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Windows 10 AMD Ryzen 5000 Zen 3 Spectre Comparison

AMD Ryzen 9 5900X quick Windows Spectre mitigation run by Michael Larabel...

Automated Executive Summary

Spectre Mitigation Disabled had the most wins, coming in first place for 51% of the tests.

Based on the geometric mean of all complete results, the fastest (Spectre Mitigation Disabled) was 1.003x the speed of the slowest (Default).

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

OSBench (Test: Create Threads) at 1.127x
Diskspd (Threads Per Target: 4 - Write Requests (Percent): 0 - Read Only - File Size: 50M - Block Size: 2MB) at 1.043x
Diskspd (Threads Per Target: 4 - Write Requests (Percent): 0 - Read Only - File Size: 50M - Block Size: 2MB) at 1.043x
Selenium (Benchmark: WASM imageConvolute - Browser: Google Chrome) at 1.038x
DaCapo Benchmark (Java Test: Jython) at 1.036x
Selenium (Benchmark: CanvasMark - Browser: Google Chrome) at 1.026x
DaCapo Benchmark (Java Test: Tradesoap) at 1.022x
Selenium (Benchmark: WebXPRT - Browser: Google Chrome) at 1.017x
Selenium (Benchmark: ARES-6 - Browser: Google Chrome) at 1.016x
Chaos Group V-RAY (Mode: CPU) at 1.016x.

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Phoronix Test Suite

Test Systems:

Default

Spectre Mitigation Disabled

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (2702 BIOS), Memory: 2 x 8192 MB 3600MHz F4-3600C16-8GTRG, Disk: 932GB Sabrent Rocket 4.0 1TB, Graphics: AMD Radeon RX 6800 XT 4GB, Network: Intel I211 Gigabit Connection

OS: Microsoft Windows 10 Pro Build 19042, Kernel: 10.0 (x86_64), Display Driver: 27.20.14501.24001, OpenCL: OpenCL 2.1 AMD-APP (3188.4), Compiler: GCC 8.3.0, File-System: NTFS, Screen Resolution: 3840x2160

Java Notes: OpenJDK Runtime Environment 18.9 (build 11.0.6+10-LTS)
Python Notes: Python 3.7.1
Security Notes: __user pointer sanitization: Disabled + IBRS: Enabled + STIBP: Enabled

	Default	Spectre Mitigation
Diskspd - 4 - 0 - Read Only - 50M - 2MB (MB/s)	**4750**	**4555**
Normalized	100%	95.91%
Standard Deviation	0%	4.7%
Diskspd - 4 - 0 - Read Only - 50M - 2MB (IOPS)	**2375**	**2278**
Normalized	100%	95.91%
Standard Deviation	0%	4.7%
OSBench - Create Files (us/Event)	**544.223592**	**536.698522**
Normalized	98.62%	100%
Standard Deviation	2.8%	3%
OSBench - Create Threads (us/Event)	**27.297**	**24.218**
Normalized	88.72%	100%
Standard Deviation	2.9%	4.8%
OSBench - Launch Programs (us/Event)	**846.018**	**843.765**
Normalized	99.73%	100%
Standard Deviation	0.8%	2.6%
WebP Image Encode - Q.1.L (Encode Time - sec)	**14.000**	**13.924**
Normalized	99.46%	100%
Standard Deviation	0.5%	0.1%
DaCapo Benchmark - Jython (msec)	**3290**	**3175**
Normalized	96.5%	100%
Standard Deviation	2.6%	2.3%
DaCapo Benchmark - Tradesoap (msec)	**6112**	**5980**
Normalized	97.84%	100%
Standard Deviation	0.9%	1.4%
Zstd Compression - 19 (MB/s)	45.0	45.0
Standard Deviation	0.1%	0.2%
LibRaw - P.P.B (Mpix/sec)	**11.77**	**11.72**
Normalized	100%	99.58%
Standard Deviation	0.3%	0.1%
dav1d - Summer Nature 4K (FPS)	**223.935000**	**222.376875**
Normalized	100%	99.3%
Standard Deviation	0.3%	0.1%

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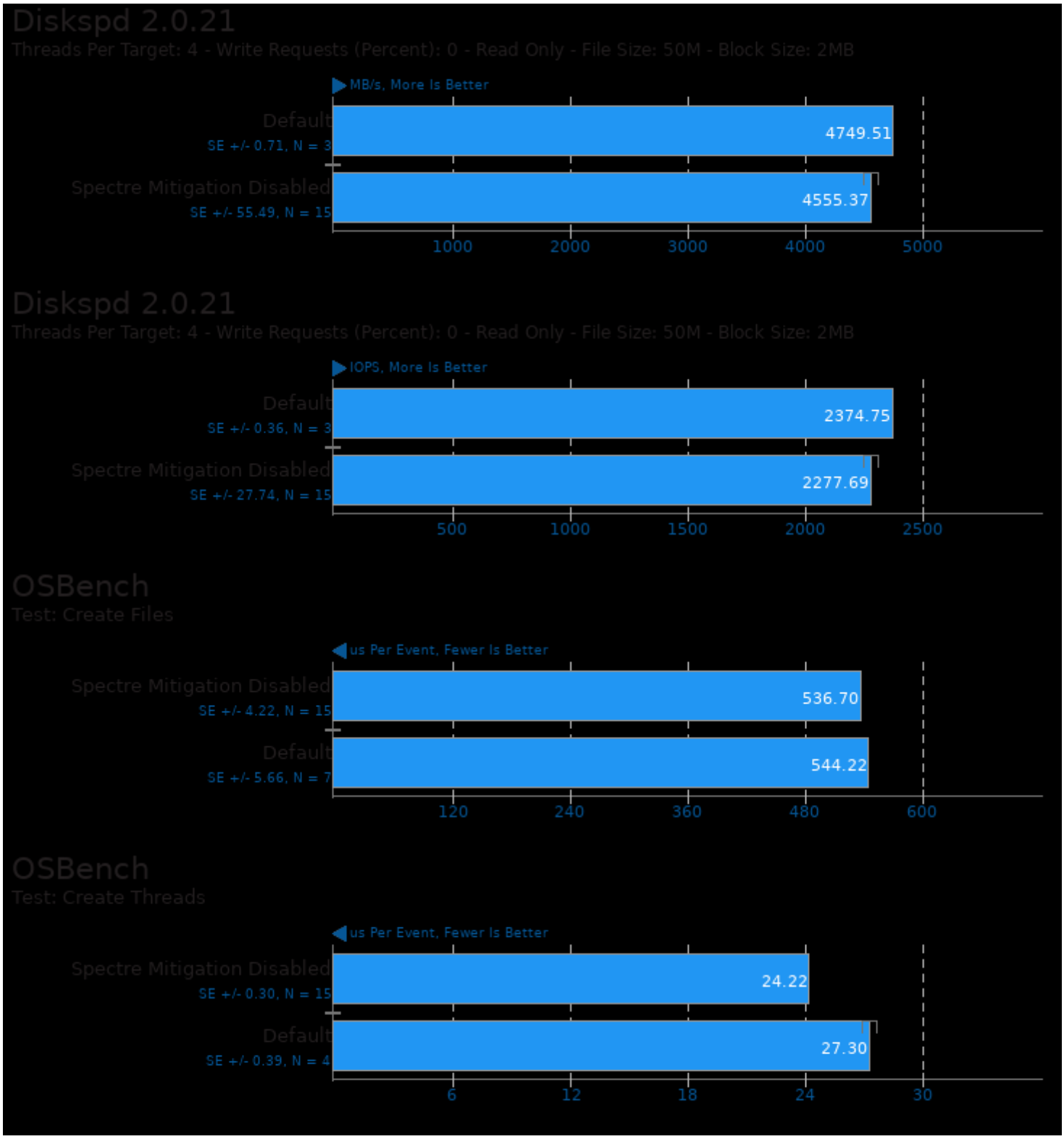
GIMP - rotate (sec)	**19.436**	**19.509**
Normalized	100%	99.63%
Standard Deviation	0.5%	6.9%
GIMP - auto-levels (sec)	**32.178**	**32.441**
Normalized	100%	99.19%
Standard Deviation	1.4%	1.3%
GIMP - unsharp-mask (sec)	**46.023**	**46.014**
Normalized	99.98%	100%
Standard Deviation	0.2%	1.5%
WinSAT - Memory (MB/s)	**41876**	**41843**
Normalized	100%	99.92%
Standard Deviation	0.1%	0.1%
WinSAT - CPU Encryption (MB/s)	**14466**	**14552**
Normalized	99.41%	100%
Standard Deviation	2.8%	2.5%
WinSAT - CPU Compression (MB/s)	**4901**	**4924**
Normalized	99.53%	100%
Standard Deviation	0.1%	1.8%
Chaos Group V-RAY - CPU (Ksamples)	**24195**	**23817**
Normalized	100%	98.44%
Standard Deviation	0.3%	0.6%
Geekbench - CPU Multi Core (Score)	**13093**	**13121**
Normalized	99.79%	100%
Standard Deviation	0.2%	0.1%
Geekbench - CPU Single Core (Score)	**1721**	**1719**
Normalized	100%	99.88%
Standard Deviation	0.2%	0.5%
Selenium - ARES-6 - Firefox (ms)	**34.00**	**33.88**
Normalized	99.65%	100%
Standard Deviation	0.7%	0.3%
Selenium - Octane - Firefox (Geometric Mean)	**32154**	**32444**
Normalized	99.11%	100%
Standard Deviation	0.7%	0.5%
Selenium - WebXPRT - Firefox (Score)	**346**	**347**
Normalized	99.71%	100%
Standard Deviation	0.4%	0.3%
Selenium - CanvasMark - Firefox (Score)	**12757**	**12575**
Normalized	100%	98.57%
Standard Deviation	2.7%	1.3%
Selenium - StyleBench - Firefox (Runs / Minute)	**74.0**	**74.3**
Normalized	99.6%	100%
Standard Deviation	1%	0.7%
Selenium - Jetstream 2 - Firefox (Score)	**119.887**	**119.840**
Normalized	100%	99.96%
Standard Deviation	0.5%	0.7%
Selenium - Maze Solver - Firefox (sec)	15	15
Selenium - Speedometer - Firefox (Runs/min)	**145.8**	**146.5**
Normalized	99.52%	100%
Standard Deviation	1.1%	1.5%
Selenium - ARES-6 - Google Chrome (ms)	**14.63**	**14.87**
Normalized	100%	98.39%
Standard Deviation	0.9%	0%
Selenium - Octane - Google Chrome (Geometric	**71210**	**71376**
Normalized	99.77%	100%
Standard Deviation	0.2%	0.2%

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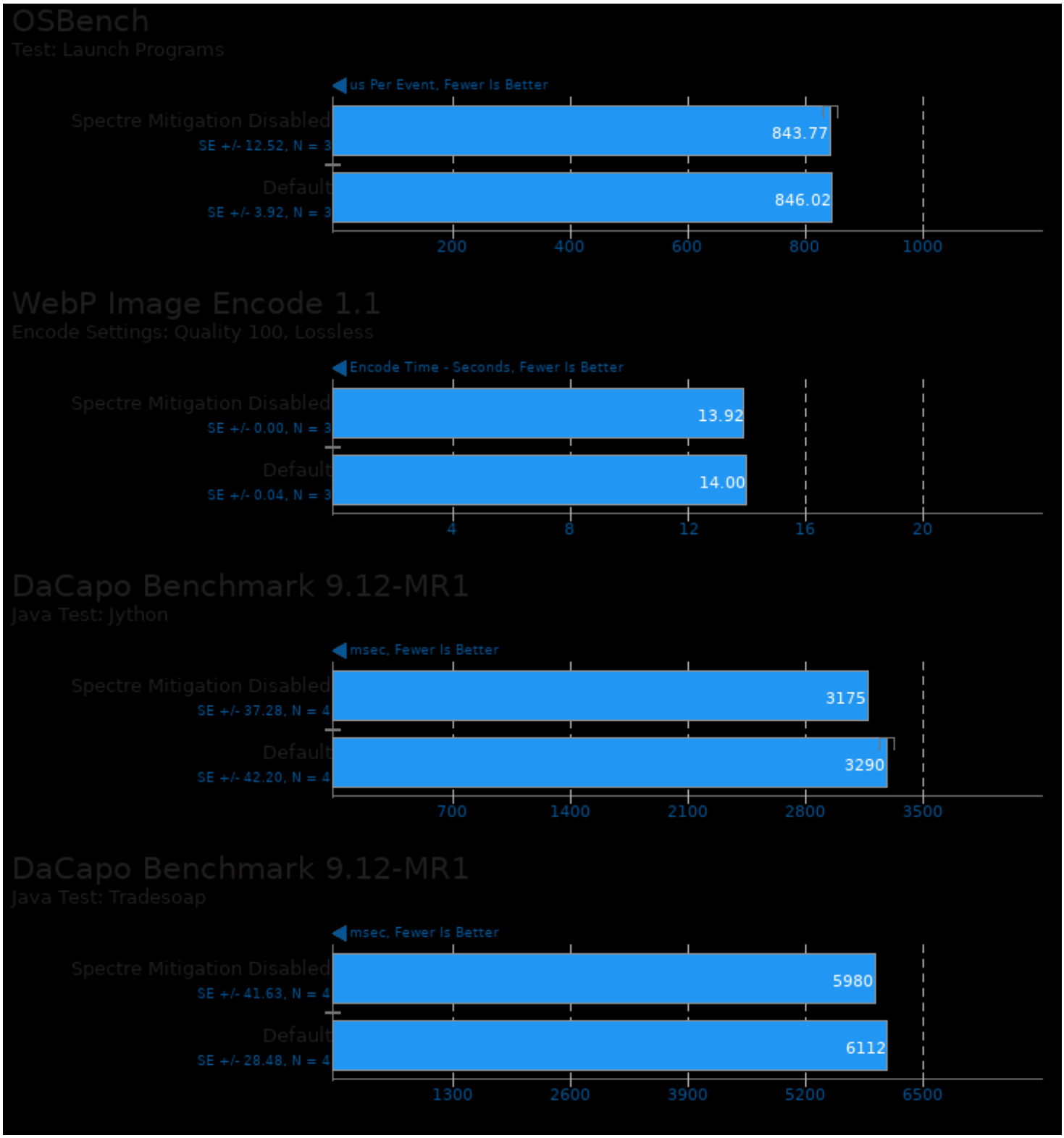
Phoronix Test Suite

Selenium - PSPDFKit WASM - Firefox (Score)	**2595**	**2608**
Normalized	100%	99.5%
Standard Deviation	0.4%	0.2%
Selenium - WebXPRT - Google Chrome (Score)	**296**	**301**
Normalized	98.34%	100%
Standard Deviation	0.7%	2.2%
Selenium - CanvasMark - Google Chrome (Score)	**28894**	**28169**
Normalized	100%	97.49%
Standard Deviation	4.8%	3%
Selenium - StyleBench - Google Chrome (Runs /	**48.89**	**48.72**
Normalized	100%	99.65%
Standard Deviation	0.3%	0.3%
Selenium - Jetstream 2 - Google Chrome (Score)	**187.586**	**187.561**
Normalized	100%	99.99%
Standard Deviation	0.6%	0.5%
Selenium - Maze Solver - Google Chrome (sec)	3.7	3.7
Standard Deviation	0%	0%
Selenium - Speedometer - Google Chrome (Runs/min)	**166.6**	**166.3**
Normalized	100%	99.82%
Standard Deviation	0.2%	0.4%
Selenium - PSPDFKit WASM - Google Chrome (Score)	**2786**	**2768**
Normalized	99.35%	100%
Standard Deviation	0.5%	0.6%
Selenium - W.i - Firefox (ms)	20.5	20.5
Standard Deviation	0.3%	0.3%
Selenium - W.c - Firefox (ms)	**279.1**	**277.9**
Normalized	99.57%	100%
Standard Deviation	0.2%	0.1%
Selenium - W.i - Google Chrome (ms)	**25.1752**	**24.2533**
Normalized	96.34%	100%
Standard Deviation	1.8%	2.8%
Selenium - W.c - Google Chrome (ms)	**250.7003**	**249.3483**
Normalized	99.46%	100%
Standard Deviation	0.1%	0%
Git - T.T.C.C.G.C (sec)	**49.966**	**49.913**
Normalized	99.89%	100%
Standard Deviation	0.4%	0.1%

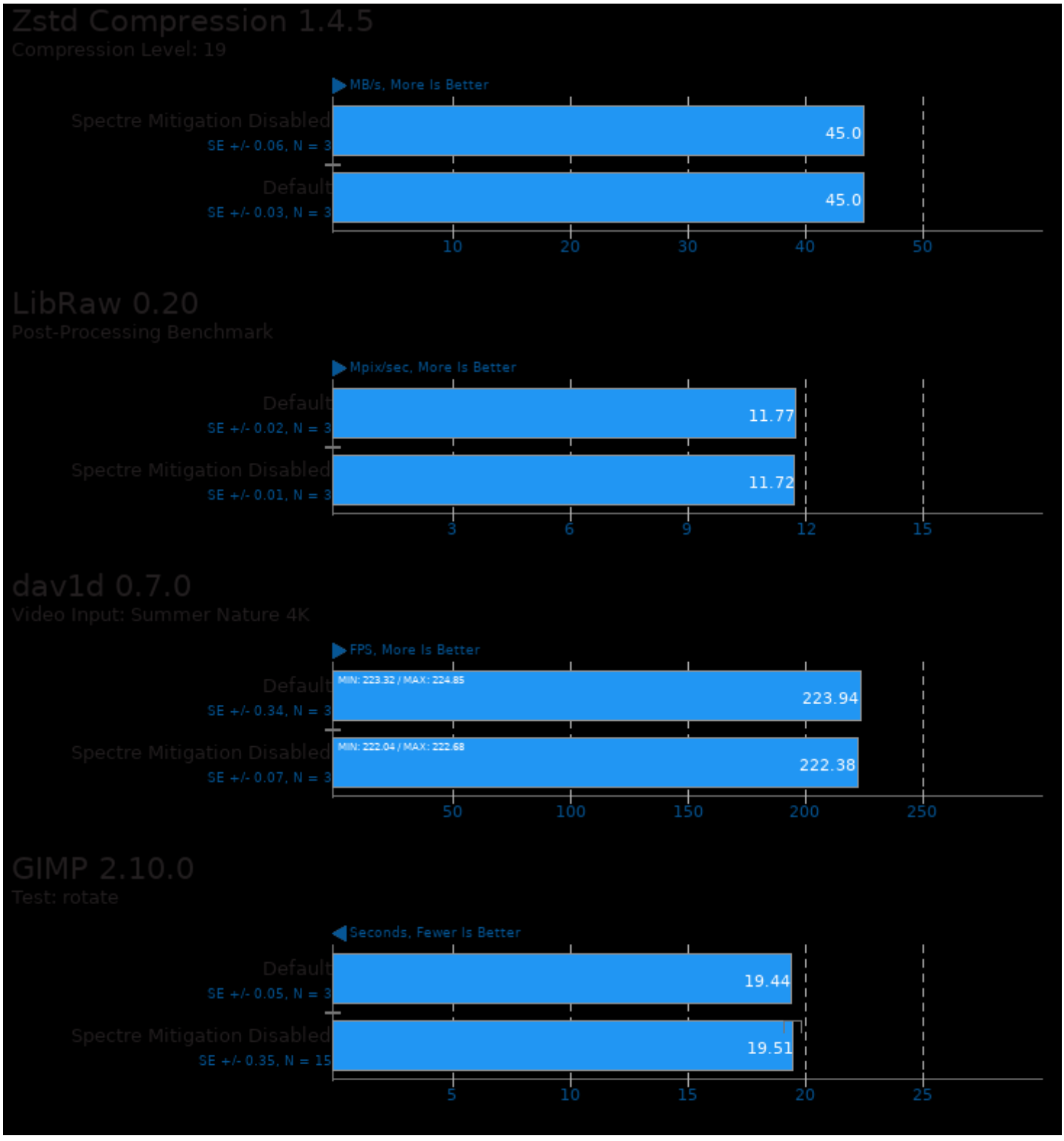
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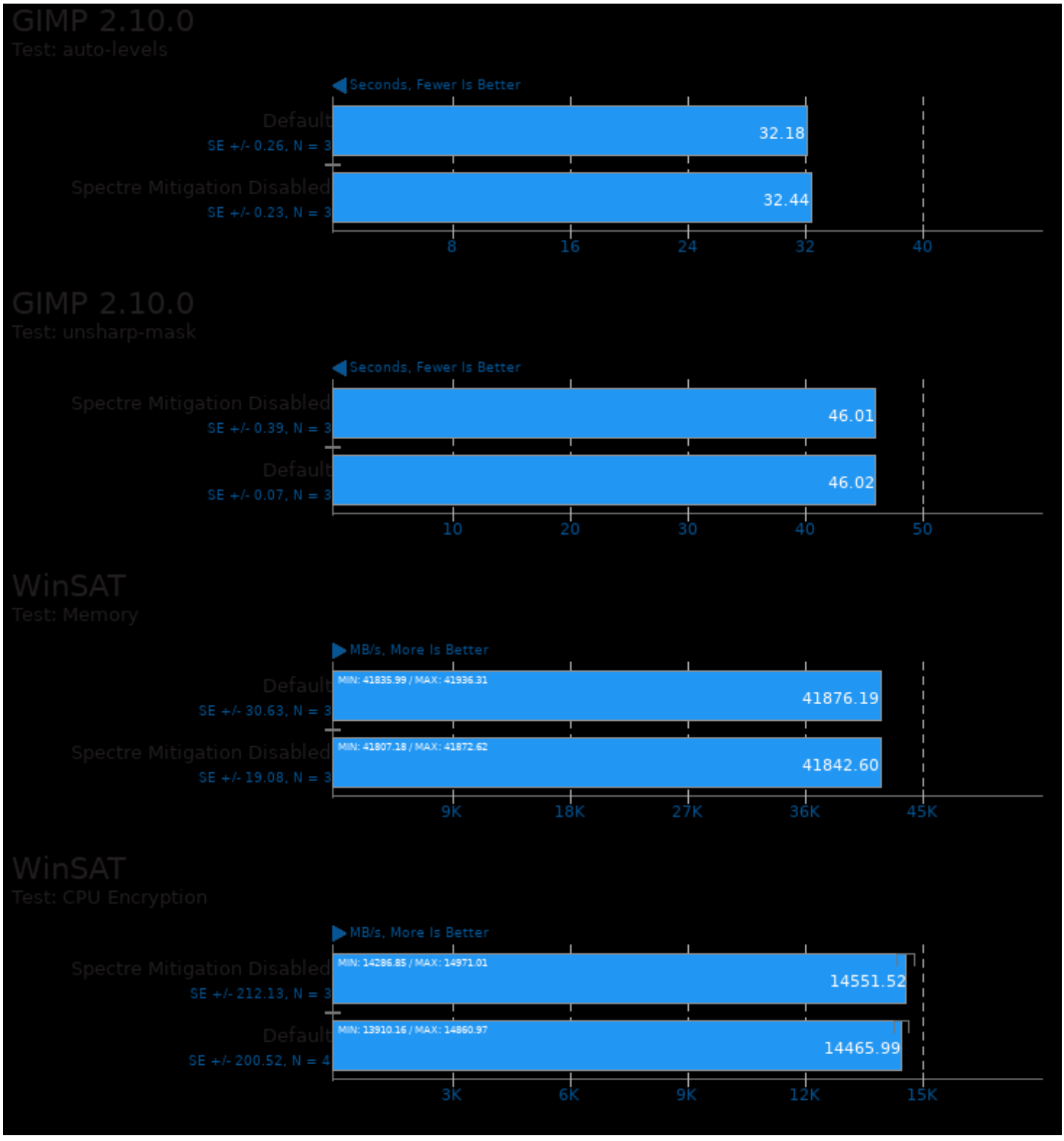
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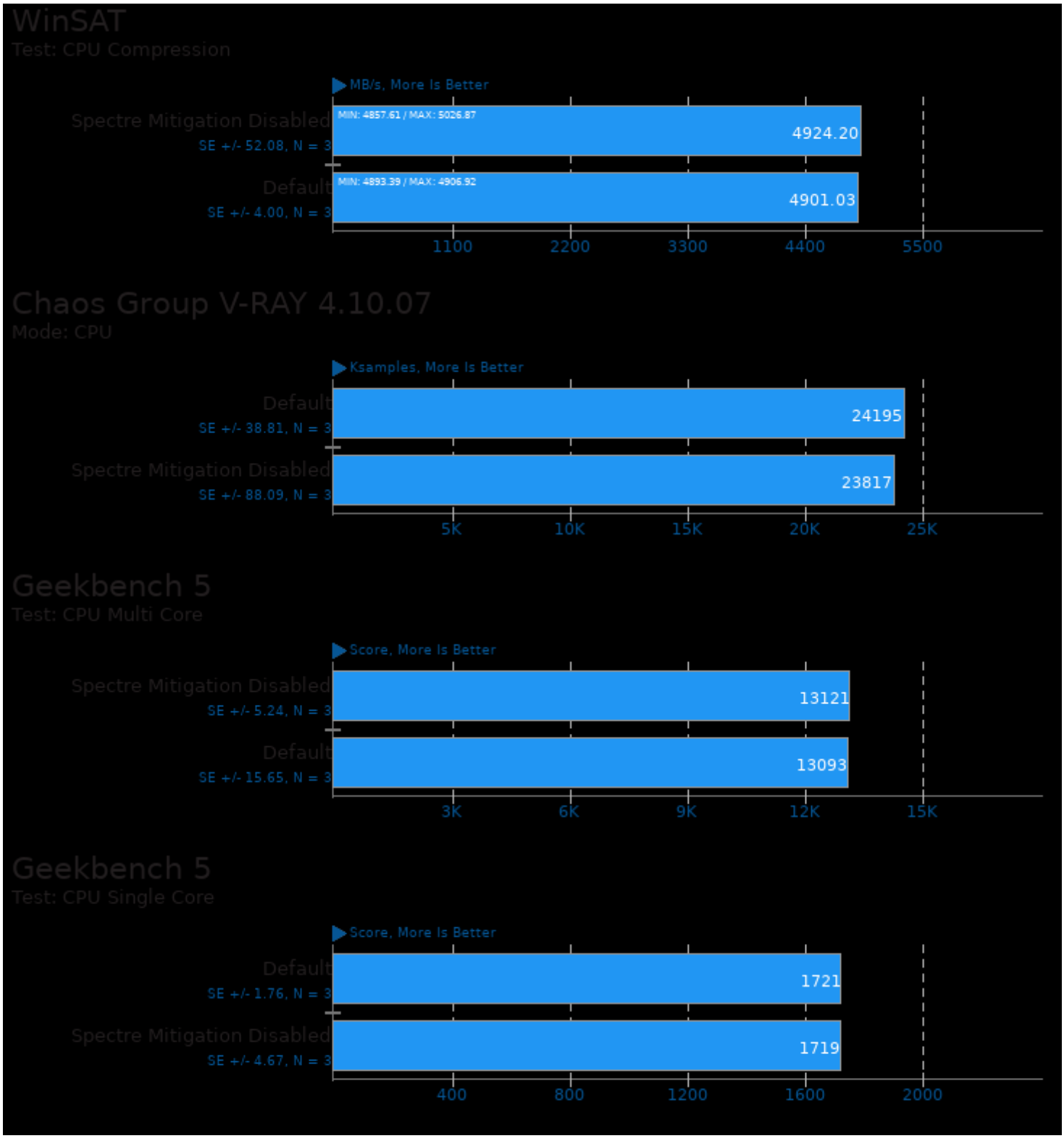
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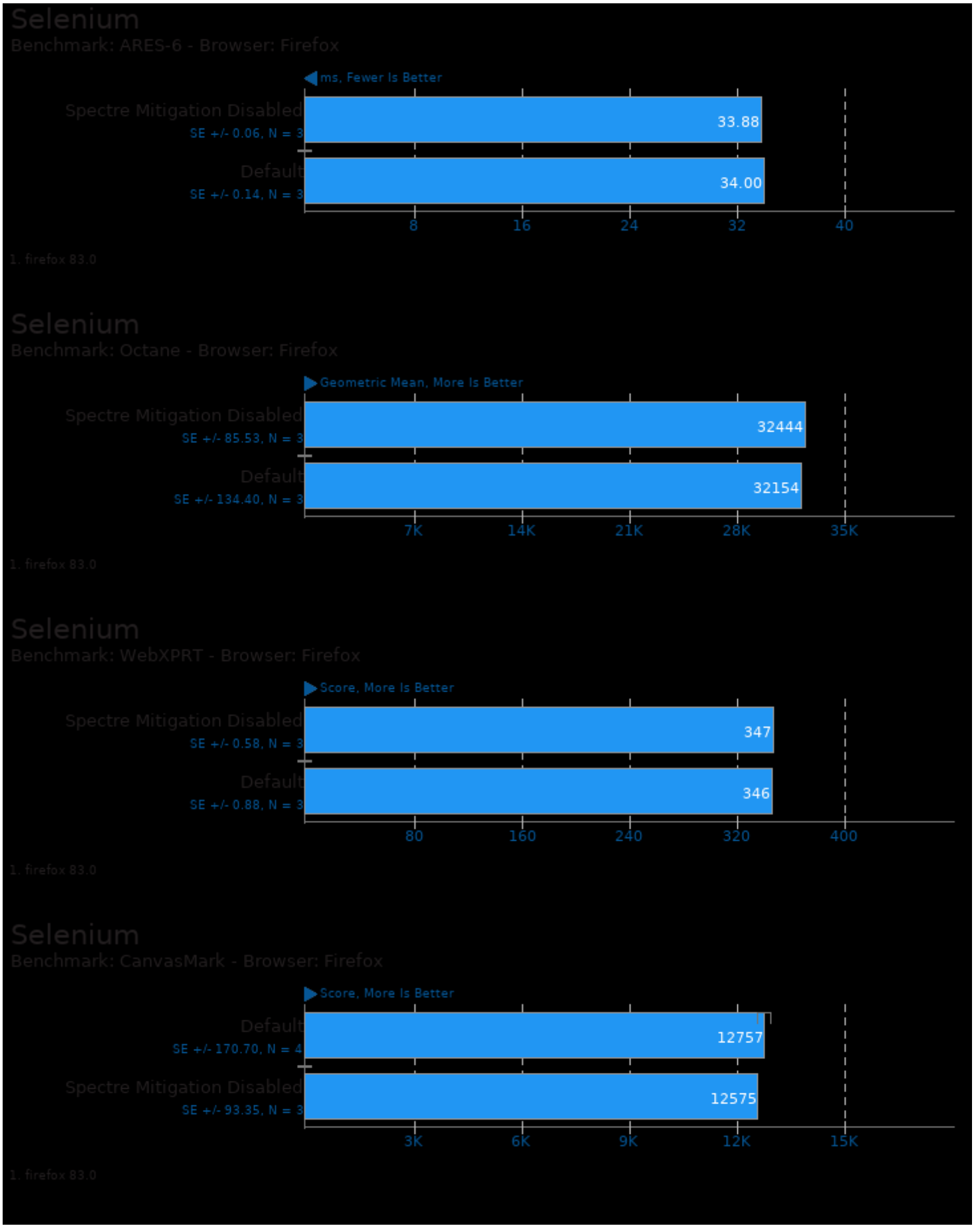
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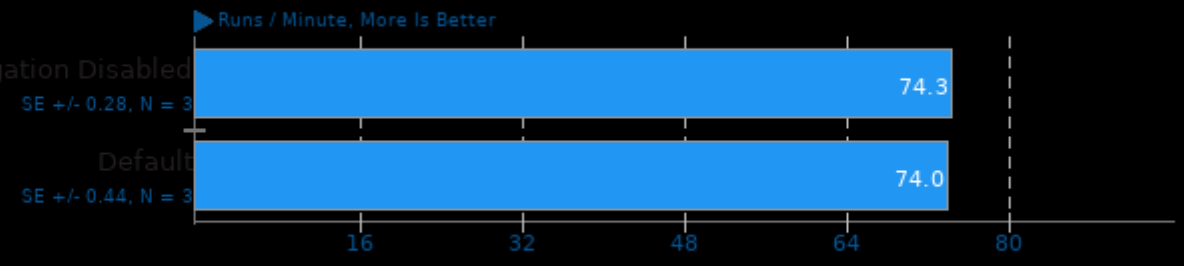
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Selenium

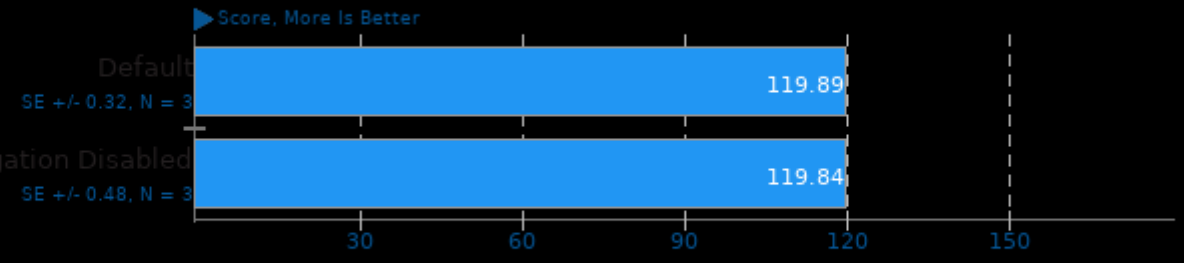
Benchmark: StyleBench - Browser: Firefox



1. firefox 83.0

Selenium

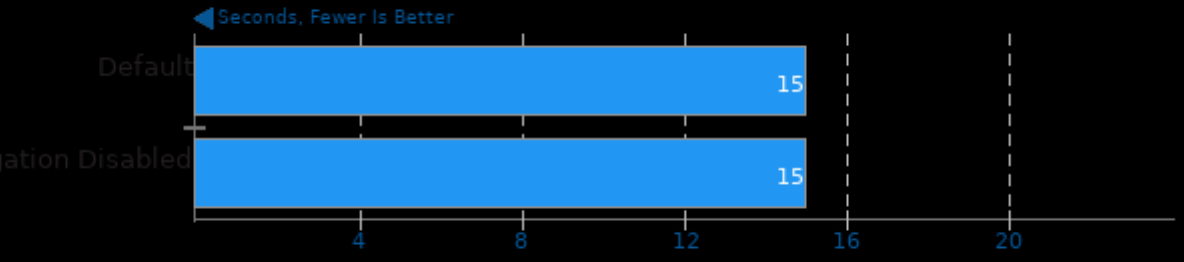
Benchmark: Jetstream 2 - Browser: Firefox



1. firefox 83.0

Selenium

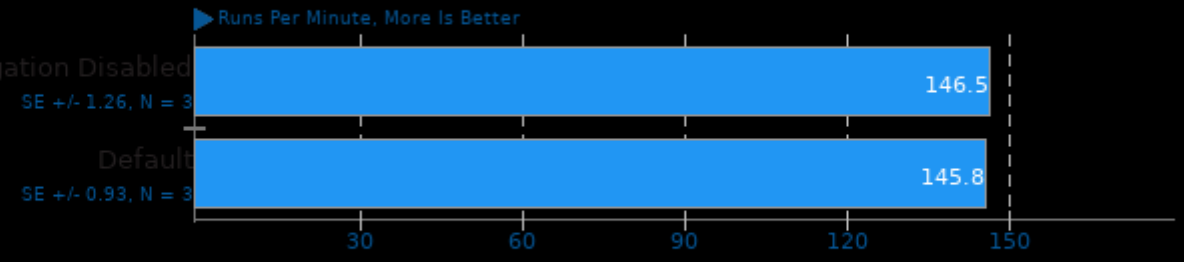
Benchmark: Maze Solver - Browser: Firefox



1. firefox 83.0

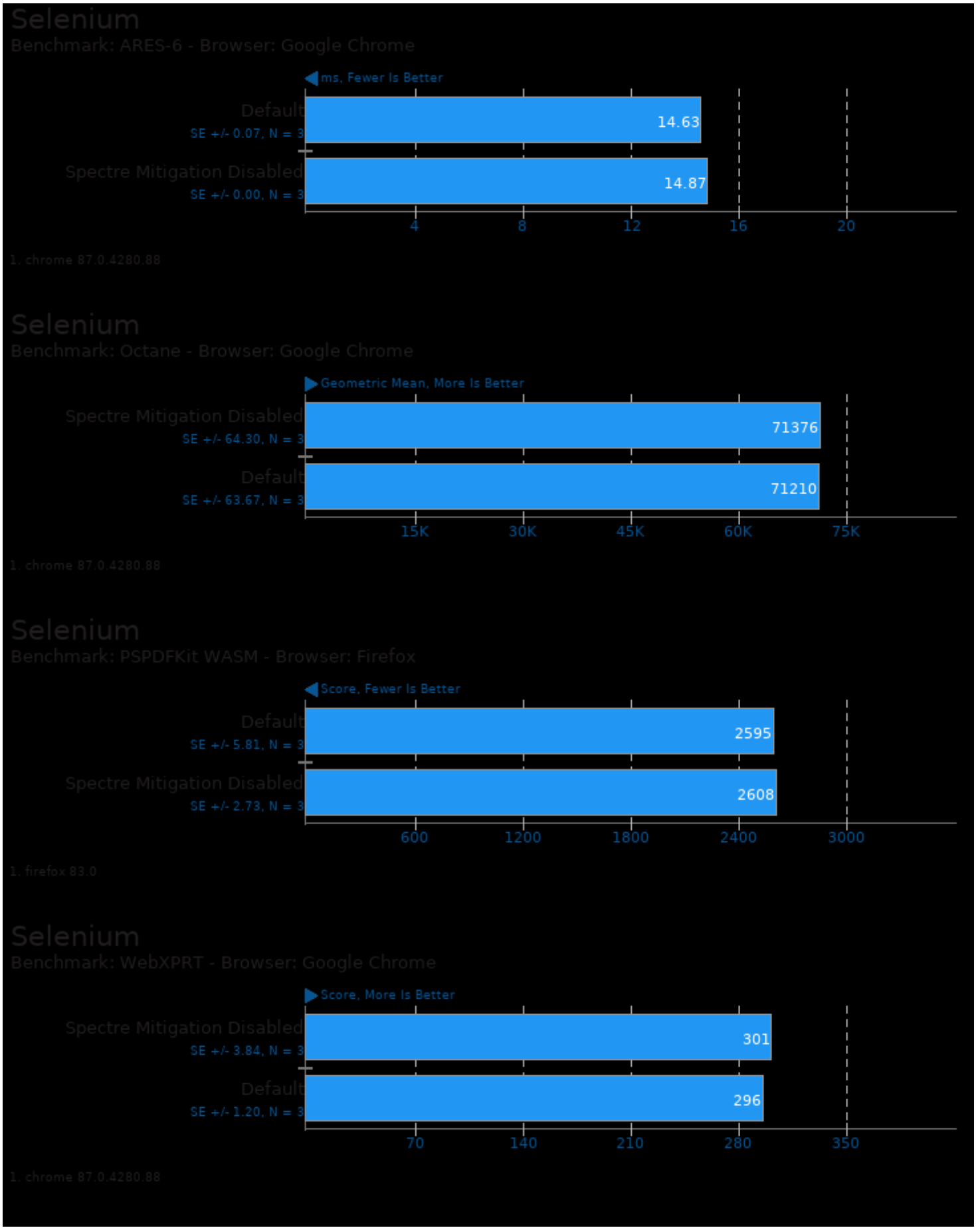
Selenium

Benchmark: Speedometer - Browser: Firefox



1. firefox 83.0

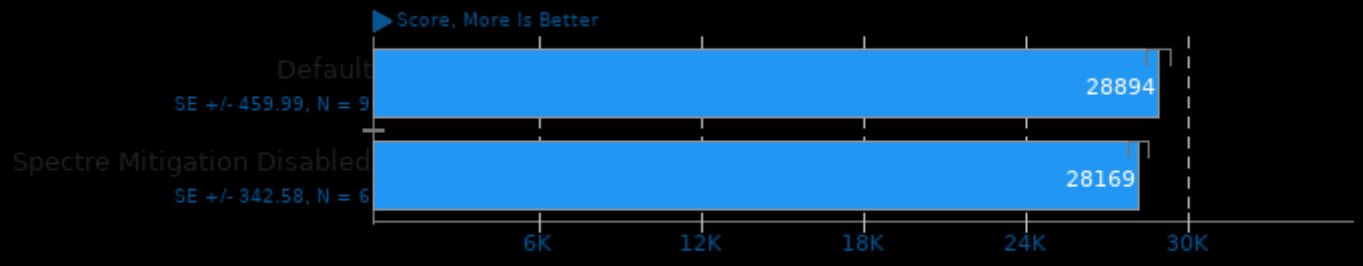
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Selenium

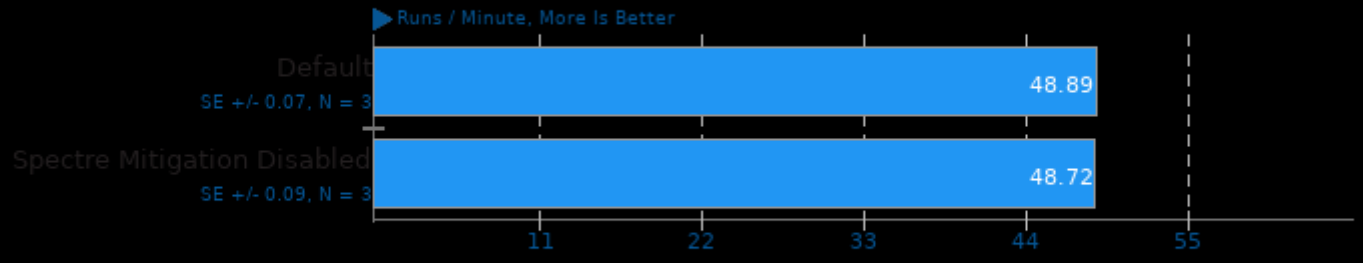
Benchmark: CanvasMark - Browser: Google Chrome



1. chrome 87.0.4280.88

Selenium

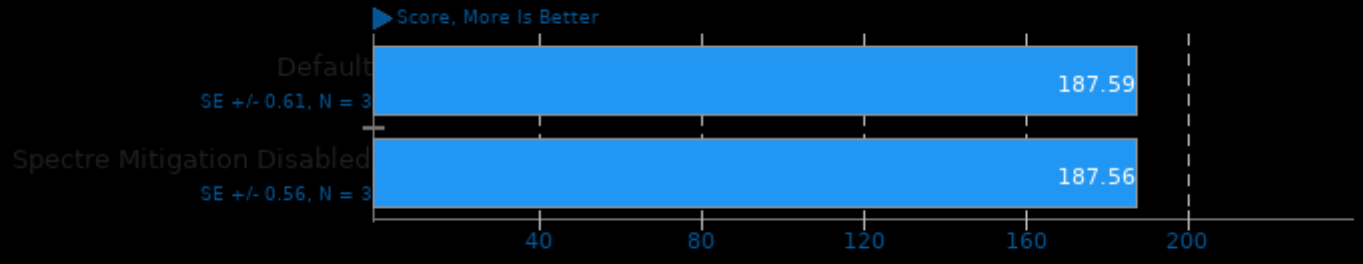
Benchmark: StyleBench - Browser: Google Chrome



1. chrome 87.0.4280.88

Selenium

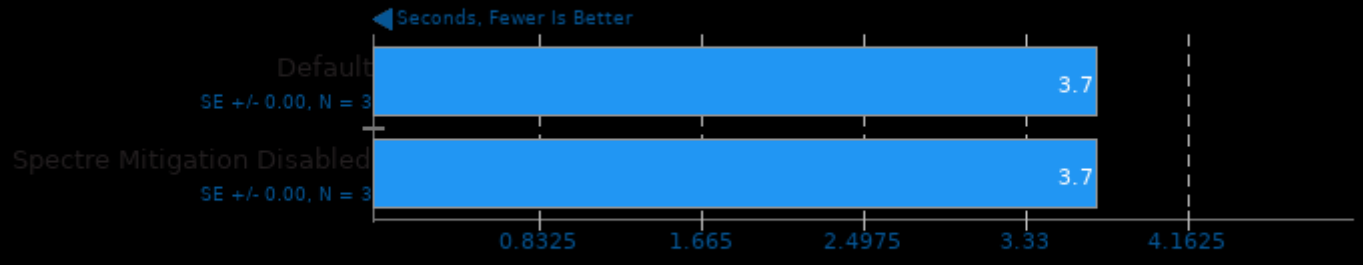
Benchmark: Jetstream 2 - Browser: Google Chrome



1. chrome 87.0.4280.88

Selenium

Benchmark: Maze Solver - Browser: Google Chrome

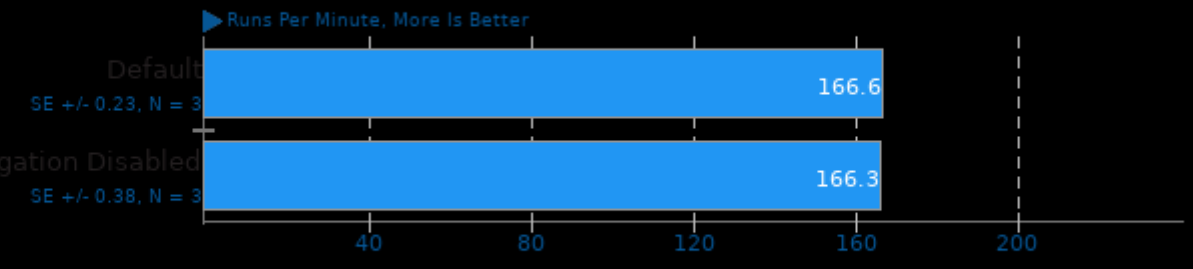


1. chrome 87.0.4280.88

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Selenium

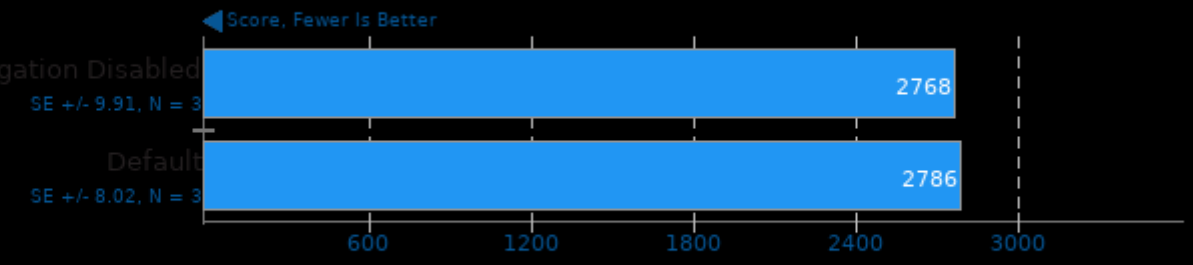
Benchmark: Speedometer - Browser: Google Chrome



1. chrome 87.0.4280.88

Selenium

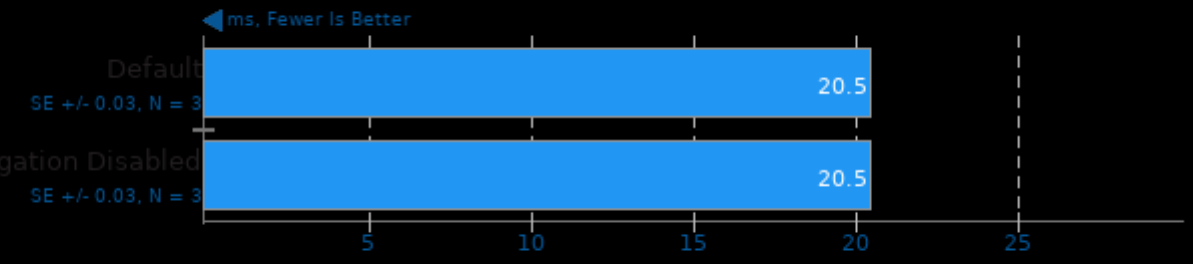
Benchmark: PSPDFKit WASM - Browser: Google Chrome



1. chrome 87.0.4280.88

Selenium

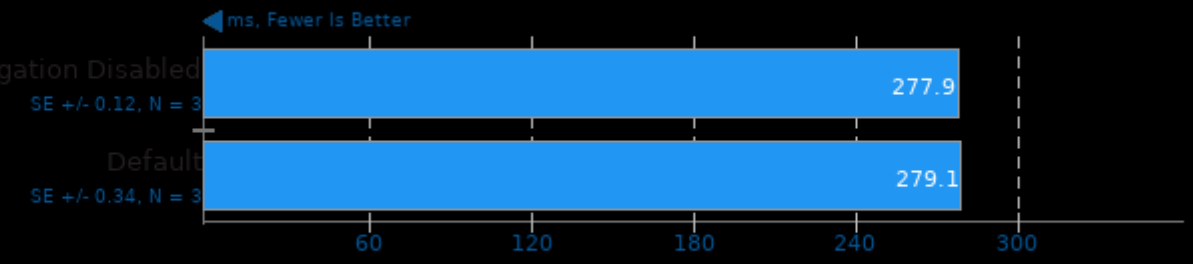
Benchmark: WASM imageConvolute - Browser: Firefox



1. firefox 83.0

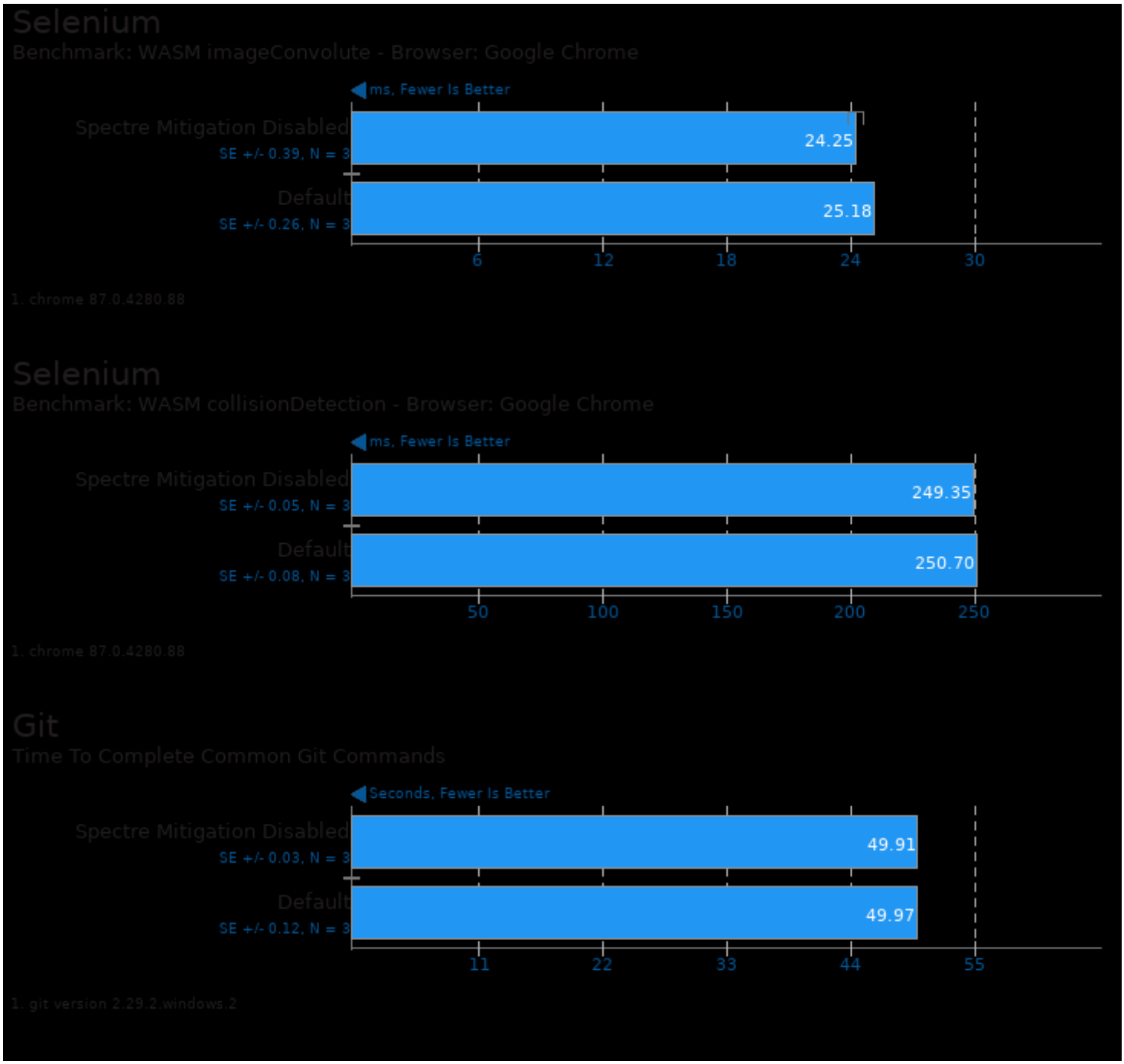
Selenium

Benchmark: WASM collisionDetection - Browser: Firefox



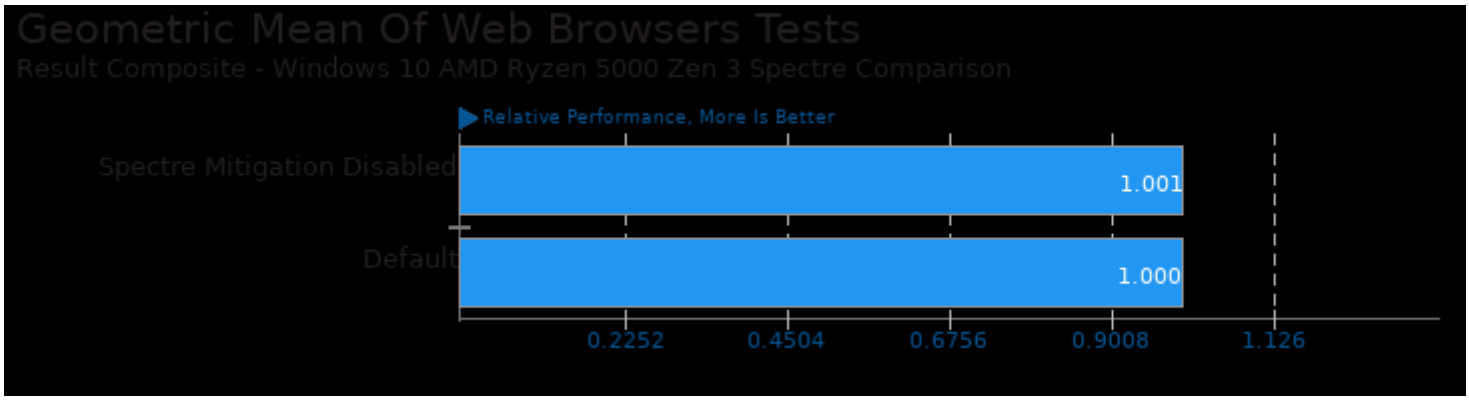
1. firefox 83.0

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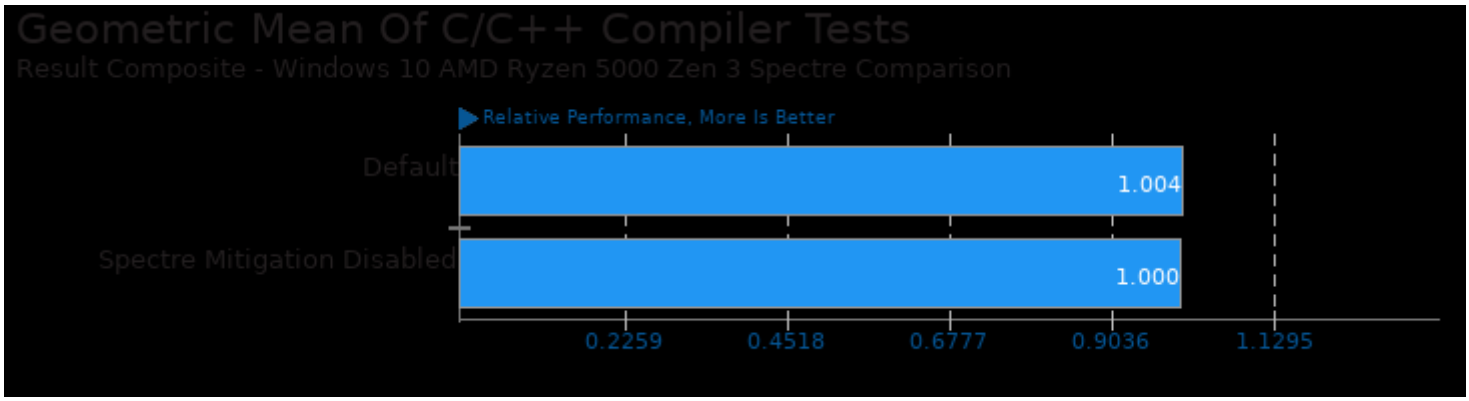


Windows 10 AMD Ryzen 5000 Zen 3 Spectre Comparison

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



Geometric mean based upon tests: system/selenium

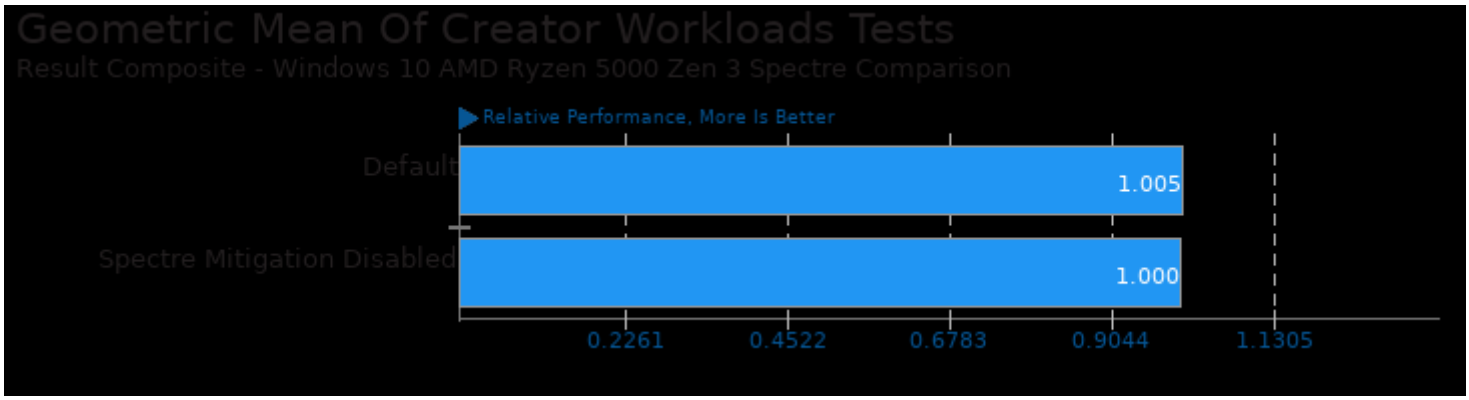


Geometric mean based upon tests: pts/dav1d and pts/compress-zstd

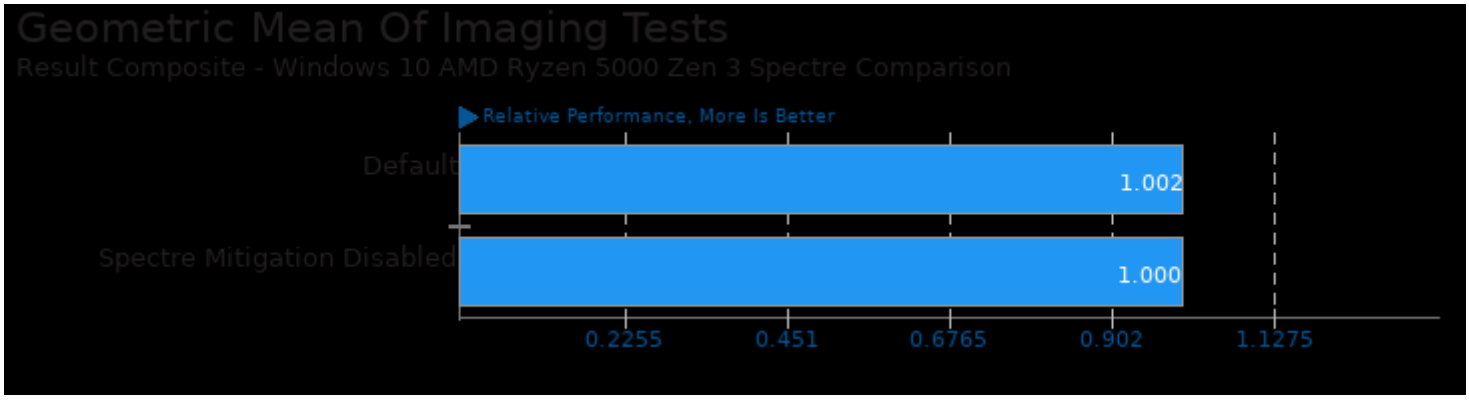


Geometric mean based upon tests: pts/compress-zstd, pts/dacapobench, pts/dav1d, pts/geekbench and pts/v-ray

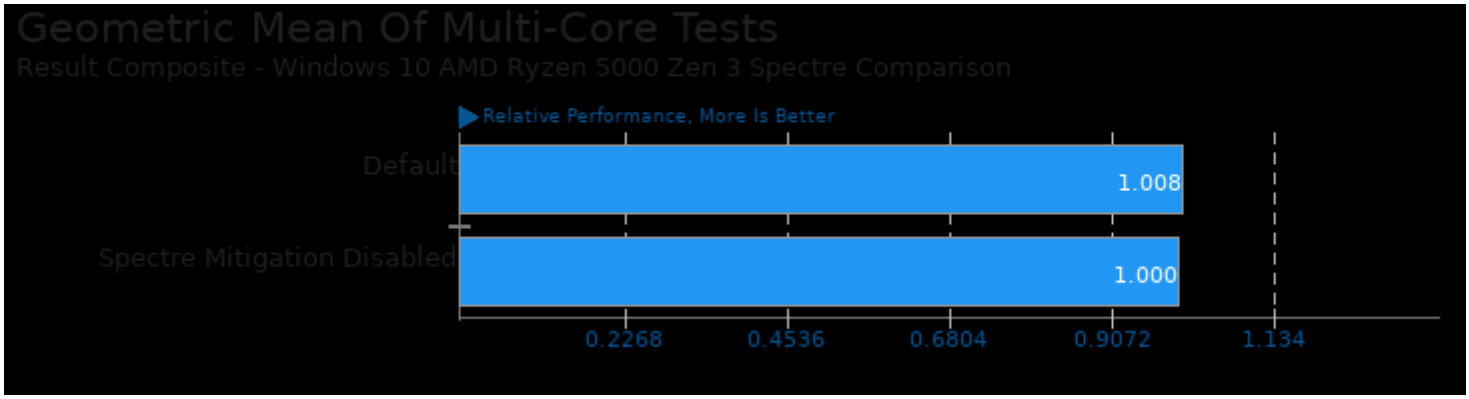
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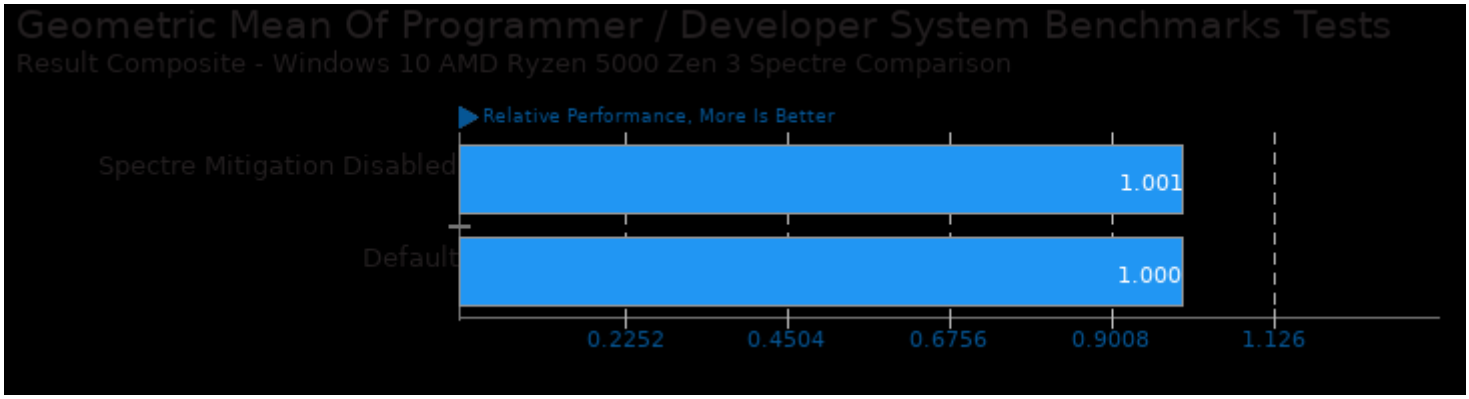
Geometric mean based upon tests: pts/v-ray, pts/dav1d, pts/libraw, pts/webp and system/gimp



Geometric mean based upon tests: pts/libraw, pts/webp and system/gimp

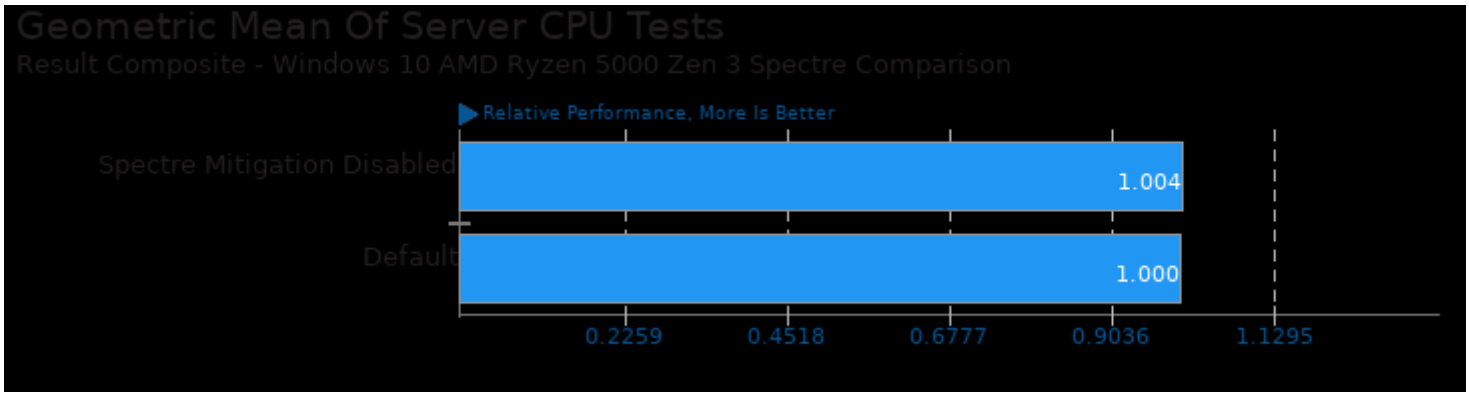


Geometric mean based upon tests: pts/dav1d, pts/compress-zstd and pts/v-ray



Geometric mean based upon tests: pts/git and pts/compress-zstd

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Geometric mean based upon tests: pts/dacapobench, pts/dav1d, pts/compress-zstd, system/gimp and pts/geekbench

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 03:02.