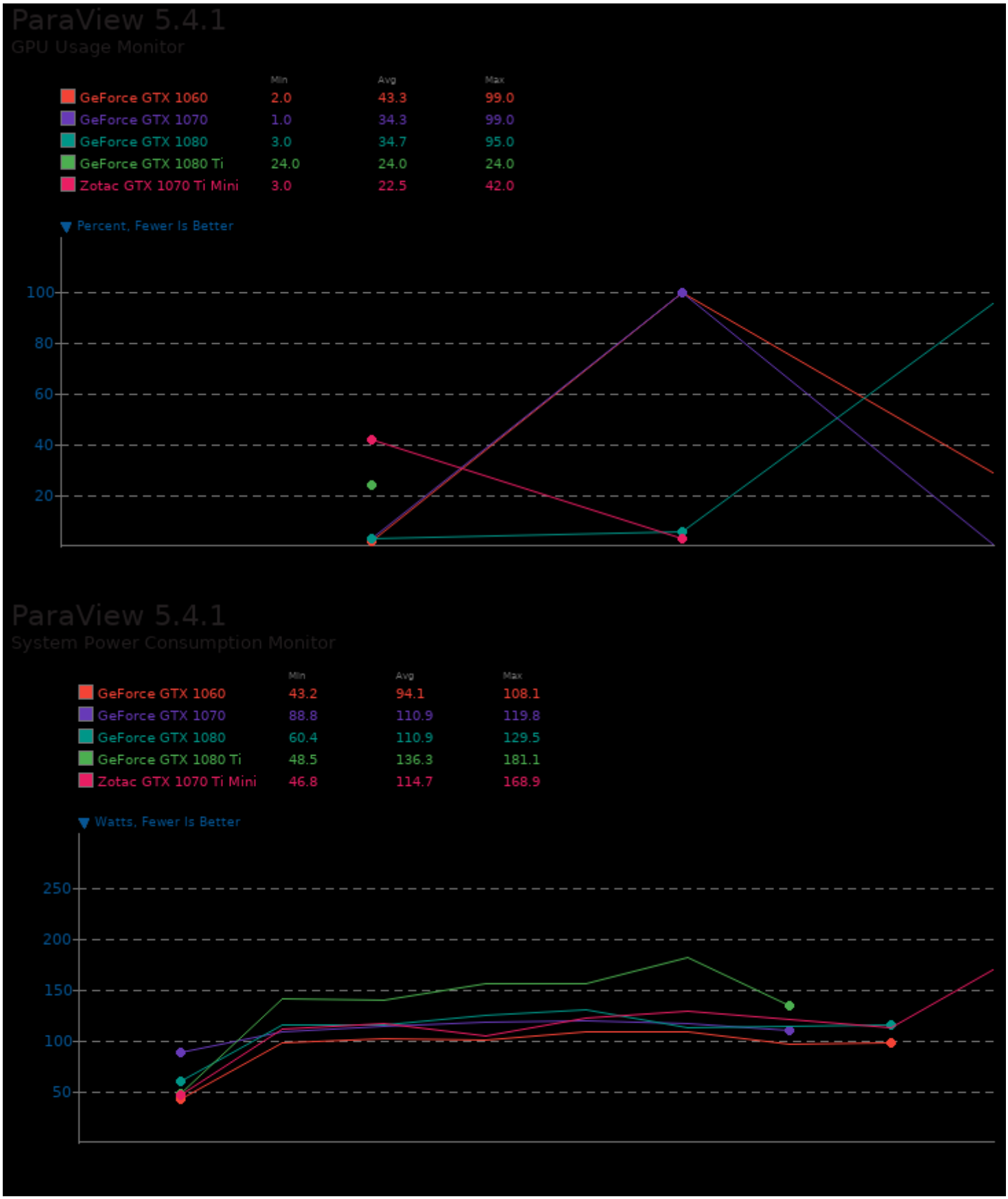

GpuTest 0.7.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 48.0 55.9 59.0
GeForce GTX 1070 50.0 61.0 65.0
GeForce GTX 1080 52.0 63.0 66.0
GeForce GTX 1080 Ti 57.0 68.9 73.0
Zotac GTX 1070 Ti Mini 45.0 51.2 53.0
Celsius, Fewer Is Better
100
80
60
40
20
GpuTest 0.7.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 90.0 93.8 95.0
GeForce GTX 1070 9.0 88.2 94.0
GeForce GTX 1080 88.0 92.4 94.0
GeForce GTX 1080 Ti 88.0 91.2 93.0
Zotac GTX 1070 Ti Mini 89.0 92.2 94.0
Percent, Fewer Is Better
100
80
60
40
20

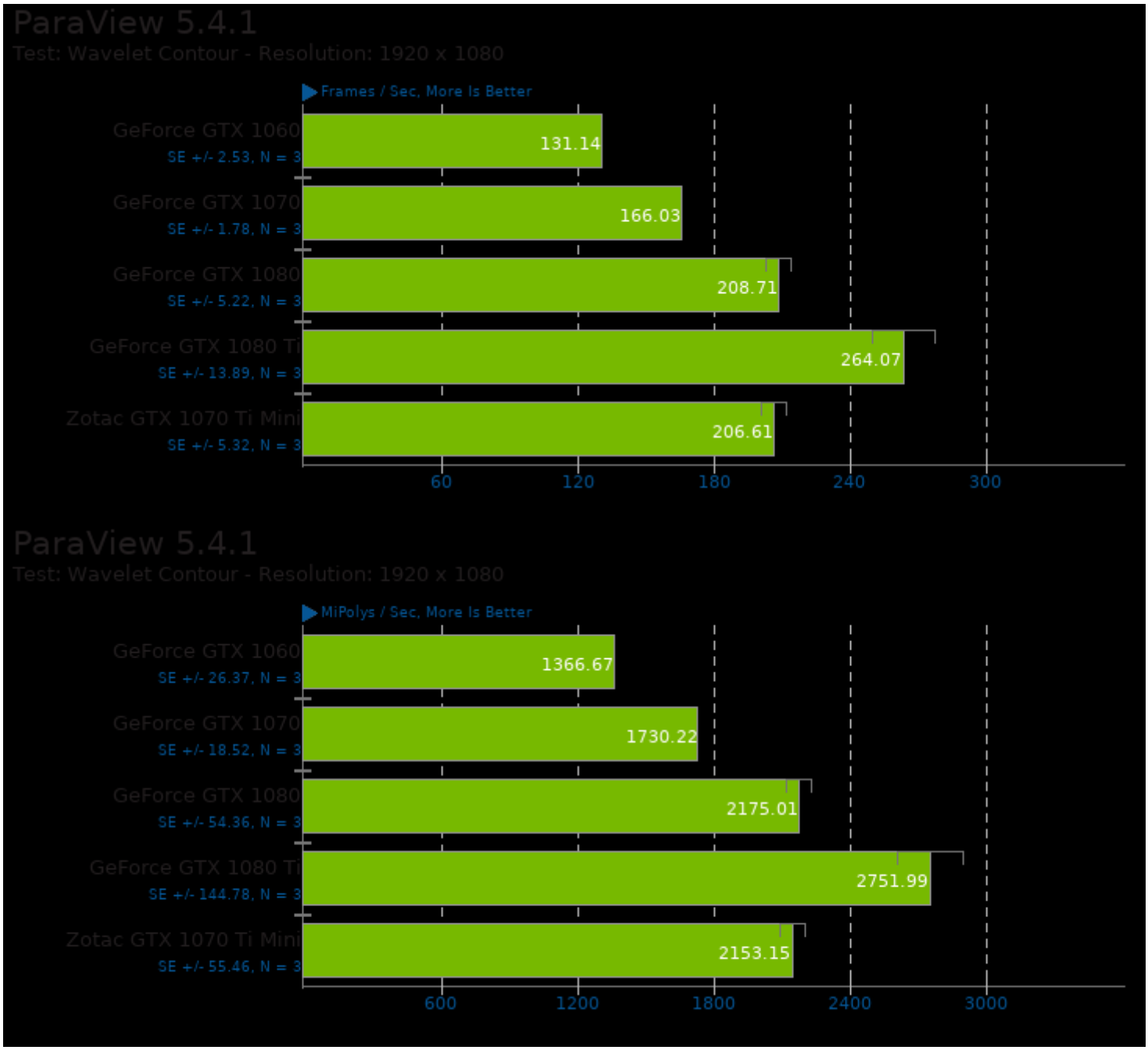

GpuTest 0.7.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 40.7 135.7 145.7
GeForce GTX 1070 42.7 165.0 172.8
GeForce GTX 1080 130.7 181.5 186.8
GeForce GTX 1080 Ti 107.2 222.2 242.7
Zotac GTX 1070 Ti Mini 46.6 172.5 189.5
Watts, Fewer Is Better
300
240
180
120
60
ParaView 5.4.1
Test: Many Spheres - Resolution: 1920 x 1080
Frames / Sec, More Is Better
GeForce GTX 1060
SE +/- 0.04, N = 3
27.30
GeForce GTX 1070
SE +/- 0.06, N = 3
39.80
GeForce GTX 1080
SE +/- 0.25, N = 3
52.37
GeForce GTX 1080 Ti
SE +/- 0.13, N = 3
57.08
Zotac GTX 1070 Ti Mini
SE +/- 0.07, N = 3
50.58
13
26
39
52
65

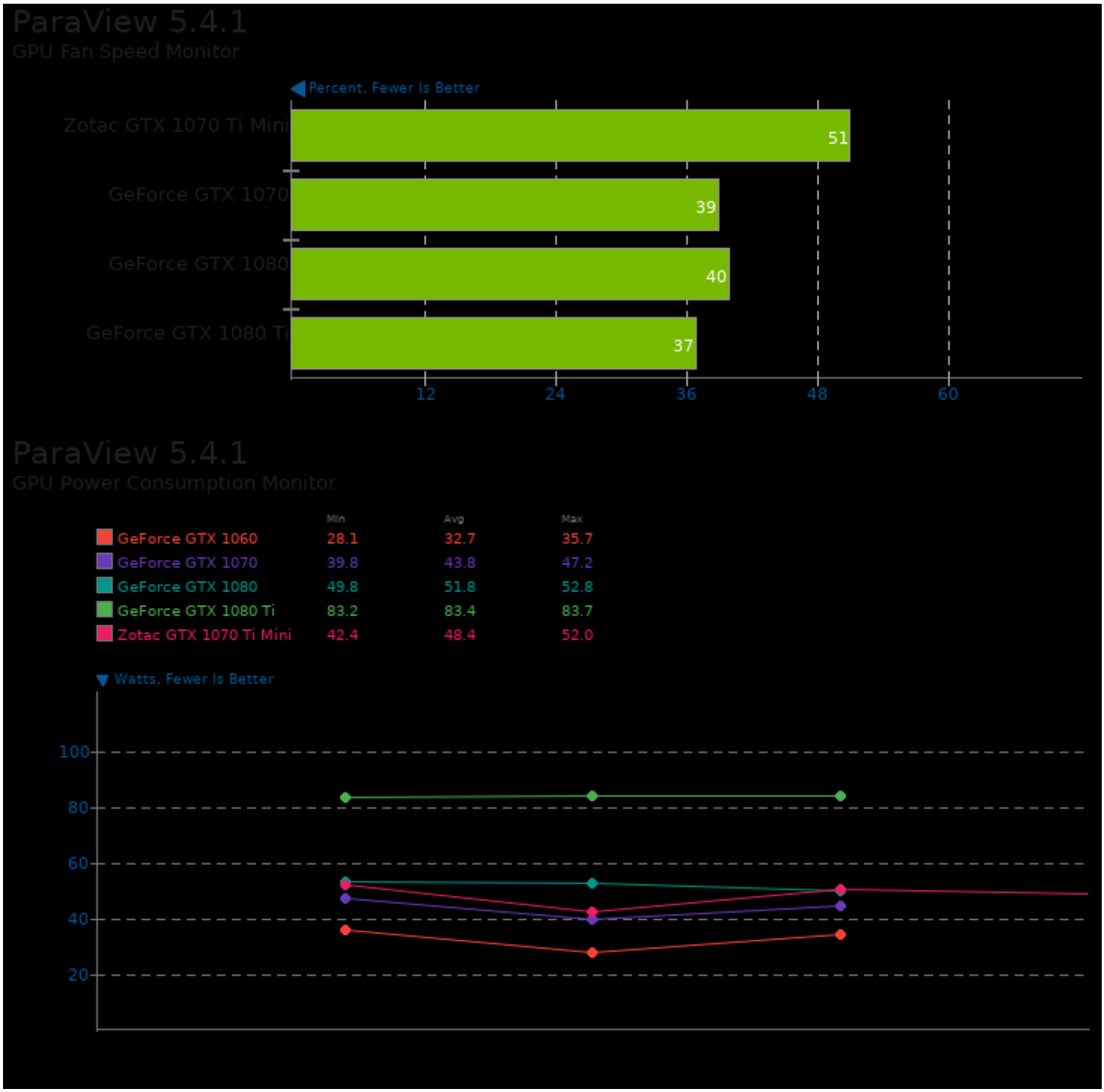

ParaView 5.4.1
Test: Many Spheres - Resolution: 1920 x 1080
MiPolys / Sec, More Is Better
GeForce GTX 1060
SE +/- 3.56, N = 3
2737.53
GeForce GTX 1070
SE +/- 6.52, N = 3
3990.52
GeForce GTX 1080
SE +/- 25.19, N = 3
5250.56
GeForce GTX 1080 Ti
SE +/- 12.72, N = 3
5722.29
Zotac GTX 1070 Ti Mini
SE +/- 6.95, N = 3
5070.76
1200
2400
3600
4800
6000

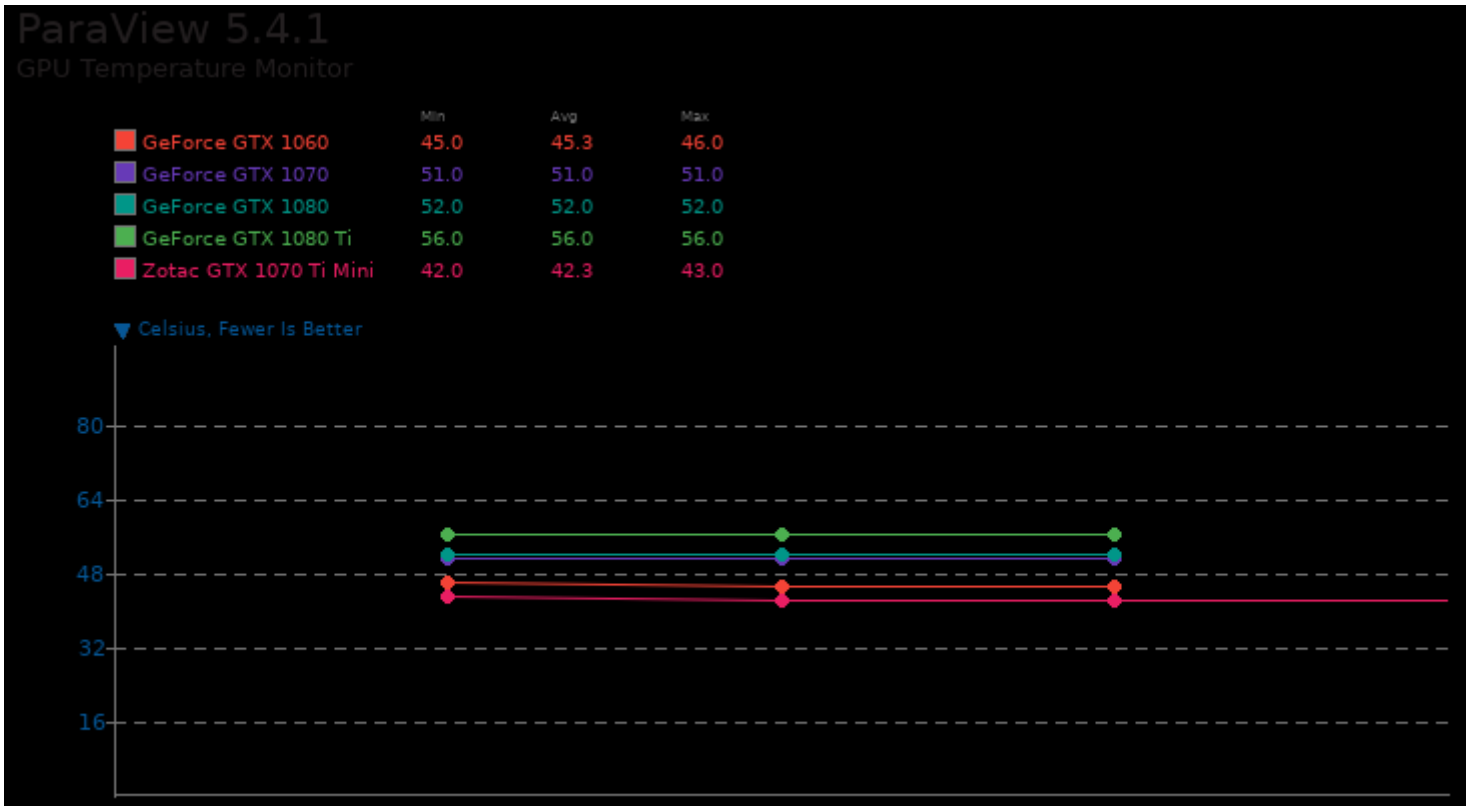

ParaView 5.4.1
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 52.0 52.3 53.0
GeForce GTX 1070 40.0 40.8 42.0
GeForce GTX 1080 41.0 42.1 43.0
GeForce GTX 1080 Ti 38.0 39.4 41.0
Zotac GTX 1070 Ti Mini 43.0 43.8 45.0
Percent, Fewer Is Better
75
60
45
30
15

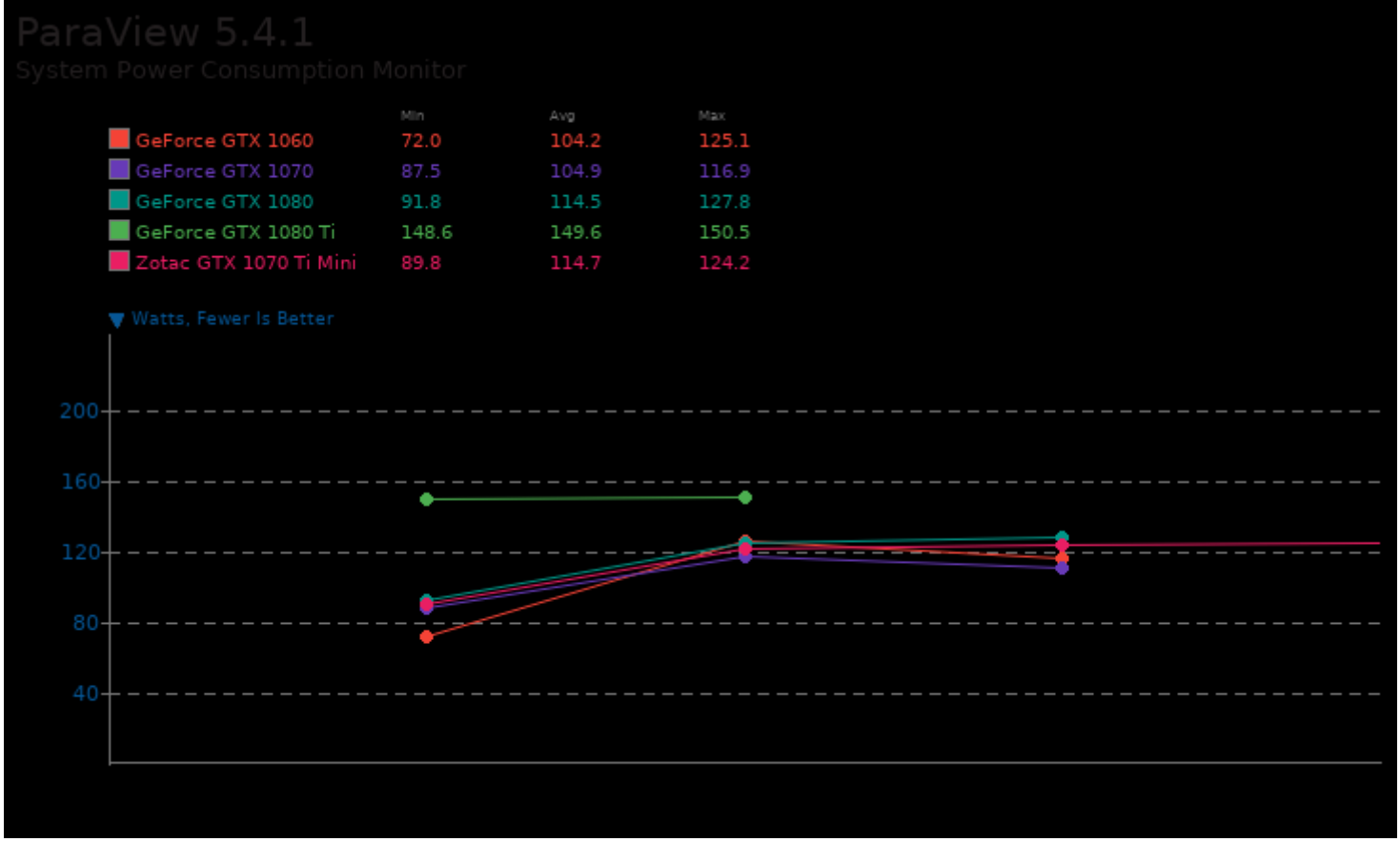

ParaView 5.4.1
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 27.9 37.7 79.5
GeForce GTX 1070 11.4 45.8 111.9
GeForce GTX 1080 9.7 53.0 136.8
GeForce GTX 1080 Ti 65.8 74.3 85.2
Zotac GTX 1070 Ti Mini 13.5 44.0 52.5
Watts, Fewer Is Better
200
160
120
80
40
ParaView 5.4.1
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 46.0 47.9 51.0
GeForce GTX 1070 51.0 53.6 55.0
GeForce GTX 1080 53.0 55.1 57.0
GeForce GTX 1080 Ti 57.0 58.6 60.0
Zotac GTX 1070 Ti Mini 42.0 43.6 44.0
Celsius, Fewer Is Better
80
64
48
32
16

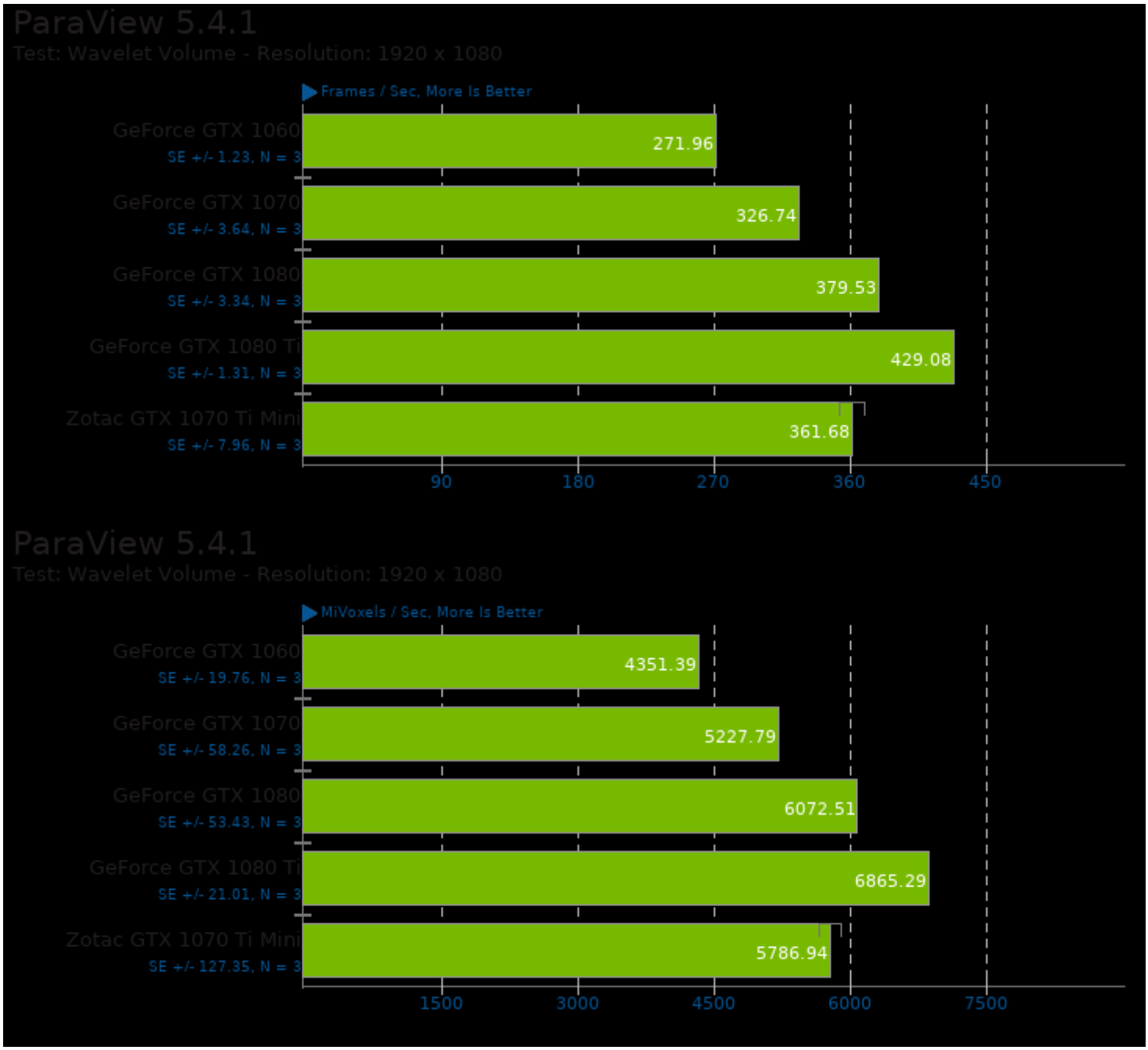

ParaView 5.4.1
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 2.0 43.3 99.0
GeForce GTX 1070 1.0 34.3 99.0
GeForce GTX 1080 3.0 34.7 95.0
GeForce GTX 1080 Ti 24.0 24.0 24.0
Zotac GTX 1070 Ti Mini 3.0 22.5 42.0
Percent, Fewer Is Better
100
80
60
40
20
ParaView 5.4.1
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 43.2 94.1 108.1
GeForce GTX 1070 88.8 110.9 119.8
GeForce GTX 1080 60.4 110.9 129.5
GeForce GTX 1080 Ti 48.5 136.3 181.1
Zotac GTX 1070 Ti Mini 46.8 114.7 168.9
Watts, Fewer Is Better
250
200
150
100
50

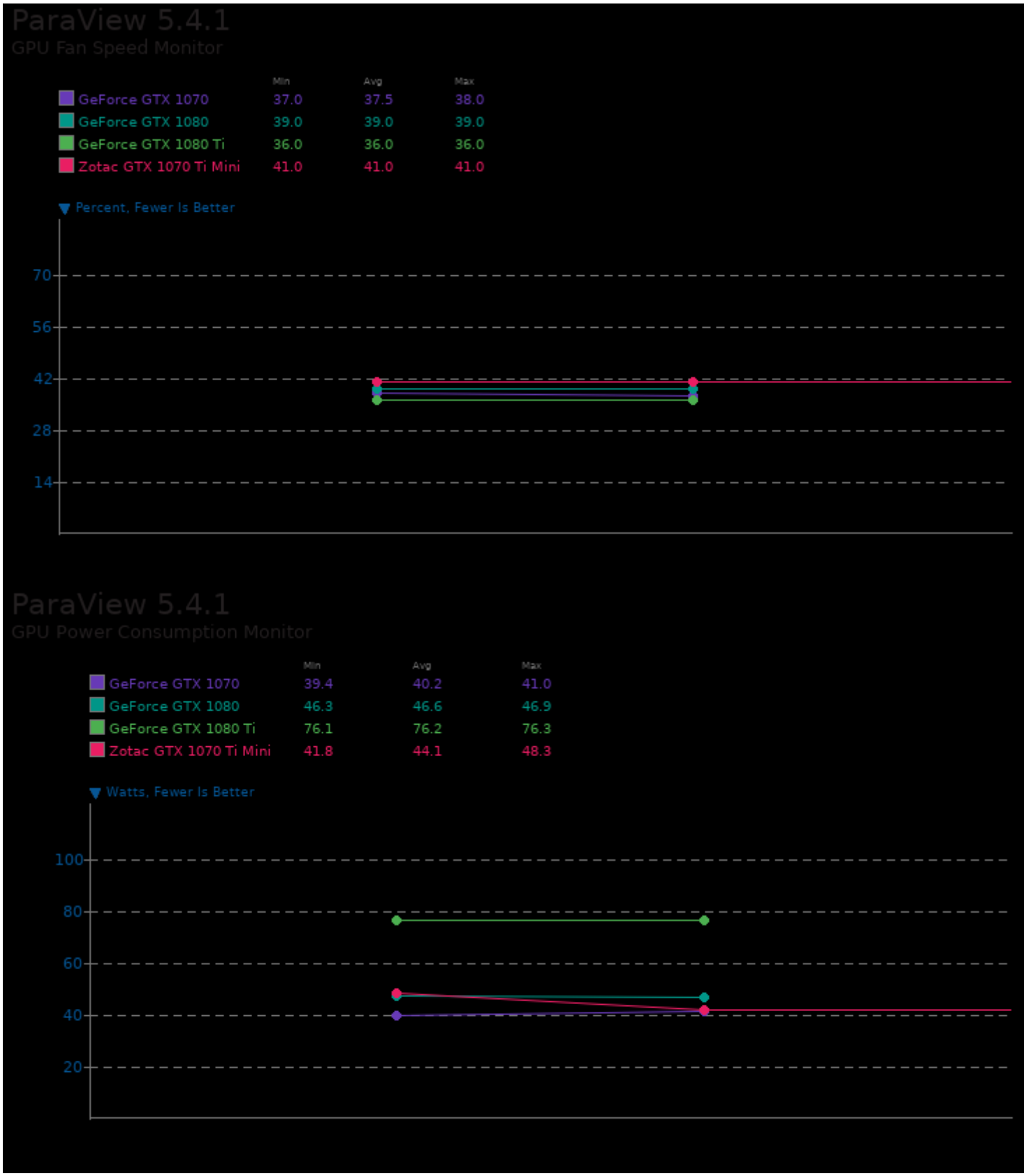

ParaView 5.4.1
Test: Wavelet Contour - Resolution: 1920 x 1080
Frames / Sec, More Is Better
GeForce GTX 1060
SE +/- 2.53, N = 3
131.14
GeForce GTX 1070
SE +/- 1.78, N = 3
166.03
GeForce GTX 1080
SE +/- 5.22, N = 3
208.71
GeForce GTX 1080 Ti
SE +/- 13.89, N = 3
264.07
Zotac GTX 1070 Ti Mini
SE +/- 5.32, N = 3
206.61
60
120
180
240
300
ParaView 5.4.1
Test: Wavelet Contour - Resolution: 1920 x 1080
MiPolys / Sec, More Is Better
GeForce GTX 1060
SE +/- 26.37, N = 3
1366.67
GeForce GTX 1070
SE +/- 18.52, N = 3
1730.22
GeForce GTX 1080
SE +/- 54.36, N = 3
2175.01
GeForce GTX 1080 Ti
SE +/- 144.78, N = 3
2751.99
Zotac GTX 1070 Ti Mini
SE +/- 55.46, N = 3
2153.15
600
1200
1800
2400
3000

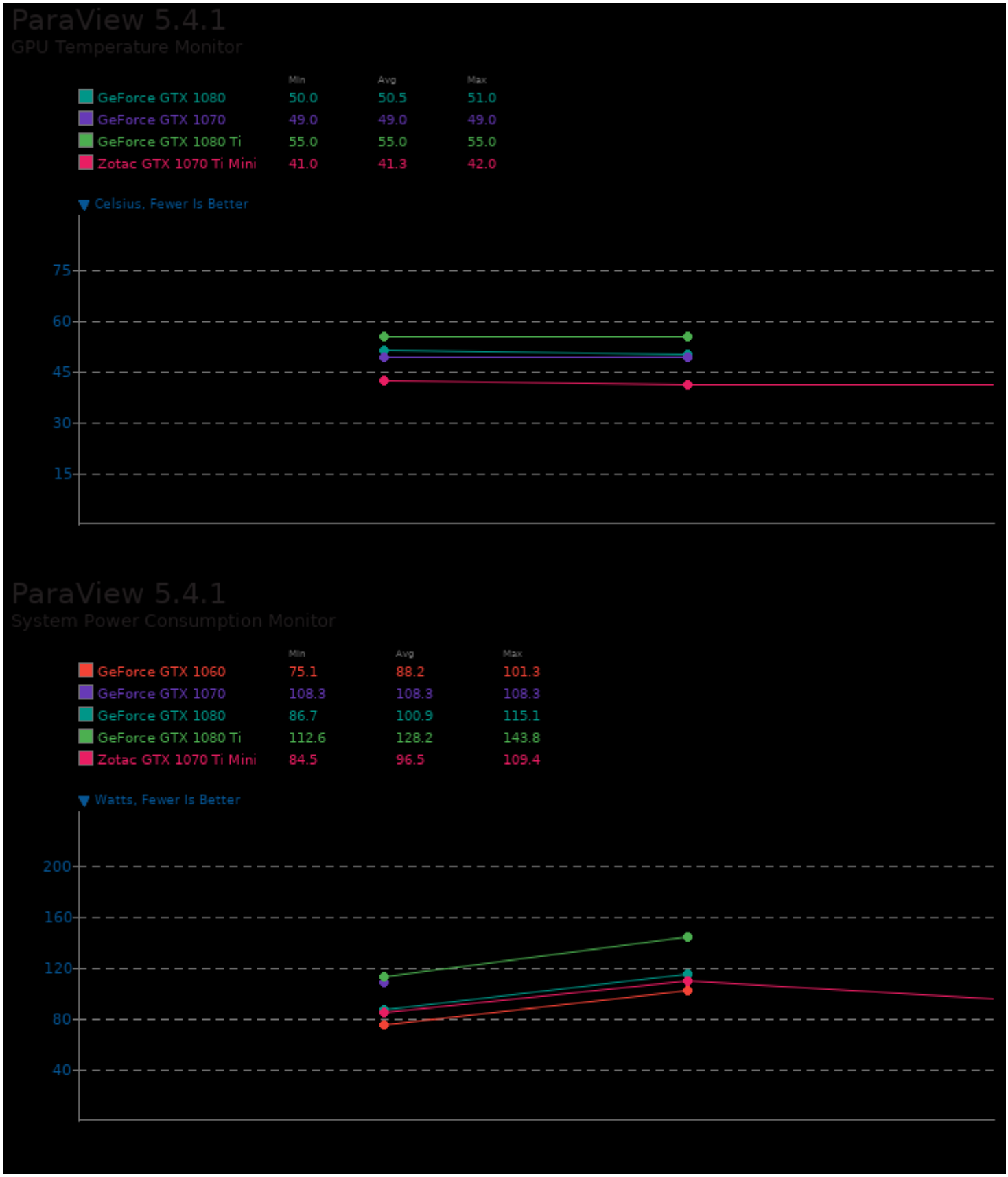

ParaView 5.4.1
GPU Fan Speed Monitor
Percent, Fewer Is Better
Zotac GTX 1070 Ti Mini
51
GeForce GTX 1070
39
GeForce GTX 1080
40
GeForce GTX 1080 Ti
37
12
24
36
48
60
ParaView 5.4.1
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.1 32.7 35.7
GeForce GTX 1070 39.8 43.8 47.2
GeForce GTX 1080 49.8 51.8 52.8
GeForce GTX 1080 Ti 83.2 83.4 83.7
Zotac GTX 1070 Ti Mini 42.4 48.4 52.0
Watts, Fewer Is Better
100
80
60
40
20

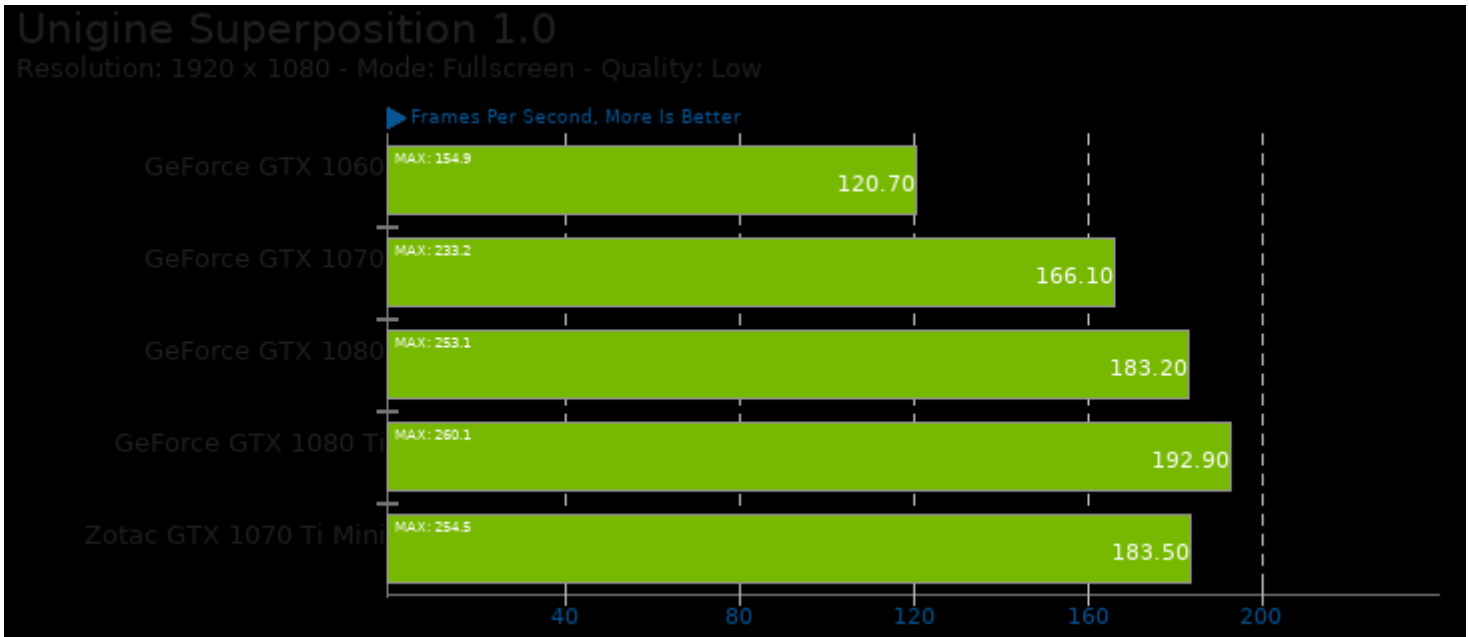

ParaView 5.4.1
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 45.0 45.3 46.0
GeForce GTX 1070 51.0 51.0 51.0
GeForce GTX 1080 52.0 52.0 52.0
GeForce GTX 1080 Ti 56.0 56.0 56.0
Zotac GTX 1070 Ti Mini 42.0 42.3 43.0
Celsius, Fewer Is Better
80
64
48
32
16

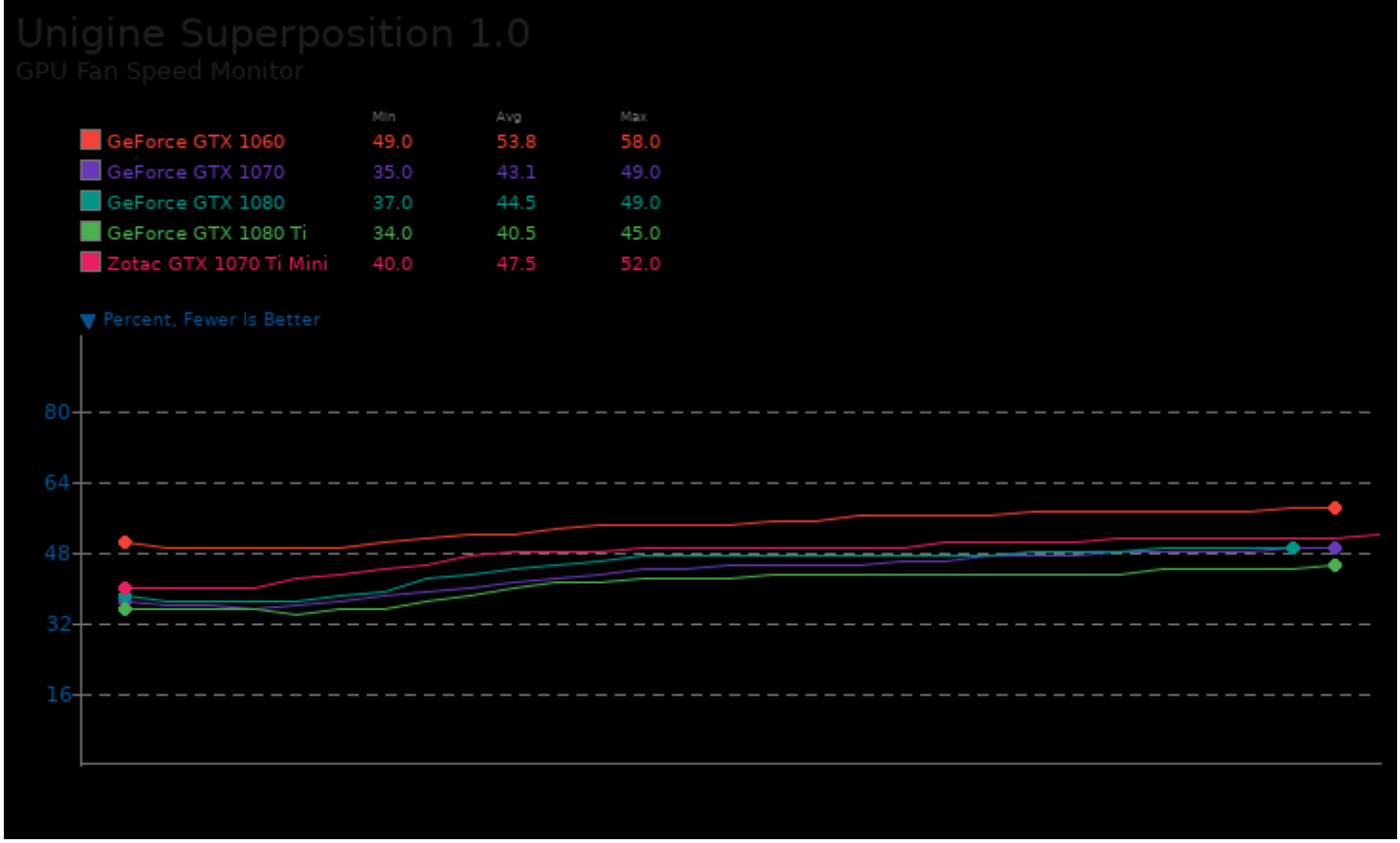

ParaView 5.4.1
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 72.0 104.2 125.1
GeForce GTX 1070 87.5 104.9 116.9
GeForce GTX 1080 91.8 114.5 127.8
GeForce GTX 1080 Ti 148.6 149.6 150.5
Zotac GTX 1070 Ti Mini 89.8 114.7 124.2
Watts, Fewer Is Better
200
160
120
80
40

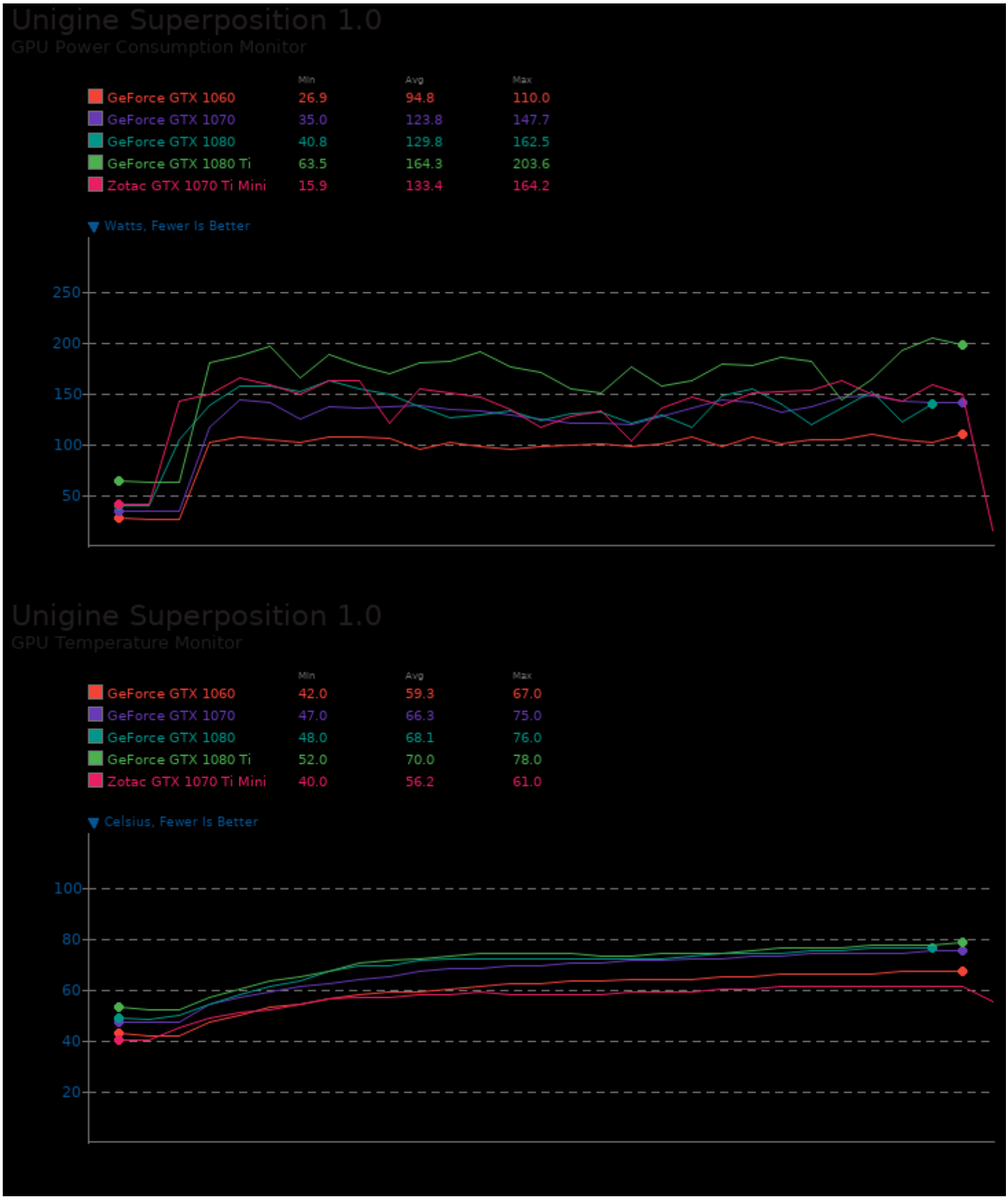

ParaView 5.4.1
Test: Wavelet Volume - Resolution: 1920 x 1080
Frames / Sec, More Is Better
GeForce GTX 1060
SE +/- 1.23, N = 3
271.96
GeForce GTX 1070
SE +/- 3.64, N = 3
326.74
GeForce GTX 1080
SE +/- 3.34, N = 3
379.53
GeForce GTX 1080 Ti
SE +/- 1.31, N = 3
429.08
Zotac GTX 1070 Ti Mini
SE +/- 7.96, N = 3
361.68
90
180
270
360
450
ParaView 5.4.1
Test: Wavelet Volume - Resolution: 1920 x 1080
MiVoxels / Sec, More Is Better
GeForce GTX 1060
SE +/- 19.76, N = 3
4351.39
GeForce GTX 1070
SE +/- 58.26, N = 3
5227.79
GeForce GTX 1080
SE +/- 53.43, N = 3
6072.51
GeForce GTX 1080 Ti
SE +/- 21.01, N = 3
6865.29
Zotac GTX 1070 Ti Mini
SE +/- 127.35, N = 3
5786.94
1500
3000
4500
6000
7500


ParaView 5.4.1
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1070 37.0 37.5 38.0
GeForce GTX 1080 39.0 39.0 39.0
GeForce GTX 1080 Ti 36.0 36.0 36.0
Zotac GTX 1070 Ti Mini 41.0 41.0 41.0
Percent, Fewer Is Better
70
56
42
28
14
ParaView 5.4.1
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1070 39.4 40.2 41.0
GeForce GTX 1080 46.3 46.6 46.9
GeForce GTX 1080 Ti 76.1 76.2 76.3
Zotac GTX 1070 Ti Mini 41.8 44.1 48.3
Watts, Fewer Is Better
100
80
60
40
20


ParaView 5.4.1
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1080 50.0 50.5 51.0
GeForce GTX 1070 49.0 49.0 49.0
GeForce GTX 1080 Ti 55.0 55.0 55.0
Zotac GTX 1070 Ti Mini 41.0 41.3 42.0
Celsius, Fewer Is Better
75
60
45
30
15
ParaView 5.4.1
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 75.1 88.2 101.3
GeForce GTX 1070 108.3 108.3 108.3
GeForce GTX 1080 86.7 100.9 115.1
GeForce GTX 1080 Ti 112.6 128.2 143.8
Zotac GTX 1070 Ti Mini 84.5 96.5 109.4
Watts, Fewer Is Better
200
160
120
80
40


Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: Low
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 154.9
120.70
GeForce GTX 1070
MAX: 233.2
166.10
GeForce GTX 1080
MAX: 253.1
183.20
GeForce GTX 1080 Ti
MAX: 260.1
192.90
Zotac GTX 1070 Ti Mini
MAX: 254.5
183.50
40
80
120
160
200

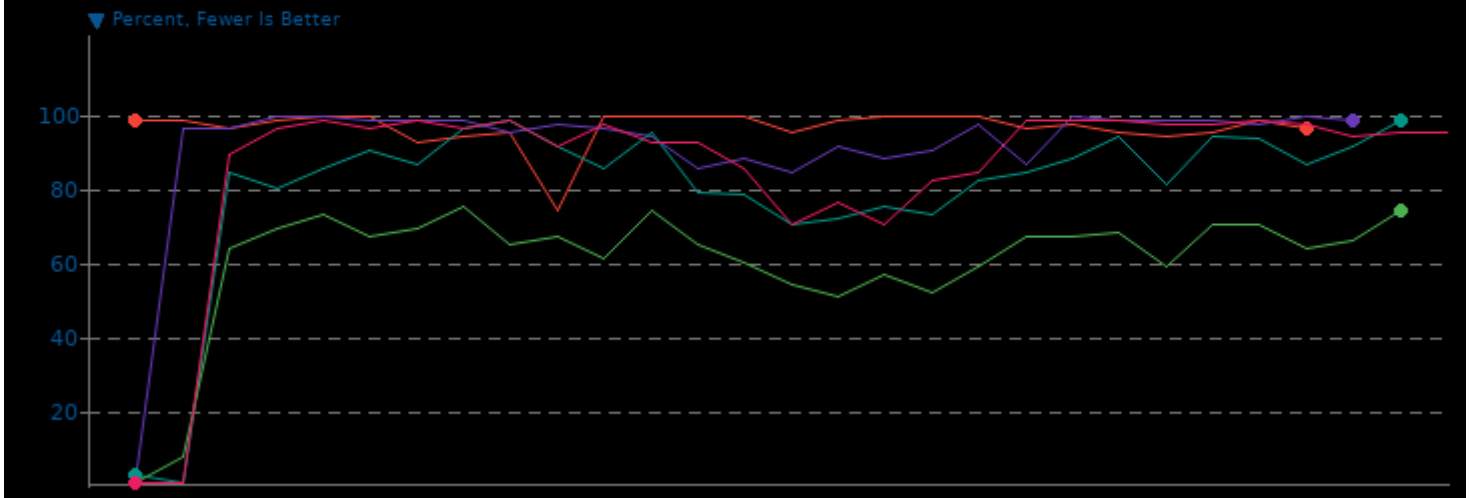

Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 49.0 53.8 58.0
GeForce GTX 1070 35.0 43.1 49.0
GeForce GTX 1080 37.0 44.5 49.0
GeForce GTX 1080 Ti 34.0 40.5 45.0
Zotac GTX 1070 Ti Mini 40.0 47.5 52.0
Percent, Fewer Is Better
80
64
48
32
16


Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 26.9 94.8 110.0
GeForce GTX 1070 35.0 123.8 147.7
GeForce GTX 1080 40.8 129.8 162.5
GeForce GTX 1080 Ti 63.5 164.3 203.6
Zotac GTX 1070 Ti Mini 15.9 133.4 164.2
Watts, Fewer Is Better
250
200
150
100
50
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 42.0 59.3 67.0
GeForce GTX 1070 47.0 66.3 75.0
GeForce GTX 1080 48.0 68.1 76.0
GeForce GTX 1080 Ti 52.0 70.0 78.0
Zotac GTX 1070 Ti Mini 40.0 56.2 61.0
Celsius, Fewer Is Better
100
80
60
40
20

Unigine Superposition 1.0

GPU Usage Monitor

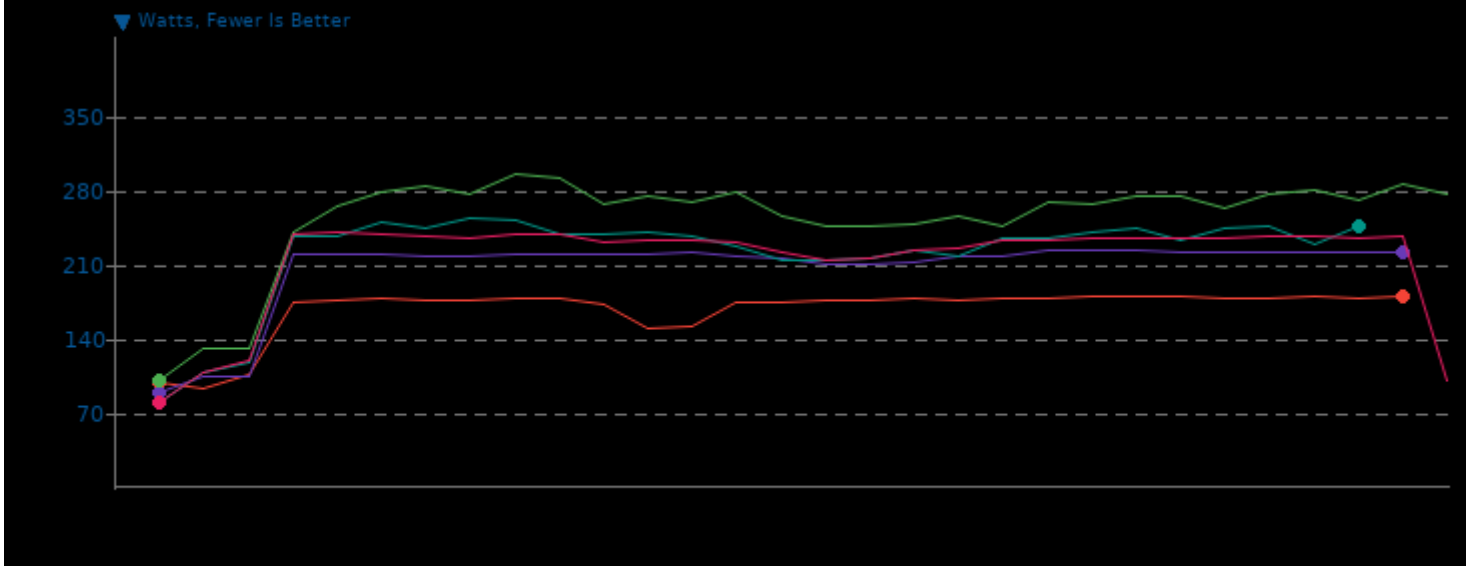
	Min	Avg	Max
GeForce GTX 1060	74.0	96.2	99.0
GeForce GTX 1070	1.0	91.2	99.0
GeForce GTX 1080	1.0	79.7	98.0
GeForce GTX 1080 Ti	1.0	60.6	75.0
Zotac GTX 1070 Ti Mini	1.0	85.5	98.0

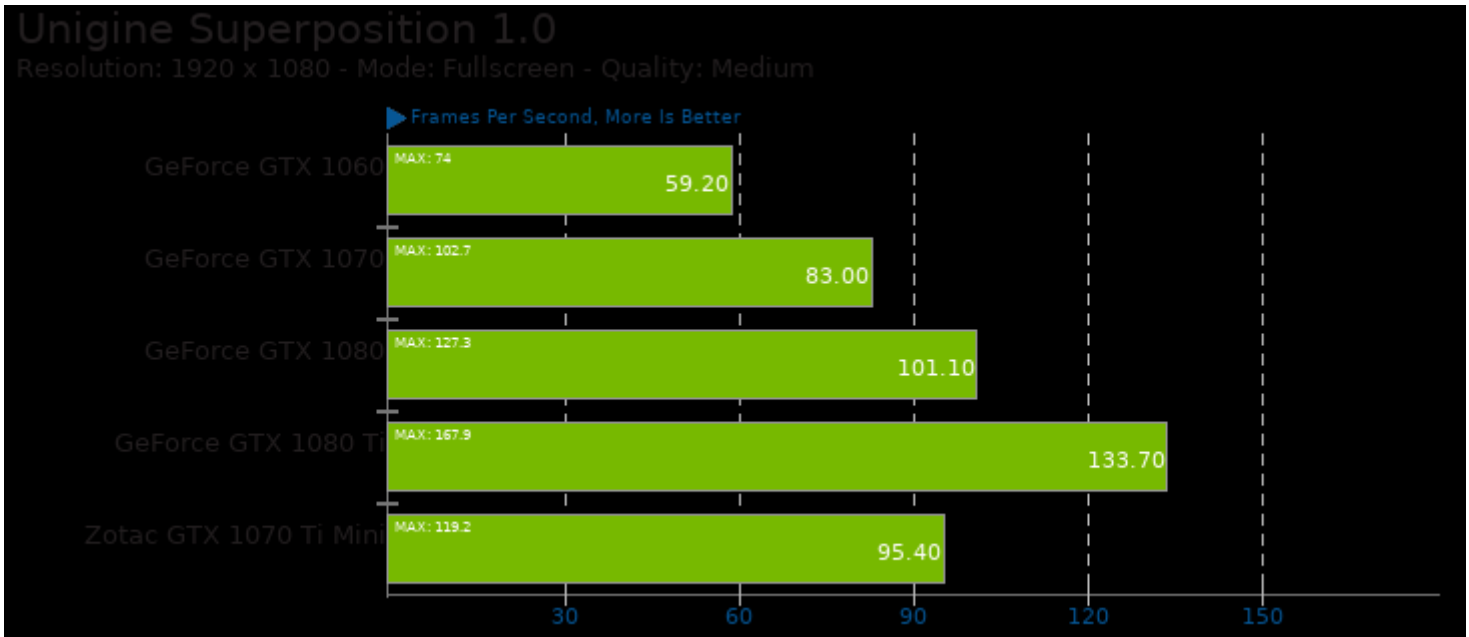


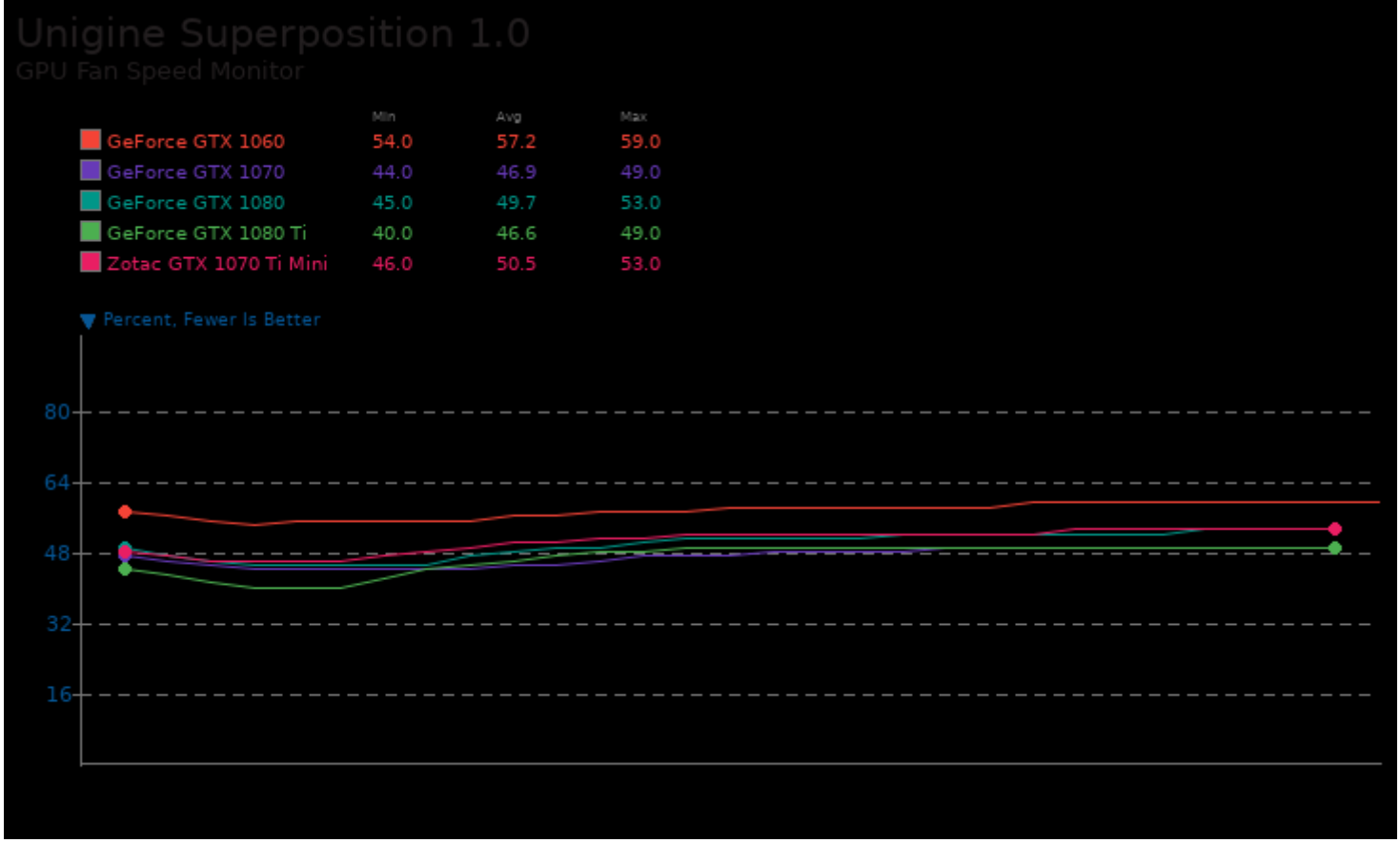
Unigine Superposition 1.0

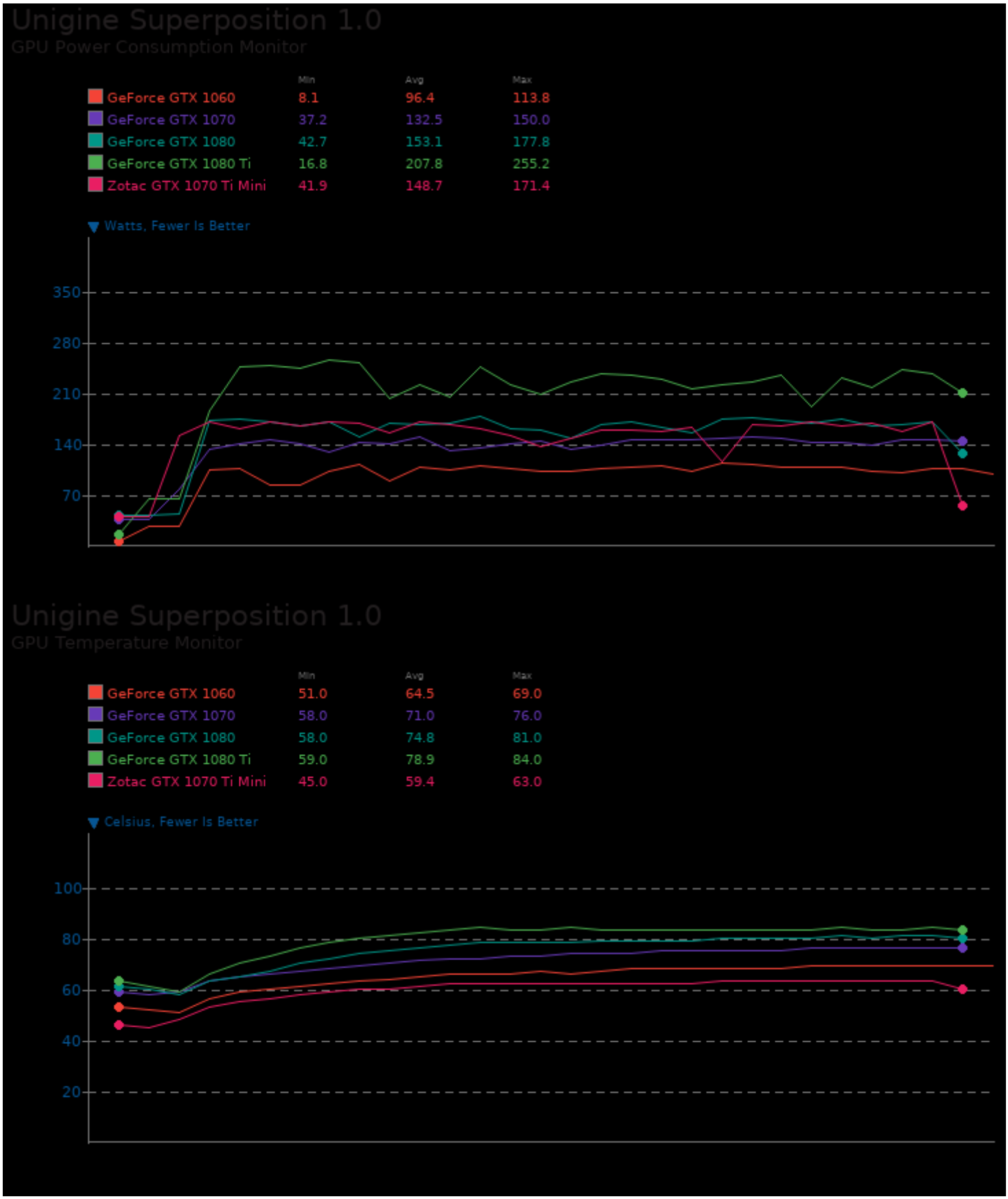
System Power Consumption Monitor

	Min	Avg	Max
GeForce GTX 1060	94.2	167.5	180.5
GeForce GTX 1070	90.8	206.7	222.9
GeForce GTX 1080	80.9	221.1	252.6
GeForce GTX 1080 Ti	100.5	253.1	293.9
Zotac GTX 1070 Ti Mini	81.5	214.9	239.4




Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: Medium
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 74
59.20
GeForce GTX 1070
MAX: 102.7
83.00
GeForce GTX 1080
MAX: 127.3
101.10
GeForce GTX 1080 Ti
MAX: 167.9
133.70
Zotac GTX 1070 Ti Mini
MAX: 119.2
95.40
30
60
90
120
150

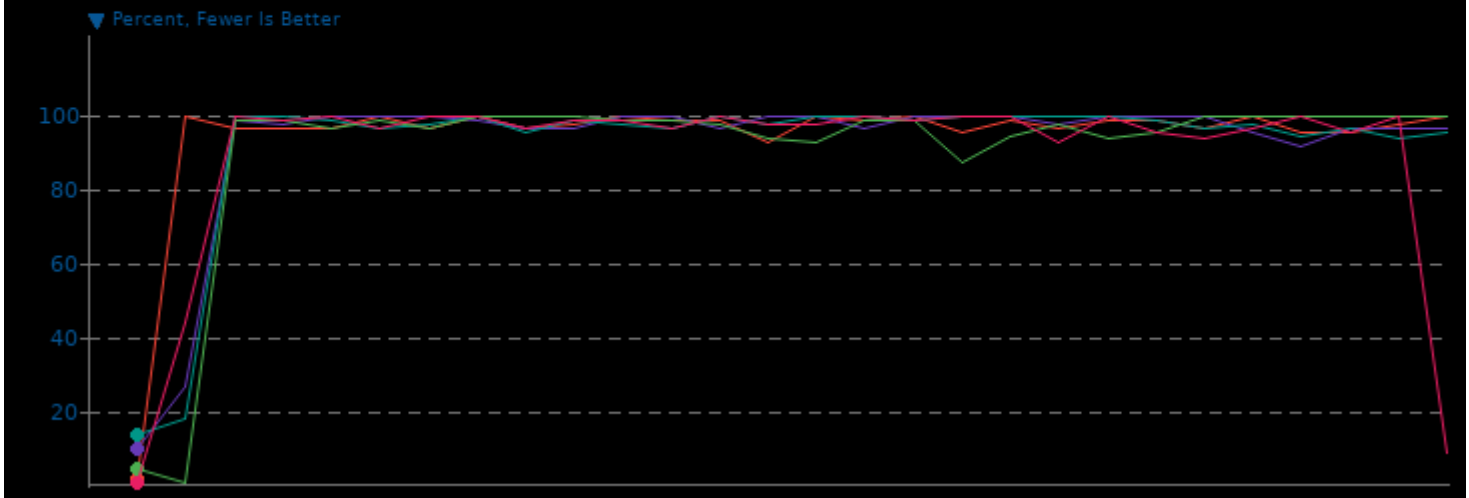

Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 54.0 57.2 59.0
GeForce GTX 1070 44.0 46.9 49.0
GeForce GTX 1080 45.0 49.7 53.0
GeForce GTX 1080 Ti 40.0 46.6 49.0
Zotac GTX 1070 Ti Mini 46.0 50.5 53.0
Percent, Fewer Is Better
80
64
48
32
16


Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 8.1 96.4 113.8
GeForce GTX 1070 37.2 132.5 150.0
GeForce GTX 1080 42.7 153.1 177.8
GeForce GTX 1080 Ti 16.8 207.8 255.2
Zotac GTX 1070 Ti Mini 41.9 148.7 171.4
Watts, Fewer Is Better
350
280
210
140
70
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 51.0 64.5 69.0
GeForce GTX 1070 58.0 71.0 76.0
GeForce GTX 1080 58.0 74.8 81.0
GeForce GTX 1080 Ti 59.0 78.9 84.0
Zotac GTX 1070 Ti Mini 45.0 59.4 63.0
Celsius, Fewer Is Better
100
80
60
40
20

Unigine Superposition 1.0

GPU Usage Monitor

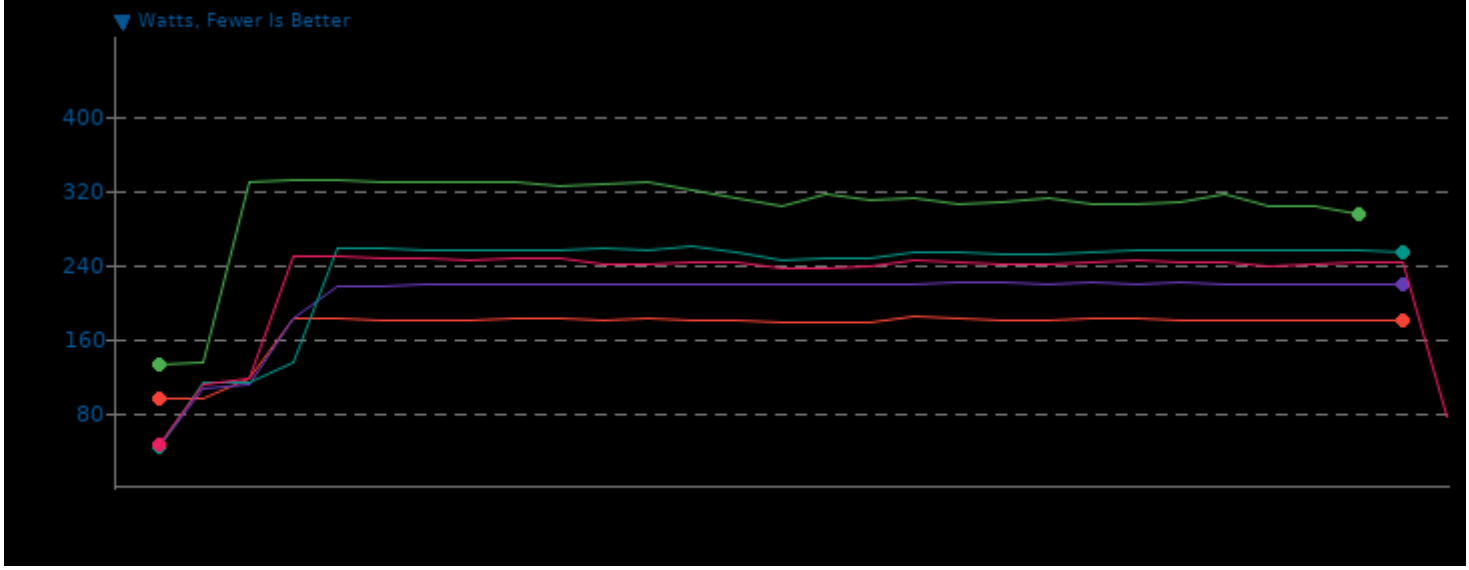
	Min	Avg	Max
GeForce GTX 1060	2.0	93.8	99.0
GeForce GTX 1070	10.0	91.9	99.0
GeForce GTX 1080	14.0	91.5	99.0
GeForce GTX 1080 Ti	1.0	90.1	99.0
Zotac GTX 1070 Ti Mini	1.0	88.9	99.0

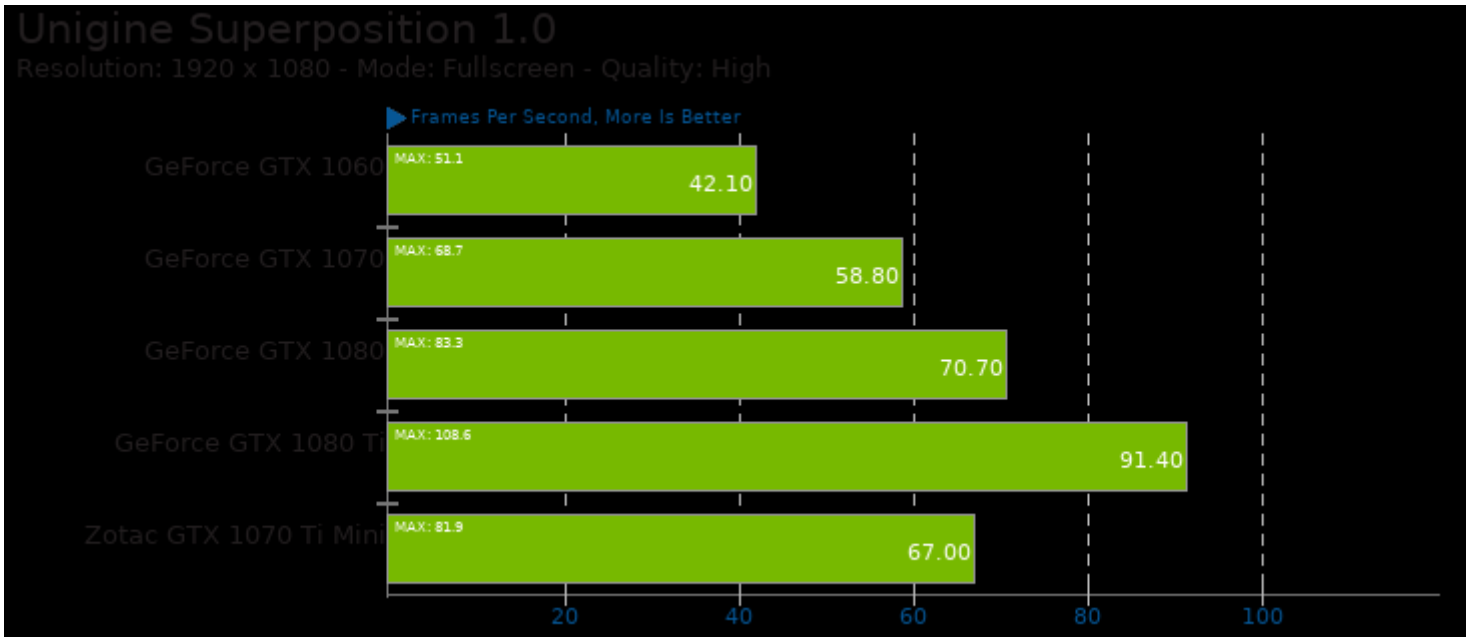


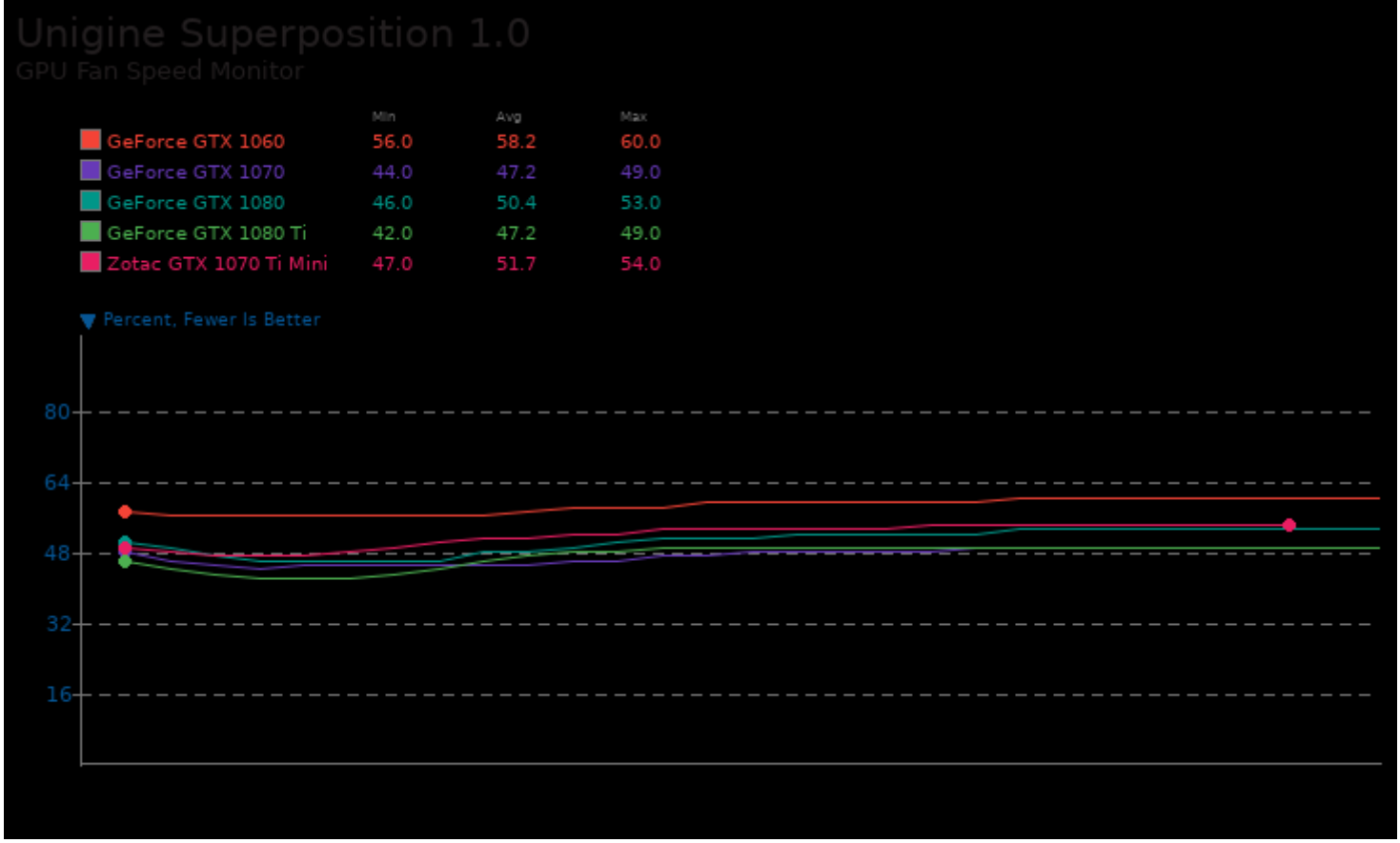
Unigine Superposition 1.0

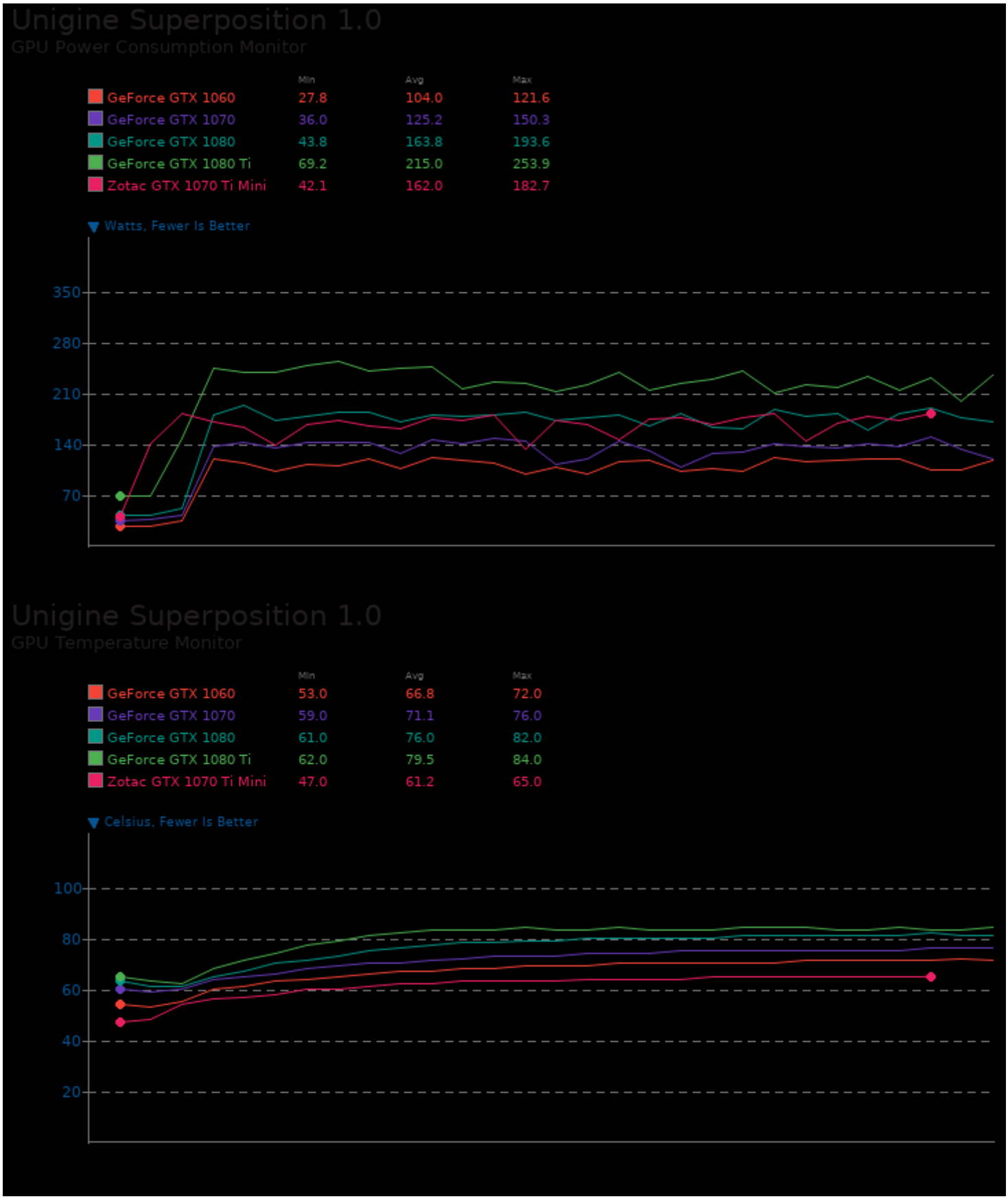
System Power Consumption Monitor

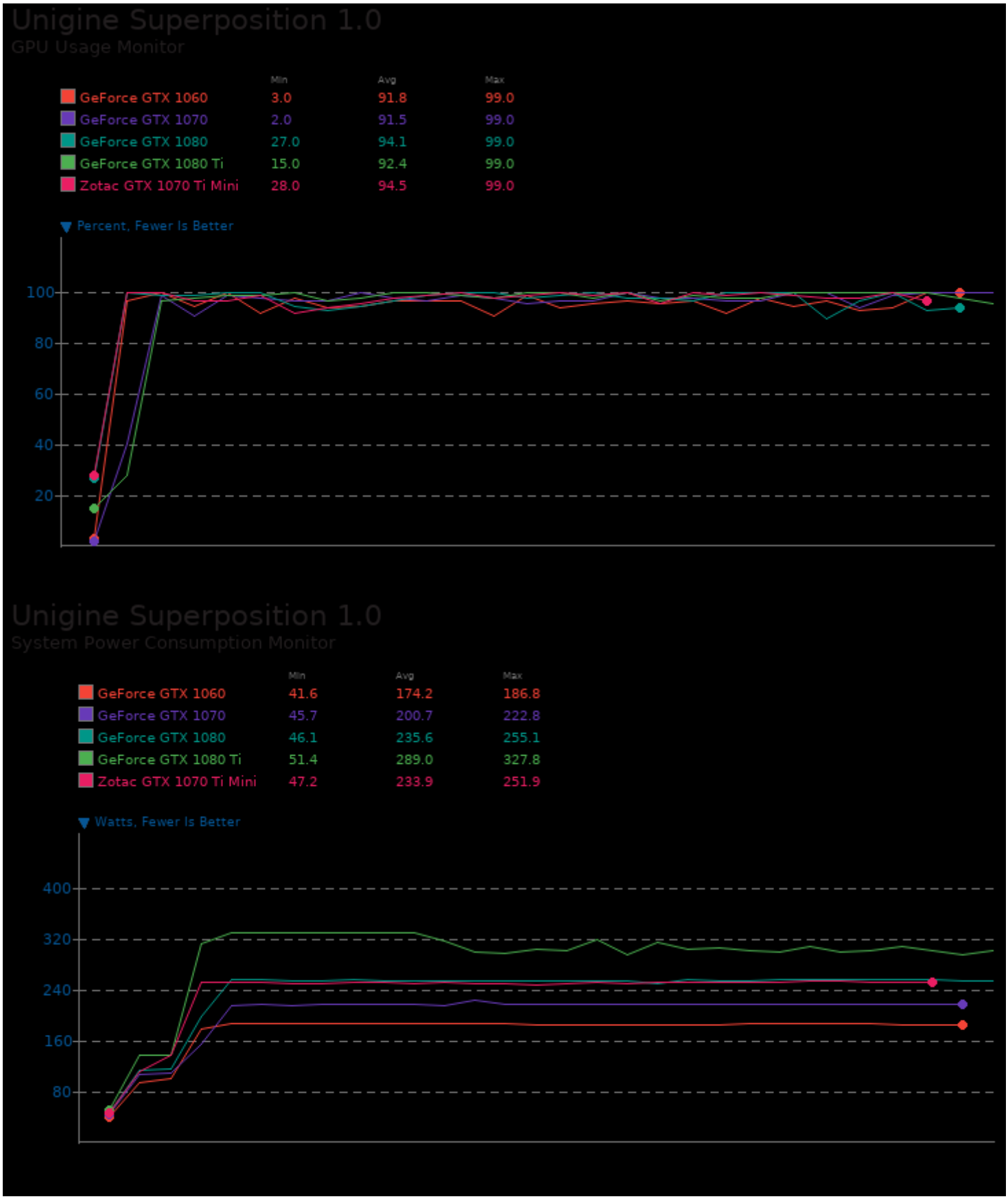
	Min	Avg	Max
GeForce GTX 1060	95.5	172.5	184.0
GeForce GTX 1070	45.2	203.9	219.9
GeForce GTX 1080	45.1	232.7	259.2
GeForce GTX 1080 Ti	133.4	302.2	329.5
Zotac GTX 1070 Ti Mini	48.2	221.7	248.5

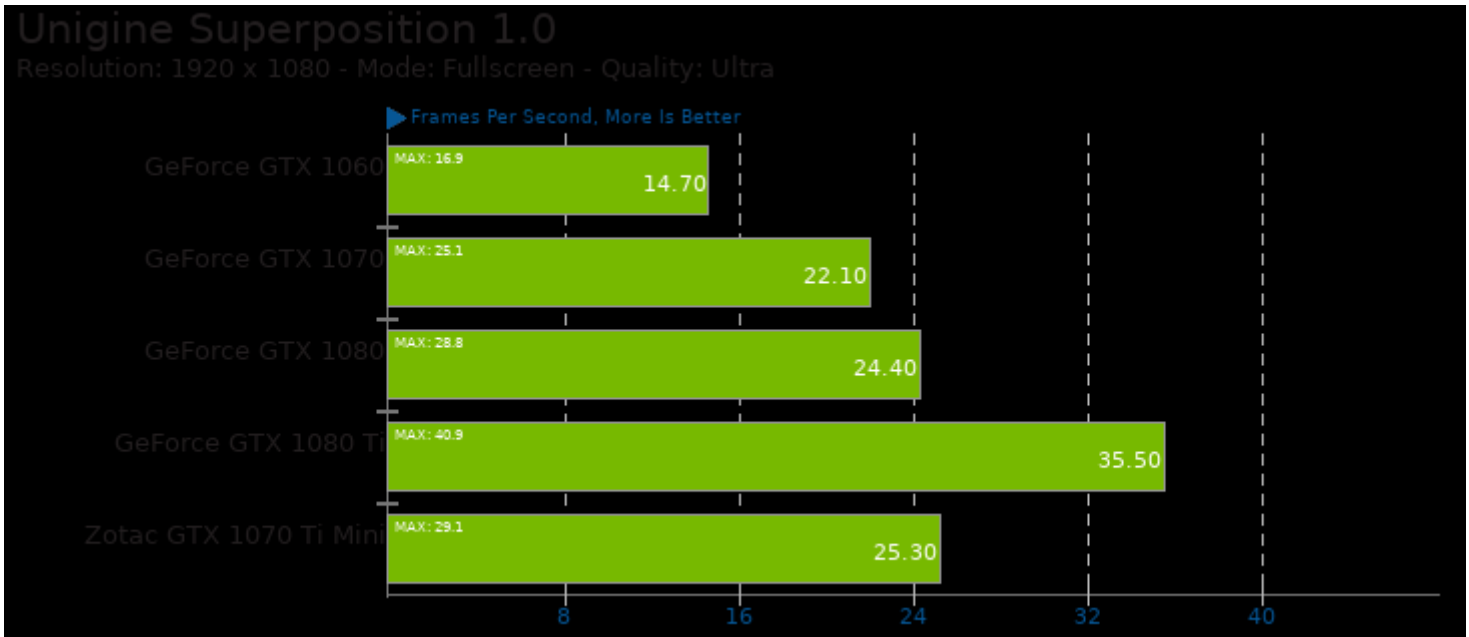


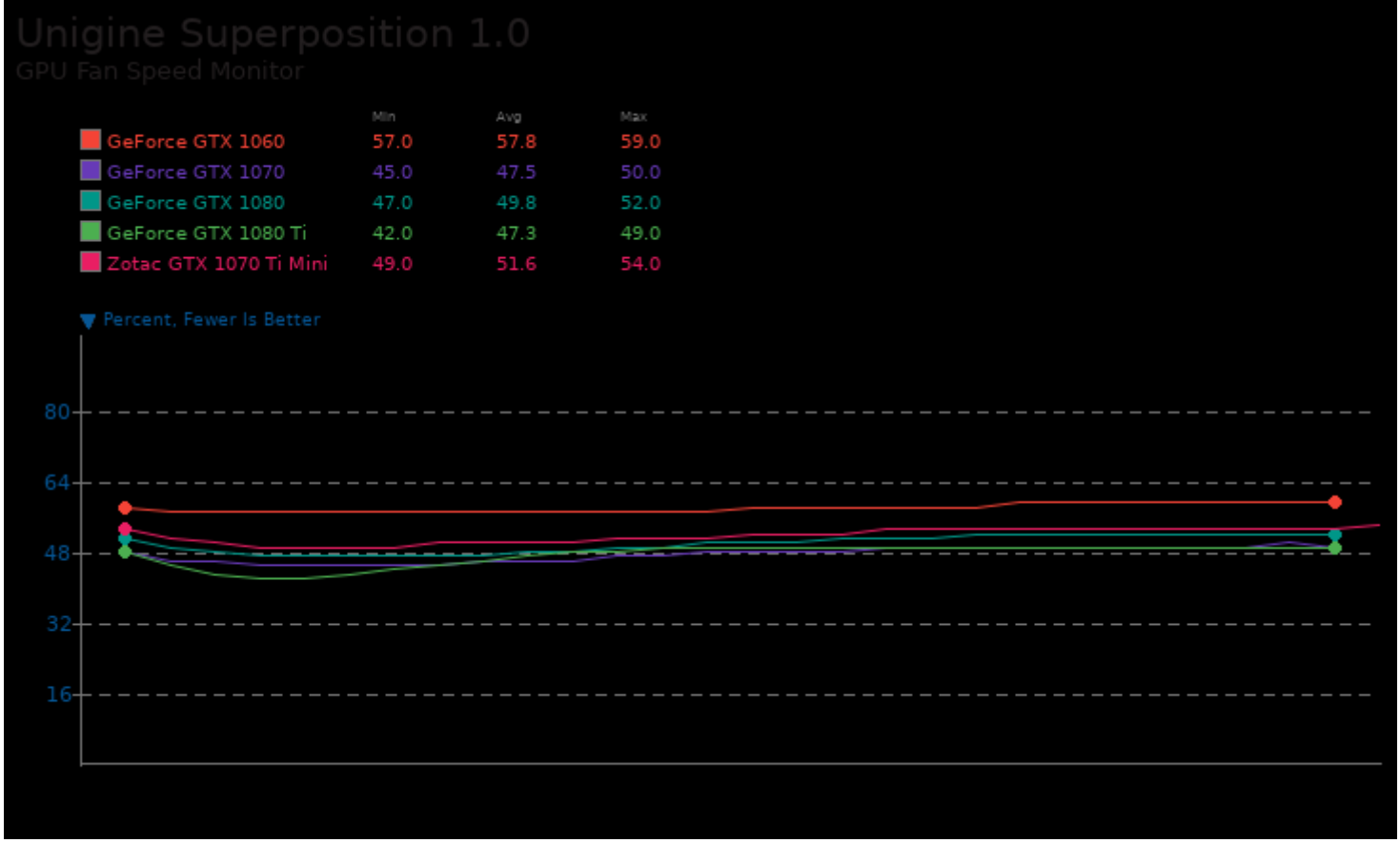

Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: High
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 51.1
42.10
GeForce GTX 1070
MAX: 68.7
58.80
GeForce GTX 1080
MAX: 83.3
70.70
GeForce GTX 1080 Ti
MAX: 108.6
91.40
Zotac GTX 1070 Ti Mini
MAX: 81.9
67.00
20
40
60
80
100

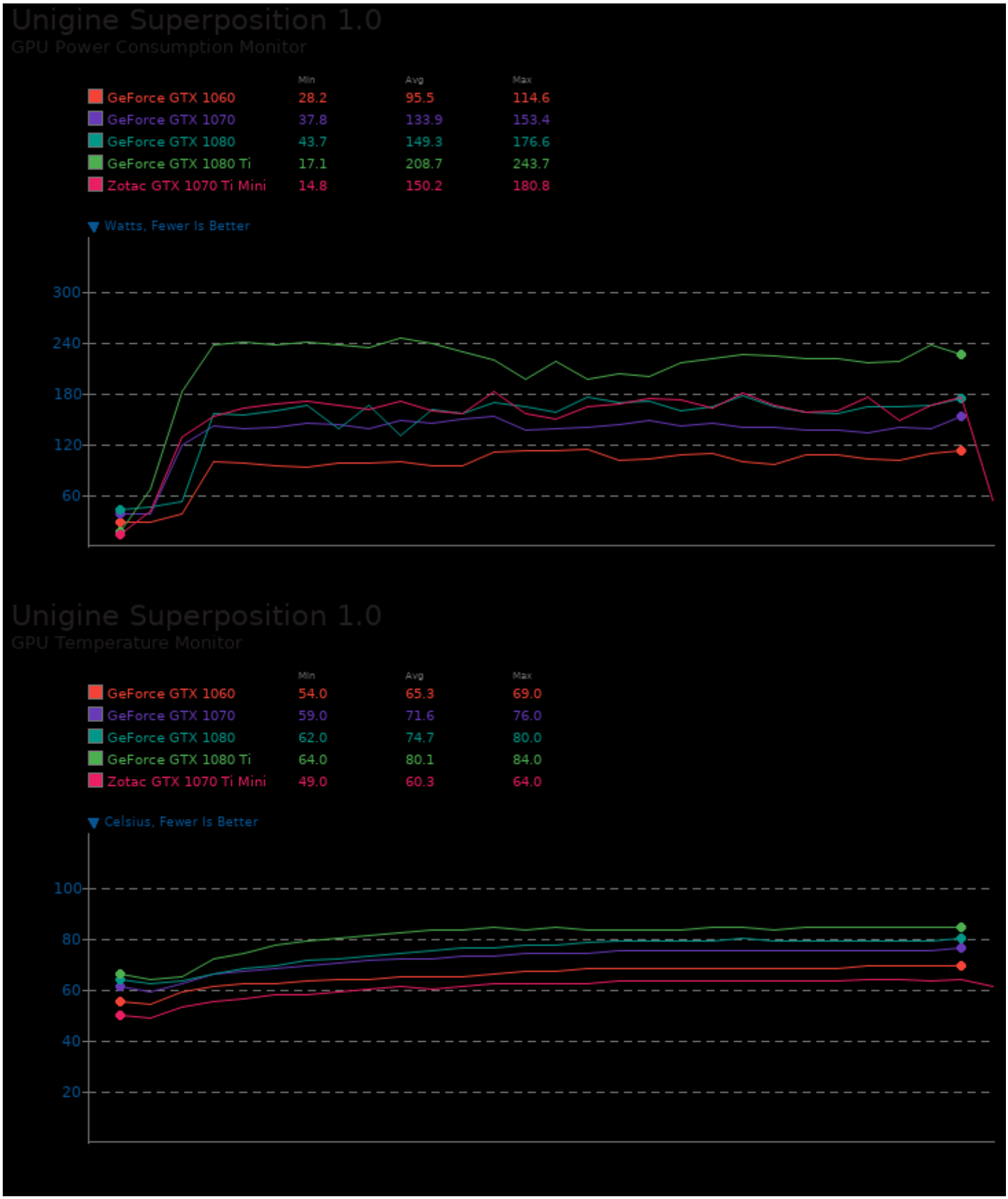

Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 58.2 60.0
GeForce GTX 1070 44.0 47.2 49.0
GeForce GTX 1080 46.0 50.4 53.0
GeForce GTX 1080 Ti 42.0 47.2 49.0
Zotac GTX 1070 Ti Mini 47.0 51.7 54.0
Percent, Fewer Is Better
80
64
48
32
16

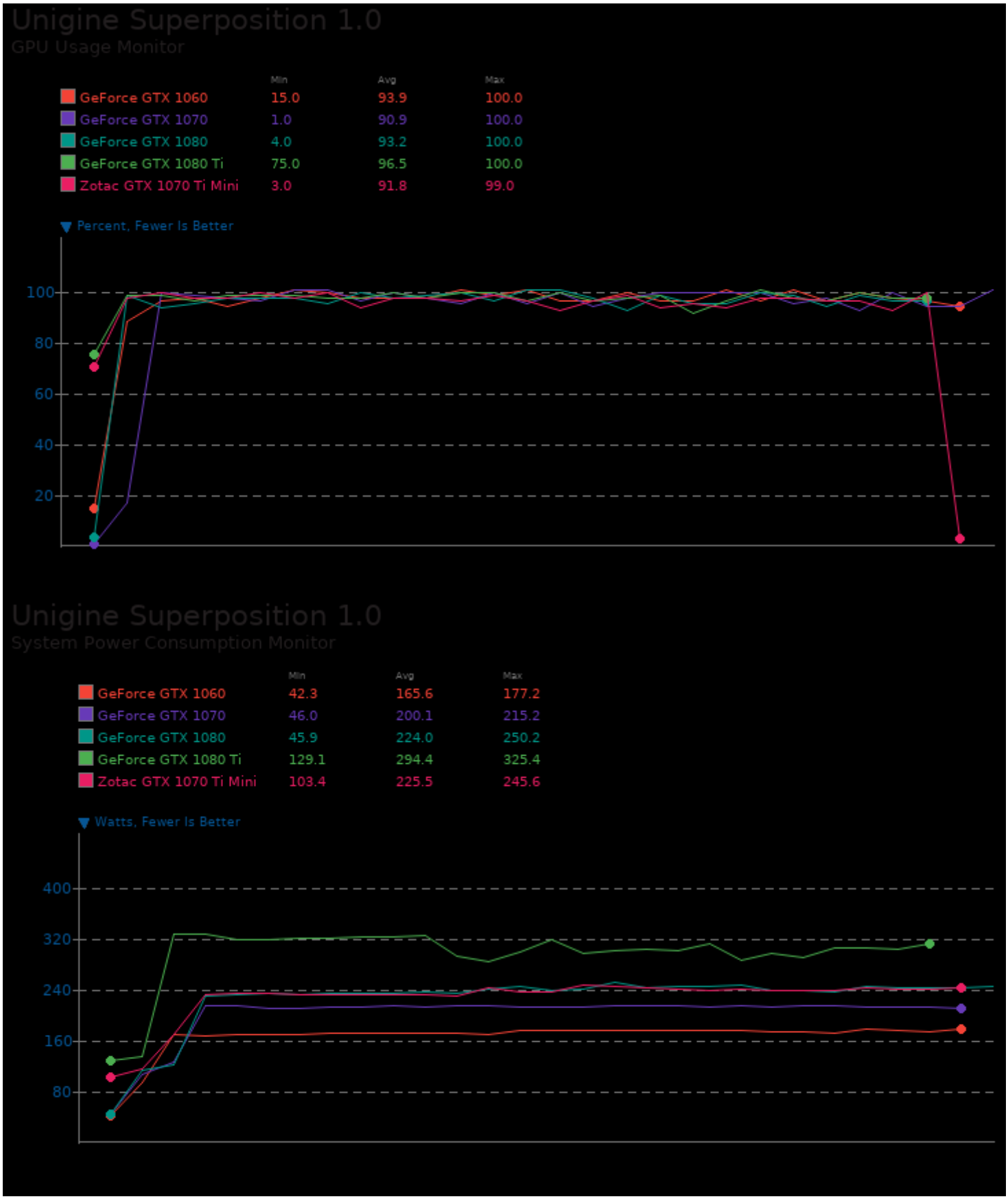

Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 27.8 104.0 121.6
GeForce GTX 1070 36.0 125.2 150.3
GeForce GTX 1080 43.8 163.8 193.6
GeForce GTX 1080 Ti 69.2 215.0 253.9
Zotac GTX 1070 Ti Mini 42.1 162.0 182.7
Watts, Fewer Is Better
350
280
210
140
70
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 53.0 66.8 72.0
GeForce GTX 1070 59.0 71.1 76.0
GeForce GTX 1080 61.0 76.0 82.0
GeForce GTX 1080 Ti 62.0 79.5 84.0
Zotac GTX 1070 Ti Mini 47.0 61.2 65.0
Celsius, Fewer Is Better
100
80
60
40
20

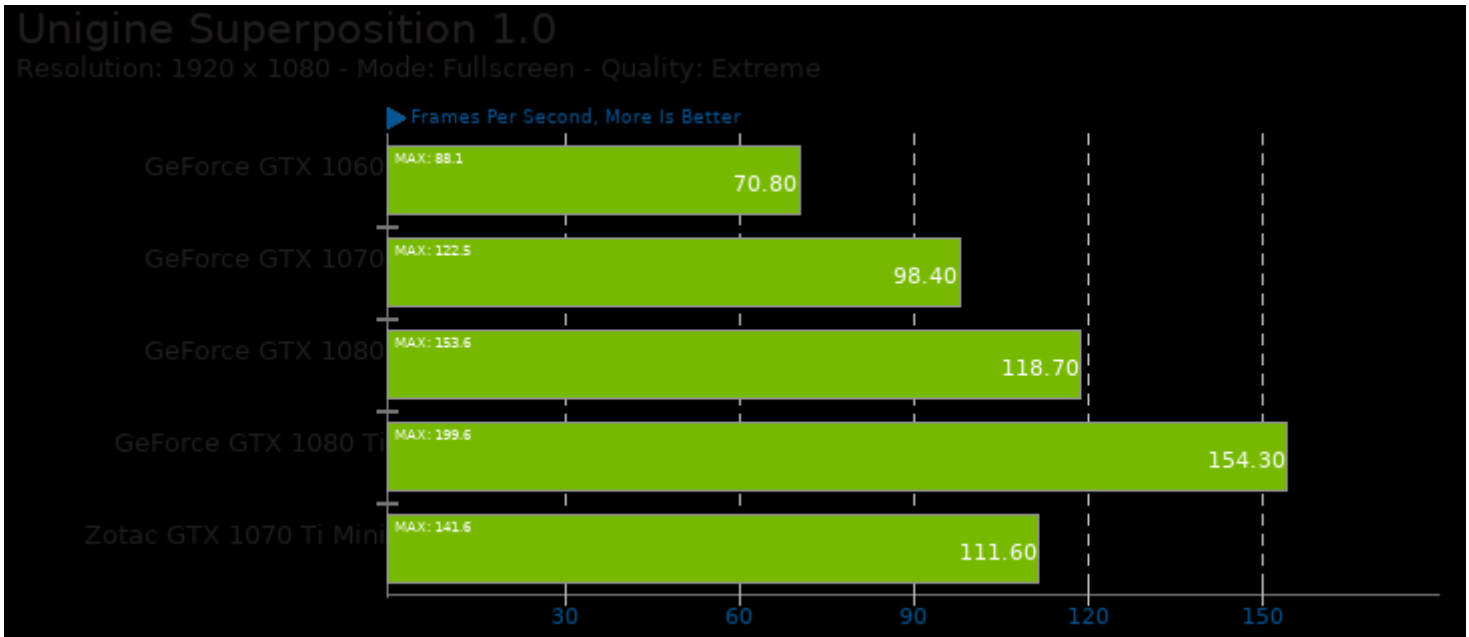

Unigine Superposition 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 3.0 91.8 99.0
GeForce GTX 1070 2.0 91.5 99.0
GeForce GTX 1080 27.0 94.1 99.0
GeForce GTX 1080 Ti 15.0 92.4 99.0
Zotac GTX 1070 Ti Mini 28.0 94.5 99.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 41.6 174.2 186.8
GeForce GTX 1070 45.7 200.7 222.8
GeForce GTX 1080 46.1 235.6 255.1
GeForce GTX 1080 Ti 51.4 289.0 327.8
Zotac GTX 1070 Ti Mini 47.2 233.9 251.9
Watts, Fewer Is Better
400
320
240
160
80

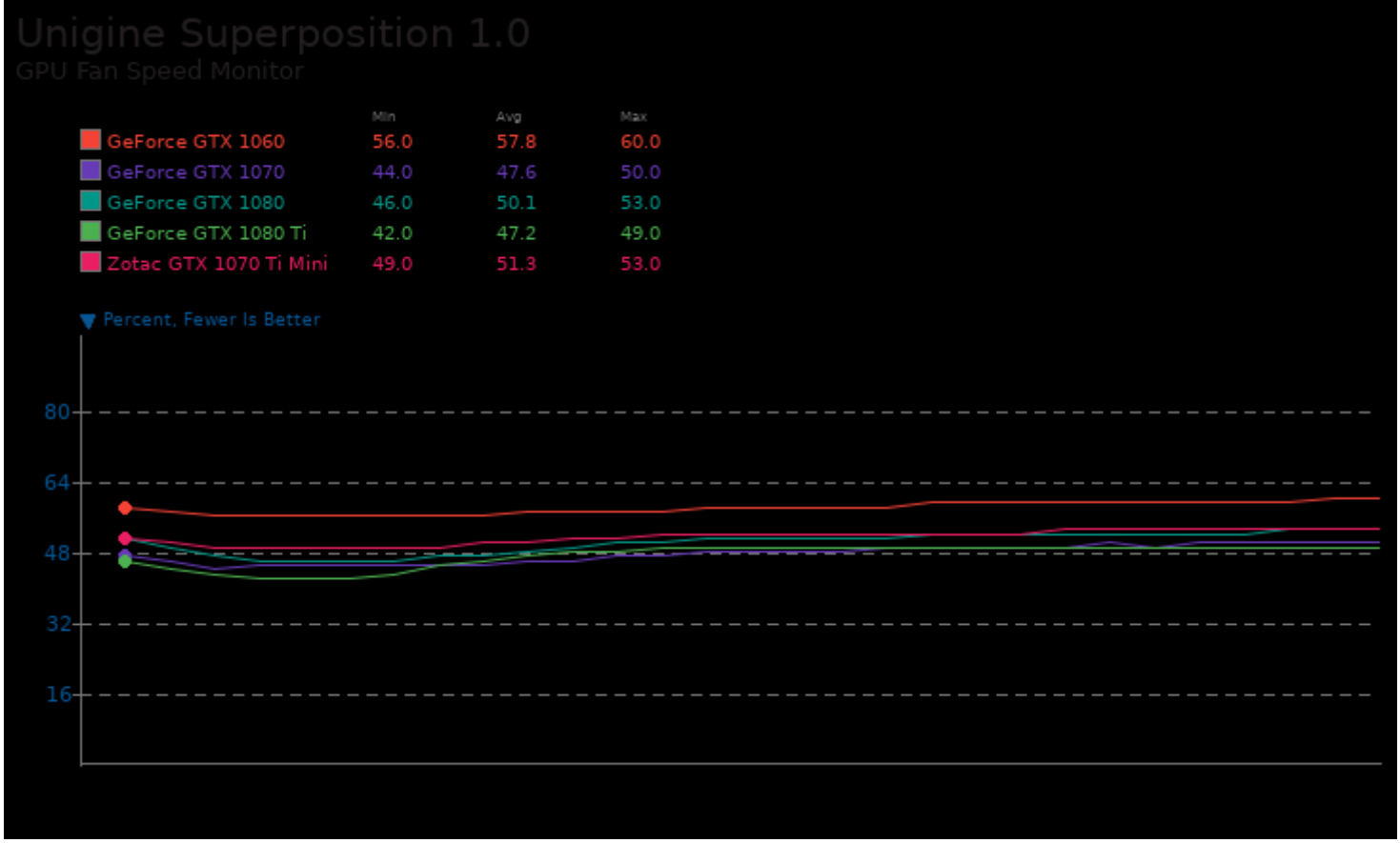

Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: Ultra
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 16.9
14.70
GeForce GTX 1070
MAX: 25.1
22.10
GeForce GTX 1080
MAX: 28.8
24.40
GeForce GTX 1080 Ti
MAX: 40.9
35.50
Zotac GTX 1070 Ti Mini
MAX: 29.1
25.30
8
16
24
32
40

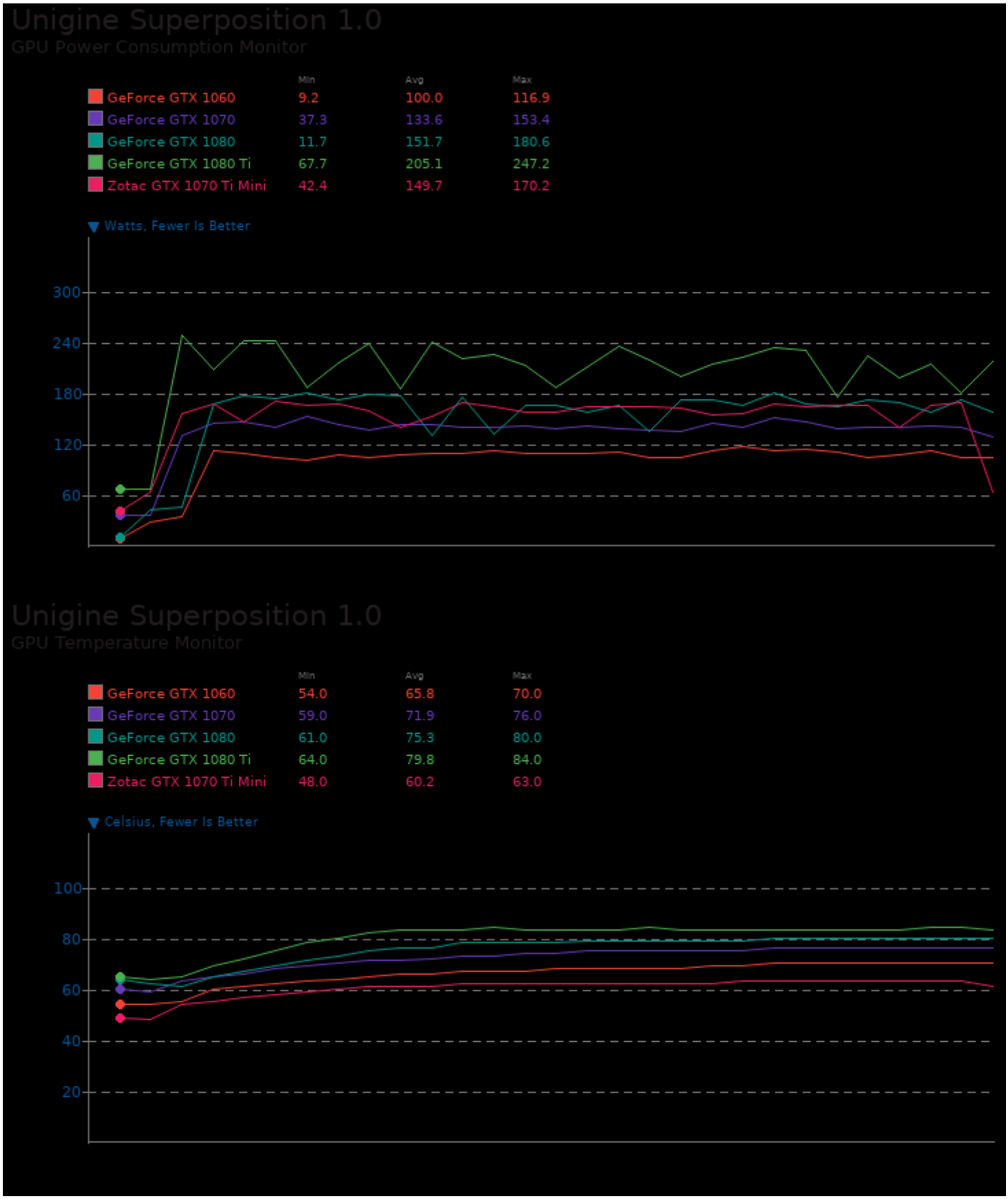

Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 57.8 59.0
GeForce GTX 1070 45.0 47.5 50.0
GeForce GTX 1080 47.0 49.8 52.0
GeForce GTX 1080 Ti 42.0 47.3 49.0
Zotac GTX 1070 Ti Mini 49.0 51.6 54.0
Percent, Fewer Is Better
80
64
48
32
16

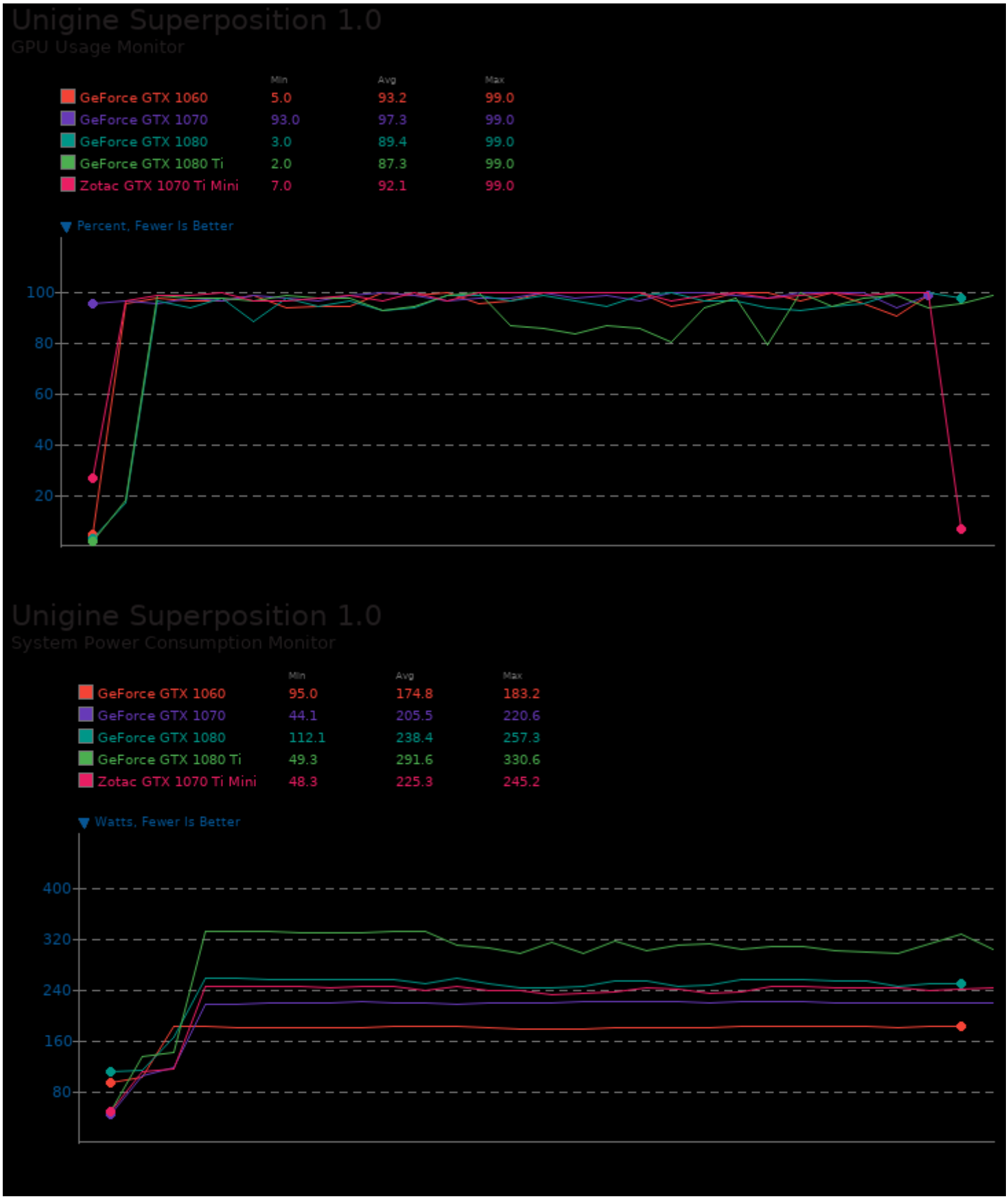

Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.2 95.5 114.6
GeForce GTX 1070 37.8 133.9 153.4
GeForce GTX 1080 43.7 149.3 176.6
GeForce GTX 1080 Ti 17.1 208.7 243.7
Zotac GTX 1070 Ti Mini 14.8 150.2 180.8
Watts, Fewer Is Better
300
240
180
120
60
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 54.0 65.3 69.0
GeForce GTX 1070 59.0 71.6 76.0
GeForce GTX 1080 62.0 74.7 80.0
GeForce GTX 1080 Ti 64.0 80.1 84.0
Zotac GTX 1070 Ti Mini 49.0 60.3 64.0
Celsius, Fewer Is Better
100
80
60
40
20

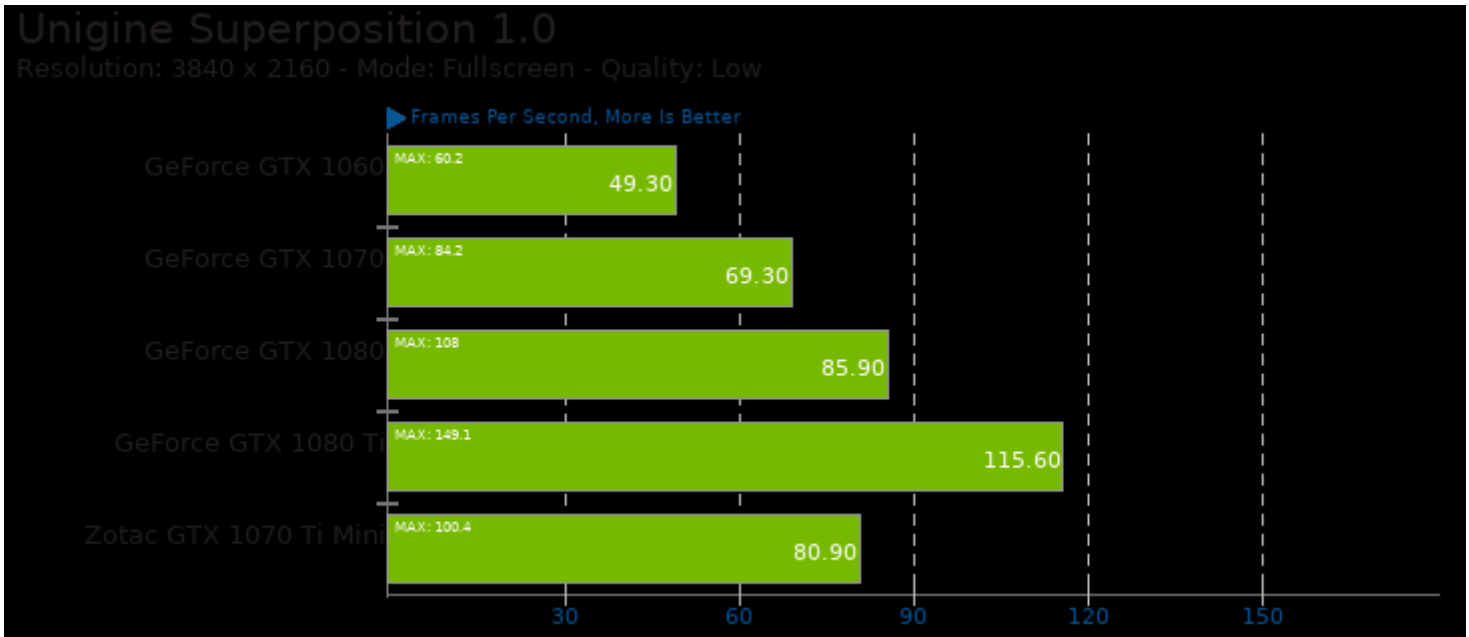

Unigine Superposition 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 15.0 93.9 100.0
GeForce GTX 1070 1.0 90.9 100.0
GeForce GTX 1080 4.0 93.2 100.0
GeForce GTX 1080 Ti 75.0 96.5 100.0
Zotac GTX 1070 Ti Mini 3.0 91.8 99.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 42.3 165.6 177.2
GeForce GTX 1070 46.0 200.1 215.2
GeForce GTX 1080 45.9 224.0 250.2
GeForce GTX 1080 Ti 129.1 294.4 325.4
Zotac GTX 1070 Ti Mini 103.4 225.5 245.6
Watts, Fewer Is Better
400
320
240
160
80

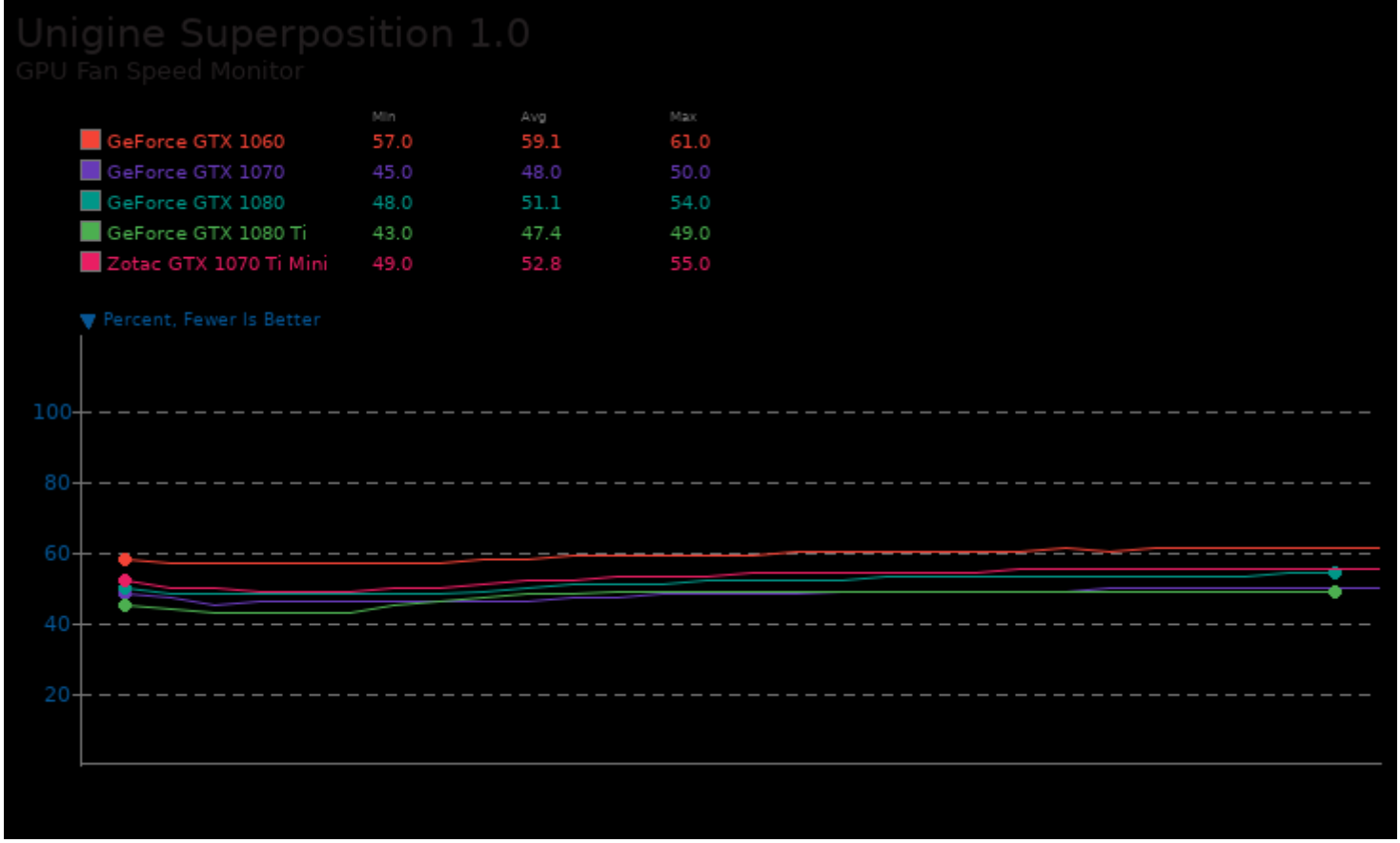

Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: Extreme
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 88.1
70.80
GeForce GTX 1070
MAX: 122.5
98.40
GeForce GTX 1080
MAX: 153.6
118.70
GeForce GTX 1080 Ti
MAX: 199.6
154.30
Zotac GTX 1070 Ti Mini
MAX: 141.6
111.60
30
60
90
120
150

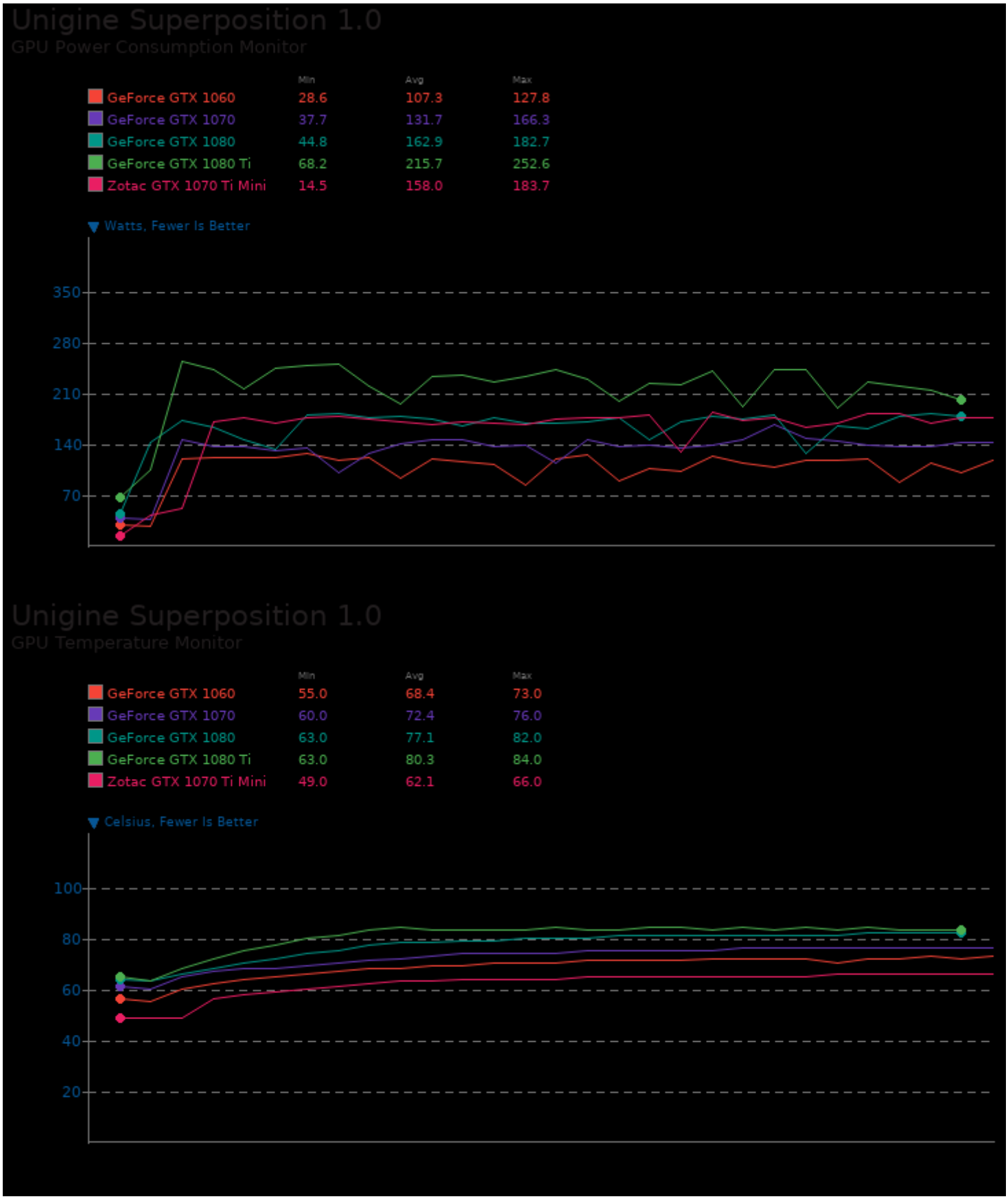

Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 57.8 60.0
GeForce GTX 1070 44.0 47.6 50.0
GeForce GTX 1080 46.0 50.1 53.0
GeForce GTX 1080 Ti 42.0 47.2 49.0
Zotac GTX 1070 Ti Mini 49.0 51.3 53.0
Percent, Fewer Is Better
80
64
48
32
16

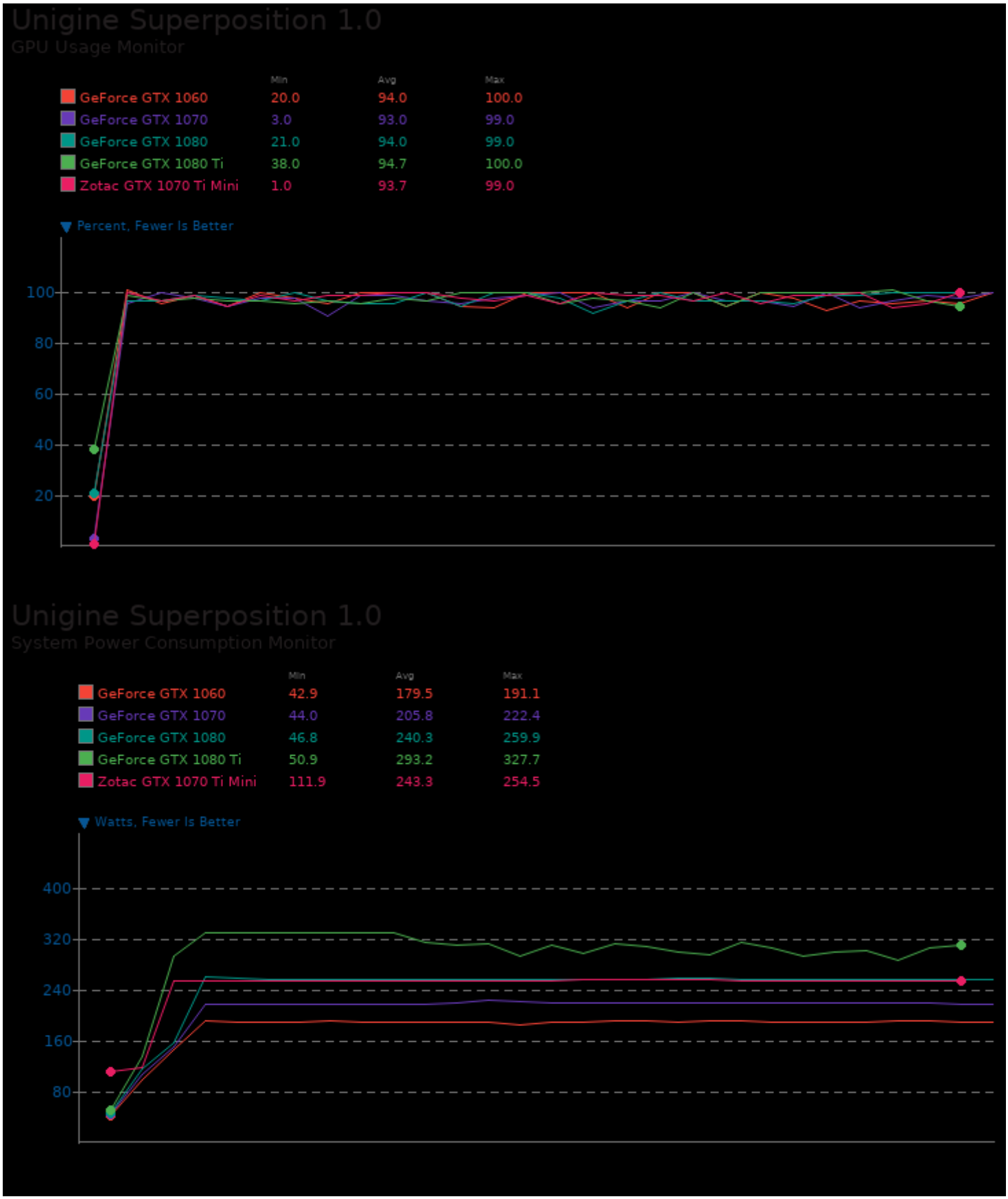

Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 9.2 100.0 116.9
GeForce GTX 1070 37.3 133.6 153.4
GeForce GTX 1080 11.7 151.7 180.6
GeForce GTX 1080 Ti 67.7 205.1 247.2
Zotac GTX 1070 Ti Mini 42.4 149.7 170.2
Watts, Fewer Is Better
300
240
180
120
60
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 54.0 65.8 70.0
GeForce GTX 1070 59.0 71.9 76.0
GeForce GTX 1080 61.0 75.3 80.0
GeForce GTX 1080 Ti 64.0 79.8 84.0
Zotac GTX 1070 Ti Mini 48.0 60.2 63.0
Celsius, Fewer Is Better
100
80
60
40
20

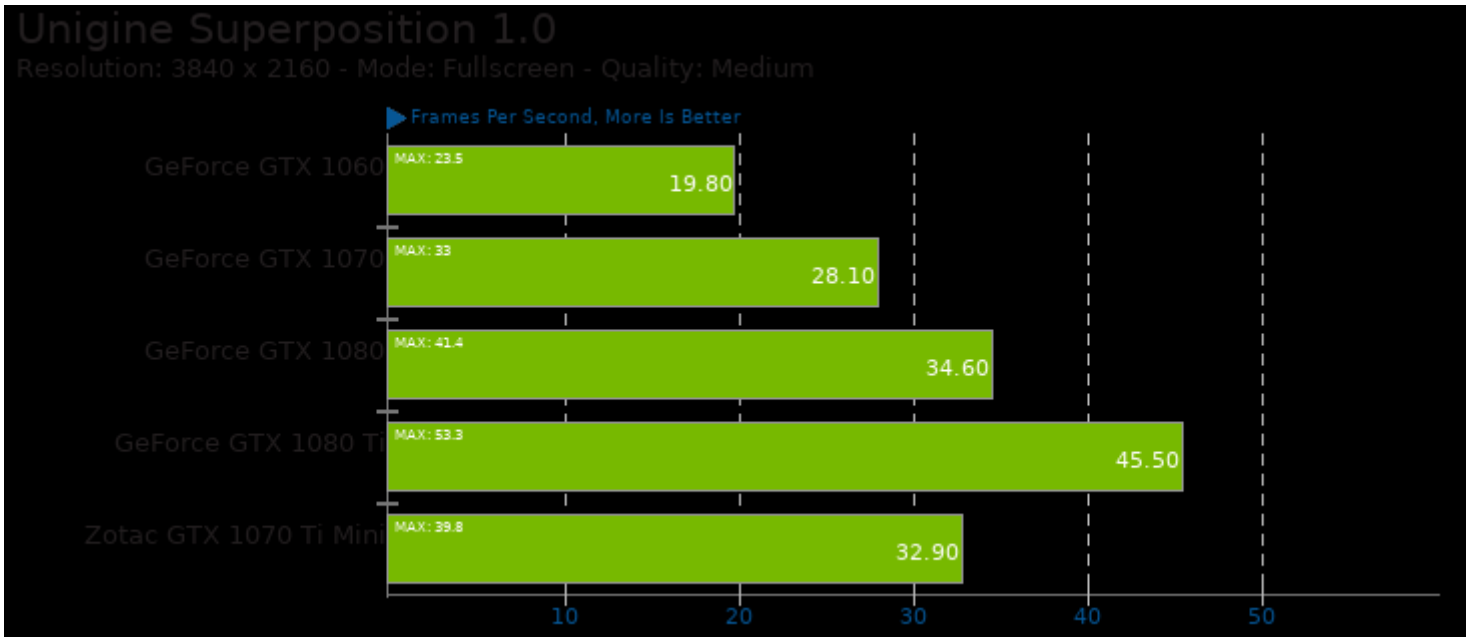

Unigine Superposition 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 5.0 93.2 99.0
GeForce GTX 1070 93.0 97.3 99.0
GeForce GTX 1080 3.0 89.4 99.0
GeForce GTX 1080 Ti 2.0 87.3 99.0
Zotac GTX 1070 Ti Mini 7.0 92.1 99.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 95.0 174.8 183.2
GeForce GTX 1070 44.1 205.5 220.6
GeForce GTX 1080 112.1 238.4 257.3
GeForce GTX 1080 Ti 49.3 291.6 330.6
Zotac GTX 1070 Ti Mini 48.3 225.3 245.2
Watts, Fewer Is Better
400
320
240
160
80

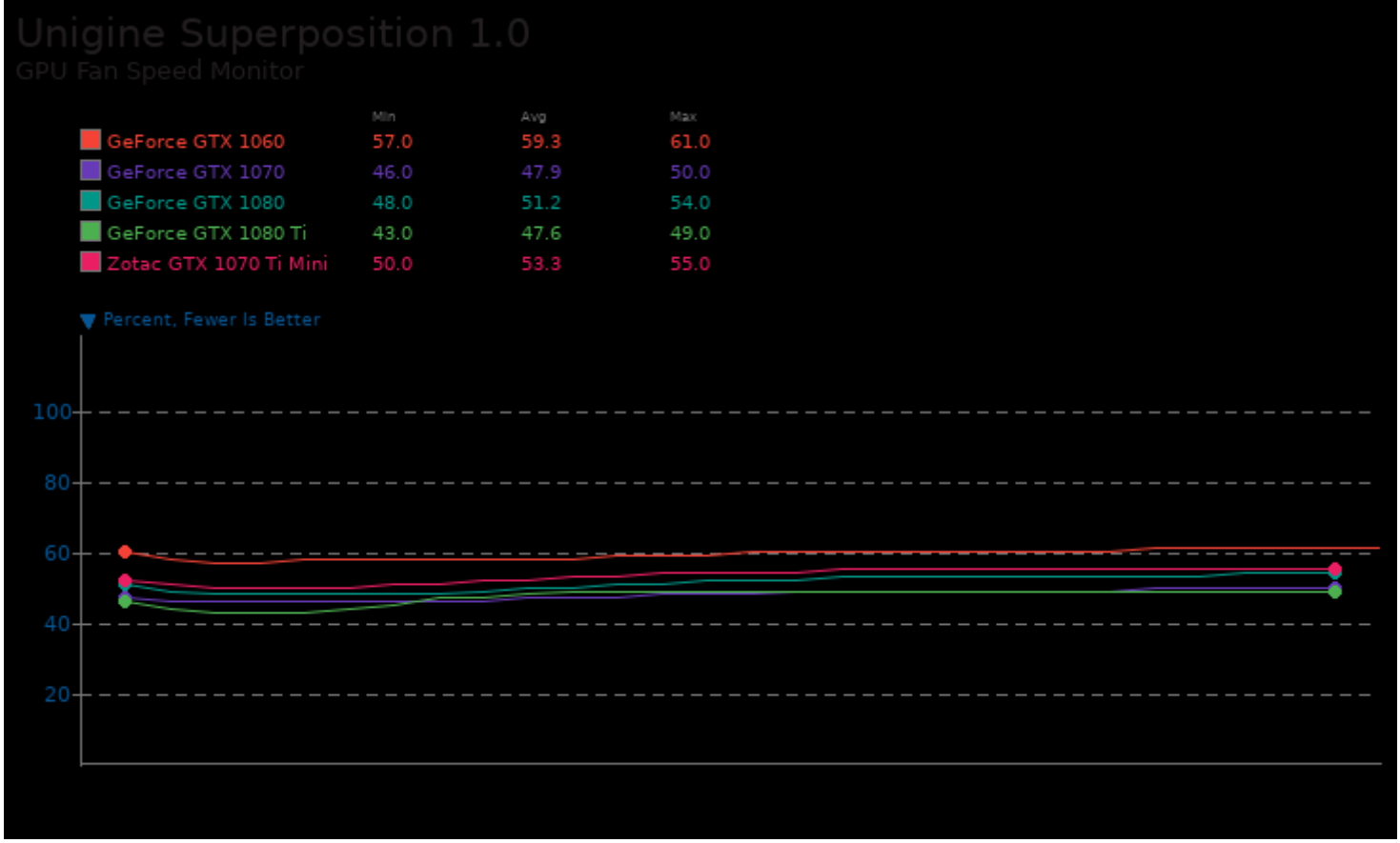

Unigine Superposition 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Quality: Low
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 60.2
49.30
GeForce GTX 1070
MAX: 84.2
69.30
GeForce GTX 1080
MAX: 108
85.90
GeForce GTX 1080 Ti
MAX: 149.1
115.60
Zotac GTX 1070 Ti Mini
MAX: 100.4
80.90
30
60
90
120
150

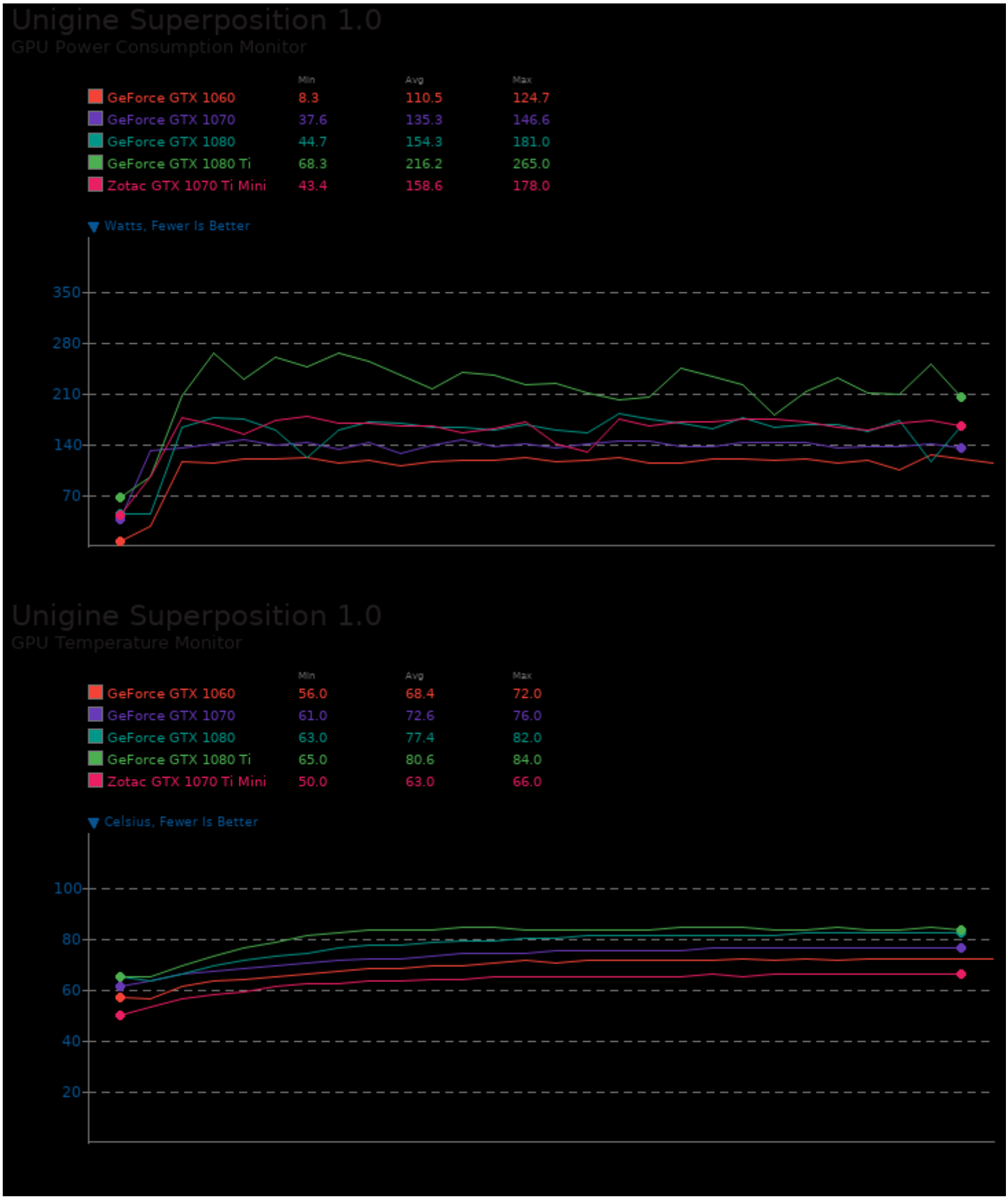

Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 59.1 61.0
GeForce GTX 1070 45.0 48.0 50.0
GeForce GTX 1080 48.0 51.1 54.0
GeForce GTX 1080 Ti 43.0 47.4 49.0
Zotac GTX 1070 Ti Mini 49.0 52.8 55.0
Percent, Fewer Is Better
100
80
60
40
20

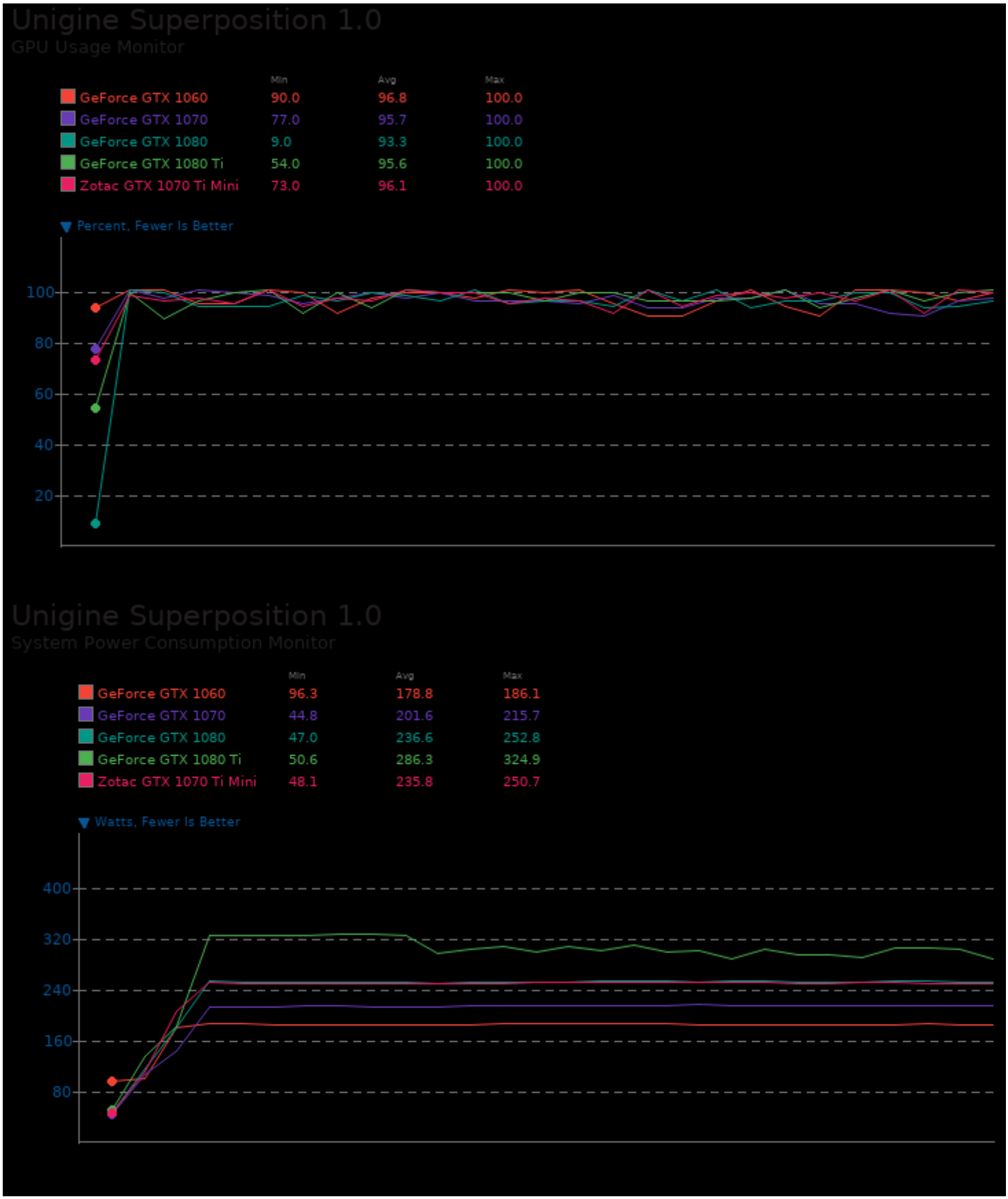

Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.6 107.3 127.8
GeForce GTX 1070 37.7 131.7 166.3
GeForce GTX 1080 44.8 162.9 182.7
GeForce GTX 1080 Ti 68.2 215.7 252.6
Zotac GTX 1070 Ti Mini 14.5 158.0 183.7
Watts, Fewer Is Better
350
280
210
140
70
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 68.4 73.0
GeForce GTX 1070 60.0 72.4 76.0
GeForce GTX 1080 63.0 77.1 82.0
GeForce GTX 1080 Ti 63.0 80.3 84.0
Zotac GTX 1070 Ti Mini 49.0 62.1 66.0
Celsius, Fewer Is Better
100
80
60
40
20

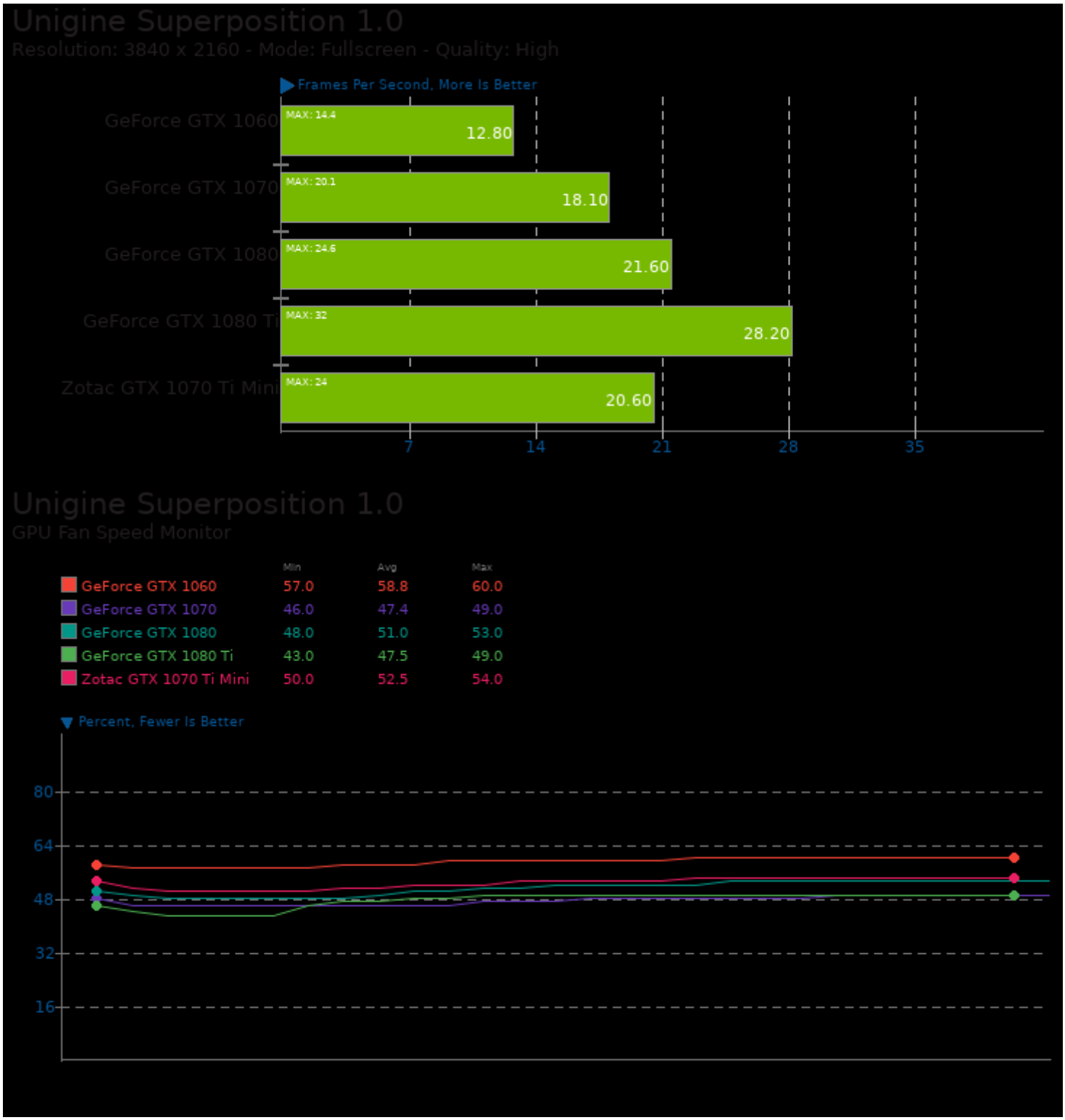

Unigine Superposition 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 20.0 94.0 100.0
GeForce GTX 1070 3.0 93.0 99.0
GeForce GTX 1080 21.0 94.0 99.0
GeForce GTX 1080 Ti 38.0 94.7 100.0
Zotac GTX 1070 Ti Mini 1.0 93.7 99.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 42.9 179.5 191.1
GeForce GTX 1070 44.0 205.8 222.4
GeForce GTX 1080 46.8 240.3 259.9
GeForce GTX 1080 Ti 50.9 293.2 327.7
Zotac GTX 1070 Ti Mini 111.9 243.3 254.5
Watts, Fewer Is Better
400
320
240
160
80

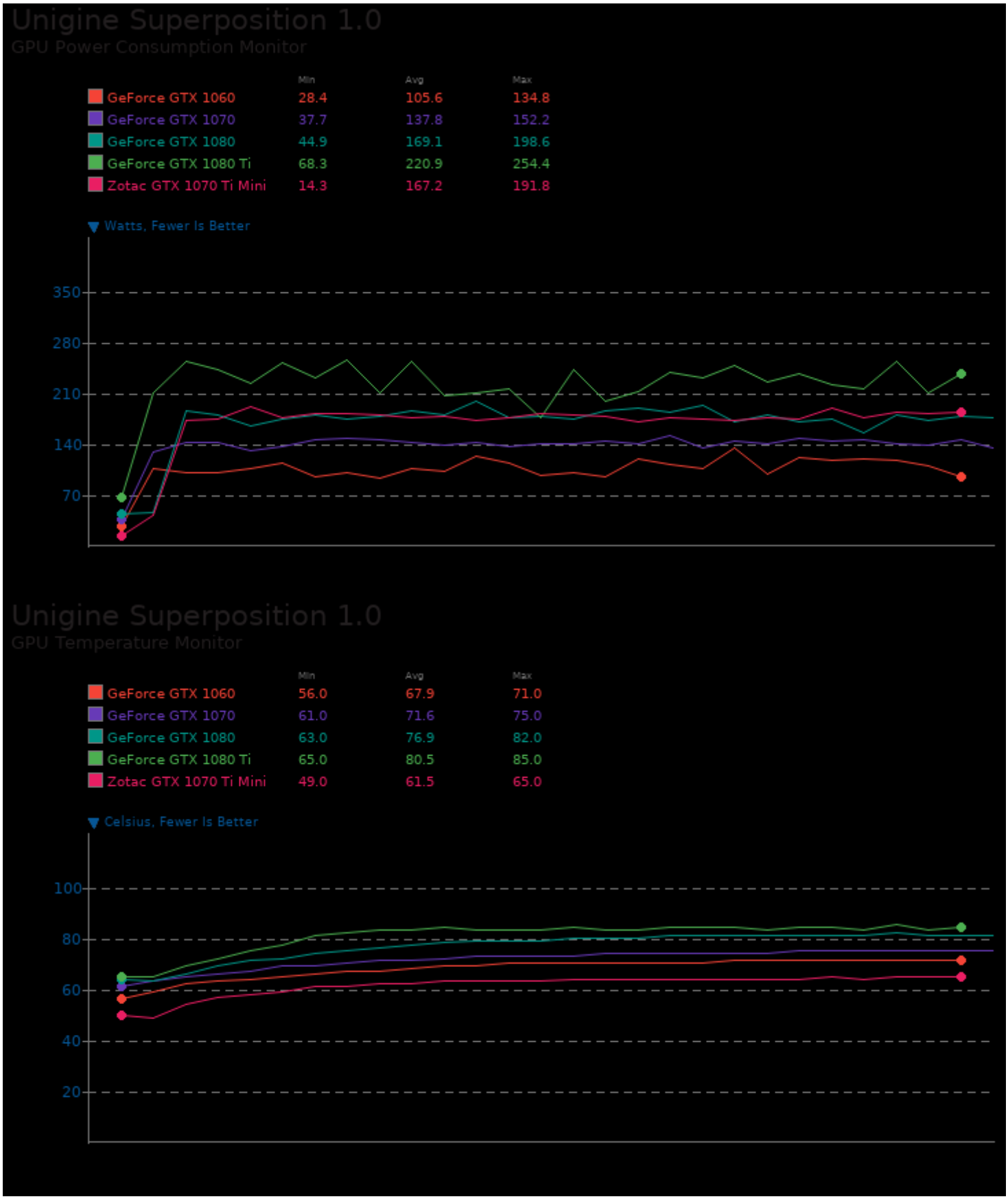

Unigine Superposition 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Quality: Medium
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 23.5
19.80
GeForce GTX 1070
MAX: 33
28.10
GeForce GTX 1080
MAX: 41.4
34.60
GeForce GTX 1080 Ti
MAX: 53.3
45.50
Zotac GTX 1070 Ti Mini
MAX: 39.8
32.90
10
20
30
40
50

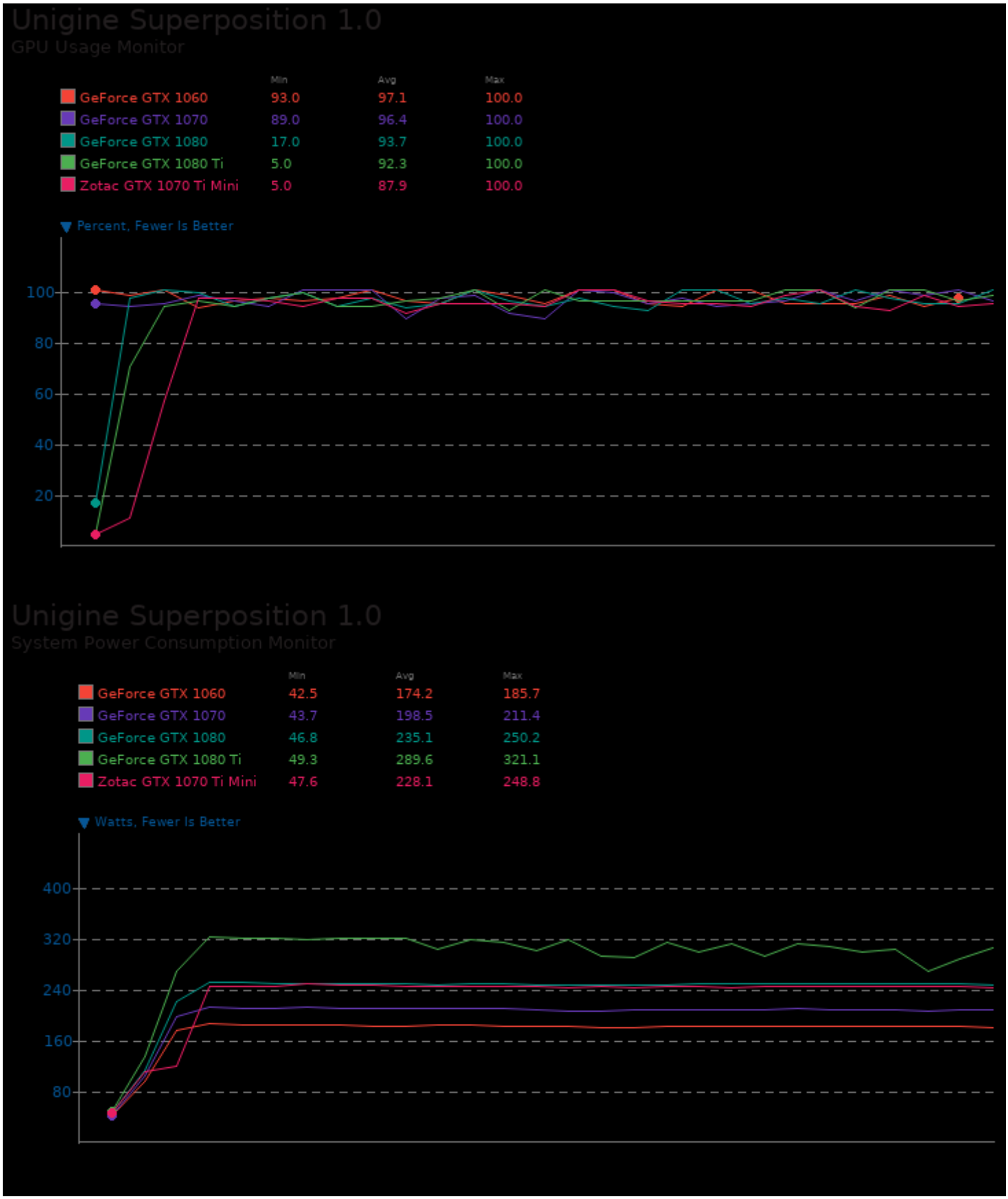

Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 59.3 61.0
GeForce GTX 1070 46.0 47.9 50.0
GeForce GTX 1080 48.0 51.2 54.0
GeForce GTX 1080 Ti 43.0 47.6 49.0
Zotac GTX 1070 Ti Mini 50.0 53.3 55.0
Percent, Fewer Is Better
100
80
60
40
20

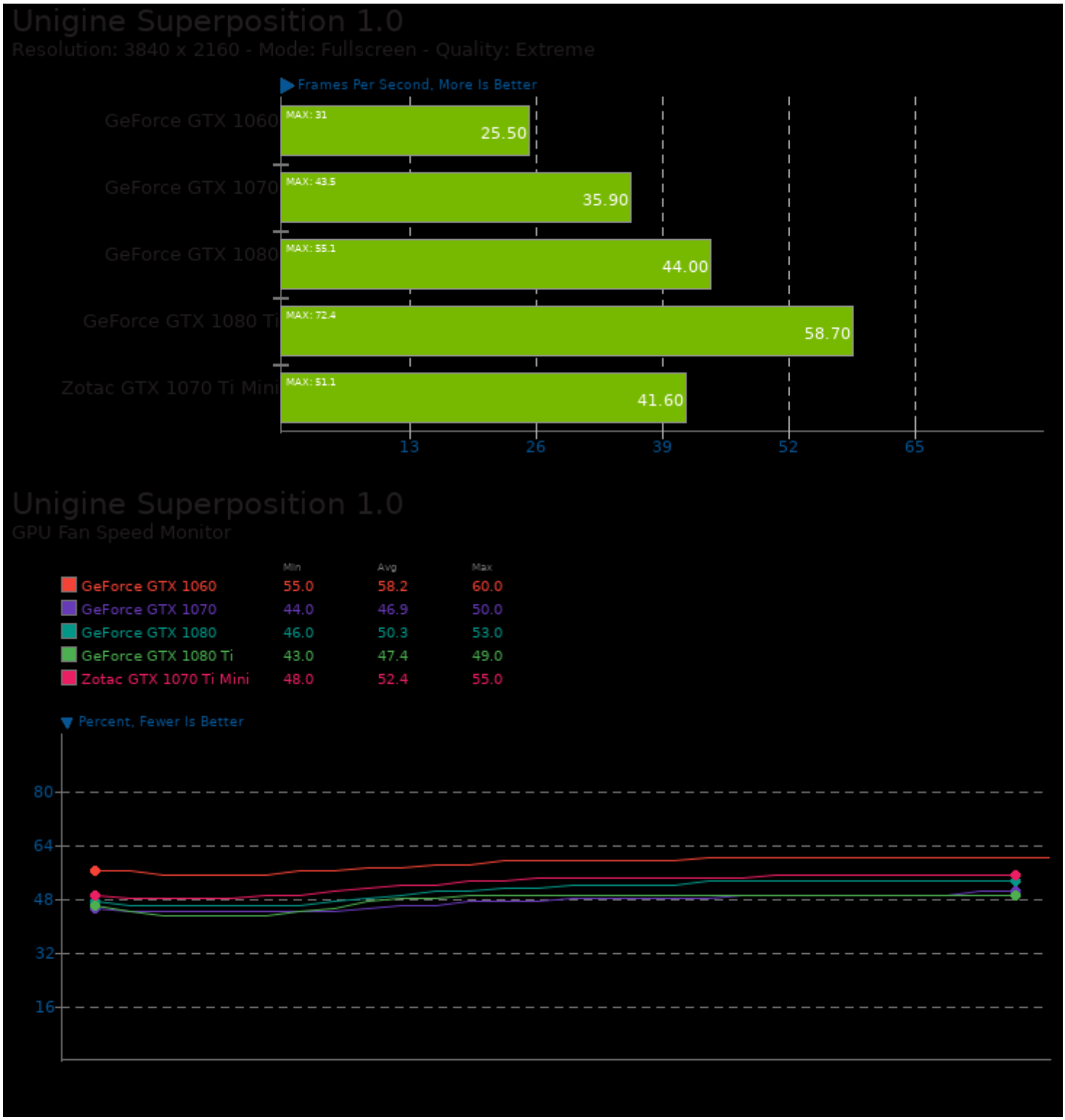

Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 8.3 110.5 124.7
GeForce GTX 1070 37.6 135.3 146.6
GeForce GTX 1080 44.7 154.3 181.0
GeForce GTX 1080 Ti 68.3 216.2 265.0
Zotac GTX 1070 Ti Mini 43.4 158.6 178.0
Watts, Fewer Is Better
350
280
210
140
70
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 68.4 72.0
GeForce GTX 1070 61.0 72.6 76.0
GeForce GTX 1080 63.0 77.4 82.0
GeForce GTX 1080 Ti 65.0 80.6 84.0
Zotac GTX 1070 Ti Mini 50.0 63.0 66.0
Celsius, Fewer Is Better
100
80
60
40
20

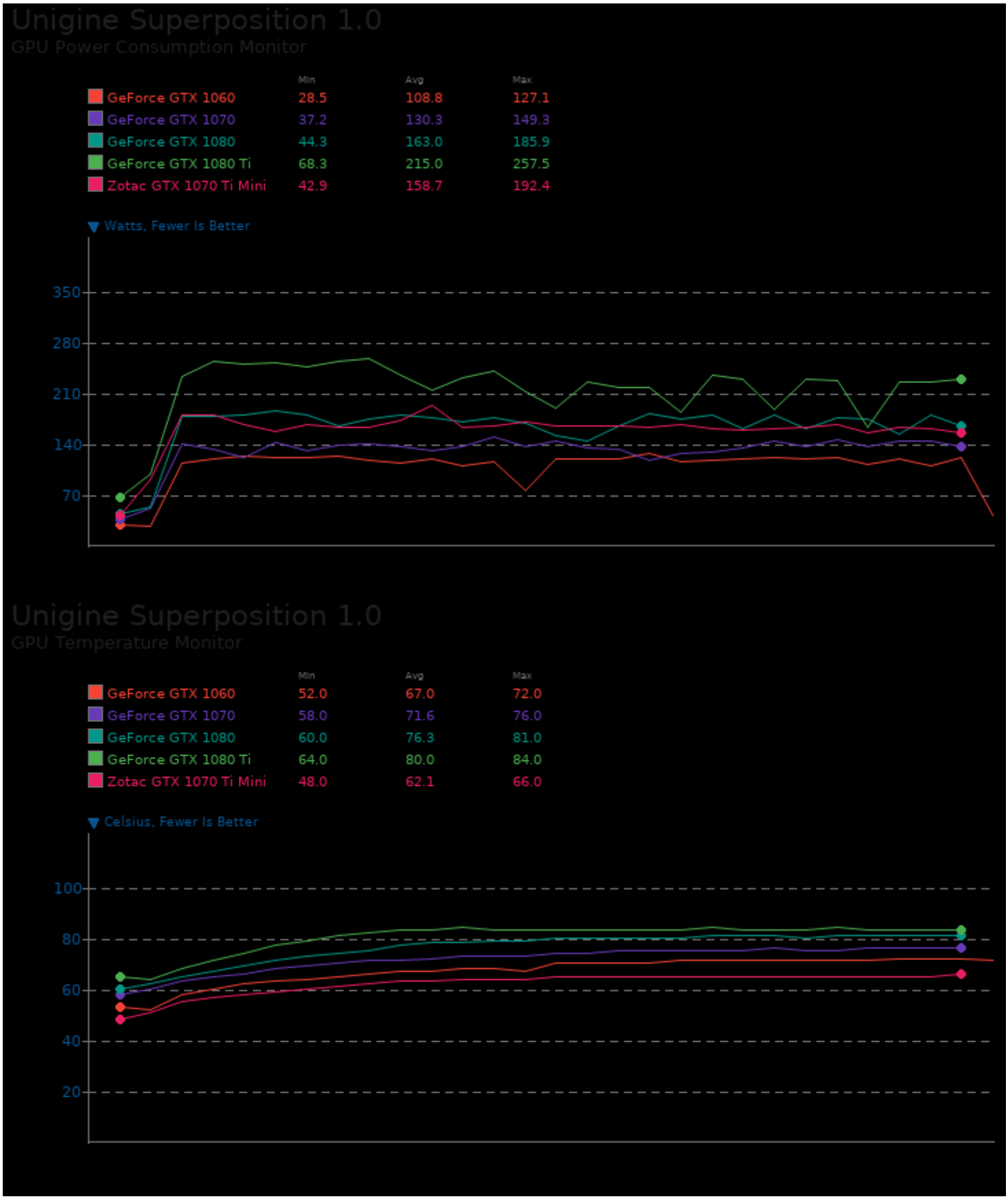

Unigine Superposition 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 90.0 96.8 100.0
GeForce GTX 1070 77.0 95.7 100.0
GeForce GTX 1080 9.0 93.3 100.0
GeForce GTX 1080 Ti 54.0 95.6 100.0
Zotac GTX 1070 Ti Mini 73.0 96.1 100.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 96.3 178.8 186.1
GeForce GTX 1070 44.8 201.6 215.7
GeForce GTX 1080 47.0 236.6 252.8
GeForce GTX 1080 Ti 50.6 286.3 324.9
Zotac GTX 1070 Ti Mini 48.1 235.8 250.7
Watts, Fewer Is Better
400
320
240
160
80

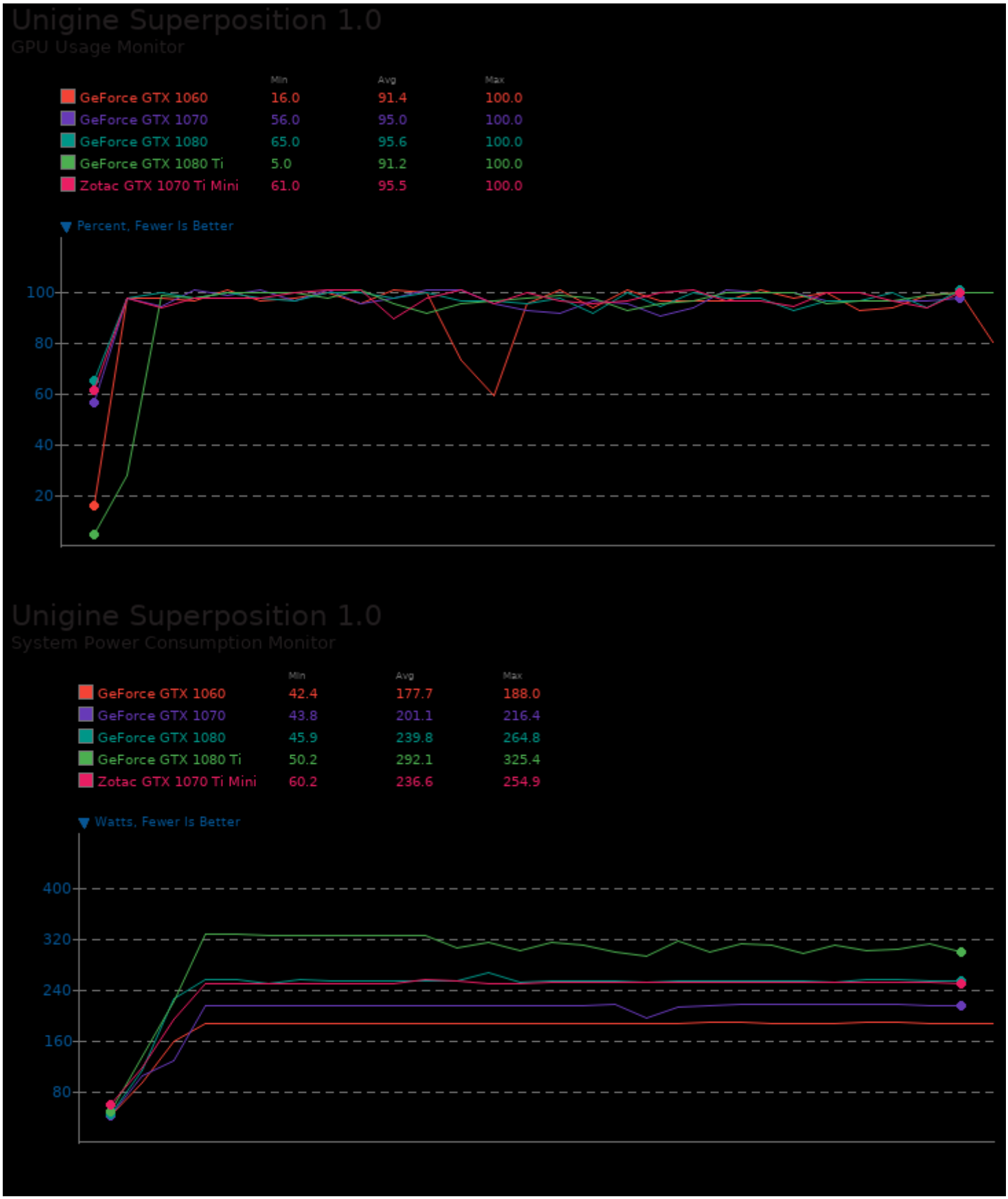

Unigine Superposition 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Quality: High
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 14.4
12.80
GeForce GTX 1070
MAX: 20.1
18.10
GeForce GTX 1080
MAX: 24.6
21.60
GeForce GTX 1080 Ti
MAX: 32
28.20
Zotac GTX 1070 Ti Mini
MAX: 24
20.60
7
14
21
28
35
Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 58.8 60.0
GeForce GTX 1070 46.0 47.4 49.0
GeForce GTX 1080 48.0 51.0 53.0
GeForce GTX 1080 Ti 43.0 47.5 49.0
Zotac GTX 1070 Ti Mini 50.0 52.5 54.0
Percent, Fewer Is Better
80
64
48
32
16

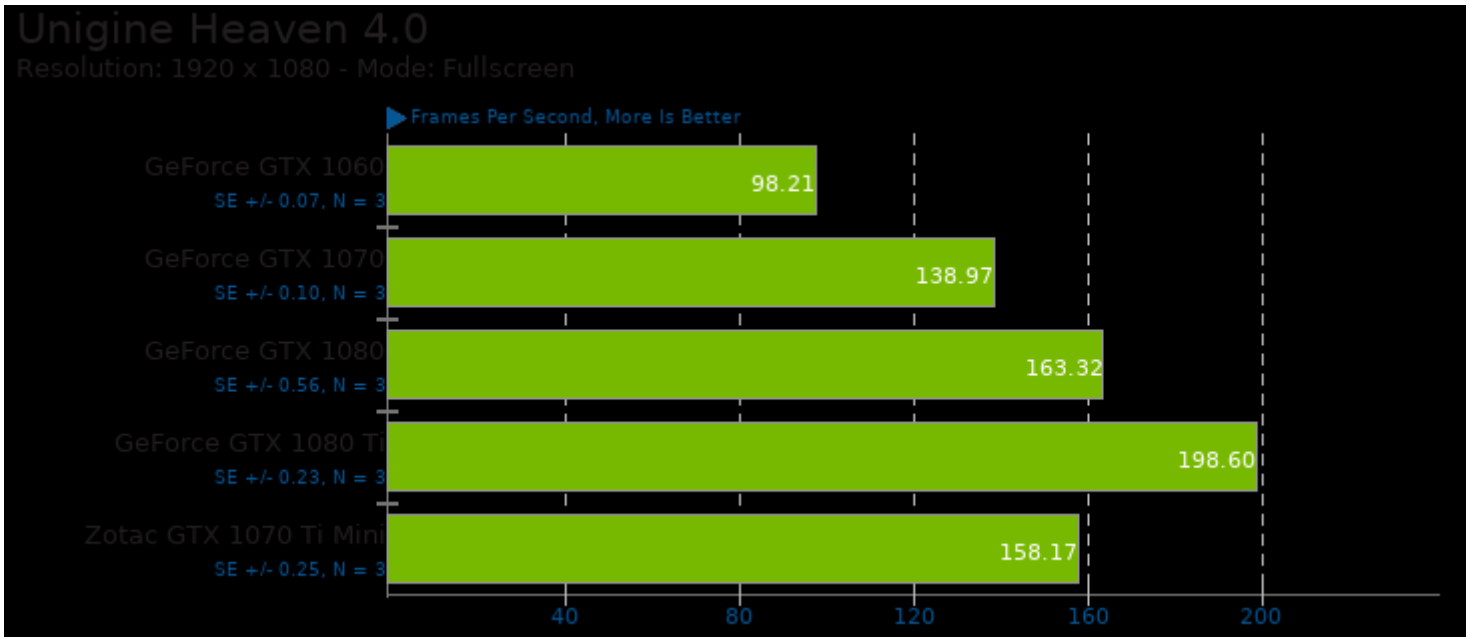

Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.4 105.6 134.8
GeForce GTX 1070 37.7 137.8 152.2
GeForce GTX 1080 44.9 169.1 198.6
GeForce GTX 1080 Ti 68.3 220.9 254.4
Zotac GTX 1070 Ti Mini 14.3 167.2 191.8
Watts, Fewer Is Better
350
280
210
140
70
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 67.9 71.0
GeForce GTX 1070 61.0 71.6 75.0
GeForce GTX 1080 63.0 76.9 82.0
GeForce GTX 1080 Ti 65.0 80.5 85.0
Zotac GTX 1070 Ti Mini 49.0 61.5 65.0
Celsius, Fewer Is Better
100
80
60
40
20

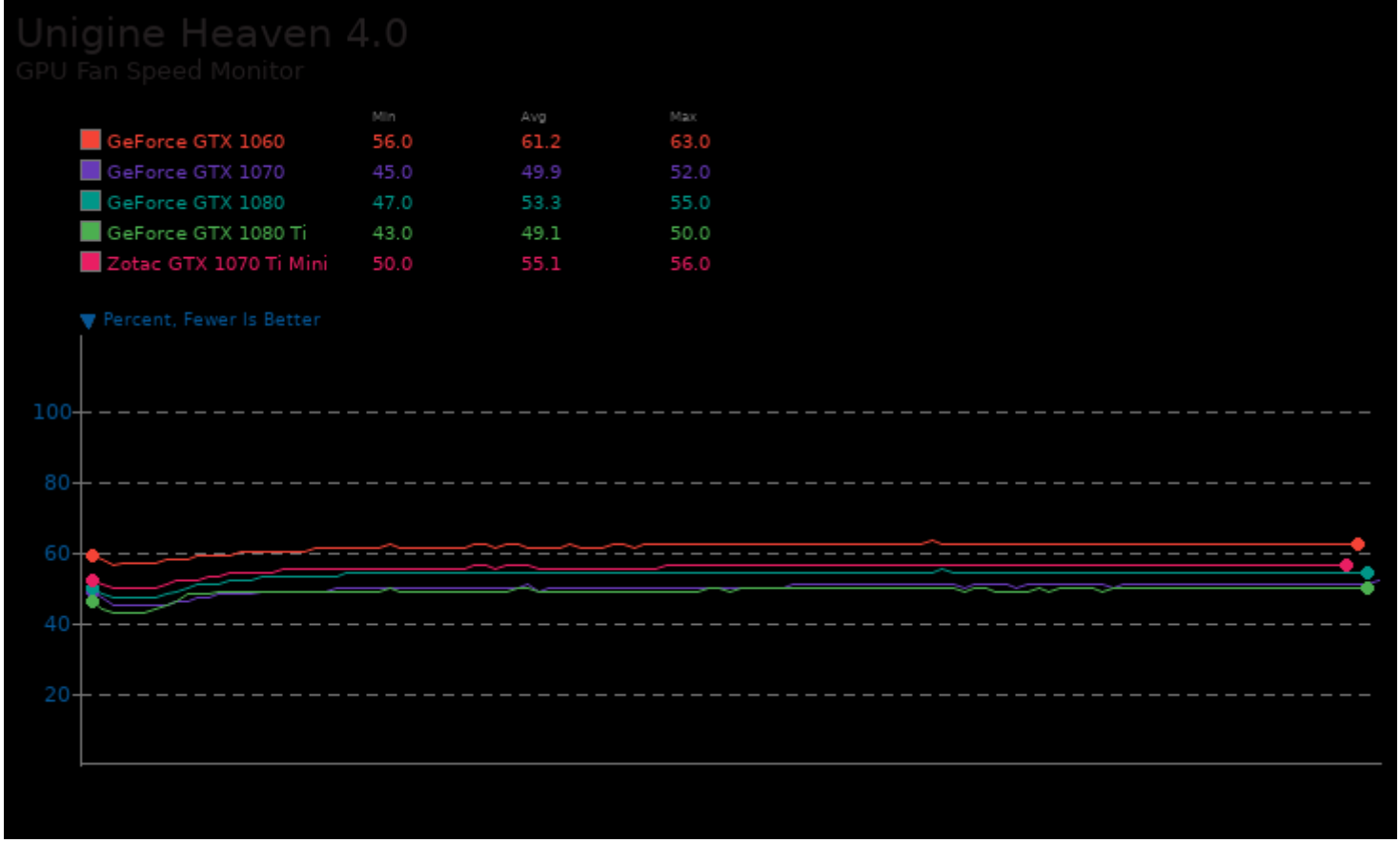

Unigine Superposition 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 93.0 97.1 100.0
GeForce GTX 1070 89.0 96.4 100.0
GeForce GTX 1080 17.0 93.7 100.0
GeForce GTX 1080 Ti 5.0 92.3 100.0
Zotac GTX 1070 Ti Mini 5.0 87.9 100.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 42.5 174.2 185.7
GeForce GTX 1070 43.7 198.5 211.4
GeForce GTX 1080 46.8 235.1 250.2
GeForce GTX 1080 Ti 49.3 289.6 321.1
Zotac GTX 1070 Ti Mini 47.6 228.1 248.8
Watts, Fewer Is Better
400
320
240
160
80


Unigine Superposition 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Quality: Extreme
Frames Per Second, More Is Better
GeForce GTX 1060
MAX: 31
25.50
GeForce GTX 1070
MAX: 43.5
35.90
GeForce GTX 1080
MAX: 55.1
44.00
GeForce GTX 1080 Ti
MAX: 72.4
58.70
Zotac GTX 1070 Ti Mini
MAX: 51.1
41.60
13
26
39
52
65
Unigine Superposition 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 58.2 60.0
GeForce GTX 1070 44.0 46.9 50.0
GeForce GTX 1080 46.0 50.3 53.0
GeForce GTX 1080 Ti 43.0 47.4 49.0
Zotac GTX 1070 Ti Mini 48.0 52.4 55.0
Percent, Fewer Is Better
80
64
48
32
16


Unigine Superposition 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.5 108.8 127.1
GeForce GTX 1070 37.2 130.3 149.3
GeForce GTX 1080 44.3 163.0 185.9
GeForce GTX 1080 Ti 68.3 215.0 257.5
Zotac GTX 1070 Ti Mini 42.9 158.7 192.4
Watts, Fewer Is Better
350
280
210
140
70
Unigine Superposition 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 52.0 67.0 72.0
GeForce GTX 1070 58.0 71.6 76.0
GeForce GTX 1080 60.0 76.3 81.0
GeForce GTX 1080 Ti 64.0 80.0 84.0
Zotac GTX 1070 Ti Mini 48.0 62.1 66.0
Celsius, Fewer Is Better
100
80
60
40
20

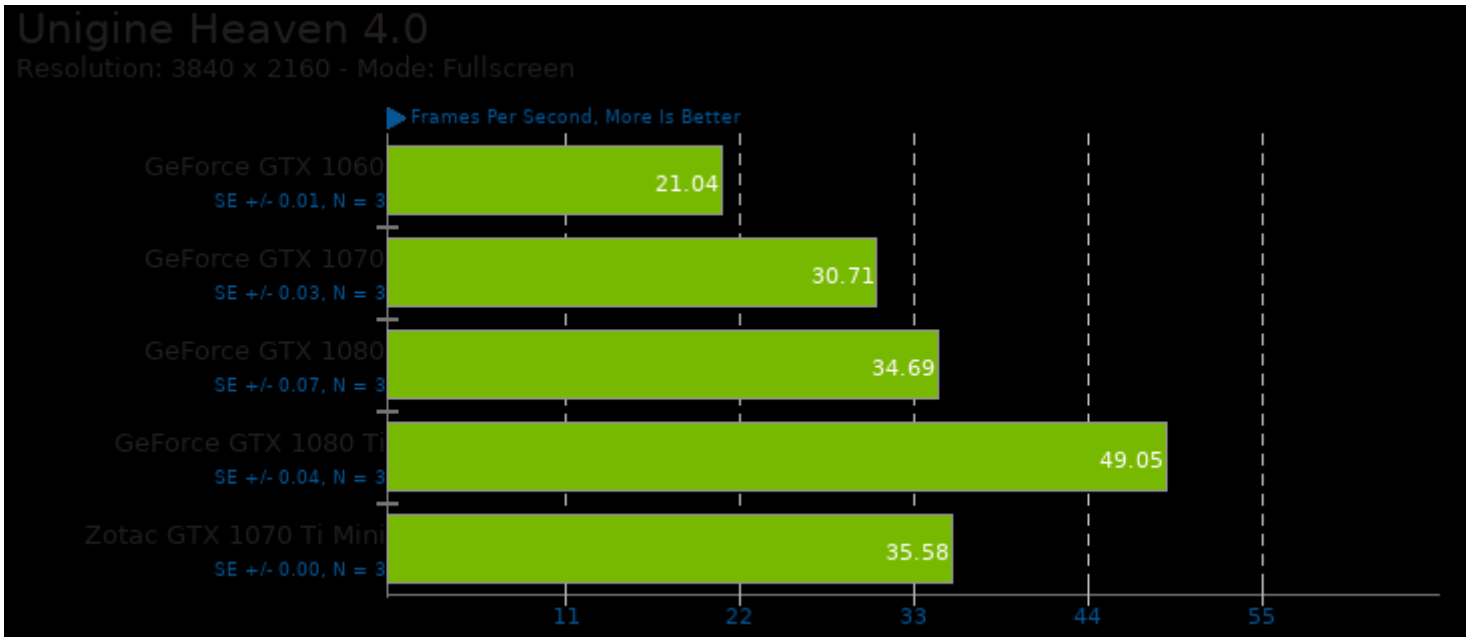

Unigine Superposition 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 16.0 91.4 100.0
GeForce GTX 1070 56.0 95.0 100.0
GeForce GTX 1080 65.0 95.6 100.0
GeForce GTX 1080 Ti 5.0 91.2 100.0
Zotac GTX 1070 Ti Mini 61.0 95.5 100.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Superposition 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 42.4 177.7 188.0
GeForce GTX 1070 43.8 201.1 216.4
GeForce GTX 1080 45.9 239.8 264.8
GeForce GTX 1080 Ti 50.2 292.1 325.4
Zotac GTX 1070 Ti Mini 60.2 236.6 254.9
Watts, Fewer Is Better
400
320
240
160
80

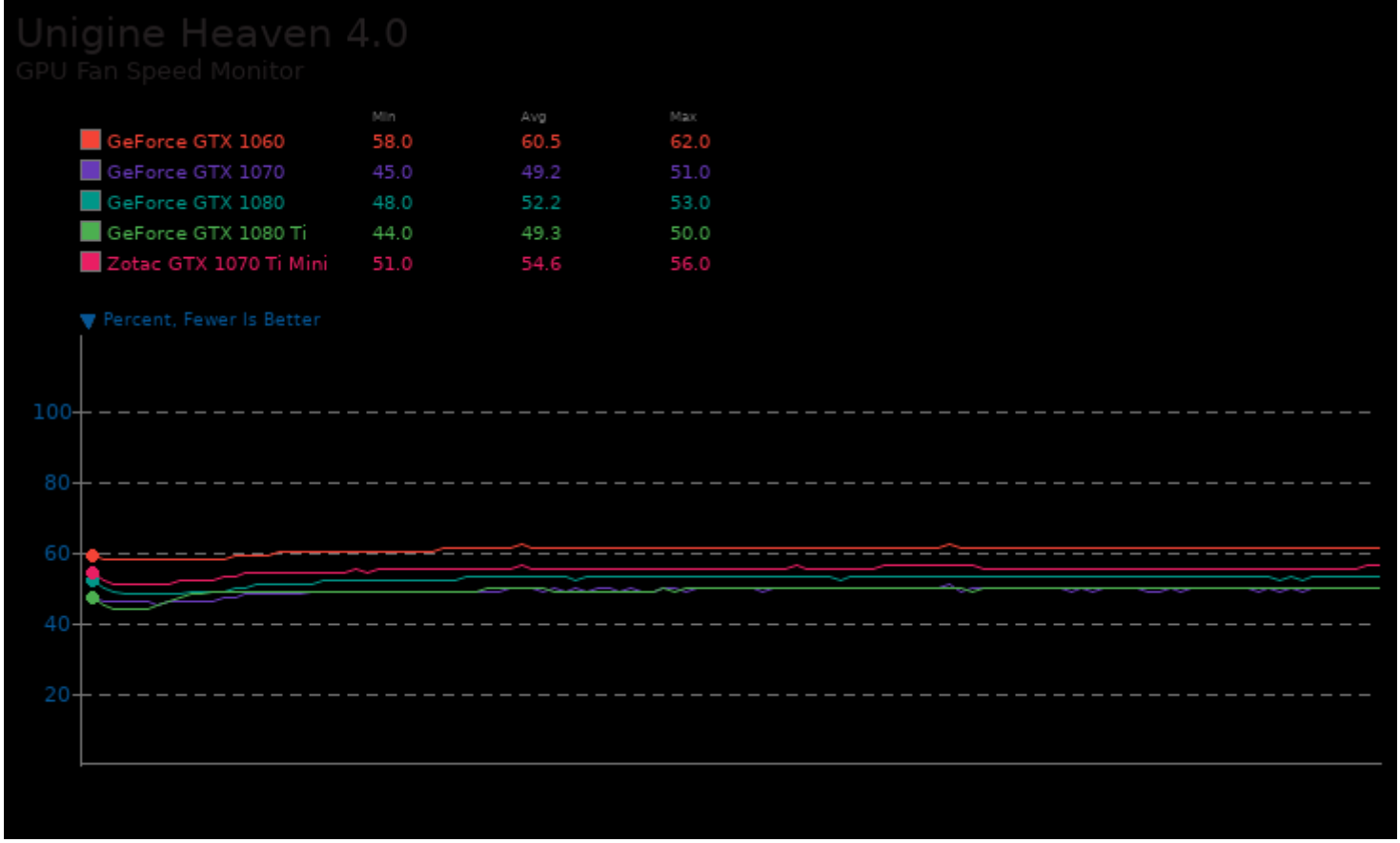

Unigine Heaven 4.0
Resolution: 1920 x 1080 - Mode: Fullscreen
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.07, N = 3
98.21
GeForce GTX 1070
SE +/- 0.10, N = 3
138.97
GeForce GTX 1080
SE +/- 0.56, N = 3
163.32
GeForce GTX 1080 Ti
SE +/- 0.23, N = 3
198.60
Zotac GTX 1070 Ti Mini
SE +/- 0.25, N = 3
158.17
40
80
120
160
200


Unigine Heaven 4.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 56.0 61.2 63.0
GeForce GTX 1070 45.0 49.9 52.0
GeForce GTX 1080 47.0 53.3 55.0
GeForce GTX 1080 Ti 43.0 49.1 50.0
Zotac GTX 1070 Ti Mini 50.0 55.1 56.0
Percent, Fewer Is Better
100
80
60
40
20


Unigine Heaven 4.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 8.3 107.6 123.7
GeForce GTX 1070 10.9 134.7 150.1
GeForce GTX 1080 44.0 159.7 188.2
GeForce GTX 1080 Ti 67.0 205.1 257.3
Zotac GTX 1070 Ti Mini 42.5 165.2 187.9
Watts, Fewer Is Better
350
280
210
140
70
Unigine Heaven 4.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 55.0 71.9 74.0
GeForce GTX 1070 60.0 75.0 77.0
GeForce GTX 1080 61.0 79.9 82.0
GeForce GTX 1080 Ti 63.0 82.3 84.0
Zotac GTX 1070 Ti Mini 48.0 64.6 66.0
Celsius, Fewer Is Better
100
80
60
40
20

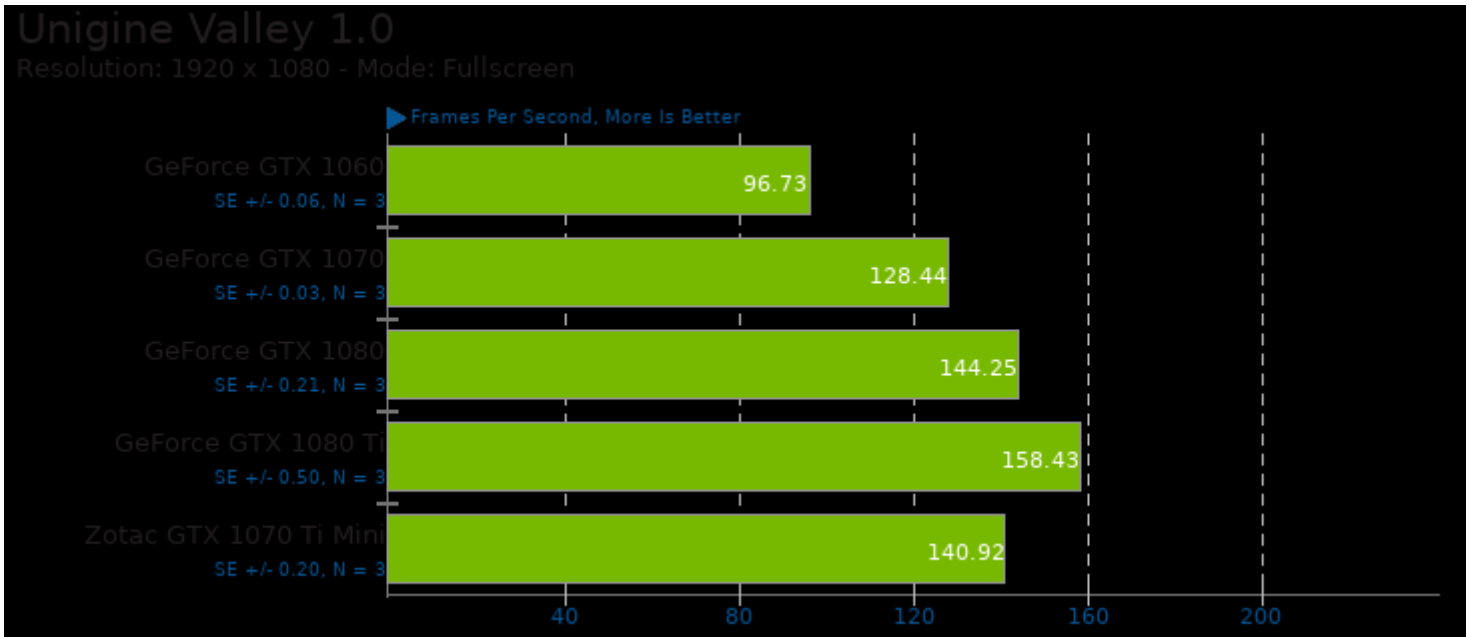

Unigine Heaven 4.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 92.8 99.0
GeForce GTX 1070 1.0 95.9 99.0
GeForce GTX 1080 1.0 91.1 99.0
GeForce GTX 1080 Ti 1.0 90.2 99.0
Zotac GTX 1070 Ti Mini 1.0 94.5 99.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Heaven 4.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 99.4 185.5 190.9
GeForce GTX 1070 108.9 212.5 221.0
GeForce GTX 1080 44.8 248.1 258.2
GeForce GTX 1080 Ti 49.7 296.3 327.5
Zotac GTX 1070 Ti Mini 48.0 248.0 256.6
Watts, Fewer Is Better
400
320
240
160
80

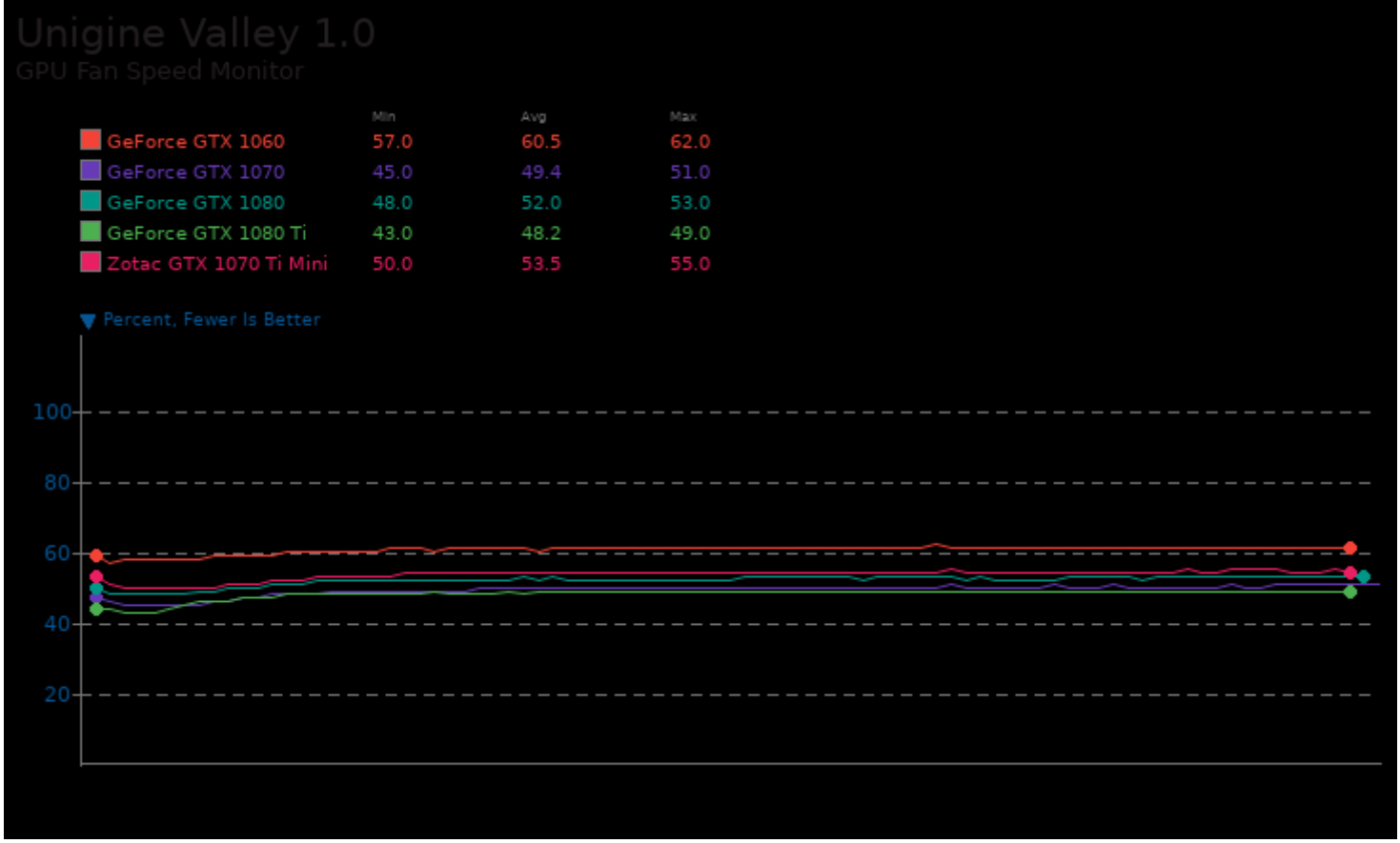

Unigine Heaven 4.0
Resolution: 3840 x 2160 - Mode: Fullscreen
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.01, N = 3
21.04
GeForce GTX 1070
SE +/- 0.03, N = 3
30.71
GeForce GTX 1080
SE +/- 0.07, N = 3
34.69
GeForce GTX 1080 Ti
SE +/- 0.04, N = 3
49.05
Zotac GTX 1070 Ti Mini
SE +/- 0.00, N = 3
35.58
11
22
33
44
55


Unigine Heaven 4.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 58.0 60.5 62.0
GeForce GTX 1070 45.0 49.2 51.0
GeForce GTX 1080 48.0 52.2 53.0
GeForce GTX 1080 Ti 44.0 49.3 50.0
Zotac GTX 1070 Ti Mini 51.0 54.6 56.0
Percent, Fewer Is Better
100
80
60
40
20

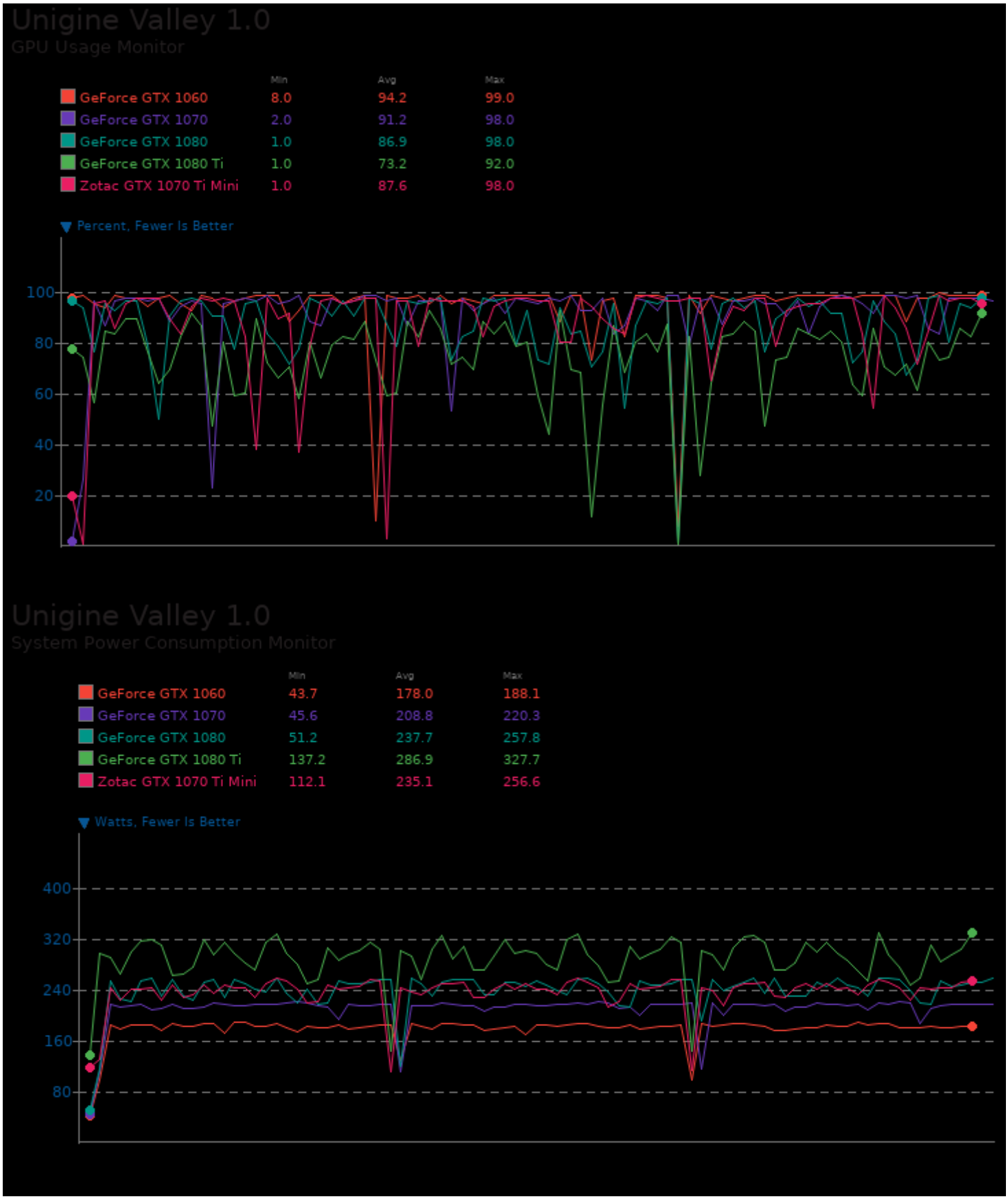

Unigine Heaven 4.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 27.8 99.4 125.3
GeForce GTX 1070 37.2 131.4 158.2
GeForce GTX 1080 10.9 158.4 198.9
GeForce GTX 1080 Ti 17.3 217.9 269.0
Zotac GTX 1070 Ti Mini 14.6 162.9 189.6
Watts, Fewer Is Better
350
280
210
140
70
Unigine Heaven 4.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 70.1 73.0
GeForce GTX 1070 60.0 73.7 76.0
GeForce GTX 1080 63.0 77.9 81.0
GeForce GTX 1080 Ti 64.0 82.6 84.0
Zotac GTX 1070 Ti Mini 50.0 63.8 66.0
Celsius, Fewer Is Better
100
80
60
40
20

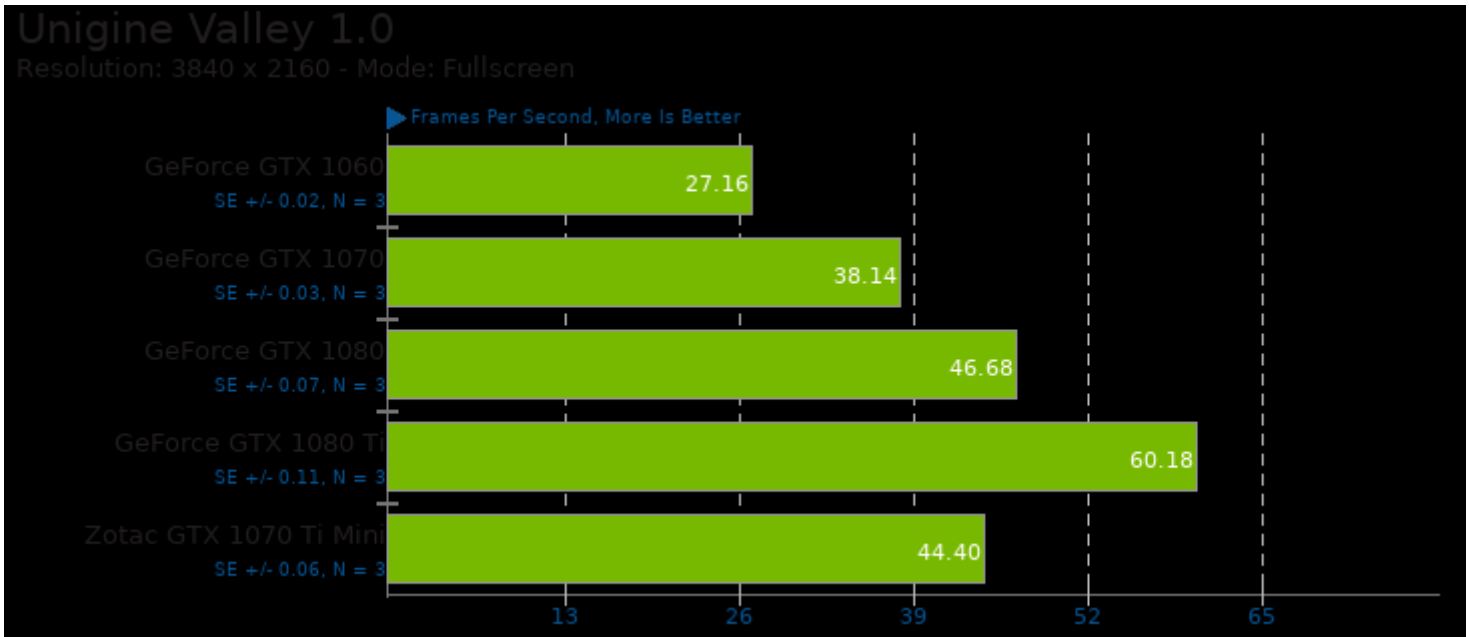

Unigine Heaven 4.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 1.0 96.6 100.0
GeForce GTX 1070 1.0 98.4 100.0
GeForce GTX 1080 1.0 97.0 100.0
GeForce GTX 1080 Ti 1.0 96.2 100.0
Zotac GTX 1070 Ti Mini 13.0 96.4 100.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Heaven 4.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 41.4 176.9 191.3
GeForce GTX 1070 45.7 203.7 217.3
GeForce GTX 1080 108.6 236.1 256.6
GeForce GTX 1080 Ti 136.3 297.5 325.3
Zotac GTX 1070 Ti Mini 112.3 239.4 254.0
Watts, Fewer Is Better
400
320
240
160
80

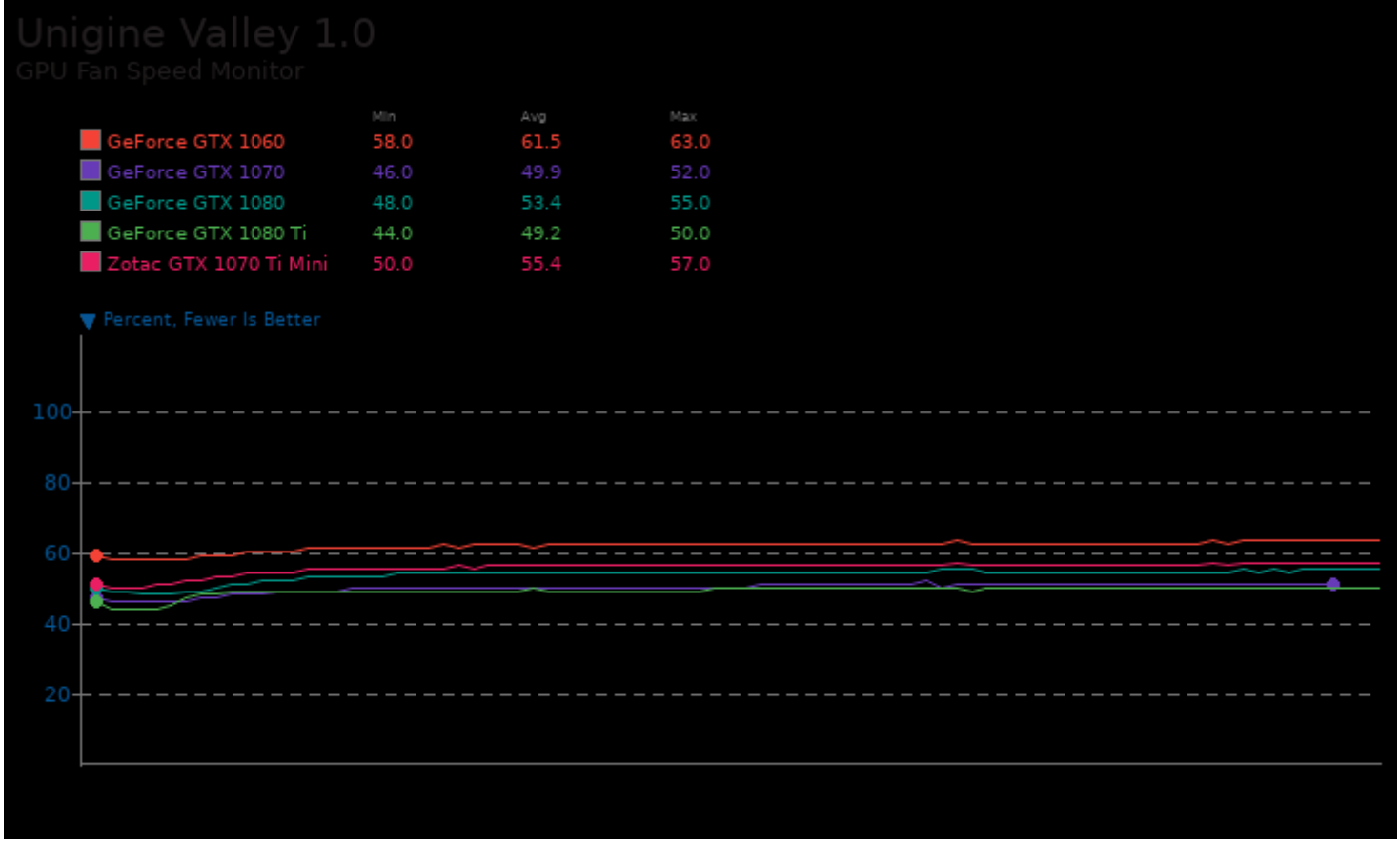

Unigine Valley 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.06, N = 3
96.73
GeForce GTX 1070
SE +/- 0.03, N = 3
128.44
GeForce GTX 1080
SE +/- 0.21, N = 3
144.25
GeForce GTX 1080 Ti
SE +/- 0.50, N = 3
158.43
Zotac GTX 1070 Ti Mini
SE +/- 0.20, N = 3
140.92
40
80
120
160
200


Unigine Valley 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 60.5 62.0
GeForce GTX 1070 45.0 49.4 51.0
GeForce GTX 1080 48.0 52.0 53.0
GeForce GTX 1080 Ti 43.0 48.2 49.0
Zotac GTX 1070 Ti Mini 50.0 53.5 55.0
Percent, Fewer Is Better
100
80
60
40
20


Unigine Valley 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 28.4 105.5 119.0
GeForce GTX 1070 37.5 129.2 147.1
GeForce GTX 1080 44.0 148.8 181.6
GeForce GTX 1080 Ti 73.6 190.9 233.8
Zotac GTX 1070 Ti Mini 17.6 147.2 182.2
Watts, Fewer Is Better
300
240
180
120
60
Unigine Valley 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 70.4 72.0
GeForce GTX 1070 59.0 74.4 77.0
GeForce GTX 1080 63.0 77.8 80.0
GeForce GTX 1080 Ti 67.0 81.1 83.0
Zotac GTX 1070 Ti Mini 49.0 62.4 65.0
Celsius, Fewer Is Better
100
80
60
40
20

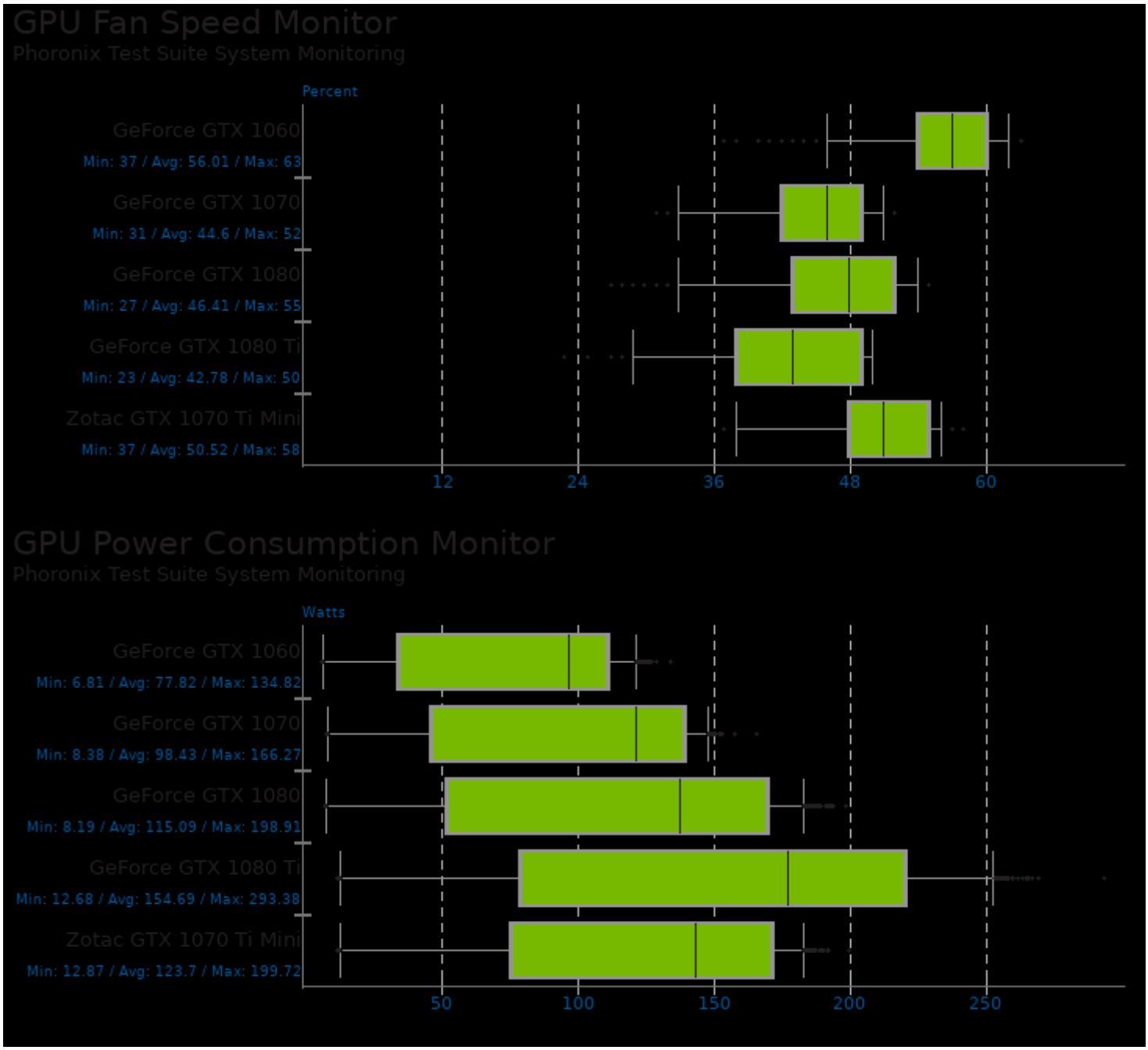

Unigine Valley 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 8.0 94.2 99.0
GeForce GTX 1070 2.0 91.2 98.0
GeForce GTX 1080 1.0 86.9 98.0
GeForce GTX 1080 Ti 1.0 73.2 92.0
Zotac GTX 1070 Ti Mini 1.0 87.6 98.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Valley 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 43.7 178.0 188.1
GeForce GTX 1070 45.6 208.8 220.3
GeForce GTX 1080 51.2 237.7 257.8
GeForce GTX 1080 Ti 137.2 286.9 327.7
Zotac GTX 1070 Ti Mini 112.1 235.1 256.6
Watts, Fewer Is Better
400
320
240
160
80

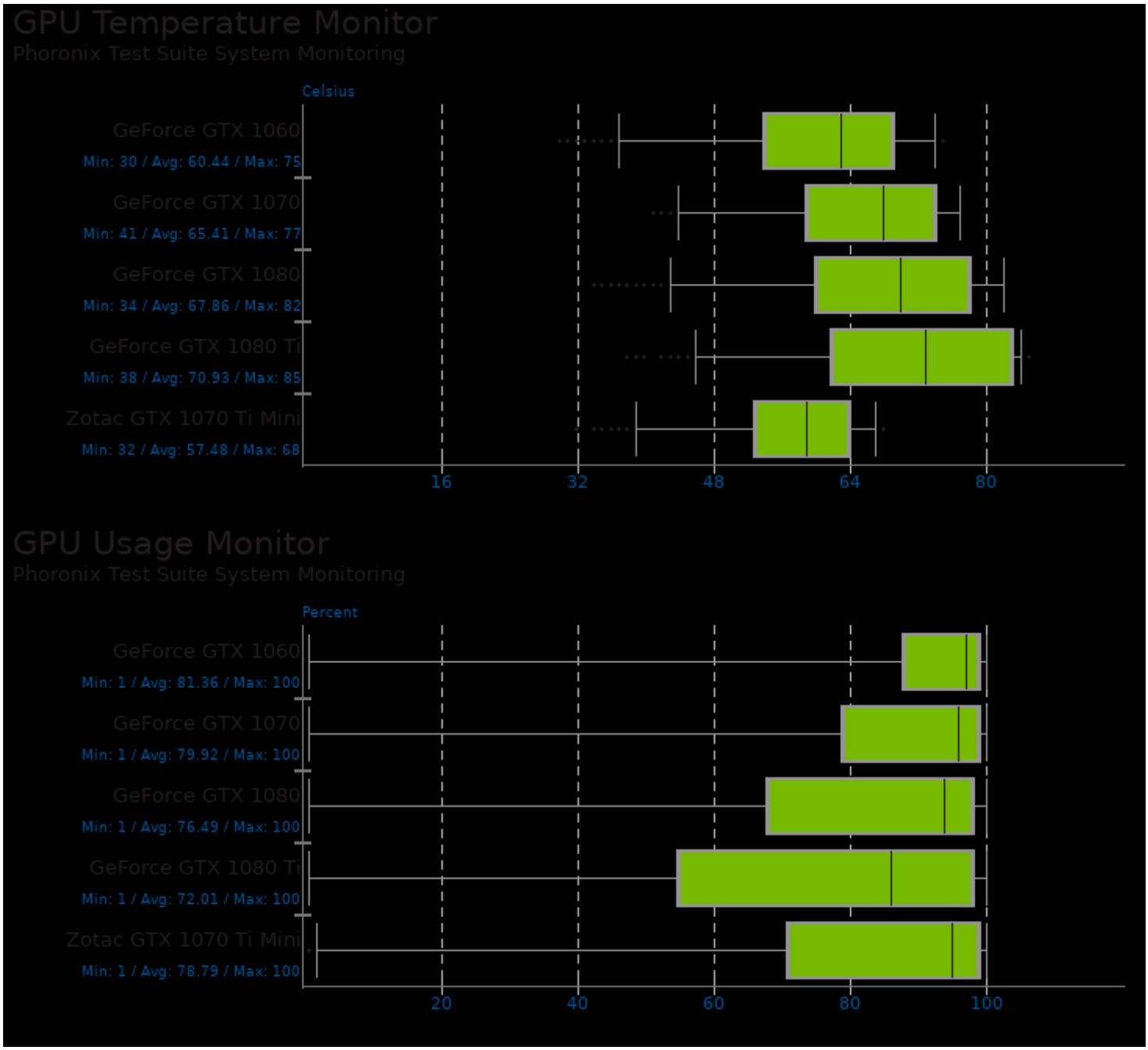

Unigine Valley 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen
Frames Per Second, More Is Better
GeForce GTX 1060
SE +/- 0.02, N = 3
27.16
GeForce GTX 1070
SE +/- 0.03, N = 3
38.14
GeForce GTX 1080
SE +/- 0.07, N = 3
46.68
GeForce GTX 1080 Ti
SE +/- 0.11, N = 3
60.18
Zotac GTX 1070 Ti Mini
SE +/- 0.06, N = 3
44.40
13
26
39
52
65

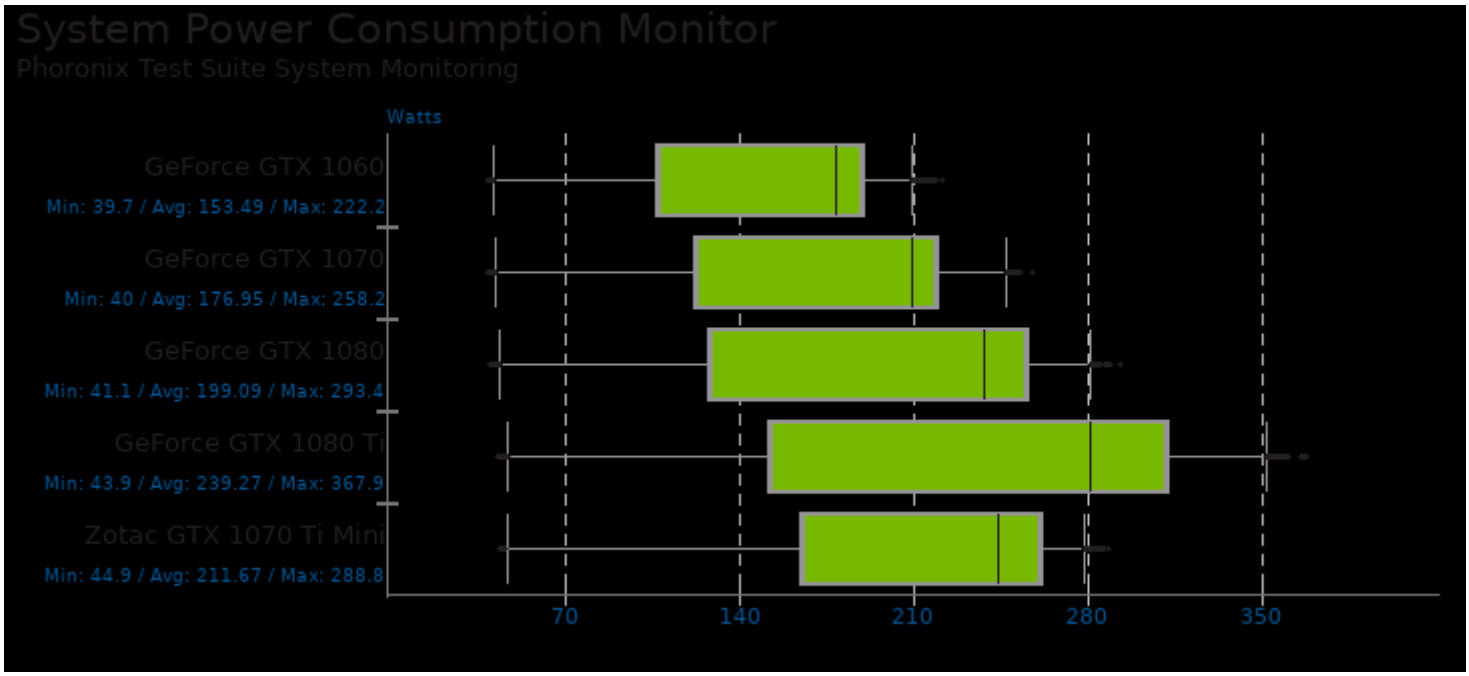

Unigine Valley 1.0
GPU Fan Speed Monitor
Min
Avg
Max
GeForce GTX 1060 58.0 61.5 63.0
GeForce GTX 1070 46.0 49.9 52.0
GeForce GTX 1080 48.0 53.4 55.0
GeForce GTX 1080 Ti 44.0 49.2 50.0
Zotac GTX 1070 Ti Mini 50.0 55.4 57.0
Percent, Fewer Is Better
100
80
60
40
20


Unigine Valley 1.0
GPU Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 8.3 113.8 126.7
GeForce GTX 1070 39.8 136.9 150.4
GeForce GTX 1080 45.1 169.5 191.2
GeForce GTX 1080 Ti 68.4 217.6 264.3
Zotac GTX 1070 Ti Mini 55.4 172.3 190.1
Watts, Fewer Is Better
350
280
210
140
70
Unigine Valley 1.0
GPU Temperature Monitor
Min
Avg
Max
GeForce GTX 1060 57.0 72.7 75.0
GeForce GTX 1070 60.0 75.4 77.0
GeForce GTX 1080 64.0 80.4 82.0
GeForce GTX 1080 Ti 66.0 82.6 84.0
Zotac GTX 1070 Ti Mini 50.0 65.1 67.0
Celsius, Fewer Is Better
100
80
60
40
20

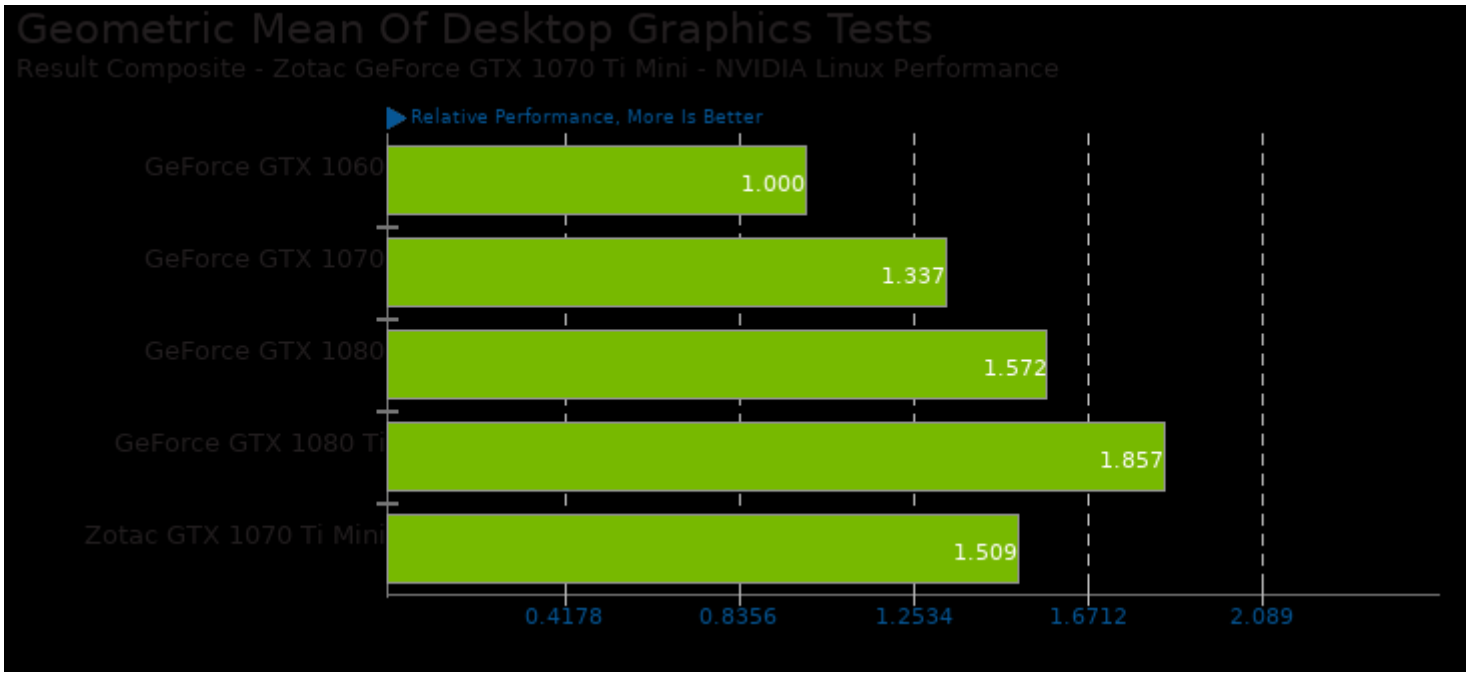

Unigine Valley 1.0
GPU Usage Monitor
Min
Avg
Max
GeForce GTX 1060 17.0 97.2 100.0
GeForce GTX 1070 3.0 95.8 100.0
GeForce GTX 1080 1.0 96.7 99.0
GeForce GTX 1080 Ti 4.0 96.1 99.0
Zotac GTX 1070 Ti Mini 57.0 97.7 100.0
Percent, Fewer Is Better
100
80
60
40
20
Unigine Valley 1.0
System Power Consumption Monitor
Min
Avg
Max
GeForce GTX 1060 98.3 184.9 191.7
GeForce GTX 1070 51.1 210.1 216.8
GeForce GTX 1080 45.2 247.2 258.4
GeForce GTX 1080 Ti 49.6 290.5 327.3
Zotac GTX 1070 Ti Mini 89.2 247.0 256.0
Watts, Fewer Is Better
400
320
240
160
80


GPU Fan Speed Monitor
Phoronix Test Suite System Monitoring
Percent
GeForce GTX 1060
Min: 37 / Avg: 56.01 / Max: 63
GeForce GTX 1070
Min: 31 / Avg: 44.6 / Max: 52
GeForce GTX 1080
Min: 27 / Avg: 46.41 / Max: 55
GeForce GTX 1080 Ti
Min: 23 / Avg: 42.78 / Max: 50
Zotac GTX 1070 Ti Mini
Min: 37 / Avg: 50.52 / Max: 58
12
24
36
48
60
GPU Power Consumption Monitor
Phoronix Test Suite System Monitoring
Watts
GeForce GTX 1060
Min: 6.81 / Avg: 77.82 / Max: 134.82
GeForce GTX 1070
Min: 8.38 / Avg: 98.43 / Max: 166.27
GeForce GTX 1080
Min: 8.19 / Avg: 115.09 / Max: 198.91
GeForce GTX 1080 Ti
Min: 12.68 / Avg: 154.69 / Max: 293.38
Zotac GTX 1070 Ti Mini
Min: 12.87 / Avg: 123.7 / Max: 199.72
50
100
150
200
250

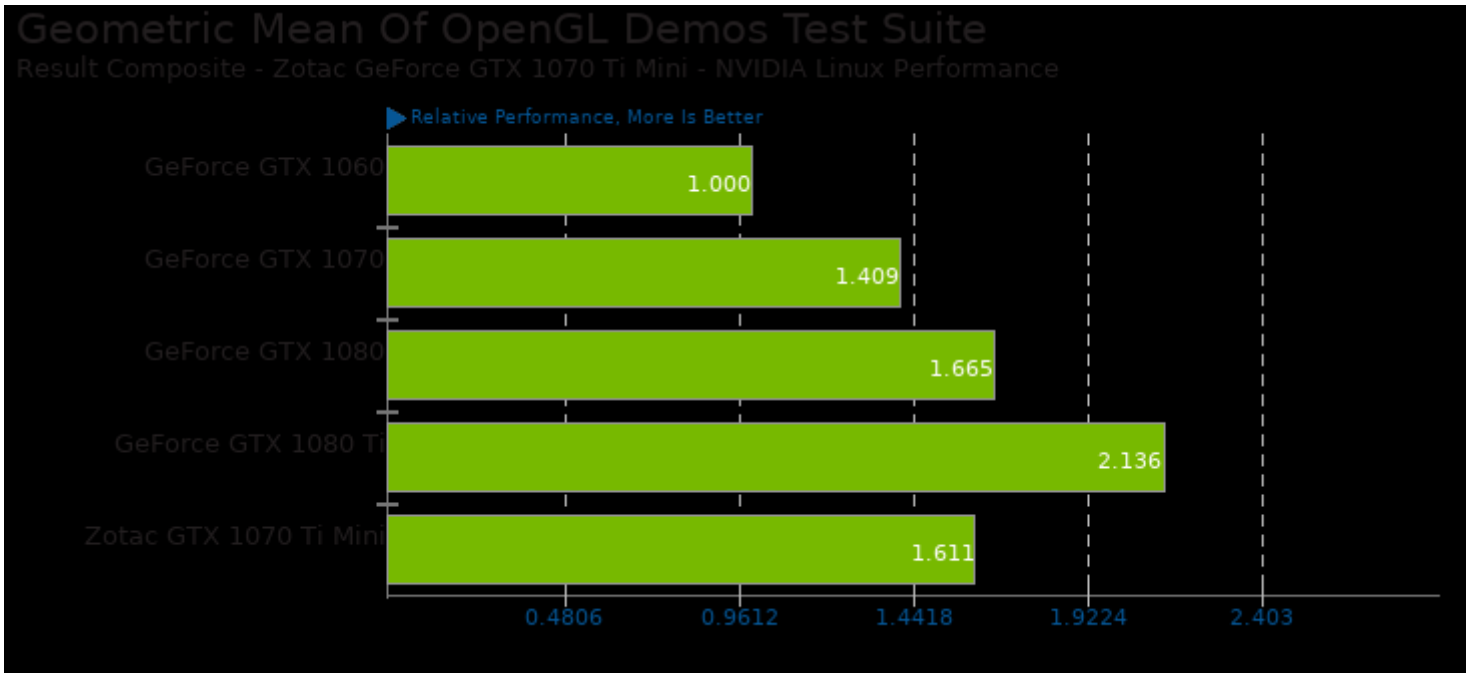

GPU Temperature Monitor
Phoronix Test Suite System Monitoring
Celsius
GeForce GTX 1060
Min: 30 / Avg: 60.44 / Max: 75
GeForce GTX 1070
Min: 41 / Avg: 65.41 / Max: 77
GeForce GTX 1080
Min: 34 / Avg: 67.86 / Max: 82
GeForce GTX 1080 Ti
Min: 38 / Avg: 70.93 / Max: 85
Zotac GTX 1070 Ti Mini
Min: 32 / Avg: 57.48 / Max: 68
16
32
48
64
80
GPU Usage Monitor
Phoronix Test Suite System Monitoring
Percent
GeForce GTX 1060
Min: 1 / Avg: 81.36 / Max: 100
GeForce GTX 1070
Min: 1 / Avg: 79.92 / Max: 100
GeForce GTX 1080
Min: 1 / Avg: 76.49 / Max: 100
GeForce GTX 1080 Ti
Min: 1 / Avg: 72.01 / Max: 100
Zotac GTX 1070 Ti Mini
Min: 1 / Avg: 78.79 / Max: 100
20
40
60
80
100


System Power Consumption Monitor
Phoronix Test Suite System Monitoring
Watts
GeForce GTX 1060
Min: 39.7 / Avg: 153.49 / Max: 222.2
GeForce GTX 1070
Min: 40 / Avg: 176.95 / Max: 258.2
GeForce GTX 1080
Min: 41.1 / Avg: 199.09 / Max: 293.4
GeForce GTX 1080 Ti
Min: 43.9 / Avg: 239.27 / Max: 367.9
Zotac GTX 1070 Ti Mini
Min: 44.9 / Avg: 211.67 / Max: 288.8
70
140
210
280
350

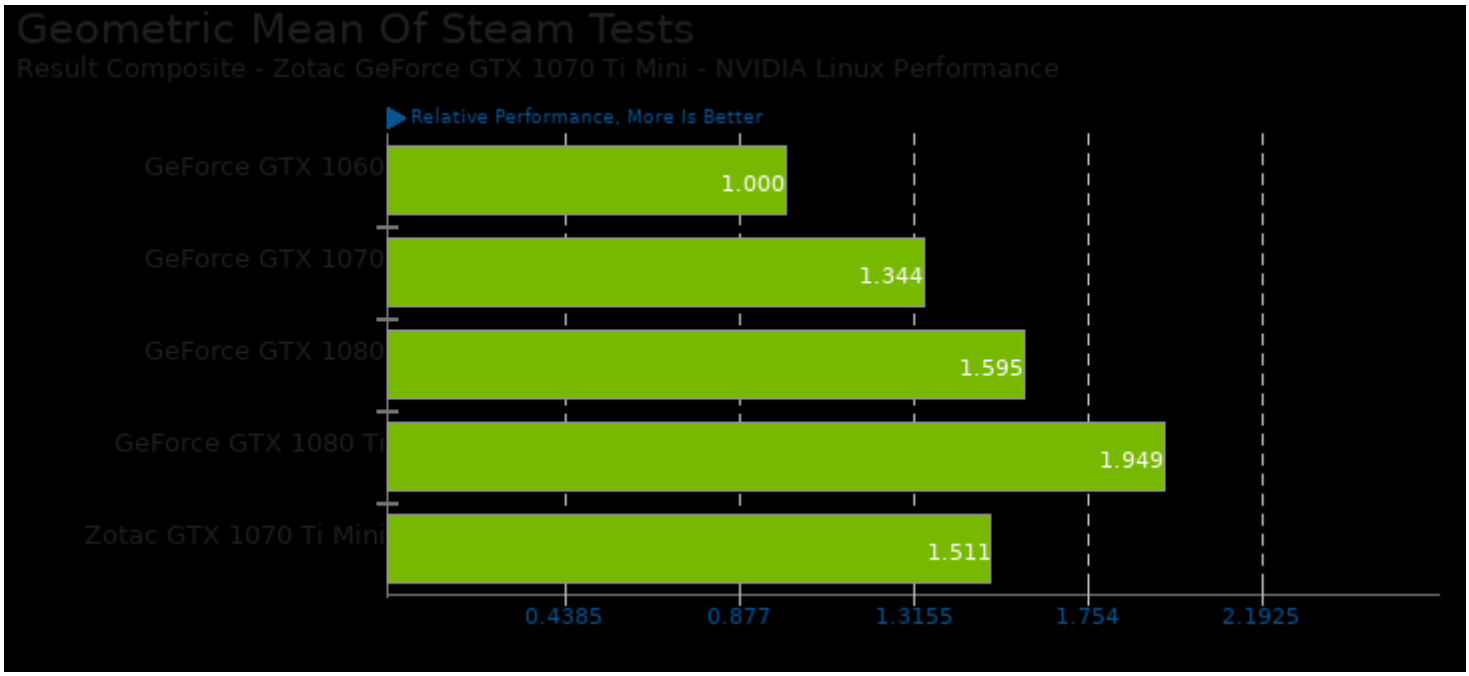
These geometric means are based upon test groupings / test suites for this result file.



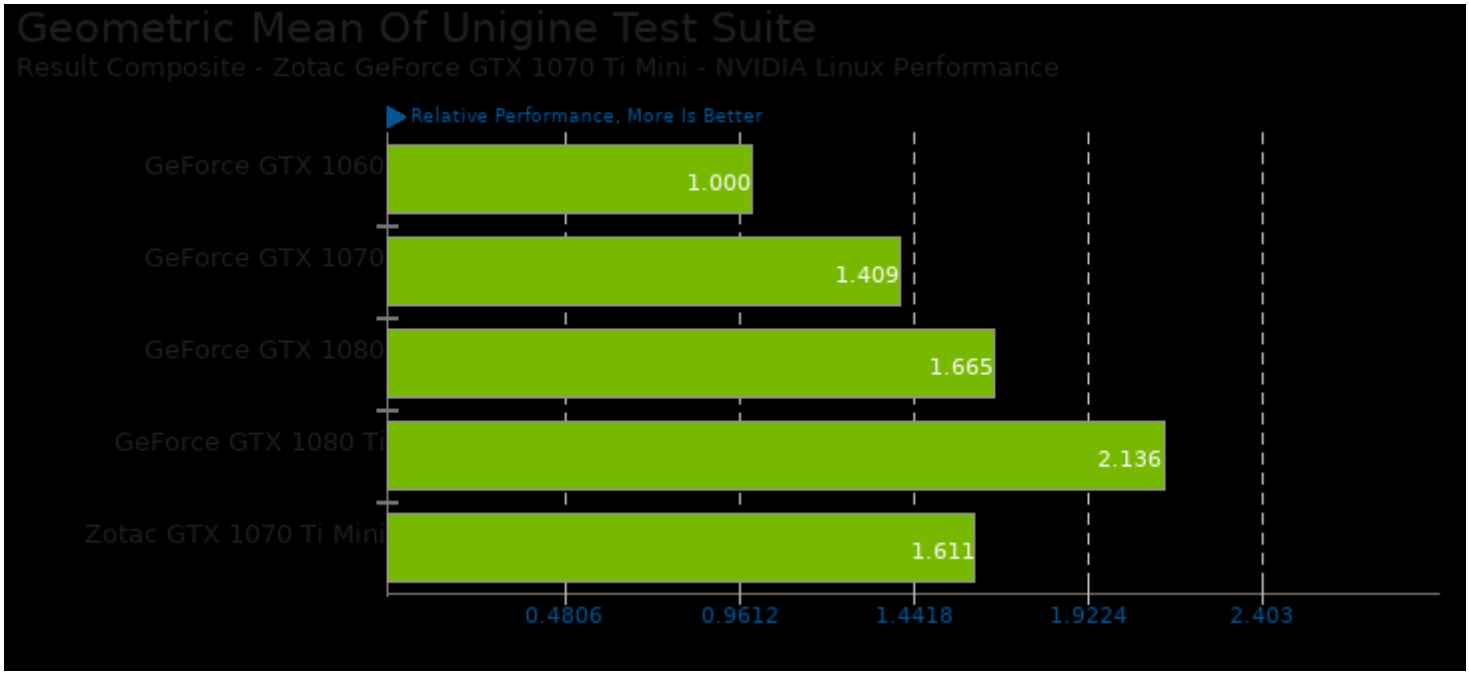
Geometric mean based upon tests: pts/xonotic, pts/tesseract, pts/paraview, pts/unigine-valley and pts/unigine-heaven



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



Geometric mean based upon tests: pts/bioshock-infinite, pts/civilization-vi, pts/csgo, pts/dota2, pts/dow3, pts/f12017, pts/metro2033-redux, pts/metroll-redux, pts/portal, pts/ss3bfe, pts/tomb-raider and pts/deus-exmd



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 11:38.