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test sample

AMD Ryzen 7 2700X Eight-Core testing with a ASRock B450 Pro4 (P1.30 BIOS) and XFX AMD Radeon RX 470/480/570/570X/580/580X 4GB on Ubuntu 18.04 via the Phoronix Test Suite.

Automated Executive Summary

2700X-SMT had the most wins, coming in first place for 46% of the tests.

Based on the geometric mean of all complete results, the fastest (2700X-SMT) was 4.441x the speed of the slowest (C2D-E8600-3.33).

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

SVT-HEVC (1080p 8-bit YUV To HEVC Video Encode) at 72.394x
Urban Terror (Resolution: 1680 x 1050 - Total Frame Time) at 64x
OpenArena (Resolution: 1920 x 1080 - Total Frame Time) at 48x
SVT-AV1 (1080p 8-bit YUV To AV1 Video Encode) at 32.152x
SuperTuxKart (Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Around the Lighthouse) at 24.175x
SuperTuxKart (Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: STK Enterprise) at 23.516x
SuperTuxKart (Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Oliver's Math

Class) at 23.242x
SuperTuxKart (Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Zen Garden) at 23.115x
SuperTuxKart (Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Hacienda) at 23.084x
SuperTuxKart (Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Cocoa Temple) at 22.807x.

Test Systems:

2xG34

Processor: 2 x AMD Opteron 6282 SE @ 2.60GHz (16 Cores / 32 Threads), Motherboard: Supermicro H8DG6/H8DGi v1.0 (3.5c BIOS), Chipset: AMD RD890 + SB7x0/SB8x0/SB9x0, Memory: 64512MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: Matrox MGA G200eW WPCM450 4GB, Audio: AMD Device aae0, Monitor: 2 x SyncMaster, Network: 2 x Intel 82576

OS: Ubuntu 18.04, Kernel: 4.15.0-58-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Security Notes: 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 STIBP: disabled RSB filling

2xE5

Processor: 2 x Intel Xeon E5-2667 0 @ 3.50GHz (12 Cores / 24 Threads), Motherboard: LENOVO (A1KT46AUS BIOS), Chipset: Intel Xeon E5/Core, Memory: 97280MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: Sapphire AMD Radeon HD 7770/8760 / R7 250X 1GB, Audio: Realtek ALC662 rev3, Monitor: SyncMaster, Network: Intel 82579LM + Intel 82574L

OS: Ubuntu 18.04, Kernel: 4.15.0-58-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Graphics Notes: GLAMOR
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling

FX-8350

Processor: AMD FX-8350 Eight-Core @ 4.00GHz (4 Cores / 8 Threads), Motherboard: ASUS M5A97 R2.0 (2603 BIOS), Chipset: AMD RD9x0/RX980, Memory: 32768MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: MSI AMD Radeon HD 7770/8760 / R7 250X 1GB, Audio: Realtek ALC887-VD, Monitor: HP ZR30w, Network: Intel 82572EI

OS: Ubuntu 18.04, Kernel: 4.15.0-58-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 2560x1600

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Security Notes: 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 STIBP: disabled RSB filling

C2D-E8600-3.33

Processor: Intel Core 2 Duo E8600 @ 3.33GHz (2 Cores), Motherboard: Dell 0C27VV (A04 BIOS), Chipset: Intel 4 DRAM + ICH10DO, Memory: 16384MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: Intel Q45/Q43 2GB, Audio: Analog Devices AD1984A, Monitor: SyncMaster, Network: Intel 82567LM-3

OS: Ubuntu 18.04, Kernel: 4.15.0-58-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 2.1 Mesa 19.0.8, Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: EPT disabled + mds: Vulnerable: Clear buffers attempted no microcode; SMT disabled + meltdown: Mitigation of PTI + spec_store_bypass: Vulnerable + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline STIBP: disabled RSB filling

O6276

Processor: AMD Opteron 6276 @ 2.30GHz (8 Cores / 16 Threads), Motherboard: Supermicro H8SGL (3.0 BIOS), Chipset: AMD RD890S/SR5650 + SB7x0/SB8x0/SB9x0, Memory: 32768MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: XFX AMD Radeon RX 470/480/570/570X/580/580X 4GB, Audio: AMD Ellesmere, Monitor: SyncMaster, Network: 2 x Intel 82574L

OS: Ubuntu 18.04, Kernel: 4.15.0-58-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw

Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Security Notes: 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 STIBP: disabled RSB filling

O6328

Processor: AMD Opteron 6328 @ 3.20GHz (4 Cores / 8 Threads), Motherboard: Supermicro H8SGL (3.0 BIOS), Chipset: AMD RD890S/SR5650 + SB7x0/SB8x0/SB9x0, Memory: 32768MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: XFX AMD Radeon RX 470/480/570/570X/580/580X 4GB, Audio: AMD Ellesmere, Monitor: SyncMaster, Network: 2 x Intel 82574L

OS: Ubuntu 18.04, Kernel: 4.15.0-60-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Security Notes: 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 STIBP: disabled RSB filling

i7-3770

Processor: Intel Core i7-3770 @ 3.90GHz (4 Cores), Motherboard: Dell 0KRC95 (A25 BIOS), Chipset: Intel Xeon E3-1200 v2/3rd, Memory: 16384MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: XFX AMD Radeon RX 470/480/570/570X/580/580X 4GB (1286/1750MHz), Audio: Realtek ALC269VB, Monitor: SyncMaster, Network: Intel 82579LM

OS: Ubuntu 18.04, Kernel: 4.15.0-60-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Graphics Notes: GLAMOR
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT disabled + mds: Mitigation of Clear buffers; SMT disabled + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW RSB filling

i5-2520M

Processor: Intel Core i5-2520M @ 3.20GHz (2 Cores), Motherboard: Dell 0NVF5K (A06 BIOS), Chipset: Intel 2nd Generation Core DRAM, Memory: 8192MB, Disk: 80GB INTEL SSDSC2CT08 + 80GB SATAWire, Graphics: Intel Sandybridge Mobile 2GB (1300MHz), Audio: IDT 92HD90BXX, Monitor: SyncMaster, Network: Intel 82579LM + Broadcom BCM43228 802.11a/b/g/n

OS: Ubuntu 18.04, Kernel: 4.15.0-62-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 3.3 Mesa 19.0.8, Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT disabled + mds: Mitigation of Clear buffers; SMT disabled + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW RSB filling

i5-2520M-HT

Processor: Intel Core i5-2520M @ 3.20GHz (2 Cores / 4 Threads), Motherboard: Dell 0NVF5K (A06 BIOS), Chipset: Intel 2nd Generation Core DRAM, Memory: 8192MB, Disk: 80GB INTEL SSDSC2CT08 + 80GB SATAWire, Graphics: Intel Sandybridge Mobile 2GB (1300MHz), Audio: IDT 92HD90BXX, Monitor: SyncMaster, Network: Intel 82579LM + Broadcom BCM43228 802.11a/b/g/n

OS: Ubuntu 18.04, Kernel: 4.15.0-62-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 3.3 Mesa 19.0.8, Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling

O6380

Processor: AMD Opteron 6380 @ 2.50GHz (8 Cores / 16 Threads), Motherboard: Supermicro H8SGL (3.0 BIOS), Chipset: AMD RD890S/SR5650 + SB7x0/SB8x0/SB9x0, Memory: 32768MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: XFX AMD Radeon RX 470/480/570/570X/580/580X 4GB, Audio: AMD Ellesmere, Monitor: 2 x SyncMaster, Network: 2 x Intel 82574L

OS: Ubuntu 18.04, Kernel: 4.15.0-62-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Security Notes: 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 STIBP: disabled RSB filling

2700X-SMT

Processor: AMD Ryzen 7 2700X Eight-Core @ 3.70GHz (8 Cores / 16 Threads), Motherboard: ASRock B450 Pro4 (P1.30 BIOS), Chipset: AMD 17h, Memory: 32768MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: XFX AMD Radeon RX 470/480/570/570X/580/580X 4GB (1286/1750MHz), Audio: AMD Ellesmere, Monitor: SyncMaster, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.15.0-64-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Security Notes: 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 STIBP: disabled RSB filling

2700X-NOSMT

Processor: AMD Ryzen 7 2700X Eight-Core @ 3.70GHz (8 Cores), Motherboard: ASRock B450 Pro4 (P1.30 BIOS), Chipset: AMD 17h, Memory: 32768MB, Disk: 2 x 80GB INTEL SSDSC2CT08, Graphics: XFX AMD Radeon RX 470/480/570/570X/580/580X 4GB (1286/1750MHz), Audio: AMD Ellesmere, Monitor: SyncMaster, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.15.0-64-generic (x86_64), Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 19.0.8 (LLVM 8.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1680x1050

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Security Notes: 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 STIBP: disabled RSB filling

	2xG34	2xE5	FX-8350	C2D-E8600-3.33	O6276	O6328	i7-3770	i5-2520M	i5-2520M-HT	O6380	2700X-SMT	2700X-NOSMT
PostMark - D.T.P (TPS)	2366	3606	3333	2419	**2279**	2941	4716	3788	3807	2595	**6944**	6756
Normalized	34.07%	51.93%	48%	34.84%	32.82%	42.35%	67.91%	54.55%	54.82%	37.37%	100%	97.29%
Standard Deviation	1.4%	1.7%	1.3%	0.6%	1%			1.5%	0.9%	0.6%		
QGears2 - OpenGL - Text (FPS)	20.31	26.44	28.37	23.45	**18.52**	23.97	35.86	27.84	27.54	21.33	47.81	**47.82**
Normalized	42.47%	55.29%	59.33%	49.04%	38.73%	50.13%	74.99%	58.22%	57.59%	44.6%	99.98%	100%
Standard Deviation	0.7%	0.2%	0.7%	0.2%	0.6%	0.3%	0.2%	0.7%	0.4%	0.4%	0.1%	0.3%

test sample

QGears2 - OpenGL - Gears (FPS)	437	521	653	383	398	642	839	**373**	**373**	515	1418	**1471**
Normalized	29.71%	35.42%	44.39%	26.04%	27.06%	43.64%	57.04%	25.36%	25.36%	35.01%	96.4%	100%
Standard Deviation	0.5%	1.8%	2.8%	0.4%	1.5%	2.5%	1%	0.1%	0.7%	1.6%	1.5%	1.4%
QGears2 - OpenGL - Image Scaling (FPS)	3714	3368	4605	**940**	3489	4727	7921	1011	1012	4147	9884	**10594**
Normalized	35.06%	31.79%	43.47%	8.87%	32.93%	44.62%	74.77%	9.54%	9.55%	39.14%	93.3%	100%
Standard Deviation	5.7%	3%	1.9%	0.5%	2.1%	7.3%	1.3%	0.1%	0.2%	2.9%	3.5%	2.2%
QGears2 - CPU-based Raster - Text (FPS)	18.07	23.90	25.48	20.98	**16.50**	21.83	32.60	23.17	25.23	18.77	43.61	**43.68**
Normalized	41.37%	54.72%	58.33%	48.03%	37.77%	49.98%	74.63%	53.04%	57.76%	42.97%	99.84%	100%
Standard Deviation	0.1%	1.4%	0.2%	0.3%	0.3%	0.9%	0.1%	0.2%	0.3%	0.6%	0.1%	0.3%
QGears2 - CPU-based Raster - Gears (FPS)	141	178	187	170	**133**	167	273	170	216	147	343	**353**
Normalized	39.94%	50.42%	52.97%	48.16%	37.68%	47.31%	77.34%	48.16%	61.19%	41.64%	97.17%	100%
Standard Deviation	0.4%	0.1%	1.4%	0.2%	0.5%	1.4%	0.1%	1.4%	0.2%	0.1%	2.5%	0.7%
QGears2 - XRender Extension - Text (FPS)	32.75	47.02	46.74	38.42	**30.63**	40.79	63.37	42.26	48.79	34.79	86.02	**86.68**
Normalized	37.78%	54.25%	53.92%	44.32%	35.34%	47.06%	73.11%	48.75%	56.29%	40.14%	99.24%	100%
Standard Deviation	0.5%	0.3%	0.4%	0.4%	0.9%	1.8%	0.2%	1%	0.8%	0.6%	1.1%	0.7%
QGears2 - XRender Extension - Gears (FPS)	148	182	197	180	**138**	176	283	176	225	155	357	**359**
Normalized	41.23%	50.7%	54.87%	50.14%	38.44%	49.03%	78.83%	49.03%	62.67%	43.18%	99.44%	100%
Standard Deviation	0.4%	0.6%	1.7%	0.2%	1.2%	2.7%	0.4%	1.6%	0.5%	0.5%	1.2%	0.2%
QGears2 - CPU-based Raster - Image Scaling (FPS)	642	824	818	874	**606**	751	1375	933	987	669	**2759**	2454
Normalized	23.27%	29.87%	29.65%	31.68%	21.96%	27.22%	49.84%	33.82%	35.77%	24.25%	100%	88.95%
Standard Deviation	1.2%	0.2%	1.4%	0.4%	0.6%	1.3%	0.6%	0.2%	1.9%	1.1%	5%	11%
QGears2 - XRender Extension - Image Scaling	811	969	1043	1034	**778**	942	1605	1208	1239	839	**2776**	2767
Normalized	29.21%	34.91%	37.57%	37.25%	28.03%	33.93%	57.82%	43.52%	44.63%	30.22%	100%	99.68%
Standard Deviation	0.7%	0.4%	1%	0.2%	2.7%	0.6%	1.2%	0.8%	0.9%	0.7%	9%	7.8%
ET: Legacy - Default - 1680 x 1050 (FPS)	95.03	148.70	128.17	**23.50**	88.13	114.70	193.17	89.30	89.67	100.40	264.30	**269.07**
Normalized	35.32%	55.26%	47.63%	8.73%	32.75%	42.63%	71.79%	33.19%	33.33%	37.31%	98.23%	100%
Standard Deviation	0.4%	0.5%	0.1%	0%	0.8%	0.5%	0.6%	0.3%	0.4%	1.4%	0.3%	0.8%

test sample

ET: Legacy - Renderer2 - 1680 x 1050 (FPS)	79.87	133.94	97.37		73.93	95.17	169.50	**64.93**	65.07	82.70	**217.53**	217.37
Normalized	36.72%	61.57%	44.76%		33.99%	43.75%	77.92%	29.85%	29.91%	38.02%	100%	99.93%
Standard Deviation	0.3%	2.8%	0.5%		0.5%	0.6%	0.1%	0.2%	0.2%	0.1%	1.5%	0.1%
OpenArena - 1920 x 1080 (FPS)	96.87	151.23	102.27	**49.57**	97.83	129.13	221.60	150.50	150.87	111.17	311.77	**323.60**
Normalized	29.94%	46.73%	31.6%	15.32%	30.23%	39.9%	68.48%	46.51%	46.62%	34.35%	96.34%	100%
Standard Deviation	1.8%	1.4%	0.4%	0.1%	0.5%	1.4%	0.6%	0.2%	0.5%	0.6%	1.7%	1.3%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Candela City (FPS)	56.27	25.42	28.11	16.37	87.06	104.87	123.28	**5.82**	**5.82**	96.55	127.72	**128.38**
Normalized	43.83%	19.8%	21.9%	12.75%	67.81%	81.69%	96.03%	4.53%	4.53%	75.21%	99.49%	100%
Standard Deviation	0.4%	0.3%	1.7%	2%	2%	2.4%	0.8%	1.5%	1.2%	0.6%	0.3%	0.7%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Cocoa Temple (FPS)	53.71	27.80	34.08	13.30	76.10	98.76	119.00	5.42	**5.33**	87.43	**121.56**	120.08
Normalized	44.18%	22.87%	28.04%	10.94%	62.6%	81.24%	97.89%	4.46%	4.38%	71.92%	100%	98.78%
Standard Deviation	1.3%	1.1%	0.4%	4.9%	2.7%	1.6%	1.2%	0.7%	0.9%	2.9%	1.1%	0.9%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - STK Enterprise (FPS)	65.97	34.72	48.09	36.72	114.67	131.94	144.61	**6.40**	6.44	125.40	**150.50**	148.44
Normalized	43.83%	23.07%	31.95%	24.4%	76.19%	87.67%	96.09%	4.25%	4.28%	83.32%	100%	98.63%
Standard Deviation	1.5%	2%	3.4%	2.5%	3%	2.2%	0.7%	0.4%	0.2%	2.1%	1.7%	1%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Antediluvian Abyss (FPS)	59.79	27.05	32.59	24.34	103.24	114.24	129.50	5.91	**5.85**	111.00	**132.77**	131.61
Normalized	45.03%	20.37%	24.55%	18.33%	77.76%	86.04%	97.54%	4.45%	4.41%	83.6%	100%	99.13%
Standard Deviation	0.4%	1.7%	2.1%	2.2%	0.9%	1.2%	1%	0.3%	0.9%	0.3%	1%	0.9%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Cornfield Crossing (FPS)	63.14	31.41	39.50	20.34	108.09	121.24	136.79	6.33	**6.30**	113.92	140.28	**141.26**
Normalized	44.7%	22.24%	27.96%	14.4%	76.52%	85.83%	96.84%	4.48%	4.46%	80.65%	99.31%	100%
Standard Deviation	0.8%	0.2%	1.8%	1.5%	0.3%	1%	0.4%	0.5%	0.2%	0.5%	0.2%	0.5%

test sample

SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - O.s.M.C	75.20	39.10	55.47	48.44	128.59	146.54	161.08	**7.18**	**7.18**	139.44	**166.88**	166.59
Normalized	45.06%	23.43%	33.24%	29.03%	77.06%	87.81%	96.52%	4.3%	4.3%	83.56%	100%	99.83%
Standard Deviation	2.7%	0.8%	2.1%	2.1%	1.8%	2.3%	2%	1.2%	2%	2.3%	1.3%	1.7%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - G.P.I (FPS)	57.97	29.41	36.12	18.03	90.88	107.38	128.50	**6.14**	6.20	98.65	131.32	**131.90**
Normalized	43.95%	22.3%	27.38%	13.67%	68.9%	81.41%	97.42%	4.66%	4.7%	74.79%	99.56%	100%
Standard Deviation	0.6%	0.9%	0.7%	1.1%	2.7%	1%	0.4%	1%	0.3%	0.2%	0.5%	0.4%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - A.t.L (FPS)	69.07	36.76	50.28	25.18	120.39	135.83	154.49	**6.61**	6.65	128.56	**159.80**	158.23
Normalized	43.22%	23%	31.46%	15.76%	75.34%	85%	96.68%	4.14%	4.16%	80.45%	100%	99.02%
Standard Deviation	1.9%	0.5%	2.9%	1.4%	1.5%	1.8%	0.7%	0.1%	0.9%	2.3%	0.7%	0.7%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Hacienda (FPS)	74.72	40.33	59.28	46.84	125.75	140.57	162.84	7.23	**7.22**	135.60	166.64	**166.67**
Normalized	44.83%	24.2%	35.57%	28.1%	75.45%	84.34%	97.7%	4.34%	4.33%	81.36%	99.98%	100%
Standard Deviation	3.2%	1.6%	1.8%	2.9%	0.5%	2.5%	0.6%	2%	0.7%	1.3%	1.8%	1.2%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Old Mine (FPS)	59.20	33.33	47.65	31.89	101.80	116.26	131.02	6.35	**6.31**	110.68	136.53	**137.51**
Normalized	43.05%	24.24%	34.65%	23.19%	74.03%	84.55%	95.28%	4.62%	4.59%	80.49%	99.29%	100%
Standard Deviation	0.9%	0.5%	0.3%	3.4%	2.3%	0.3%	0.7%	0.5%	0.8%	1.1%	0.1%	0.3%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Zen Garden (FPS)	64.66	35.36	50.76	30.24	114.09	125.93	142.30	6.39	**6.35**	121.46	**146.78**	145.90
Normalized	44.05%	24.09%	34.58%	20.6%	77.73%	85.8%	96.95%	4.35%	4.33%	82.75%	100%	99.4%
Standard Deviation	1.2%	2.6%	1.9%	1.6%	1.6%	1.6%	1.2%	1%	1.2%	2.9%	1.5%	0.4%
Urban Terror - 1680 x 1050 (FPS)	318	420	412	**69.40**	298.30	403.90	701.63	246.60	243.63	333.25	913.77	**923.40**
Normalized	34.44%	45.48%	44.62%	7.52%	32.3%	43.74%	75.98%	26.71%	26.38%	36.09%	98.96%	100%
Standard Deviation	1%	1.5%	1.5%	2.7%	2.2%	2.9%	0.9%	2.8%	0.2%	2.9%	1%	0.8%

test sample

Unreal Tournament 2004 Demo - AS-Convoy Botmatch - 1680 x 1050 (FPS)	93.05	130.67	127.56	**24.30**	86.80	115.84	168.74	76.56	76.42	104.78	220.00	**223.40**
Normalized	41.65%	58.49%	57.1%	10.88%	38.85%	51.85%	75.53%	34.27%	34.21%	46.9%	98.48%	100%
Standard Deviation	1.3%	4%	0.7%	0.1%	2.4%	1.5%	0.3%	0.2%	0.7%	1.9%	0.4%	0.3%
Unreal Tournament 2004 Demo - DM-Rankin Botmatch - 1680 x 1050 (FPS)	167	227	226	**32.52**	152.65	202.54	306.41	115.09	116.23	184.30	391.56	**407.26**
Normalized	41.01%	55.74%	55.49%	7.99%	37.48%	49.73%	75.24%	28.26%	28.54%	45.25%	96.14%	100%
Standard Deviation	0.4%	6%	2.3%	0.9%	1.3%	4.7%	0.7%	2.1%	0.2%	2.7%	3.6%	2.9%
Unreal Tournament 2004 Demo - O.T.B - 1680 x 1050 (FPS)	109	149	152	**24.47**	100.22	137.73	201.95	83.61	83.46	123.18	258.26	**264.93**
Normalized	41.14%	56.24%	57.37%	9.24%	37.83%	51.99%	76.23%	31.56%	31.5%	46.5%	97.48%	100%
Standard Deviation	0.3%	5.4%	0.5%	0%	1.5%	0.4%	0.9%	0.1%	0.3%	2.3%	0.9%	0.6%
Unreal Tournament 2004 Demo - B.C.B - 1680 x 1050 (FPS)	135	174	187	**28.54**	129.04	170.75	238.72	97.25	95.83	151.28	328.81	**332.33**
Normalized	40.62%	52.36%	56.27%	8.59%	38.83%	51.38%	71.83%	29.26%	28.84%	45.52%	98.94%	100%
Standard Deviation	6.3%	7.8%	4.2%	2.5%	5.3%	4.8%	4.7%	4.1%	5%	7.5%	6.2%	1.3%
Unreal Tournament 2004 Demo - C.F.B - 1680 x 1050 (FPS)	156	213	213	**28.95**	145.97	195.88	292.33	111.89	112.85	176.02	385.68	**393.50**
Normalized	39.64%	54.13%	54.13%	7.36%	37.1%	49.78%	74.29%	28.43%	28.68%	44.73%	98.01%	100%
Standard Deviation	1.1%	1.5%	0.4%	0.3%	2%	0.9%	0.2%	1%	0.3%	1.8%	1.2%	0.8%
Unreal Tournament 2004 Demo - C.B.B - 1680 x 1050 (FPS)	215	291	294	**38.58**	198.49	269.46	406.22	143.84	143.88	240.36	548.38	**553.47**
Normalized	38.85%	52.58%	53.12%	6.97%	35.86%	48.69%	73.4%	25.99%	26%	43.43%	99.08%	100%
Standard Deviation	0.9%	5%	0.9%	0%	0.5%	0.5%	0.4%	0.2%	0.2%	1%	1.4%	1.3%
Stream - Copy (MB/s)	**63622**	59058	17987	**6857**	23959	31293	18811	20785	20067	32261	30627	32935
Normalized	100%	92.83%	28.27%	10.78%	37.66%	49.19%	29.57%	32.67%	31.54%	50.71%	48.14%	51.77%
Standard Deviation	1.5%	1.3%	0%	0%	3%	2.2%	0.1%	0%	0%	1.2%	0.2%	0.1%

Phoronix Test Suite

test sample

Stream - Scale (MB/s)	**40426**	39552	11176	**4225**	15472	21174	13610	14170	13848	20420	20119	20982
Normalized	100%	97.84%	27.65%	10.45%	38.27%	52.38%	33.67%	35.05%	34.26%	50.51%	49.77%	51.9%
Standard Deviation	1.4%	1.1%	0%	0.1%	2.1%	1%	0.2%	0%	0%	0.9%	0.1%	0.1%
Stream - Triad (MB/s)	43961	**44652**	12499	**5365**	17780	23381	15325	15805	15394	22274	23833	24519
Normalized	98.45%	100%	27.99%	12.02%	39.82%	52.36%	34.32%	35.4%	34.48%	49.88%	53.37%	54.91%
Standard Deviation	1.3%	1.1%	0%	0.1%	1.5%	1.4%	0.1%	0%	0.1%	1.7%	0.1%	0.2%
Stream - Add (MB/s)	44024	**45316**	12521	**5375**	16742	23258	15400	15819	15423	22484	24045	24757
Normalized	97.15%	100%	27.63%	11.86%	36.95%	51.32%	33.98%	34.91%	34.03%	49.62%	53.06%	54.63%
Standard Deviation	1.6%	1%	0%	0.1%	1.7%	0.5%	0.2%	0%	0.1%	0.9%	0.2%	0.2%
NAS Parallel Benchmarks - BT.A (Mop/s)	1926	2362	2661	2213	**1702**	2308	3591	2894	2895	1924	5546	**5604**
Normalized	34.37%	42.15%	47.48%	39.49%	30.37%	41.18%	64.08%	51.64%	51.66%	34.33%	98.97%	100%
Standard Deviation	0.3%	0.2%	0.2%	0.1%	0.3%	0.4%	0.3%	0.2%	0%	0.7%	0.4%	1.1%
NAS Parallel Benchmarks - EP.C (Mop/s)	347	**474**	126	**65.93**	152.38	107.24	193.71	73.96	74.05	171.32	321.25	321.91
Normalized	73.21%	100%	26.58%	13.91%	32.15%	22.62%	40.87%	15.6%	15.62%	36.14%	67.77%	67.91%
Standard Deviation	1.5%	0.4%	0.2%	1.2%	0.9%	0%	0.5%	0.3%	0.3%	0%	0.1%	0.1%
NAS Parallel Benchmarks - FT.A (Mop/s)	2867	6129	3642	**1431**	3236	3580	5260	3088	3099	3706	**6236**	6214
Normalized	45.97%	98.28%	58.4%	22.95%	51.89%	57.41%	84.35%	49.52%	49.7%	59.43%	100%	99.65%
Standard Deviation	2.6%	0.5%	0.2%	0.1%	3%	2.9%	0.1%	0.4%	0.1%	4.8%	0.1%	0.6%
NAS Parallel Benchmarks - FT.B (Mop/s)	3349	6524	3657	**1499**	2930	3321	5410	3118	3118	3769	**6917**	6914
Normalized	48.42%	94.32%	52.87%	21.67%	42.36%	48.01%	78.21%	45.08%	45.08%	54.49%	100%	99.96%
Standard Deviation	0.7%	1.5%	1.5%	0.3%	1.7%	4.4%	0.1%	0.3%	0.2%	2.9%	0.1%	0.2%
NAS Parallel Benchmarks - LU.A (Mop/s)	20701	**21526**	7525	**3421**	10438	7962	9698	4387	4375	11799	15950	16921
Normalized	96.17%	100%	34.96%	15.89%	48.49%	36.99%	45.05%	20.38%	20.32%	54.81%	74.1%	78.61%
Standard Deviation	11%	0.2%	1%	0.1%	0.2%	7.2%	0.5%	0.5%	0.2%	1.8%	1.2%	0.9%
NAS Parallel Benchmarks - LU.C (Mop/s)	**22730**	22105	4779	**1684**	7792	6654	5247	4279	4280	9750	8333	8406
Normalized	100%	97.25%	21.03%	7.41%	34.28%	29.27%	23.08%	18.83%	18.83%	42.89%	36.66%	36.98%
Standard Deviation	1.4%	0.2%	0.6%	0.3%	2.9%	4.4%	0.9%	0.2%	0.1%	3%	1.1%	0.7%
NAS Parallel Benchmarks - SP.A (Mop/s)	1075	1756	1464	977	**967**	1254	2245	1882	1879	1074	2929	**3177**
Normalized	33.84%	55.27%	46.08%	30.75%	30.44%	39.47%	70.66%	59.24%	59.14%	33.81%	92.19%	100%
Standard Deviation	0.5%	0.3%	0.1%	0.1%	0.3%	0.5%	0.9%	0.1%	0.2%	0.2%	2.7%	0.1%

test sample

NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	2.35464	**1.85031**	5.96895	**18.46840**	5.26415	7.23904	5.13182	13.33650	12.04487	4.65458	2.32467	2.77758
Normalized	78.58%	100%	31%	10.02%	35.15%	25.56%	36.06%	13.87%	15.36%	39.75%	79.59%	66.62%
Standard Deviation	0.2%	0.3%	0.2%	0.2%	0.2%	0%	0.2%	0.3%	0.1%	0.2%	0.2%	0.3%
BLAKE2 (Cycles/Byte)	7.81	4.94	**9.41**	6.82	7.13	8.24	5.49	**4.93**	**4.93**	7.26	8.98	9.00
Normalized	63.12%	99.8%	52.39%	72.29%	69.14%	59.83%	89.8%	100%	100%	67.91%	54.9%	54.78%
Standard Deviation	0.1%	11.2%	0.1%	0.2%	0%	2.9%	0.1%	0.1%	0%	0.1%	0.9%	2.1%
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	241	**349**	150	60.44	151.64	119.41	154.79	**56.56**	73.37	167.43	332.86	266.72
Normalized	69.05%	100%	42.98%	17.32%	43.45%	34.21%	44.35%	16.21%	21.02%	47.97%	95.38%	76.42%
Standard Deviation	1.2%	0.1%	0.1%	0.2%	0.3%	0.4%	0.7%	0.2%	0.3%	0.2%	0.4%	0.1%
SVT-AV1 - 1.8.b.Y.T.A.V.E (FPS)	5.51	5.31	2.62		2.88	2.15	2.10	**0.79**	0.93	3.26	**25.40**	20.62
Normalized	21.69%	20.91%	10.31%		11.34%	8.46%	8.27%	3.11%	3.66%	12.83%	100%	81.18%
Standard Deviation	0.2%	0.3%	0.2%		0.6%	0.1%	0.4%	0.1%	0.1%	0.2%	0.3%	1.1%
SVT-HEVC - 1.8.b.Y.T.H.V.E (FPS)	8.78	13.72	4.21	**1.98**	4.99	3.55	5.57	**1.98**	2.17	5.50	**143.34**	116.68
Normalized	6.13%	9.57%	2.94%	1.38%	3.48%	2.48%	3.89%	1.38%	1.51%	3.84%	100%	81.4%
Standard Deviation	0.1%	0%	0.1%	0%	0.1%	0%	0.2%	0%	0%	0.1%	0.2%	4.7%
x264 - H.2.V.E (FPS)	68.37	63.58	30.80	**9.76**	34.25	25.46	23.76	10.75	12.21	38.66	**77.16**	57.83
Normalized	88.61%	82.4%	39.92%	12.65%	44.39%	33%	30.79%	13.93%	15.82%	50.1%	100%	74.95%
Standard Deviation	0.5%	1.5%	0.5%	0%	0.2%	0.5%	3%	2.3%	1.2%	0.5%	0.6%	2.9%
GraphicsMagick - Swirl (Iterations/min)	117	153	124	**60**	102	109	131	67	78	113	**219**	205
Normalized	53.42%	69.86%	56.62%	27.4%	46.58%	49.77%	59.82%	30.59%	35.62%	51.6%	100%	93.61%
Standard Deviation		0.7%			0.6%	0.5%					0.3%	0.3%
GraphicsMagick - Rotate (Iterations/min)	127	176	164	139	**124**	148	220	169	169	133	251	**253**
Normalized	50.2%	69.57%	64.82%	54.94%	49.01%	58.5%	86.96%	66.8%	66.8%	52.57%	99.21%	100%
Standard Deviation	0.5%	0.7%									0.2%	0.8%
GraphicsMagick - Sharpen (Iterations/min)	96	119	72	38	68	61	77	**36**	37	75	**143**	142
Normalized	67.13%	83.22%	50.35%	26.57%	47.55%	42.66%	53.85%	25.17%	25.87%	52.45%	100%	99.3%
Standard Deviation	1%	0.5%										
GraphicsMagick - Enhanced (Iterations/min)	99	106	76	32	72	66	83	**29**	30	79	**169**	163
Normalized	58.58%	62.72%	44.97%	18.93%	42.6%	39.05%	49.11%	17.16%	17.75%	46.75%	100%	96.45%
Standard Deviation		0.5%										

test sample

GraphicsMagick - Resizing (Iterations/min)	131	173	157	**99**	123	137	186	117	121	132	247	**254**
Normalized	51.57%	68.11%	61.81%	38.98%	48.43%	53.94%	73.23%	46.06%	47.64%	51.97%	97.24%	100%
Standard Deviation		1.3%								0.4%	8.4%	0.2%
GraphicsMagick - Noise-Gaussian (Iterations/min)	85	109	59	**20**	58	51	59	26	32	64	**130**	111
Normalized	65.38%	83.85%	45.38%	15.38%	44.62%	39.23%	45.38%	20%	24.62%	49.23%	100%	85.38%
Standard Deviation		1.4%					1.9%					
GraphicsMagick - HWB Color Space	138	156	160	**118**	130	142	211	130	131	140	**268**	262
Normalized	51.49%	58.21%	59.7%	44.03%	48.51%	52.99%	78.73%	48.51%	48.88%	52.24%	100%	97.76%
Standard Deviation		2.9%									0.2%	0.2%
7-Zip Compression - C.S.T (MIPS)	**48721**	45435	22049	6039	23983	18151	15960	**5853**	8260	27503	37244	35001
Normalized	100%	93.26%	45.26%	12.4%	49.23%	37.25%	32.76%	12.01%	16.95%	56.45%	76.44%	71.84%
Standard Deviation	1.6%	1%	0.5%	0.3%	0.7%	0.3%	1.2%	0.1%	0.3%	1.2%	0.8%	1.4%
Stockfish - Total Time (Nodes/s)	**246117 89**	242676 70	102105 65		111230 07	850967 6	780462 1	**307136 2**	379540 1	131202 52	230906 65	172854 83
Normalized	100%	98.6%	41.49%		45.19%	34.58%	31.71%	12.48%	15.42%	53.31%	93.82%	70.23%
Standard Deviation	0.9%	0.7%	0.6%		0.9%	1.4%	1.6%	1.6%	2.1%	0.3%	1.3%	2.1%
Swet - Average (Operations/sec)	274062 809	481406 883	377403 508	441991 654	**270257 192**	329055 712	624322 910	481495 468	480578 618	286722 506	737370 944	**747763 427**
Normalized	36.65%	64.38%	50.47%	59.11%	36.14%	44.01%	83.49%	64.39%	64.27%	38.34%	98.61%	100%
Standard Deviation	0.6%	2.9%	1.4%	0.9%	3.5%	1.4%	2.3%	2.2%	0.6%	1.3%	2.9%	1.2%
Timed GCC Compilation - Time To Compile (sec)	1670	1355	1885	**4883**	2221	2197	2096	4818	4092	1873	**1021**	1142
Normalized	61.14%	75.35%	54.16%	20.91%	45.97%	46.47%	48.71%	21.19%	24.95%	54.51%	100%	89.4%
Standard Deviation	0.1%	0.3%	0.1%	0%	0.3%	0.3%	1.7%	0.2%	0.8%	0.1%	0.5%	0.1%
Timed Linux Kernel Compilation - Time To Compile (sec)	93.05	95.02	193.03	**649.02**	176.53	225.11	252.53	628.22	529.24	150.79	**84.61**	107.25
Normalized	90.93%	89.04%	43.83%	13.04%	47.93%	37.59%	33.5%	13.47%	15.99%	56.11%	100%	78.89%
Standard Deviation	2.9%	2.9%	1.2%	0.4%	2.5%	1.4%	1%	0.5%	0.7%	2.4%	1.6%	1.4%
Parallel BZIP2 Compression - 2.F.C (sec)	**4.14**	4.38	9.05	28.86	8.12	10.96	12.28	**30.86**	24.10	7.22	4.31	5.59
Normalized	100%	94.52%	45.75%	14.35%	50.99%	37.77%	33.71%	13.42%	17.18%	57.34%	96.06%	74.06%
Standard Deviation	0.2%	0.4%	0.6%	2.9%	0.8%	1%	8.7%	2%	1.5%	0.3%	0.4%	5.9%

Phoronix Test Suite

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Rust Prime Benchmark - P.N.T.T.2.0.0 (sec)	**26.18**	26.19	51.03	101.71	60.25	60.04	55.70	**149.23**	147.45	37.58	41.40	41.51
Normalized	100%	99.96%	51.3%	25.74%	43.45%	43.6%	47%	17.54%	17.76%	69.66%	63.24%	63.07%
Standard Deviation	0.1%	0.6%	0%	0%	0.1%	0.1%	0%	0.1%	0%	0.1%	0.1%	0%
Smallpt - G.I.R.1.S (sec)	15.26	14.71	38.73	**136.50**	33.75	45.90	42.92	112.80	91.41	30.00	**12.44**	17.18
Normalized	81.52%	84.57%	32.12%	9.11%	36.86%	27.1%	28.98%	11.03%	13.61%	41.47%	100%	72.41%
Standard Deviation	0.2%	0.2%	0.3%	0.1%	0.1%	0.1%	0.1%	1.7%	0.2%	0.4%	0.3%	0.5%
Y-Cruncher - C.5.P.D (sec)	47.74	48.72	102.60	**442.55**	91.54	125.51	115.83	292.92	275.26	81.24	**36.18**	41.41
Normalized	75.79%	74.26%	35.26%	8.18%	39.52%	28.83%	31.24%	12.35%	13.14%	44.53%	100%	87.37%
Standard Deviation	0.5%	0.3%	0.2%	0%	0.1%	0.1%	0%	0%	0.1%	0.2%	0.2%	0.5%
Gzip Compression - L.S.T.A.T.t.g	75.70	45.27	54.92	50.41	**81.36**	63.67	38.63	48.32	48.24	71.60	34.70	**34.48**
Normalized	45.55%	76.17%	62.78%	68.4%	42.38%	54.15%	89.26%	71.36%	71.48%	48.16%	99.37%	100%
Standard Deviation	0.1%	1.5%	0.3%	0.7%	0.2%	0.7%	0.6%	0.7%	0.7%	0.4%	0.7%	1%
FLAC Audio Encoding - WAV To FLAC (sec)	22.51	16.38	18.73	**25.92**	24.15	20.60	13.22	17.14	17.31	23.40	**10.70**	10.74
Normalized	47.53%	65.32%	57.13%	41.28%	44.31%	51.94%	80.94%	62.43%	61.81%	45.73%	100%	99.63%
Standard Deviation	0.9%	1.4%	1.2%	0.5%	0.7%	1.2%	2.1%	1.4%	1.2%	0.7%	2.2%	1%
Hackbench - 8 - Thread (sec)	34.27	27.75	66.36	**199.15**	66.28	82.30	85.05	198.04	159.71	59.19	**18.41**	32.99
Normalized	53.72%	66.34%	27.74%	9.24%	27.78%	22.37%	21.65%	9.3%	11.53%	31.1%	100%	55.8%
Standard Deviation	1.5%	3.5%	4.6%	0.4%	2.5%	1.5%	2.6%	0.4%	0.2%	1%	10.1%	2.3%
Hackbench - 8 - Process (sec)	23.50	26.11	57.60	189.80	46.48	62.04	83.19	**195.30**	160.53	42.00	**17.21**	33.00
Normalized	73.23%	65.91%	29.88%	9.07%	37.03%	27.74%	20.69%	8.81%	10.72%	40.98%	100%	52.15%
Standard Deviation	1.1%	0.9%	4.6%	0.8%	2.8%	4.8%	2.1%	0.4%	0.8%	5.2%	6.2%	6.3%
m-queens - Time To Solve (sec)	73.04	80.80	184.44	**746.56**	164.91	216.65	260.22	697.40	516.46	140.01	**71.77**	113.08
Normalized	98.26%	88.82%	38.91%	9.61%	43.52%	33.13%	27.58%	10.29%	13.9%	51.26%	100%	63.47%
Standard Deviation	0.3%	0.1%	0%	0%	0.4%	0.1%	0%	0%	0%	0%	0.1%	0.1%
Mencoder - AVI To LAVC (sec)	36.06	24.05	26.51	31.00	**38.93**	29.90	20.27	26.19	26.30	34.05	16.92	**16.90**
Normalized	46.87%	70.27%	63.75%	54.52%	43.41%	56.52%	83.37%	64.53%	64.26%	49.63%	99.88%	100%
Standard Deviation	0.2%	1.5%	1%	0.5%	0.8%	0.2%	0.8%	0.4%	0.4%	0.1%	0.8%	0.5%
Minion - Graceful (sec)	100.13	72.37	70.36	77.12	**104.23**	78.08	60.19	76.62	77.08	88.26	43.09	**42.97**
Normalized	42.91%	59.38%	61.07%	55.72%	41.23%	55.03%	71.39%	56.08%	55.75%	48.69%	99.72%	100%
Standard Deviation	0.1%	0.7%	0.8%	0.3%	0.5%	0.2%	0.3%	0.2%	0.4%	0.2%	1.4%	0.6%
Minion - Solitaire (sec)	149.87	97.23	105.72	110.33	**161.41**	117.89	78.31	100.85	102.24	135.59	65.76	**64.40**
Normalized	42.97%	66.23%	60.92%	58.37%	39.9%	54.63%	82.24%	63.86%	62.99%	47.5%	97.93%	100%
Standard Deviation	0.8%	0.7%	0.7%	0.4%	0.7%	0.7%	0.6%	0.7%	0.6%	0.1%	3.7%	1.4%
Minion - Quasigroup	236	160	171	177	**252**	190	132	165	168	220	**112**	113
Normalized	47.46%	70%	65.5%	63.28%	44.44%	58.95%	84.85%	67.88%	66.67%	50.91%	100%	99.12%
Standard Deviation	0.3%	0.4%	0.8%	0.6%	0.4%	0.4%	0.2%	0.3%	0.8%	0.2%	0.6%	0.4%

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N-Queens - Elapsed Time (sec)	**13.57**	14.34	34.22	**135.56**	30.95	39.70	51.24	131.09	91.32	25.58	14.30	24.36
Normalized	100%	94.63%	39.66%	10.01%	43.84%	34.18%	26.48%	10.35%	14.86%	53.05%	94.9%	55.71%
Standard Deviation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%	0%
Tachyon - Total Time (sec)	7.27	**5.55**	17.34	**65.25**	16.26	20.72	16.81	44.12	35.16	13.40	5.57	8.06
Normalized	76.34%	100%	32.01%	8.51%	34.13%	26.79%	33.02%	12.58%	15.78%	41.42%	99.64%	68.86%
Standard Deviation	0.4%	0.2%	0.2%	0.7%	0.3%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.3%
glibc bench - cos (nanoseconds)	108064	50157	81177	89084	**116470**	89815	43720	54570	56334	102974	**40307**	40519
Normalized	37.3%	80.36%	49.65%	45.25%	34.61%	44.88%	92.19%	73.86%	71.55%	39.14%	100%	99.48%
Standard Deviation	0%	0.4%	0.9%	0.7%	0.1%	0.1%	0%	0.1%	0.7%	0.2%	0.1%	1.7%
glibc bench - ffs (nanoseconds)	3.61	2.86	2.34	2.88	**6.76**	2.67	2.49	3.06	3.08	3.06	**1.81**	**1.81**
Normalized	50.14%	63.29%	77.35%	62.85%	26.78%	67.79%	72.69%	59.15%	58.77%	59.15%	100%	100%
Standard Deviation	12.3%	0.8%	0.4%	0.1%	48.9%	5%	0.2%	0.1%	0.1%	6.6%	0.1%	0.3%
glibc bench - sin (nanoseconds)	107594	50090	80573	88085	**115975**	89642	43702	54428	55742	103596	**40348**	40535
Normalized	37.5%	80.55%	50.08%	45.81%	34.79%	45.01%	92.33%	74.13%	72.38%	38.95%	100%	99.54%
Standard Deviation	0.2%	0.2%	0.2%	0.3%	0.1%	0.2%	0.1%	0%	0.6%	0.6%	0.2%	0.4%
glibc bench - sqrt	**6.55**	5.72	3.38	5.33	6.14	3.77	3.66	6.16	6.18	4.22	1.98	**1.97**
Normalized	30.08%	34.44%	58.28%	36.96%	32.08%	52.25%	53.83%	31.98%	31.88%	46.68%	99.49%	100%
Standard Deviation	55.2%	0.8%	0.3%	0%	55.6%	0.5%	0.2%	0%	0.1%	0.2%	0.7%	0.4%
glibc bench - tanh	**46.79**	22.91	31.00	31.22	42.93	34.60	18.80	24.76	25.52	38.90	13.27	**13.25**
Normalized	28.32%	57.84%	42.74%	42.44%	30.86%	38.29%	70.48%	53.51%	51.92%	34.06%	99.85%	100%
Standard Deviation	15.6%	0.9%	0.2%	0.2%	0.9%	0.2%	0.3%	0.2%	2.8%	0.1%	0%	0.4%
glibc bench - ffsll	4.25	3.14	2.48	3.18	**5.13**	2.78	2.74	3.38	3.39	3.10	**1.80**	1.81
Normalized	42.35%	57.32%	72.58%	56.6%	35.09%	64.75%	65.69%	53.25%	53.1%	58.06%	100%	99.45%
Standard Deviation	37.9%	1.1%	1.3%	0.1%	52.1%	1.4%	0.2%	0.3%	0.4%	2.4%	0.5%	0.7%
glibc bench - pthread_once (nanoseconds)	3.89	2.86	2.36	2.96	**4.21**	2.61	2.49	3.06	3.06	2.91	**1.80**	**1.80**
Normalized	46.27%	62.94%	76.27%	60.81%	42.76%	68.97%	72.29%	58.82%	58.82%	61.86%	100%	100%
Standard Deviation	47%	1.5%	2.8%	10.5%	44.3%	8.4%	0.3%	0.3%	0.2%	5.2%	0.5%	0.7%
Cryptsetup - PBKDF2-sha512 (Iterations/sec)	683882	920883	851130	775210	**626200**	773369	1082250	842908	829752	674297	1271517	**1273080**
Normalized	53.44%	71.95%	66.5%	60.57%	48.93%	60.43%	84.56%	65.86%	64.83%	52.69%	99.35%	99.47%
Standard Deviation	0.8%	0.2%	0.5%	0.6%	1.2%	1.3%	1.3%	0.2%	1.8%	1.6%	0.2%	0.5%
Cryptsetup - PBKDF2-whirlpool	278516	538099	390483	493990	**264808**	350160	611298	493679	478939	300971	833120	**833527**
Normalized	33.41%	64.56%	46.85%	59.27%	31.77%	42.01%	73.34%	59.23%	57.46%	36.11%	99.95%	100%
Standard Deviation	2.7%	0.1%	0.2%	0.1%	1%	0.7%	0.2%		4.2%	0.3%	0.8%	0.2%
Darktable - Boat - OpenCL (sec)	11.40	**10.27**	24.60	**64.73**	20.40	23.80	21.47	44.56	43.47	17.92	12.42	11.45
Normalized	90.09%	100%	41.75%	15.87%	50.34%	43.15%	47.83%	23.05%	23.63%	57.31%	82.69%	89.69%
Standard Deviation	2.8%	0.2%	0.4%	0.1%	0.7%	2.3%	0.2%	0.1%	0.1%	1.1%	0.1%	0.3%

Phoronix Test Suite

test sample

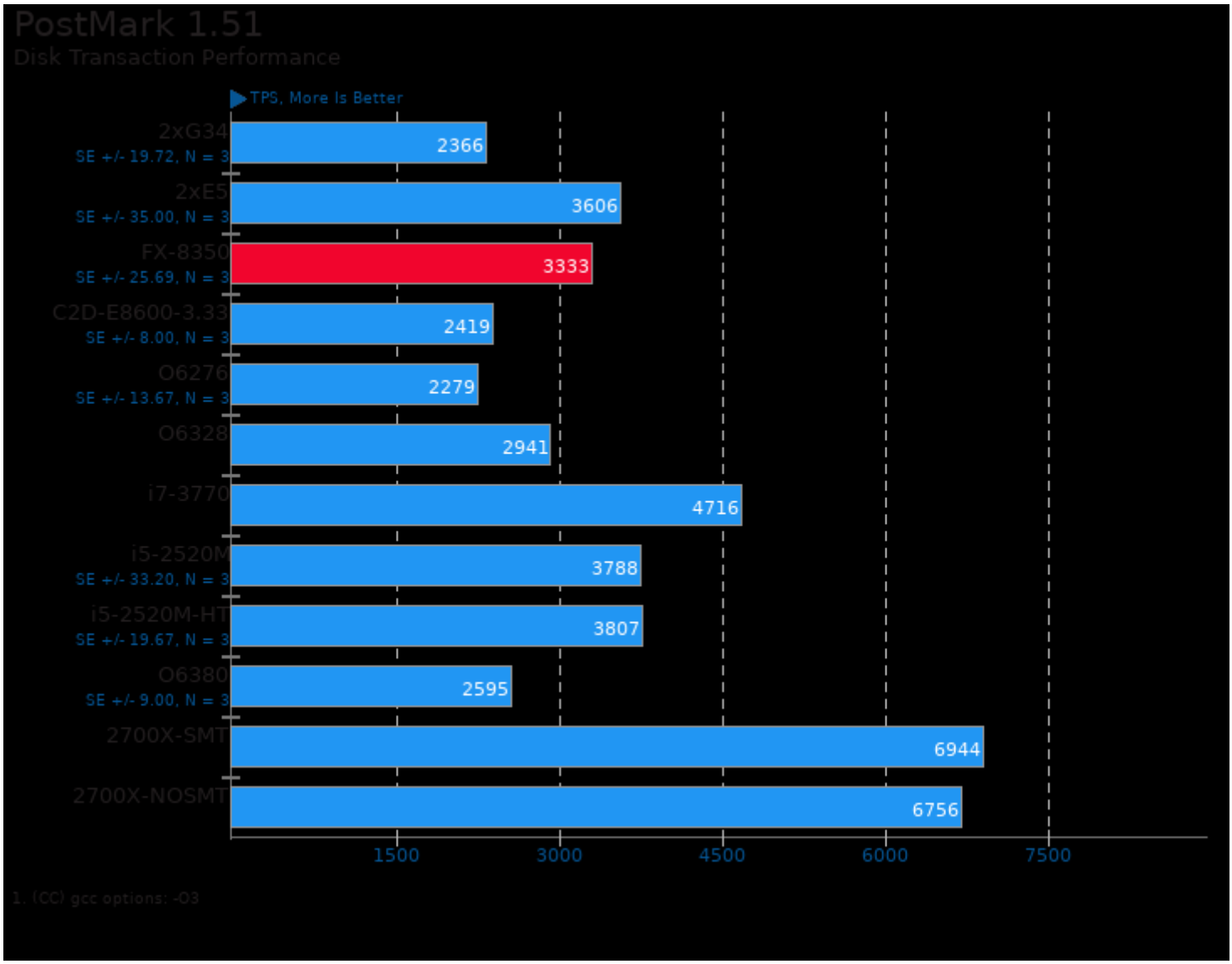
Darktable - Boat - CPU-only (sec)	11.05	**10.35**	24.48	**64.73**	20.34	23.82	21.47	44.57	43.44	17.93	12.42	11.43
Normalized	93.67%	100%	42.28%	15.99%	50.88%	43.45%	48.21%	23.22%	23.83%	57.72%	83.33%	90.55%
Standard Deviation	0.8%	0.7%	0.1%	0.1%	0.4%	1.7%	0%	0.1%	0.1%	0.9%	0.1%	0.2%
Darktable - Masskrug - OpenCL (sec)	11.76	8.63	15.52	**40.40**	16.14	18.33	14.41	32.61	27.65	14.53	**7.25**	7.94
Normalized	61.65%	84.01%	46.71%	17.95%	44.92%	39.55%	50.31%	22.23%	26.22%	49.9%	100%	91.31%
Standard Deviation	2.3%	0.8%	0.1%	0.1%	2.9%	1%	0%	0.1%	0.1%	2.1%	0.6%	0.7%
Darktable - Masskrug - CPU-only (sec)	11.48	8.70	15.51	**40.36**	15.74	18.62	14.42	32.81	27.69	14.42	**7.21**	7.94
Normalized	62.8%	82.87%	46.49%	17.86%	45.81%	38.72%	50%	21.98%	26.04%	50%	100%	90.81%
Standard Deviation	0.3%	2.8%	0.1%	0%	0.3%	1.9%	0.1%	0.9%	0.2%	0.6%	0.2%	0.1%
Darktable - Server Rack - OpenCL (sec)	0.22	**0.19**	0.42	**1.02**	0.36	0.41	0.35	0.81	0.71	0.32	**0.19**	0.21
Normalized	86.36%	100%	45.24%	18.63%	52.78%	46.34%	54.29%	23.46%	26.76%	59.38%	100%	90.48%
Standard Deviation	2%	0.5%	1.1%	0.3%	2.1%	2.8%	0.3%	1.4%	0.4%	2.7%	0.3%	0.5%
Darktable - Server Room - OpenCL (sec)	5.89	4.84	11.30	**27.53**	10.36	12.35	9.77	23.89	22.64	8.85	**4.16**	4.33
Normalized	70.63%	85.95%	36.81%	15.11%	40.15%	33.68%	42.58%	17.41%	18.37%	47.01%	100%	96.07%
Standard Deviation	1.1%	0.8%	0.4%	0.2%	0.5%	0.6%	0.1%	0.2%	0.8%	0.3%	1.3%	0.5%
Darktable - Server Rack - CPU-only (sec)	0.22	**0.19**	0.42	**1.04**	0.35	0.41	0.35	0.81	0.72	0.32	**0.19**	0.21
Normalized	86.36%	100%	45.24%	18.27%	54.29%	46.34%	54.29%	23.46%	26.39%	59.38%	100%	90.48%
Standard Deviation	0.7%	1.4%	0%	0.6%	0.8%	0.2%	0.5%	1.6%	1.4%	0.8%	0.8%	0.8%
Darktable - Server Room - CPU-only (sec)	6.04	4.87	11.31	**27.57**	10.32	12.44	9.77	23.90	22.53	8.87	**4.16**	4.31
Normalized	68.87%	85.42%	36.78%	15.09%	40.31%	33.44%	42.58%	17.41%	18.46%	46.9%	100%	96.52%
Standard Deviation	2.9%	0.7%	0.5%	0.2%	1.3%	0.9%	0.1%	0.2%	0.8%	0.8%	1%	0.2%
GIMP - resize (sec)	19.29	13.90	13.71	14.19	**20.63**	15.09	9.85	12.47	12.75	18.21	**7.18**	7.30
Normalized	37.22%	51.65%	52.37%	50.6%	34.8%	47.58%	72.89%	57.58%	56.31%	39.43%	100%	98.36%
Standard Deviation	0.5%	1.9%	1%	1.1%	0.6%	0.8%	1.6%	1.5%	1.2%	0.4%	0.6%	3%
GIMP - rotate (sec)	40.09	31.59	28.91	29.46	**43.50**	32.32	21.88	27.75	28.33	38.57	16.07	**16.00**
Normalized	39.91%	50.65%	55.34%	54.31%	36.78%	49.5%	73.13%	57.66%	56.48%	41.48%	99.56%	100%
Standard Deviation	0.5%	0.1%	0.3%	0.1%	0.4%	0.3%	0.4%	0.2%	0.4%	0.5%	0.2%	0.3%
GIMP - auto-levels (sec)	38.52	28.27	27.02	29.53	**40.32**	30.75	20.40	27.24	27.33	36.22	**15.06**	15.43
Normalized	39.1%	53.27%	55.74%	51%	37.35%	48.98%	73.82%	55.29%	55.1%	41.58%	100%	97.6%
Standard Deviation	1.3%	0.8%	0.7%	0.1%	0.8%	0.4%	0.3%	0.4%	0.4%	0.8%	0.4%	0.3%
GIMP - unsharp-mask (sec)	94.84	59.45	63.09	59.44	**101.33**	68.15	42.70	57.41	57.44	85.40	**35.81**	37.46
Normalized	37.76%	60.24%	56.76%	60.25%	35.34%	52.55%	83.86%	62.38%	62.34%	41.93%	100%	95.6%
Standard Deviation	0.9%	0.6%	0.5%	0.3%	0.5%	0.5%	0.1%	0.2%	0.2%	0.6%	0.9%	0.1%

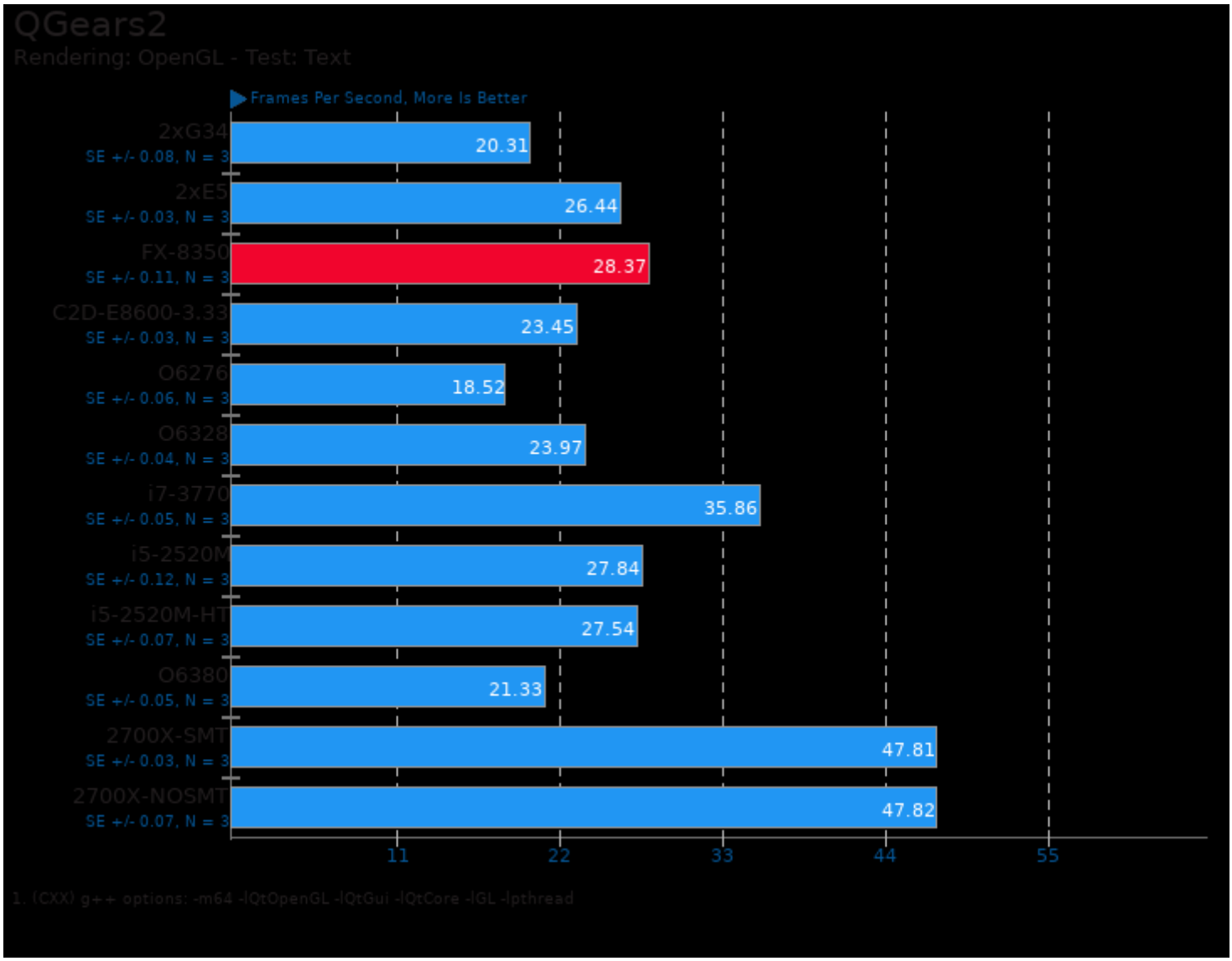
test sample

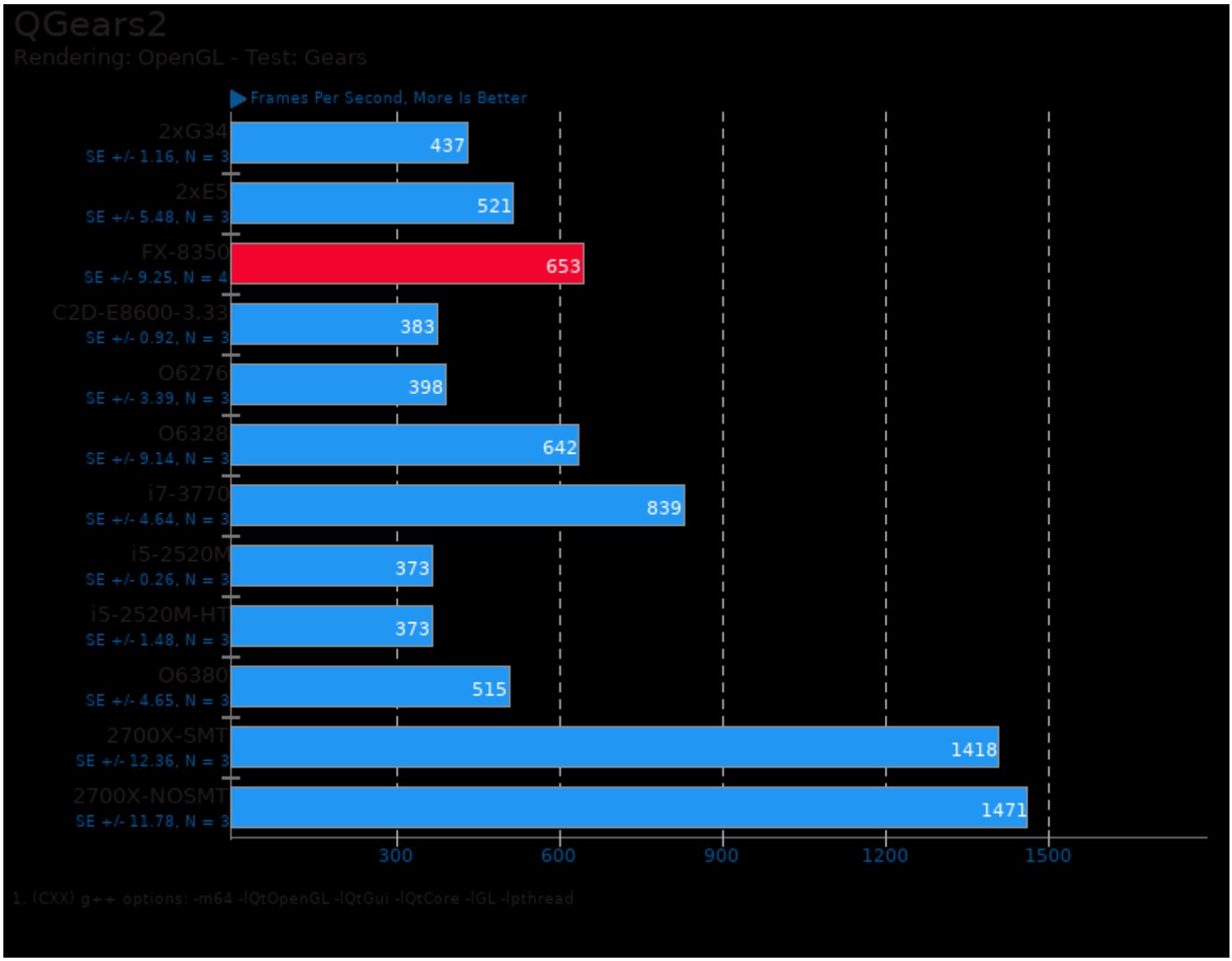
Blender - BMW27 -	989	569	769	**2682**	1181	921	814	2009	1580	984	361	**355**
Normalized	35.89%	62.39%	46.16%	13.24%	30.06%	38.55%	43.61%	17.67%	22.47%	36.08%	98.34%	100%
Standard Deviation	0.8%	0.4%	0.4%	0%	0.1%	0.8%	0.4%	0.5%	0.9%	0.8%	0.5%	0.6%
Blender - BMW27 -	267	232	626	**2601**	586	751	724	1903	1455	486	**195**	273
Normalized	73.03%	84.05%	31.15%	7.5%	33.28%	25.97%	26.93%	10.25%	13.4%	40.12%	100%	71.43%
Standard Deviation	0.2%	0.3%	0.1%	0.1%	0.1%	0.6%	0.6%	0.4%	0.5%	0.3%	0.1%	0.1%
Blender - Classroom - OpenCL (sec)	859	857	1760		1838	2117	**2161**			1403	**535**	735
Normalized	62.28%	62.43%	30.4%		29.11%	25.27%	24.76%			38.13%	100%	72.79%
Standard Deviation	0.2%	0.7%	0.6%		0.1%	0.3%	0.2%			0.2%	0.3%	0.2%
Blender - Fishy Cat - OpenCL (sec)	2504	1406	1779	**3513**	2829	2085	1263			2308	945	**942**
Normalized	37.62%	67%	52.95%	26.81%	33.3%	45.18%	74.58%			40.81%	99.68%	100%
Standard Deviation	0.3%	0.4%	0.2%	0.6%	0.3%	1.3%	0.3%			0.1%	0.7%	0.4%
Blender - Barbershop - OpenCL (sec)	1301	940	2290		2375	2779	**2828**			1963	**905**	1174
Normalized	69.56%	96.28%	39.52%		38.11%	32.57%	32%			46.1%	100%	77.09%
Standard Deviation	0.7%	0.5%	0.4%		0.9%	0.2%	0.3%			0.3%	1.1%	0.2%
Blender - Classroom - CPU-Only (sec)	762	653	1716		1718	2048	**2124**			1319	**503**	715
Normalized	66.01%	77.03%	29.31%		29.28%	24.56%	23.68%			38.13%	100%	70.35%
Standard Deviation	0.3%	0.6%	0.2%		0.3%	0.2%	0.1%			0.1%	0.3%	0.2%
Blender - Fishy Cat - CPU-Only (sec)	395	330	888	**3341**	873	1070	1062	2737	2061	688	**291**	406
Normalized	73.67%	88.18%	32.77%	8.71%	33.33%	27.2%	27.4%	10.63%	14.12%	42.3%	100%	71.67%
Standard Deviation	0%	0.1%	0.2%	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.2%	0.1%	0.1%
Blender - Barbershop - CPU-Only (sec)	965	847	2223		2073	2709	**2774**			1720	**791**	1134
Normalized	81.97%	93.39%	35.58%		38.16%	29.2%	28.51%			45.99%	100%	69.75%
Standard Deviation	0.1%	0.2%	0.2%		0.4%	0.4%	0.2%			0.2%	0%	0.1%
Blender - Pabellon Barcelona - OpenCL (sec)	2974	1671	3498		**3514**		3445			2976	**1275**	1732
Normalized	42.87%	76.3%	36.45%		36.28%		37.01%			42.84%	100%	73.61%
Standard Deviation	0.2%	0.5%	0.1%		0.2%		0.4%			0.2%	4.5%	0.2%
Blender - Pabellon Barcelona - CPU-Only (sec)	935	821	2229		2060	2707	**2749**			1726	**705**	1019
Normalized	75.4%	85.87%	31.63%		34.22%	26.04%	25.65%			40.85%	100%	69.19%
Standard Deviation	0.2%	0.3%	0.2%		0.4%	0.2%	0.1%			0.2%	0.3%	0.6%

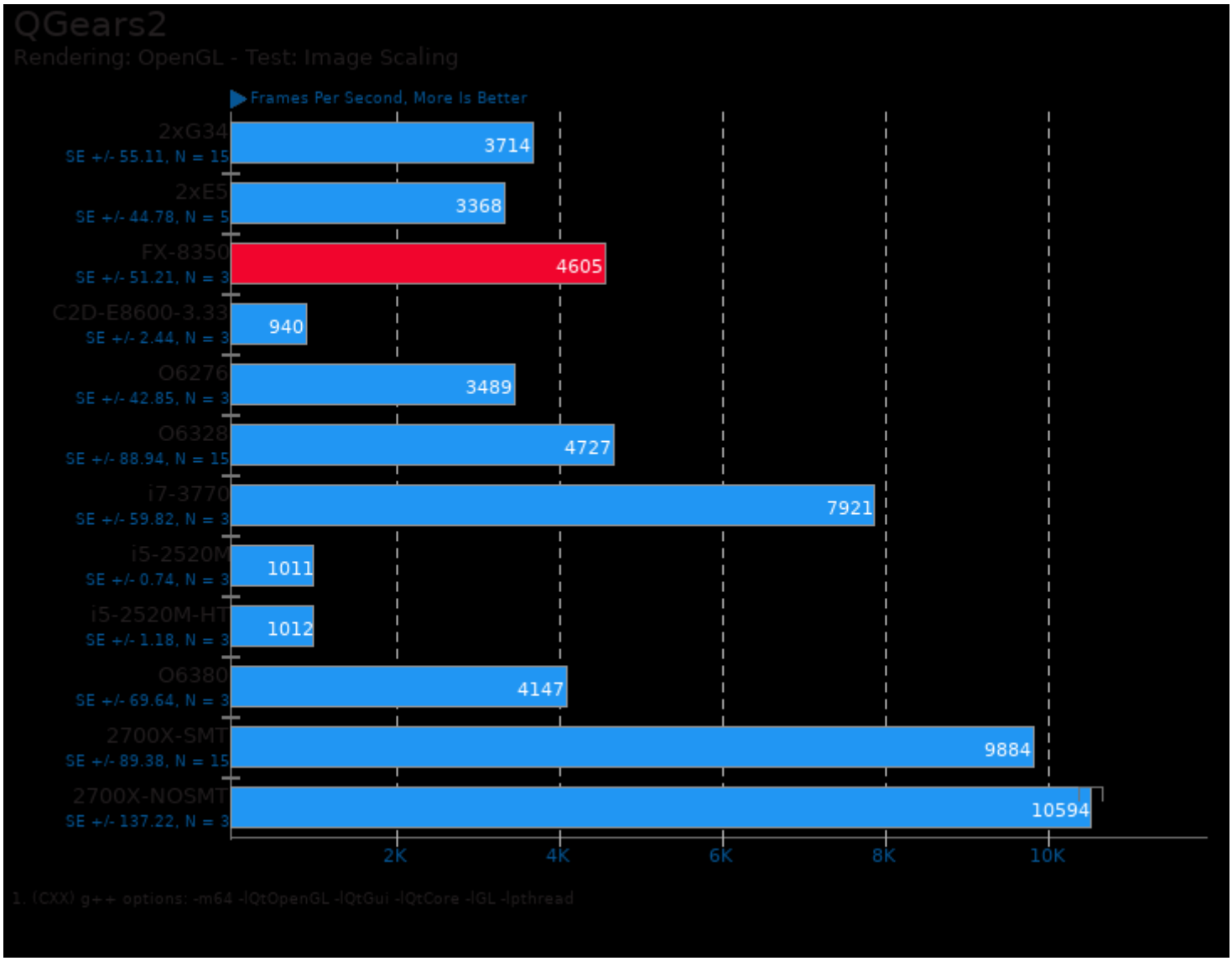
test sample

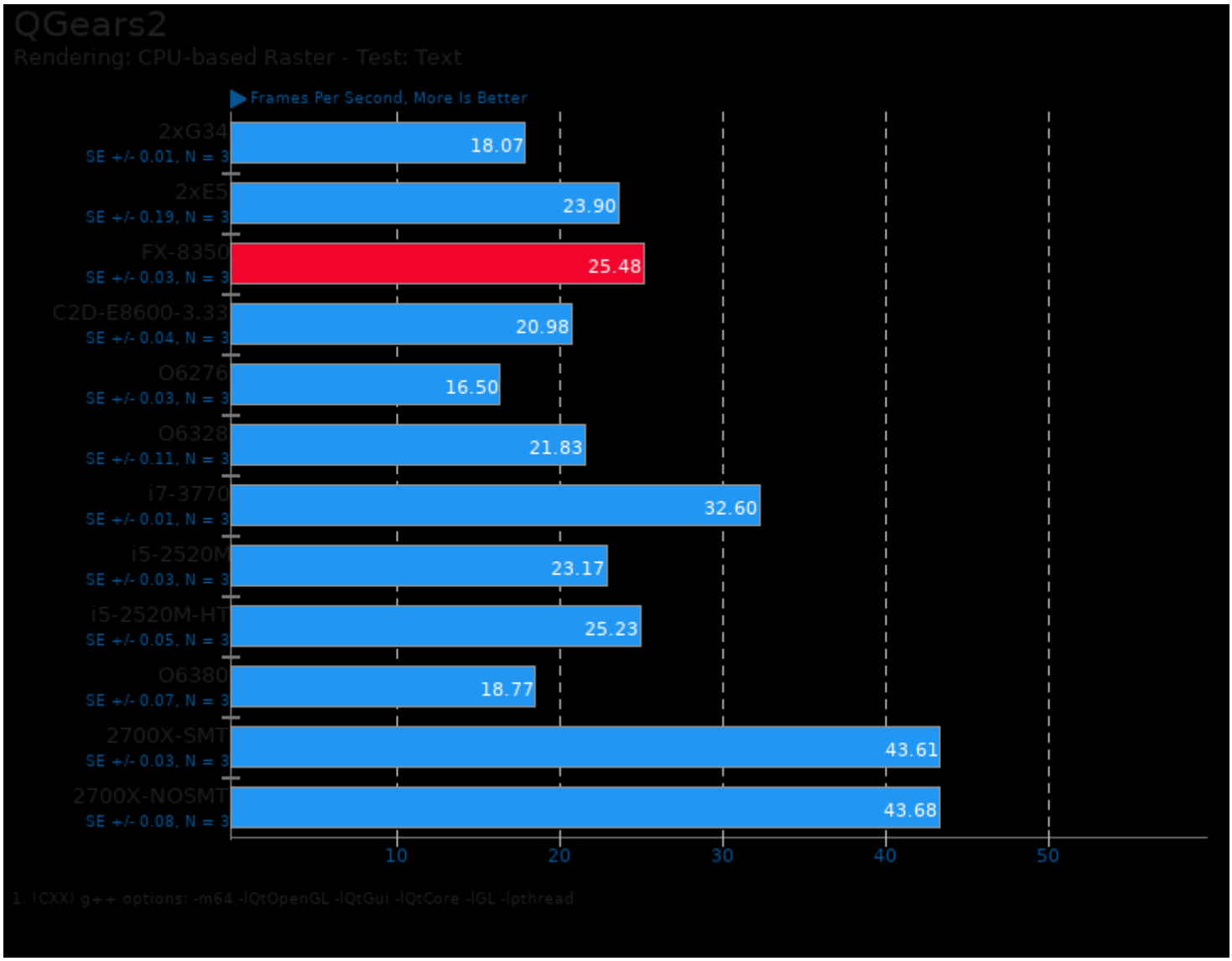
NGINX Benchmark - S.W.P.S (Reqs/sec)	15408	19298	18412	16823	**14959**	17660	25481	18265		15947	33030	**33363**
Normalized	46.18%	57.84%	55.19%	50.42%	44.84%	52.93%	76.38%	54.75%		47.8%	99%	100%
Standard Deviation	0.3%	0.3%	0.4%	0.1%	0.2%	0.2%	0.5%	0.5%		0.4%	0.8%	2.3%
Appleseed - Emily (sec)	584	585	1161		1208	1496	1676	**4313**		988	**436**	592
Normalized	74.66%	74.53%	37.55%		36.09%	29.14%	26.01%	10.11%		44.13%	100%	73.65%
Appleseed - Disney Material (sec)	389	391	780		788	943	1103	**2782**		680	**242**	316
Normalized	62.21%	61.89%	31.03%		30.71%	25.66%	21.94%	8.7%		35.59%	100%	76.58%
Appleseed - Material Tester (sec)	383	349	755		706	910	964	**2439**		562	**233**	321
Normalized	60.84%	66.76%	30.86%		33%	25.6%	24.17%	9.55%		41.46%	100%	72.59%
Git - T.T.C.C.G.C (sec)	11.51	8.51	8.63	9.81	**12.00**	9.99	6.53	8.78		10.87	5.62	**5.58**
Normalized	48.48%	65.57%	64.66%	56.88%	46.5%	55.86%	85.45%	63.55%		51.33%	99.29%	100%
Standard Deviation	1.3%	1.3%	2.2%	1%	0.7%	5.3%	3.8%	0.2%		2.1%	0%	0.4%
Tesseract OCR - T.T.O.7.I (sec)	67.90	44.46	49.99	**74.37**	72.31	57.43	32.50	63.41		64.60	27.99	**27.94**
Normalized	41.15%	62.84%	55.89%	37.57%	38.64%	48.65%	85.97%	44.06%		43.25%	99.82%	100%
Standard Deviation	0.2%	0.3%	0.1%	0.9%	0.1%	0.1%	0.1%	0.1%		0.4%	0.4%	0.2%
Cryptsetup - PBKDF2-whirlpool		530399	391658	492136	**265063**	346244	610585	492751	488539	301556	807957	**838003**
Normalized		63.29%	46.74%	58.73%	31.63%	41.32%	72.86%	58.8%	58.3%	35.99%	96.41%	100%
Standard Deviation		1.7%	0.6%	0.2%	0.5%	3.3%	0.2%		1.3%	0.7%	7.1%	0.8%

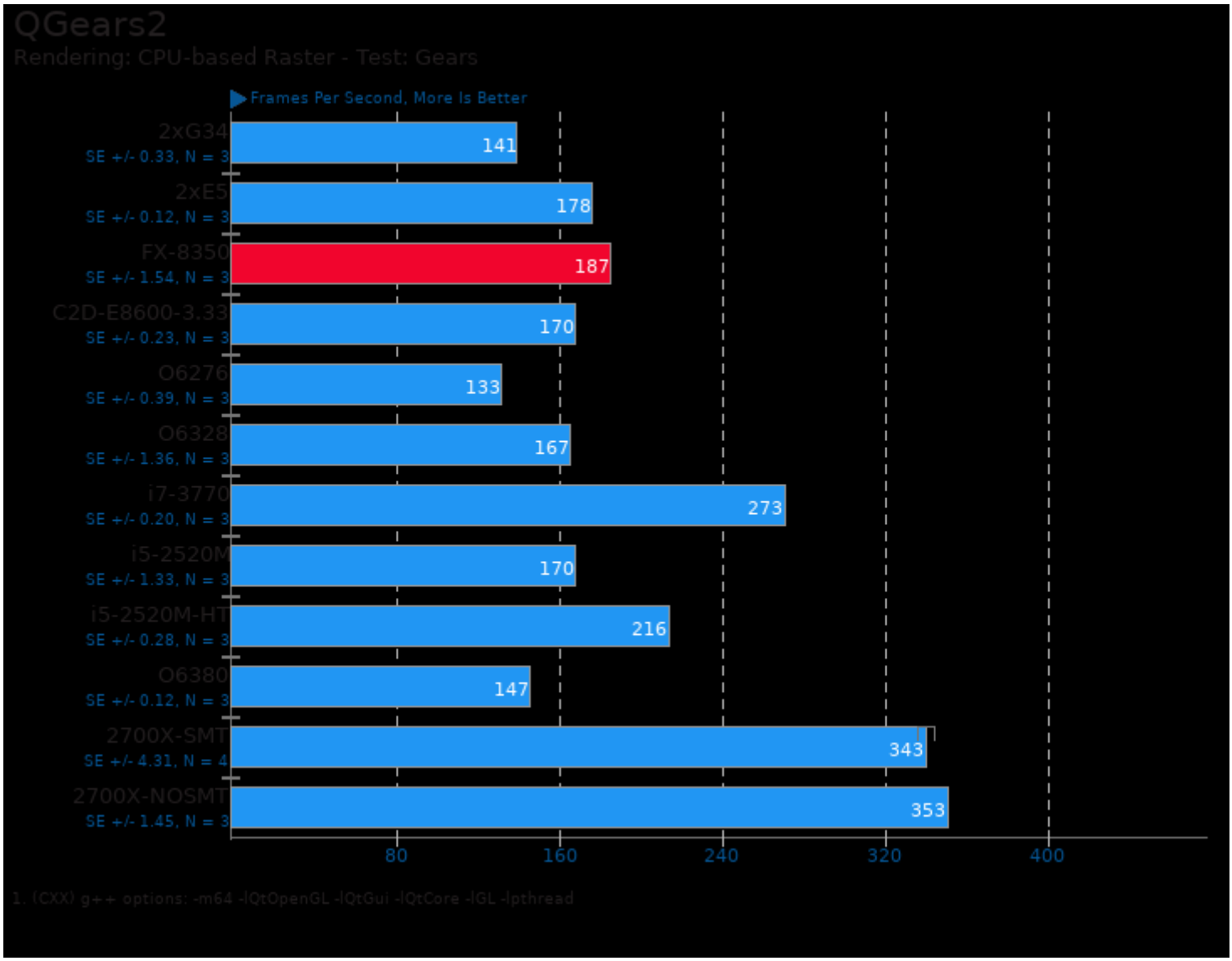

PostMark 1.51
Disk Transaction Performance
TPS, More Is Better
2xG34
SE +/- 19.72, N = 3
2366
2xE5
SE +/- 35.00, N = 3
3606
FX-8350
SE +/- 25.69, N = 3
3333
C2D-E8600-3.33
SE +/- 8.00, N = 3
2419
O6276
SE +/- 13.67, N = 3
2279
O6328
2941
i7-3770
4716
i5-2520M
SE +/- 33.20, N = 3
3788
i5-2520M-HT
SE +/- 19.67, N = 3
3807
O6380
SE +/- 9.00, N = 3
2595
2700X-SMT
6944
2700X-NOSMT
6756
1500
3000
4500
6000
7500
1. (CC) gcc options: -O3

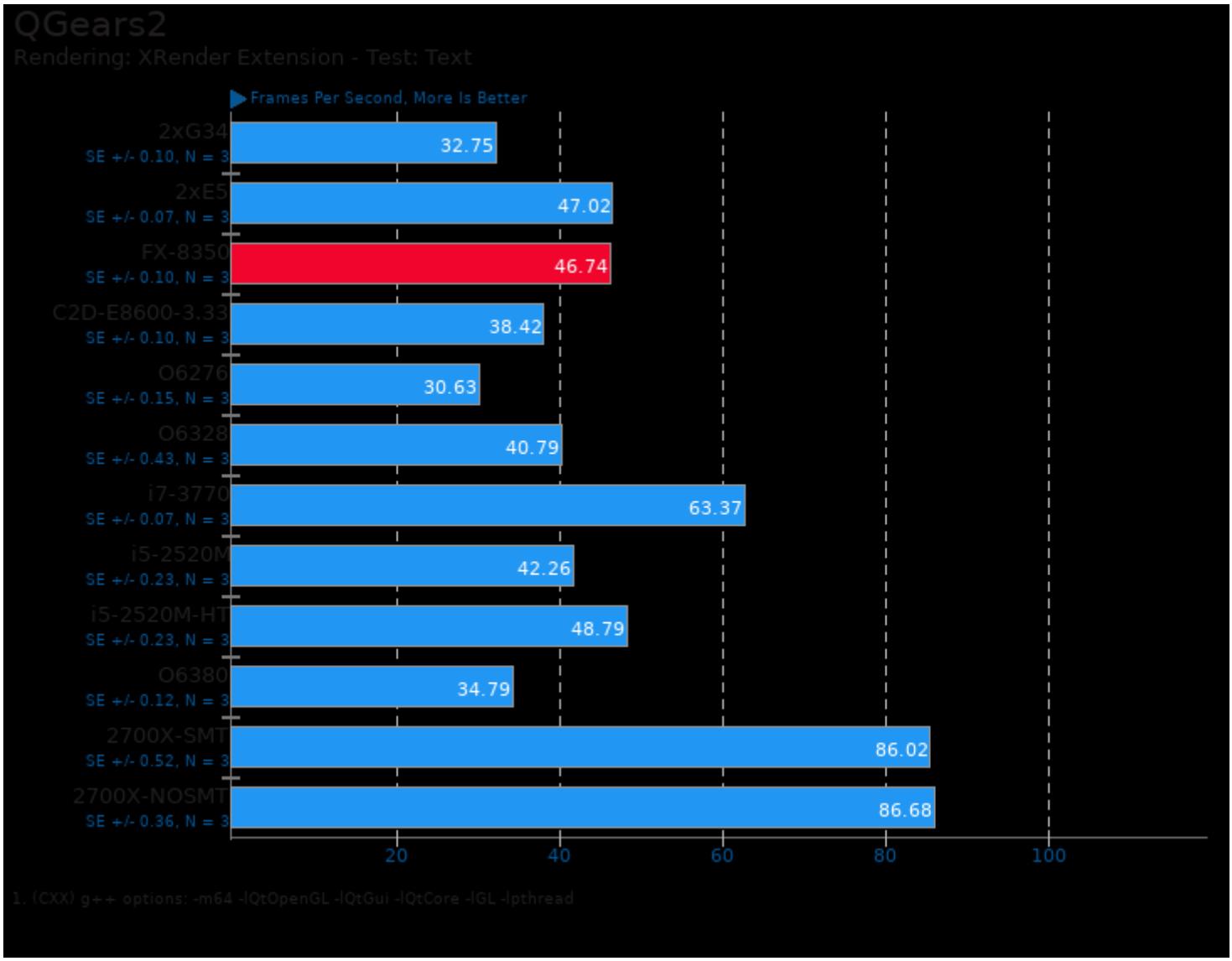

QGears2
Rendering: OpenGL - Test: Text
Frames Per Second, More Is Better
2xG34
SE +/- 0.08, N = 3
20.31
2xE5
SE +/- 0.03, N = 3
26.44
FX-8350
SE +/- 0.11, N = 3
28.37
C2D-E8600-3.33
SE +/- 0.03, N = 3
23.45
O6276
SE +/- 0.06, N = 3
18.52
O6328
SE +/- 0.04, N = 3
23.97
i7-3770
SE +/- 0.05, N = 3
35.86
i5-2520M
SE +/- 0.12, N = 3
27.84
i5-2520M-HT
SE +/- 0.07, N = 3
27.54
O6380
SE +/- 0.05, N = 3
21.33
2700X-SMT
SE +/- 0.03, N = 3
47.81
2700X-NOSMT
SE +/- 0.07, N = 3
47.82
11
22
33
44
55
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

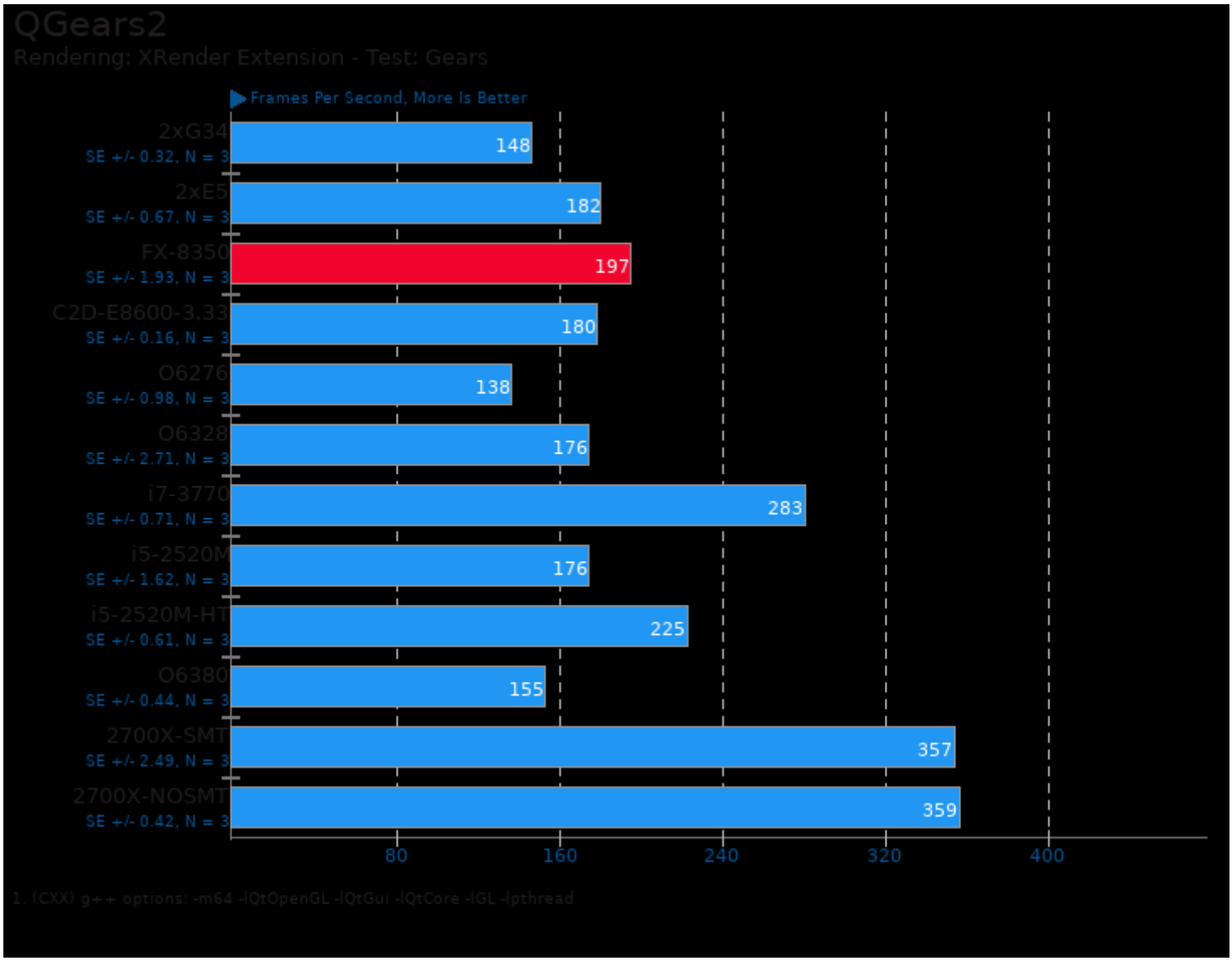

QGears2
Rendering: OpenGL - Test: Gears
Frames Per Second, More Is Better
2xG34
SE +/- 1.16, N = 3
437
2xE5
SE +/- 5.48, N = 3
521
FX-8350
SE +/- 9.25, N = 4
653
C2D-E8600-3.33
SE +/- 0.92, N = 3
383
O6276
SE +/- 3.39, N = 3
398
O6328
SE +/- 9.14, N = 3
642
i7-3770
SE +/- 4.64, N = 3
839
i5-2520M
SE +/- 0.26, N = 3
373
i5-2520M-HT
SE +/- 1.48, N = 3
373
O6380
SE +/- 4.65, N = 3
515
2700X-SMT
SE +/- 12.36, N = 3
1418
2700X-NOSMT
SE +/- 11.78, N = 3
1471
300
600
900
1200
1500
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

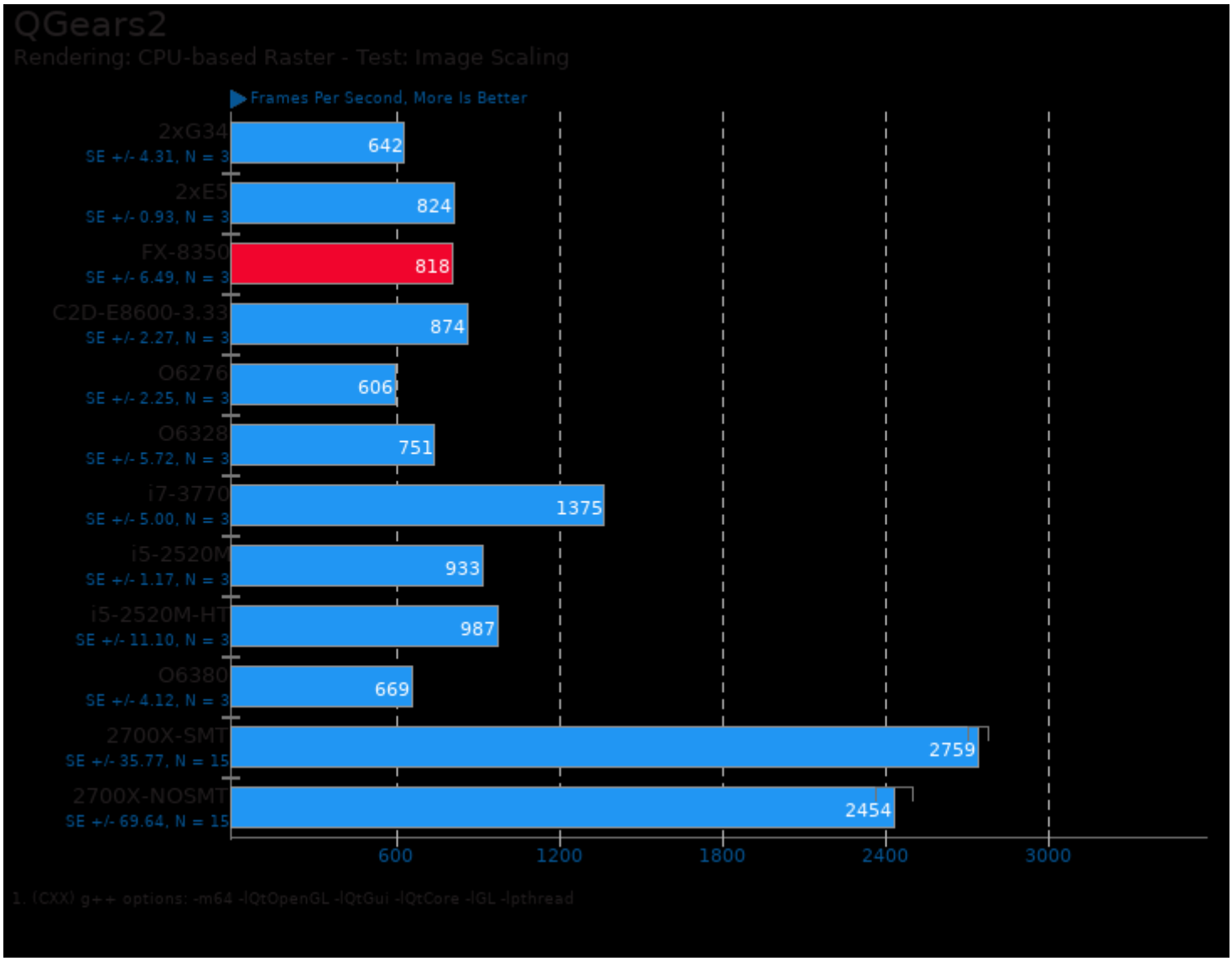

QGears2
Rendering: OpenGL - Test: Image Scaling
Frames Per Second, More Is Better
2xG34
SE +/- 55.11, N = 15
3714
2xE5
SE +/- 44.78, N = 5
3368
FX-8350
SE +/- 51.21, N = 3
4605
C2D-E8600-3.33
SE +/- 2.44, N = 3
940
O6276
SE +/- 42.85, N = 3
3489
O6328
SE +/- 88.94, N = 15
4727
i7-3770
SE +/- 59.82, N = 3
7921
i5-2520M
SE +/- 0.74, N = 3
1011
i5-2520M-HT
SE +/- 1.18, N = 3
1012
O6380
SE +/- 69.64, N = 3
4147
2700X-SMT
SE +/- 89.38, N = 15
9884
2700X-NOSMT
SE +/- 137.22, N = 3
10594
2K
4K
6K
8K
10K
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

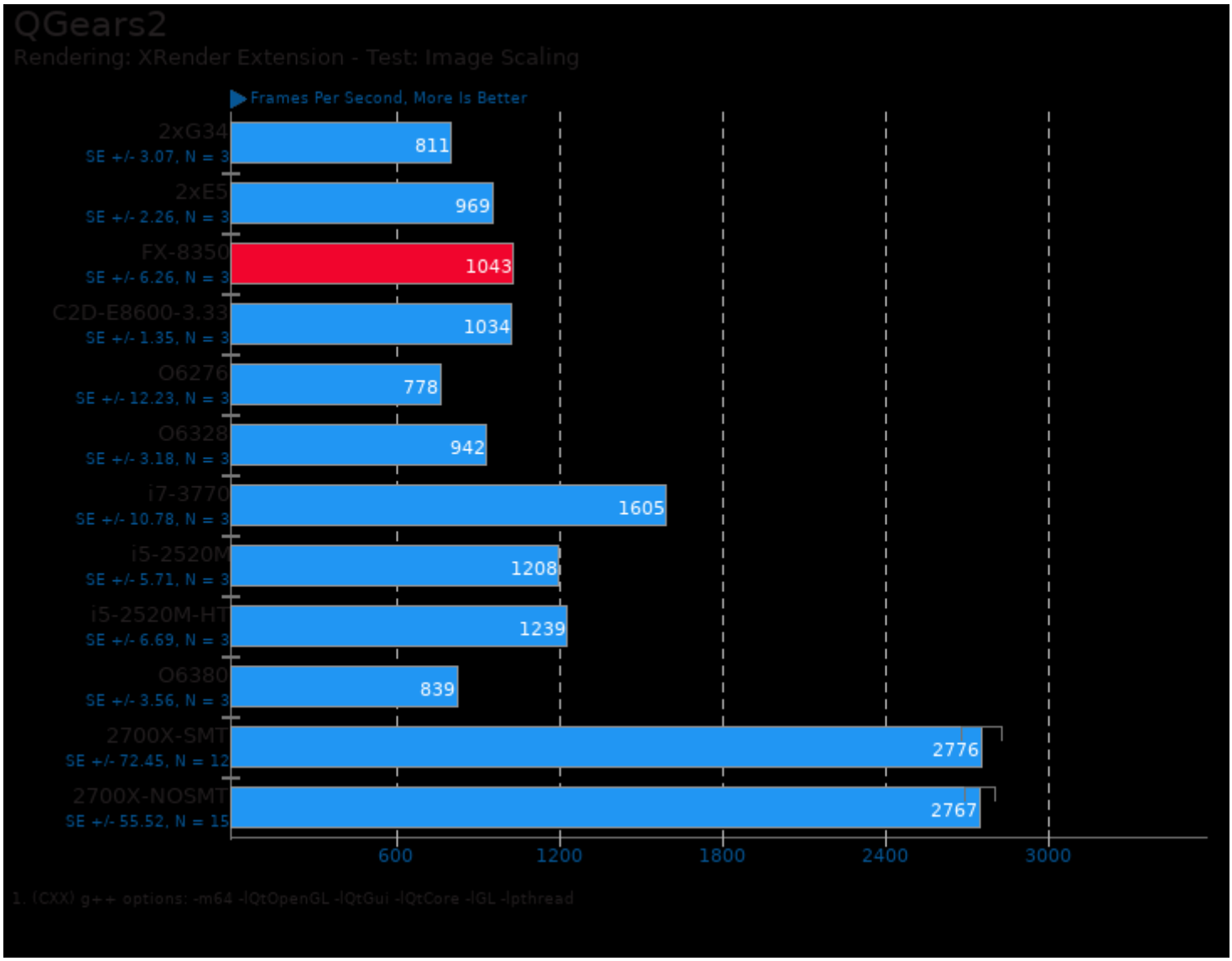

QGears2
Rendering: CPU-based Raster - Test: Text
Frames Per Second, More Is Better
2xG34
SE +/- 0.01, N = 3
18.07
2xE5
SE +/- 0.19, N = 3
23.90
FX-8350
SE +/- 0.03, N = 3
25.48
C2D-E8600-3.33
SE +/- 0.04, N = 3
20.98
O6276
SE +/- 0.03, N = 3
16.50
O6328
SE +/- 0.11, N = 3
21.83
i7-3770
SE +/- 0.01, N = 3
32.60
i5-2520M
SE +/- 0.03, N = 3
23.17
i5-2520M-HT
SE +/- 0.05, N = 3
25.23
O6380
SE +/- 0.07, N = 3
18.77
2700X-SMT
SE +/- 0.03, N = 3
43.61
2700X-NOSMT
SE +/- 0.08, N = 3
43.68
10
20
30
40
50
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

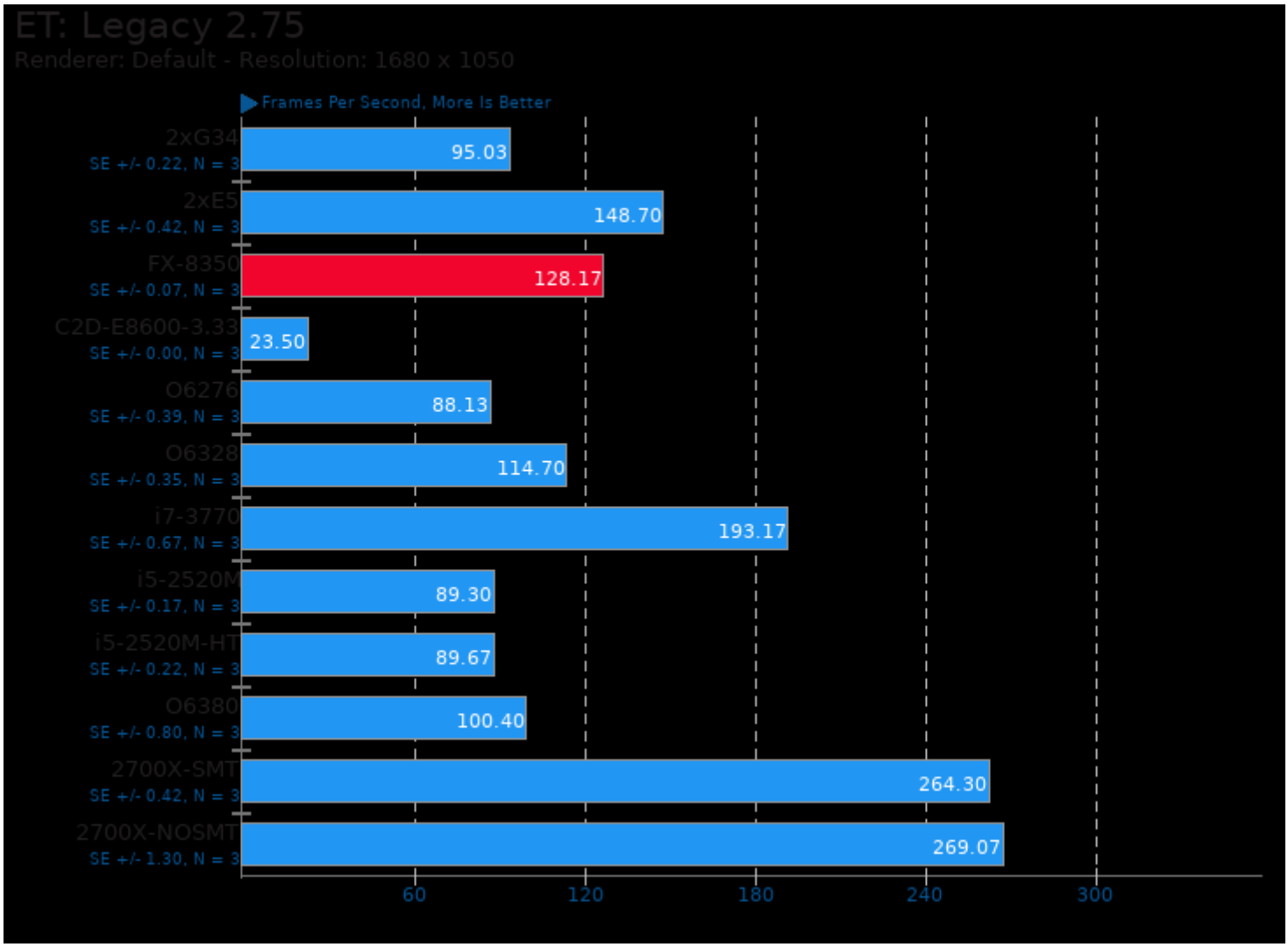

QGears2
Rendering: CPU-based Raster - Test: Gears
Frames Per Second, More Is Better
2xG34
SE +/- 0.33, N = 3
141
2xE5
SE +/- 0.12, N = 3
178
FX-8350
SE +/- 1.54, N = 3
187
C2D-E8600-3.33
SE +/- 0.23, N = 3
170
O6276
SE +/- 0.39, N = 3
133
O6328
SE +/- 1.36, N = 3
167
i7-3770
SE +/- 0.20, N = 3
273
i5-2520M
SE +/- 1.33, N = 3
170
i5-2520M-HT
SE +/- 0.28, N = 3
216
O6380
SE +/- 0.12, N = 3
147
2700X-SMT
SE +/- 4.31, N = 4
343
2700X-NOSMT
SE +/- 1.45, N = 3
353
80
160
240
320
400
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

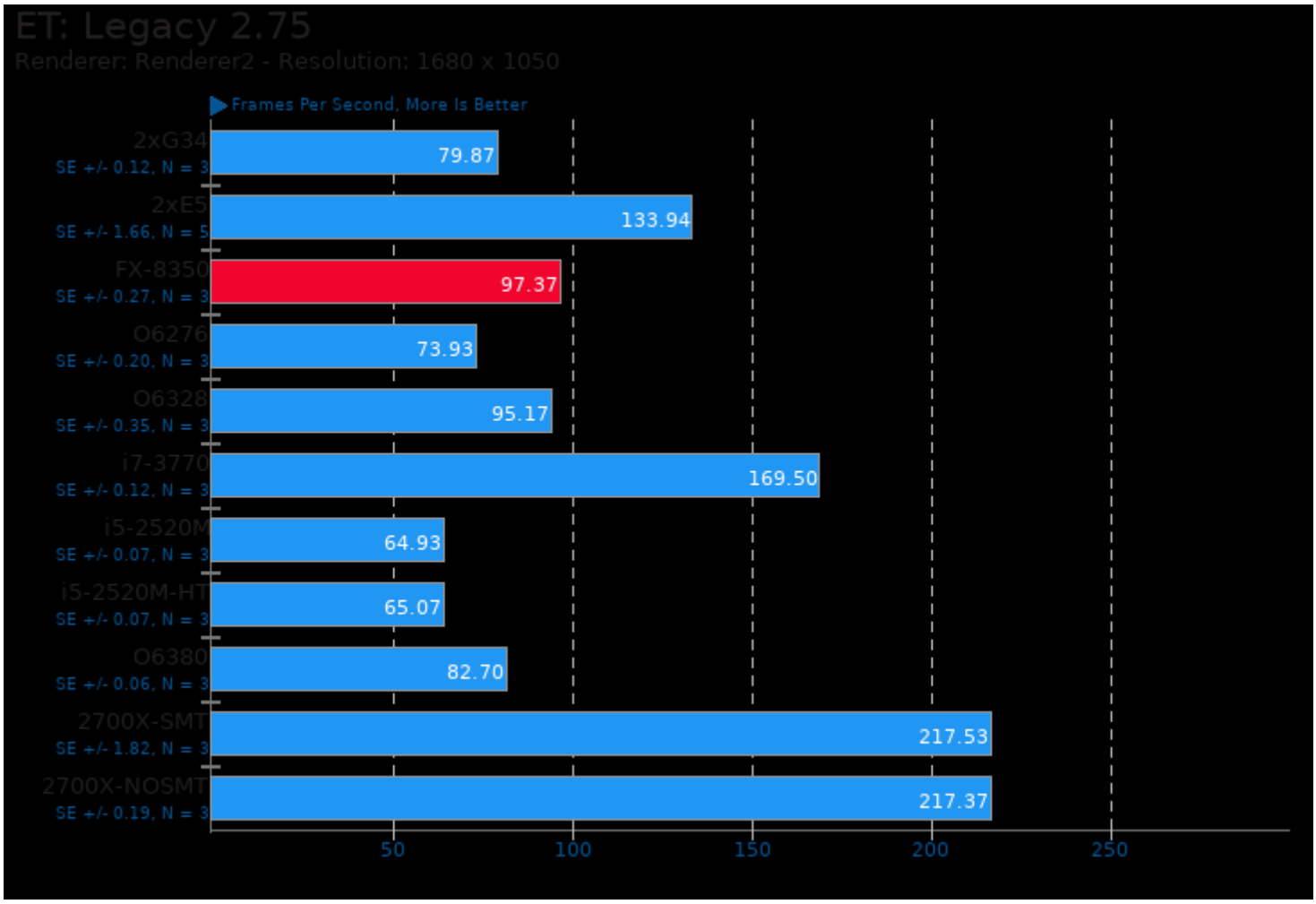

QGears2
Rendering: XRender Extension - Test: Text
Frames Per Second, More Is Better
2xG34
SE +/- 0.10, N = 3
32.75
2xE5
SE +/- 0.07, N = 3
47.02
FX-8350
SE +/- 0.10, N = 3
46.74
C2D-E8600-3.33
SE +/- 0.10, N = 3
38.42
O6276
SE +/- 0.15, N = 3
30.63
O6328
SE +/- 0.43, N = 3
40.79
i7-3770
SE +/- 0.07, N = 3
63.37
i5-2520M
SE +/- 0.23, N = 3
42.26
i5-2520M-HT
SE +/- 0.23, N = 3
48.79
O6380
SE +/- 0.12, N = 3
34.79
2700X-SMT
SE +/- 0.52, N = 3
86.02
2700X-NOSMT
SE +/- 0.36, N = 3
86.68
20
40
60
80
100
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

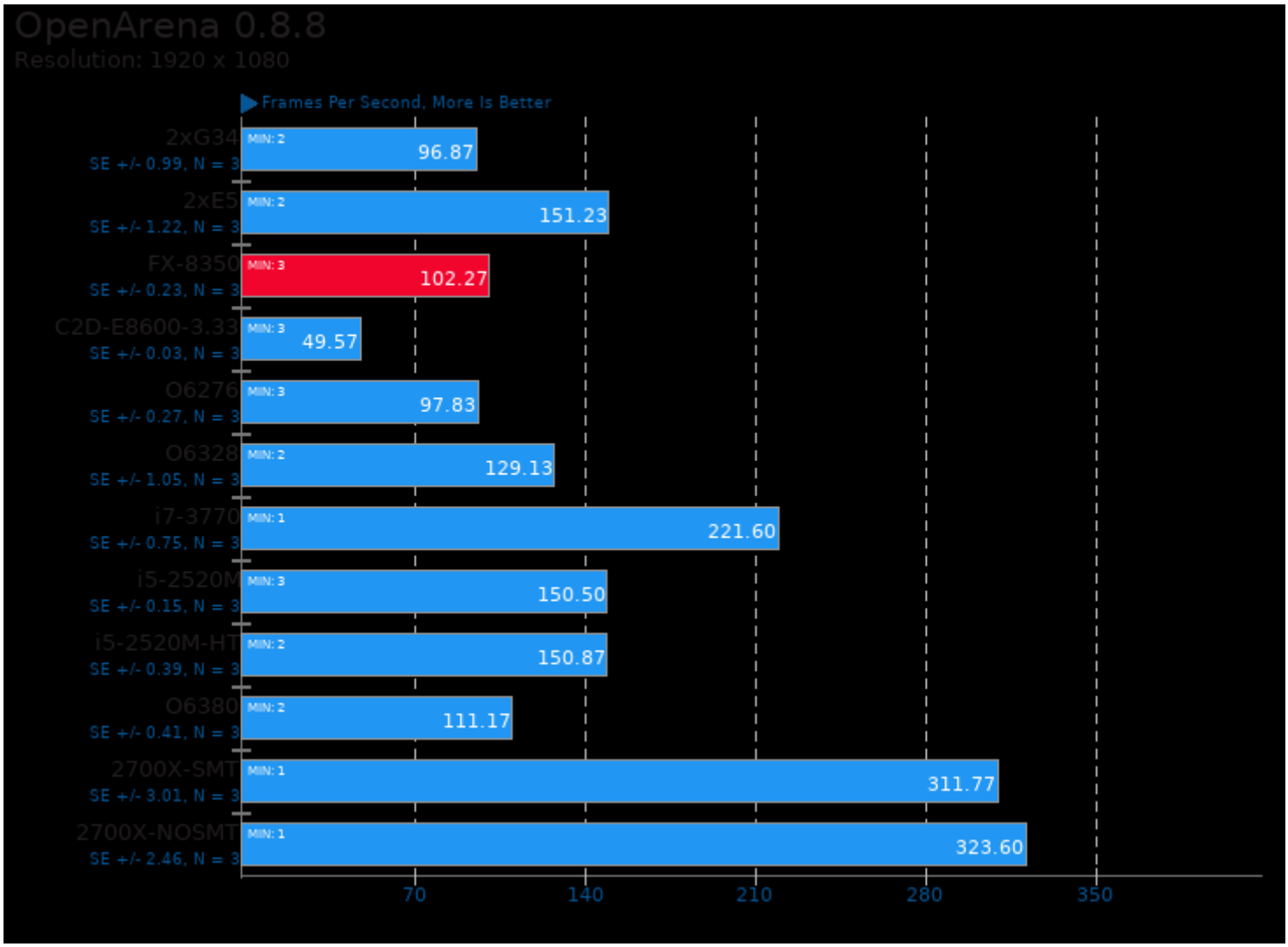

QGears2
Rendering: XRender Extension - Test: Gears
Frames Per Second, More Is Better
2xG34
SE +/- 0.32, N = 3
148
2xE5
SE +/- 0.67, N = 3
182
FX-8350
SE +/- 1.93, N = 3
197
C2D-E8600-3.33
SE +/- 0.16, N = 3
180
O6276
SE +/- 0.98, N = 3
138
O6328
SE +/- 2.71, N = 3
176
i7-3770
SE +/- 0.71, N = 3
283
i5-2520M
SE +/- 1.62, N = 3
176
i5-2520M-HT
SE +/- 0.61, N = 3
225
O6380
SE +/- 0.44, N = 3
155
2700X-SMT
SE +/- 2.49, N = 3
357
2700X-NOSMT
SE +/- 0.42, N = 3
359
80
160
240
320
400
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread


QGears2
Rendering: CPU-based Raster - Test: Image Scaling
Frames Per Second, More Is Better
2xG34
SE +/- 4.31, N = 3
642
2xE5
SE +/- 0.93, N = 3
824
FX-8350
SE +/- 6.49, N = 3
818
C2D-E8600-3.33
SE +/- 2.27, N = 3
874
O6276
SE +/- 2.25, N = 3
606
O6328
SE +/- 5.72, N = 3
751
i7-3770
SE +/- 5.00, N = 3
1375
i5-2520M
SE +/- 1.17, N = 3
933
i5-2520M-HT
SE +/- 11.10, N = 3
987
O6380
SE +/- 4.12, N = 3
669
2700X-SMT
SE +/- 35.77, N = 15
2759
2700X-NOSMT
SE +/- 69.64, N = 15
2454
600
1200
1800
2400
3000
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

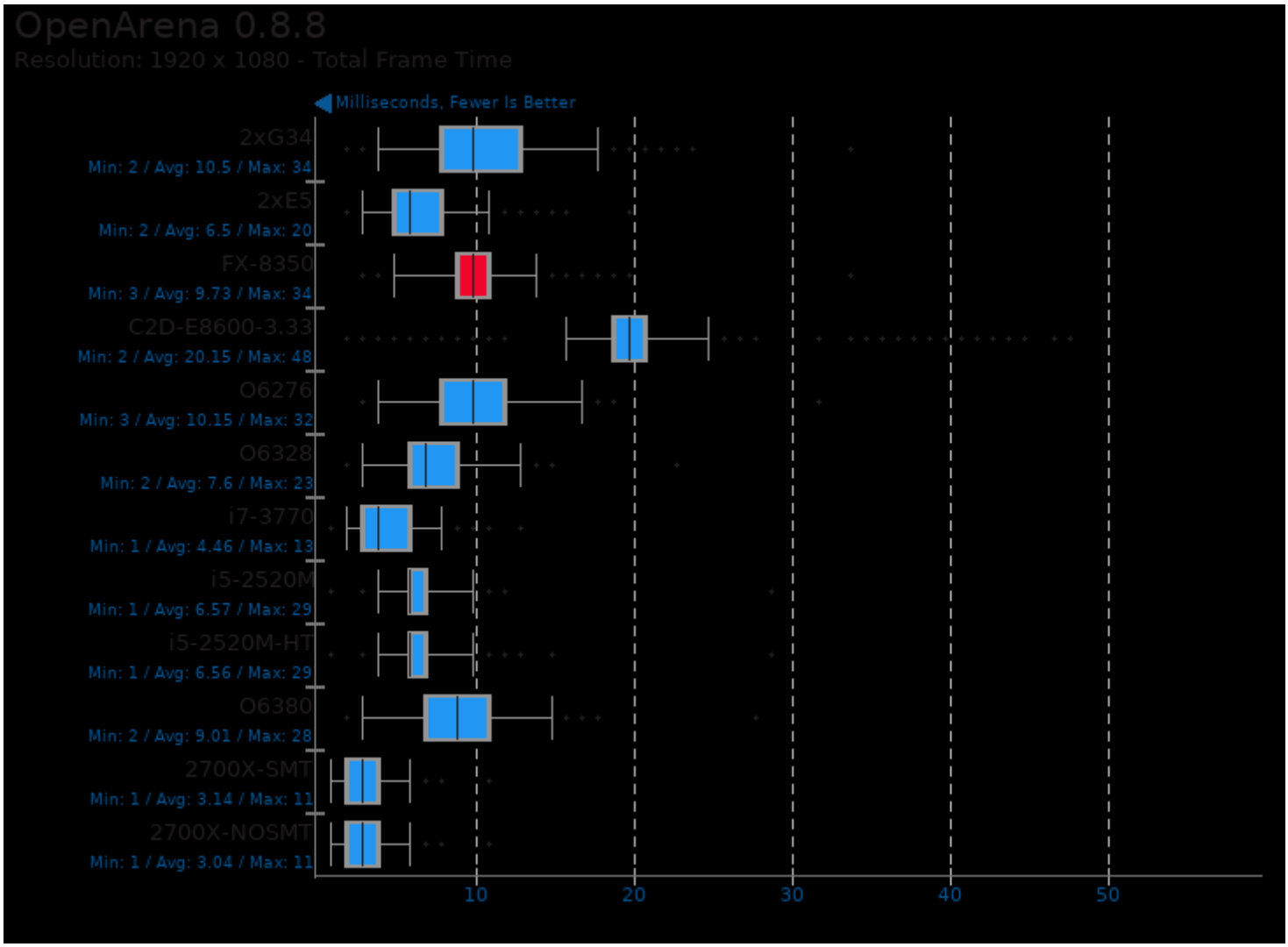

QGears2
Rendering: XRender Extension - Test: Image Scaling
Frames Per Second, More Is Better
2xG34
SE +/- 3.07, N = 3
811
2xE5
SE +/- 2.26, N = 3
969
FX-8350
SE +/- 6.26, N = 3
1043
C2D-E8600-3.33
SE +/- 1.35, N = 3
1034
O6276
SE +/- 12.23, N = 3
778
O6328
SE +/- 3.18, N = 3
942
i7-3770
SE +/- 10.78, N = 3
1605
i5-2520M
SE +/- 5.71, N = 3
1208
i5-2520M-HT
SE +/- 6.69, N = 3
1239
O6380
SE +/- 3.56, N = 3
839
2700X-SMT
SE +/- 72.45, N = 12
2776
2700X-NOSMT
SE +/- 55.52, N = 15
2767
600
1200
1800
2400
3000
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

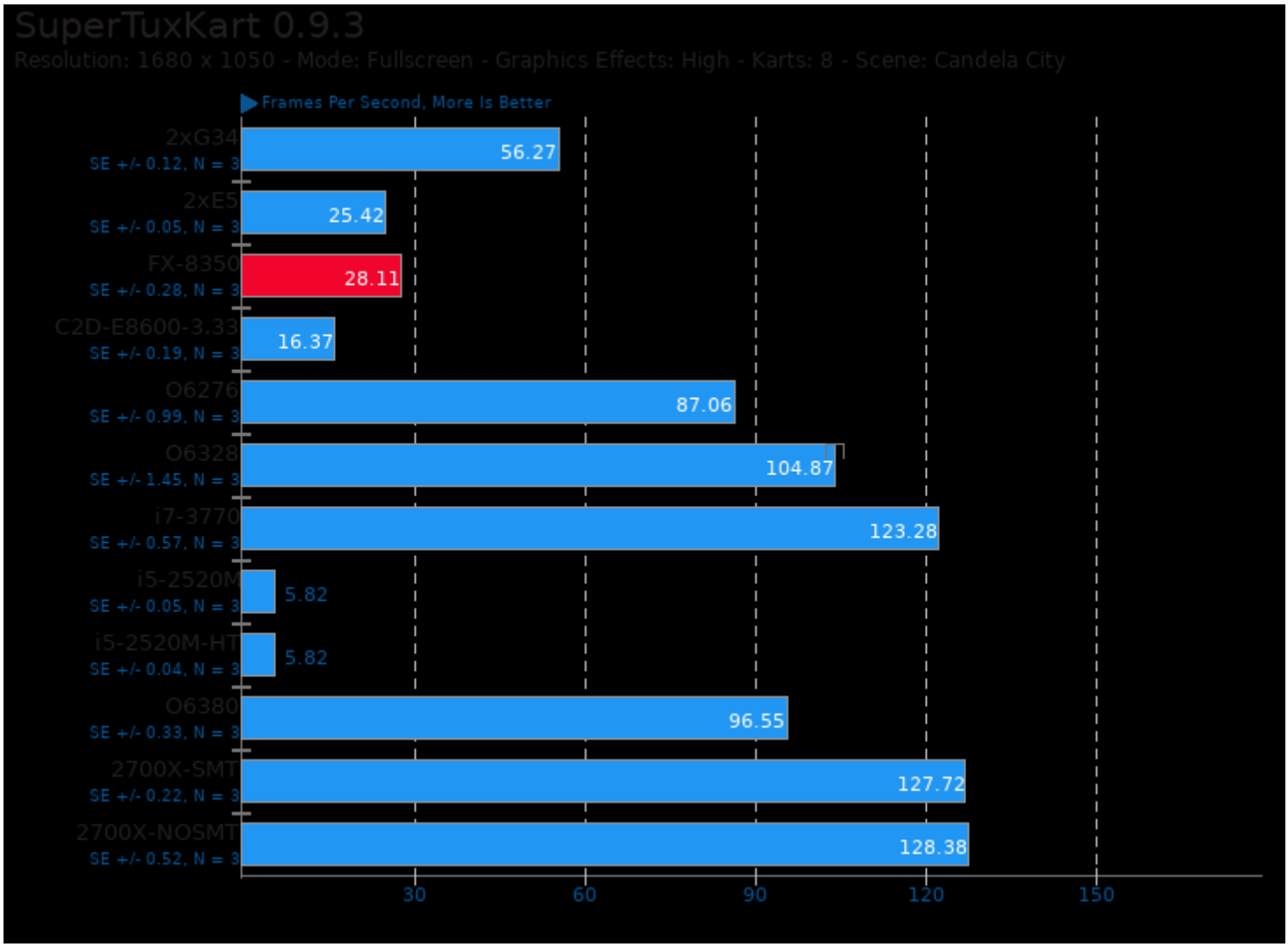

ET: Legacy 2.75
Renderer: Default - Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 0.22, N = 3
95.03
2xE5
SE +/- 0.42, N = 3
148.70
FX-8350
SE +/- 0.07, N = 3
128.17
C2D-E8600-3.33
SE +/- 0.00, N = 3
23.50
O6276
SE +/- 0.39, N = 3
88.13
O6328
SE +/- 0.35, N = 3
114.70
i7-3770
SE +/- 0.67, N = 3
193.17
i5-2520M
SE +/- 0.17, N = 3
89.30
i5-2520M-HT
SE +/- 0.22, N = 3
89.67
O6380
SE +/- 0.80, N = 3
100.40
2700X-SMT
SE +/- 0.42, N = 3
264.30
2700X-NOSMT
SE +/- 1.30, N = 3
269.07
60
120
180
240
300

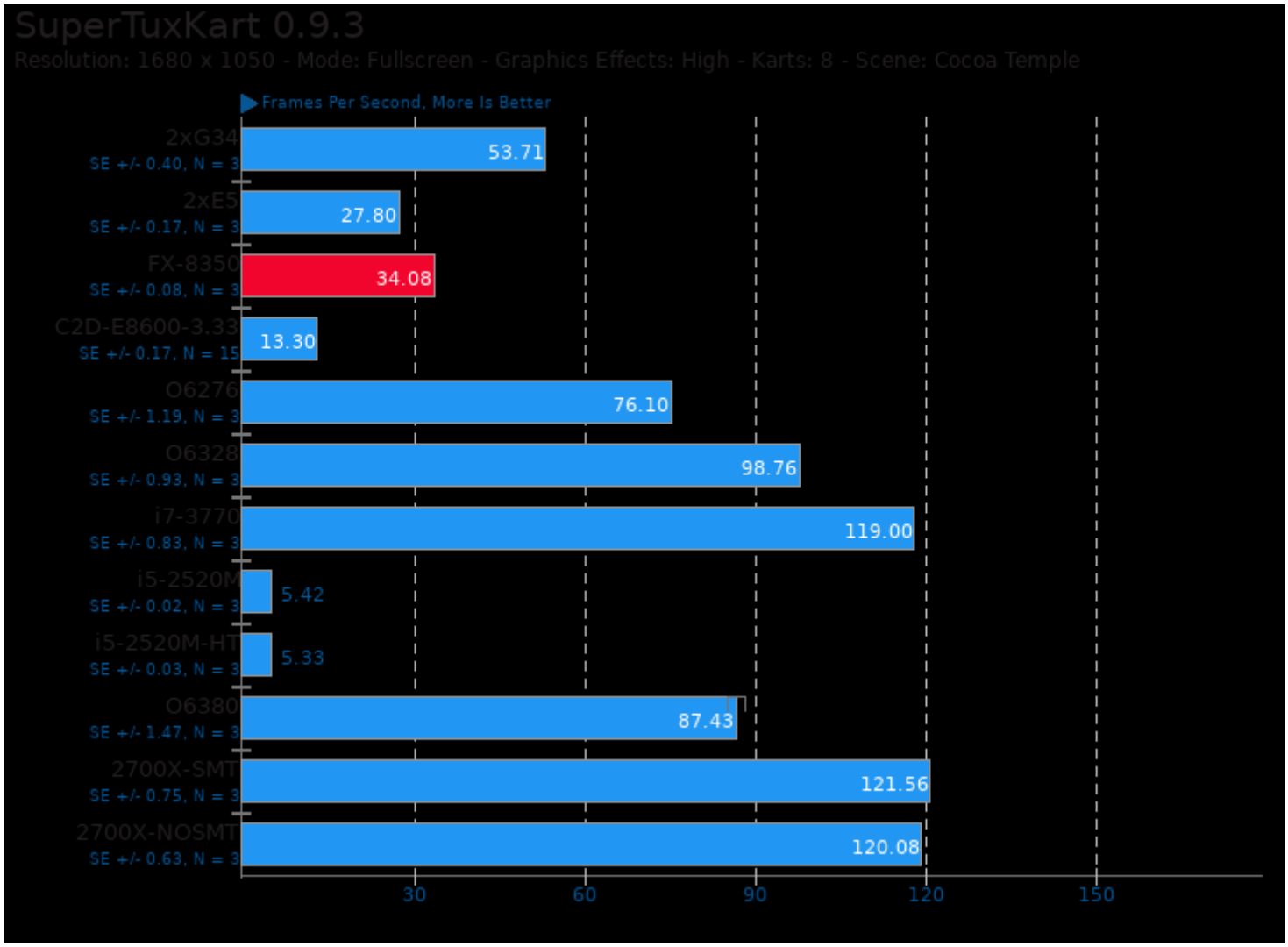

ET: Legacy 2.75
Renderer: Renderer2 - Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 0.12, N = 3
79.87
2xE5
SE +/- 1.66, N = 5
133.94
FX-8350
SE +/- 0.27, N = 3
97.37
O6276
SE +/- 0.20, N = 3
73.93
O6328
SE +/- 0.35, N = 3
95.17
i7-3770
SE +/- 0.12, N = 3
169.50
i5-2520M
SE +/- 0.07, N = 3
64.93
i5-2520M-HT
SE +/- 0.07, N = 3
65.07
O6380
SE +/- 0.06, N = 3
82.70
2700X-SMT
SE +/- 1.82, N = 3
217.53
2700X-NOSMT
SE +/- 0.19, N = 3
217.37
50
100
150
200
250

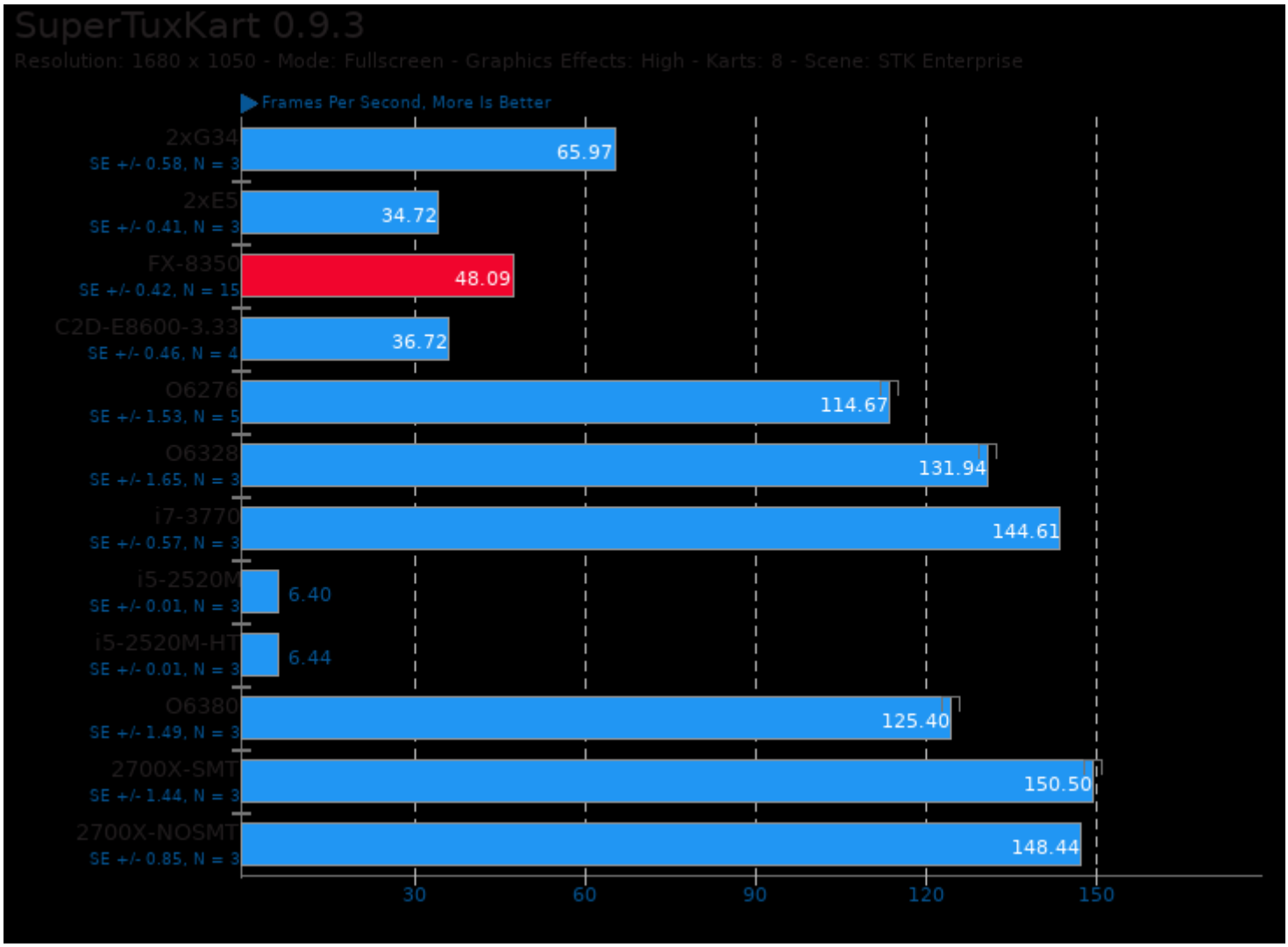

OpenArena 0.8.8
Resolution: 1920 x 1080
Frames Per Second, More Is Better
2xG34
SE +/- 0.99, N = 3
MIN: 2
96.87
2xE5
SE +/- 1.22, N = 3
MIN: 2
151.23
FX-8350
SE +/- 0.23, N = 3
MIN: 3
102.27
C2D-E8600-3.33
SE +/- 0.03, N = 3
MIN: 3
49.57
O6276
SE +/- 0.27, N = 3
MIN: 3
97.83
O6328
SE +/- 1.05, N = 3
MIN: 2
129.13
i7-3770
SE +/- 0.75, N = 3
MIN: 1
221.60
i5-2520M
SE +/- 0.15, N = 3
MIN: 3
150.50
i5-2520M-HT
SE +/- 0.39, N = 3
MIN: 2
150.87
O6380
SE +/- 0.41, N = 3
MIN: 2
111.17
2700X-SMT
SE +/- 3.01, N = 3
MIN: 1
311.77
2700X-NOSMT
SE +/- 2.46, N = 3
MIN: 1
323.60
70
140
210
280
350

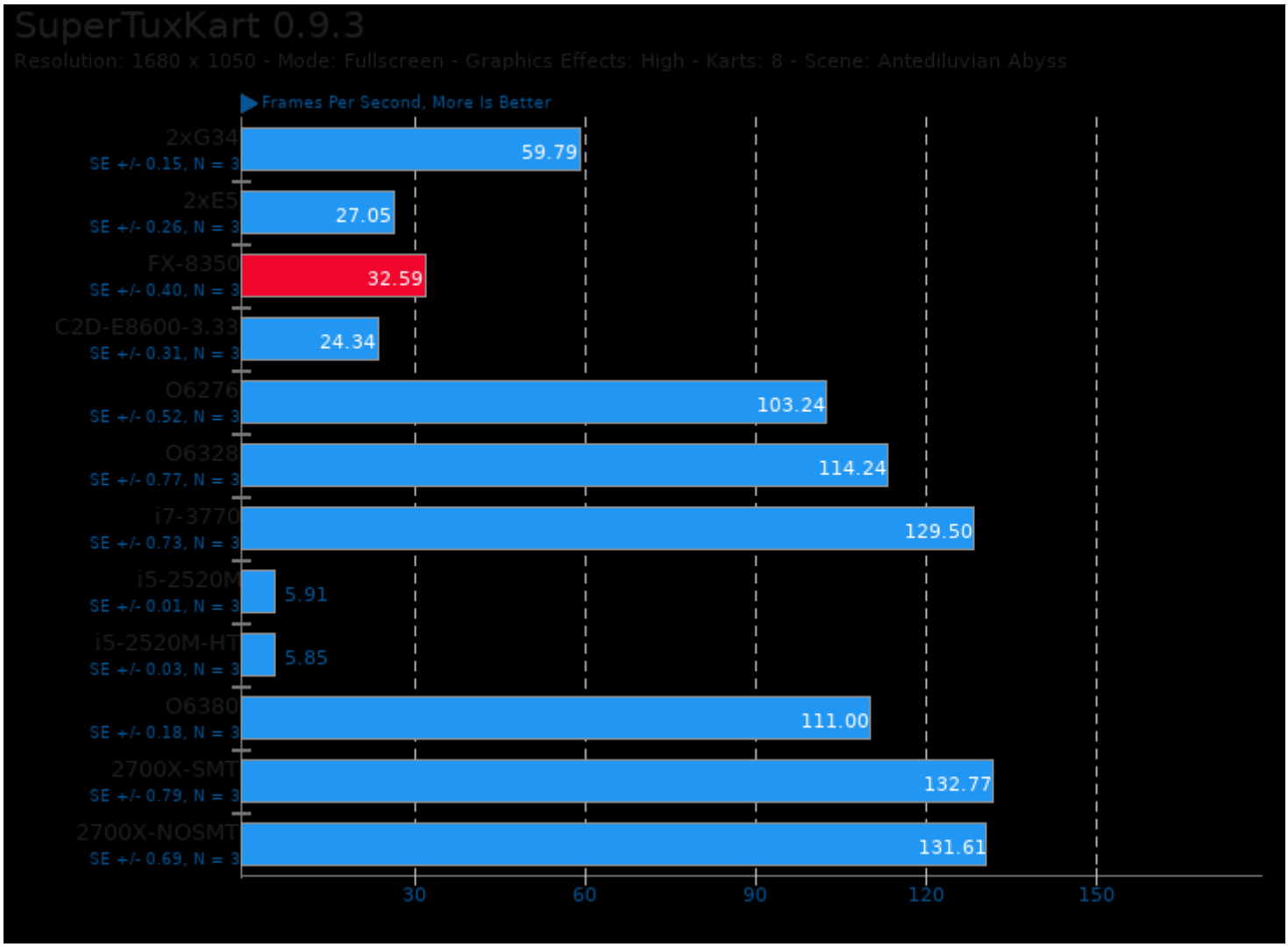
test sample

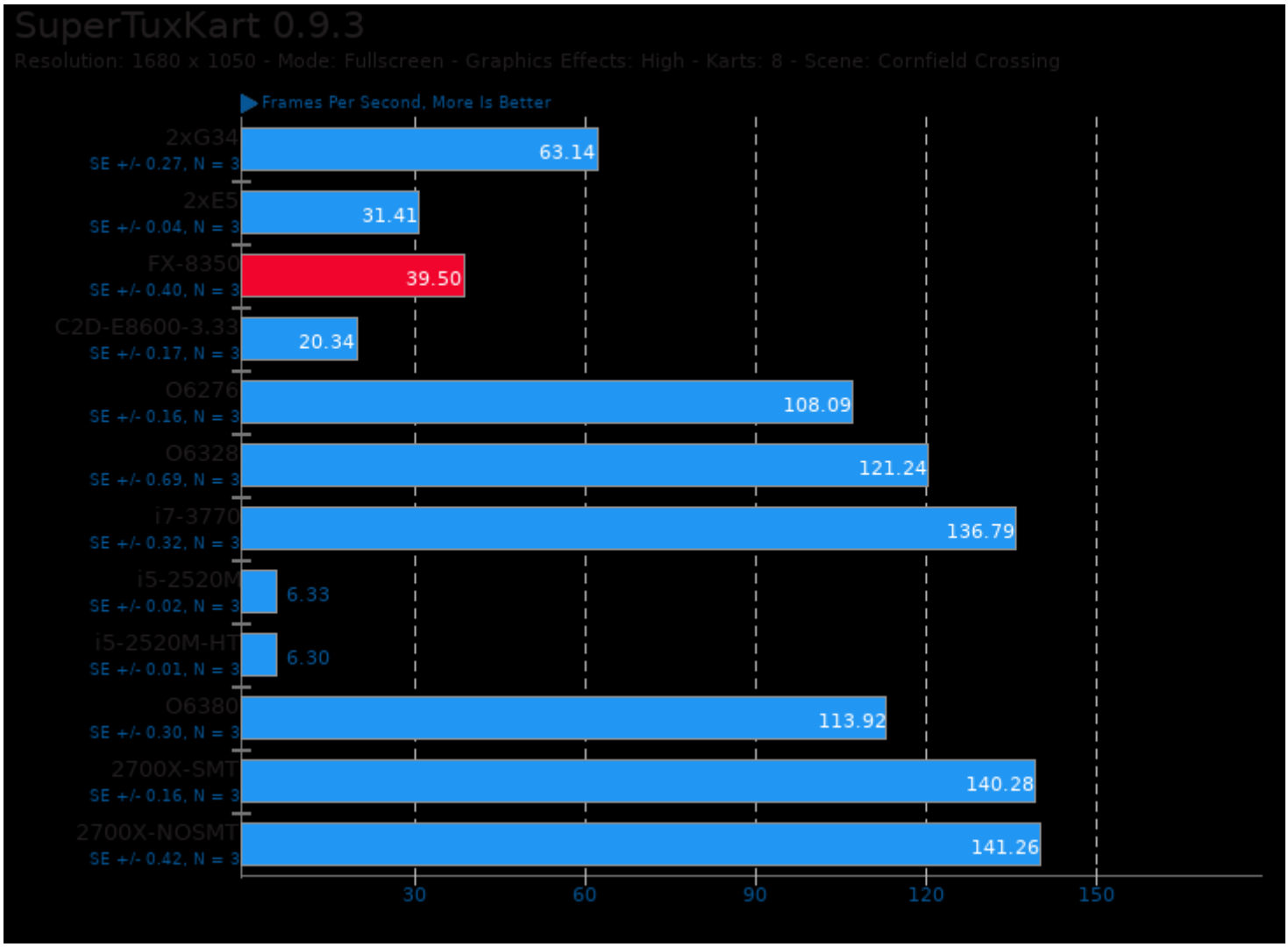

OpenArena 0.8.8
Resolution: 1920 x 1080 - Total Frame Time
Milliseconds, Fewer Is Better
2xG34
Min: 2 / Avg: 10.5 / Max: 34
2xE5
Min: 2 / Avg: 6.5 / Max: 20
FX-8350
Min: 3 / Avg: 9.73 / Max: 34
C2D-E8600-3.33
Min: 2 / Avg: 20.15 / Max: 48
O6276
Min: 3 / Avg: 10.15 / Max: 32
O6328
Min: 2 / Avg: 7.6 / Max: 23
i7-3770
Min: 1 / Avg: 4.46 / Max: 13
i5-2520M
Min: 1 / Avg: 6.57 / Max: 29
i5-2520M-HT
Min: 1 / Avg: 6.56 / Max: 29
O6380
Min: 2 / Avg: 9.01 / Max: 28
2700X-SMT
Min: 1 / Avg: 3.14 / Max: 11
2700X-NOSMT
Min: 1 / Avg: 3.04 / Max: 11
10
20
30
40
50

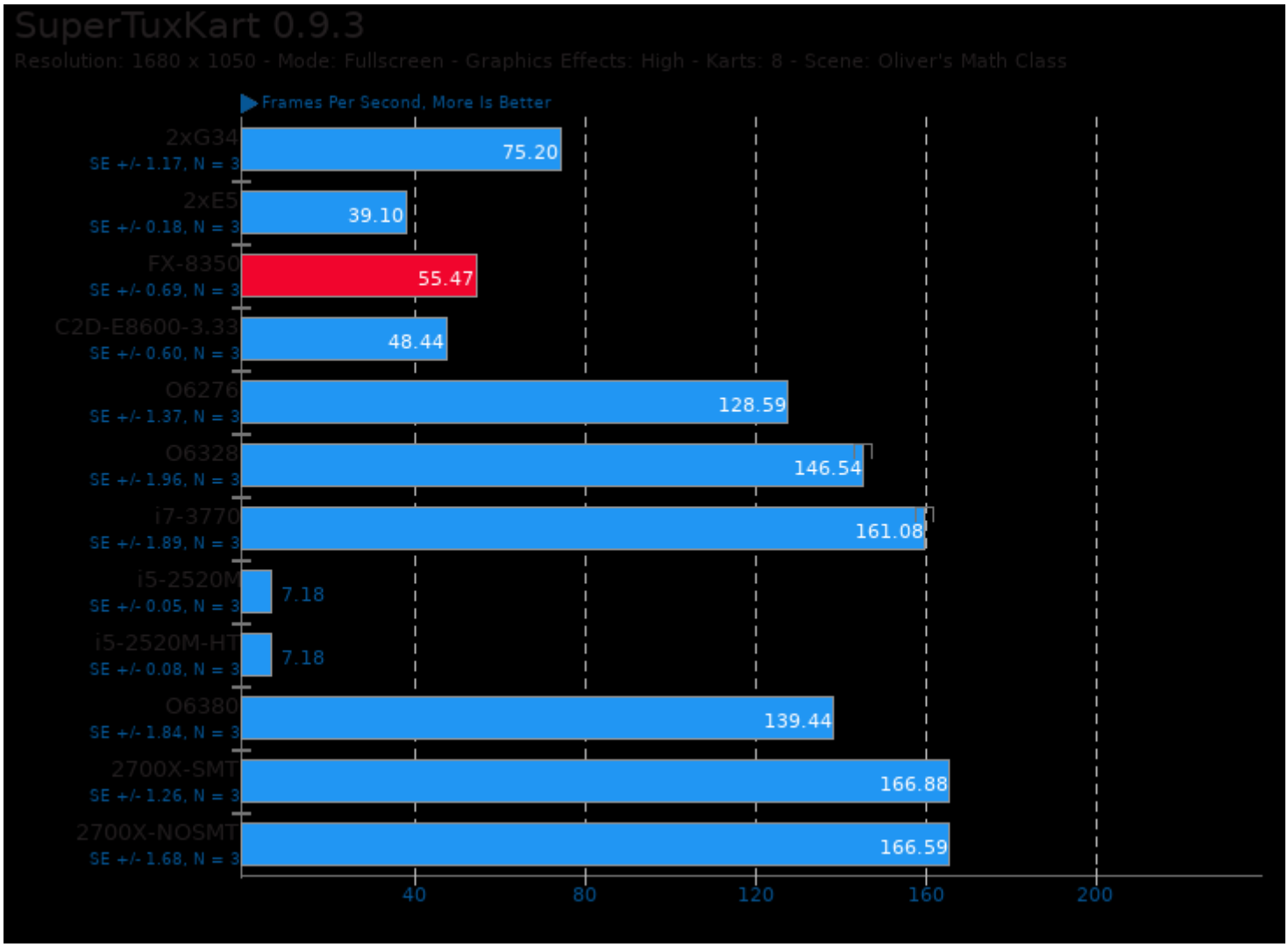

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Candela City
Frames Per Second, More Is Better
2xG34
SE +/- 0.12, N = 3
56.27
2xE5
SE +/- 0.05, N = 3
25.42
FX-8350
SE +/- 0.28, N = 3
28.11
C2D-E8600-3.33
SE +/- 0.19, N = 3
16.37
O6276
SE +/- 0.99, N = 3
87.06
O6328
SE +/- 1.45, N = 3
104.87
i7-3770
SE +/- 0.57, N = 3
123.28
i5-2520M
SE +/- 0.05, N = 3
5.82
i5-2520M-HT
SE +/- 0.04, N = 3
5.82
O6380
SE +/- 0.33, N = 3
96.55
2700X-SMT
SE +/- 0.22, N = 3
127.72
2700X-NOSMT
SE +/- 0.52, N = 3
128.38
30
60
90
120
150

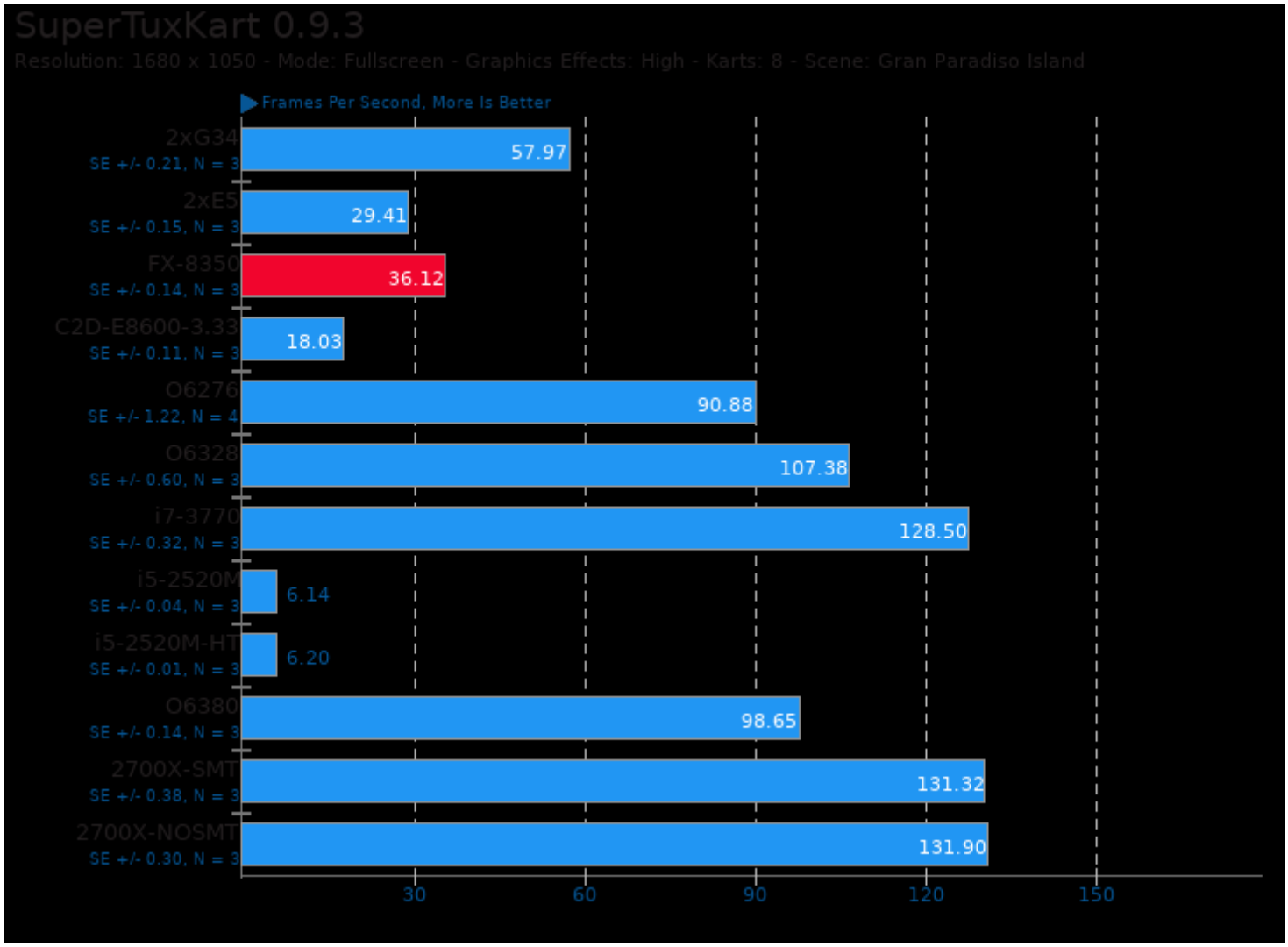

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Cocoa Temple
Frames Per Second, More Is Better
2xG34
SE +/- 0.40, N = 3
53.71
2xE5
SE +/- 0.17, N = 3
27.80
FX-8350
SE +/- 0.08, N = 3
34.08
C2D-E8600-3.33
SE +/- 0.17, N = 15
13.30
O6276
SE +/- 1.19, N = 3
76.10
O6328
SE +/- 0.93, N = 3
98.76
i7-3770
SE +/- 0.83, N = 3
119.00
i5-2520M
SE +/- 0.02, N = 3
5.42
i5-2520M-HT
SE +/- 0.03, N = 3
5.33
O6380
SE +/- 1.47, N = 3
87.43
2700X-SMT
SE +/- 0.75, N = 3
121.56
2700X-NOSMT
SE +/- 0.63, N = 3
120.08
30
60
90
120
150

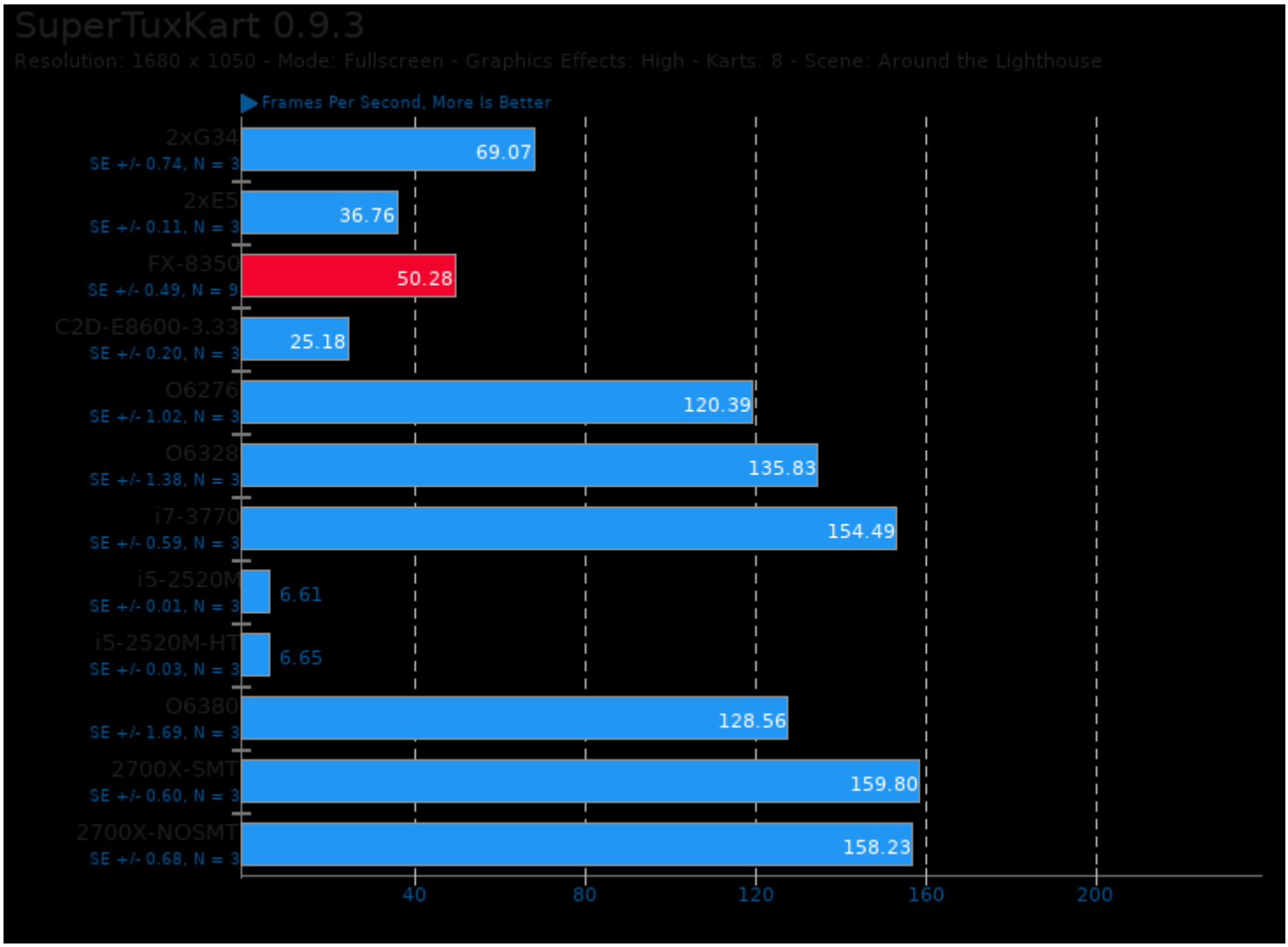

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: STK Enterprise
Frames Per Second, More Is Better
2xG34
SE +/- 0.58, N = 3
65.97
2xE5
SE +/- 0.41, N = 3
34.72
FX-8350
SE +/- 0.42, N = 15
48.09
C2D-E8600-3.33
SE +/- 0.46, N = 4
36.72
O6276
SE +/- 1.53, N = 5
114.67
O6328
SE +/- 1.65, N = 3
131.94
i7-3770
SE +/- 0.57, N = 3
144.61
i5-2520M
SE +/- 0.01, N = 3
6.40
i5-2520M-HT
SE +/- 0.01, N = 3
6.44
O6380
SE +/- 1.49, N = 3
125.40
2700X-SMT
SE +/- 1.44, N = 3
150.50
2700X-NOSMT
SE +/- 0.85, N = 3
148.44
30
60
90
120
150

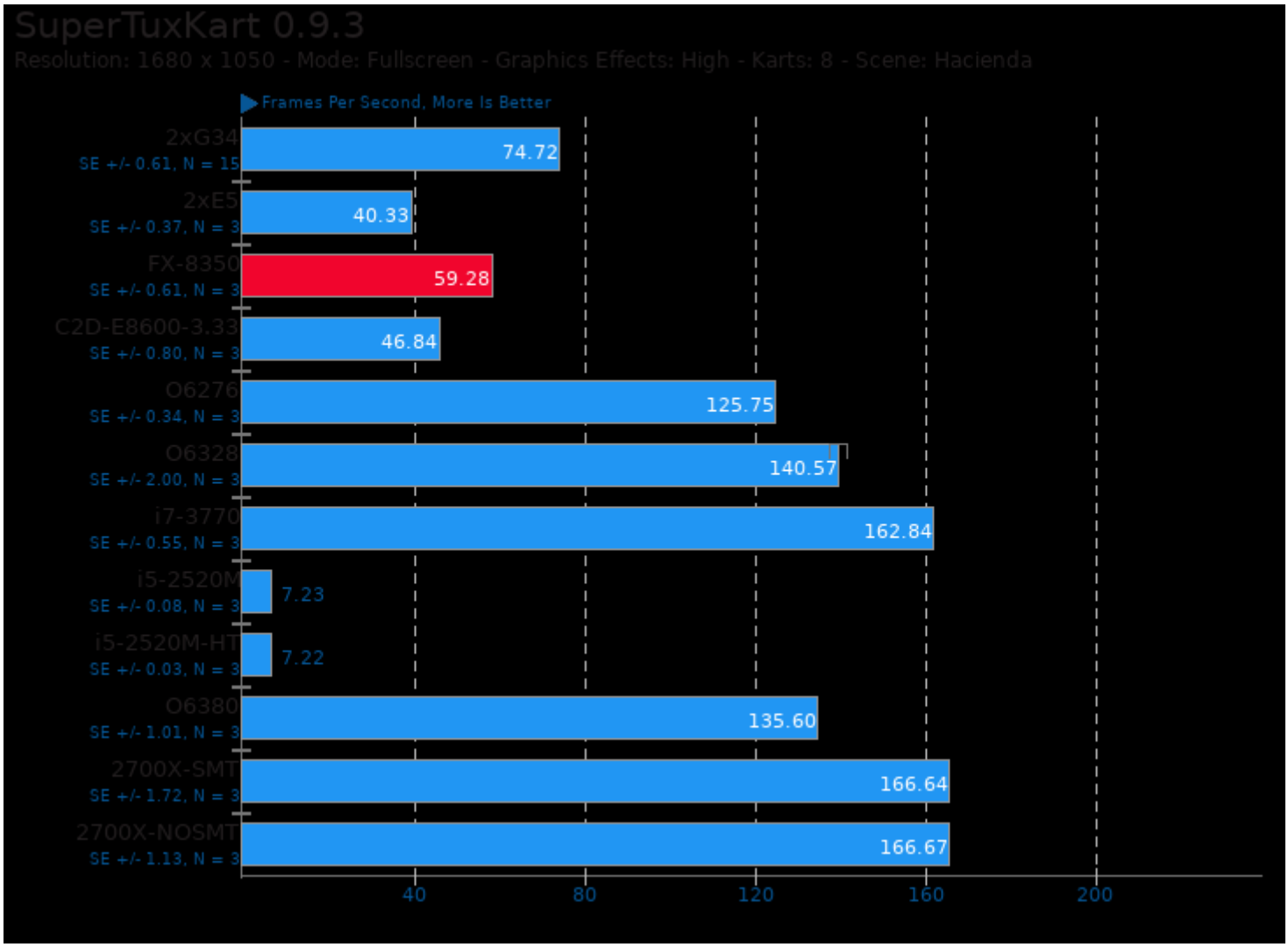

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Antediluvian Abyss
Frames Per Second, More Is Better
2xG34
SE +/- 0.15, N = 3
59.79
2xE5
SE +/- 0.26, N = 3
27.05
FX-8350
SE +/- 0.40, N = 3
32.59
C2D-E8600-3.33
SE +/- 0.31, N = 3
24.34
O6276
SE +/- 0.52, N = 3
103.24
O6328
SE +/- 0.77, N = 3
114.24
i7-3770
SE +/- 0.73, N = 3
129.50
i5-2520M
SE +/- 0.01, N = 3
5.91
i5-2520M-HT
SE +/- 0.03, N = 3
5.85
O6380
SE +/- 0.18, N = 3
111.00
2700X-SMT
SE +/- 0.79, N = 3
132.77
2700X-NOSMT
SE +/- 0.69, N = 3
131.61
30
60
90
120
150

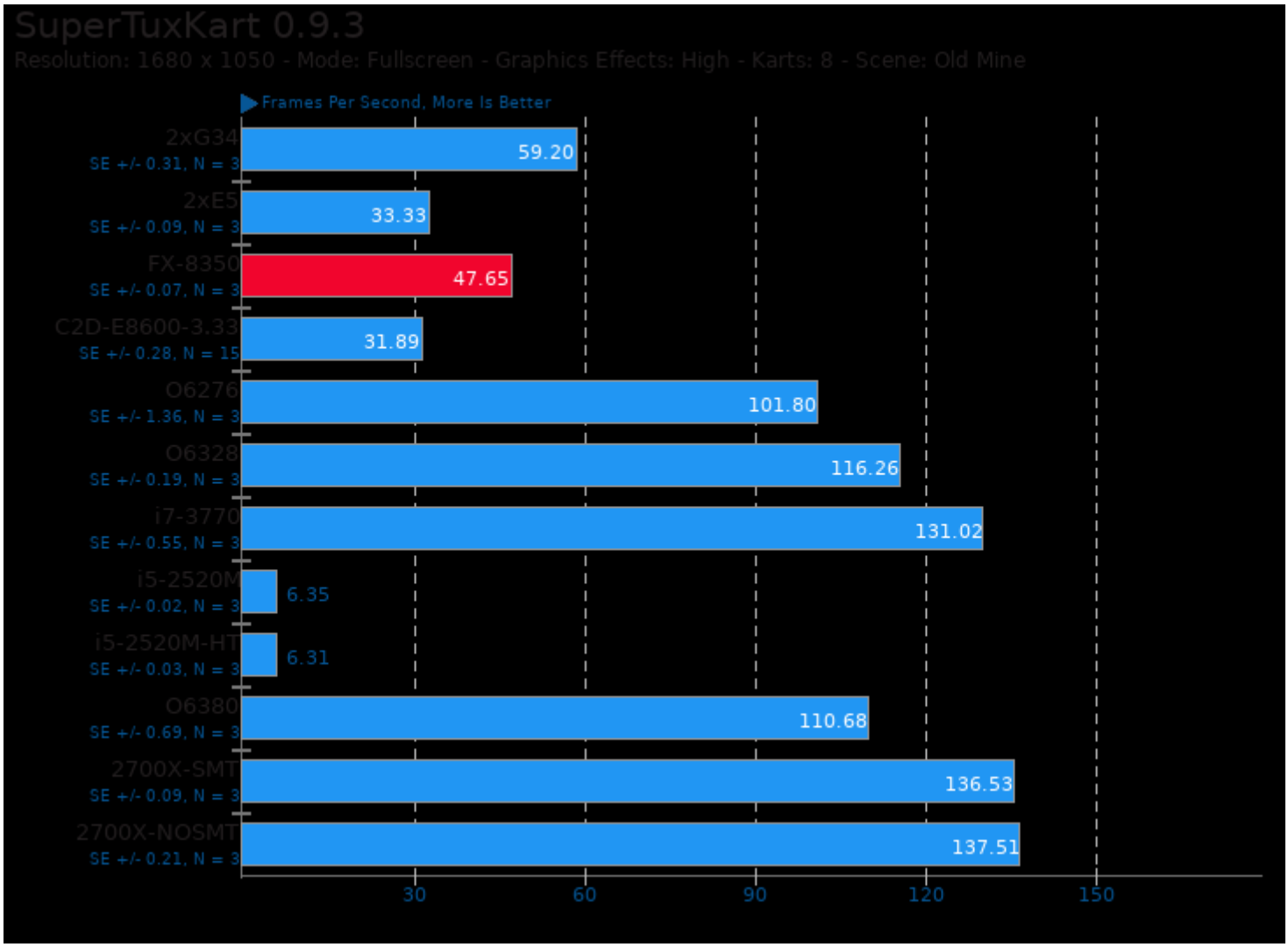

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Cornfield Crossing
Frames Per Second, More Is Better
2xG34
SE +/- 0.27, N = 3
63.14
2xE5
SE +/- 0.04, N = 3
31.41
FX-8350
SE +/- 0.40, N = 3
39.50
C2D-E8600-3.33
SE +/- 0.17, N = 3
20.34
O6276
SE +/- 0.16, N = 3
108.09
O6328
SE +/- 0.69, N = 3
121.24
i7-3770
SE +/- 0.32, N = 3
136.79
i5-2520M
SE +/- 0.02, N = 3
6.33
i5-2520M-HT
SE +/- 0.01, N = 3
6.30
O6380
SE +/- 0.30, N = 3
113.92
2700X-SMT
SE +/- 0.16, N = 3
140.28
2700X-NOSMT
SE +/- 0.42, N = 3
141.26
30
60
90
120
150

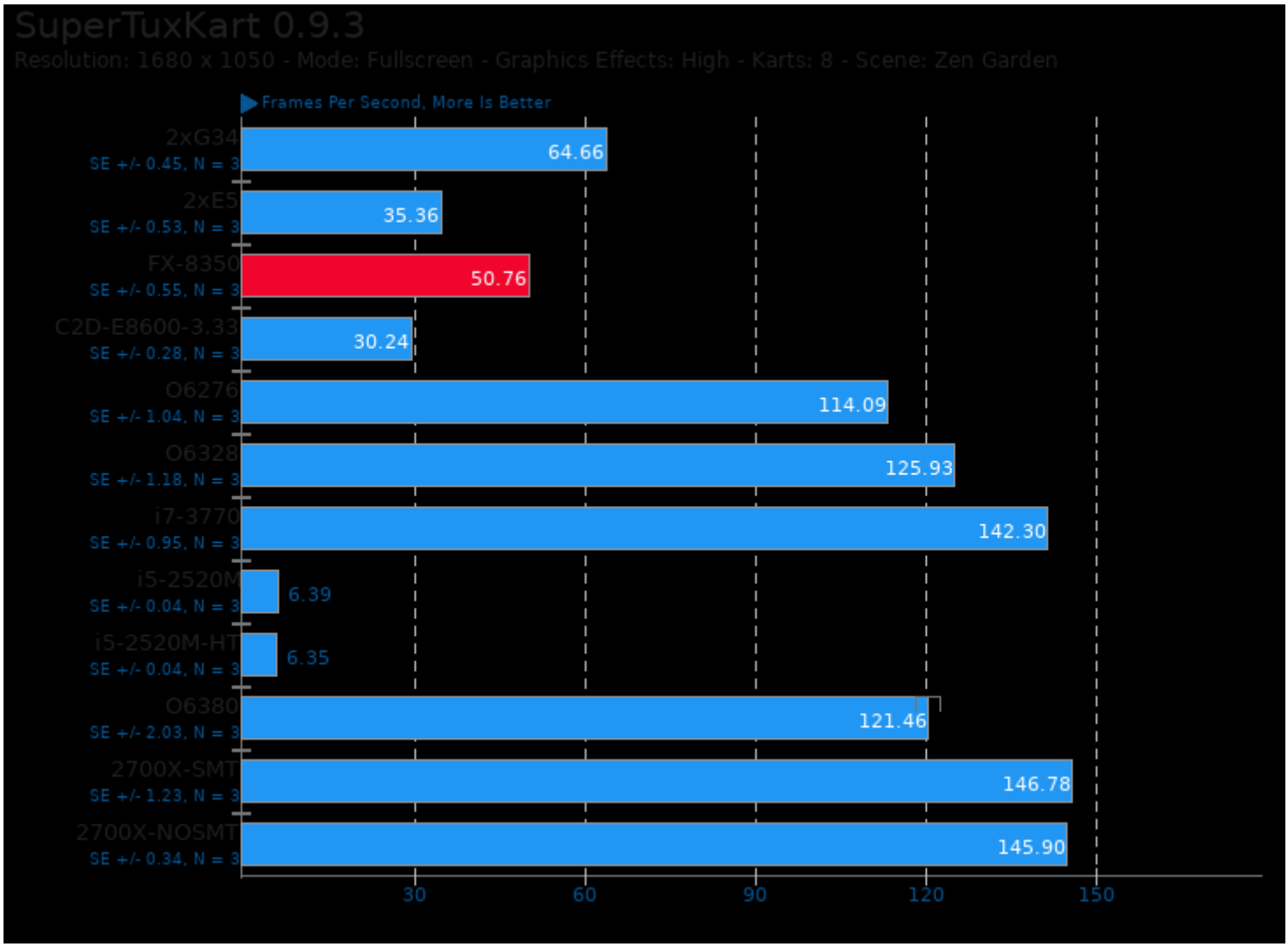

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Oliver's Math Class
Frames Per Second, More Is Better
2xG34
SE +/- 1.17, N = 3
75.20
2xE5
SE +/- 0.18, N = 3
39.10
FX-8350
SE +/- 0.69, N = 3
55.47
C2D-E8600-3.33
SE +/- 0.60, N = 3
48.44
O6276
SE +/- 1.37, N = 3
128.59
O6328
SE +/- 1.96, N = 3
146.54
i7-3770
SE +/- 1.89, N = 3
161.08
i5-2520M
SE +/- 0.05, N = 3
7.18
i5-2520M-HT
SE +/- 0.08, N = 3
7.18
O6380
SE +/- 1.84, N = 3
139.44
2700X-SMT
SE +/- 1.26, N = 3
166.88
2700X-NOSMT
SE +/- 1.68, N = 3
166.59
40
80
120
160
200

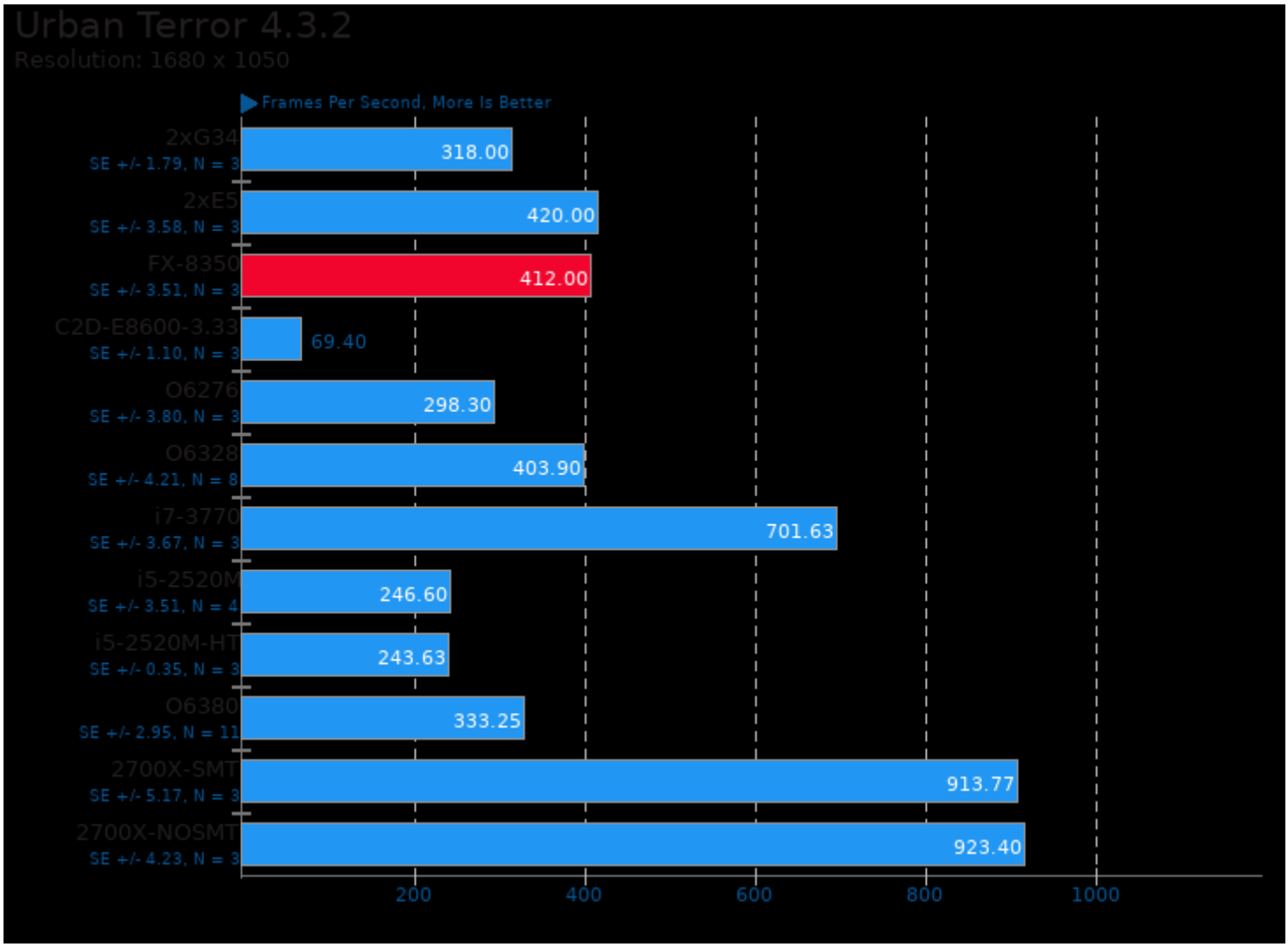

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Gran Paradiso Island
Frames Per Second, More Is Better
2xG34
SE +/- 0.21, N = 3
57.97
2xE5
SE +/- 0.15, N = 3
29.41
FX-8350
SE +/- 0.14, N = 3
36.12
C2D-E8600-3.33
SE +/- 0.11, N = 3
18.03
O6276
SE +/- 1.22, N = 4
90.88
O6328
SE +/- 0.60, N = 3
107.38
i7-3770
SE +/- 0.32, N = 3
128.50
i5-2520M
SE +/- 0.04, N = 3
6.14
i5-2520M-HT
SE +/- 0.01, N = 3
6.20
O6380
SE +/- 0.14, N = 3
98.65
2700X-SMT
SE +/- 0.38, N = 3
131.32
2700X-NOSMT
SE +/- 0.30, N = 3
131.90
30
60
90
120
150


SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Around the Lighthouse
Frames Per Second, More Is Better
2xG34
SE +/- 0.74, N = 3
69.07
2xE5
SE +/- 0.11, N = 3
36.76
FX-8350
SE +/- 0.49, N = 9
50.28
C2D-E8600-3.33
SE +/- 0.20, N = 3
25.18
O6276
SE +/- 1.02, N = 3
120.39
O6328
SE +/- 1.38, N = 3
135.83
i7-3770
SE +/- 0.59, N = 3
154.49
i5-2520M
SE +/- 0.01, N = 3
6.61
i5-2520M-HT
SE +/- 0.03, N = 3
6.65
O6380
SE +/- 1.69, N = 3
128.56
2700X-SMT
SE +/- 0.60, N = 3
159.80
2700X-NOSMT
SE +/- 0.68, N = 3
158.23
40
80
120
160
200

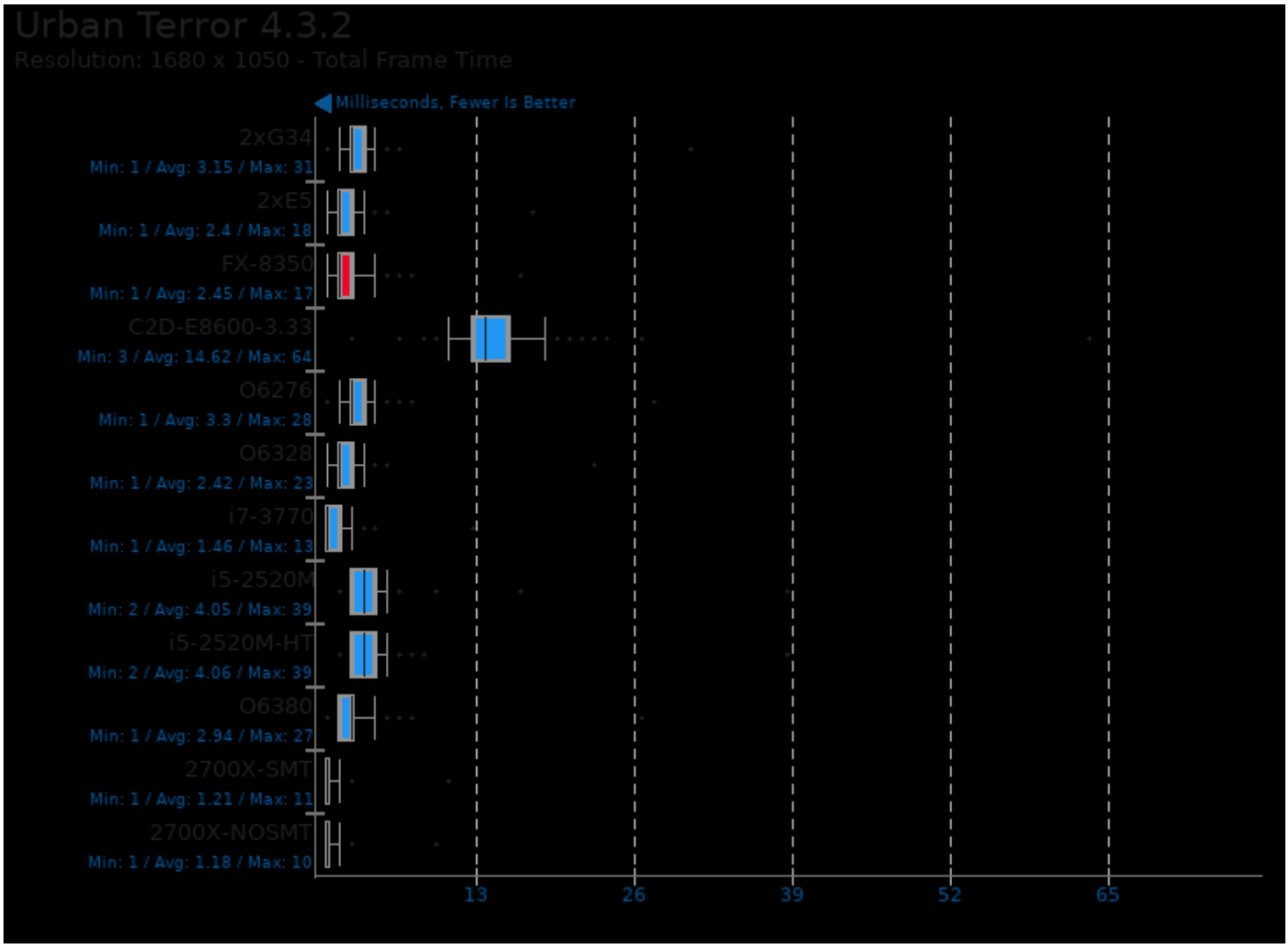

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Hacienda
Frames Per Second, More Is Better
2xG34
SE +/- 0.61, N = 15
74.72
2xE5
SE +/- 0.37, N = 3
40.33
FX-8350
SE +/- 0.61, N = 3
59.28
C2D-E8600-3.33
SE +/- 0.80, N = 3
46.84
O6276
SE +/- 0.34, N = 3
125.75
O6328
SE +/- 2.00, N = 3
140.57
i7-3770
SE +/- 0.55, N = 3
162.84
i5-2520M
SE +/- 0.08, N = 3
7.23
i5-2520M-HT
SE +/- 0.03, N = 3
7.22
O6380
SE +/- 1.01, N = 3
135.60
2700X-SMT
SE +/- 1.72, N = 3
166.64
2700X-NOSMT
SE +/- 1.13, N = 3
166.67
40
80
120
160
200

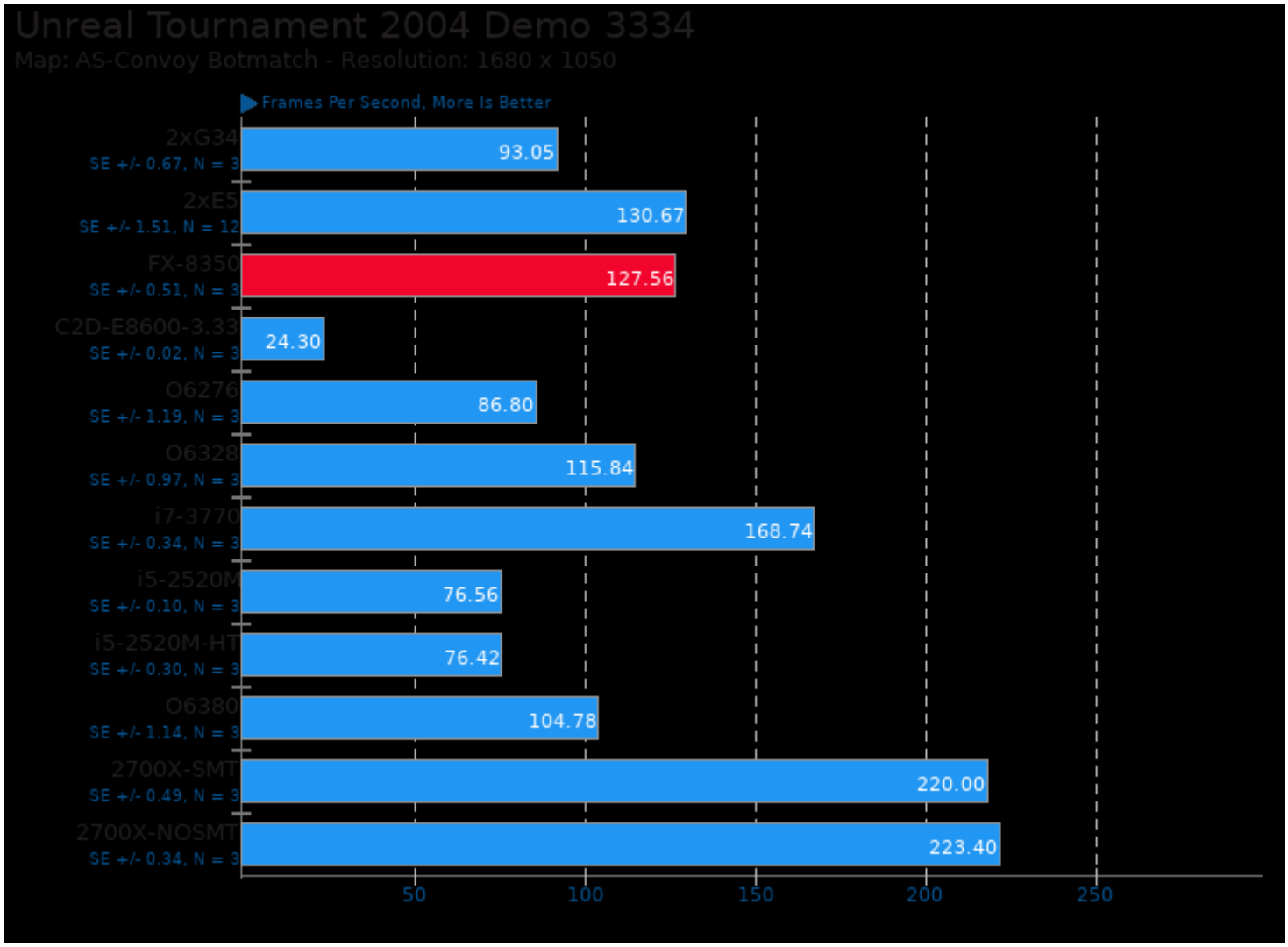

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Old Mine
Frames Per Second, More Is Better
2xG34
SE +/- 0.31, N = 3
59.20
2xE5
SE +/- 0.09, N = 3
33.33
FX-8350
SE +/- 0.07, N = 3
47.65
C2D-E8600-3.33
SE +/- 0.28, N = 15
31.89
O6276
SE +/- 1.36, N = 3
101.80
O6328
SE +/- 0.19, N = 3
116.26
i7-3770
SE +/- 0.55, N = 3
131.02
i5-2520M
SE +/- 0.02, N = 3
6.35
i5-2520M-HT
SE +/- 0.03, N = 3
6.31
O6380
SE +/- 0.69, N = 3
110.68
2700X-SMT
SE +/- 0.09, N = 3
136.53
2700X-NOSMT
SE +/- 0.21, N = 3
137.51
30
60
90
120
150

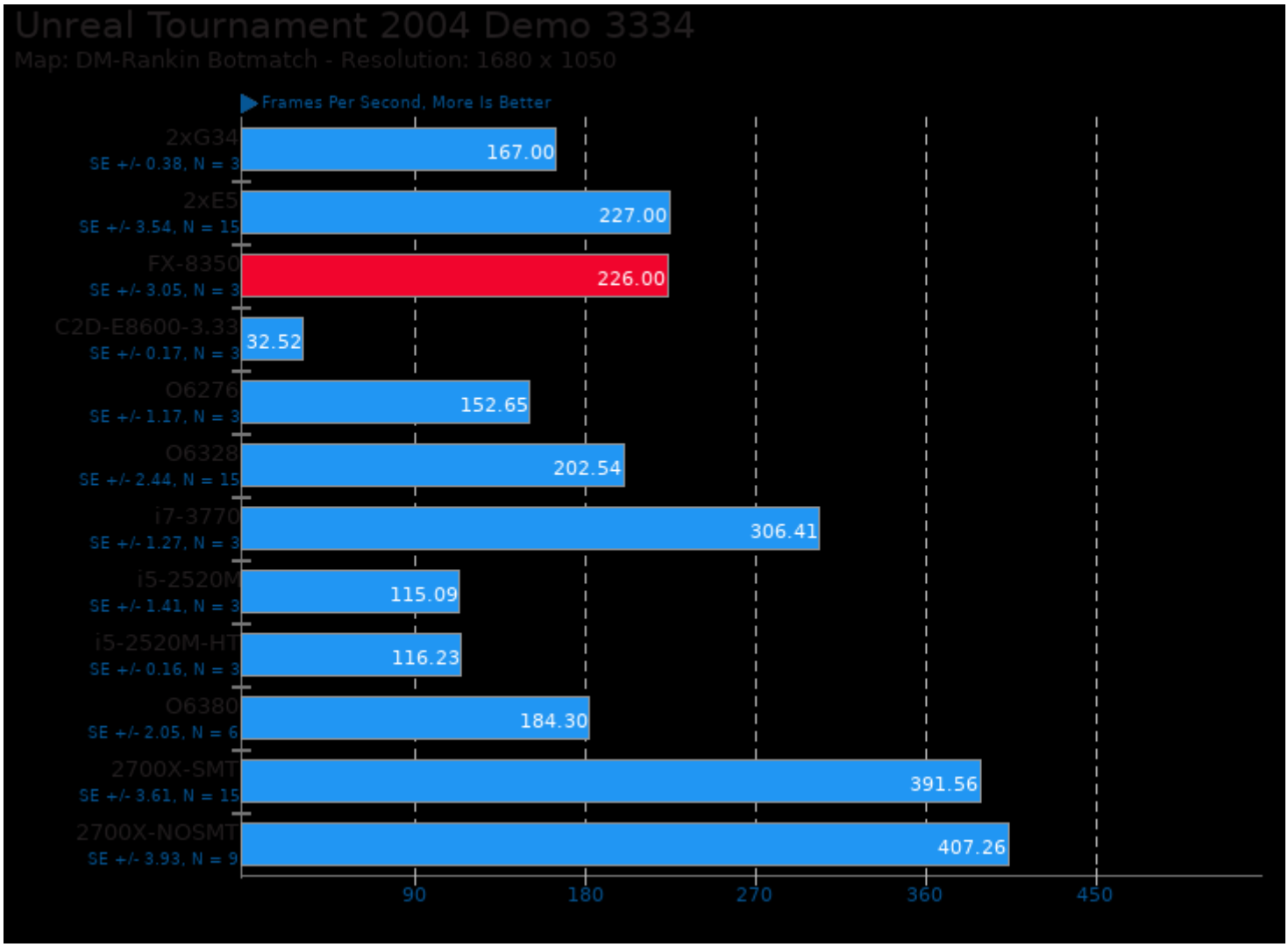

SuperTuxKart 0.9.3
Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Zen Garden
Frames Per Second, More Is Better
2xG34
SE +/- 0.45, N = 3
64.66
2xE5
SE +/- 0.53, N = 3
35.36
FX-8350
SE +/- 0.55, N = 3
50.76
C2D-E8600-3.33
SE +/- 0.28, N = 3
30.24
O6276
SE +/- 1.04, N = 3
114.09
O6328
SE +/- 1.18, N = 3
125.93
i7-3770
SE +/- 0.95, N = 3
142.30
i5-2520M
SE +/- 0.04, N = 3
6.39
i5-2520M-HT
SE +/- 0.04, N = 3
6.35
O6380
SE +/- 2.03, N = 3
121.46
2700X-SMT
SE +/- 1.23, N = 3
146.78
2700X-NOSMT
SE +/- 0.34, N = 3
145.90
30
60
90
120
150

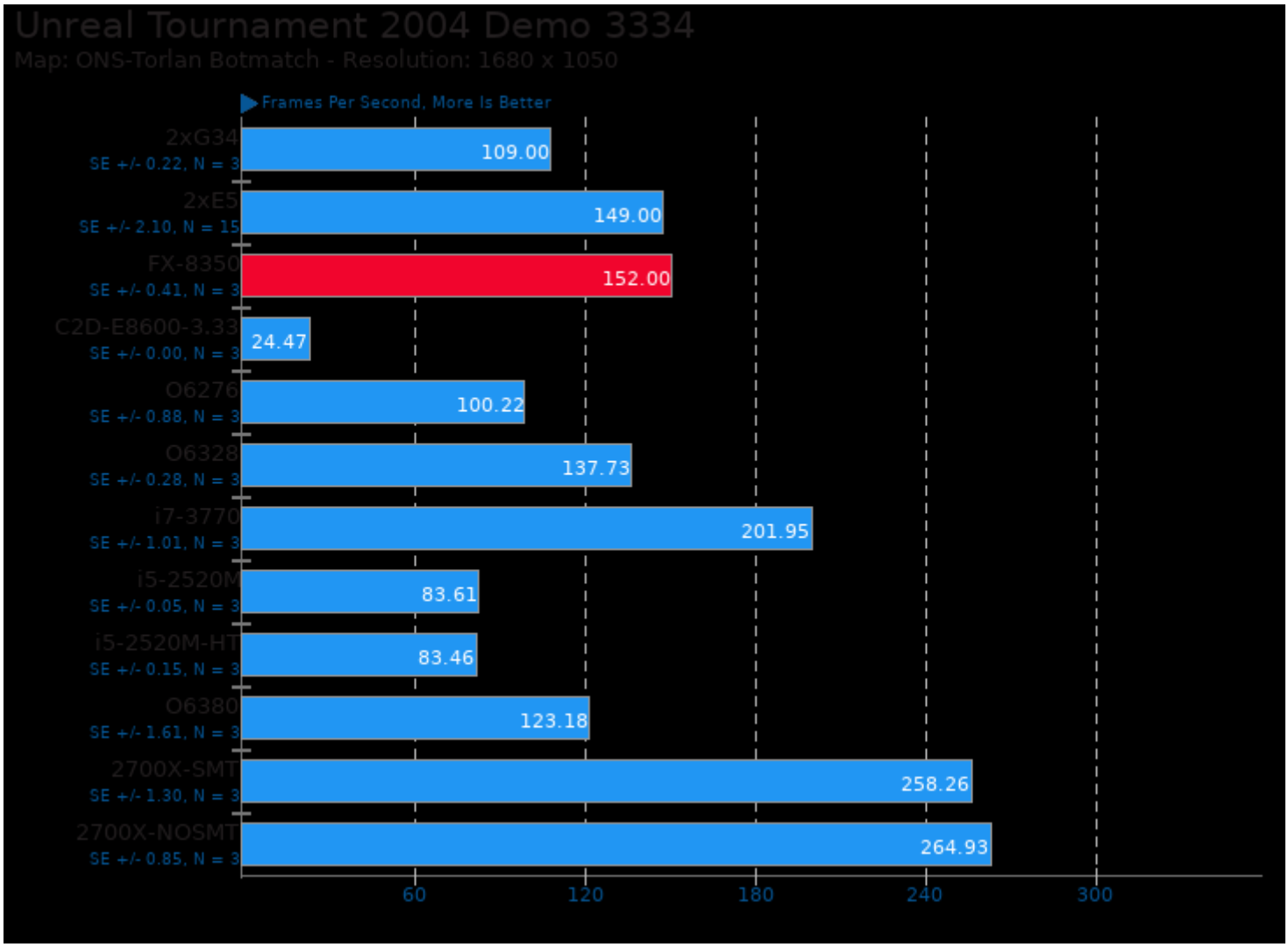

Urban Terror 4.3.2
Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 1.79, N = 3
318.00
2xE5
SE +/- 3.58, N = 3
420.00
FX-8350
SE +/- 3.51, N = 3
412.00
C2D-E8600-3.33
SE +/- 1.10, N = 3
69.40
O6276
SE +/- 3.80, N = 3
298.30
O6328
SE +/- 4.21, N = 8
403.90
i7-3770
SE +/- 3.67, N = 3
701.63
i5-2520M
SE +/- 3.51, N = 4
246.60
i5-2520M-HT
SE +/- 0.35, N = 3
243.63
O6380
SE +/- 2.95, N = 11
333.25
2700X-SMT
SE +/- 5.17, N = 3
913.77
2700X-NOSMT
SE +/- 4.23, N = 3
923.40
200
400
600
800
1000

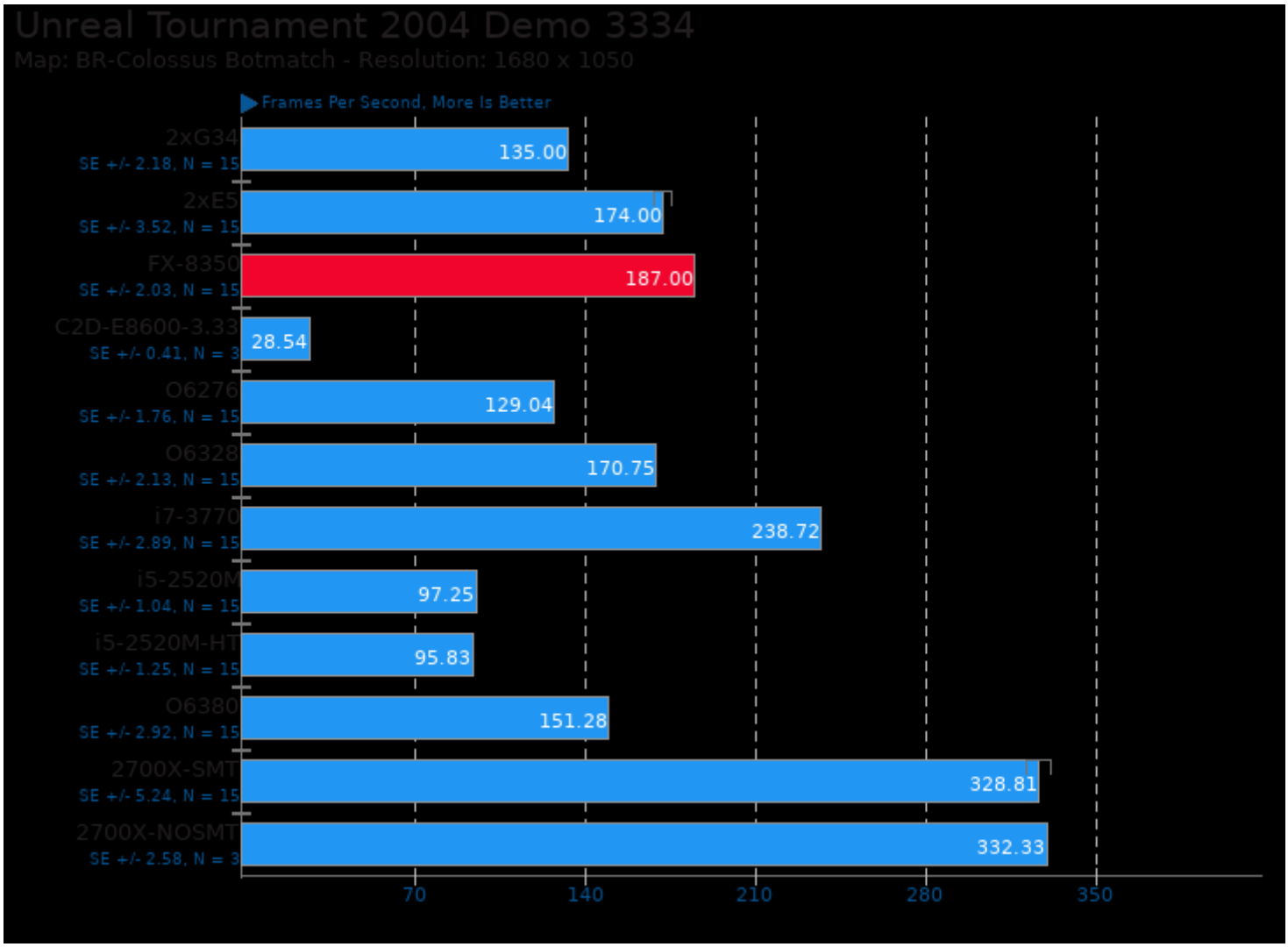
test sample

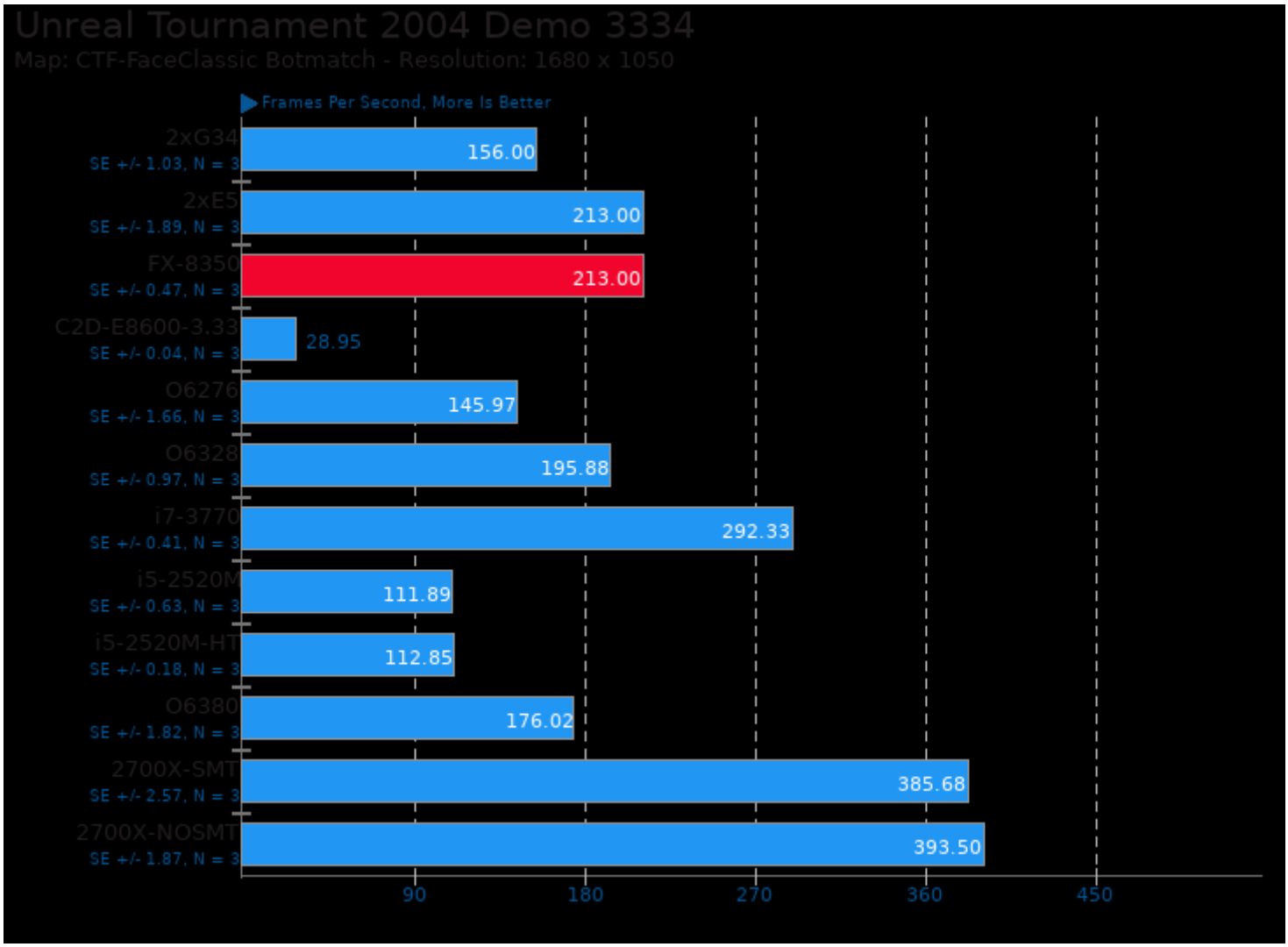

Urban Terror 4.3.2
Resolution: 1680 x 1050 - Total Frame Time
Milliseconds, Fewer Is Better
2xG34
Min: 1 / Avg: 3.15 / Max: 31
2xE5
Min: 1 / Avg: 2.4 / Max: 18
FX-8350
Min: 1 / Avg: 2.45 / Max: 17
C2D-E8600-3.33
Min: 3 / Avg: 14.62 / Max: 64
O6276
Min: 1 / Avg: 3.3 / Max: 28
O6328
Min: 1 / Avg: 2.42 / Max: 23
i7-3770
Min: 1 / Avg: 1.46 / Max: 13
i5-2520M
Min: 2 / Avg: 4.05 / Max: 39
i5-2520M-HT
Min: 2 / Avg: 4.06 / Max: 39
O6380
Min: 1 / Avg: 2.94 / Max: 27
2700X-SMT
Min: 1 / Avg: 1.21 / Max: 11
2700X-NOSMT
Min: 1 / Avg: 1.18 / Max: 10
13
26
39
52
65

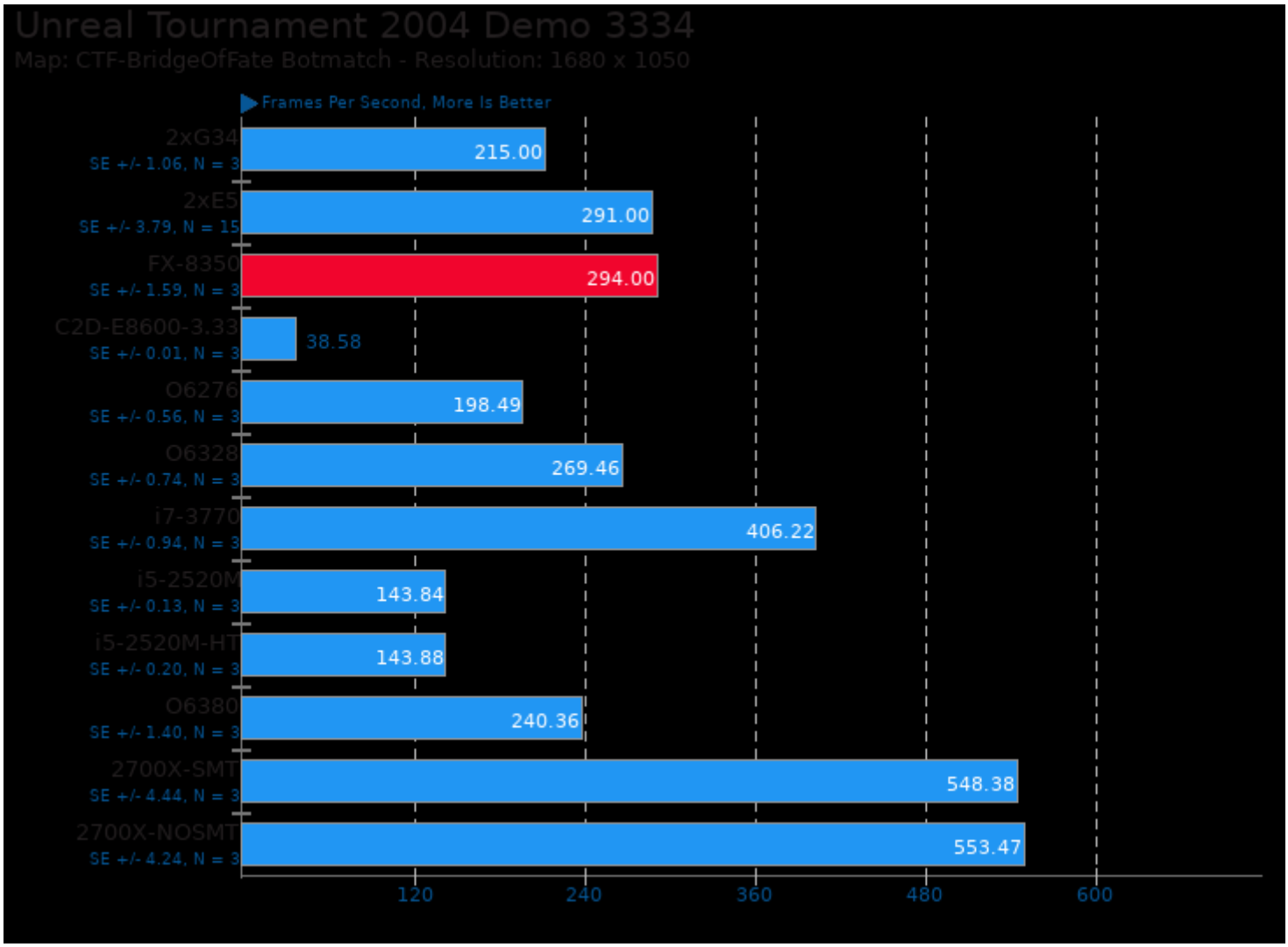

Unreal Tournament 2004 Demo 3334
Map: AS-Convoy Botmatch - Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 0.67, N = 3
93.05
2xE5
SE +/- 1.51, N = 12
130.67
FX-8350
SE +/- 0.51, N = 3
127.56
C2D-E8600-3.33
SE +/- 0.02, N = 3
24.30
O6276
SE +/- 1.19, N = 3
86.80
O6328
SE +/- 0.97, N = 3
115.84
i7-3770
SE +/- 0.34, N = 3
168.74
i5-2520M
SE +/- 0.10, N = 3
76.56
i5-2520M-HT
SE +/- 0.30, N = 3
76.42
O6380
SE +/- 1.14, N = 3
104.78
2700X-SMT
SE +/- 0.49, N = 3
220.00
2700X-NOSMT
SE +/- 0.34, N = 3
223.40
50
100
150
200
250

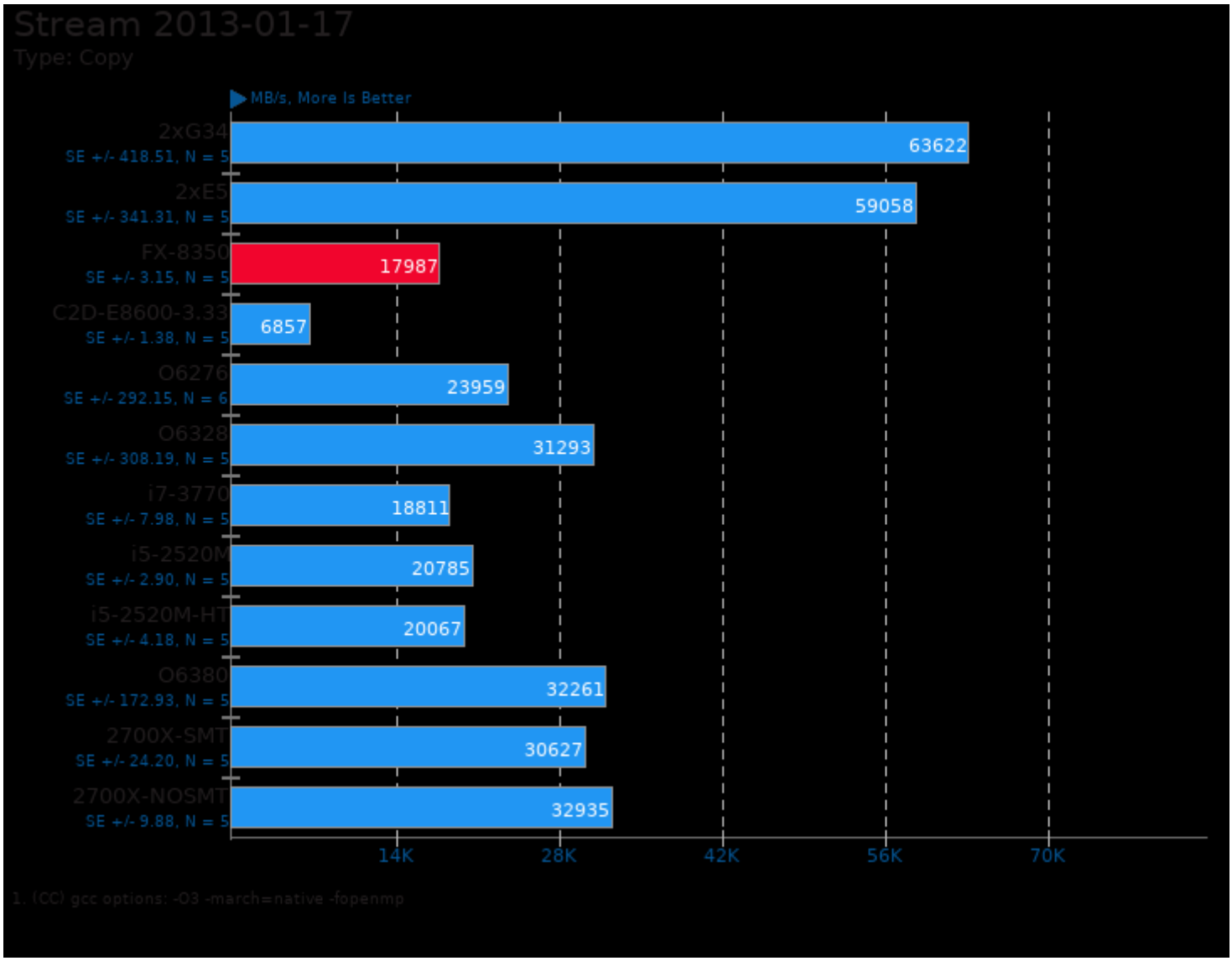

Unreal Tournament 2004 Demo 3334
Map: DM-Rankin Botmatch - Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 0.38, N = 3
167.00
2xE5
SE +/- 3.54, N = 15
227.00
FX-8350
SE +/- 3.05, N = 3
226.00
C2D-E8600-3.33
SE +/- 0.17, N = 3
32.52
O6276
SE +/- 1.17, N = 3
152.65
O6328
SE +/- 2.44, N = 15
202.54
i7-3770
SE +/- 1.27, N = 3
306.41
i5-2520M
SE +/- 1.41, N = 3
115.09
i5-2520M-HT
SE +/- 0.16, N = 3
116.23
O6380
SE +/- 2.05, N = 6
184.30
2700X-SMT
SE +/- 3.61, N = 15
391.56
2700X-NOSMT
SE +/- 3.93, N = 9
407.26
90
180
270
360
450

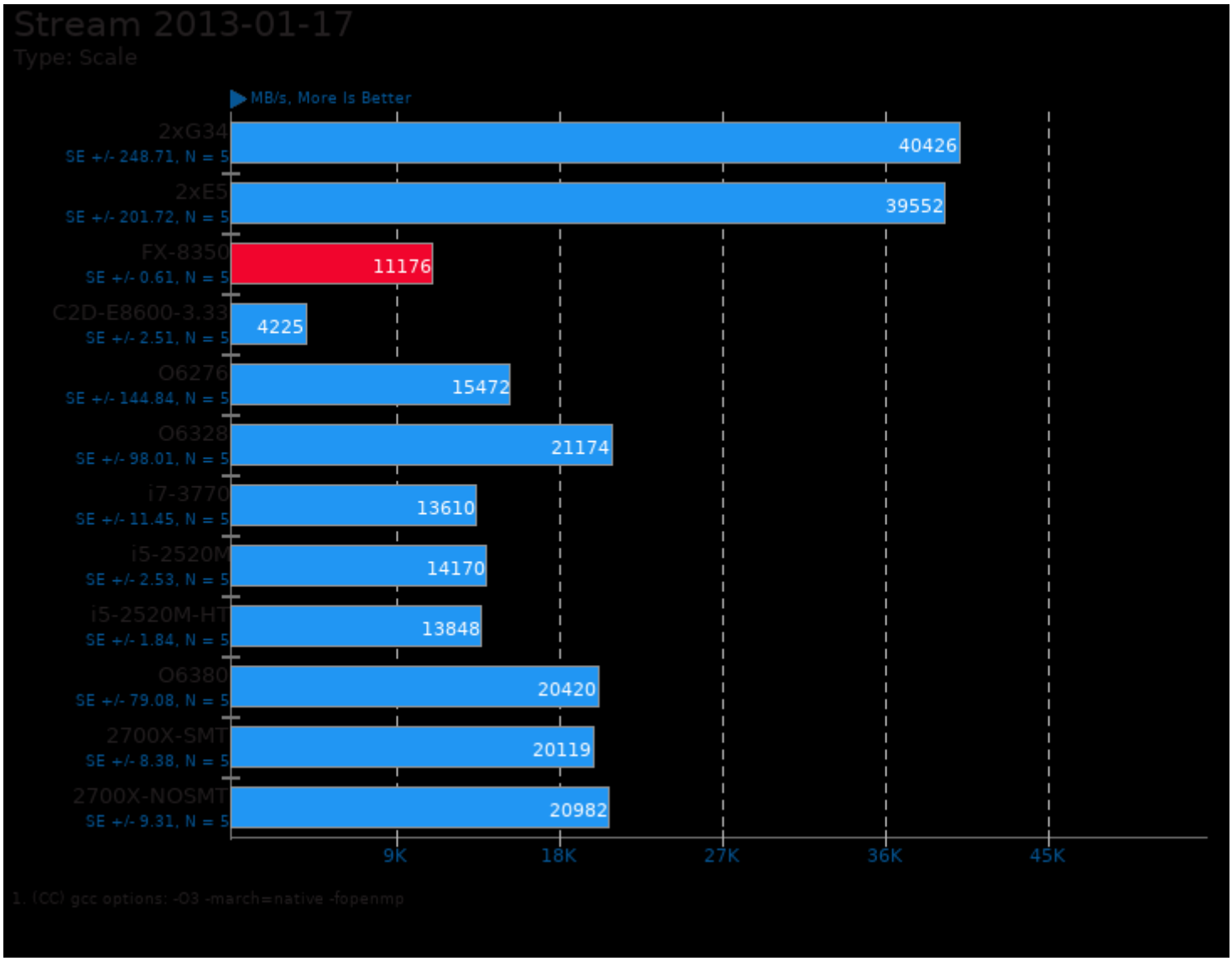

Unreal Tournament 2004 Demo 3334
Map: ONS-Torlan Botmatch - Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 0.22, N = 3
109.00
2xE5
SE +/- 2.10, N = 15
149.00
FX-8350
SE +/- 0.41, N = 3
152.00
C2D-E8600-3.33
SE +/- 0.00, N = 3
24.47
O6276
SE +/- 0.88, N = 3
100.22
O6328
SE +/- 0.28, N = 3
137.73
i7-3770
SE +/- 1.01, N = 3
201.95
i5-2520M
SE +/- 0.05, N = 3
83.61
i5-2520M-HT
SE +/- 0.15, N = 3
83.46
O6380
SE +/- 1.61, N = 3
123.18
2700X-SMT
SE +/- 1.30, N = 3
258.26
2700X-NOSMT
SE +/- 0.85, N = 3
264.93
60
120
180
240
300

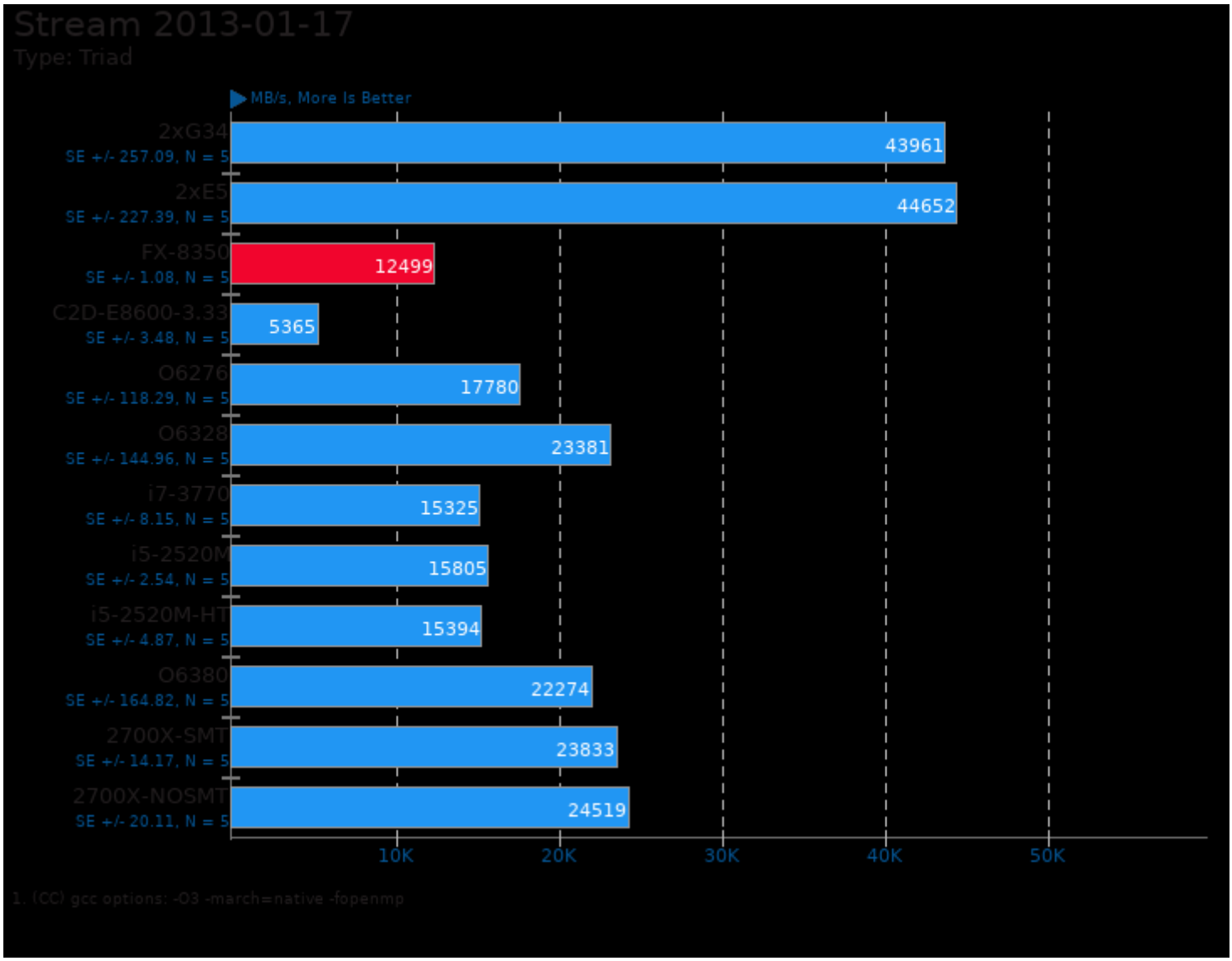

Unreal Tournament 2004 Demo 3334
Map: BR-Colossus Botmatch - Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 2.18, N = 15
135.00
2xE5
SE +/- 3.52, N = 15
174.00
FX-8350
SE +/- 2.03, N = 15
187.00
C2D-E8600-3.33
SE +/- 0.41, N = 3
28.54
O6276
SE +/- 1.76, N = 15
129.04
O6328
SE +/- 2.13, N = 15
170.75
i7-3770
SE +/- 2.89, N = 15
238.72
i5-2520M
SE +/- 1.04, N = 15
97.25
i5-2520M-HT
SE +/- 1.25, N = 15
95.83
O6380
SE +/- 2.92, N = 15
151.28
2700X-SMT
SE +/- 5.24, N = 15
328.81
2700X-NOSMT
SE +/- 2.58, N = 3
332.33
70
140
210
280
350

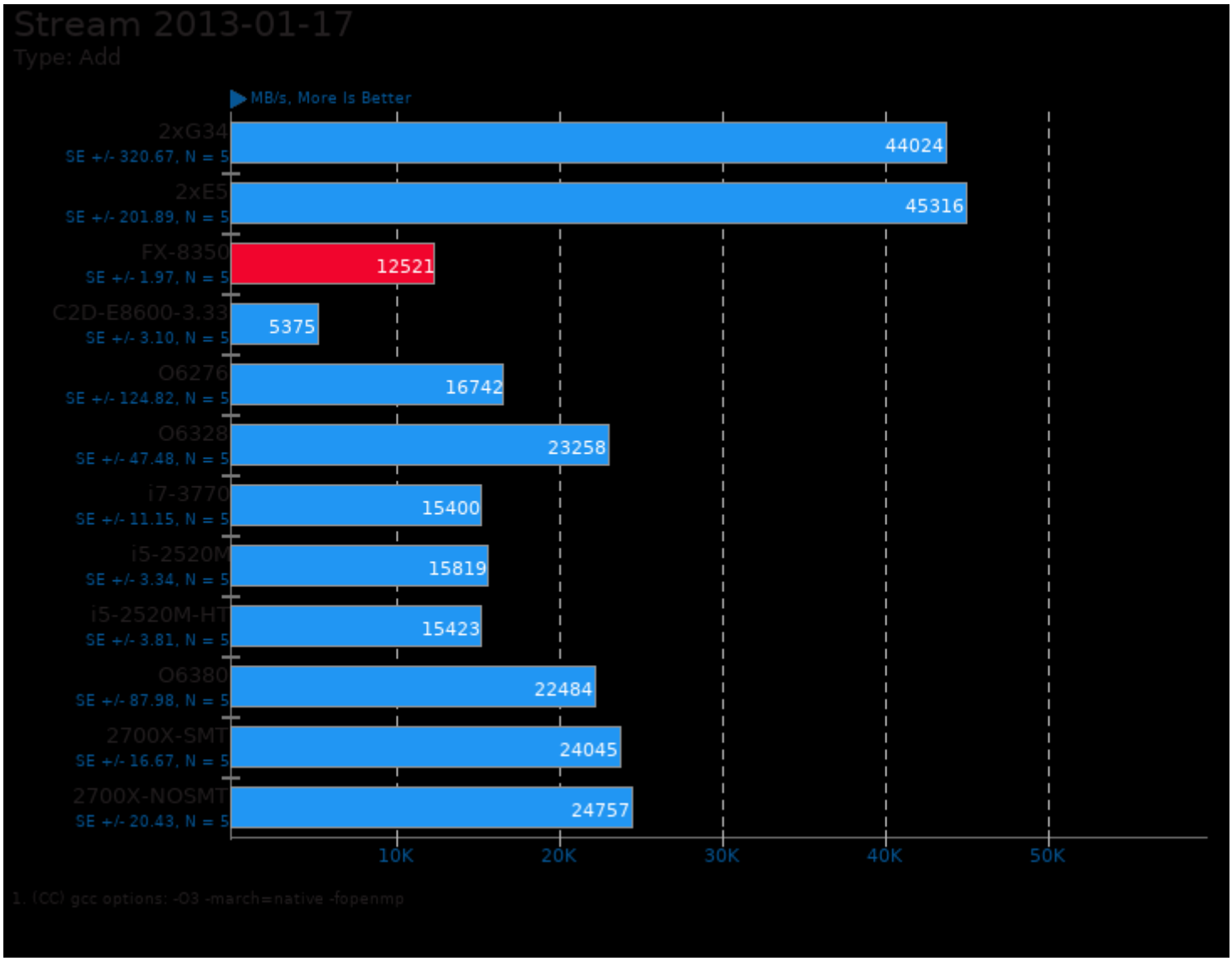

Unreal Tournament 2004 Demo 3334
Map: CTF-FaceClassic Botmatch - Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 1.03, N = 3
156.00
2xE5
SE +/- 1.89, N = 3
213.00
FX-8350
SE +/- 0.47, N = 3
213.00
C2D-E8600-3.33
SE +/- 0.04, N = 3
28.95
O6276
SE +/- 1.66, N = 3
145.97
O6328
SE +/- 0.97, N = 3
195.88
i7-3770
SE +/- 0.41, N = 3
292.33
i5-2520M
SE +/- 0.63, N = 3
111.89
i5-2520M-HT
SE +/- 0.18, N = 3
112.85
O6380
SE +/- 1.82, N = 3
176.02
2700X-SMT
SE +/- 2.57, N = 3
385.68
2700X-NOSMT
SE +/- 1.87, N = 3
393.50
90
180
270
360
450

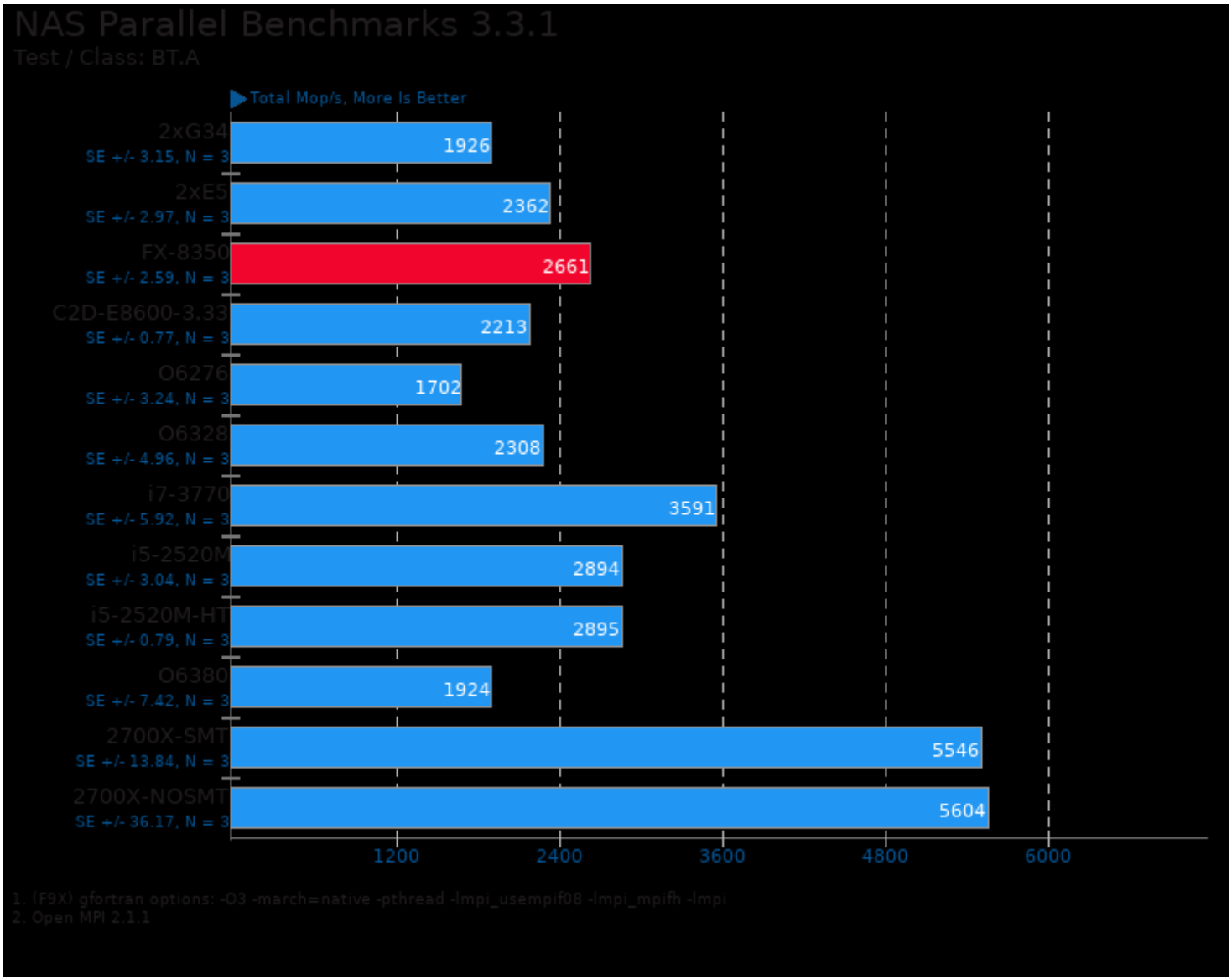

Unreal Tournament 2004 Demo 3334
Map: CTF-BridgeOfFate Botmatch - Resolution: 1680 x 1050
Frames Per Second, More Is Better
2xG34
SE +/- 1.06, N = 3
215.00
2xE5
SE +/- 3.79, N = 15
291.00
FX-8350
SE +/- 1.59, N = 3
294.00
C2D-E8600-3.33
SE +/- 0.01, N = 3
38.58
O6276
SE +/- 0.56, N = 3
198.49
O6328
SE +/- 0.74, N = 3
269.46
i7-3770
SE +/- 0.94, N = 3
406.22
i5-2520M
SE +/- 0.13, N = 3
143.84
i5-2520M-HT
SE +/- 0.20, N = 3
143.88
O6380
SE +/- 1.40, N = 3
240.36
2700X-SMT
SE +/- 4.44, N = 3
548.38
2700X-NOSMT
SE +/- 4.24, N = 3
553.47
120
240
360
480
600

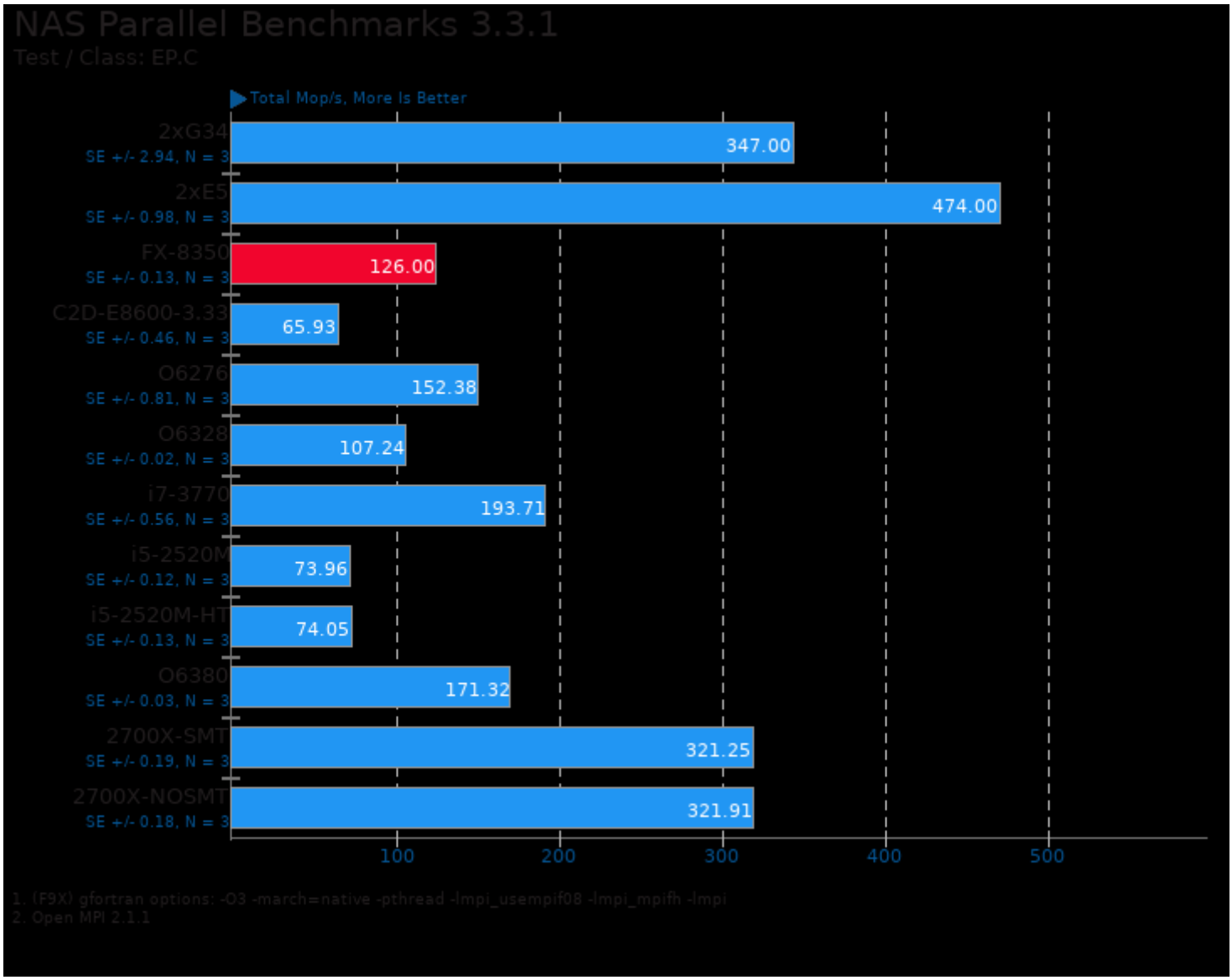

Stream 2013-01-17
Type: Copy
MB/s, More Is Better
2xG34
SE +/- 418.51, N = 5
63622
2xE5
SE +/- 341.31, N = 5
59058
FX-8350
SE +/- 3.15, N = 5
17987
C2D-E8600-3.33
SE +/- 1.38, N = 5
6857
O6276
SE +/- 292.15, N = 6
23959
O6328
SE +/- 308.19, N = 5
31293
i7-3770
SE +/- 7.98, N = 5
18811
i5-2520M
SE +/- 2.90, N = 5
20785
i5-2520M-HT
SE +/- 4.18, N = 5
20067
O6380
SE +/- 172.93, N = 5
32261
2700X-SMT
SE +/- 24.20, N = 5
30627
2700X-NOSMT
SE +/- 9.88, N = 5
32935
14K
28K
42K
56K
70K
1. (CC) gcc options: -O3 -march=native -fopenmp

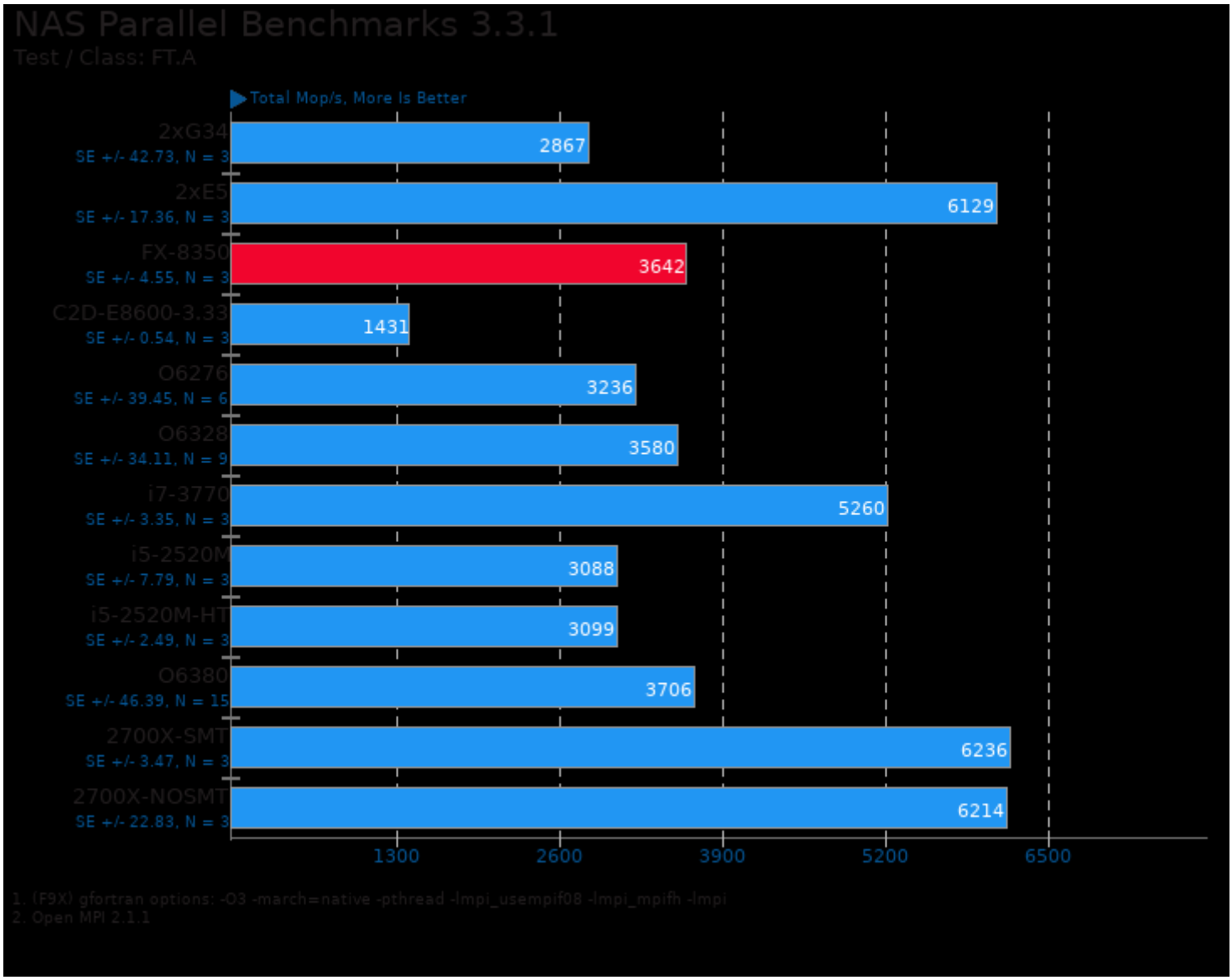

Stream 2013-01-17
Type: Scale
MB/s, More Is Better
2xG34
SE +/- 248.71, N = 5
40426
2xE5
SE +/- 201.72, N = 5
39552
FX-8350
SE +/- 0.61, N = 5
11176
C2D-E8600-3.33
SE +/- 2.51, N = 5
4225
O6276
SE +/- 144.84, N = 5
15472
O6328
SE +/- 98.01, N = 5
21174
i7-3770
SE +/- 11.45, N = 5
13610
i5-2520M
SE +/- 2.53, N = 5
14170
i5-2520M-HT
SE +/- 1.84, N = 5
13848
O6380
SE +/- 79.08, N = 5
20420
2700X-SMT
SE +/- 8.38, N = 5
20119
2700X-NOSMT
SE +/- 9.31, N = 5
20982
9K
18K
27K
36K
45K
1. (CC) gcc options: -O3 -march=native -fopenmp

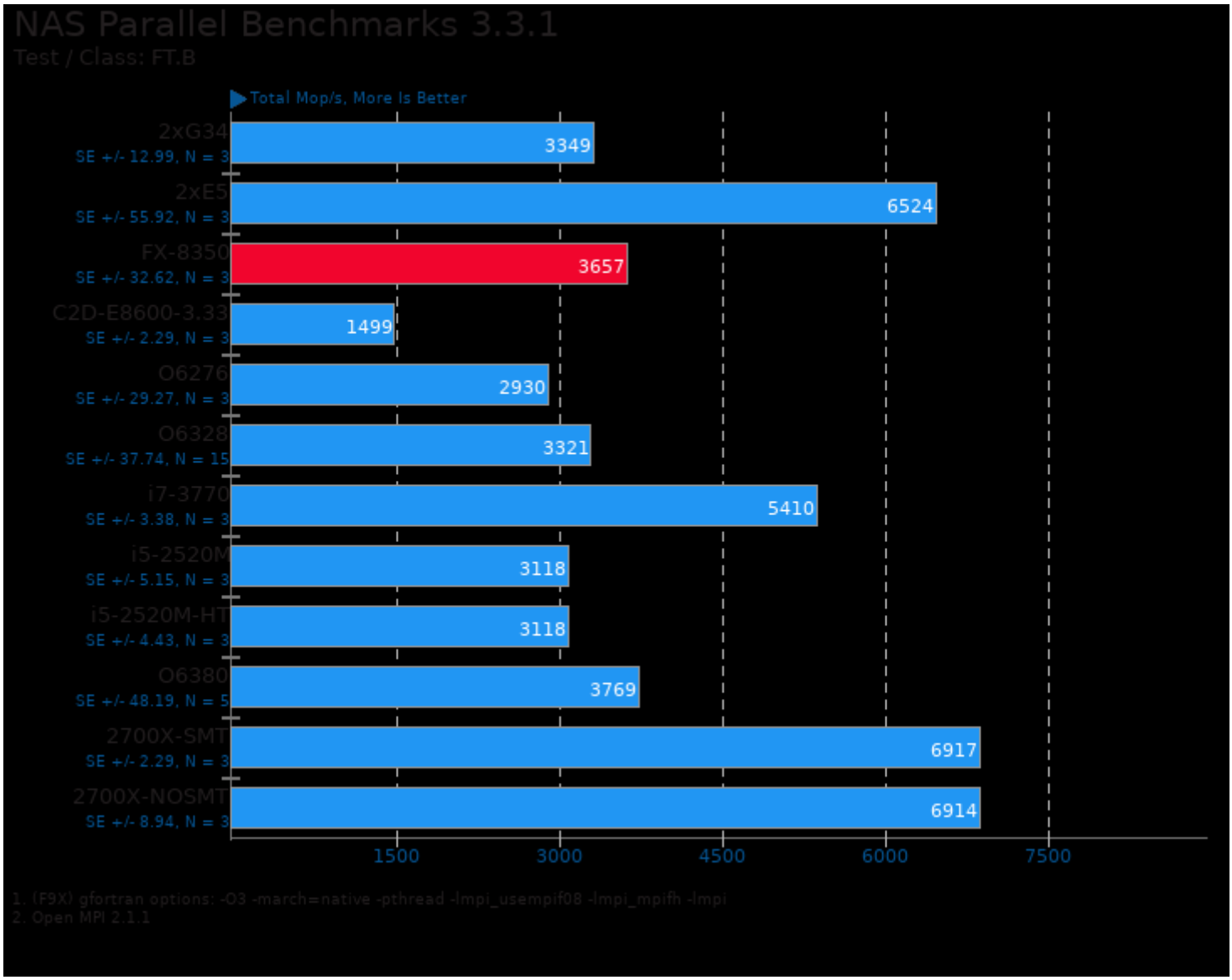

Stream 2013-01-17
Type: Triad
MB/s, More Is Better
2xG34
SE +/- 257.09, N = 5
43961
2xE5
SE +/- 227.39, N = 5
44652
FX-8350
SE +/- 1.08, N = 5
12499
C2D-E8600-3.33
SE +/- 3.48, N = 5
5365
O6276
SE +/- 118.29, N = 5
17780
O6328
SE +/- 144.96, N = 5
23381
i7-3770
SE +/- 8.15, N = 5
15325
i5-2520M
SE +/- 2.54, N = 5
15805
i5-2520M-HT
SE +/- 4.87, N = 5
15394
O6380
SE +/- 164.82, N = 5
22274
2700X-SMT
SE +/- 14.17, N = 5
23833
2700X-NOSMT
SE +/- 20.11, N = 5
24519
10K
20K
30K
40K
50K
1. (CC) gcc options: -O3 -march=native -fopenmp

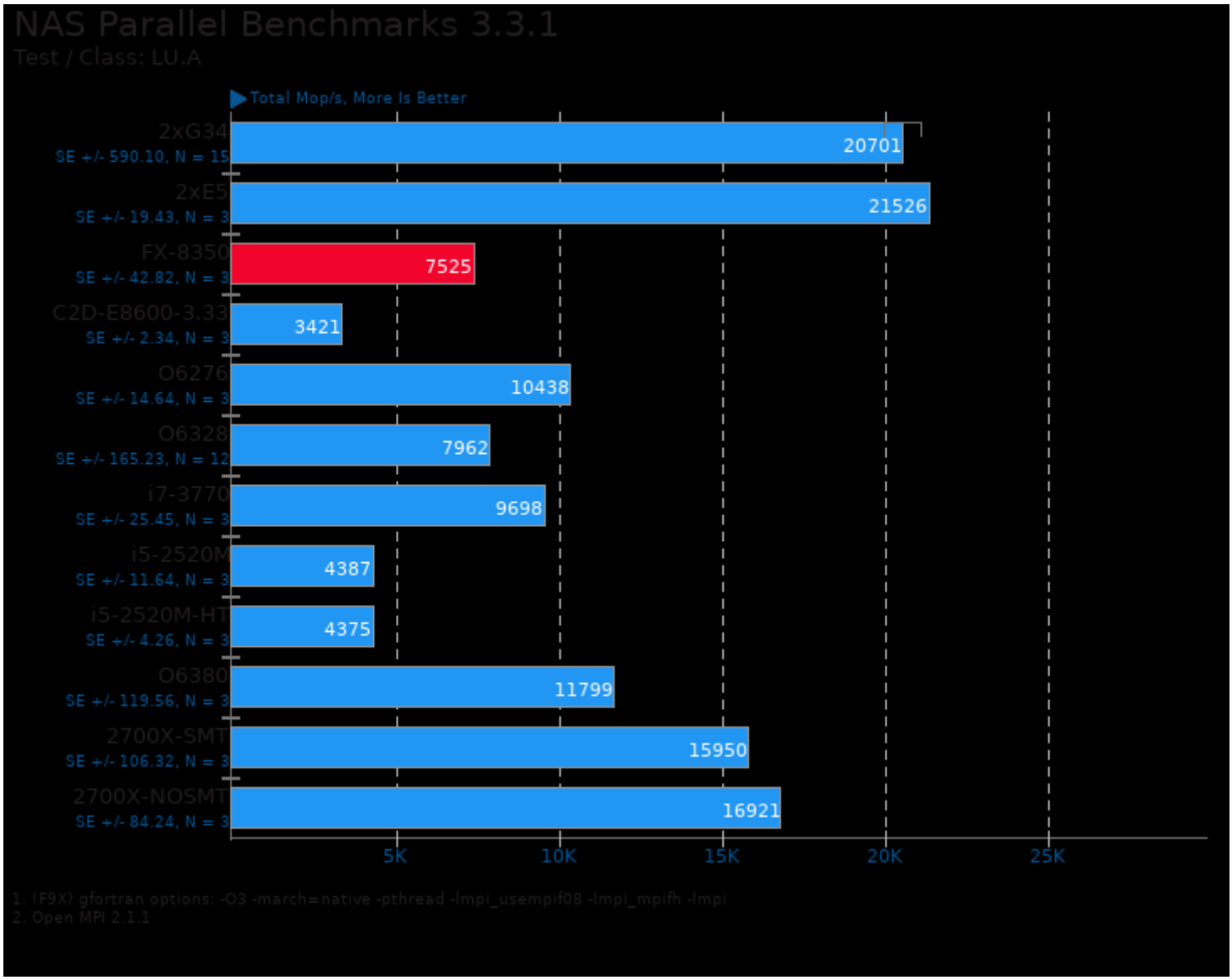

Stream 2013-01-17
Type: Add
MB/s, More Is Better
2xG34
SE +/- 320.67, N = 5
44024
2xE5
SE +/- 201.89, N = 5
45316
FX-8350
SE +/- 1.97, N = 5
12521
C2D-E8600-3.33
SE +/- 3.10, N = 5
5375
O6276
SE +/- 124.82, N = 5
16742
O6328
SE +/- 47.48, N = 5
23258
i7-3770
SE +/- 11.15, N = 5
15400
i5-2520M
SE +/- 3.34, N = 5
15819
i5-2520M-HT
SE +/- 3.81, N = 5
15423
O6380
SE +/- 87.98, N = 5
22484
2700X-SMT
SE +/- 16.67, N = 5
24045
2700X-NOSMT
SE +/- 20.43, N = 5
24757
10K
20K
30K
40K
50K
1. (CC) gcc options: -O3 -march=native -fopenmp

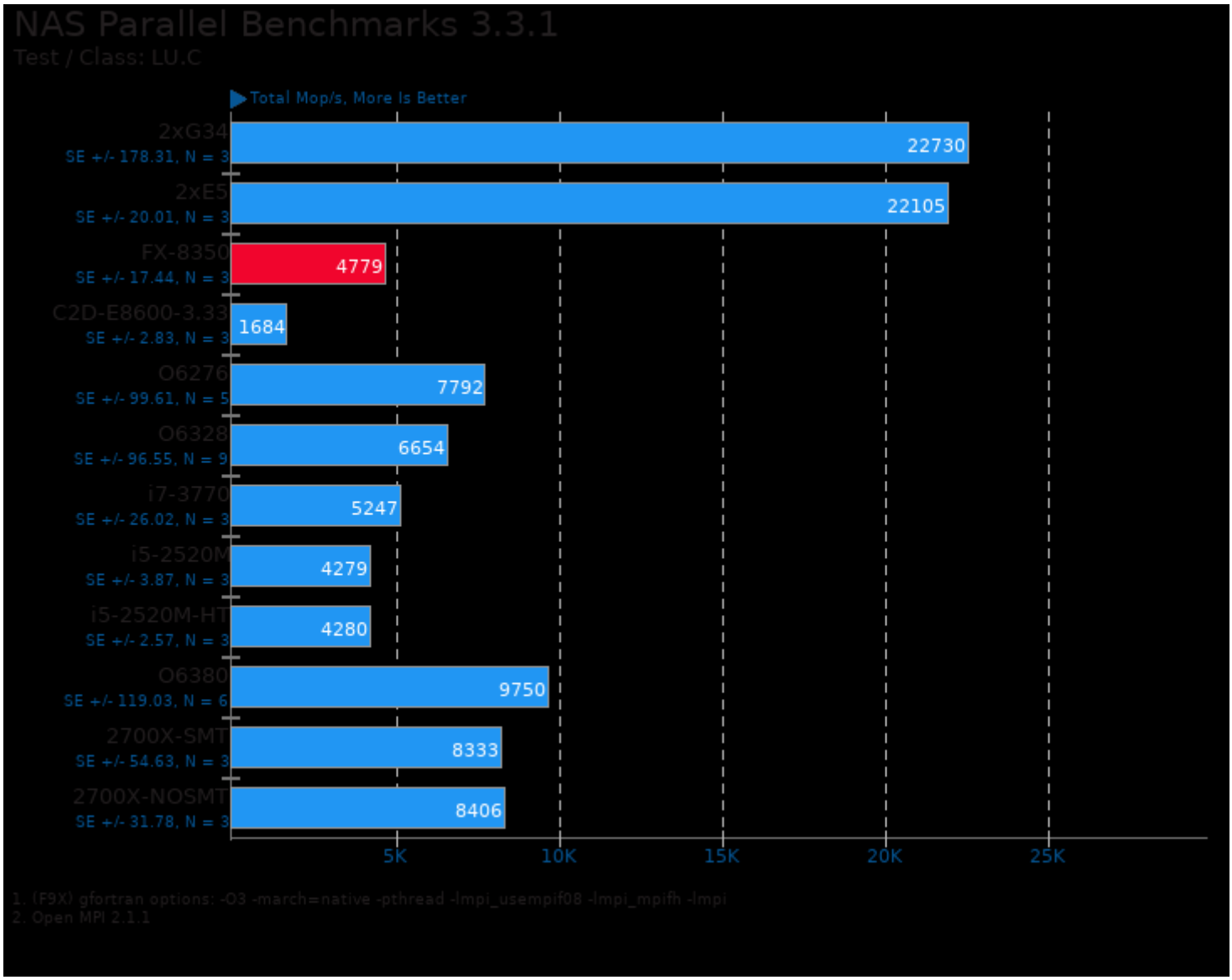

NAS Parallel Benchmarks 3.3.1
Test / Class: BT.A
Total Mop/s, More Is Better
2xG34
SE +/- 3.15, N = 3
1926
2xE5
SE +/- 2.97, N = 3
2362
FX-8350
SE +/- 2.59, N = 3
2661
C2D-E8600-3.33
SE +/- 0.77, N = 3
2213
O6276
SE +/- 3.24, N = 3
1702
O6328
SE +/- 4.96, N = 3
2308
i7-3770
SE +/- 5.92, N = 3
3591
i5-2520M
SE +/- 3.04, N = 3
2894
i5-2520M-HT
SE +/- 0.79, N = 3
2895
O6380
SE +/- 7.42, N = 3
1924
2700X-SMT
SE +/- 13.84, N = 3
5546
2700X-NOSMT
SE +/- 36.17, N = 3
5604
1200
2400
3600
4800
6000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

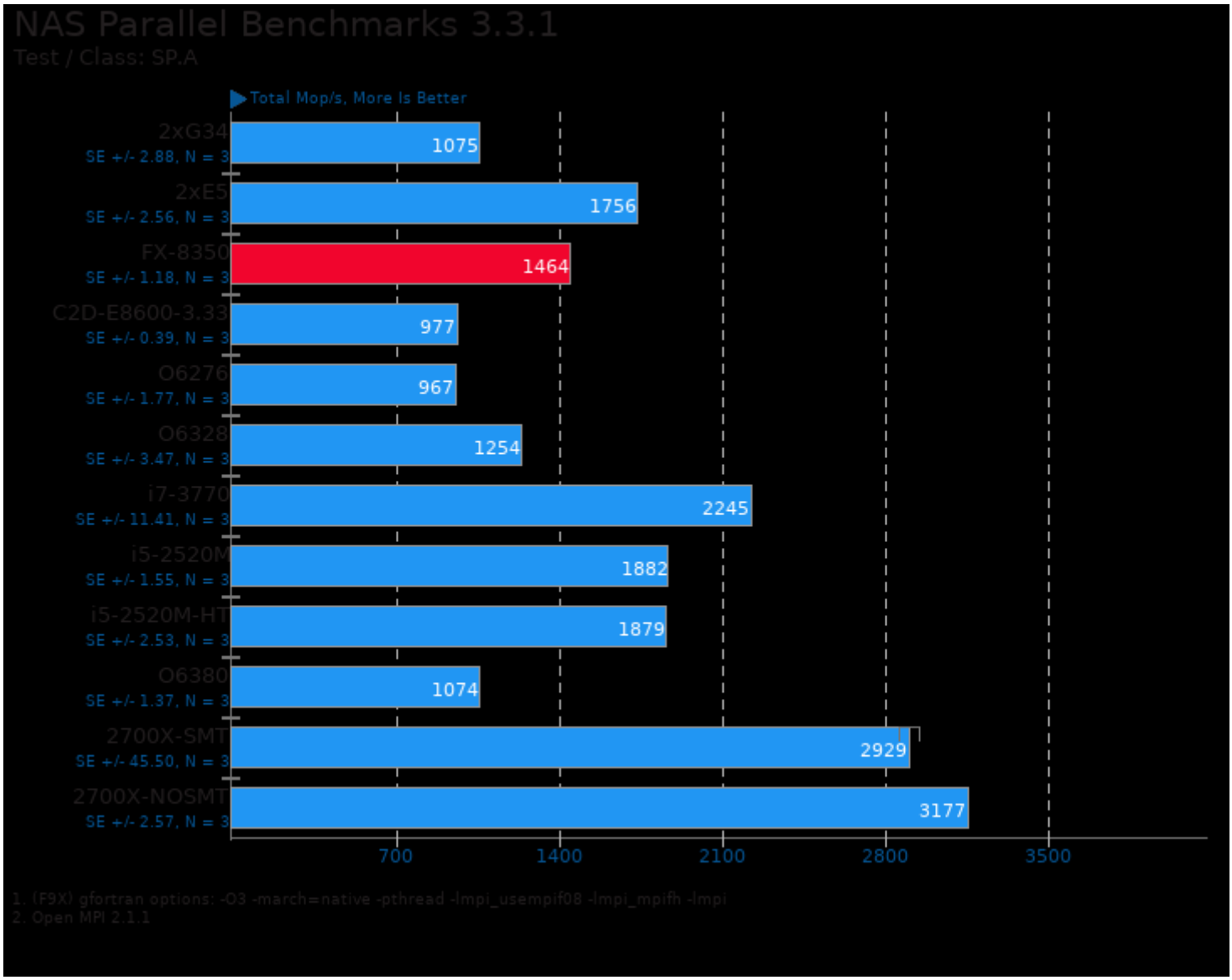

NAS Parallel Benchmarks 3.3.1
Test / Class: EP.C
Total Mop/s, More Is Better
2xG34
SE +/- 2.94, N = 3
347.00
2xE5
SE +/- 0.98, N = 3
474.00
FX-8350
SE +/- 0.13, N = 3
126.00
C2D-E8600-3.33
SE +/- 0.46, N = 3
65.93
O6276
SE +/- 0.81, N = 3
152.38
O6328
SE +/- 0.02, N = 3
107.24
i7-3770
SE +/- 0.56, N = 3
193.71
i5-2520M
SE +/- 0.12, N = 3
73.96
i5-2520M-HT
SE +/- 0.13, N = 3
74.05
O6380
SE +/- 0.03, N = 3
171.32
2700X-SMT
SE +/- 0.19, N = 3
321.25
2700X-NOSMT
SE +/- 0.18, N = 3
321.91
100
200
300
400
500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1


NAS Parallel Benchmarks 3.3.1
Test / Class: FT.A
Total Mop/s, More Is Better
2xG34
SE +/- 42.73, N = 3
2867
2xE5
SE +/- 17.36, N = 3
6129
FX-8350
SE +/- 4.55, N = 3
3642
C2D-E8600-3.33
SE +/- 0.54, N = 3
1431
O6276
SE +/- 39.45, N = 6
3236
O6328
SE +/- 34.11, N = 9
3580
i7-3770
SE +/- 3.35, N = 3
5260
i5-2520M
SE +/- 7.79, N = 3
3088
i5-2520M-HT
SE +/- 2.49, N = 3
3099
O6380
SE +/- 46.39, N = 15
3706
2700X-SMT
SE +/- 3.47, N = 3
6236
2700X-NOSMT
SE +/- 22.83, N = 3
6214
1300
2600
3900
5200
6500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

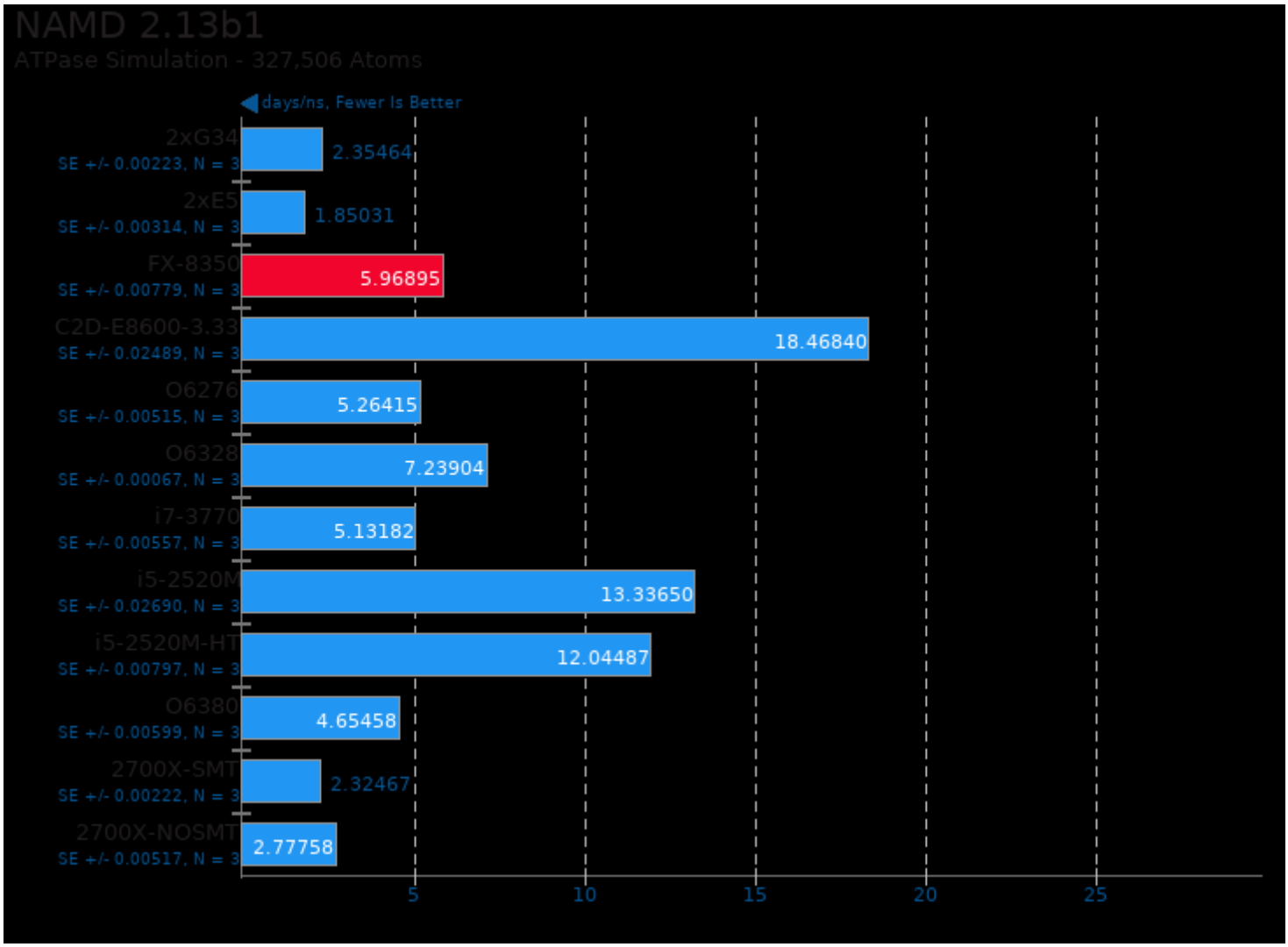

NAS Parallel Benchmarks 3.3.1
Test / Class: FT.B
Total Mop/s, More Is Better
2xG34
SE +/- 12.99, N = 3
3349
2xE5
SE +/- 55.92, N = 3
6524
FX-8350
SE +/- 32.62, N = 3
3657
C2D-E8600-3.33
SE +/- 2.29, N = 3
1499
O6276
SE +/- 29.27, N = 3
2930
O6328
SE +/- 37.74, N = 15
3321
i7-3770
SE +/- 3.38, N = 3
5410
i5-2520M
SE +/- 5.15, N = 3
3118
i5-2520M-HT
SE +/- 4.43, N = 3
3118
O6380
SE +/- 48.19, N = 5
3769
2700X-SMT
SE +/- 2.29, N = 3
6917
2700X-NOSMT
SE +/- 8.94, N = 3
6914
1500
3000
4500
6000
7500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

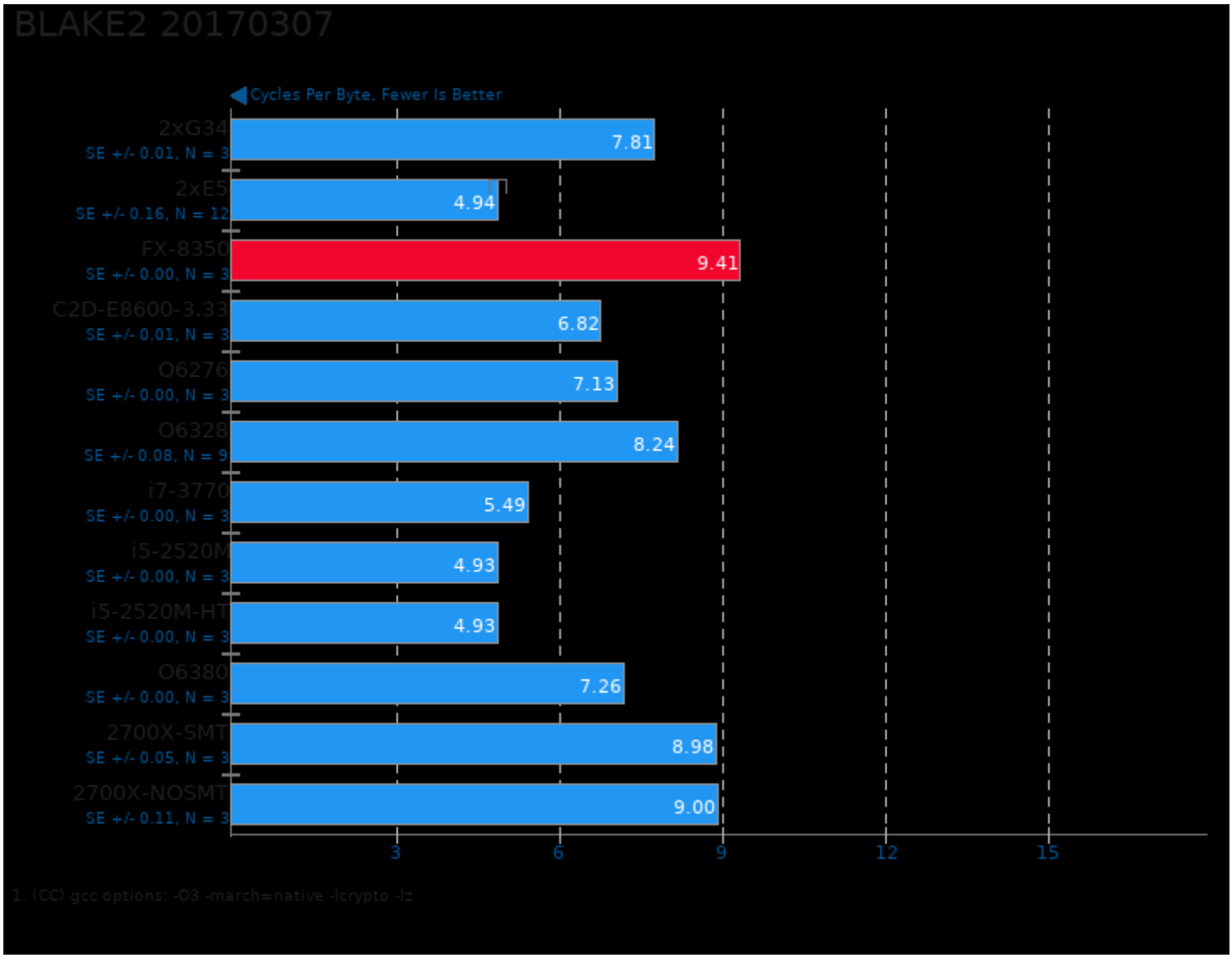

NAS Parallel Benchmarks 3.3.1
Test / Class: LU.A
Total Mop/s, More Is Better
2xG34
SE +/- 590.10, N = 15
20701
2xE5
SE +/- 19.43, N = 3
21526
FX-8350
SE +/- 42.82, N = 3
7525
C2D-E8600-3.33
SE +/- 2.34, N = 3
3421
O6276
SE +/- 14.64, N = 3
10438
O6328
SE +/- 165.23, N = 12
7962
i7-3770
SE +/- 25.45, N = 3
9698
i5-2520M
SE +/- 11.64, N = 3
4387
i5-2520M-HT
SE +/- 4.26, N = 3
4375
O6380
SE +/- 119.56, N = 3
11799
2700X-SMT
SE +/- 106.32, N = 3
15950
2700X-NOSMT
SE +/- 84.24, N = 3
16921
5K
10K
15K
20K
25K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

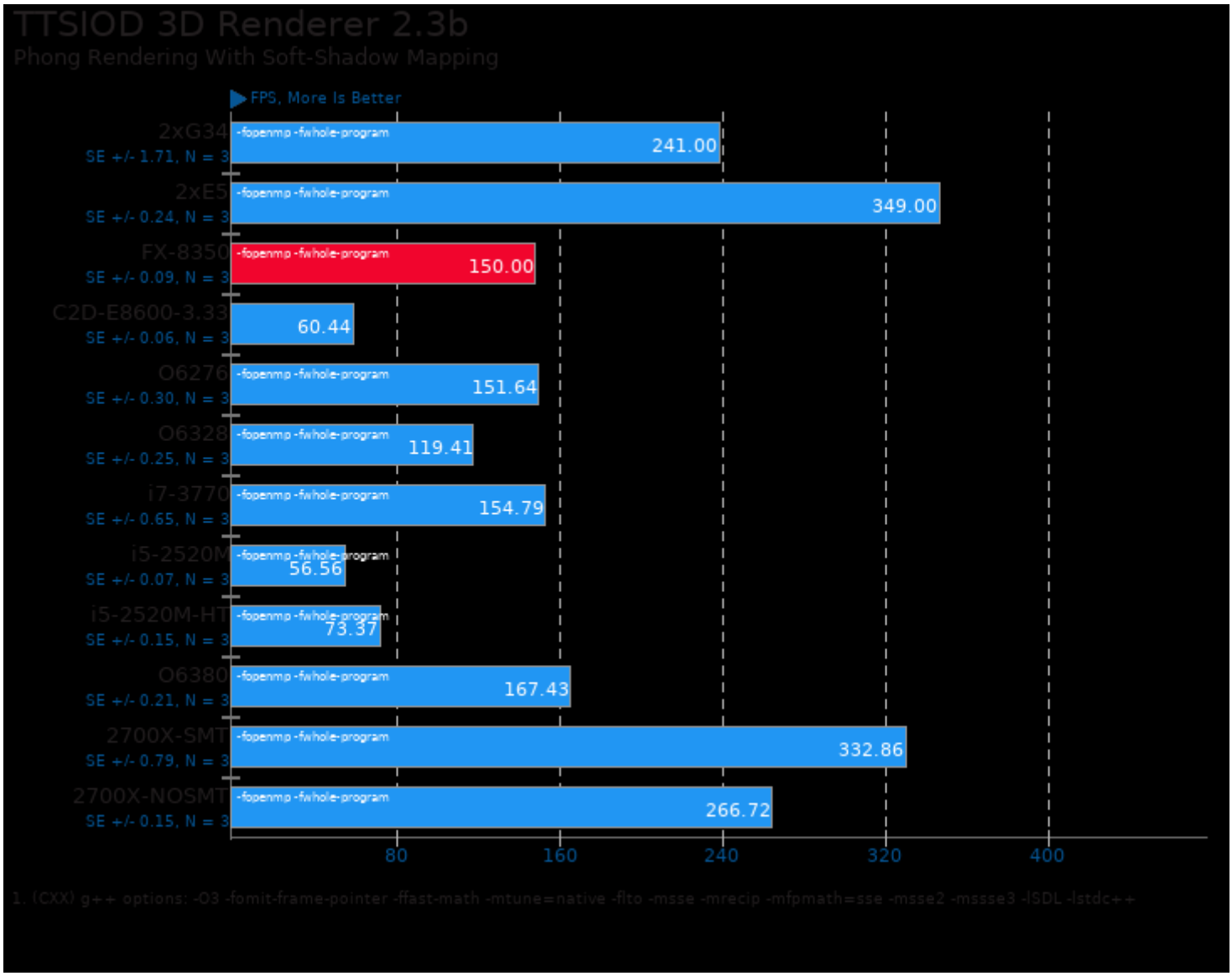

NAS Parallel Benchmarks 3.3.1
Test / Class: LU.C
Total Mop/s, More Is Better
2xG34
SE +/- 178.31, N = 3
22730
2xE5
SE +/- 20.01, N = 3
22105
FX-8350
SE +/- 17.44, N = 3
4779
C2D-E8600-3.33
SE +/- 2.83, N = 3
1684
O6276
SE +/- 99.61, N = 5
7792
O6328
SE +/- 96.55, N = 9
6654
i7-3770
SE +/- 26.02, N = 3
5247
i5-2520M
SE +/- 3.87, N = 3
4279
i5-2520M-HT
SE +/- 2.57, N = 3
4280
O6380
SE +/- 119.03, N = 6
9750
2700X-SMT
SE +/- 54.63, N = 3
8333
2700X-NOSMT
SE +/- 31.78, N = 3
8406
5K
10K
15K
20K
25K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

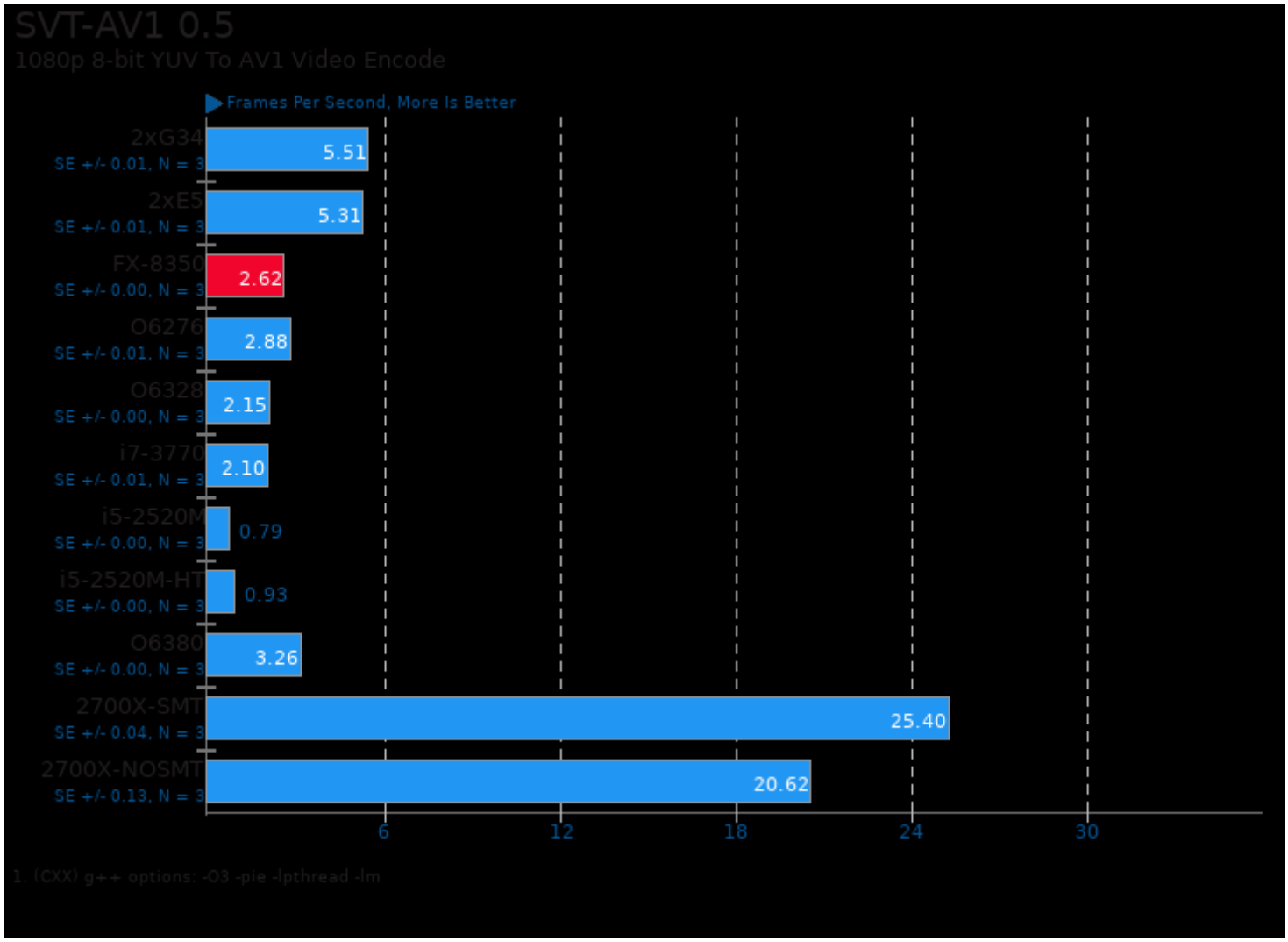

NAS Parallel Benchmarks 3.3.1
Test / Class: SP.A
Total Mop/s, More Is Better
2xG34
SE +/- 2.88, N = 3
1075
2xE5
SE +/- 2.56, N = 3
1756
FX-8350
SE +/- 1.18, N = 3
1464
C2D-E8600-3.33
SE +/- 0.39, N = 3
977
O6276
SE +/- 1.77, N = 3
967
O6328
SE +/- 3.47, N = 3
1254
i7-3770
SE +/- 11.41, N = 3
2245
i5-2520M
SE +/- 1.55, N = 3
1882
i5-2520M-HT
SE +/- 2.53, N = 3
1879
O6380
SE +/- 1.37, N = 3
1074
2700X-SMT
SE +/- 45.50, N = 3
2929
2700X-NOSMT
SE +/- 2.57, N = 3
3177
700
1400
2100
2800
3500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

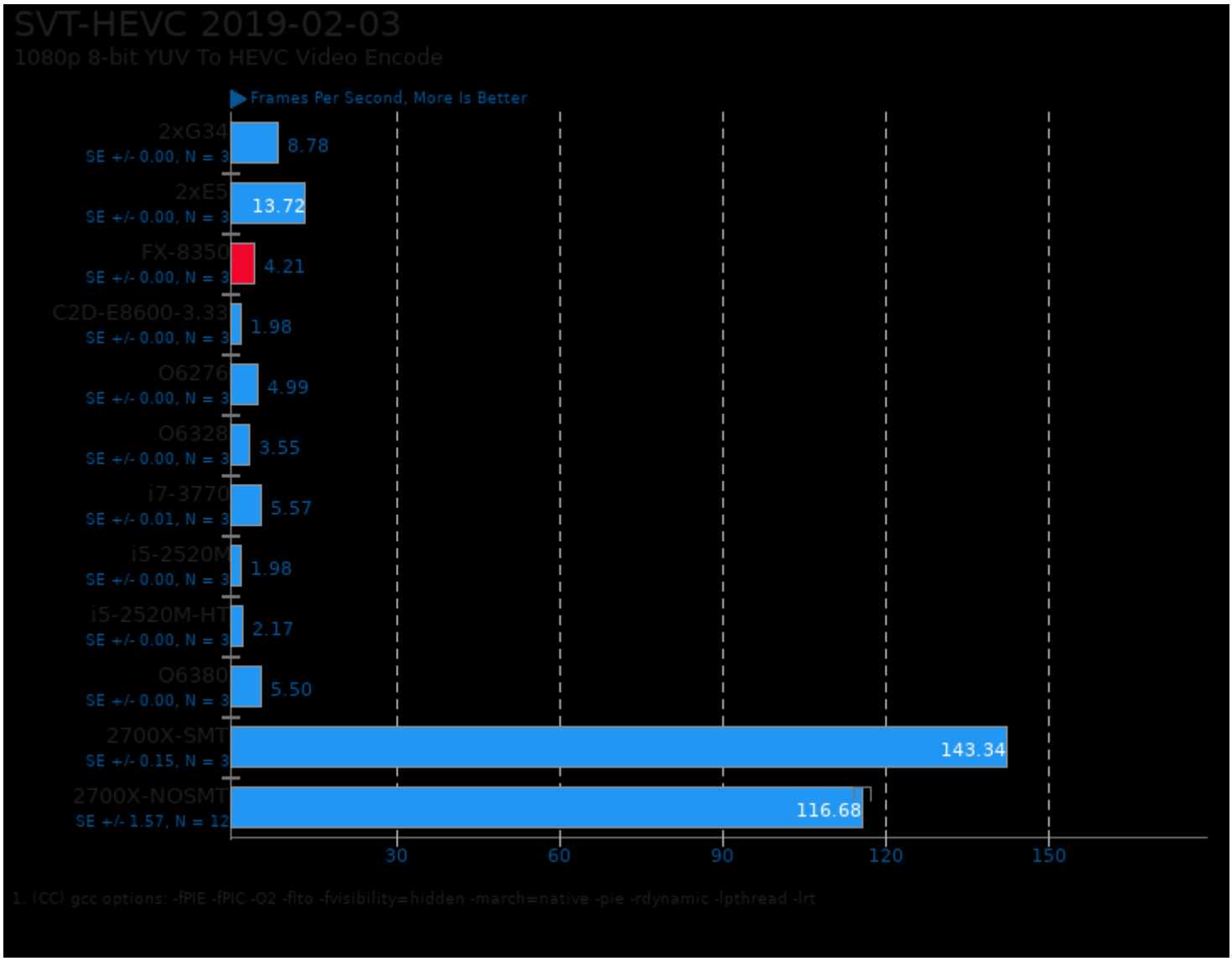
test sample

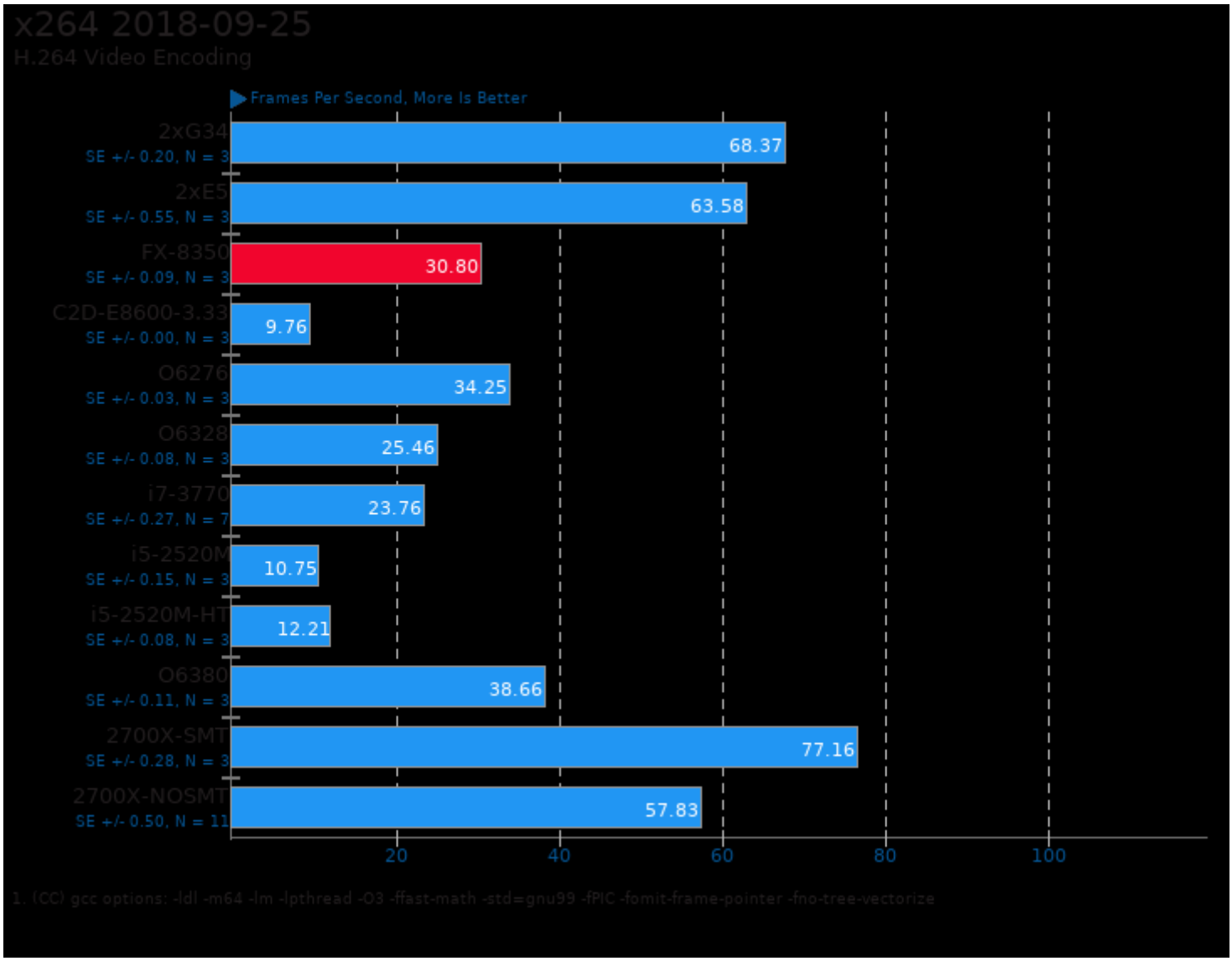

NAMD 2.13b1
ATPase Simulation - 327,506 Atoms
days/ns, Fewer Is Better
2xG34
SE +/- 0.00223, N = 3
2.35464
2xE5
SE +/- 0.00314, N = 3
1.85031
FX-8350
SE +/- 0.00779, N = 3
5.96895
C2D-E8600-3.33
SE +/- 0.02489, N = 3
18.46840
O6276
SE +/- 0.00515, N = 3
5.26415
O6328
SE +/- 0.00067, N = 3
7.23904
i7-3770
SE +/- 0.00557, N = 3
5.13182
i5-2520M
SE +/- 0.02690, N = 3
13.33650
i5-2520M-HT
SE +/- 0.00797, N = 3
12.04487
O6380
SE +/- 0.00599, N = 3
4.65458
2700X-SMT
SE +/- 0.00222, N = 3
2.32467
2700X-NOSMT
SE +/- 0.00517, N = 3
2.77758
5
10
15
20
25

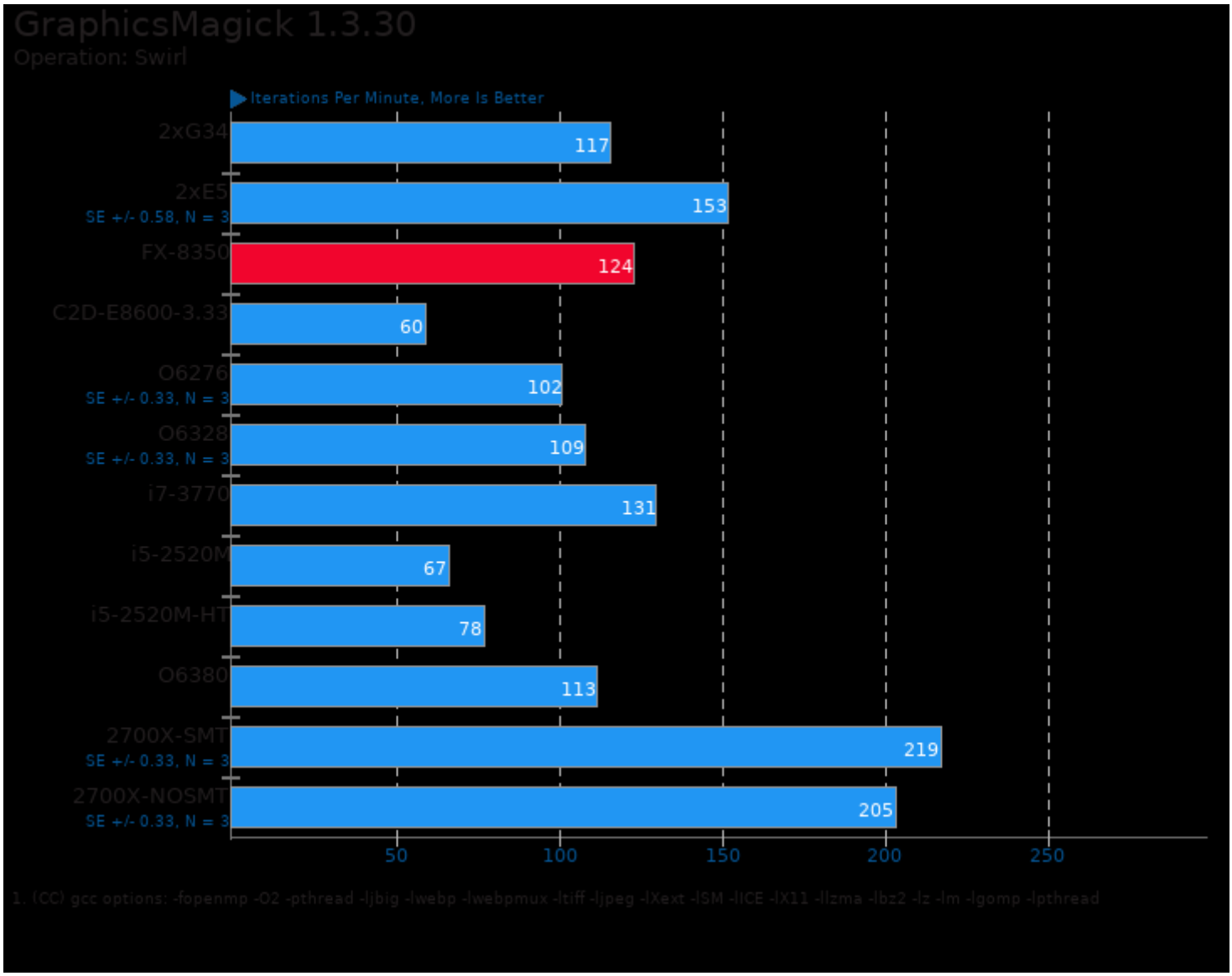

BLAKE2 20170307
Cycles Per Byte, Fewer Is Better
2xG34
SE +/- 0.01, N = 3
7.81
2xE5
SE +/- 0.16, N = 12
4.94
FX-8350
SE +/- 0.00, N = 3
9.41
C2D-E8600-3.33
SE +/- 0.01, N = 3
6.82
O6276
SE +/- 0.00, N = 3
7.13
O6328
SE +/- 0.08, N = 9
8.24
i7-3770
SE +/- 0.00, N = 3
5.49
i5-2520M
SE +/- 0.00, N = 3
4.93
i5-2520M-HT
SE +/- 0.00, N = 3
4.93
O6380
SE +/- 0.00, N = 3
7.26
2700X-SMT
SE +/- 0.05, N = 3
8.98
2700X-NOSMT
SE +/- 0.11, N = 3
9.00
3
6
9
12
15
1. (CC) gcc options: -O3 -march=native -lcrypto -lz

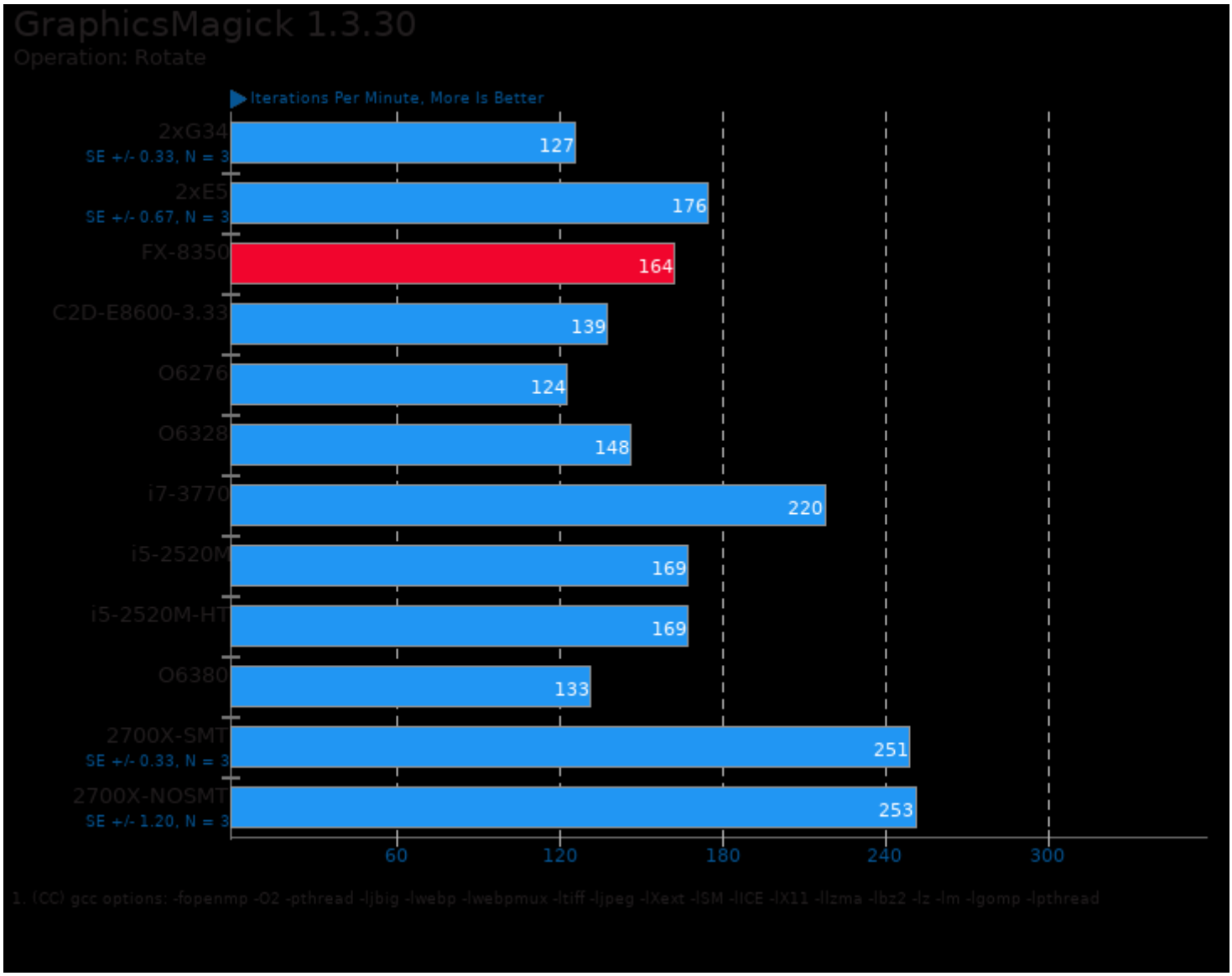

TTSIOD 3D Renderer 2.3b
Phong Rendering With Soft-Shadow Mapping
FPS, More Is Better
2xG34
SE +/- 1.71, N = 3
-fopenmp -fwhole-program
241.00
2xE5
SE +/- 0.24, N = 3
-fopenmp -fwhole-program
349.00
FX-8350
SE +/- 0.09, N = 3
-fopenmp -fwhole-program
150.00
C2D-E8600-3.33
SE +/- 0.06, N = 3
60.44
O6276
SE +/- 0.30, N = 3
-fopenmp -fwhole-program
151.64
O6328
SE +/- 0.25, N = 3
-fopenmp -fwhole-program
119.41
i7-3770
SE +/- 0.65, N = 3
-fopenmp -fwhole-program
154.79
i5-2520M
SE +/- 0.07, N = 3
-fopenmp -fwhole-program
56.56
i5-2520M-HT
SE +/- 0.15, N = 3
-fopenmp -fwhole-program
73.37
O6380
SE +/- 0.21, N = 3
-fopenmp -fwhole-program
167.43
2700X-SMT
SE +/- 0.79, N = 3
-fopenmp -fwhole-program
332.86
2700X-NOSMT
SE +/- 0.15, N = 3
-fopenmp -fwhole-program
266.72
80
160
240
320
400
1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -flto -msse -mrecip -mfpmath=sse -msse2 -mssse3 -lSDL -lstdc++

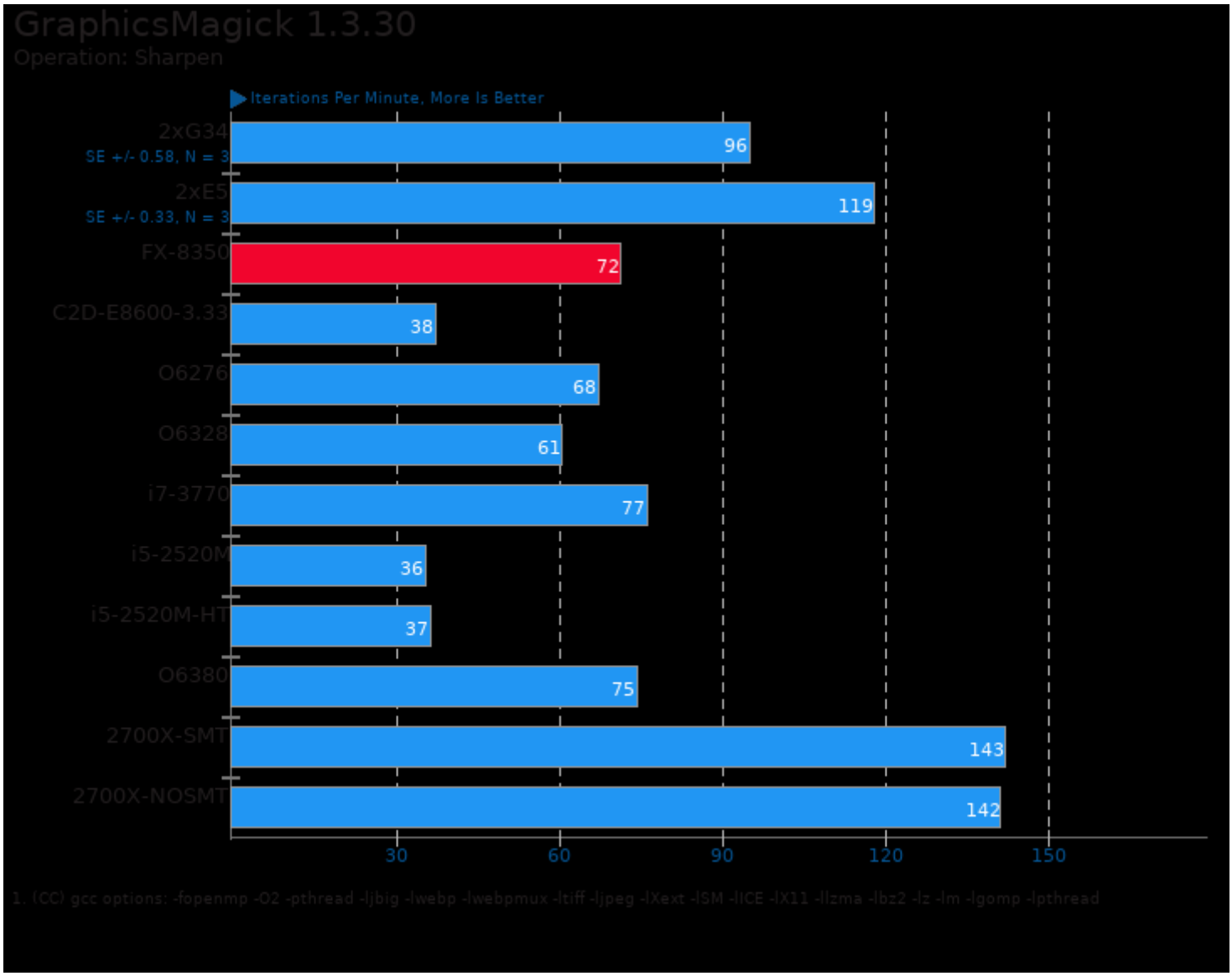

SVT-AV1 0.5
1080p 8-bit YUV To AV1 Video Encode
Frames Per Second, More Is Better
2xG34
SE +/- 0.01, N = 3
5.51
2xE5
SE +/- 0.01, N = 3
5.31
FX-8350
SE +/- 0.00, N = 3
2.62
O6276
SE +/- 0.01, N = 3
2.88
O6328
SE +/- 0.00, N = 3
2.15
i7-3770
SE +/- 0.01, N = 3
2.10
i5-2520M
SE +/- 0.00, N = 3
0.79
i5-2520M-HT
SE +/- 0.00, N = 3
0.93
O6380
SE +/- 0.00, N = 3
3.26
2700X-SMT
SE +/- 0.04, N = 3
25.40
2700X-NOSMT
SE +/- 0.13, N = 3
20.62
6
12
18
24
30
1. (CXX) g++ options: -O3 -pie -lpthread -lm

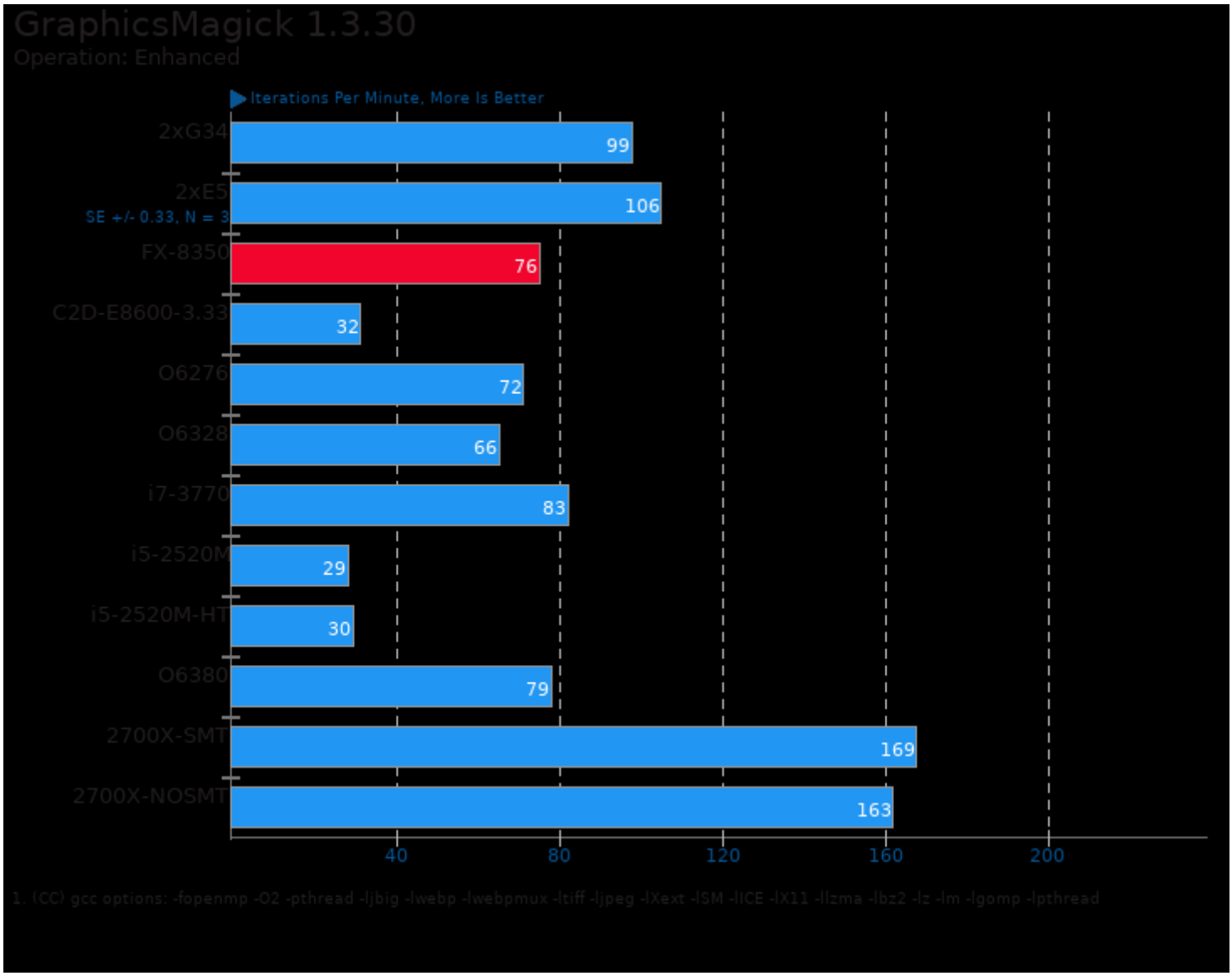

SVT-HEVC 2019-02-03
1080p 8-bit YUV To HEVC Video Encode
Frames Per Second, More Is Better
2xG34
SE +/- 0.00, N = 3
8.78
2xE5
SE +/- 0.00, N = 3
13.72
FX-8350
SE +/- 0.00, N = 3
4.21
C2D-E8600-3.33
SE +/- 0.00, N = 3
1.98
O6276
SE +/- 0.00, N = 3
4.99
O6328
SE +/- 0.00, N = 3
3.55
i7-3770
SE +/- 0.01, N = 3
5.57
i5-2520M
SE +/- 0.00, N = 3
1.98
i5-2520M-HT
SE +/- 0.00, N = 3
2.17
O6380
SE +/- 0.00, N = 3
5.50
2700X-SMT
SE +/- 0.15, N = 3
143.34
2700X-NOSMT
SE +/- 1.57, N = 12
116.68
30
60
90
120
150
1. (CC) gcc options: -fPIE -fPIC -O2 -flto -fvisibility=hidden -march=native -pie -rdynamic -lpthread -lrt

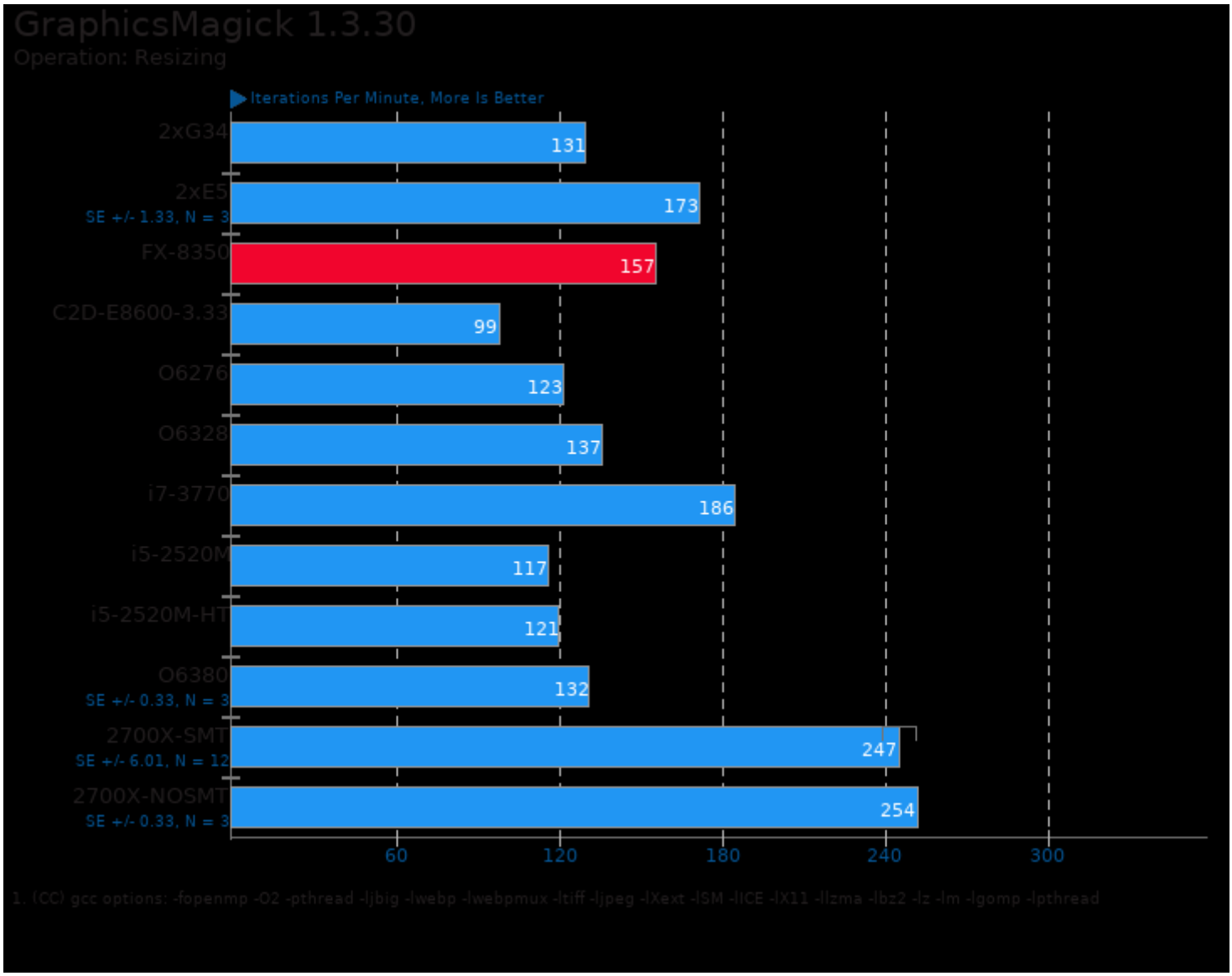

x264 2018-09-25
H.264 Video Encoding
Frames Per Second, More Is Better
2xG34
SE +/- 0.20, N = 3
68.37
2xE5
SE +/- 0.55, N = 3
63.58
FX-8350
SE +/- 0.09, N = 3
30.80
C2D-E8600-3.33
SE +/- 0.00, N = 3
9.76
O6276
SE +/- 0.03, N = 3
34.25
O6328
SE +/- 0.08, N = 3
25.46
i7-3770
SE +/- 0.27, N = 7
23.76
i5-2520M
SE +/- 0.15, N = 3
10.75
i5-2520M-HT
SE +/- 0.08, N = 3
12.21
O6380
SE +/- 0.11, N = 3
38.66
2700X-SMT
SE +/- 0.28, N = 3
77.16
2700X-NOSMT
SE +/- 0.50, N = 11
57.83
20
40
60
80
100
1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

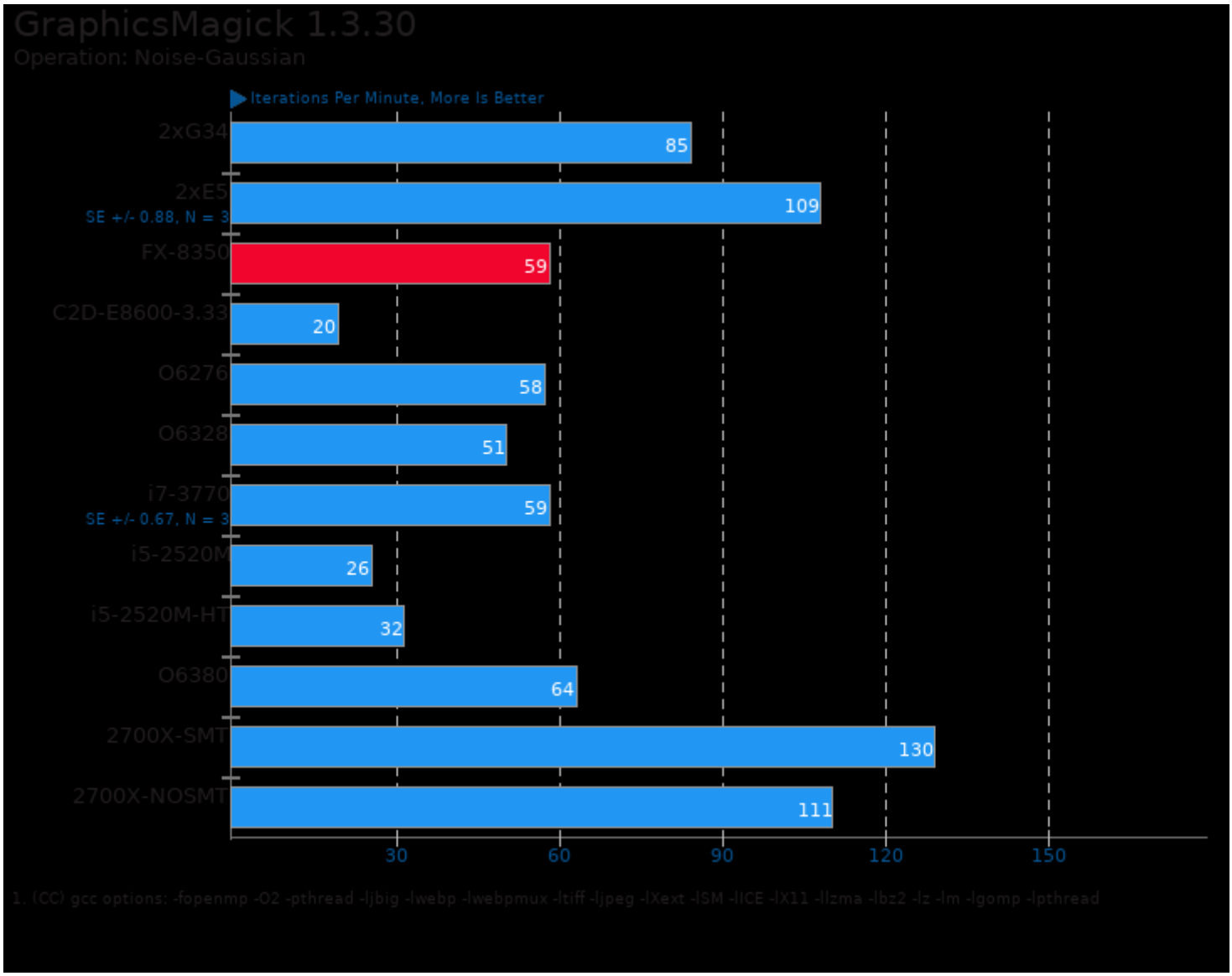

GraphicsMagick 1.3.30
Operation: Swirl
Iterations Per Minute, More Is Better
2xG34
117
2xE5
SE +/- 0.58, N = 3
153
FX-8350
124
C2D-E8600-3.33
60
O6276
SE +/- 0.33, N = 3
102
O6328
SE +/- 0.33, N = 3
109
i7-3770
131
i5-2520M
67
i5-2520M-HT
78
O6380
113
2700X-SMT
SE +/- 0.33, N = 3
219
2700X-NOSMT
SE +/- 0.33, N = 3
205
50
100
150
200
250
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread

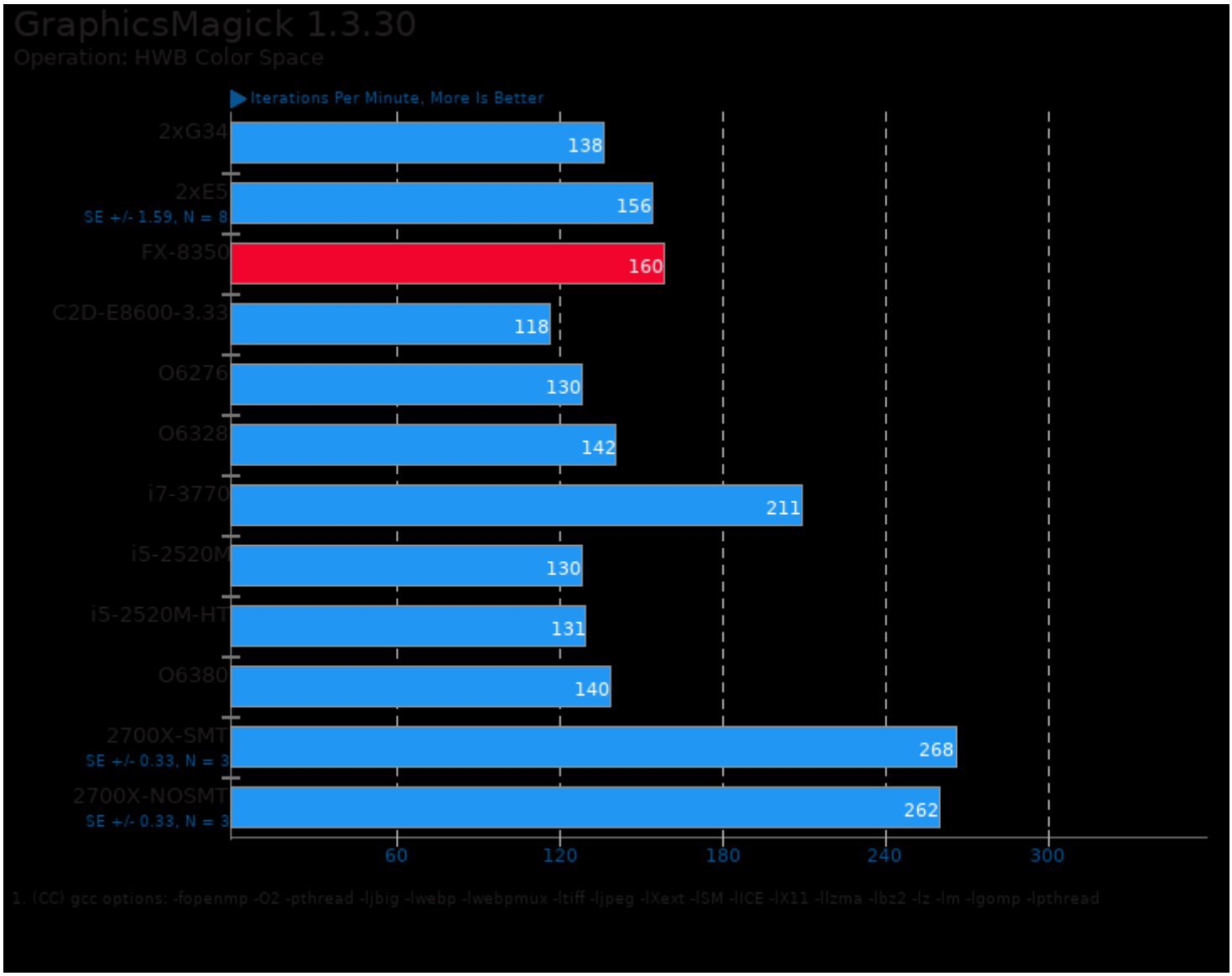

GraphicsMagick 1.3.30
Operation: Rotate
Iterations Per Minute, More Is Better
2xG34
SE +/- 0.33, N = 3
127
2xE5
SE +/- 0.67, N = 3
176
FX-8350
164
C2D-E8600-3.33
139
O6276
124
O6328
148
i7-3770
220
i5-2520M
169
i5-2520M-HT
169
O6380
133
2700X-SMT
SE +/- 0.33, N = 3
251
2700X-NOSMT
SE +/- 1.20, N = 3
253
60
120
180
240
300
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread

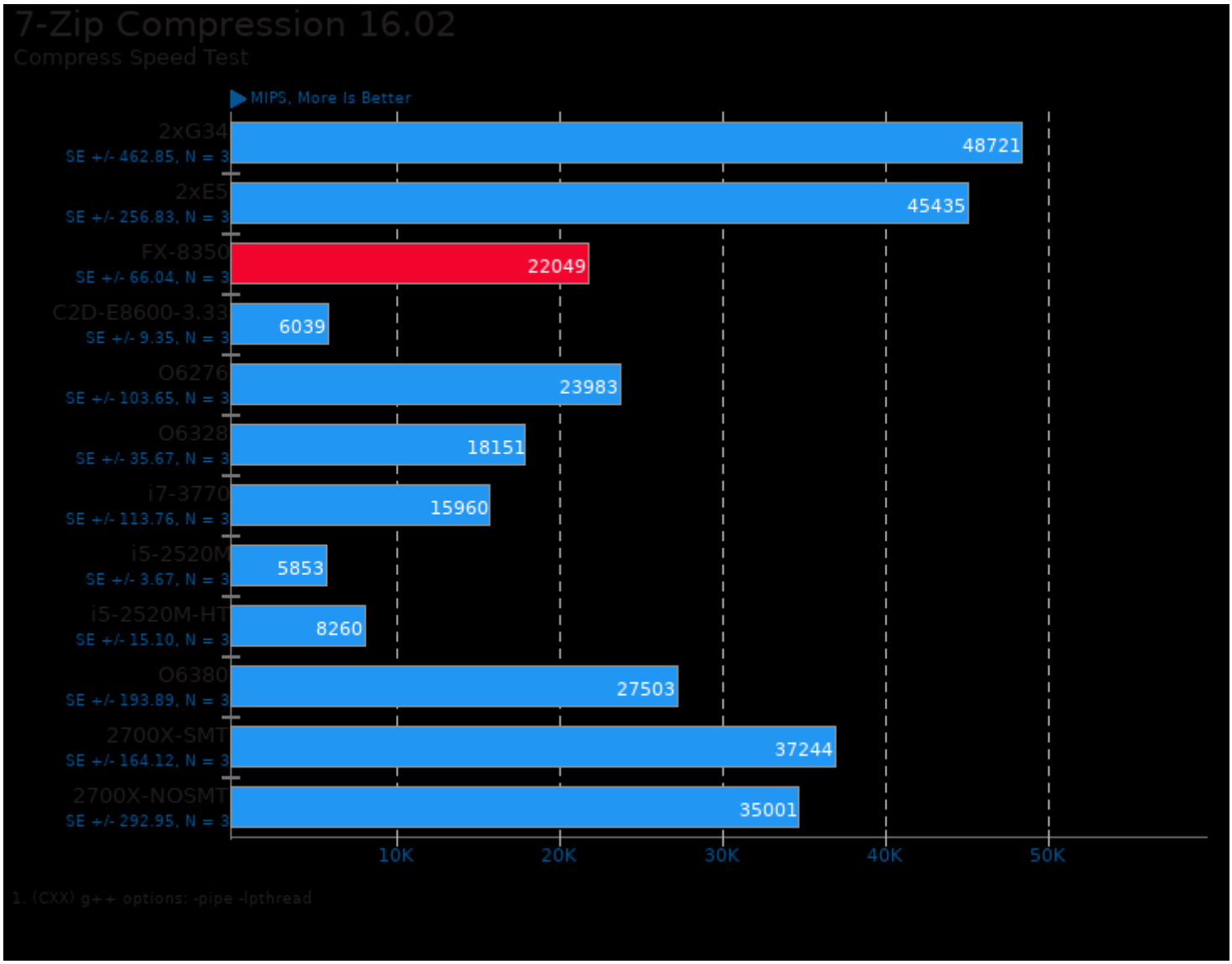

GraphicsMagick 1.3.30
Operation: Sharpen
Iterations Per Minute, More Is Better
2xG34
SE +/- 0.58, N = 3
96
2xE5
SE +/- 0.33, N = 3
119
FX-8350
72
C2D-E8600-3.33
38
O6276
68
O6328
61
i7-3770
77
i5-2520M
36
i5-2520M-HT
37
O6380
75
2700X-SMT
143
2700X-NOSMT
142
30
60
90
120
150
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread


GraphicsMagick 1.3.30
Operation: Enhanced
Iterations Per Minute, More Is Better
2xG34
99
2xE5
106
SE +/- 0.33, N = 3
FX-8350
76
C2D-E8600-3.33
32
O6276
72
O6328
66
i7-3770
83
i5-2520M
29
i5-2520M-HT
30
O6380
79
2700X-SMT
169
2700X-NOSMT
163
40
80
120
160
200
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread

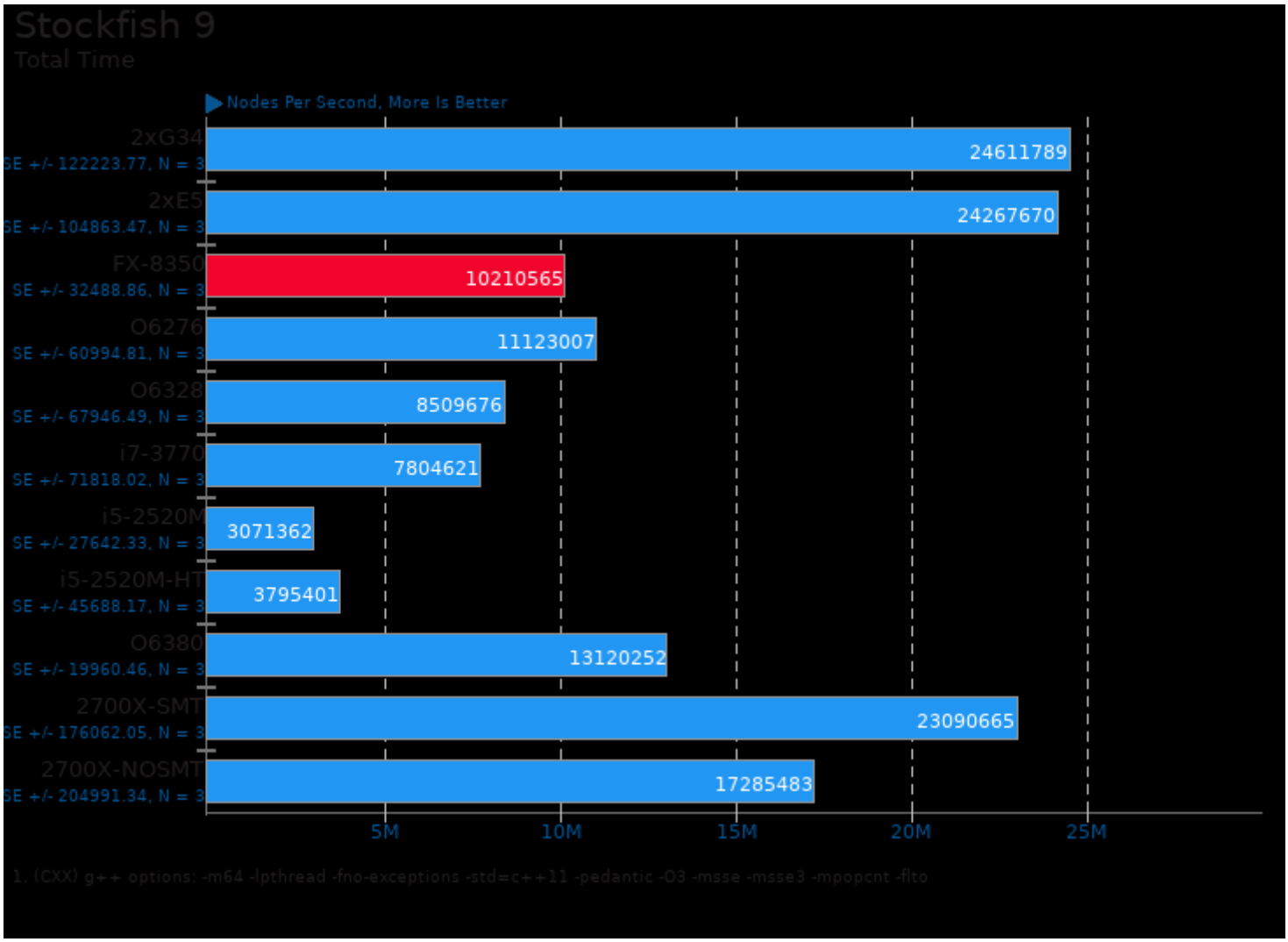

GraphicsMagick 1.3.30
Operation: Resizing
Iterations Per Minute, More Is Better
2xG34
131
2xE5
SE +/- 1.33, N = 3
173
FX-8350
157
C2D-E8600-3.33
99
O6276
123
O6328
137
i7-3770
186
i5-2520M
117
i5-2520M-HT
121
O6380
SE +/- 0.33, N = 3
132
2700X-SMT
SE +/- 6.01, N = 12
247
2700X-NOSMT
SE +/- 0.33, N = 3
254
60
120
180
240
300
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread


GraphicsMagick 1.3.30
Operation: Noise-Gaussian
Iterations Per Minute, More Is Better
2xG34
85
2xE5
SE +/- 0.88, N = 3
109
FX-8350
59
C2D-E8600-3.33
20
O6276
58
O6328
51
i7-3770
SE +/- 0.67, N = 3
59
i5-2520M
26
i5-2520M-HT
32
O6380
64
2700X-SMT
130
2700X-NOSMT
111
30
60
90
120
150
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread

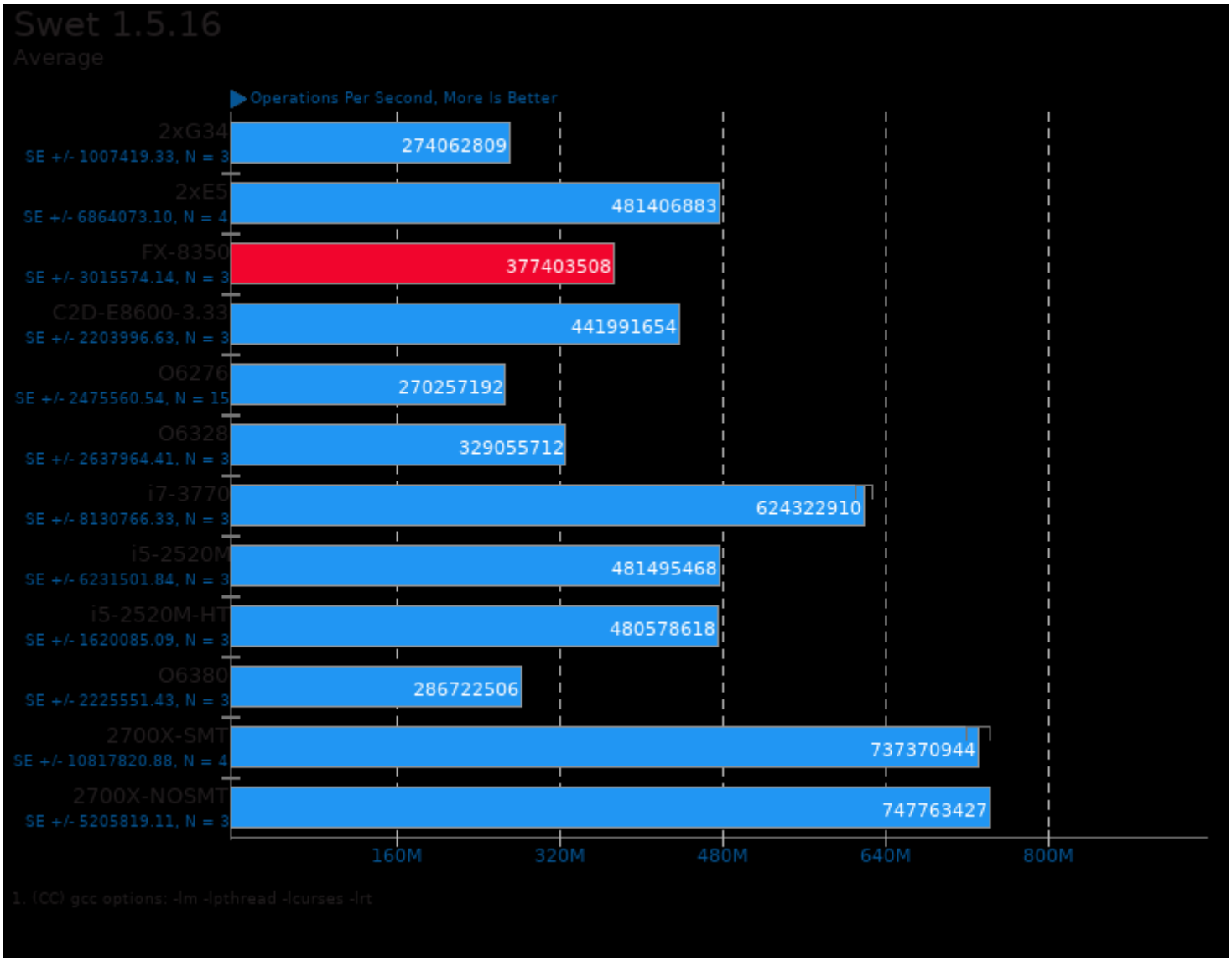

GraphicsMagick 1.3.30
Operation: HWB Color Space
Iterations Per Minute, More Is Better
2xG34
138
2xE5
SE +/- 1.59, N = 8
156
FX-8350
160
C2D-E8600-3.33
118
O6276
130
O6328
142
i7-3770
211
i5-2520M
130
i5-2520M-HT
131
O6380
140
2700X-SMT
SE +/- 0.33, N = 3
268
2700X-NOSMT
SE +/- 0.33, N = 3
262
60
120
180
240
300
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread

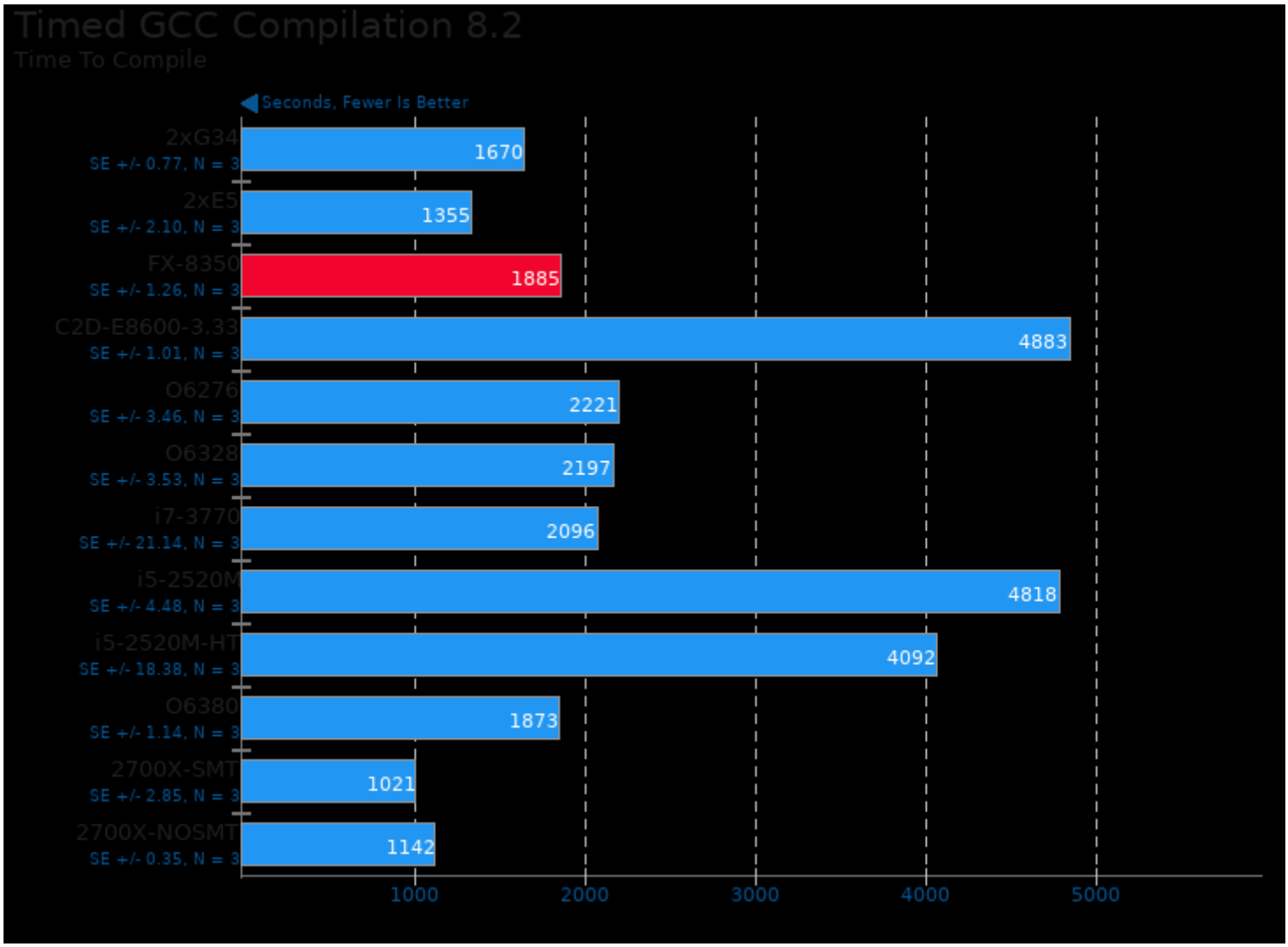

7-Zip Compression 16.02
Compress Speed Test
MIPS, More Is Better
2xG34
SE +/- 462.85, N = 3
48721
2xE5
SE +/- 256.83, N = 3
45435
FX-8350
SE +/- 66.04, N = 3
22049
C2D-E8600-3.33
SE +/- 9.35, N = 3
6039
O6276
SE +/- 103.65, N = 3
23983
O6328
SE +/- 35.67, N = 3
18151
i7-3770
SE +/- 113.76, N = 3
15960
i5-2520M
SE +/- 3.67, N = 3
5853
i5-2520M-HT
SE +/- 15.10, N = 3
8260
O6380
SE +/- 193.89, N = 3
27503
2700X-SMT
SE +/- 164.12, N = 3
37244
2700X-NOSMT
SE +/- 292.95, N = 3
35001
10K
20K
30K
40K
50K
1. (CXX) g++ options: -pipe -lpthread

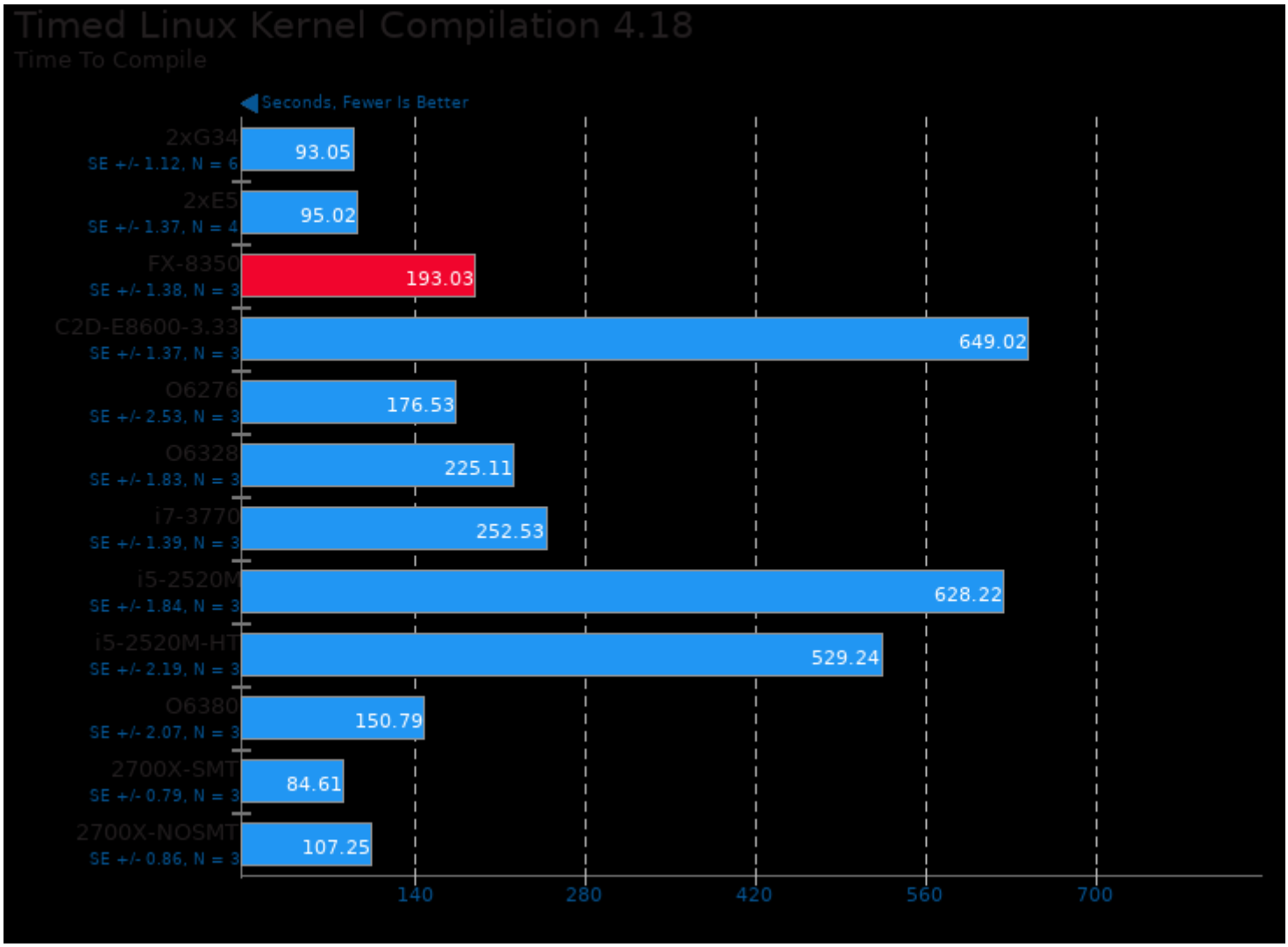
test sample

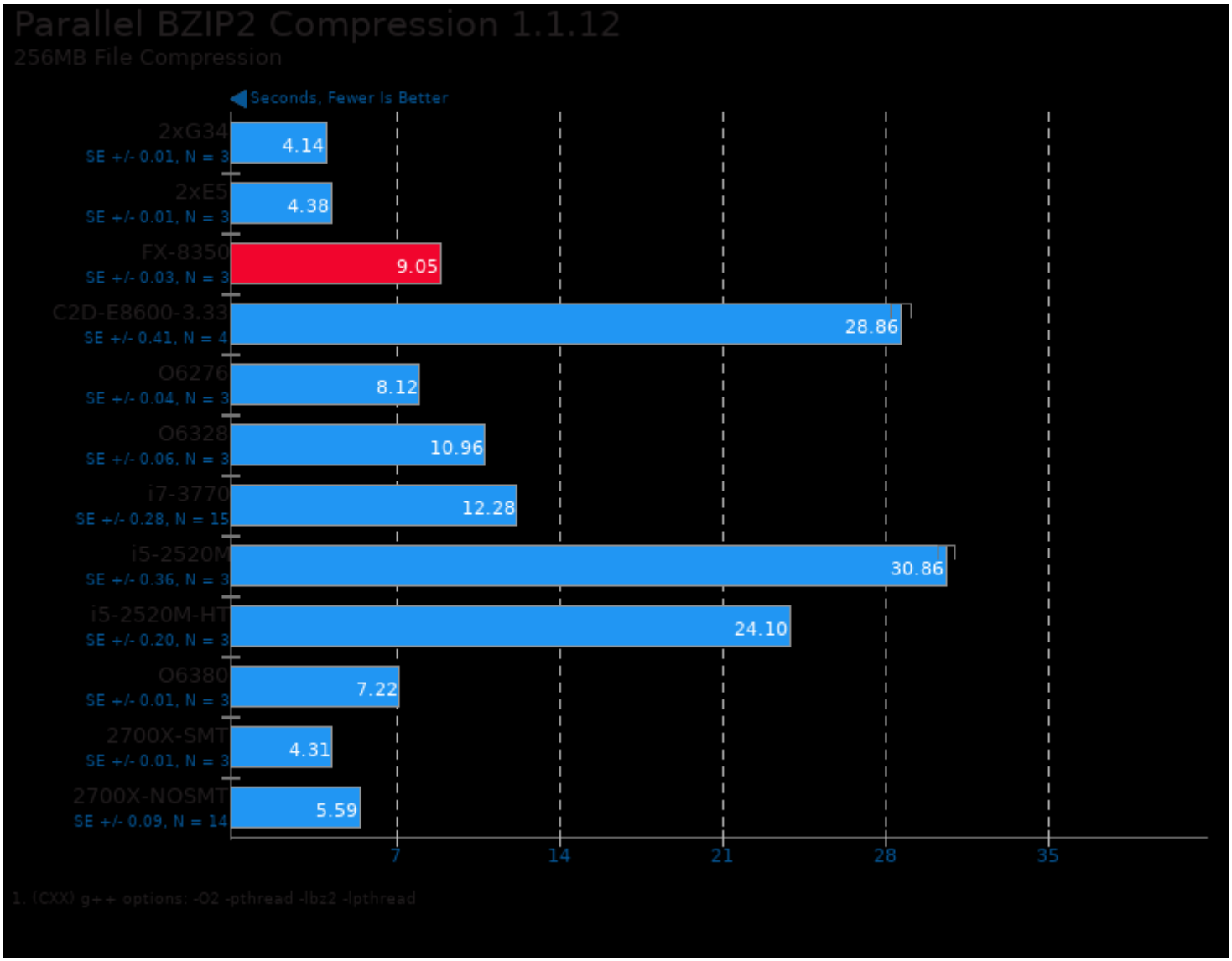

Stockfish 9
Total Time
Nodes Per Second, More Is Better
2xG34
SE +/- 122223.77, N = 3
24611789
2xE5
SE +/- 104863.47, N = 3
24267670
FX-8350
SE +/- 32488.86, N = 3
10210565
O6276
SE +/- 60994.81, N = 3
11123007
O6328
SE +/- 67946.49, N = 3
8509676
i7-3770
SE +/- 71818.02, N = 3
7804621
i5-2520M
SE +/- 27642.33, N = 3
3071362
i5-2520M-HT
SE +/- 45688.17, N = 3
3795401
O6380
SE +/- 19960.46, N = 3
13120252
2700X-SMT
SE +/- 176062.05, N = 3
23090665
2700X-NOSMT
SE +/- 204991.34, N = 3
17285483
5M
10M
15M
20M
25M
1. (CXX) g++ options: -m64 -lpthread -fno-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -flto

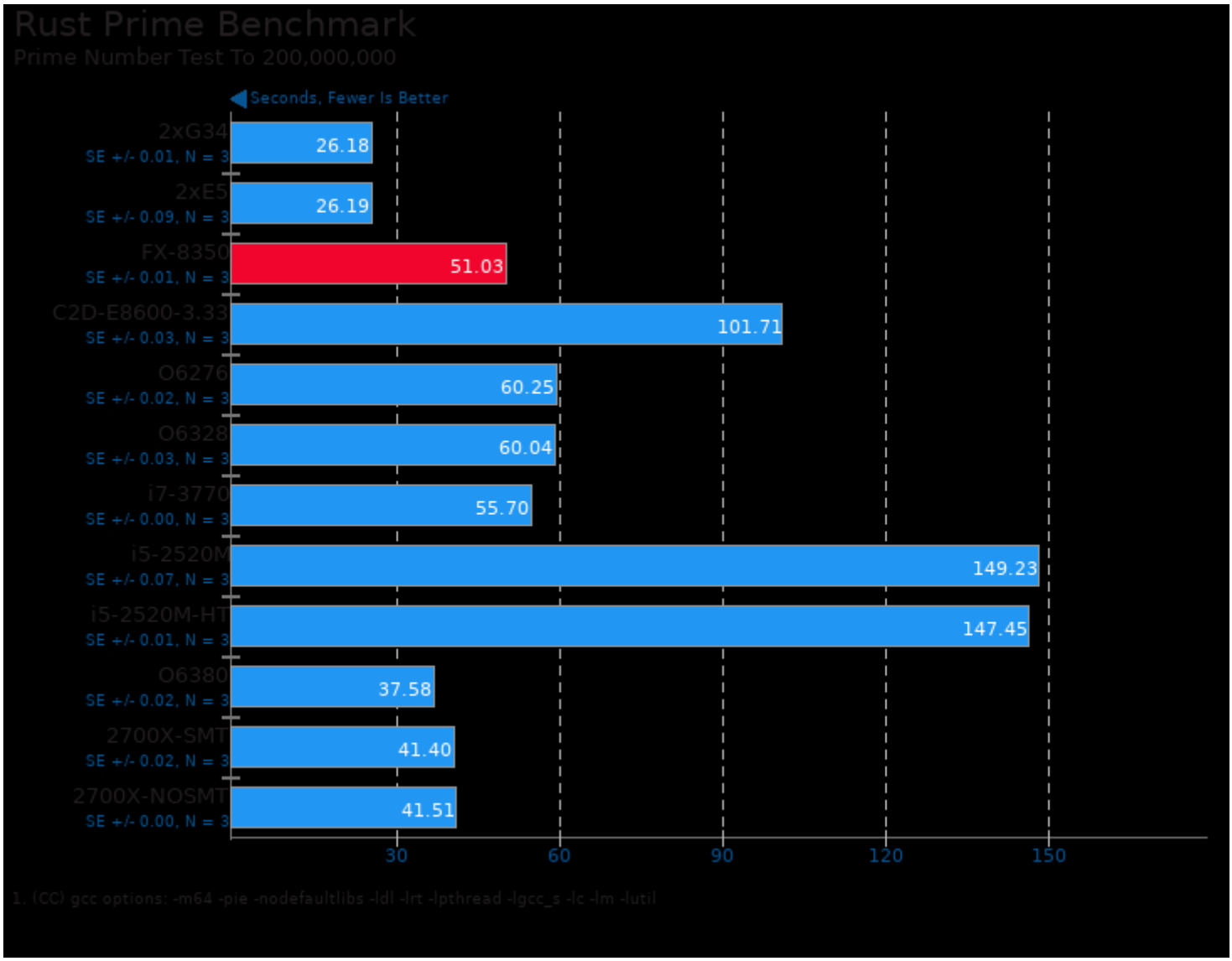
test sample

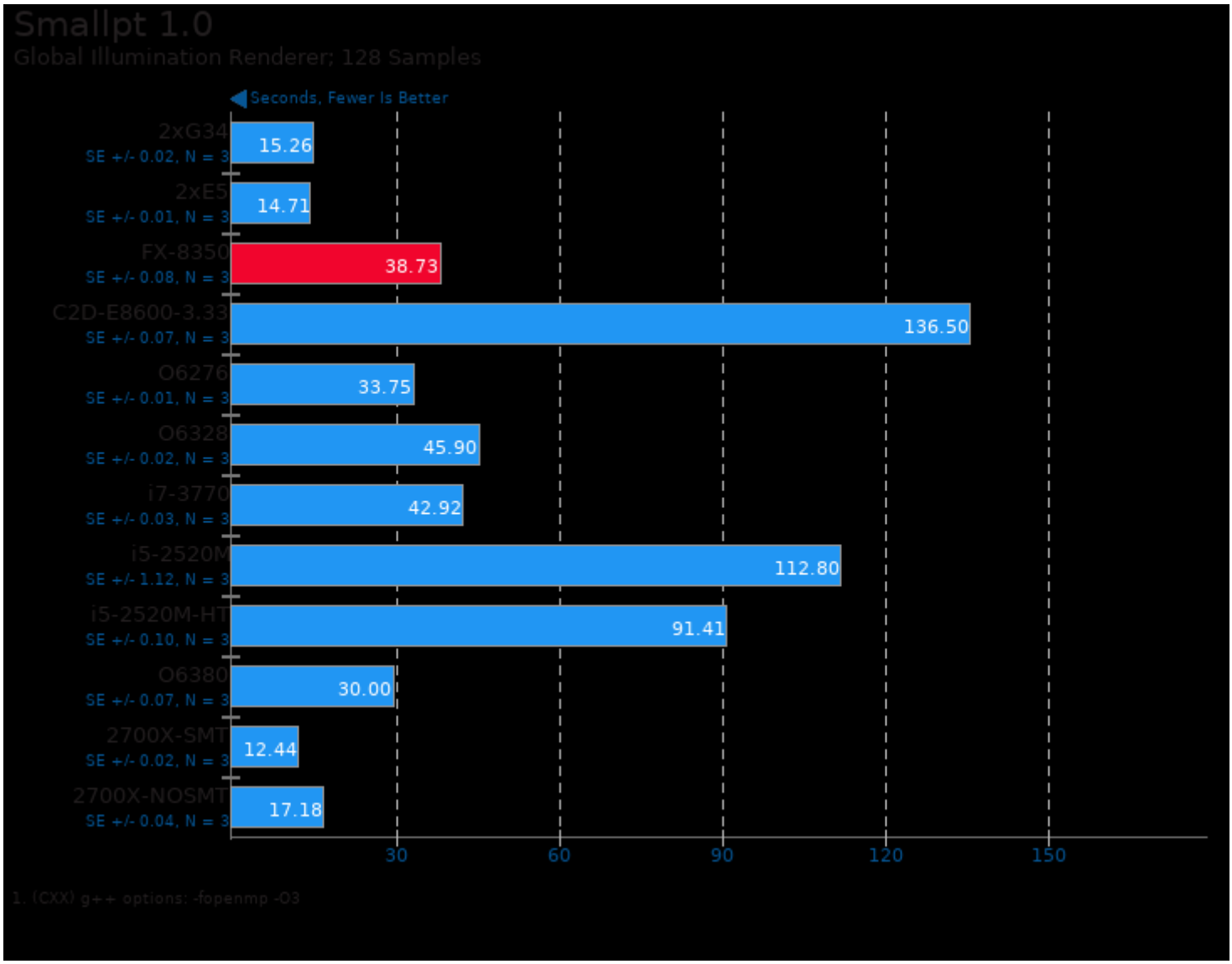

Swet 1.5.16
Average
Operations Per Second, More Is Better
2xG34
SE +/- 1007419.33, N = 3
274062809
2xE5
SE +/- 6864073.10, N = 4
481406883
FX-8350
SE +/- 3015574.14, N = 3
377403508
C2D-E8600-3.33
SE +/- 2203996.63, N = 3
441991654
O6276
SE +/- 2475560.54, N = 15
270257192
O6328
SE +/- 2637964.41, N = 3
329055712
i7-3770
SE +/- 8130766.33, N = 3
624322910
i5-2520M
SE +/- 6231501.84, N = 3
481495468
i5-2520M-HT
SE +/- 1620085.09, N = 3
480578618
O6380
SE +/- 2225551.43, N = 3
286722506
2700X-SMT
SE +/- 10817820.88, N = 4
737370944
2700X-NOSMT
SE +/- 5205819.11, N = 3
747763427
160M
320M
480M
640M
800M
1. (CC) gcc options: -lm -lpthread -lcurses -lrt

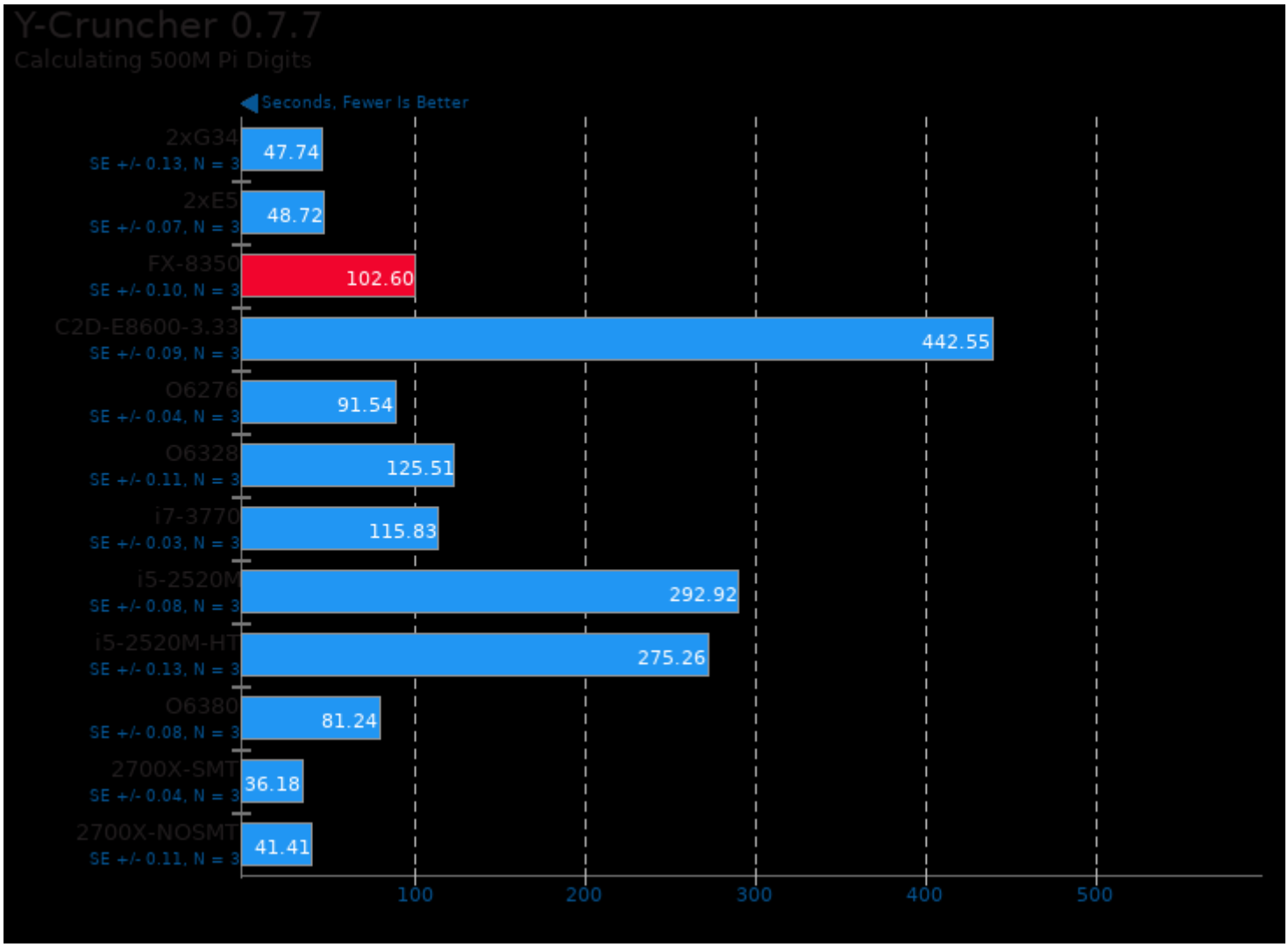

Timed GCC Compilation 8.2
Time To Compile
Seconds, Fewer Is Better
2xG34
SE +/- 0.77, N = 3
1670
2xE5
SE +/- 2.10, N = 3
1355
FX-8350
SE +/- 1.26, N = 3
1885
C2D-E8600-3.33
SE +/- 1.01, N = 3
4883
O6276
SE +/- 3.46, N = 3
2221
O6328
SE +/- 3.53, N = 3
2197
i7-3770
SE +/- 21.14, N = 3
2096
i5-2520M
SE +/- 4.48, N = 3
4818
i5-2520M-HT
SE +/- 18.38, N = 3
4092
O6380
SE +/- 1.14, N = 3
1873
2700X-SMT
SE +/- 2.85, N = 3
1021
2700X-NOSMT
SE +/- 0.35, N = 3
1142
1000
2000
3000
4000
5000

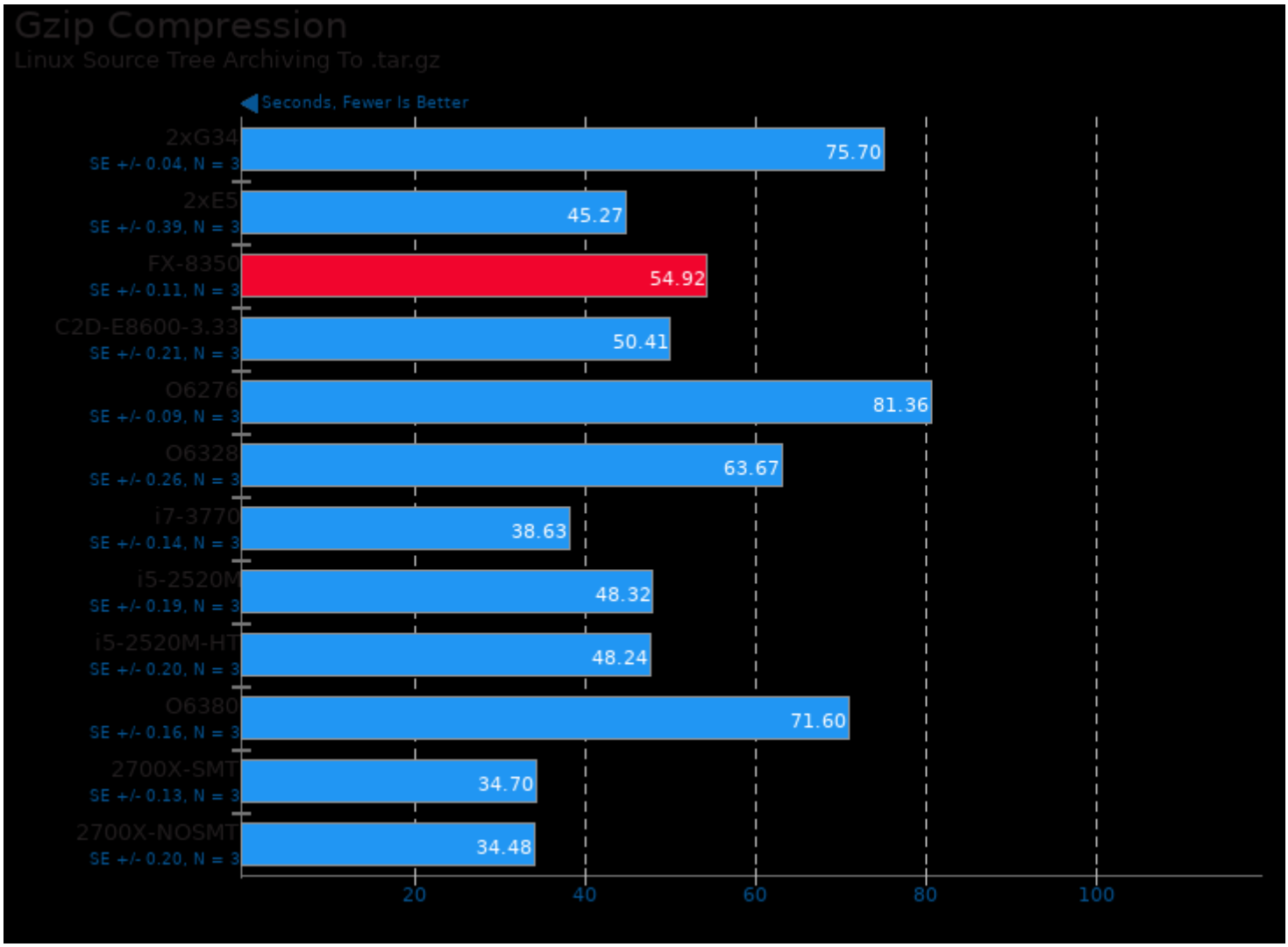

Timed Linux Kernel Compilation 4.18
Time To Compile
Seconds, Fewer Is Better
2xG34
SE +/- 1.12, N = 6
93.05
2xE5
SE +/- 1.37, N = 4
95.02
FX-8350
SE +/- 1.38, N = 3
193.03
C2D-E8600-3.33
SE +/- 1.37, N = 3
649.02
O6276
SE +/- 2.53, N = 3
176.53
O6328
SE +/- 1.83, N = 3
225.11
i7-3770
SE +/- 1.39, N = 3
252.53
i5-2520M
SE +/- 1.84, N = 3
628.22
i5-2520M-HT
SE +/- 2.19, N = 3
529.24
O6380
SE +/- 2.07, N = 3
150.79
2700X-SMT
SE +/- 0.79, N = 3
84.61
2700X-NOSMT
SE +/- 0.86, N = 3
107.25
140
280
420
560
700

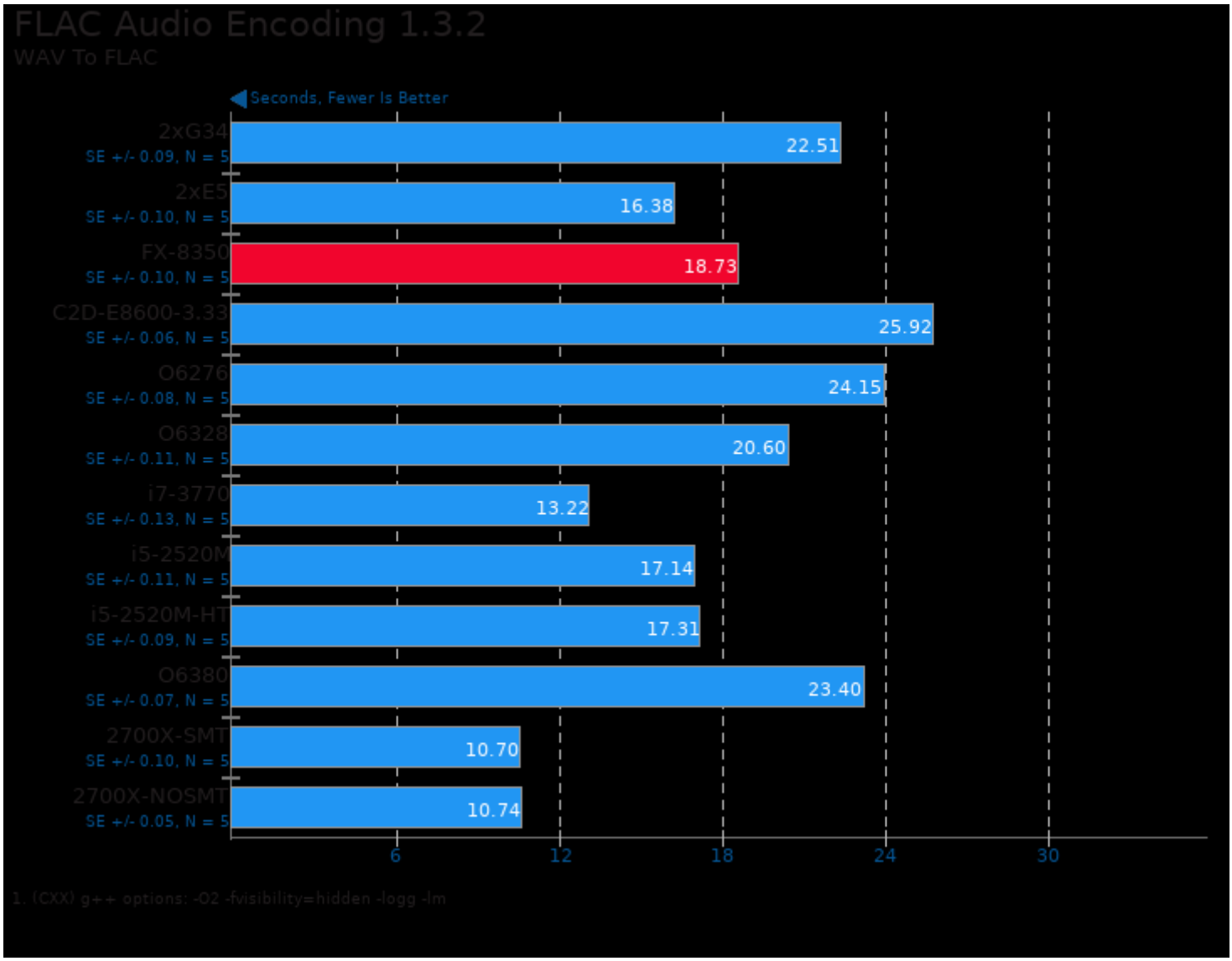

Parallel BZIP2 Compression 1.1.12
256MB File Compression
Seconds, Fewer Is Better
2xG34
SE +/- 0.01, N = 3
4.14
2xE5
SE +/- 0.01, N = 3
4.38
FX-8350
SE +/- 0.03, N = 3
9.05
C2D-E8600-3.33
SE +/- 0.41, N = 4
28.86
O6276
SE +/- 0.04, N = 3
8.12
O6328
SE +/- 0.06, N = 3
10.96
i7-3770
SE +/- 0.28, N = 15
12.28
i5-2520M
SE +/- 0.36, N = 3
30.86
i5-2520M-HT
SE +/- 0.20, N = 3
24.10
O6380
SE +/- 0.01, N = 3
7.22
2700X-SMT
SE +/- 0.01, N = 3
4.31
2700X-NOSMT
SE +/- 0.09, N = 14
5.59
7
14
21
28
35
1. (CXX) g++ options: -O2 -pthread -lbz2 -lpthread

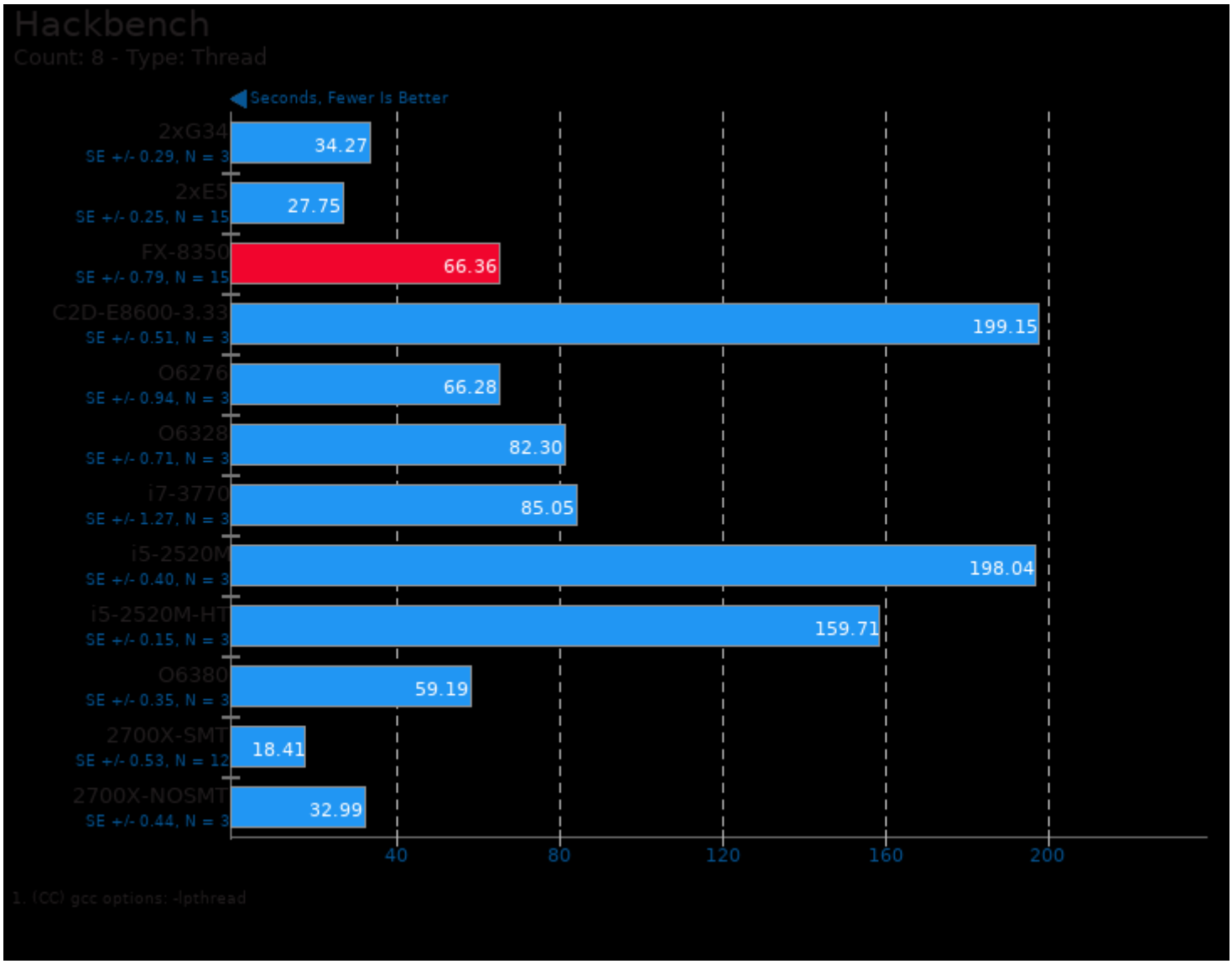

Rust Prime Benchmark
Prime Number Test To 200,000,000
Seconds, Fewer Is Better
2xG34
SE +/- 0.01, N = 3
26.18
2xE5
SE +/- 0.09, N = 3
26.19
FX-8350
SE +/- 0.01, N = 3
51.03
C2D-E8600-3.33
SE +/- 0.03, N = 3
101.71
O6276
SE +/- 0.02, N = 3
60.25
O6328
SE +/- 0.03, N = 3
60.04
i7-3770
SE +/- 0.00, N = 3
55.70
i5-2520M
SE +/- 0.07, N = 3
149.23
i5-2520M-HT
SE +/- 0.01, N = 3
147.45
O6380
SE +/- 0.02, N = 3
37.58
2700X-SMT
SE +/- 0.02, N = 3
41.40
2700X-NOSMT
SE +/- 0.00, N = 3
41.51
30
60
90
120
150
1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lrt -lpthread -lgcc_s -lc -lm -lutil

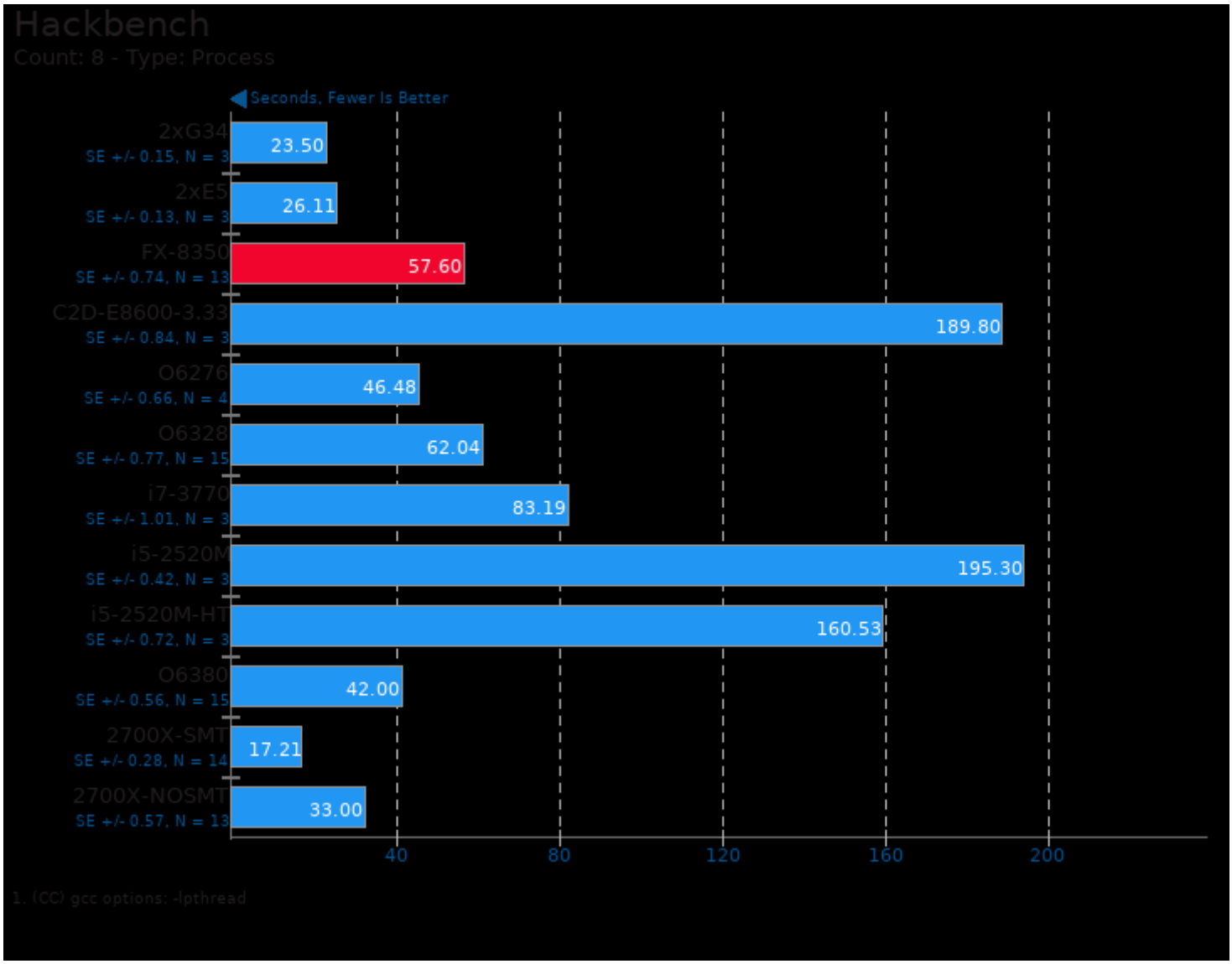

Smallpt 1.0
Global Illumination Renderer; 128 Samples
Seconds, Fewer Is Better
2xG34
SE +/- 0.02, N = 3
15.26
2xE5
SE +/- 0.01, N = 3
14.71
FX-8350
SE +/- 0.08, N = 3
38.73
C2D-E8600-3.33
SE +/- 0.07, N = 3
136.50
O6276
SE +/- 0.01, N = 3
33.75
O6328
SE +/- 0.02, N = 3
45.90
i7-3770
SE +/- 0.03, N = 3
42.92
i5-2520M
SE +/- 1.12, N = 3
112.80
i5-2520M-HT
SE +/- 0.10, N = 3
91.41
O6380
SE +/- 0.07, N = 3
30.00
2700X-SMT
SE +/- 0.02, N = 3
12.44
2700X-NOSMT
SE +/- 0.04, N = 3
17.18
30
60
90
120
150
1. (CXX) g++ options: -fopenmp -O3

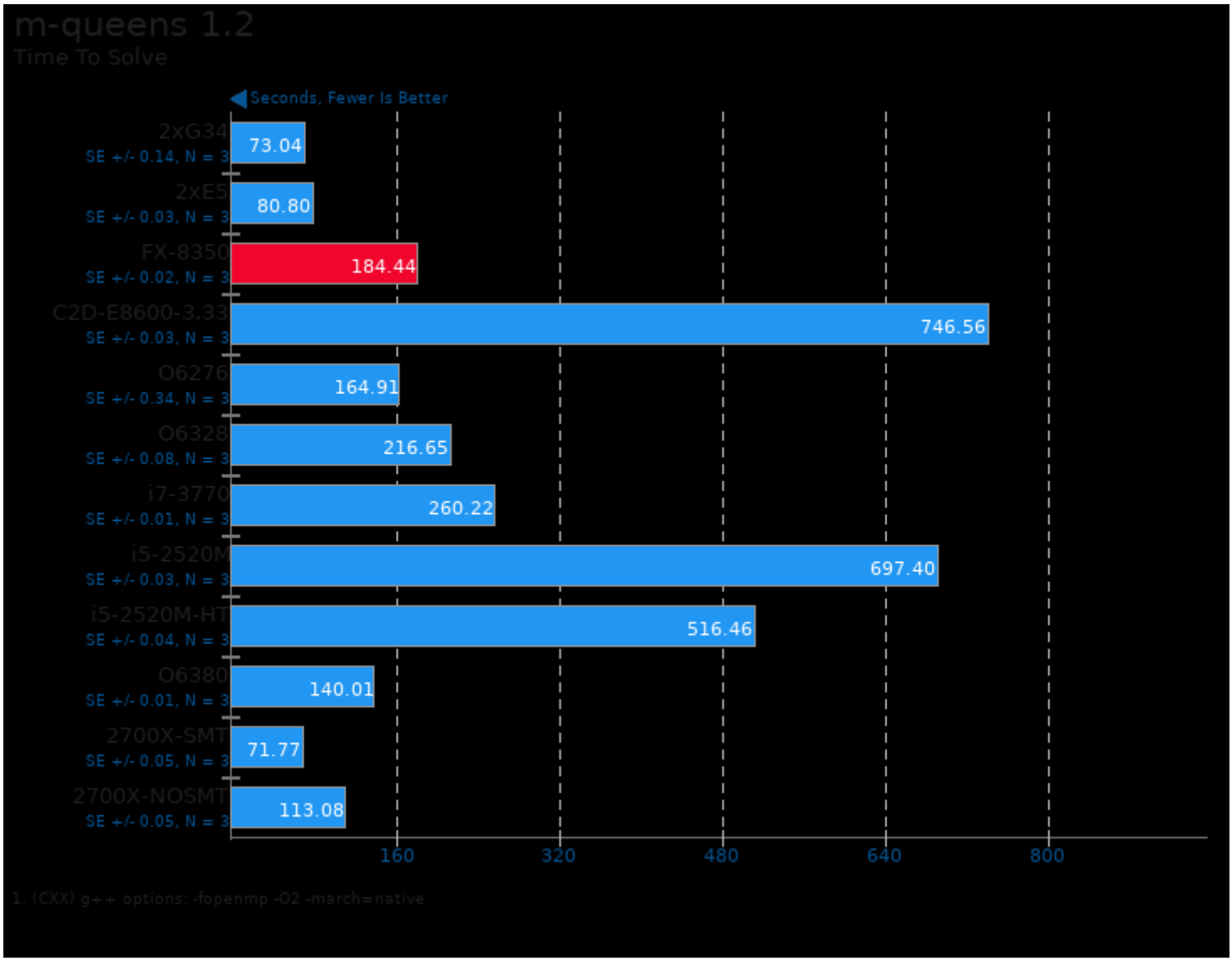

Y-Cruncher 0.7.7
Calculating 500M Pi Digits
Seconds, Fewer Is Better
2xG34
SE +/- 0.13, N = 3
47.74
2xE5
SE +/- 0.07, N = 3
48.72
FX-8350
SE +/- 0.10, N = 3
102.60
C2D-E8600-3.33
SE +/- 0.09, N = 3
442.55
O6276
SE +/- 0.04, N = 3
91.54
O6328
SE +/- 0.11, N = 3
125.51
i7-3770
SE +/- 0.03, N = 3
115.83
i5-2520M
SE +/- 0.08, N = 3
292.92
i5-2520M-HT
SE +/- 0.13, N = 3
275.26
O6380
SE +/- 0.08, N = 3
81.24
2700X-SMT
SE +/- 0.04, N = 3
36.18
2700X-NOSMT
SE +/- 0.11, N = 3
41.41
100
200
300
400
500

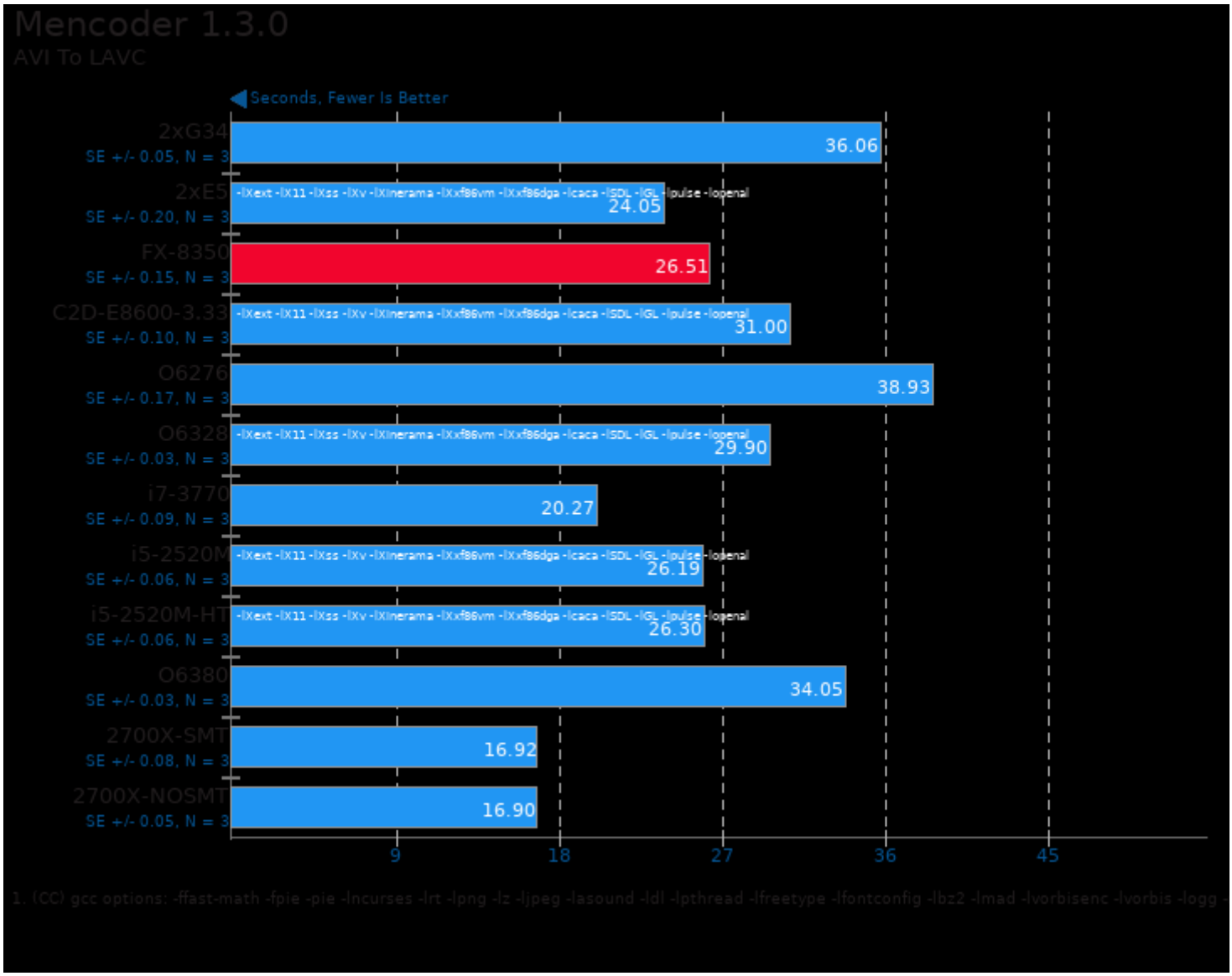

Gzip Compression
Linux Source Tree Archiving To .tar.gz
Seconds, Fewer Is Better
2xG34
SE +/- 0.04, N = 3
75.70
2xE5
SE +/- 0.39, N = 3
45.27
FX-8350
SE +/- 0.11, N = 3
54.92
C2D-E8600-3.33
SE +/- 0.21, N = 3
50.41
O6276
SE +/- 0.09, N = 3
81.36
O6328
SE +/- 0.26, N = 3
63.67
i7-3770
SE +/- 0.14, N = 3
38.63
i5-2520M
SE +/- 0.19, N = 3
48.32
i5-2520M-HT
SE +/- 0.20, N = 3
48.24
O6380
SE +/- 0.16, N = 3
71.60
2700X-SMT
SE +/- 0.13, N = 3
34.70
2700X-NOSMT
SE +/- 0.20, N = 3
34.48
20
40
60
80
100

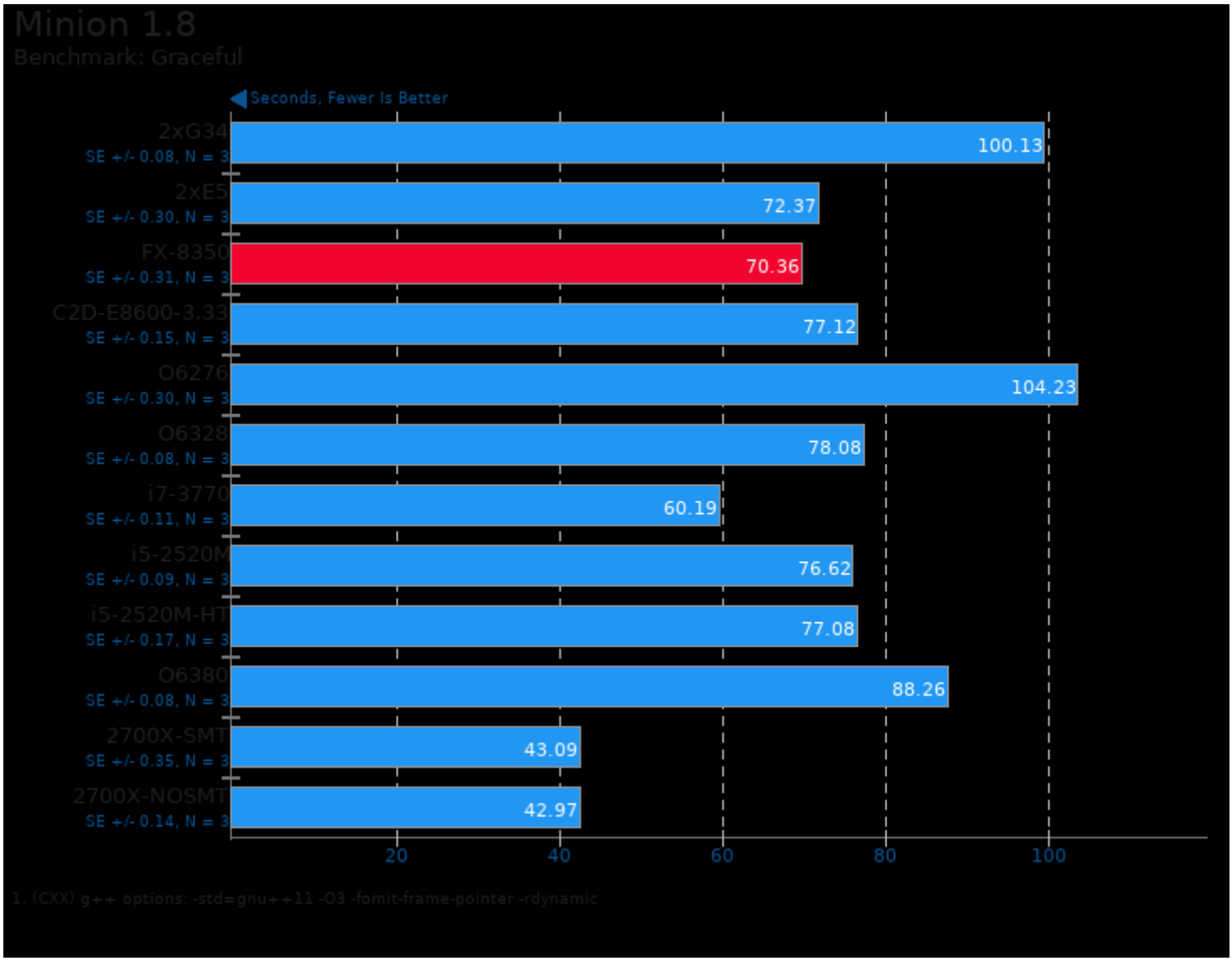

FLAC Audio Encoding 1.3.2
WAV To FLAC
Seconds, Fewer Is Better
2xG34
SE +/- 0.09, N = 5
22.51
2xE5
SE +/- 0.10, N = 5
16.38
FX-8350
SE +/- 0.10, N = 5
18.73
C2D-E8600-3.33
SE +/- 0.06, N = 5
25.92
O6276
SE +/- 0.08, N = 5
24.15
O6328
SE +/- 0.11, N = 5
20.60
i7-3770
SE +/- 0.13, N = 5
13.22
i5-2520M
SE +/- 0.11, N = 5
17.14
i5-2520M-HT
SE +/- 0.09, N = 5
17.31
O6380
SE +/- 0.07, N = 5
23.40
2700X-SMT
SE +/- 0.10, N = 5
10.70
2700X-NOSMT
SE +/- 0.05, N = 5
10.74
6
12
18
24
30
1. (CXX) g++ options: -O2 -fvisibility=hidden -logg -lm

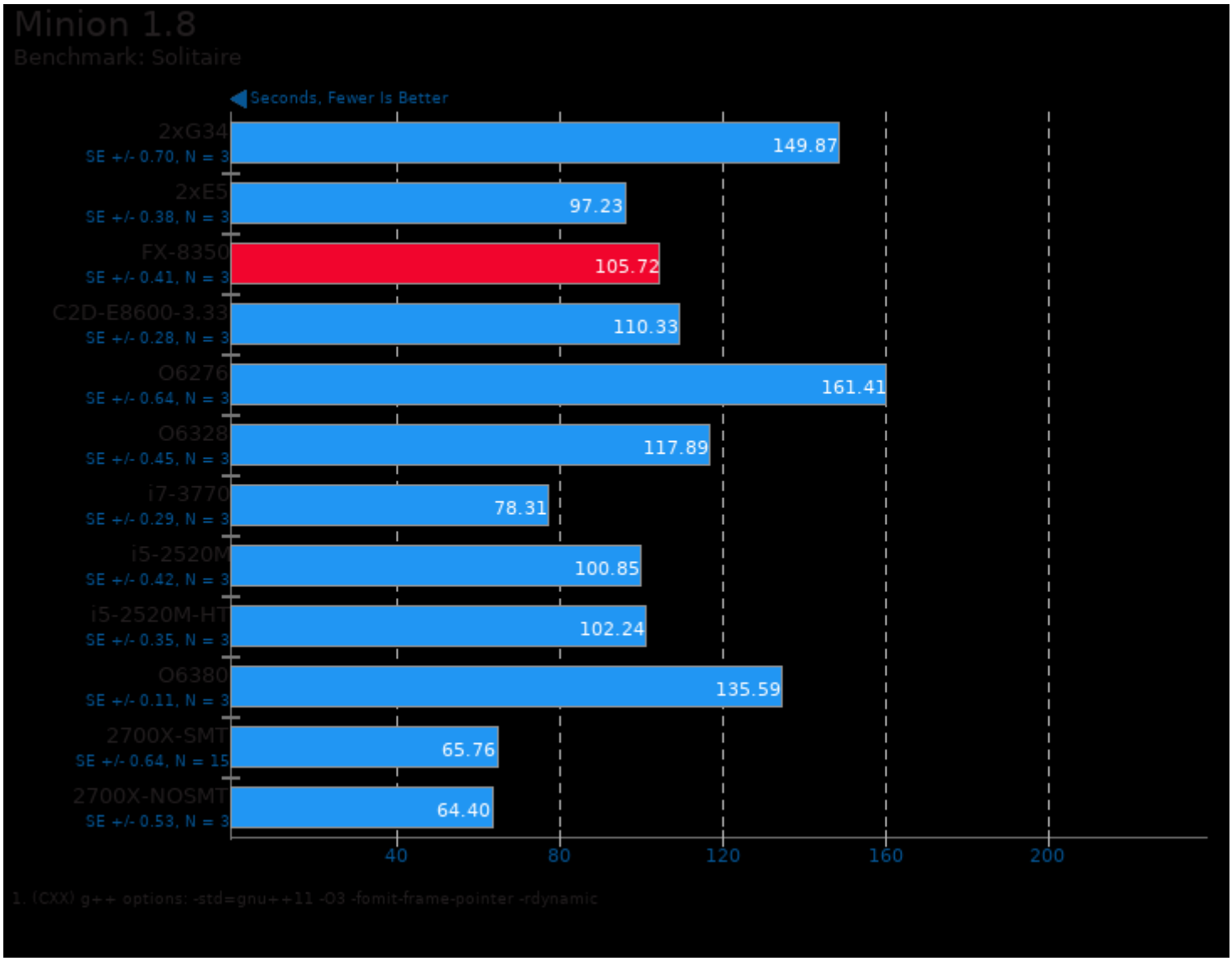

Hackbench
Count: 8 - Type: Thread
Seconds, Fewer Is Better
2xG34
SE +/- 0.29, N = 3
34.27
2xE5
SE +/- 0.25, N = 15
27.75
FX-8350
SE +/- 0.79, N = 15
66.36
C2D-E8600-3.33
SE +/- 0.51, N = 3
199.15
O6276
SE +/- 0.94, N = 3
66.28
O6328
SE +/- 0.71, N = 3
82.30
i7-3770
SE +/- 1.27, N = 3
85.05
i5-2520M
SE +/- 0.40, N = 3
198.04
i5-2520M-HT
SE +/- 0.15, N = 3
159.71
O6380
SE +/- 0.35, N = 3
59.19
2700X-SMT
SE +/- 0.53, N = 12
18.41
2700X-NOSMT
SE +/- 0.44, N = 3
32.99
40
80
120
160
200
1. (CC) gcc options: -lpthread

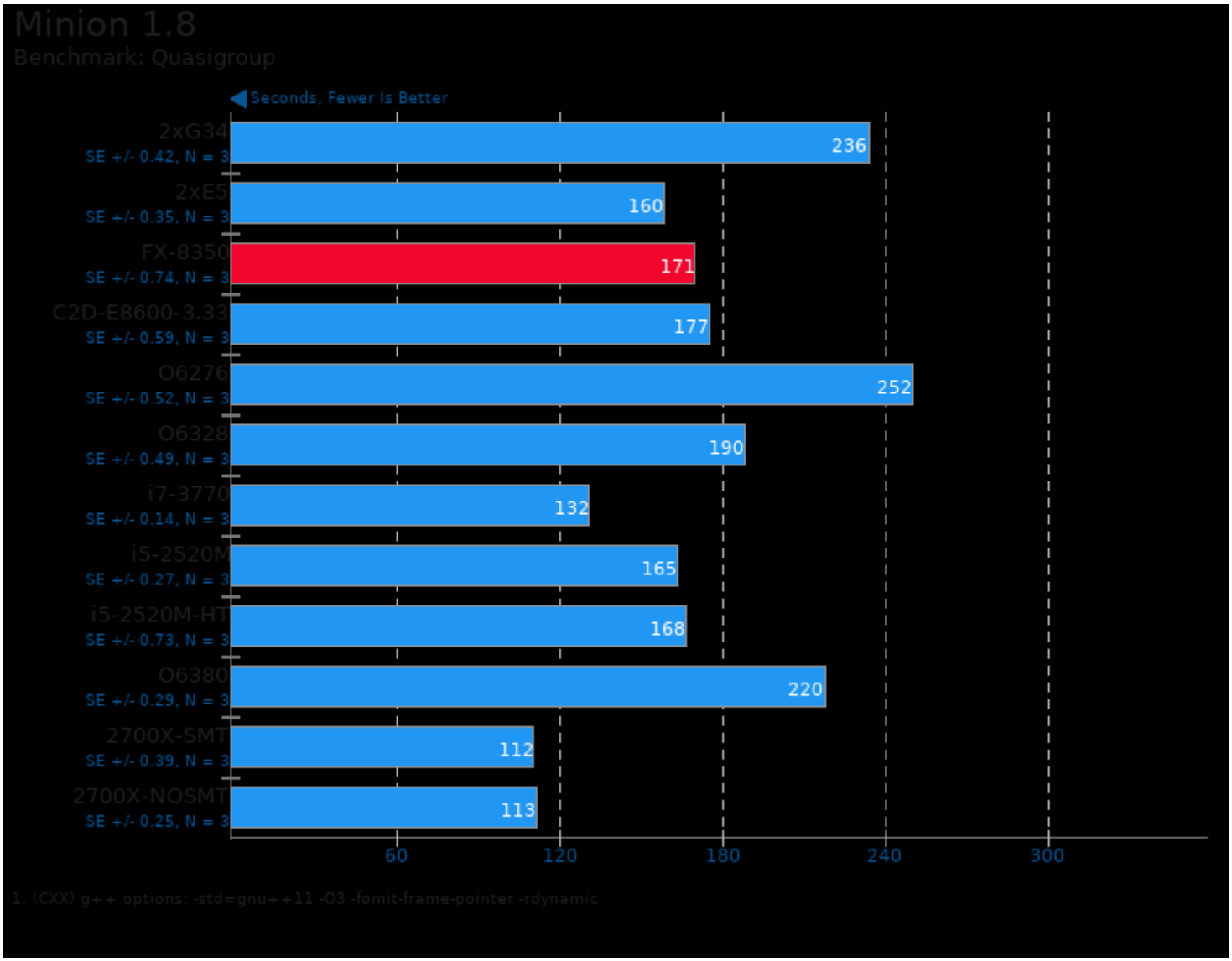

Hackbench
Count: 8 - Type: Process
Seconds, Fewer Is Better
2xG34
SE +/- 0.15, N = 3
23.50
2xE5
SE +/- 0.13, N = 3
26.11
FX-8350
SE +/- 0.74, N = 13
57.60
C2D-E8600-3.33
SE +/- 0.84, N = 3
189.80
O6276
SE +/- 0.66, N = 4
46.48
O6328
SE +/- 0.77, N = 15
62.04
i7-3770
SE +/- 1.01, N = 3
83.19
i5-2520M
SE +/- 0.42, N = 3
195.30
i5-2520M-HT
SE +/- 0.72, N = 3
160.53
O6380
SE +/- 0.56, N = 15
42.00
2700X-SMT
SE +/- 0.28, N = 14
17.21
2700X-NOSMT
SE +/- 0.57, N = 13
33.00
40
80
120
160
200
1. (CC) gcc options: -lpthread

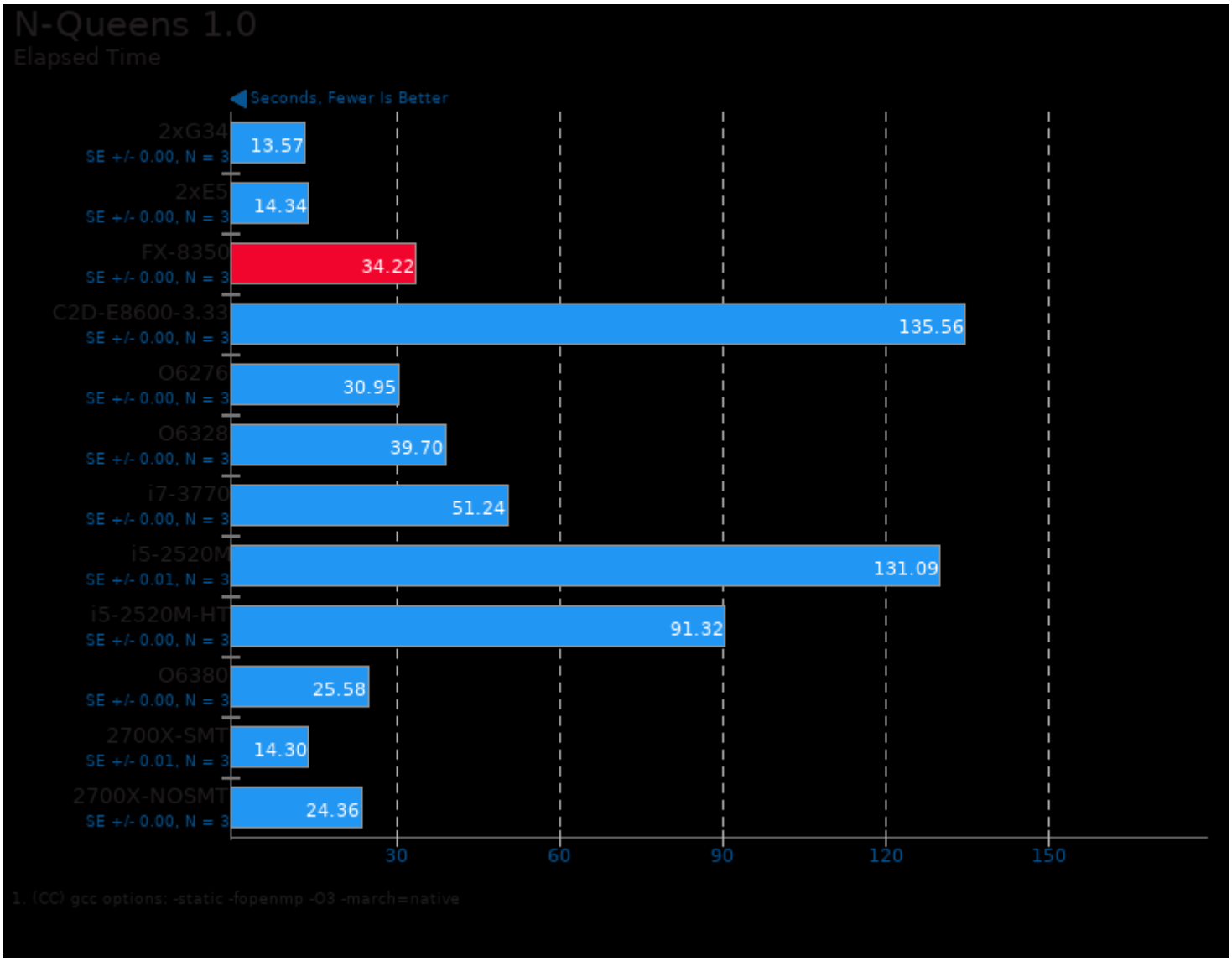

m-queens 1.2
Time To Solve
Seconds, Fewer Is Better
2xG34
SE +/- 0.14, N = 3
73.04
2xE5
SE +/- 0.03, N = 3
80.80
FX-8350
SE +/- 0.02, N = 3
184.44
C2D-E8600-3.33
SE +/- 0.03, N = 3
746.56
O6276
SE +/- 0.34, N = 3
164.91
O6328
SE +/- 0.08, N = 3
216.65
i7-3770
SE +/- 0.01, N = 3
260.22
i5-2520M
SE +/- 0.03, N = 3
697.40
i5-2520M-HT
SE +/- 0.04, N = 3
516.46
O6380
SE +/- 0.01, N = 3
140.01
2700X-SMT
SE +/- 0.05, N = 3
71.77
2700X-NOSMT
SE +/- 0.05, N = 3
113.08
160
320
480
640
800
1. (CXX) g++ options: -fopenmp -O2 -march=native

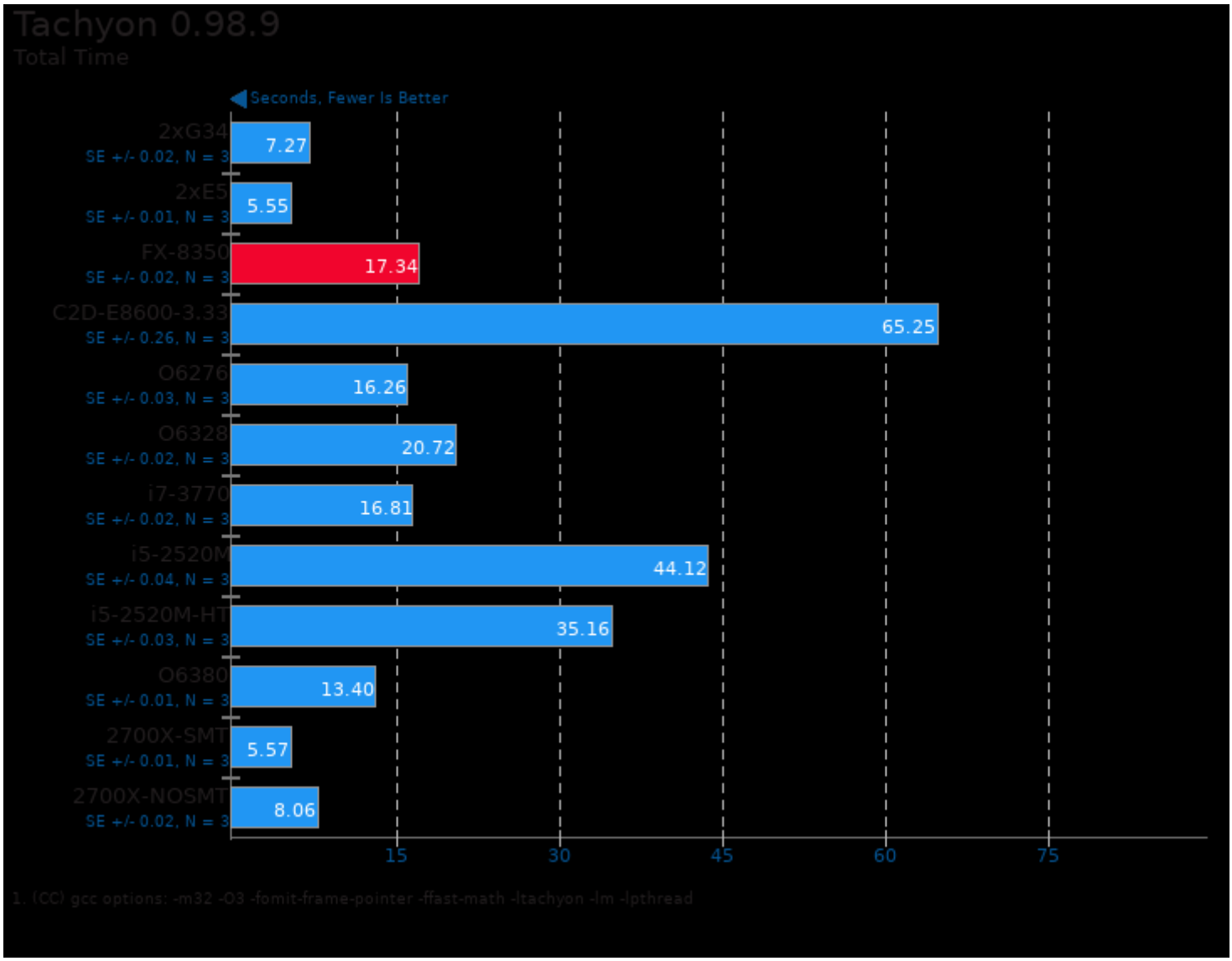

Mencoder 1.3.0
AVI To LAVC
Seconds, Fewer Is Better
2xG34
SE +/- 0.05, N = 3
36.06
2xE5
SE +/- 0.20, N = 3
-lXext -lX11 -lXss -lXv -lXinerama -lXxf86vm -lXxf86dga -lcaca -lSDL -lGL -lpulse -lopenal
24.05
FX-8350
SE +/- 0.15, N = 3
26.51
C2D-E8600-3.33
SE +/- 0.10, N = 3
-lXext -lX11 -lXss -lXv -lXinerama -lXxf86vm -lXxf86dga -lcaca -lSDL -lGL -lpulse -lopenal
31.00
O6276
SE +/- 0.17, N = 3
38.93
O6328
SE +/- 0.03, N = 3
-lXext -lX11 -lXss -lXv -lXinerama -lXxf86vm -lXxf86dga -lcaca -lSDL -lGL -lpulse -lopenal
29.90
i7-3770
SE +/- 0.09, N = 3
20.27
i5-2520M
SE +/- 0.06, N = 3
-lXext -lX11 -lXss -lXv -lXinerama -lXxf86vm -lXxf86dga -lcaca -lSDL -lGL -lpulse -lopenal
26.19
i5-2520M-HT
SE +/- 0.06, N = 3
-lXext -lX11 -lXss -lXv -lXinerama -lXxf86vm -lXxf86dga -lcaca -lSDL -lGL -lpulse -lopenal
26.30
O6380
SE +/- 0.03, N = 3
34.05
2700X-SMT
SE +/- 0.08, N = 3
16.92
2700X-NOSMT
SE +/- 0.05, N = 3
16.90
9
18
27
36
45
1. (CC) gcc options: -ffast-math -fpie -pie -lncurses -lrt -lpng -lz -ljpeg -lasound -ldl -lpthread -lfreetype -lfontconfig -lbz2 -lmad -lvorbisenc -lvorbis -logg

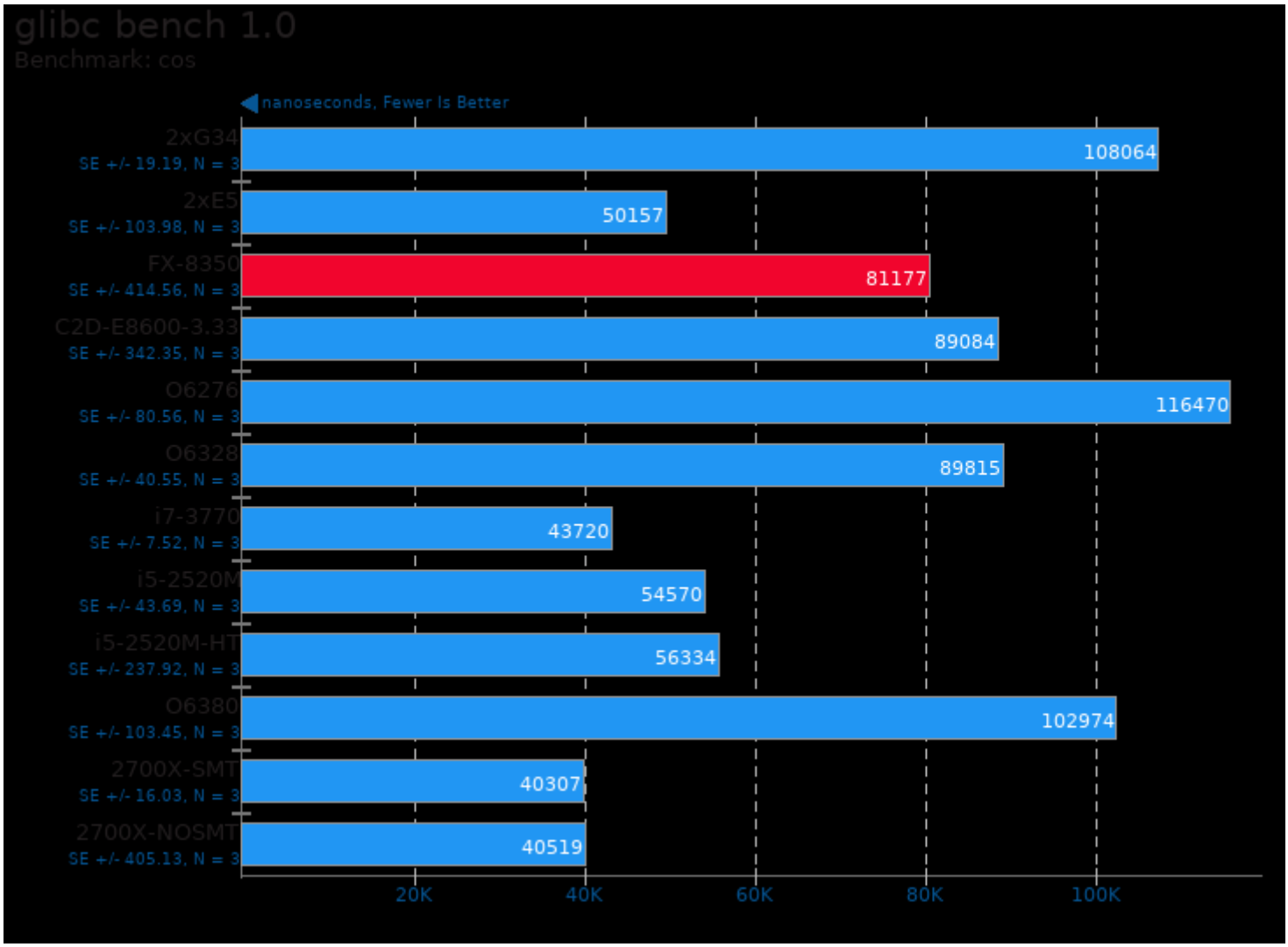

Minion 1.8
Benchmark: Graceful
Seconds, Fewer Is Better
2xG34
SE +/- 0.08, N = 3
100.13
2xE5
SE +/- 0.30, N = 3
72.37
FX-8350
SE +/- 0.31, N = 3
70.36
C2D-E8600-3.33
SE +/- 0.15, N = 3
77.12
O6276
SE +/- 0.30, N = 3
104.23
O6328
SE +/- 0.08, N = 3
78.08
i7-3770
SE +/- 0.11, N = 3
60.19
i5-2520M
SE +/- 0.09, N = 3
76.62
i5-2520M-HT
SE +/- 0.17, N = 3
77.08
O6380
SE +/- 0.08, N = 3
88.26
2700X-SMT
SE +/- 0.35, N = 3
43.09
2700X-NOSMT
SE +/- 0.14, N = 3
42.97
20
40
60
80
100
1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

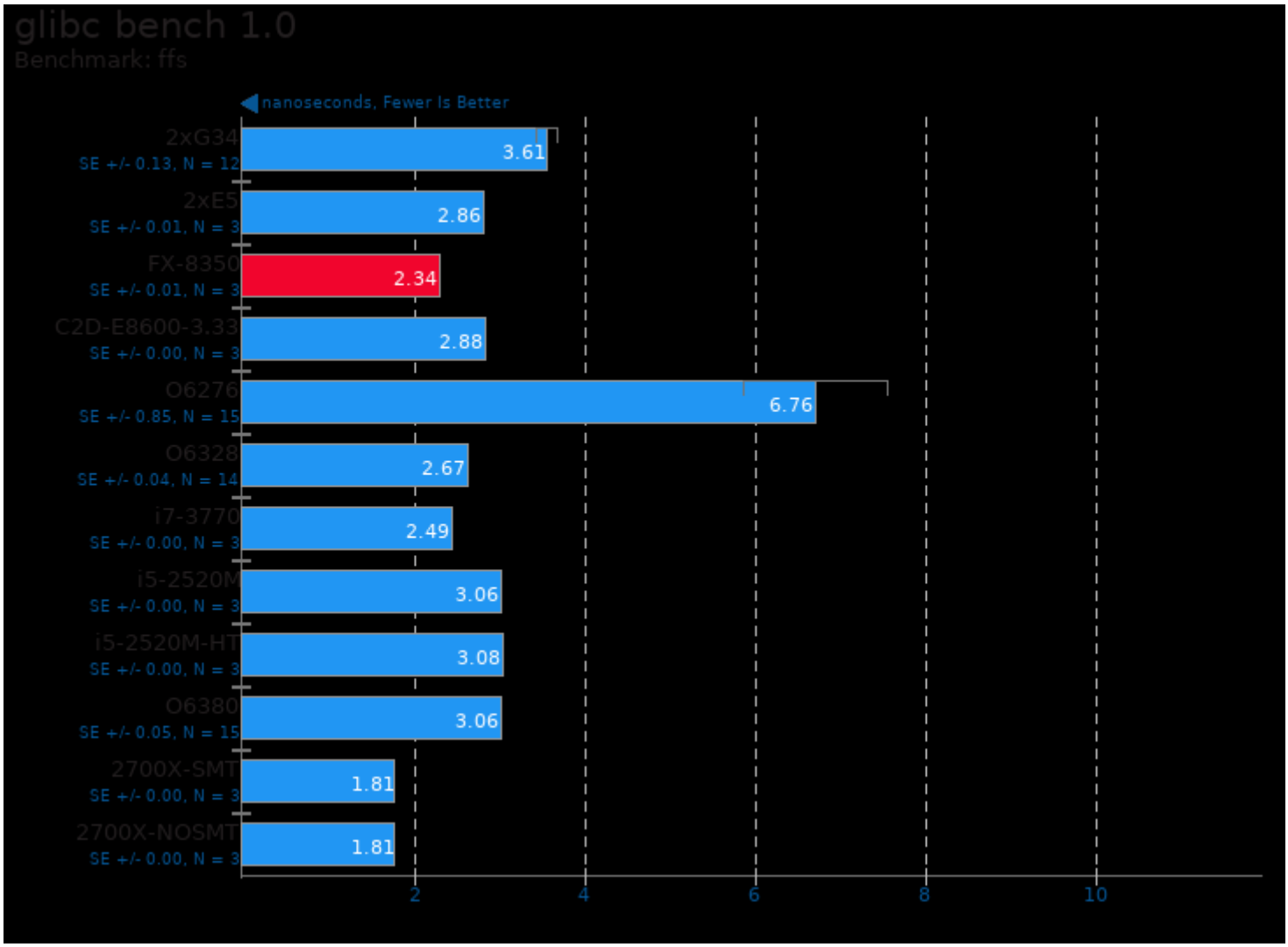

Minion 1.8
Benchmark: Solitaire
Seconds, Fewer Is Better
2xG34
SE +/- 0.70, N = 3
149.87
2xE5
SE +/- 0.38, N = 3
97.23
FX-8350
SE +/- 0.41, N = 3
105.72
C2D-E8600-3.33
SE +/- 0.28, N = 3
110.33
O6276
SE +/- 0.64, N = 3
161.41
O6328
SE +/- 0.45, N = 3
117.89
i7-3770
SE +/- 0.29, N = 3
78.31
i5-2520M
SE +/- 0.42, N = 3
100.85
i5-2520M-HT
SE +/- 0.35, N = 3
102.24
O6380
SE +/- 0.11, N = 3
135.59
2700X-SMT
SE +/- 0.64, N = 15
65.76
2700X-NOSMT
SE +/- 0.53, N = 3
64.40
40
80
120
160
200
1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

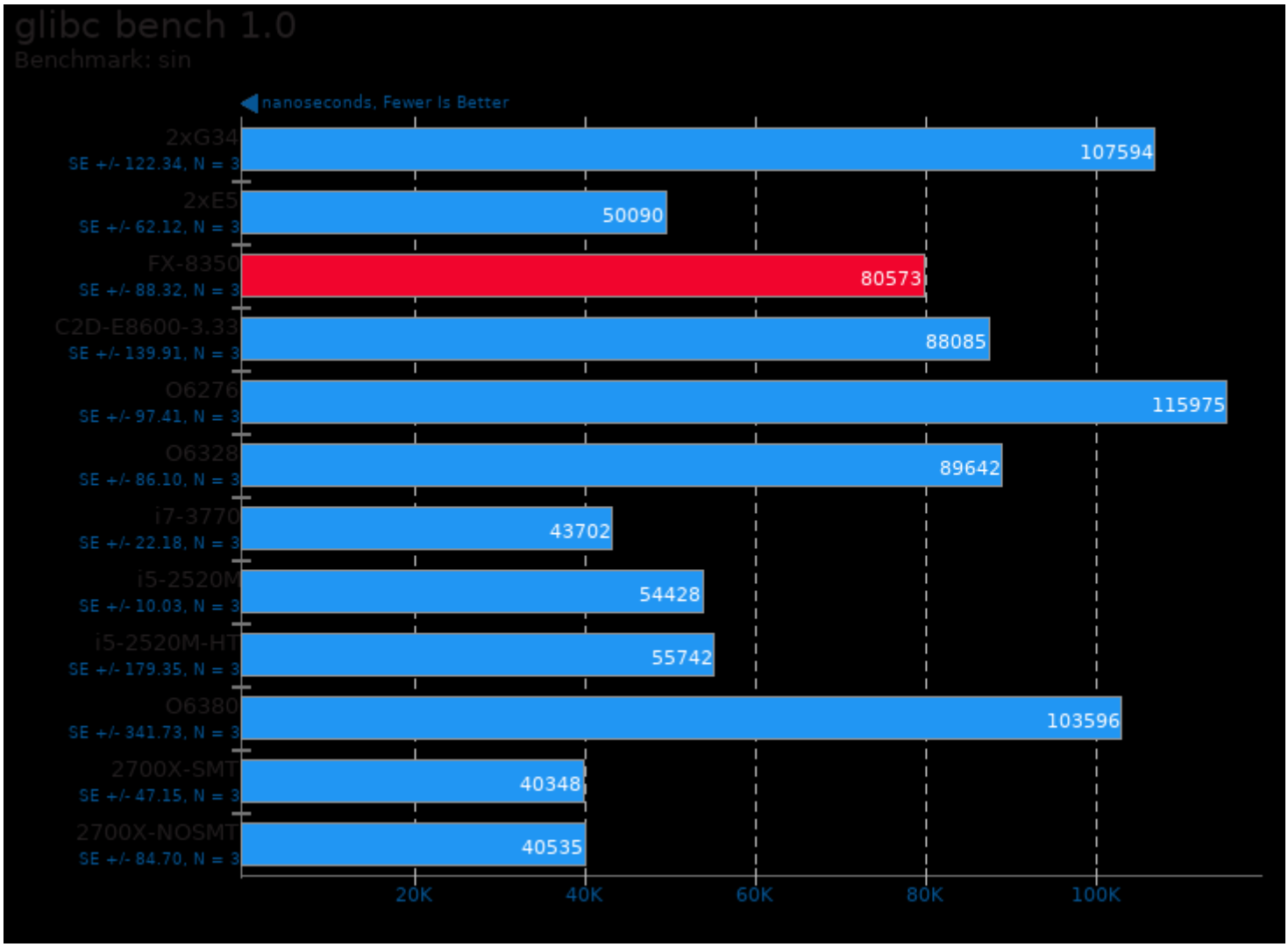

Minion 1.8
Benchmark: Quasigroup
Seconds, Fewer Is Better
2xG34
SE +/- 0.42, N = 3
236
2xE5
SE +/- 0.35, N = 3
160
FX-8350
SE +/- 0.74, N = 3
171
C2D-E8600-3.33
SE +/- 0.59, N = 3
177
O6276
SE +/- 0.52, N = 3
252
O6328
SE +/- 0.49, N = 3
190
i7-3770
SE +/- 0.14, N = 3
132
i5-2520M
SE +/- 0.27, N = 3
165
i5-2520M-HT
SE +/- 0.73, N = 3
168
O6380
SE +/- 0.29, N = 3
220
2700X-SMT
SE +/- 0.39, N = 3
112
2700X-NOSMT
SE +/- 0.25, N = 3
113
60
120
180
240
300
1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic


N-Queens 1.0
Elapsed Time
Seconds, Fewer Is Better
2xG34
SE +/- 0.00, N = 3
13.57
2xE5
SE +/- 0.00, N = 3
14.34
FX-8350
SE +/- 0.00, N = 3
34.22
C2D-E8600-3.33
SE +/- 0.00, N = 3
135.56
O6276
SE +/- 0.00, N = 3
30.95
O6328
SE +/- 0.00, N = 3
39.70
i7-3770
SE +/- 0.00, N = 3
51.24
i5-2520M
SE +/- 0.01, N = 3
131.09
i5-2520M-HT
SE +/- 0.00, N = 3
91.32
O6380
SE +/- 0.00, N = 3
25.58
2700X-SMT
SE +/- 0.01, N = 3
14.30
2700X-NOSMT
SE +/- 0.00, N = 3
24.36
30
60
90
120
150
1. (CC) gcc options: -static -fopenmp -O3 -march=native

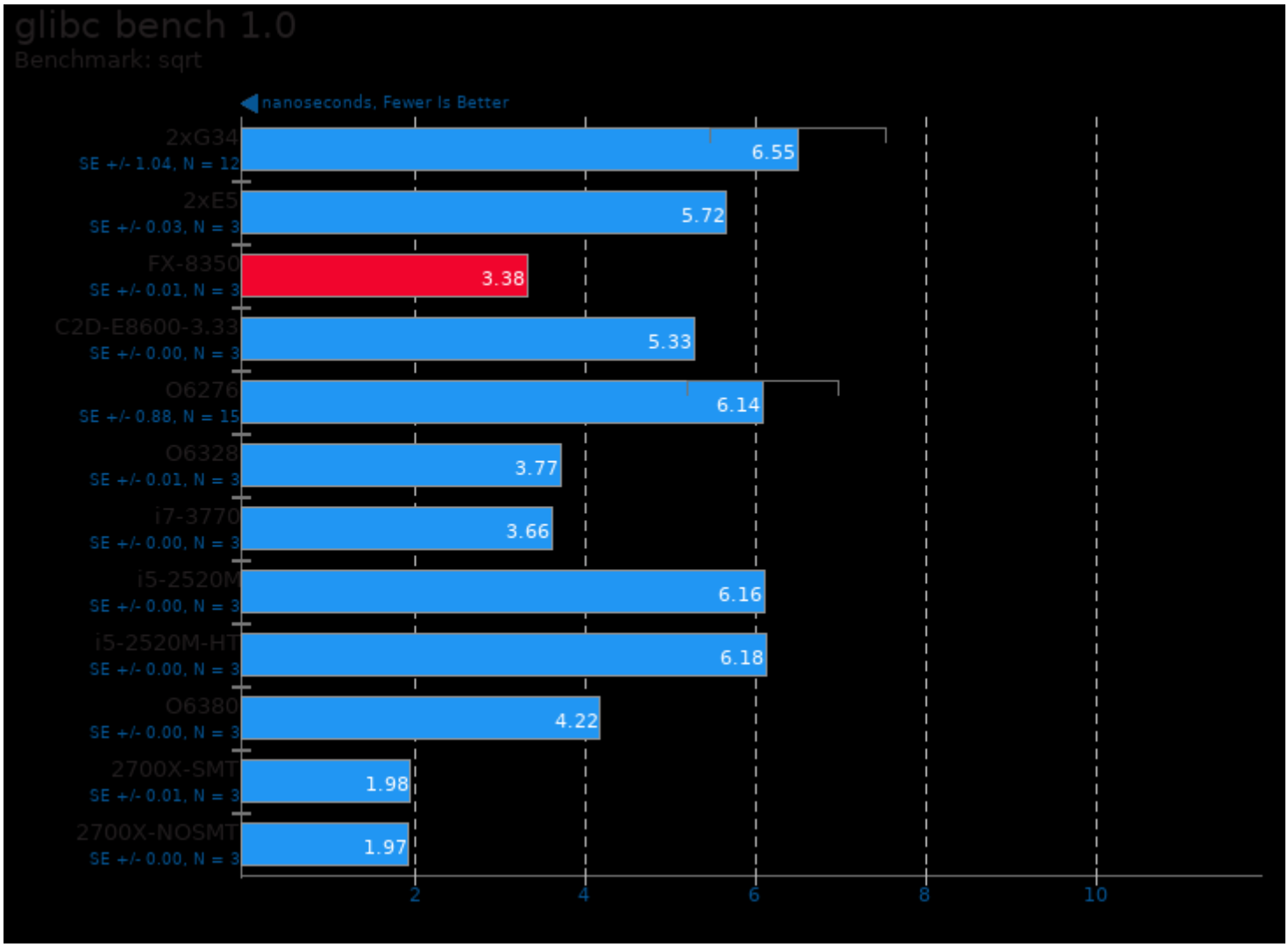

Tachyon 0.98.9
Total Time
Seconds, Fewer Is Better
2xG34
SE +/- 0.02, N = 3
7.27
2xE5
SE +/- 0.01, N = 3
5.55
FX-8350
SE +/- 0.02, N = 3
17.34
C2D-E8600-3.33
SE +/- 0.26, N = 3
65.25
O6276
SE +/- 0.03, N = 3
16.26
O6328
SE +/- 0.02, N = 3
20.72
i7-3770
SE +/- 0.02, N = 3
16.81
i5-2520M
SE +/- 0.04, N = 3
44.12
i5-2520M-HT
SE +/- 0.03, N = 3
35.16
O6380
SE +/- 0.01, N = 3
13.40
2700X-SMT
SE +/- 0.01, N = 3
5.57
2700X-NOSMT
SE +/- 0.02, N = 3
8.06
15
30
45
60
75
1. (CC) gcc options: -m32 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

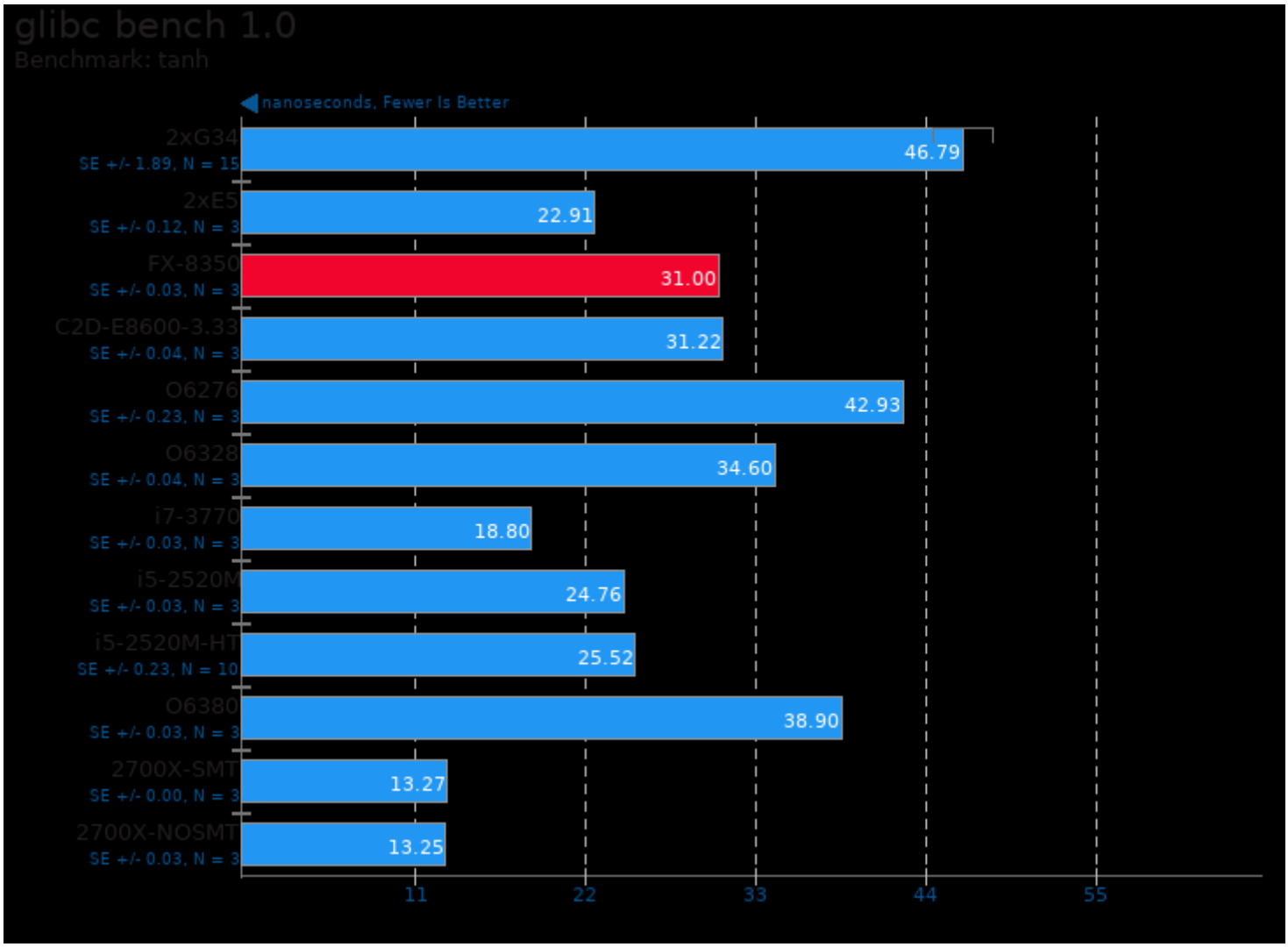

glibc bench 1.0
Benchmark: cos
nanoseconds, Fewer Is Better
2xG34
SE +/- 19.19, N = 3
108064
2xE5
SE +/- 103.98, N = 3
50157
FX-8350
SE +/- 414.56, N = 3
81177
C2D-E8600-3.33
SE +/- 342.35, N = 3
89084
O6276
SE +/- 80.56, N = 3
116470
O6328
SE +/- 40.55, N = 3
89815
i7-3770
SE +/- 7.52, N = 3
43720
i5-2520M
SE +/- 43.69, N = 3
54570
i5-2520M-HT
SE +/- 237.92, N = 3
56334
O6380
SE +/- 103.45, N = 3
102974
2700X-SMT
SE +/- 16.03, N = 3
40307
2700X-NOSMT
SE +/- 405.13, N = 3
40519
20K
40K
60K
80K
100K

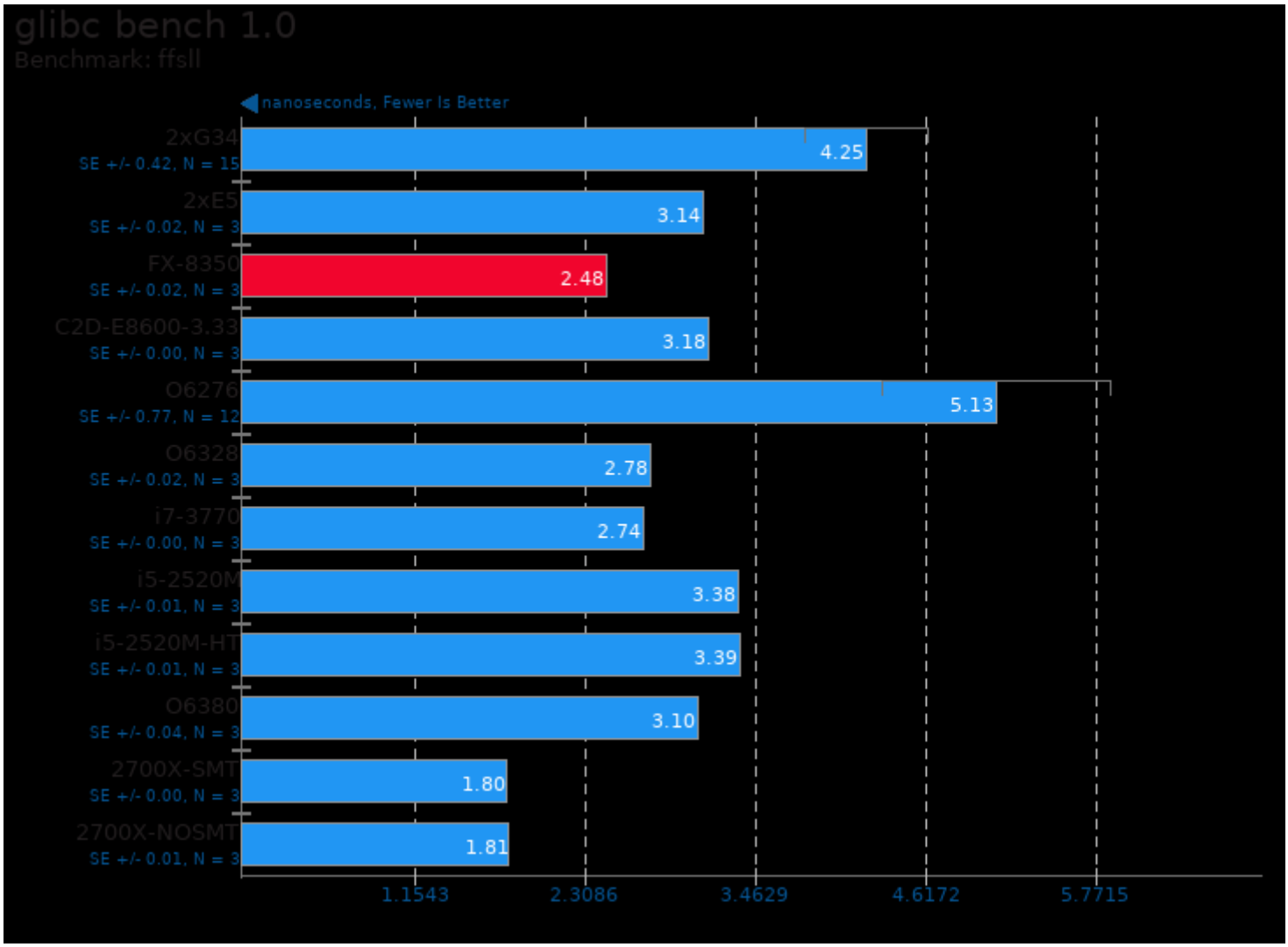

glibc bench 1.0
Benchmark: ffs
nanoseconds, Fewer Is Better
2xG34
SE +/- 0.13, N = 12
3.61
2xE5
SE +/- 0.01, N = 3
2.86
FX-8350
SE +/- 0.01, N = 3
2.34
C2D-E8600-3.33
SE +/- 0.00, N = 3
2.88
O6276
SE +/- 0.85, N = 15
6.76
O6328
SE +/- 0.04, N = 14
2.67
i7-3770
SE +/- 0.00, N = 3
2.49
i5-2520M
SE +/- 0.00, N = 3
3.06
i5-2520M-HT
SE +/- 0.00, N = 3
3.08
O6380
SE +/- 0.05, N = 15
3.06
2700X-SMT
SE +/- 0.00, N = 3
1.81
2700X-NOSMT
SE +/- 0.00, N = 3
1.81
2
4
6
8
10

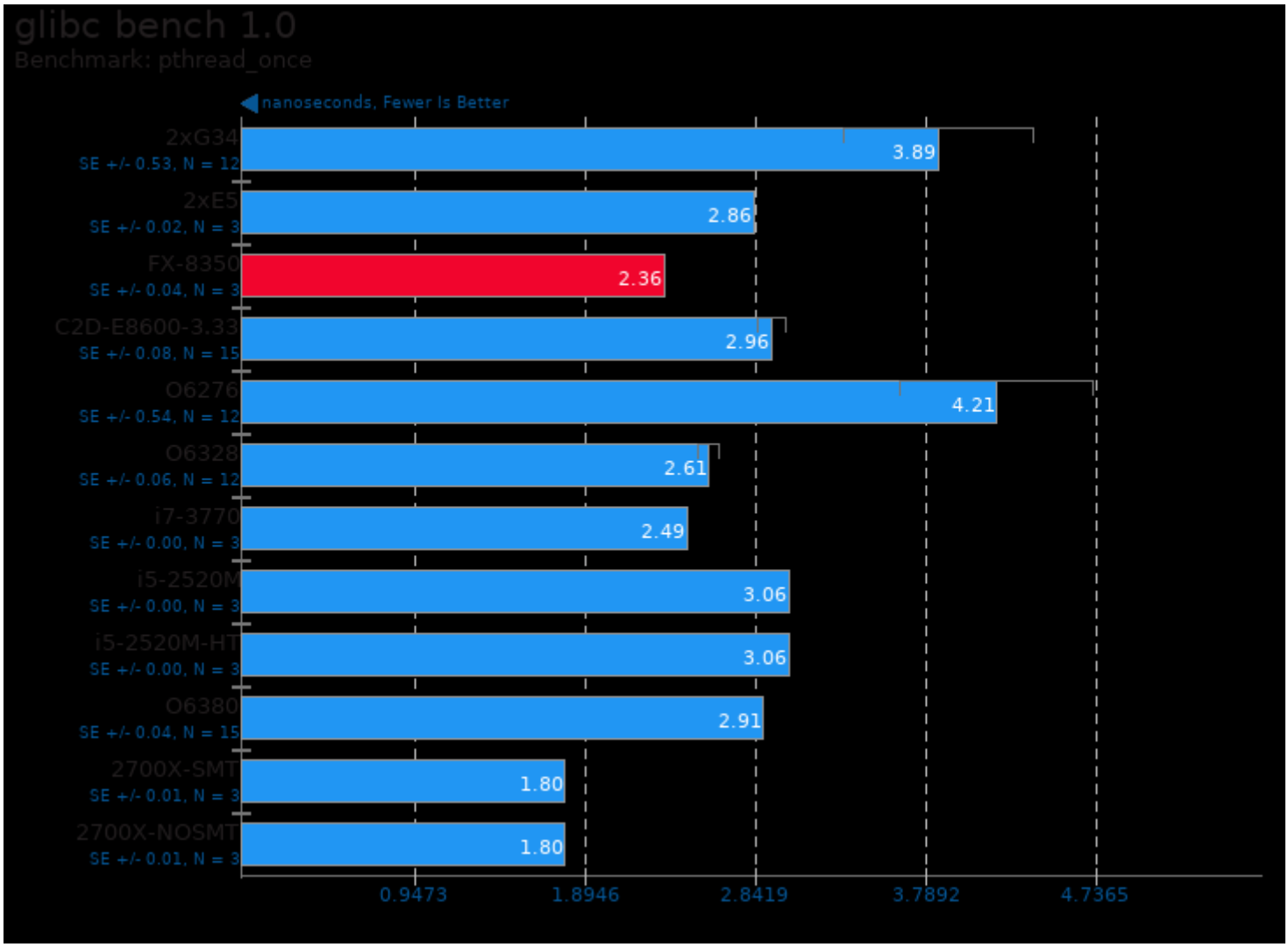

glibc bench 1.0
Benchmark: sin
nanoseconds, Fewer Is Better
2xG34
SE +/- 122.34, N = 3
107594
2xE5
SE +/- 62.12, N = 3
50090
FX-8350
SE +/- 88.32, N = 3
80573
C2D-E8600-3.33
SE +/- 139.91, N = 3
88085
O6276
SE +/- 97.41, N = 3
115975
O6328
SE +/- 86.10, N = 3
89642
i7-3770
SE +/- 22.18, N = 3
43702
i5-2520M
SE +/- 10.03, N = 3
54428
i5-2520M-HT
SE +/- 179.35, N = 3
55742
O6380
SE +/- 341.73, N = 3
103596
2700X-SMT
SE +/- 47.15, N = 3
40348
2700X-NOSMT
SE +/- 84.70, N = 3
40535
20K
40K
60K
80K
100K

test sample

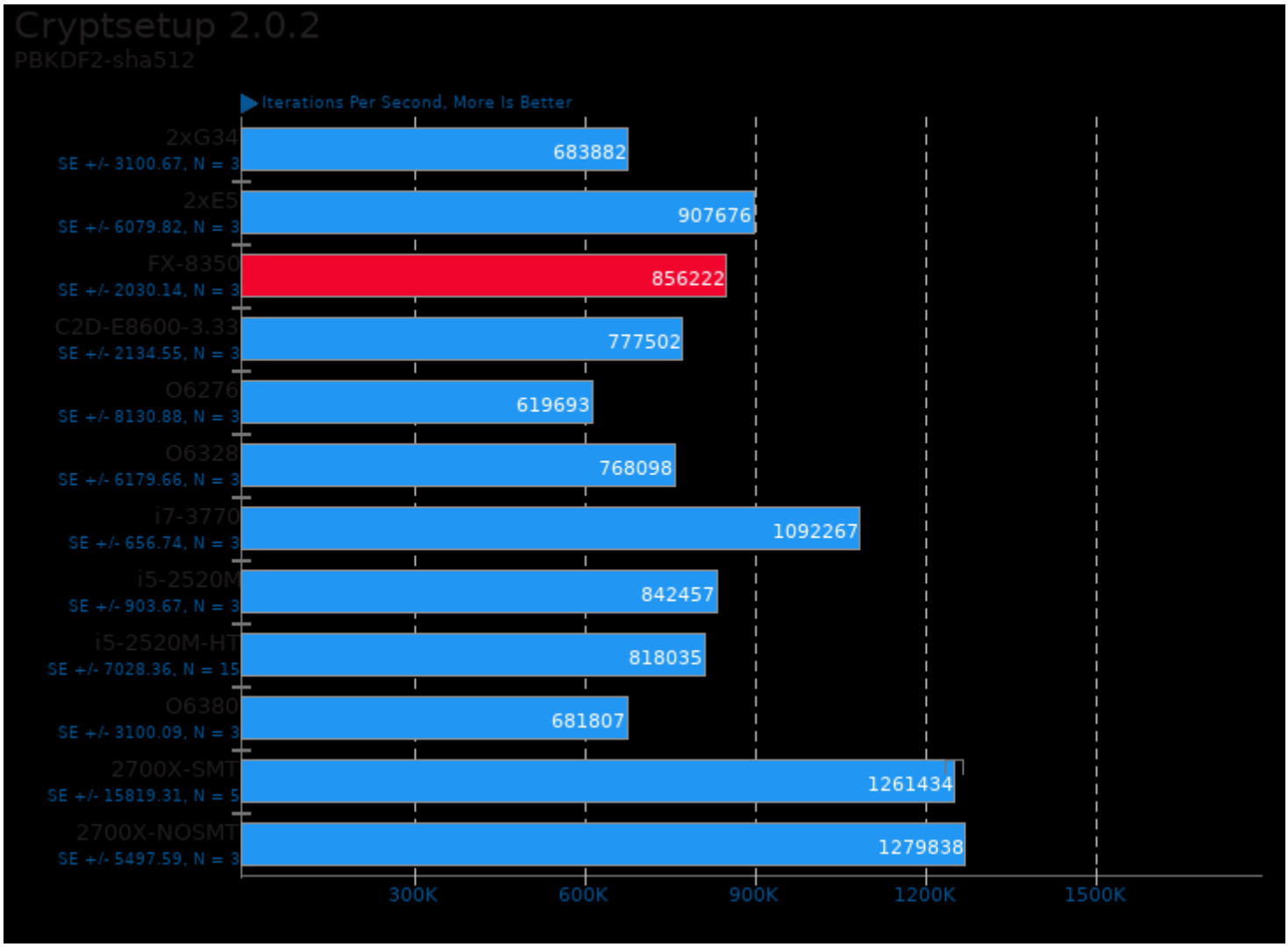

glibc bench 1.0
Benchmark: sqrt
nanoseconds, Fewer Is Better
2xG34
SE +/- 1.04, N = 12
6.55
2xE5
SE +/- 0.03, N = 3
5.72
FX-8350
SE +/- 0.01, N = 3
3.38
C2D-E8600-3.33
SE +/- 0.00, N = 3
5.33
O6276
SE +/- 0.88, N = 15
6.14
O6328
SE +/- 0.01, N = 3
3.77
i7-3770
SE +/- 0.00, N = 3
3.66
i5-2520M
SE +/- 0.00, N = 3
6.16
i5-2520M-HT
SE +/- 0.00, N = 3
6.18
O6380
SE +/- 0.00, N = 3
4.22
2700X-SMT
SE +/- 0.01, N = 3
1.98
2700X-NOSMT
SE +/- 0.00, N = 3
1.97
2
4
6
8
10

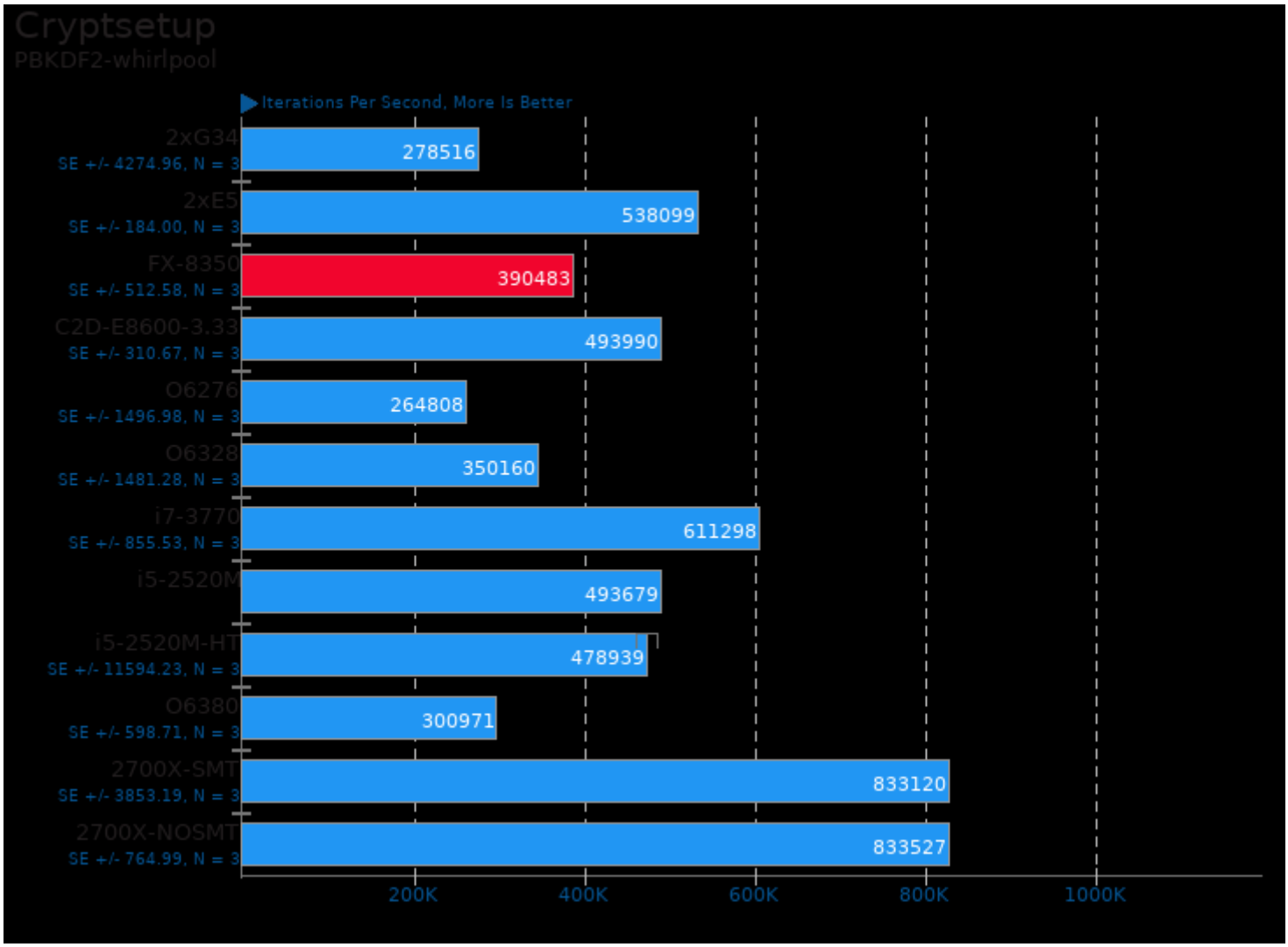

glibc bench 1.0
Benchmark: tanh
nanoseconds, Fewer Is Better
2xG34
SE +/- 1.89, N = 15
46.79
2xE5
SE +/- 0.12, N = 3
22.91
FX-8350
SE +/- 0.03, N = 3
31.00
C2D-E8600-3.33
SE +/- 0.04, N = 3
31.22
O6276
SE +/- 0.23, N = 3
42.93
O6328
SE +/- 0.04, N = 3
34.60
i7-3770
SE +/- 0.03, N = 3
18.80
i5-2520M
SE +/- 0.03, N = 3
24.76
i5-2520M-HT
SE +/- 0.23, N = 10
25.52
O6380
SE +/- 0.03, N = 3
38.90
2700X-SMT
SE +/- 0.00, N = 3
13.27
2700X-NOSMT
SE +/- 0.03, N = 3
13.25
11
22
33
44
55

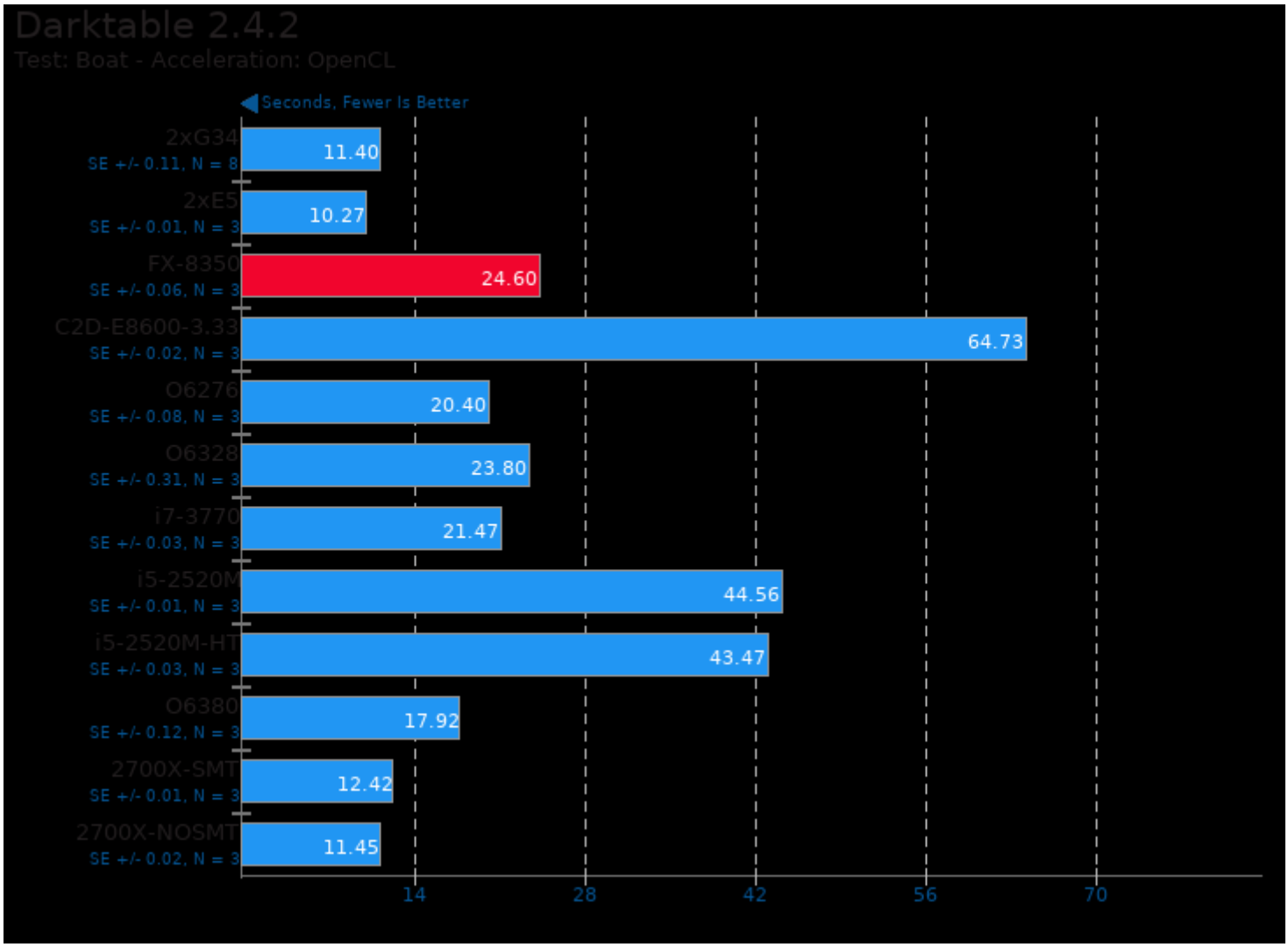

glibc bench 1.0
Benchmark: ffsll
nanoseconds, Fewer Is Better
2xG34
SE +/- 0.42, N = 15
4.25
2xE5
SE +/- 0.02, N = 3
3.14
FX-8350
SE +/- 0.02, N = 3
2.48
C2D-E8600-3.33
SE +/- 0.00, N = 3
3.18
O6276
SE +/- 0.77, N = 12
5.13
O6328
SE +/- 0.02, N = 3
2.78
i7-3770
SE +/- 0.00, N = 3
2.74
i5-2520M
SE +/- 0.01, N = 3
3.38
i5-2520M-HT
SE +/- 0.01, N = 3
3.39
O6380
SE +/- 0.04, N = 3
3.10
2700X-SMT
SE +/- 0.00, N = 3
1.80
2700X-NOSMT
SE +/- 0.01, N = 3
1.81
1.1543
2.3086
3.4629
4.6172
5.7715

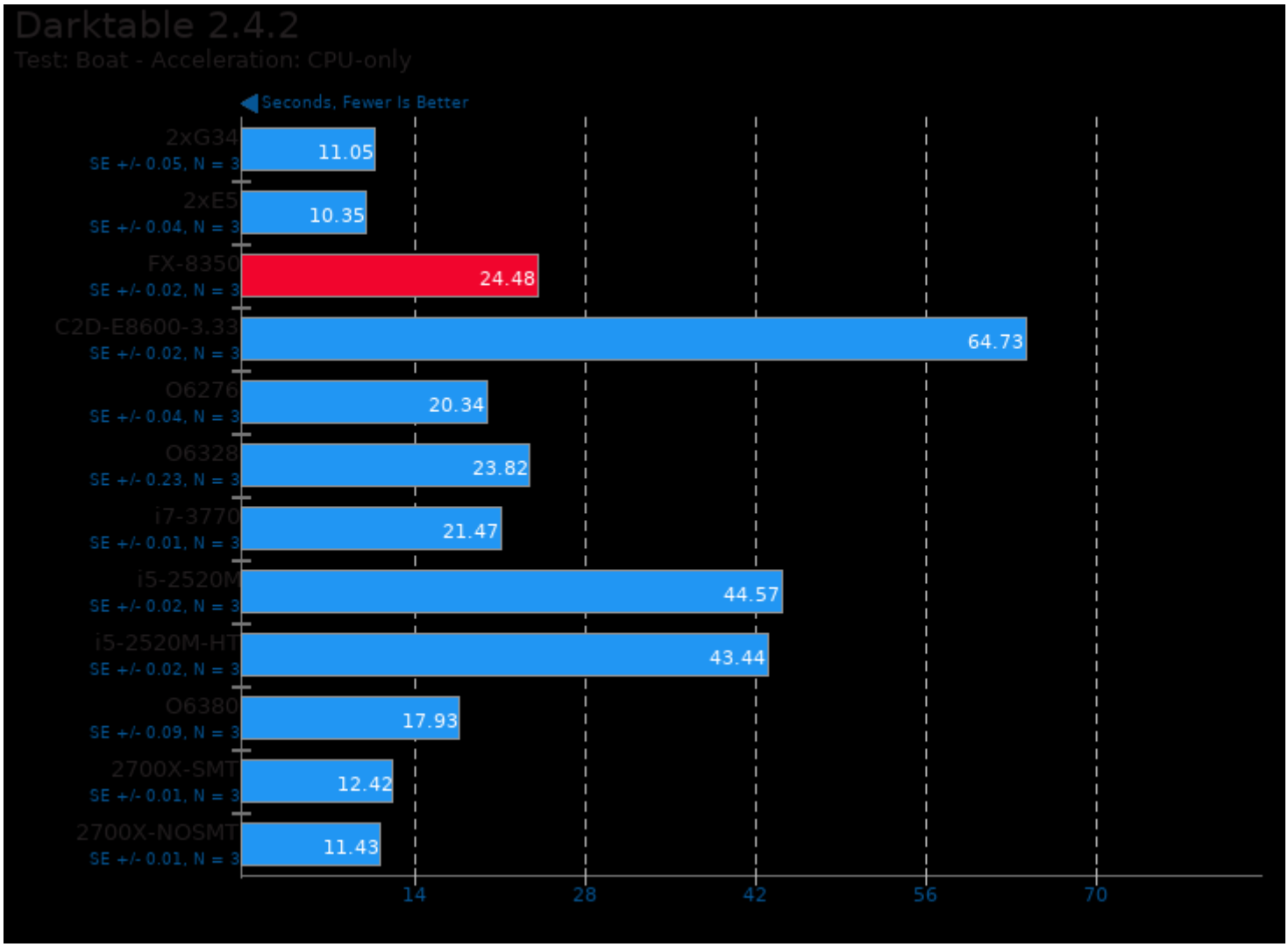

glibc bench 1.0
Benchmark: pthread_once
nanoseconds, Fewer Is Better
2xG34
SE +/- 0.53, N = 12
3.89
2xE5
SE +/- 0.02, N = 3
2.86
FX-8350
SE +/- 0.04, N = 3
2.36
C2D-E8600-3.33
SE +/- 0.08, N = 15
2.96
O6276
SE +/- 0.54, N = 12
4.21
O6328
SE +/- 0.06, N = 12
2.61
i7-3770
SE +/- 0.00, N = 3
2.49
i5-2520M
SE +/- 0.00, N = 3
3.06
i5-2520M-HT
SE +/- 0.00, N = 3
3.06
O6380
SE +/- 0.04, N = 15
2.91
2700X-SMT
SE +/- 0.01, N = 3
1.80
2700X-NOSMT
SE +/- 0.01, N = 3
1.80
0.9473
1.8946
2.8419
3.7892
4.7365

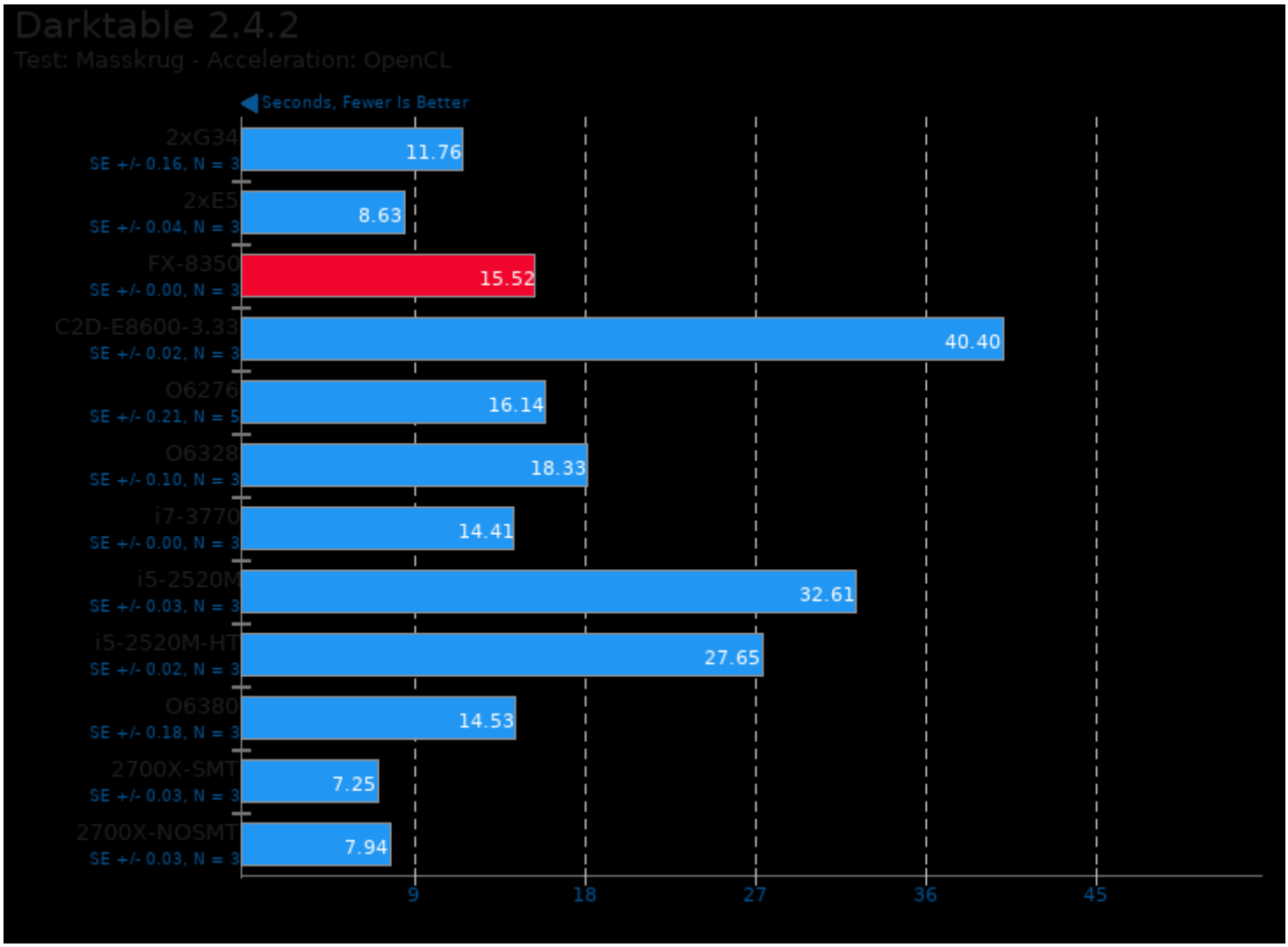
test sample

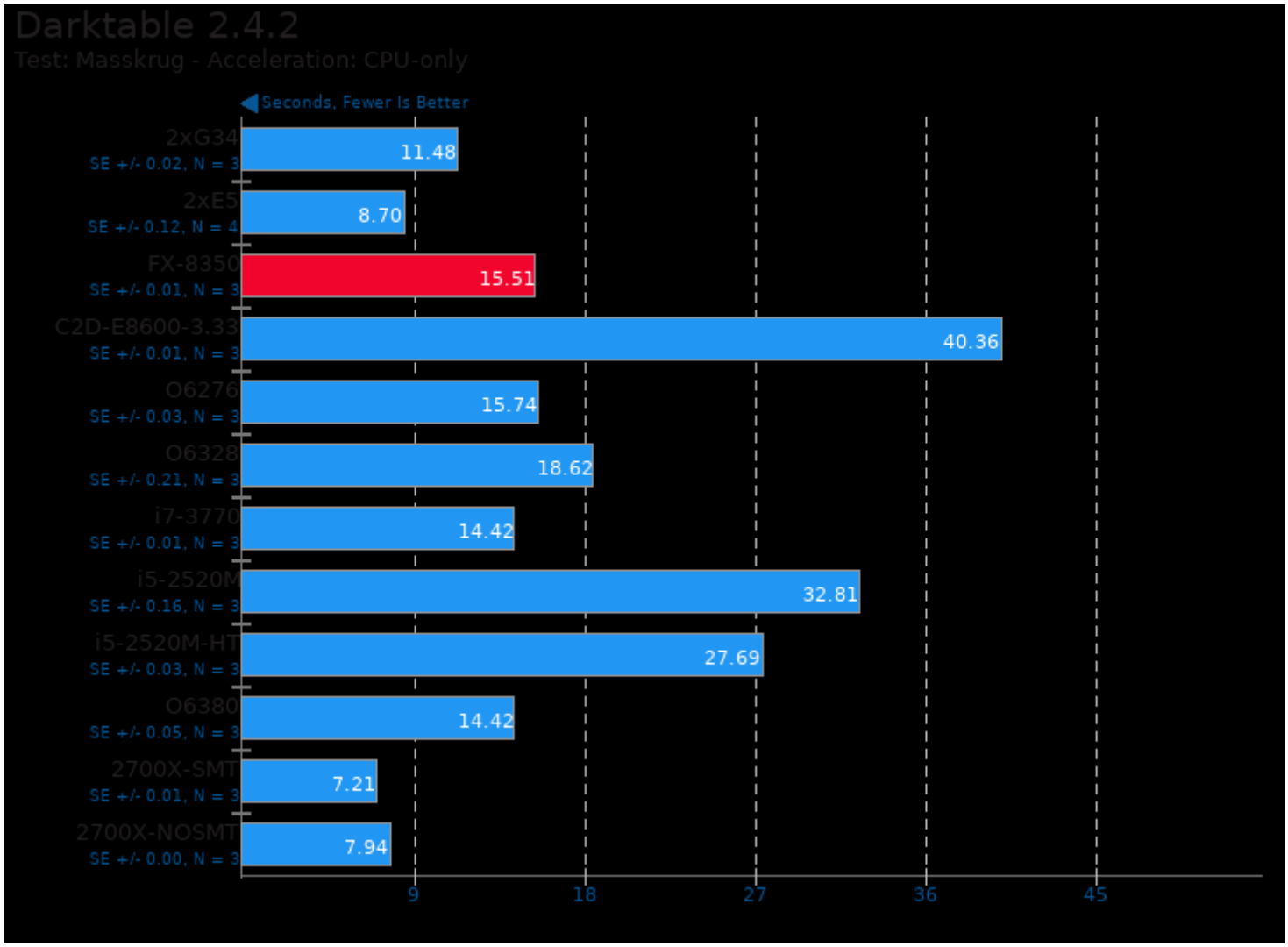

Cryptsetup 2.0.2
PBKDF2-sha512
Iterations Per Second, More Is Better
2xG34
SE +/- 3100.67, N = 3
683882
2xE5
SE +/- 6079.82, N = 3
907676
FX-8350
SE +/- 2030.14, N = 3
856222
C2D-E8600-3.33
SE +/- 2134.55, N = 3
777502
O6276
SE +/- 8130.88, N = 3
619693
O6328
SE +/- 6179.66, N = 3
768098
i7-3770
SE +/- 656.74, N = 3
1092267
i5-2520M
SE +/- 903.67, N = 3
842457
i5-2520M-HT
SE +/- 7028.36, N = 15
818035
O6380
SE +/- 3100.09, N = 3
681807
2700X-SMT
SE +/- 15819.31, N = 5
1261434
2700X-NOSMT
SE +/- 5497.59, N = 3
1279838
300K
600K
900K
1200K
1500K

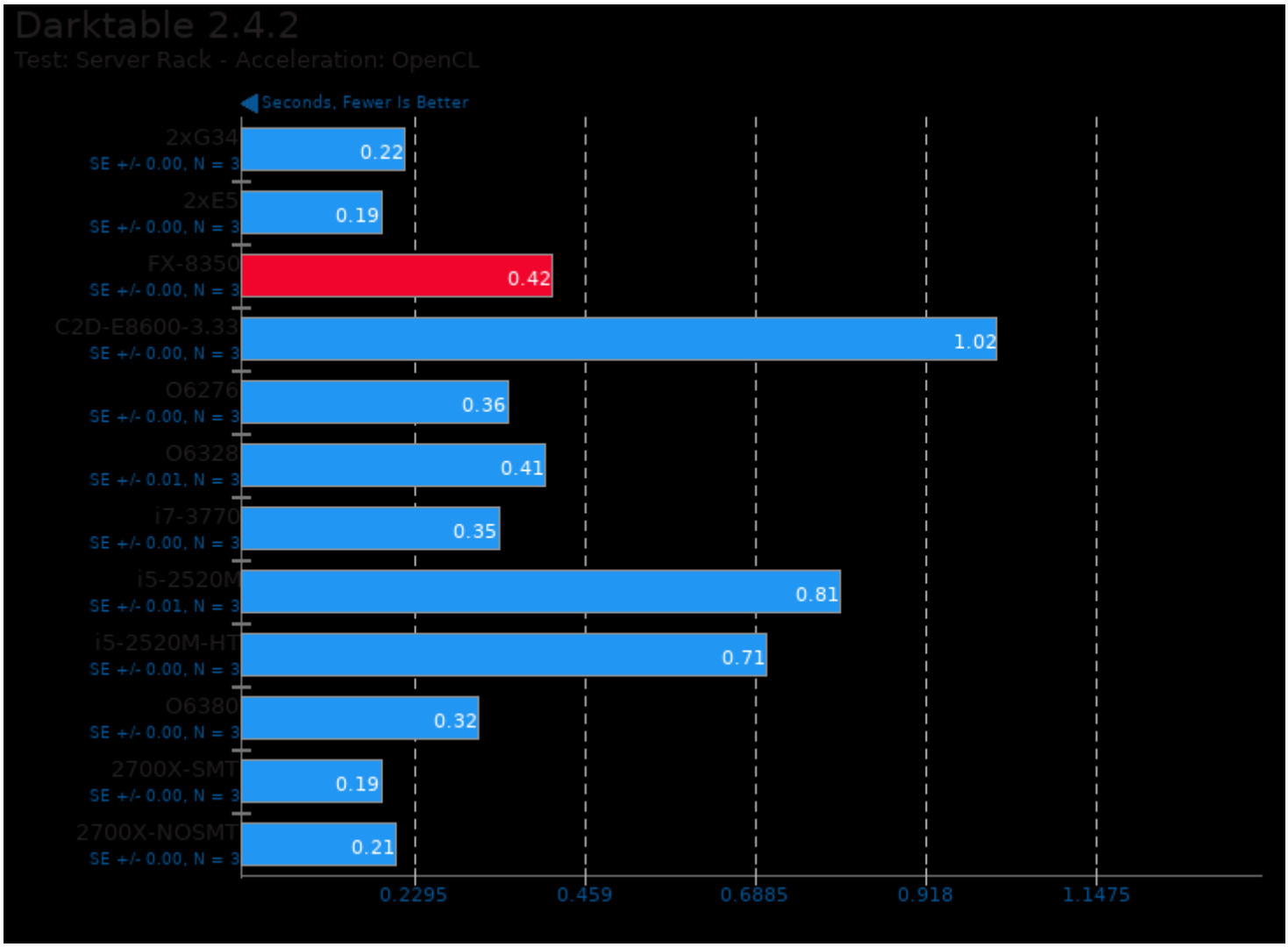

Cryptsetup
PBKDF2-whirlpool
Iterations Per Second, More Is Better
2xG34
SE +/- 4274.96, N = 3
278516
2xE5
SE +/- 184.00, N = 3
538099
FX-8350
SE +/- 512.58, N = 3
390483
C2D-E8600-3.33
SE +/- 310.67, N = 3
493990
O6276
SE +/- 1496.98, N = 3
264808
O6328
SE +/- 1481.28, N = 3
350160
i7-3770
SE +/- 855.53, N = 3
611298
i5-2520M
493679
i5-2520M-HT
SE +/- 11594.23, N = 3
478939
O6380
SE +/- 598.71, N = 3
300971
2700X-SMT
SE +/- 3853.19, N = 3
833120
2700X-NOSMT
SE +/- 764.99, N = 3
833527
200K
400K
600K
800K
1000K

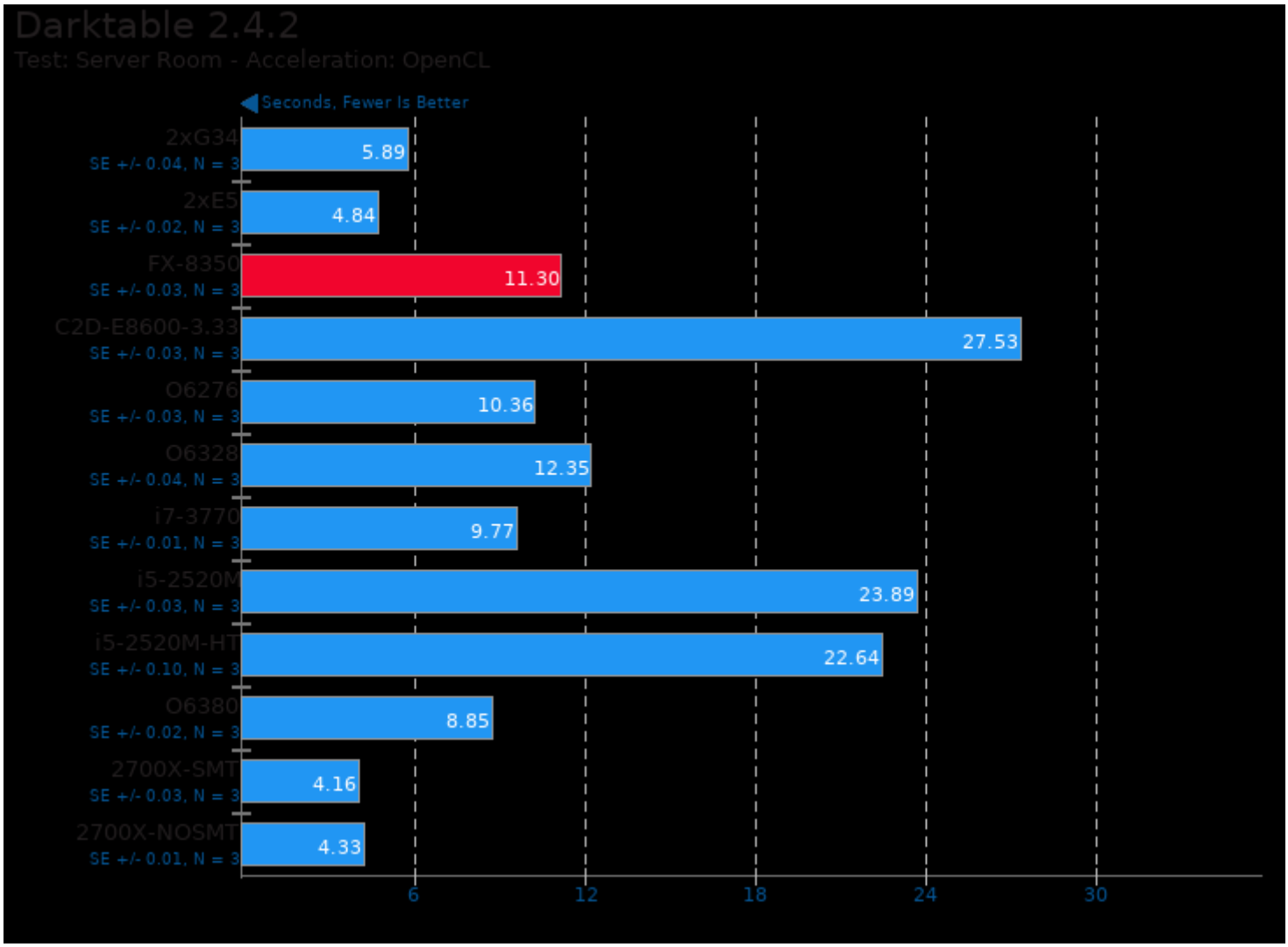

Darktable 2.4.2
Test: Boat - Acceleration: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 0.11, N = 8
11.40
2xE5
SE +/- 0.01, N = 3
10.27
FX-8350
SE +/- 0.06, N = 3
24.60
C2D-E8600-3.33
SE +/- 0.02, N = 3
64.73
O6276
SE +/- 0.08, N = 3
20.40
O6328
SE +/- 0.31, N = 3
23.80
i7-3770
SE +/- 0.03, N = 3
21.47
i5-2520M
SE +/- 0.01, N = 3
44.56
i5-2520M-HT
SE +/- 0.03, N = 3
43.47
O6380
SE +/- 0.12, N = 3
17.92
2700X-SMT
SE +/- 0.01, N = 3
12.42
2700X-NOSMT
SE +/- 0.02, N = 3
11.45
14
28
42
56
70

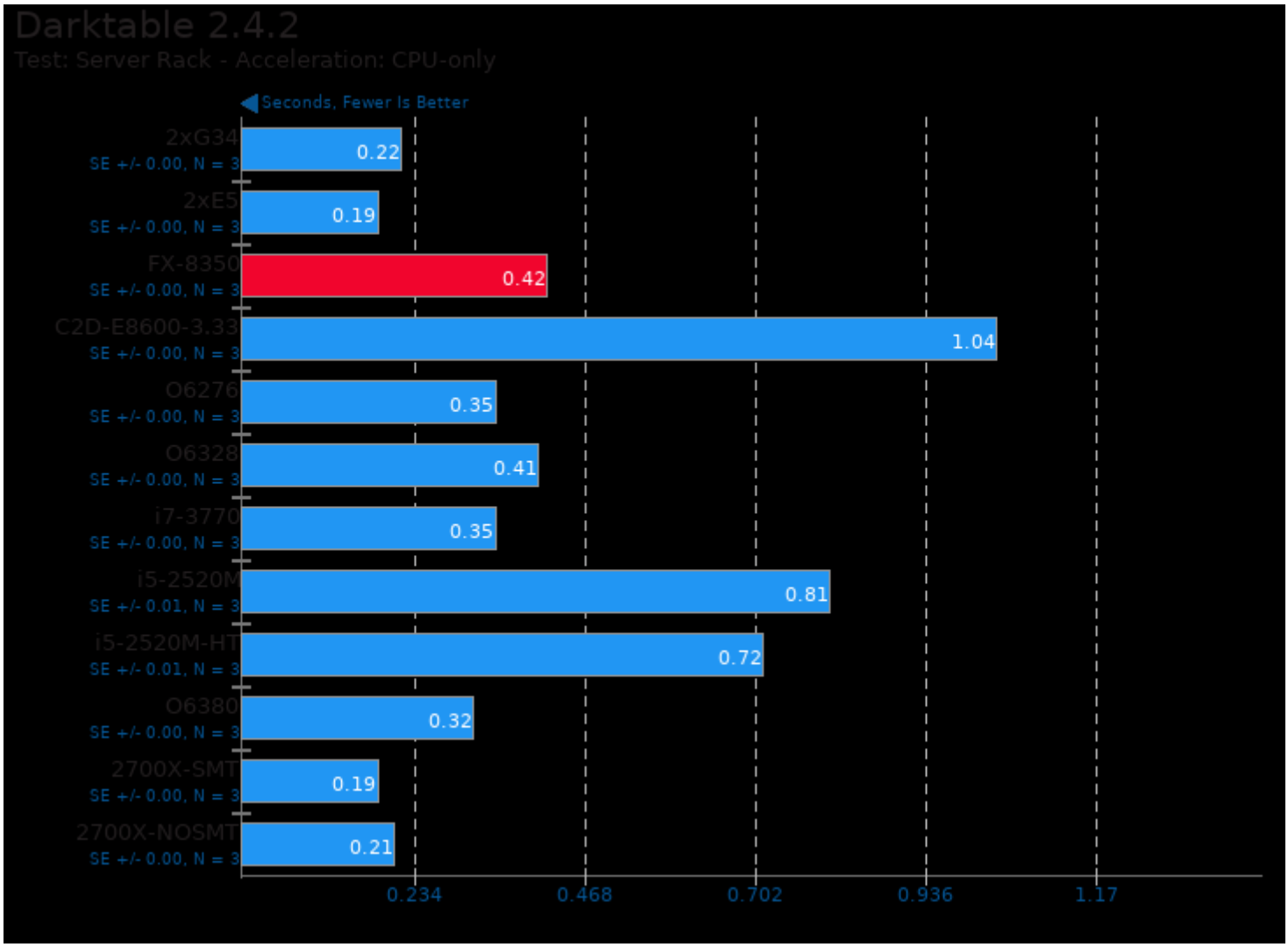

Darktable 2.4.2
Test: Boat - Acceleration: CPU-only
Seconds, Fewer Is Better
2xG34
SE +/- 0.05, N = 3
11.05
2xE5
SE +/- 0.04, N = 3
10.35
FX-8350
SE +/- 0.02, N = 3
24.48
C2D-E8600-3.33
SE +/- 0.02, N = 3
64.73
O6276
SE +/- 0.04, N = 3
20.34
O6328
SE +/- 0.23, N = 3
23.82
i7-3770
SE +/- 0.01, N = 3
21.47
i5-2520M
SE +/- 0.02, N = 3
44.57
i5-2520M-HT
SE +/- 0.02, N = 3
43.44
O6380
SE +/- 0.09, N = 3
17.93
2700X-SMT
SE +/- 0.01, N = 3
12.42
2700X-NOSMT
SE +/- 0.01, N = 3
11.43
14
28
42
56
70

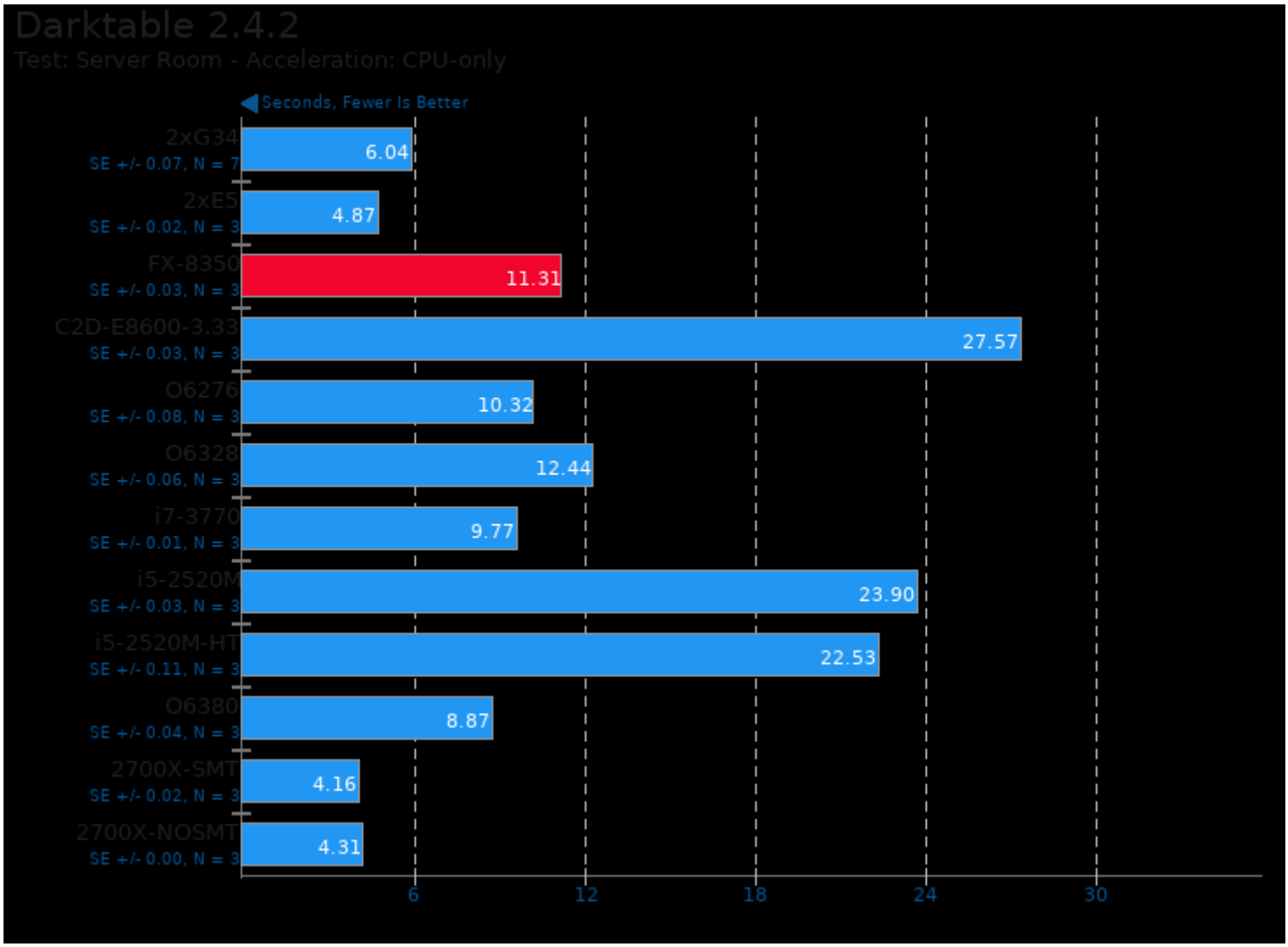

Darktable 2.4.2
Test: Masskrug - Acceleration: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 0.16, N = 3
11.76
2xE5
SE +/- 0.04, N = 3
8.63
FX-8350
SE +/- 0.00, N = 3
15.52
C2D-E8600-3.33
SE +/- 0.02, N = 3
40.40
O6276
SE +/- 0.21, N = 5
16.14
O6328
SE +/- 0.10, N = 3
18.33
i7-3770
SE +/- 0.00, N = 3
14.41
i5-2520M
SE +/- 0.03, N = 3
32.61
i5-2520M-HT
SE +/- 0.02, N = 3
27.65
O6380
SE +/- 0.18, N = 3
14.53
2700X-SMT
SE +/- 0.03, N = 3
7.25
2700X-NOSMT
SE +/- 0.03, N = 3
7.94
9
18
27
36
45

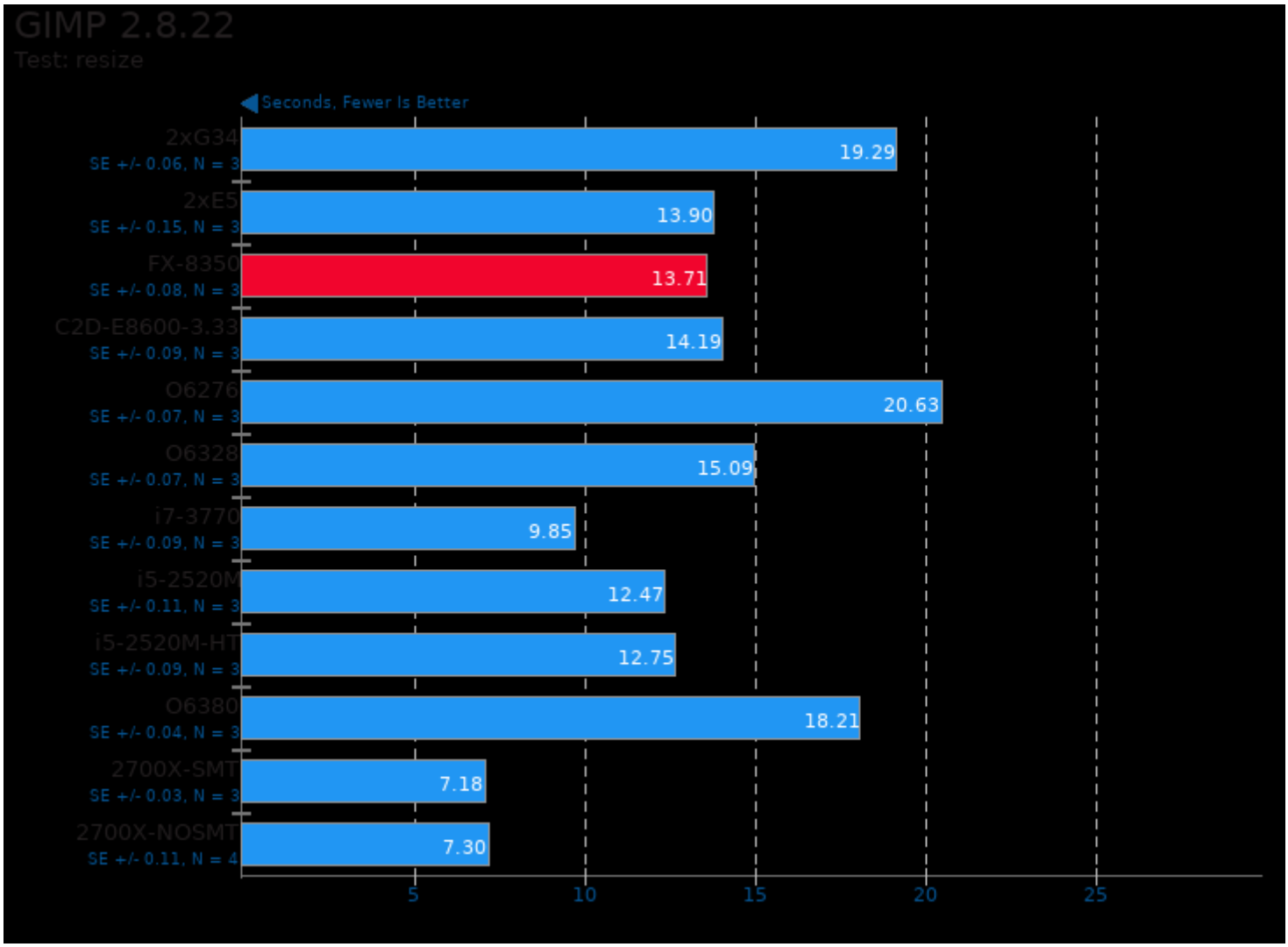

Darktable 2.4.2
Test: Masskrug - Acceleration: CPU-only
Seconds, Fewer Is Better
2xG34
SE +/- 0.02, N = 3
11.48
2xE5
SE +/- 0.12, N = 4
8.70
FX-8350
SE +/- 0.01, N = 3
15.51
C2D-E8600-3.33
SE +/- 0.01, N = 3
40.36
O6276
SE +/- 0.03, N = 3
15.74
O6328
SE +/- 0.21, N = 3
18.62
i7-3770
SE +/- 0.01, N = 3
14.42
i5-2520M
SE +/- 0.16, N = 3
32.81
i5-2520M-HT
SE +/- 0.03, N = 3
27.69
O6380
SE +/- 0.05, N = 3
14.42
2700X-SMT
SE +/- 0.01, N = 3
7.21
2700X-NOSMT
SE +/- 0.00, N = 3
7.94
9
18
27
36
45


Darktable 2.4.2
Test: Server Rack - Acceleration: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 0.00, N = 3
0.22
2xE5
SE +/- 0.00, N = 3
0.19
FX-8350
SE +/- 0.00, N = 3
0.42
C2D-E8600-3.33
SE +/- 0.00, N = 3
1.02
O6276
SE +/- 0.00, N = 3
0.36
O6328
SE +/- 0.01, N = 3
0.41
i7-3770
SE +/- 0.00, N = 3
0.35
i5-2520M
SE +/- 0.01, N = 3
0.81
i5-2520M-HT
SE +/- 0.00, N = 3
0.71
O6380
SE +/- 0.00, N = 3
0.32
2700X-SMT
SE +/- 0.00, N = 3
0.19
2700X-NOSMT
SE +/- 0.00, N = 3
0.21
0.2295
0.459
0.6885
0.918
1.1475

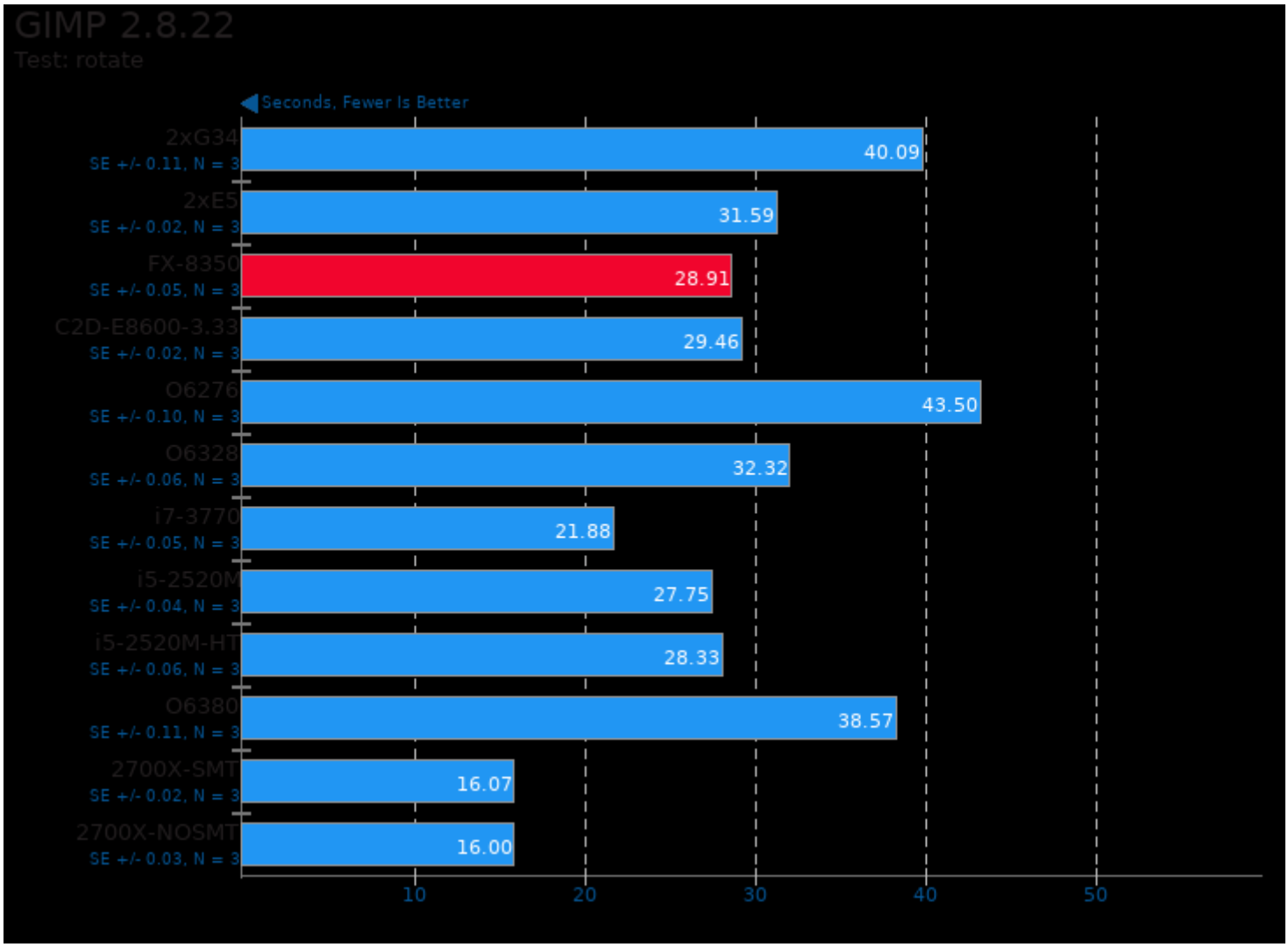

Darktable 2.4.2
Test: Server Room - Acceleration: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 0.04, N = 3
5.89
2xE5
SE +/- 0.02, N = 3
4.84
FX-8350
SE +/- 0.03, N = 3
11.30
C2D-E8600-3.33
SE +/- 0.03, N = 3
27.53
O6276
SE +/- 0.03, N = 3
10.36
O6328
SE +/- 0.04, N = 3
12.35
i7-3770
SE +/- 0.01, N = 3
9.77
i5-2520M
SE +/- 0.03, N = 3
23.89
i5-2520M-HT
SE +/- 0.10, N = 3
22.64
O6380
SE +/- 0.02, N = 3
8.85
2700X-SMT
SE +/- 0.03, N = 3
4.16
2700X-NOSMT
SE +/- 0.01, N = 3
4.33
6
12
18
24
30

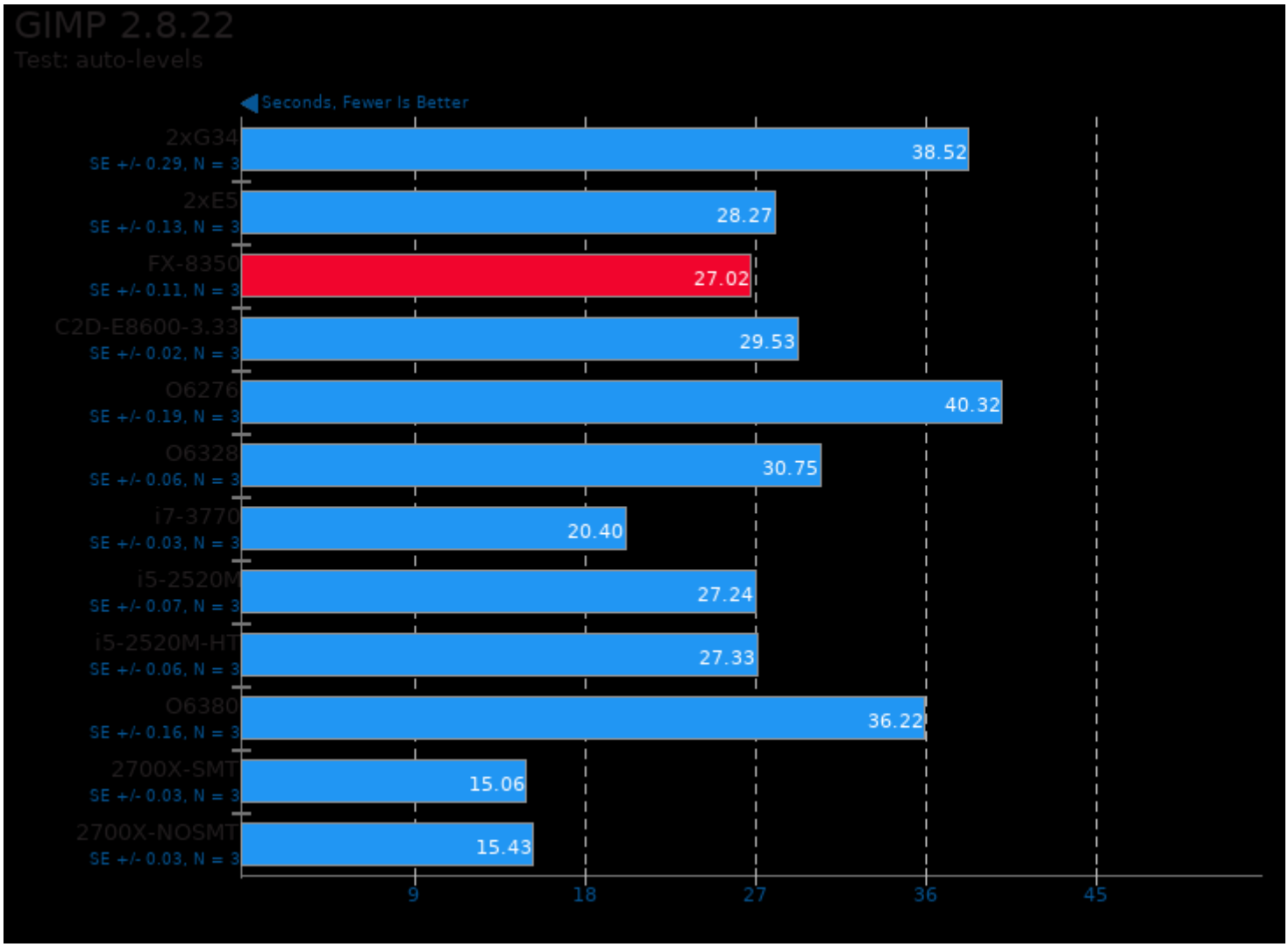

Darktable 2.4.2
Test: Server Rack - Acceleration: CPU-only
Seconds, Fewer Is Better
2xG34
SE +/- 0.00, N = 3
0.22
2xE5
SE +/- 0.00, N = 3
0.19
FX-8350
SE +/- 0.00, N = 3
0.42
C2D-E8600-3.33
SE +/- 0.00, N = 3
1.04
O6276
SE +/- 0.00, N = 3
0.35
O6328
SE +/- 0.00, N = 3
0.41
i7-3770
SE +/- 0.00, N = 3
0.35
i5-2520M
SE +/- 0.01, N = 3
0.81
i5-2520M-HT
SE +/- 0.01, N = 3
0.72
O6380
SE +/- 0.00, N = 3
0.32
2700X-SMT
SE +/- 0.00, N = 3
0.19
2700X-NOSMT
SE +/- 0.00, N = 3
0.21
0.234
0.468
0.702
0.936
1.17


Darktable 2.4.2
Test: Server Room - Acceleration: CPU-only
Seconds, Fewer Is Better
2xG34
SE +/- 0.07, N = 7
6.04
2xE5
SE +/- 0.02, N = 3
4.87
FX-8350
SE +/- 0.03, N = 3
11.31
C2D-E8600-3.33
SE +/- 0.03, N = 3
27.57
O6276
SE +/- 0.08, N = 3
10.32
O6328
SE +/- 0.06, N = 3
12.44
i7-3770
SE +/- 0.01, N = 3
9.77
i5-2520M
SE +/- 0.03, N = 3
23.90
i5-2520M-HT
SE +/- 0.11, N = 3
22.53
O6380
SE +/- 0.04, N = 3
8.87
2700X-SMT
SE +/- 0.02, N = 3
4.16
2700X-NOSMT
SE +/- 0.00, N = 3
4.31
6
12
18
24
30

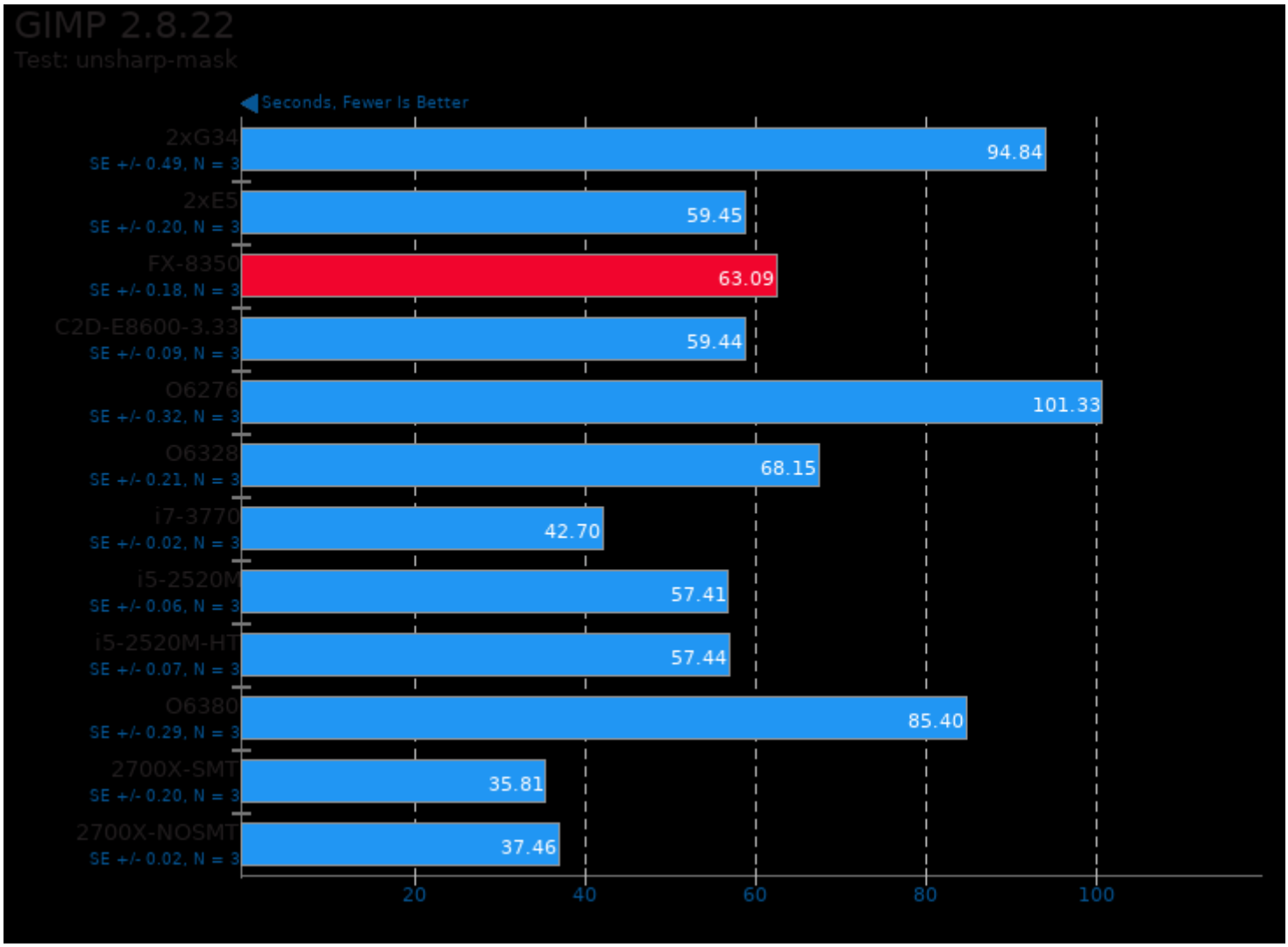

GIMP 2.8.22
Test: resize
Seconds, Fewer Is Better
2xG34
SE +/- 0.06, N = 3
19.29
2xE5
SE +/- 0.15, N = 3
13.90
FX-8350
SE +/- 0.08, N = 3
13.71
C2D-E8600-3.33
SE +/- 0.09, N = 3
14.19
O6276
SE +/- 0.07, N = 3
20.63
O6328
SE +/- 0.07, N = 3
15.09
i7-3770
SE +/- 0.09, N = 3
9.85
i5-2520M
SE +/- 0.11, N = 3
12.47
i5-2520M-HT
SE +/- 0.09, N = 3
12.75
O6380
SE +/- 0.04, N = 3
18.21
2700X-SMT
SE +/- 0.03, N = 3
7.18
2700X-NOSMT
SE +/- 0.11, N = 4
7.30
5
10
15
20
25

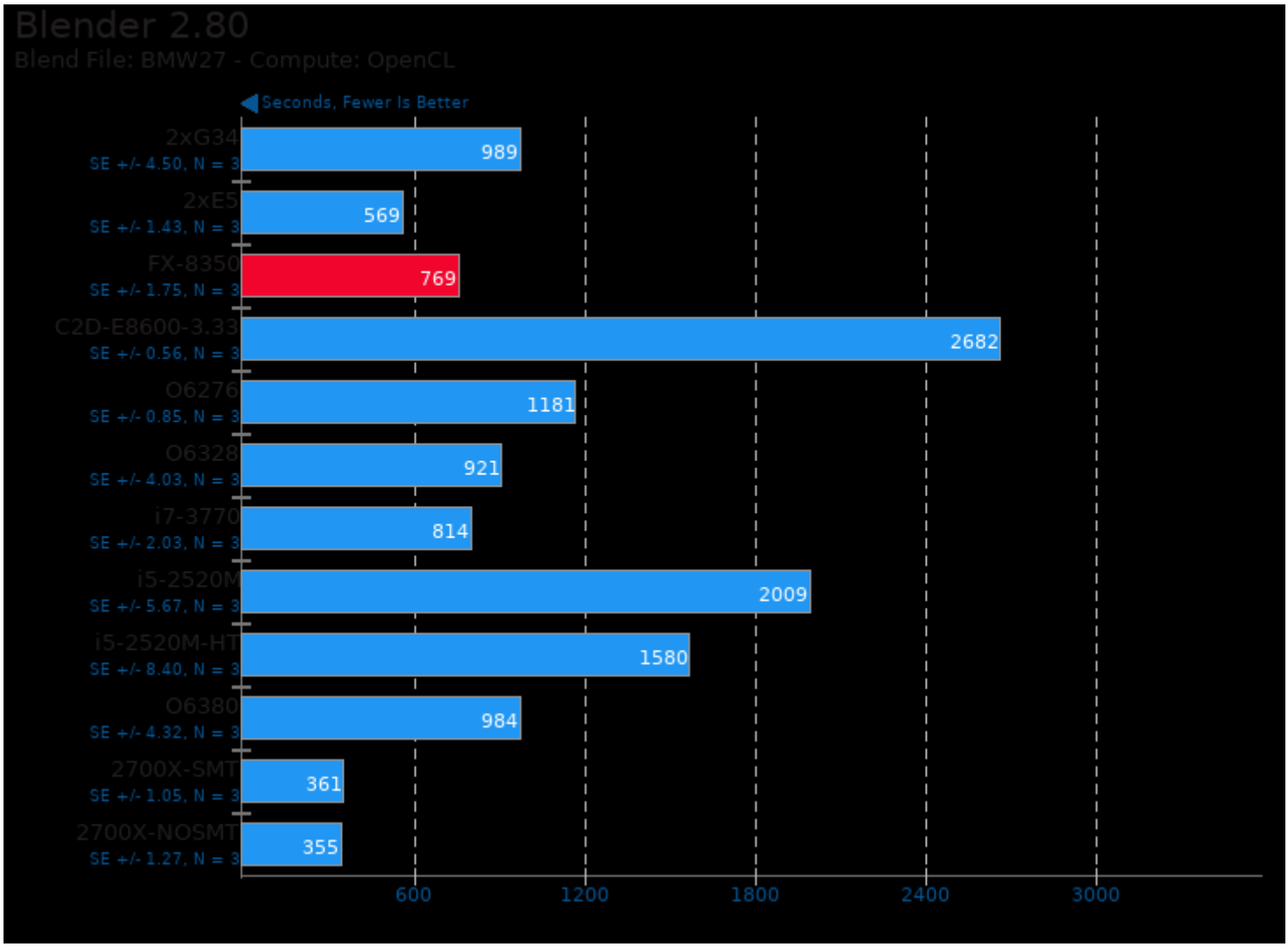
test sample

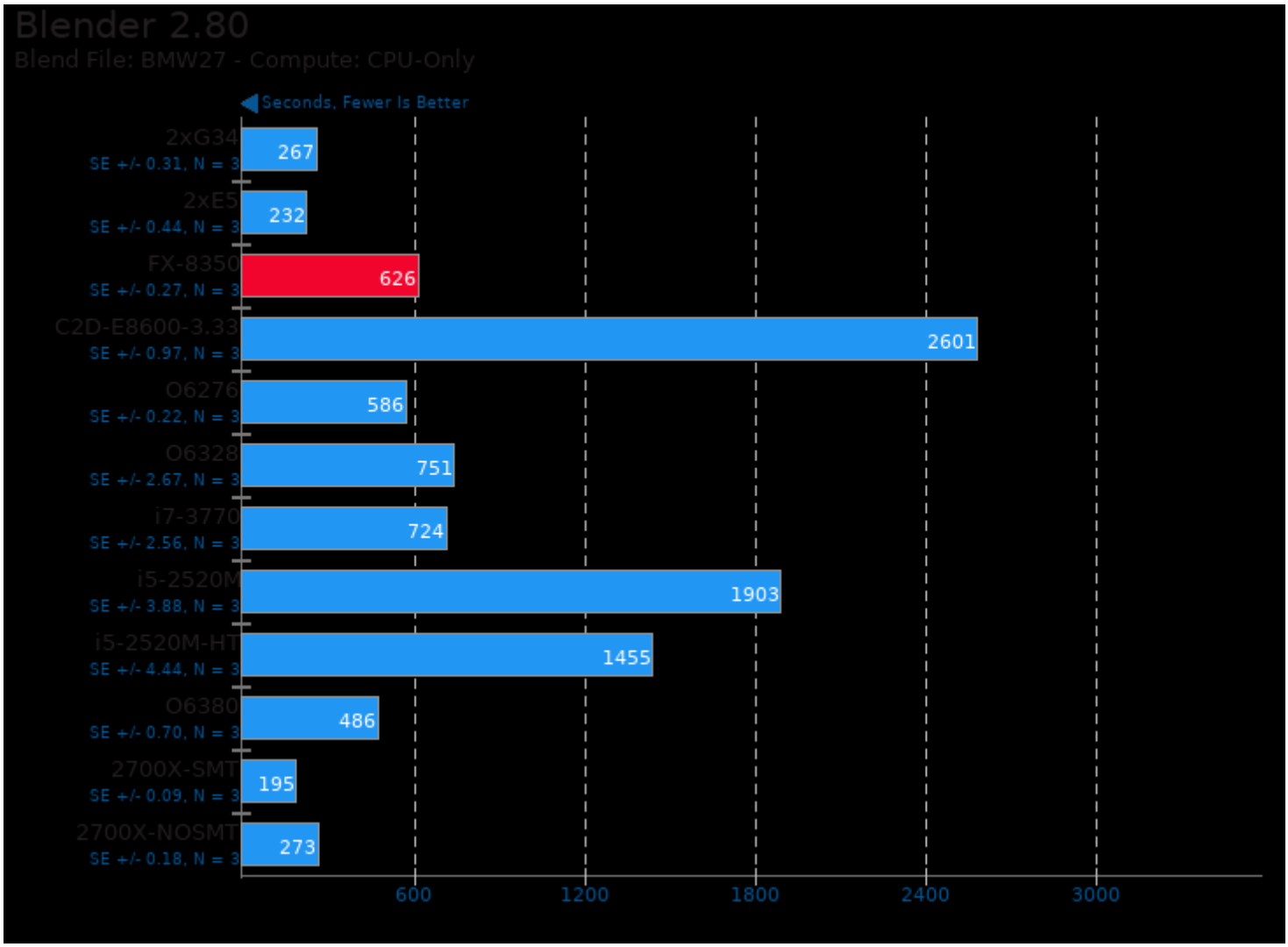

GIMP 2.8.22
Test: rotate
Seconds, Fewer Is Better
2xG34
SE +/- 0.11, N = 3
40.09
2xE5
SE +/- 0.02, N = 3
31.59
FX-8350
SE +/- 0.05, N = 3
28.91
C2D-E8600-3.33
SE +/- 0.02, N = 3
29.46
O6276
SE +/- 0.10, N = 3
43.50
O6328
SE +/- 0.06, N = 3
32.32
i7-3770
SE +/- 0.05, N = 3
21.88
i5-2520M
SE +/- 0.04, N = 3
27.75
i5-2520M-HT
SE +/- 0.06, N = 3
28.33
O6380
SE +/- 0.11, N = 3
38.57
2700X-SMT
SE +/- 0.02, N = 3
16.07
2700X-NOSMT
SE +/- 0.03, N = 3
16.00
10
20
30
40
50

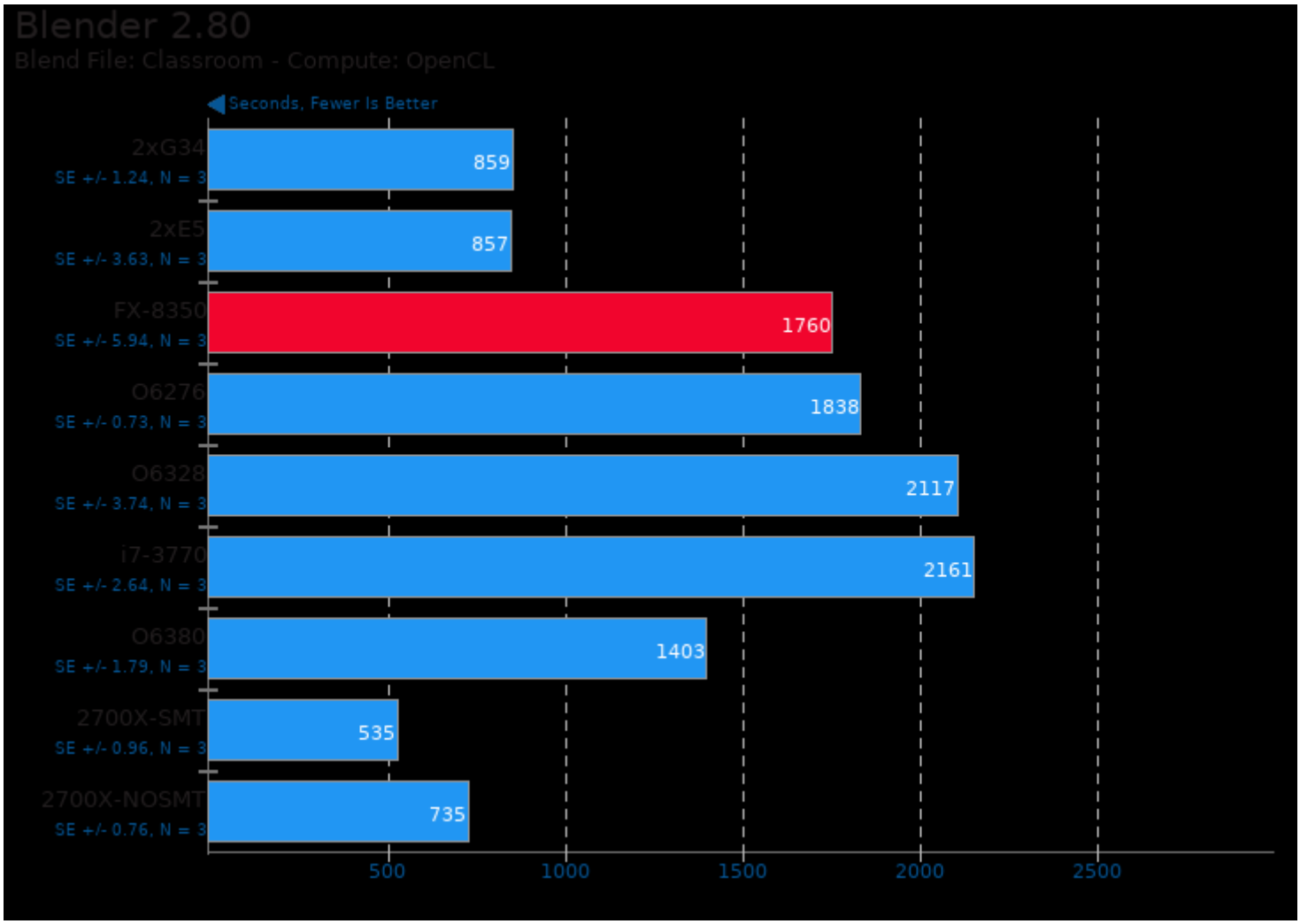

GIMP 2.8.22
Test: auto-levels
Seconds, Fewer Is Better
2xG34
SE +/- 0.29, N = 3
38.52
2xE5
SE +/- 0.13, N = 3
28.27
FX-8350
SE +/- 0.11, N = 3
27.02
C2D-E8600-3.33
SE +/- 0.02, N = 3
29.53
O6276
SE +/- 0.19, N = 3
40.32
O6328
SE +/- 0.06, N = 3
30.75
i7-3770
SE +/- 0.03, N = 3
20.40
i5-2520M
SE +/- 0.07, N = 3
27.24
i5-2520M-HT
SE +/- 0.06, N = 3
27.33
O6380
SE +/- 0.16, N = 3
36.22
2700X-SMT
SE +/- 0.03, N = 3
15.06
2700X-NOSMT
SE +/- 0.03, N = 3
15.43
9
18
27
36
45

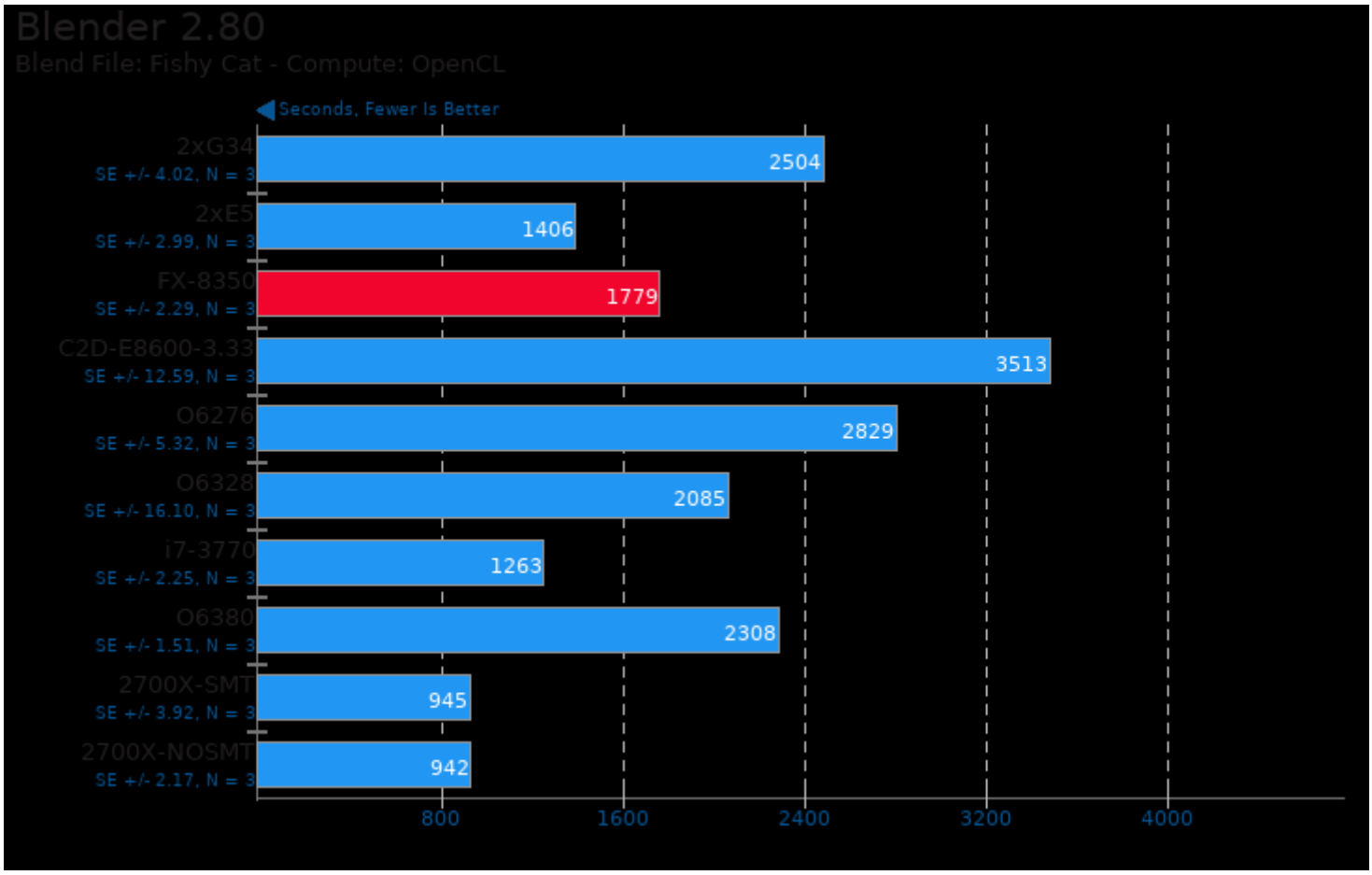
test sample

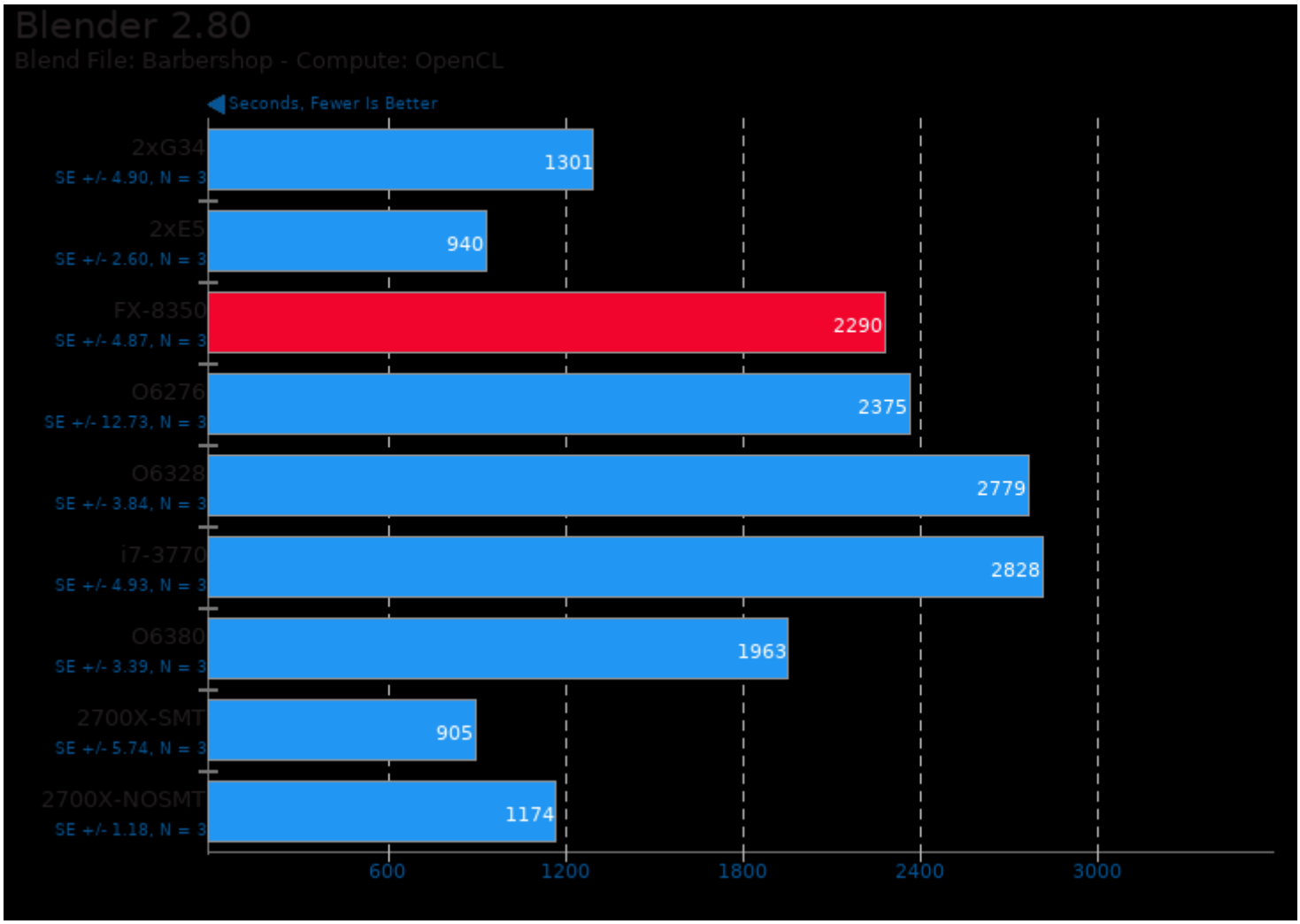

GIMP 2.8.22
Test: unsharp-mask
Seconds, Fewer Is Better
2xG34
SE +/- 0.49, N = 3
94.84
2xE5
SE +/- 0.20, N = 3
59.45
FX-8350
SE +/- 0.18, N = 3
63.09
C2D-E8600-3.33
SE +/- 0.09, N = 3
59.44
O6276
SE +/- 0.32, N = 3
101.33
O6328
SE +/- 0.21, N = 3
68.15
i7-3770
SE +/- 0.02, N = 3
42.70
i5-2520M
SE +/- 0.06, N = 3
57.41
i5-2520M-HT
SE +/- 0.07, N = 3
57.44
O6380
SE +/- 0.29, N = 3
85.40
2700X-SMT
SE +/- 0.20, N = 3
35.81
2700X-NOSMT
SE +/- 0.02, N = 3
37.46
20
40
60
80
100

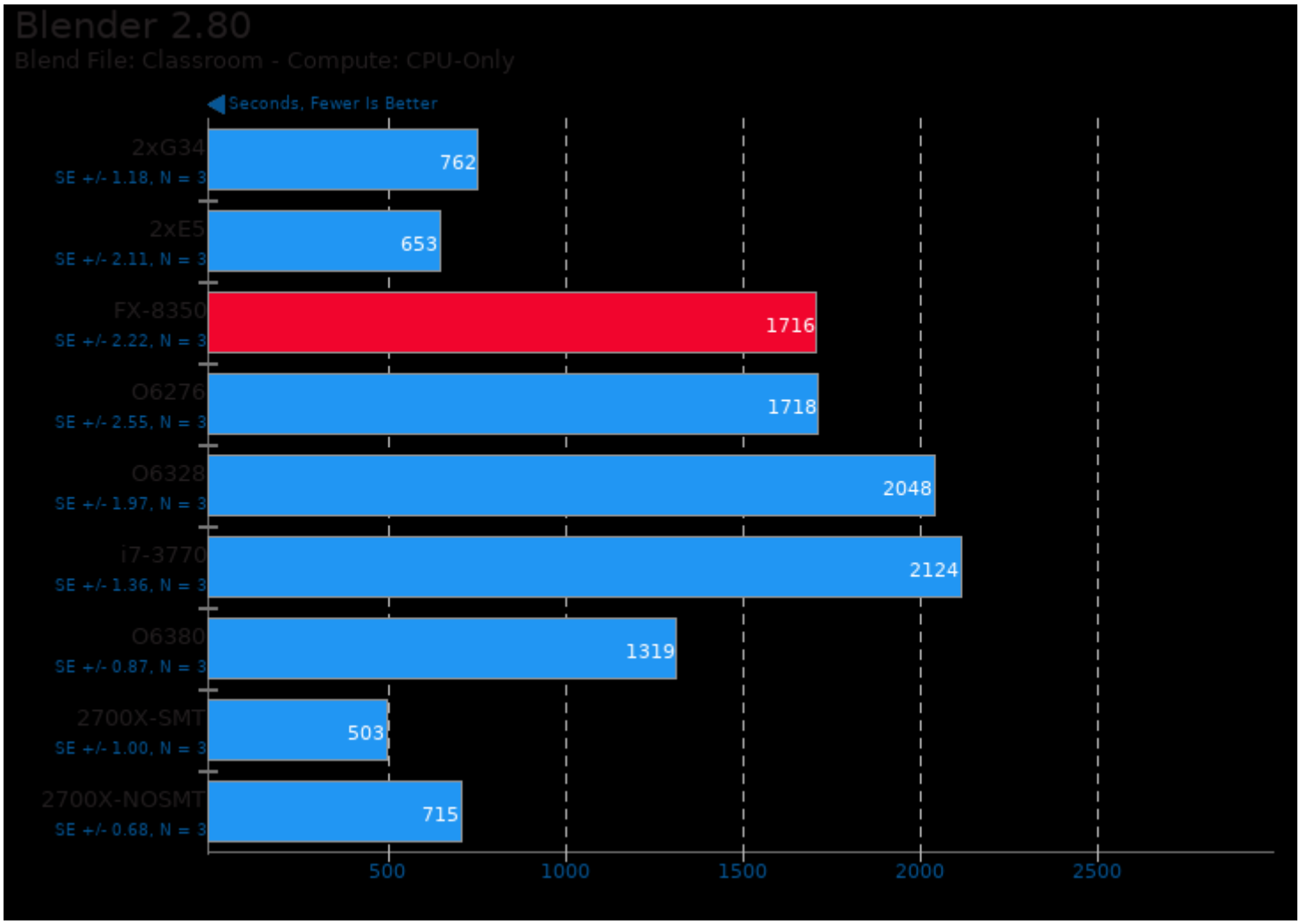

Blender 2.80
Blend File: BMW27 - Compute: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 4.50, N = 3
989
2xE5
SE +/- 1.43, N = 3
569
FX-8350
SE +/- 1.75, N = 3
769
C2D-E8600-3.33
SE +/- 0.56, N = 3
2682
O6276
SE +/- 0.85, N = 3
1181
O6328
SE +/- 4.03, N = 3
921
i7-3770
SE +/- 2.03, N = 3
814
i5-2520M
SE +/- 5.67, N = 3
2009
i5-2520M-HT
SE +/- 8.40, N = 3
1580
O6380
SE +/- 4.32, N = 3
984
2700X-SMT
SE +/- 1.05, N = 3
361
2700X-NOSMT
SE +/- 1.27, N = 3
355
600
1200
1800
2400
3000

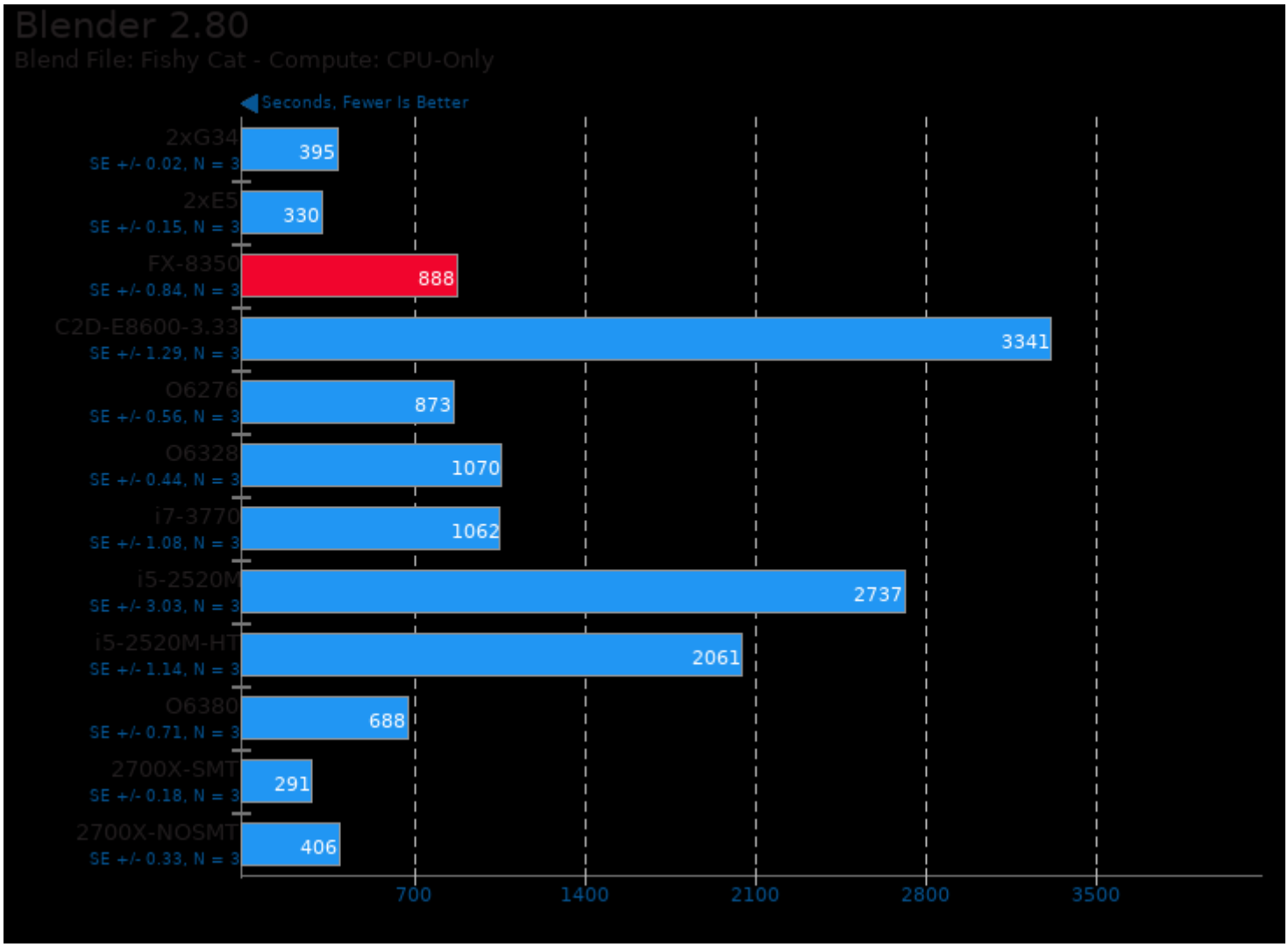

Blender 2.80
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
2xG34
SE +/- 0.31, N = 3
267
2xE5
SE +/- 0.44, N = 3
232
FX-8350
SE +/- 0.27, N = 3
626
C2D-E8600-3.33
SE +/- 0.97, N = 3
2601
O6276
SE +/- 0.22, N = 3
586
O6328
SE +/- 2.67, N = 3
751
i7-3770
SE +/- 2.56, N = 3
724
i5-2520M
SE +/- 3.88, N = 3
1903
i5-2520M-HT
SE +/- 4.44, N = 3
1455
O6380
SE +/- 0.70, N = 3
486
2700X-SMT
SE +/- 0.09, N = 3
195
2700X-NOSMT
SE +/- 0.18, N = 3
273
600
1200
1800
2400
3000

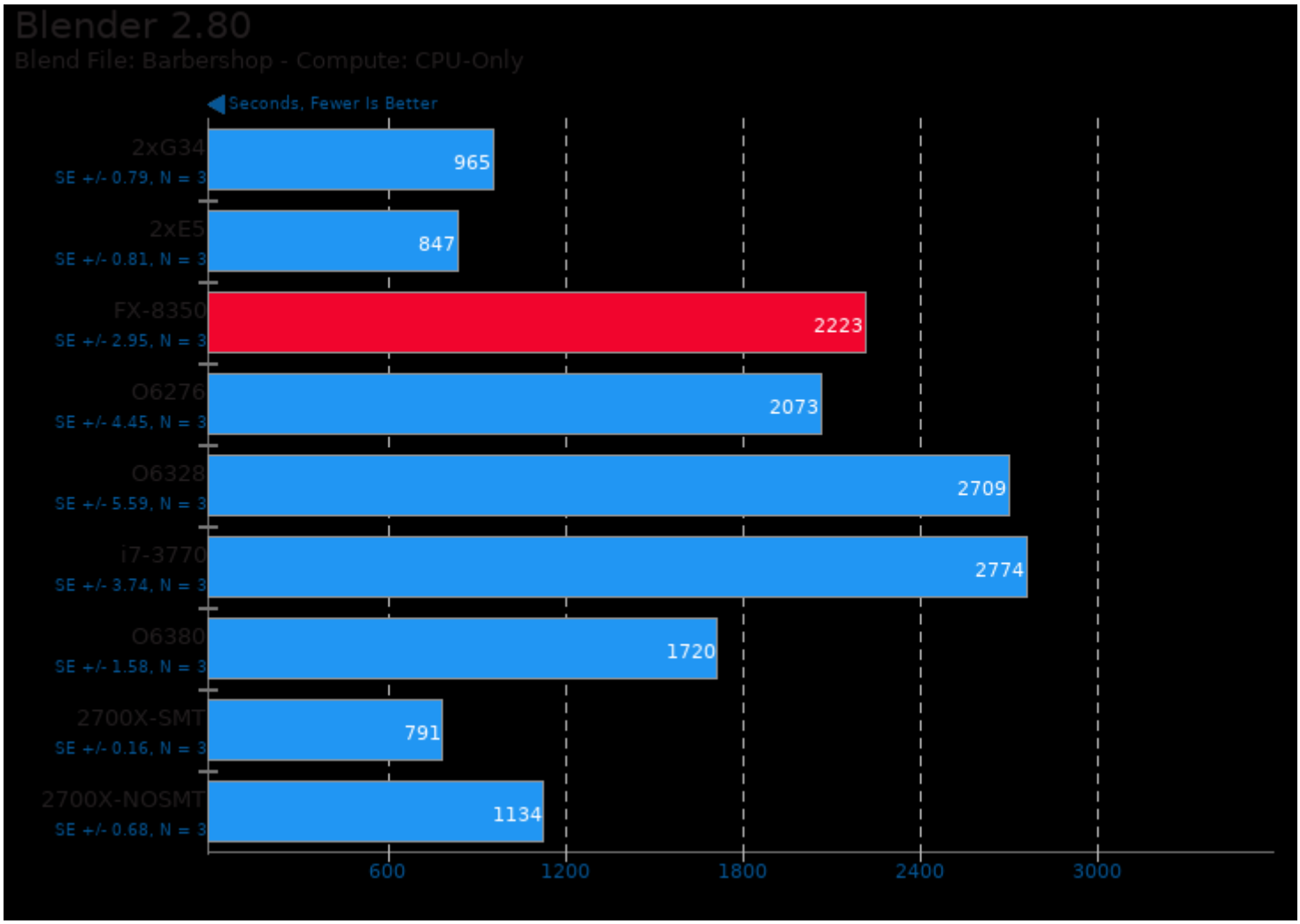

Blender 2.80
Blend File: Classroom - Compute: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 1.24, N = 3
859
2xE5
SE +/- 3.63, N = 3
857
FX-8350
SE +/- 5.94, N = 3
1760
O6276
SE +/- 0.73, N = 3
1838
O6328
SE +/- 3.74, N = 3
2117
i7-3770
SE +/- 2.64, N = 3
2161
O6380
SE +/- 1.79, N = 3
1403
2700X-SMT
SE +/- 0.96, N = 3
535
2700X-NOSMT
SE +/- 0.76, N = 3
735
500
1000
1500
2000
2500

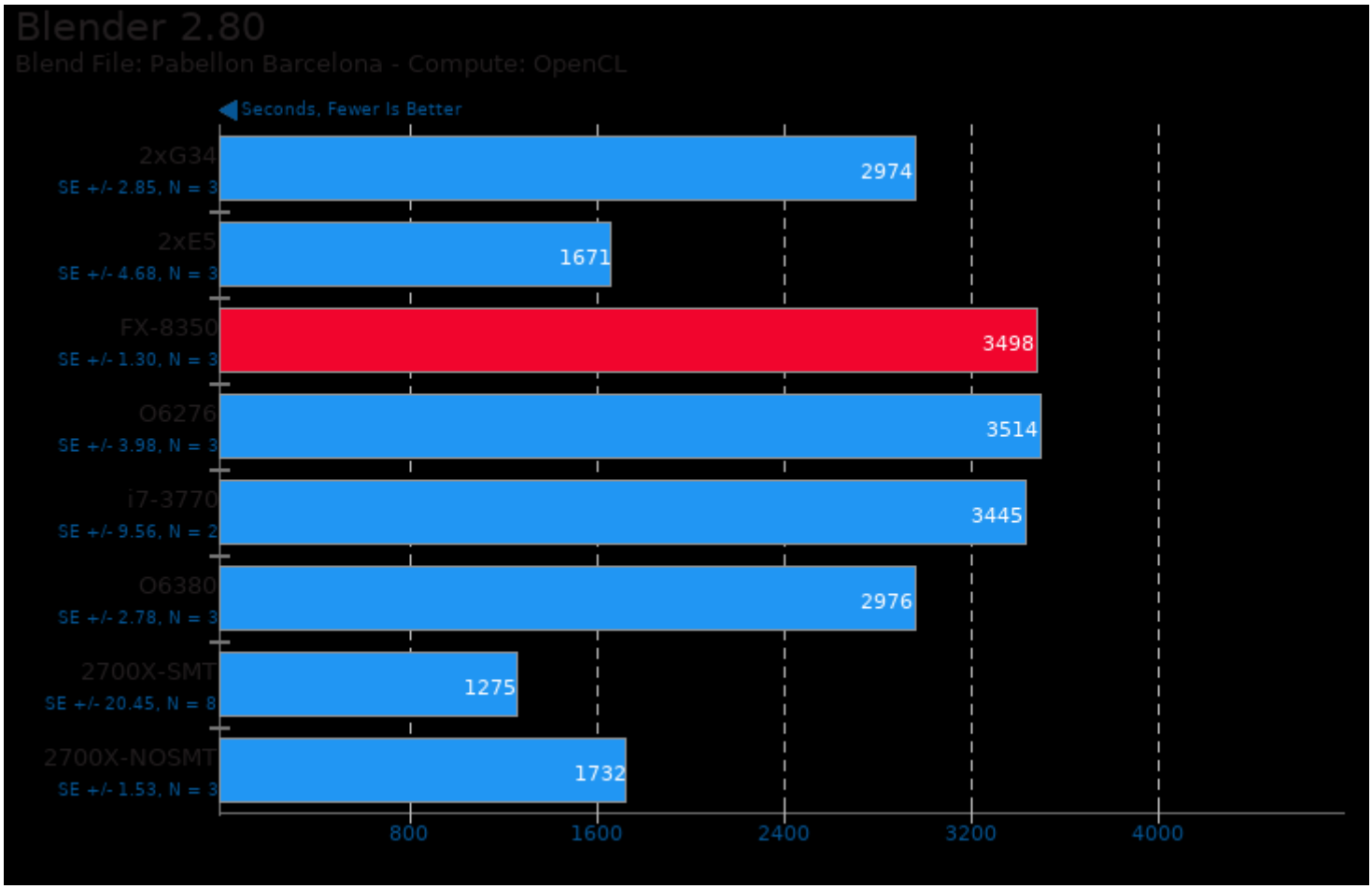

Blender 2.80
Blend File: Fishy Cat - Compute: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 4.02, N = 3
2504
2xE5
SE +/- 2.99, N = 3
1406
FX-8350
SE +/- 2.29, N = 3
1779
C2D-E8600-3.33
SE +/- 12.59, N = 3
3513
O6276
SE +/- 5.32, N = 3
2829
O6328
SE +/- 16.10, N = 3
2085
i7-3770
SE +/- 2.25, N = 3
1263
O6380
SE +/- 1.51, N = 3
2308
2700X-SMT
SE +/- 3.92, N = 3
945
2700X-NOSMT
SE +/- 2.17, N = 3
942
800
1600
2400
3200
4000

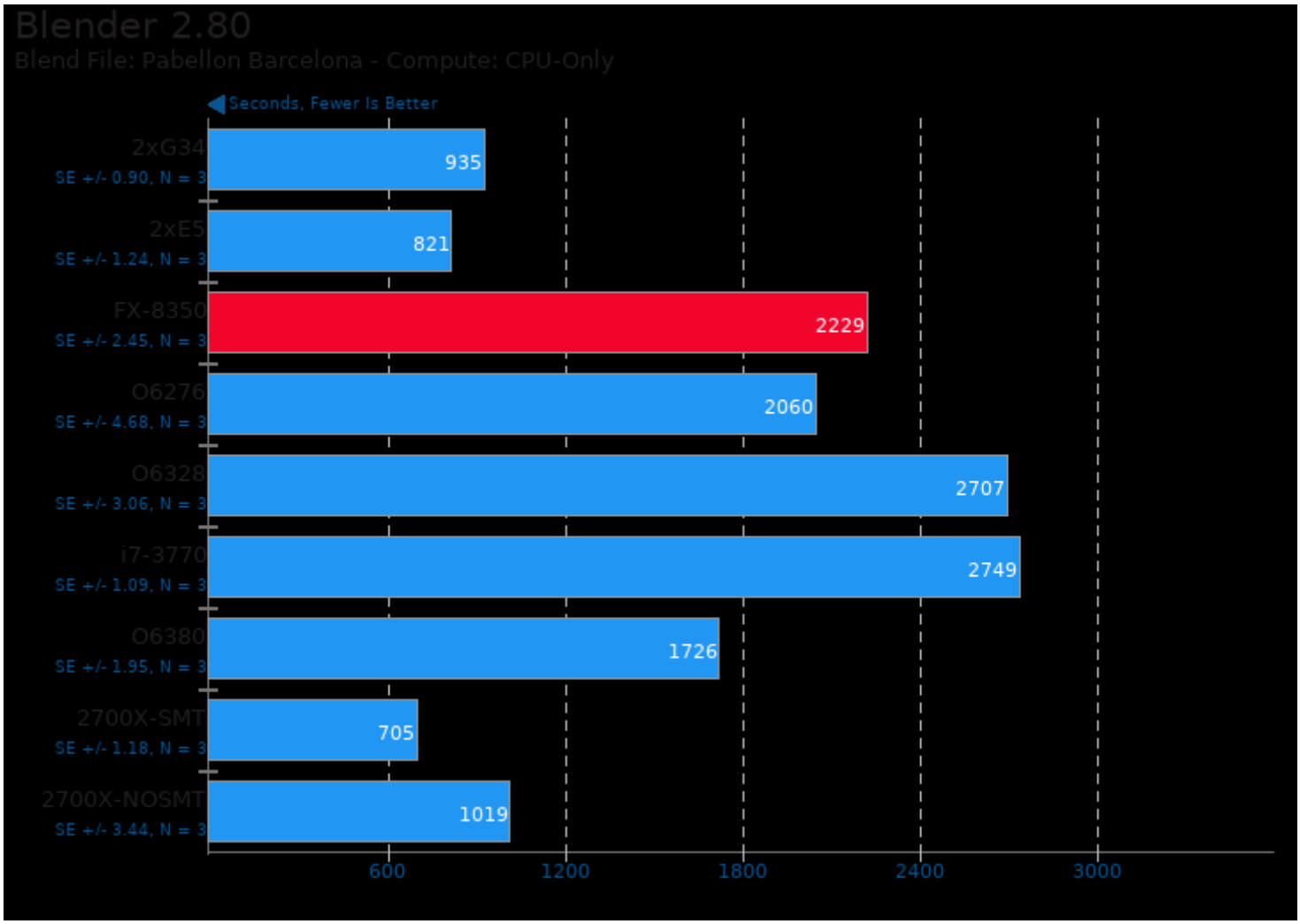

Blender 2.80
Blend File: Barbershop - Compute: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 4.90, N = 3
1301
2xE5
SE +/- 2.60, N = 3
940
FX-8350
SE +/- 4.87, N = 3
2290
O6276
SE +/- 12.73, N = 3
2375
O6328
SE +/- 3.84, N = 3
2779
i7-3770
SE +/- 4.93, N = 3
2828
O6380
SE +/- 3.39, N = 3
1963
2700X-SMT
SE +/- 5.74, N = 3
905
2700X-NOSMT
SE +/- 1.18, N = 3
1174
600
1200
1800
2400
3000

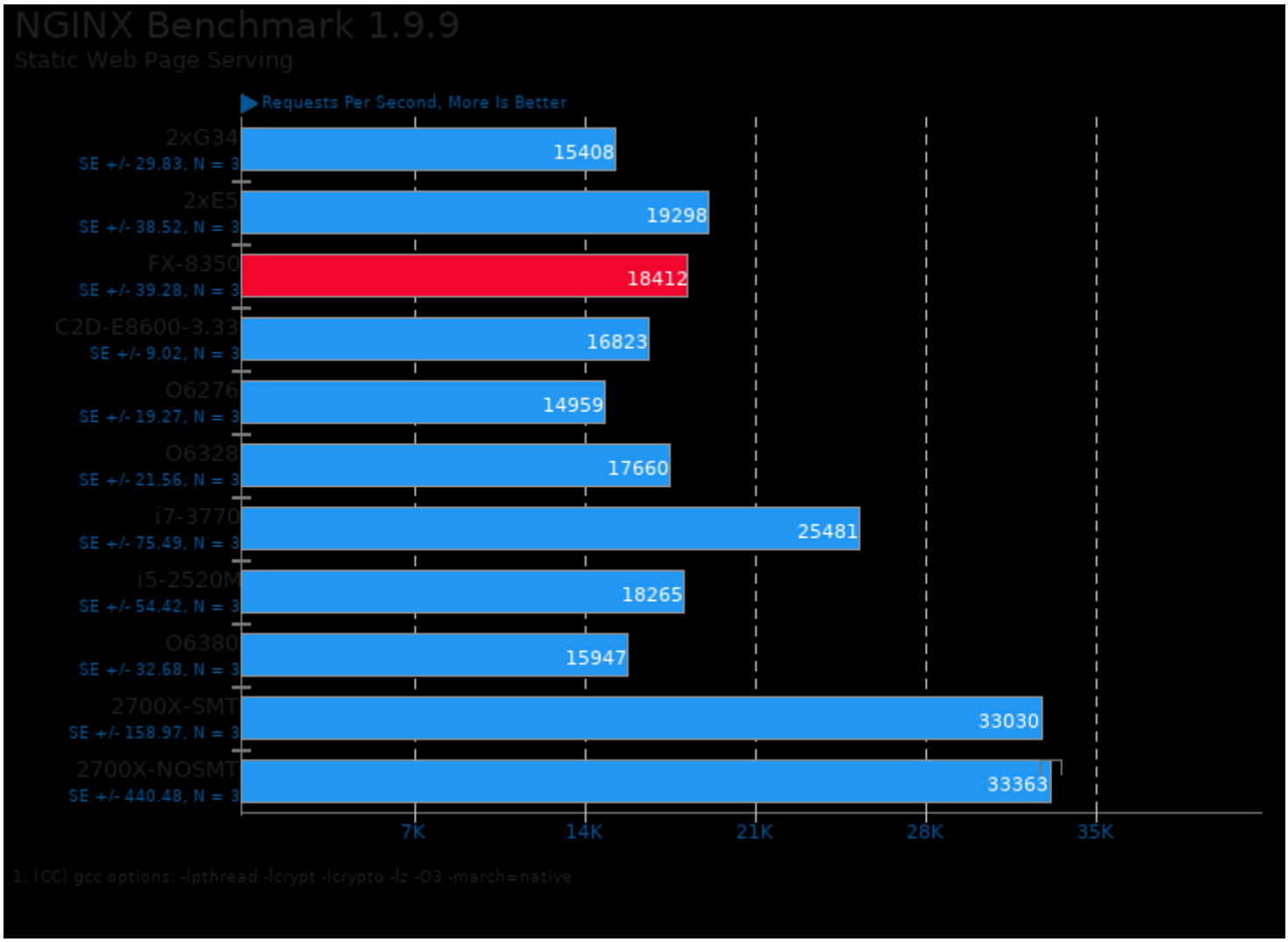

Blender 2.80
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
2xG34
SE +/- 1.18, N = 3
762
2xE5
SE +/- 2.11, N = 3
653
FX-8350
SE +/- 2.22, N = 3
1716
O6276
SE +/- 2.55, N = 3
1718
O6328
SE +/- 1.97, N = 3
2048
i7-3770
SE +/- 1.36, N = 3
2124
O6380
SE +/- 0.87, N = 3
1319
2700X-SMT
SE +/- 1.00, N = 3
503
2700X-NOSMT
SE +/- 0.68, N = 3
715
500
1000
1500
2000
2500

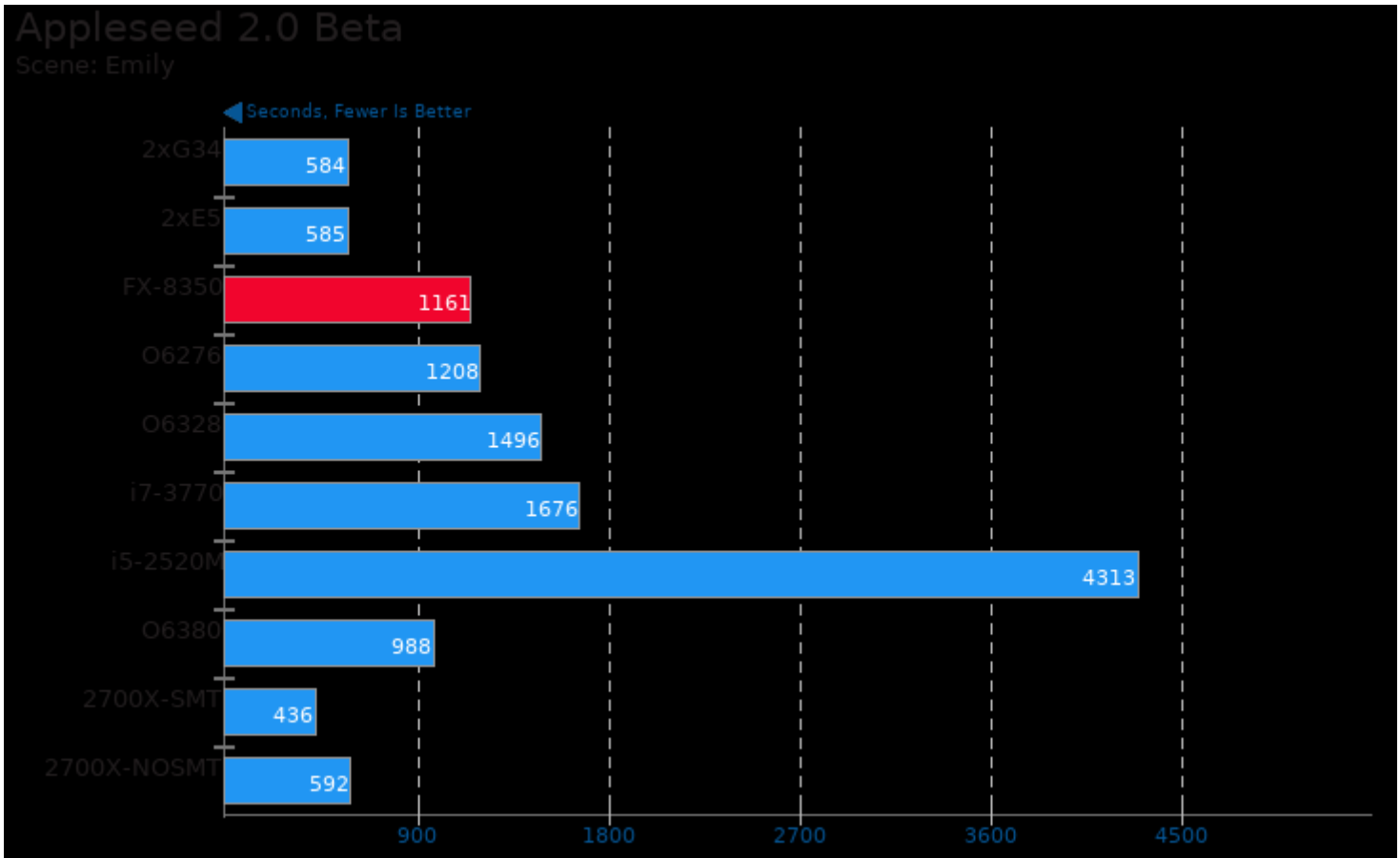

Blender 2.80
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
2xG34
SE +/- 0.02, N = 3
395
2xE5
SE +/- 0.15, N = 3
330
FX-8350
SE +/- 0.84, N = 3
888
C2D-E8600-3.33
SE +/- 1.29, N = 3
3341
O6276
SE +/- 0.56, N = 3
873
O6328
SE +/- 0.44, N = 3
1070
i7-3770
SE +/- 1.08, N = 3
1062
i5-2520M
SE +/- 3.03, N = 3
2737
i5-2520M-HT
SE +/- 1.14, N = 3
2061
O6380
SE +/- 0.71, N = 3
688
2700X-SMT
SE +/- 0.18, N = 3
291
2700X-NOSMT
SE +/- 0.33, N = 3
406
700
1400
2100
2800
3500

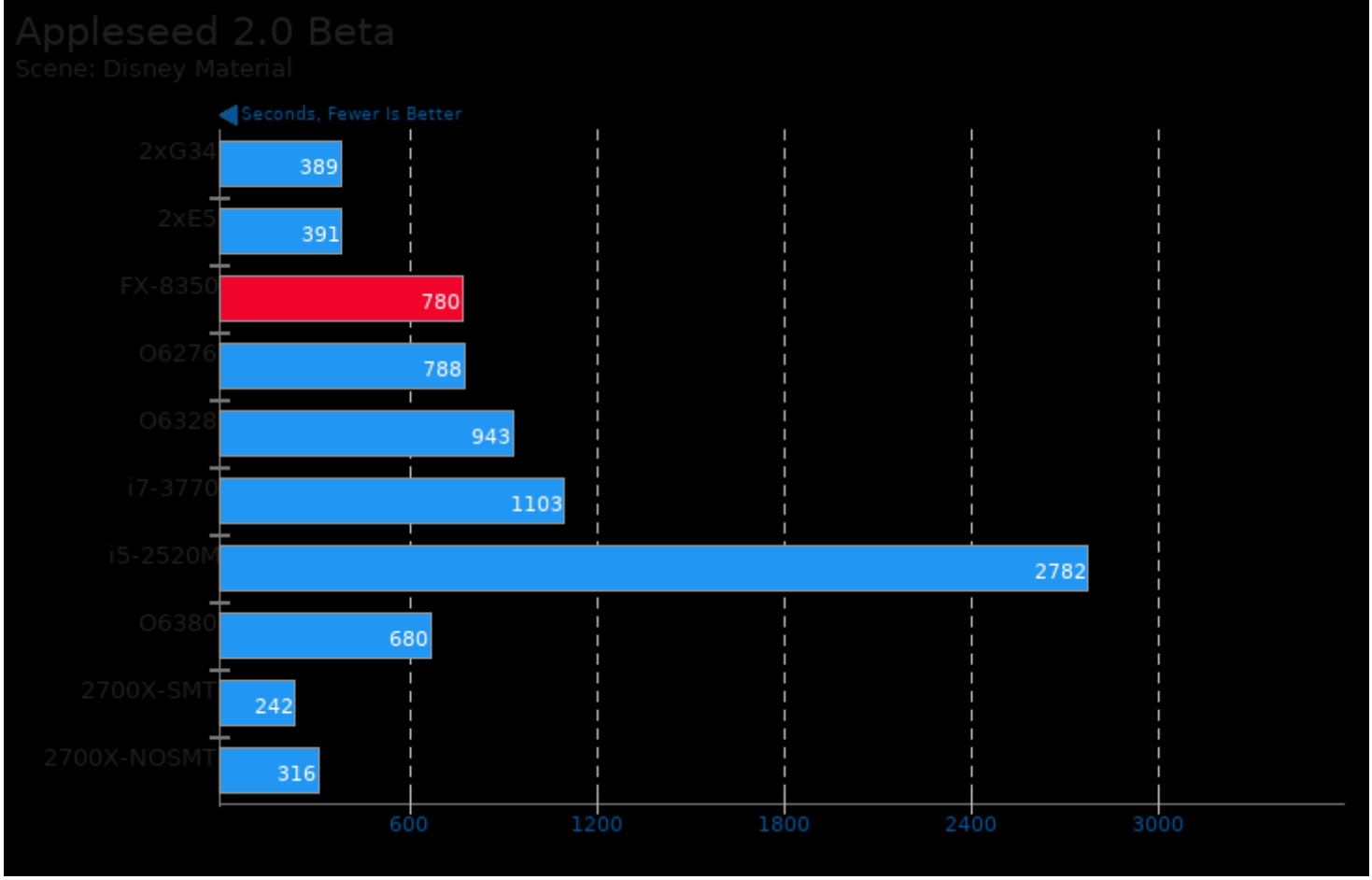

Blender 2.80
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
2xG34
SE +/- 0.79, N = 3
965
2xE5
SE +/- 0.81, N = 3
847
FX-8350
SE +/- 2.95, N = 3
2223
O6276
SE +/- 4.45, N = 3
2073
O6328
SE +/- 5.59, N = 3
2709
i7-3770
SE +/- 3.74, N = 3
2774
O6380
SE +/- 1.58, N = 3
1720
2700X-SMT
SE +/- 0.16, N = 3
791
2700X-NOSMT
SE +/- 0.68, N = 3
1134
600
1200
1800
2400
3000

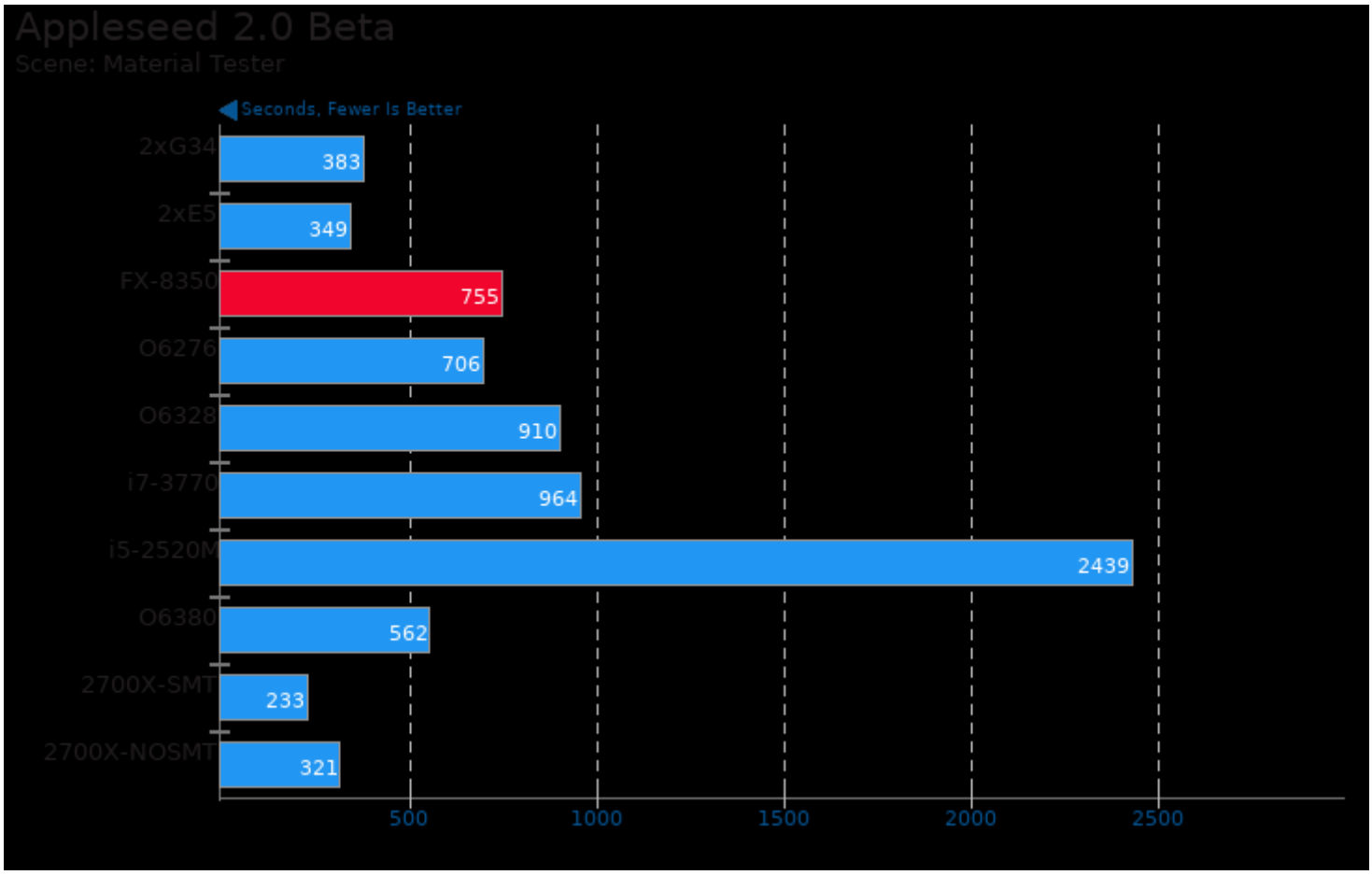

Blender 2.80
Blend File: Pabellon Barcelona - Compute: OpenCL
Seconds, Fewer Is Better
2xG34
SE +/- 2.85, N = 3
2974
2xE5
SE +/- 4.68, N = 3
1671
FX-8350
SE +/- 1.30, N = 3
3498
O6276
SE +/- 3.98, N = 3
3514
i7-3770
SE +/- 9.56, N = 2
3445
O6380
SE +/- 2.78, N = 3
2976
2700X-SMT
SE +/- 20.45, N = 8
1275
2700X-NOSMT
SE +/- 1.53, N = 3
1732
800
1600
2400
3200
4000

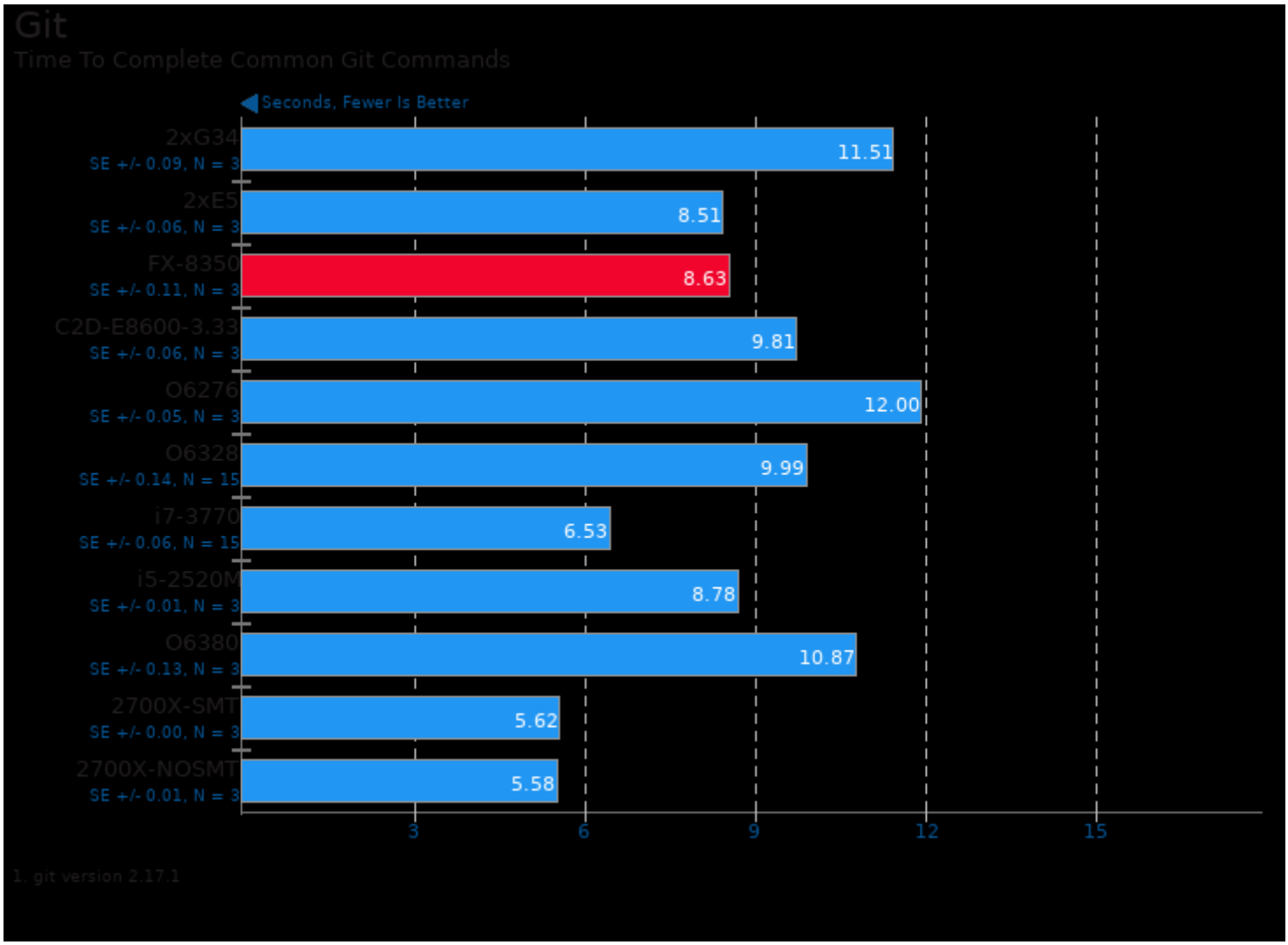

Blender 2.80
Blend File: Pabellon Barcelona - Compute: CPU-Only
Seconds, Fewer Is Better
2xG34
SE +/- 0.90, N = 3
935
2xE5
SE +/- 1.24, N = 3
821
FX-8350
SE +/- 2.45, N = 3
2229
O6276
SE +/- 4.68, N = 3
2060
O6328
SE +/- 3.06, N = 3
2707
i7-3770
SE +/- 1.09, N = 3
2749
O6380
SE +/- 1.95, N = 3
1726
2700X-SMT
SE +/- 1.18, N = 3
705
2700X-NOSMT
SE +/- 3.44, N = 3
1019
600
1200
1800
2400
3000

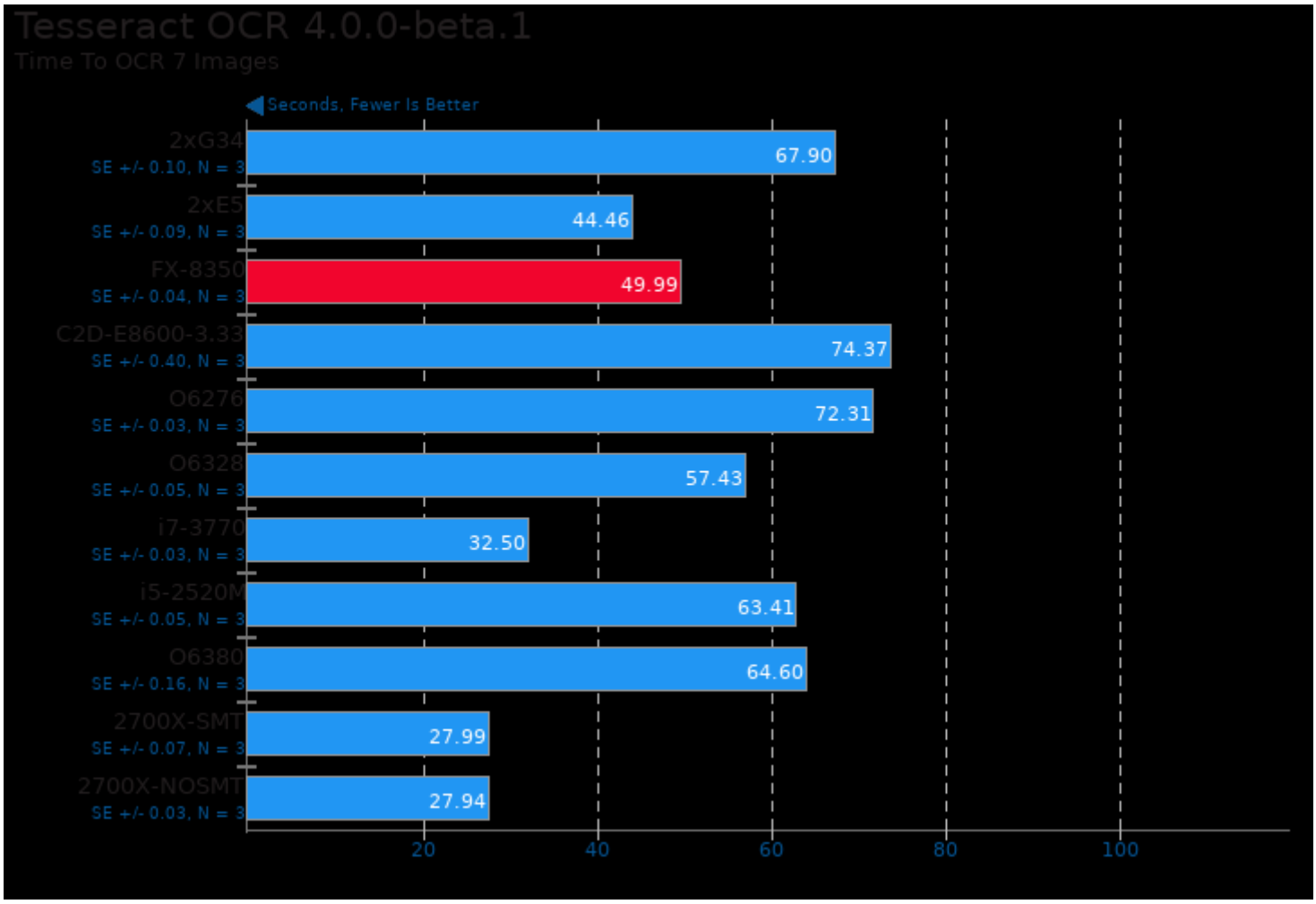

NGINX Benchmark 1.9.9
Static Web Page Serving
Requests Per Second, More Is Better
2xG34
SE +/- 29.83, N = 3
15408
2xE5
SE +/- 38.52, N = 3
19298
FX-8350
SE +/- 39.28, N = 3
18412
C2D-E8600-3.33
SE +/- 9.02, N = 3
16823
O6276
SE +/- 19.27, N = 3
14959
O6328
SE +/- 21.56, N = 3
17660
i7-3770
SE +/- 75.49, N = 3
25481
i5-2520M
SE +/- 54.42, N = 3
18265
O6380
SE +/- 32.68, N = 3
15947
2700X-SMT
SE +/- 158.97, N = 3
33030
2700X-NOSMT
SE +/- 440.48, N = 3
33363
7K
14K
21K
28K
35K
1. (CC) gcc options: -lpthread -lcrypt -lcrypto -lz -O3 -march=native

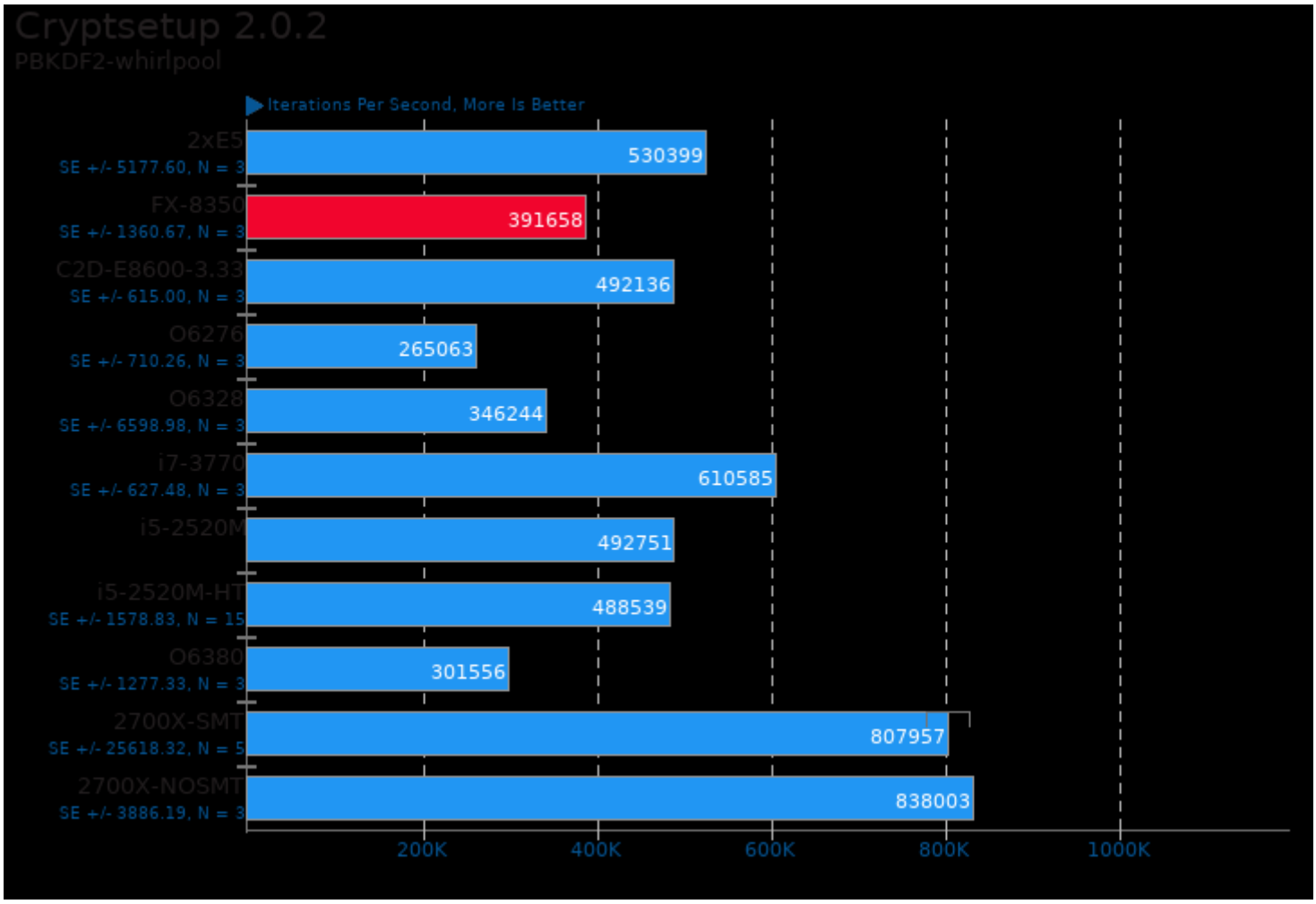

Appleseed 2.0 Beta
Scene: Emily
Seconds, Fewer Is Better
2xG34
584
2xE5
585
FX-8350
1161
O6276
1208
O6328
1496
i7-3770
1676
i5-2520M
4313
O6380
988
2700X-SMT
436
2700X-NOSMT
592
900
1800
2700
3600
4500


Appleseed 2.0 Beta
Scene: Disney Material
Seconds, Fewer Is Better
2xG34
389
2xE5
391
FX-8350
780
O6276
788
O6328
943
i7-3770
1103
i5-2520M
2782
O6380
680
2700X-SMT
242
2700X-NOSMT
316
600
1200
1800
2400
3000

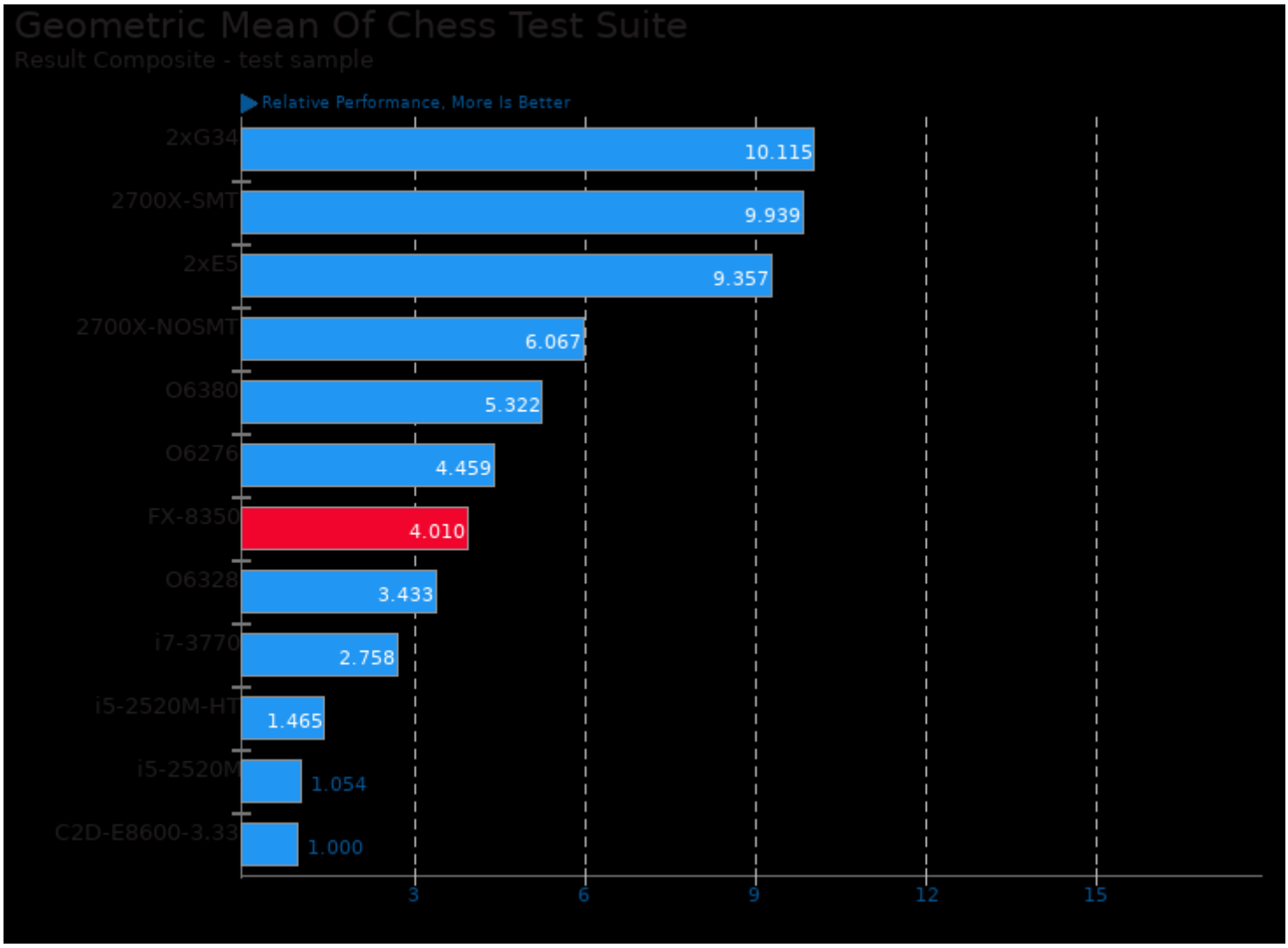

Appleseed 2.0 Beta
Scene: Material Tester
Seconds, Fewer Is Better
2xG34
383
2xE5
349
FX-8350
755
O6276
706
O6328
910
i7-3770
964
i5-2520M
2439
O6380
562
2700X-SMT
233
2700X-NOSMT
321
500
1000
1500
2000
2500


Git
Time To Complete Common Git Commands
Seconds, Fewer Is Better
2xG34
SE +/- 0.09, N = 3
11.51
2xE5
SE +/- 0.06, N = 3
8.51
FX-8350
SE +/- 0.11, N = 3
8.63
C2D-E8600-3.33
SE +/- 0.06, N = 3
9.81
O6276
SE +/- 0.05, N = 3
12.00
O6328
SE +/- 0.14, N = 15
9.99
i7-3770
SE +/- 0.06, N = 15
6.53
i5-2520M
SE +/- 0.01, N = 3
8.78
O6380
SE +/- 0.13, N = 3
10.87
2700X-SMT
SE +/- 0.00, N = 3
5.62
2700X-NOSMT
SE +/- 0.01, N = 3
5.58
3
6
9
12
15
1. git version 2.17.1

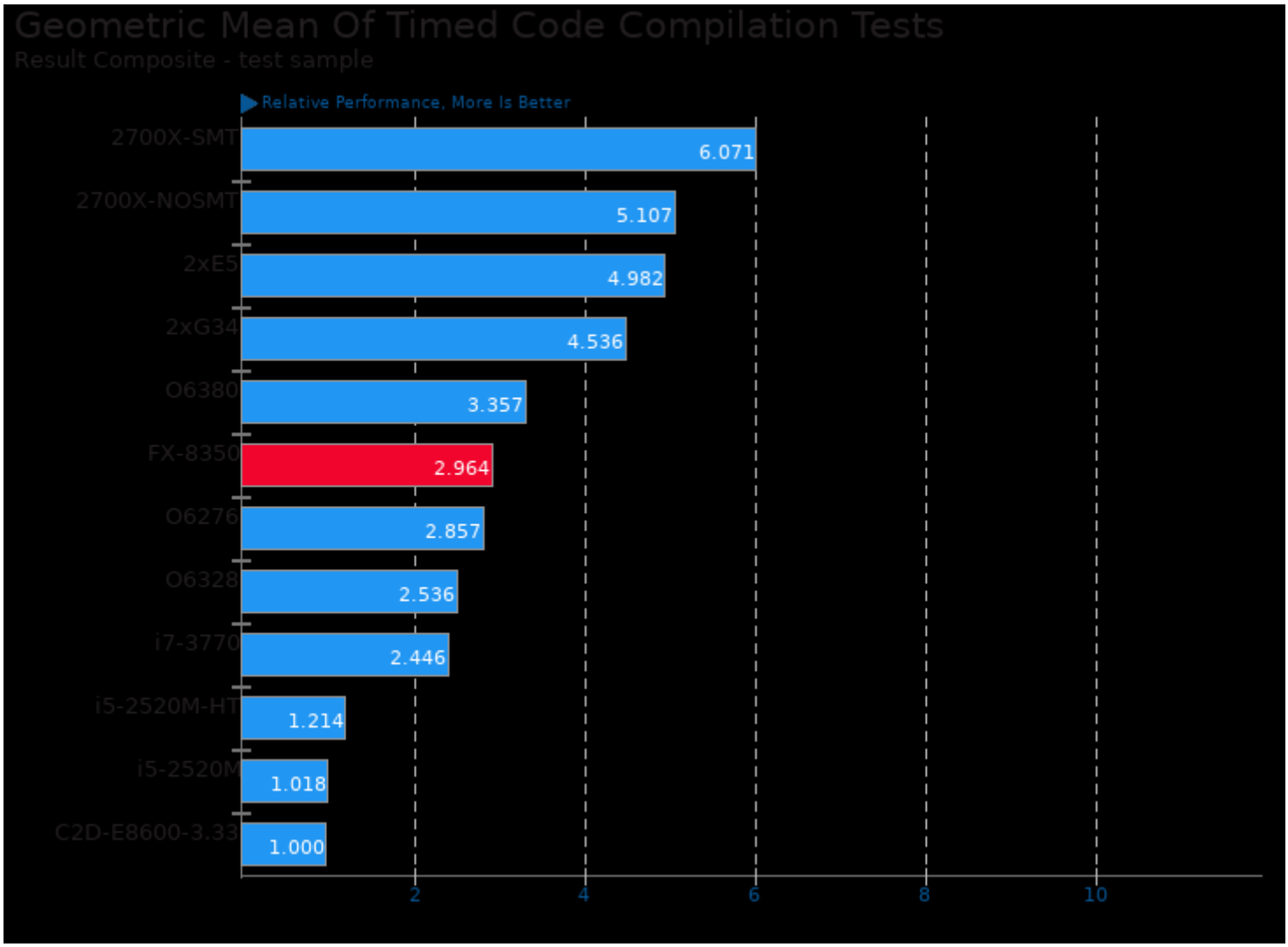

Tesseract OCR 4.0.0-beta.1
Time To OCR 7 Images
Seconds, Fewer Is Better
2xG34
SE +/- 0.10, N = 3
67.90
2xE5
SE +/- 0.09, N = 3
44.46
FX-8350
SE +/- 0.04, N = 3
49.99
C2D-E8600-3.33
SE +/- 0.40, N = 3
74.37
O6276
SE +/- 0.03, N = 3
72.31
O6328
SE +/- 0.05, N = 3
57.43
i7-3770
SE +/- 0.03, N = 3
32.50
i5-2520M
SE +/- 0.05, N = 3
63.41
O6380
SE +/- 0.16, N = 3
64.60
2700X-SMT
SE +/- 0.07, N = 3
27.99
2700X-NOSMT
SE +/- 0.03, N = 3
27.94
20
40
60
80
100


Cryptsetup 2.0.2
PBKDF2-whirlpool
Iterations Per Second, More Is Better
2xE5
SE +/- 5177.60, N = 3
530399
FX-8350
SE +/- 1360.67, N = 3
391658
C2D-E8600-3.33
SE +/- 615.00, N = 3
492136
O6276
SE +/- 710.26, N = 3
265063
O6328
SE +/- 6598.98, N = 3
346244
i7-3770
SE +/- 627.48, N = 3
610585
i5-2520M
492751
i5-2520M-HT
SE +/- 1578.83, N = 15
488539
O6380
SE +/- 1277.33, N = 3
301556
2700X-SMT
SE +/- 25618.32, N = 5
807957
2700X-NOSMT
SE +/- 3886.19, N = 3
838003
200K
400K
600K
800K
1000K

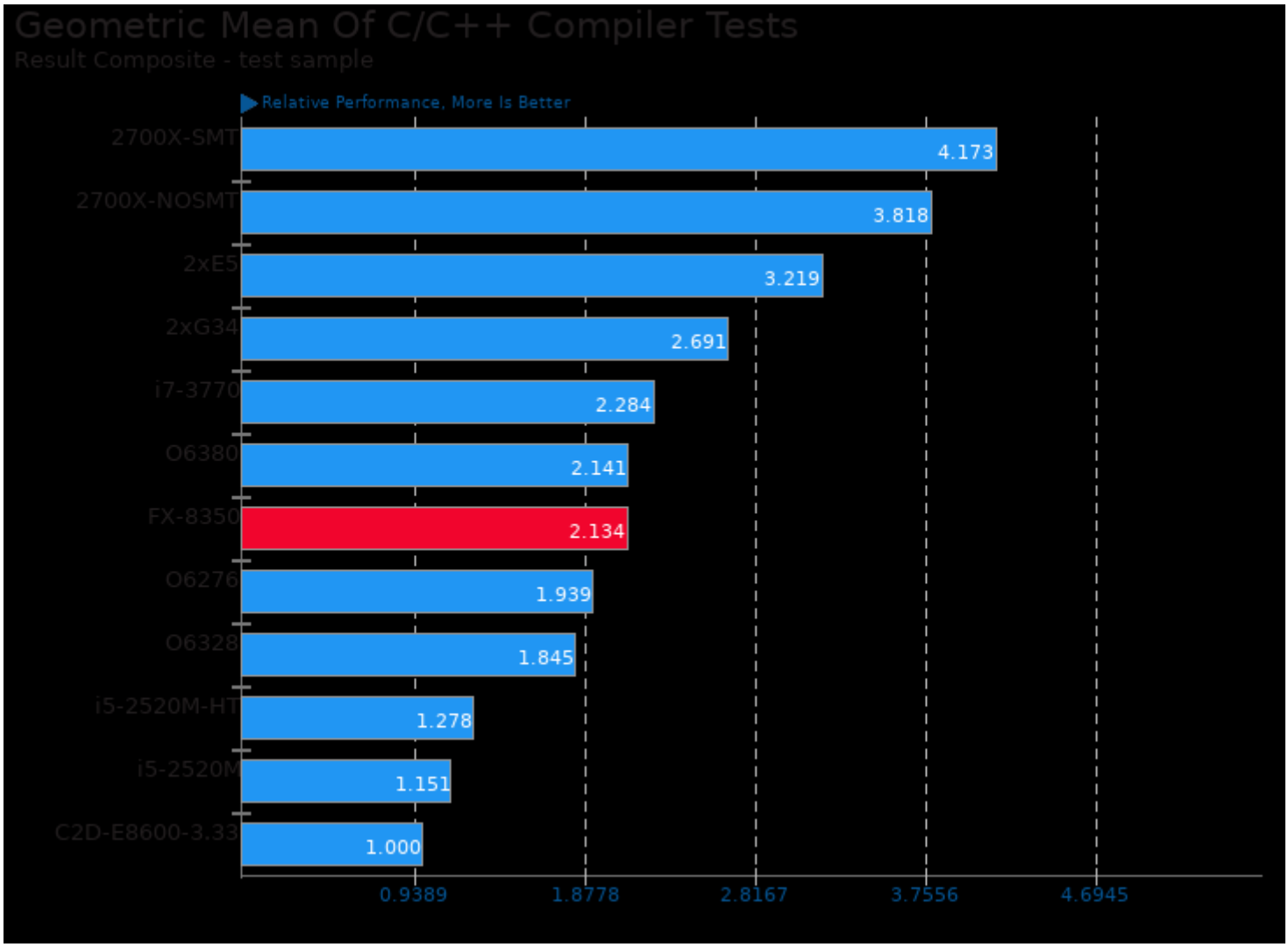
These geometric means are based upon test groupings / test suites for this result file.



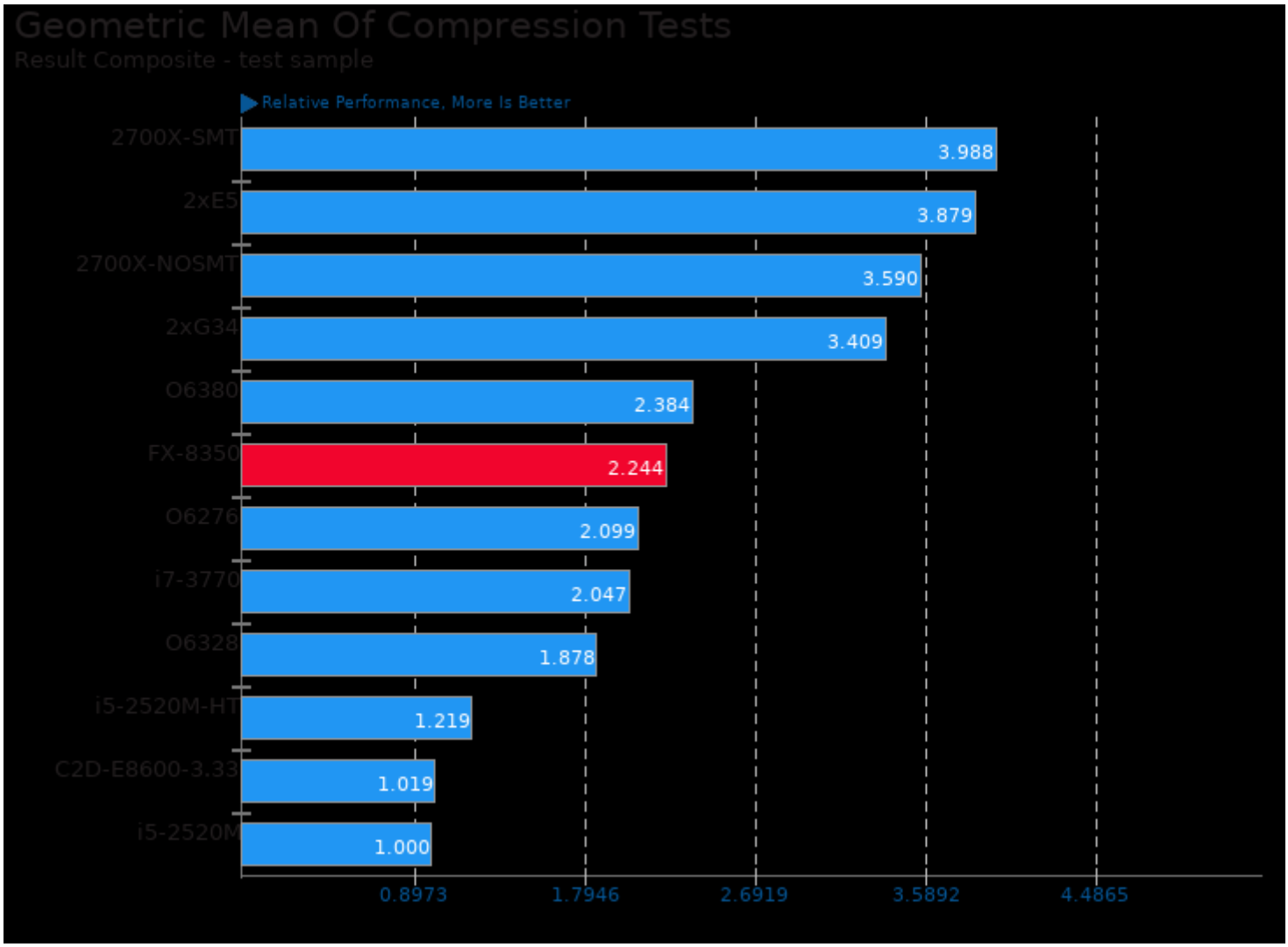
Geometric mean based upon tests: pts/stockfish, pts/n-queens and pts/m-queens



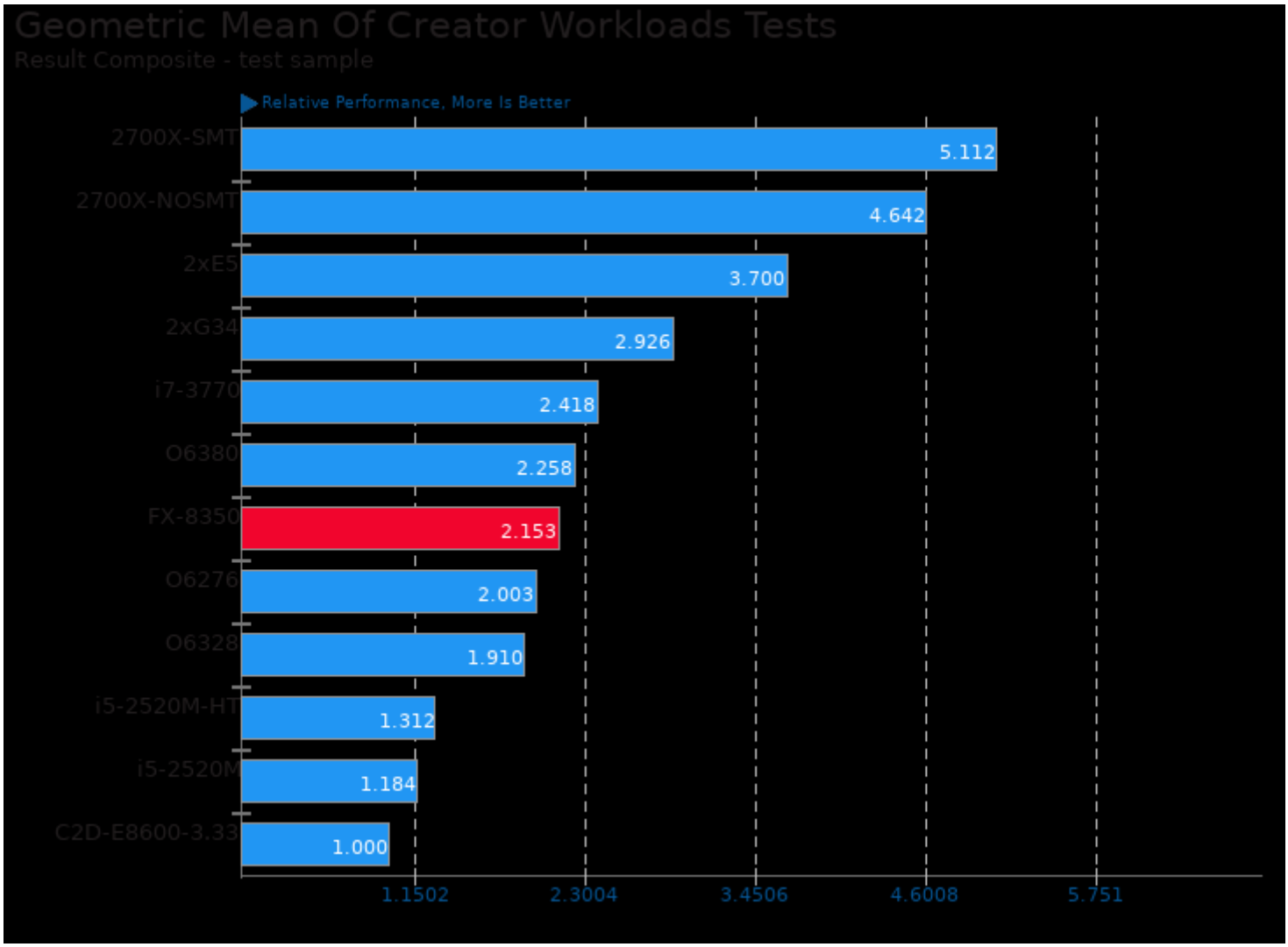
Geometric mean based upon tests: pts/build-linux-kernel and pts/build-gcc



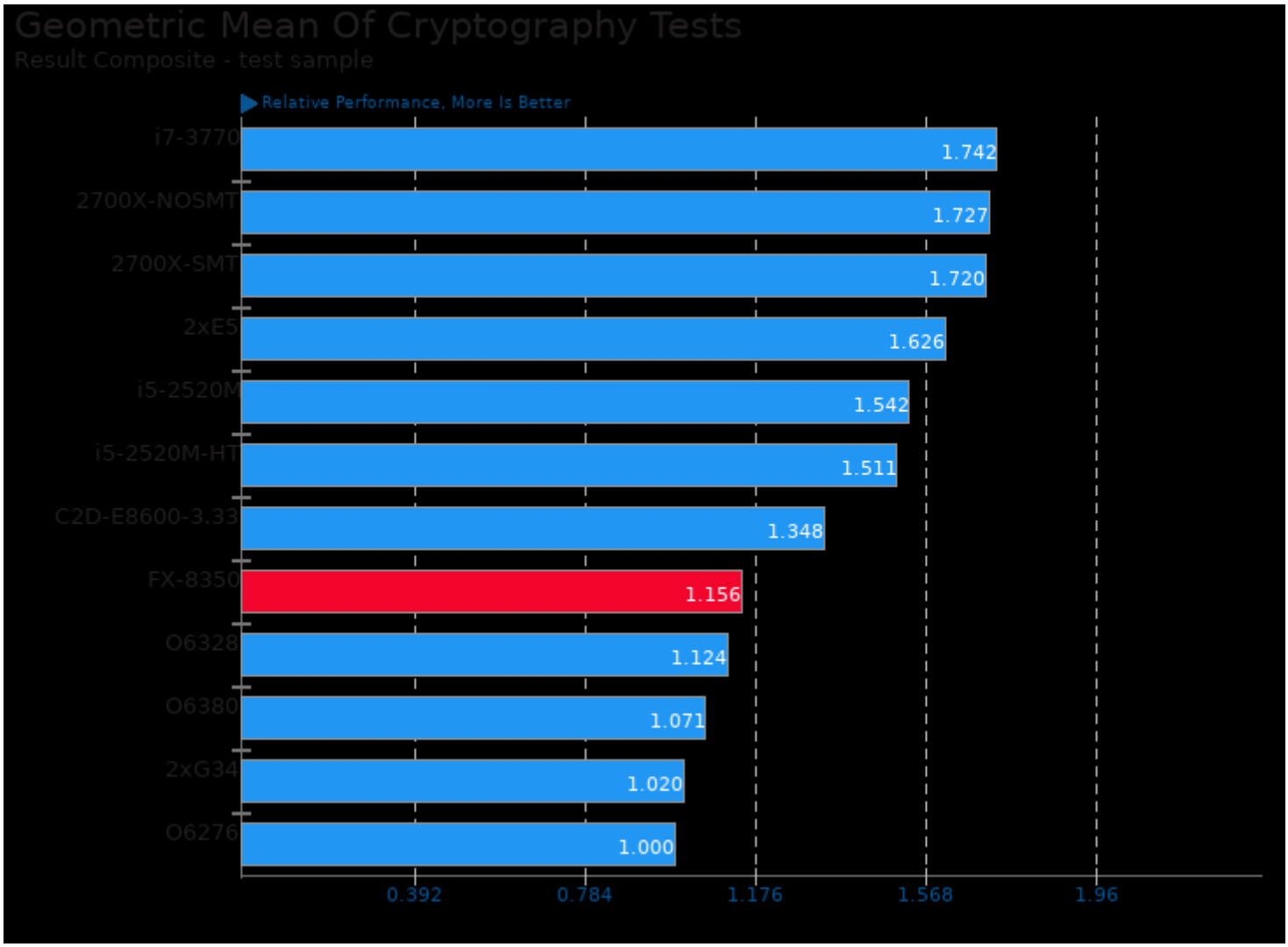
Geometric mean based upon tests: pts/graphics-magick, pts/stockfish, pts/compress-7zip, pts/encode-flac, pts/x264, pts/nginx, pts/svt-av1 and pts/tachyon



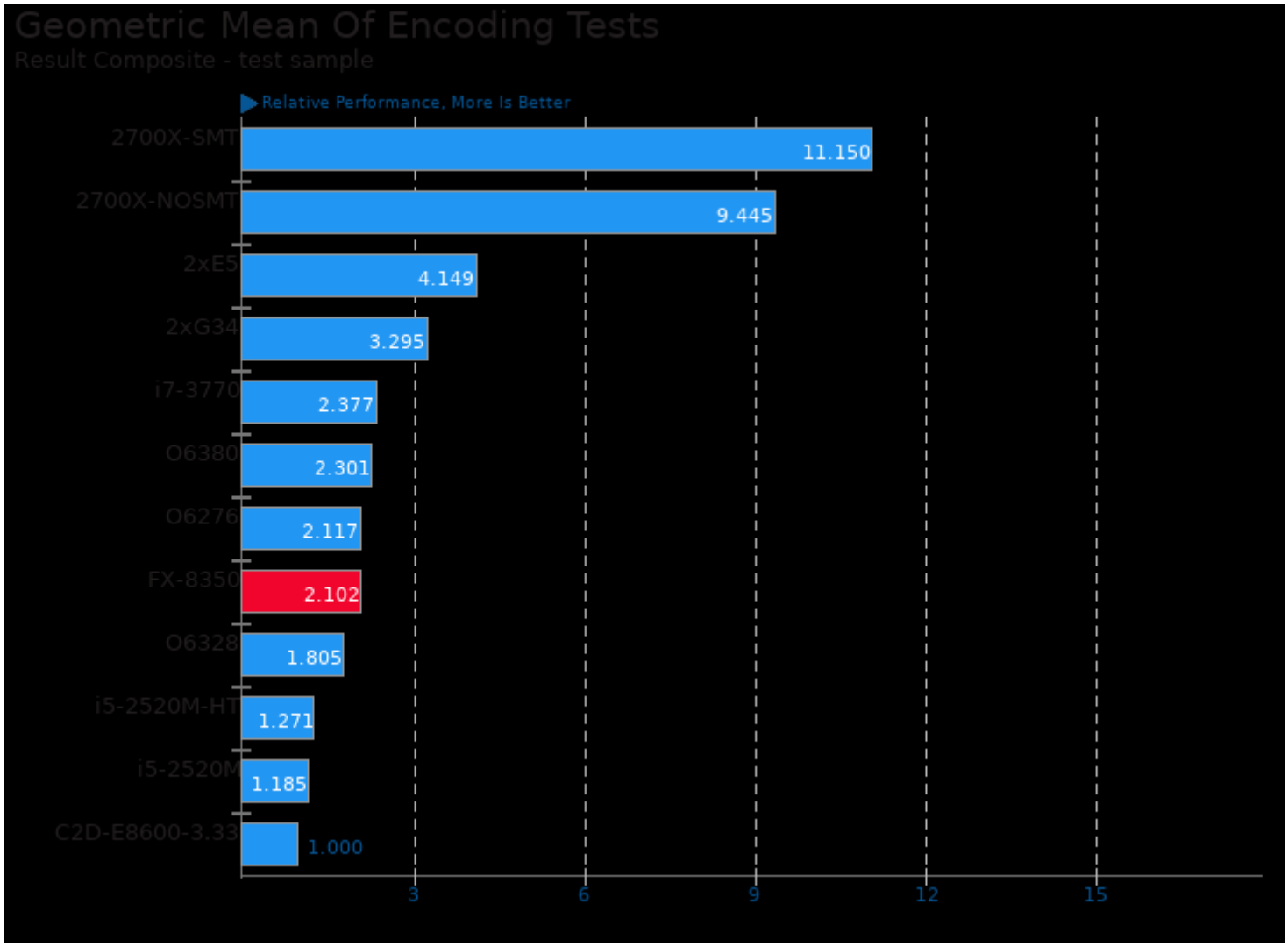
Geometric mean based upon tests: pts/compress-7zip, pts/compress-gzip and pts/compress-pbzip2



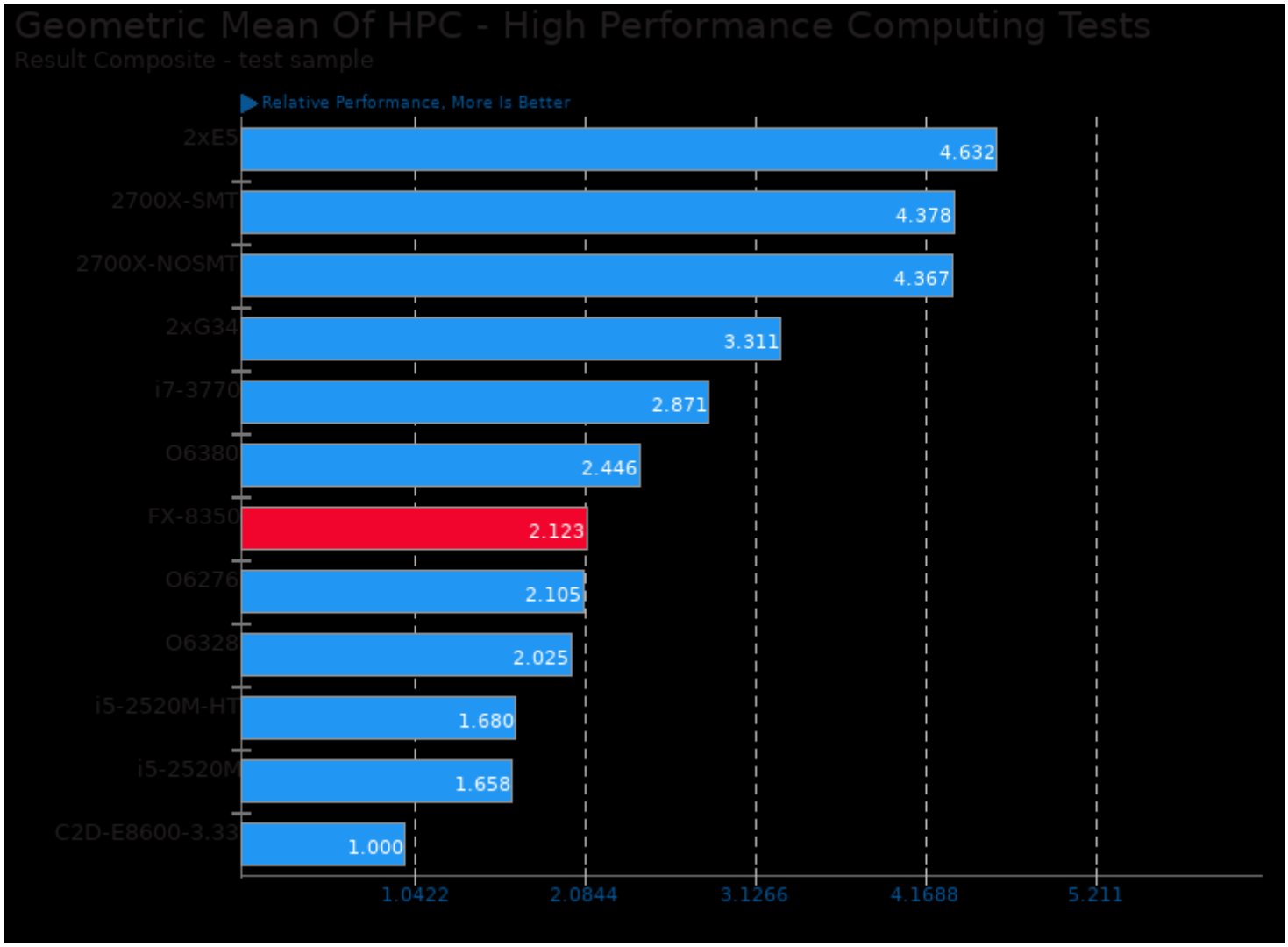
Geometric mean based upon tests: pts/tachyon, pts/blender, pts/appleseed, pts/smallpt, pts/ttsiod-renderer, system/tesseract-ocr, pts/svt-hevc, pts/x264, pts/svt-av1, pts/encode-flac, pts/graphics-magick, system/gimp and system/darktable



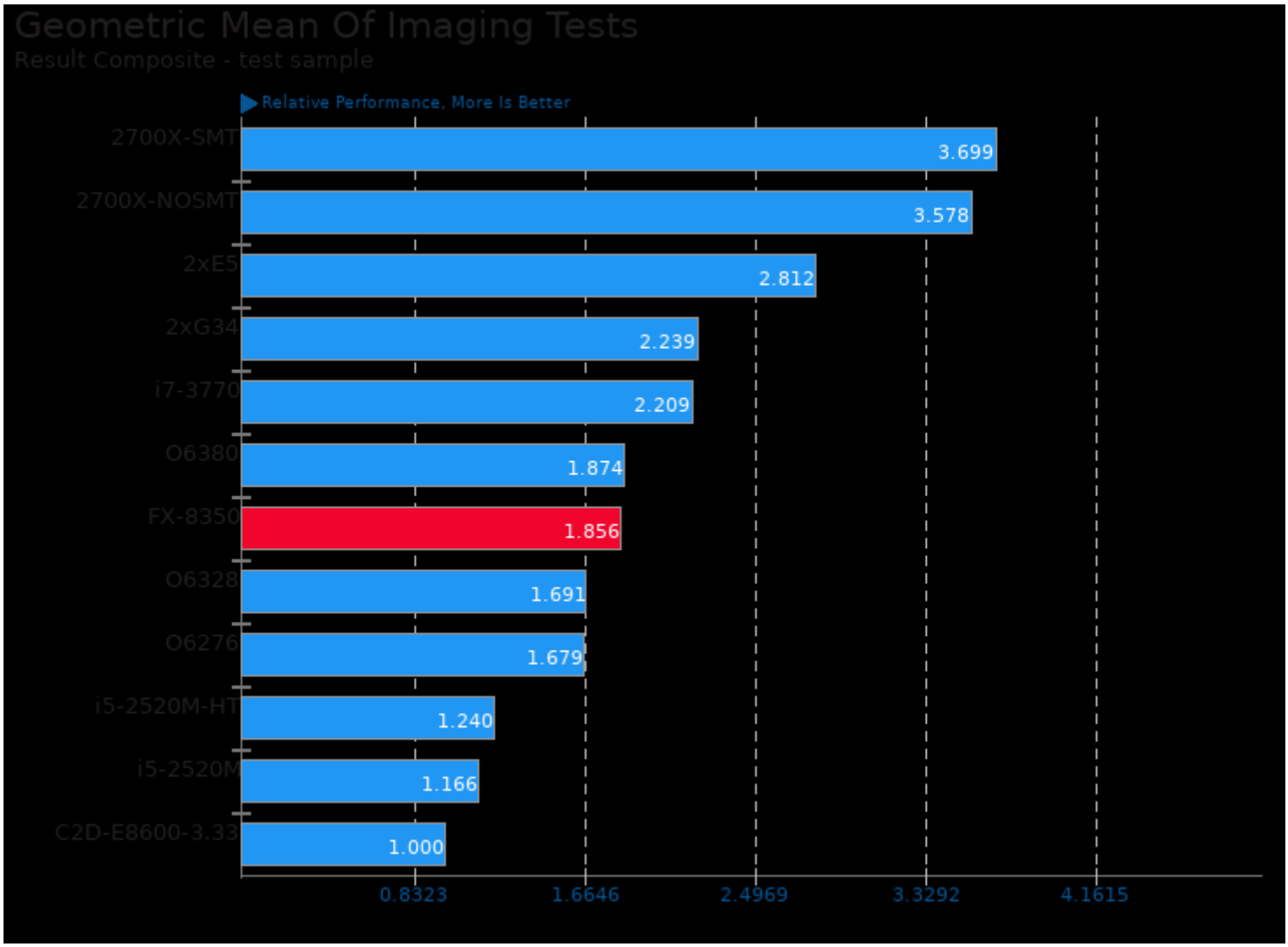
Geometric mean based upon tests: pts/blake2 and system/cryptsetup



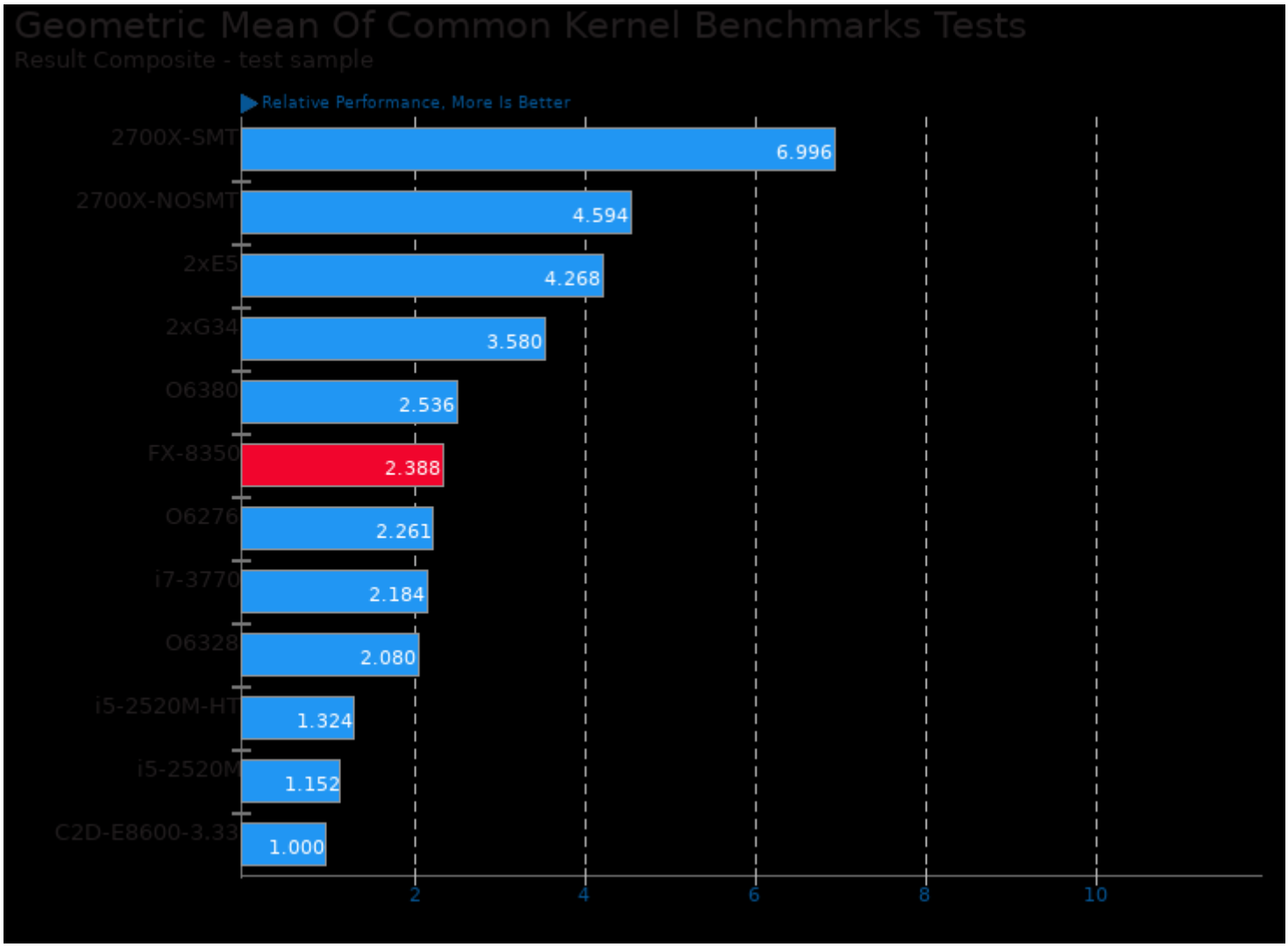
Geometric mean based upon tests: pts/encode-flac, pts/svt-hevc, pts/x264 and pts/svt-av1



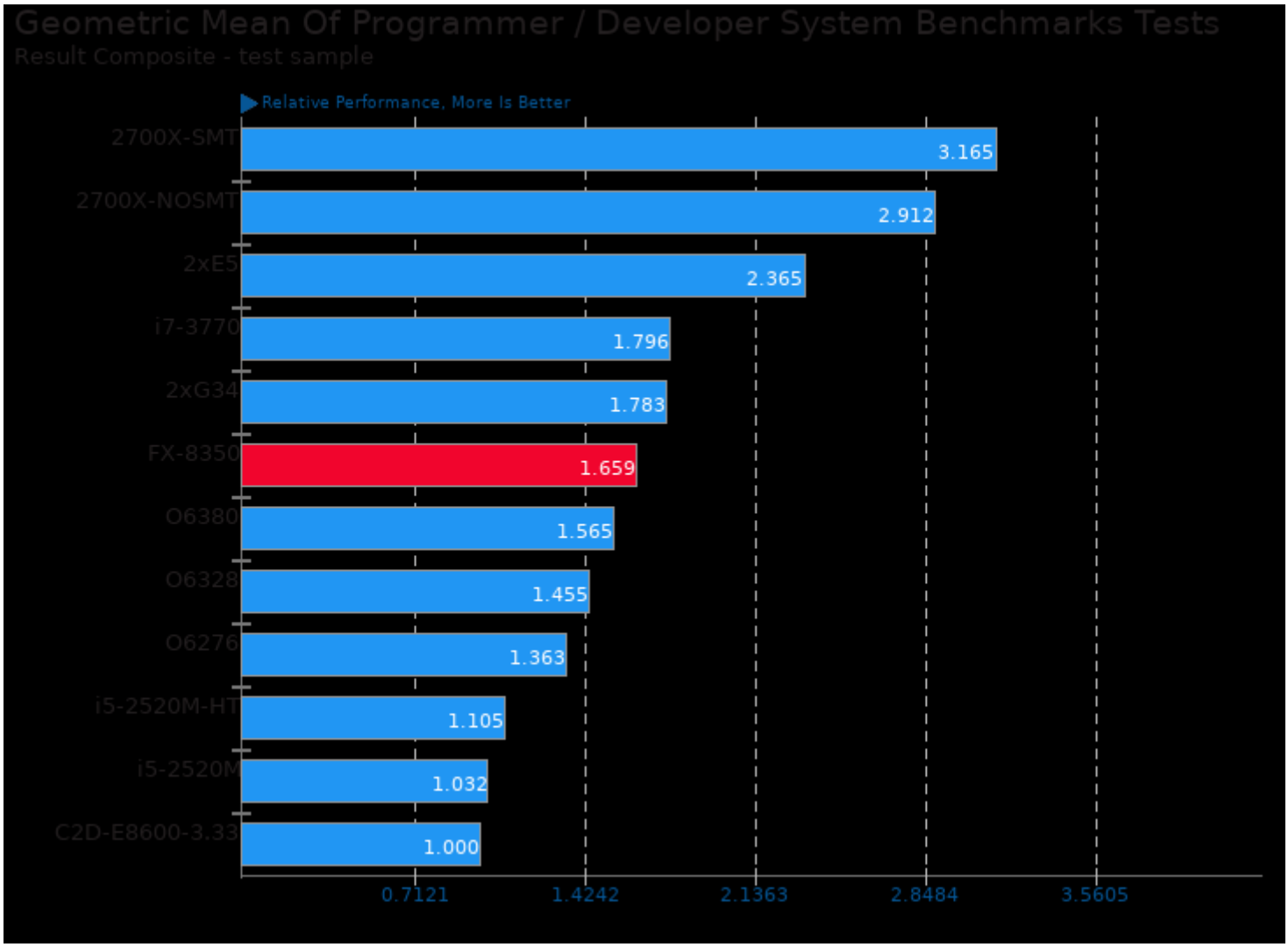
Geometric mean based upon tests: pts/npb and pts/namd



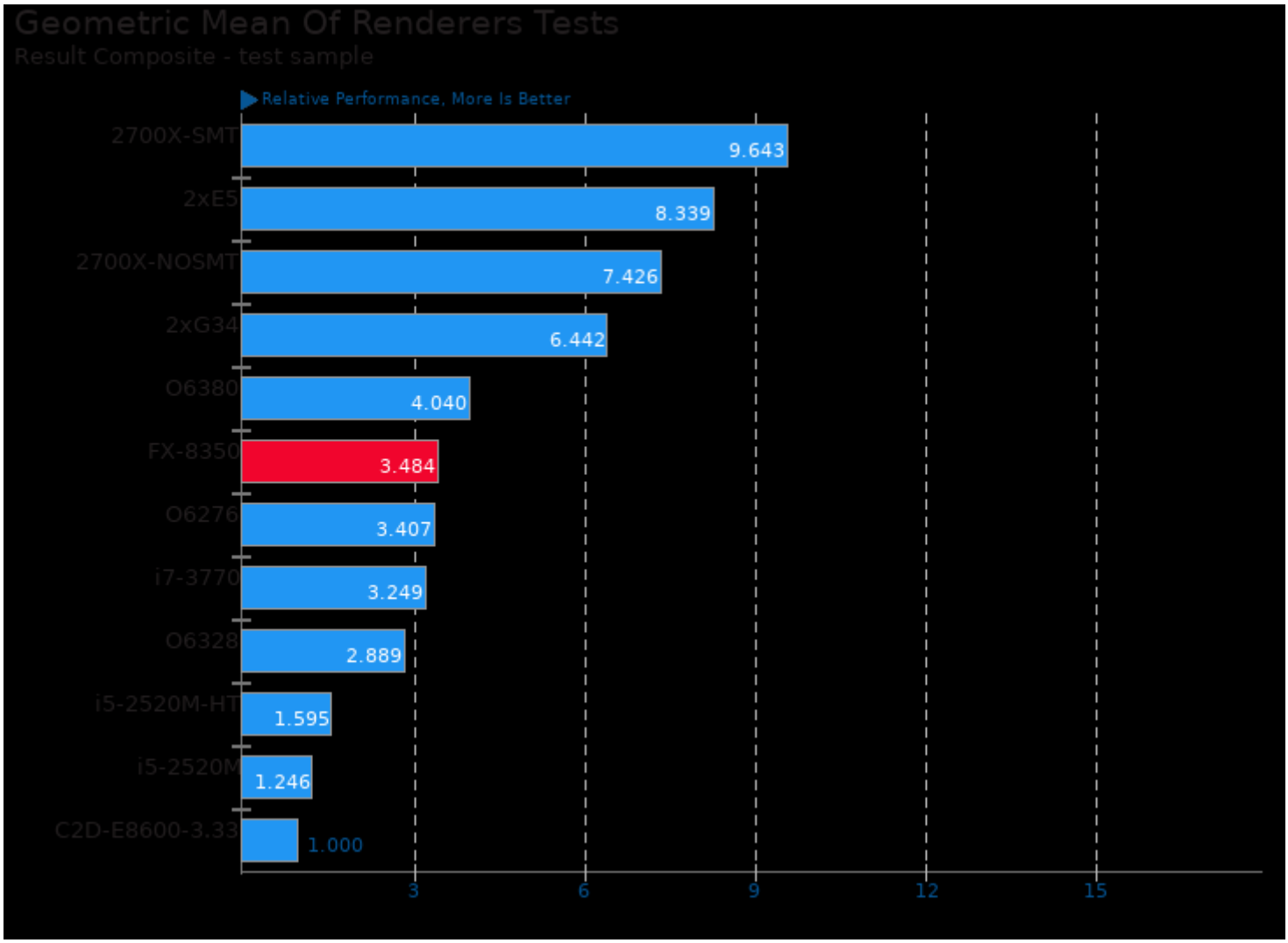
Geometric mean based upon tests: pts/graphics-magick, system/gimp and system/darktable



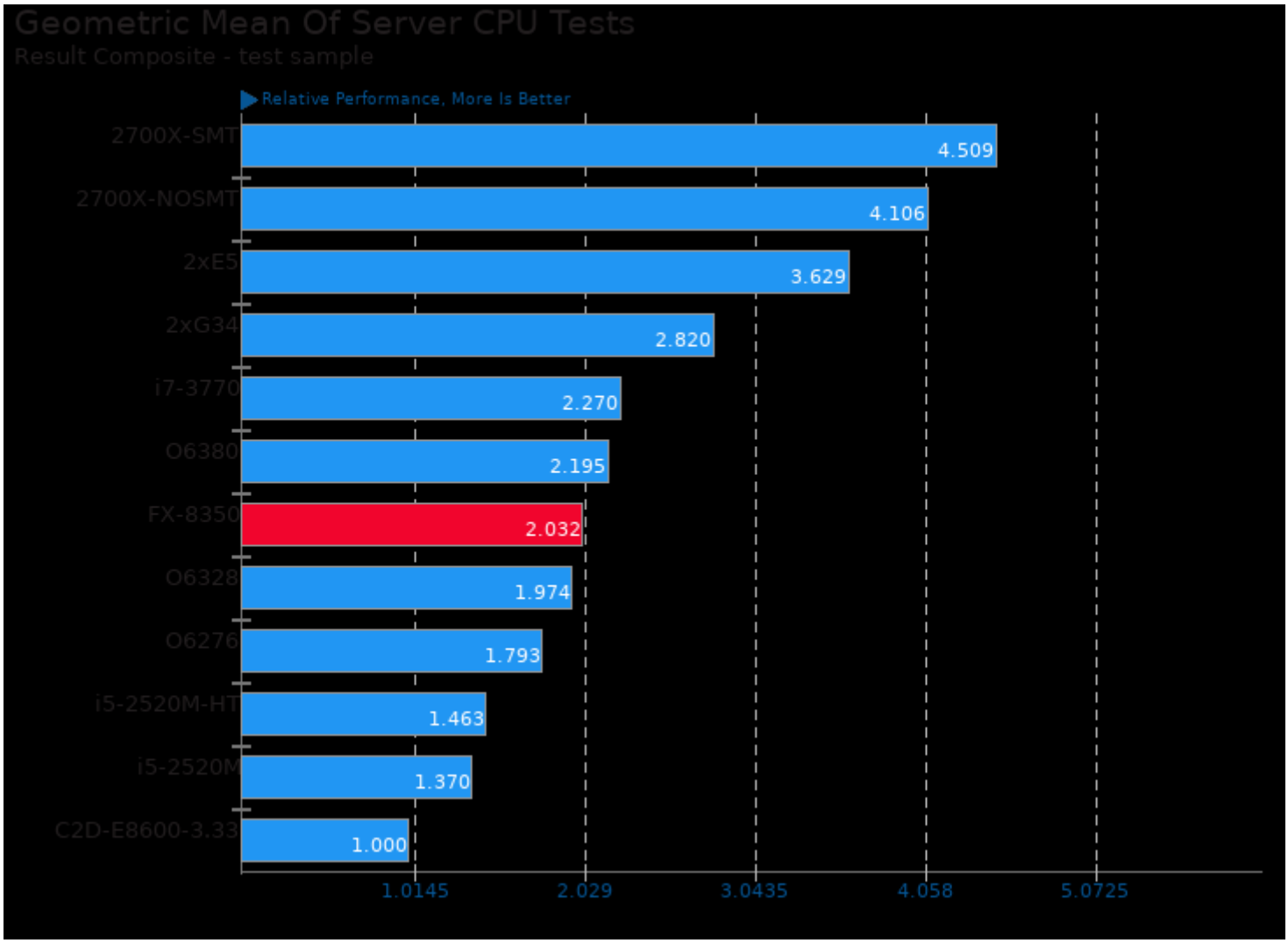
Geometric mean based upon tests: pts/postmark and pts/hackbench



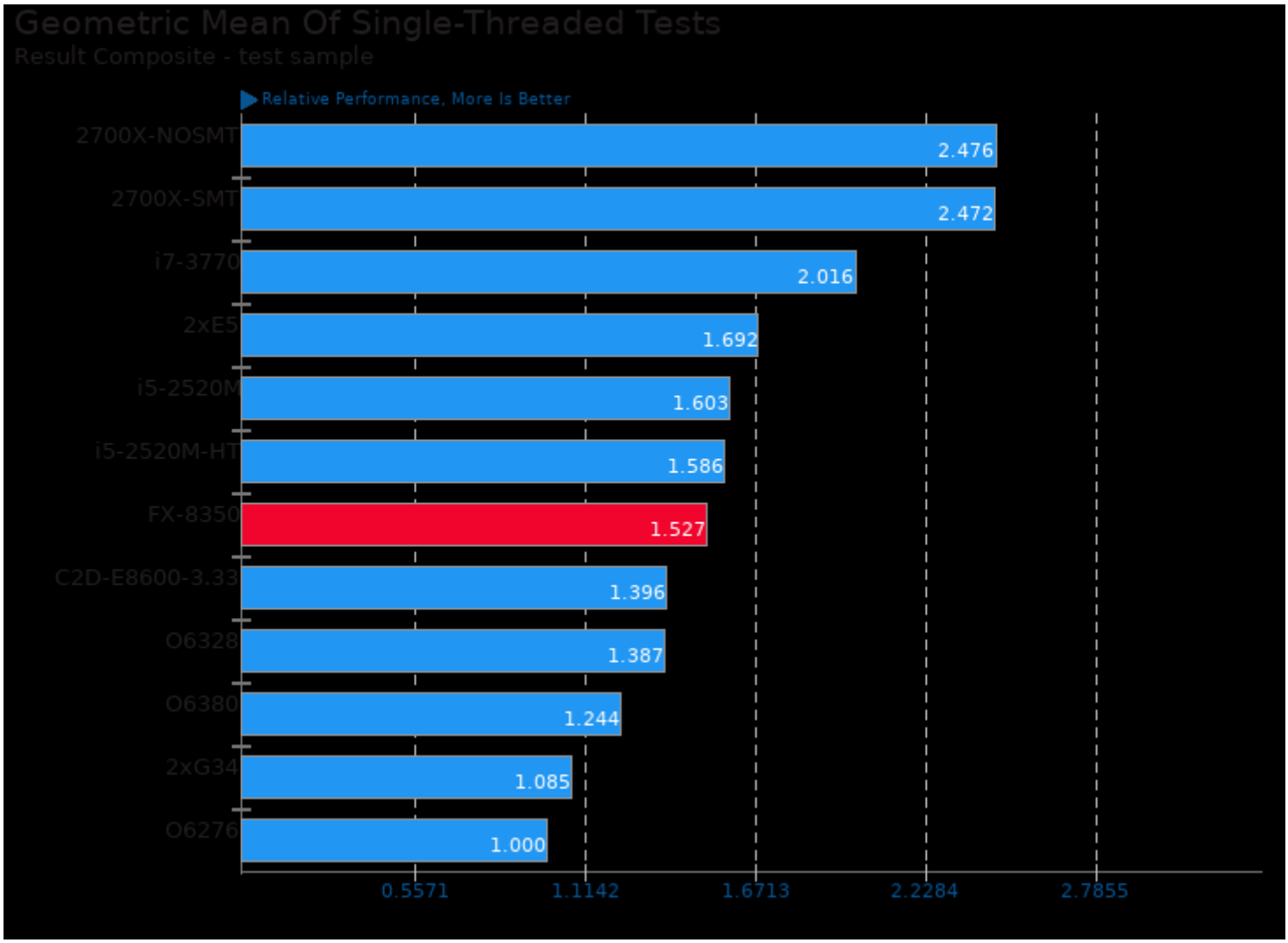
Geometric mean based upon tests: pts/git, system/cryptsetup, pts/build-linux-kernel and pts/build-gcc



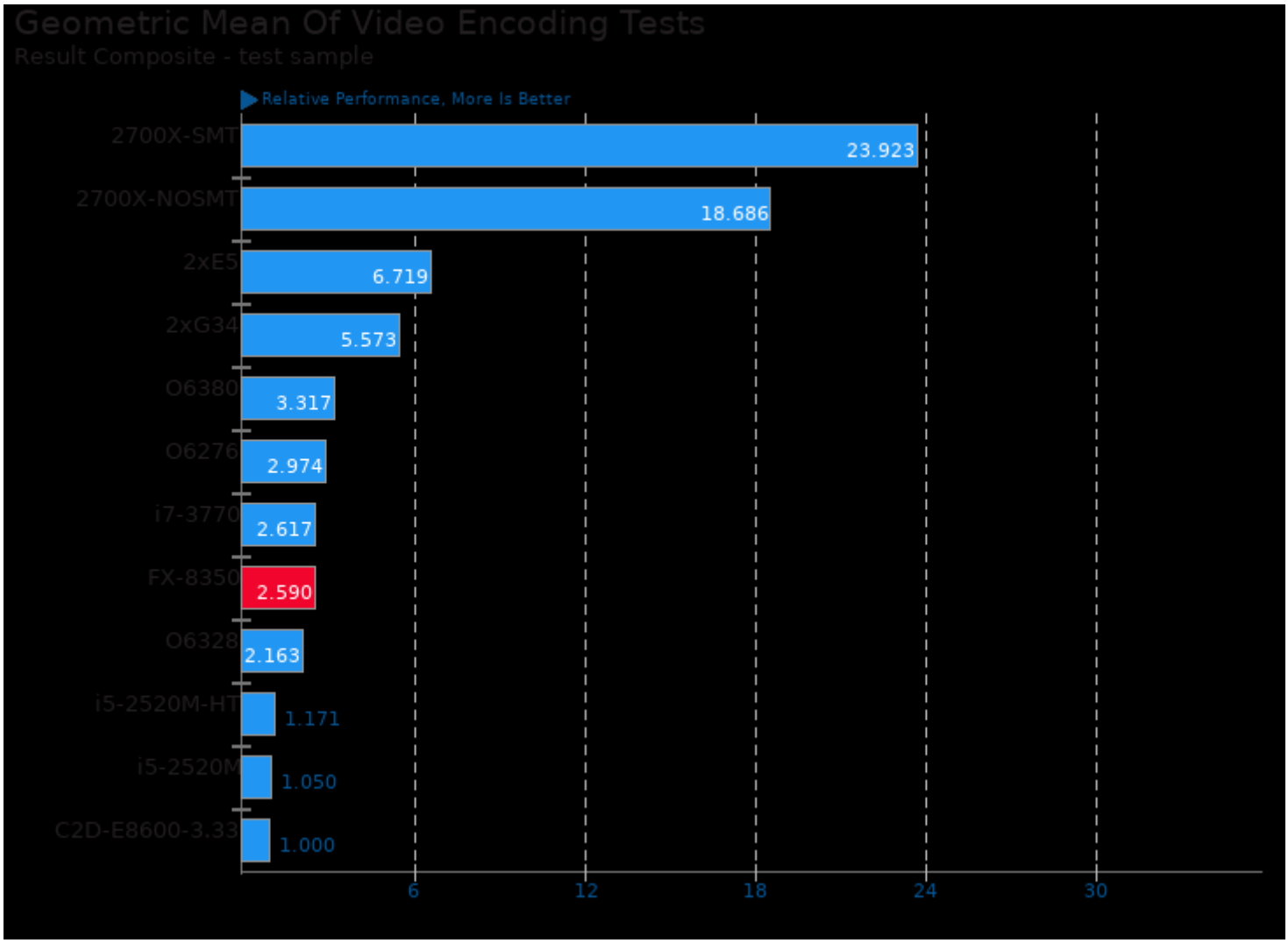
Geometric mean based upon tests: pts/tachyon, pts/blender, pts/appleseed, pts/smallpt and pts/ttsiod-renderer



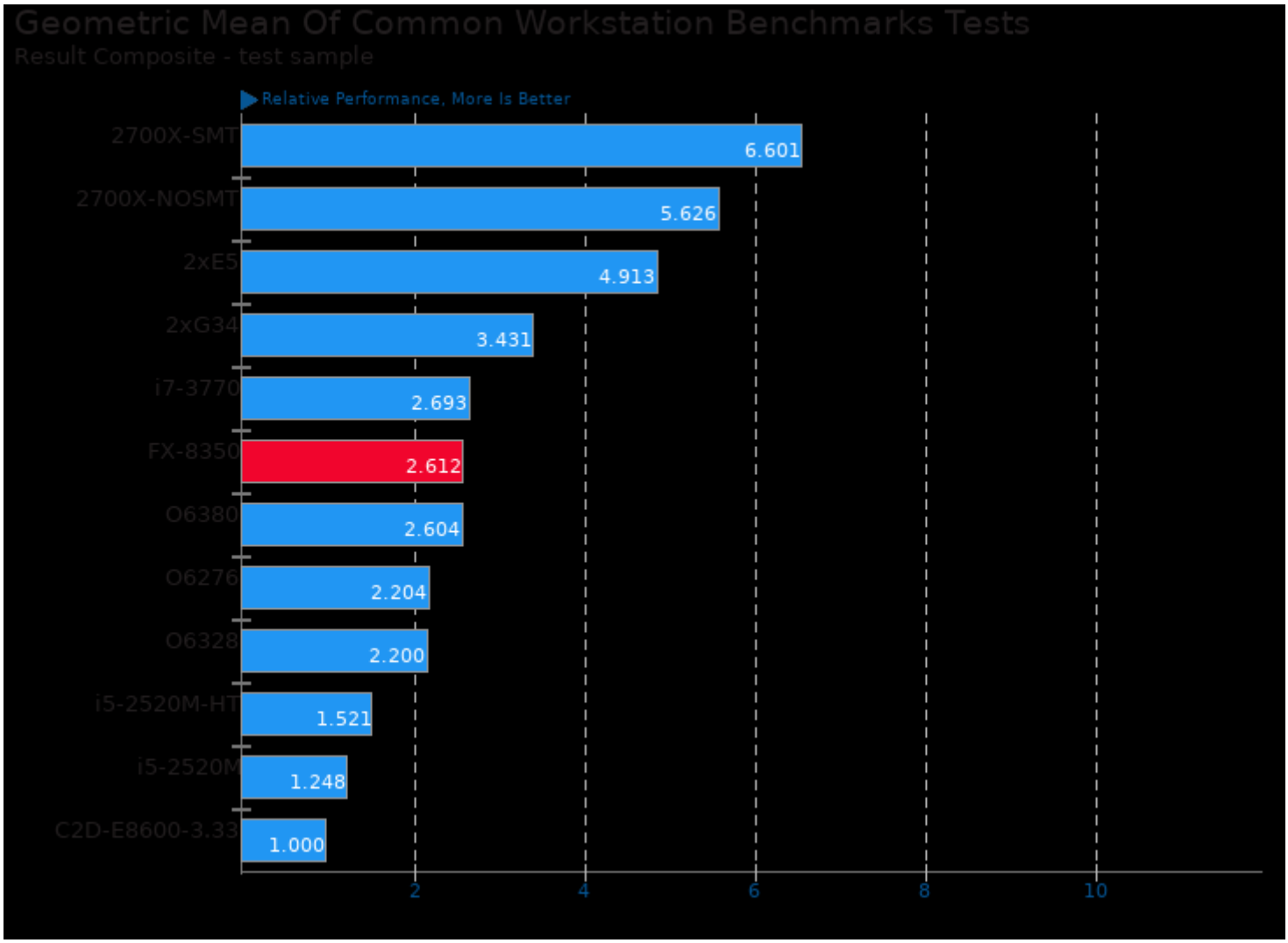
Geometric mean based upon tests: pts/npb, pts/namd, pts/svt-av1, pts/svt-hevc, pts/x264, pts/compress-7zip, pts/stockfish, pts/build-gcc, pts/build-linux-kernel, pts/hackbench, pts/m-queens, pts/glibc-bench, system/gimp, pts/blender, pts/appleseed, system/tesseract-ocr and pts/stream



Geometric mean based upon tests: pts/blake2, pts/swet, pts/compress-gzip, pts/encode-flac, pts/minion, pts/glibc-bench, pts/nginx, pts/git and system/tesseract-ocr



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



Geometric mean based upon tests: pts/blender, pts/swet and pts/git

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 09:01.