

www.phoronix-test-suite.com

Ryzen 9 5900X Freq Invariance Combo Testing

AMD Ryzen 9 5900X 12-Core testing with a ASUS ROG CROSSHAIR VIII HERO (2702 BIOS) and Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

Linux 5.11 Performance had the most wins, coming in first place for 30% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 5.10 Performance) was 1.572x the speed of the slowest (Linux 5.11 Schedutil 5).

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

Selenium (Benchmark: Kraken - Browser: Google Chrome) at 2.137x
Selenium (Benchmark: ARES-6 - Browser: Google Chrome) at 2.109x
Selenium (Benchmark: WASM imageConvolute - Browser: Google Chrome) at 2.068x
InfluxDB (Concurrent Streams: 4 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000) at 2.027x
Selenium (Benchmark: Speedometer - Browser: Google Chrome) at 1.983x
InfluxDB (Concurrent Streams: 64 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000) at 1.982x
Selenium (Benchmark: Jetstream 2 - Browser: Google Chrome) at 1.955x
x265 (Video Input: Bosphorus 1080p) at 1.935x
x264 (H.264 Video Encoding) at 1.928x

SVT-AV1 (Encoder Mode: Enc Mode 8 - Input: 1080p) at 1.865x.

Test Systems:

Linux 5.10 Schedutil

Linux 5.10 Performance

Linux 5.10 Ondemand

Linux 5.11 Schedutil

Linux 5.11 Ondemand

Linux 5.11 Performance

Linux 5.11 Schedutil RL 100

Linux 5.11 Schedutil RL 2000

Linux 5.11 Schedutil 2

Linux 5.11 Schedutil 3

Linux 5.11 Schedutil 4

Linux 5.11 Schedutil 5

Linux 5.11 Schedutil 6

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (2702 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 1TB, Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.10, Kernel: 5.10.0-phx (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
Graphics Notes: GLAMOR
Python Notes: Python 3.8.6

Ryzen 9 5900X Freq Invariance Combo Testing

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

	Linux 5.10 Schedutil	Linux 5.10 Performance	Linux 5.10 Ondemand	Linux 5.11 Schedutil	Linux 5.11 Ondemand	Linux 5.11 Performance	Linux 5.11 Schedutil RL 100	Linux 5.11 Schedutil RL 2000	Linux 5.11 Schedutil 2	Linux 5.11 Schedutil 3	Linux 5.11 Schedutil 4	Linux 5.11 Schedutil 5	Linux 5.11 Schedutil 6
Timed Linux Kernel Compilation - Time To Compile (sec)	53.124	52.284	52.578	52.900	53.394	53.083	52.563	52.457	52.348	52.722	**52.190**	**54.797**	52.257
Normalized	98.24%	99.82%	99.26%	98.66%	97.75%	98.32%	99.29%	99.49%	99.7%	98.99%	100%	95.24%	99.87%
Standard Deviation	1.3%	0.2%	0.6%	1%	1.4%	1.2%	0.7%	0.4%	0.9%	0.7%	0.7%	1%	1.4%
Timed LLVM Compilation - Time To Compile (sec)	412.919	421.125	414.012	415.807	**407.188**	**424.250**	412.702	416.897	411.963	412.136	421.428	414.754	412.286
Normalized	98.61%	96.69%	98.35%	97.93%	100%	95.98%	98.66%	97.67%	98.84%	98.8%	96.62%	98.18%	98.76%
Standard Deviation	1%	0.7%	2.4%	1.7%	0.8%	0.5%	1.6%	1.7%	0.9%	1.7%	0.1%	1.7%	2.1%
LeelaChessZero - BLAS (Nodes/s)	573	581	578	580	570	**583**	579	579	575	570	580	**517**	569
Normalized	98.28%	99.66%	99.14%	99.49%	97.77%	100%	99.31%	99.31%	98.63%	97.77%	99.49%	88.68%	97.6%
Standard Deviation	2%	1.8%	2.5%	2.5%	1.5%	1.5%	1.6%	2.4%	2.2%	1.6%	2.3%	1.7%	0.3%
LeelaChessZero - BLAS (Nodes/s/Watt)	2.65	**2.69**		2.67	2.61	2.66	2.67	2.68	2.68	2.61	2.67	**2.51**	2.64
Normalized	98.51%	100%		99.26%	97.03%	98.88%	99.26%	99.63%	99.63%	97.03%	99.26%	93.31%	98.14%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	**10.977**	10.953	9.281	10.949	9.742	10.849	10.976	10.774	10.910	10.879	10.765	**8.713**	10.898
Normalized	100%	99.78%	84.55%	99.74%	88.75%	98.83%	99.99%	98.15%	99.39%	99.11%	98.07%	79.38%	99.28%
Standard Deviation	0.5%	1.1%	3%	1%	3.3%	1.6%	0.6%	3.7%	2.4%	2.1%	4.3%	1.5%	2.1%

Ryzen 9 5900X Freq Invariance Combo Testing

LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day/Watt)	0.08	0.09		0.09	0.08	0.11	0.09	0.07	0.10	**0.13**	0.09	0.08	**0.06**
Normalized	61.54%	69.23%		69.23%	61.54%	84.62%	69.23%	53.85%	76.92%	100%	69.23%	61.54%	46.15%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**1.2908 0**	1.2889 9	1.2893 9	1.2857 3	1.2886 6	1.2860 6	1.2874 7	1.2822 4	1.2828 8	1.2805 1	1.2851 0	1.2868 2	**1.2800 1**
Normalized	99.16%	99.3%	99.27%	99.56%	99.33%	99.53%	99.42%	99.83%	99.78%	99.96%	99.6%	99.47%	100%
Standard Deviation	0.7%	0.4%	0.7%	0.4%	0.6%	0.4%	0.4%	0.2%	0.3%	0.1%	0.1%	0.3%	0.5%
GROMACS - Water Benchmark (Ns/Day)	1.273	1.275	1.282	1.283	**1.272**	1.284	1.279	1.285	1.281	1.281	**1.287**	1.275	1.283
Normalized	98.91%	99.07%	99.61%	99.69%	98.83%	99.77%	99.38%	99.84%	99.53%	99.53%	100%	99.07%	99.69%
Standard Deviation	0.1%	0.1%	0.3%	0.2%	0.2%	0%	0.2%	0.1%	0.7%	0.6%	0.6%	0.3%	0.4%
GROMACS - Water Benchmark (Ns/Day/Watt)	0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Intel Open Image Denoise - Memorial (Images / Sec)	11.78	11.78	11.65	9.34	11.60	11.80	9.02	8.85	**6.45**	6.47	**11.83**	6.51	6.49
Normalized	99.58%	99.58%	98.48%	78.95%	98.06%	99.75%	76.25%	74.81%	54.52%	54.69%	100%	55.03%	54.86%
Standard Deviation	0.1%	0%	1.2%	11.6%	2%	0.2%	2%	17.1%	0.5%	0.3%	0.1%	0.4%	0.4%
Intel Open Image Denoise - Memorial (Images / Sec/Watt)	0.06	0.06		0.05	0.06	**0.07**	0.05	0.05	**0.04**	**0.04**	0.06	**0.04**	**0.04**
Normalized	85.71%	85.71%		71.43%	85.71%	100%	71.43%	71.43%	57.14%	57.14%	85.71%	57.14%	57.14%
OpenVKL - vklBenchmark (Items / Sec)	215.00	239.69	234.81	216.86	234.08	**239.75**	217.72	217.72	236.47	197.56	228.89	**131.89**	210.15
Normalized	89.68%	99.97%	97.94%	90.45%	97.64%	100%	90.81%	90.81%	98.63%	82.4%	95.47%	55.01%	87.65%
Standard Deviation	0.4%	0.2%	0.3%	0.4%	0.1%	0.2%	0.9%	0.2%	1.6%	2.3%	1.1%	0.4%	2.3%
OpenVKL - vklBenchmark (Items / Sec/Watt)	1.55	1.72		1.55	1.65	**1.74**	1.54	1.56	1.70	1.44	1.65	**0.97**	1.54
Normalized	89.08%	98.85%		89.08%	94.83%	100%	88.51%	89.66%	97.7%	82.76%	94.83%	55.75%	88.51%
OSPray - M.R - SciVis (FPS)	**17.86**	**17.86**	**17.86**	**17.86**	**17.86**	**17.86**	**17.86**	**17.86**	16.90	10.79	**17.86**	**10.42**	12.30
Normalized	100%	100%	100%	100%	100%	100%	100%	100%	94.62%	60.41%	100%	58.34%	68.87%
Standard Deviation	0%	0%	0%	0%	0%	0%	0%	0%	2.2%	1.7%	0%	1%	1.4%

Ryzen 9 5900X Freq Invariance Combo Testing

OSPray - M.R - SciVis (FPS/Watt)	**0.10**	0.09		**0.10**	0.09	0.09	**0.10**	0.09	0.09	**0.06**	**0.10**	**0.06**	0.07
Normalized	100%	90%		100%	90%	90%	100%	90%	90%	60%	100%	60%	70%
OSPray - XFrog Forest - SciVis (FPS)	4.52	4.50	4.50	4.52	4.52	4.51	4.52	4.53	4.54	**4.55**	4.51	**2.63**	4.53
Normalized	99.34%	98.9%	98.9%	99.34%	99.34%	99.12%	99.34%	99.56%	99.78%	100%	99.12%	57.8%	99.56%
Standard Deviation	0.5%	0.5%	0.5%	0.5%	0.7%	0.3%	0.3%	0.3%	0.5%	0.5%	0.5%	1.1%	0.7%
OSPray - XFrog Forest - SciVis (FPS/Watt)	**0.02**	**0.02**		**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.01**	**0.02**
Normalized	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	50%	100%
OSPray - NASA Streamlines - SciVis (FPS)	**33.33**	**33.33**	**33.33**	33.18	32.97	**33.33**	32.97	33.15	27.35	19.33	**33.33**	**19.17**	19.42
Normalized	100%	100%	100%	99.55%	98.92%	100%	98.92%	99.46%	82.06%	58%	100%	57.52%	58.27%
Standard Deviation	0%	0%	0%	1.2%	1.7%	0%	1.7%	1.3%	6.7%	1%	0%	0.8%	2%
OSPray - NASA Streamlines - SciVis (FPS/Watt)	0.21	0.21		**0.22**	0.21	0.20	0.21	**0.22**	0.17	0.12	0.21	0.12	**0.11**
Normalized	95.45%	95.45%		100%	95.45%	90.91%	95.45%	100%	77.27%	54.55%	95.45%	54.55%	50%
OSPray - San Miguel - SciVis (FPS)	**24.39**	**24.39**	24.32	**24.39**	**24.39**	**24.39**	**24.39**	**24.39**	19.53	13.83	**24.39**	**13.64**	14.29
Normalized	100%	100%	99.71%	100%	100%	100%	100%	100%	80.07%	56.7%	100%	55.92%	58.59%
Standard Deviation	0%	0%	0.8%	0%	0%	0%	0%	0%	6.5%	2.1%	0%	0.8%	2%
OSPray - San Miguel - SciVis (FPS/Watt)	0.17	0.17		0.17	0.17	**0.18**	0.17	0.17	0.13	**0.09**	**0.18**	0.10	**0.09**
Normalized	94.44%	94.44%		94.44%	94.44%	100%	94.44%	94.44%	72.22%	50%	100%	55.56%	50%
x264 - H.2.V.E (FPS)	130.87	176.42	160.01	111.34	159.53	**177.03**	112.65	112.83	102.19	92.86	170.84	**91.83**	94.52
Normalized	73.93%	99.66%	90.39%	62.89%	90.11%	100%	63.63%	63.73%	57.72%	52.45%	96.5%	51.87%	53.39%
Standard Deviation	3.7%	1.9%	1.2%	1.4%	1.9%	1.5%	1.6%	1.5%	1%	1%	2%	0.7%	1.3%
x264 - H.2.V.E (FPS/Watt)	0.89	**1.26**		**0.69**	1.11	1.20	0.82	0.78	0.72	0.78	1.12	0.77	0.76
Normalized	70.63%	100%		54.76%	88.1%	95.24%	65.08%	61.9%	57.14%	61.9%	88.89%	61.11%	60.32%
x265 - Bosphorus 1080p (FPS)	48.25	**84.98**	72.37	**43.91**	72.03	84.48	44.00	44.41	44.56	44.29	70.88	44.20	44.46
Normalized	56.78%	100%	85.16%	51.67%	84.76%	99.41%	51.78%	52.26%	52.44%	52.12%	83.41%	52.01%	52.32%
Standard Deviation	0.8%	0.4%	0.7%	0.4%	0.7%	0.2%	0.4%	0.4%	0.2%	0.4%	1%	0.4%	0.4%
x265 - Bosphorus 1080p (FPS/Watt)	**0.32**	**0.52**		0.41	0.42	0.50	0.39	0.41	0.41	0.41	0.48	0.41	0.42
Normalized	61.54%	100%		78.85%	80.77%	96.15%	75%	78.85%	78.85%	78.85%	92.31%	78.85%	80.77%

Ryzen 9 5900X Freq Invariance Combo Testing

x265 - Bosphorus 4K (FPS)	23.40	24.12	23.90	19.94	24.03	24.30	20.23	19.98	15.40	14.60	**24.53**	**14.42**	14.79
Normalized	95.39%	98.33%	97.43%	81.29%	97.96%	99.06%	82.47%	81.45%	62.78%	59.52%	100%	58.79%	60.29%
Standard Deviation	0.7%	2.3%	0.7%	3.1%	0.3%	0.3%	3.2%	0.9%	1.1%	0.2%	0.3%	2%	0.4%
x265 - Bosphorus 4K (FPS/Watt)	0.12	0.12		0.11	0.12	0.12	0.11	0.11	**0.10**	0.12	**0.13**	0.12	0.11
Normalized	92.31%	92.31%		84.62%	92.31%	92.31%	84.62%	84.62%	76.92%	92.31%	100%	92.31%	84.62%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)	43.244	45.814	43.668	42.471	43.819	**45.917**	42.151	42.001	34.196	27.699	45.452	**24.625**	28.871
Normalized	94.18%	99.78%	95.1%	92.5%	95.43%	100%	91.8%	91.47%	74.47%	60.32%	98.99%	53.63%	62.88%
Standard Deviation	0.7%	1%	1.1%	1.6%	0.8%	0.8%	1.1%	0.8%	2.4%	0.9%	0.6%	0.9%	1%
SVT-AV1 - Enc Mode 8 - 1080p (FPS/Watt)	0.26	**0.30**		0.28	**0.30**	0.29	0.26	0.26	0.22	**0.20**	0.28	0.22	0.21
Normalized	86.67%	100%		93.33%	100%	96.67%	86.67%	86.67%	73.33%	66.67%	93.33%	73.33%	70%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	5.380	5.466	5.336	5.424	5.415	5.465	5.422	5.432	5.254	4.436	**5.522**	**3.019**	4.695
Normalized	97.43%	98.99%	96.63%	98.23%	98.06%	98.97%	98.19%	98.37%	95.15%	80.33%	100%	54.67%	85.02%
Standard Deviation	0.3%	0.6%	0.4%	0.8%	0.8%	0.7%	0.5%	0.7%	0.7%	1.4%	0.7%	0.8%	0.9%
SVT-AV1 - Enc Mode 4 - 1080p (FPS/Watt)	**0.03**	**0.03**		**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.02**	**0.03**	**0.02**	**0.03**
Normalized	100%	100%		100%	100%	100%	100%	100%	100%	66.67%	100%	66.67%	100%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000 (val/sec)	1073957	**2071445**	180015 6	104146 9	180070 8	206689 3	103625 3	103699 8	103866 8	**1021802**	120098 1	103485 2	103810 1
Normalized	51.85%	100%	86.9%	50.28%	86.93%	99.78%	50.03%	50.06%	50.14%	49.33%	57.98%	49.96%	50.11%
Standard Deviation	1%	0.1%	0.6%	0.2%	0.4%	0.2%	0.2%	0.3%	0.1%	2%	0.4%	0.2%	0.2%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000 (val/sec/Watt)	**8970**	12732		9556	11398	**12928**	9683	9515	9694	9642	9031	9696	9742
Normalized	69.39%	98.48%		73.91%	88.16%	100%	74.89%	73.6%	74.98%	74.58%	69.85%	75%	75.35%
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	1682982	**2114042**	201577 1	159426 2	203086 2	211188 3	162131 9	160929 3	150575 6	124915 5	191466 5	**1066620**	132656 7
Normalized	79.61%	100%	95.35%	75.41%	96.07%	99.9%	76.69%	76.12%	71.23%	59.09%	90.57%	50.45%	62.75%
Standard Deviation	0.4%	0.4%	0.5%	0.5%	0.2%	0%	0.6%	0.2%	0.9%	1.7%	0.2%	0.4%	1.7%

Ryzen 9 5900X Freq Invariance Combo Testing

InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec/Watt)	11234	**13226**		11053	12784	12884	11100	11234	10981	10511	12094	**10065**	10634
Normalized	84.94%	100%		83.57%	96.65%	97.41%	83.92%	84.94%	83.03%	79.47%	91.44%	76.1%	80.4%
Xonotic - 3840 x 2160 - High (FPS)	473.38	**476.10**	466.44	315.70	468.64	475.51	326.60	306.48	**265.44**	274.72	473.87	274.49	269.77
	12869	**98347**	88877	90557	60148	49422	07954	02138	**42889**	52467	80656	30070	18410
Normalized	99.43%	100%	97.97%	66.31%	98.43%	99.88%	68.6%	64.37%	55.75%	57.7%	99.53%	57.65%	56.66%
Standard Deviation	0.4%	0.7%	0.4%	17.8%	0.6%	0.4%	15.3%	24.7%	1.9%	2%	0.6%	1.5%	1.2%
Xonotic - 3840 x 2160 - High (FPS/Watt)	2.13	2.13		**1.79**	2.20	2.20	1.86	1.83	1.80	1.82	**2.21**	1.81	1.80
Normalized	96.38%	96.38%		81%	99.55%	99.55%	84.16%	82.81%	81.45%	82.35%	100%	81.9%	81.45%
Xonotic - 3840 x 2160 - Ultra (FPS)	415.55	416.70	409.82	277.34	408.74	**417.59**	293.01	258.14	265.06	241.86	414.10	**241.31**	246.03
	54166	35658	56912	86082	34275	**28567**	52251	53291	85939	45509	81632	**60079**	16551
Normalized	99.51%	99.79%	98.14%	66.42%	97.88%	100%	70.17%	61.82%	63.48%	57.92%	99.17%	57.79%	58.92%
Standard Deviation	0.5%	0.6%	0.9%	11.5%	0.3%	0.5%	12.8%	8.9%	10.9%	1.3%	0.2%	2.2%	0.2%
Xonotic - 3840 x 2160 - Ultra (FPS/Watt)	**1.79**	**1.79**		1.52	1.76	1.78	1.61	1.49	1.51	**1.42**	1.65	1.54	1.52
Normalized	100%	100%		84.92%	98.32%	99.44%	89.94%	83.24%	84.36%	79.33%	92.18%	86.03%	84.92%
Xonotic - 3840 x 2160 - Ultimate (FPS)	331.58	**334.23**	327.38	236.37	327.24	333.98	260.85	237.25	228.44	**215.28**	332.32	216.40	217.46
	94325	**37984**	31997	53535	31977	91845	47882	39123	08463	**08501**	97172	60556	55758
Normalized	99.21%	100%	97.95%	70.72%	97.91%	99.93%	78.05%	70.98%	68.35%	64.41%	99.43%	64.75%	65.06%
Standard Deviation	0.2%	0.2%	0.1%	6.5%	0.1%	0.5%	9.5%	5.2%	6.3%	2.5%	0.2%	6.2%	0.2%
Xonotic - 3840 x 2160 - Ultimate	**1.39**	1.32		1.23	1.38	1.36	1.23	1.24	**1.19**	1.23	1.37	1.23	1.24
Normalized	100%	94.96%		88.49%	99.28%	97.84%	88.49%	89.21%	85.61%	88.49%	98.56%	88.49%	89.21%
Basemark GPU - OpenGL - 2560 x 1440 - High (FPS)	93.67	92.91	93.68	93.58	93.47	**94.20**	92.61	92.40	92.48	**92.09**	93.63	92.42	92.84
Normalized	99.44%	98.63%	99.45%	99.34%	99.23%	100%	98.31%	98.09%	98.17%	97.76%	99.39%	98.11%	98.56%
Standard Deviation	1.4%	0.4%	0.4%	1.1%	1.2%	0.6%	0.6%	1.1%	0.7%	0.3%	1.9%	0.8%	1.3%
Basemark GPU - OpenGL - 2560 x 1440 - High (FPS/Watt)	0.43	**0.42**		0.45	0.43	**0.42**	0.44	0.43	0.45	**0.46**	0.43	0.44	0.44
Normalized	93.48%	91.3%		97.83%	93.48%	91.3%	95.65%	93.48%	97.83%	100%	93.48%	95.65%	95.65%

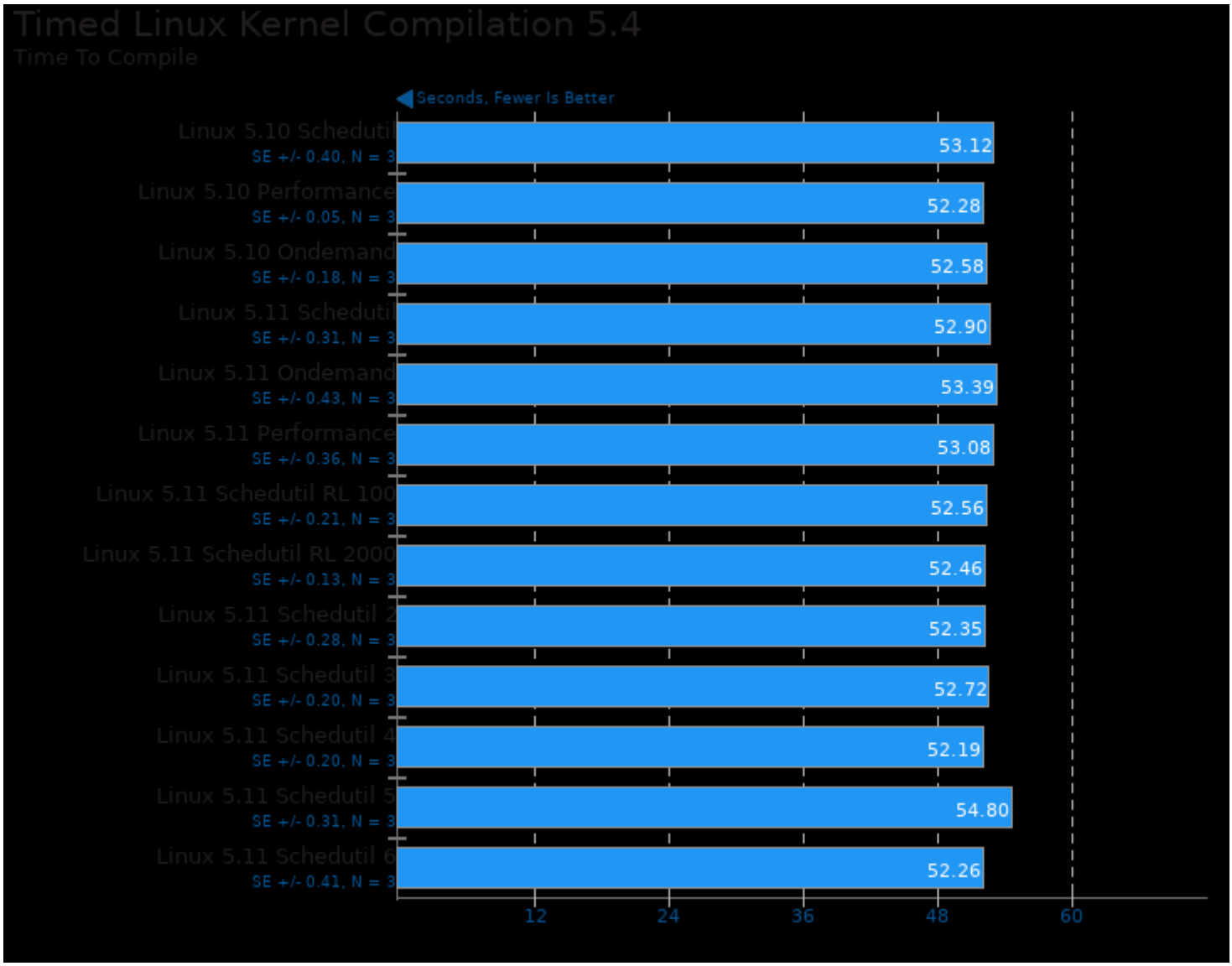
Ryzen 9 5900X Freq Invariance Combo Testing

ET: Legacy - Renderer2 - 3840 x 2160 (FPS)	279.6	**286.8**	279.2	183.2	278.8	**286.8**	180.4	163.4	164.0	151.7	280.4	**151.1**	153.9
Normalized	97.49%	100%	97.35%	63.88%	97.21%	100%	62.9%	56.97%	57.18%	52.89%	97.77%	52.68%	53.66%
Standard Deviation	0.6%	0.3%	0.2%	13.3%	0.3%	0.7%	13.3%	0.8%	15.2%	2.1%	0.7%	2.1%	12.3%
ET: Legacy - Renderer2 - 3840 x 2160 (FPS/Watt)	1.58	**1.66**		1.21	1.50	1.64	1.20	1.18	1.15	1.15	1.58	**1.09**	1.12
Normalized	95.18%	100%		72.89%	90.36%	98.8%	72.29%	71.08%	69.28%	69.28%	95.18%	65.66%	67.47%
Tesseract - 2560 x 1440	398.97	**533.37**	474.53	346.94	459.08	532.54	348.85	350.89	373.88	337.41	515.61	352.76	**335.44**
	39	**48**	46	96	44	77	17	57	45	37	91	81	**29**
Normalized	74.8%	100%	88.97%	65.05%	86.07%	99.84%	65.4%	65.79%	70.1%	63.26%	96.67%	66.14%	62.89%
Standard Deviation	2.4%	2.4%	2.5%	0.5%	0.8%	1.5%	1.1%	5%	8.4%	4.2%	0.3%	5.3%	1.1%
Tesseract - 2560 x 1440 (FPS/Watt)	2.24	2.21		2.19	2.21	2.22	2.13	2.20	**2.25**	**2.10**	2.21	2.19	2.15
Normalized	99.56%	98.22%		97.33%	98.22%	98.67%	94.67%	97.78%	100%	93.33%	98.22%	97.33%	95.56%
Tesseract - 3840 x 2160	302.99	350.05	326.83	301.71	326.40	**350.22**	304.16	301.12	304.40	302.37	330.64	310.85	**300.95**
	45	61	65	39	87	**57**	21	76	69	31	40	51	**26**
Normalized	86.51%	99.95%	93.32%	86.15%	93.2%	100%	86.85%	85.98%	86.92%	86.34%	94.41%	88.76%	85.93%
Standard Deviation	1%	0.8%	0.9%	1.1%	2%	0.8%	1.7%	1.3%	2.5%	0%	1.5%	4.5%	1.2%
Tesseract - 3840 x 2160 (FPS/Watt)	1.35	1.34		**1.41**	1.38	1.34	1.37	**1.32**	1.34	**1.41**	1.36	1.34	1.39
Normalized	95.74%	95.04%		100%	97.87%	95.04%	97.16%	93.62%	95.04%	100%	96.45%	95.04%	98.58%
Selenium - ARES-6 - Google Chrome (ms)	18.06	**13.69**	14.42	19.54	14.46	13.70	19.99	19.35	23.38	28.24	15.97	**28.87**	26.26
Normalized	75.8%	100%	94.94%	70.06%	94.67%	99.93%	68.48%	70.75%	58.55%	48.48%	85.72%	47.42%	52.13%
Standard Deviation	0.5%	1.3%	0.1%	3.3%	1.1%	0.4%	1.2%	3.6%	2.3%	2%	2%	0.6%	2.3%
Selenium - Speedometer - Google Chrome (Runs/min)	170	186.2	177.5	162	176.9	**186.7**	158	163	139	104.6	175	**94.15**	110
Normalized	91.06%	99.73%	95.07%	86.77%	94.75%	100%	84.63%	87.31%	74.45%	56.03%	93.73%	50.43%	58.92%
Standard Deviation	1.2%	0.6%	0.3%	1.6%	1%	0.9%	1.3%	1.5%	3.6%	4%	1.2%	2.5%	3.4%
Selenium - Speedometer - Google Chrome (Runs/min/Watt	1.44	1.53		1.39	1.52	**1.56**	1.38	1.45	1.27	1.04	1.47	**0.96**	1.08
Normalized	92.31%	98.08%		89.1%	97.44%	100%	88.46%	92.95%	81.41%	66.67%	94.23%	61.54%	69.23%

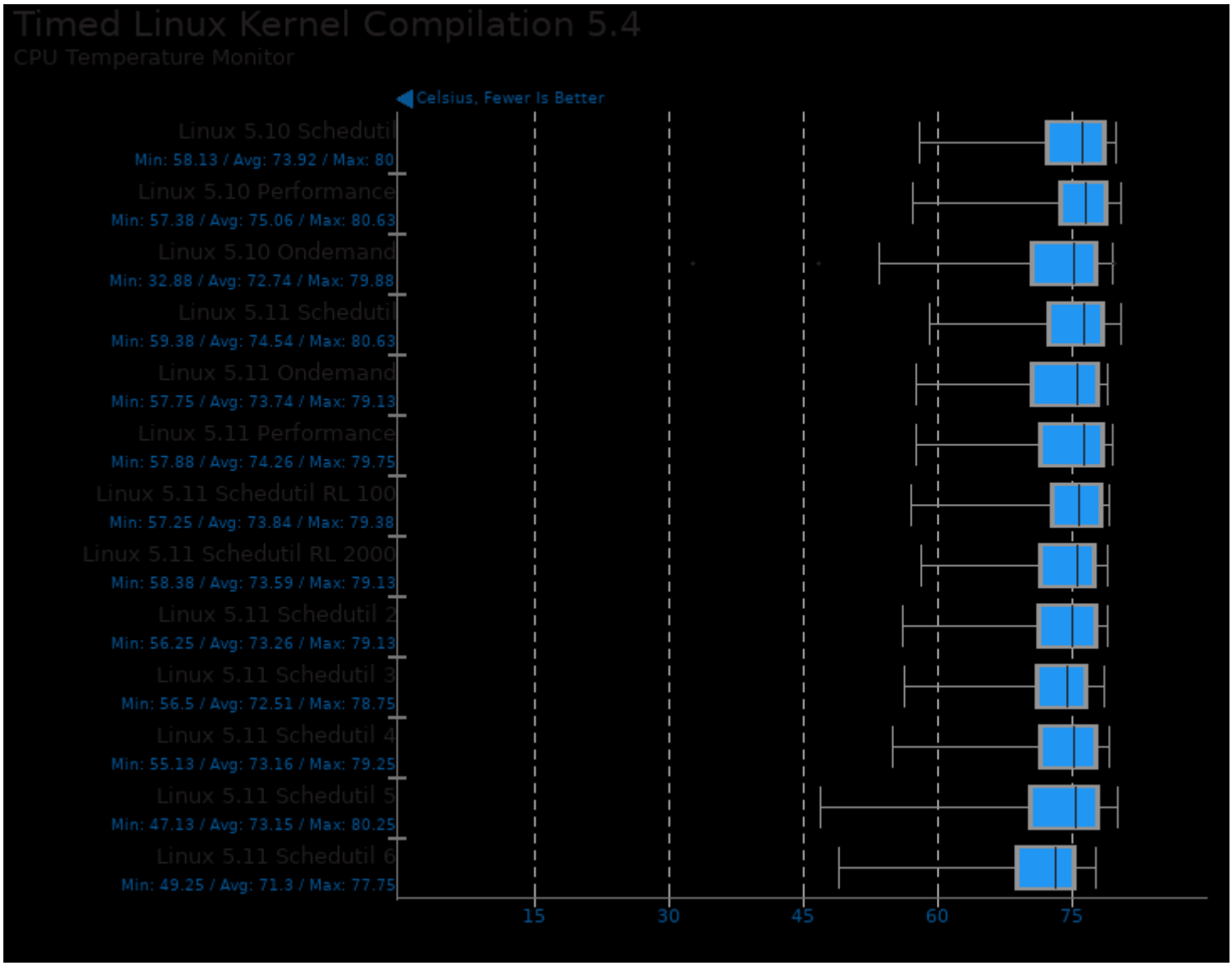
Ryzen 9 5900X Freq Invariance Combo Testing

Selenium - Jetstream 2 - Google Chrome (Score)	169.882	**209.299**	190.114	156.574	189.093	208.295	155.877	159.180	136.147	119.978	180.160	**107.040**	127.310
Normalized	81.17%	100%	90.83%	74.81%	90.35%	99.52%	74.48%	76.05%	65.05%	57.32%	86.08%	51.14%	60.83%
Standard Deviation	0.6%	0.2%	0.5%	0.5%	0.2%	0.4%	2%	1.9%	1%	1.6%	0.6%	0.8%	0.5%
Selenium - Jetstream 2 - Google Chrome (Score/Watt)	1.45	1.72		1.40	1.58	**1.73**	1.36	1.39	1.24	1.18	1.53	**1.11**	1.23
Normalized	83.82%	99.42%		80.92%	91.33%	100%	78.61%	80.35%	71.68%	68.21%	88.44%	64.16%	71.1%
Selenium - PSPDFKit WASM - Google Chrome (Score)	2980	2747	2808	3072	2812	**2735**	3078	3065	3138	3480	2937		**3571**
Normalized	91.78%	99.56%	97.4%	89.03%	97.26%	100%	88.86%	89.23%	87.16%	78.59%	93.12%		76.59%
Standard Deviation	1.6%	0.1%	1.2%	0.6%	0.5%	0.6%	1.5%	0.5%	2.2%	2.2%	1.2%		1.3%
Selenium - W.c - Google Chrome (ms)	258.3294	256.5661	254.0616	254.603	253.0804	258.1206	258.3735	252.2506	257.1751	258.008	**258.6739**	256.1963	**251.0934**
Normalized	97.2%	97.87%	98.83%	98.62%	99.21%	97.28%	97.18%	99.54%	97.64%	97.32%	97.07%	98.01%	100%
Standard Deviation	0.4%	1%	1.5%	1.5%	1.6%	0.5%	1.6%	1.9%	0.7%	0.5%	0.6%	1.4%	1.8%
Selenium - W.i - Google Chrome (ms)	24.5654	**24.5014**	24.5857	24.5390	24.6838	24.9571	24.6358	24.5608	25.0798	25.3745	25.0734	**50.6607**	25.3747
Normalized	99.74%	100%	99.66%	99.85%	99.26%	98.17%	99.45%	99.76%	97.69%	96.56%	97.72%	48.36%	96.56%
Standard Deviation	2.5%	2.2%	2.5%	2.4%	2.2%	2.5%	1.9%	2.2%	3.4%	7.6%	2.5%	10%	8.1%
Selenium - Kraken - Google Chrome	583.3	546.1	584.6	770.3	585.9	**537.1**	780.0	789.2	945.3	1082	571.4	**1148**	1053
Normalized	92.08%	98.35%	91.87%	69.73%	91.67%	100%	68.86%	68.06%	56.82%	49.66%	94%	46.8%	50.99%
Standard Deviation	2%	0.1%	1.5%	8.4%	2.3%	1.4%	5%	5%	3.3%	2.4%	0.8%	0.1%	0.9%
Meta Performance Per Watts - P.P.W (Performance/	140.5141	156.7848		126.8042	149.8010	**156.9081**	127.5066	125.6148	117.1198	104.7769	149.3036	**96.1573**	107.1914
Normalized	89.55%	99.92%		80.81%	95.47%	100%	81.26%	80.06%	74.64%	66.78%	95.15%	61.28%	68.31%

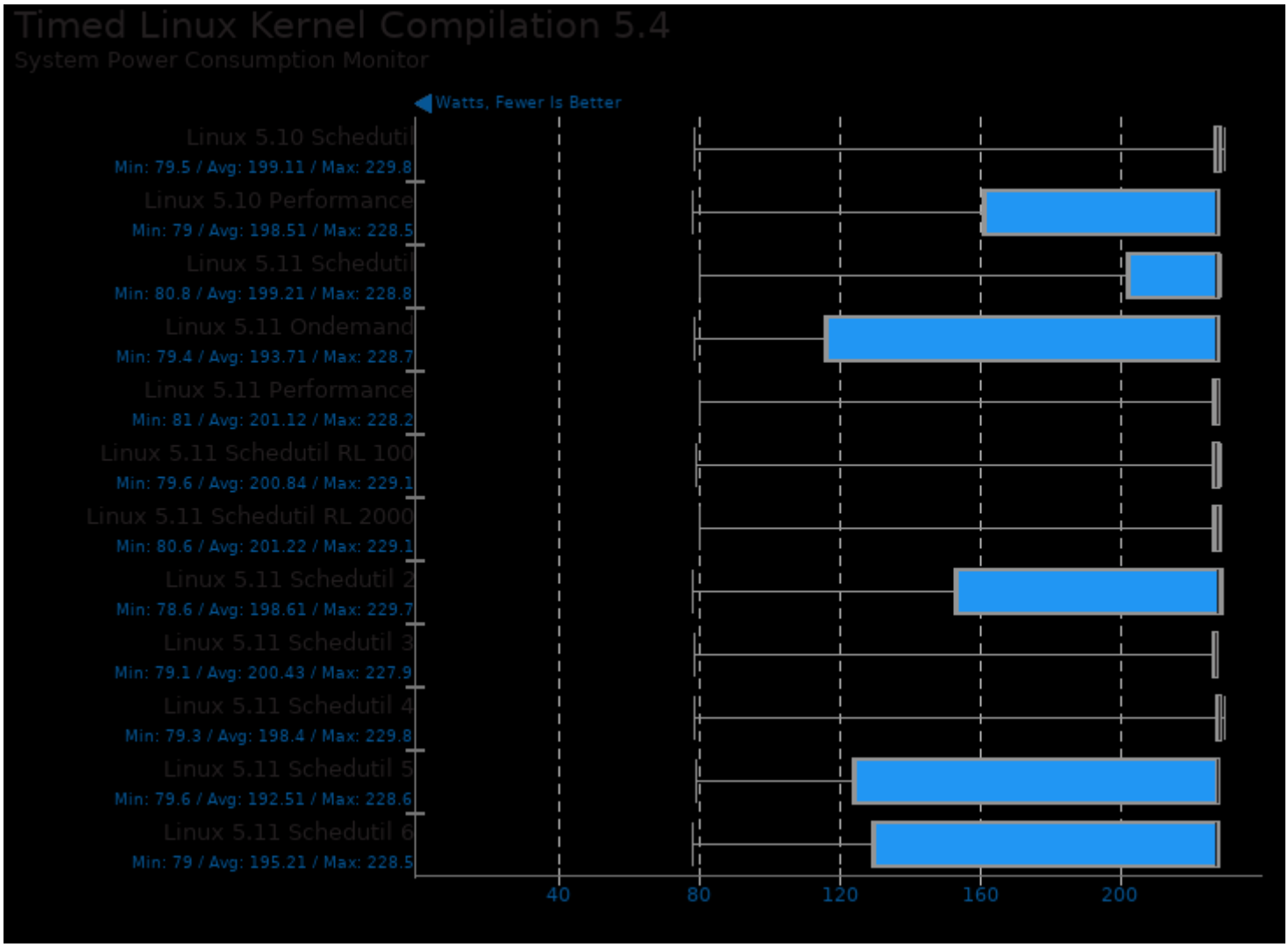
Ryzen 9 5900X Freq Invariance Combo Testing

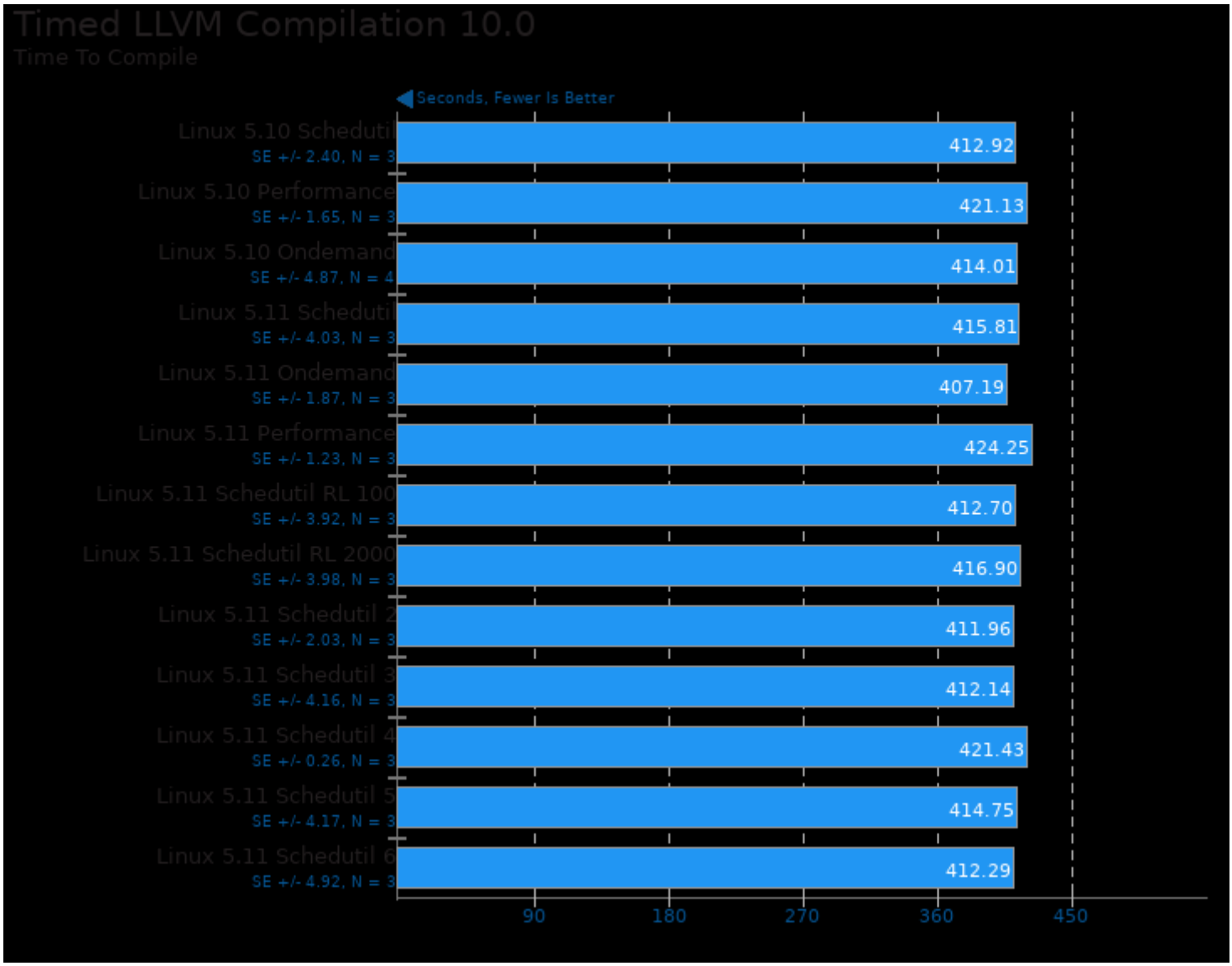


Ryzen 9 5900X Freq Invariance Combo Testing

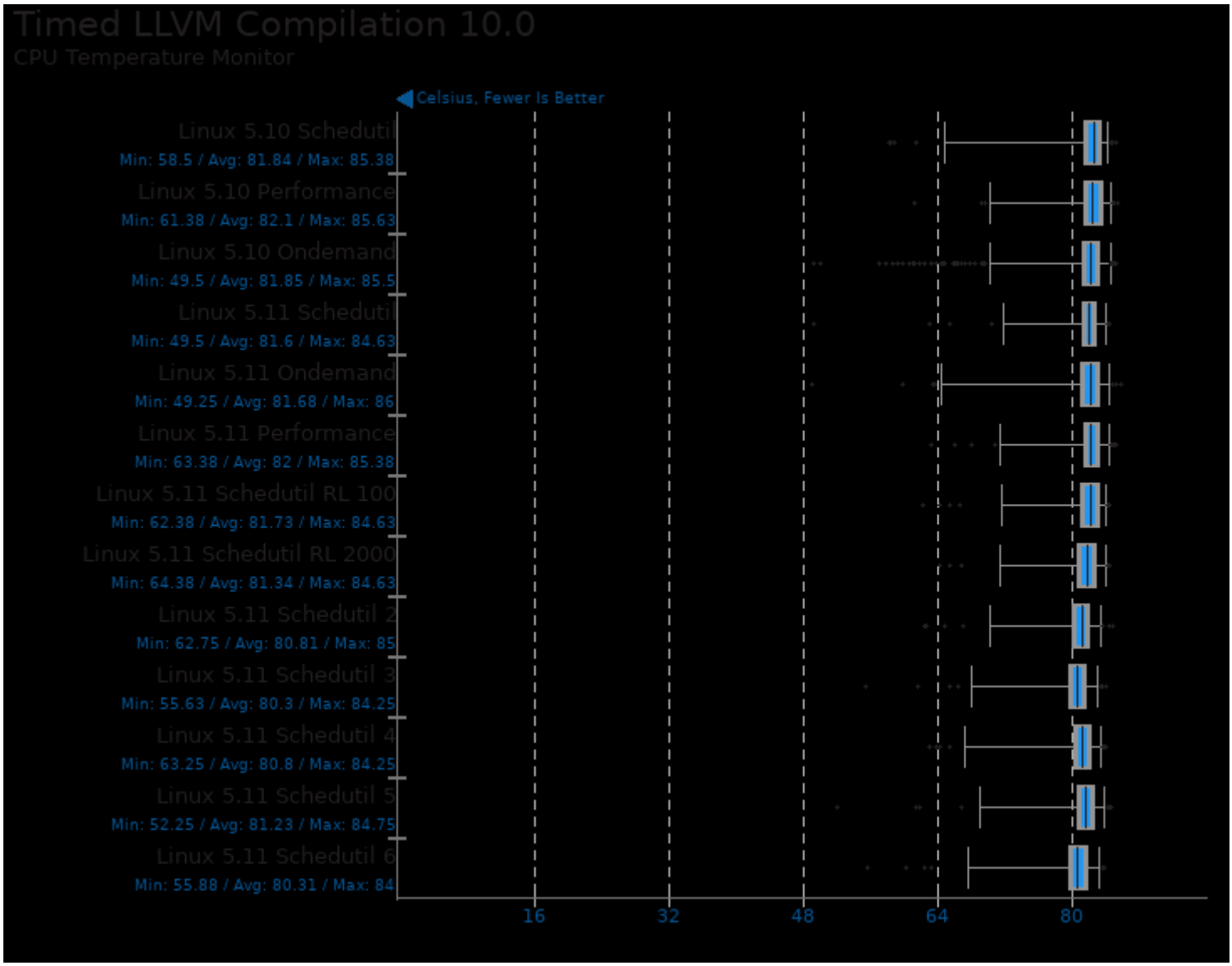


Ryzen 9 5900X Freq Invariance Combo Testing

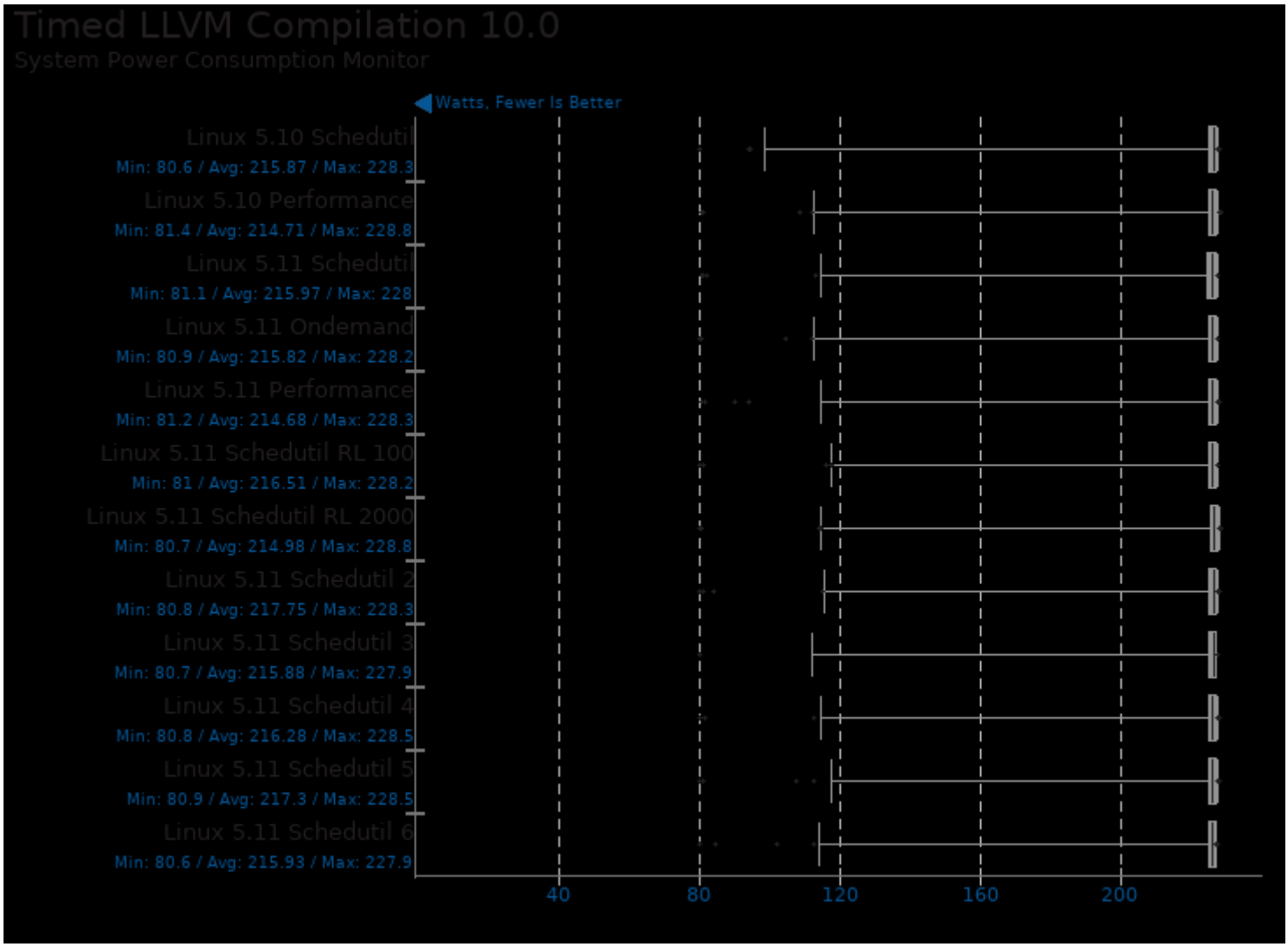



Timed LLVM Compilation 10.0
Time To Compile
Seconds, Fewer Is Better
Linux 5.10 Schedutil
SE +/- 2.40, N = 3
412.92
Linux 5.10 Performance
SE +/- 1.65, N = 3
421.13
Linux 5.10 Ondemand
SE +/- 4.87, N = 4
414.01
Linux 5.11 Schedutil
SE +/- 4.03, N = 3
415.81
Linux 5.11 Ondemand
SE +/- 1.87, N = 3
407.19
Linux 5.11 Performance
SE +/- 1.23, N = 3
424.25
Linux 5.11 Schedutil RL 100
SE +/- 3.92, N = 3
412.70
Linux 5.11 Schedutil RL 2000
SE +/- 3.98, N = 3
416.90
Linux 5.11 Schedutil 2
SE +/- 2.03, N = 3
411.96
Linux 5.11 Schedutil 3
SE +/- 4.16, N = 3
412.14
Linux 5.11 Schedutil 4
SE +/- 0.26, N = 3
421.43
Linux 5.11 Schedutil 5
SE +/- 4.17, N = 3
414.75
Linux 5.11 Schedutil 6
SE +/- 4.92, N = 3
412.29
90
180
270
360
450

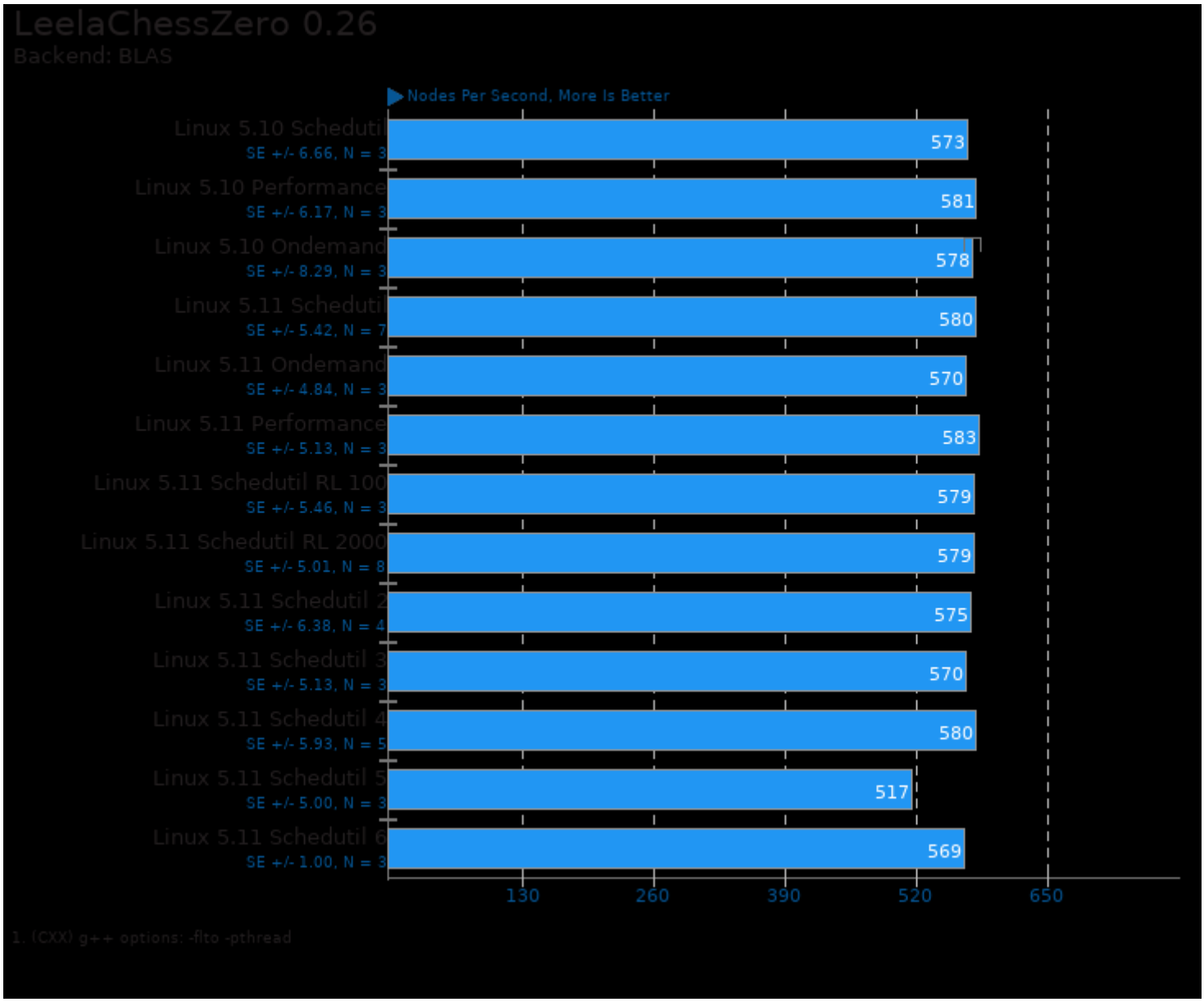
Ryzen 9 5900X Freq Invariance Combo Testing



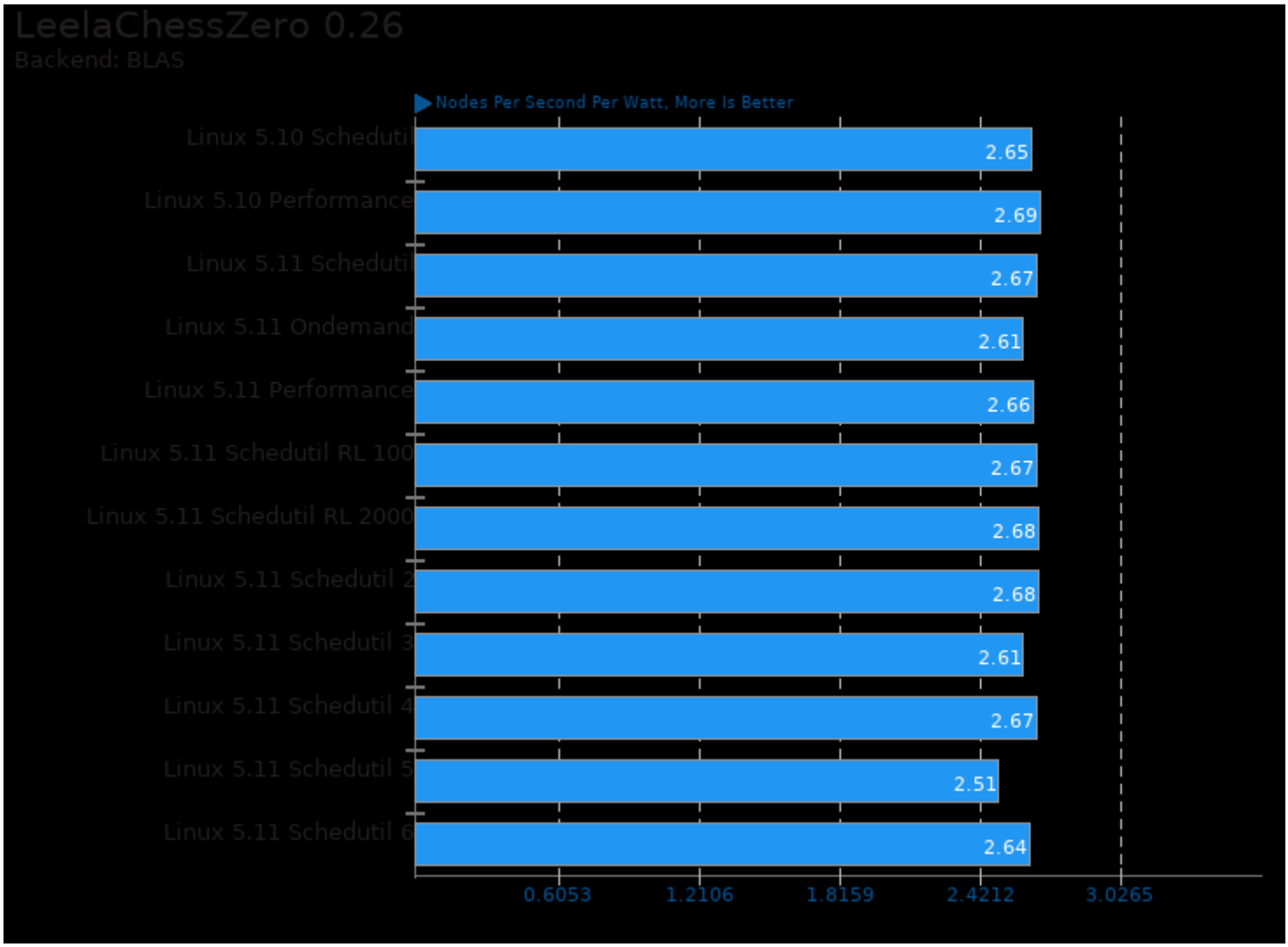
Ryzen 9 5900X Freq Invariance Combo Testing



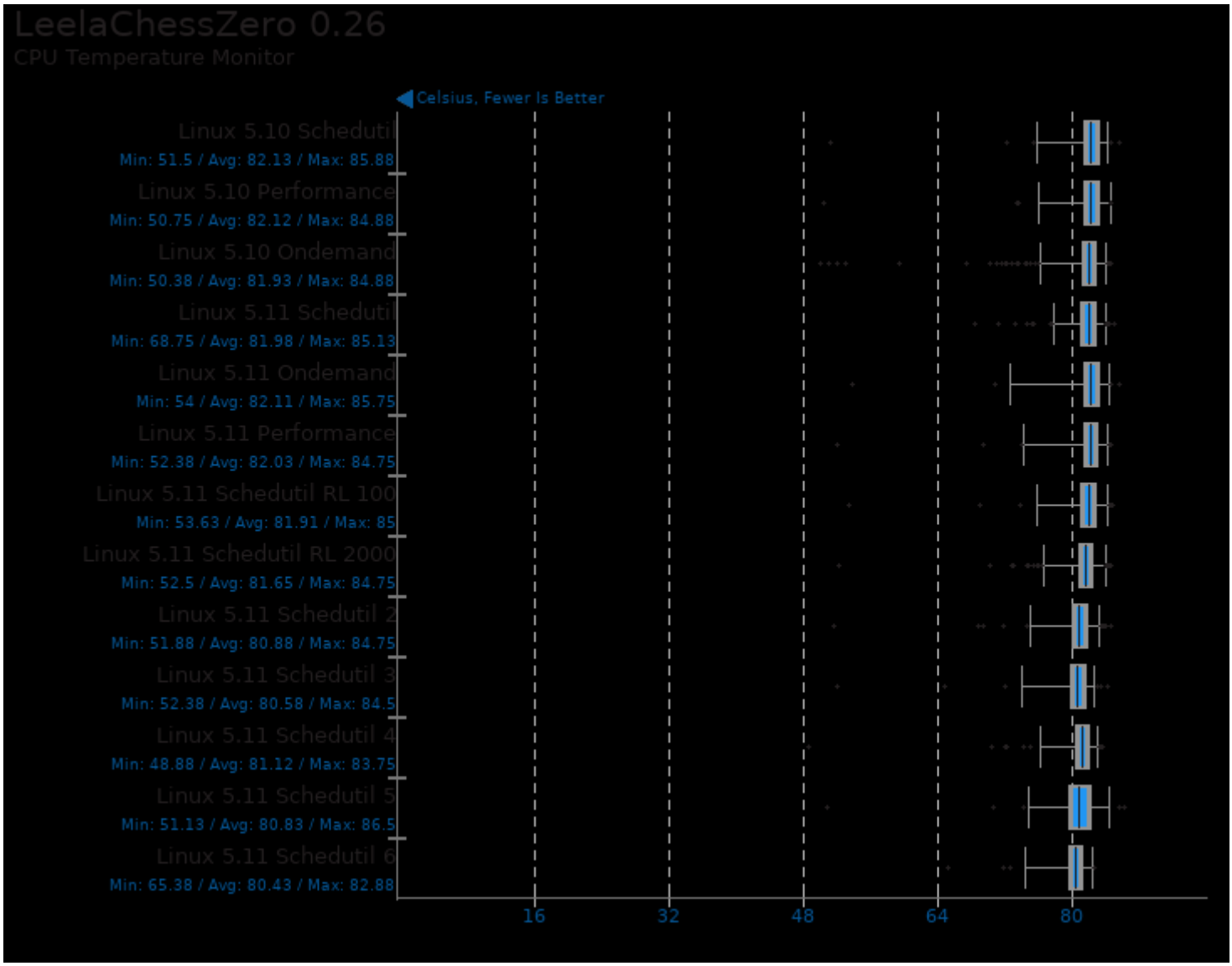
Ryzen 9 5900X Freq Invariance Combo Testing



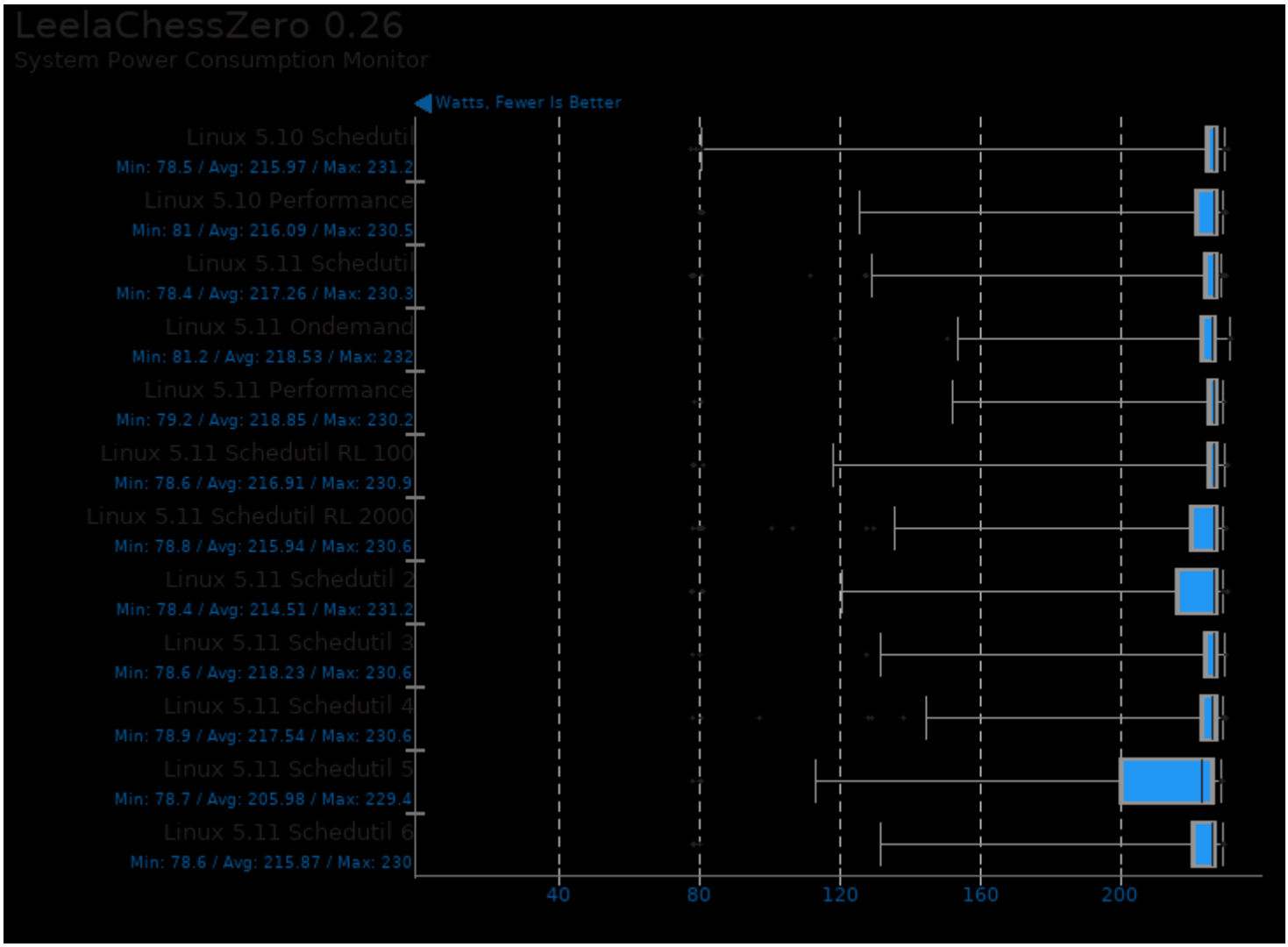
Ryzen 9 5900X Freq Invariance Combo Testing



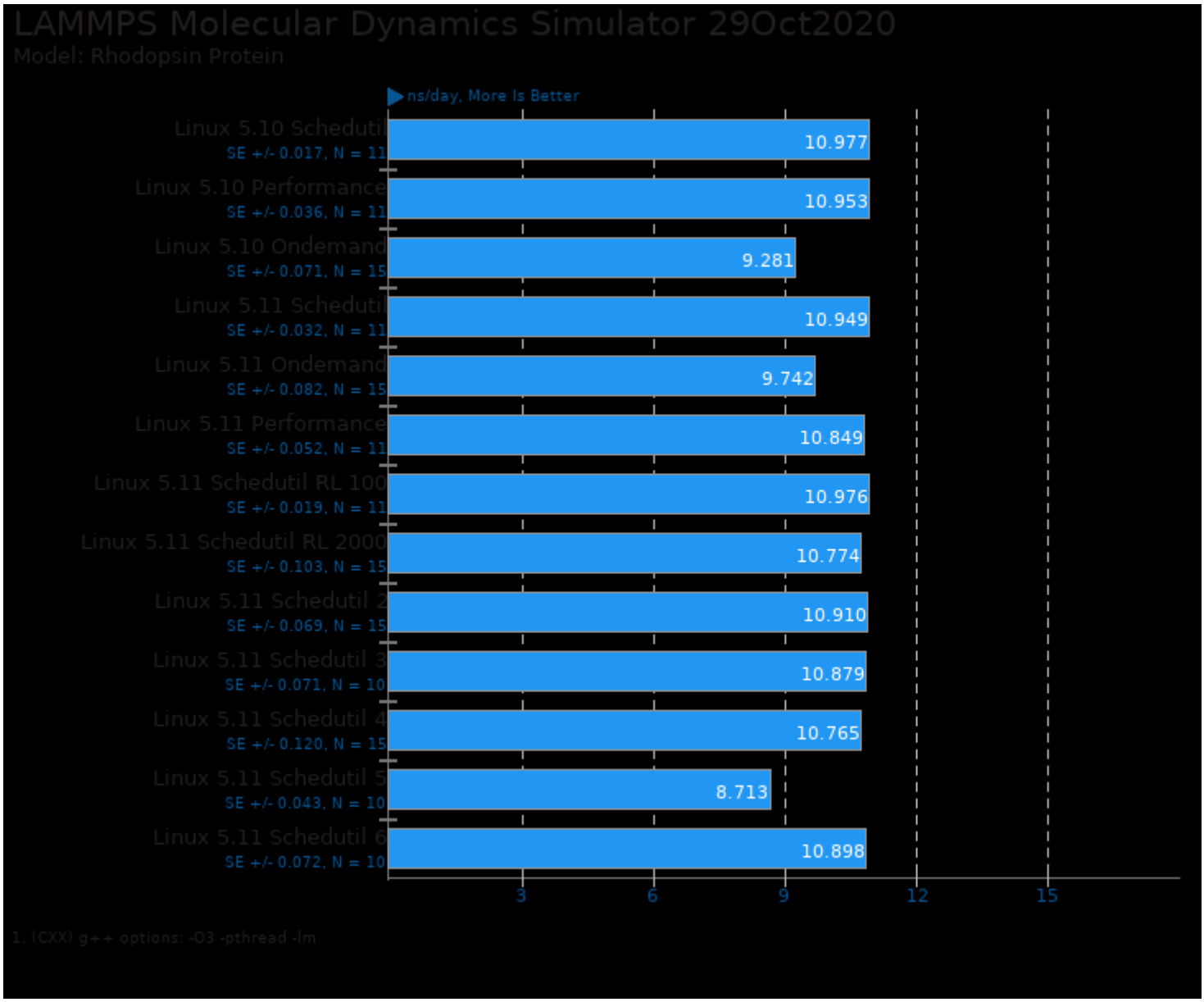
Ryzen 9 5900X Freq Invariance Combo Testing



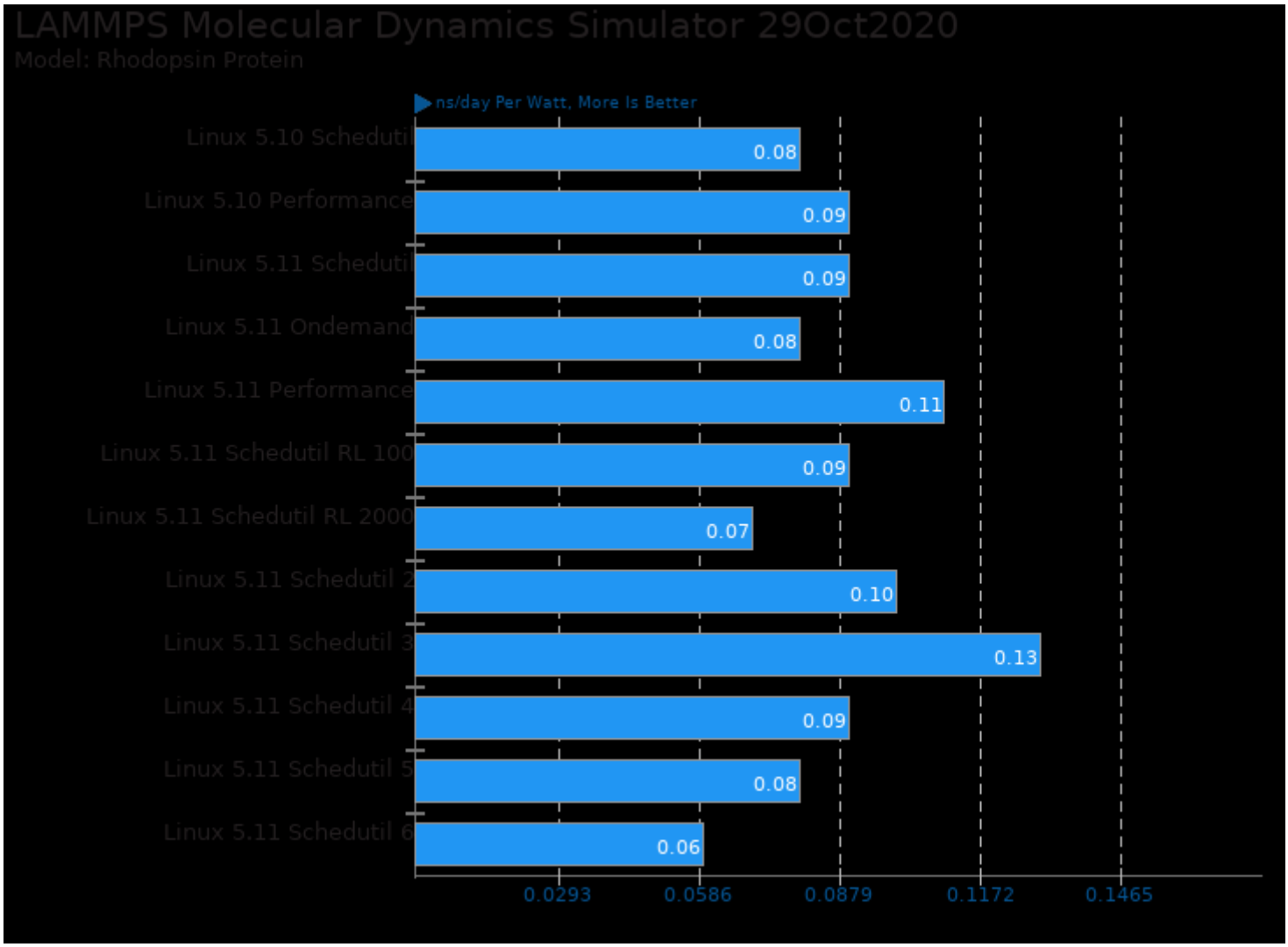
Ryzen 9 5900X Freq Invariance Combo Testing



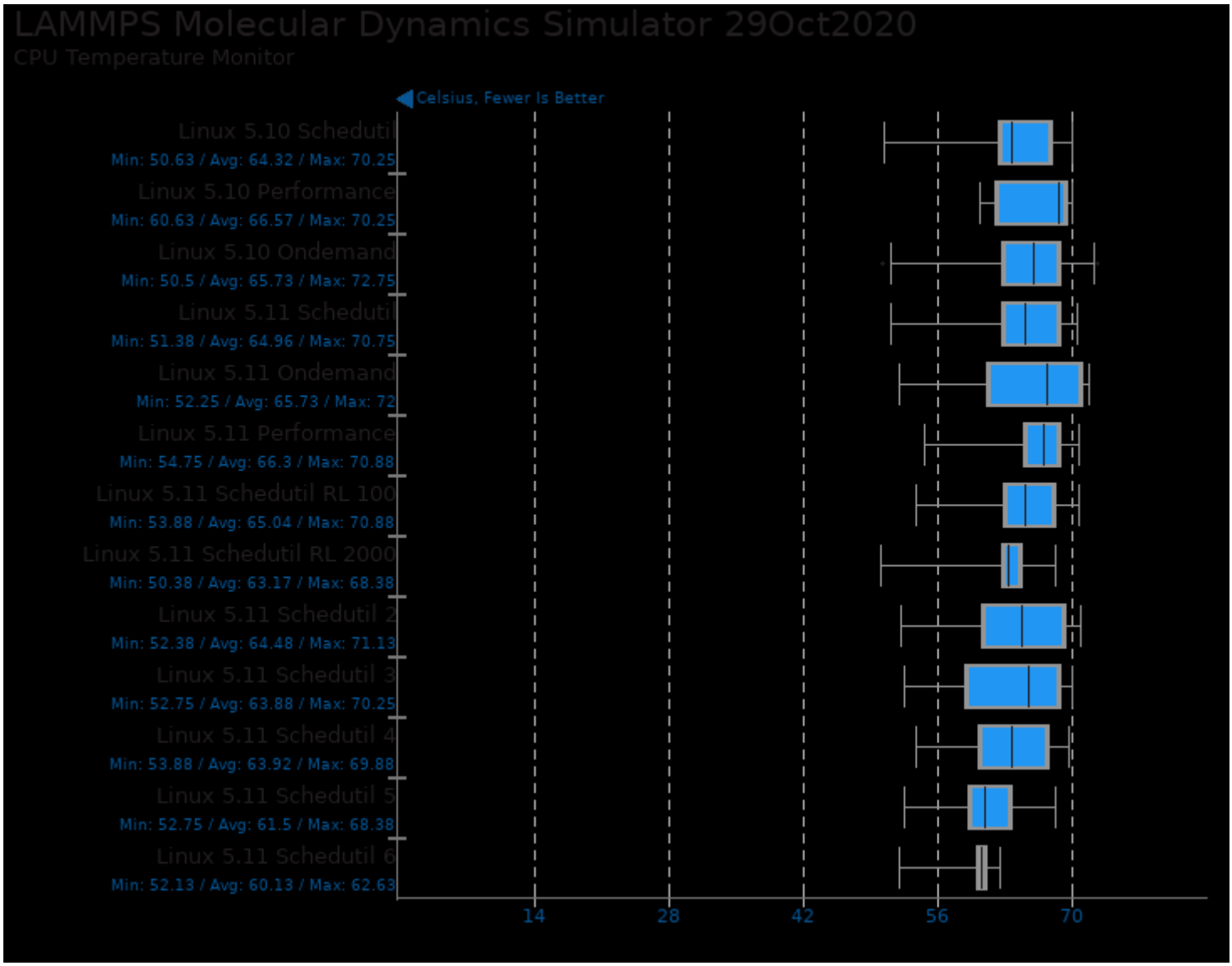
Ryzen 9 5900X Freq Invariance Combo Testing



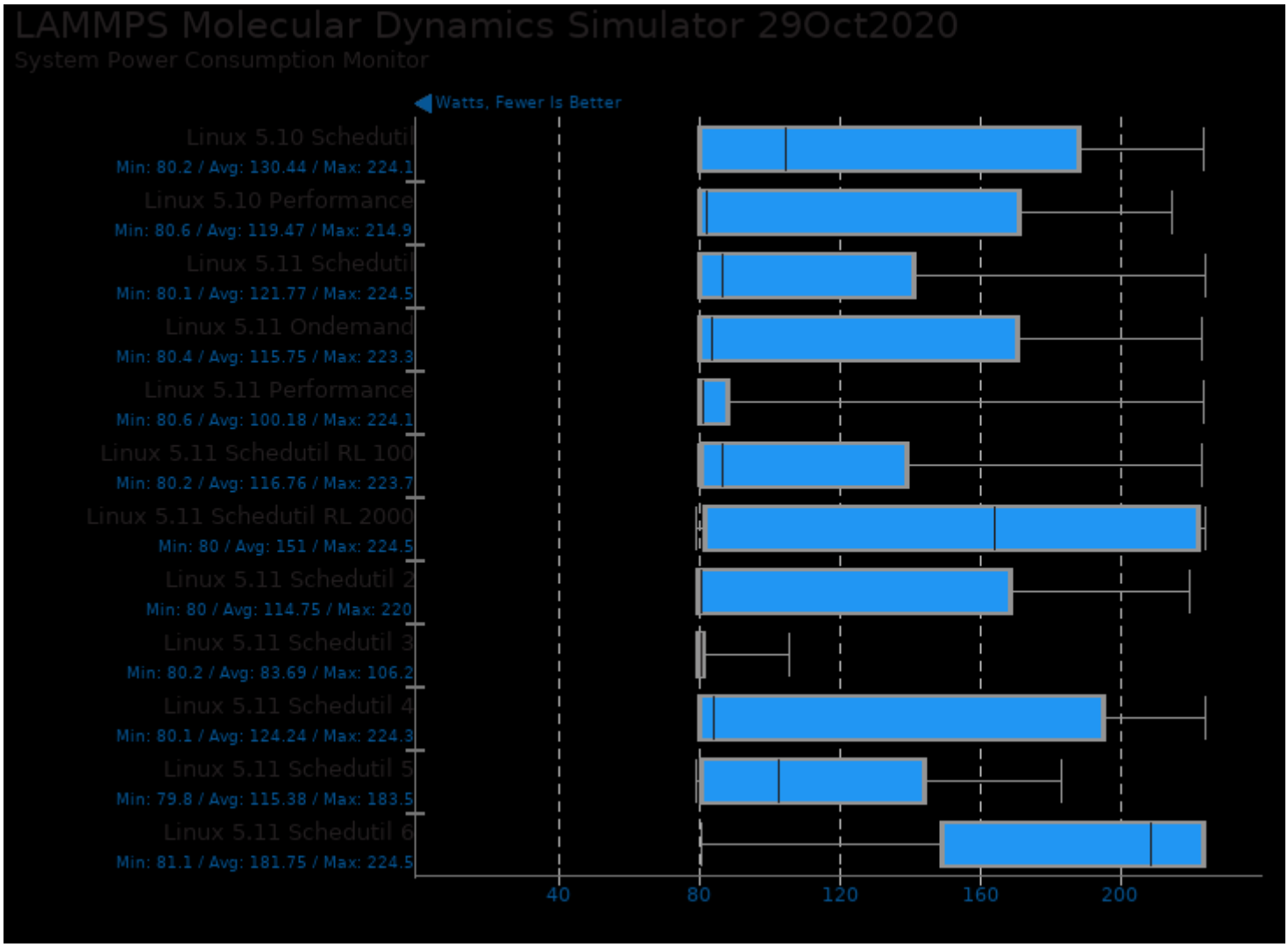
Ryzen 9 5900X Freq Invariance Combo Testing



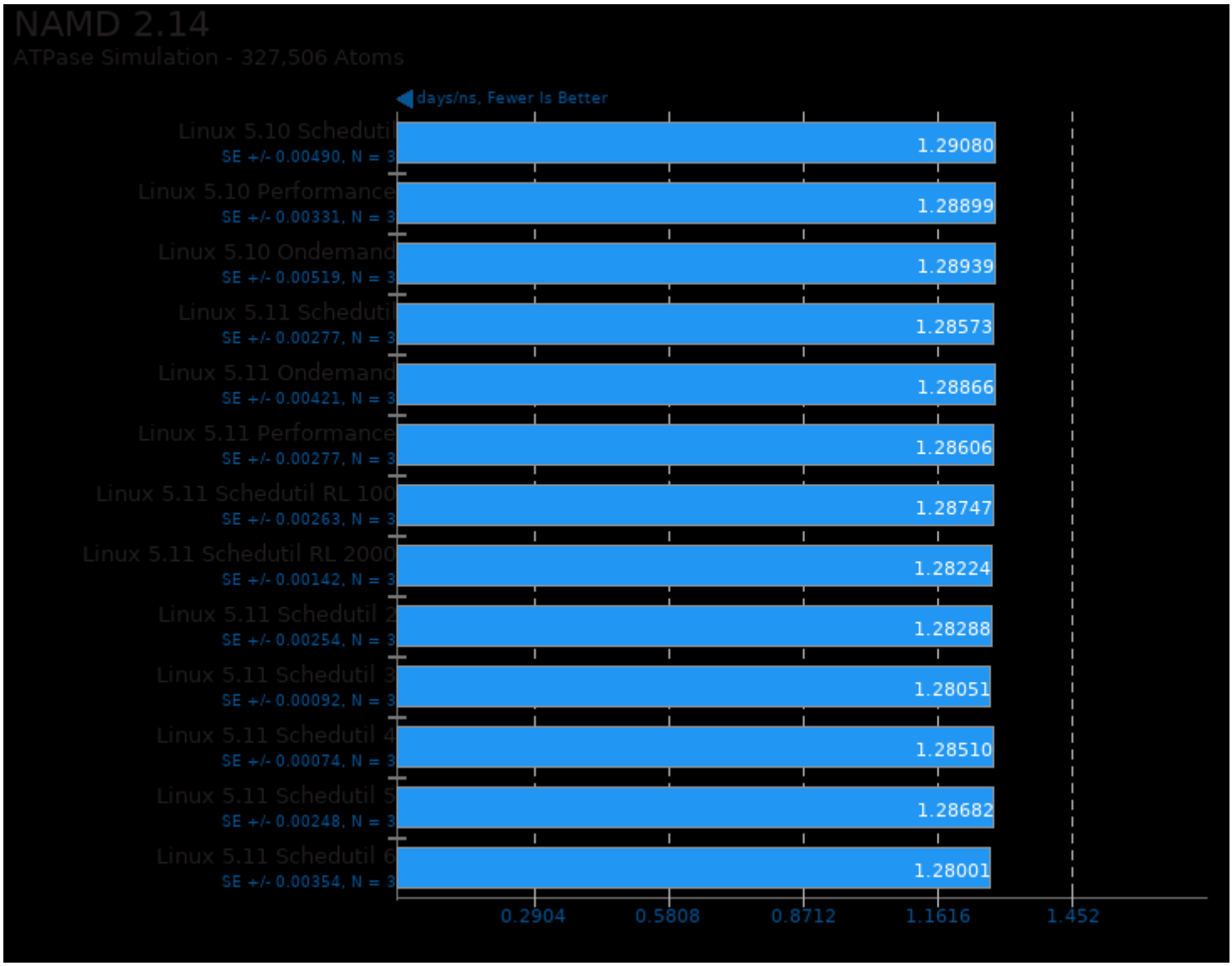
Ryzen 9 5900X Freq Invariance Combo Testing



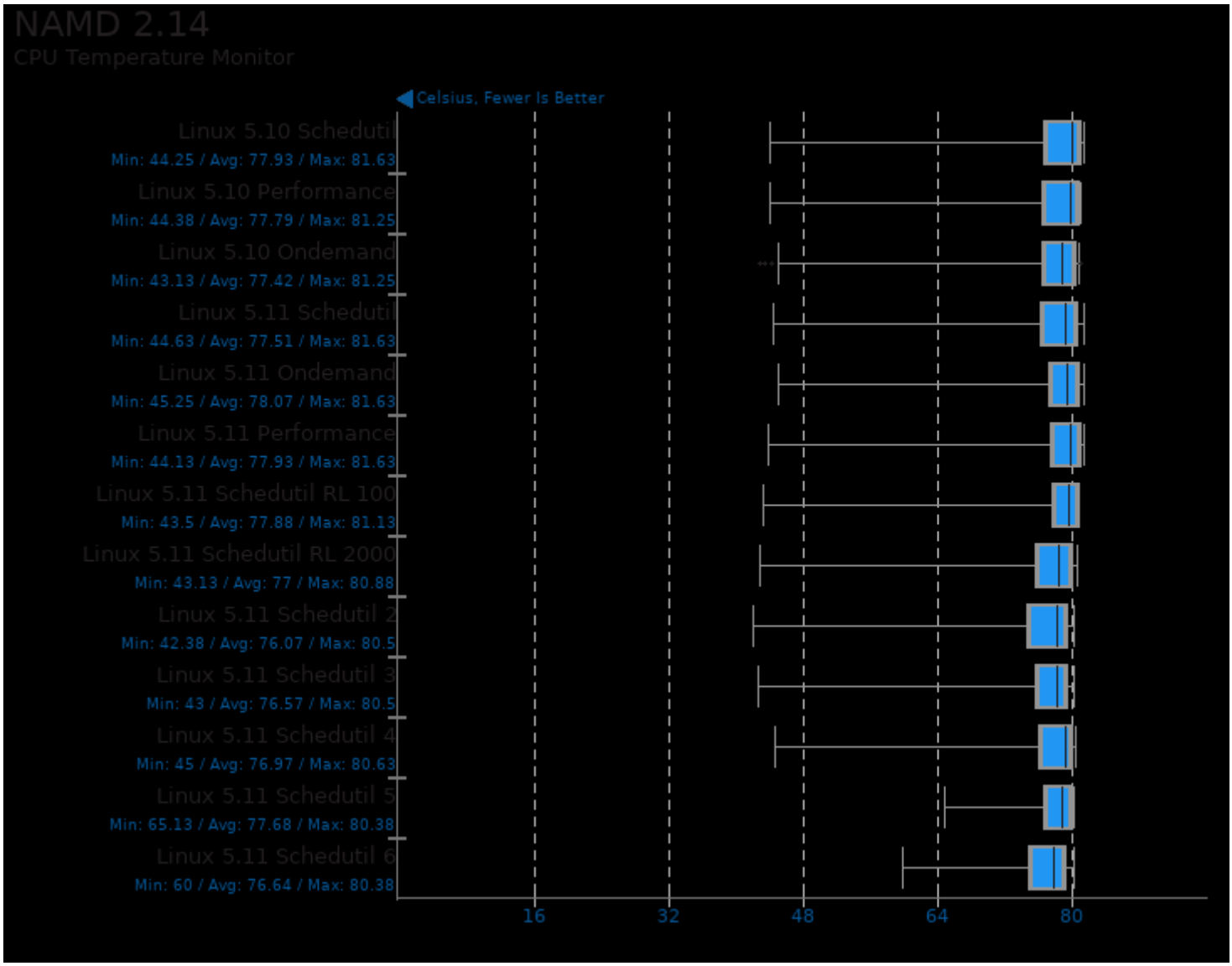
Ryzen 9 5900X Freq Invariance Combo Testing



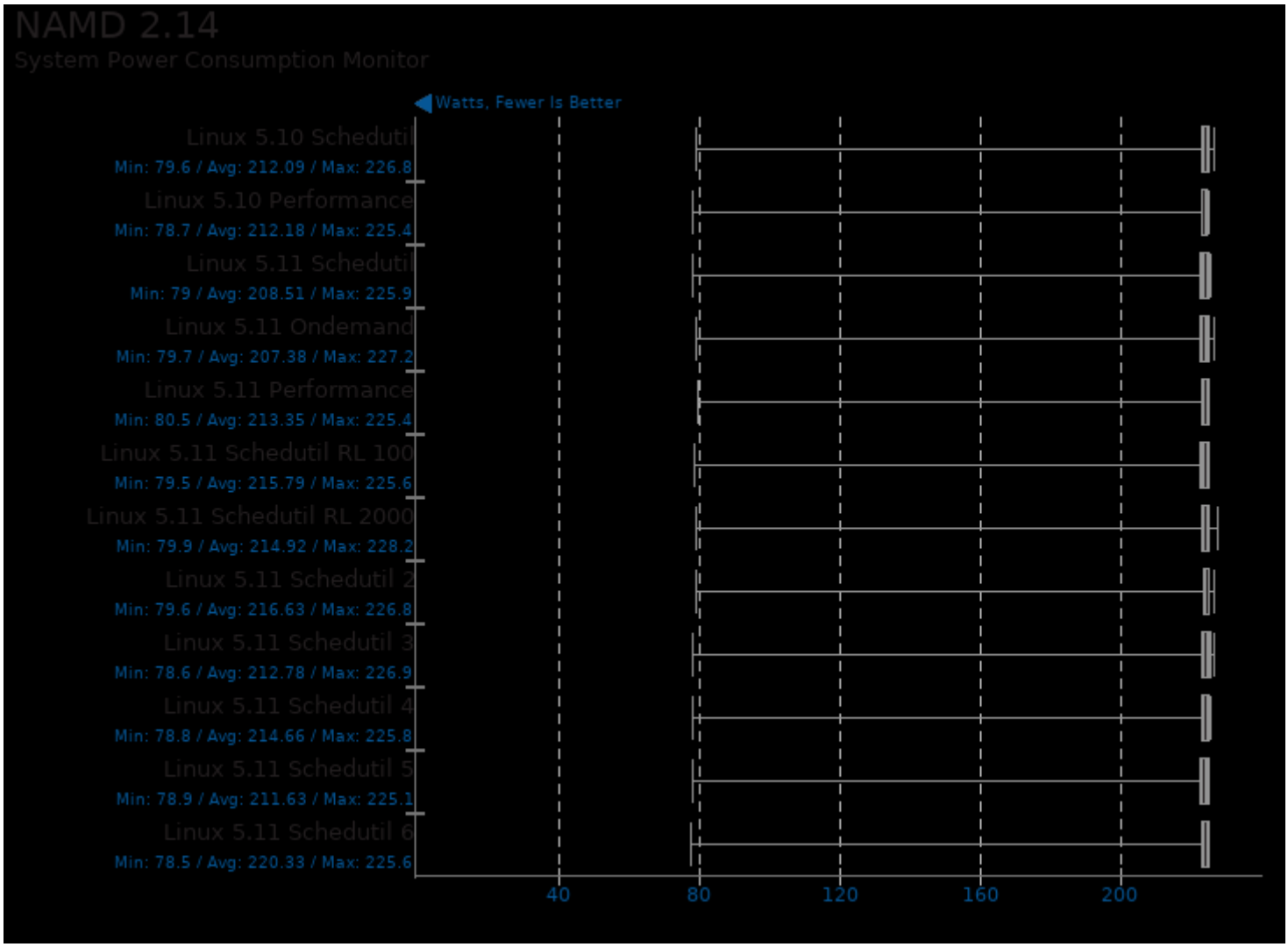
Ryzen 9 5900X Freq Invariance Combo Testing



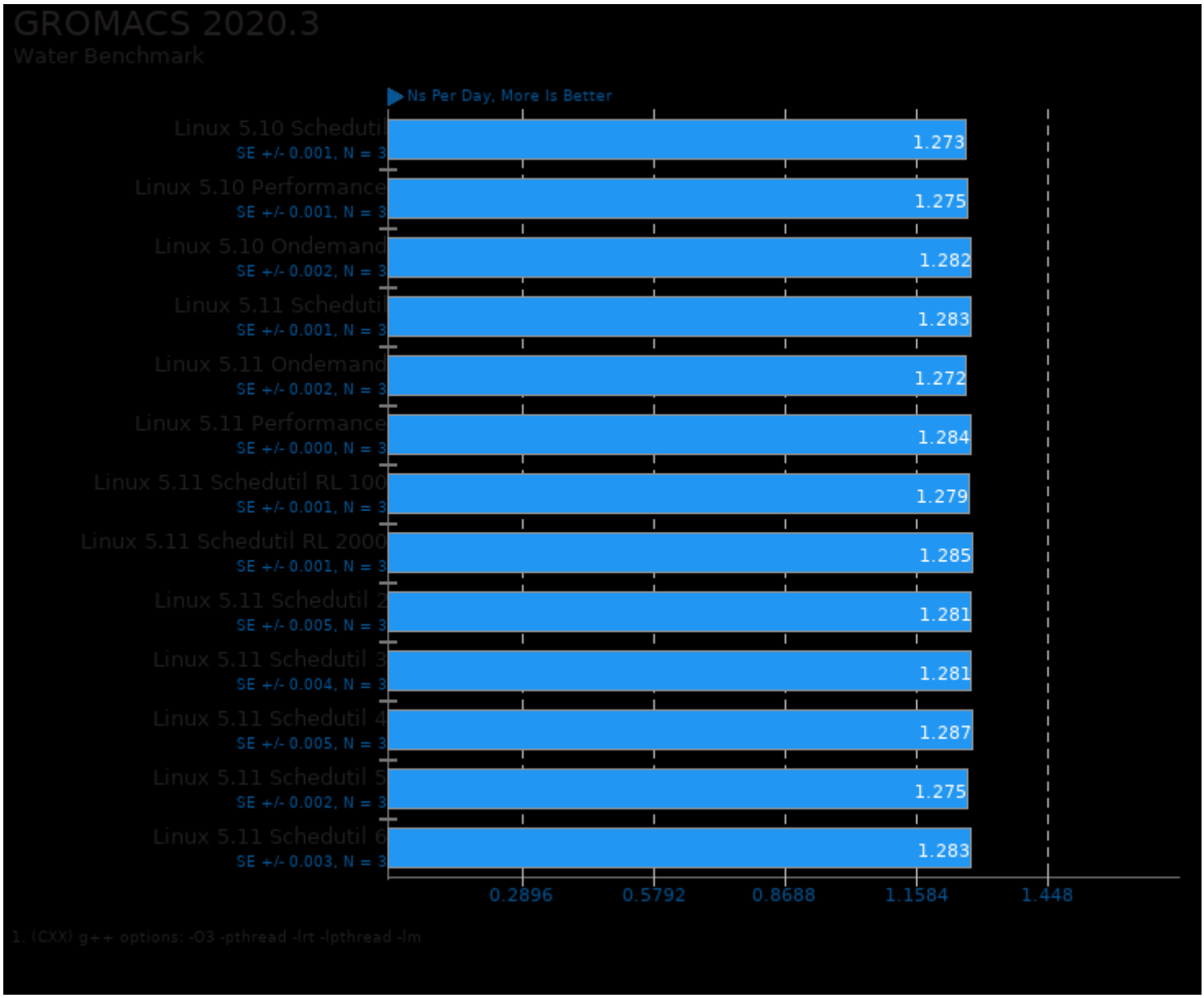
Ryzen 9 5900X Freq Invariance Combo Testing



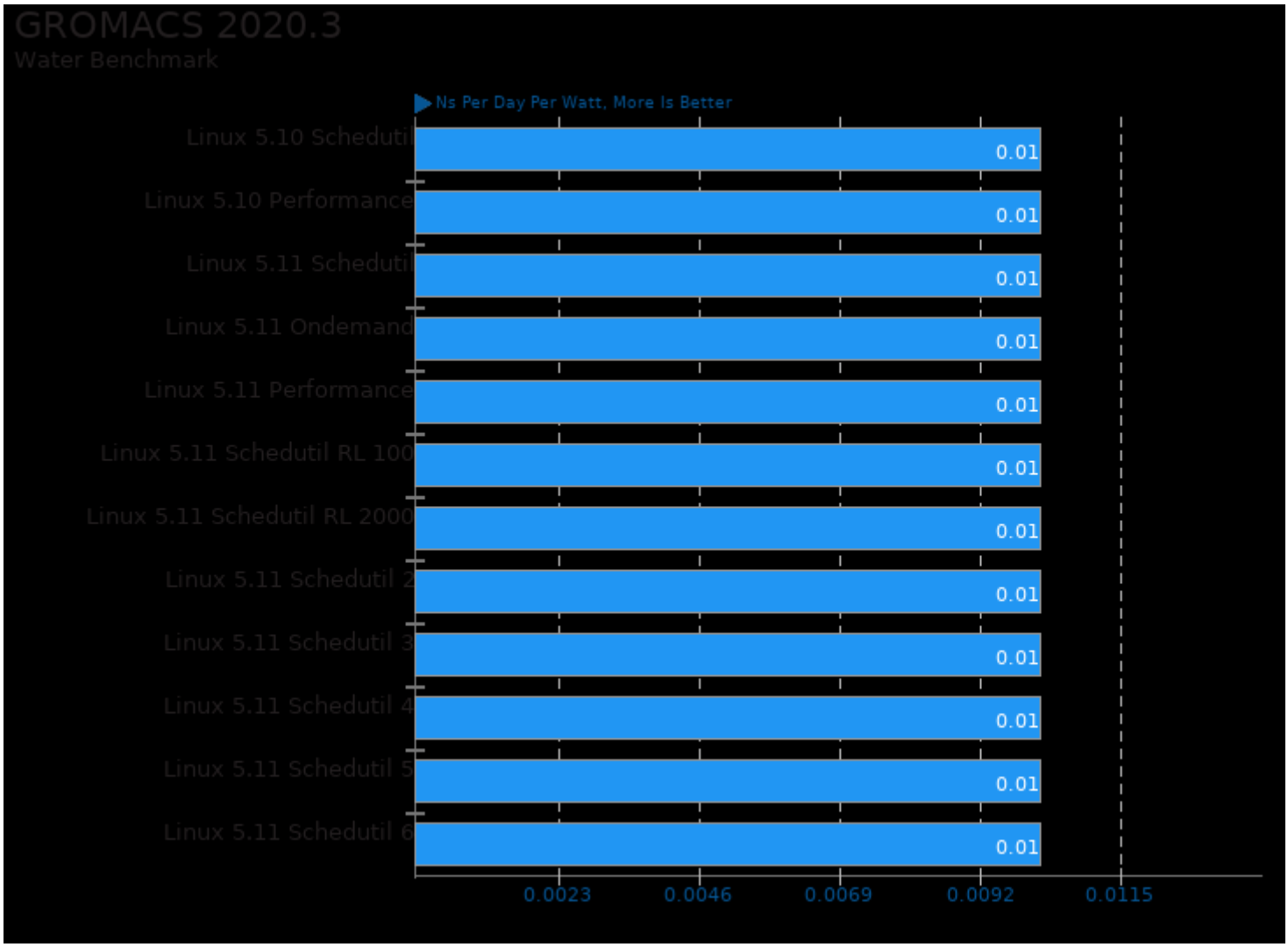
Ryzen 9 5900X Freq Invariance Combo Testing



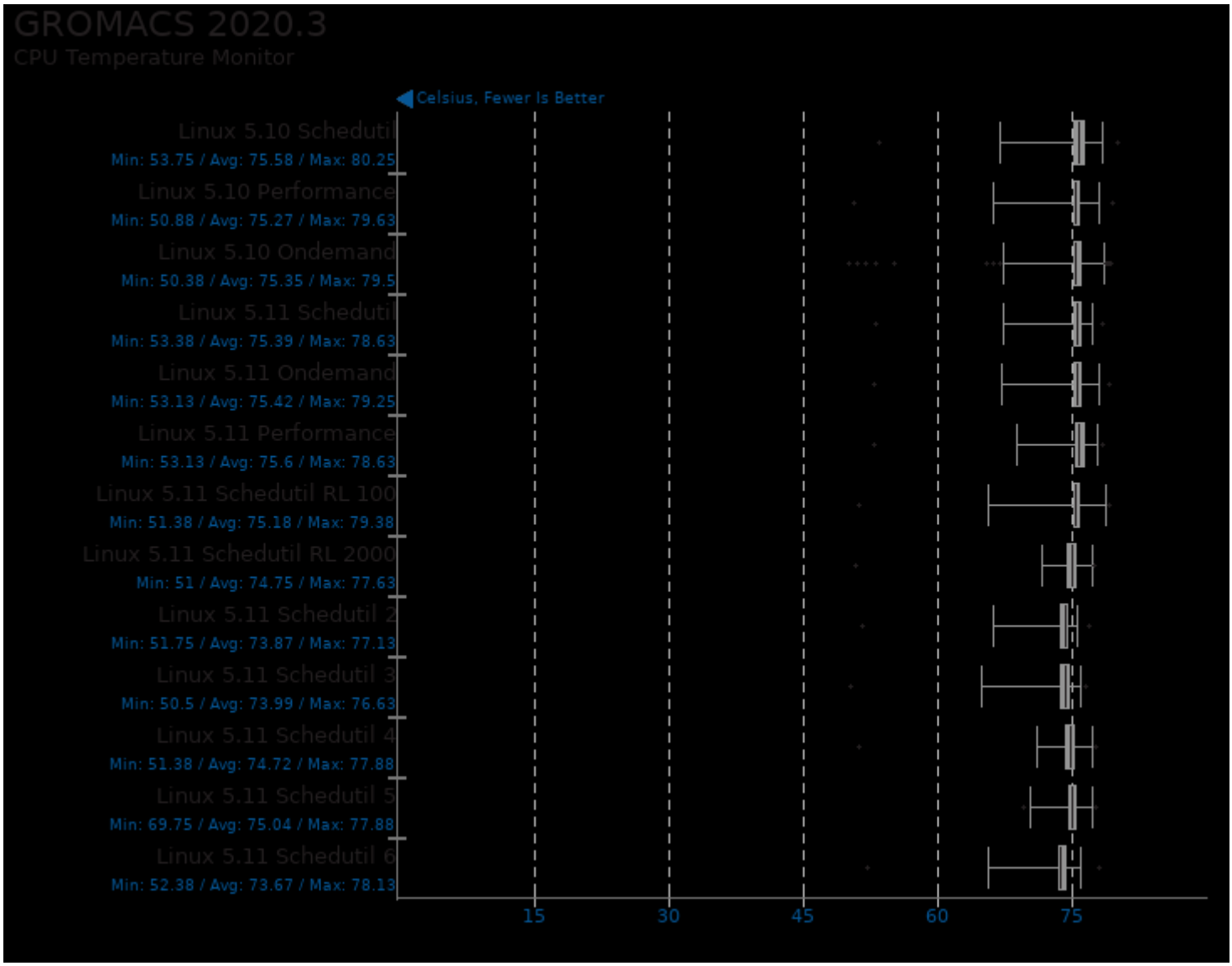
Ryzen 9 5900X Freq Invariance Combo Testing



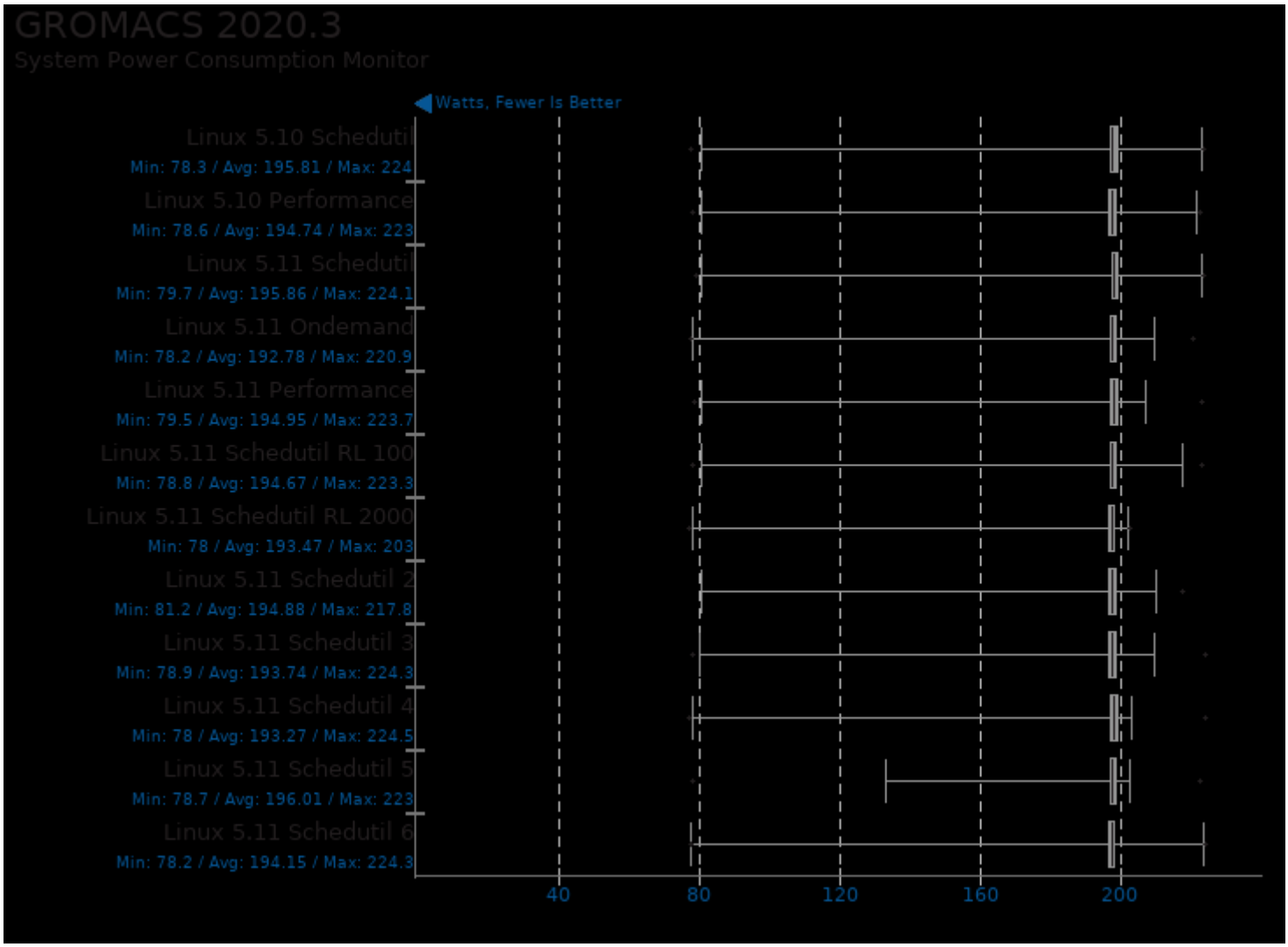
Ryzen 9 5900X Freq Invariance Combo Testing



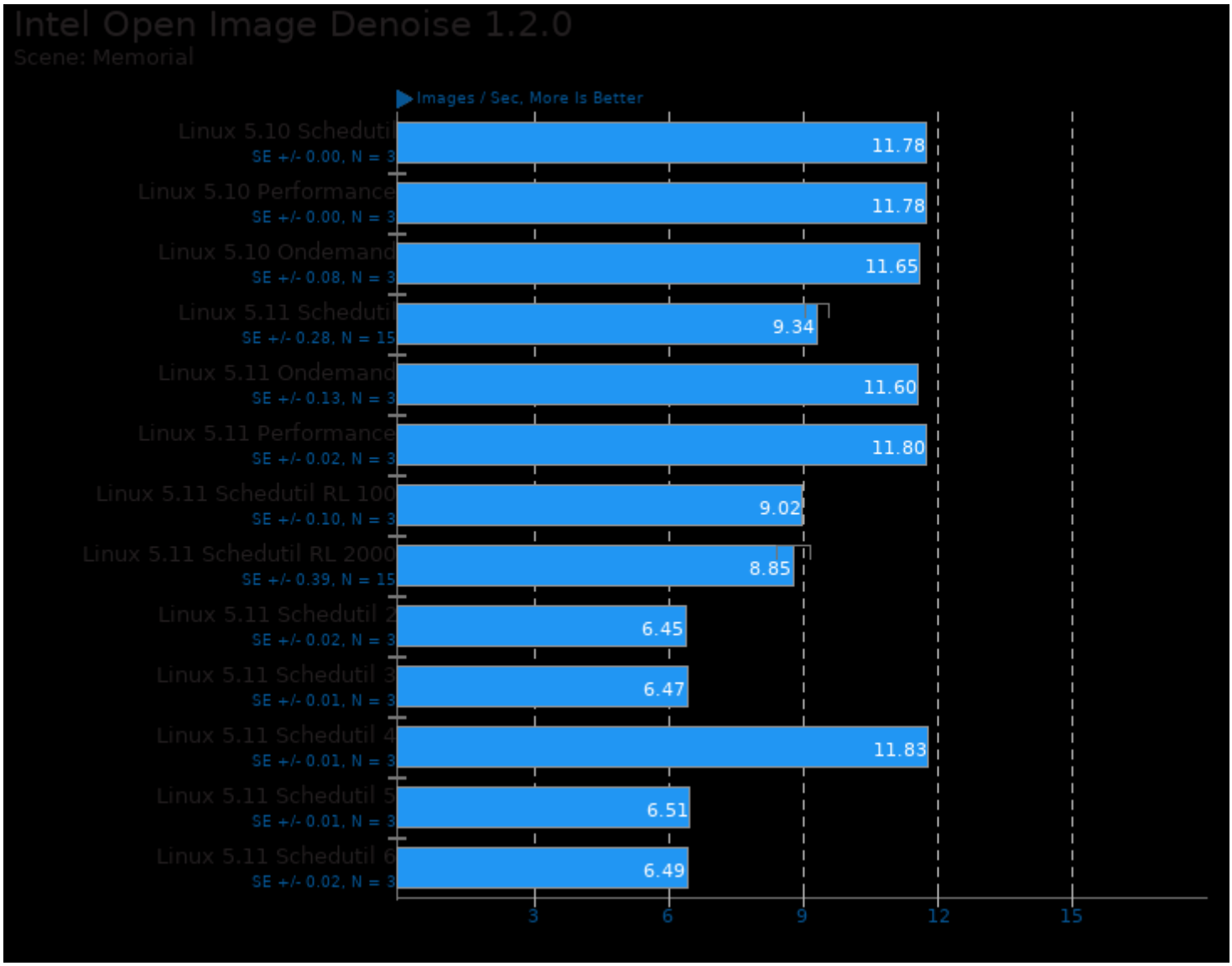
Ryzen 9 5900X Freq Invariance Combo Testing

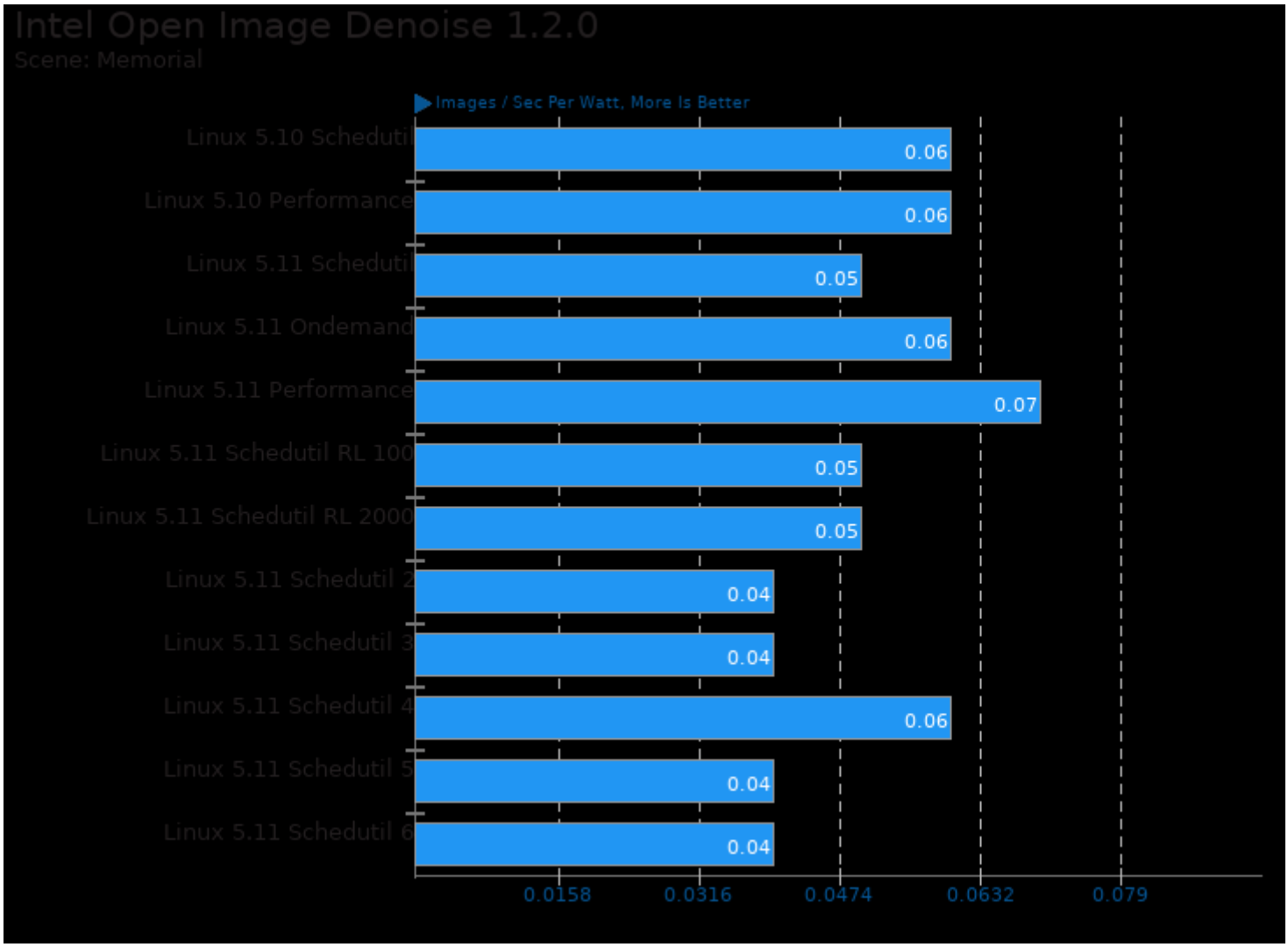


Ryzen 9 5900X Freq Invariance Combo Testing

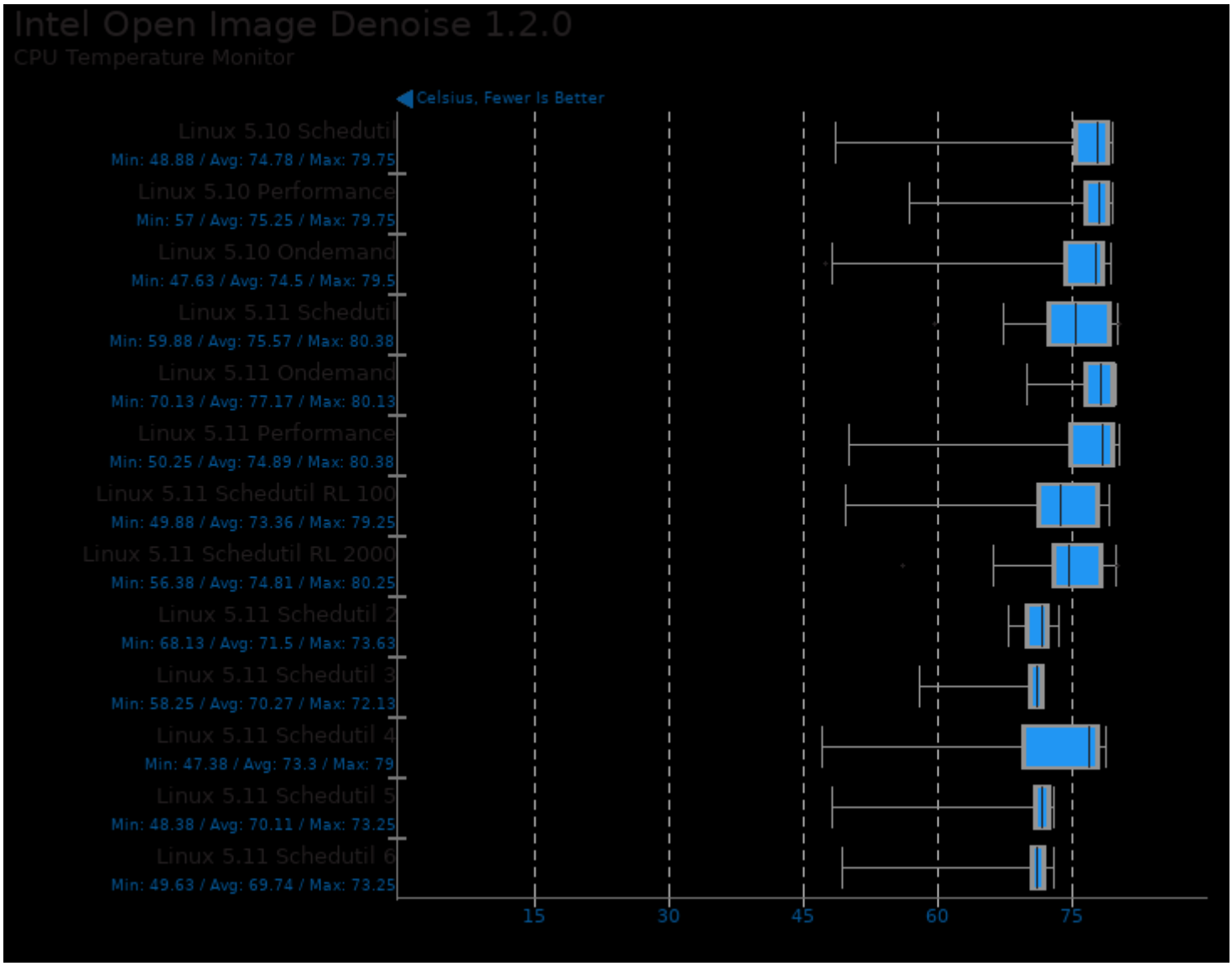


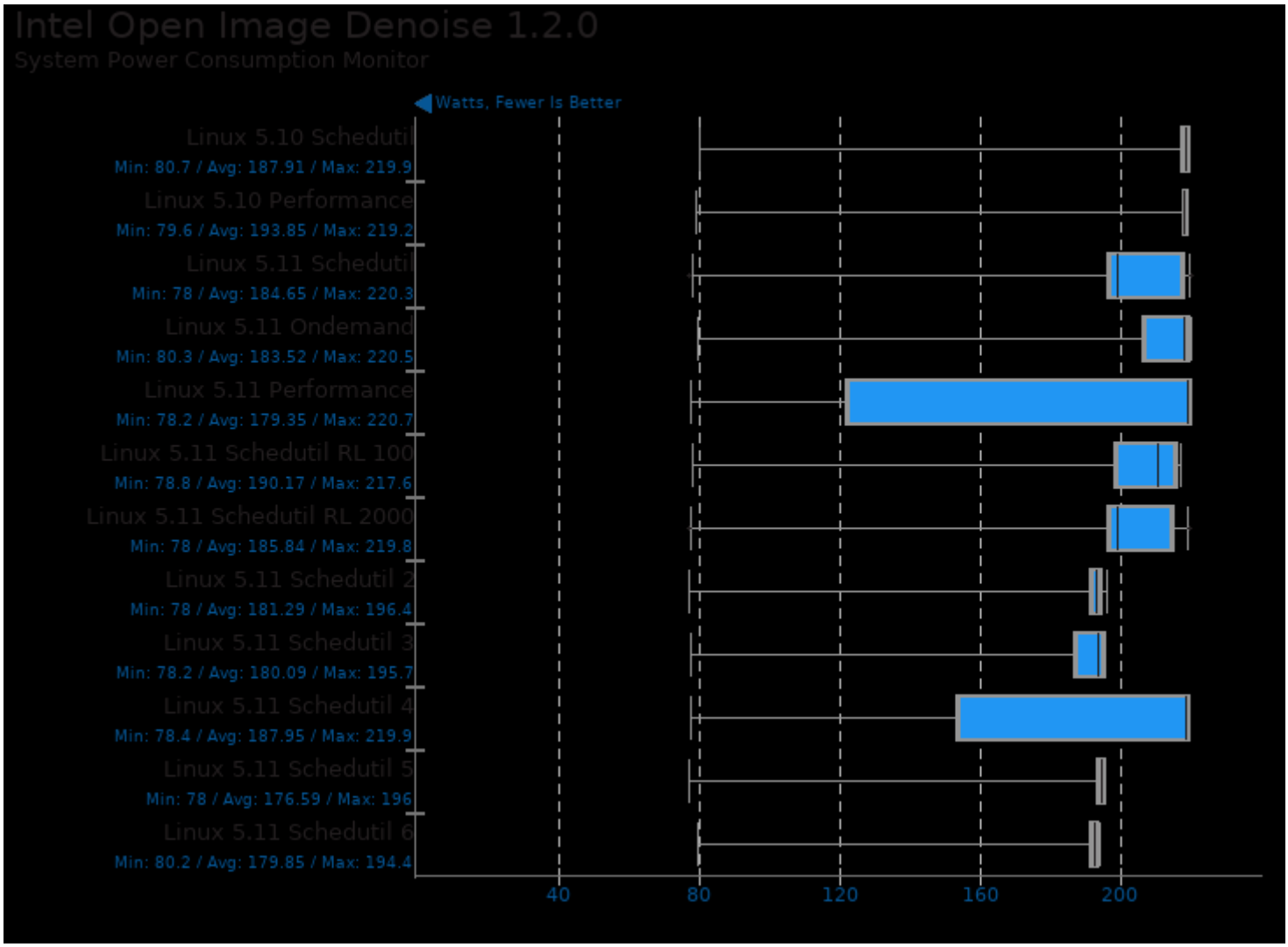
Ryzen 9 5900X Freq Invariance Combo Testing



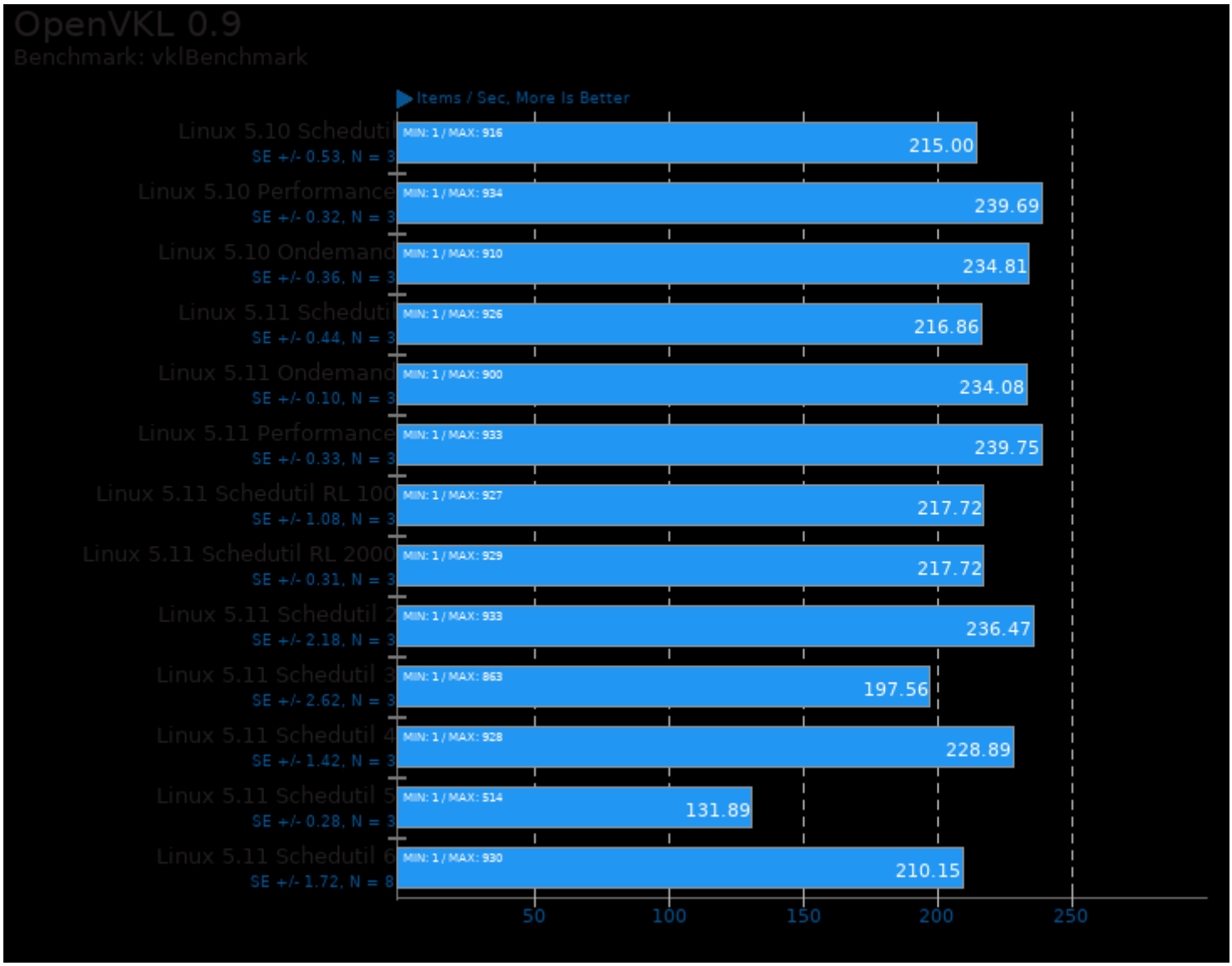

Intel Open Image Denoise 1.2.0
Scene: Memorial
Images / Sec Per Watt, More Is Better
Linux 5.10 Schedutil
Linux 5.10 Performance
Linux 5.11 Schedutil
Linux 5.11 Ondemand
Linux 5.11 Performance
Linux 5.11 Schedutil RL 100
Linux 5.11 Schedutil RL 2000
Linux 5.11 Schedutil 2
Linux 5.11 Schedutil 3
Linux 5.11 Schedutil 4
Linux 5.11 Schedutil 5
Linux 5.11 Schedutil 6
0.06
0.06
0.05
0.06
0.07
0.05
0.05
0.04
0.04
0.06
0.04
0.04
0.0158
0.0316
0.0474
0.0632
0.079

Ryzen 9 5900X Freq Invariance Combo Testing

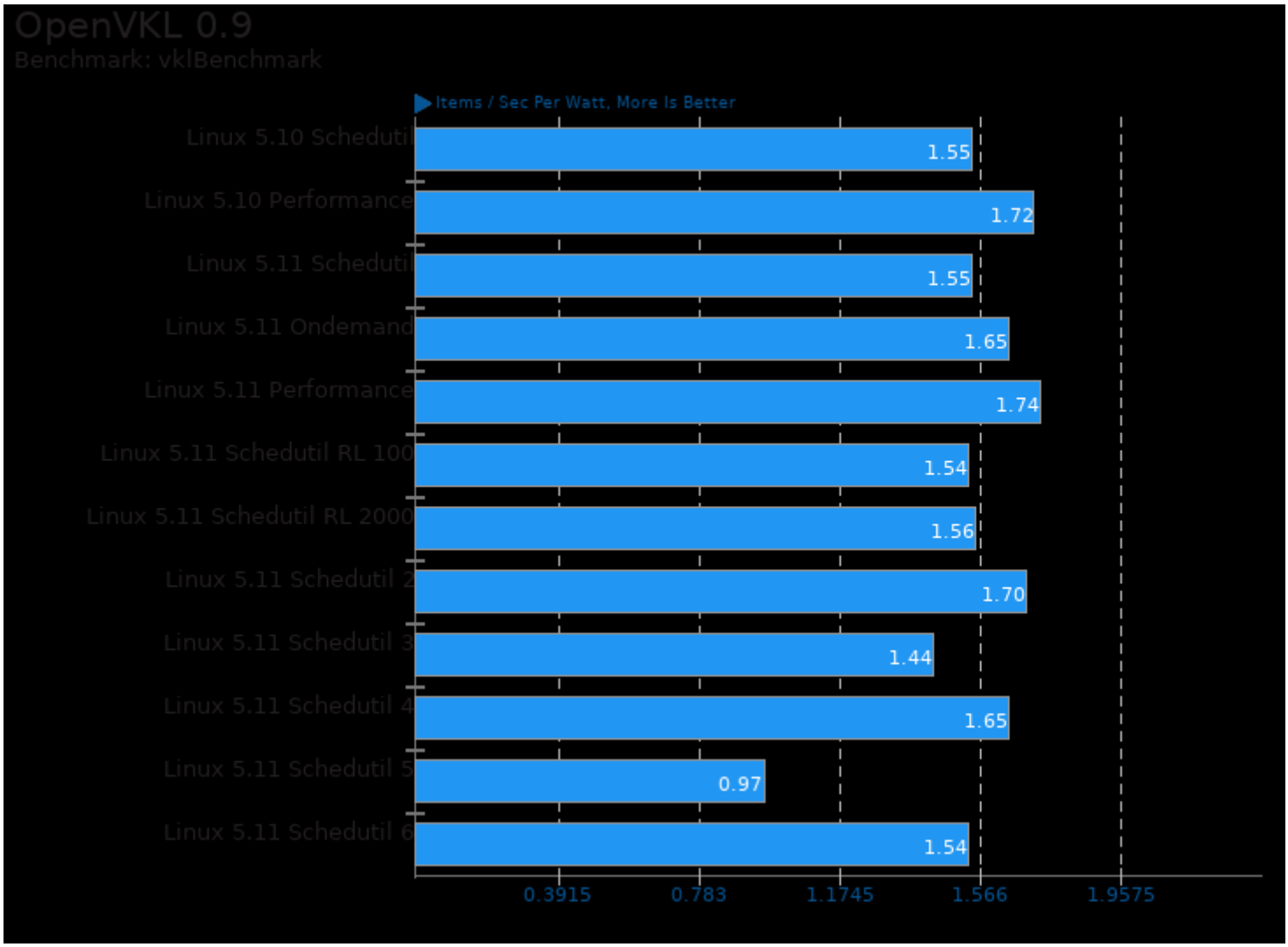



Intel Open Image Denoise 1.2.0
System Power Consumption Monitor
Watts, Fewer Is Better
Linux 5.10 Schedutil
Min: 80.7 / Avg: 187.91 / Max: 219.9
Linux 5.10 Performance
Min: 79.6 / Avg: 193.85 / Max: 219.2
Linux 5.11 Schedutil
Min: 78 / Avg: 184.65 / Max: 220.3
Linux 5.11 Ondemand
Min: 80.3 / Avg: 183.52 / Max: 220.5
Linux 5.11 Performance
Min: 78.2 / Avg: 179.35 / Max: 220.7
Linux 5.11 Schedutil RL 100
Min: 78.8 / Avg: 190.17 / Max: 217.6
Linux 5.11 Schedutil RL 2000
Min: 78 / Avg: 185.84 / Max: 219.8
Linux 5.11 Schedutil 2
Min: 78 / Avg: 181.29 / Max: 196.4
Linux 5.11 Schedutil 3
Min: 78.2 / Avg: 180.09 / Max: 195.7
Linux 5.11 Schedutil 4
Min: 78.4 / Avg: 187.95 / Max: 219.9
Linux 5.11 Schedutil 5
Min: 78 / Avg: 176.59 / Max: 196
Linux 5.11 Schedutil 6
Min: 80.2 / Avg: 179.85 / Max: 194.4
40
80
120
160
200

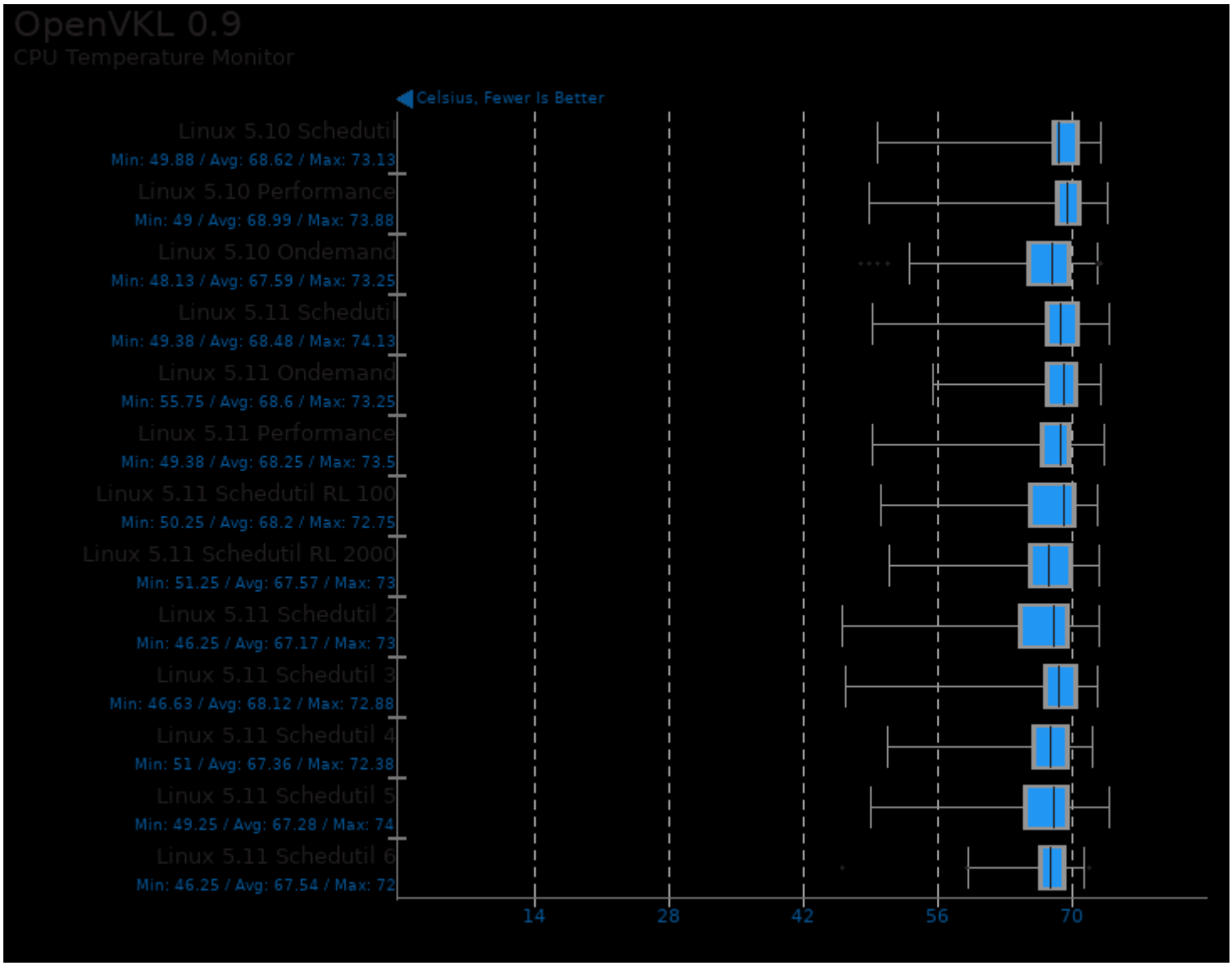
Ryzen 9 5900X Freq Invariance Combo Testing



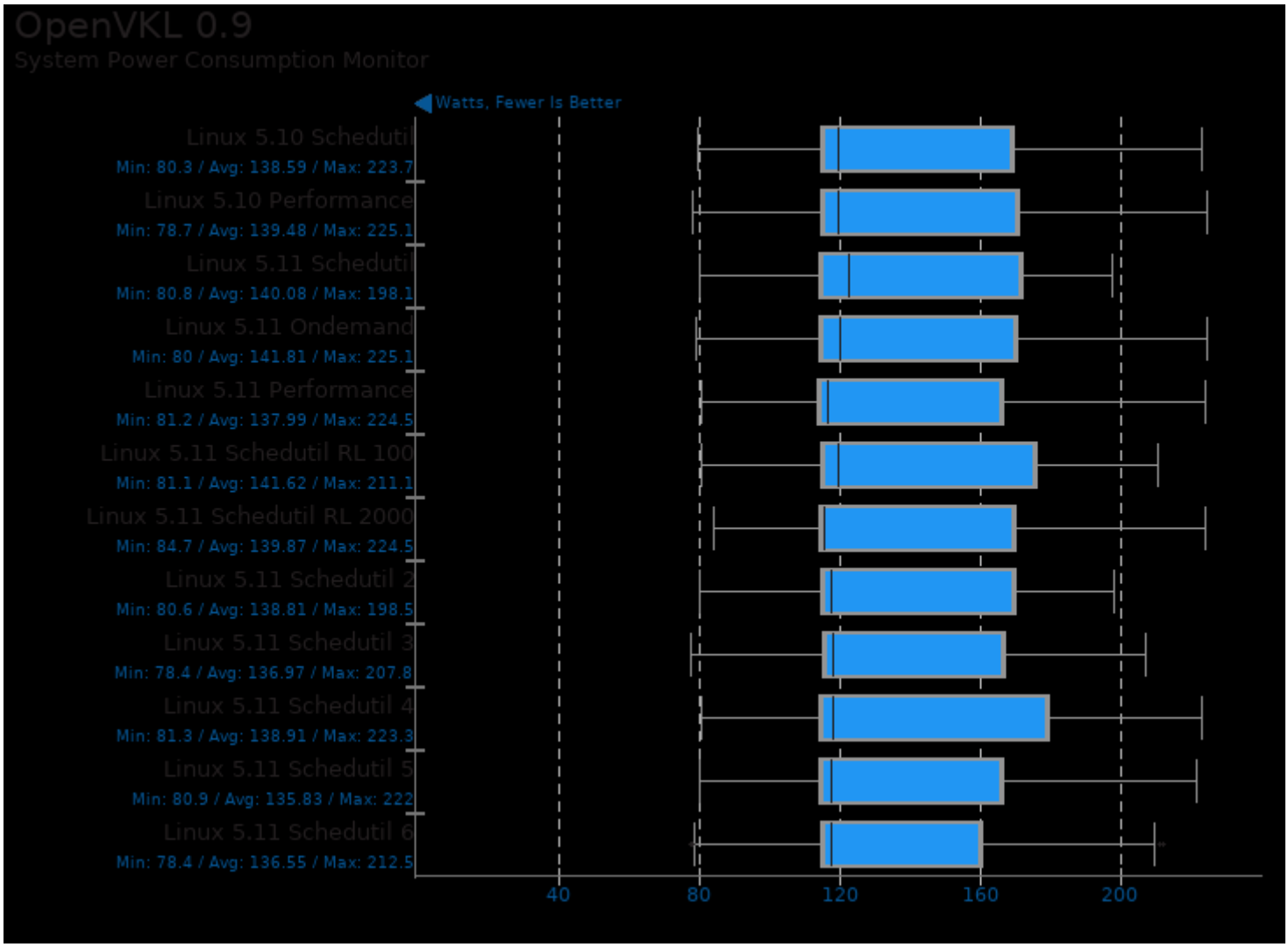
Ryzen 9 5900X Freq Invariance Combo Testing



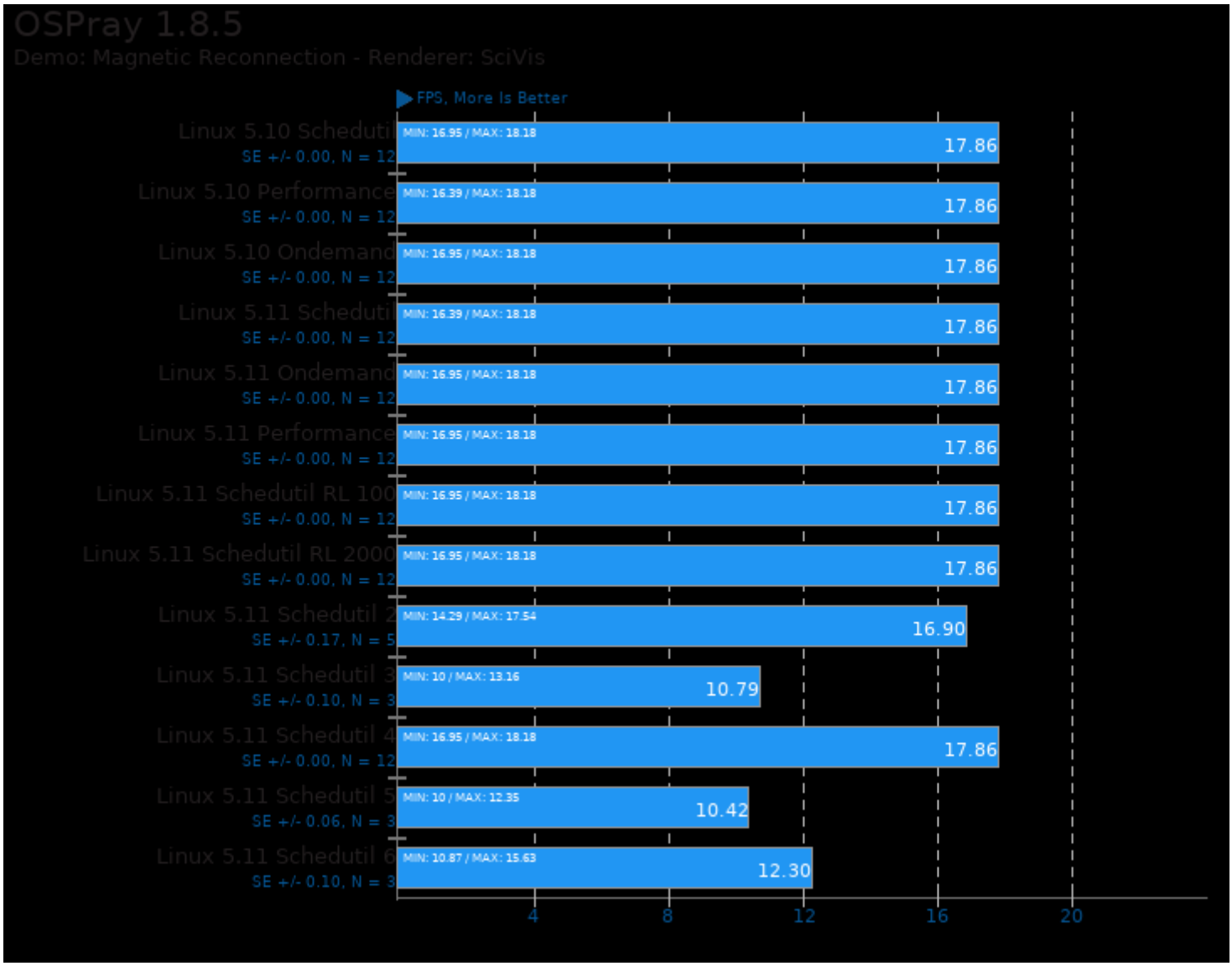
Ryzen 9 5900X Freq Invariance Combo Testing



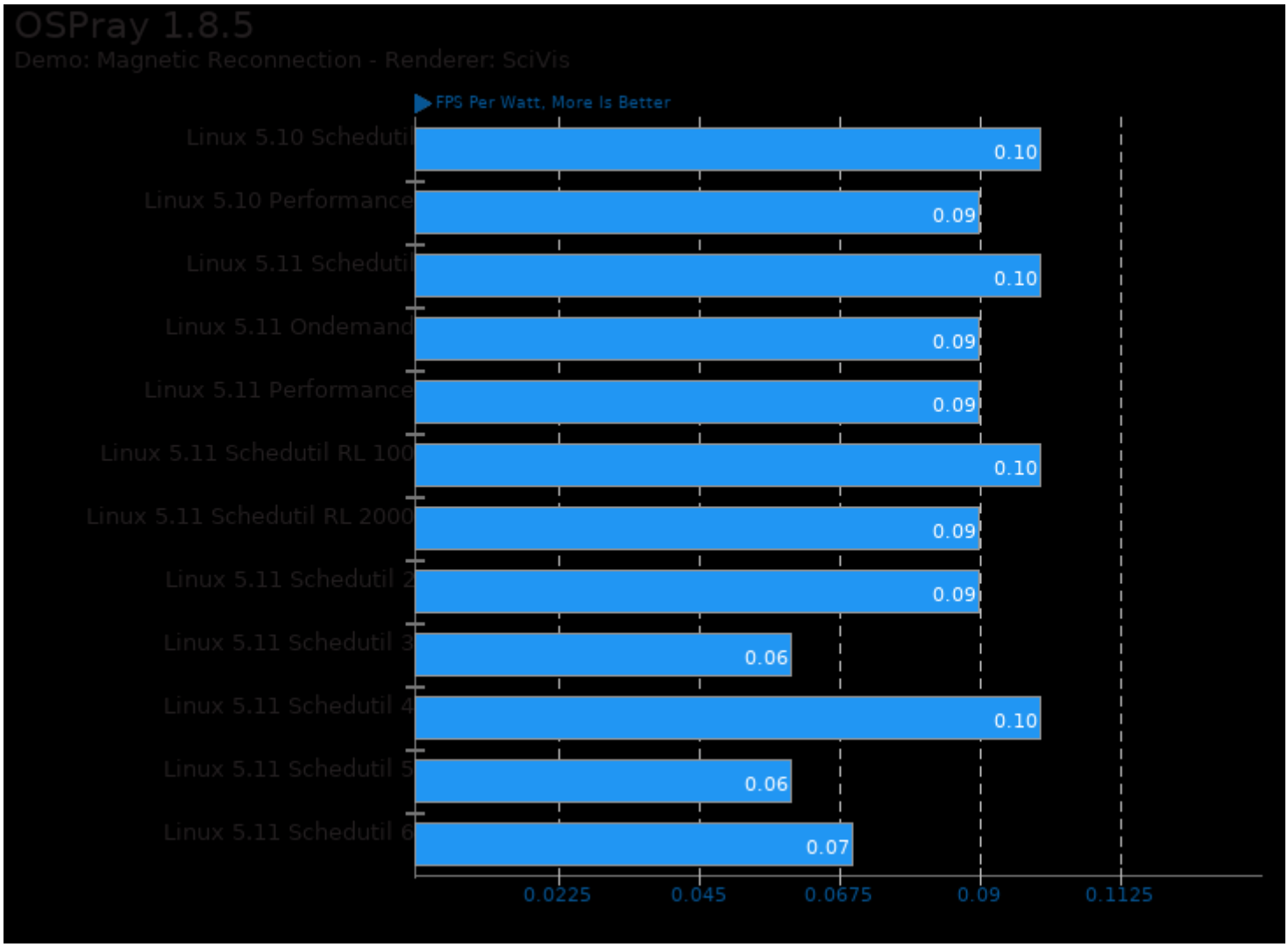
Ryzen 9 5900X Freq Invariance Combo Testing



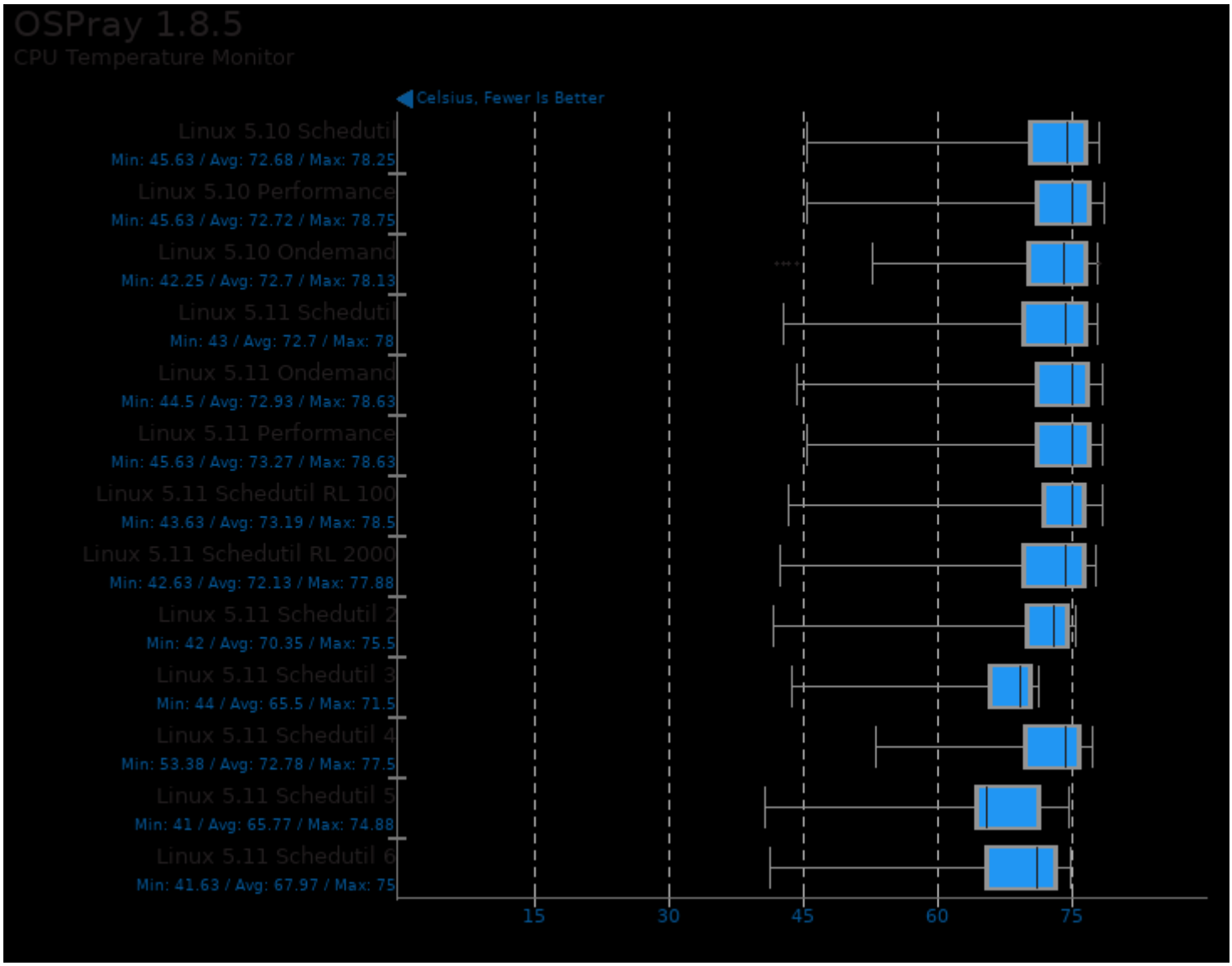
Ryzen 9 5900X Freq Invariance Combo Testing



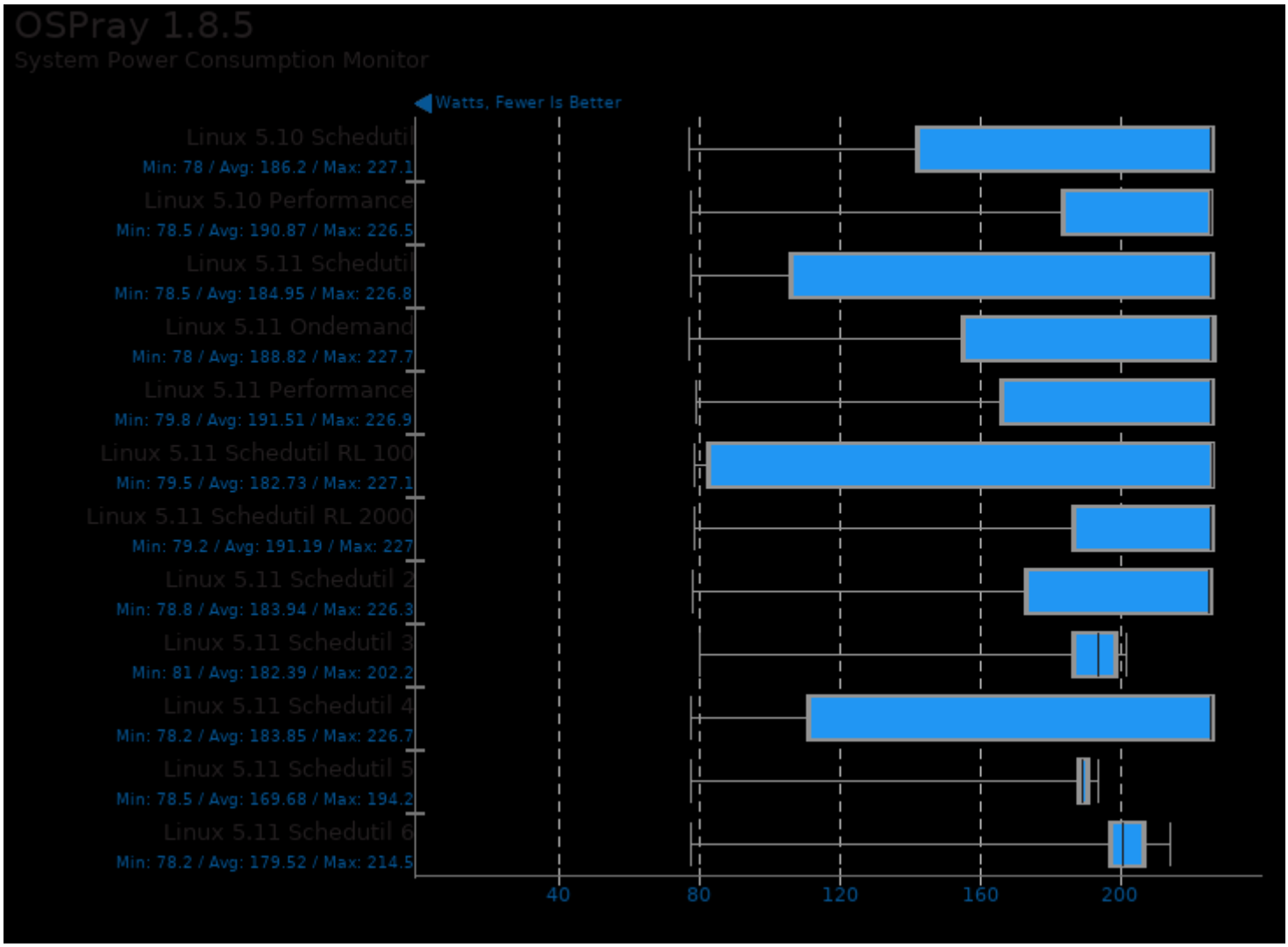
Ryzen 9 5900X Freq Invariance Combo Testing



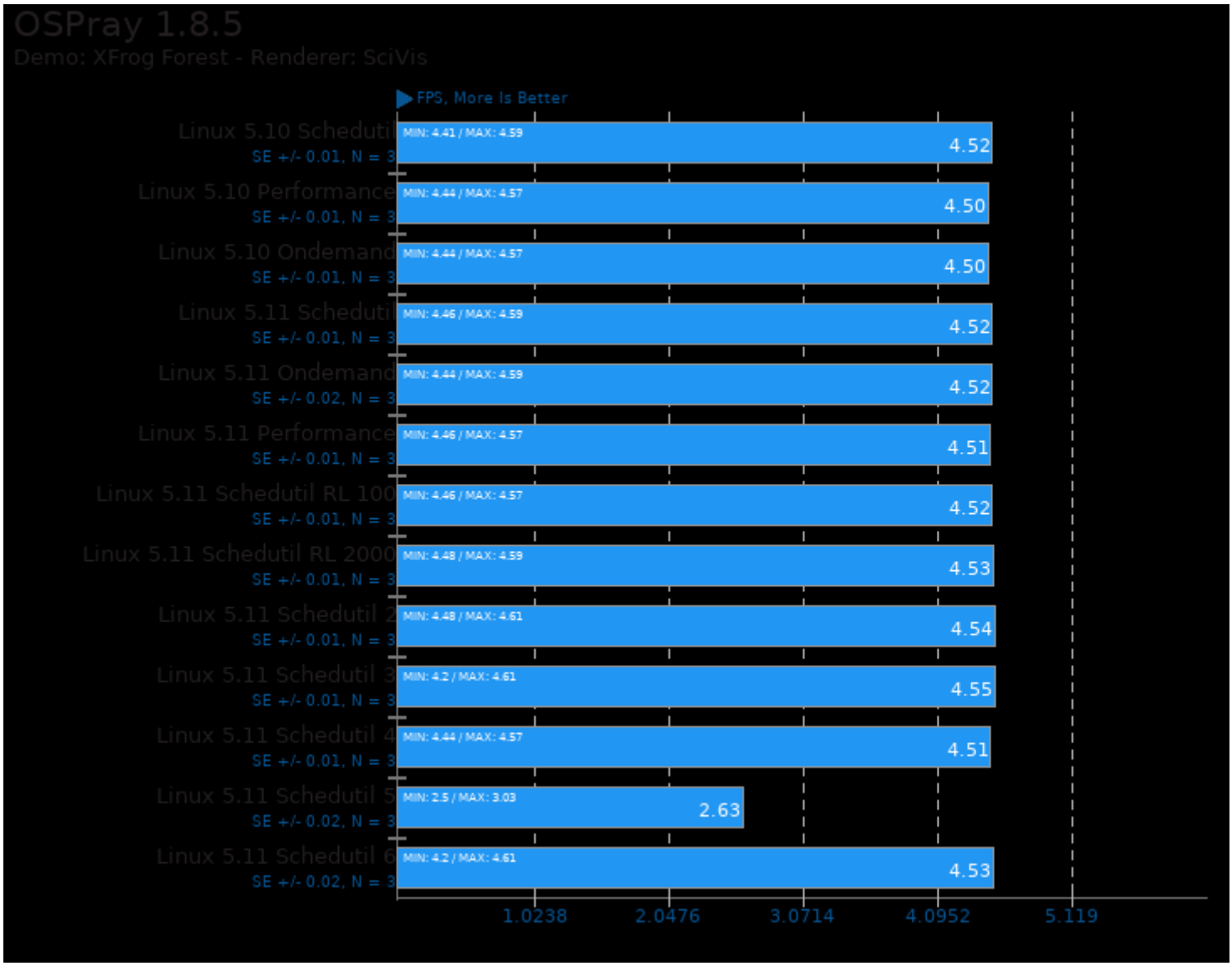
Ryzen 9 5900X Freq Invariance Combo Testing



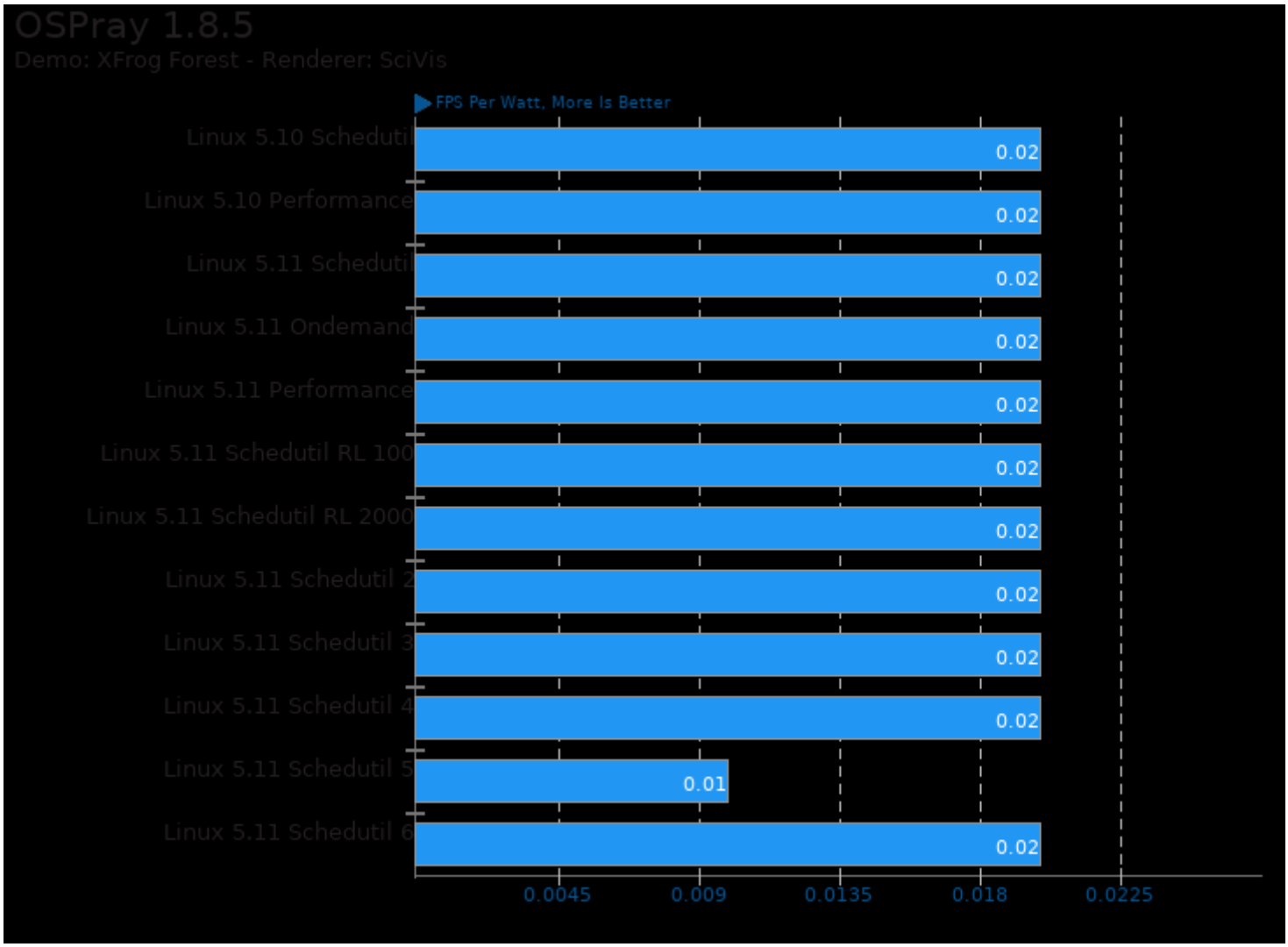
Ryzen 9 5900X Freq Invariance Combo Testing



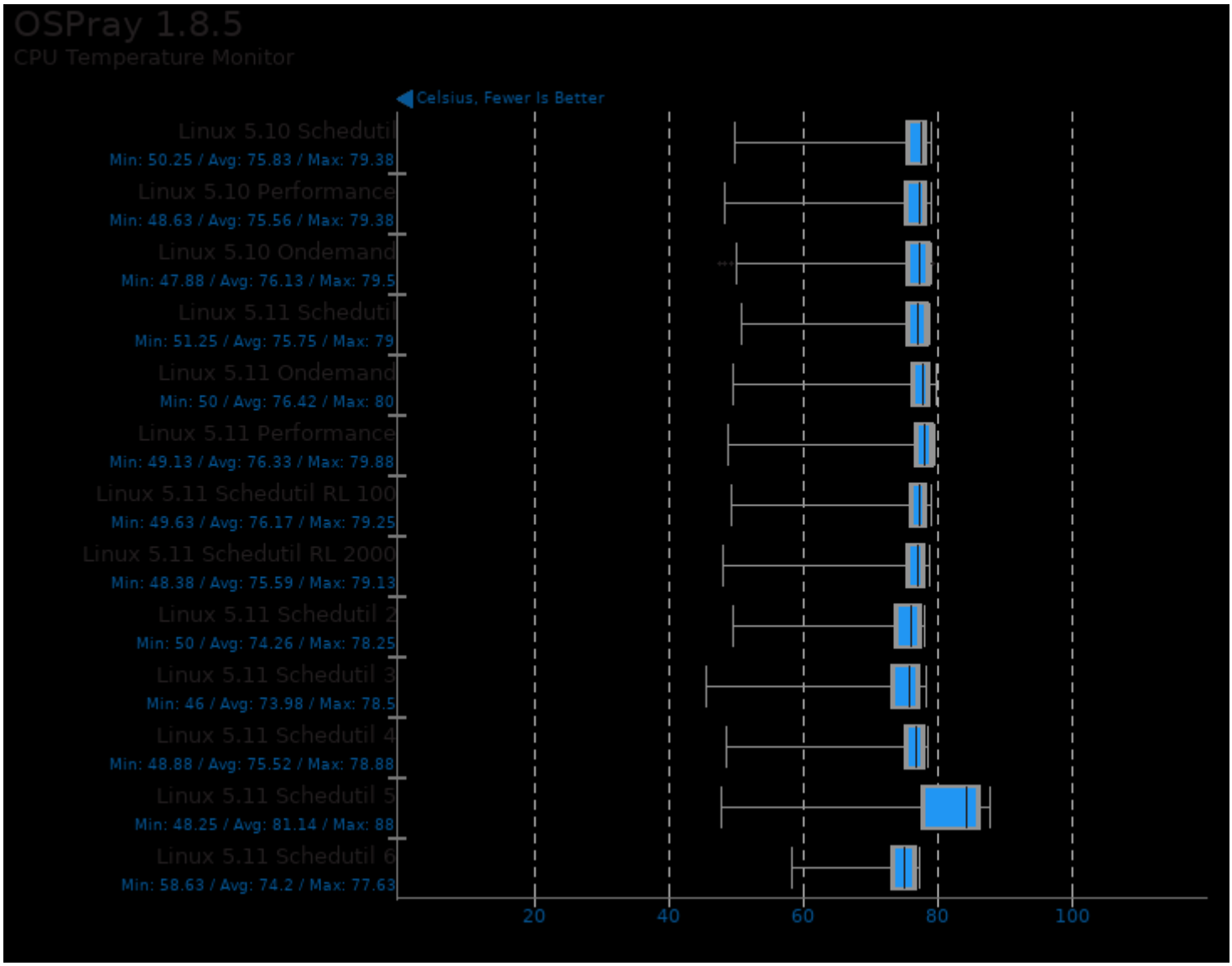
Ryzen 9 5900X Freq Invariance Combo Testing



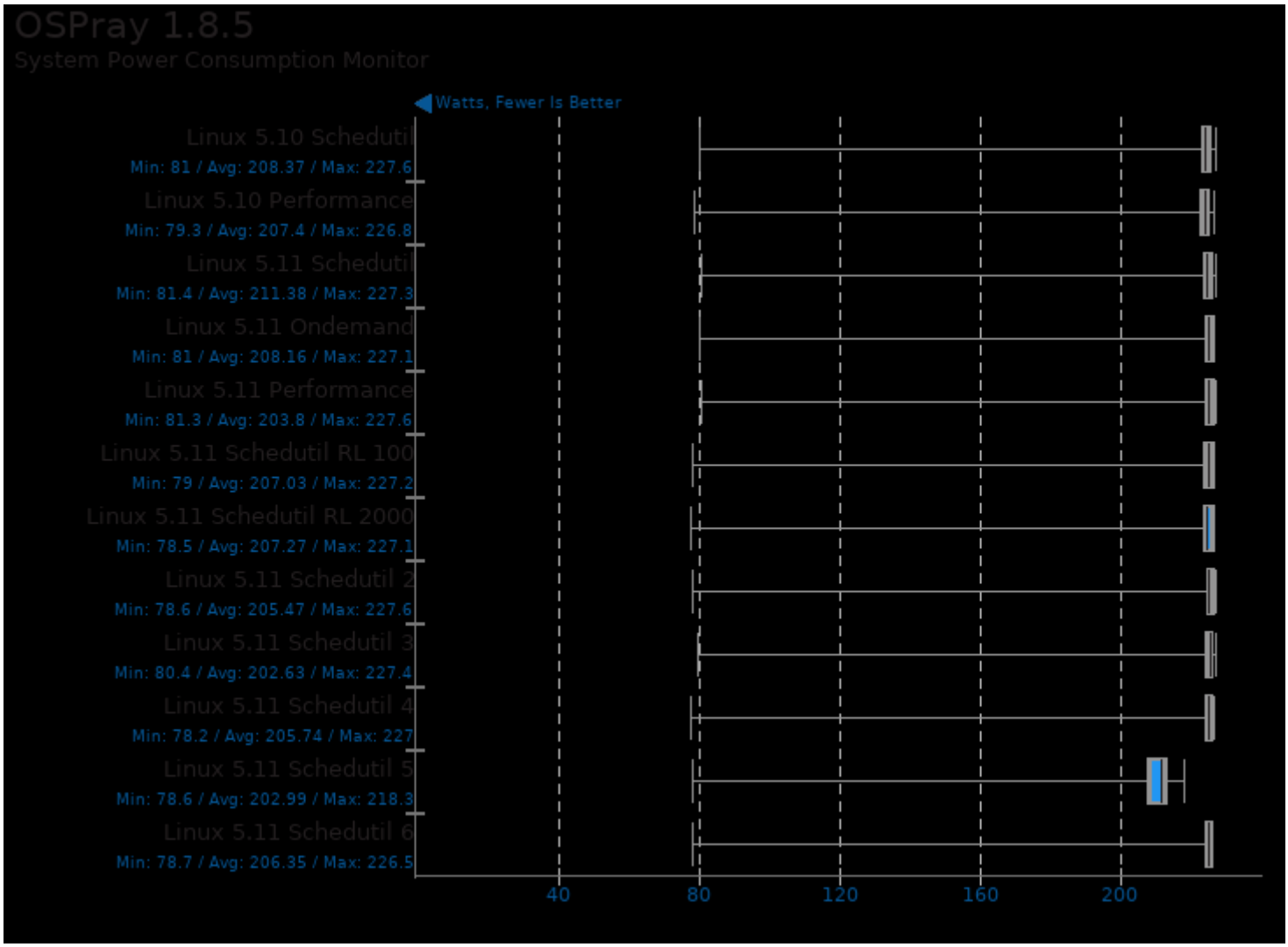
Ryzen 9 5900X Freq Invariance Combo Testing



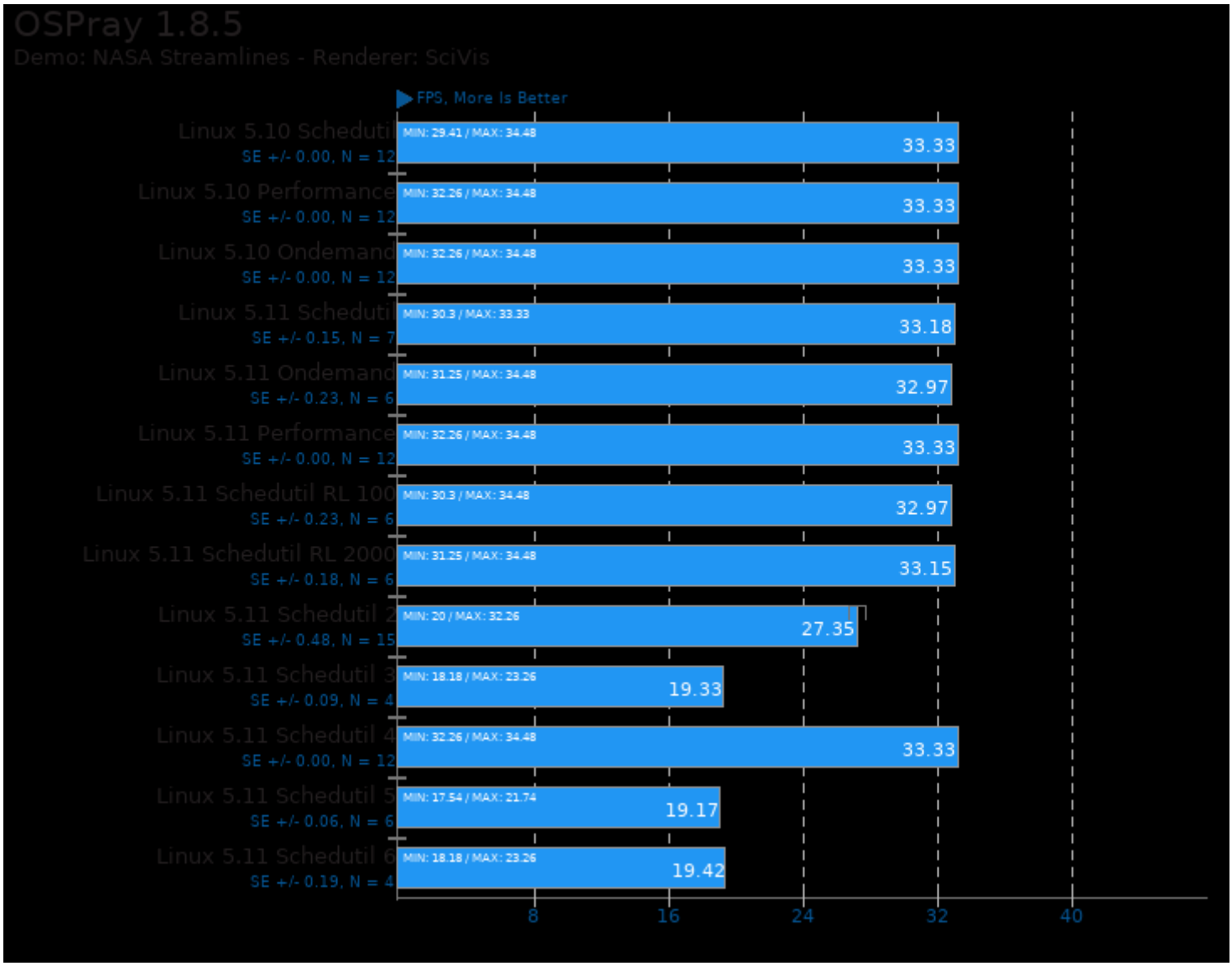
Ryzen 9 5900X Freq Invariance Combo Testing



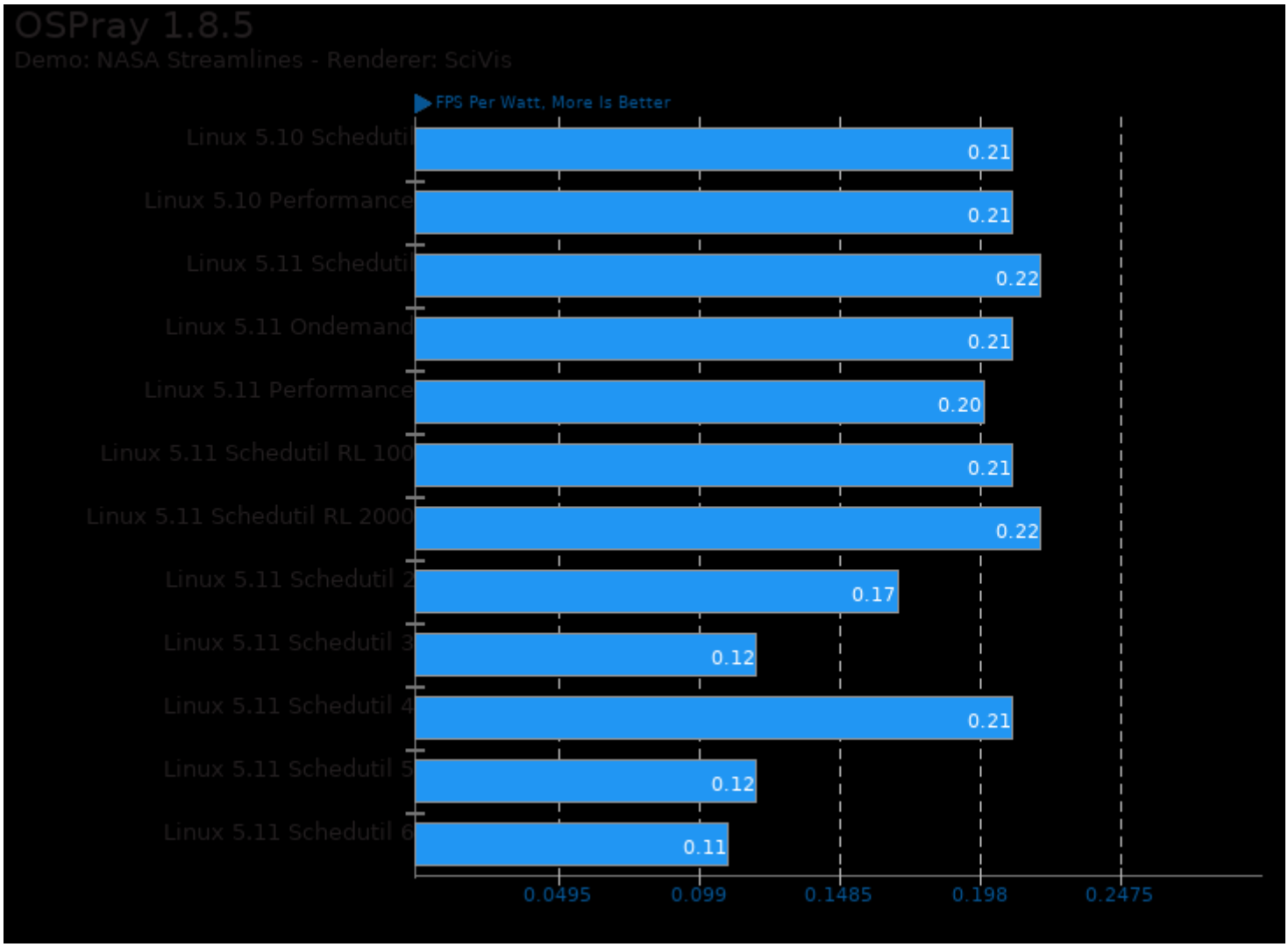
Ryzen 9 5900X Freq Invariance Combo Testing



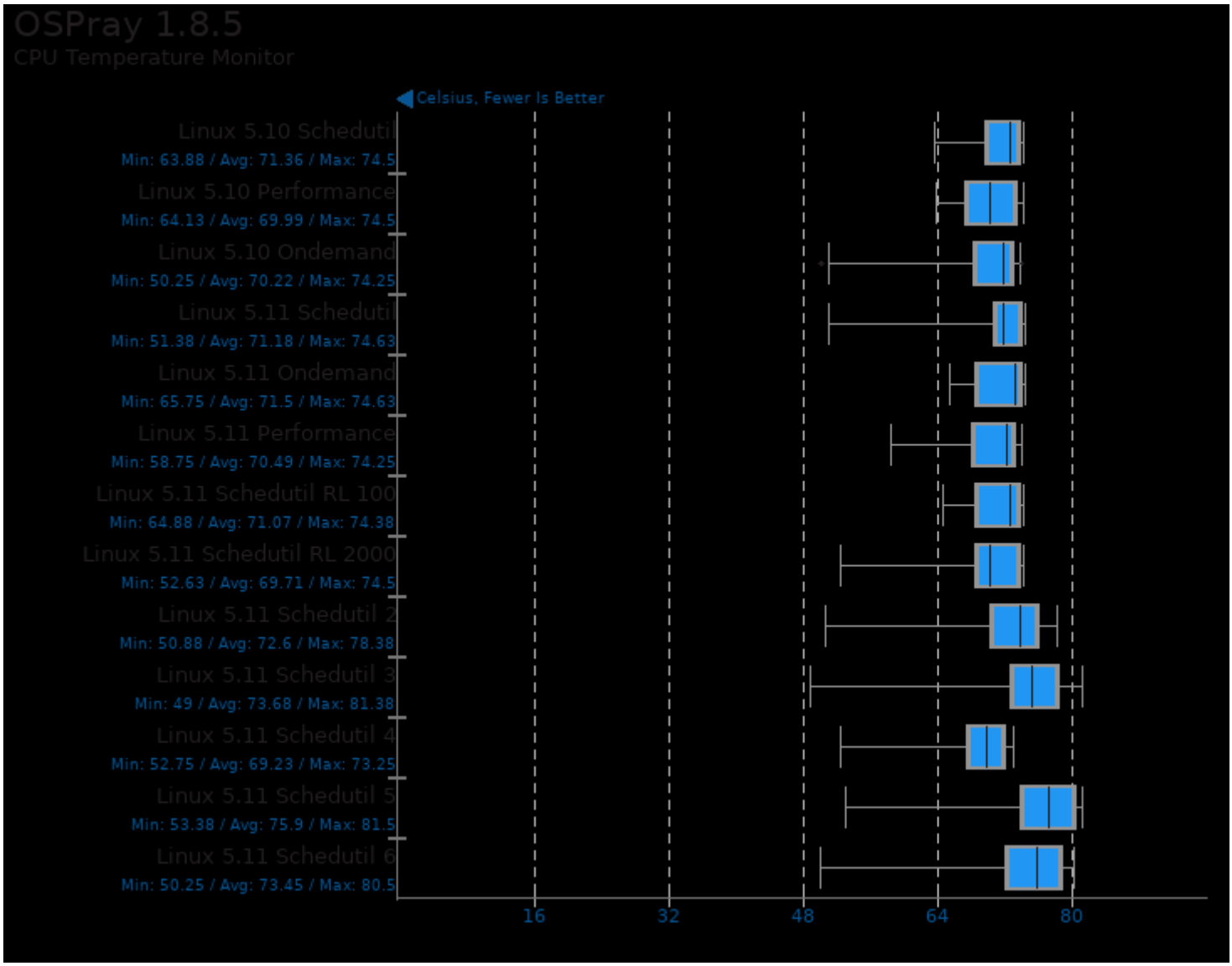
Ryzen 9 5900X Freq Invariance Combo Testing



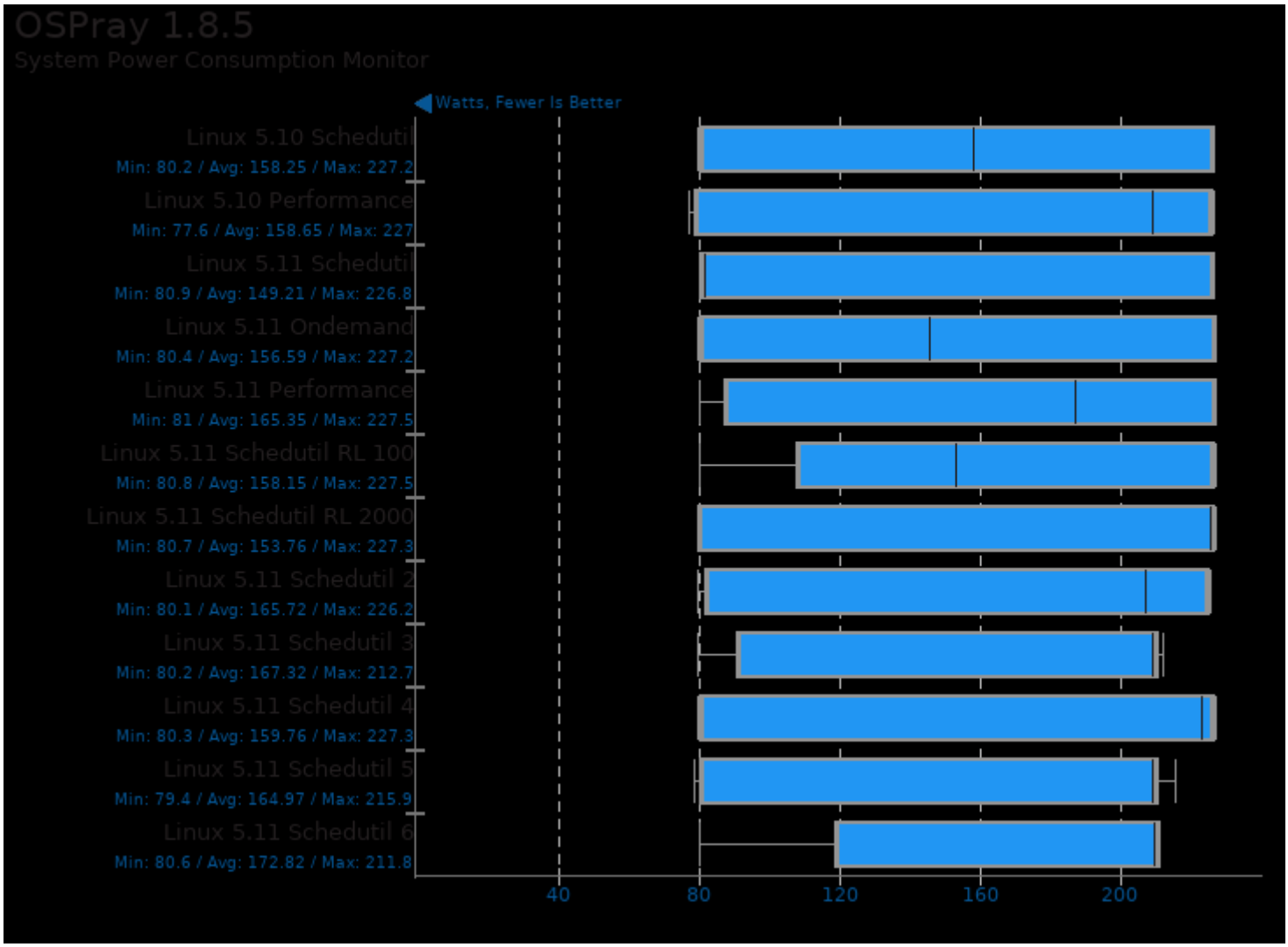
Ryzen 9 5900X Freq Invariance Combo Testing



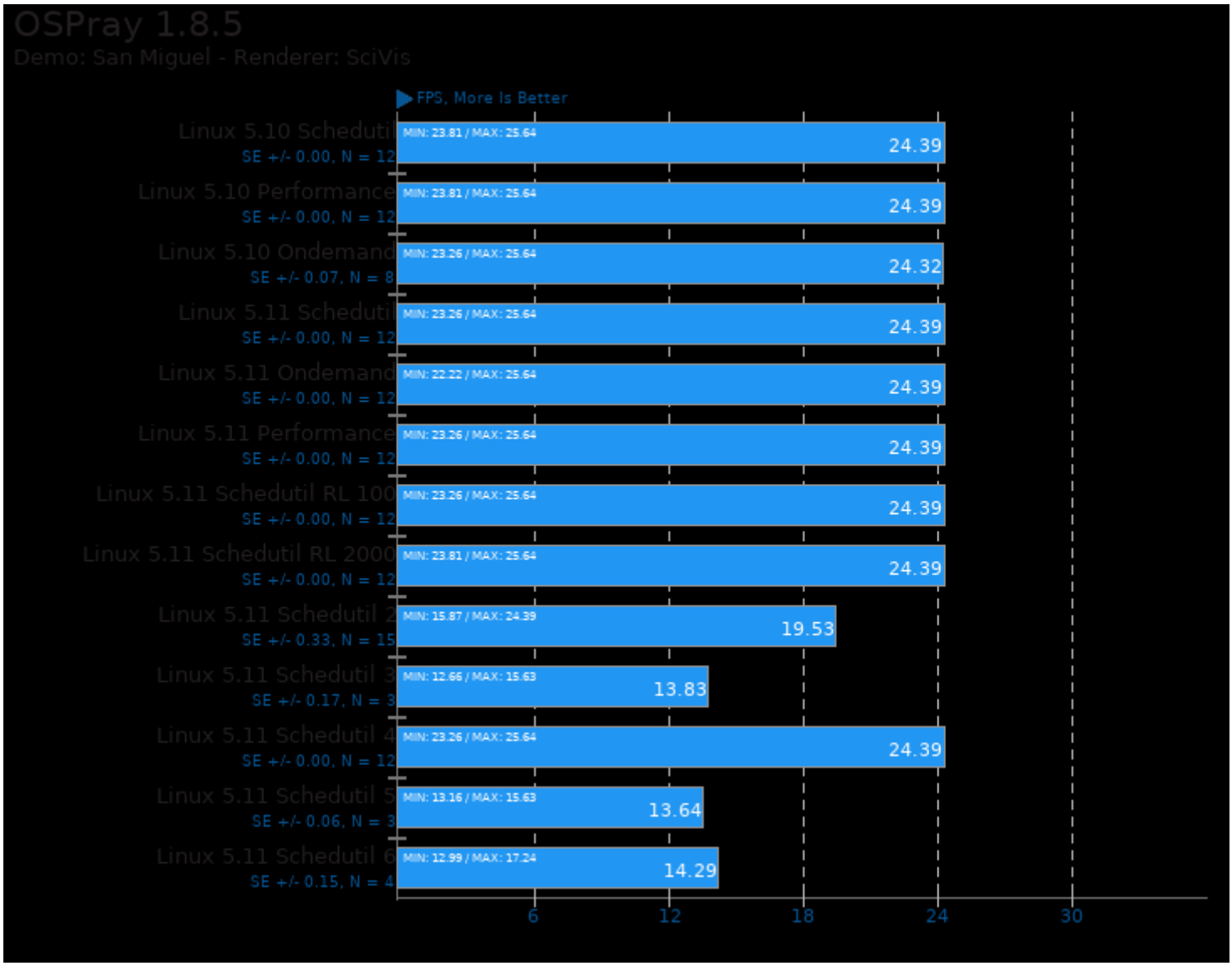
Ryzen 9 5900X Freq Invariance Combo Testing



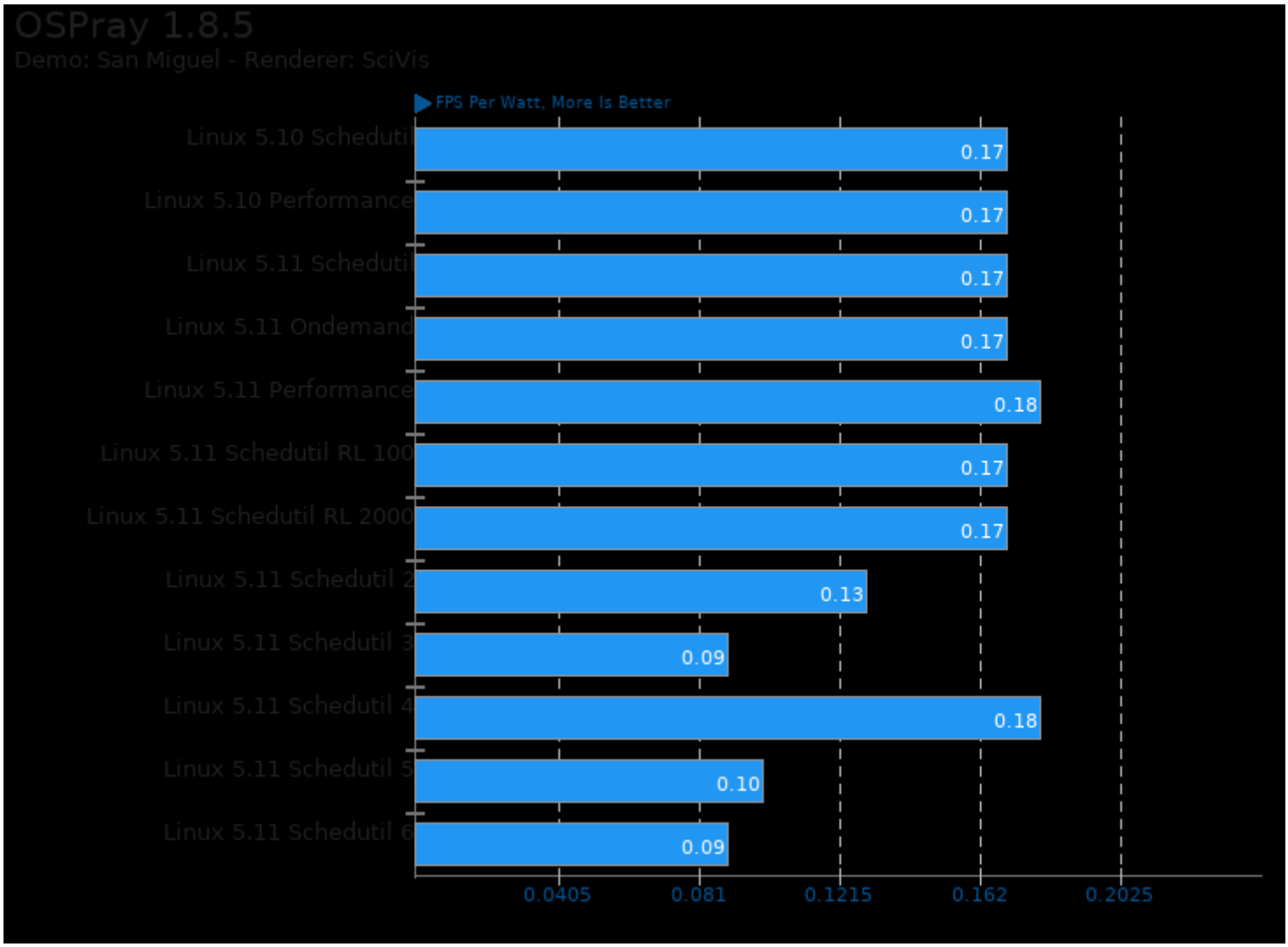
Ryzen 9 5900X Freq Invariance Combo Testing



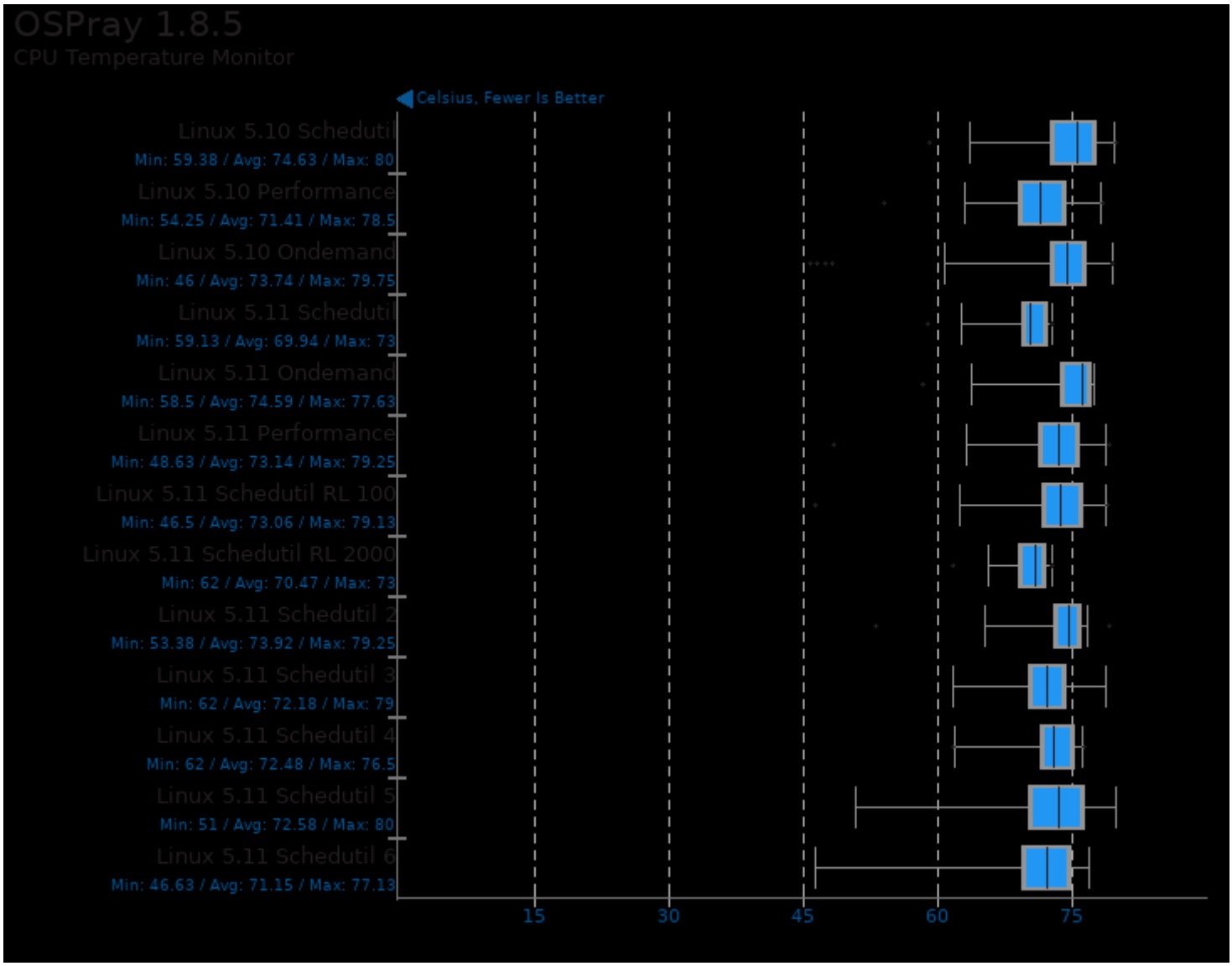
Ryzen 9 5900X Freq Invariance Combo Testing



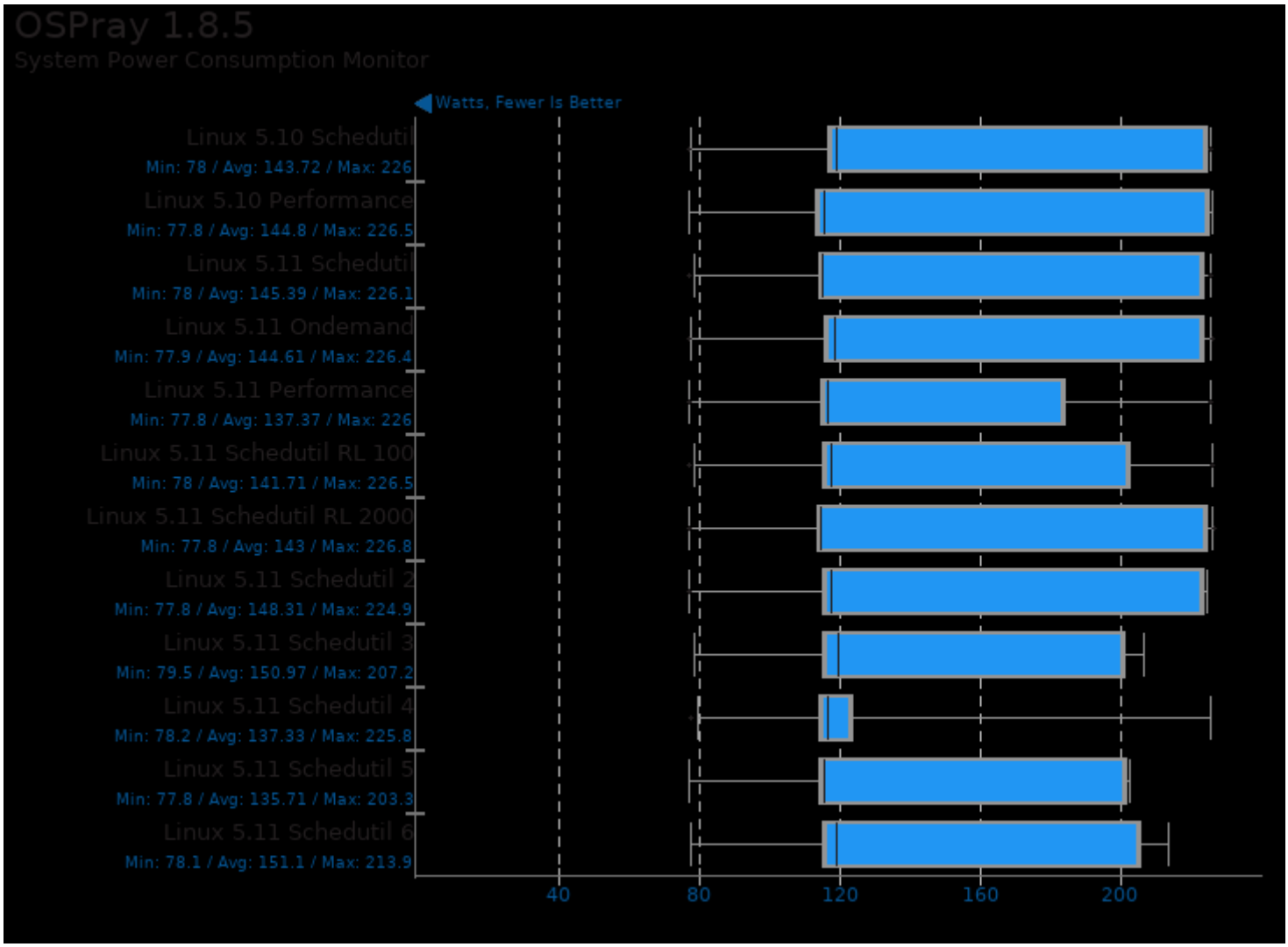
Ryzen 9 5900X Freq Invariance Combo Testing



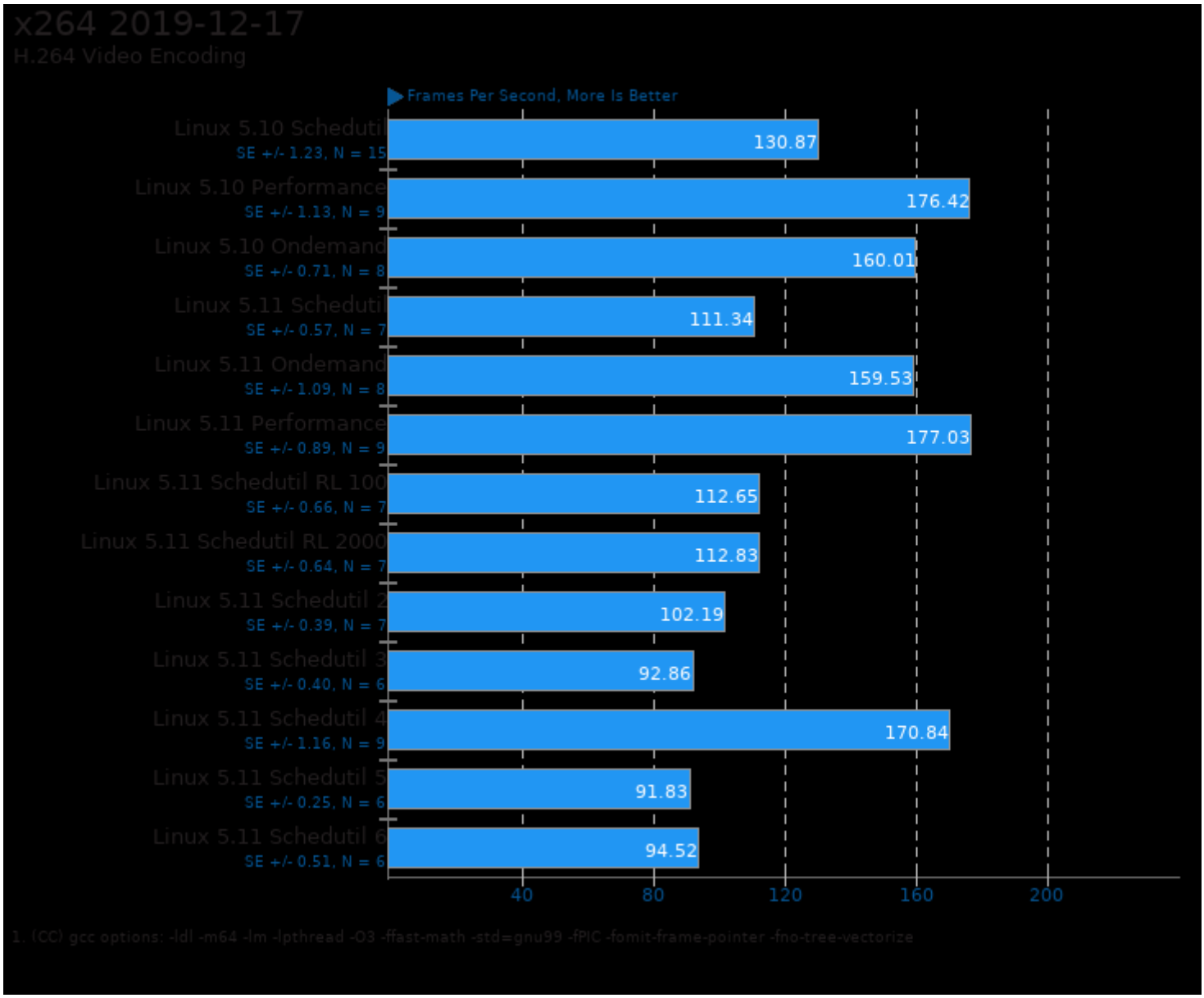
Ryzen 9 5900X Freq Invariance Combo Testing



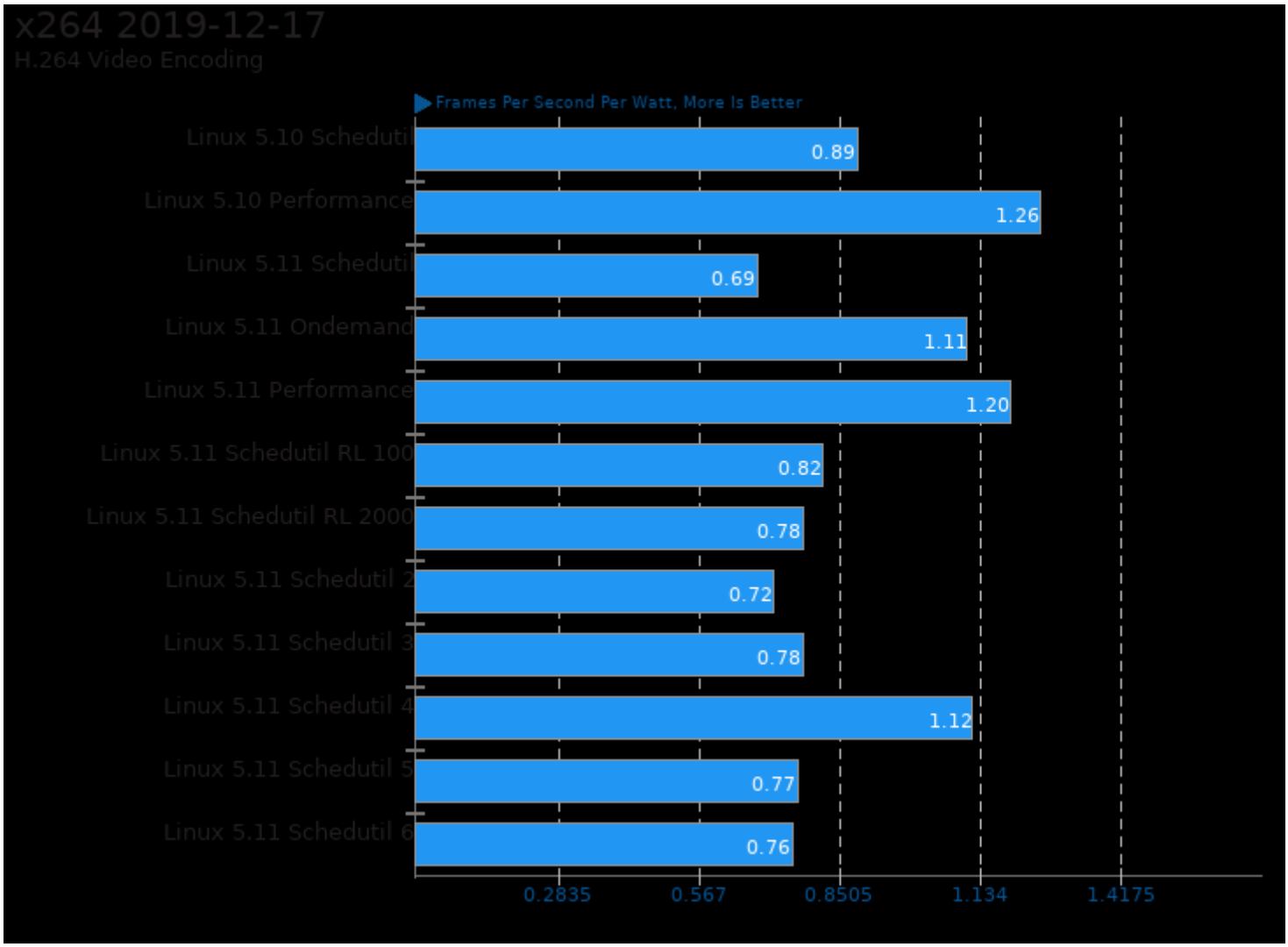
Ryzen 9 5900X Freq Invariance Combo Testing



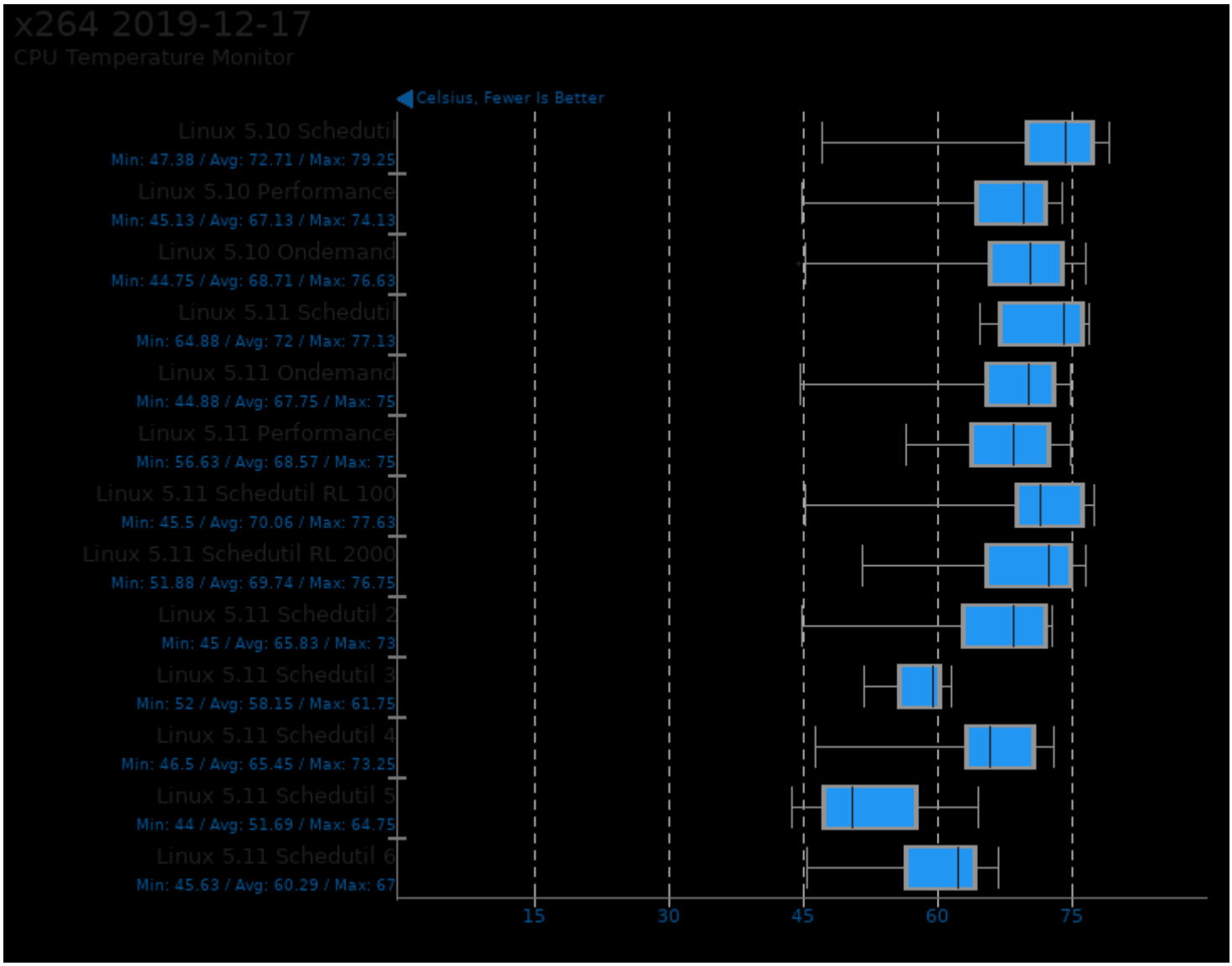
Ryzen 9 5900X Freq Invariance Combo Testing



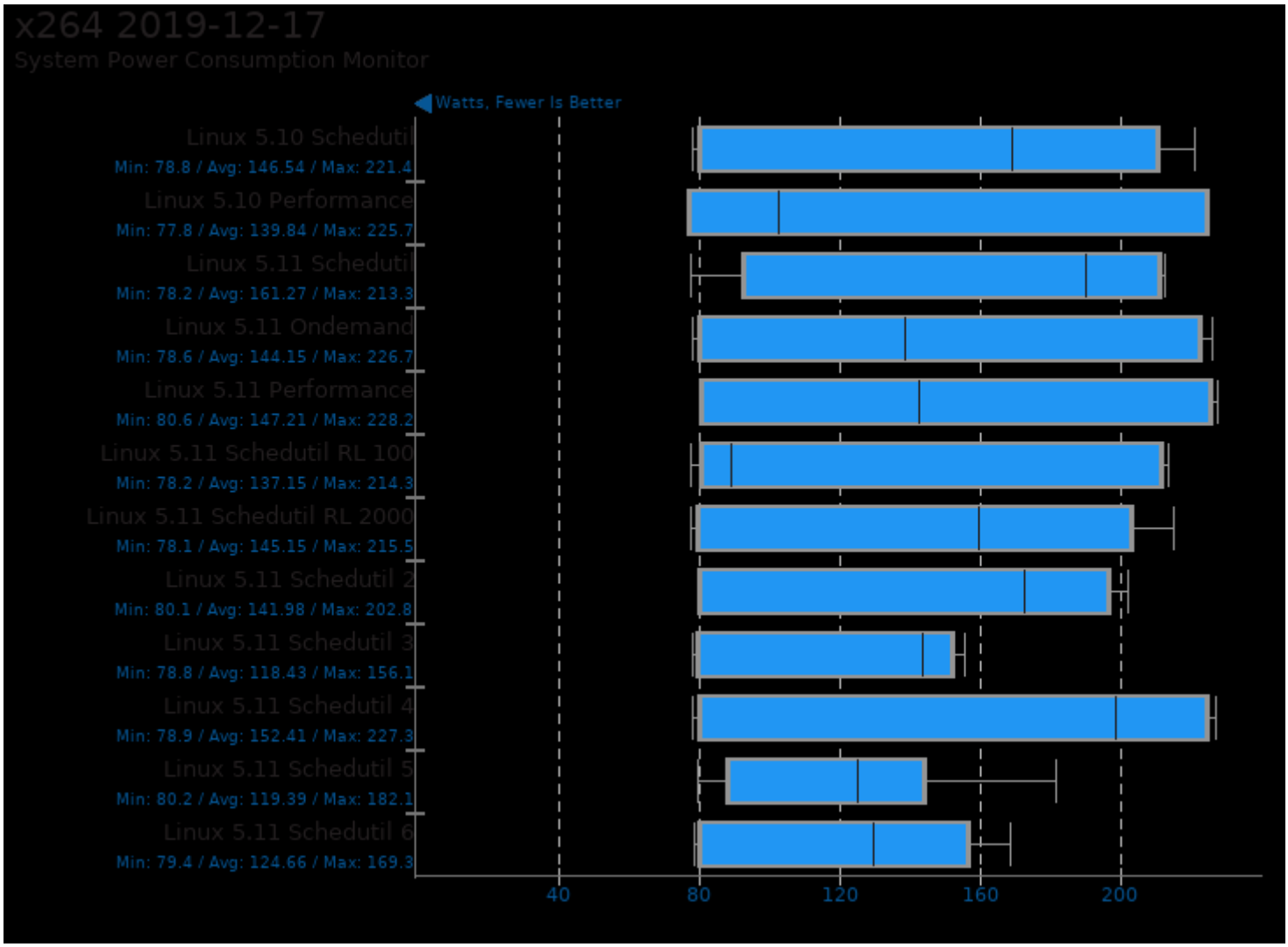
Ryzen 9 5900X Freq Invariance Combo Testing



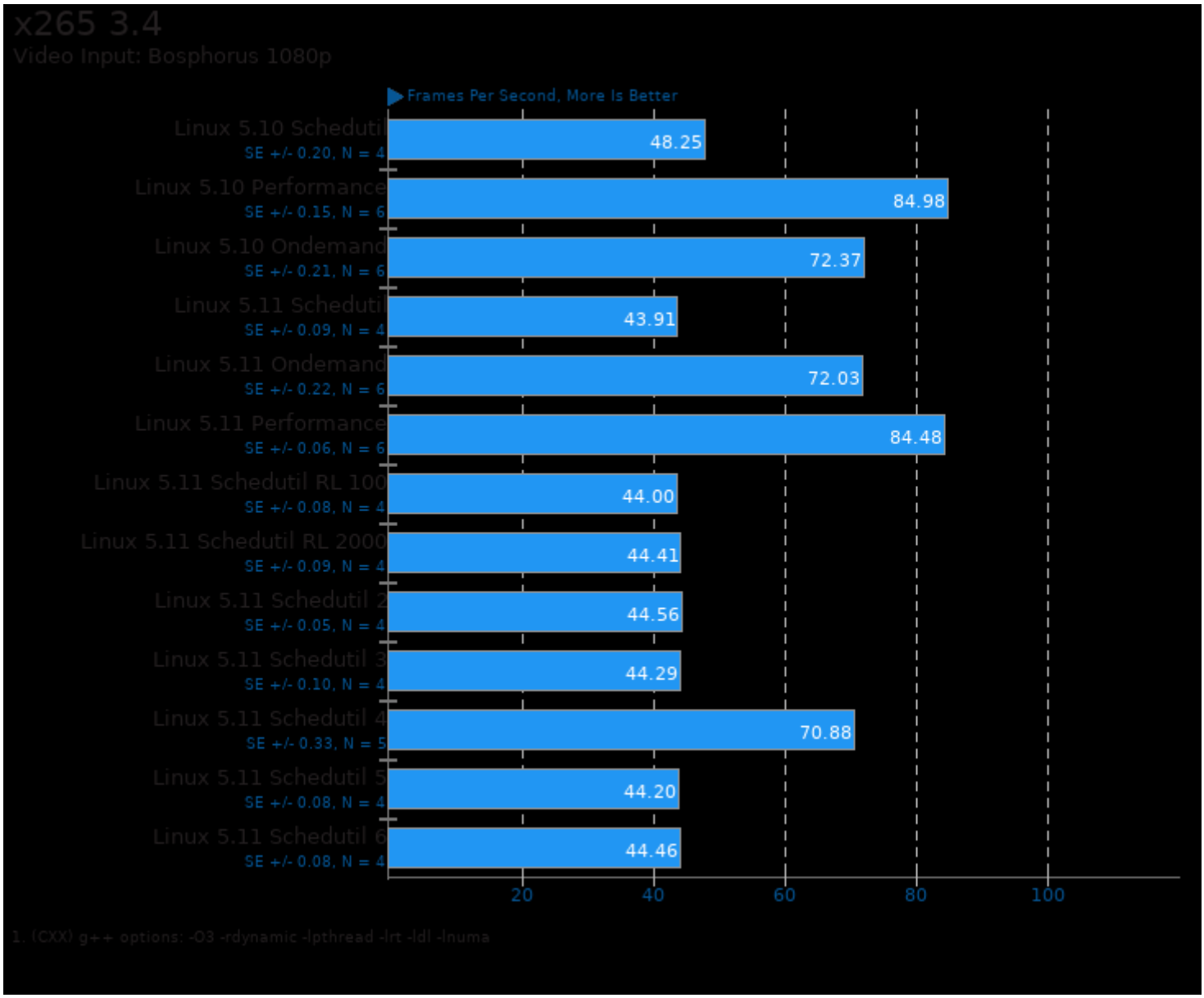
Ryzen 9 5900X Freq Invariance Combo Testing



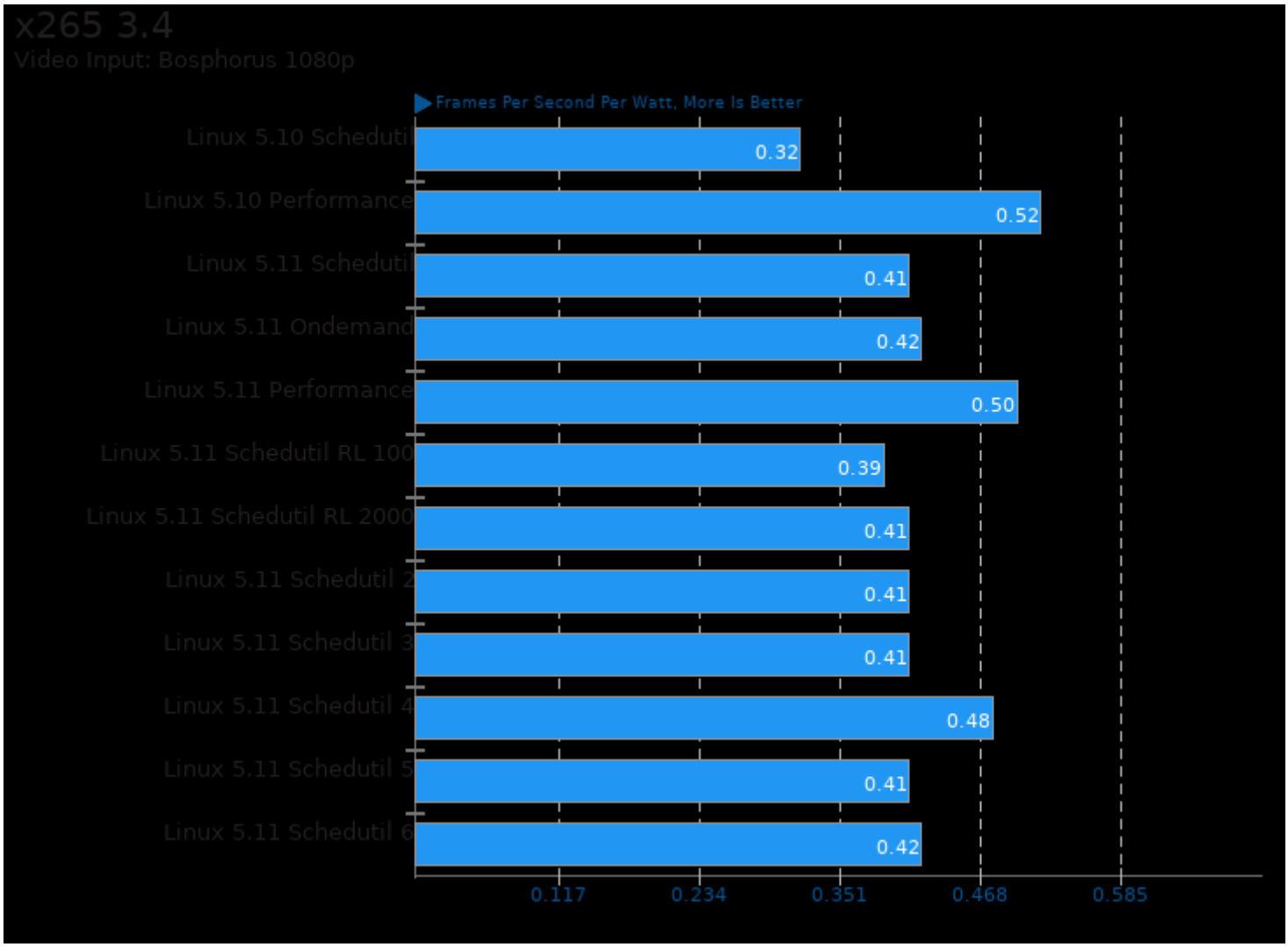
Ryzen 9 5900X Freq Invariance Combo Testing



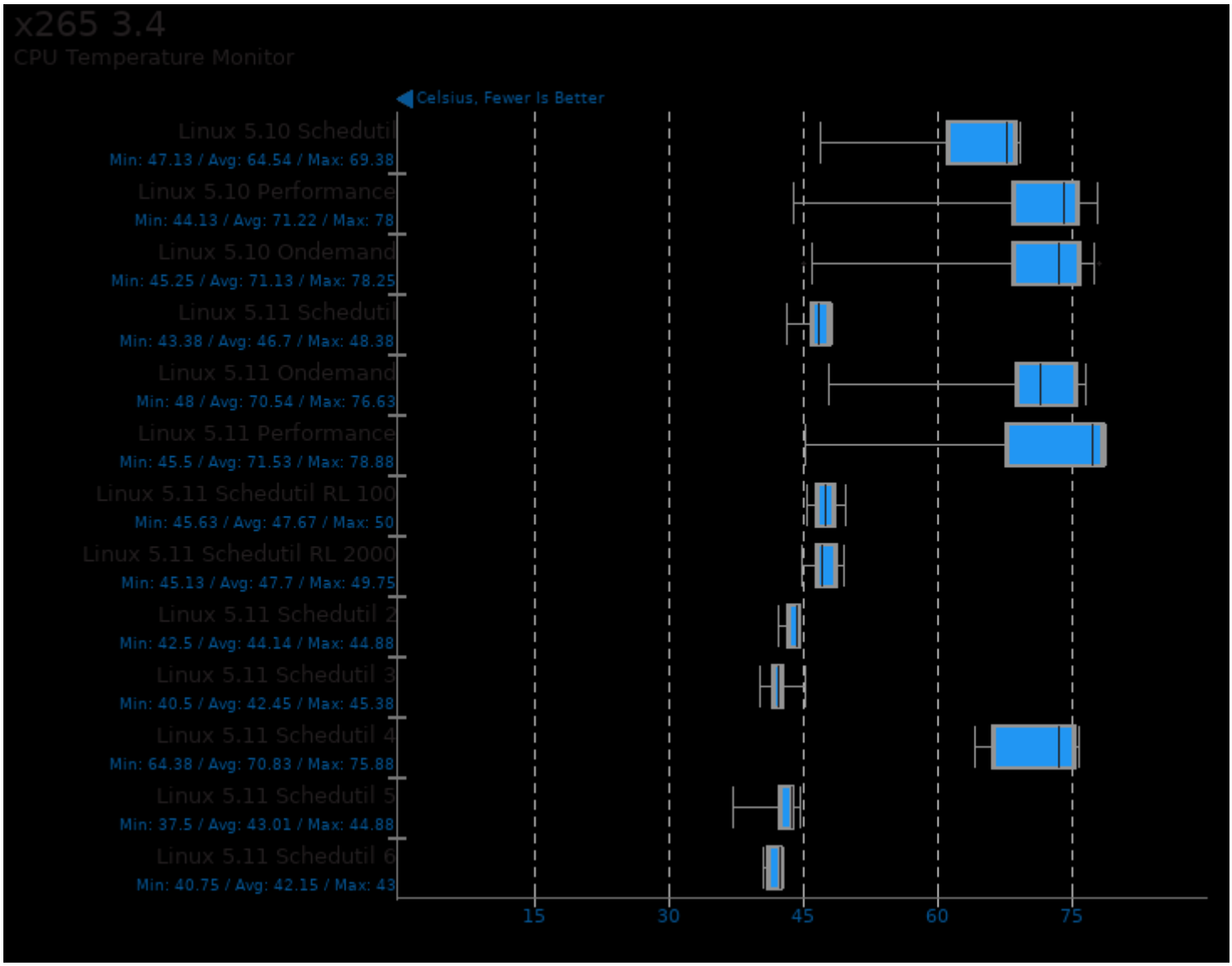
Ryzen 9 5900X Freq Invariance Combo Testing



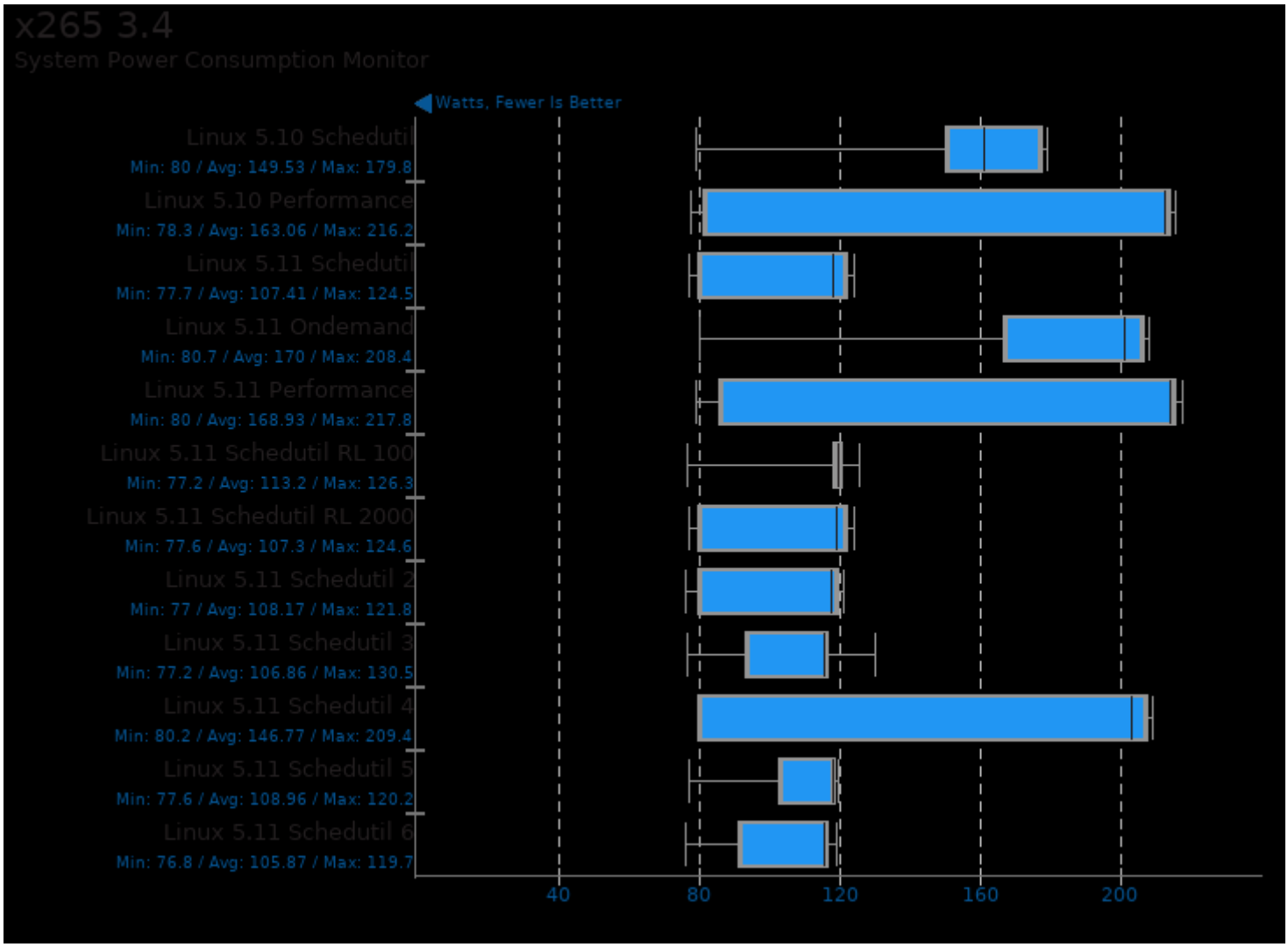
Ryzen 9 5900X Freq Invariance Combo Testing



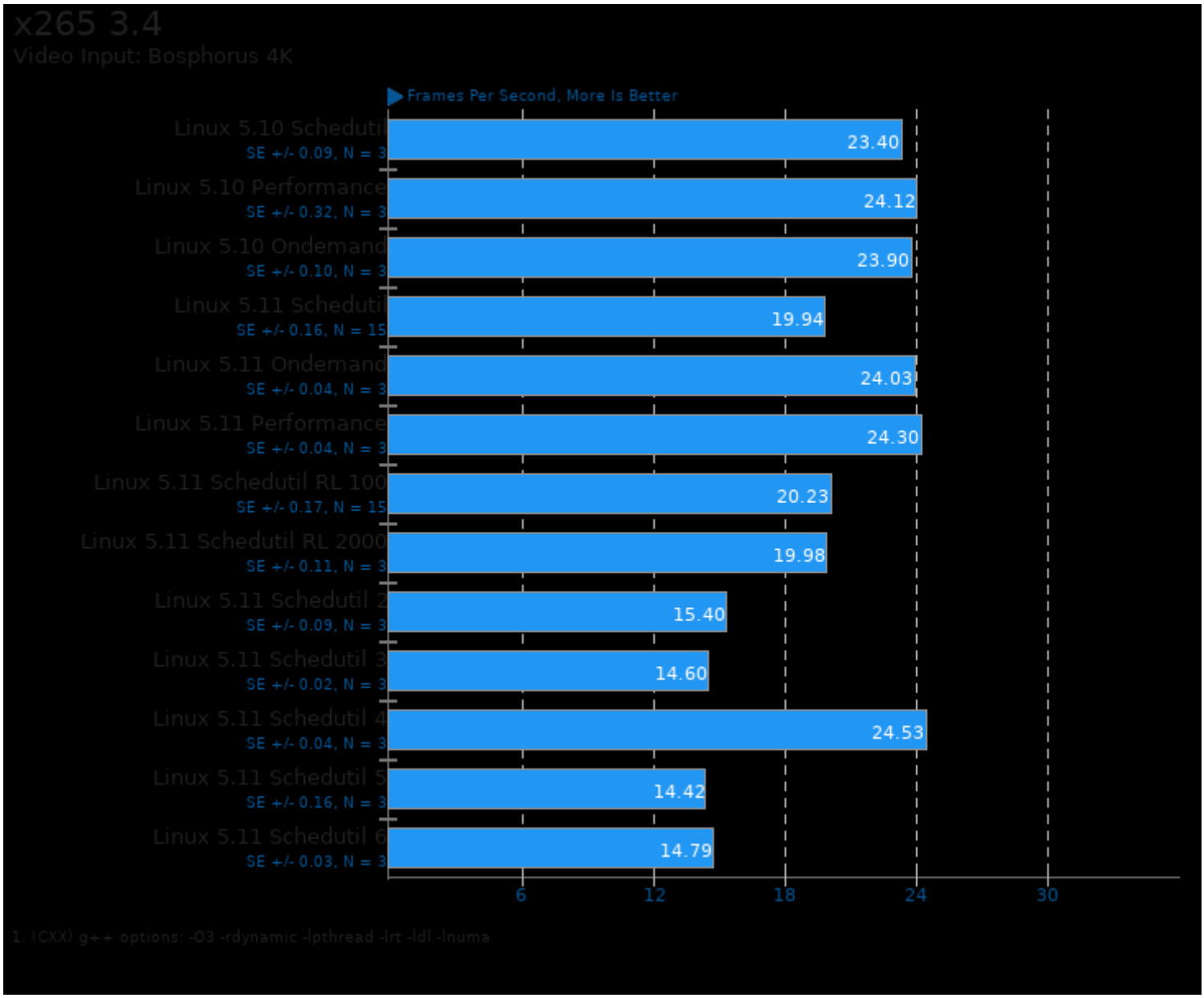
Ryzen 9 5900X Freq Invariance Combo Testing



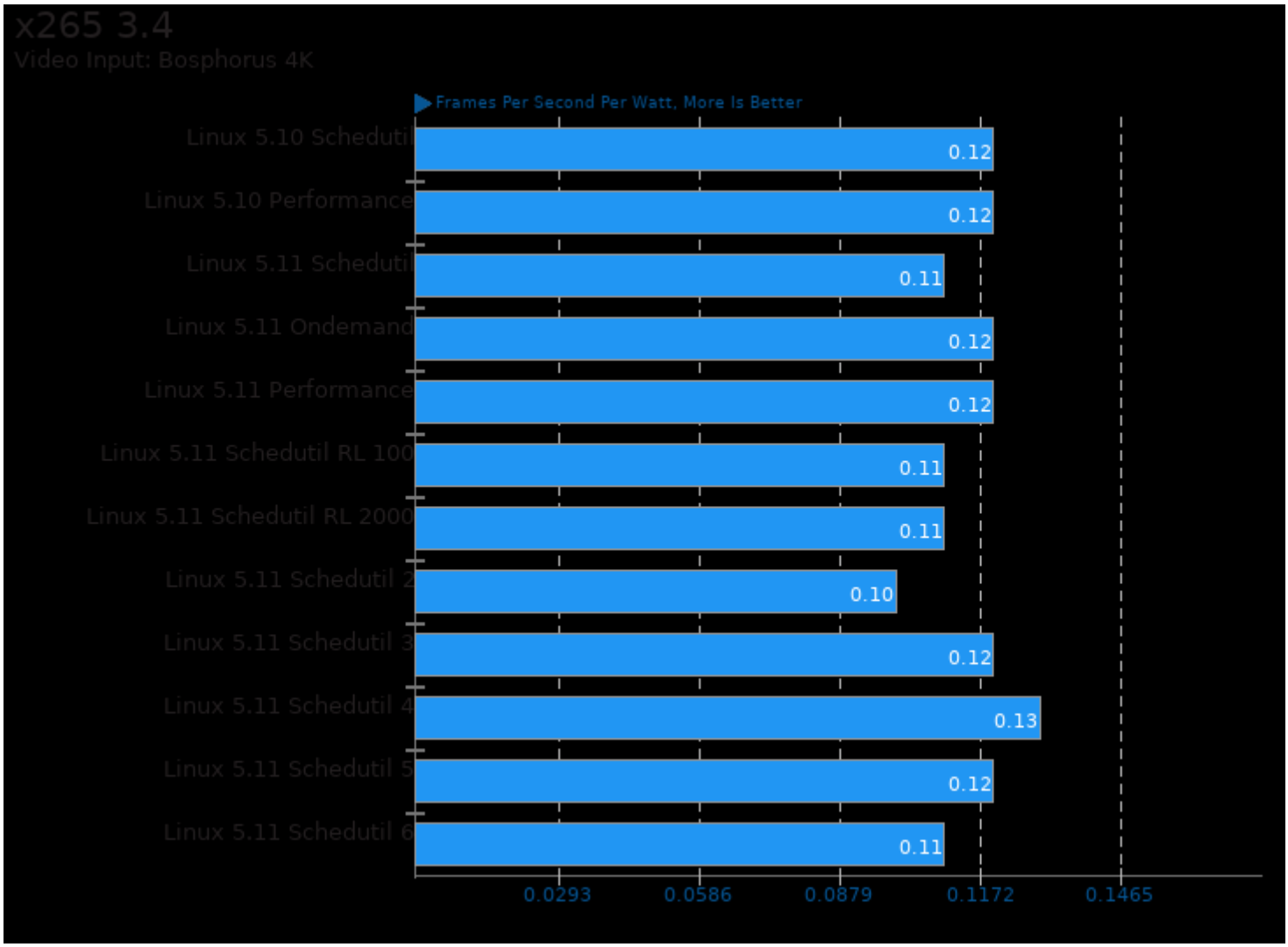
Ryzen 9 5900X Freq Invariance Combo Testing



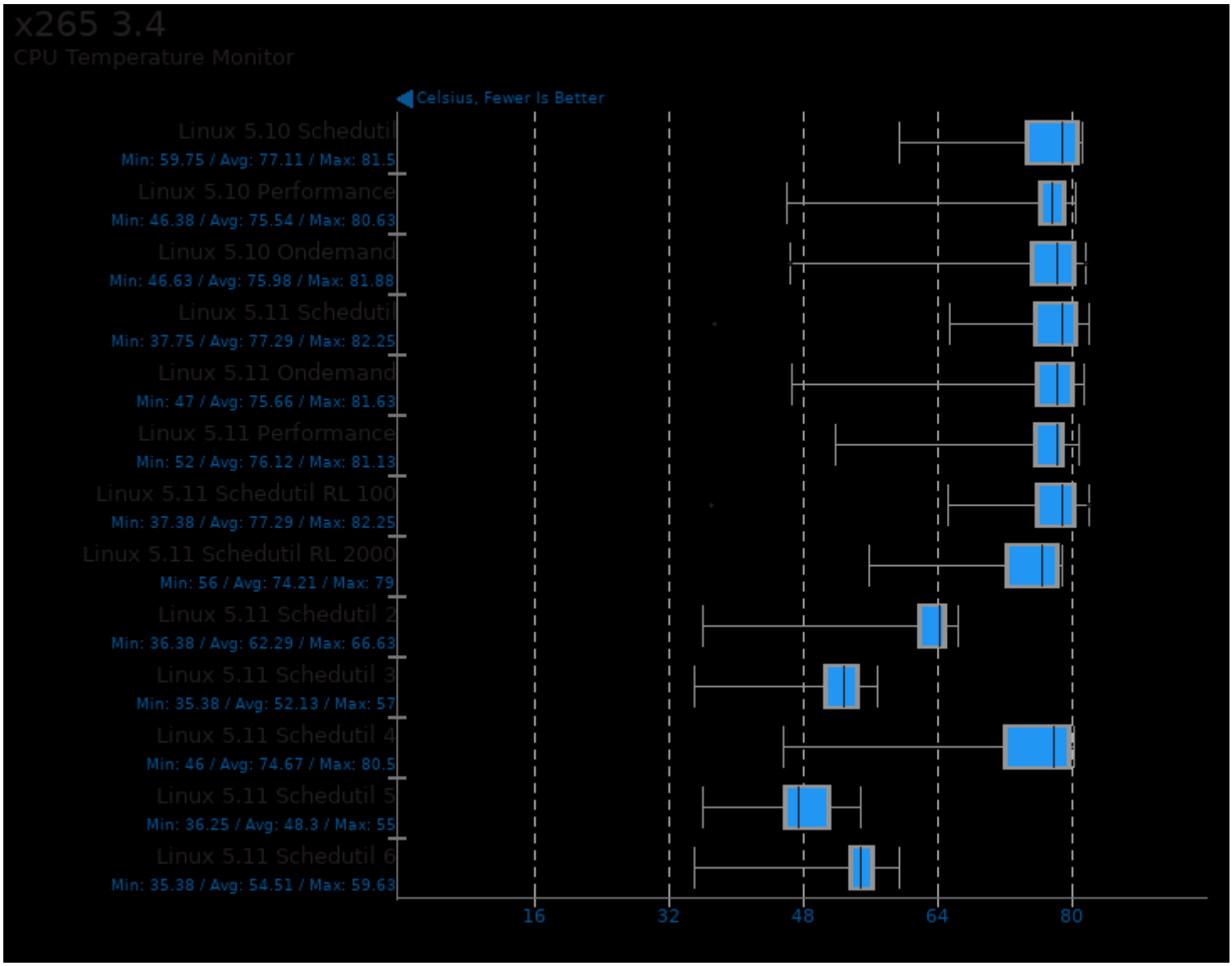
Ryzen 9 5900X Freq Invariance Combo Testing



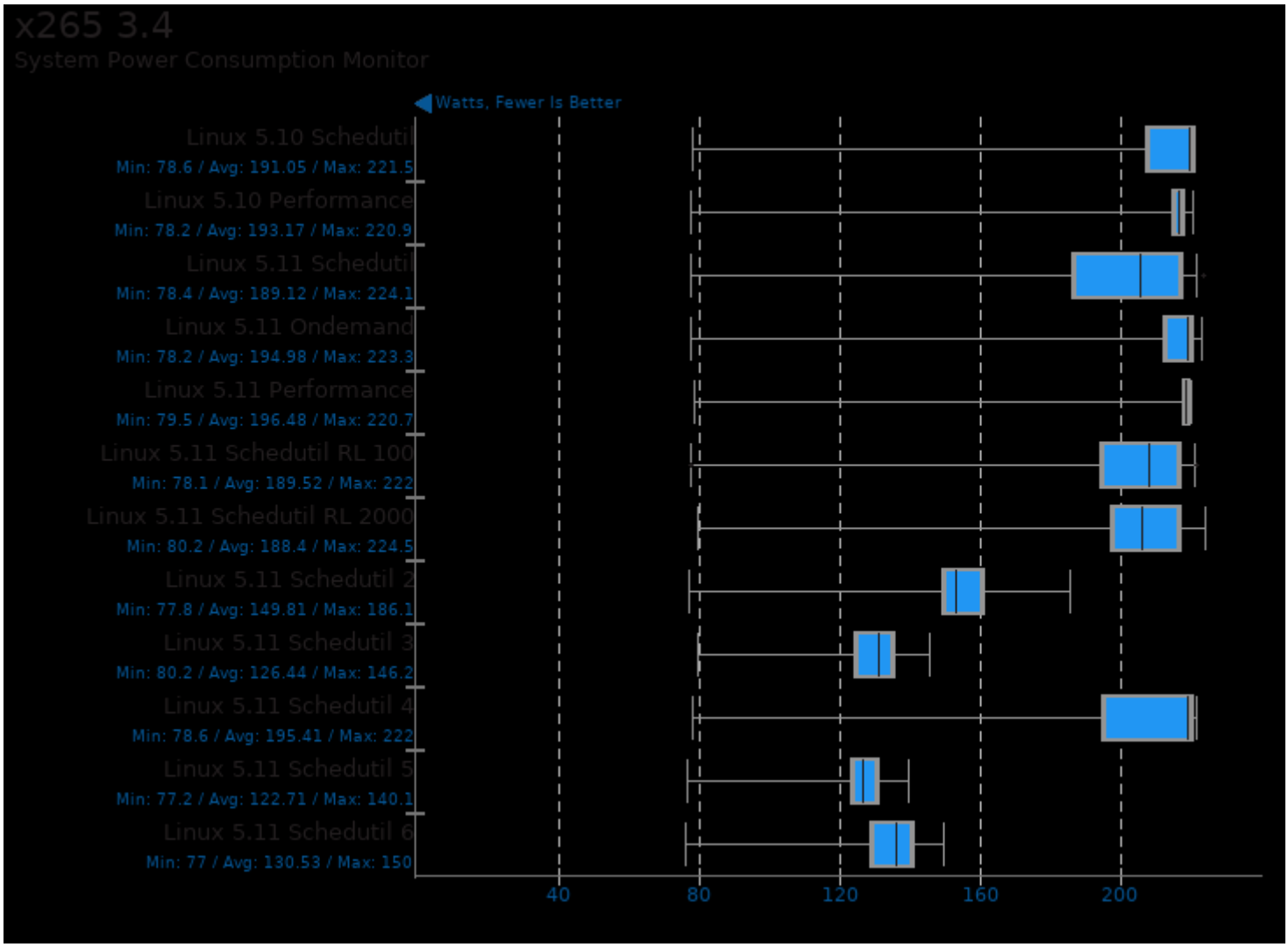
Ryzen 9 5900X Freq Invariance Combo Testing



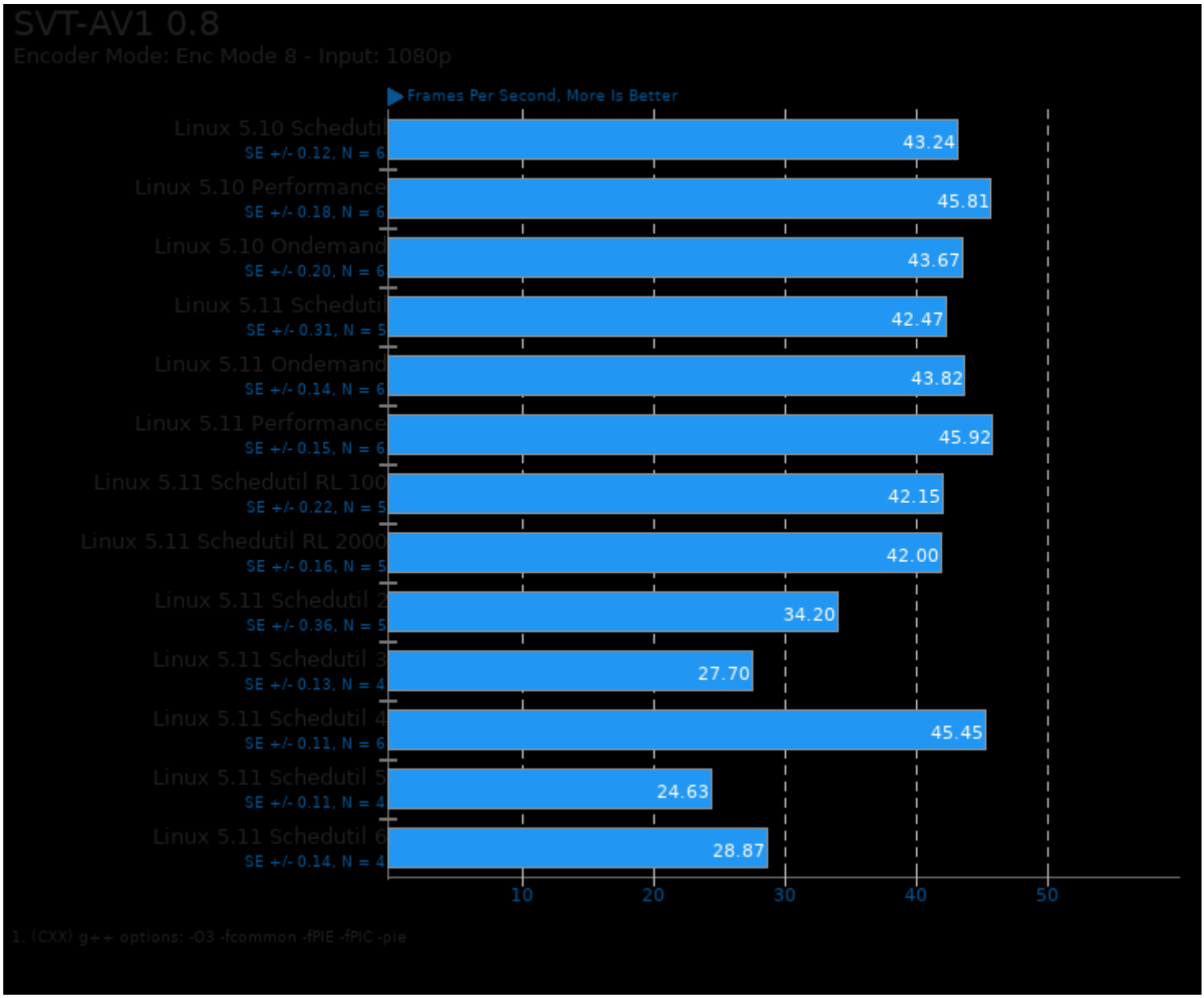
Ryzen 9 5900X Freq Invariance Combo Testing



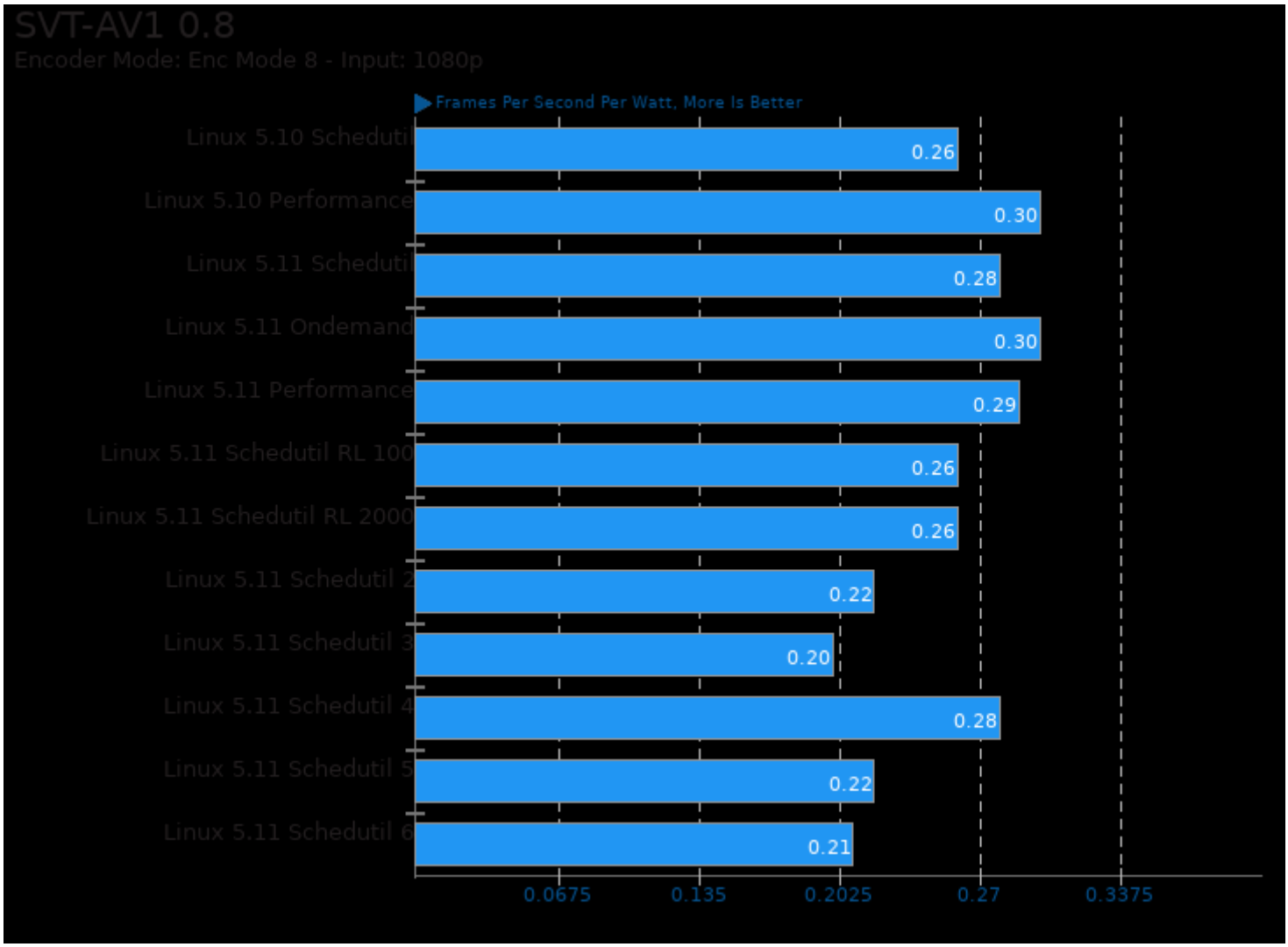
Ryzen 9 5900X Freq Invariance Combo Testing



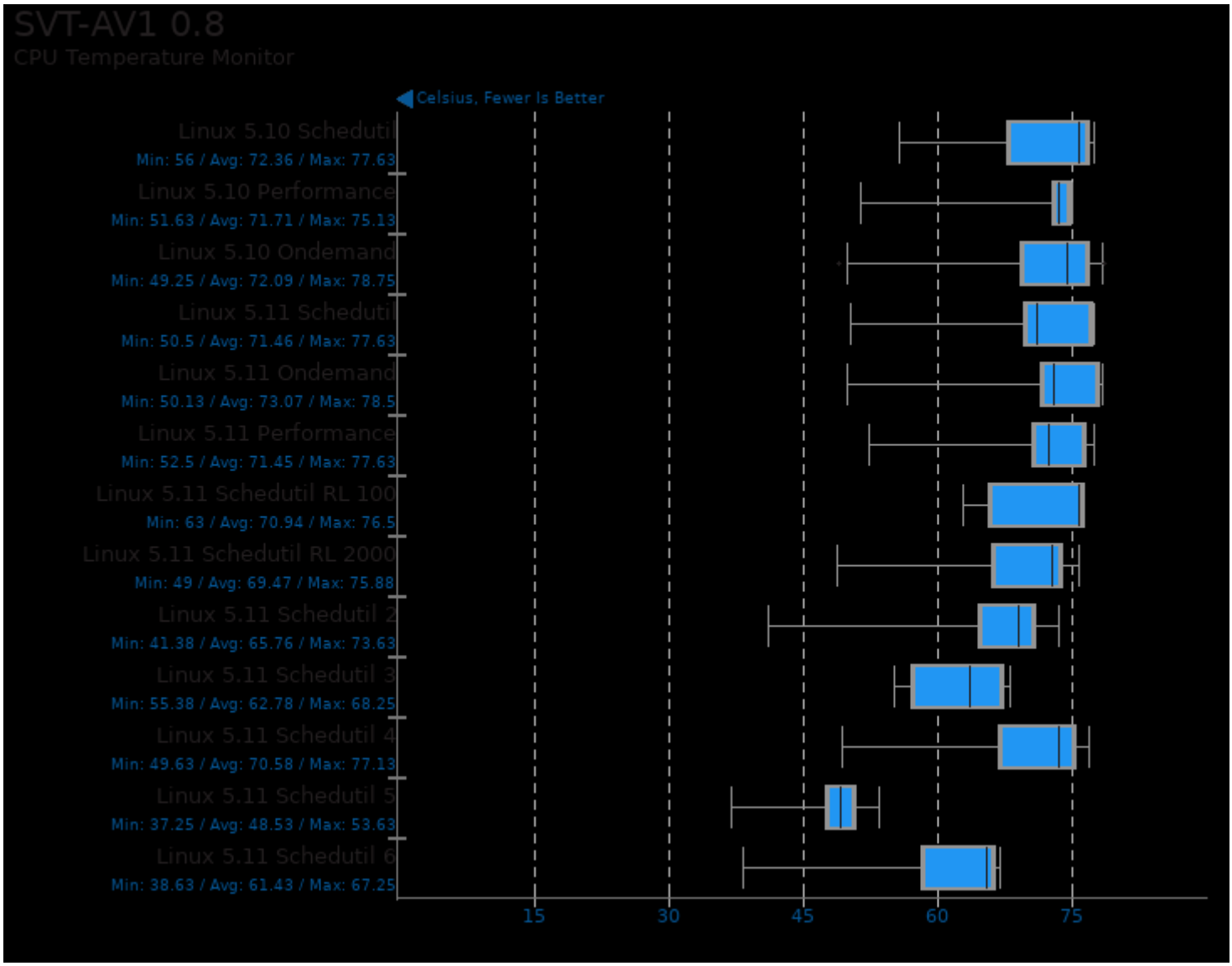
Ryzen 9 5900X Freq Invariance Combo Testing



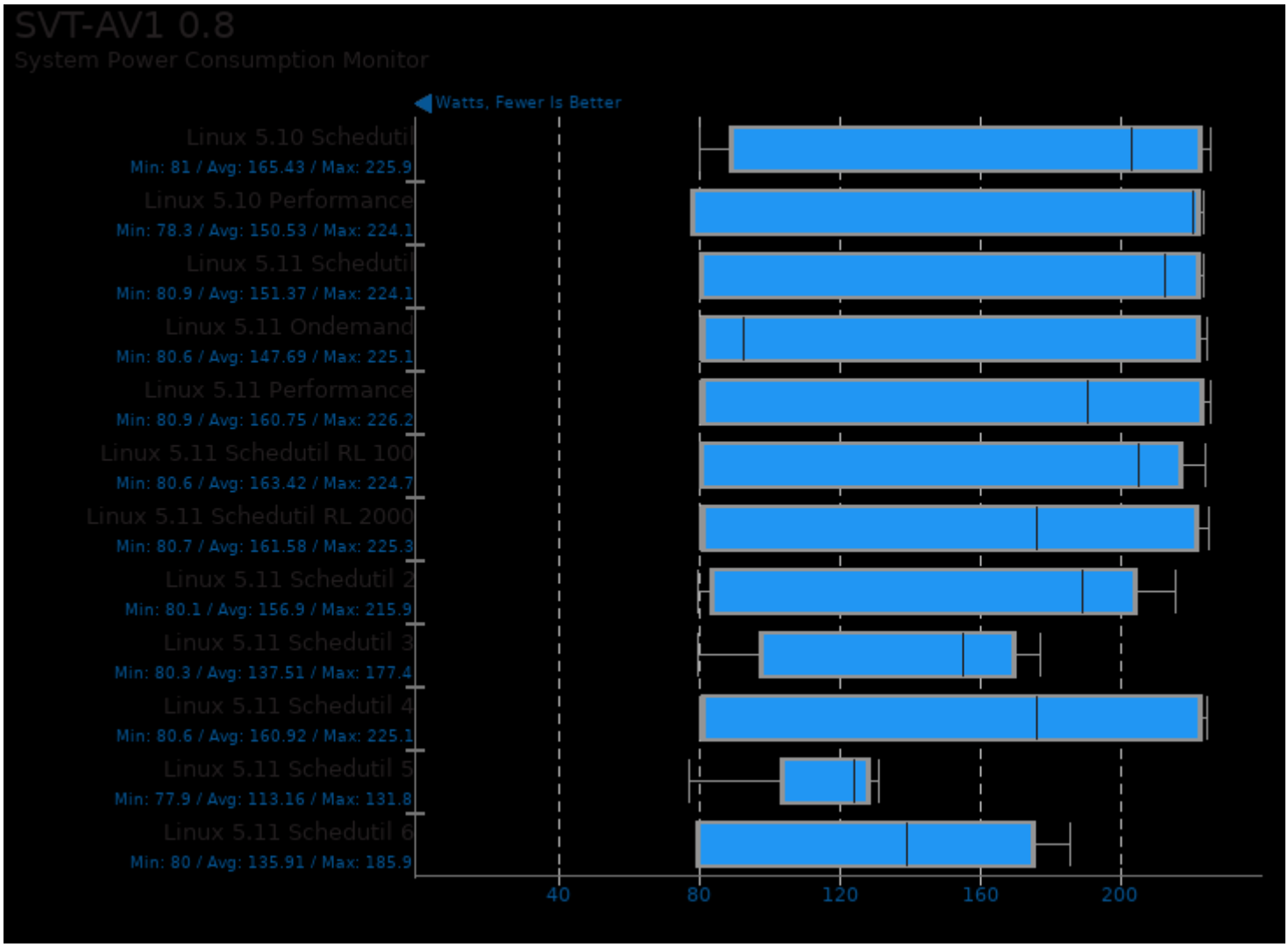
Ryzen 9 5900X Freq Invariance Combo Testing



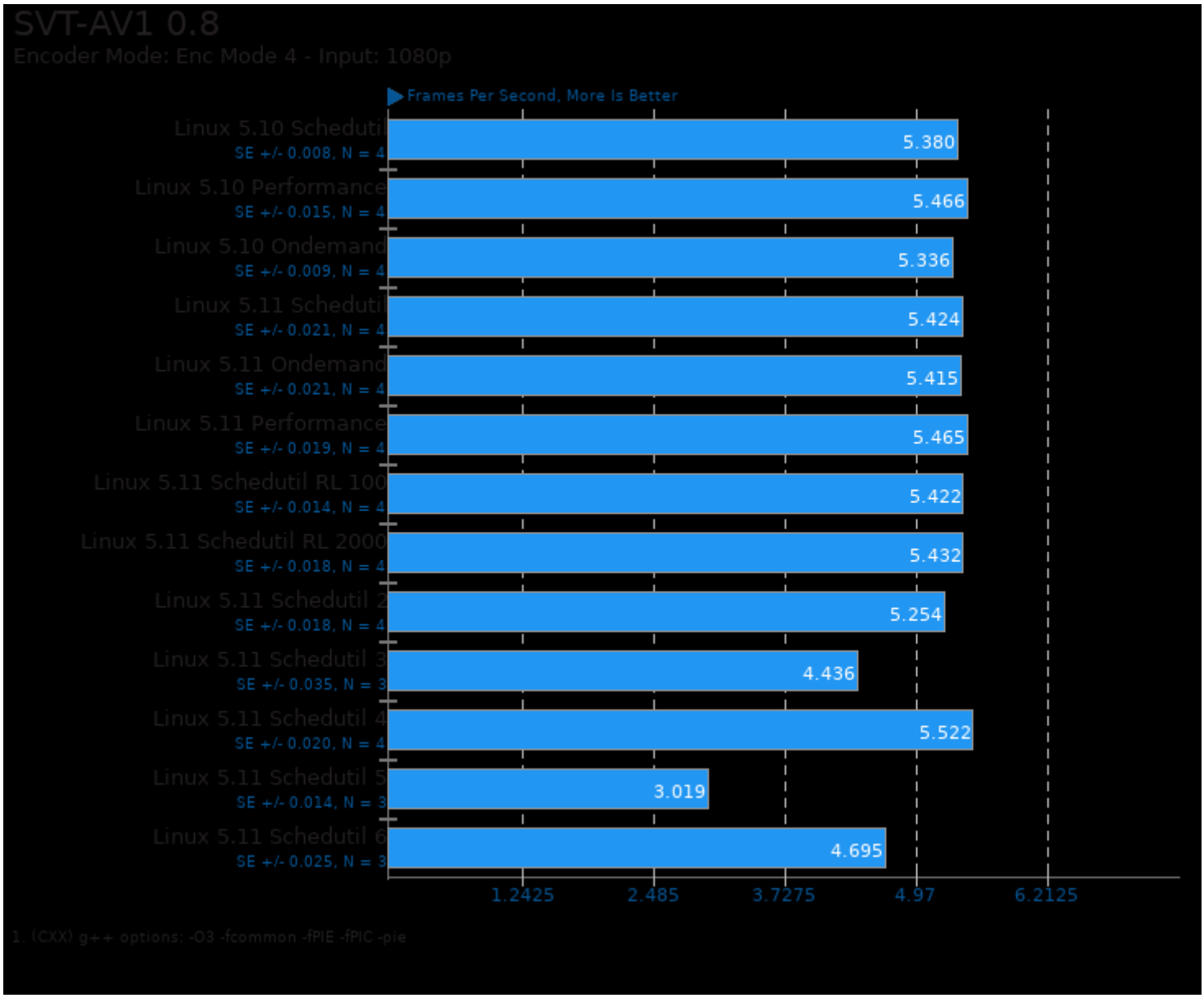
Ryzen 9 5900X Freq Invariance Combo Testing



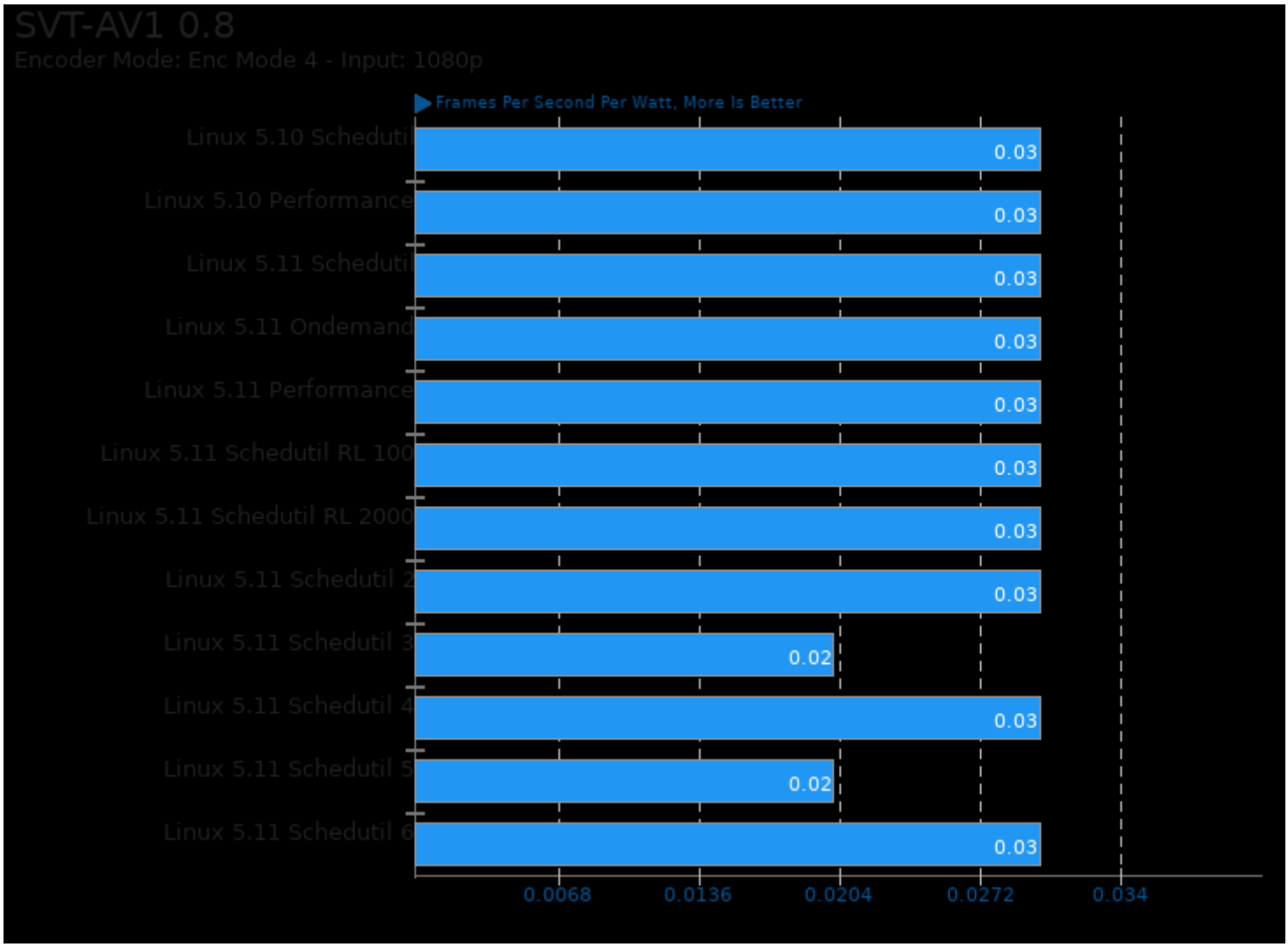
Ryzen 9 5900X Freq Invariance Combo Testing



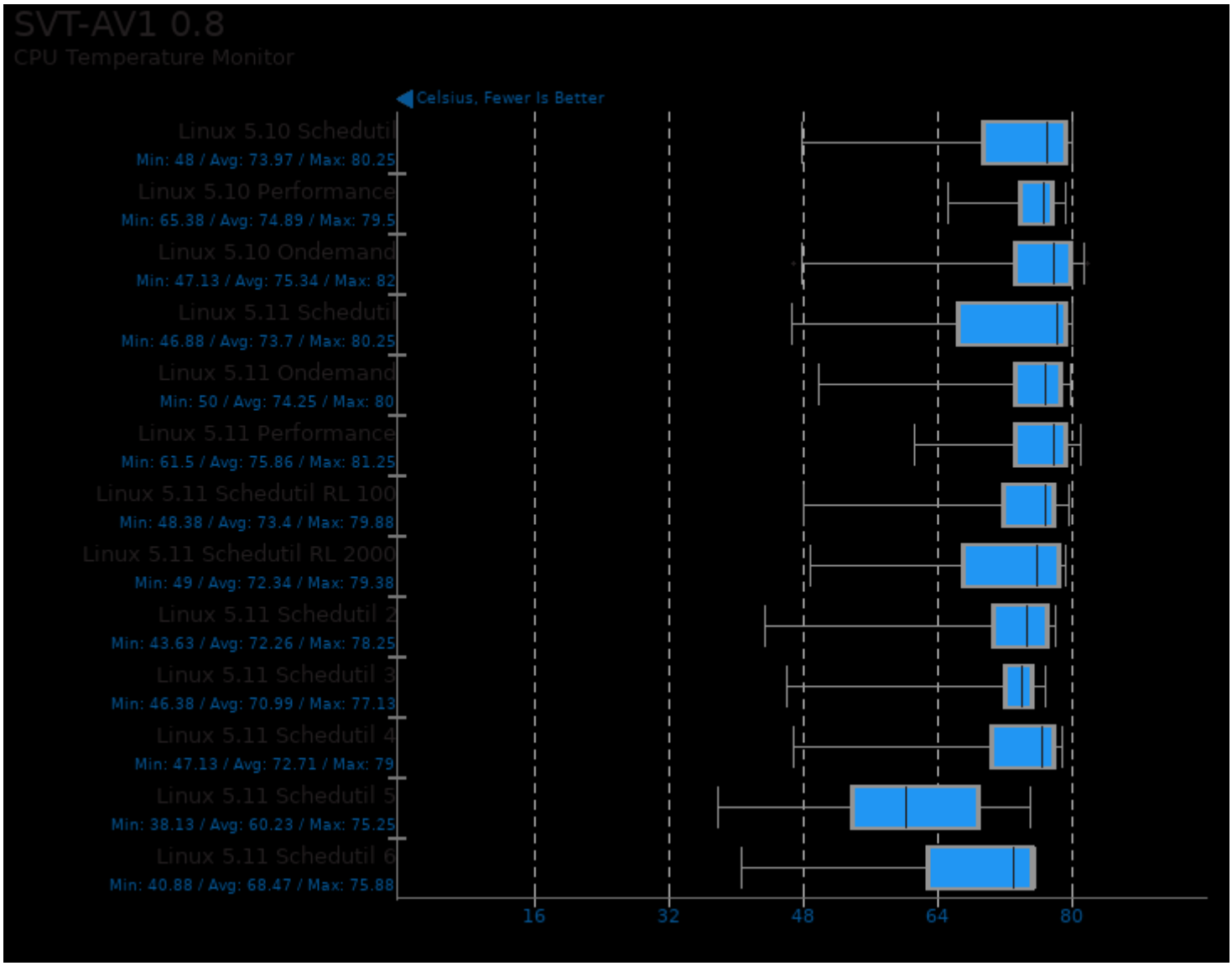
Ryzen 9 5900X Freq Invariance Combo Testing



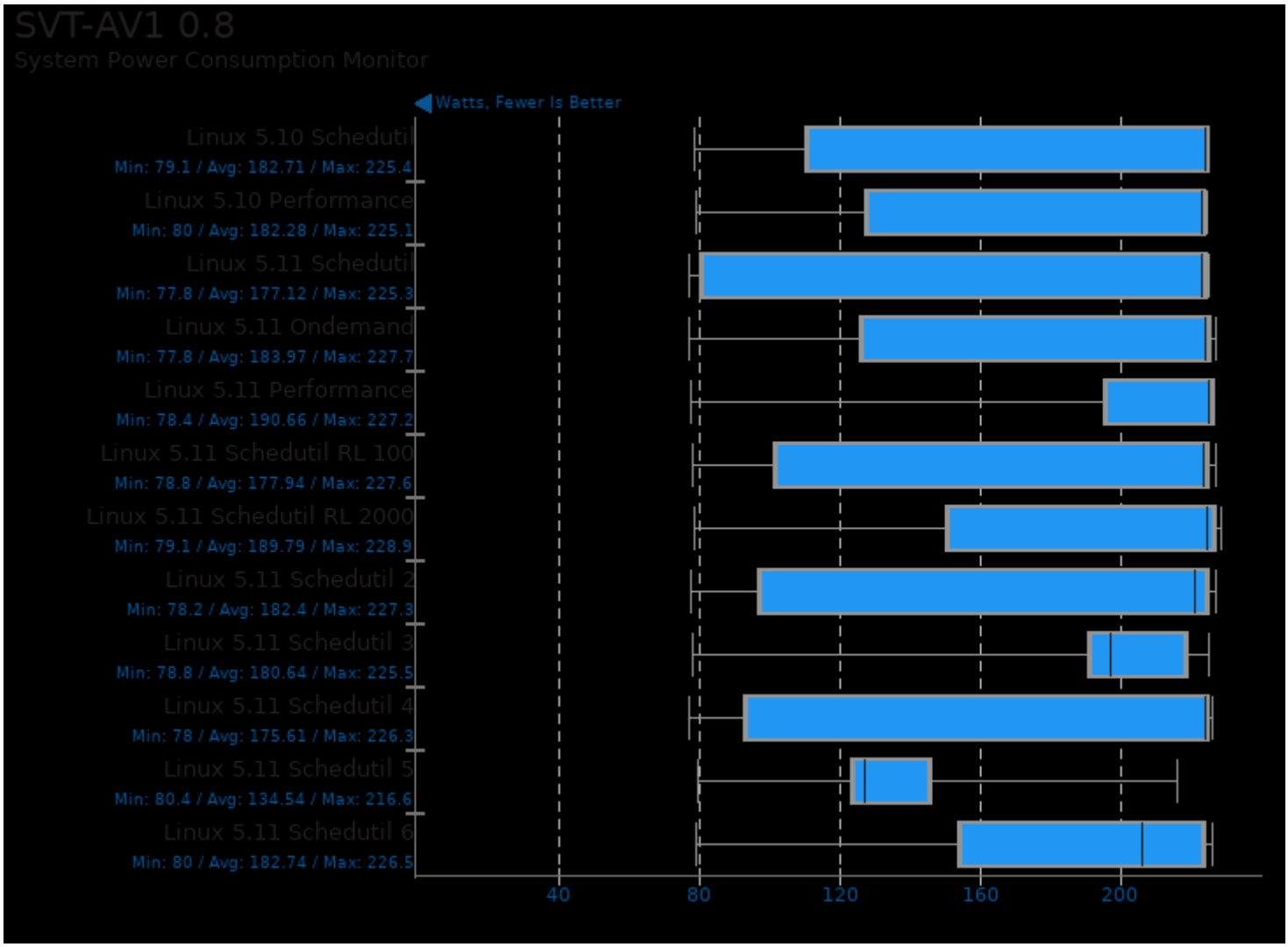
Ryzen 9 5900X Freq Invariance Combo Testing



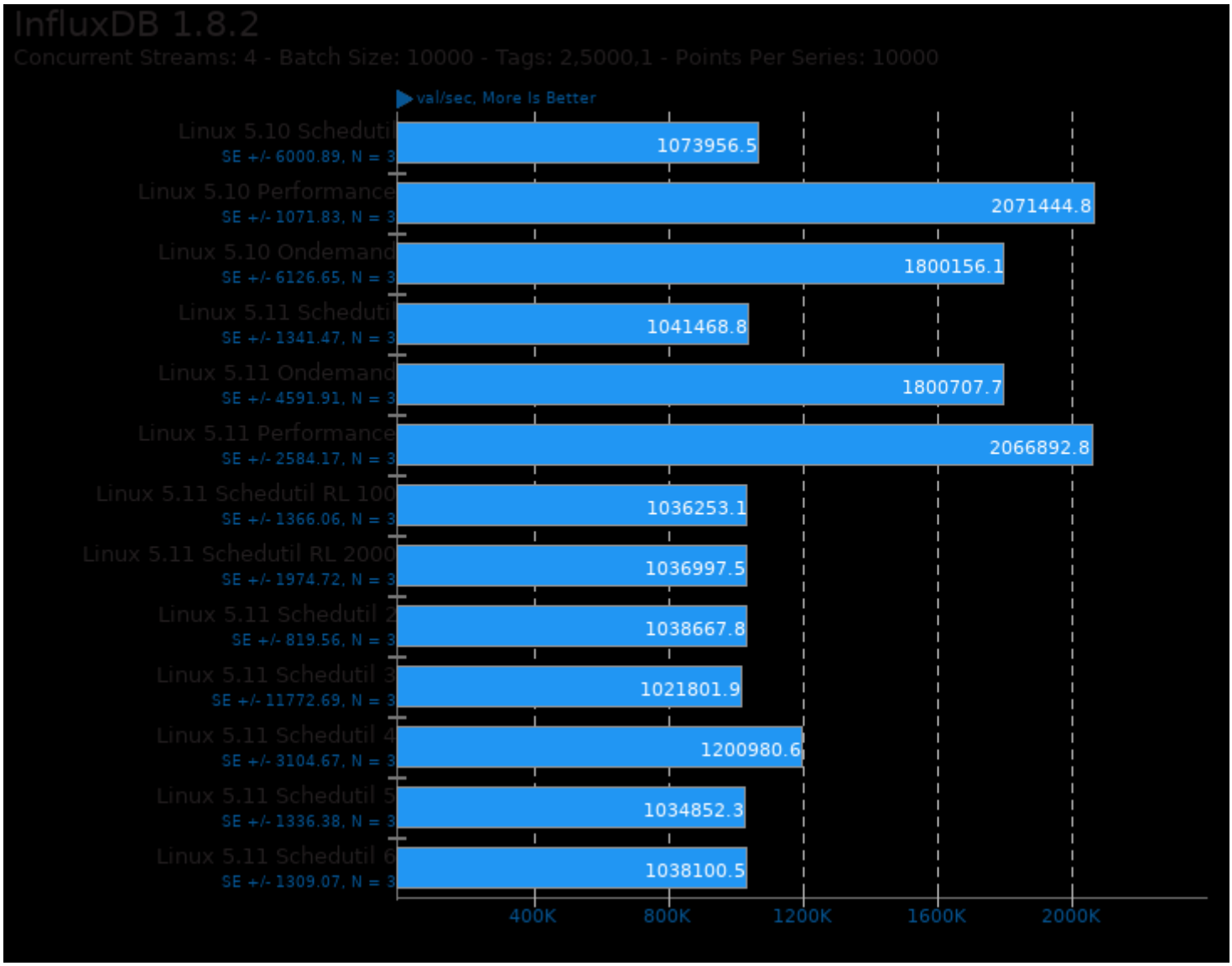
Ryzen 9 5900X Freq Invariance Combo Testing



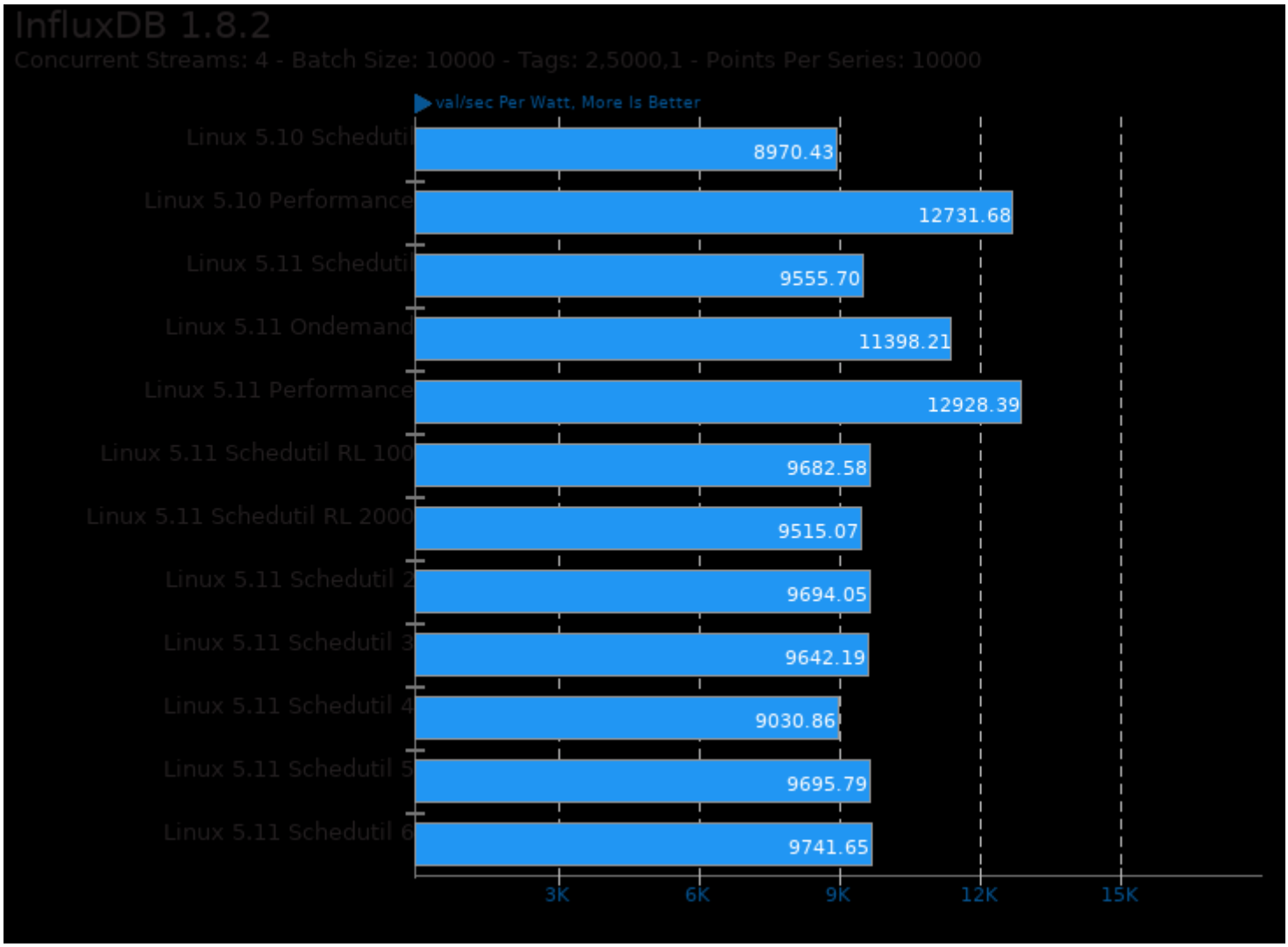
Ryzen 9 5900X Freq Invariance Combo Testing



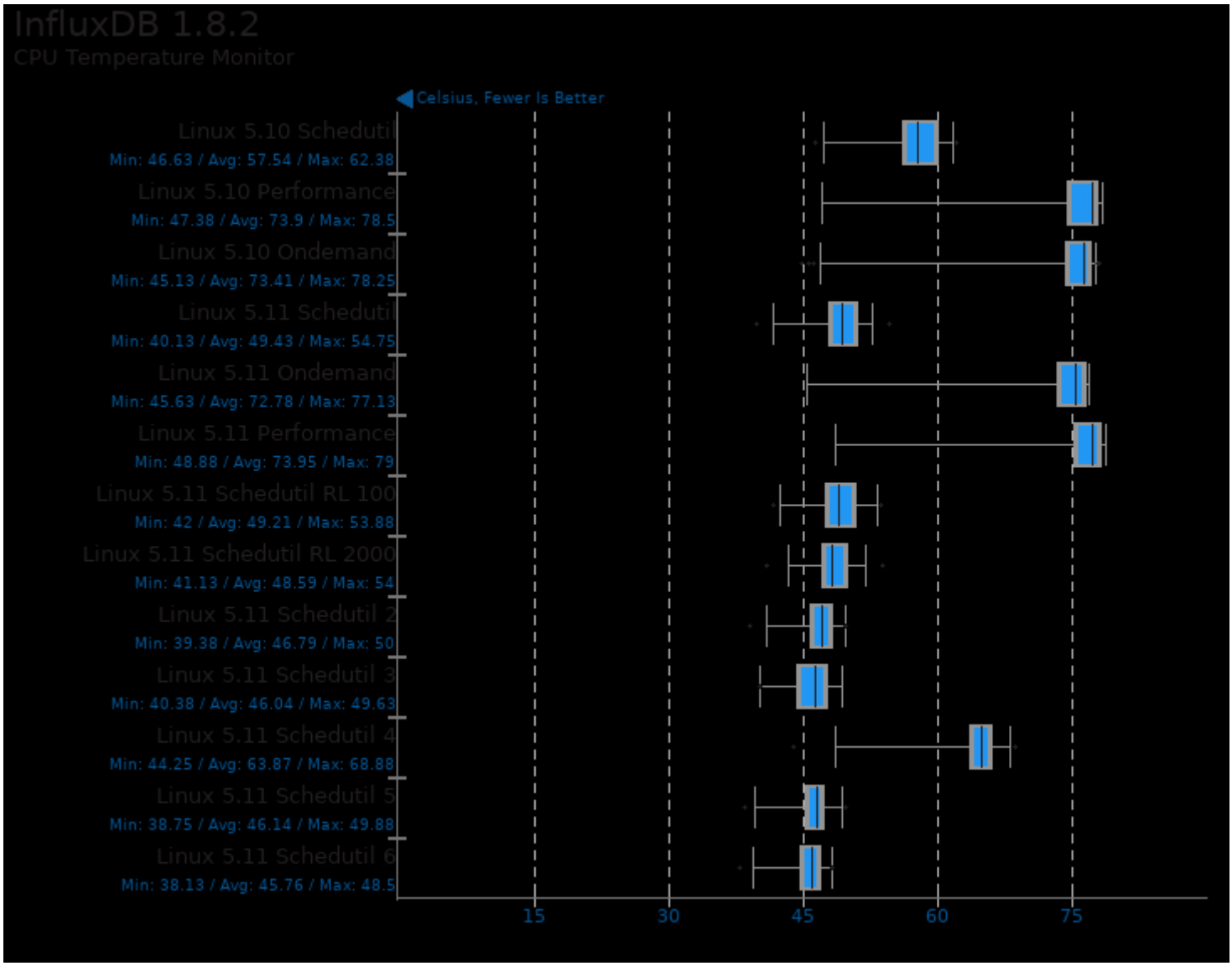
Ryzen 9 5900X Freq Invariance Combo Testing



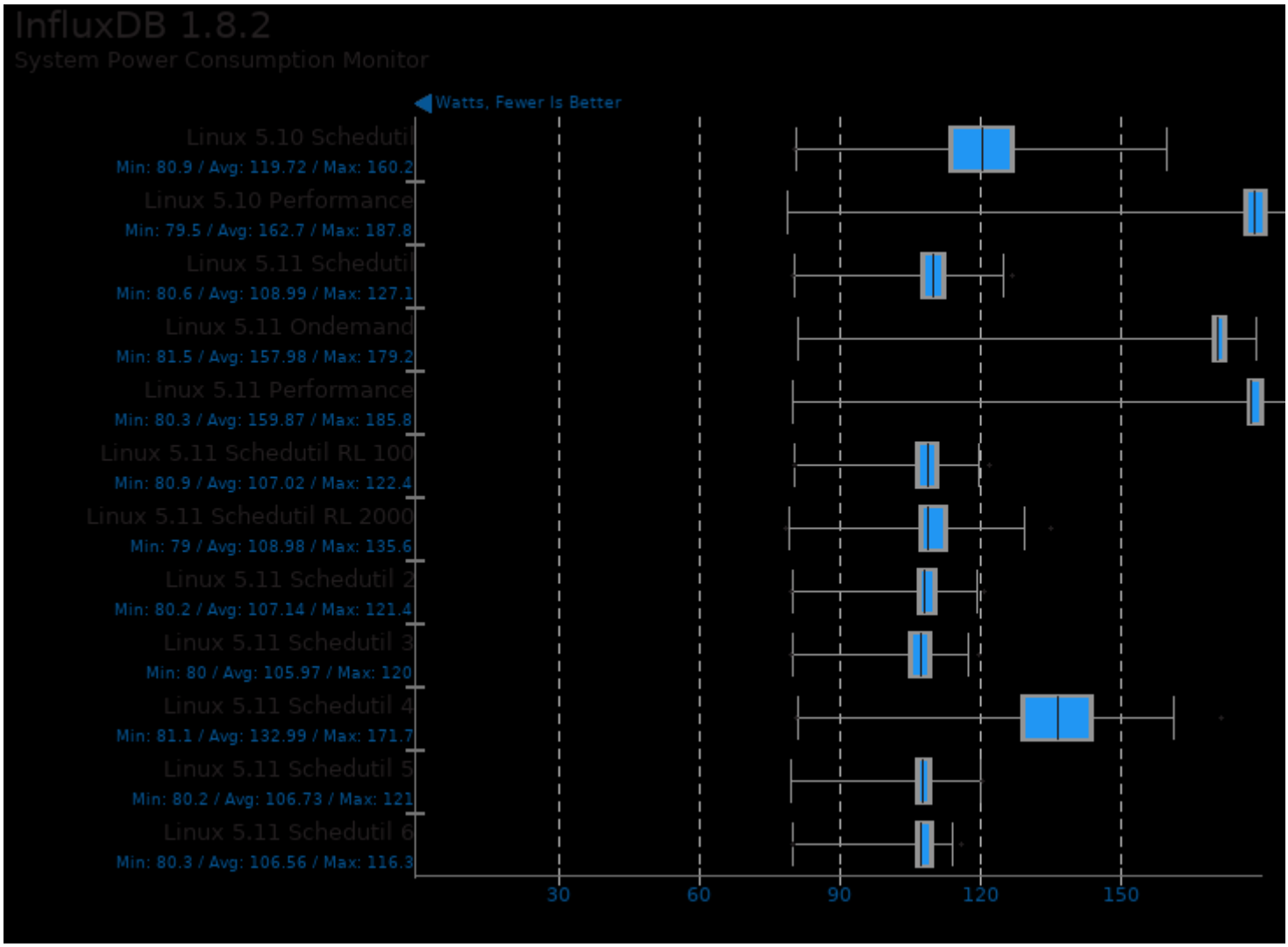
Ryzen 9 5900X Freq Invariance Combo Testing

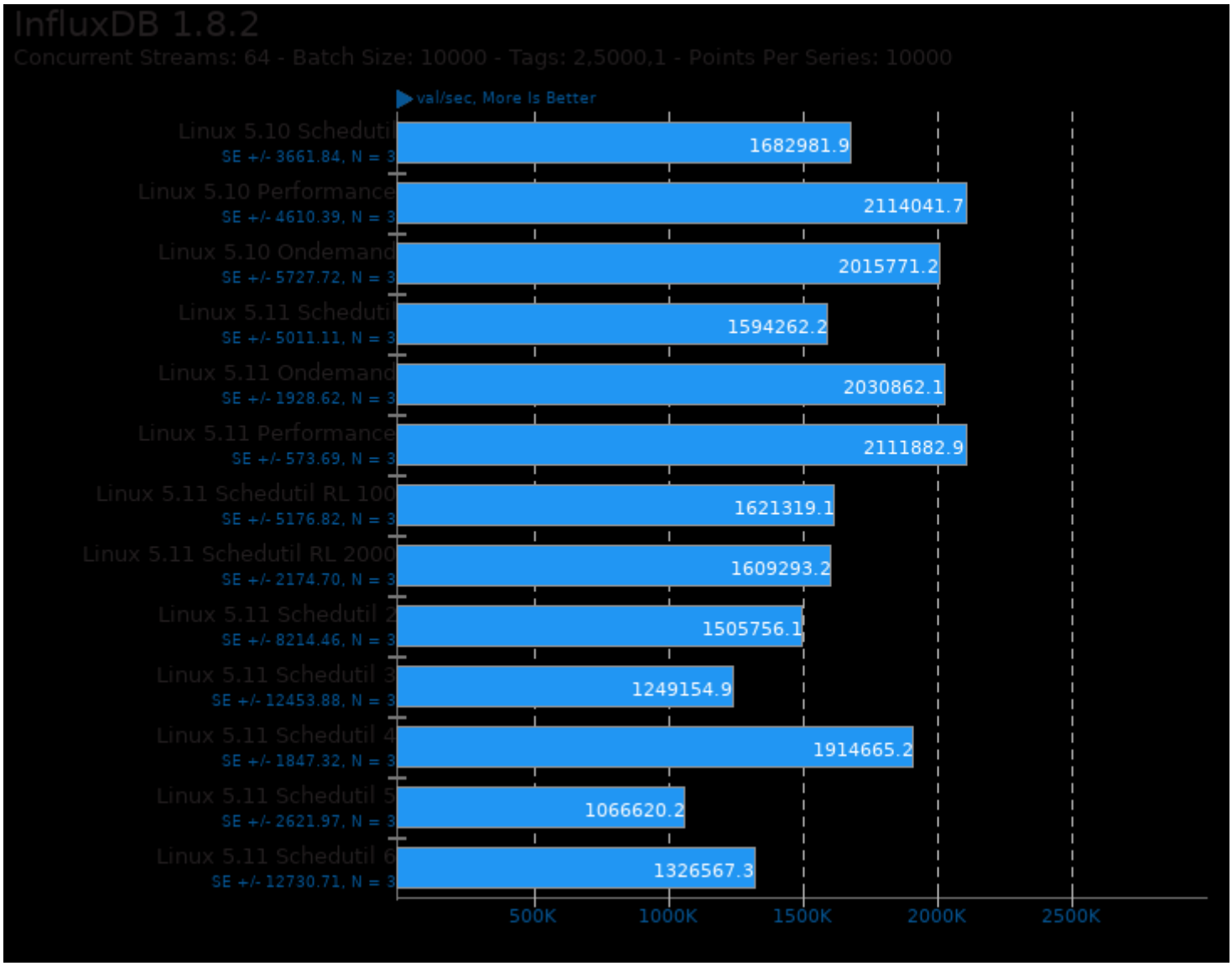


Ryzen 9 5900X Freq Invariance Combo Testing

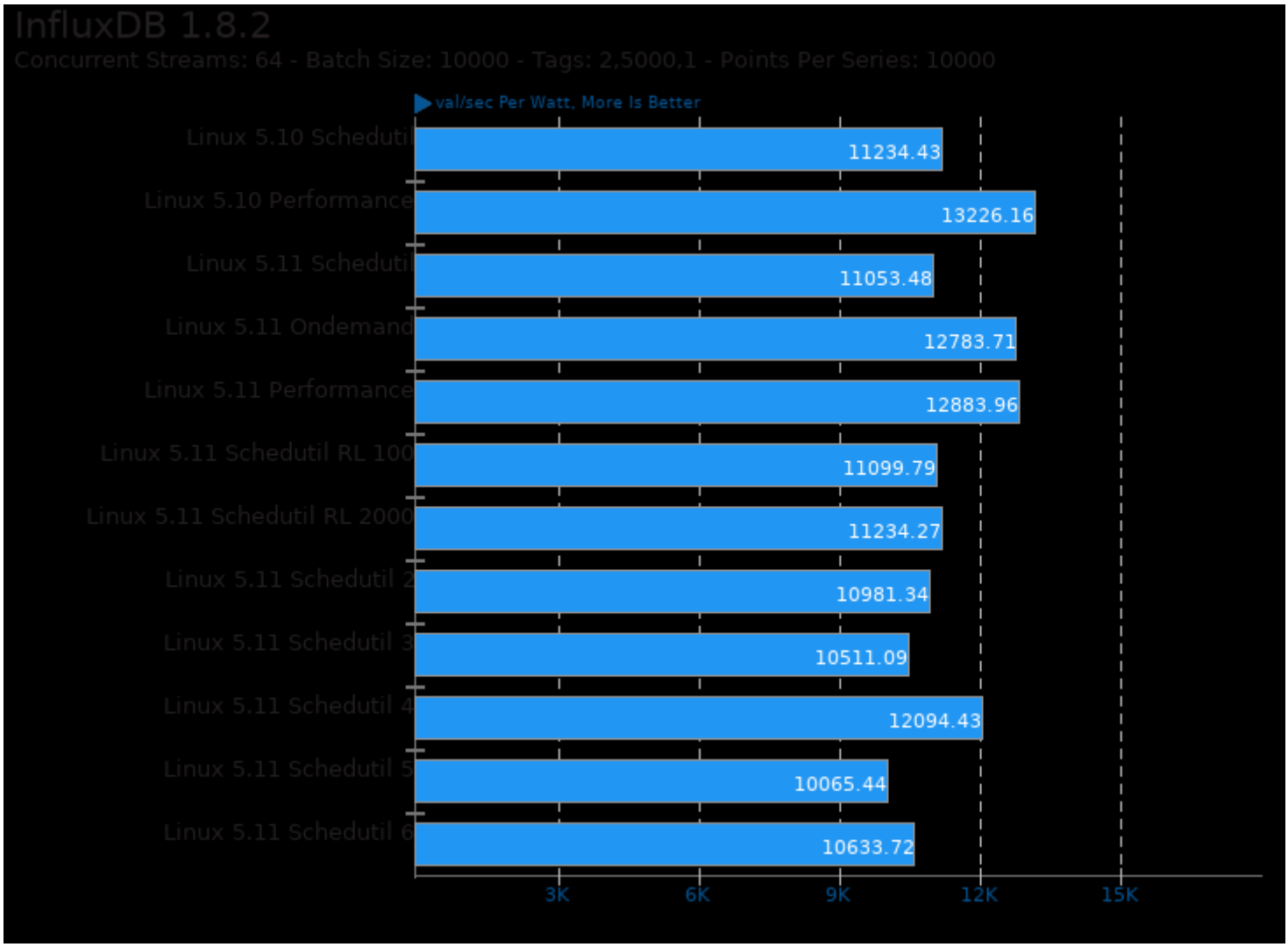


Ryzen 9 5900X Freq Invariance Combo Testing

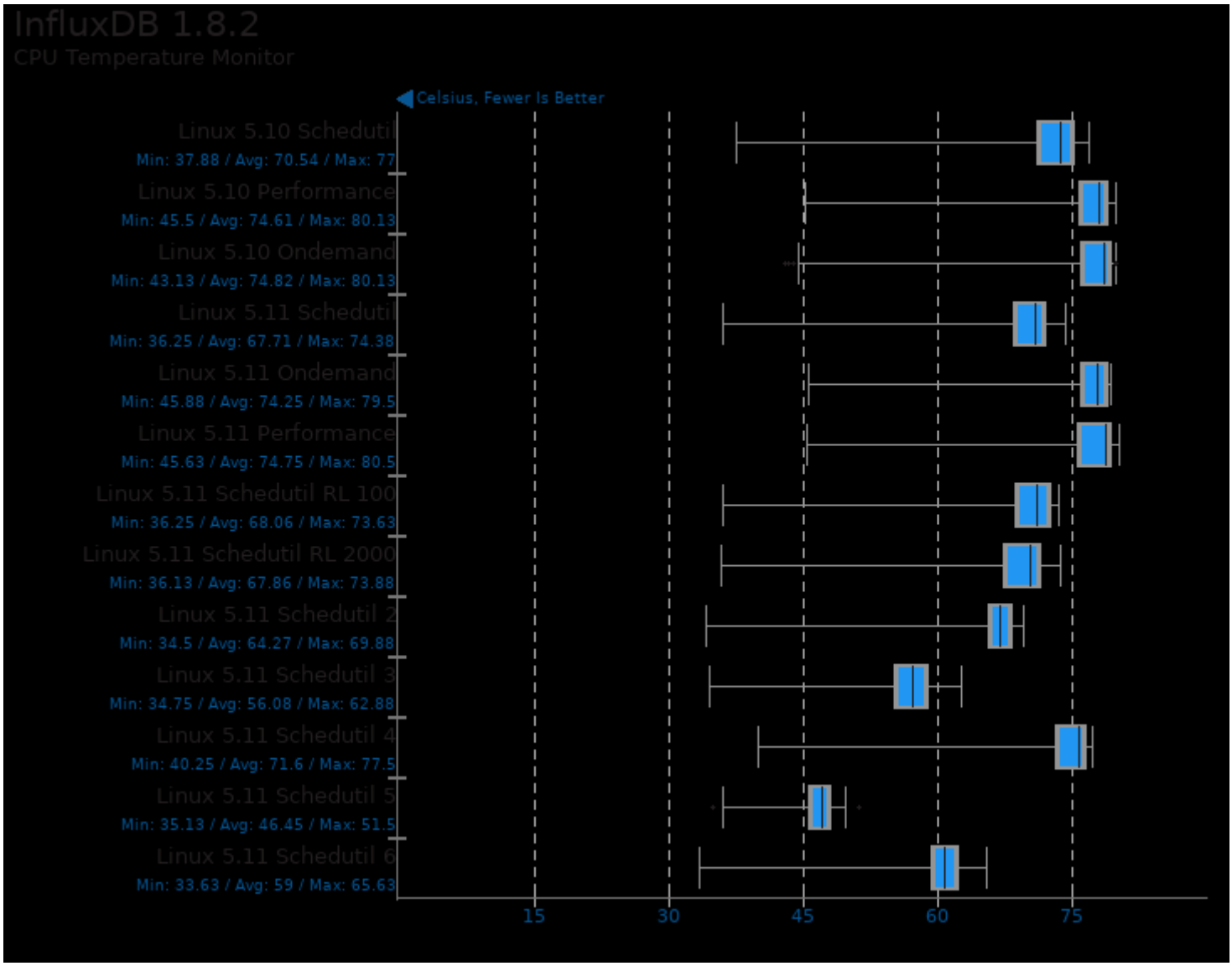



InfluxDB 1.8.2
Concurrent Streams: 64 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000
val/sec, More Is Better
Linux 5.10 Schedutil
SE +/- 3661.84, N = 3
1682981.9
Linux 5.10 Performance
SE +/- 4610.39, N = 3
2114041.7
Linux 5.10 Ondemand
SE +/- 5727.72, N = 3
2015771.2
Linux 5.11 Schedutil
SE +/- 5011.11, N = 3
1594262.2
Linux 5.11 Ondemand
SE +/- 1928.62, N = 3
2030862.1
Linux 5.11 Performance
SE +/- 573.69, N = 3
2111882.9
Linux 5.11 Schedutil RL 100
SE +/- 5176.82, N = 3
1621319.1
Linux 5.11 Schedutil RL 2000
SE +/- 2174.70, N = 3
1609293.2
Linux 5.11 Schedutil 2
SE +/- 8214.46, N = 3
1505756.1
Linux 5.11 Schedutil 3
SE +/- 12453.88, N = 3
1249154.9
Linux 5.11 Schedutil 4
SE +/- 1847.32, N = 3
1914665.2
Linux 5.11 Schedutil 5
SE +/- 2621.97, N = 3
1066620.2
Linux 5.11 Schedutil 6
SE +/- 12730.71, N = 3
1326567.3
500K
1000K
1500K
2000K
2500K

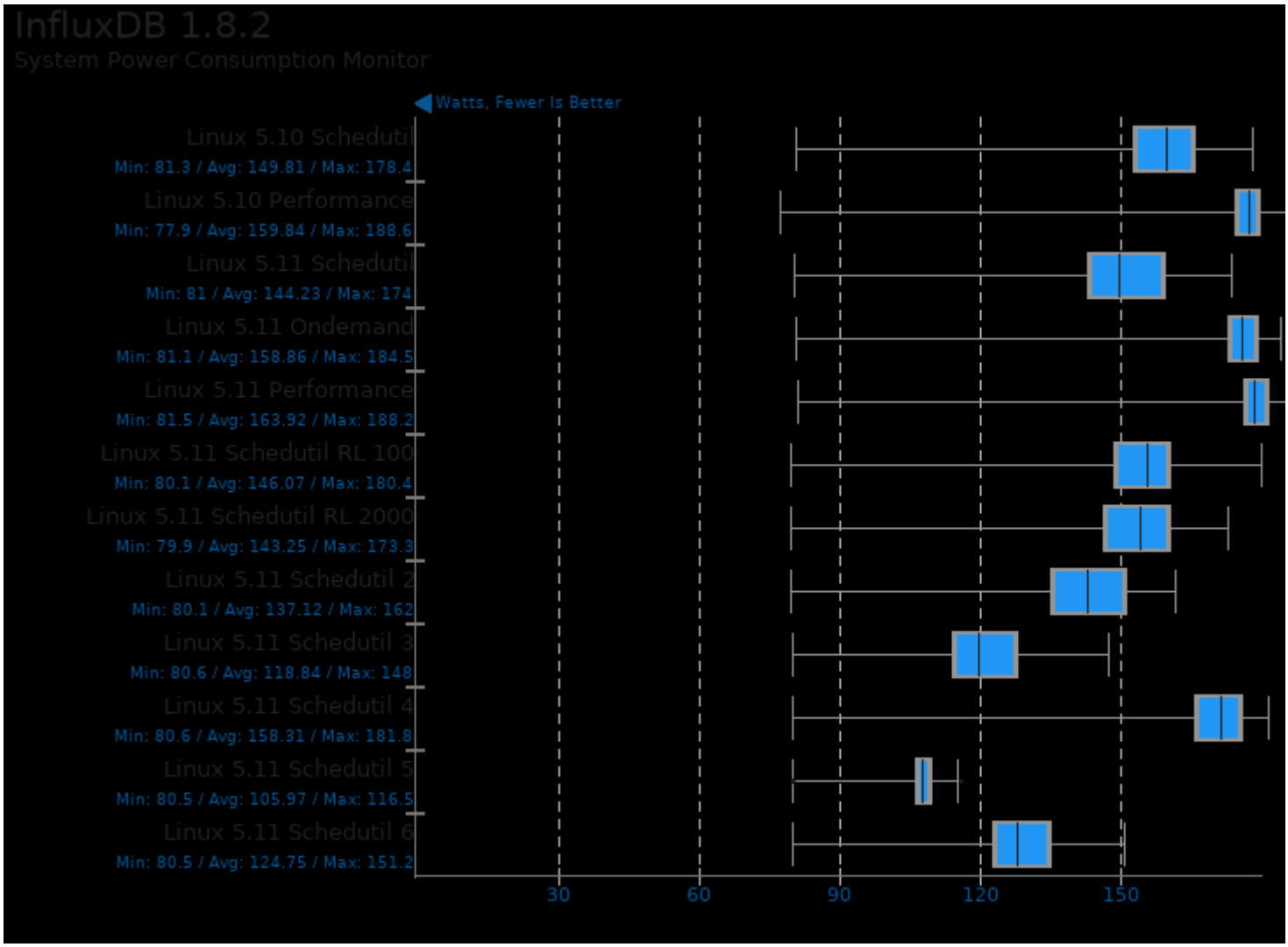
Ryzen 9 5900X Freq Invariance Combo Testing



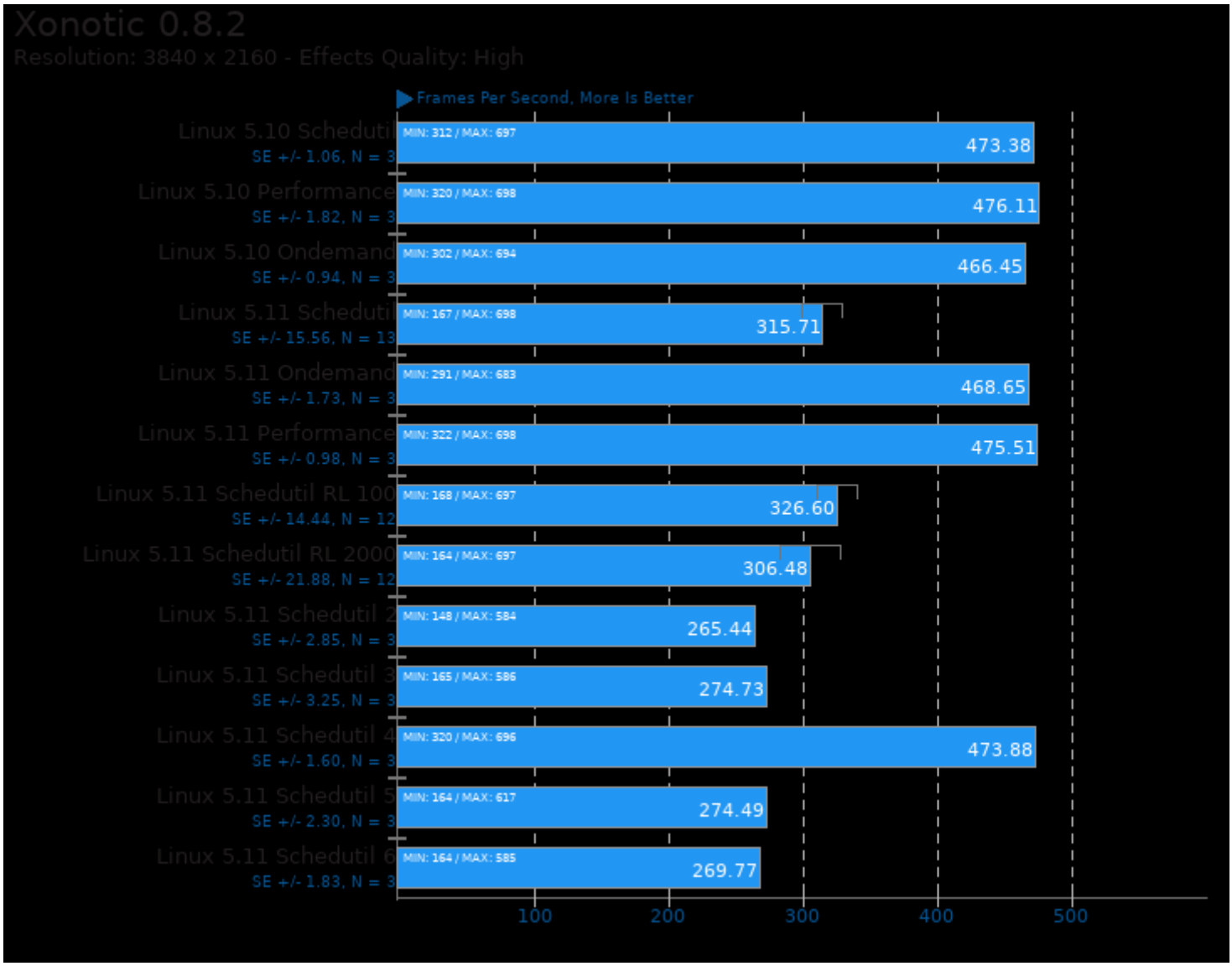
Ryzen 9 5900X Freq Invariance Combo Testing



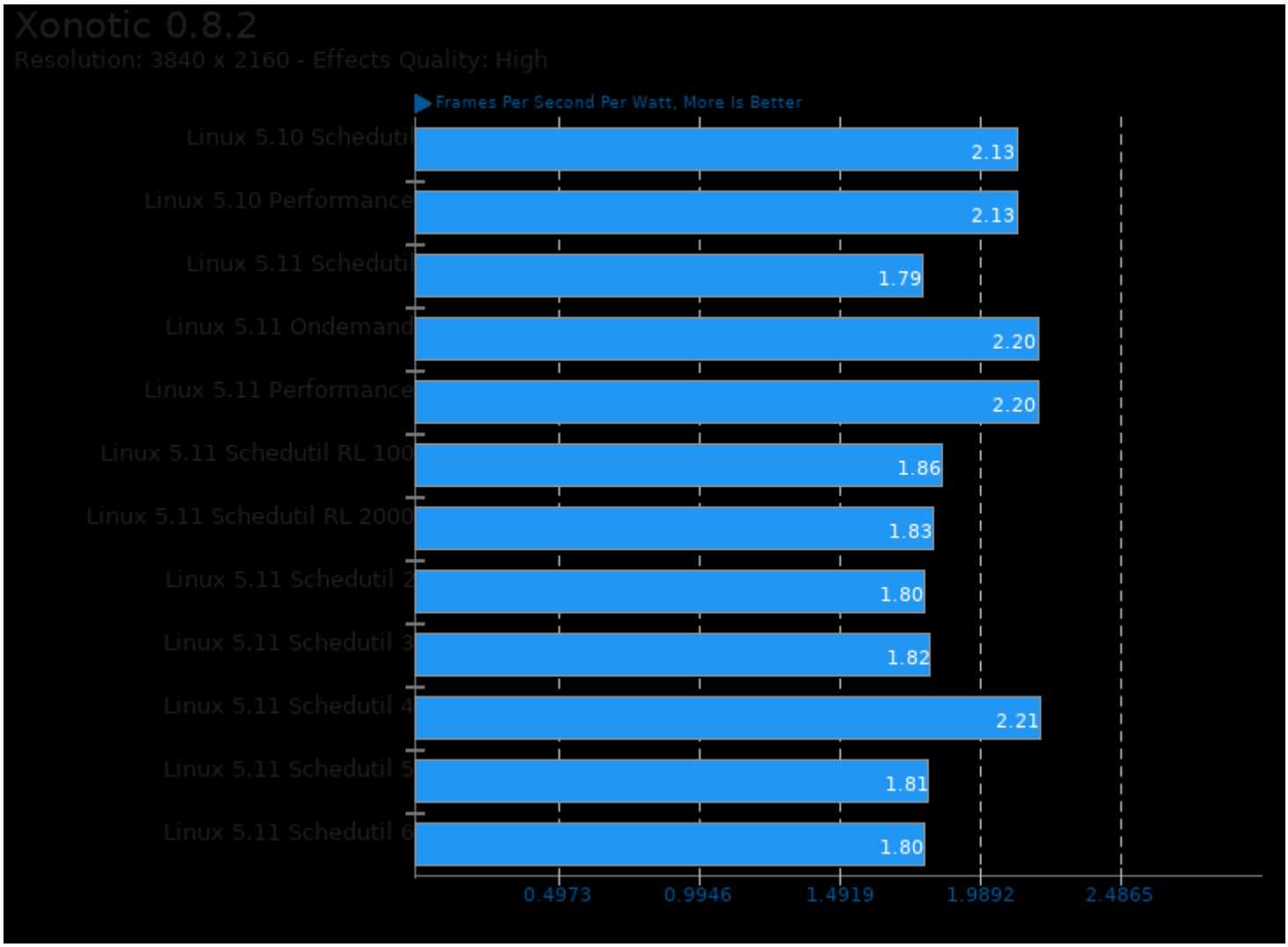
Ryzen 9 5900X Freq Invariance Combo Testing



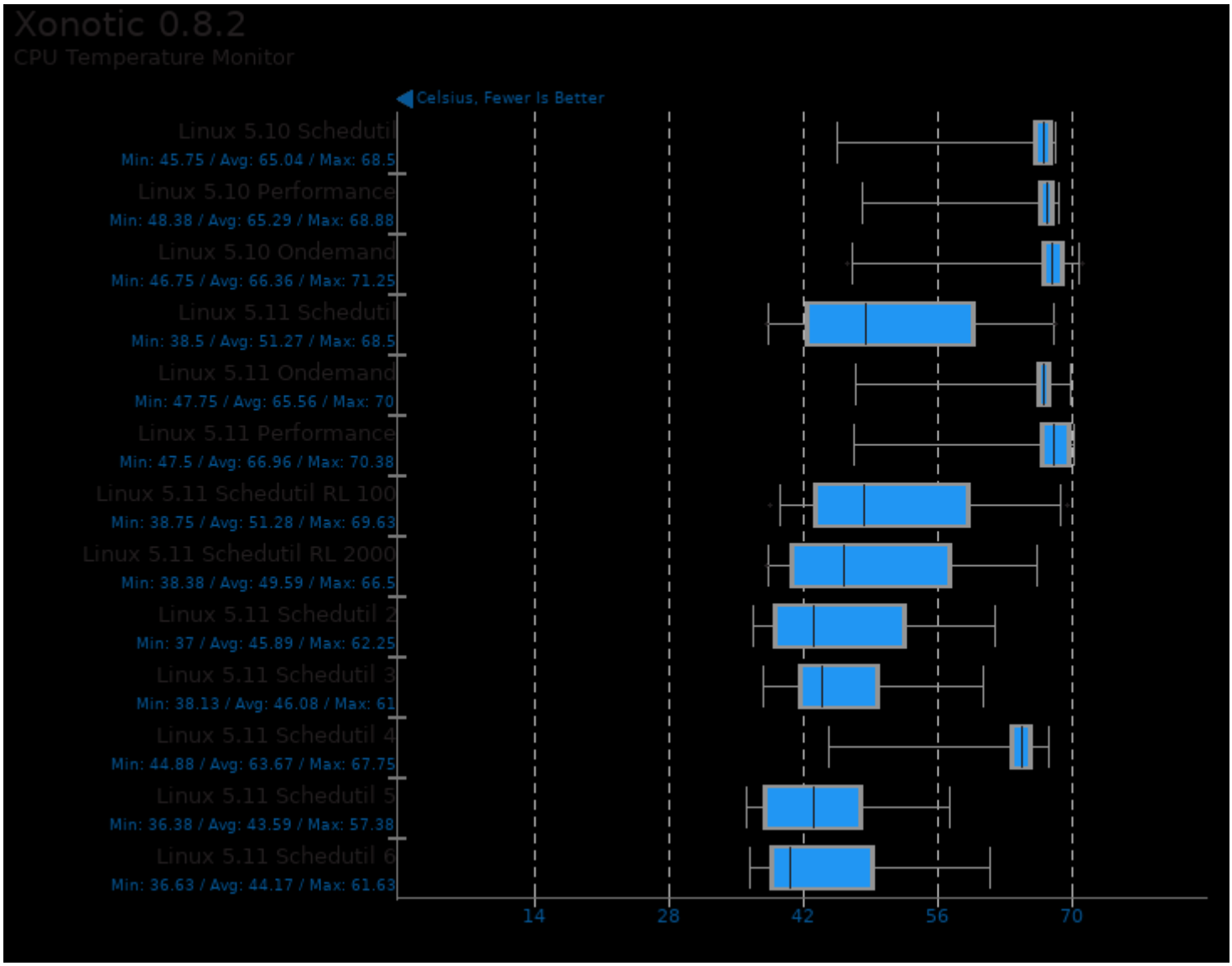
Ryzen 9 5900X Freq Invariance Combo Testing



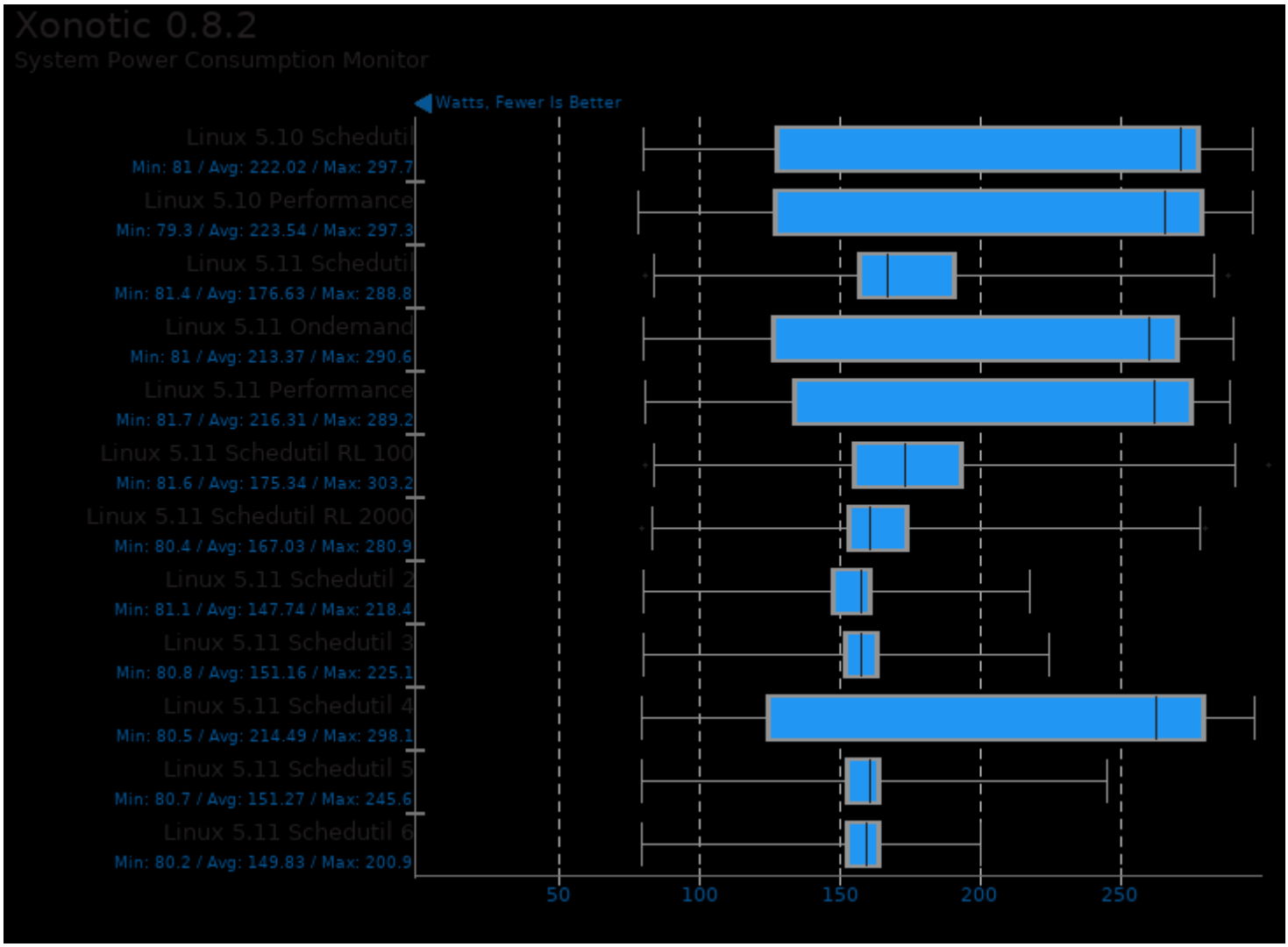
Ryzen 9 5900X Freq Invariance Combo Testing



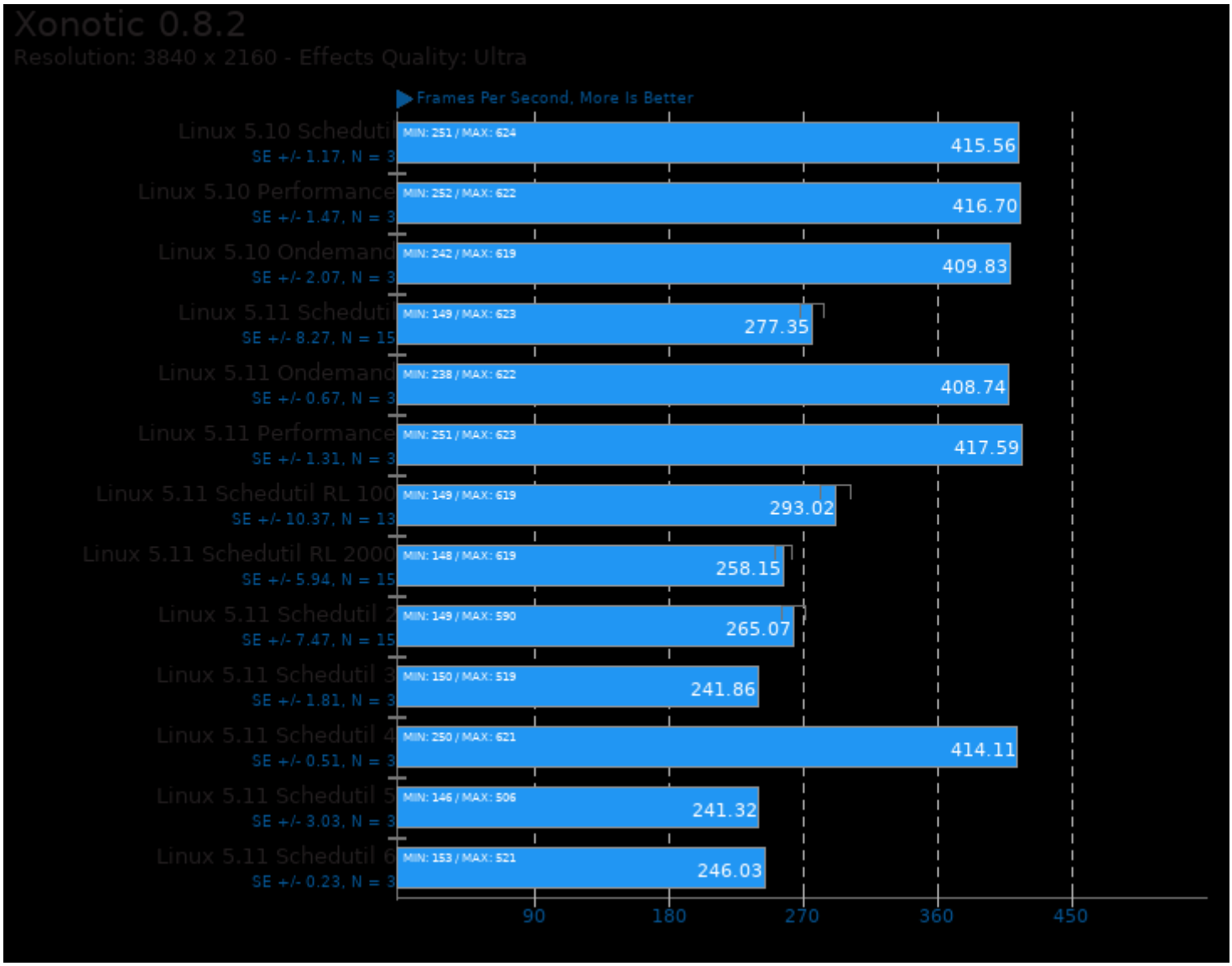
Ryzen 9 5900X Freq Invariance Combo Testing



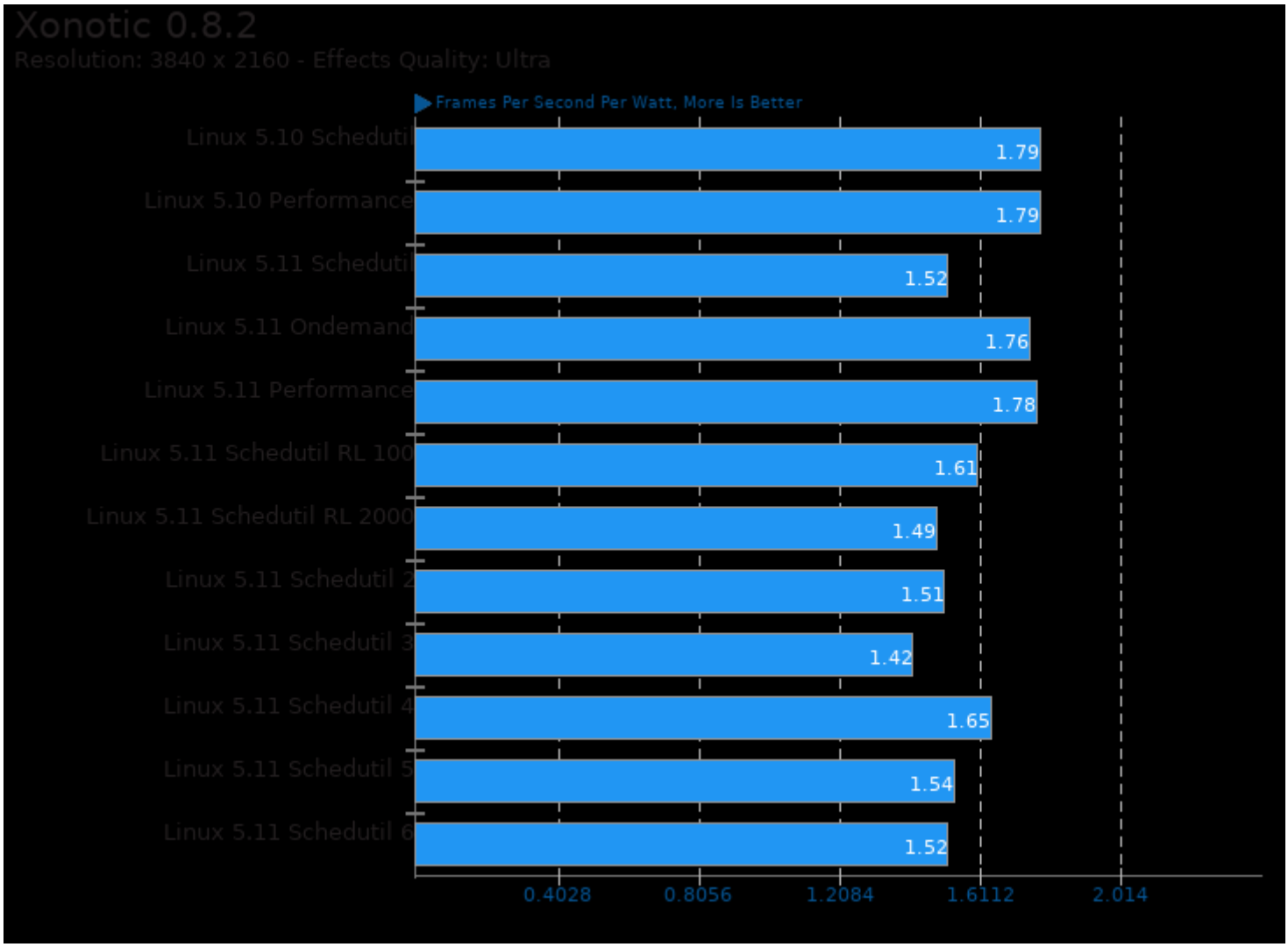
Ryzen 9 5900X Freq Invariance Combo Testing



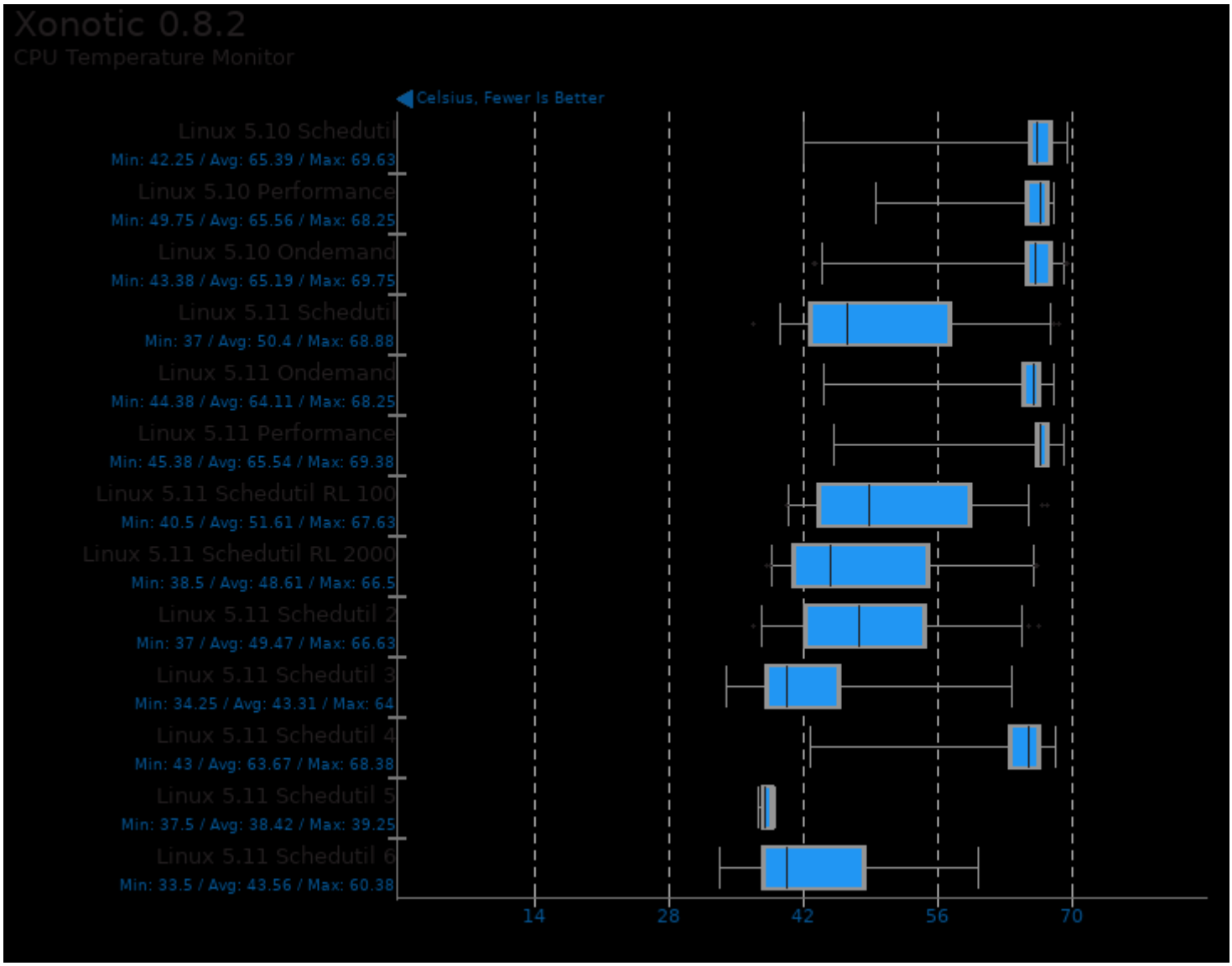
Ryzen 9 5900X Freq Invariance Combo Testing



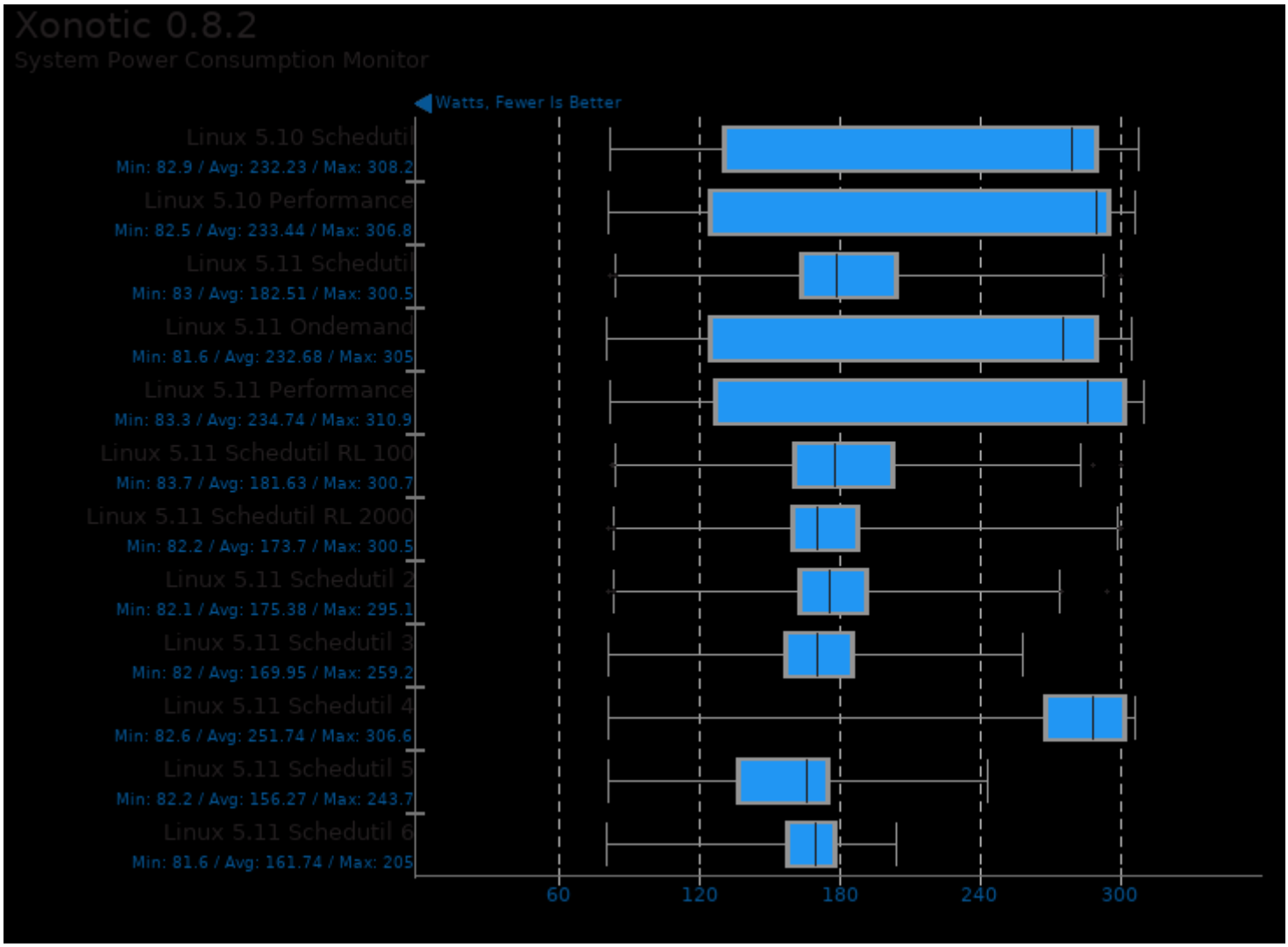
Ryzen 9 5900X Freq Invariance Combo Testing



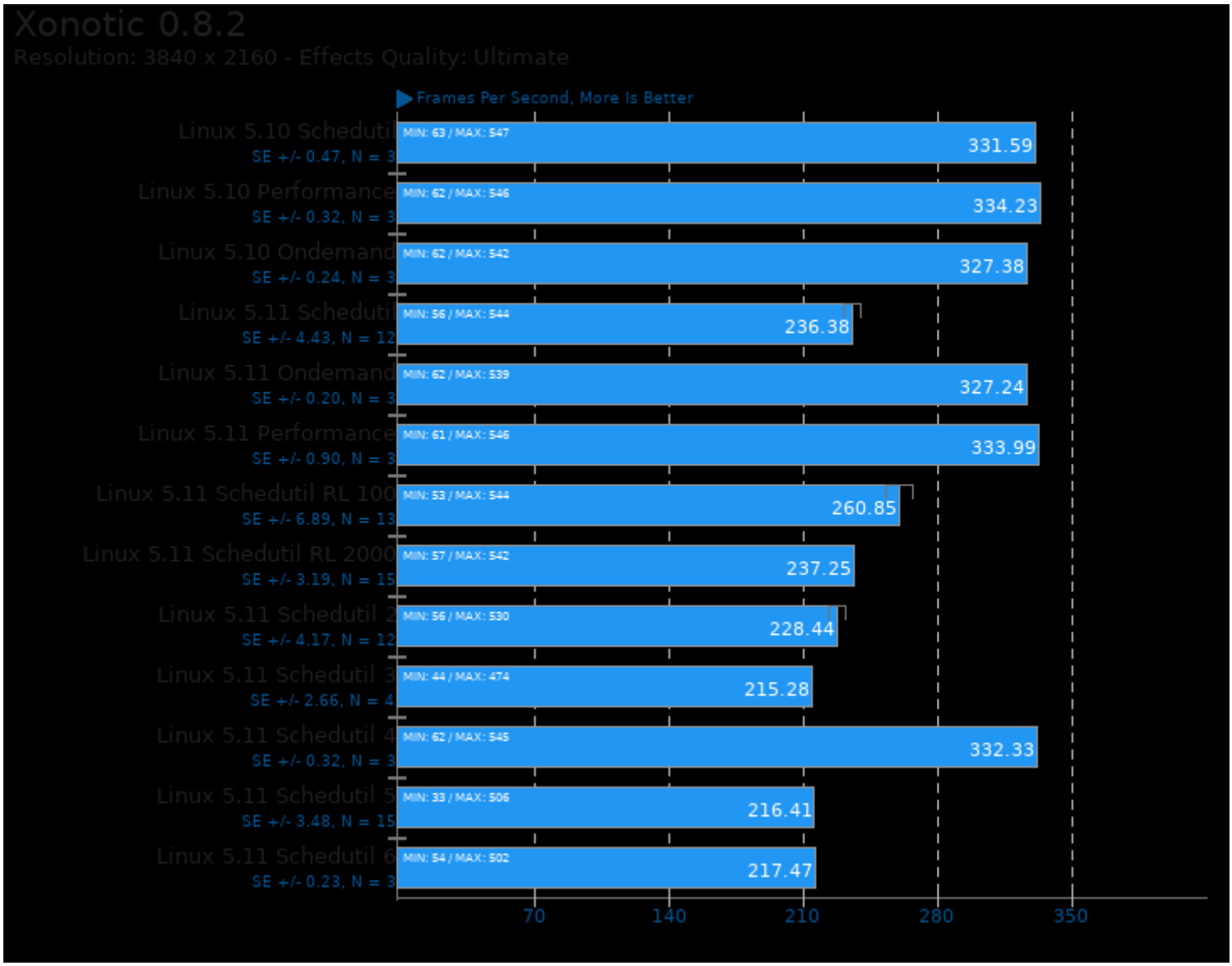
Ryzen 9 5900X Freq Invariance Combo Testing



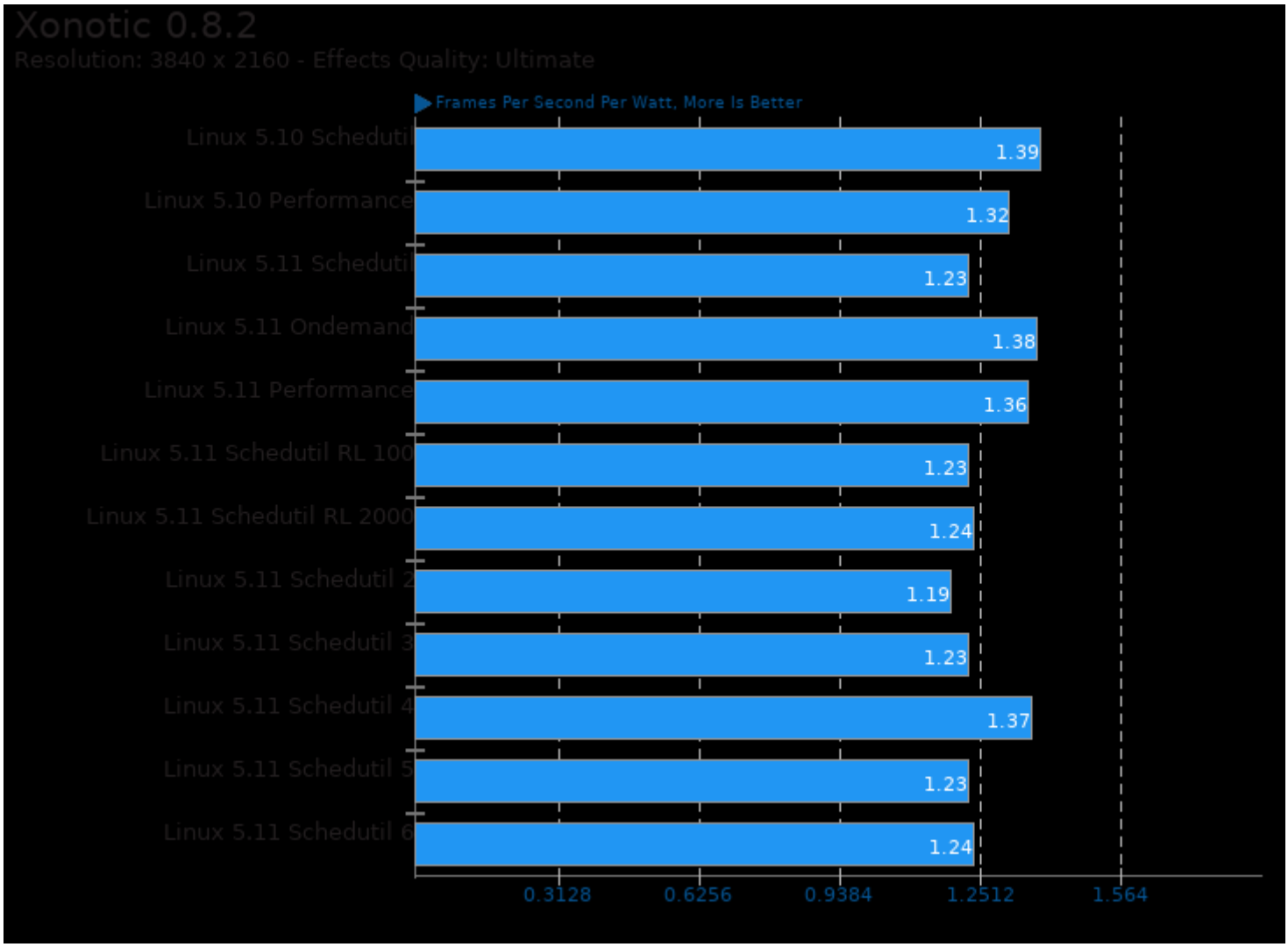
Ryzen 9 5900X Freq Invariance Combo Testing



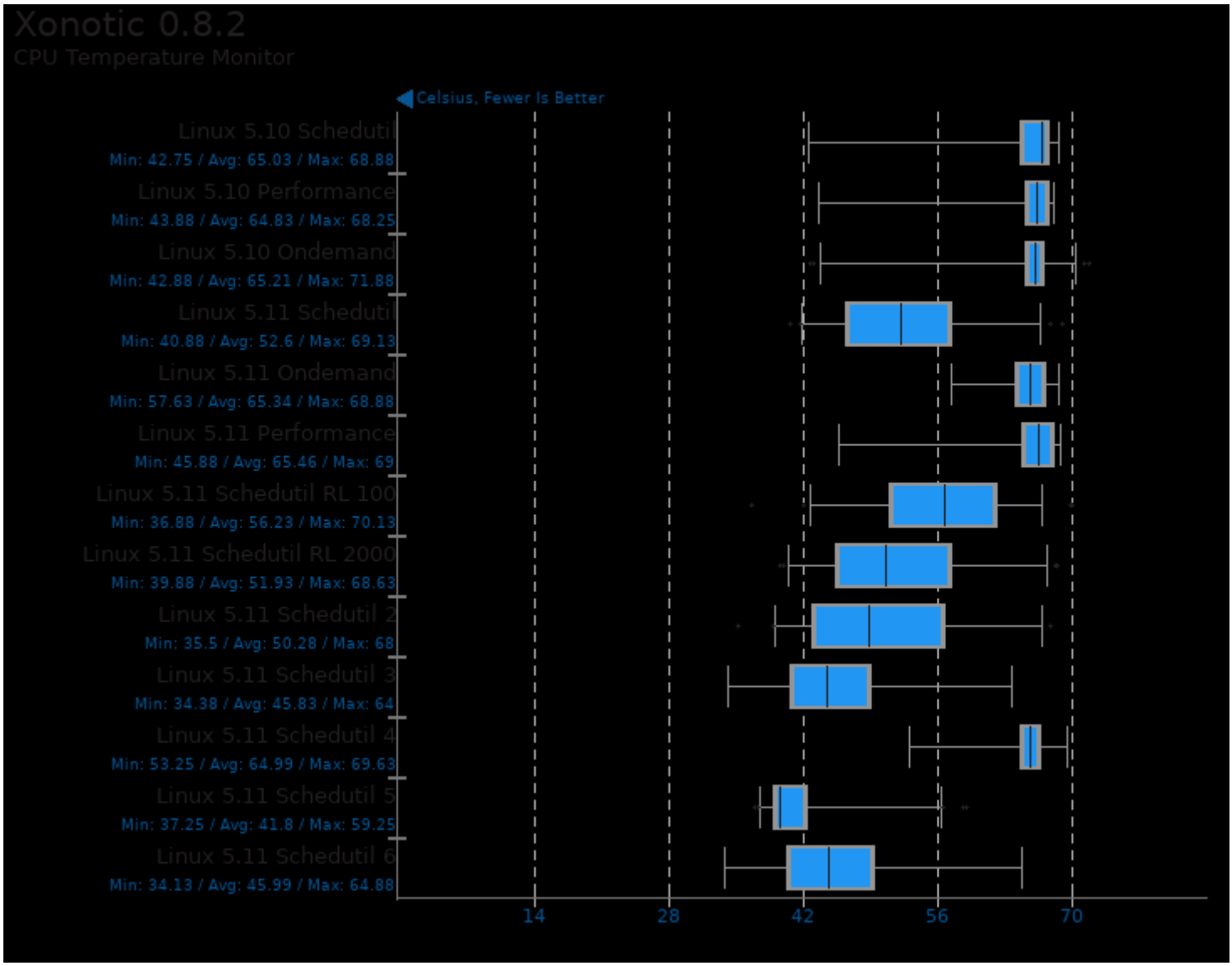
Ryzen 9 5900X Freq Invariance Combo Testing



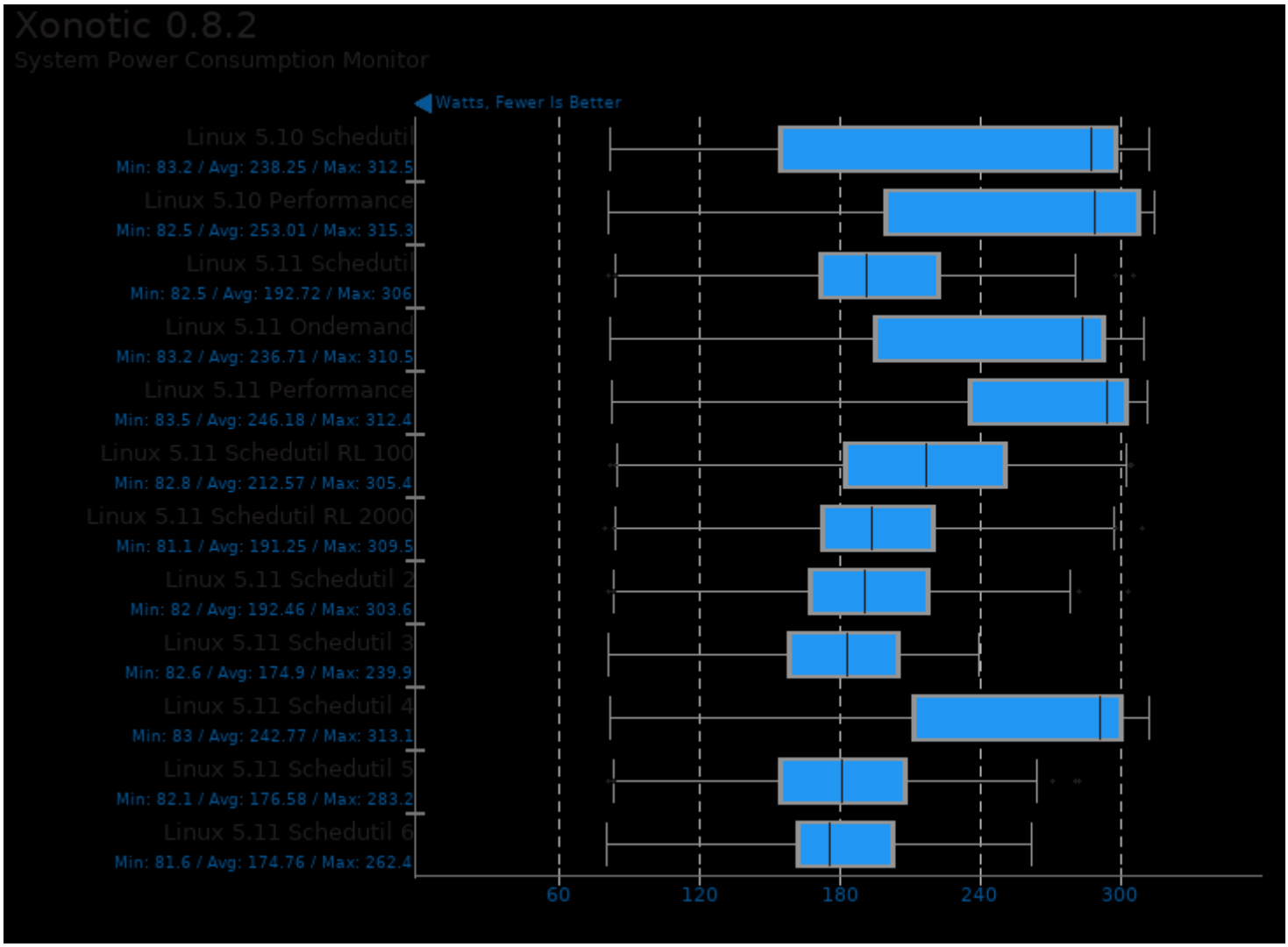
Ryzen 9 5900X Freq Invariance Combo Testing



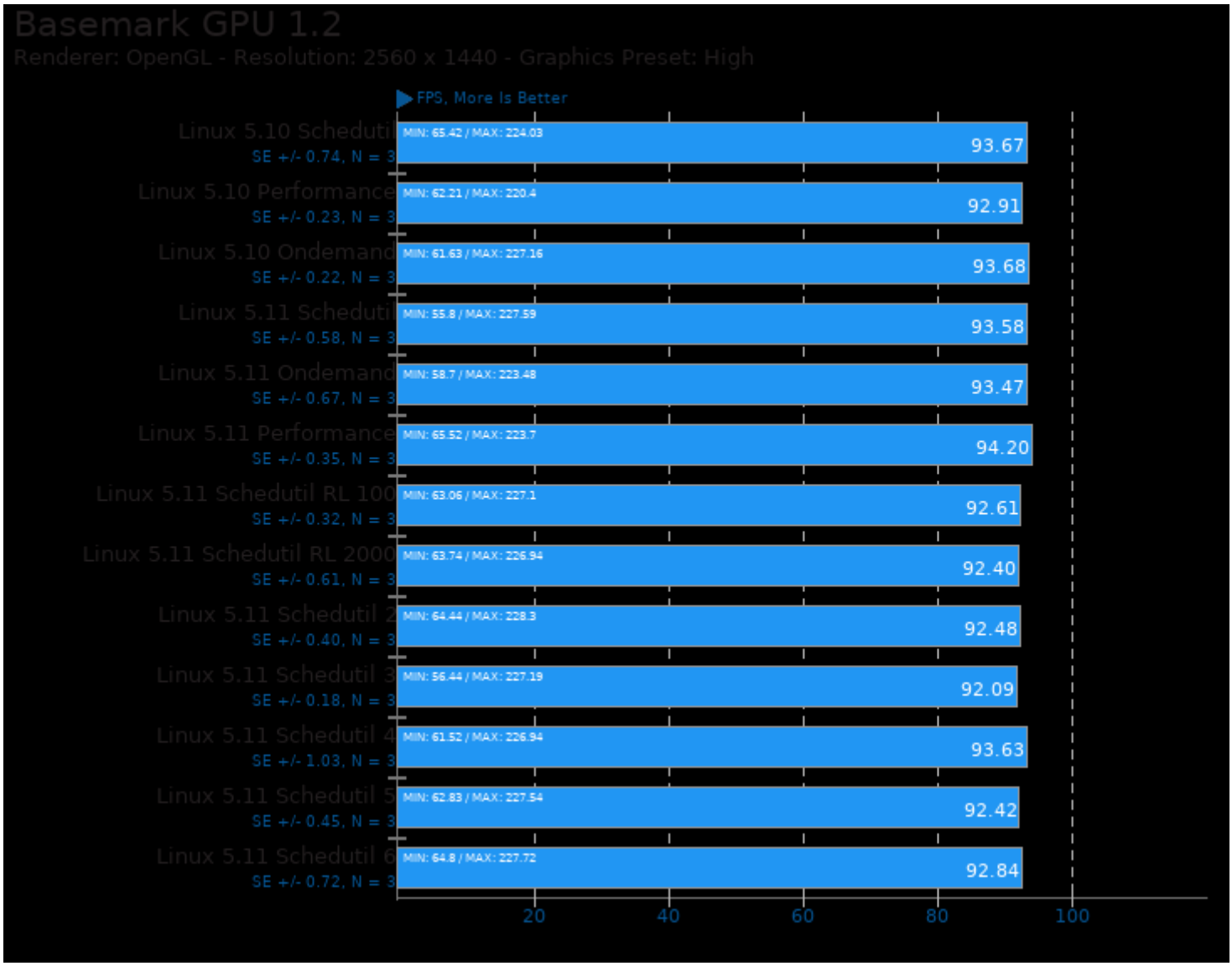
Ryzen 9 5900X Freq Invariance Combo Testing



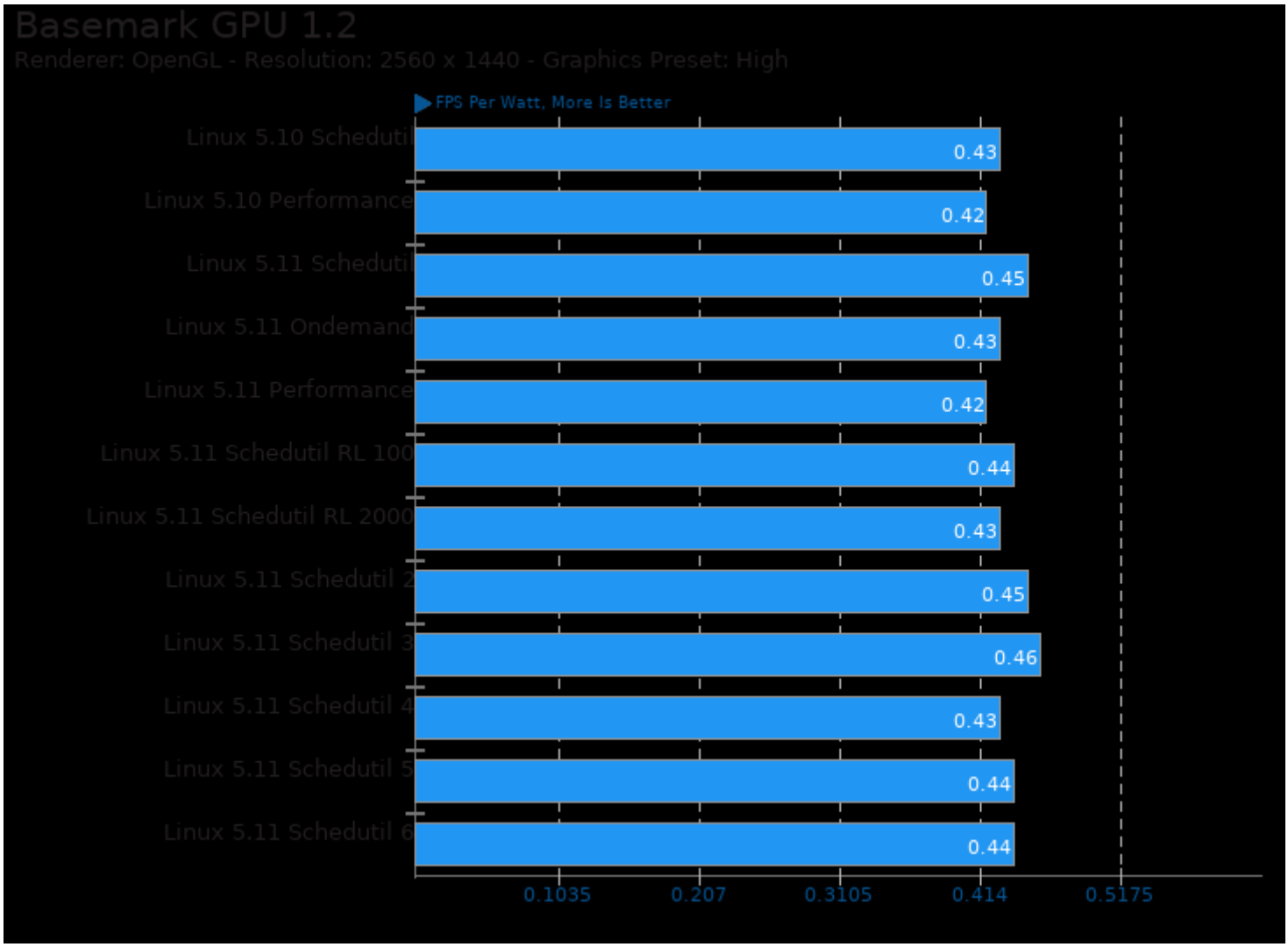
Ryzen 9 5900X Freq Invariance Combo Testing



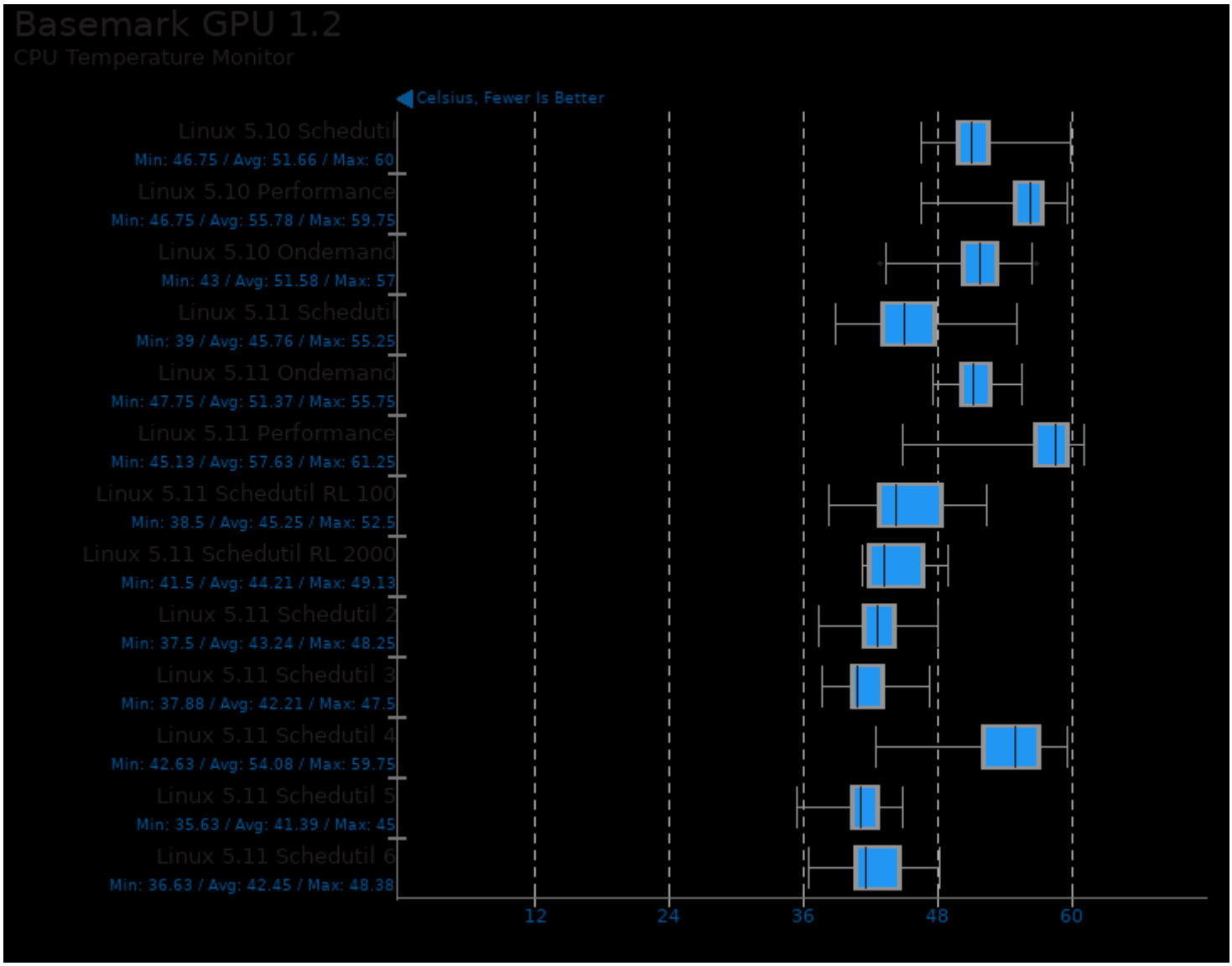
Ryzen 9 5900X Freq Invariance Combo Testing



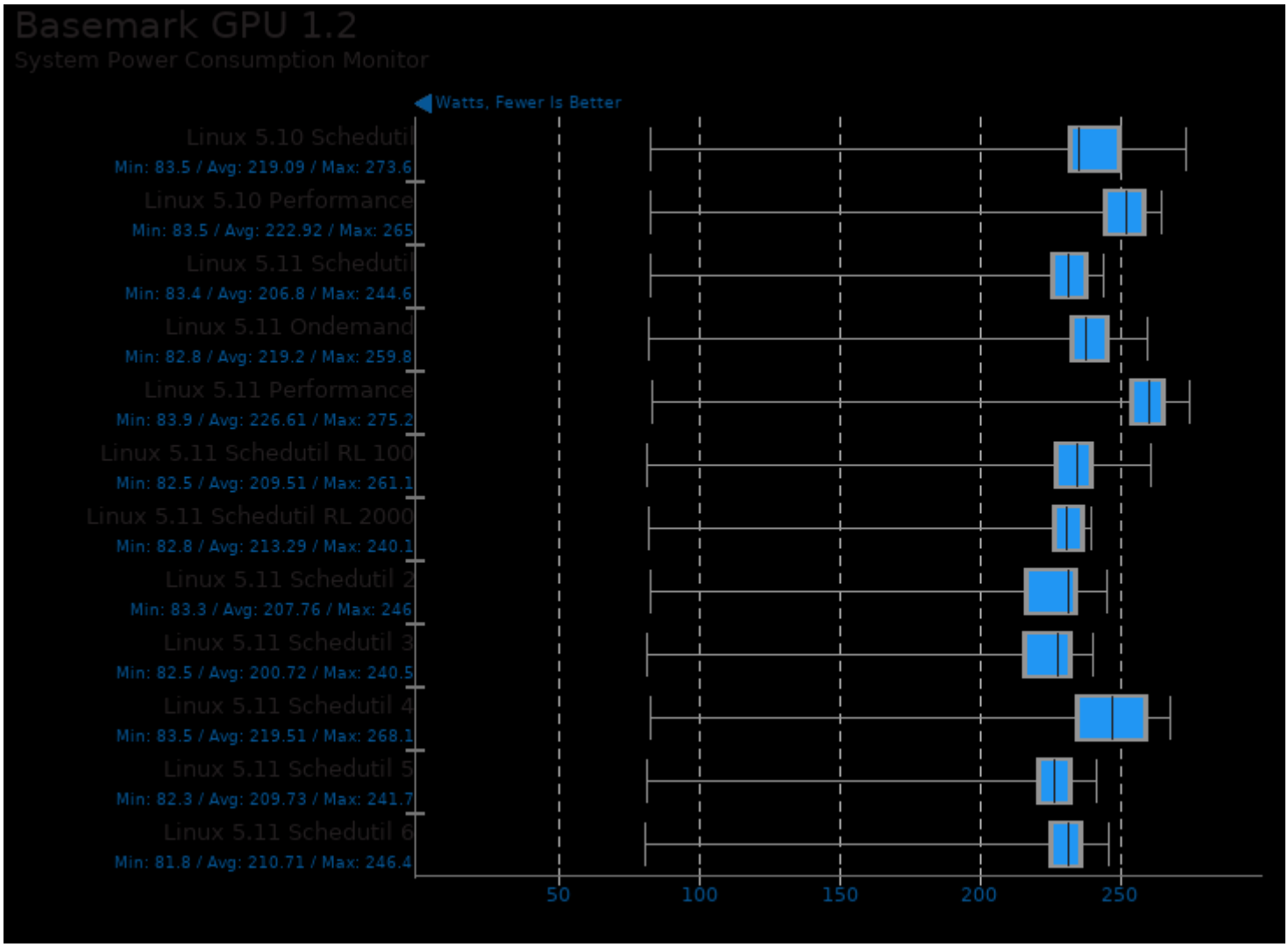
Ryzen 9 5900X Freq Invariance Combo Testing



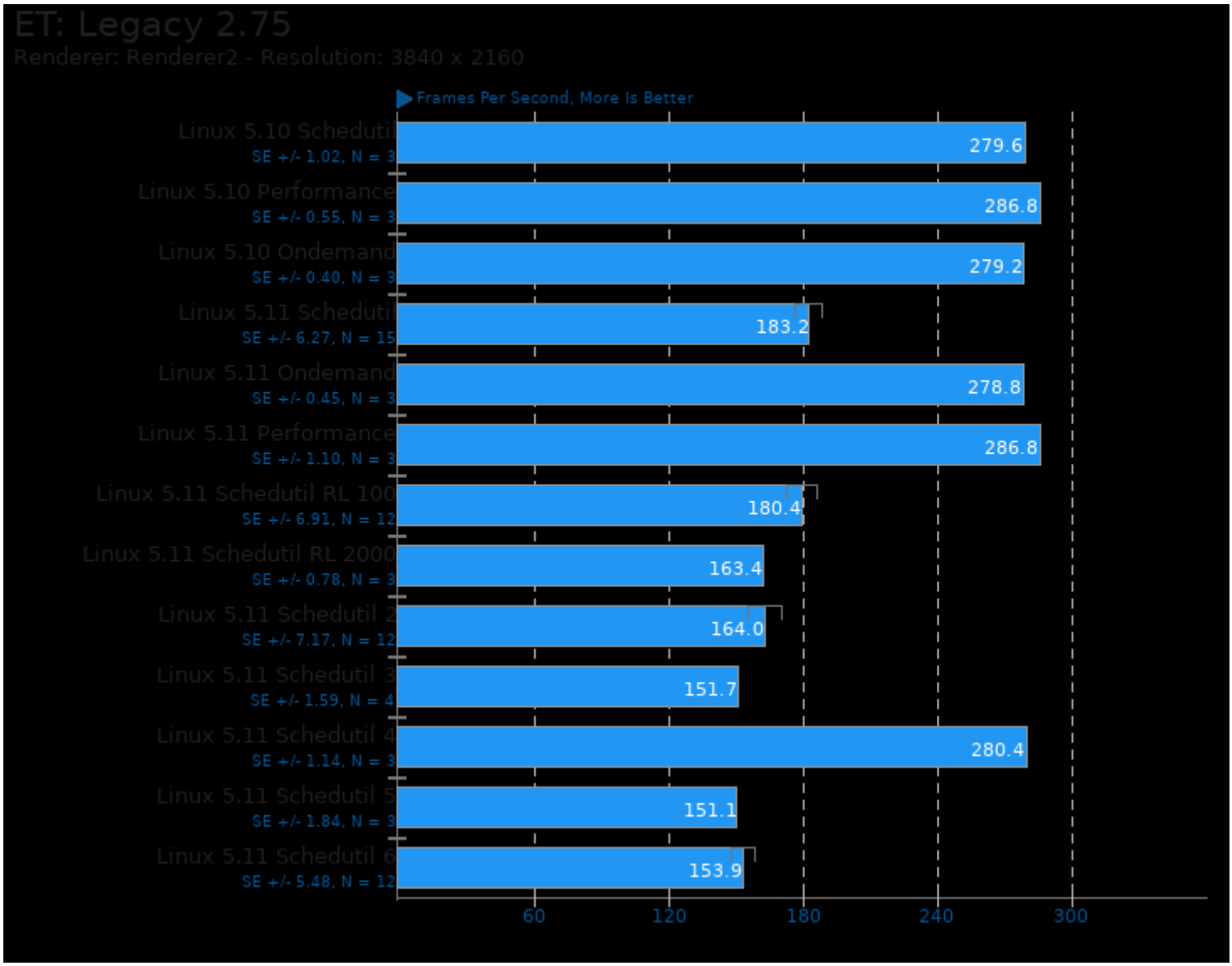
Ryzen 9 5900X Freq Invariance Combo Testing



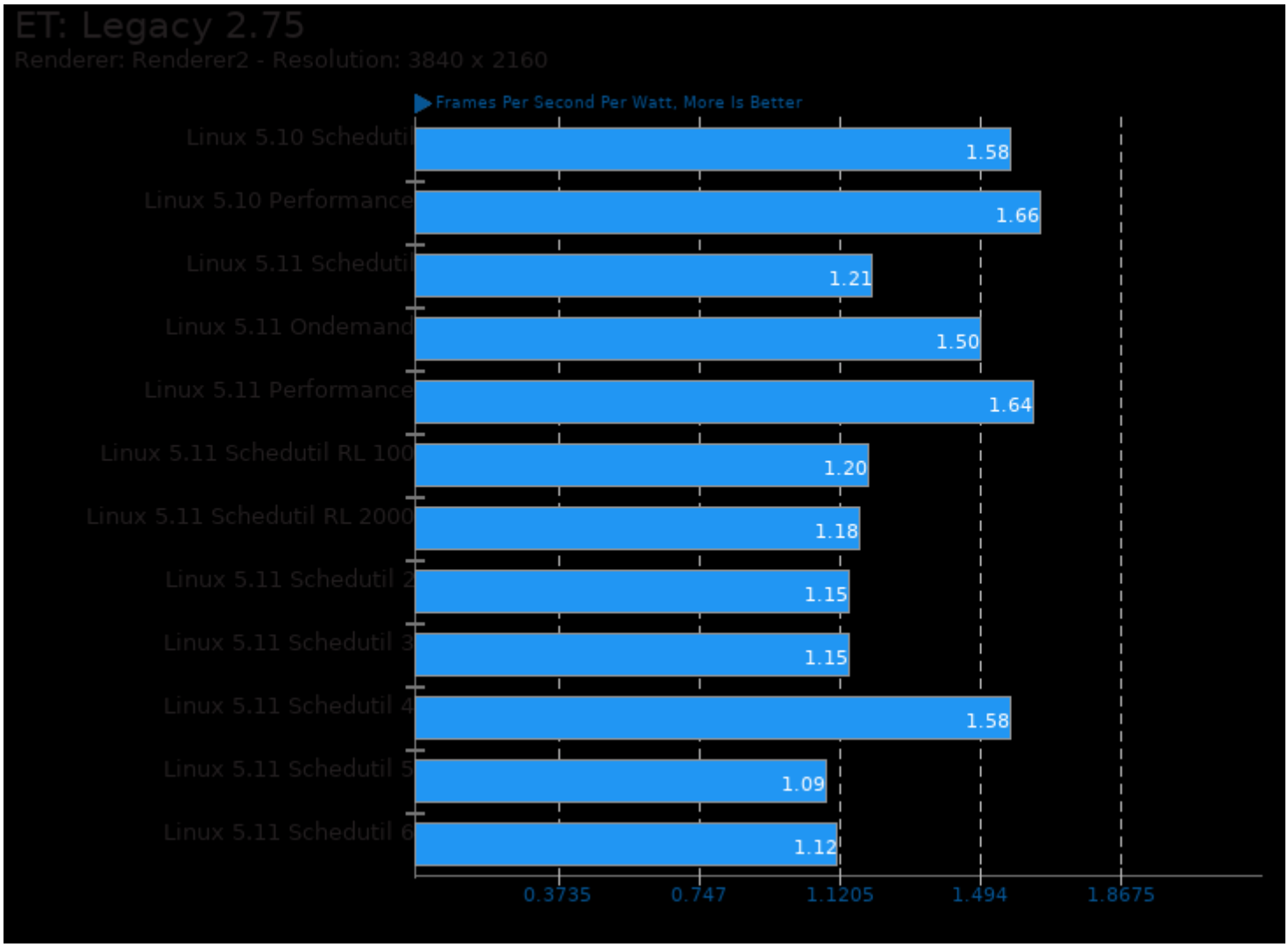
Ryzen 9 5900X Freq Invariance Combo Testing



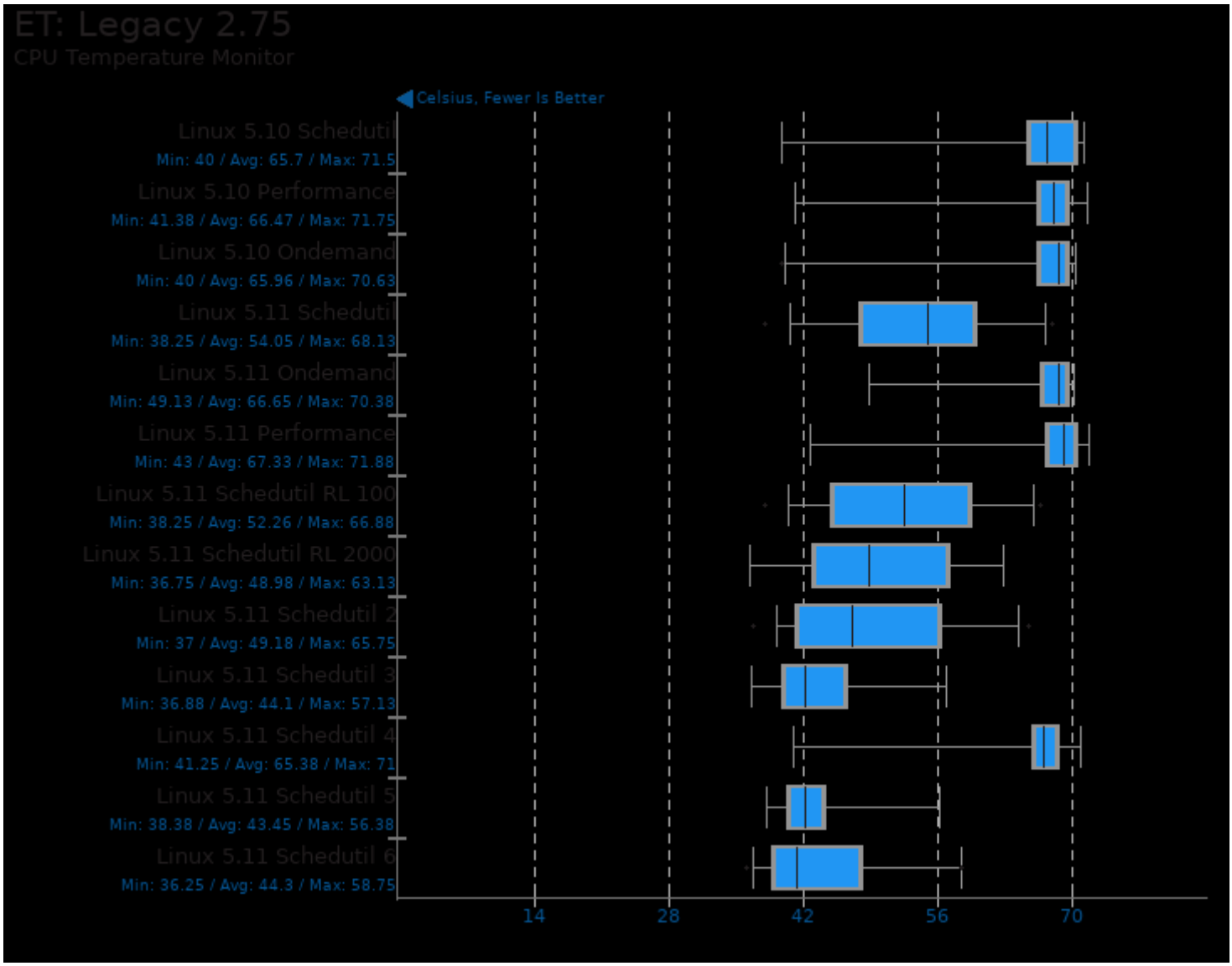
Ryzen 9 5900X Freq Invariance Combo Testing



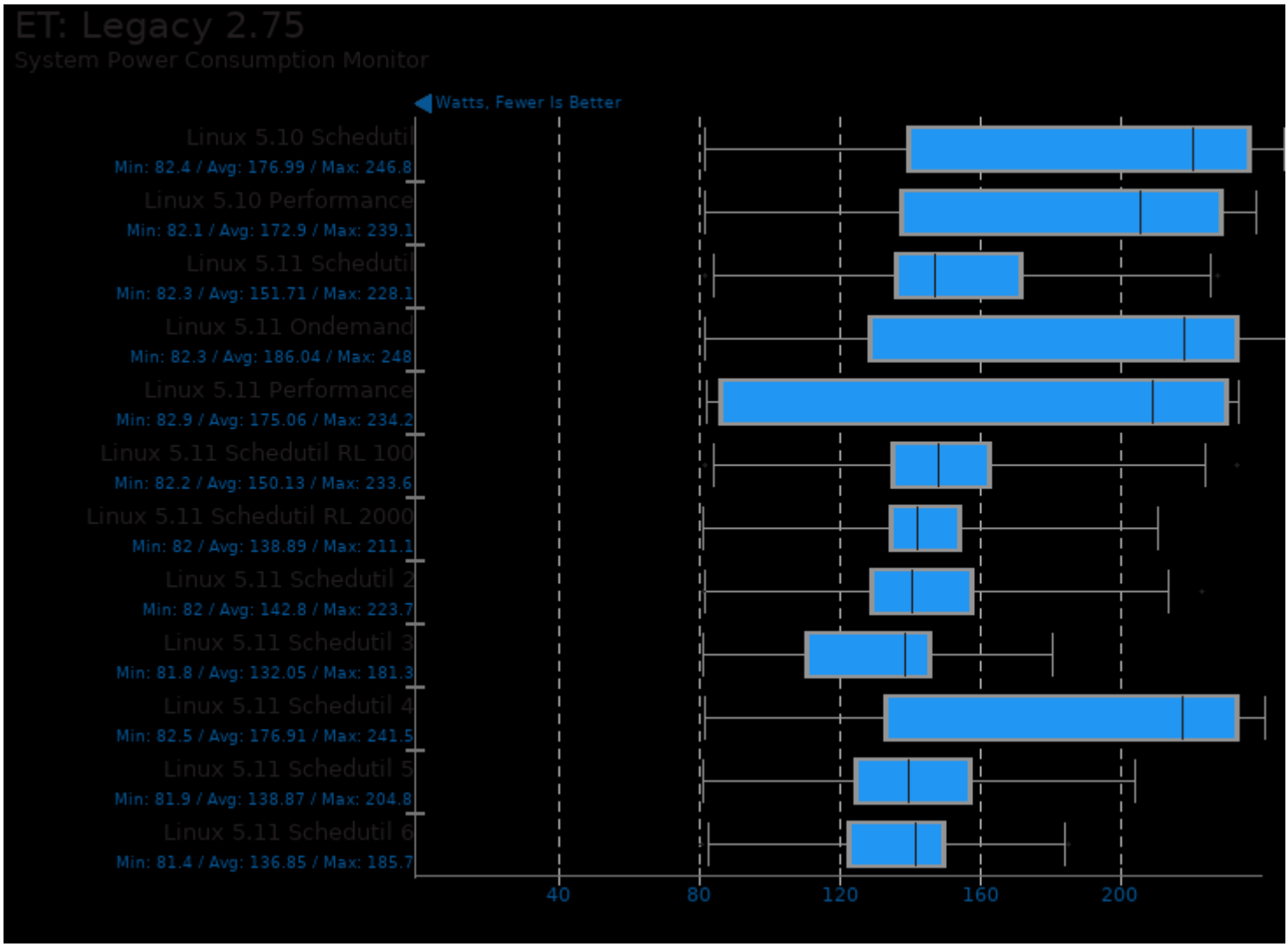
Ryzen 9 5900X Freq Invariance Combo Testing



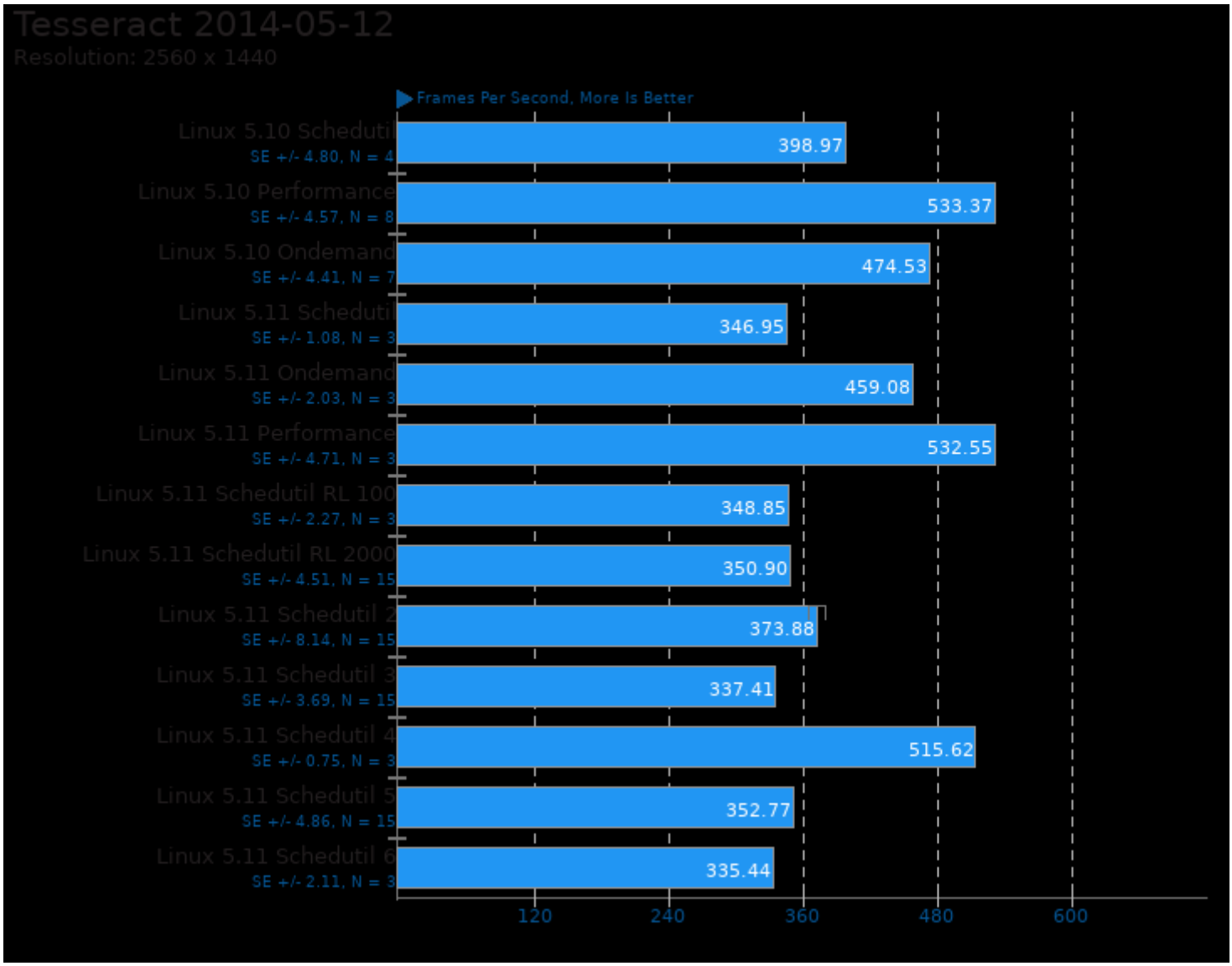
Ryzen 9 5900X Freq Invariance Combo Testing



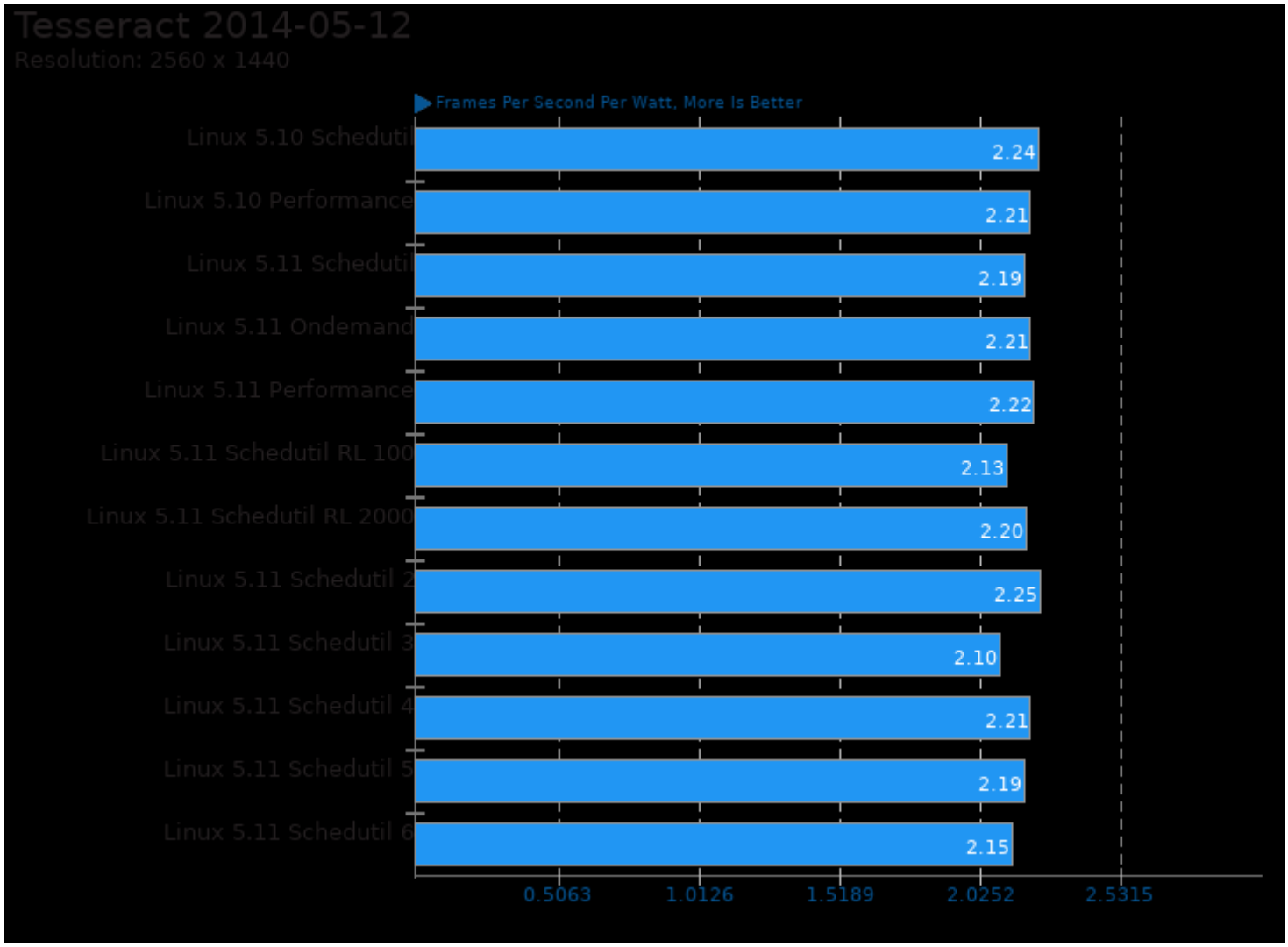
Ryzen 9 5900X Freq Invariance Combo Testing



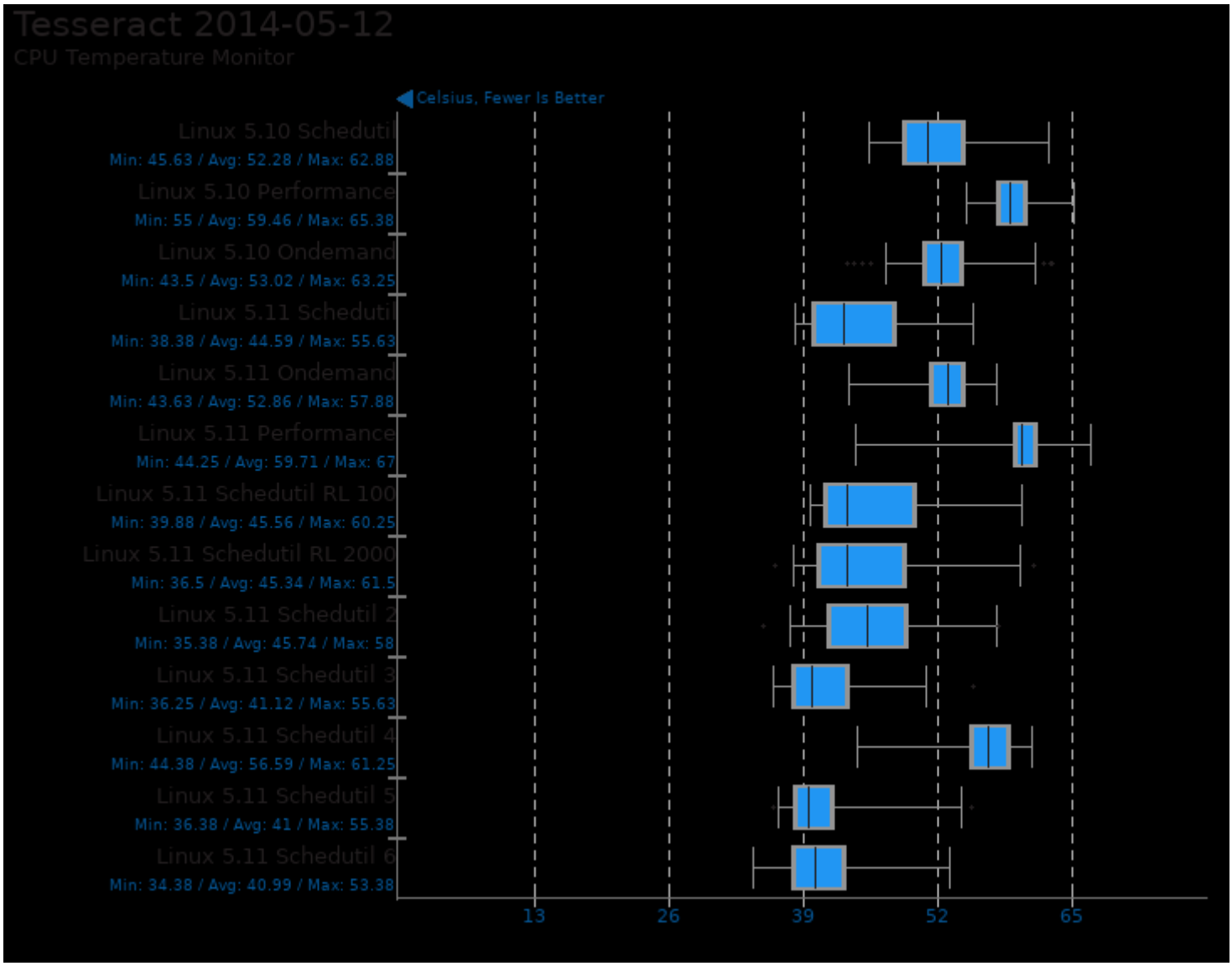
Ryzen 9 5900X Freq Invariance Combo Testing



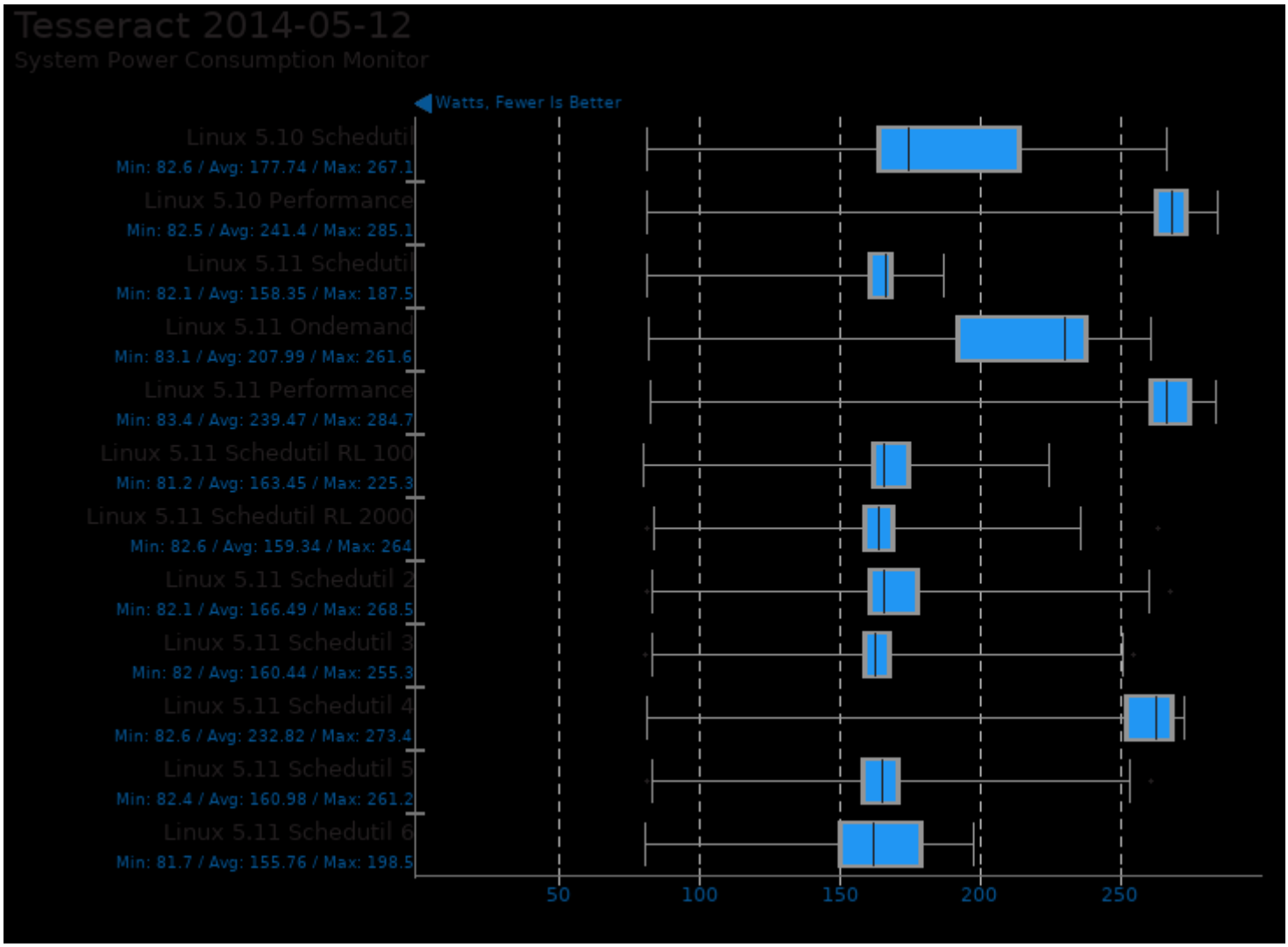
Ryzen 9 5900X Freq Invariance Combo Testing



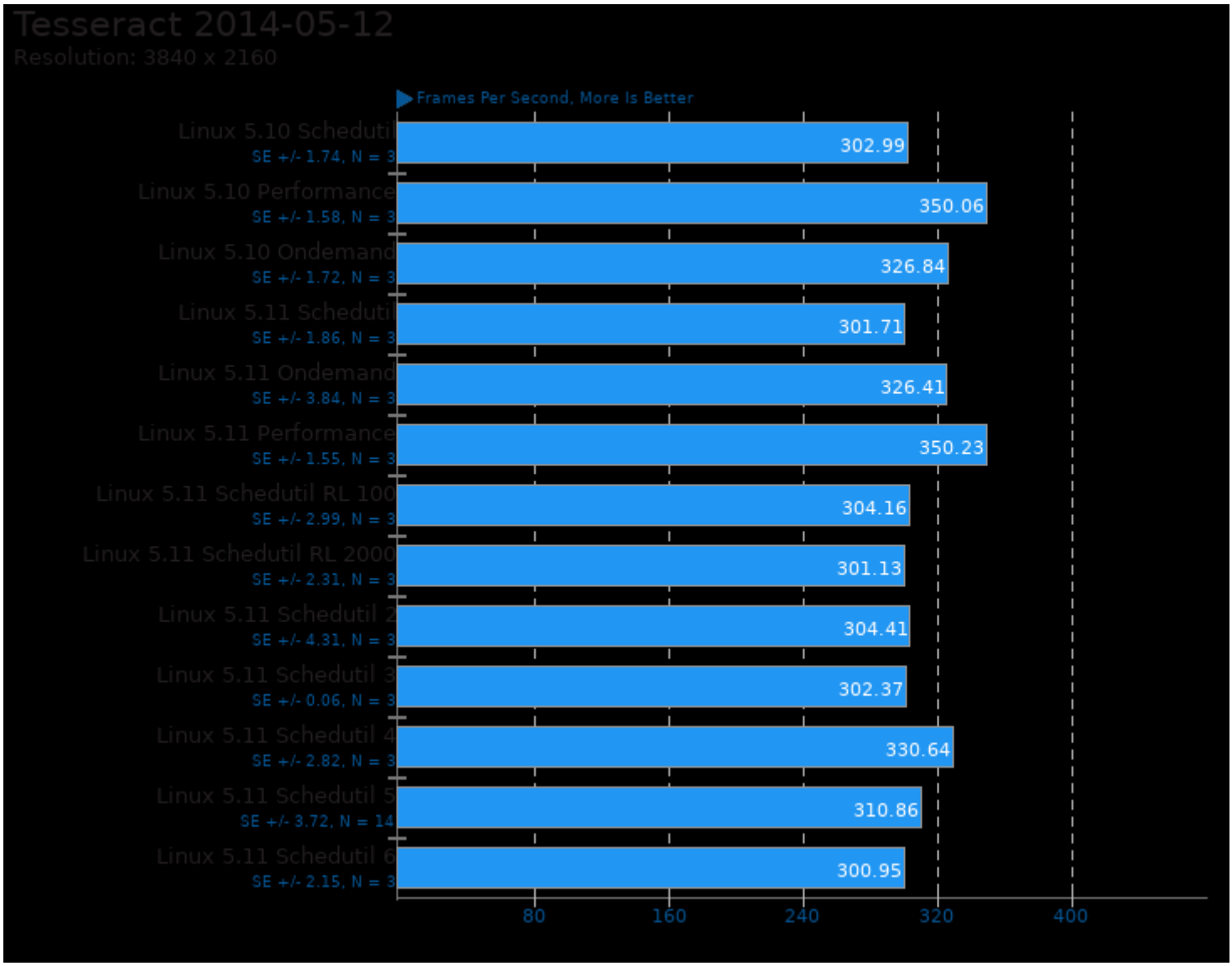
Ryzen 9 5900X Freq Invariance Combo Testing



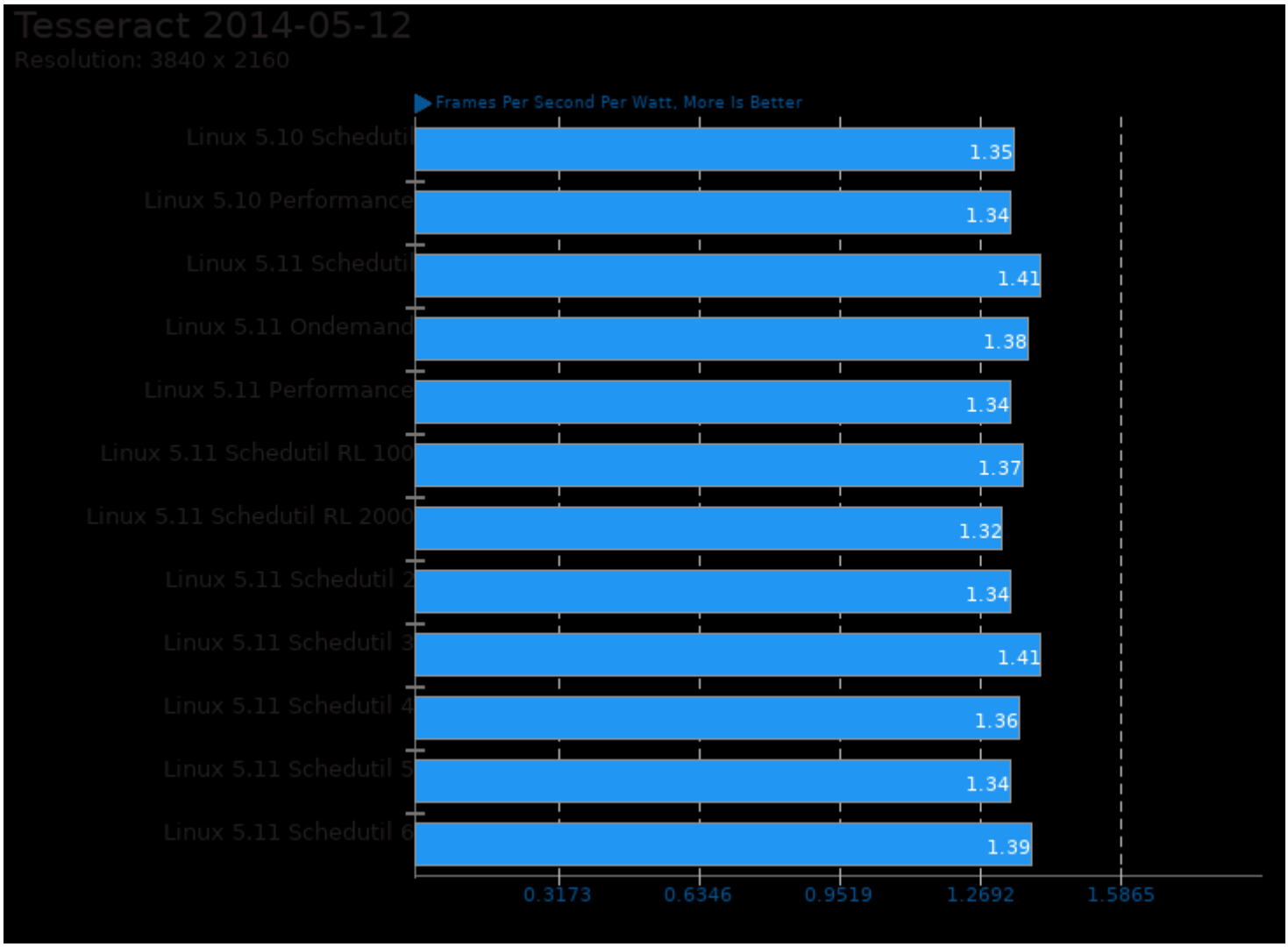
Ryzen 9 5900X Freq Invariance Combo Testing



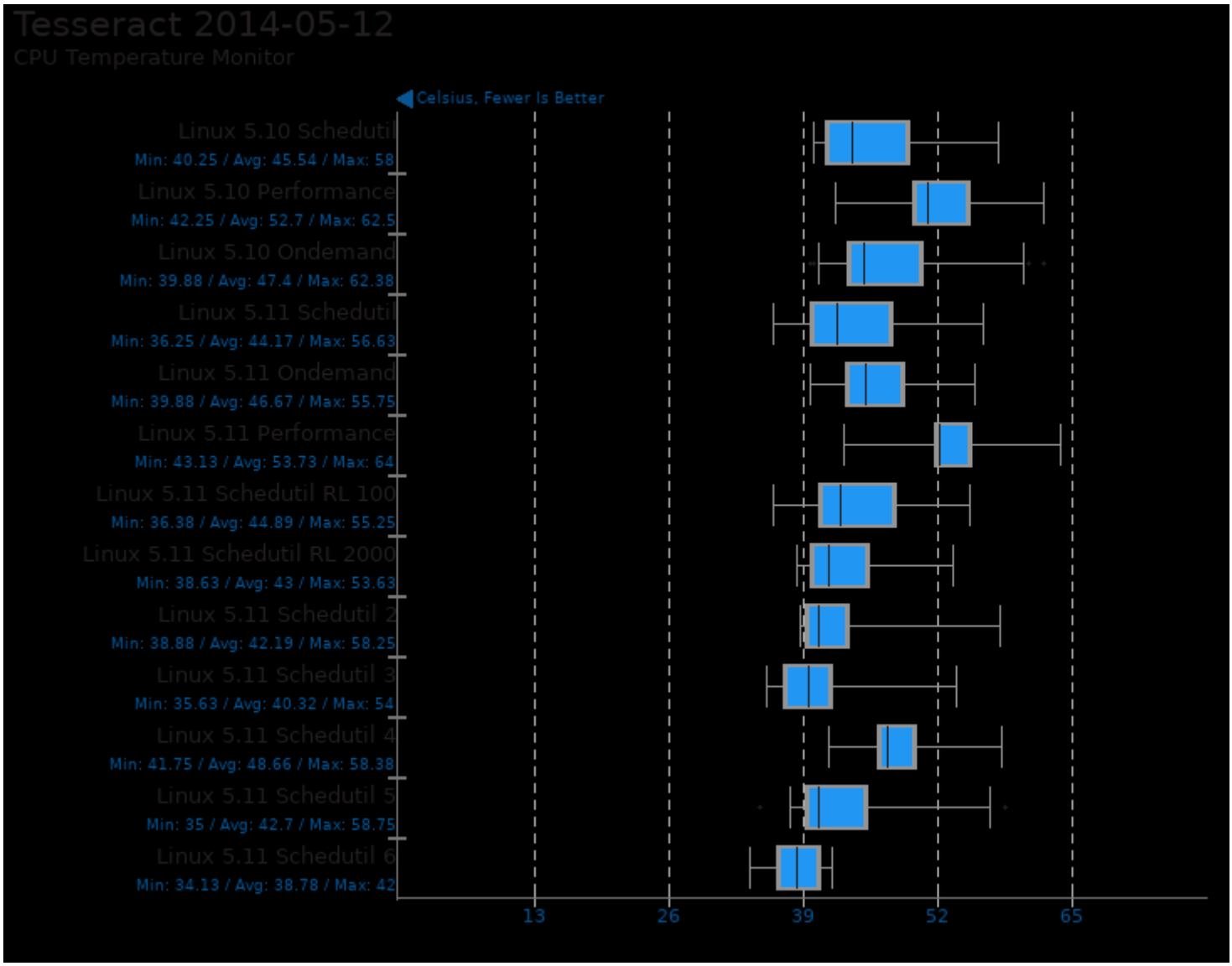
Ryzen 9 5900X Freq Invariance Combo Testing



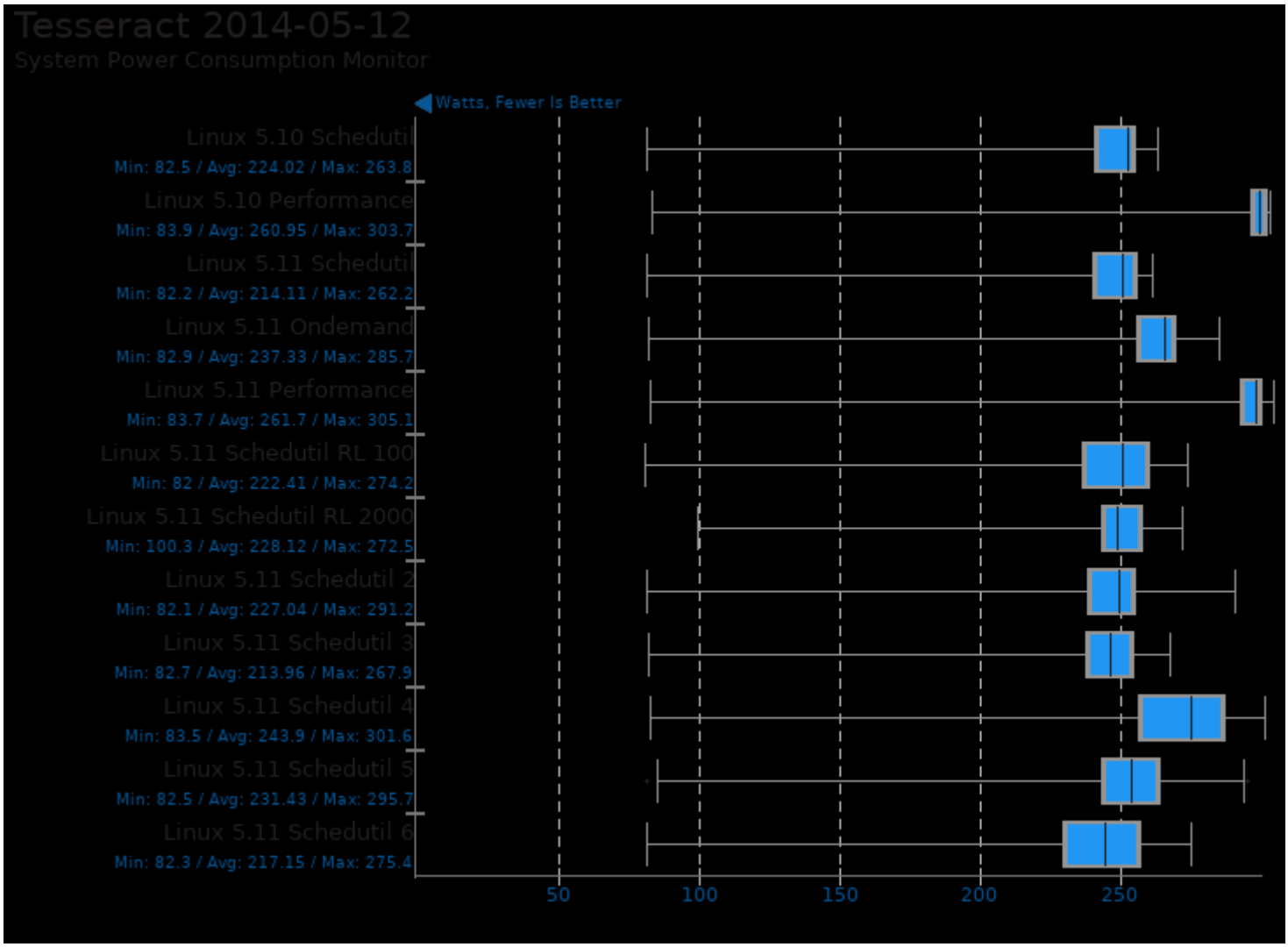
Ryzen 9 5900X Freq Invariance Combo Testing



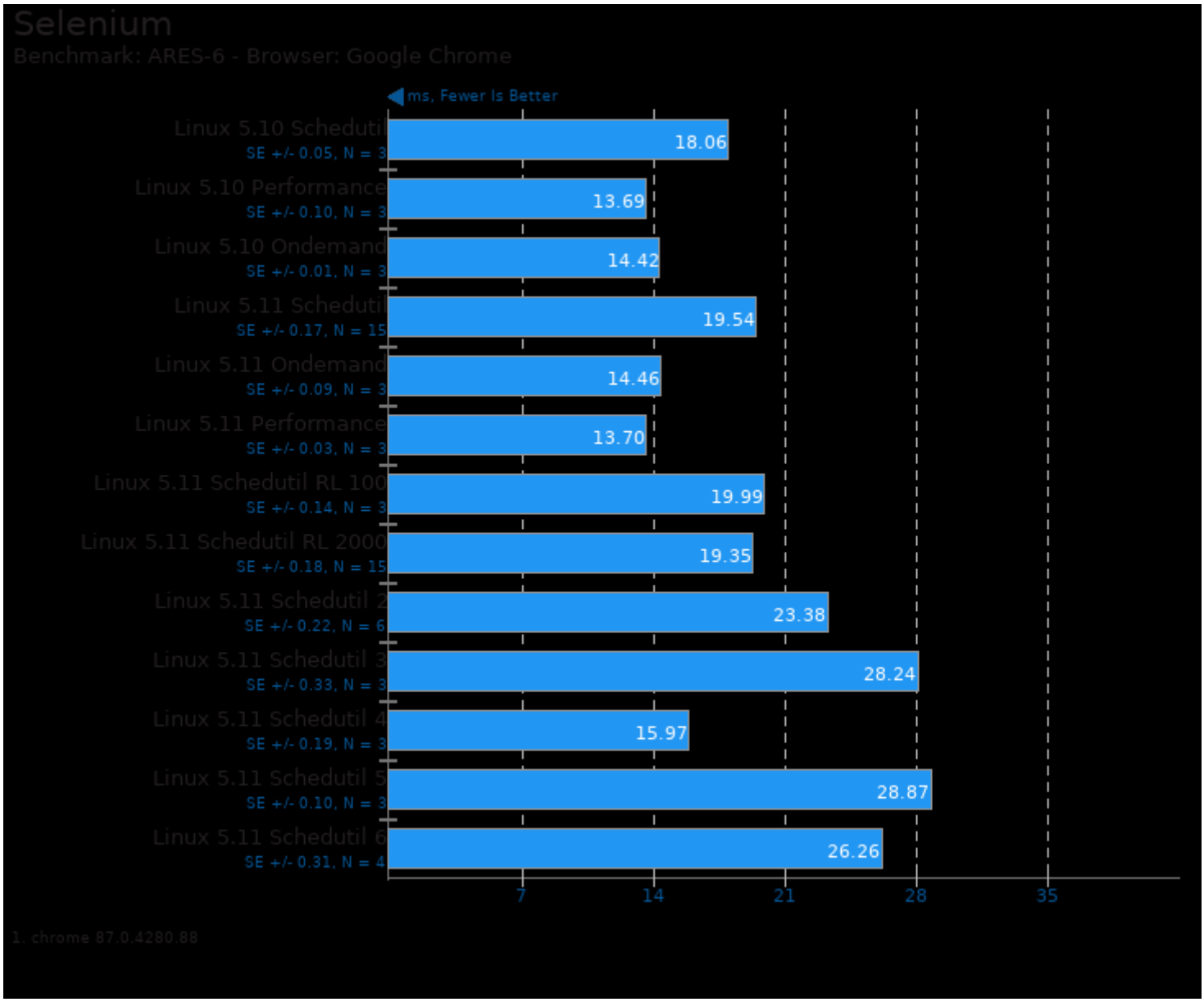
Ryzen 9 5900X Freq Invariance Combo Testing



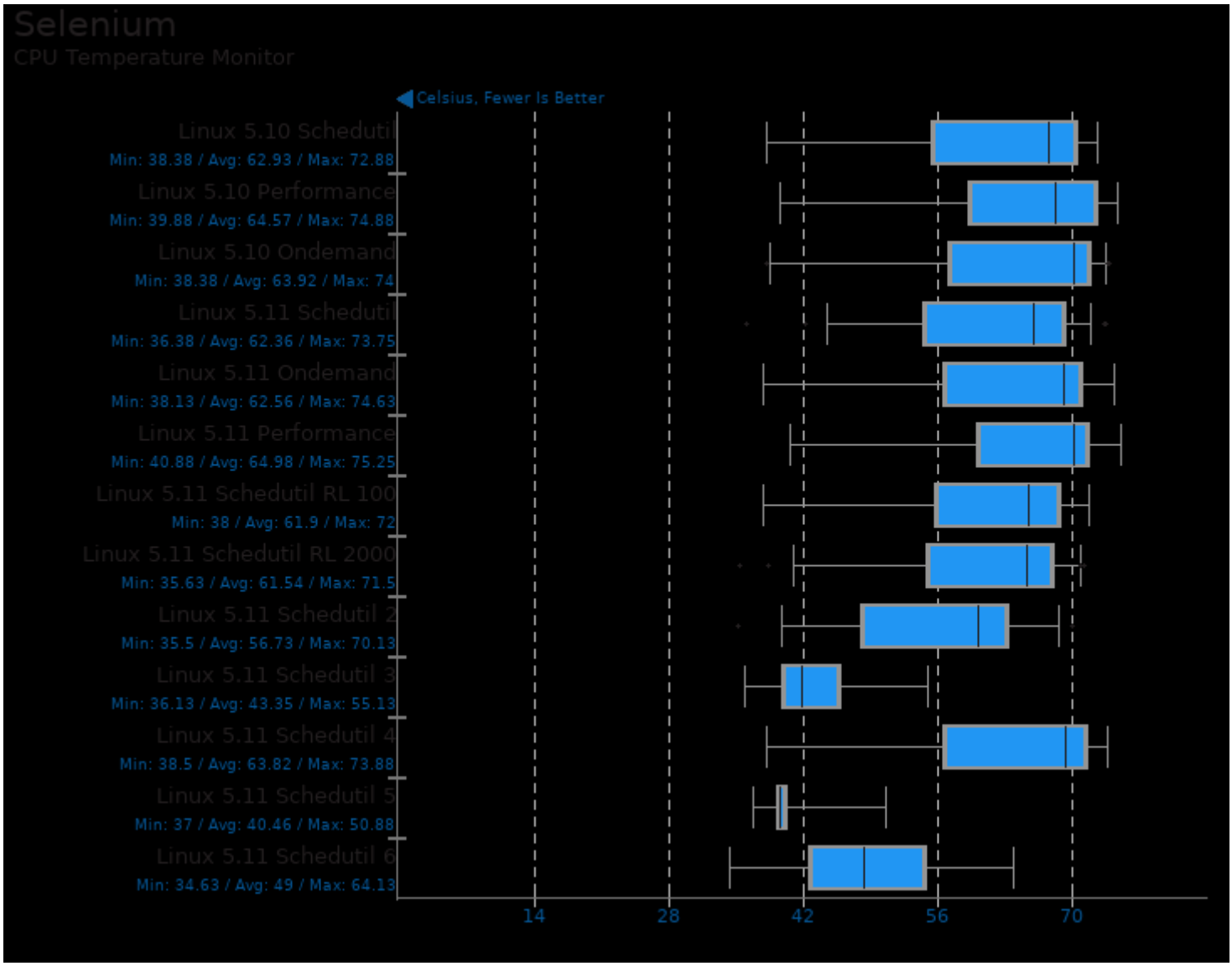
Ryzen 9 5900X Freq Invariance Combo Testing



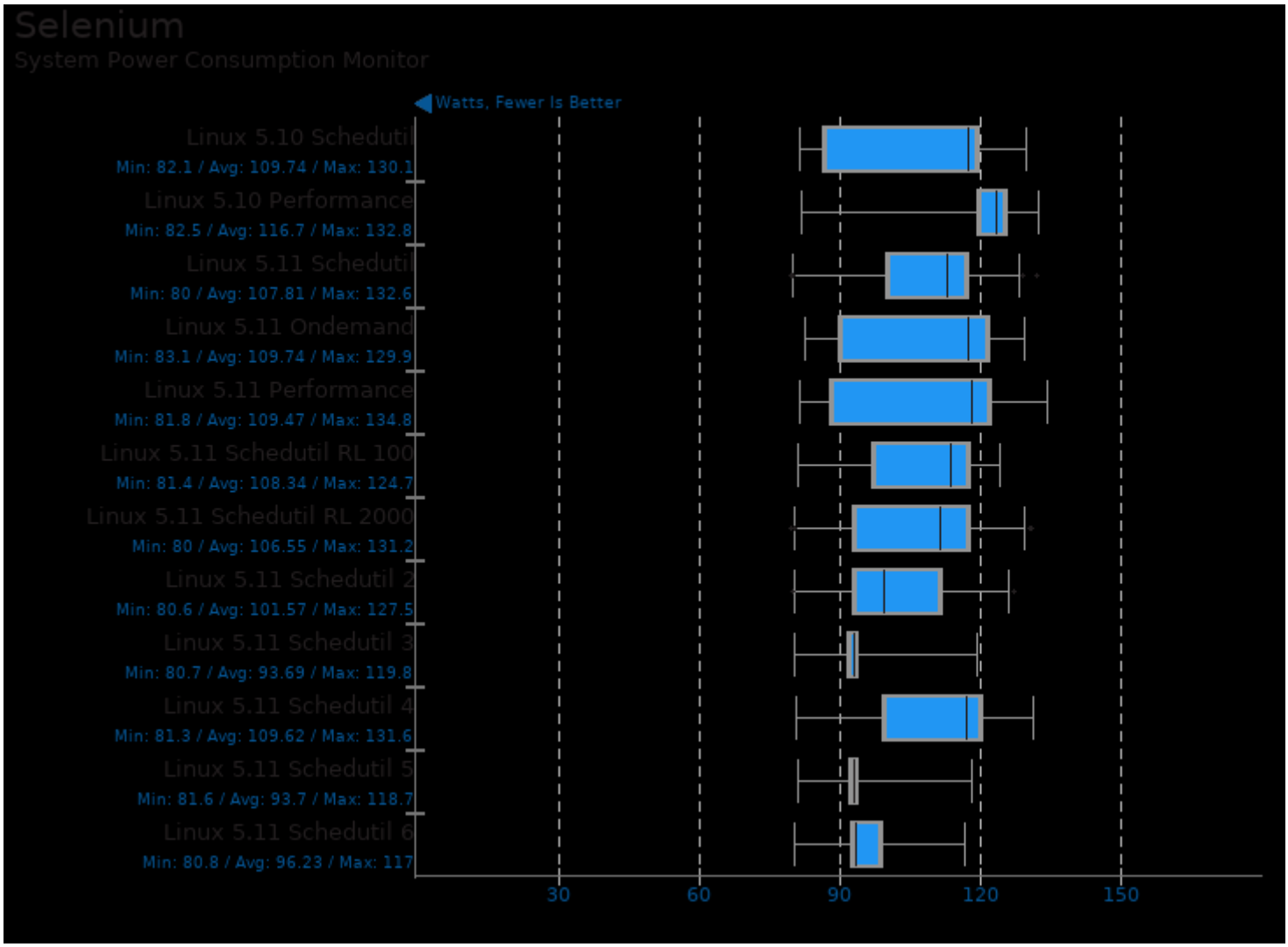
Ryzen 9 5900X Freq Invariance Combo Testing



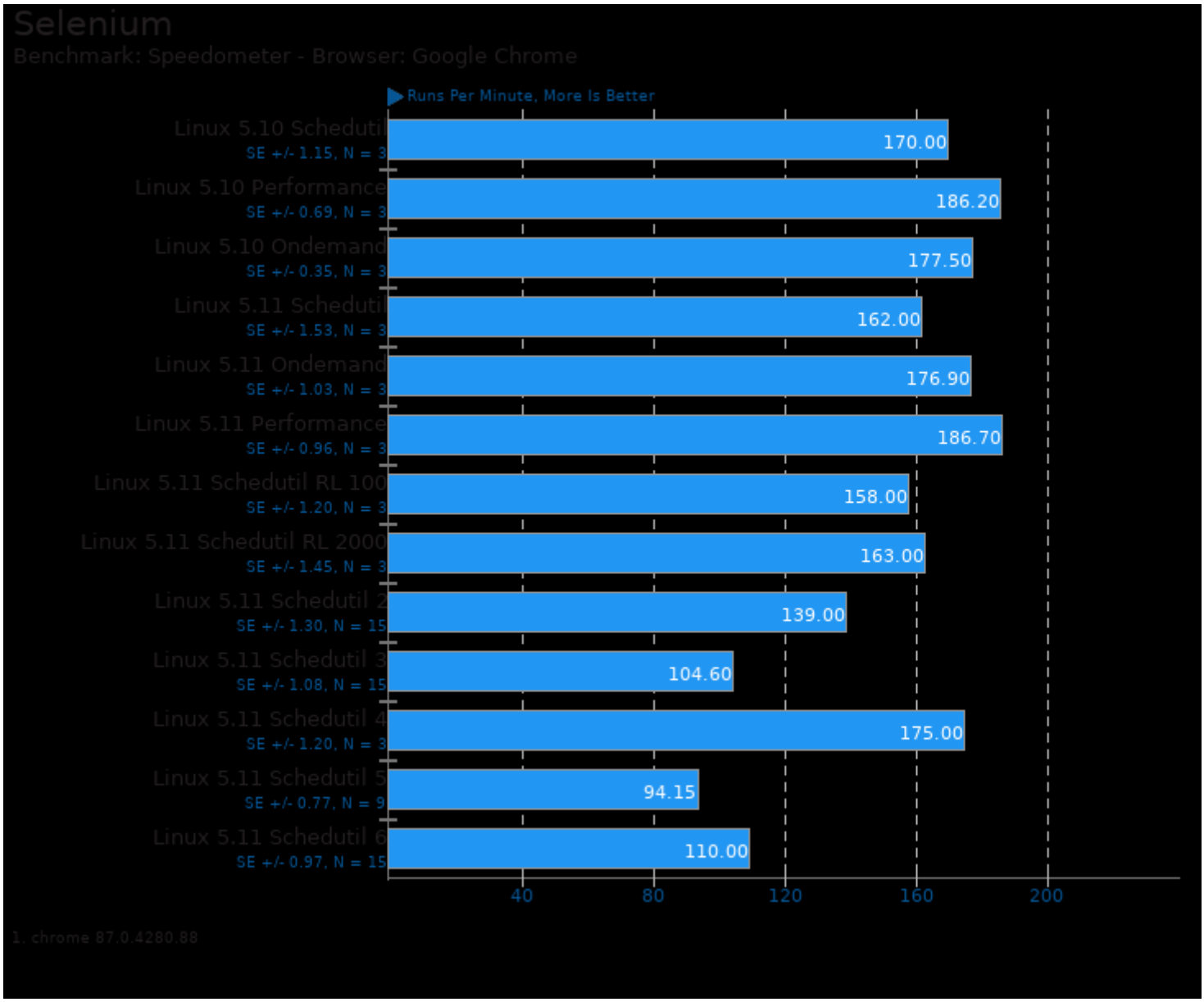
Ryzen 9 5900X Freq Invariance Combo Testing



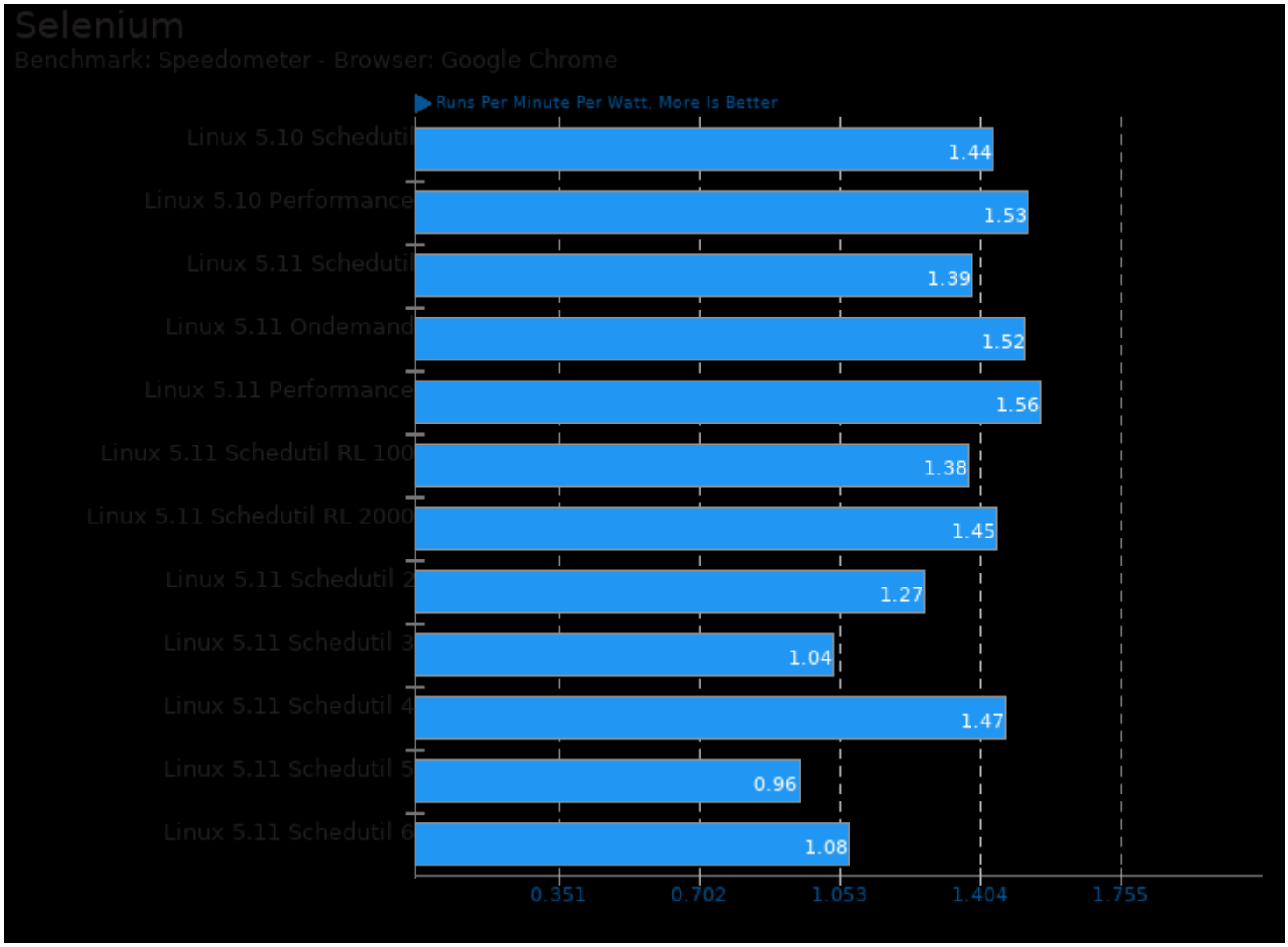
Ryzen 9 5900X Freq Invariance Combo Testing



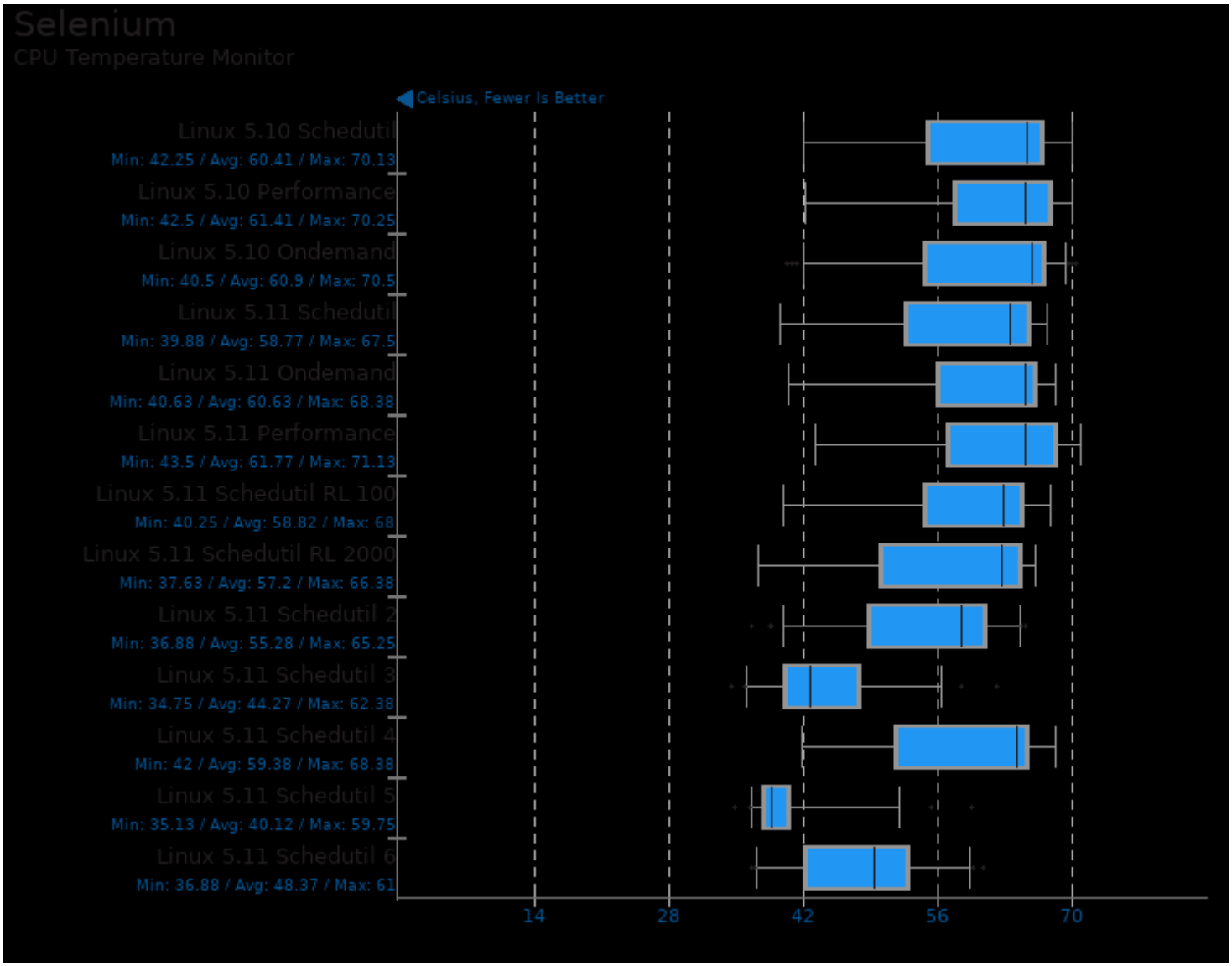
Ryzen 9 5900X Freq Invariance Combo Testing



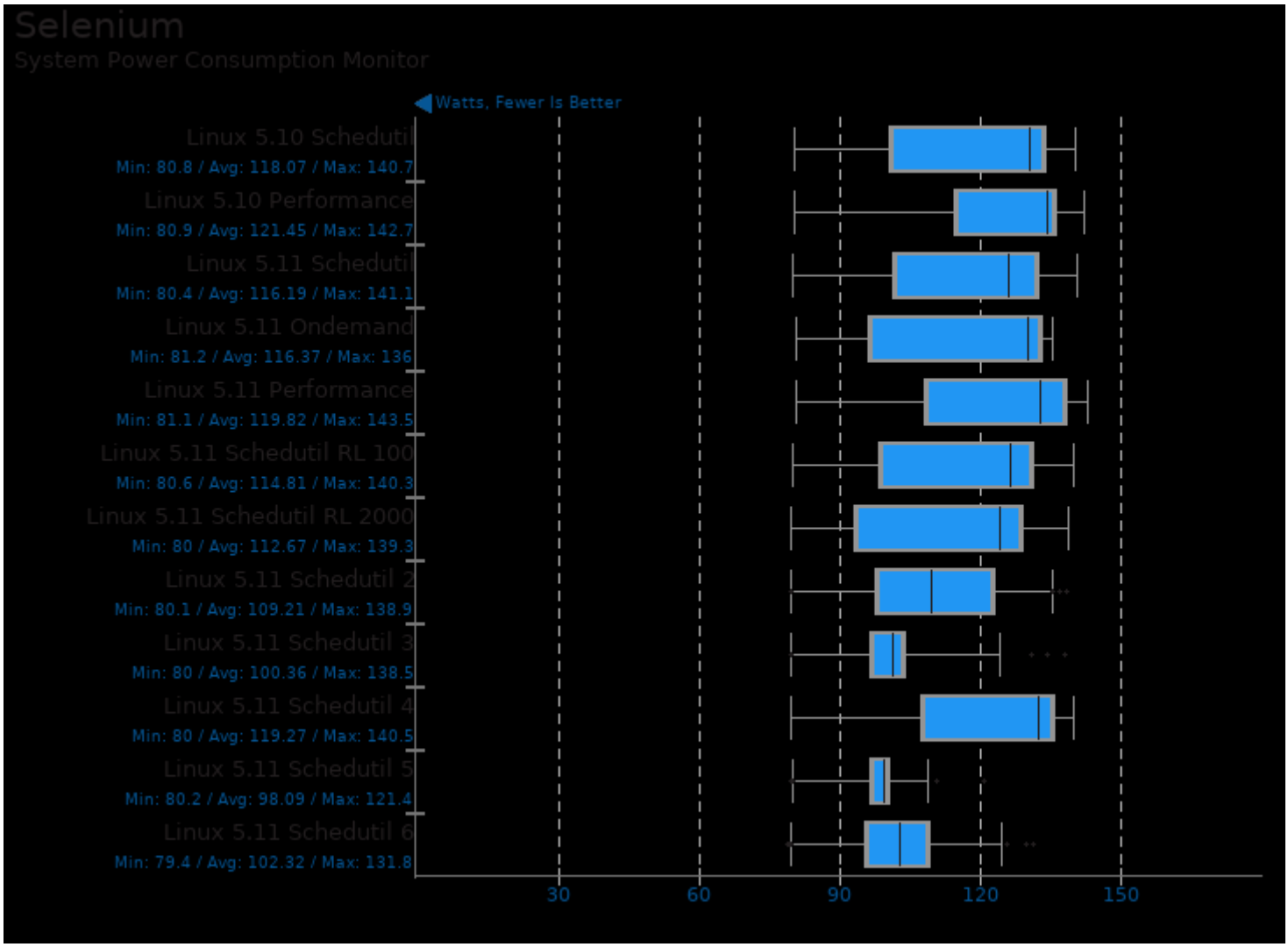
Ryzen 9 5900X Freq Invariance Combo Testing



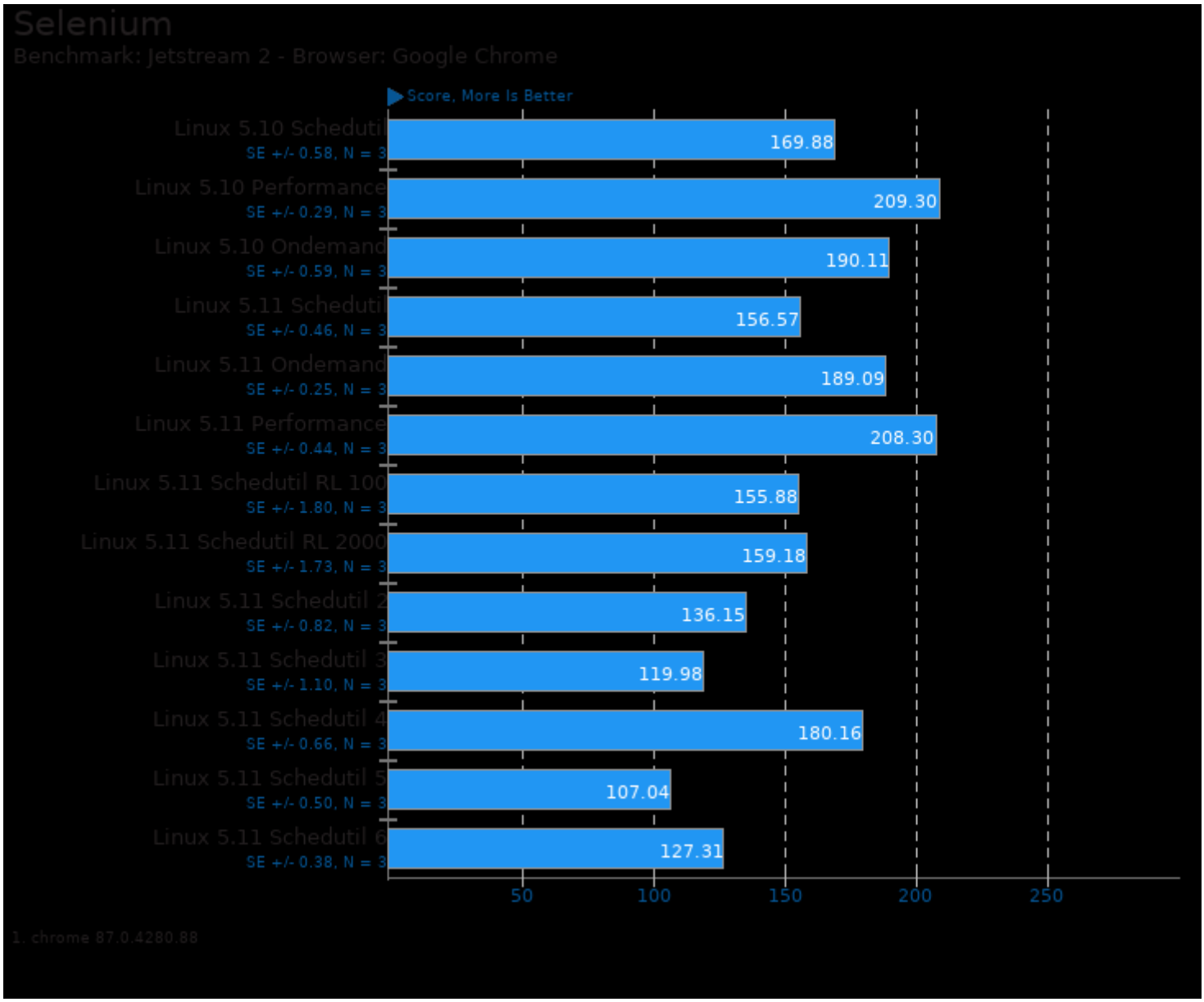
Ryzen 9 5900X Freq Invariance Combo Testing



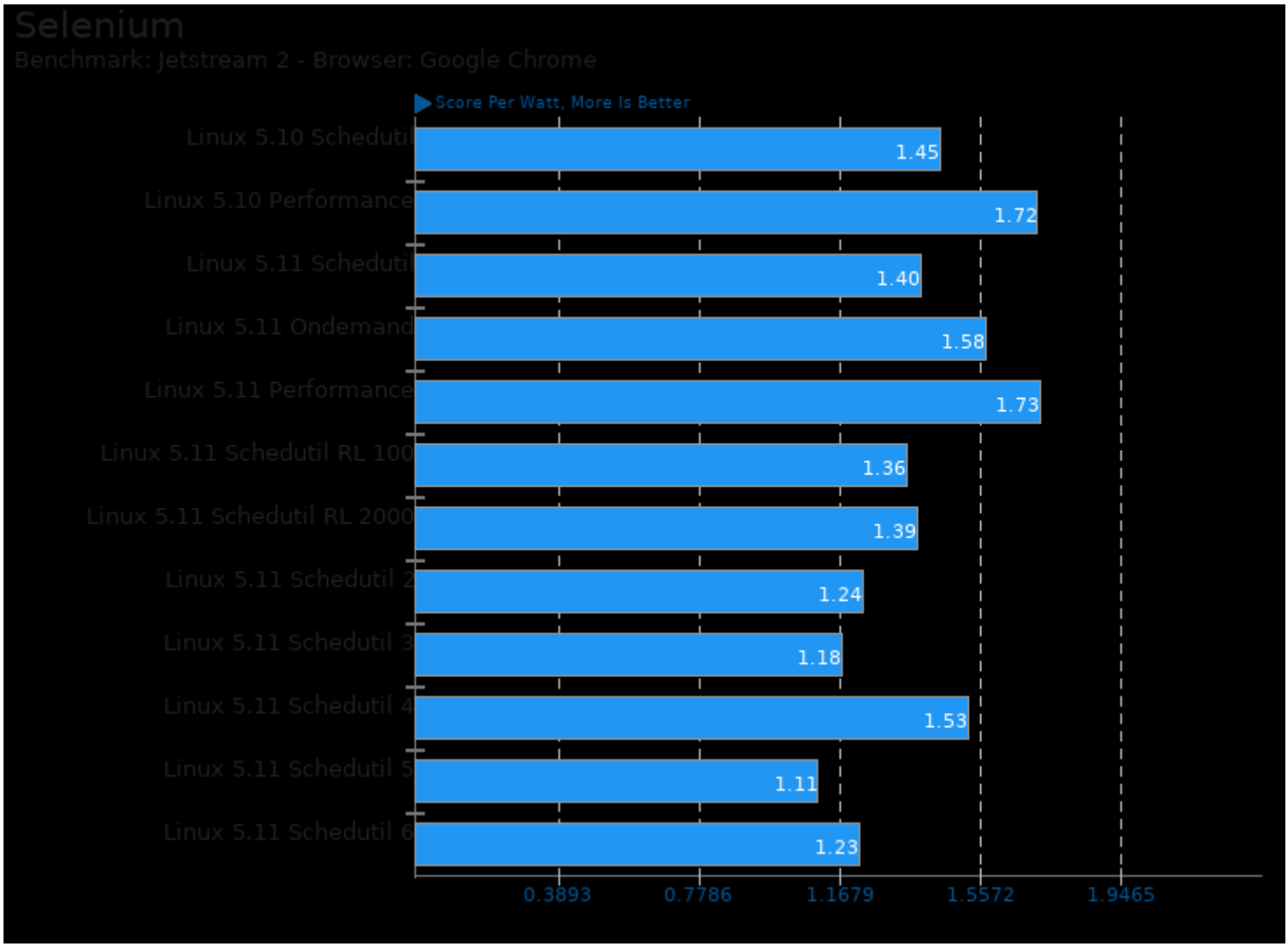
Ryzen 9 5900X Freq Invariance Combo Testing



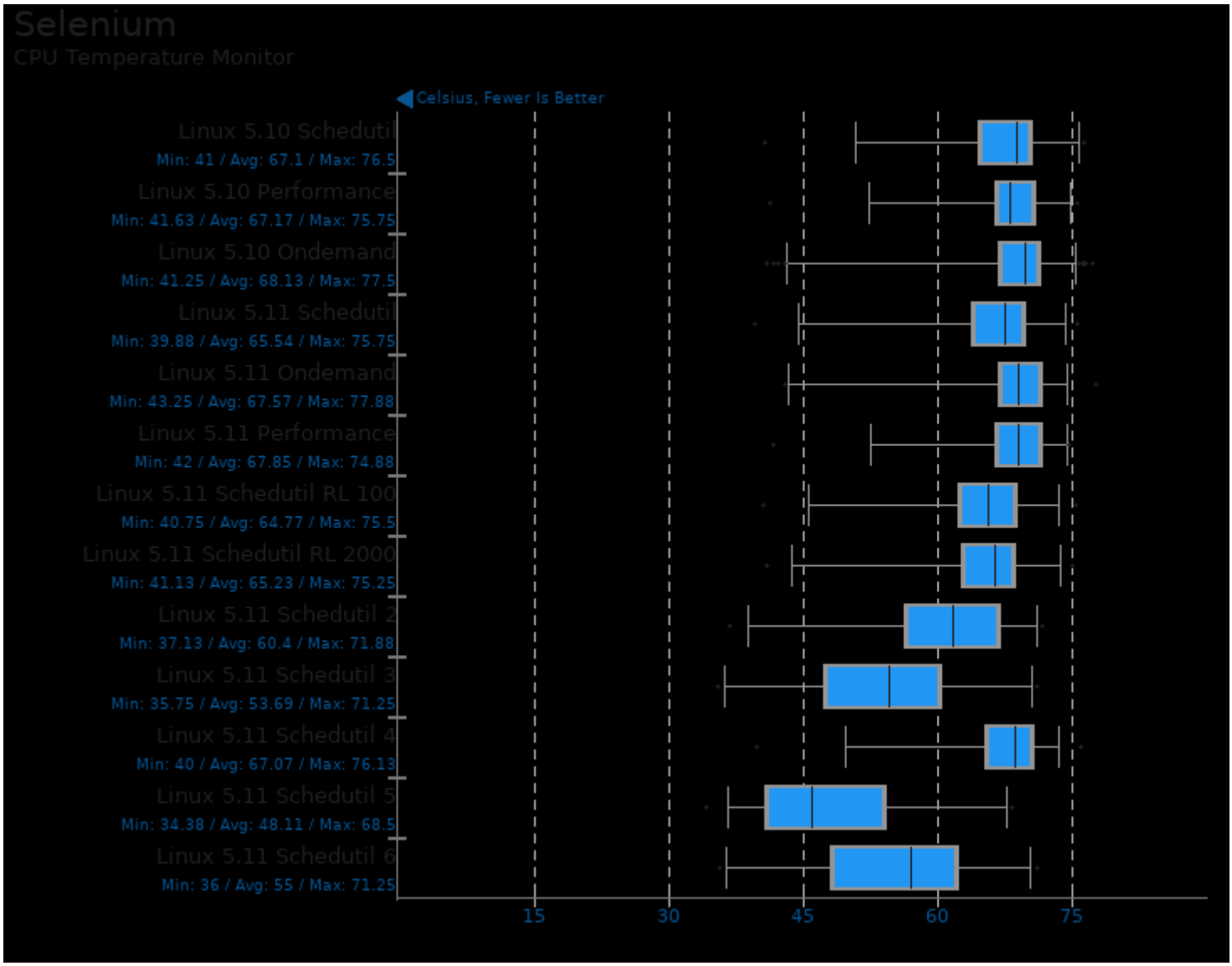
Ryzen 9 5900X Freq Invariance Combo Testing



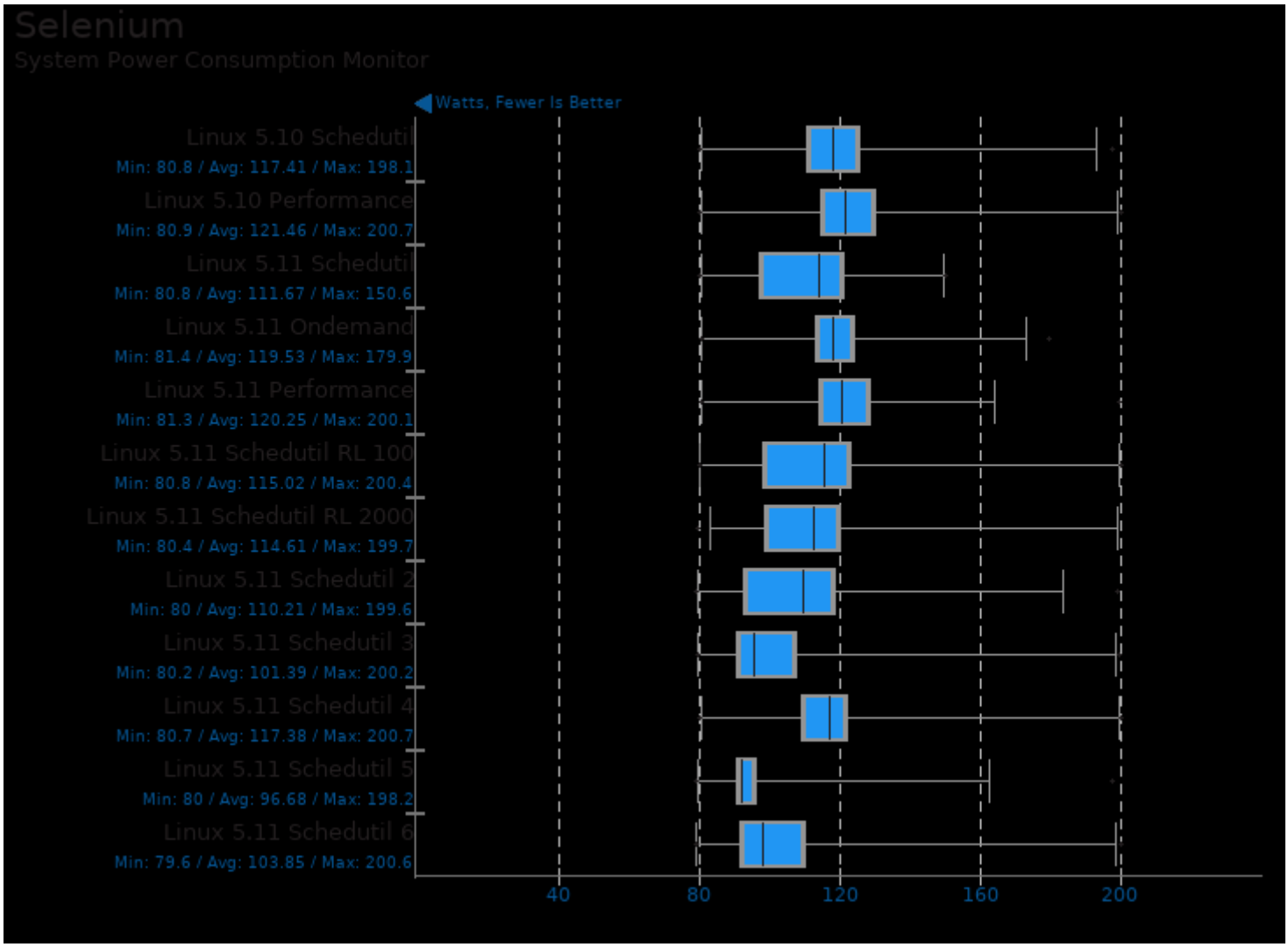
Ryzen 9 5900X Freq Invariance Combo Testing



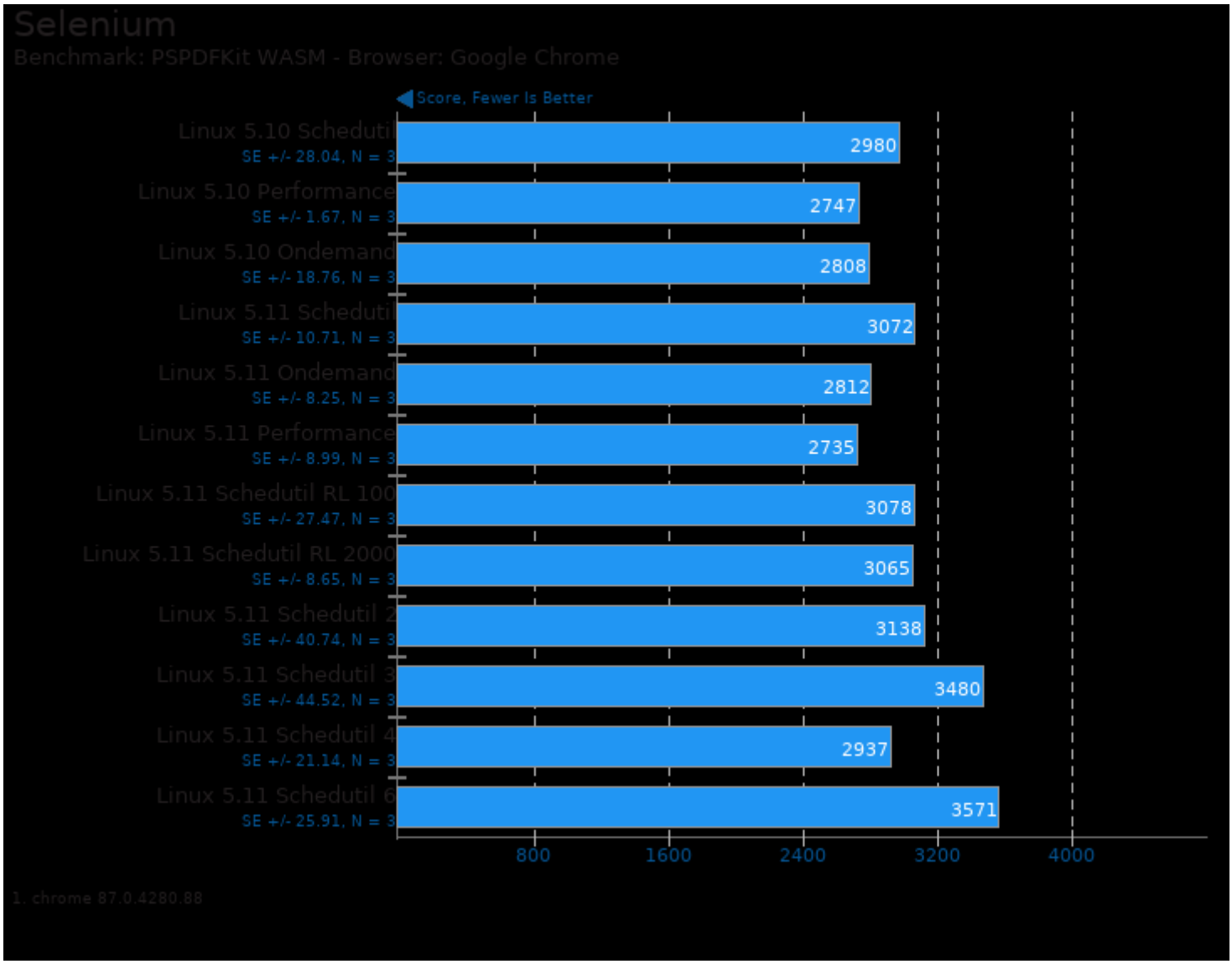
Ryzen 9 5900X Freq Invariance Combo Testing



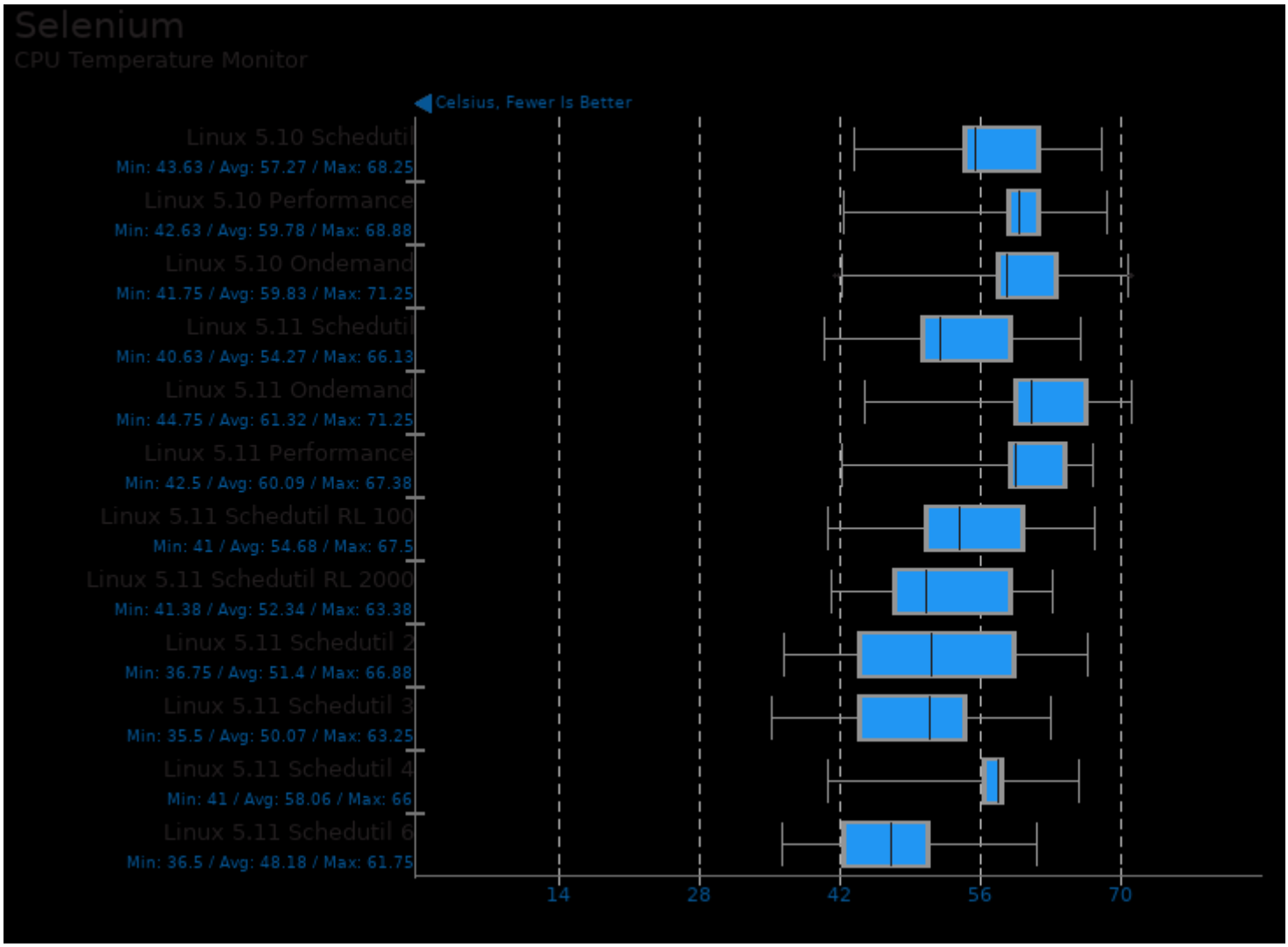
Ryzen 9 5900X Freq Invariance Combo Testing



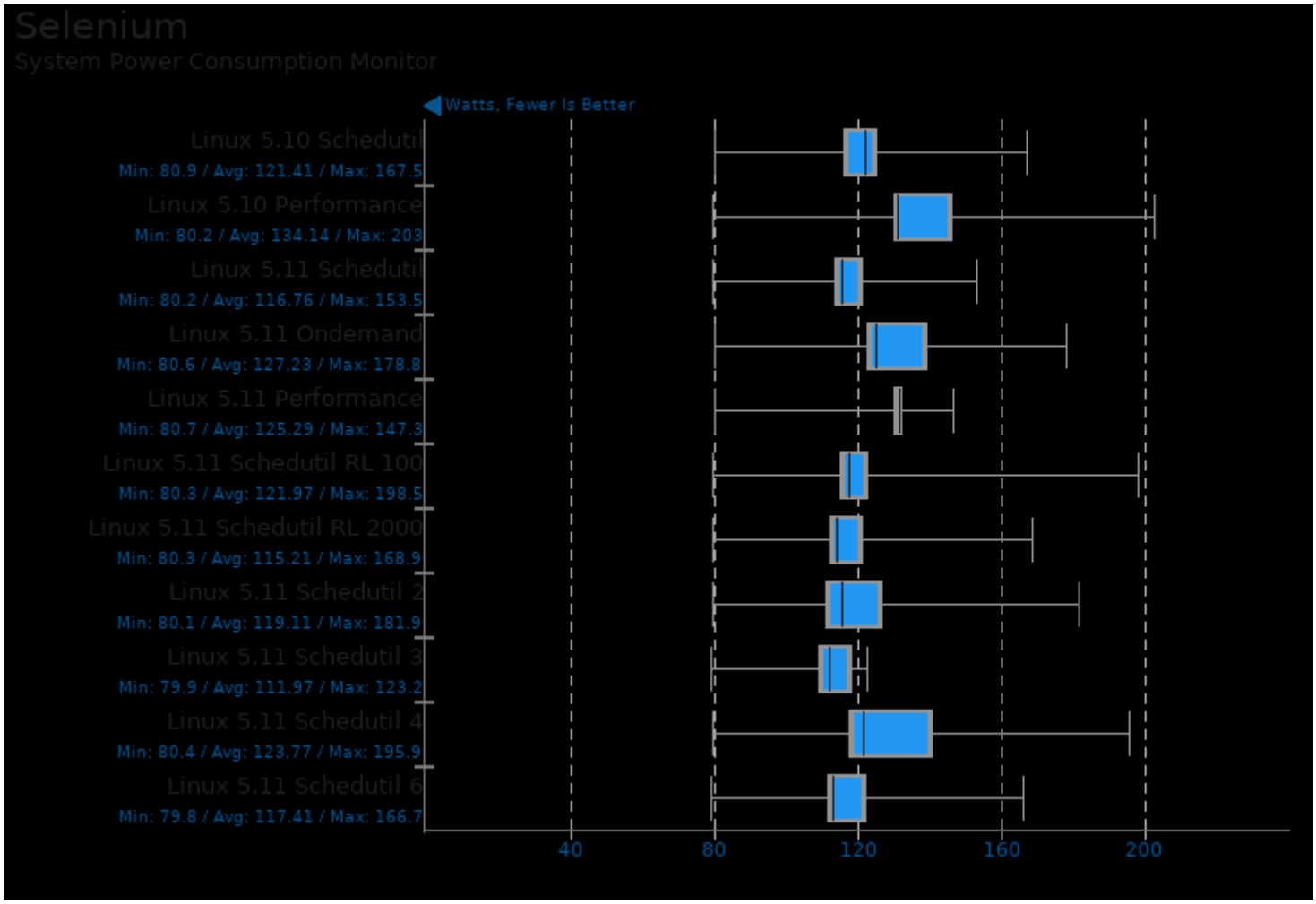
Ryzen 9 5900X Freq Invariance Combo Testing



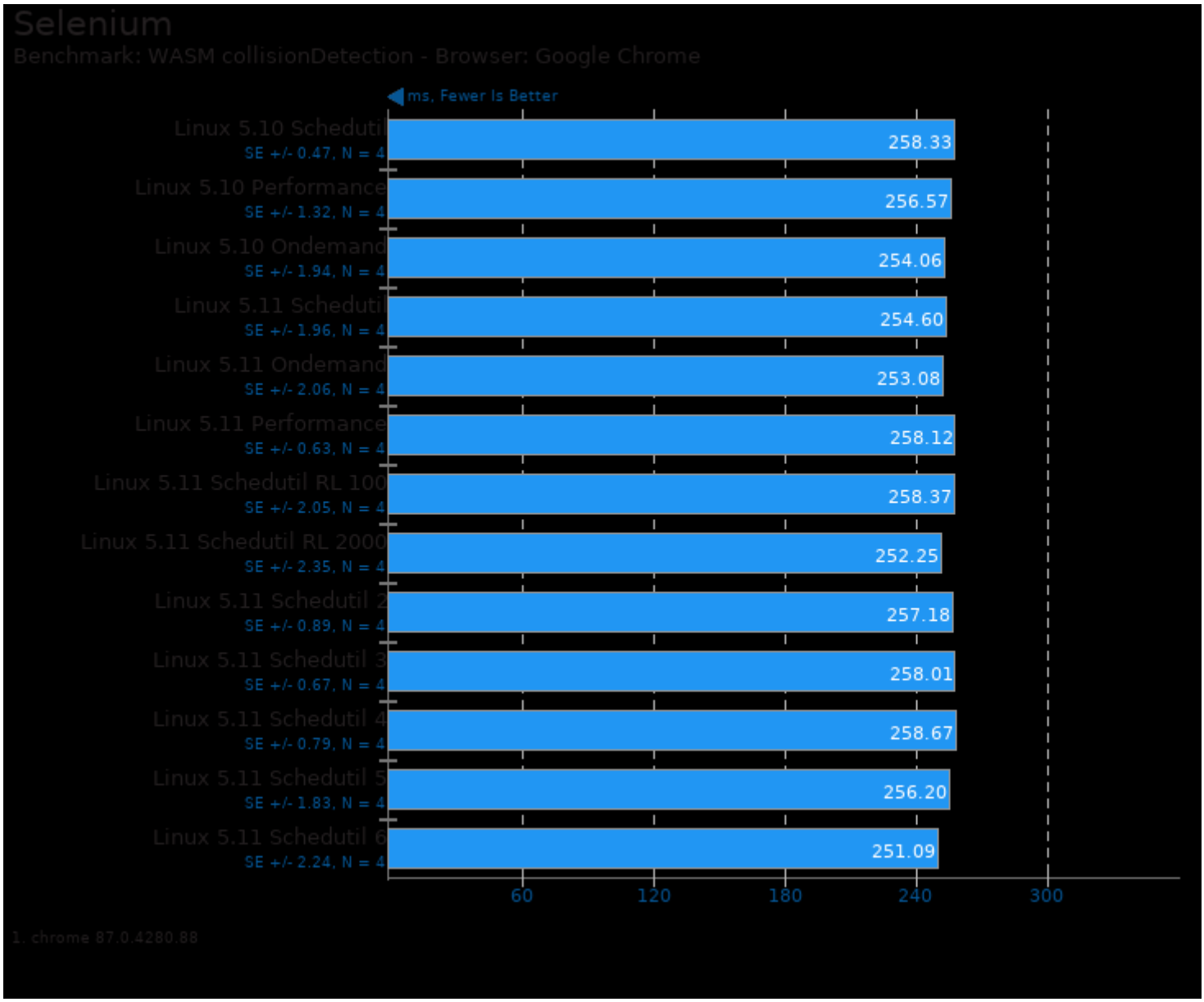
Ryzen 9 5900X Freq Invariance Combo Testing



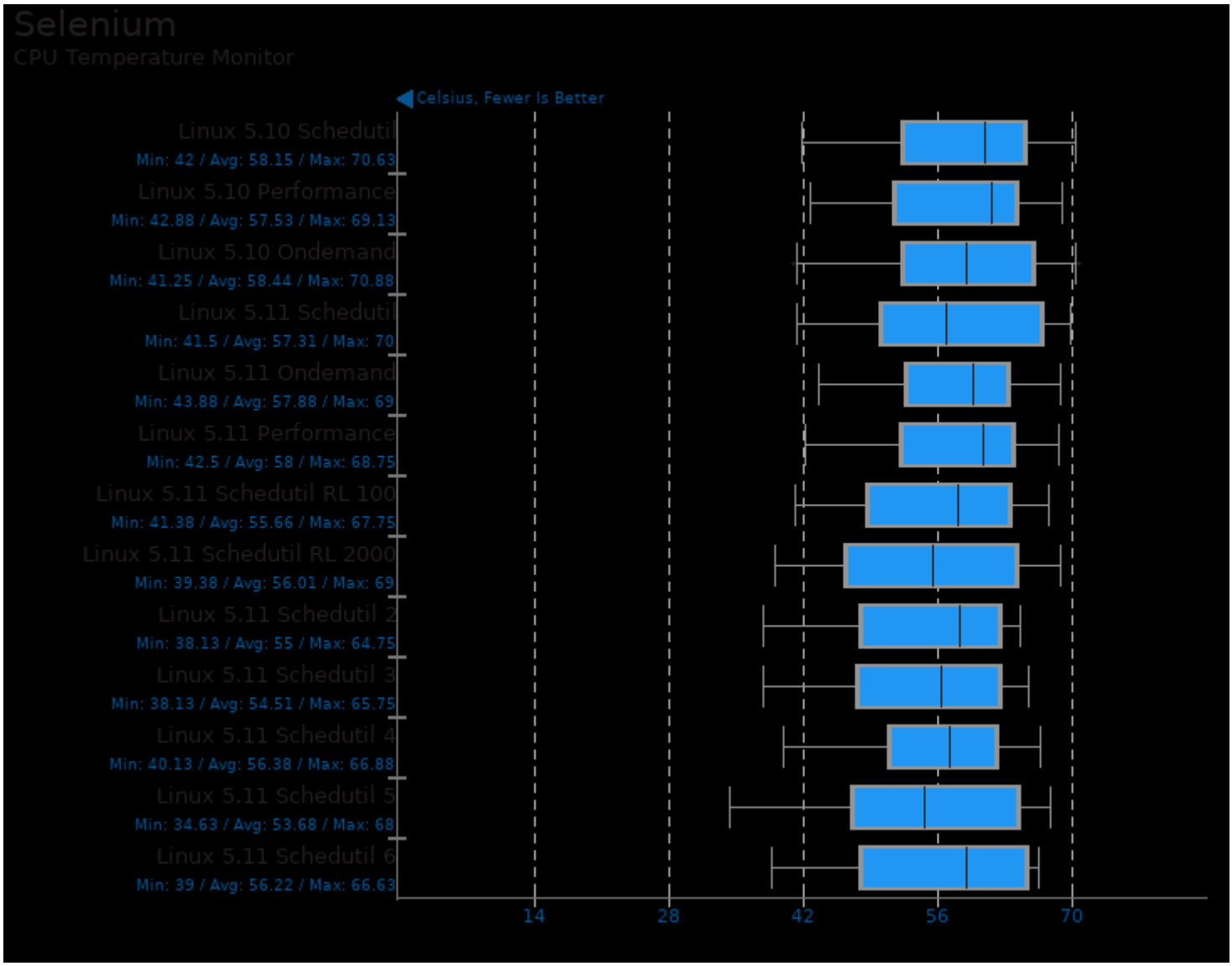
Ryzen 9 5900X Freq Invariance Combo Testing



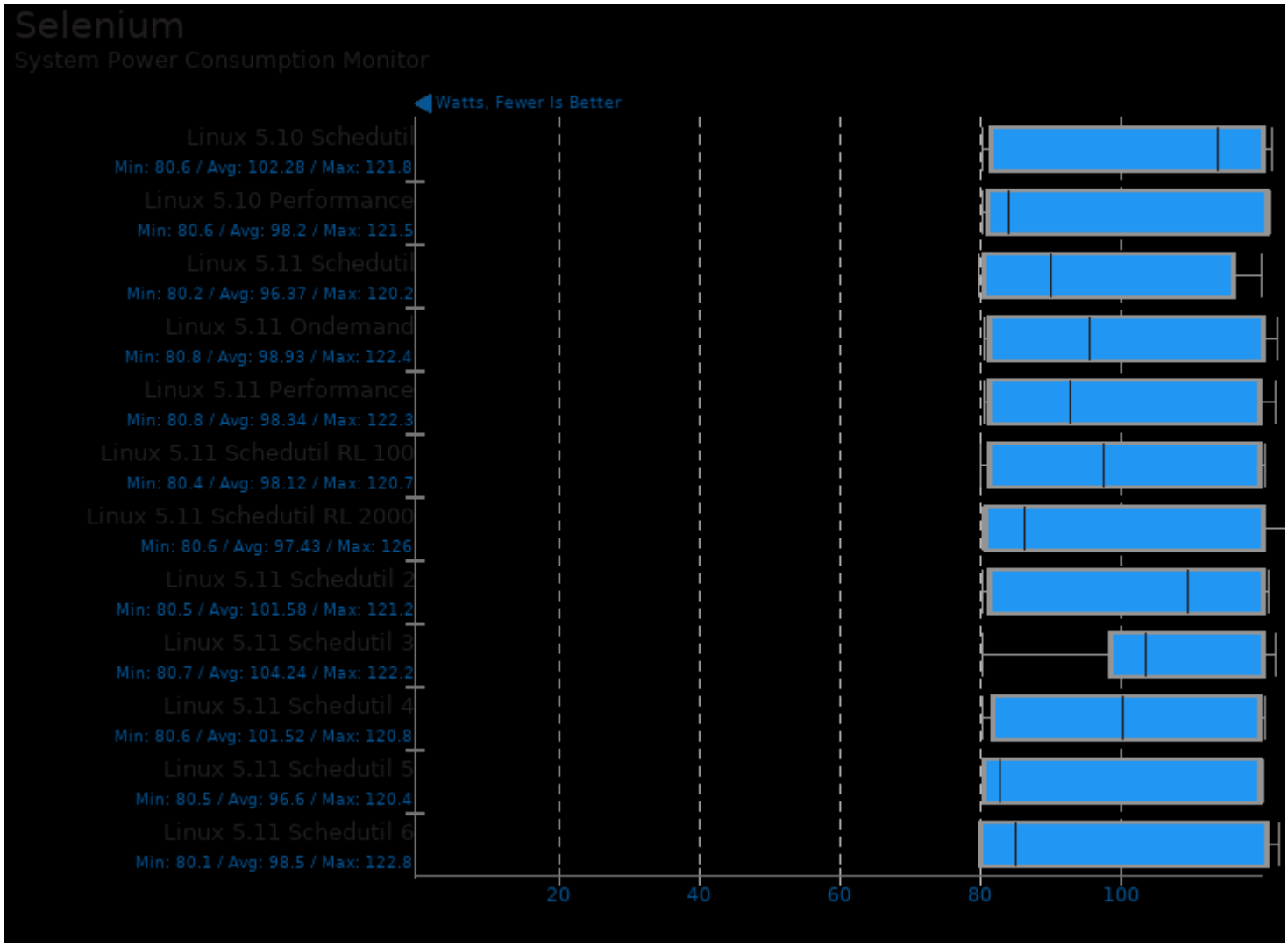
Ryzen 9 5900X Freq Invariance Combo Testing



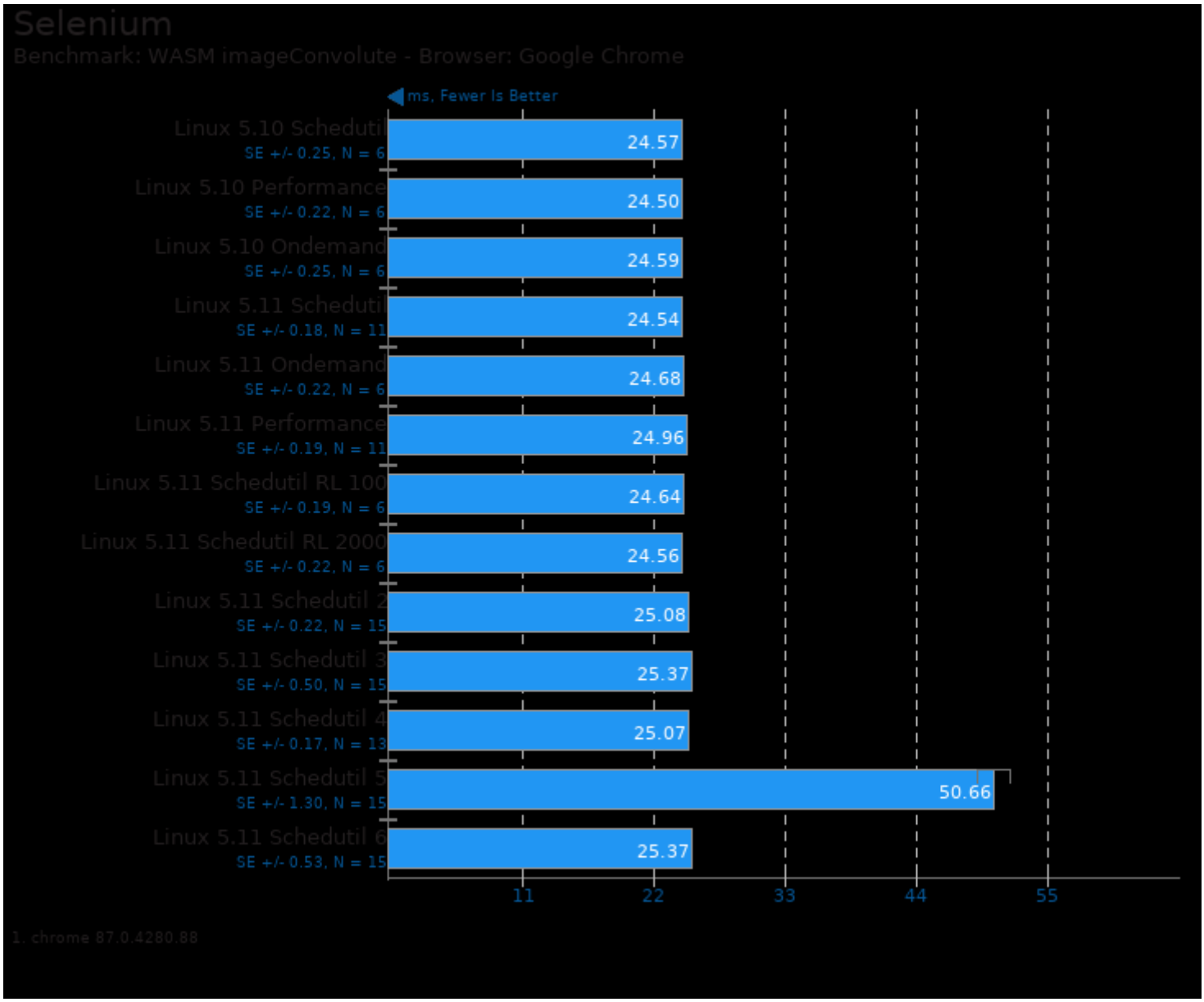
Ryzen 9 5900X Freq Invariance Combo Testing



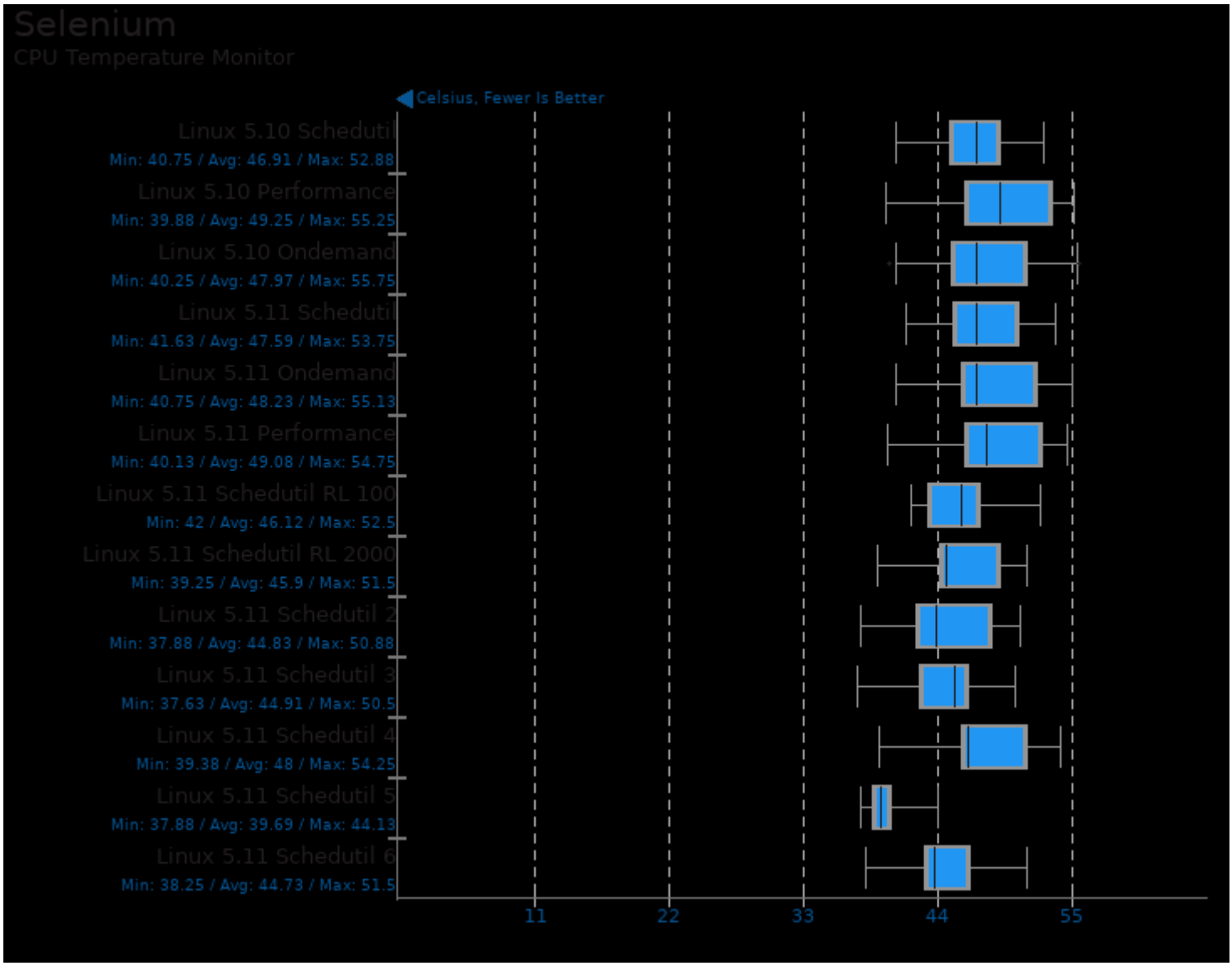
Ryzen 9 5900X Freq Invariance Combo Testing



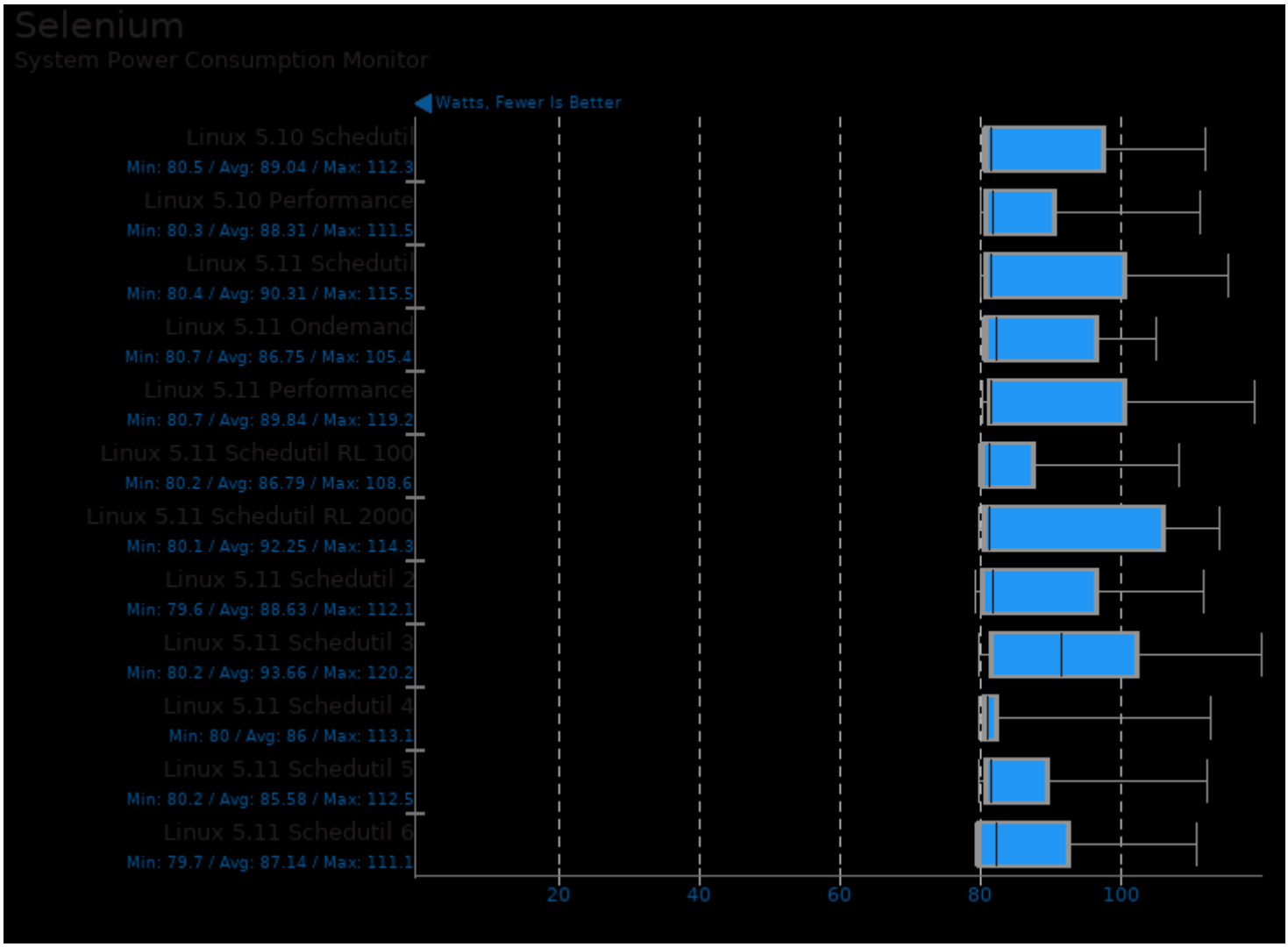
Ryzen 9 5900X Freq Invariance Combo Testing



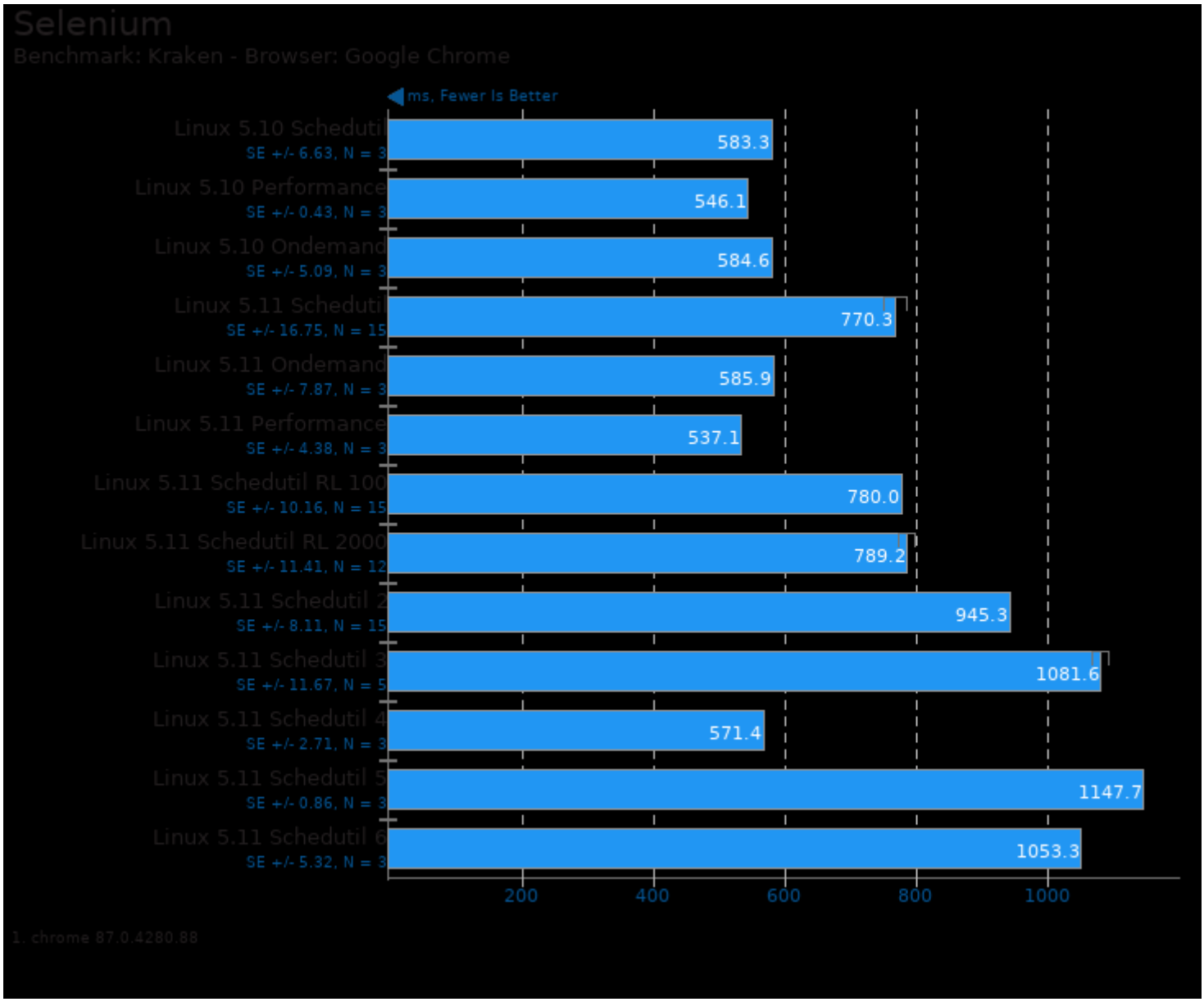
Ryzen 9 5900X Freq Invariance Combo Testing



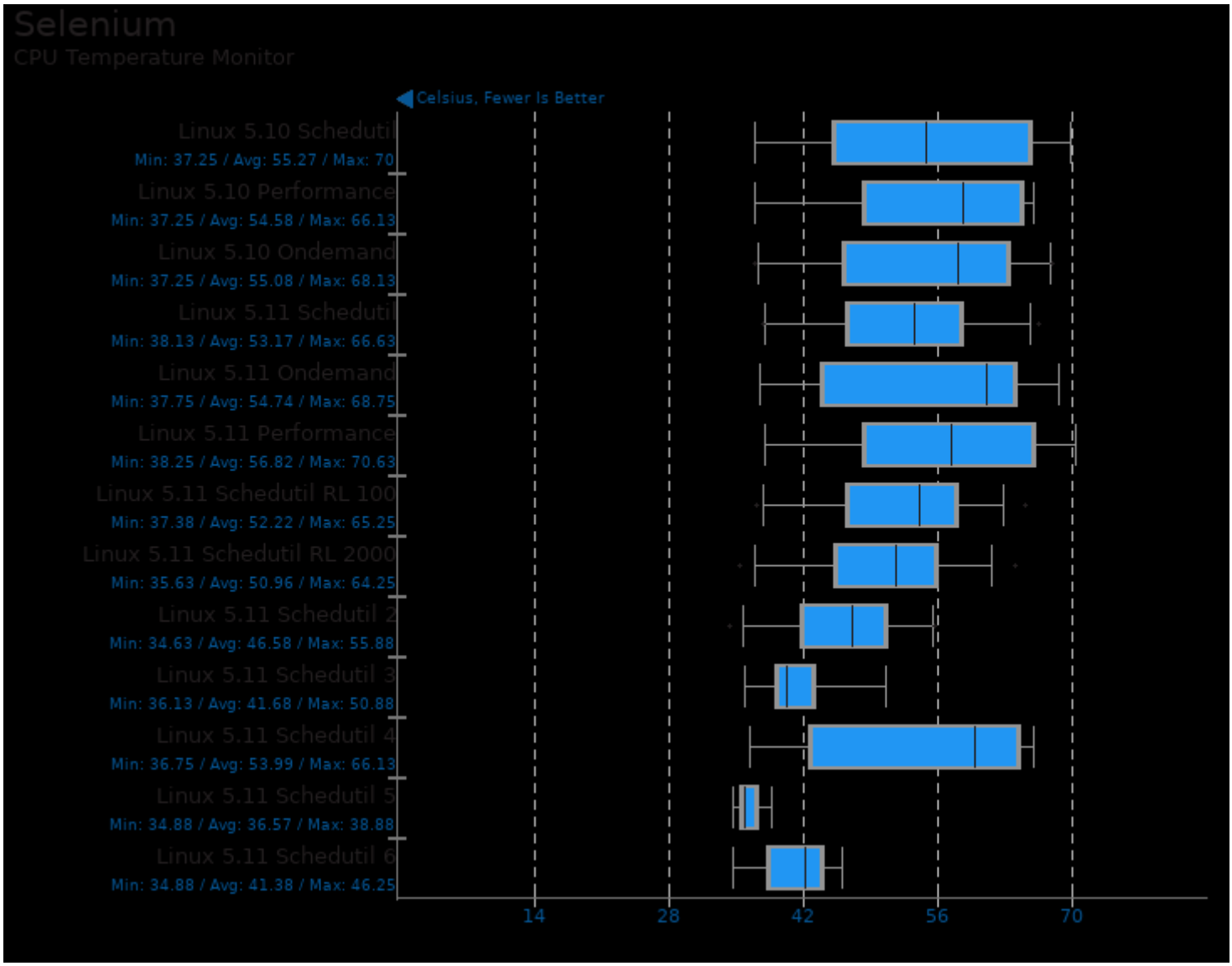
Ryzen 9 5900X Freq Invariance Combo Testing



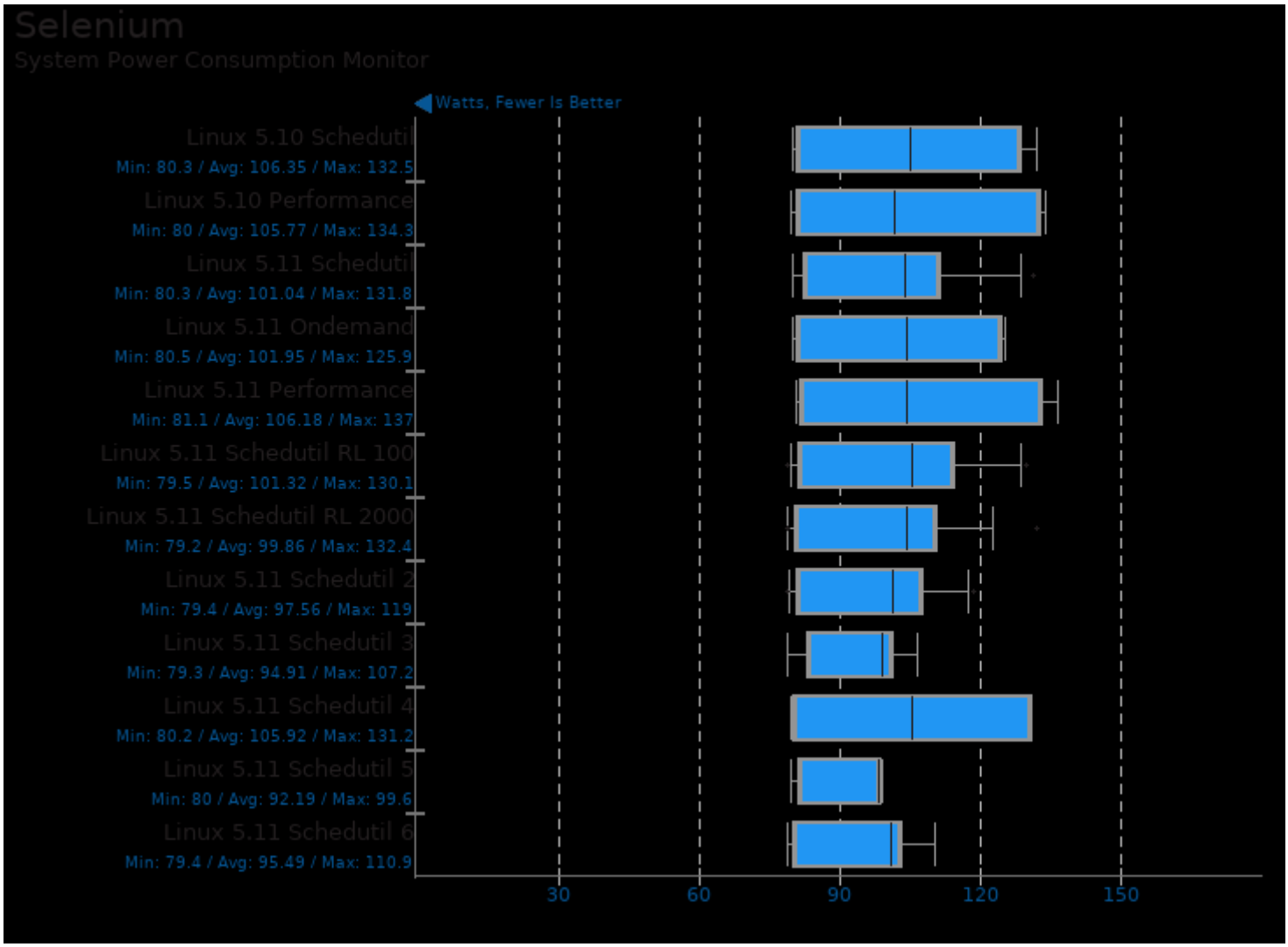
Ryzen 9 5900X Freq Invariance Combo Testing



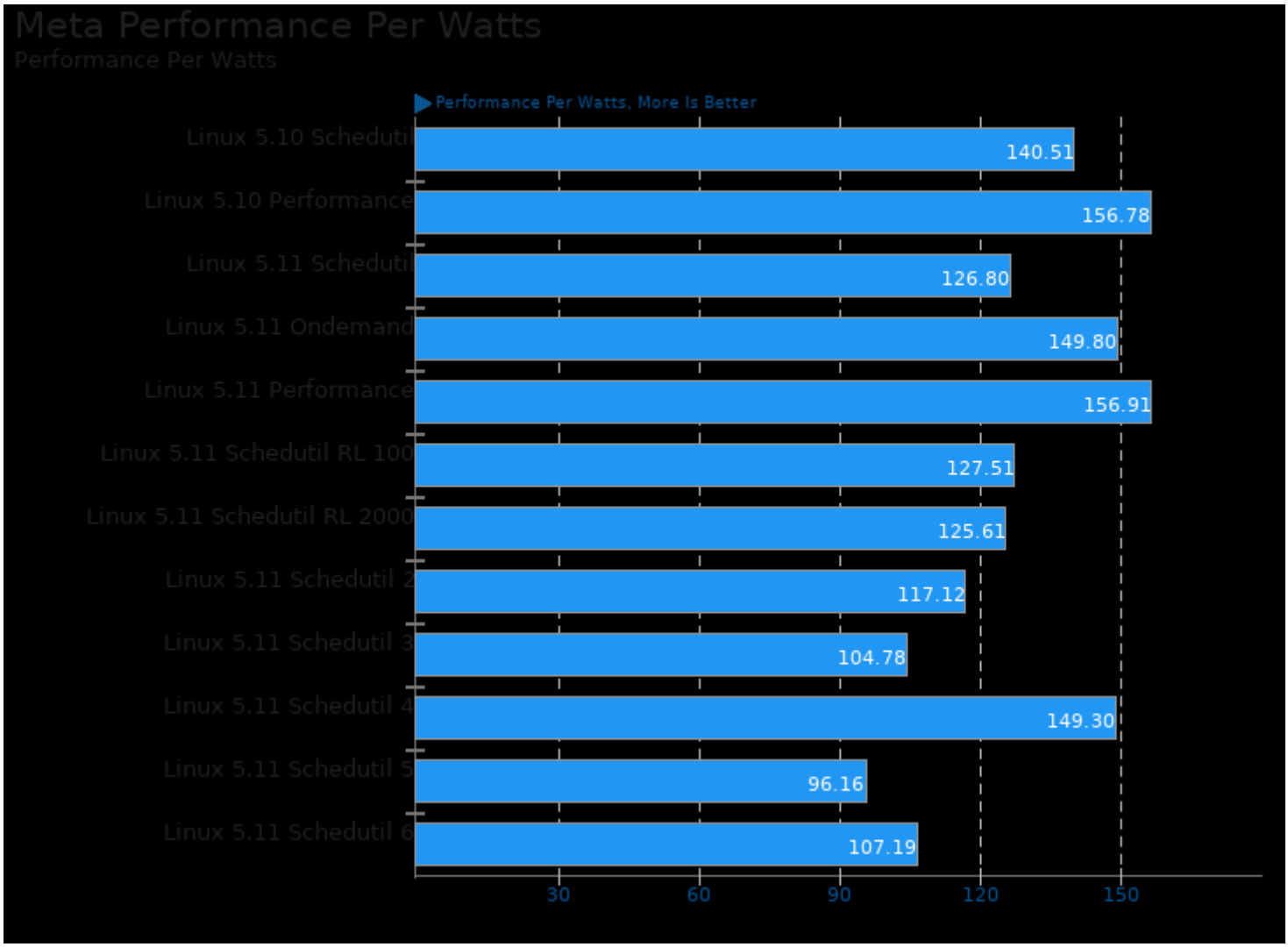
Ryzen 9 5900X Freq Invariance Combo Testing



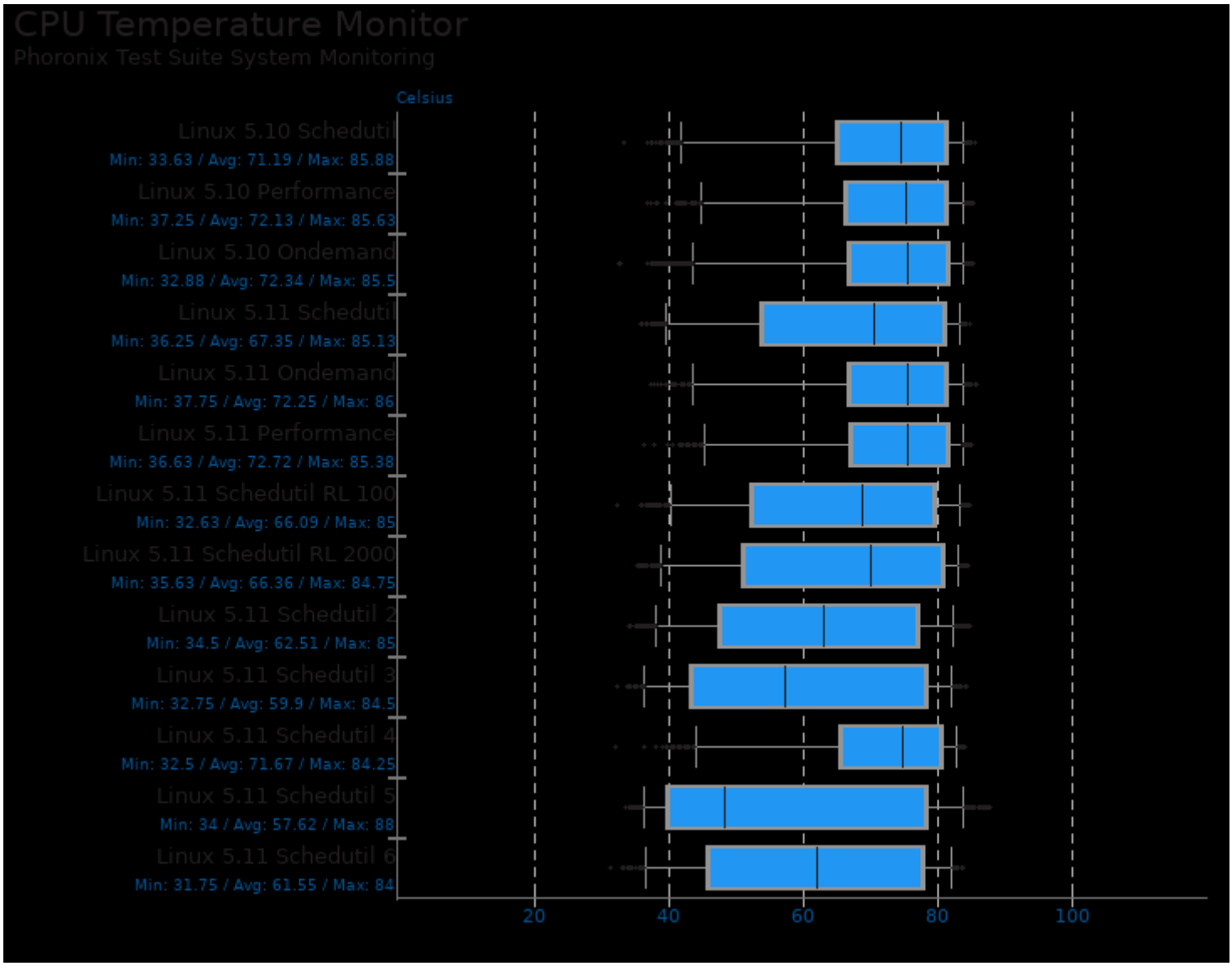
Ryzen 9 5900X Freq Invariance Combo Testing



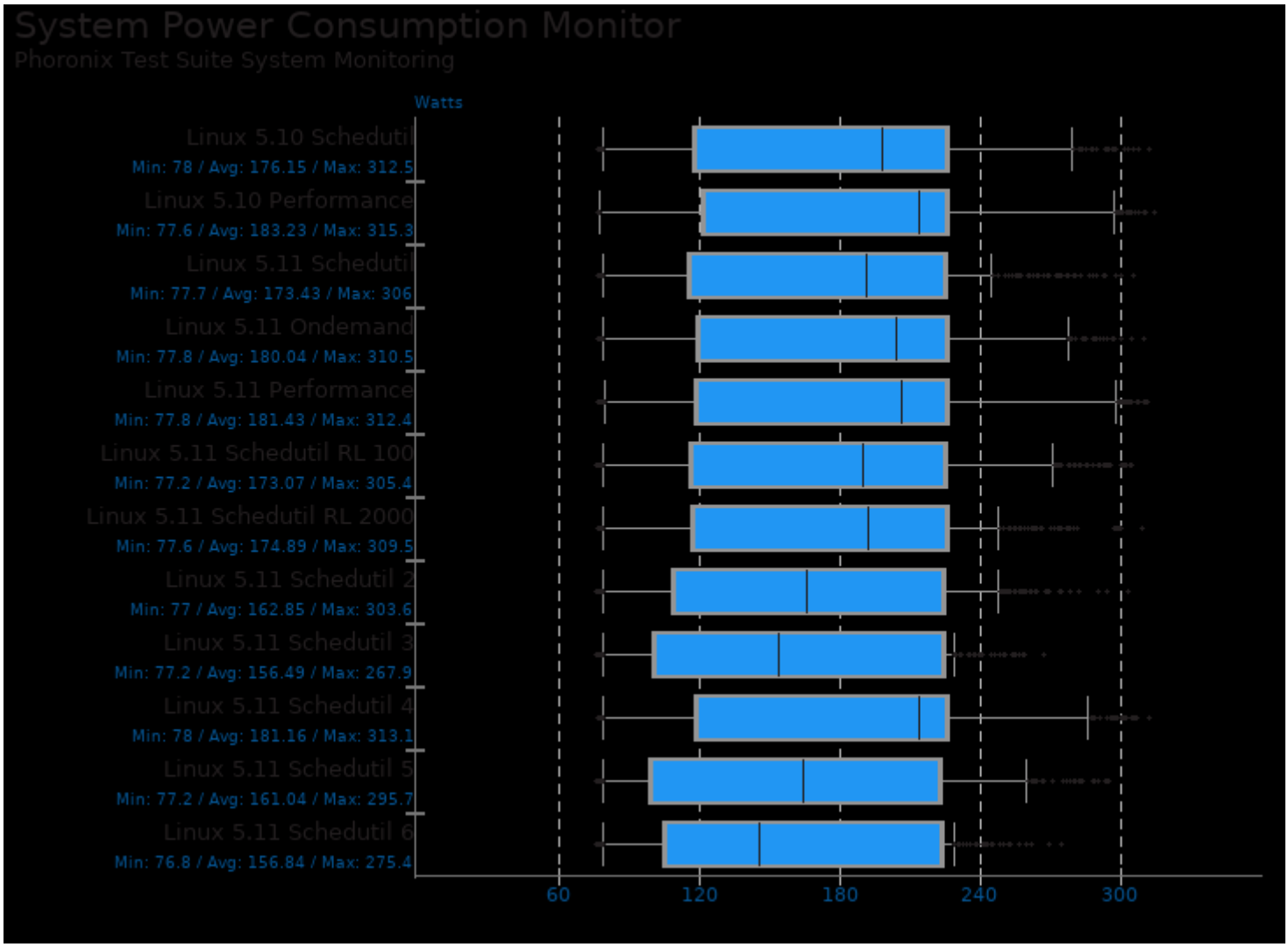
Ryzen 9 5900X Freq Invariance Combo Testing



Ryzen 9 5900X Freq Invariance Combo Testing

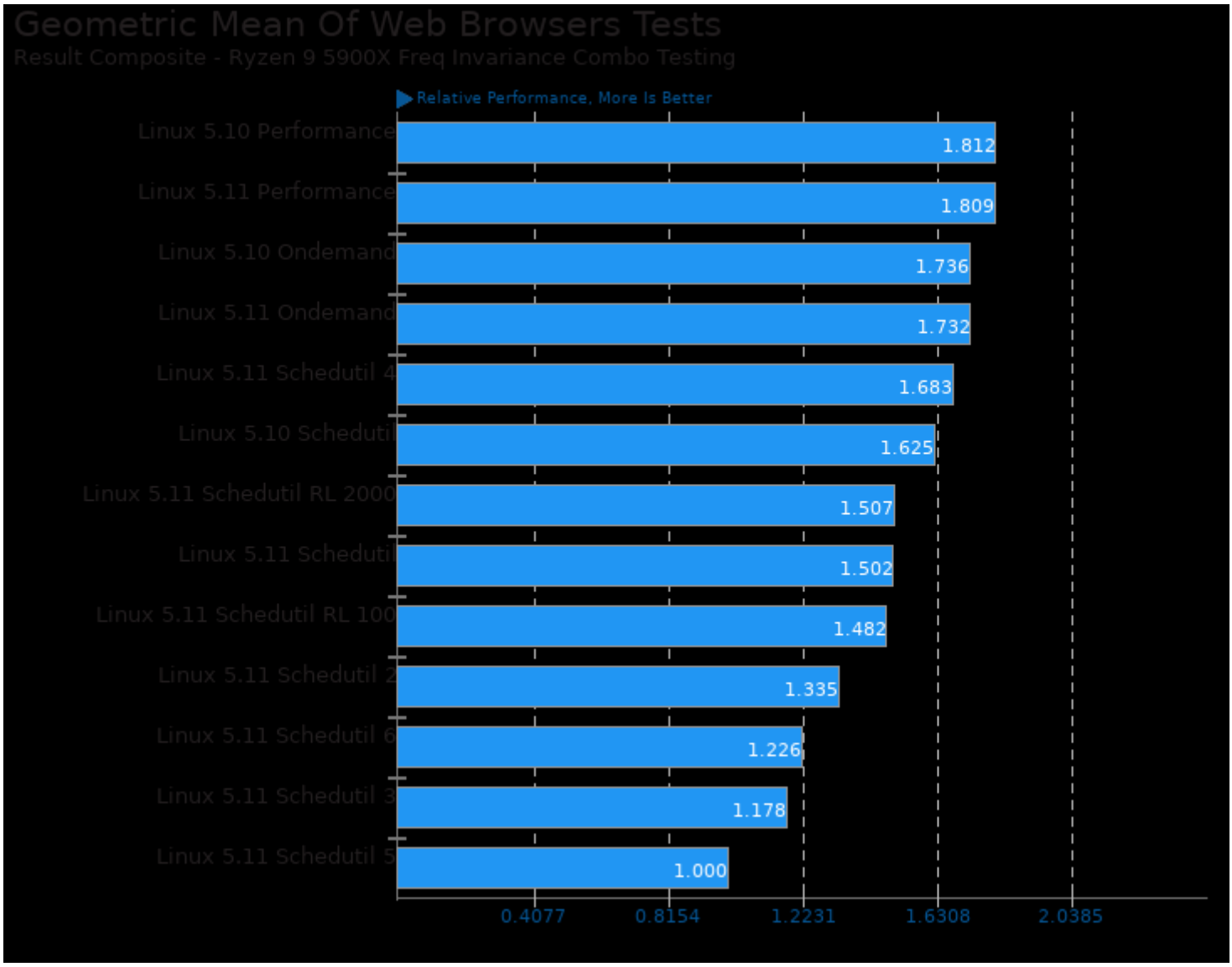


Ryzen 9 5900X Freq Invariance Combo Testing



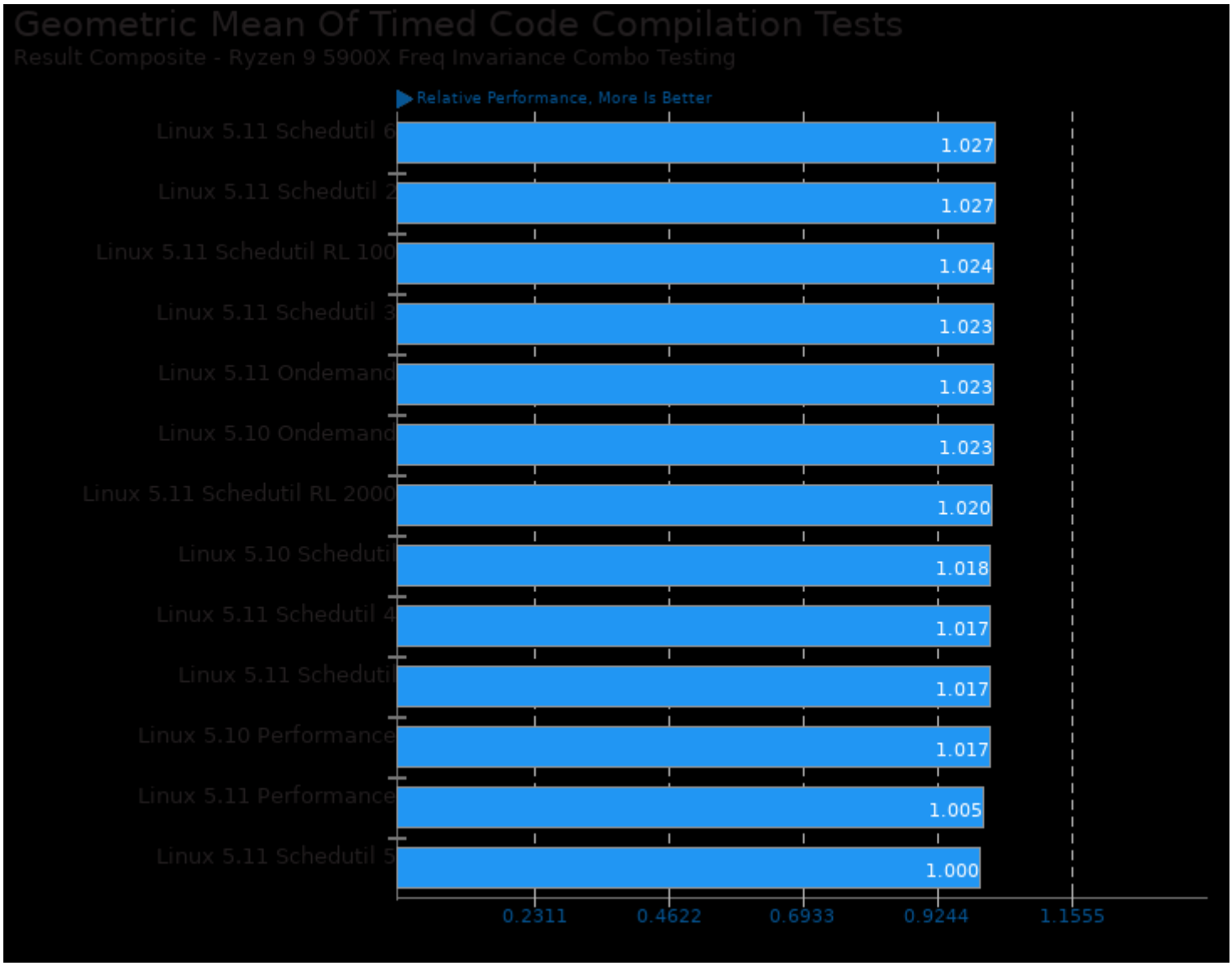
Ryzen 9 5900X Freq Invariance Combo Testing

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



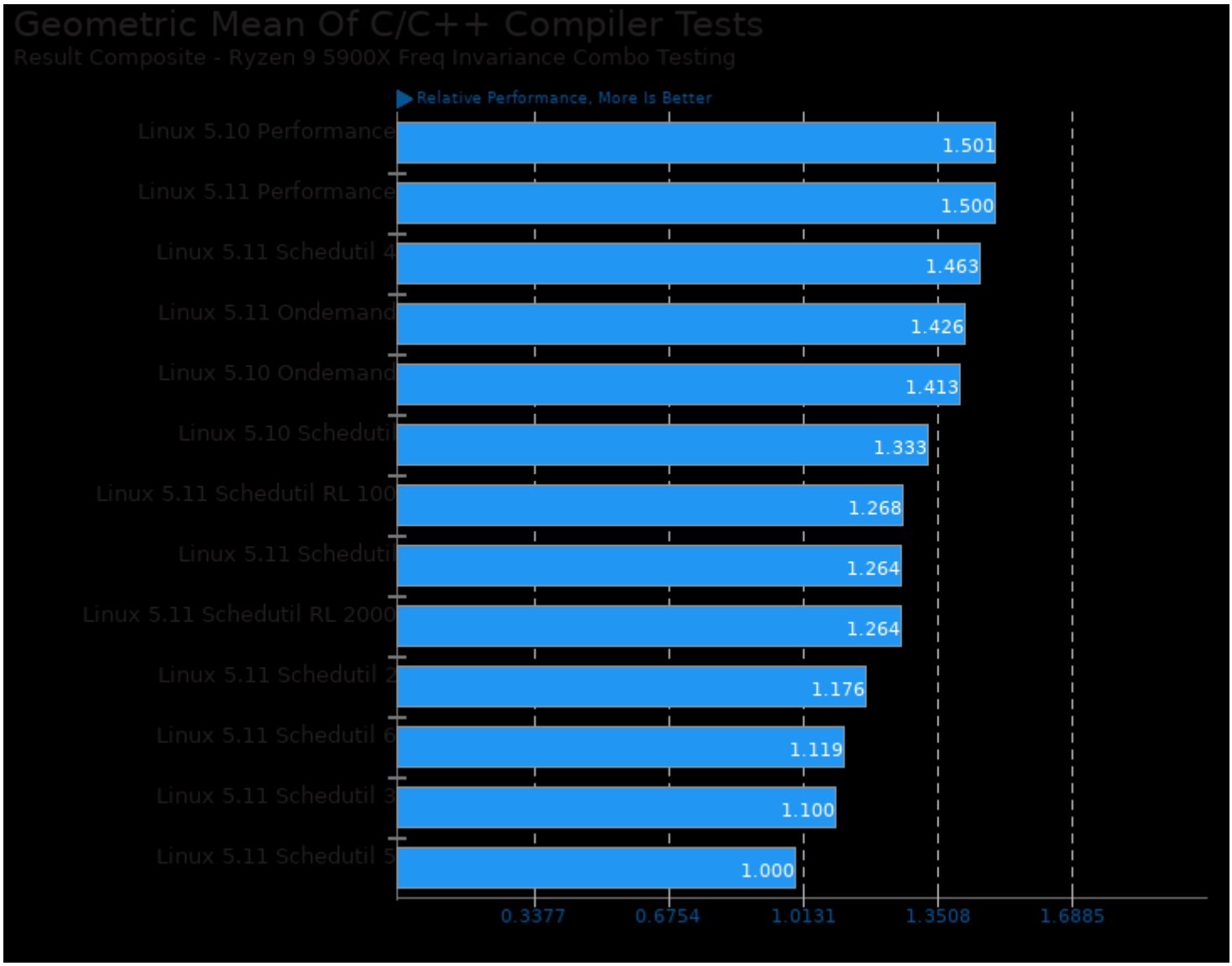
Geometric mean based upon tests: system/selenium

Ryzen 9 5900X Freq Invariance Combo Testing



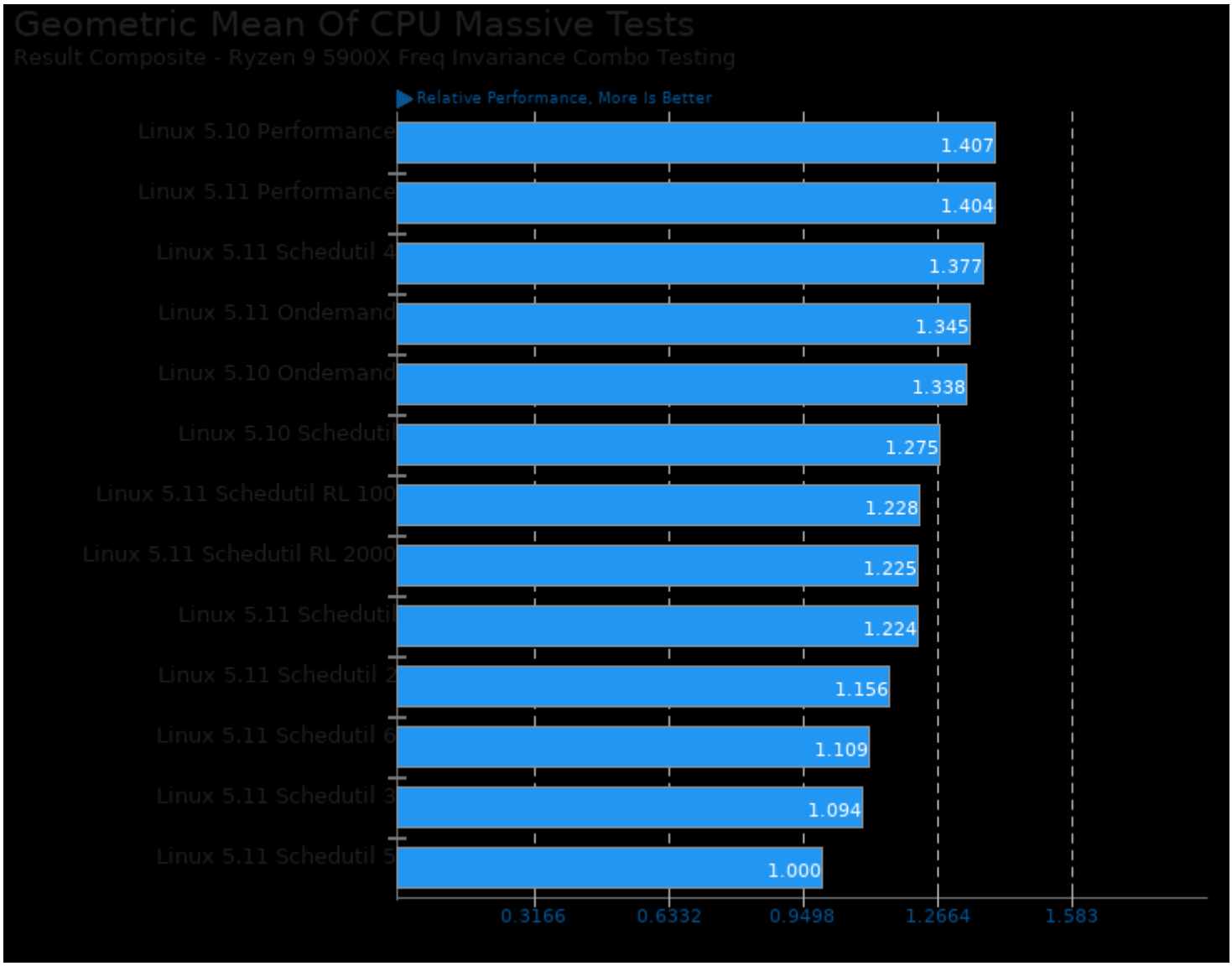
Geometric mean based upon tests: pts/build-linux-kernel and pts/build-llvm

Ryzen 9 5900X Freq Invariance Combo Testing



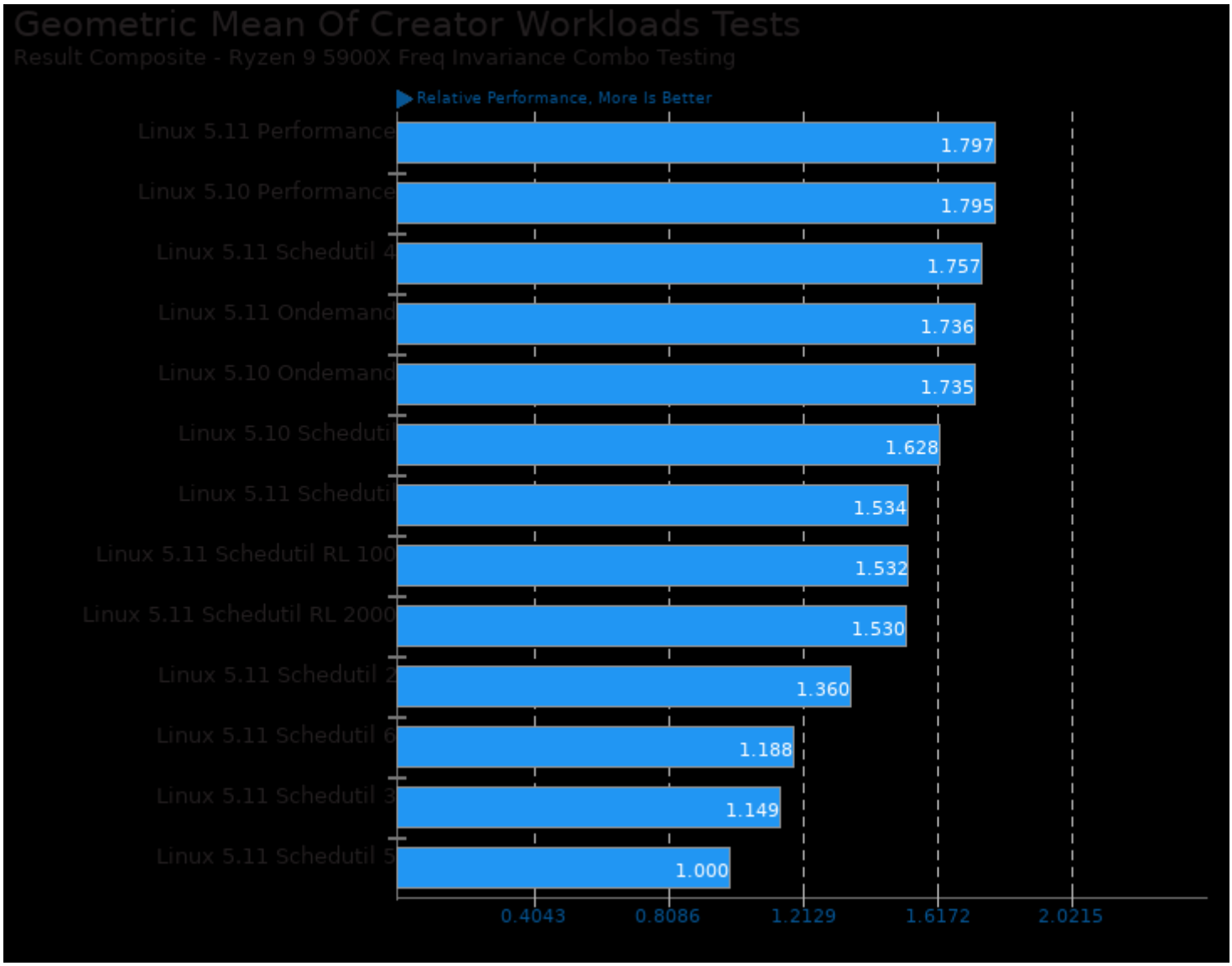
Geometric mean based upon tests: pts/build-llvm, pts/x264, pts/x265, pts/lammps, pts/svt-av1 and pts/gromacs

Ryzen 9 5900X Freq Invariance Combo Testing



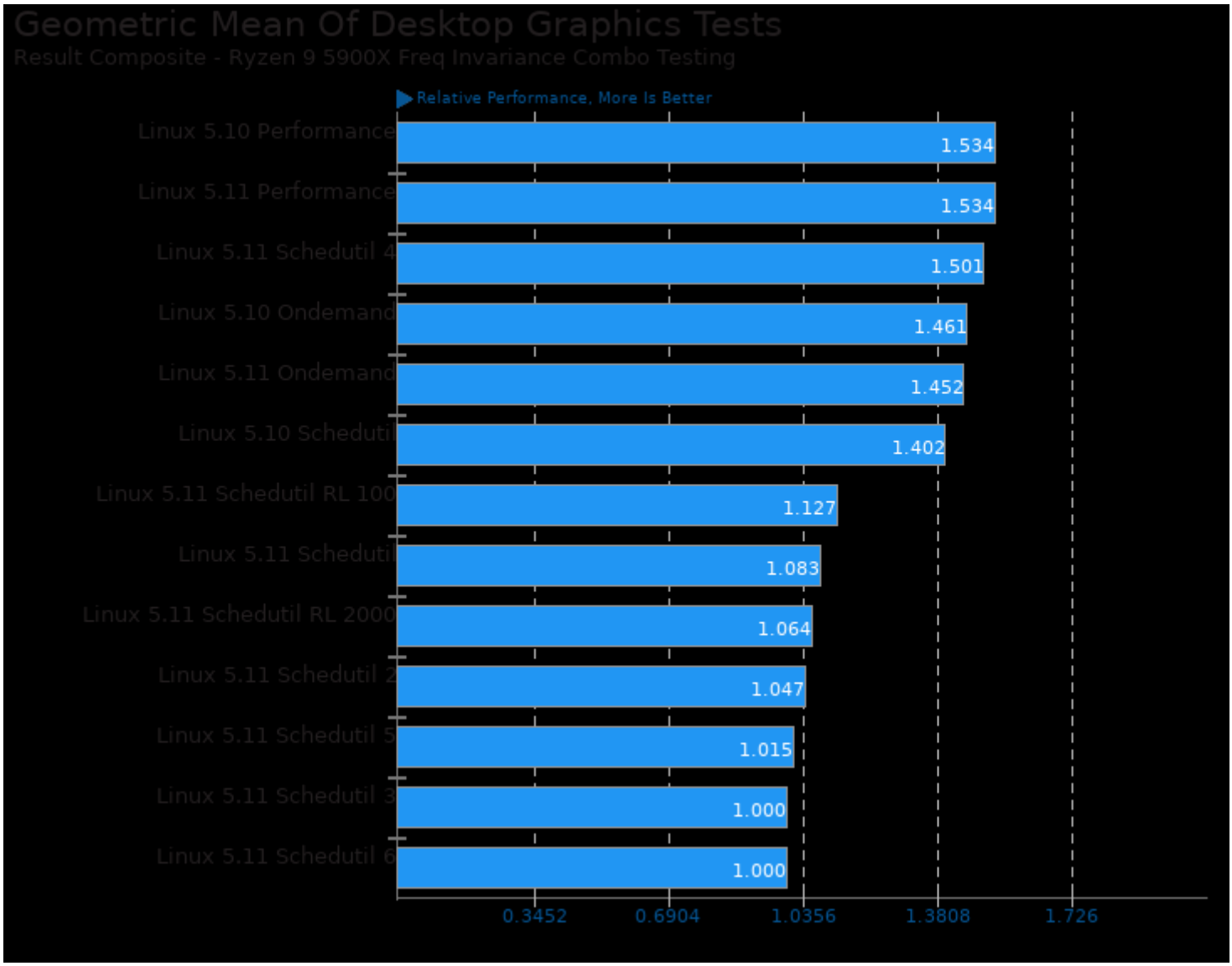
Geometric mean based upon tests: pts/build-llvm, pts/build-linux-kernel, pts/svt-av1, pts/x264, pts/x265, pts/lammps, pts/lczero and pts/namd

Ryzen 9 5900X Freq Invariance Combo Testing



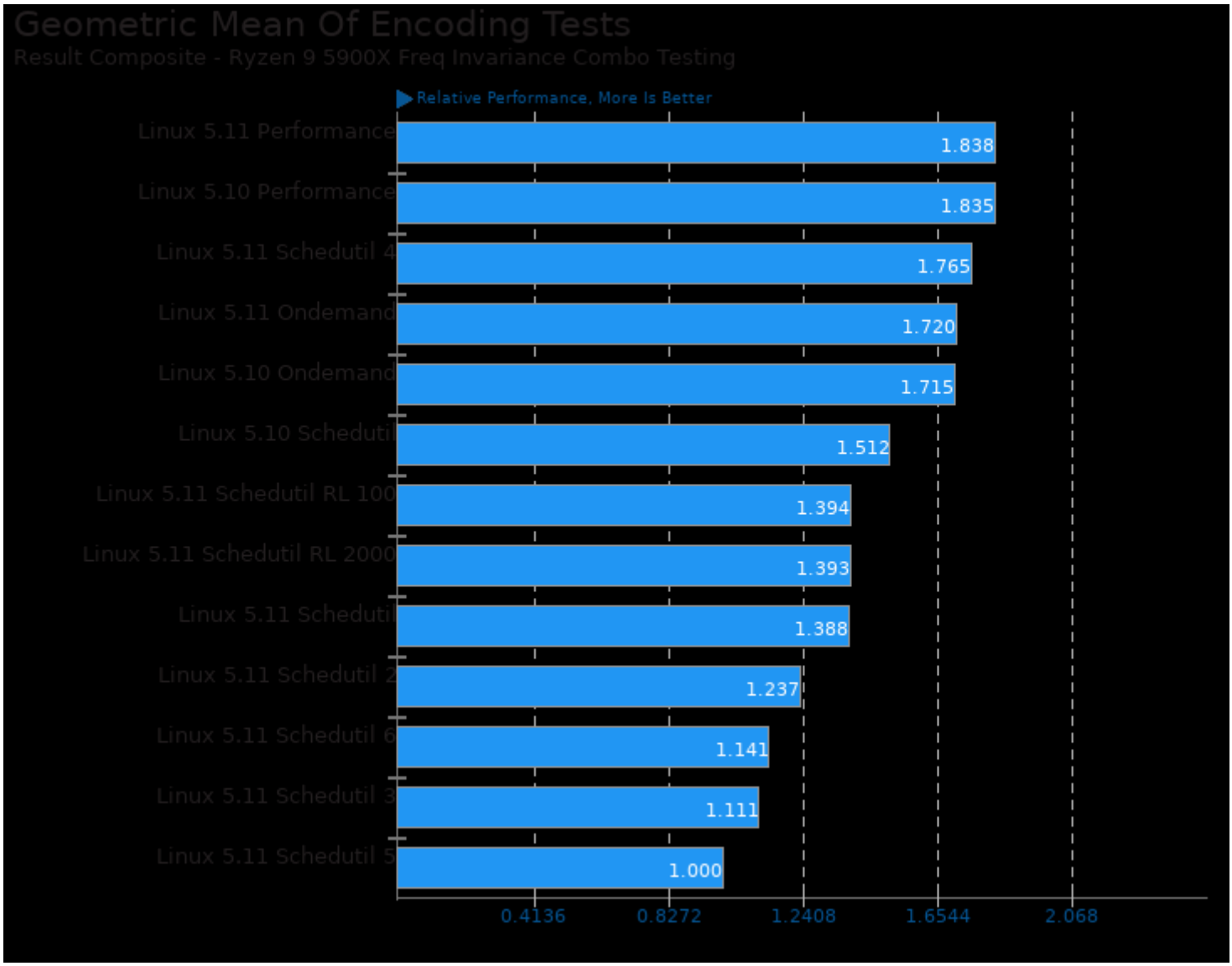
Geometric mean based upon tests: pts/ospray, pts/x264, pts/x265, pts/svt-av1, pts/oidn and pts/openvkl

Ryzen 9 5900X Freq Invariance Combo Testing



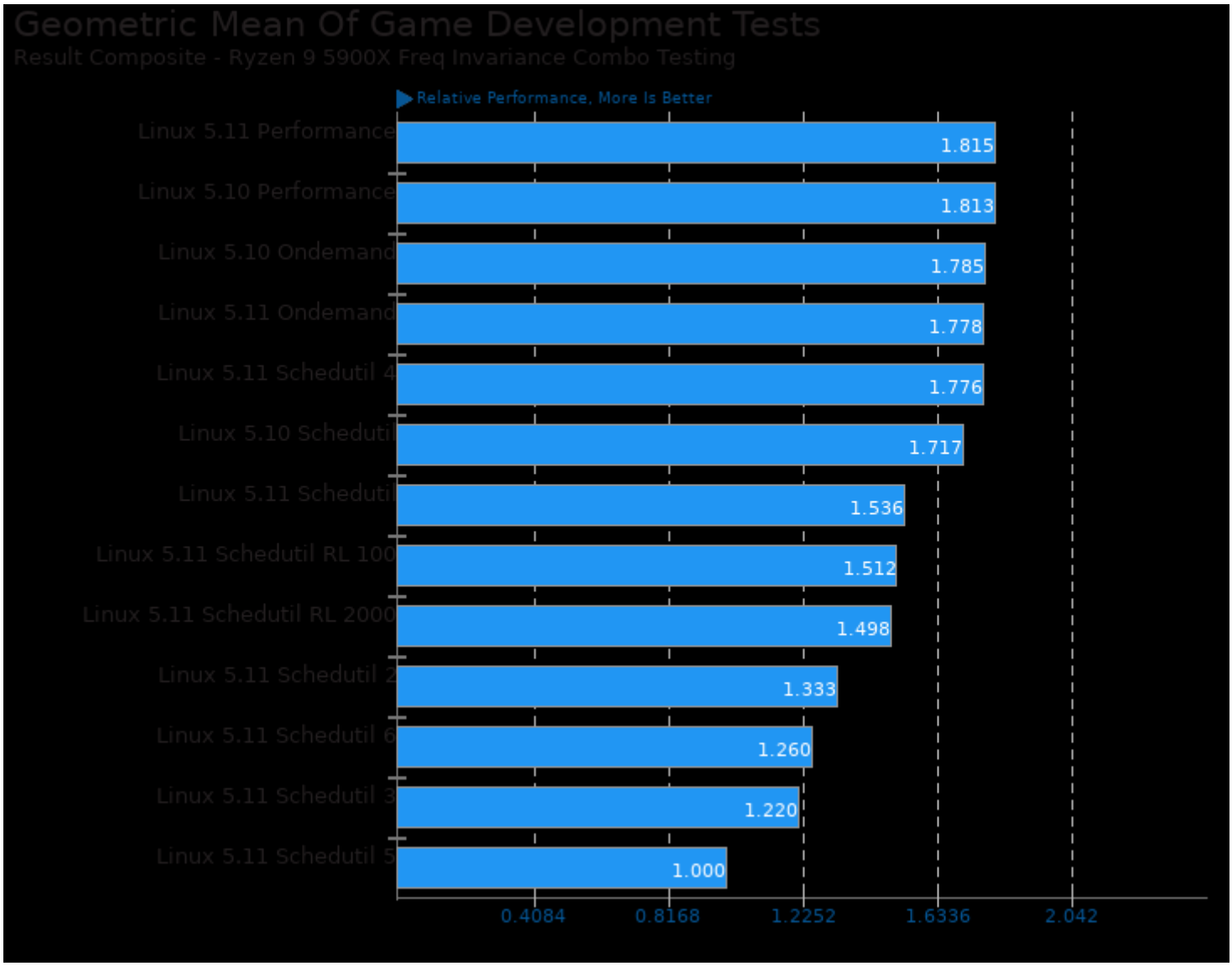
Geometric mean based upon tests: pts/xonotic and pts/tesseract

Ryzen 9 5900X Freq Invariance Combo Testing



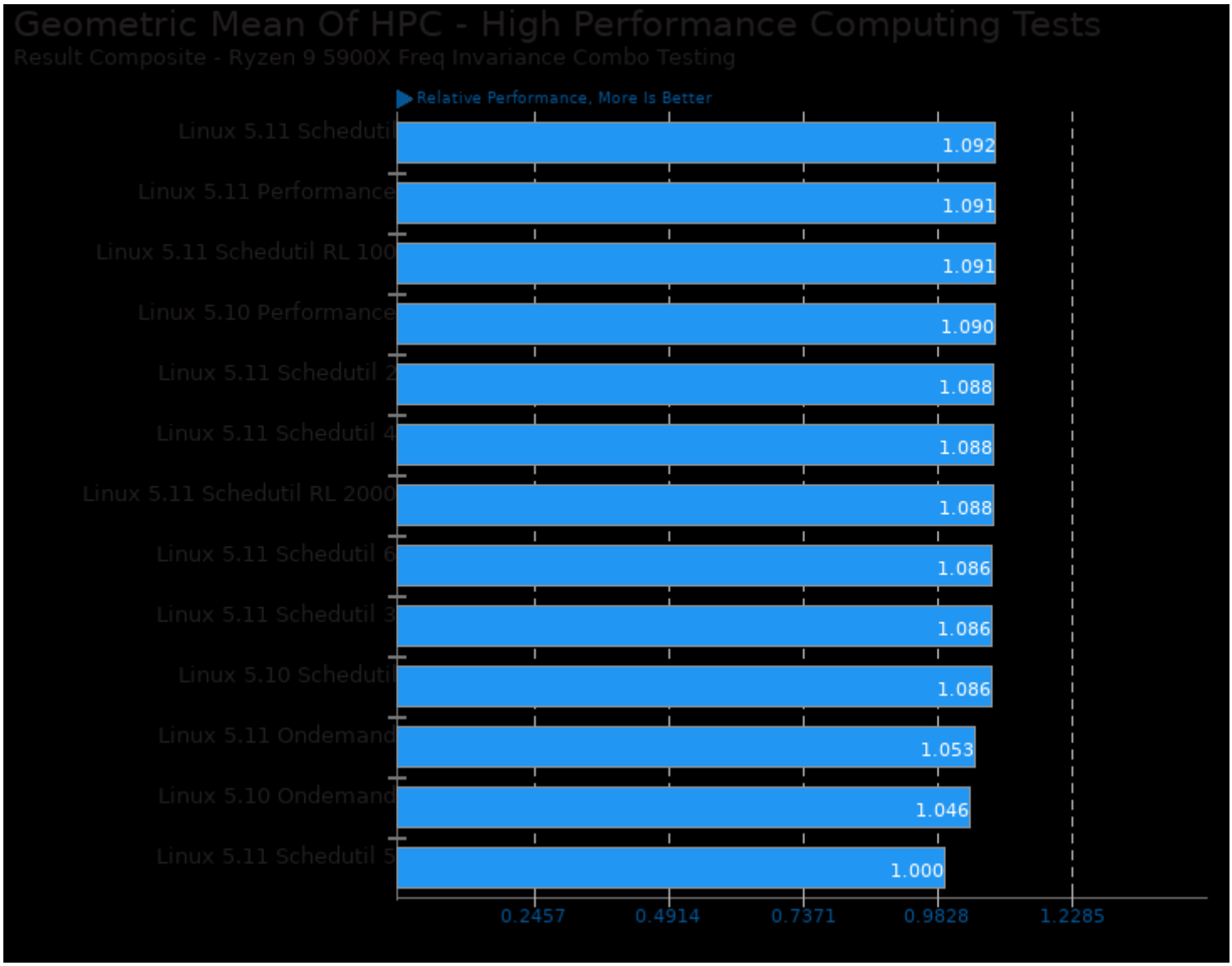
Geometric mean based upon tests: pts/x264, pts/x265 and pts/svt-av1

Ryzen 9 5900X Freq Invariance Combo Testing



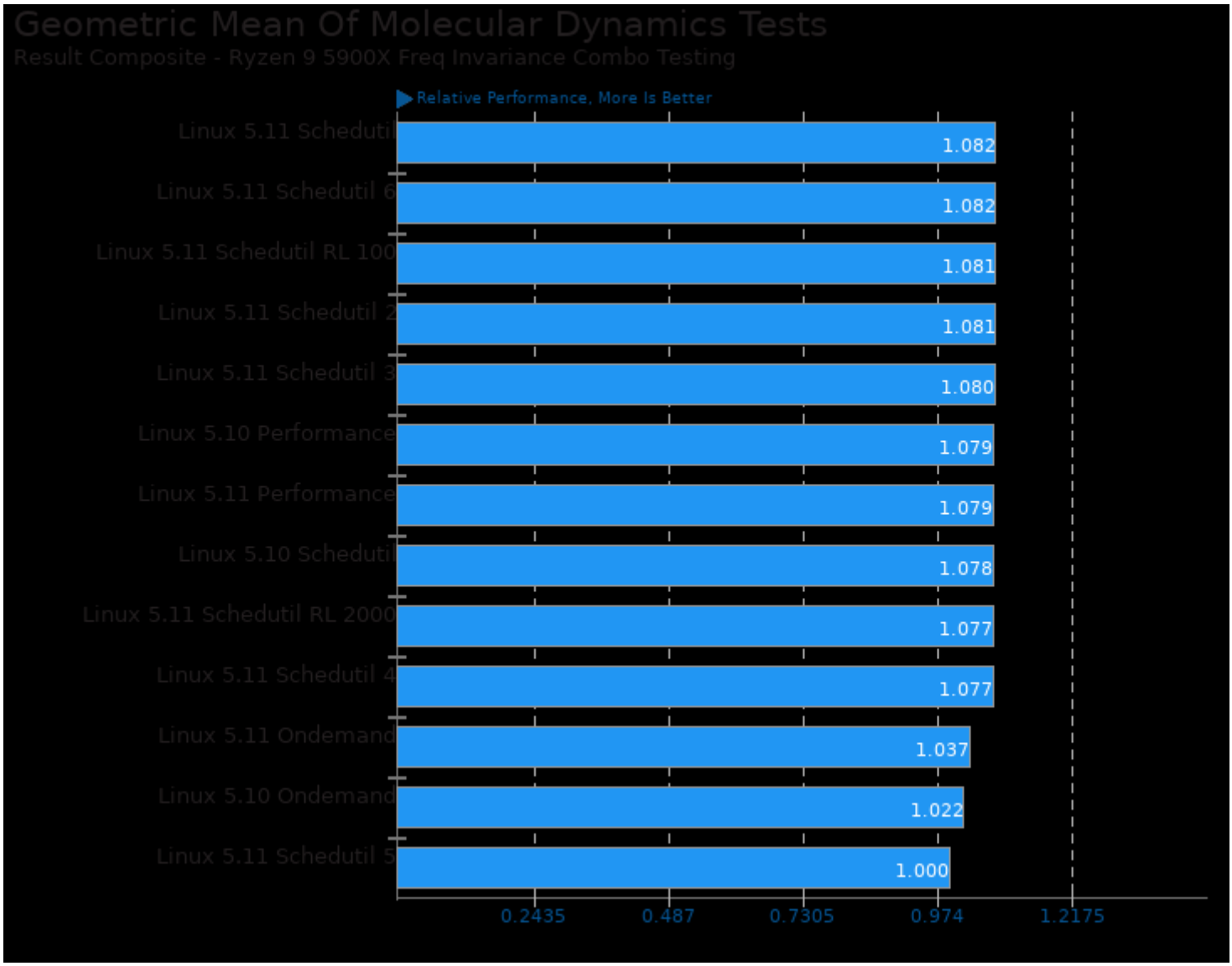
Geometric mean based upon tests: pts/oidn and pts/openvkl

Ryzen 9 5900X Freq Invariance Combo Testing



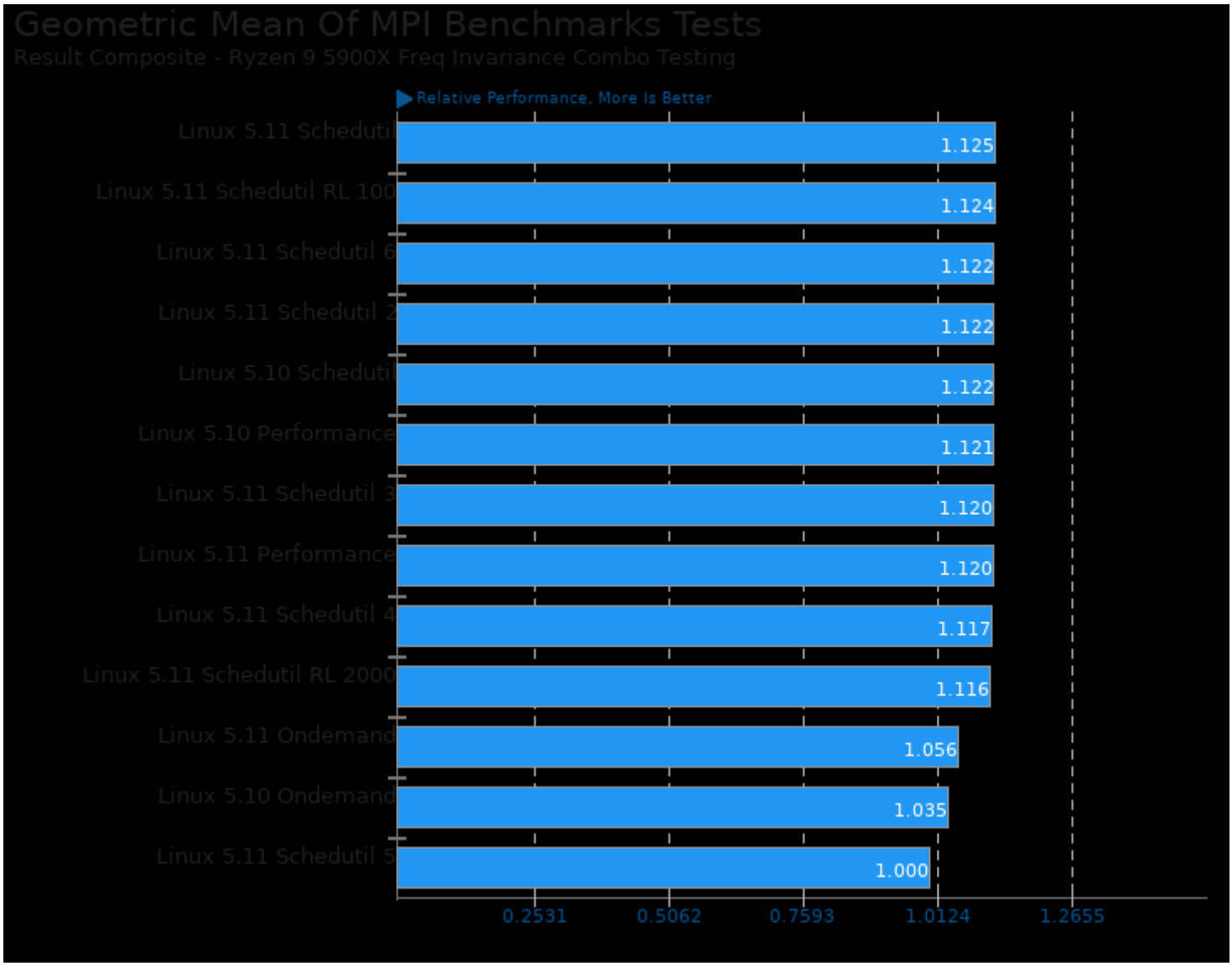
Geometric mean based upon tests: pts/namd, pts/gromacs, pts/lammps and pts/lczero

Ryzen 9 5900X Freq Invariance Combo Testing



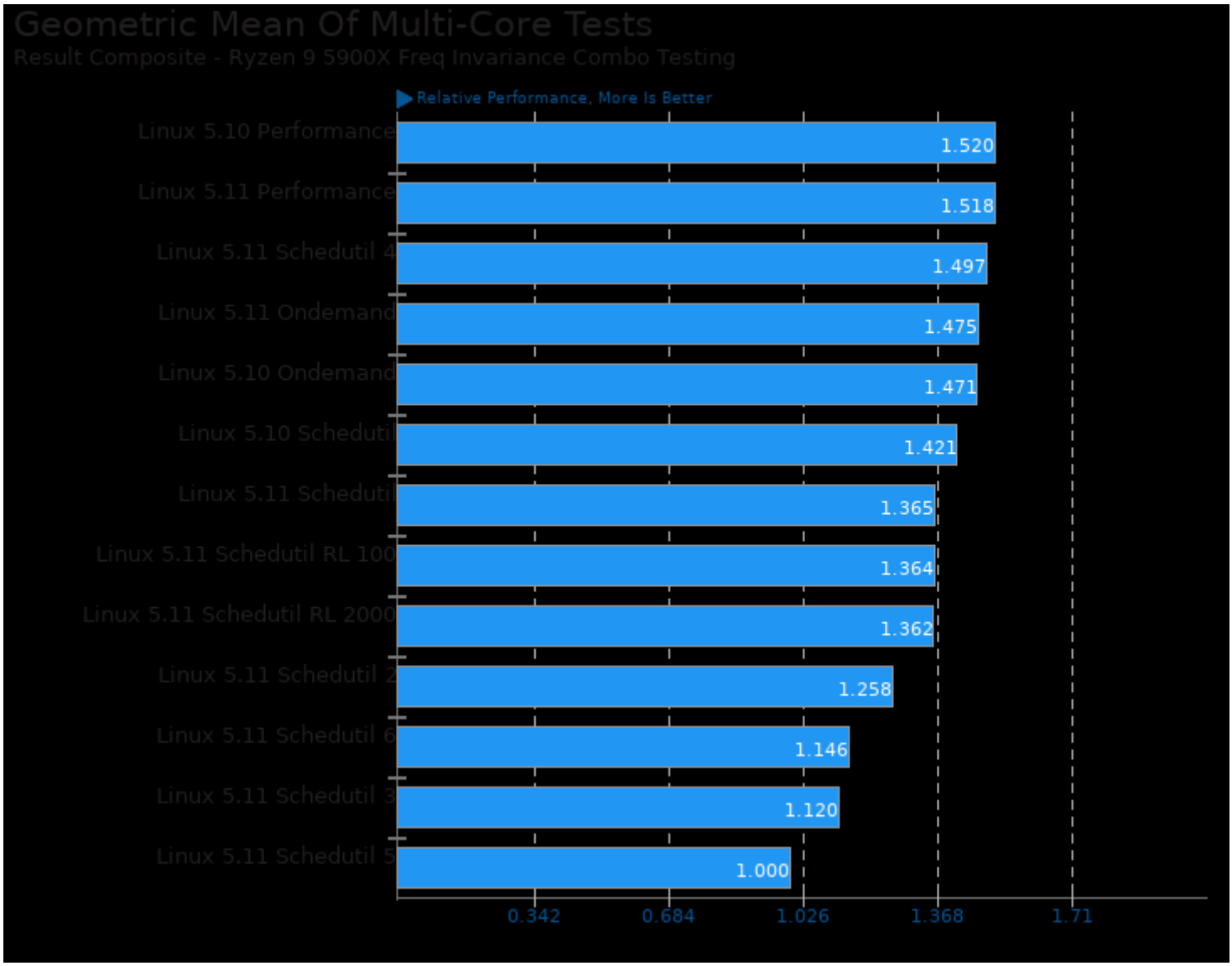
Geometric mean based upon tests: pts/namd, pts/gromacs and pts/lammps

Ryzen 9 5900X Freq Invariance Combo Testing



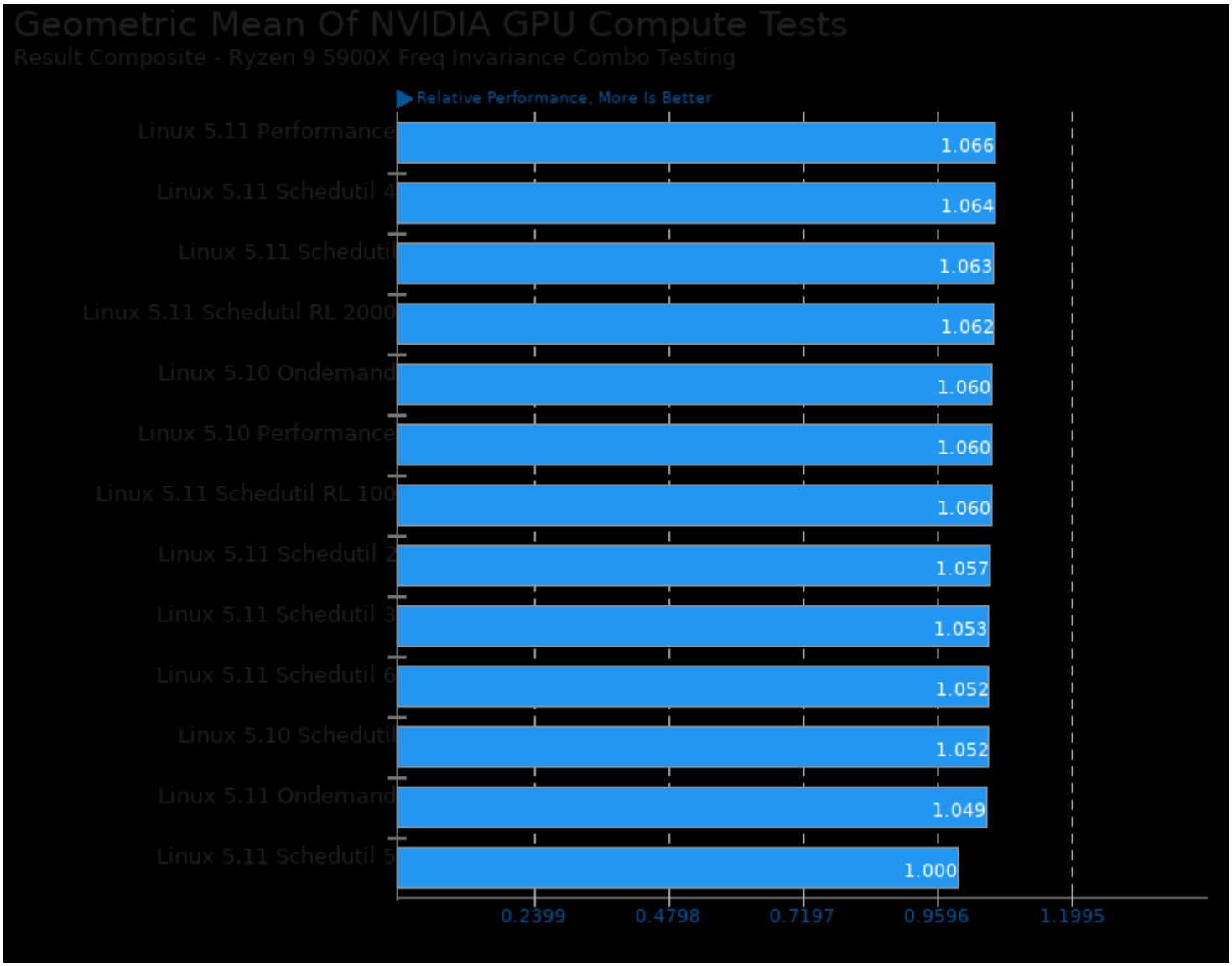
Geometric mean based upon tests: pts/lammps and pts/gromacs

Ryzen 9 5900X Freq Invariance Combo Testing



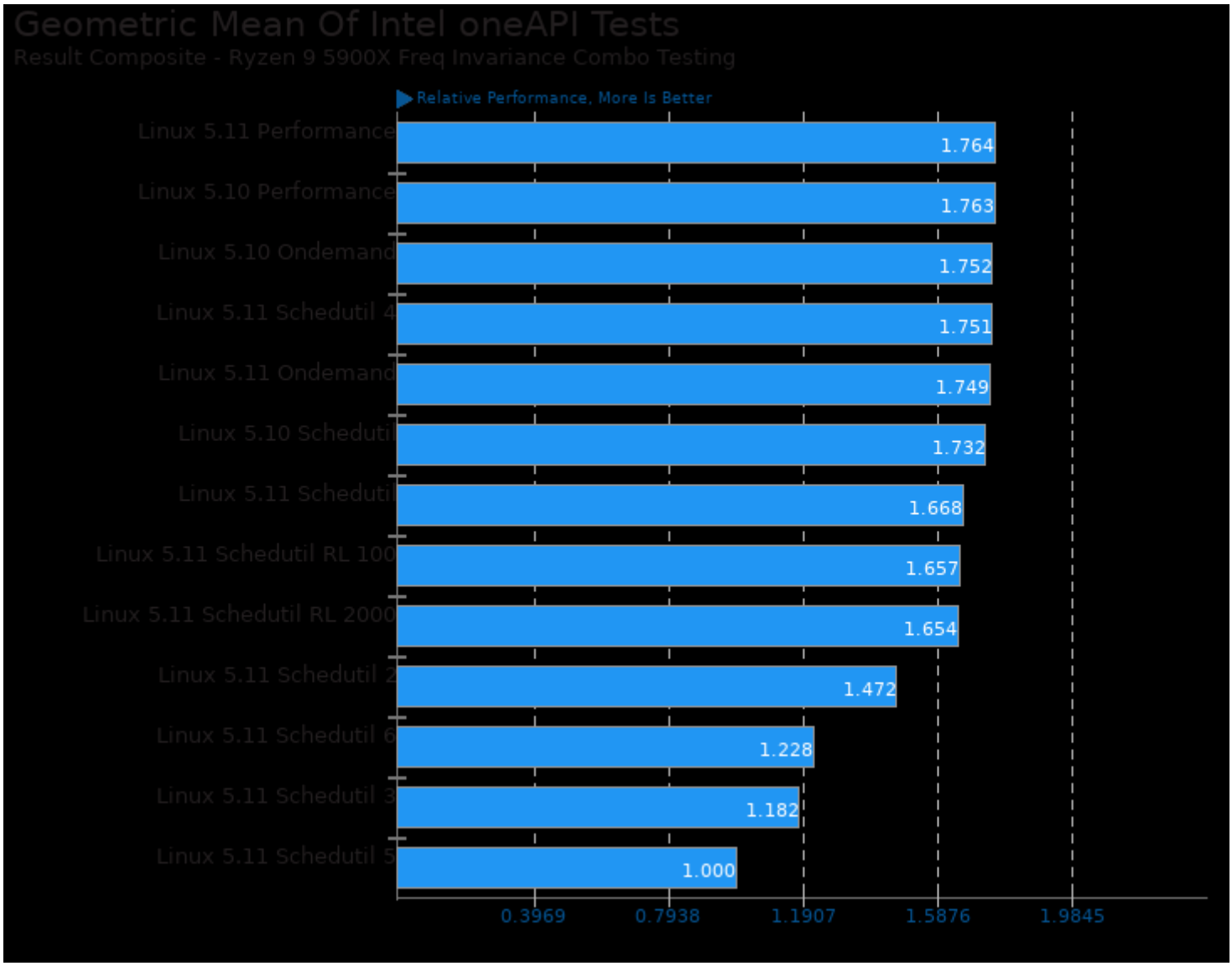
Geometric mean based upon tests: pts/ospray, pts/x264, pts/x265, pts/svt-av1, pts/namd, pts/lammps, pts/gromacs, pts/build-linux-kernel, pts/build-llvm, pts/oidn and pts/openvkl

Ryzen 9 5900X Freq Invariance Combo Testing



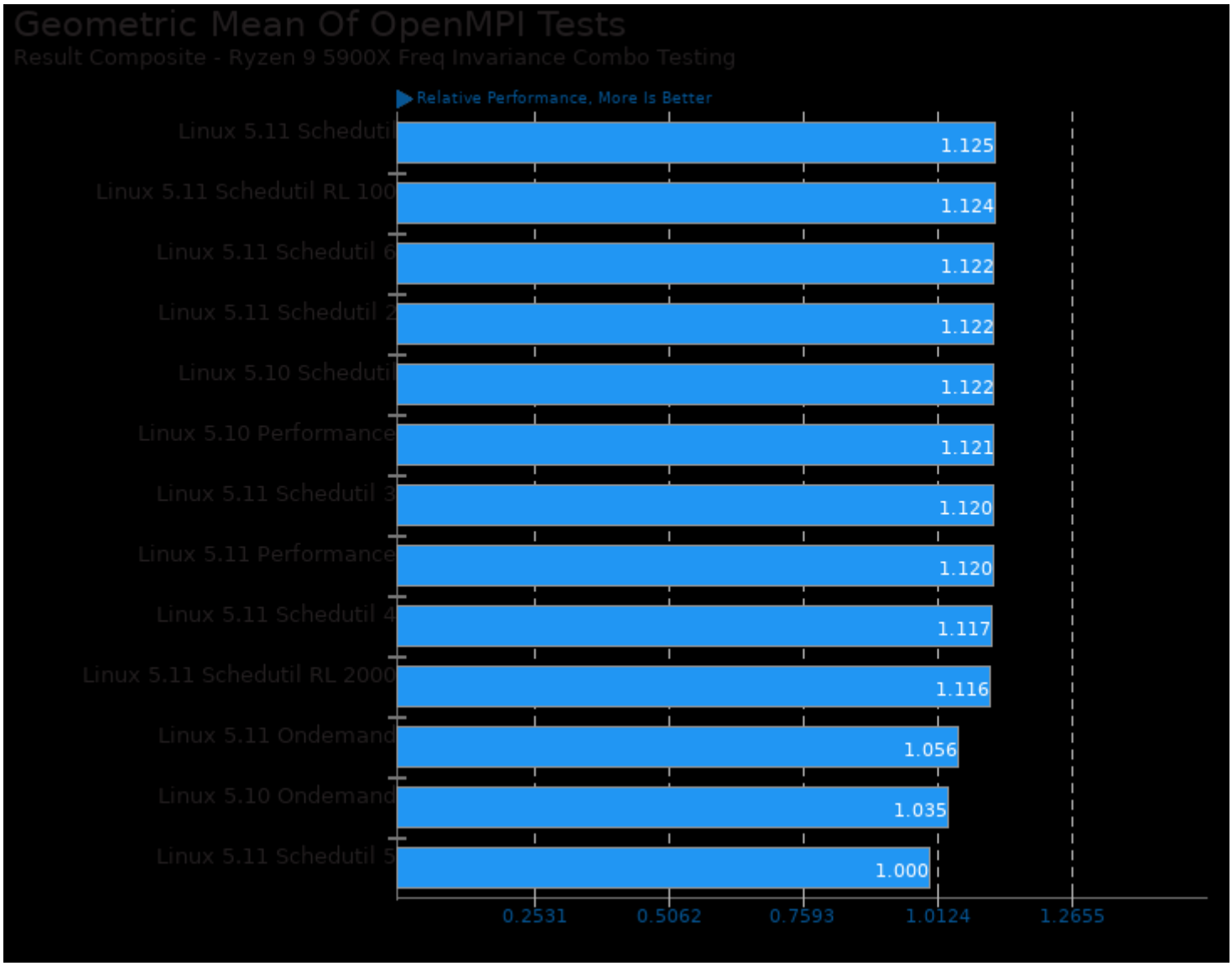
Geometric mean based upon tests: pts/gromacs and pts/lczero

Ryzen 9 5900X Freq Invariance Combo Testing



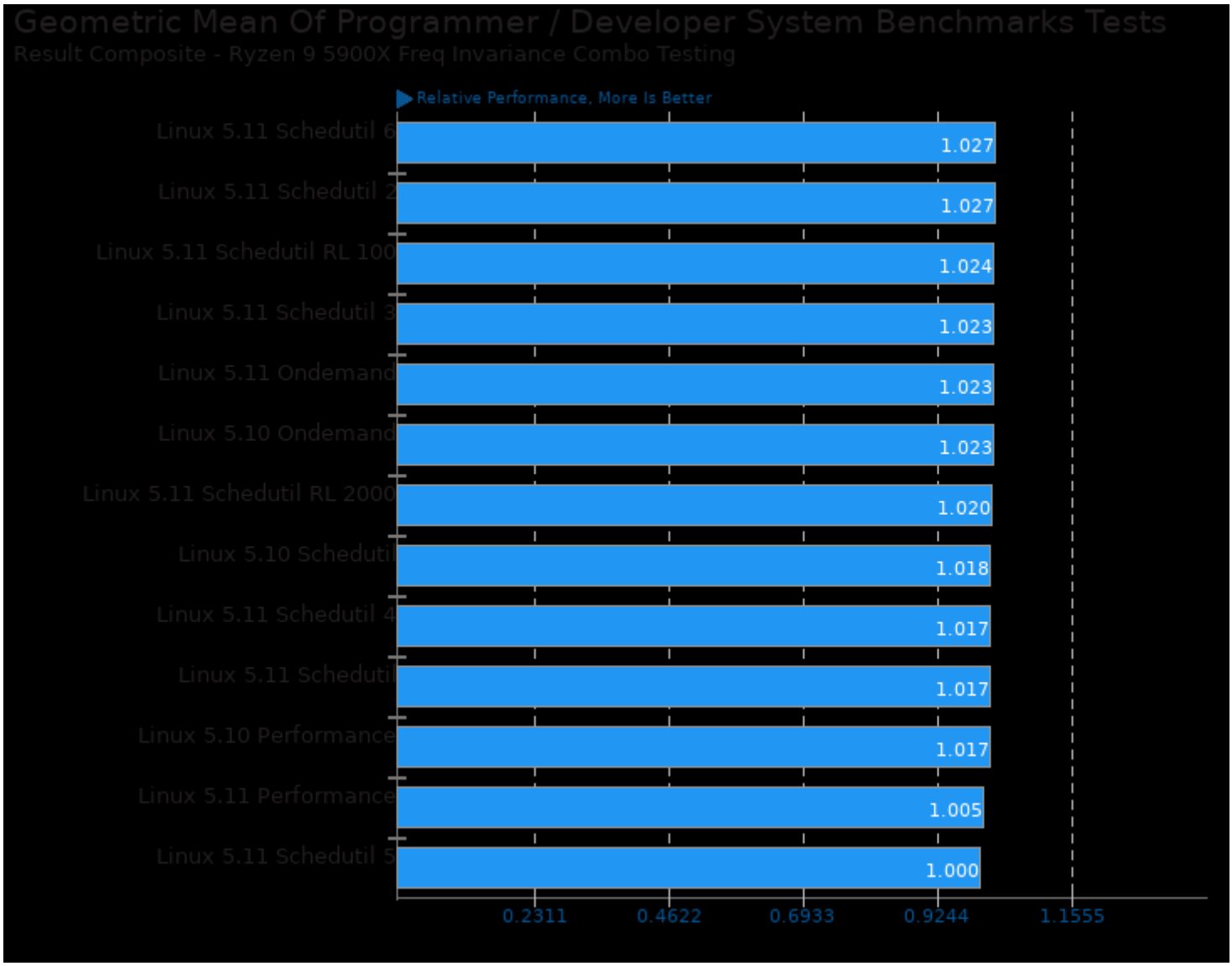
Geometric mean based upon tests: pts/oidn, pts/ospray and pts/openvkl

Ryzen 9 5900X Freq Invariance Combo Testing



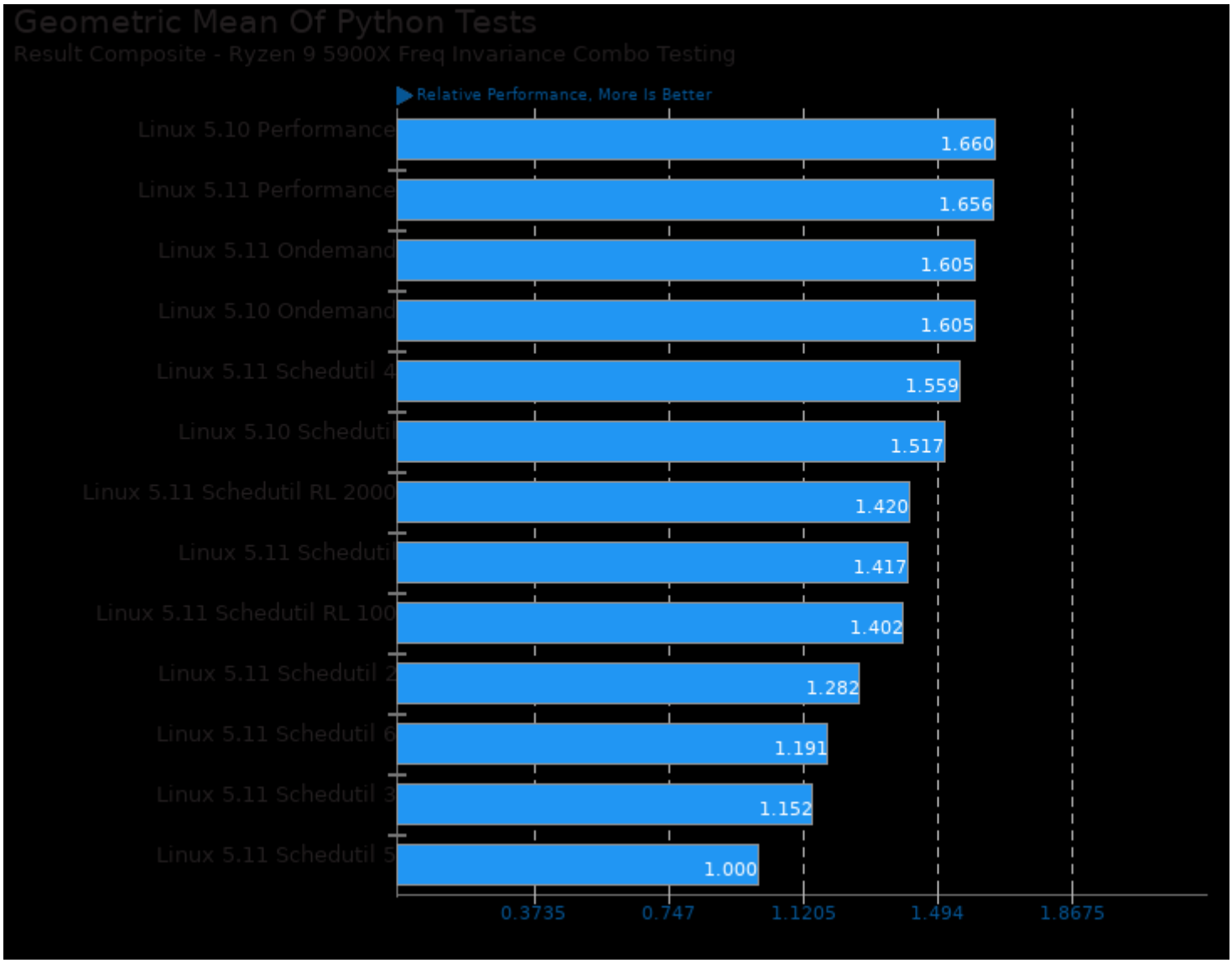
Geometric mean based upon tests: pts/lammps and pts/gromacs

Ryzen 9 5900X Freq Invariance Combo Testing



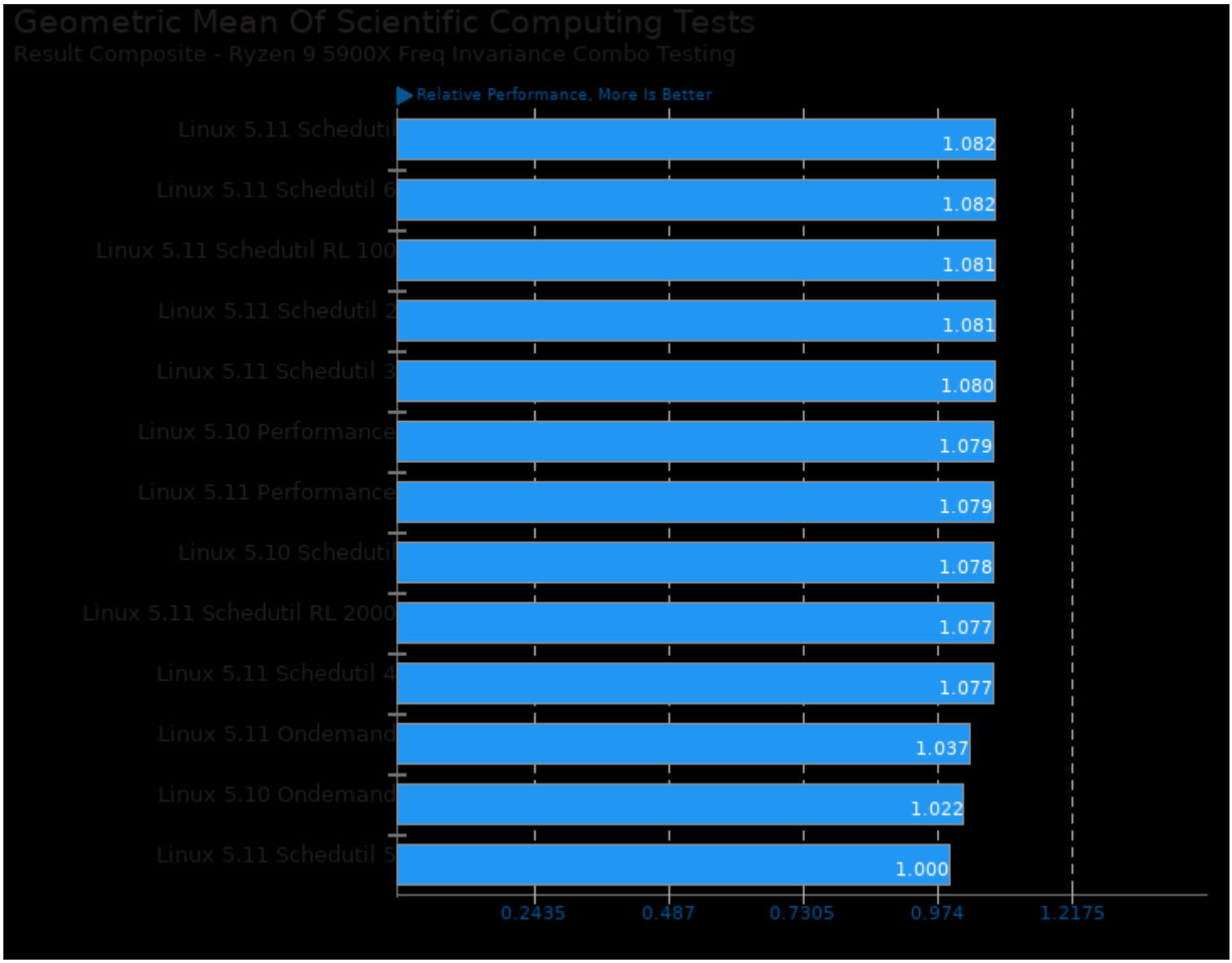
Geometric mean based upon tests: pts/build-linux-kernel and pts/build-llvm

Ryzen 9 5900X Freq Invariance Combo Testing

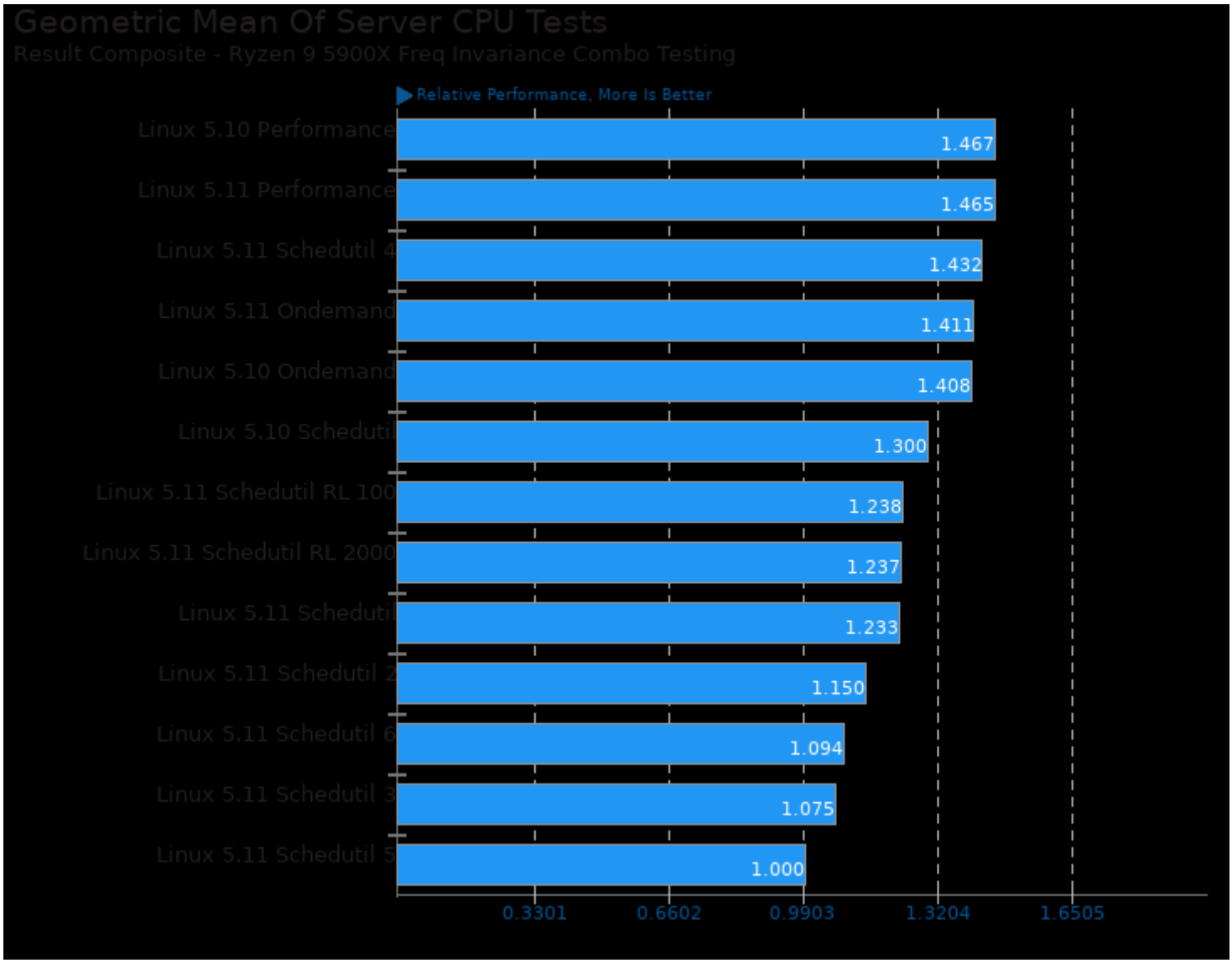


Geometric mean based upon tests: pts/build-llvm and system/selenium

Ryzen 9 5900X Freq Invariance Combo Testing

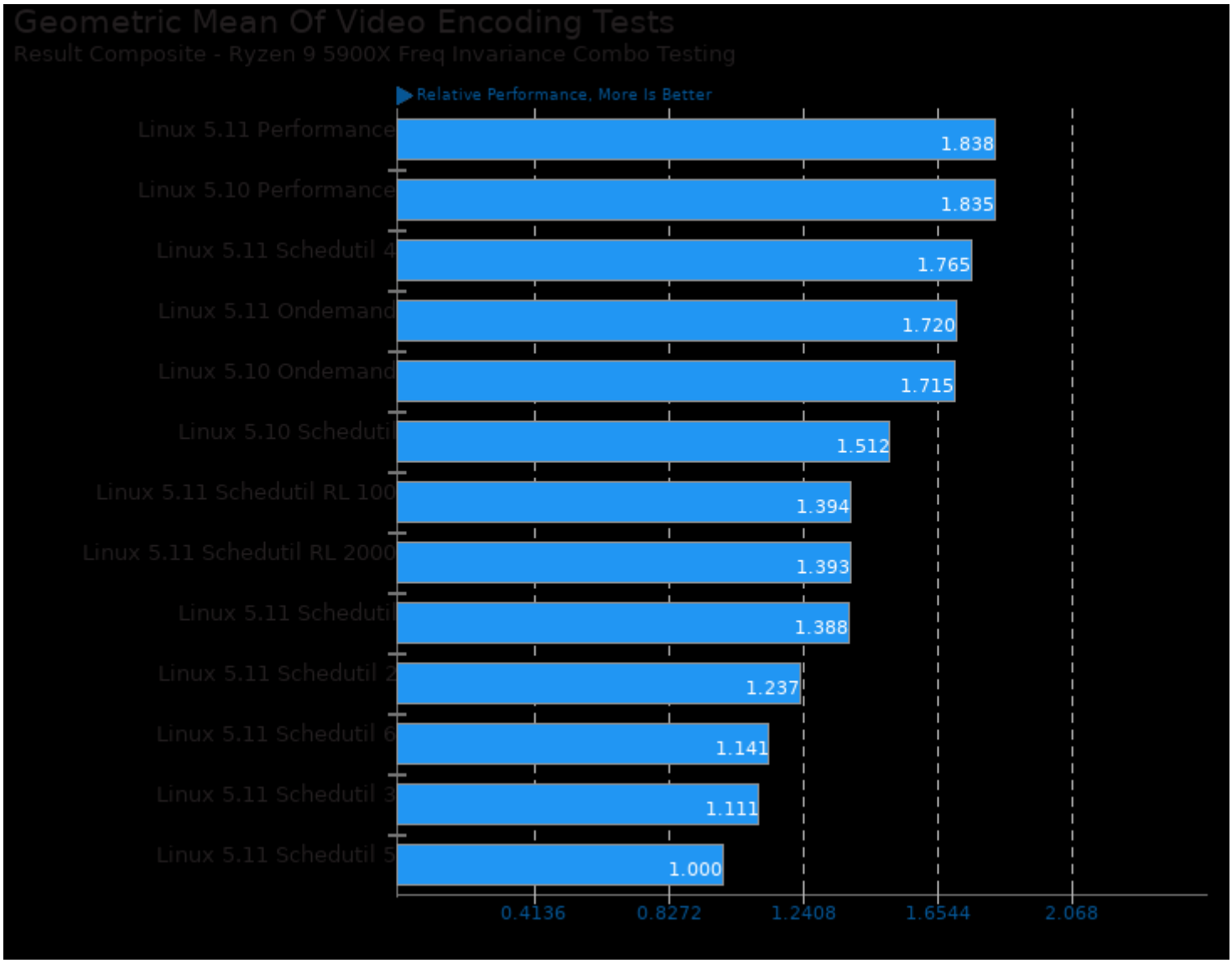


Geometric mean based upon tests: pts/namd, pts/gromacs and pts/lammps



Geometric mean based upon tests: pts/namd, pts/svt-av1, pts/x264, pts/x265, pts/build-linux-kernel and pts/build-llvm

Ryzen 9 5900X Freq Invariance Combo Testing



Geometric mean based upon tests: pts/x264, pts/x265 and pts/svt-av1

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 01:38.