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test sample

AMD Opteron 6328 testing with a Supermicro H8SGL (3.0 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

2xE5 had the most wins, coming in first place for 56% of the tests.

Based on the geometric mean of all complete results, the fastest (2xE5) was 2.769x the speed of the slowest (C2D-E8600-3.33). 2xG34 was 0.853x the speed of 2xE5, O6328 was 0.89x the speed of 2xG34, FX-8350 was 0.951x the speed of O6328, O6276 was 0.948x the speed of FX-8350, C2D-E8600-3.33 was 0.528x the speed of O6276.

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

Urban Terror (Resolution: 1680 x 1050 - Total Frame Time) at 64x

OpenArena (Resolution: 1920 x 1080 - Total Frame Time) at 24x

NAS Parallel Benchmarks (Test / Class: LU.C) at 13.498x

Tachyon (Total Time) at 11.757x

Blender (Blend File: BMW27 - Compute: CPU-Only) at 11.211x

m-queens (Time To Solve) at 10.221x

Blender (Blend File: Fishy Cat - Compute: CPU-Only) at 10.124x

N-Queens (Elapsed Time) at 9.99x

NAMD (ATPase Simulation - 327,506 Atoms) at 9.981x
Stream (Type: Scale) at 9.568x.

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: I1tf: Not affected + mds: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retrpoline 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: I1tf: 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/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retrpoline 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: I1tf: Not affected + mds: Not affected + meltdown: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps 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: I1tf: 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/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline STIBP: disabled RSB filling

06276

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: I1tf: Not affected + mds: Not affected + meltdown: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling

06328

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: I1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling

	2xG34	2xE5	FX-8350	C2D-E8600-3.3	O6276	O6328
PostMark - D.T.P (TPS)	2366	3606	3333	2419	2279	2941
Normalized	65.61%	100%	92.43%	67.08%	63.2%	81.56%
Standard Deviation	1.4%	1.7%	1.3%	0.6%	1%	
QGears2 - OpenGL - Text (FPS)	20.31	26.44	28.37	23.45	18.52	23.97
Normalized	71.59%	93.2%	100%	82.66%	65.28%	84.49%
Standard Deviation	0.7%	0.2%	0.7%	0.2%	0.6%	0.3%
QGears2 - OpenGL - Gears (FPS)	437	521	653	383	398	642
Normalized	66.92%	79.79%	100%	58.65%	60.95%	98.32%
Standard Deviation	0.5%	1.8%	2.8%	0.4%	1.5%	2.5%
QGears2 - OpenGL - Image Scaling (FPS)	3714	3368	4605	940	3489	4727
Normalized	78.57%	71.25%	97.42%	19.89%	73.81%	100%
Standard Deviation	5.7%	3%	1.9%	0.5%	2.1%	7.3%
QGears2 - CPU-based Raster - Text (FPS)	18.07	23.90	25.48	20.98	16.50	21.83
Normalized	70.92%	93.8%	100%	82.34%	64.76%	85.68%
Standard Deviation	0.1%	1.4%	0.2%	0.3%	0.3%	0.9%
QGears2 - CPU-based Raster - Gears (FPS)	141	178	187	170	133	167
Normalized	75.4%	95.19%	100%	90.91%	71.12%	89.3%
Standard Deviation	0.4%	0.1%	1.4%	0.2%	0.5%	1.4%
QGears2 - XRender	32.75	47.02	46.74	38.42	30.63	40.79
Extension - Text (FPS)						
Normalized	69.65%	100%	99.4%	81.71%	65.14%	86.75%
Standard Deviation	0.5%	0.3%	0.4%	0.4%	0.9%	1.8%

QGears2 - XRender	148	182	197	180	138	176
Extension - Gears (FPS)						
Normalized	75.13%	92.39%	100%	91.37%	70.05%	89.34%
Standard Deviation	0.4%	0.6%	1.7%	0.2%	1.2%	2.7%
QGears2 - CPU-based Raster	642	824	818	874	606	751
- Image Scaling (FPS)						
Normalized	73.46%	94.28%	93.59%	100%	69.34%	85.93%
Standard Deviation	1.2%	0.2%	1.4%	0.4%	0.6%	1.3%
QGears2 - XRender	811	969	1043	1034	778	942
Extension - Image Scaling						
Normalized	77.76%	92.91%	100%	99.14%	74.59%	90.32%
Standard Deviation	0.7%	0.4%	1%	0.2%	2.7%	0.6%
ET: Legacy - Default - 1680 x 1050 (FPS)	95.03	148.70	128.17	23.50	88.13	114.70
Normalized	63.91%	100%	86.19%	15.8%	59.27%	77.14%
Standard Deviation	0.4%	0.5%	0.1%	0%	0.8%	0.5%
ET: Legacy - Renderer2 - 1680 x 1050 (FPS)	79.87	133.94	97.37		73.93	95.17
Normalized	59.63%	100%	72.7%		55.2%	71.05%
Standard Deviation	0.3%	2.8%	0.5%		0.5%	0.6%
OpenArena - 1920 x 1080 (FPS)	96.87	151.23	102.27	49.57	97.83	129.13
Normalized	64.05%	100%	67.63%	32.78%	64.69%	85.39%
Standard Deviation	1.8%	1.4%	0.4%	0.1%	0.5%	1.4%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Candela City (FPS)	56.27	25.42	28.11	16.37	87.06	104.87
Normalized	53.66%	24.24%	26.8%	15.61%	83.02%	100%
Standard Deviation	0.4%	0.3%	1.7%	2%	2%	2.4%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Cocoa Temple (FPS)	53.71	27.80	34.08	13.30	76.10	98.76
Normalized	54.38%	28.15%	34.51%	13.47%	77.06%	100%
Standard Deviation	1.3%	1.1%	0.4%	4.9%	2.7%	1.6%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - STK Enterprise (FPS)	65.97	34.72	48.09	36.72	114.67	131.94
Normalized	50%	26.31%	36.45%	27.83%	86.91%	100%
Standard Deviation	1.5%	2%	3.4%	2.5%	3%	2.2%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Antediluvian Abyss (FPS)	59.79	27.05	32.59	24.34	103.24	114.24
Normalized	52.34%	23.68%	28.53%	21.31%	90.37%	100%
Standard Deviation	0.4%	1.7%	2.1%	2.2%	0.9%	1.2%
SuperTuxKart - 1680 x 1050 - Fullscreen - High - 8 - Cornfield Crossing (FPS)	63.14	31.41	39.50	20.34	108.09	121.24
Normalized	52.08%	25.91%	32.58%	16.78%	89.15%	100%
Standard Deviation	0.8%	0.2%	1.8%	1.5%	0.3%	1%

SuperTuxKart - 1680 x 1050 -	75.20	39.10	55.47	48.44	128.59	146.54
Fullscreen - High - 8 -						
O.s.M.C (FPS)						
Normalized	51.32%	26.68%	37.85%	33.06%	87.75%	100%
Standard Deviation	2.7%	0.8%	2.1%	2.1%	1.8%	2.3%
SuperTuxKart - 1680 x 1050 -	57.97	29.41	36.12	18.03	90.88	107.38
Fullscreen - High - 8 - G.P.I						
(FPS)						
Normalized	53.99%	27.39%	33.64%	16.79%	84.63%	100%
Standard Deviation	0.6%	0.9%	0.7%	1.1%	2.7%	1%
SuperTuxKart - 1680 x 1050 -	69.07	36.76	50.28	25.18	120.39	135.83
Fullscreen - High - 8 - A.t.L						
(FPS)						
Normalized	50.85%	27.06%	37.02%	18.54%	88.63%	100%
Standard Deviation	1.9%	0.5%	2.9%	1.4%	1.5%	1.8%
SuperTuxKart - 1680 x 1050 -	74.72	40.33	59.28	46.84	125.75	140.57
Fullscreen - High - 8 -						
Hacienda (FPS)						
Normalized	53.16%	28.69%	42.17%	33.32%	89.46%	100%
Standard Deviation	3.2%	1.6%	1.8%	2.9%	0.5%	2.5%
SuperTuxKart - 1680 x 1050 -	59.20	33.33	47.65	31.89	101.80	116.26
Fullscreen - High - 8 - Old						
Mine (FPS)						
Normalized	50.92%	28.67%	40.99%	27.43%	87.56%	100%
Standard Deviation	0.9%	0.5%	0.3%	3.4%	2.3%	0.3%
SuperTuxKart - 1680 x 1050 -	64.66	35.36	50.76	30.24	114.09	125.93
Fullscreen - High - 8 - Zen						
Garden (FPS)						
Normalized	51.35%	28.08%	40.31%	24.01%	90.6%	100%
Standard Deviation	1.2%	2.6%	1.9%	1.6%	1.6%	1.6%
Urban Terror - 1680 x 1050	318	420	412	69.40	298.30	403.90
(FPS)						
Normalized	75.71%	100%	98.1%	16.52%	71.02%	96.17%
Standard Deviation	1%	1.5%	1.5%	2.7%	2.2%	2.9%
Unreal Tournament 2004	93.05	130.67	127.56	24.30	86.80	115.84
Demo - AS-Convoy						
Botmatch - 1680 x 1050						
Normalized	71.21%	100%	97.62%	18.6%	66.43%	88.65%
Standard Deviation	1.3%	4%	0.7%	0.1%	2.4%	1.5%
Unreal Tournament 2004	167	227	226	32.52	152.65	202.54
Demo - DM-Rankin Botmatch						
- 1680 x 1050 (FPS)						
Normalized	73.57%	100%	99.56%	14.33%	67.25%	89.22%
Standard Deviation	0.4%	6%	2.3%	0.9%	1.3%	4.7%
Unreal Tournament 2004	109	149	152	24.47	100.22	137.73
Demo - O.T.B - 1680 x 1050						
(FPS)						
Normalized	71.71%	98.03%	100%	16.1%	65.93%	90.61%
Standard Deviation	0.3%	5.4%	0.5%	0%	1.5%	0.4%

Unreal Tournament 2004	135	174	187	28.54	129.04	170.75
Demo - B.C.B - 1680 x 1050						
(FPS)						
Normalized	72.19%	93.05%	100%	15.26%	69.01%	91.31%
Standard Deviation	6.3%	7.8%	4.2%	2.5%	5.3%	4.8%
Unreal Tournament 2004	156	213	213	28.95	145.97	195.88
Demo - C.F.B - 1680 x 1050						
(FPS)						
Normalized	73.24%	100%	100%	13.59%	68.53%	91.96%
Standard Deviation	1.1%	1.5%	0.4%	0.3%	2%	0.9%
Unreal Tournament 2004	215	291	294	38.58	198.49	269.46
Demo - C.B.B - 1680 x 1050						
(FPS)						
Normalized	73.13%	98.98%	100%	13.12%	67.51%	91.65%
Standard Deviation	0.9%	5%	0.9%	0%	0.5%	0.5%
Stream - Copy (MB/s)	63622	59058	17987	6857	23959	31293
Normalized	100%	92.83%	28.27%	10.78%	37.66%	49.19%
Standard Deviation	1.5%	1.3%	0%	0%	3%	2.2%
Stream - Scale (MB/s)	40426	39552	11176	4225	15472	21174
Normalized	100%	97.84%	27.65%	10.45%	38.27%	52.38%
Standard Deviation	1.4%	1.1%	0%	0.1%	2.1%	1%
Stream - Triad (MB/s)	44652	12499	5365	17780	23381	
Normalized	98.45%	100%	27.99%	12.02%	39.82%	52.36%
Standard Deviation	1.3%	1.1%	0%	0.1%	1.5%	1.4%
Stream - Add (MB/s)	45316	12521	5375	16742	23258	
Normalized	97.15%	100%	27.63%	11.86%	36.95%	51.32%
Standard Deviation	1.6%	1%	0%	0.1%	1.7%	0.5%
NAS Parallel Benchmarks -	1926	2362	2661	2213	1702	2308
BT.A (Mop/s)						
Normalized	72.38%	88.76%	100%	83.16%	63.96%	86.73%
Standard Deviation	0.3%	0.2%	0.2%	0.1%	0.3%	0.4%
NAS Parallel Benchmarks -	347	474	126	65.93	152.38	107.24
EP.C (Mop/s)						
Normalized	73.21%	100%	26.58%	13.91%	32.15%	22.62%
Standard Deviation	1.5%	0.4%	0.2%	1.2%	0.9%	0%
NAS Parallel Benchmarks -	2867	6129	3642	1431	3236	3580
FT.A (Mop/s)						
Normalized	46.78%	100%	59.42%	23.35%	52.8%	58.41%
Standard Deviation	2.6%	0.5%	0.2%	0.1%	3%	2.9%
NAS Parallel Benchmarks -	3349	6524	3657	1499	2930	3321
FT.B (Mop/s)						
Normalized	51.33%	100%	56.05%	22.98%	44.91%	50.9%
Standard Deviation	0.7%	1.5%	1.5%	0.3%	1.7%	4.4%
NAS Parallel Benchmarks -	20701	21526	7525	3421	10438	7962
LU.A (Mop/s)						
Normalized	96.17%	100%	34.96%	15.89%	48.49%	36.99%
Standard Deviation	11%	0.2%	1%	0.1%	0.2%	7.2%
NAS Parallel Benchmarks -	22730	22105	4779	1684	7792	6654
LU.C (Mop/s)						
Normalized	100%	97.25%	21.03%	7.41%	34.28%	29.27%
Standard Deviation	1.4%	0.2%	0.6%	0.3%	2.9%	4.4%

test sample

NAS Parallel Benchmarks - 1075	1756	1464	977	967	1254
SP.A (Mop/s)					
Normalized	61.22%	100%	83.37%	55.64%	55.07%
Standard Deviation	0.5%	0.3%	0.1%	0.1%	0.3%
NAMD - ATPase Simulation - 2.35464	1.85031	5.96895	18.46840	5.26415	7.23904
327,506 Atoms (days/ns)					
Normalized	78.58%	100%	31%	10.02%	35.15%
Standard Deviation	0.2%	0.3%	0.2%	0.2%	0%
BLAKE2 (Cycles/Byte) 7.81	4.94	9.41	6.82	7.13	8.24
Normalized	63.25%	100%	52.5%	72.43%	69.28%
Standard Deviation	0.1%	11.2%	0.1%	0.2%	0%
TTSIOD 3D Renderer - 241	349	150	60.44	151.64	119.41
P.R.W.S.S.M (FPS)					
Normalized	69.05%	100%	42.98%	17.32%	43.45%
Standard Deviation	1.2%	0.1%	0.1%	0.2%	0.3%
SVT-AV1 - 1.8.b.Y.T.A.V.E	5.51	5.31	2.62		2.15
(FPS)					
Normalized	100%	96.37%	47.55%		52.27%
Standard Deviation	0.2%	0.3%	0.2%		0.6%
SVT-HEVC - 1.8.b.Y.T.H.V.E	8.78	13.72	4.21	1.98	4.99
(FPS)					3.55
Normalized	63.99%	100%	30.69%	14.43%	36.37%
Standard Deviation	0.1%	0%	0.1%	0%	0.1%
x264 - H.2.V.E (FPS)	68.37	63.58	30.80	9.76	34.25
(FPS)					25.46
Normalized	100%	92.99%	45.05%	14.28%	50.1%
Standard Deviation	0.5%	1.5%	0.5%	0%	0.2%
GraphicsMagick - Swirl	117	153	124	60	102
(Iterations/min)					109
Normalized	76.47%	100%	81.05%	39.22%	66.67%
Standard Deviation	0.7%				0.6%
GraphicsMagick - Rotate	127	176	164	124	148
(Iterations/min)					
Normalized	72.16%	100%	93.18%	78.98%	70.45%
Standard Deviation	0.5%	0.7%			84.09%
GraphicsMagick - Sharpen	96	119	72	38	68
(Iterations/min)					61
Normalized	80.67%	100%	60.5%	31.93%	57.14%
Standard Deviation	1%	0.5%			51.26%
GraphicsMagick - Enhanced	99	106	76	32	72
(Iterations/min)					66
Normalized	93.4%	100%	71.7%	30.19%	67.92%
Standard Deviation	0.5%	0.5%			62.26%
GraphicsMagick - Resizing	131	173	157	99	123
(Iterations/min)					137
Normalized	75.72%	100%	90.75%	57.23%	71.1%
Standard Deviation	1.3%				79.19%
GraphicsMagick - Noise-Gaussian	85	109	59	20	58
(Iterations/min)					51
Normalized	77.98%	100%	54.13%	18.35%	53.21%
Standard Deviation	1.4%				46.79%

GraphicsMagick - HWB	138	156	160	118	130	142
Color Space (Iterations/min)						
Normalized	86.25%	97.5%	100%	73.75%	81.25%	88.75%
Standard Deviation		2.9%				
7-Zip Compression - C.S.T (MIPS)	48721	45435	22049	6039	23983	18151
Normalized	100%	93.26%	45.26%	12.4%	49.23%	37.25%
Standard Deviation	1.6%	1%	0.5%	0.3%	0.7%	0.3%
Stockfish - Total Time (Nodes/s)	24611789	24267670	10210565		11123007	8509676
Normalized	100%	98.6%	41.49%		45.19%	34.58%
Standard Deviation	0.9%	0.7%	0.6%		0.9%	1.4%
Swet - Average (Operations/sec)	274062809	481406883	377403508	441991654	270257192	329055712
Normalized	56.93%	100%	78.4%	91.81%	56.14%	68.35%
Standard Deviation	0.6%	2.9%	1.4%	0.9%	3.5%	1.4%
Timed GCC Compilation - Time To Compile (sec)	1670	1355	1885	4883	2221	2197
Normalized	81.14%	100%	71.88%	27.75%	61.01%	61.68%
Standard Deviation	0.1%	0.3%	0.1%	0%	0.3%	0.3%
Timed Linux Kernel	93.05	95.02	193.03	649.02	176.53	225.11
Compilation - Time To Compile (sec)						
Normalized	100%	97.93%	48.2%	14.34%	52.71%	41.34%
Standard Deviation	2.9%	2.9%	1.2%	0.4%	2.5%	1.4%
Parallel BZIP2 Compression - 2.F.C (sec)	4.14	4.38	9.05	28.86	8.12	10.96
Normalized	100%	94.52%	45.75%	14.35%	50.99%	37.77%
Standard Deviation	0.2%	0.4%	0.6%	2.9%	0.8%	1%
Rust Prime Benchmark - P.N.T.T.2.0.0 (sec)	26.18	26.19	51.03	101.71	60.25	60.04
Normalized	100%	99.96%	51.3%	25.74%	43.45%	43.6%
Standard Deviation	0.1%	0.6%	0%	0%	0.1%	0.1%
Smallpt - G.I.R.1.S (sec)	15.26	14.71	38.73	136.50	33.75	45.90
Normalized	96.4%	100%	37.98%	10.78%	43.59%	32.05%
Standard Deviation	0.2%	0.2%	0.3%	0.1%	0.1%	0.1%
Y-Cruncher - C.5.P.D (sec)	47.74	48.72	102.60	442.55	91.54	125.51
Normalized	100%	97.99%	46.53%	10.79%	52.15%	38.04%
Standard Deviation	0.5%	0.3%	0.2%	0%	0.1%	0.1%
Gzip Compression - L.S.T.A.T.t.g (sec)	75.70	45.27	54.92	50.41	81.36	63.67
Normalized	59.8%	100%	82.43%	89.8%	55.64%	71.1%
Standard Deviation	0.1%	1.5%	0.3%	0.7%	0.2%	0.7%
FLAC Audio Encoding - WAV To FLAC (sec)	22.51	16.38	18.73	25.92	24.15	20.60
Normalized	72.77%	100%	87.45%	63.19%	67.83%	79.51%
Standard Deviation	0.9%	1.4%	1.2%	0.5%	0.7%	1.2%
Hackbench - 8 - Thread (sec)	34.27	27.75	66.36	199.15	66.28	82.30
Normalized	80.97%	100%	41.82%	13.93%	41.87%	33.72%
Standard Deviation	1.5%	3.5%	4.6%	0.4%	2.5%	1.5%
Hackbench - 8 - Process	23.50	26.11	57.60	189.80	46.48	62.04
Normalized	100%	90%	40.8%	12.38%	50.56%	37.88%
Standard Deviation	1.1%	0.9%	4.6%	0.8%	2.8%	4.8%

m-queens - Time To Solve	73.04	80.80	184.44	746.56	164.91	216.65
	(sec)					
Normalized	100%	90.4%	39.6%	9.78%	44.29%	33.71%
Standard Deviation	0.3%	0.1%	0%	0%	0.4%	0.1%
Mencoder - AVI To LAVC	36.06	24.05	26.51	31.00	38.93	29.90
Normalized	66.69%	100%	90.72%	77.58%	61.78%	80.43%
Standard Deviation	0.2%	1.5%	1%	0.5%	0.8%	0.2%
Minion - Graceful (sec)	100.13	72.37	70.36	77.12	104.23	78.08
Normalized	70.27%	97.22%	100%	91.23%	67.5%	90.11%
Standard Deviation	0.1%	0.7%	0.8%	0.3%	0.5%	0.2%
Minion - Solitaire (sec)	149.87	97.23	105.72	110.33	161.41	117.89
Normalized	64.88%	100%	91.97%	88.13%	60.24%	82.48%
Standard Deviation	0.8%	0.7%	0.7%	0.4%	0.7%	0.7%
Minion - Quasigroup (sec)	236	160	171	177	252	190
Normalized	67.8%	100%	93.57%	90.4%	63.49%	84.21%
Standard Deviation	0.3%	0.4%	0.8%	0.6%	0.4%	0.4%
N-Queens - Elapsed Time	13.57	14.34	34.22	135.56	30.95	39.70
	(sec)					
Normalized	100%	94.63%	39.66%	10.01%	43.84%	34.18%
Standard Deviation	0%	0%	0%	0%	0%	0%
Tachyon - Total Time (sec)	7.27	5.55	17.34	65.25	16.26	20.72
Normalized	76.34%	100%	32.01%	8.51%	34.13%	26.79%
Standard Deviation	0.4%	0.2%	0.2%	0.7%	0.3%	0.2%
glibc bench - cos	108064	50157	81177	89084	116470	89815
	(nanoseconds)					
Normalized	46.41%	100%	61.79%	56.3%	43.06%	55.84%
Standard Deviation	0%	0.4%	0.9%	0.7%	0.1%	0.1%
glibc bench - ffs	3.61	2.86	2.34	2.88	6.76	2.67
	(nanoseconds)					
Normalized	64.82%	81.82%	100%	81.25%	34.62%	87.64%
Standard Deviation	12.3%	0.8%	0.4%	0.1%	48.9%	5%
glibc bench - sin	107594	50090	80573	88085	115975	89642
	(nanoseconds)					
Normalized	46.55%	100%	62.17%	56.87%	43.19%	55.88%
Standard Deviation	0.2%	0.2%	0.2%	0.3%	0.1%	0.2%
glibc bench - sqrt	6.55	5.72	3.38	5.33	6.14	3.77
	(nanoseconds)					
Normalized	51.6%	59.09%	100%	63.41%	55.05%	89.66%
Standard Deviation	55.2%	0.8%	0.3%	0%	55.6%	0.5%
glibc bench - tanh	46.79	22.91	31.00	31.22	42.93	34.60
	(nanoseconds)					
Normalized	48.96%	100%	73.9%	73.38%	53.37%	66.21%
Standard Deviation	15.6%	0.9%	0.2%	0.2%	0.9%	0.2%
glibc bench - ffsl	4.25	3.14	2.48	3.18	5.13	2.78
	(nanoseconds)					
Normalized	58.35%	78.98%	100%	77.99%	48.34%	89.21%
Standard Deviation	37.9%	1.1%	1.3%	0.1%	52.1%	1.4%
glibc bench - pthread_once	3.89	2.86	2.36	2.96	4.21	2.61
	(nanoseconds)					
Normalized	60.67%	82.52%	100%	79.73%	56.06%	90.42%
Standard Deviation	47%	1.5%	2.8%	10.5%	44.3%	8.4%

Cryptsetup - PBKDF2-sha512	683882	920883	851130	775210	626200	773369
Normalized	74.26%	100%	92.43%	84.18%	68%	83.98%
Standard Deviation	0.8%	0.2%	0.5%	0.6%	1.2%	1.3%
Cryptsetup - PBKDF2-whirlpool	278516	538099	390483	493990	264808	350160
Iterations/sec)						
Normalized	51.76%	100%	72.57%	91.8%	49.21%	65.07%
Standard Deviation	2.7%	0.1%	0.2%	0.1%	1%	0.7%
Darktable - Boat - OpenCL (sec)	11.40	10.27	24.60	64.73	20.40	23.80
Normalized	90.09%	100%	41.75%	15.87%	50.34%	43.15%
Standard Deviation	2.8%	0.2%	0.4%	0.1%	0.7%	2.3%
Darktable - Boat - CPU-only (sec)	11.05	10.35	24.48	64.73	20.34	23.82
Normalized	93.67%	100%	42.28%	15.99%	50.88%	43.45%
Standard Deviation	0.8%	0.7%	0.1%	0.1%	0.4%	1.7%
Darktable - Masskrug - OpenCL (sec)	11.76	8.63	15.52	40.40	16.14	18.33
Normalized	73.38%	100%	55.61%	21.36%	53.47%	47.08%
Standard Deviation	2.3%	0.8%	0.1%	0.1%	2.9%	1%
Darktable - Masskrug - CPU-only (sec)	11.48	8.70	15.51	40.36	15.74	18.62
Normalized	75.78%	100%	56.09%	21.56%	55.27%	46.72%
Standard Deviation	0.3%	2.8%	0.1%	0%	0.3%	1.9%
Darktable - Server Rack - OpenCL (sec)	0.22	0.19	0.42	1.02	0.36	0.41
Normalized	86.36%	100%	45.24%	18.63%	52.78%	46.34%
Standard Deviation	2%	0.5%	1.1%	0.3%	2.1%	2.8%
Darktable - Server Room - OpenCL (sec)	5.89	4.84	11.30	27.53	10.36	12.35
Normalized	82.17%	100%	42.83%	17.58%	46.72%	39.19%
Standard Deviation	1.1%	0.8%	0.4%	0.2%	0.5%	0.6%
Darktable - Server Rack - CPU-only (sec)	0.22	0.19	0.42	1.04	0.35	0.41
Normalized	86.36%	100%	45.24%	18.27%	54.29%	46.34%
Standard Deviation	0.7%	1.4%	0%	0.6%	0.8%	0.2%
Darktable - Server Room - CPU-only (sec)	6.04	4.87	11.31	27.57	10.32	12.44
Normalized	80.63%	100%	43.06%	17.66%	47.19%	39.15%
Standard Deviation	2.9%	0.7%	0.5%	0.2%	1.3%	0.9%
GIMP - resize (sec)	19.29	13.90	13.71	14.19	20.63	15.09
Normalized	71.07%	98.63%	100%	96.62%	66.46%	90.85%
Standard Deviation	0.5%	1.9%	1%	1.1%	0.6%	0.8%
GIMP - rotate (sec)	40.09	31.59	28.91	29.46	43.50	32.32
Normalized	72.11%	91.52%	100%	98.13%	66.46%	89.45%
Standard Deviation	0.5%	0.1%	0.3%	0.1%	0.4%	0.3%
GIMP - auto-levels (sec)	38.52	28.27	27.02	29.53	40.32	30.75
Normalized	70.15%	95.58%	100%	91.5%	67.01%	87.87%
Standard Deviation	1.3%	0.8%	0.7%	0.1%	0.8%	0.4%
GIMP - unsharp-mask (sec)	94.84	59.45	63.09	59.44	101.33	68.15
Normalized	62.67%	99.98%	94.21%	100%	58.66%	87.22%
Standard Deviation	0.9%	0.6%	0.5%	0.3%	0.5%	0.5%

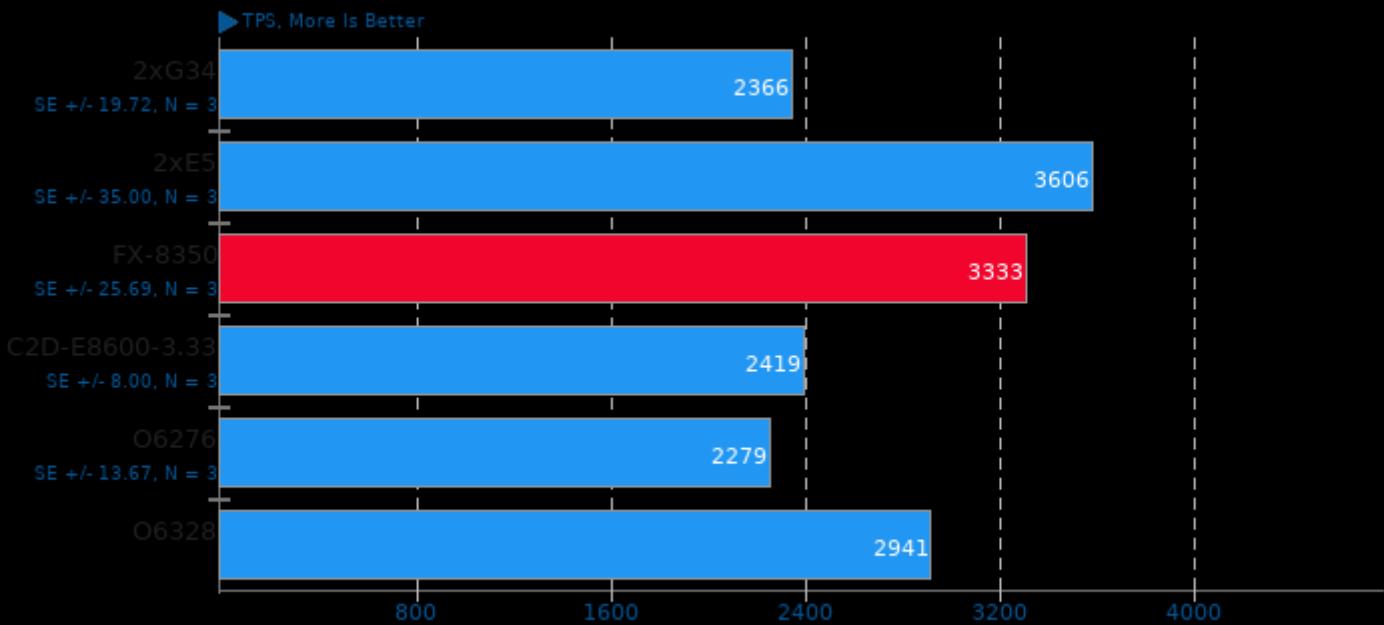
Blender - BMW27 - OpenCL	989	569	769	2682	1181	921
(sec)						
Normalized	57.53%	100%	73.99%	21.22%	48.18%	61.78%
Standard Deviation	0.8%	0.4%	0.4%	0%	0.1%	0.8%
Blender - BMW27 - CPU-Only	267	232	626	2601	586	751
(sec)						
Normalized	86.89%	100%	37.06%	8.92%	39.59%	30.89%
Standard Deviation	0.2%	0.3%	0.1%	0.1%	0.1%	0.6%
Blender - Classroom - OpenCL (sec)	859	857	1760		1838	2117
Normalized	99.77%	100%	48.69%		46.63%	40.48%
Standard Deviation	0.2%	0.7%	0.6%		0.1%	0.3%
Blender - Fishy Cat - OpenCL (sec)	2504	1406	1779	3513	2829	2085
Normalized	56.15%	100%	79.03%	40.02%	49.7%	67.43%
Standard Deviation	0.3%	0.4%	0.2%	0.6%	0.3%	1.3%
Blender - Barbershop - OpenCL (sec)	1301	940	2290		2375	2779
Normalized	72.25%	100%	41.05%		39.58%	33.83%
Standard Deviation	0.7%	0.5%	0.4%		0.9%	0.2%
Blender - Classroom - CPU-Only (sec)	762	653	1716		1718	2048
Normalized	85.7%	100%	38.05%		38.01%	31.88%
Standard Deviation	0.3%	0.6%	0.2%		0.3%	0.2%
Blender - Fishy Cat - CPU-Only (sec)	395	330	888	3341	873	1070
Normalized	83.54%	100%	37.16%	9.88%	37.8%	30.84%
Standard Deviation	0%	0.1%	0.2%	0.1%	0.1%	0.1%
Blender - Barbershop - CPU-Only (sec)	965	847	2223		2073	2709
Normalized	87.77%	100%	38.1%		40.86%	31.27%
Standard Deviation	0.1%	0.2%	0.2%		0.4%	0.4%
Blender - Pabellon	2974	1671	3498		3514	
Barcelona - OpenCL (sec)						
Normalized	56.19%	100%	47.77%		47.55%	
Standard Deviation	0.2%	0.5%	0.1%		0.2%	
Blender - Pabellon	935	821	2229		2060	2707
Barcelona - CPU-Only (sec)						
Normalized	87.81%	100%	36.83%		39.85%	30.33%
Standard Deviation	0.2%	0.3%	0.2%		0.4%	0.2%
NGINX Benchmark - S.W.P.S (Req/sec)	15408	19298	18412	16823	14959	17660
Normalized	79.84%	100%	95.41%	87.17%	77.52%	91.51%
Standard Deviation	0.3%	0.3%	0.4%	0.1%	0.2%	0.2%
Appleseed - Emily (sec)	584	585	1161		1208	1496
Normalized	100%	99.83%	50.3%		48.34%	39.04%
Appleseed - Disney Material (sec)	389	391	780		788	943
Normalized	100%	99.49%	49.87%		49.37%	41.25%
Appleseed - Material Tester (sec)	383	349	755		706	910
Normalized	91.12%	100%	46.23%		49.43%	38.35%
Git - T.T.C.C.G.C (sec)	11.51	8.51	8.63	9.81	12.00	9.99

test sample

Tesseract OCR - T.T.O.7.I	Normalized Standard Deviation	73.94% 1.3%	100% 1.3%	98.61% 2.2%	86.75% 1%	70.92% 0.7%	85.19% 5.3%
		67.90	44.46	49.99	74.37	72.31	57.43
	(sec)						
Cryptsetup - PBKDF2-whirlpool	Normalized Standard Deviation	65.48% 0.2%	100% 0.3%	88.94% 0.1%	59.78% 0.9%	61.49% 0.1%	77.42% 0.1%
		391658	530399	492136	265063	346244	
	(Iterations/sec)						
	Normalized Standard Deviation	100% 1.7%	73.84% 0.6%	92.79% 0.2%	49.97% 0.5%	65.28% 3.3%	

PostMark 1.51

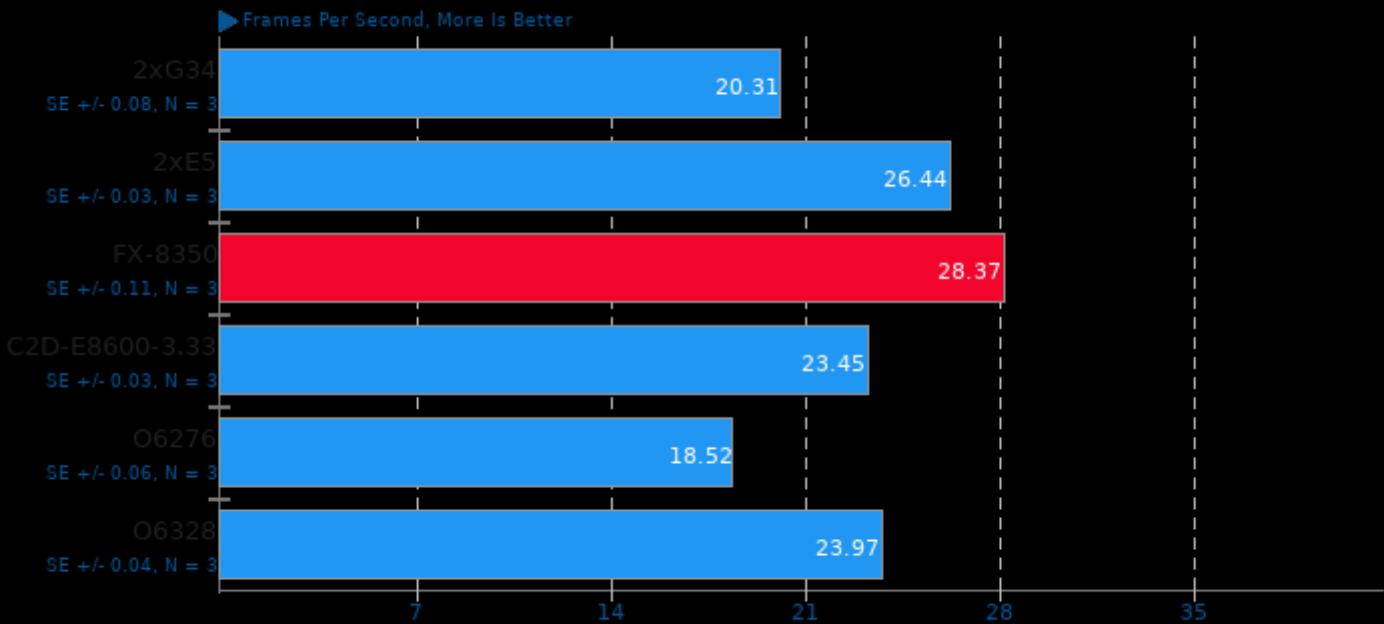
Disk Transaction Performance



1. (CC) gcc options: -O3

QGears2

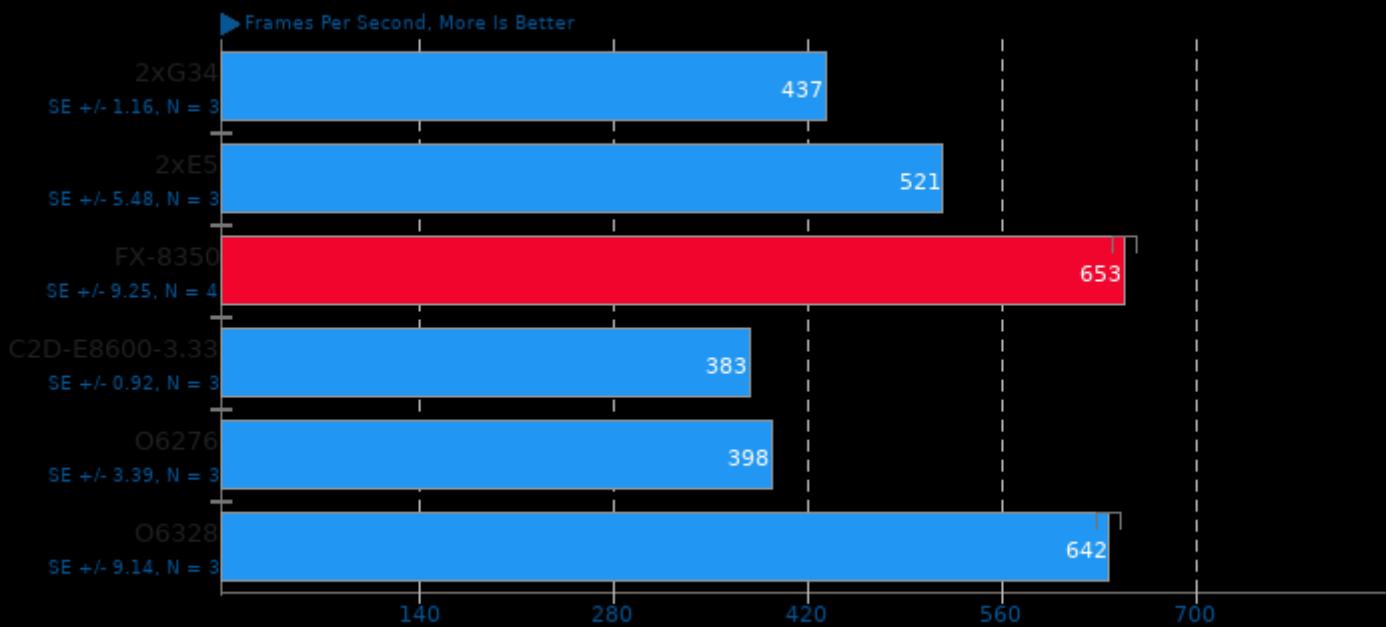
Rendering: OpenGL - Test: Text



1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

QGears2

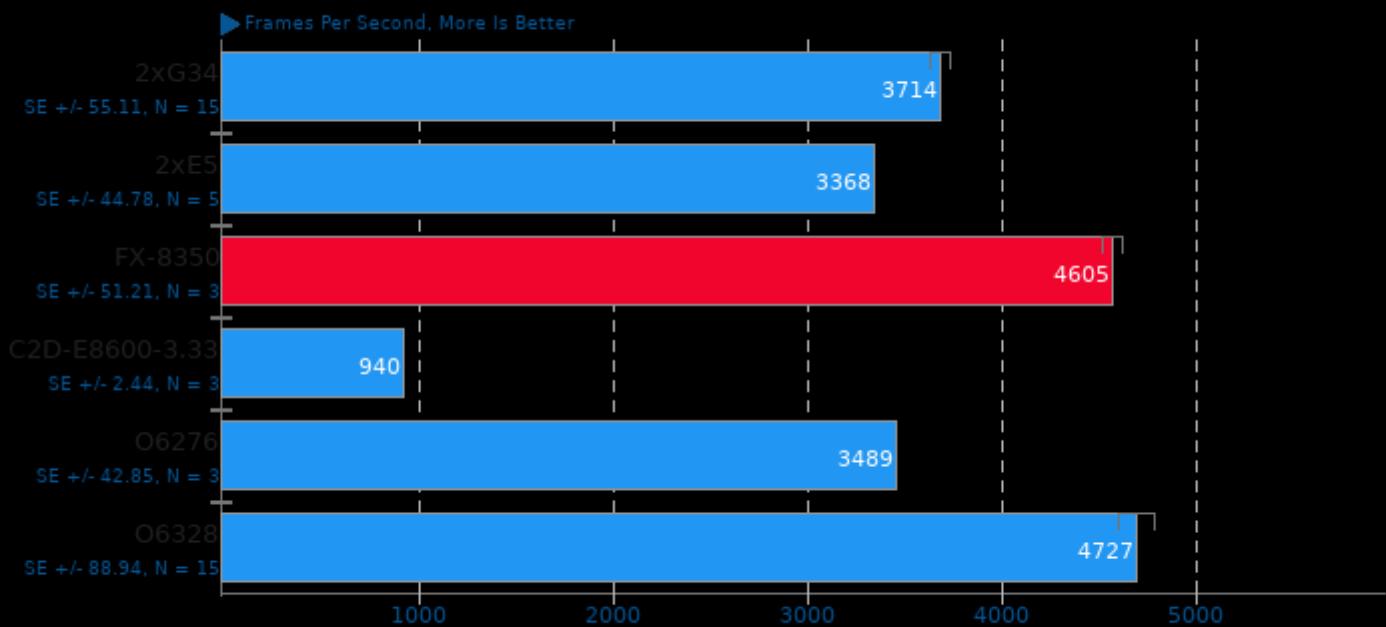
Rendering: OpenGL - Test: Gears



1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

QGears2

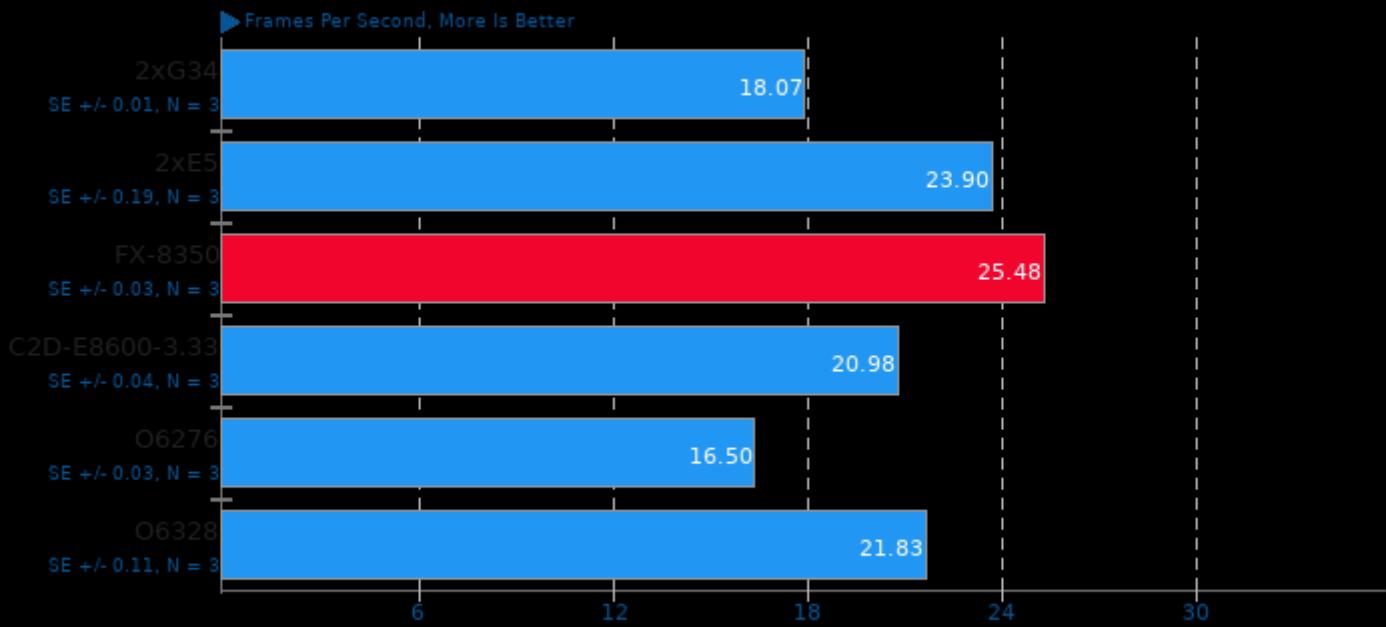
Rendering: OpenGL - Test: Image Scaling



1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

QGears2

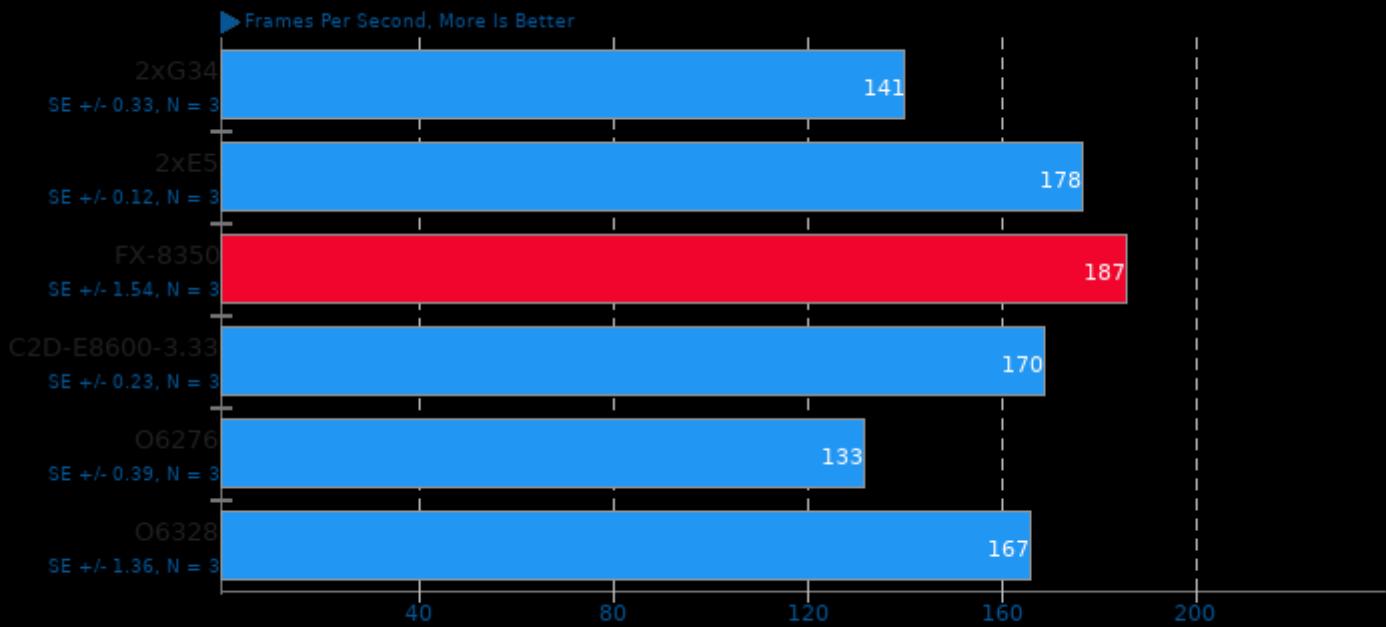
Rendering: CPU-based Raster - Test: Text



1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

QGears2

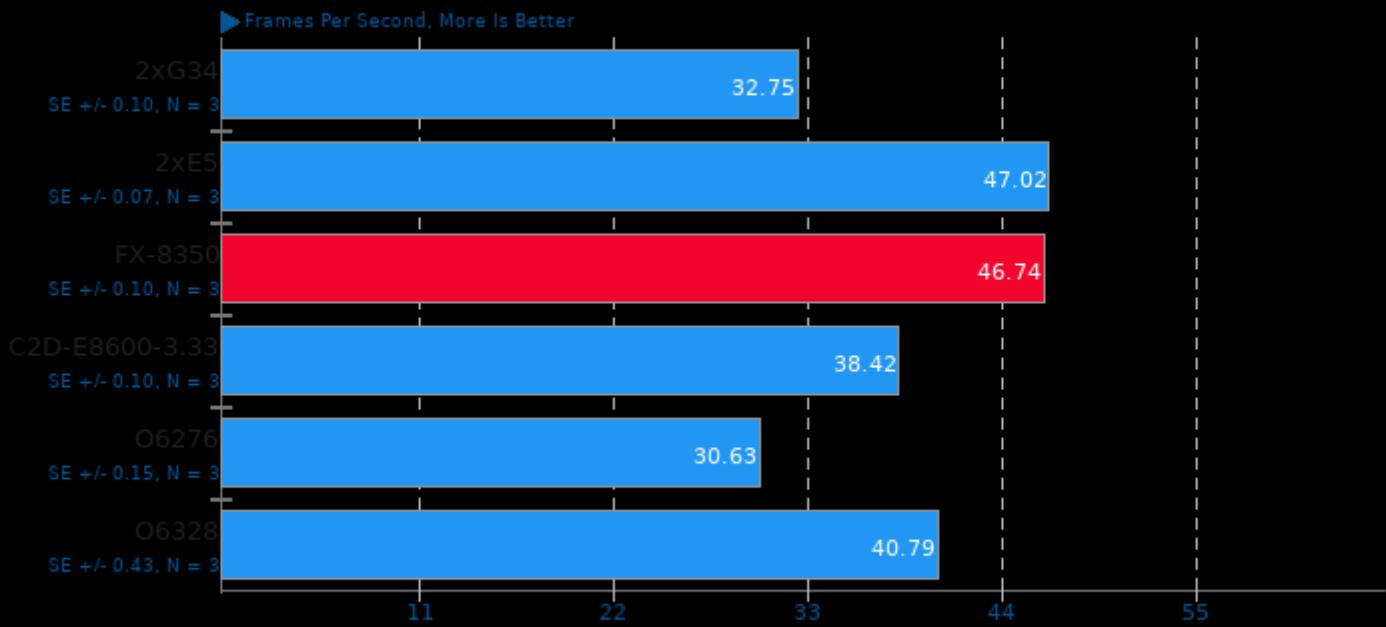
Rendering: CPU-based Raster - Test: Gears



1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

QGears2

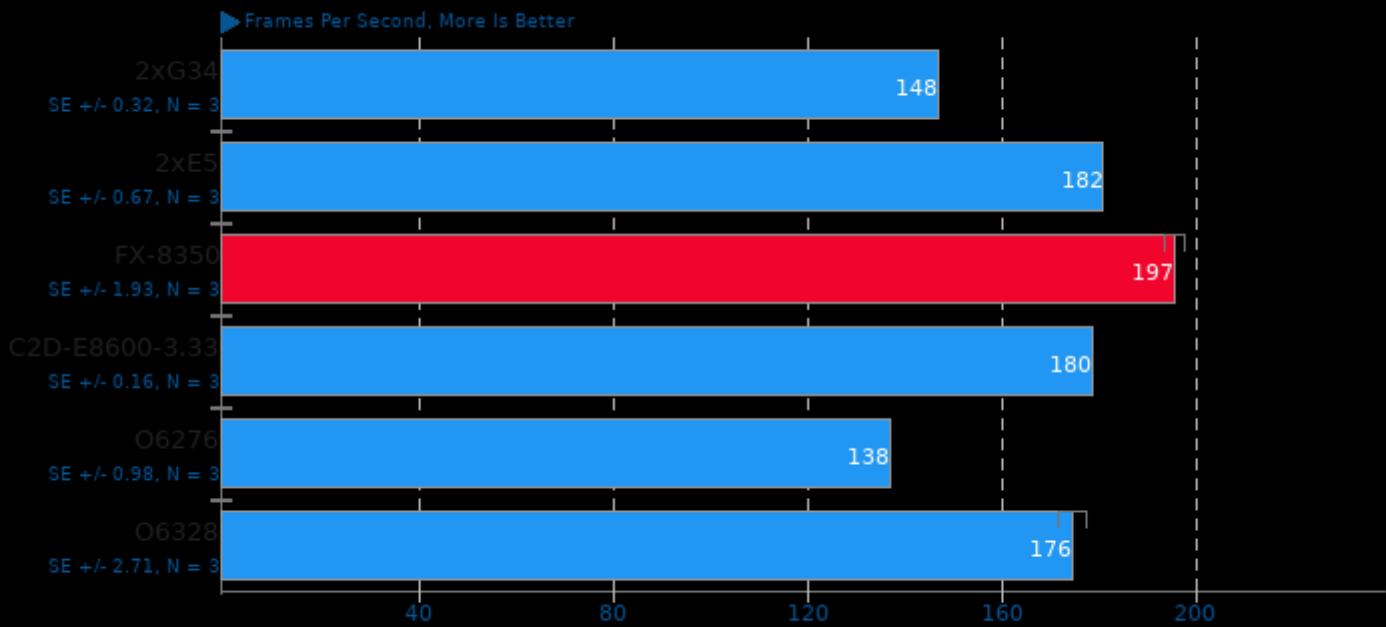
Rendering: XRender Extension - Test: Text



1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

QGears2

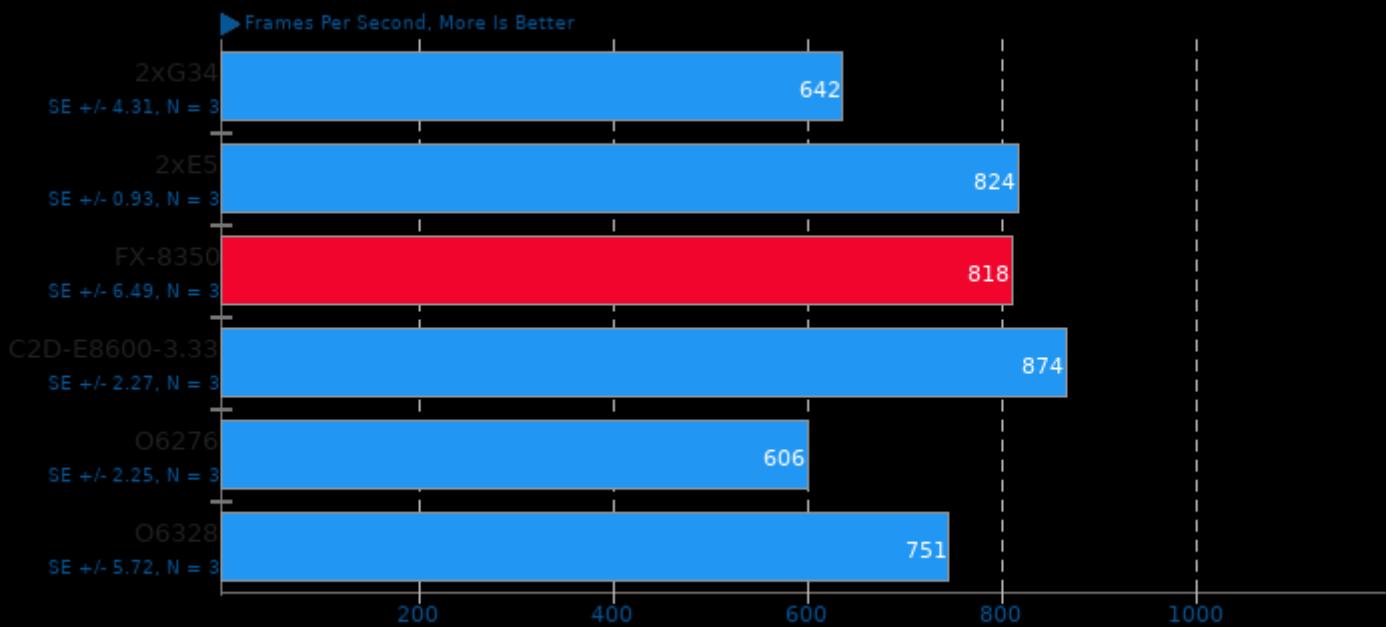
Rendering: XRender Extension - Test: Gears



1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

QGears2

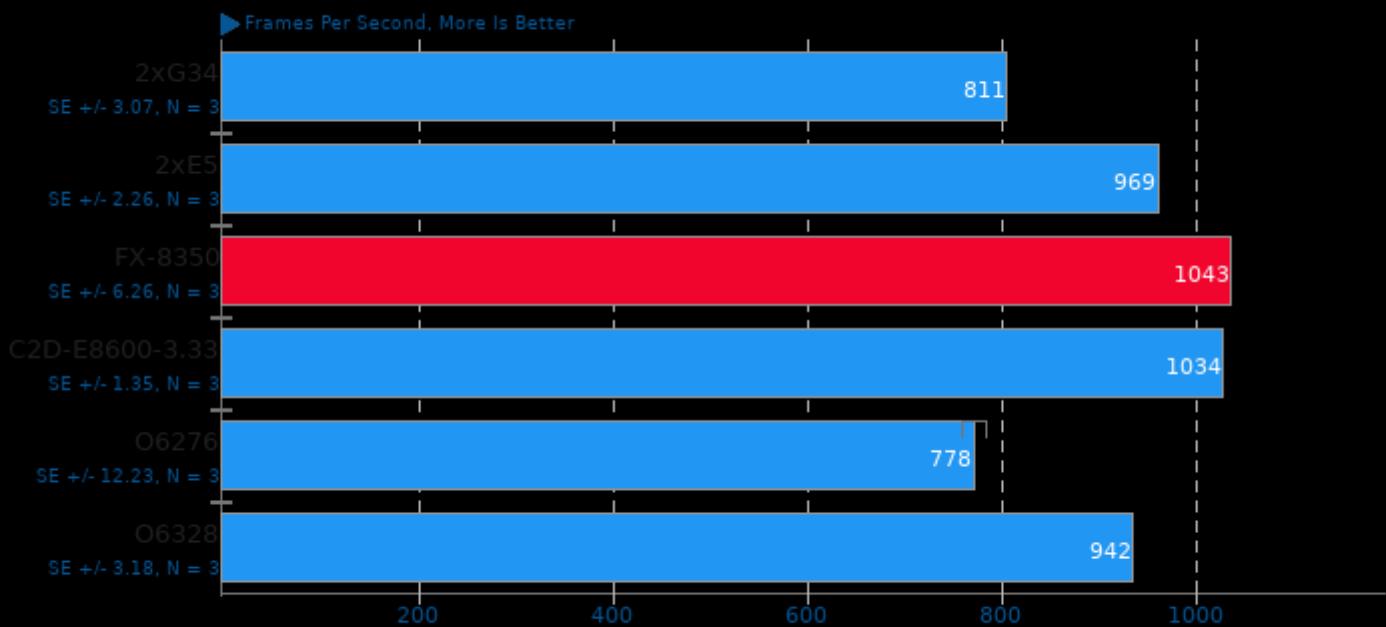
Rendering: CPU-based Raster - Test: Image Scaling



1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

QGears2

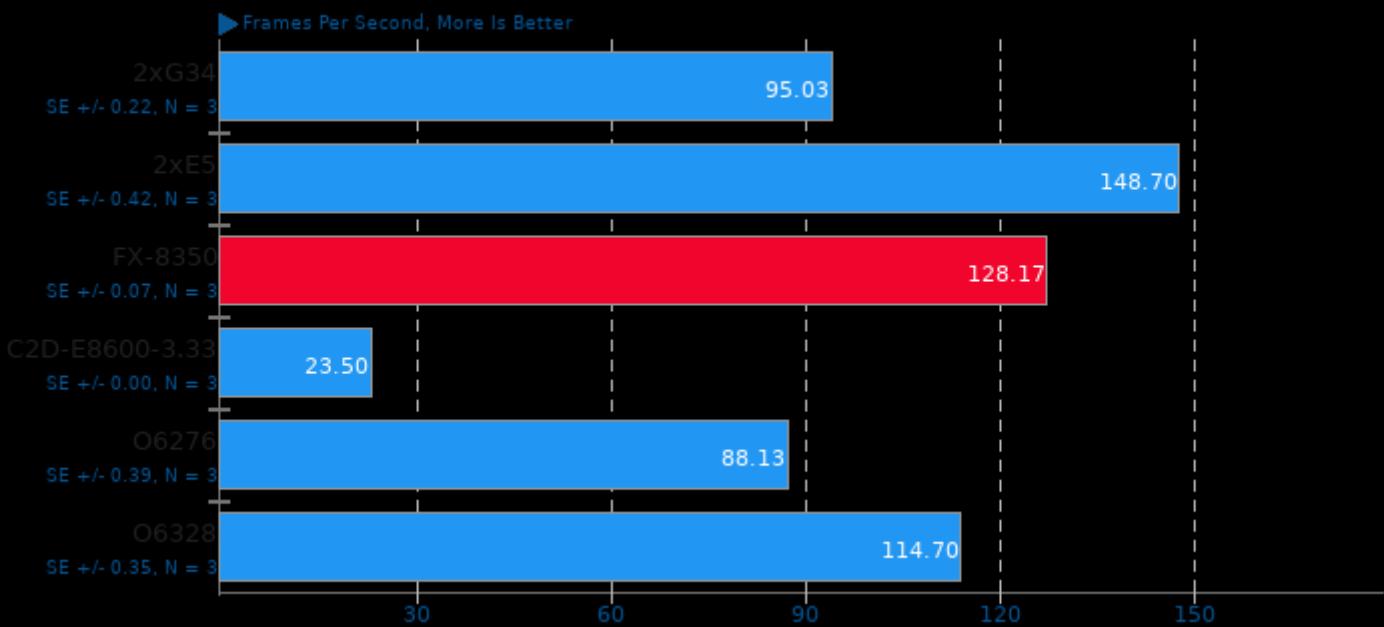
Rendering: XRender Extension - Test: Image Scaling



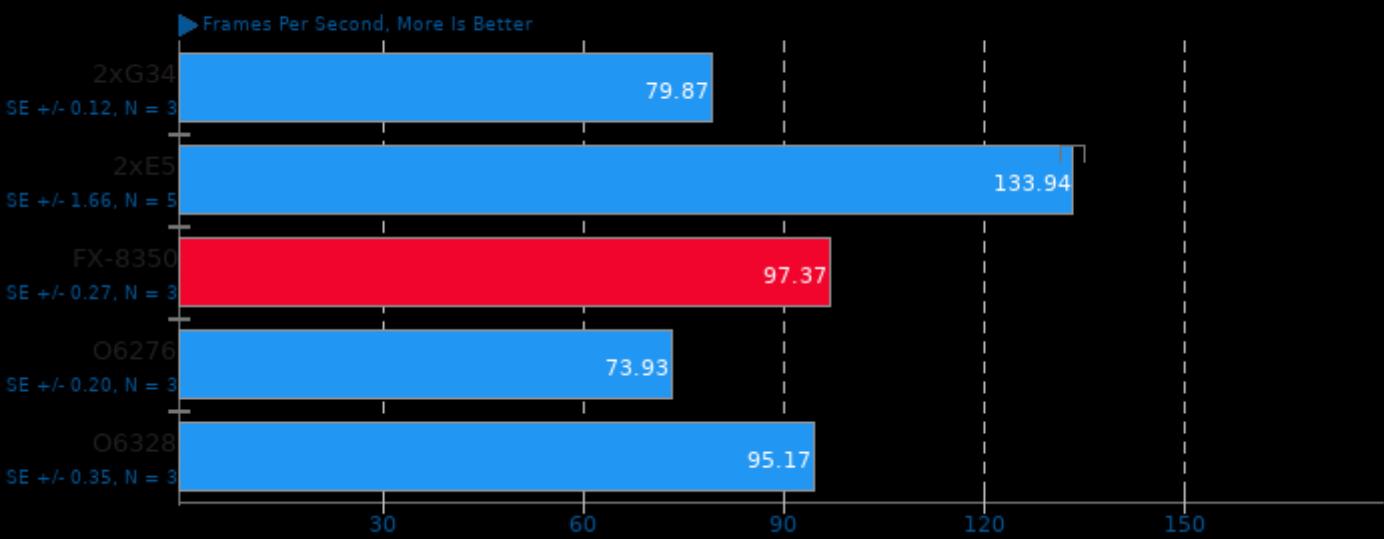
1. (CXX) g++ options: -m64 -lQtOpenGL -lQtGui -lQtCore -lGL -lpthread

ET: Legacy 2.75

Renderer: Default - Resolution: 1680 x 1050

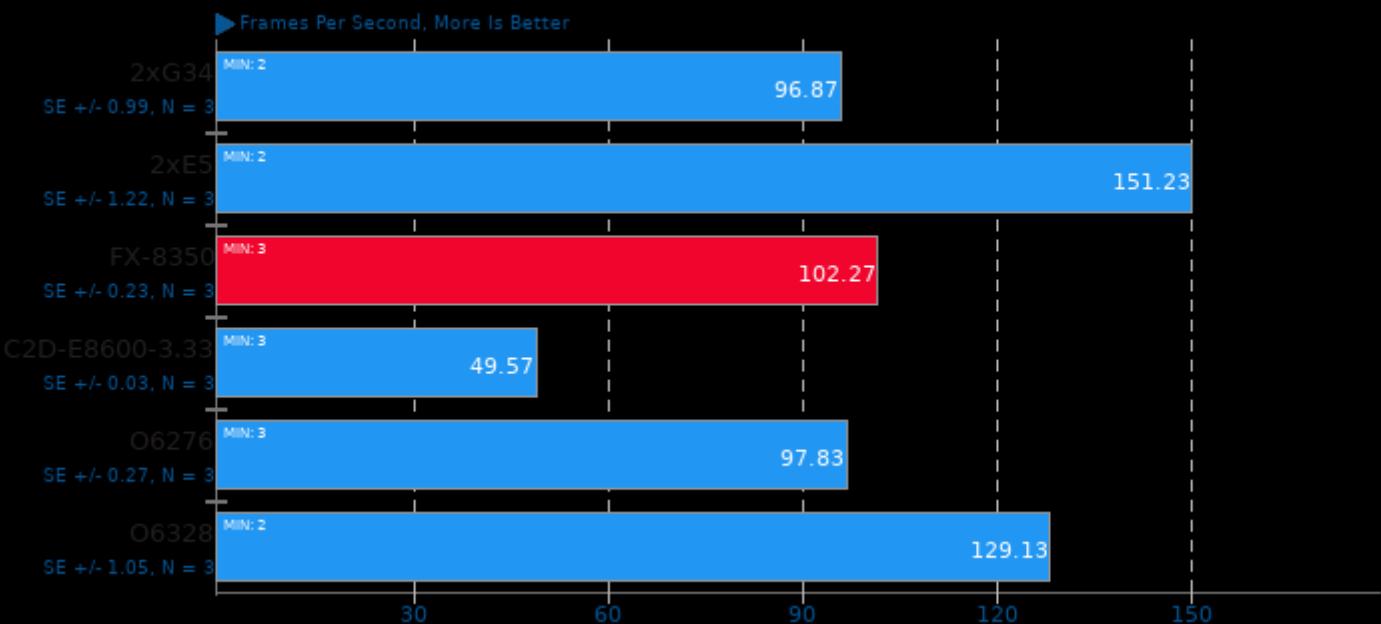
**ET: Legacy 2.75**

Renderer: Renderer2 - Resolution: 1680 x 1050



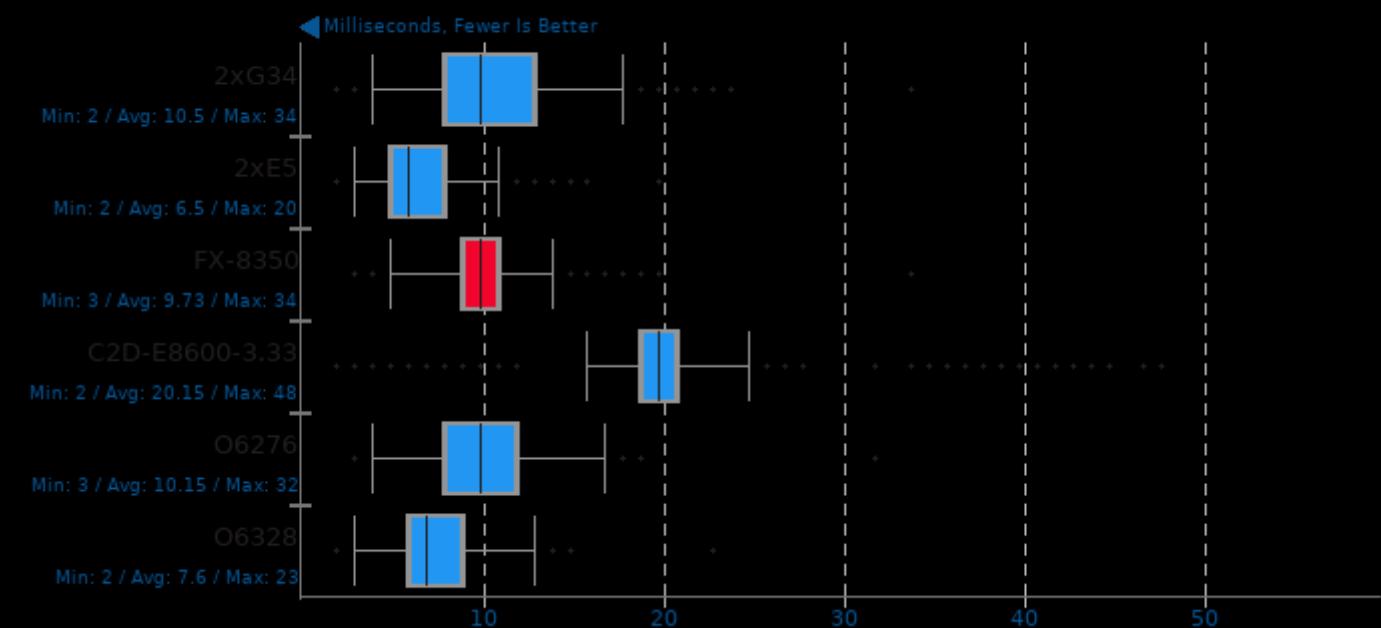
OpenArena 0.8.8

Resolution: 1920 x 1080



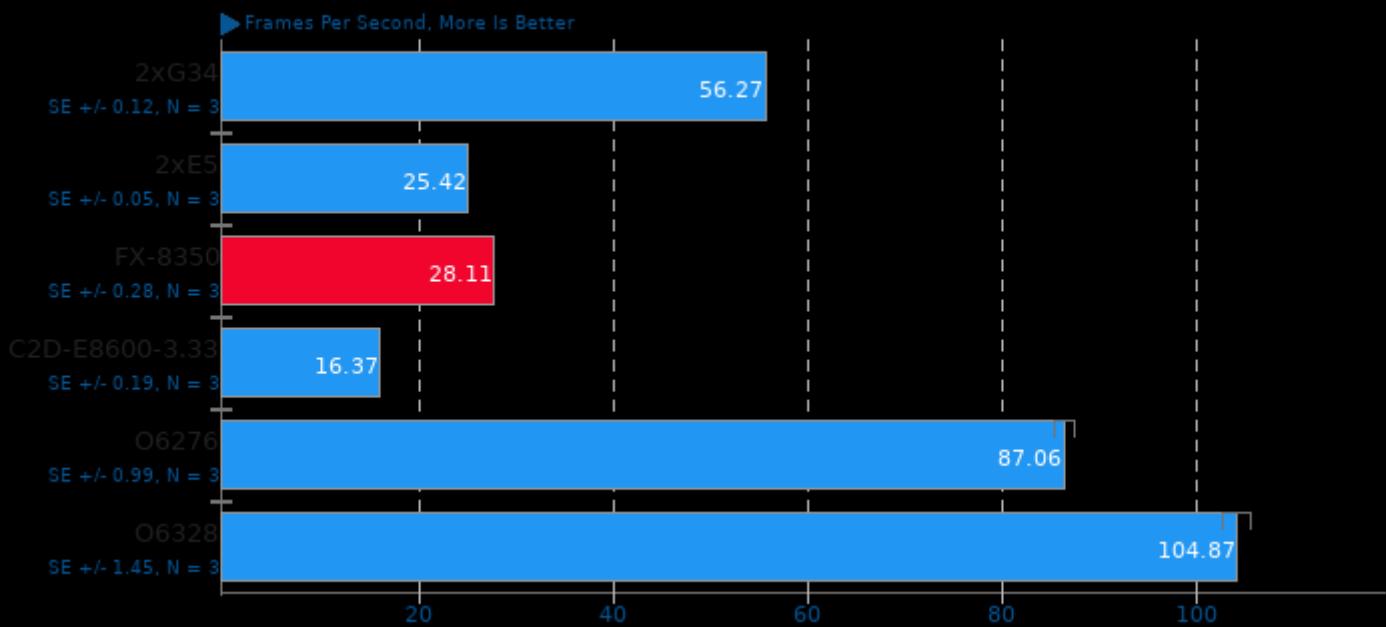
OpenArena 0.8.8

Resolution: 1920 x 1080 - Total Frame Time



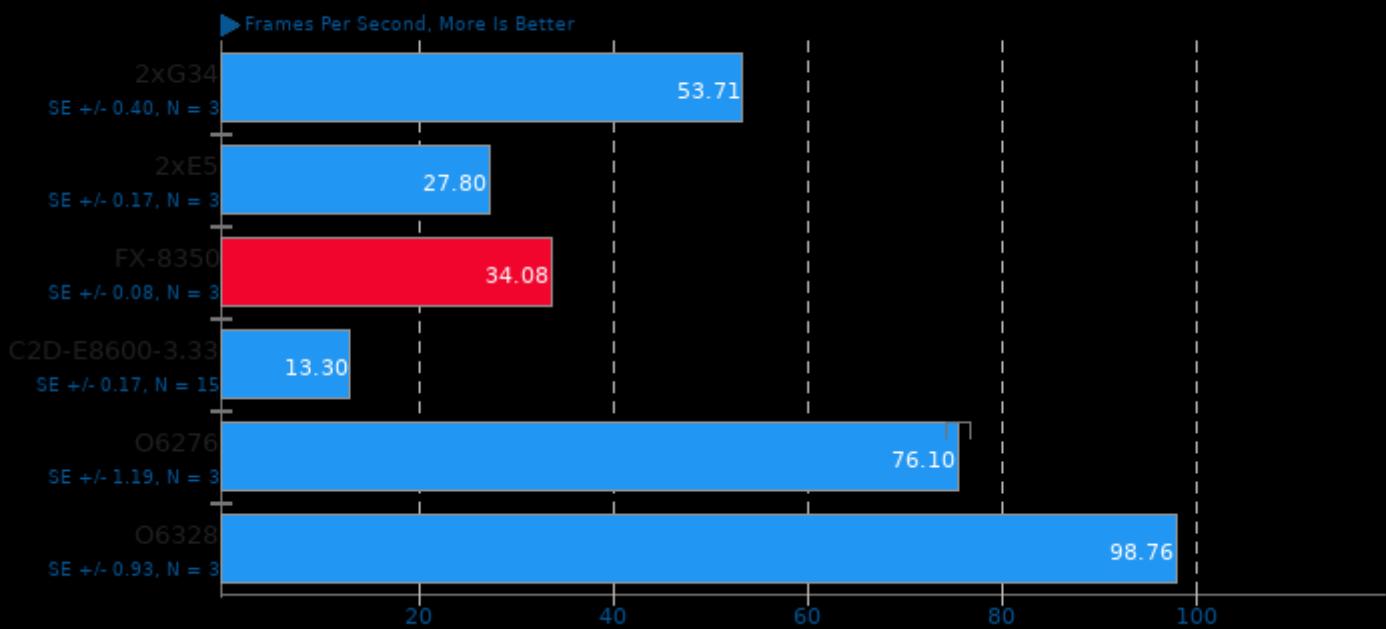
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Candela City



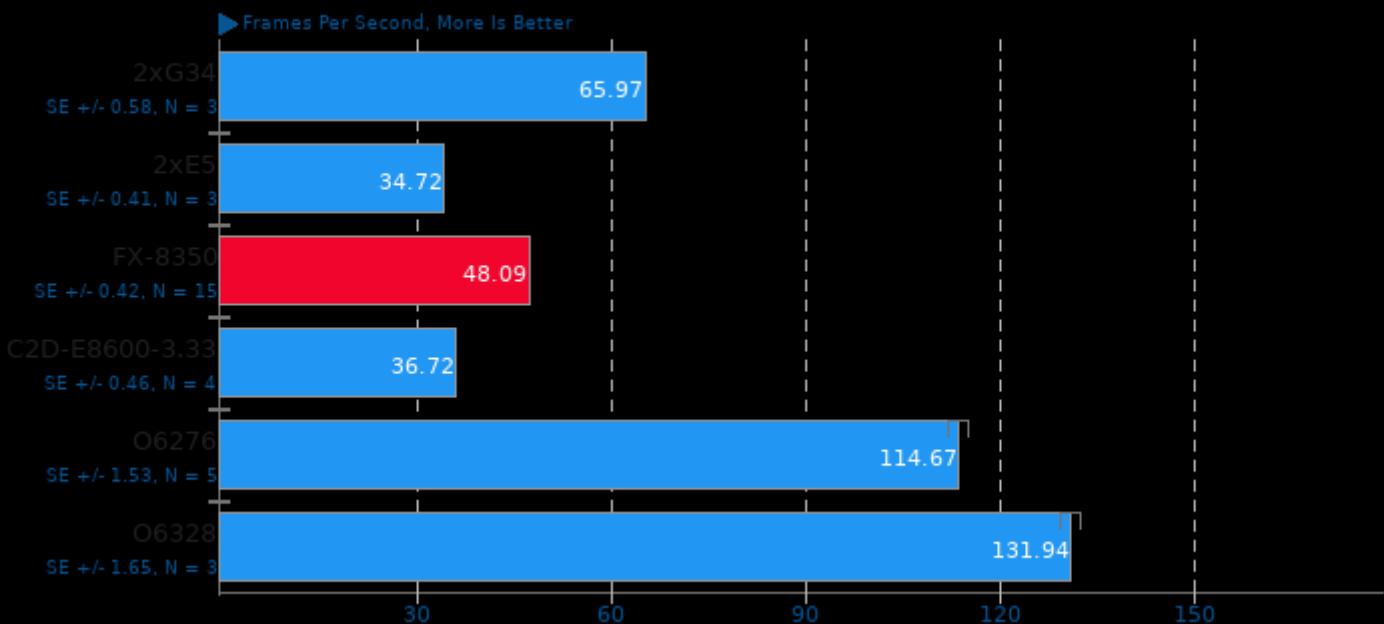
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Cocoa Temple



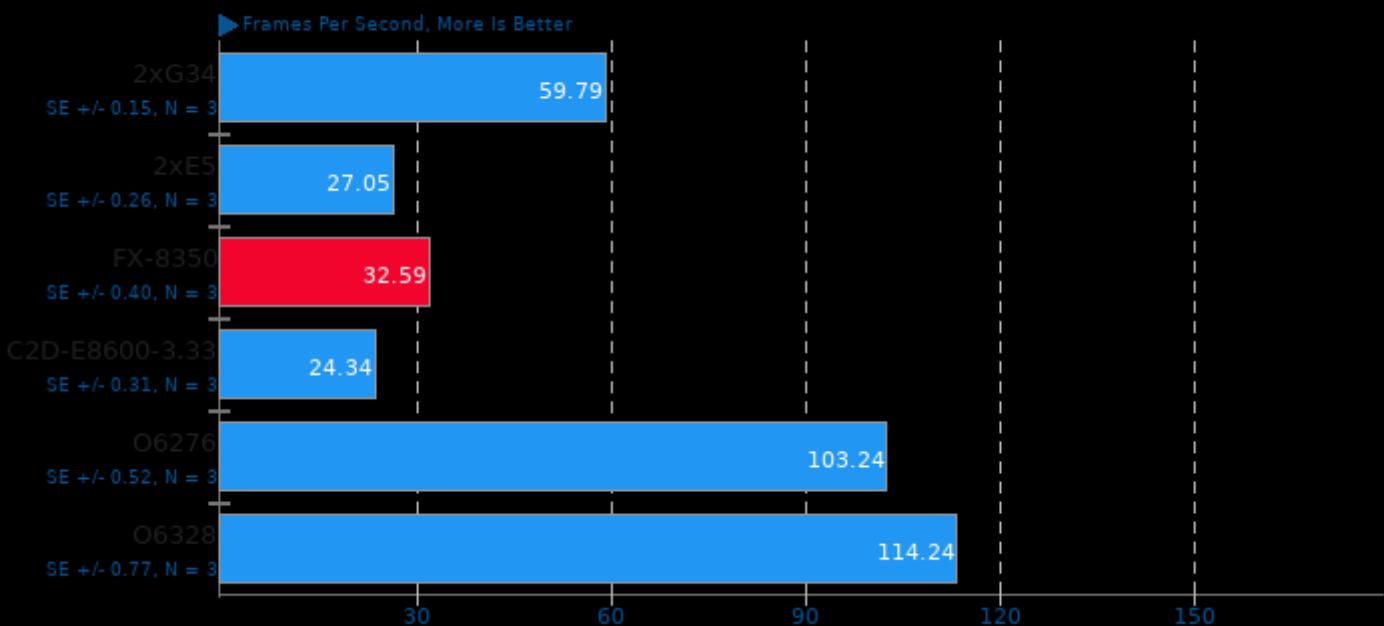
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode:Fullscreen - Graphics Effects: High - Karts: 8 - Scene: STK Enterprise



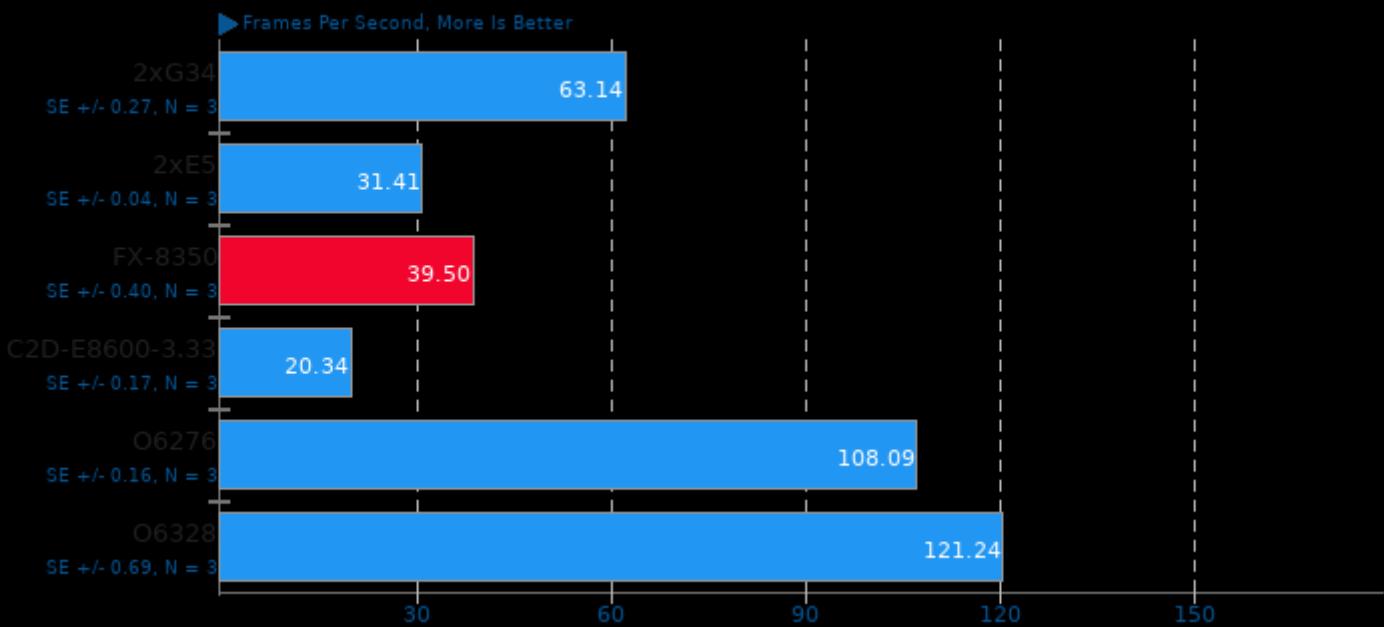
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode:Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Antediluvian Abyss



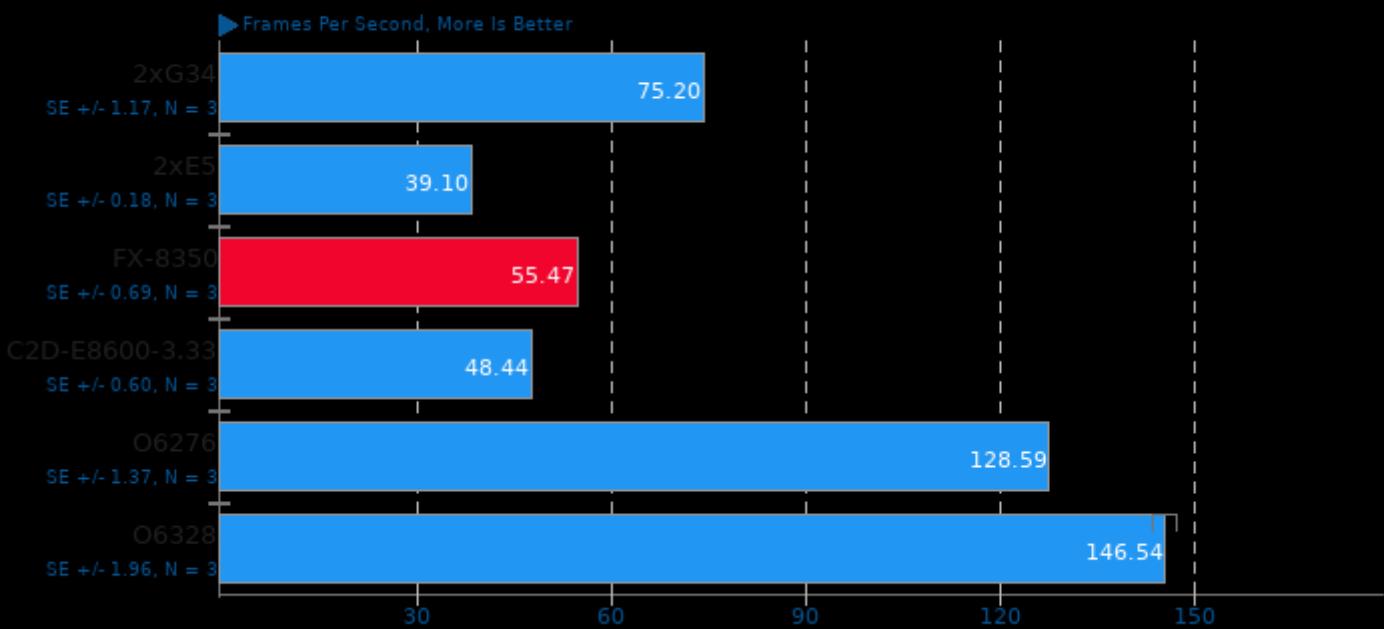
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode:Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Cornfield Crossing



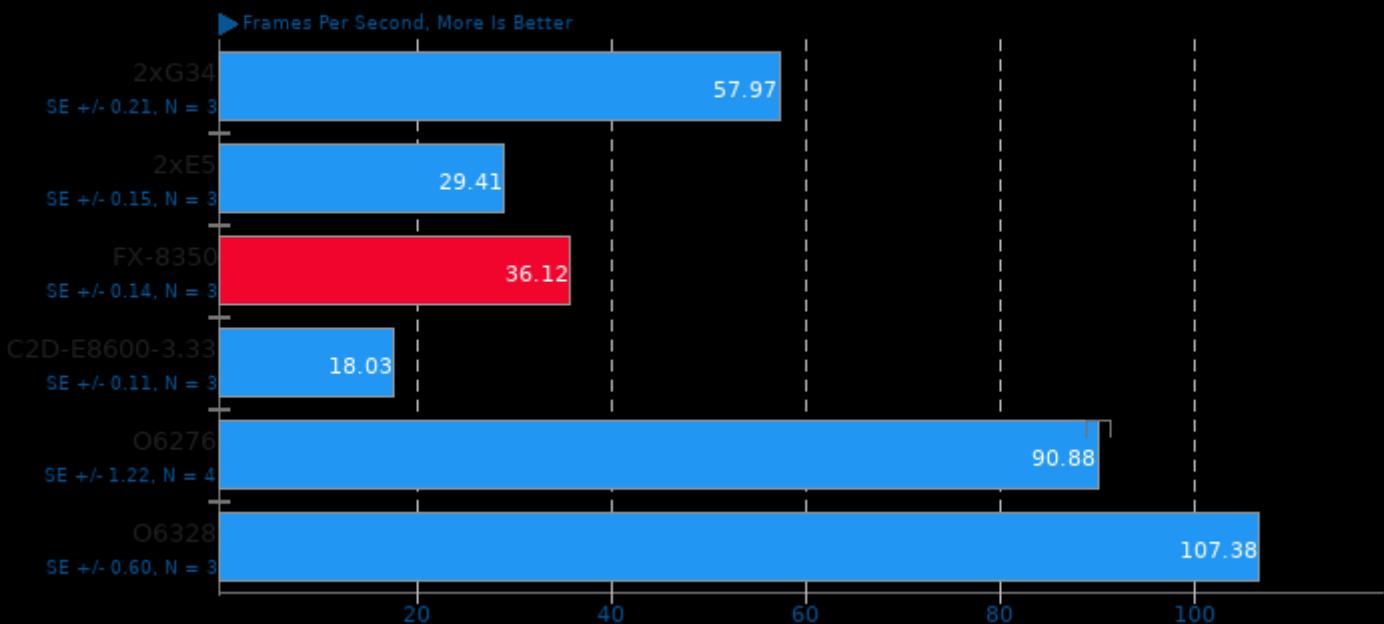
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode:Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Oliver's Math Class



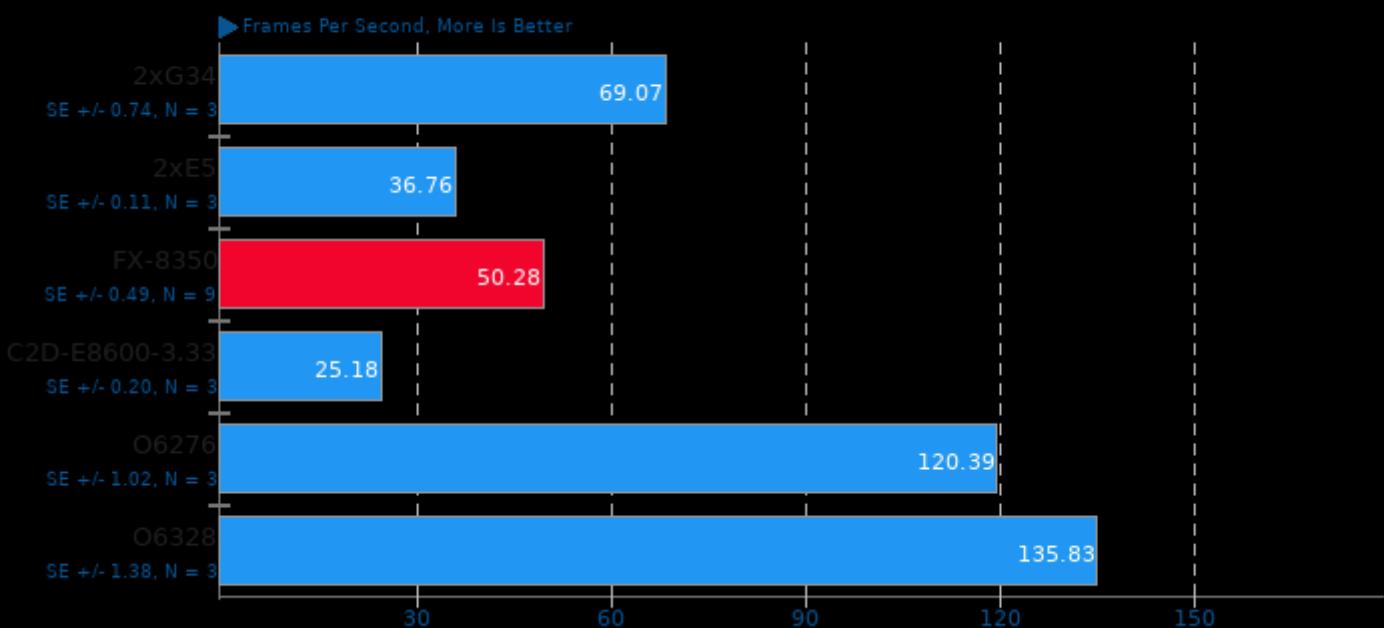
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode:Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Gran Paradiso Island



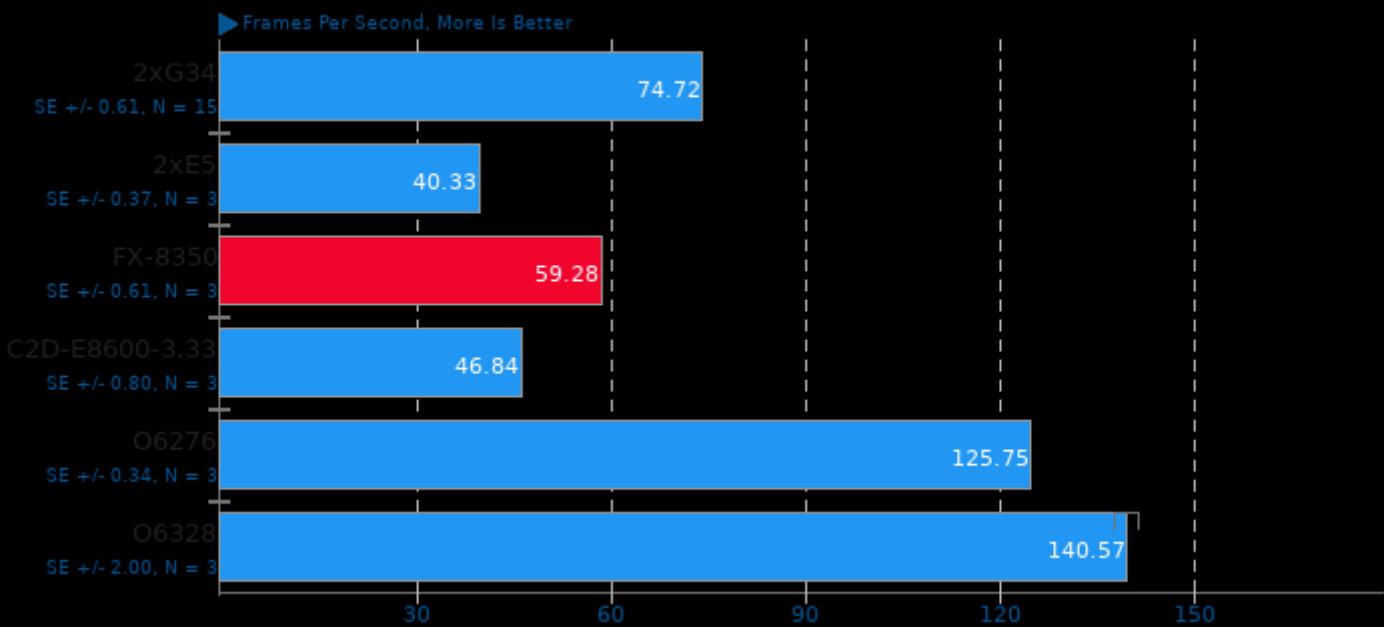
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode:Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Around the Lighthouse



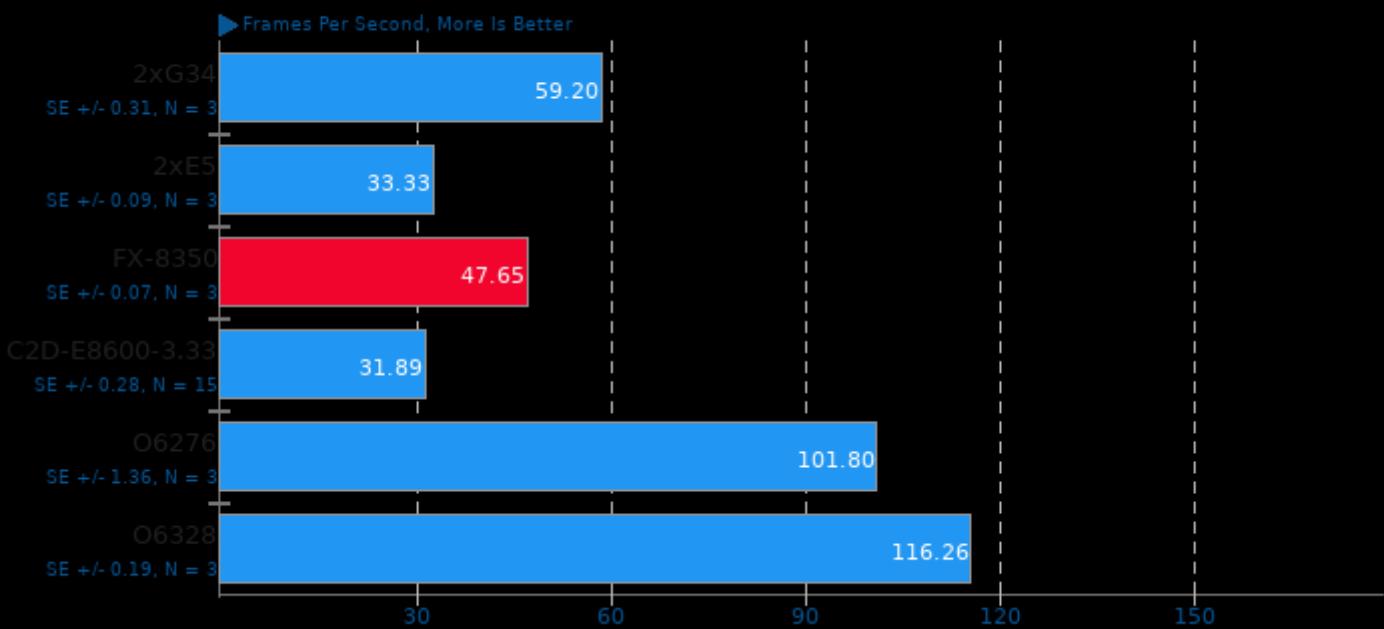
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Hacienda



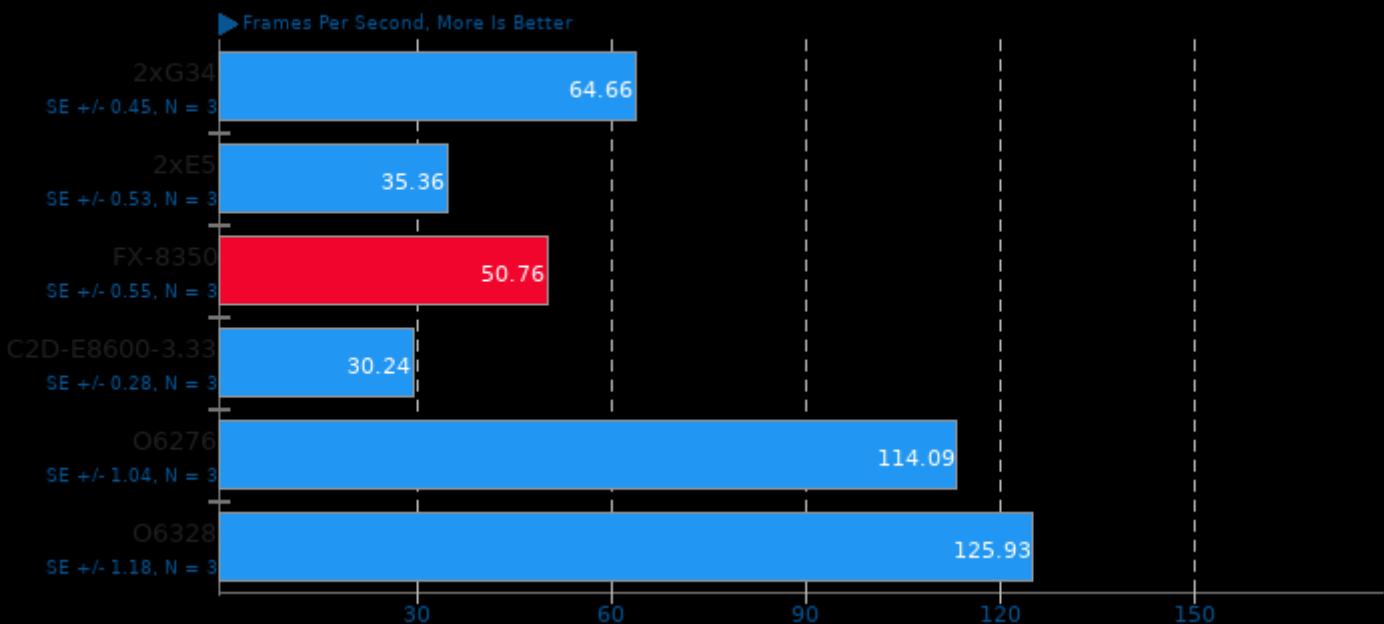
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Old Mine



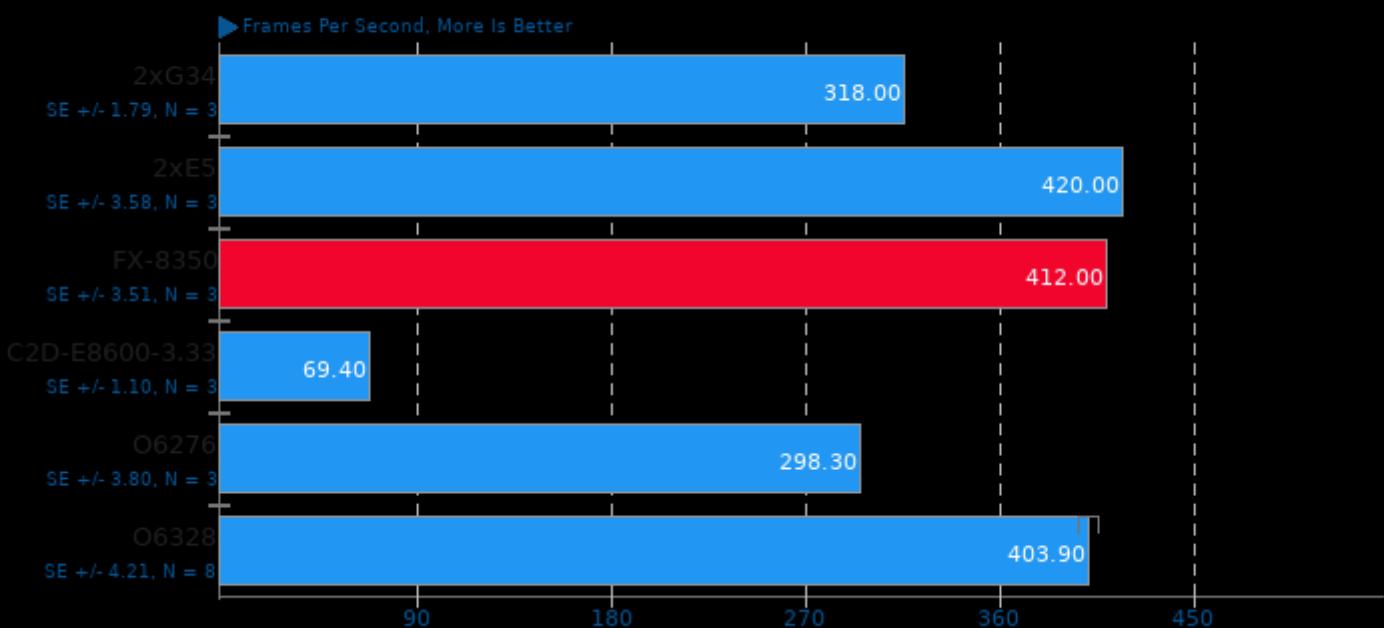
SuperTuxKart 0.9.3

Resolution: 1680 x 1050 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Zen Garden



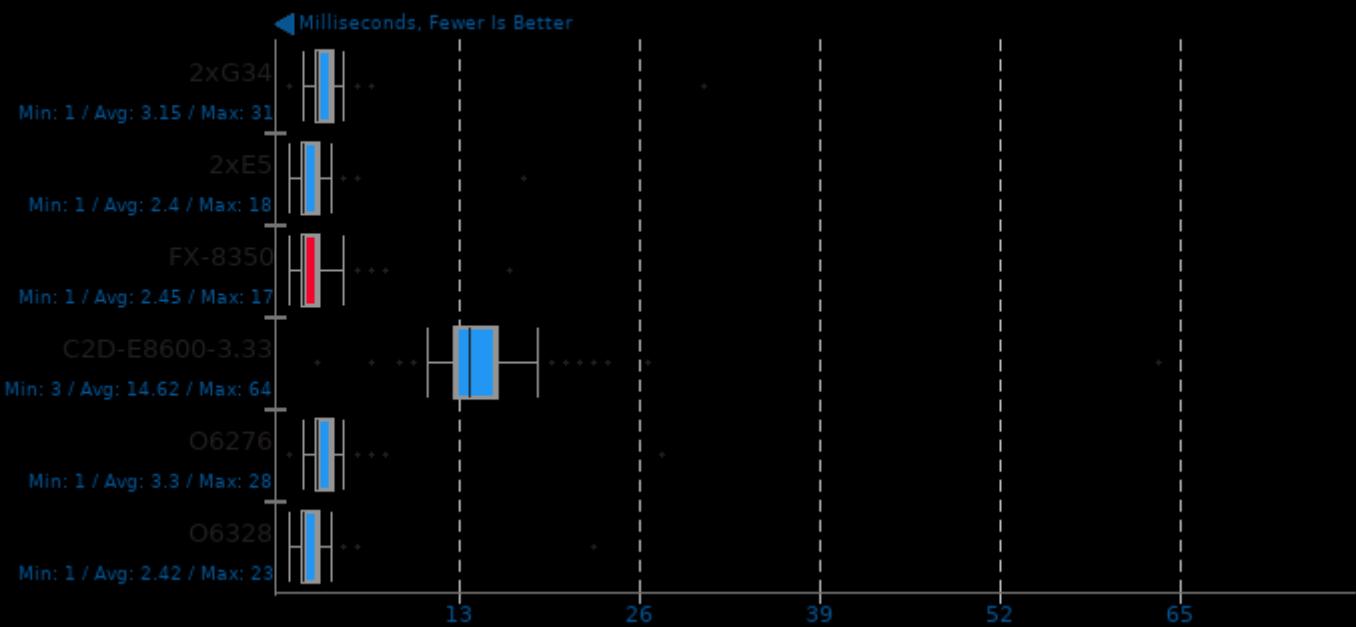
Urban Terror 4.3.2

Resolution: 1680 x 1050



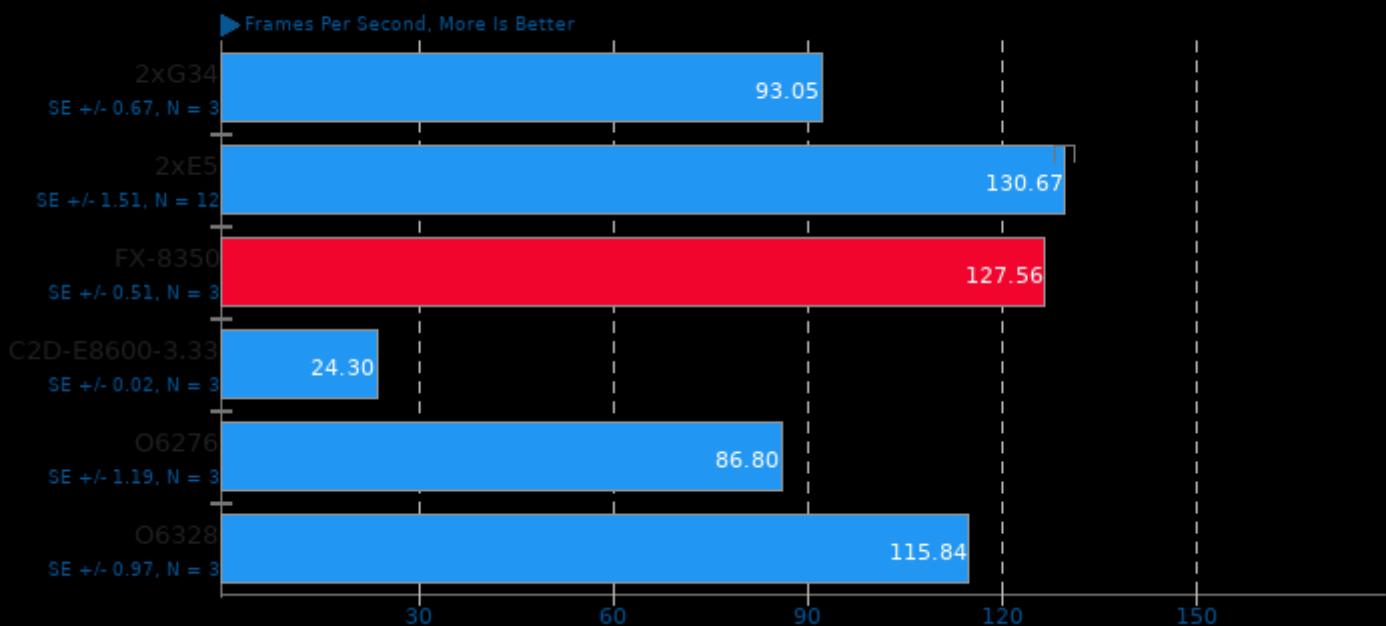
Urban Terror 4.3.2

Resolution: 1680 x 1050 - Total Frame Time



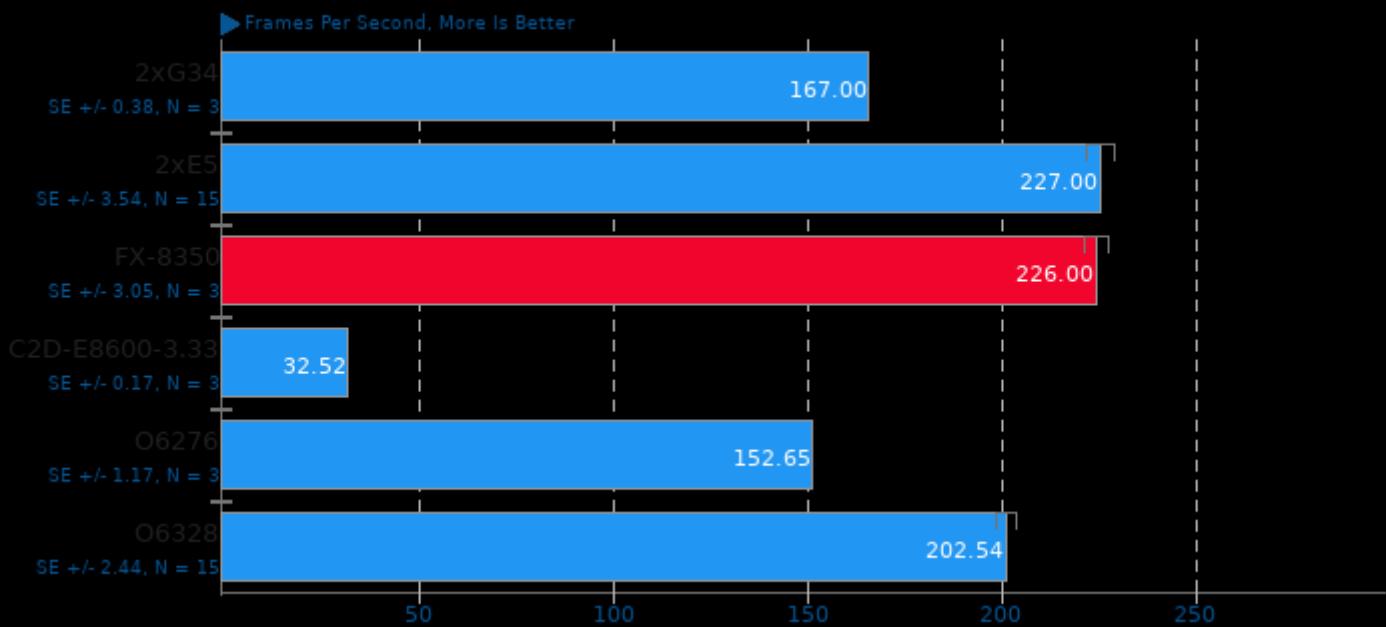
Unreal Tournament 2004 Demo 3334

Map: AS-Convoy Botmatch - Resolution: 1680 x 1050



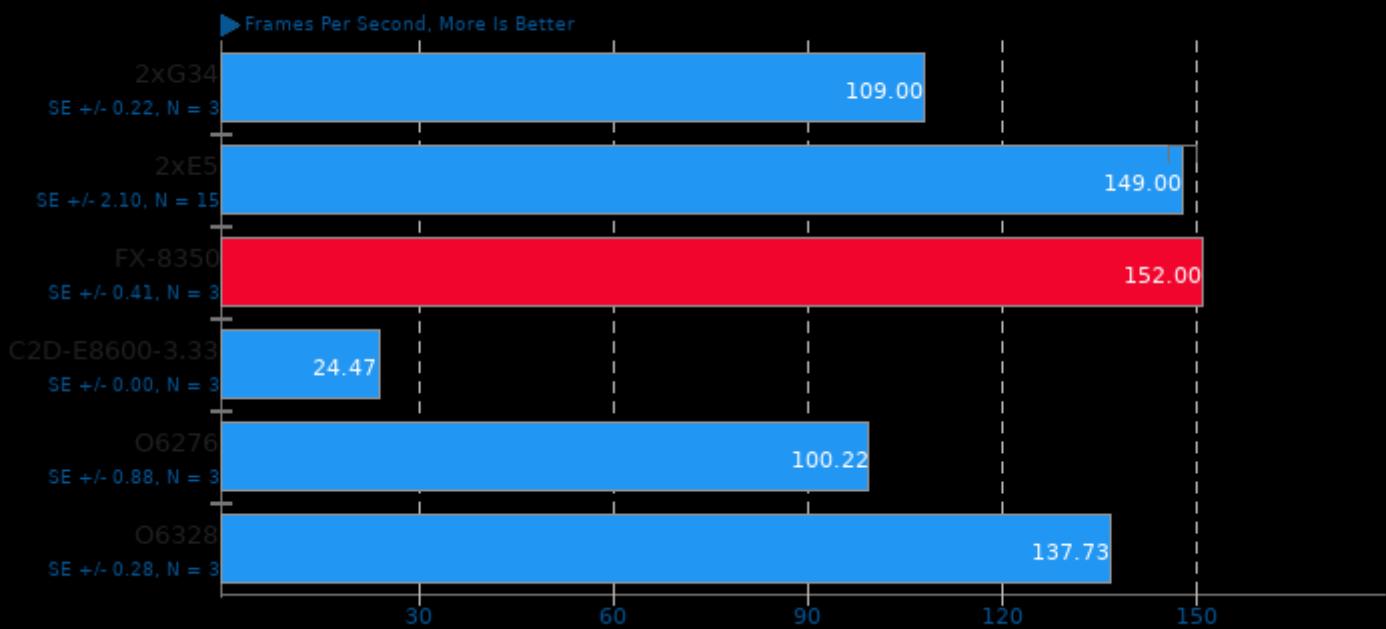
Unreal Tournament 2004 Demo 3334

Map: DM-Rankin Botmatch - Resolution: 1680 x 1050



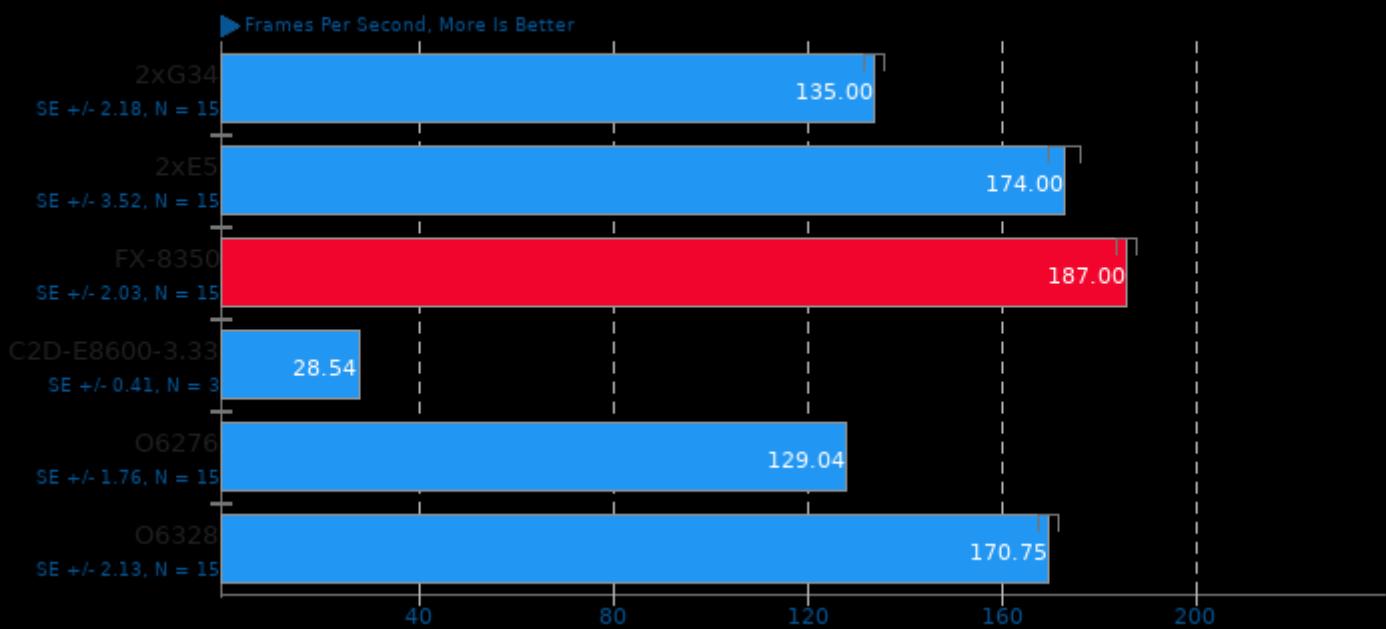
Unreal Tournament 2004 Demo 3334

Map: ONS-Torlan Botmatch - Resolution: 1680 x 1050



Unreal Tournament 2004 Demo 3334

Map: BR-Colossus Botmatch - Resolution: 1680 x 1050



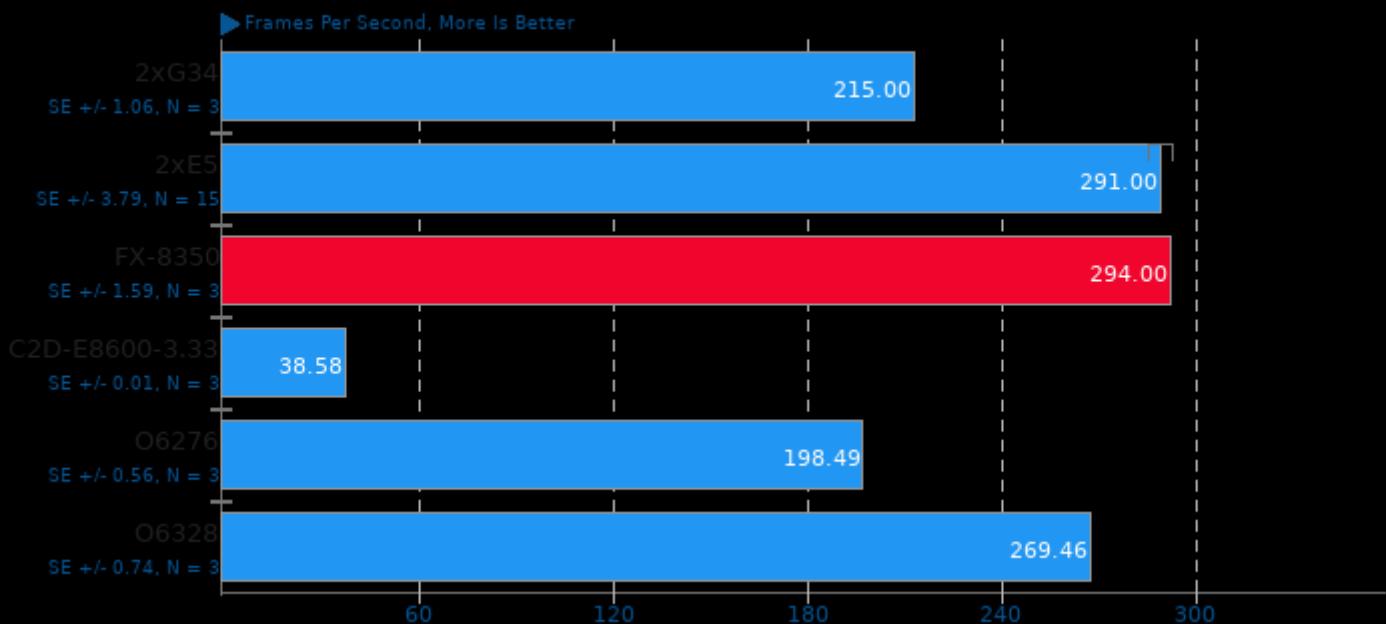
Unreal Tournament 2004 Demo 3334

Map: CTF-FaceClassic Botmatch - Resolution: 1680 x 1050



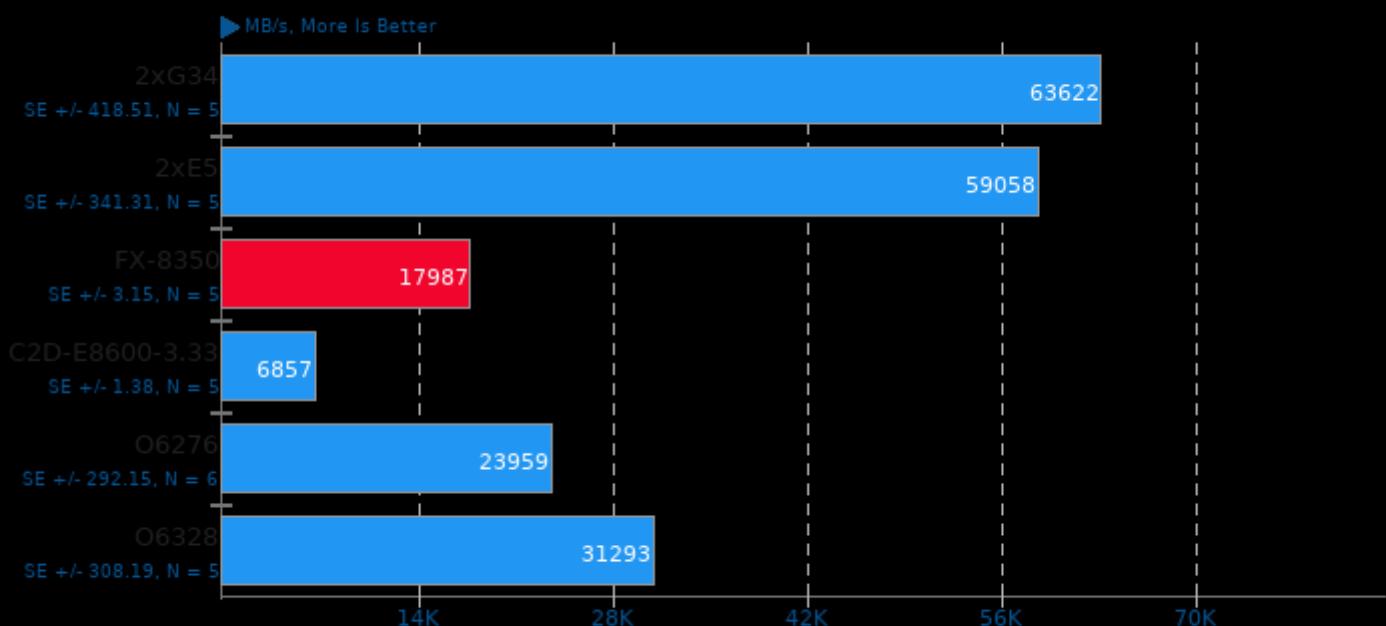
Unreal Tournament 2004 Demo 3334

Map: CTF-BridgeOfFate Botmatch - Resolution: 1680 x 1050



Stream 2013-01-17

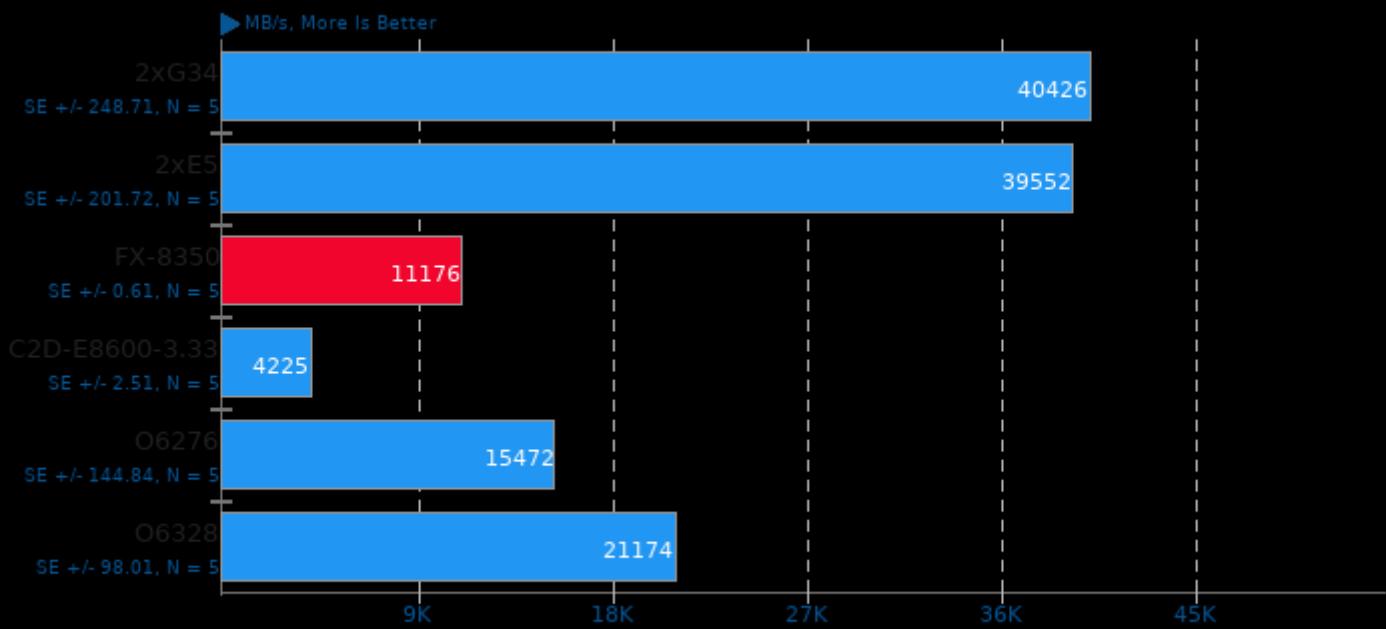
Type: Copy



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

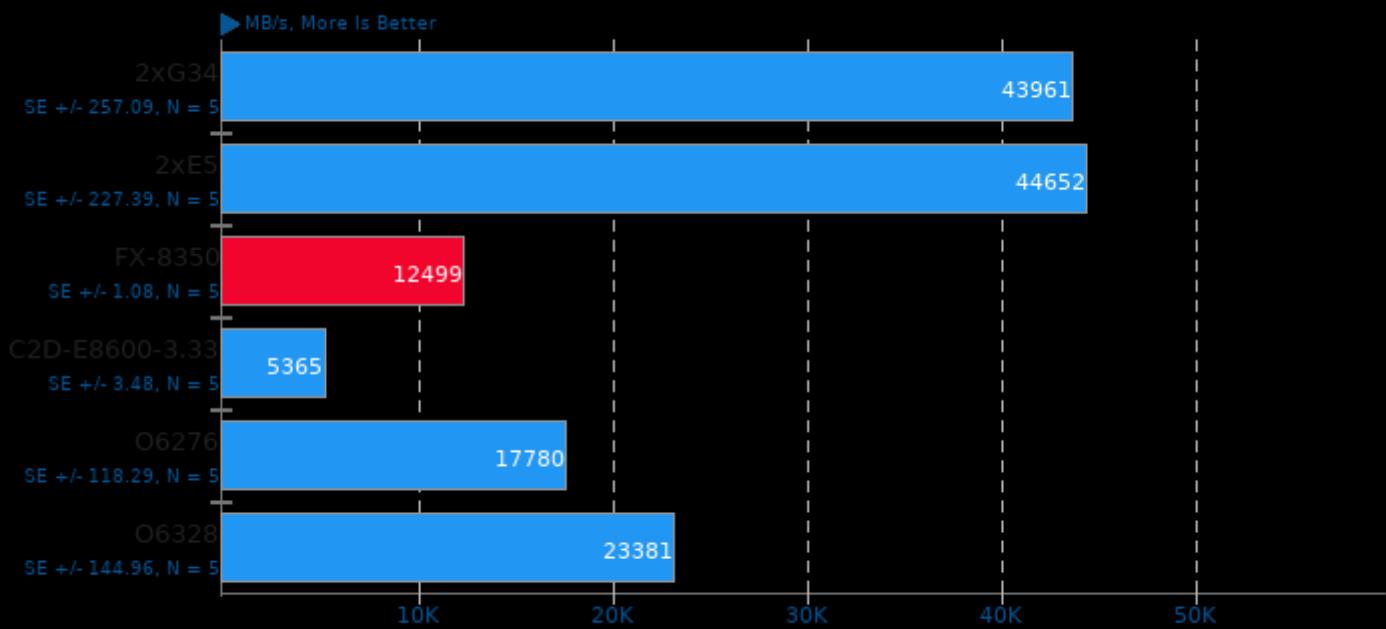
Type: Scale



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

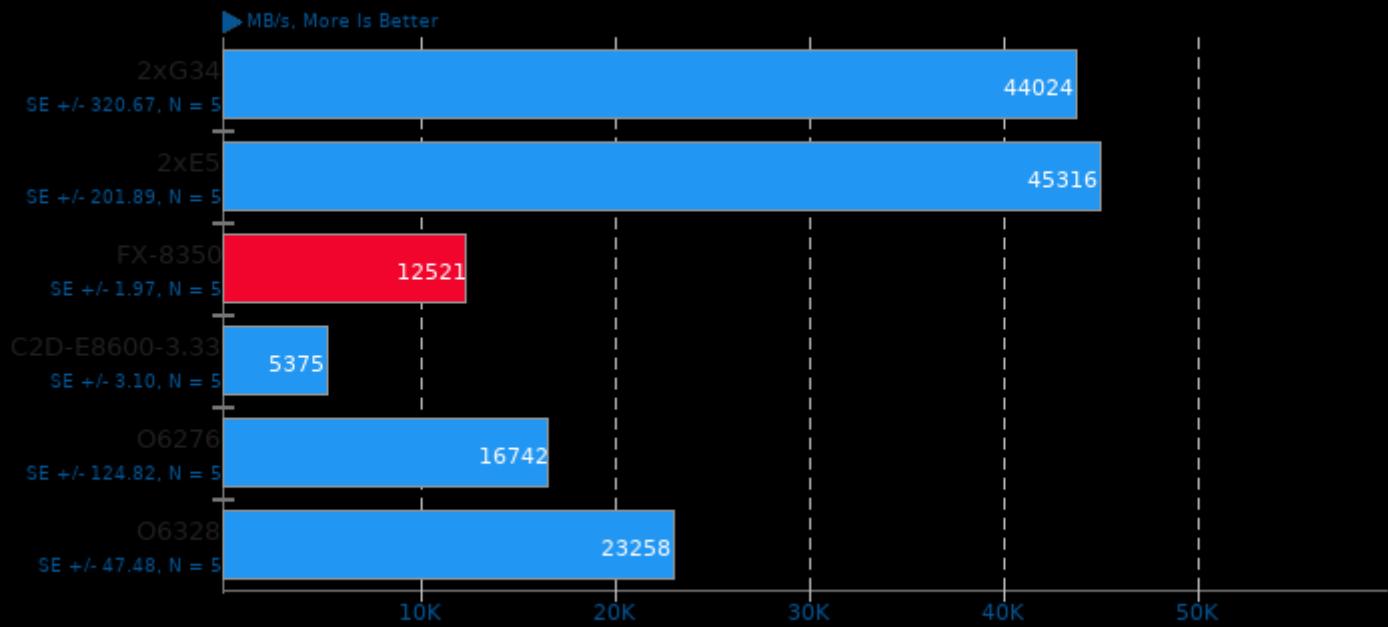
Type: Triad



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

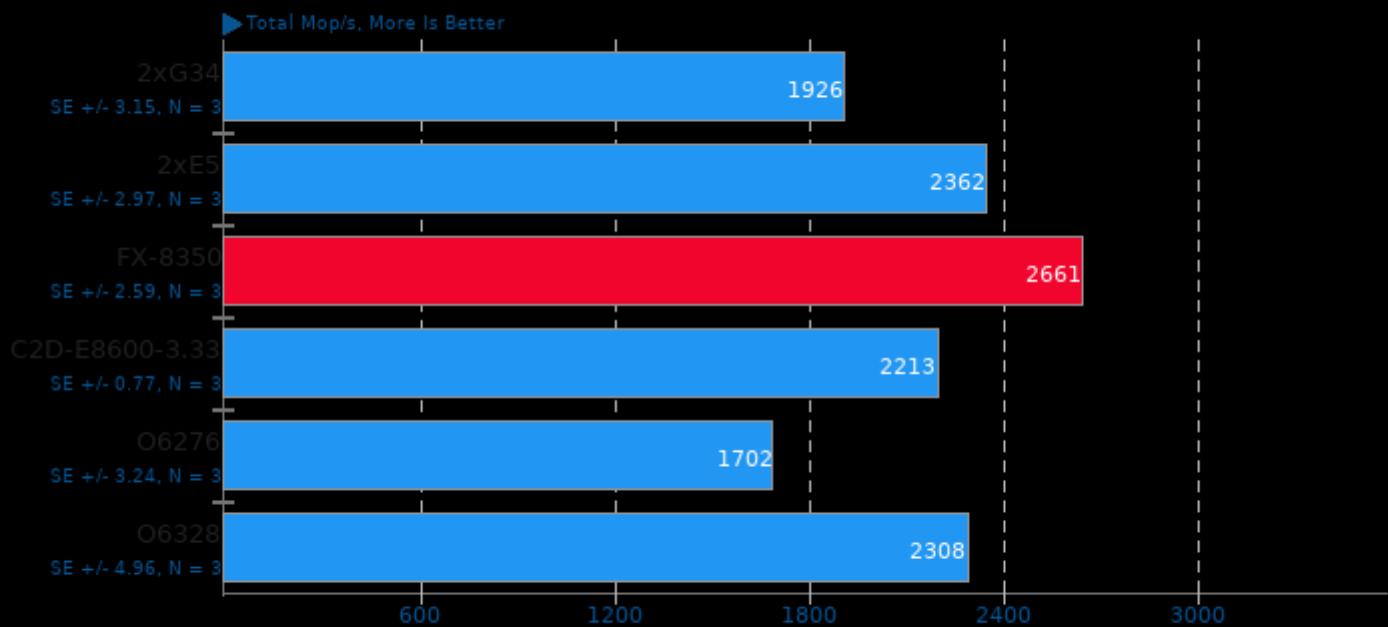
Type: Add



1. (CC) gcc options: -O3 -march=native -fopenmp

NAS Parallel Benchmarks 3.3.1

Test / Class: BT.A

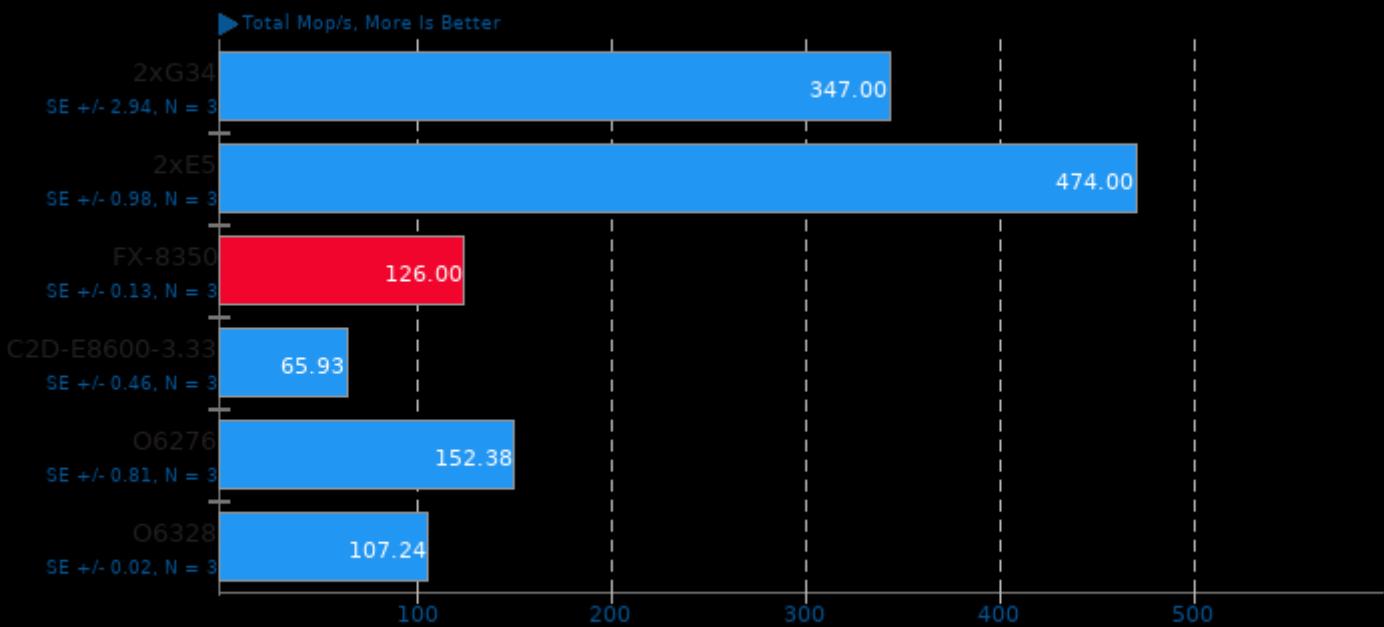


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 2.1.1

NAS Parallel Benchmarks 3.3.1

Test / Class: EP.C

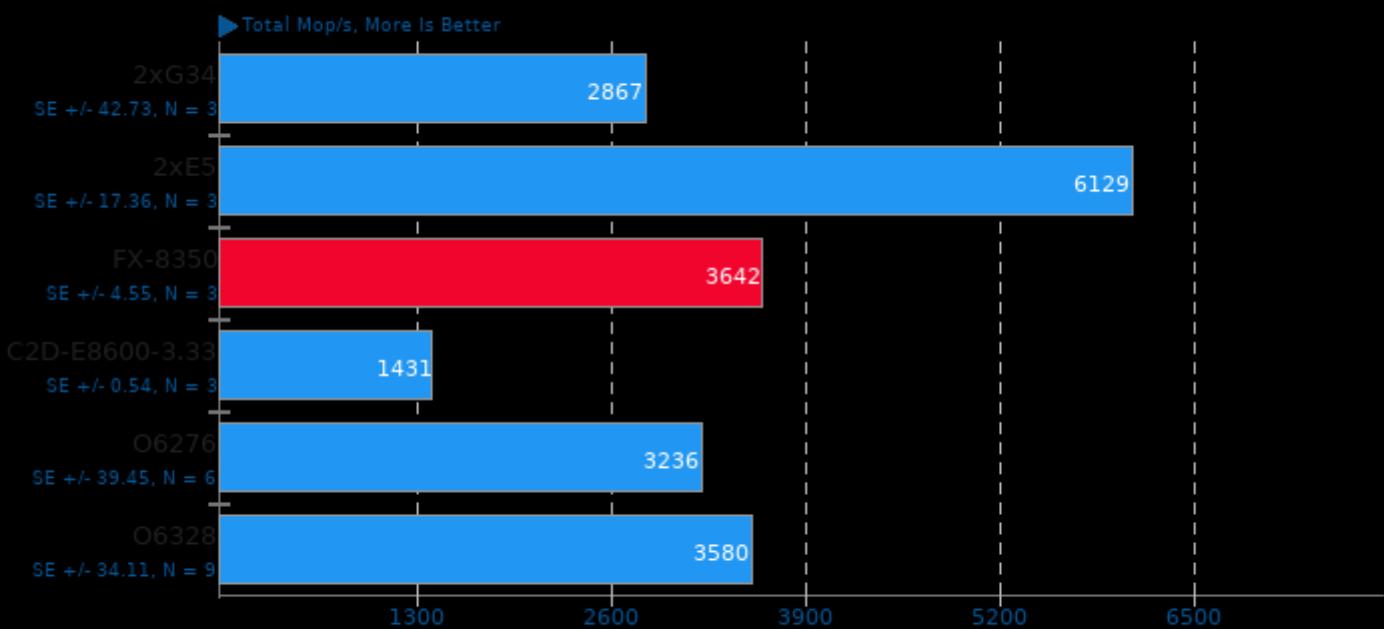


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 2.1.1

NAS Parallel Benchmarks 3.3.1

Test / Class: FT.A

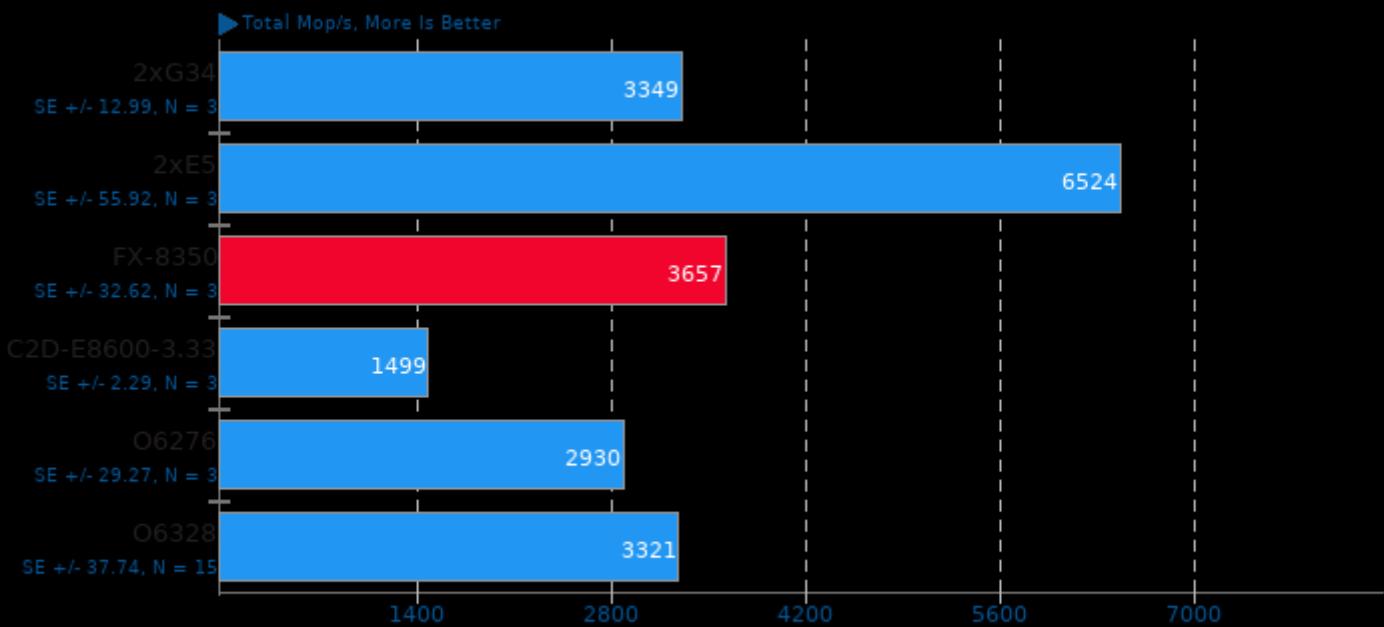


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 2.1.1

NAS Parallel Benchmarks 3.3.1

Test / Class: FT.B

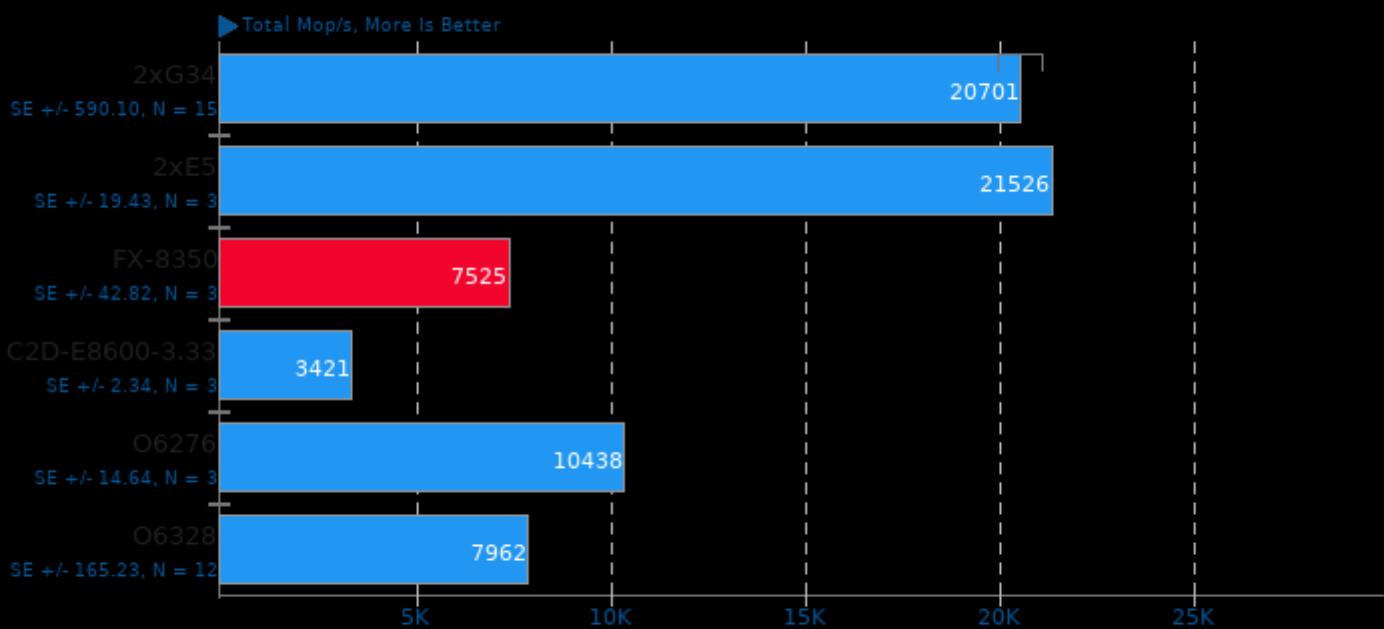


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 2.1.1

NAS Parallel Benchmarks 3.3.1

Test / Class: LU.A

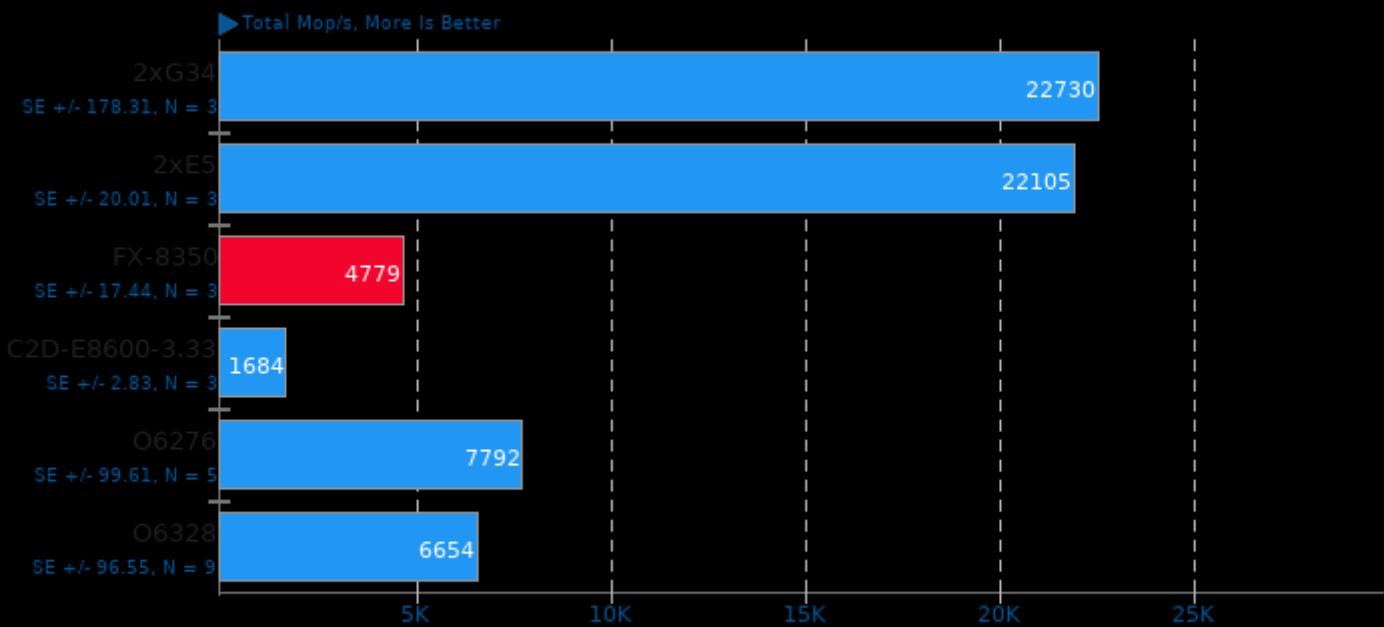


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 2.1.1

NAS Parallel Benchmarks 3.3.1

Test / Class: LU.C

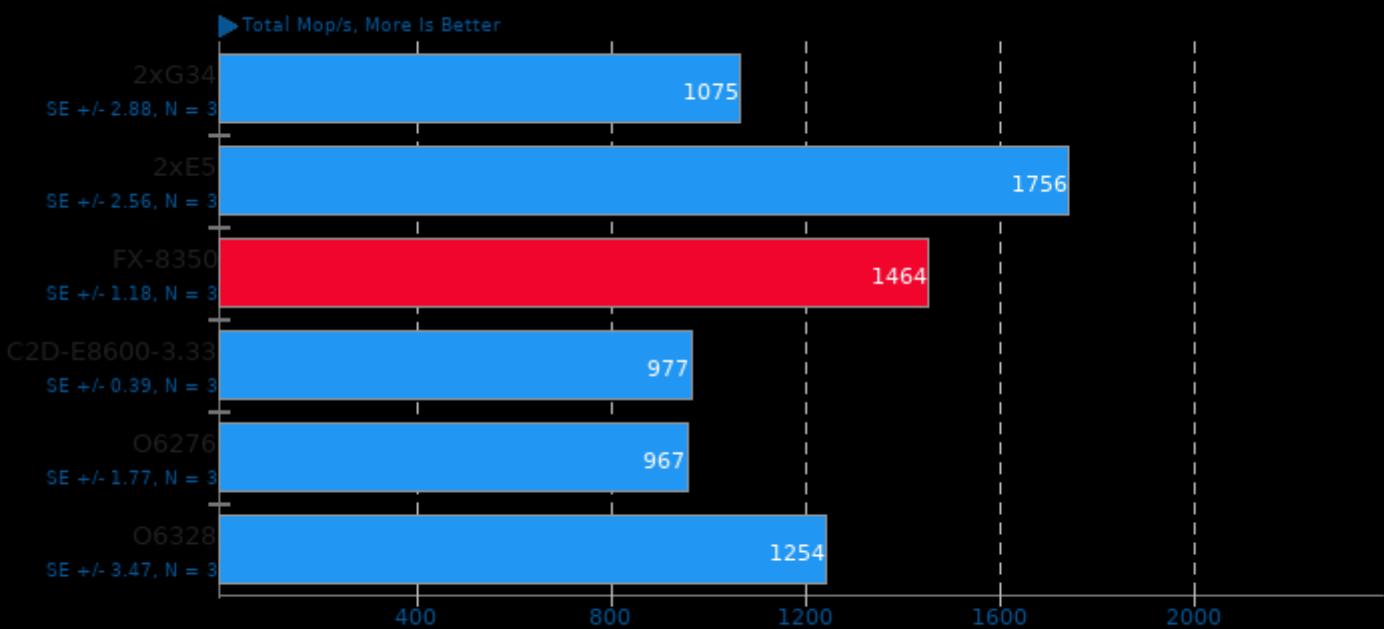


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 2.1.1

NAS Parallel Benchmarks 3.3.1

Test / Class: SP.A

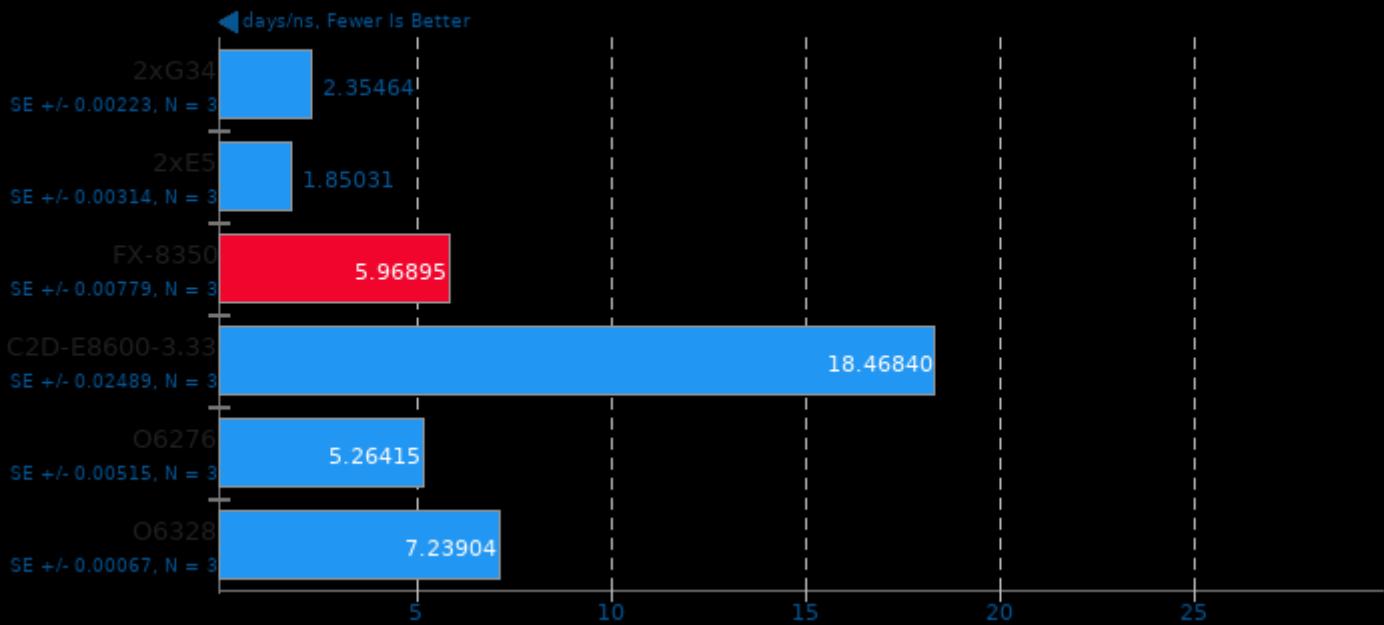


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

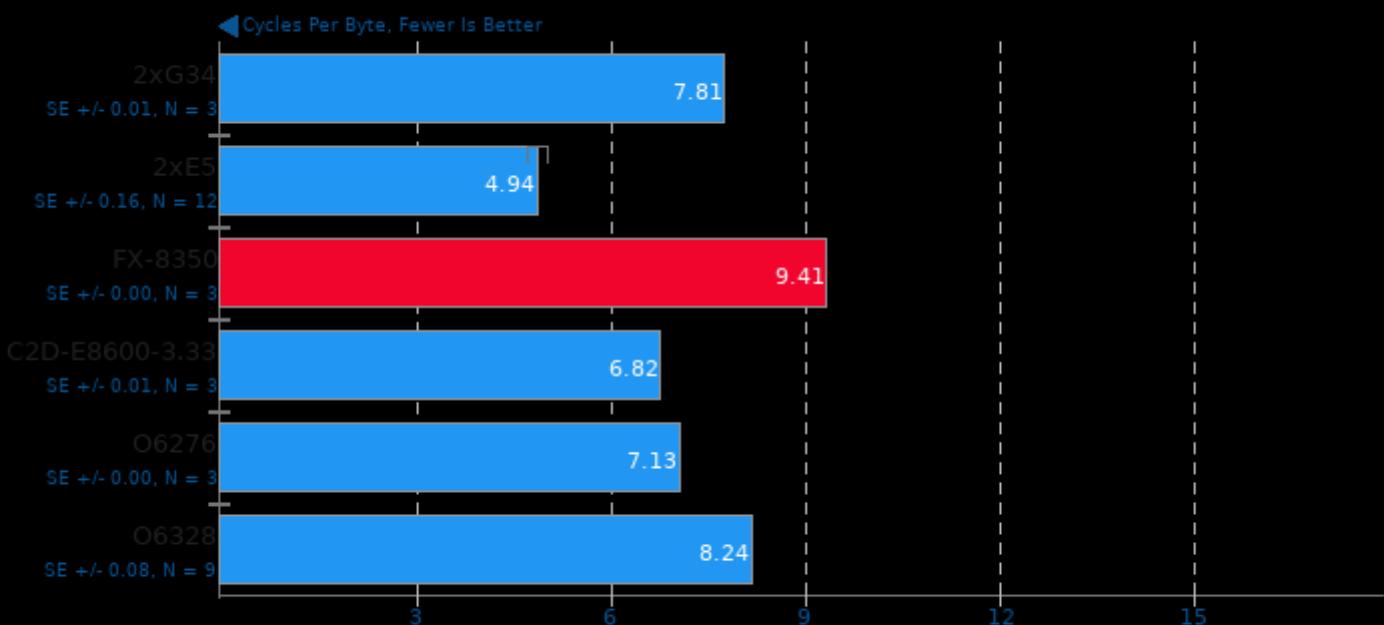
2. Open MPI 2.1.1

NAMD 2.13b1

ATPase Simulation - 327,506 Atoms

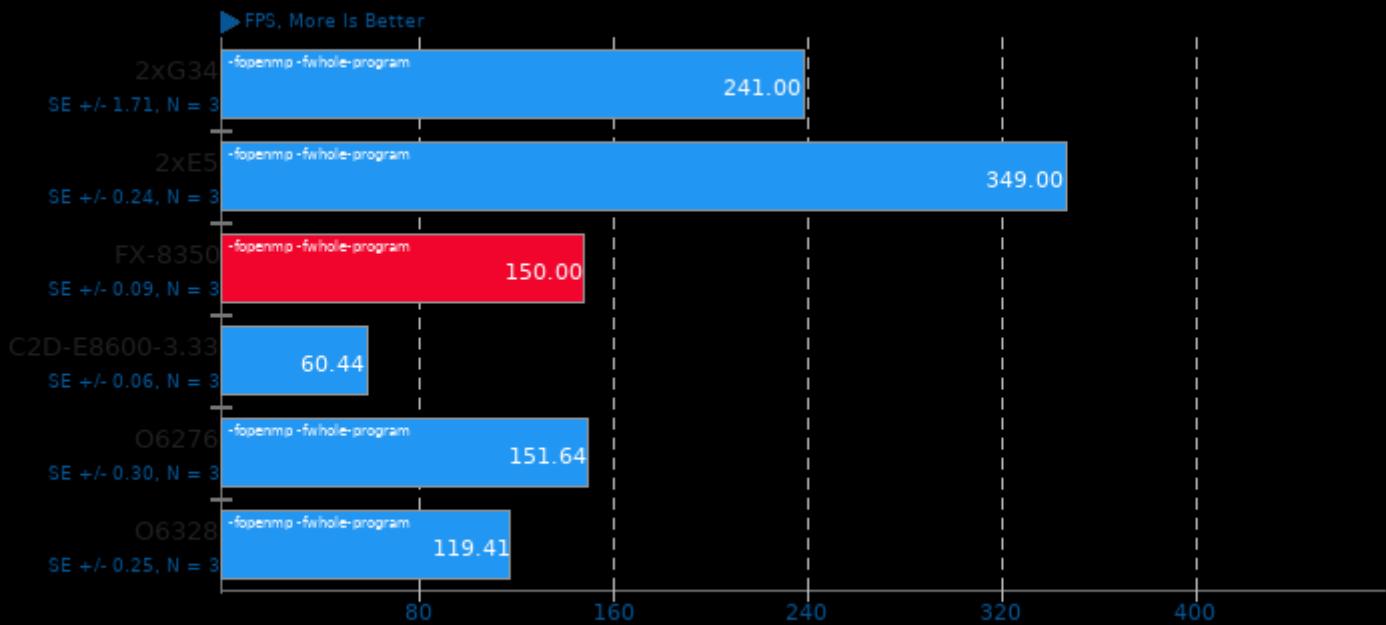


BLAKE2 20170307



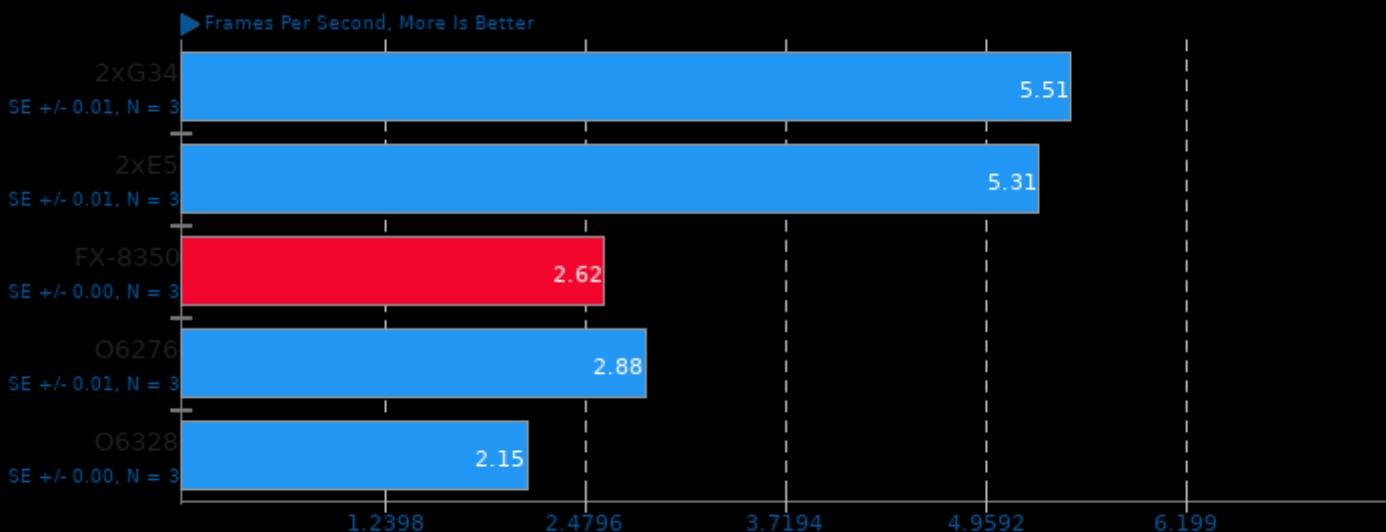
1. (CC) gcc options: -O3 -march=native -lcrypto -lz

TTSIOD 3D Renderer 2.3b Phong Rendering With Soft-Shadow Mapping



1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -fno -msse -mrecip -mfpmath=sse -msse2 -msse3 -fSD -fstdc++

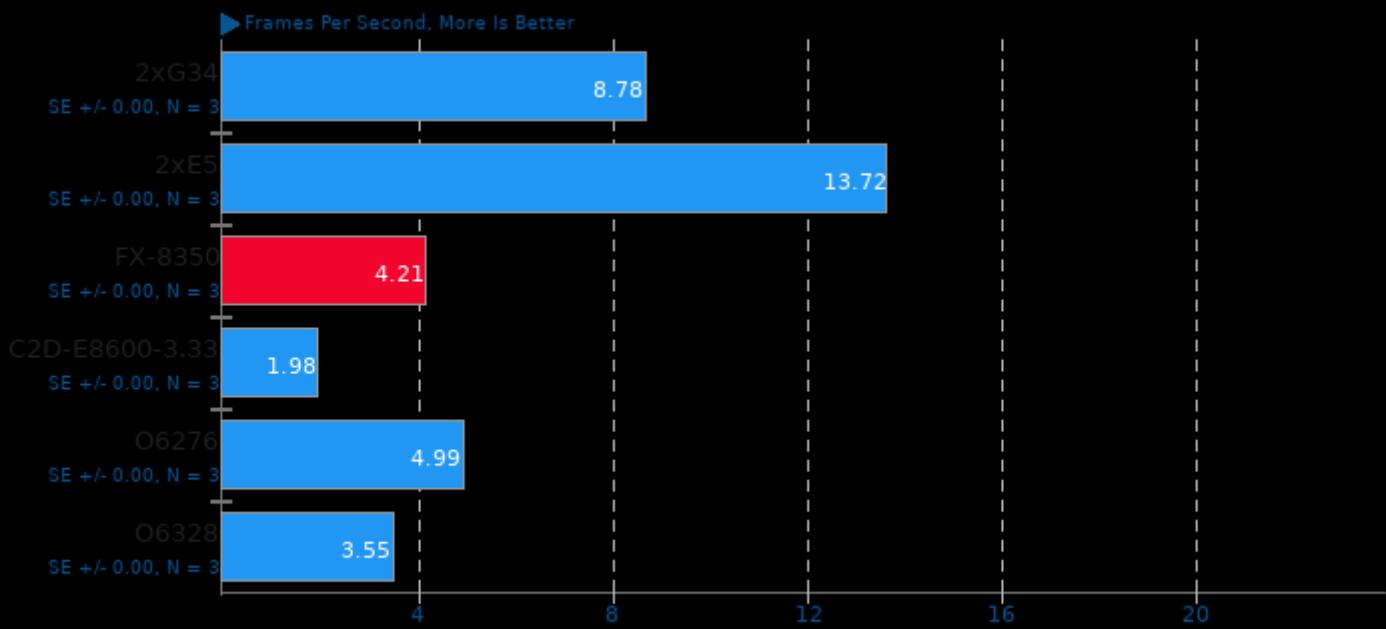
SVT-AV1 0.5 1080p 8-bit YUV To AV1 Video Encode



1. (CXX) g++ options: -O3 -pie -fthread -lm

SVT-HEVC 2019-02-03

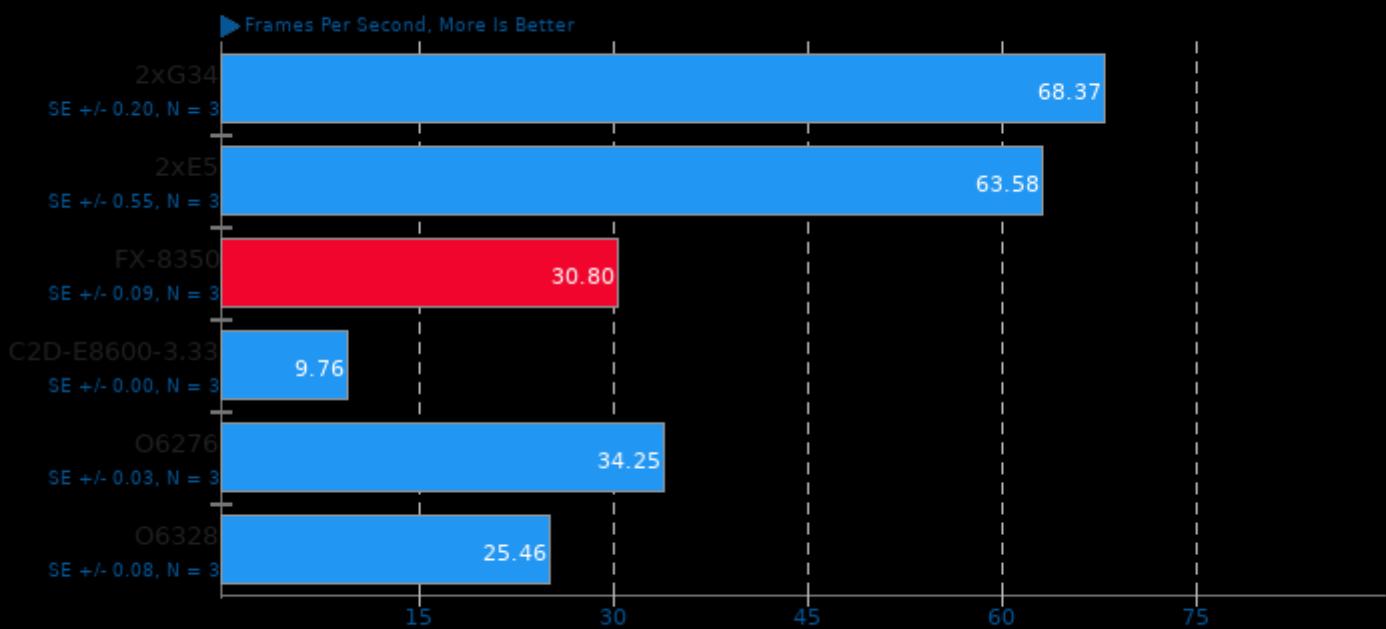
1080p 8-bit YUV To HEVC Video Encode



1. (CC) gcc options: -fPIE -fPIC -O2 -fno-visibility=hidden -march=native -pie -rdynamic -lpthread -lrt

x264 2018-09-25

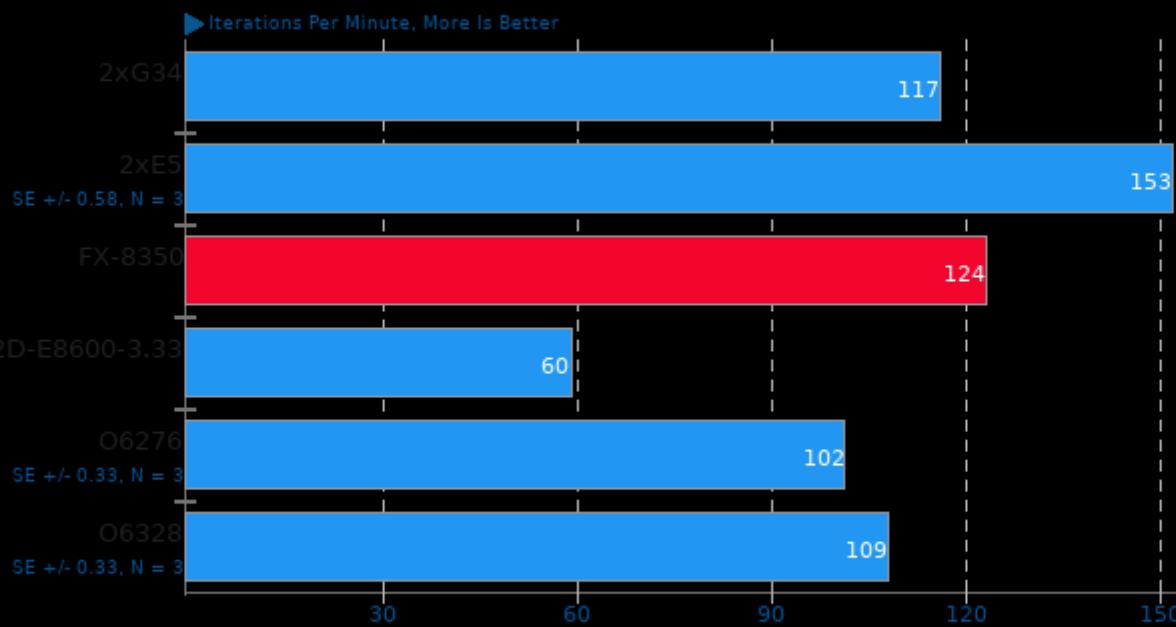
H.264 Video Encoding



1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

GraphicsMagick 1.3.30

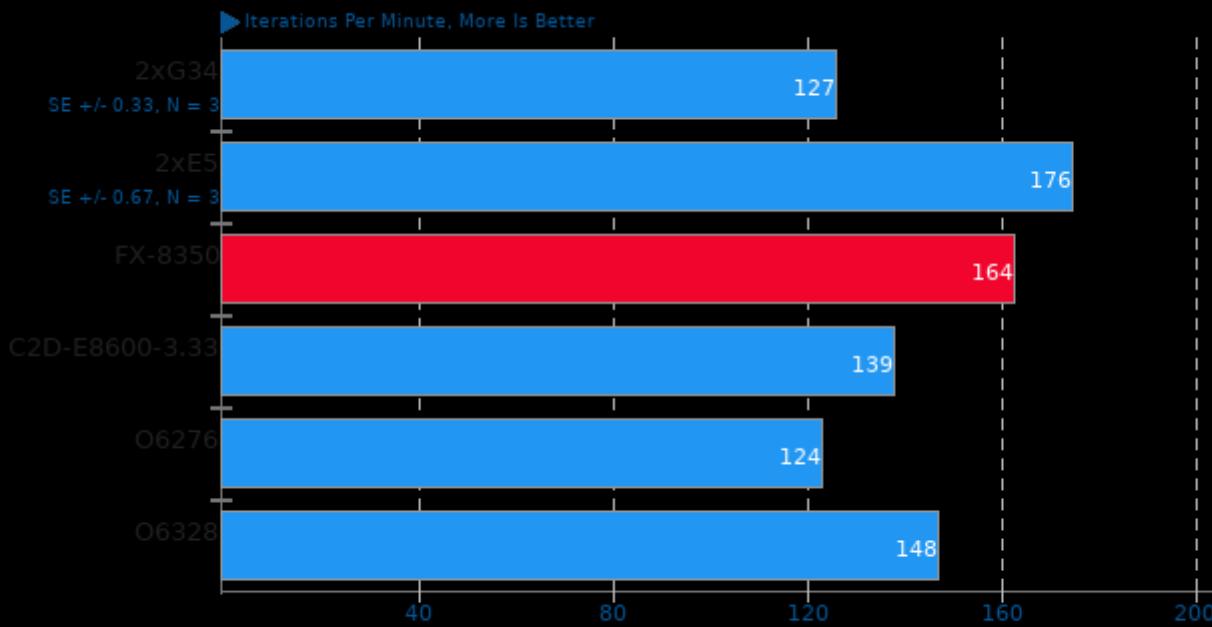
Operation: Swirl



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -lzma -lbz2 -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.30

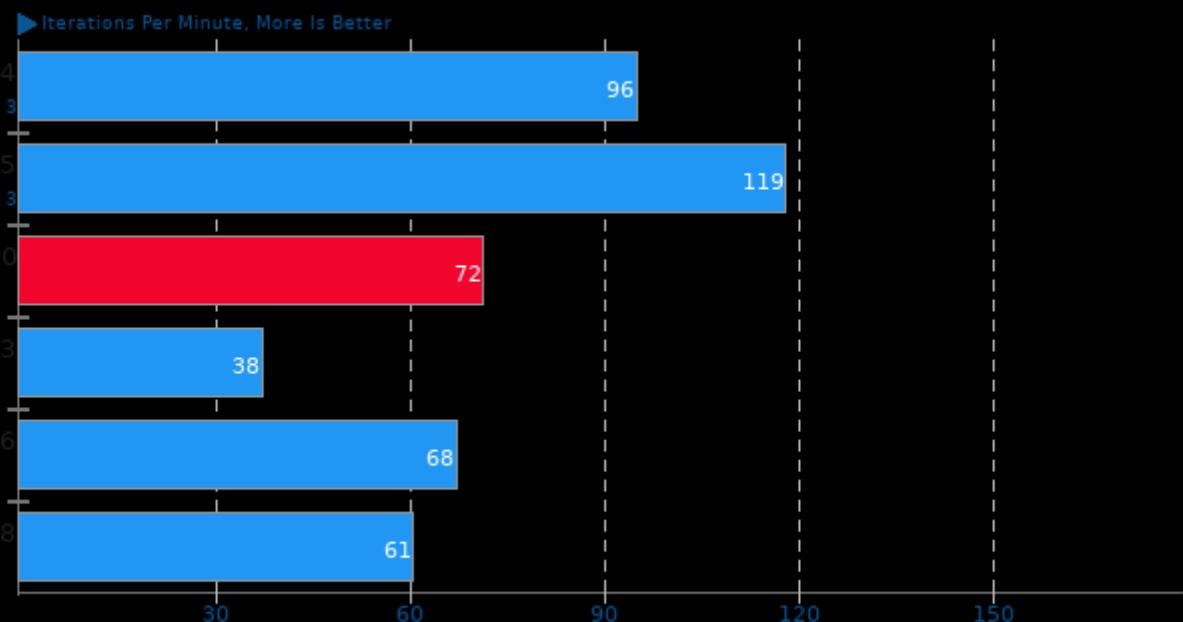
Operation: Rotate



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -lzma -lbz2 -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.30

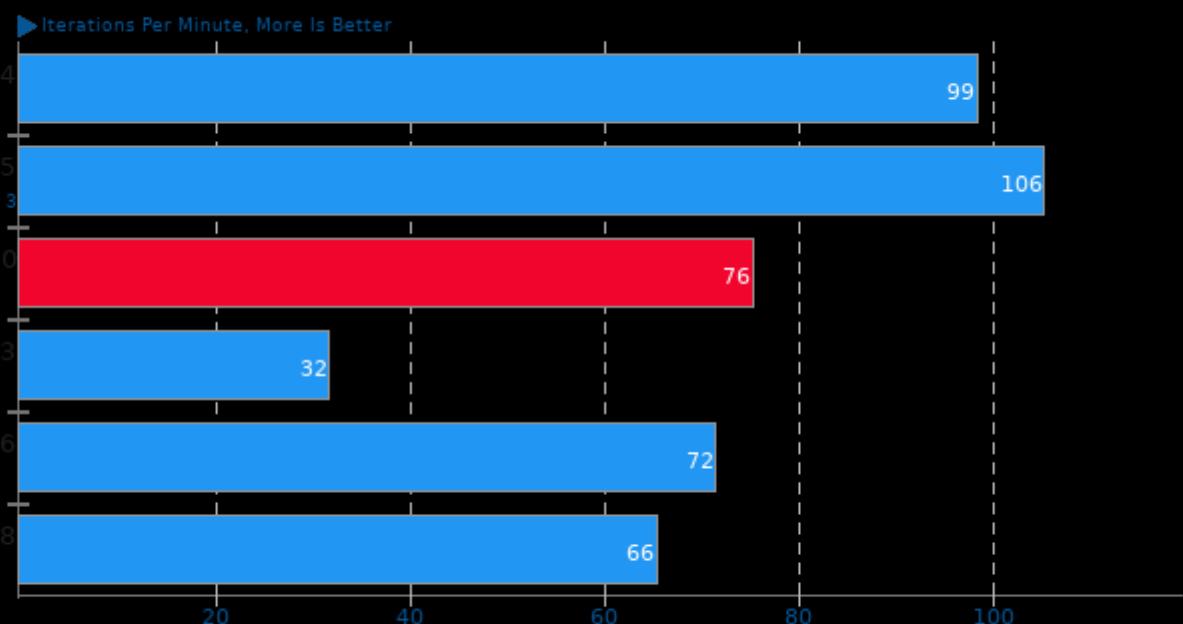
Operation: Sharpen



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -lzma -lbz2 -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.30

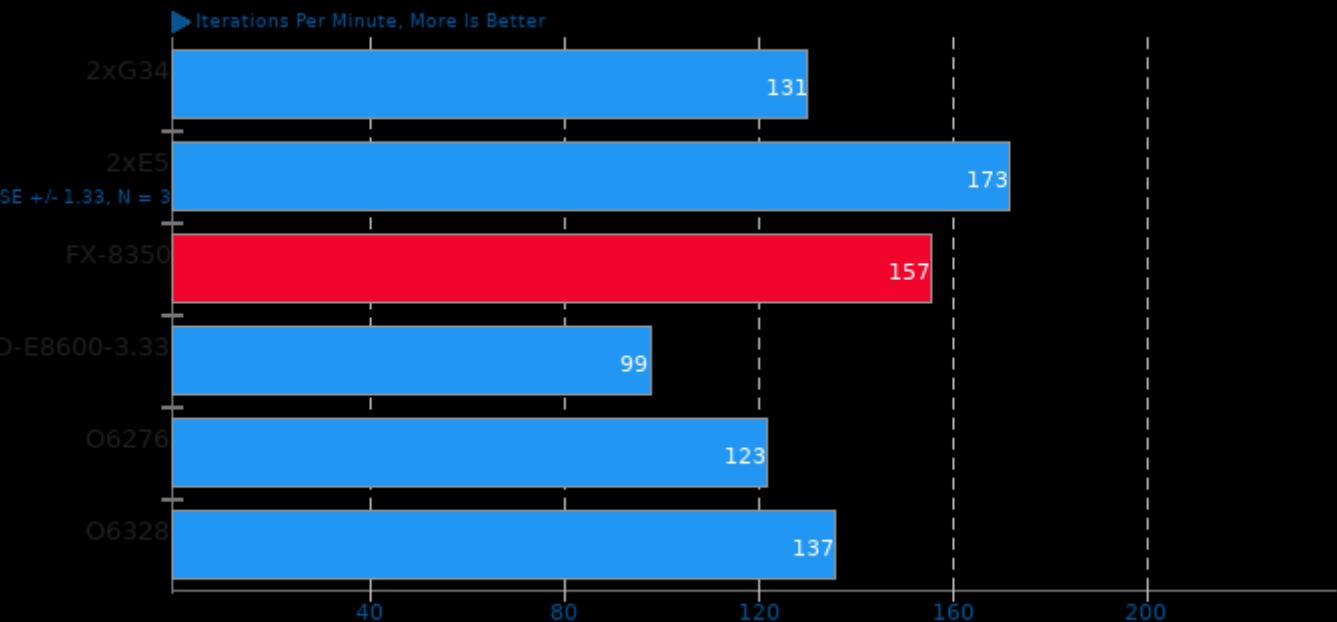
Operation: Enhanced



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -lzma -lbz2 -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.30

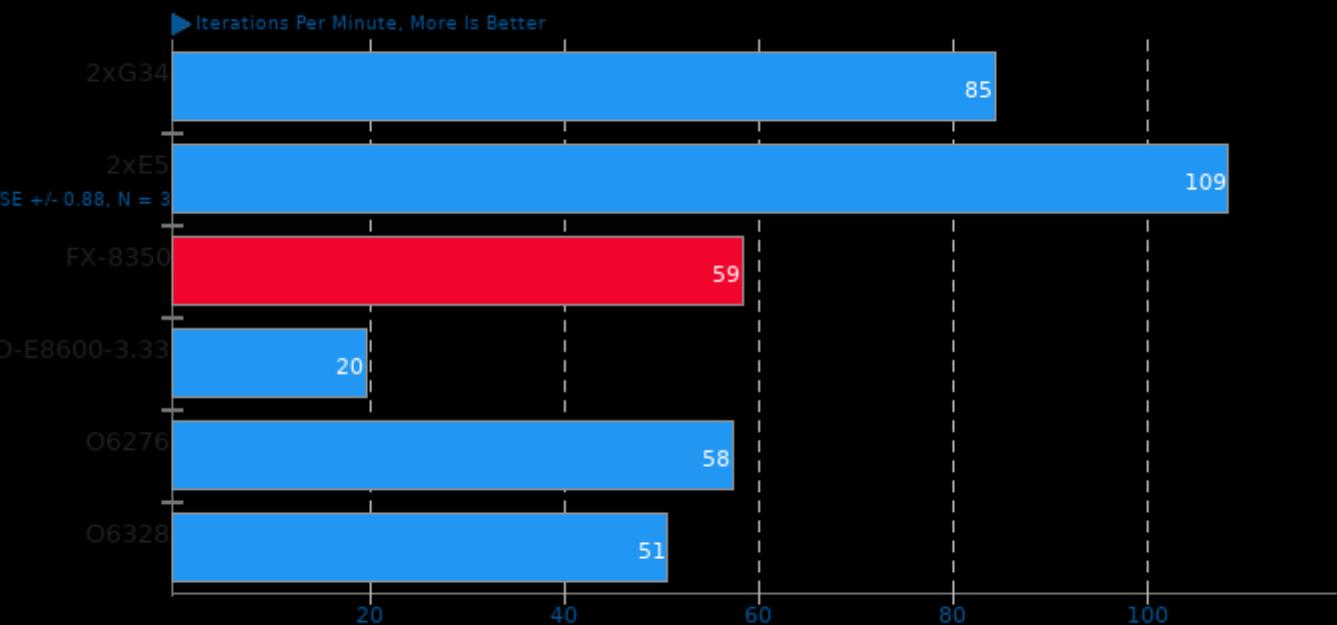
Operation: Resizing



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -lzma -lbz2 -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.30

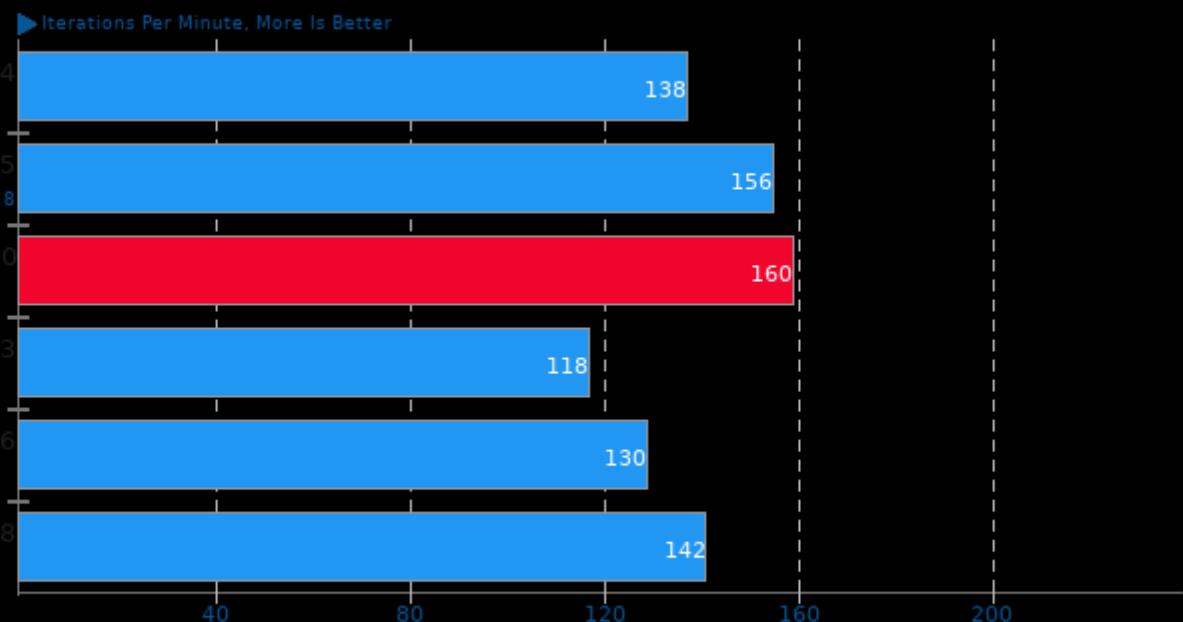
Operation: Noise-Gaussian



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -lzma -lbz2 -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.30

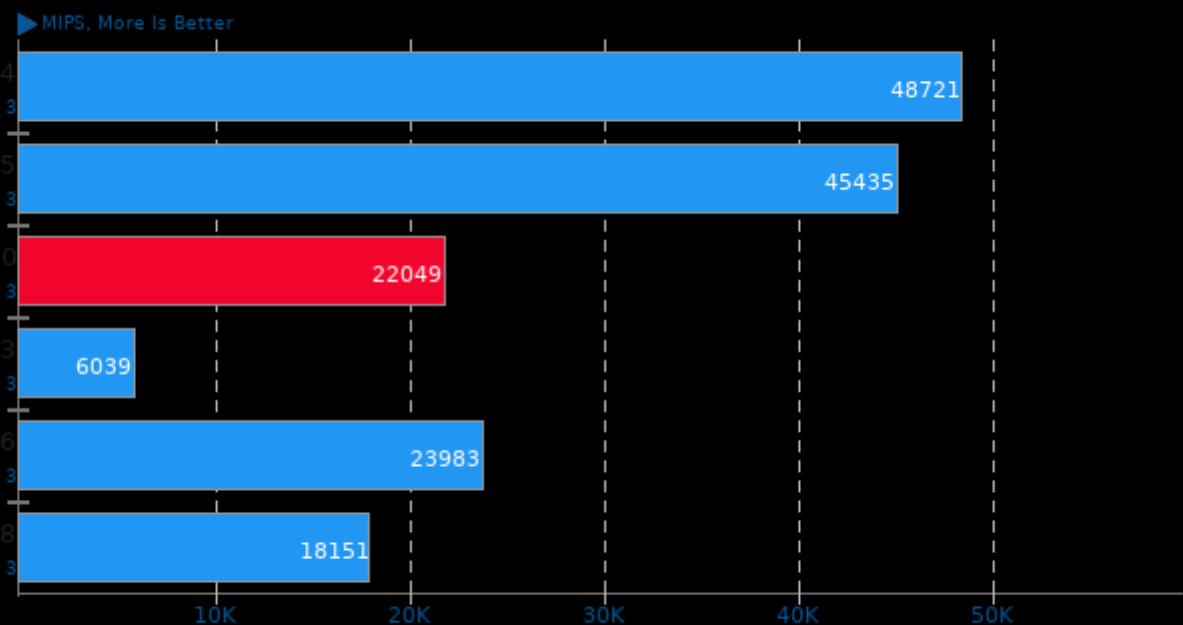
Operation: HWB Color Space



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -lzma -lbz2 -lz -lm -lgomp -lpthread

7-Zip Compression 16.02

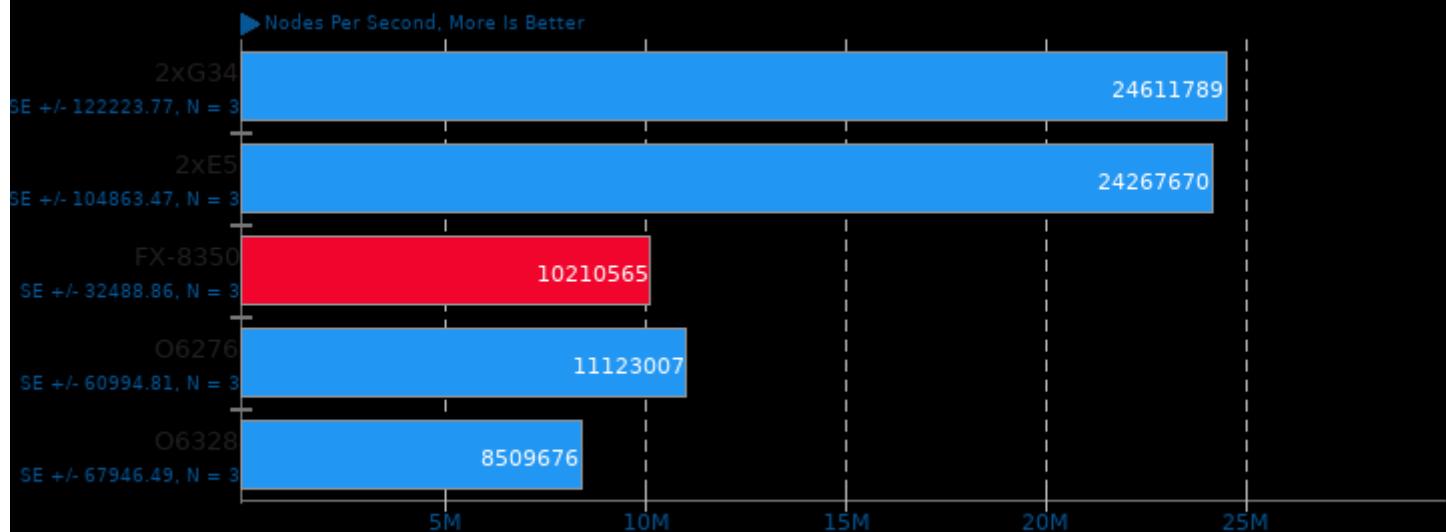
Compress Speed Test



1. (CXX) g++ options: -pipe -lpthread

Stockfish 9

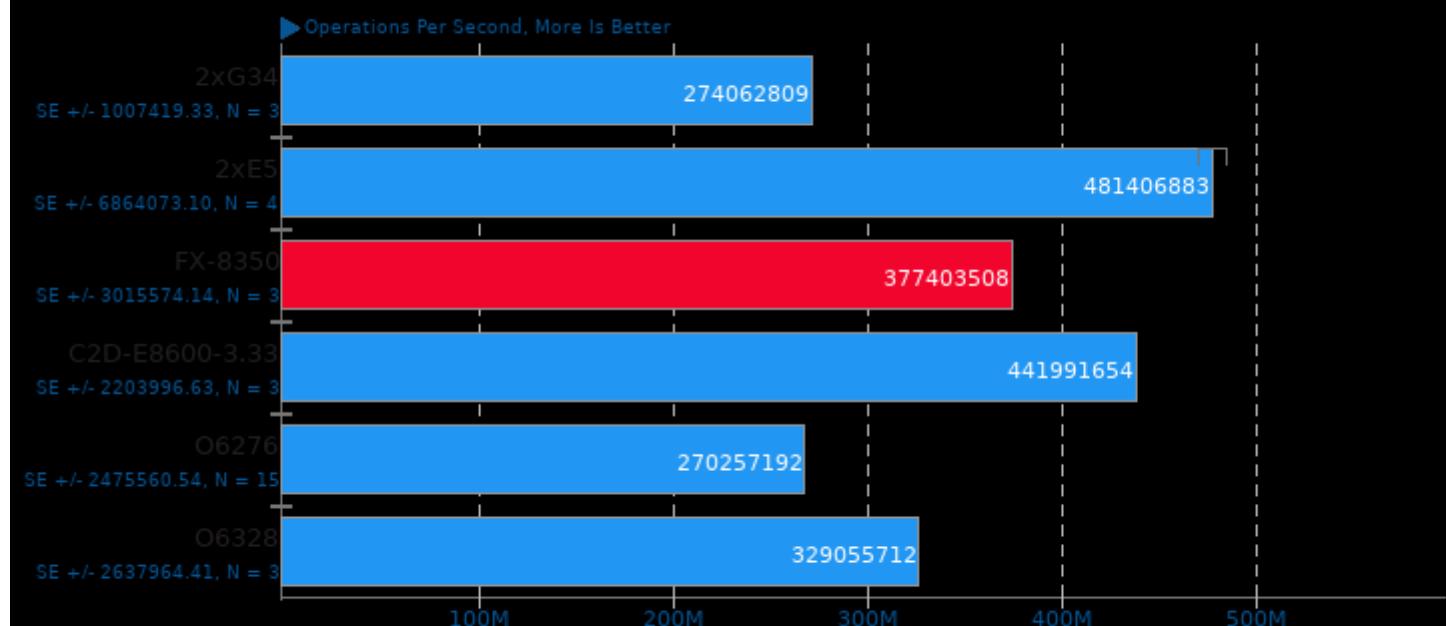
Total Time



1. (CXX) g++ options: -m64 -fthread-safe-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -fno-

Swet 1.5.16

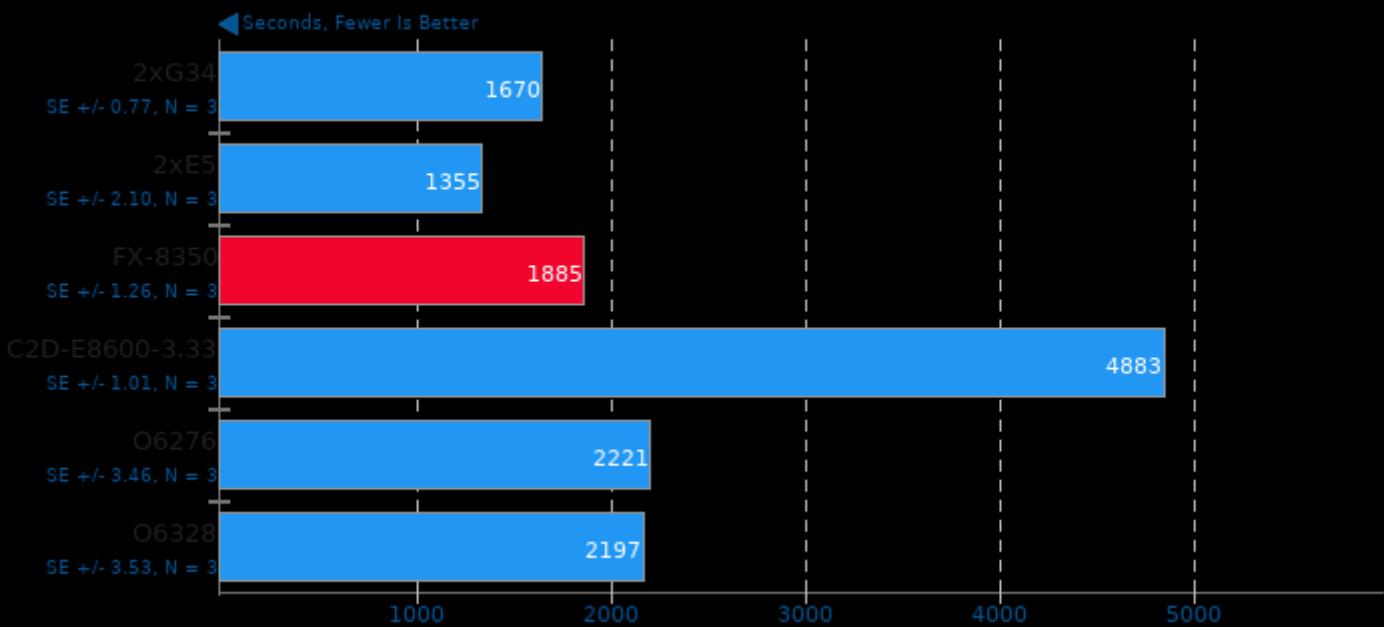
Average



1. (CC) gcc options: -lm -fthread-safe-exceptions -fno-

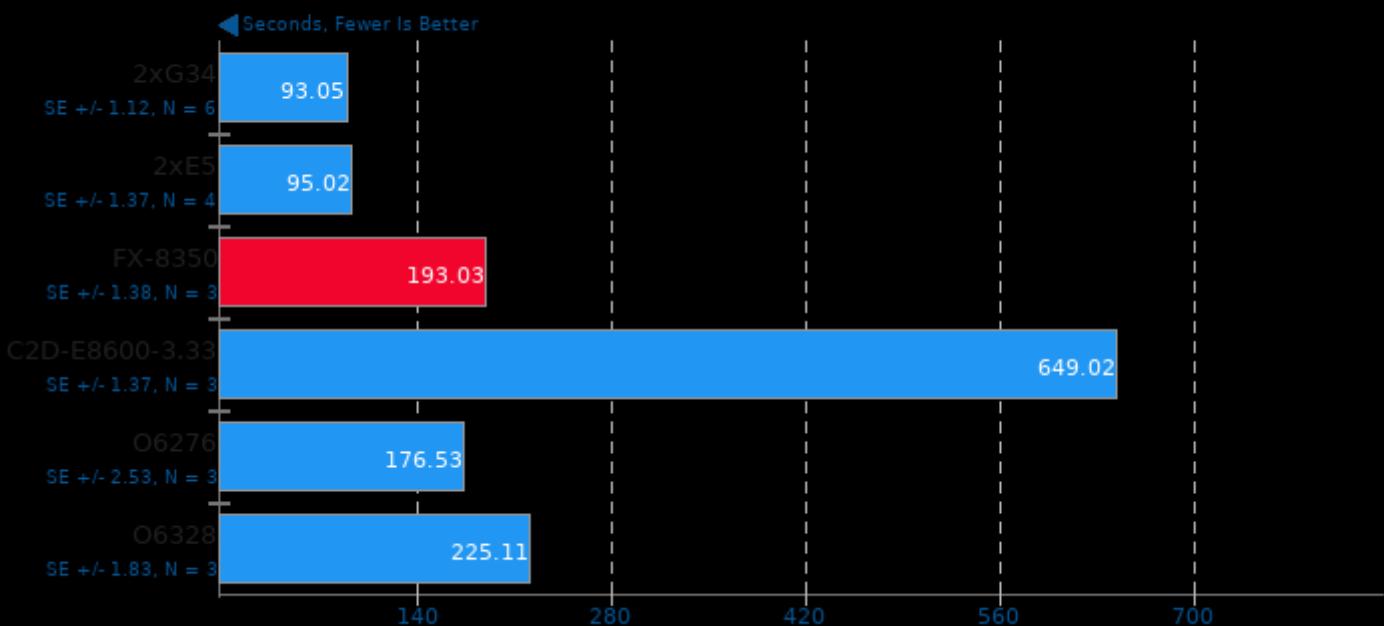
Timed GCC Compilation 8.2

Time To Compile



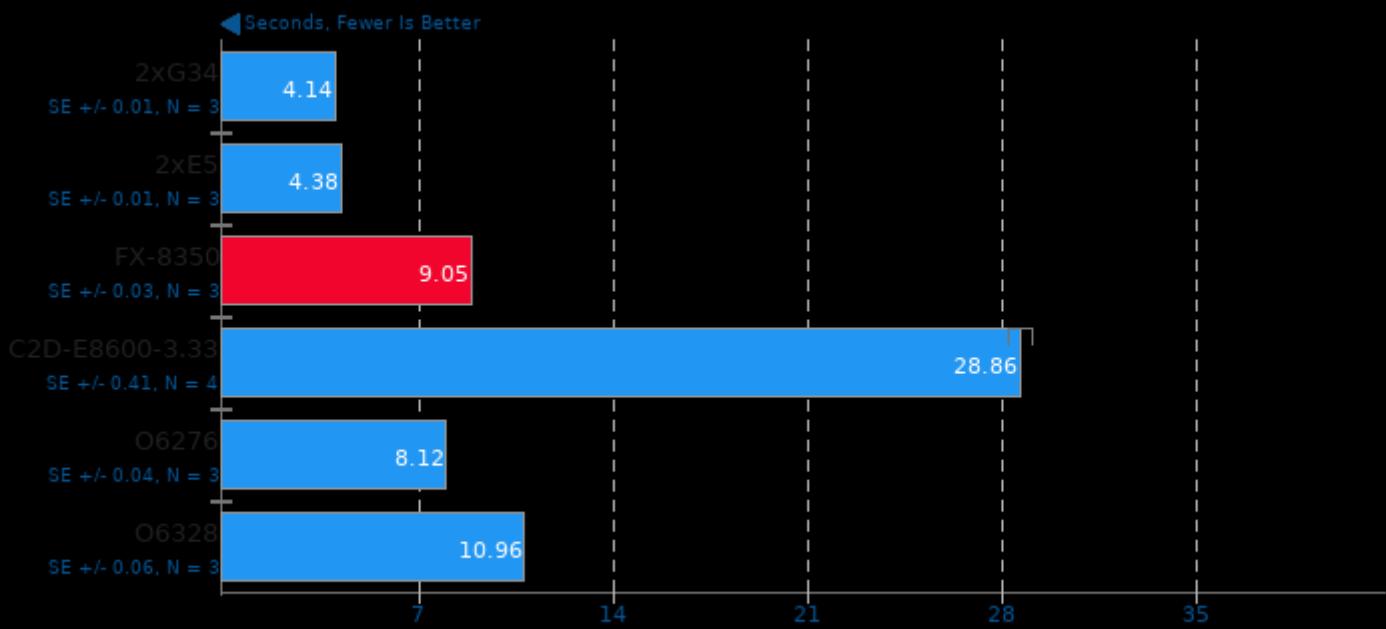
Timed Linux Kernel Compilation 4.18

Time To Compile



Parallel BZIP2 Compression 1.1.12

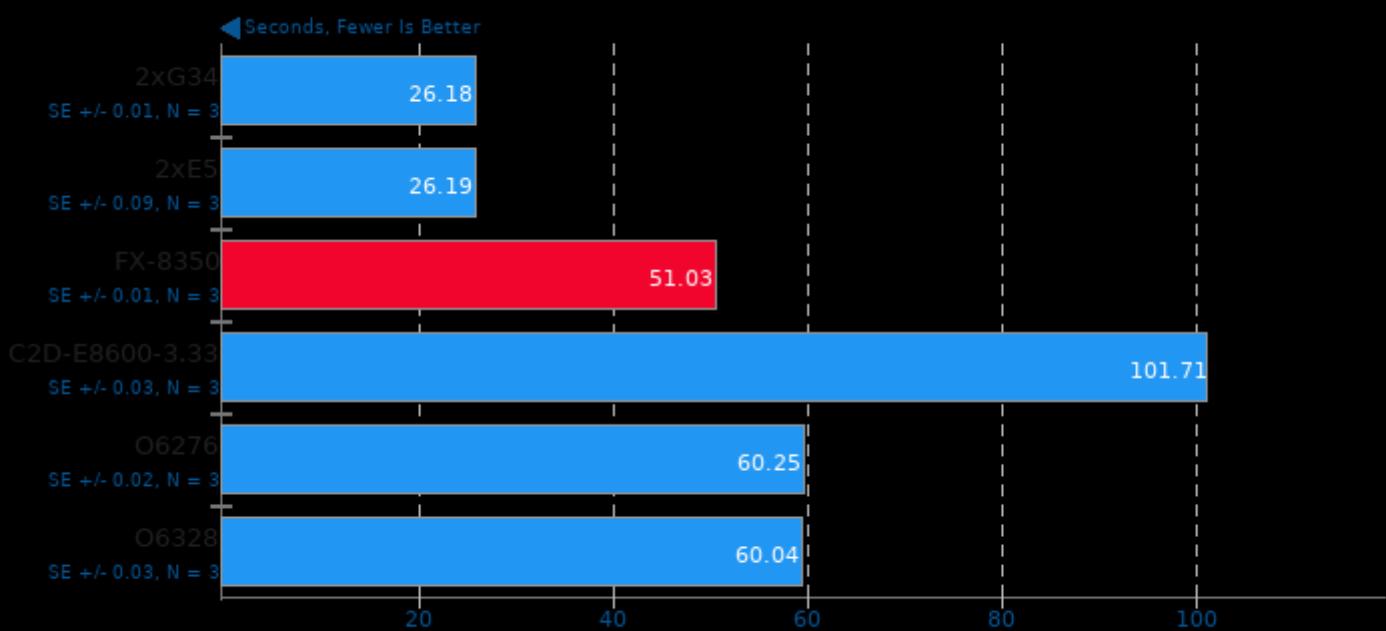
256MB File Compression



1. (CXX) g++ options: -O2 -pthread -lbz2 -lpthread

Rust Prime Benchmark

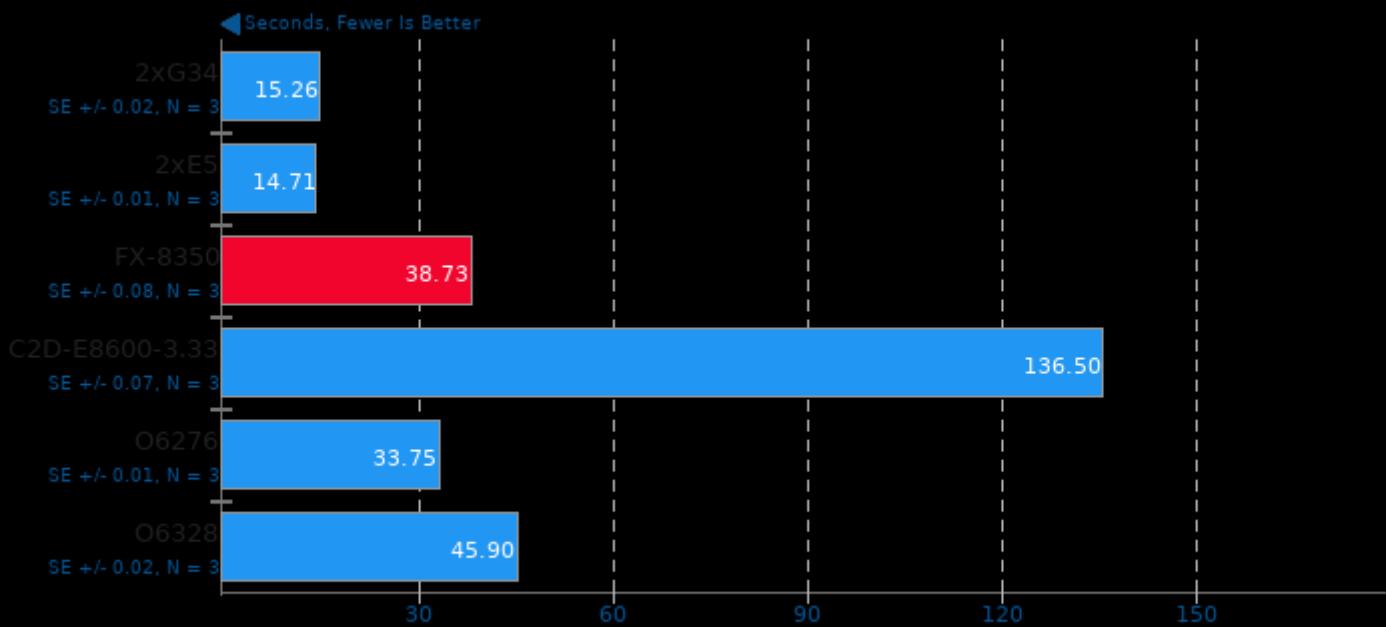
Prime Number Test To 200,000,000



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lrt -lpthread -lgcc_s -lc -lm -lutil

Smallpt 1.0

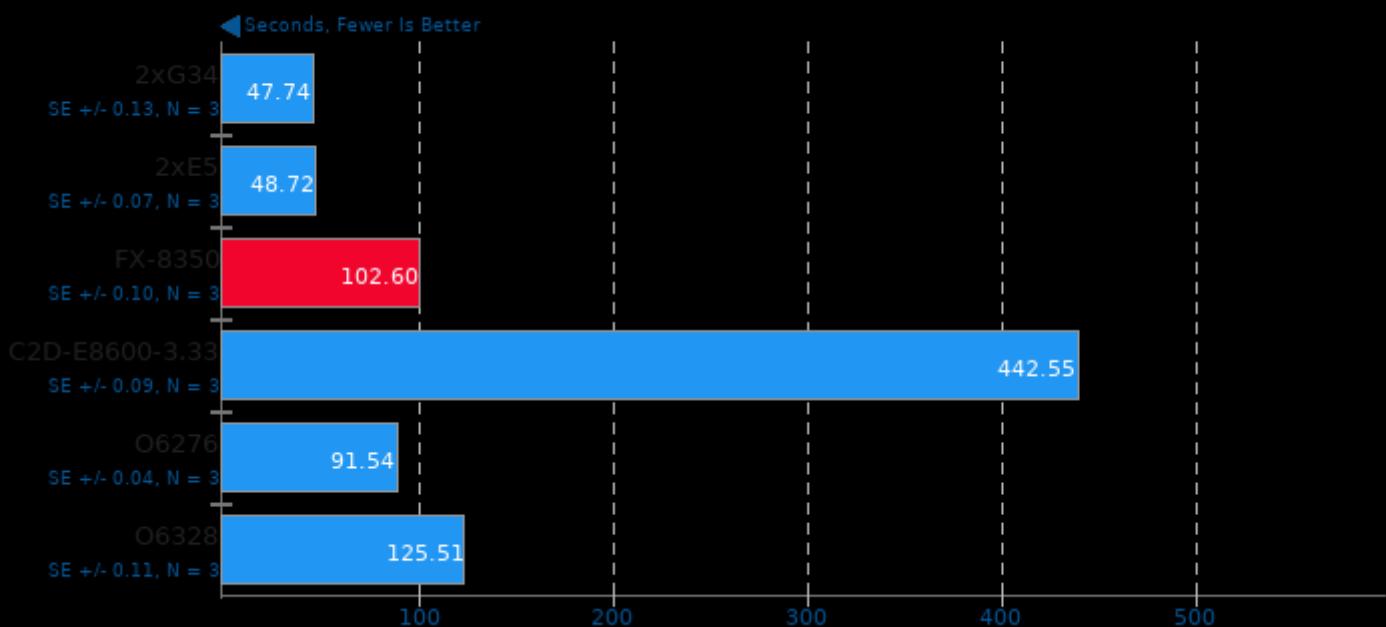
Global Illumination Renderer; 128 Samples



1. (CXX) g++ options: -fopenmp -O3

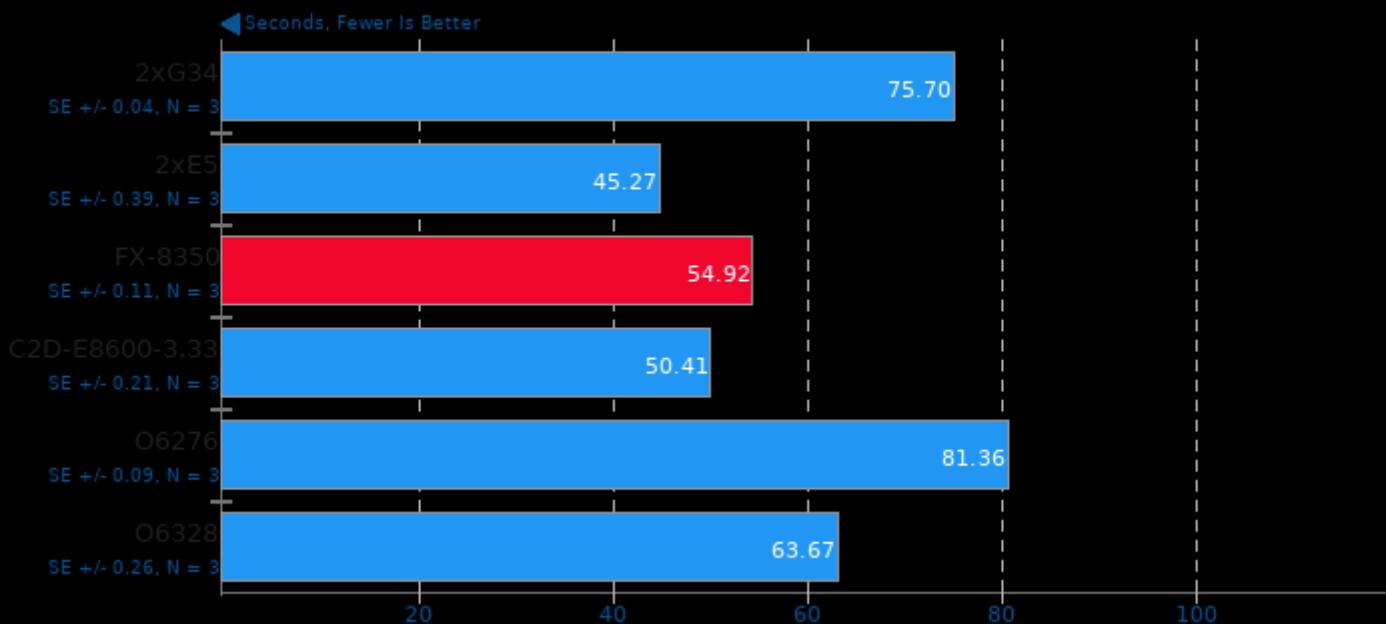
Y-Cruncher 0.7.7

Calculating 500M Pi Digits



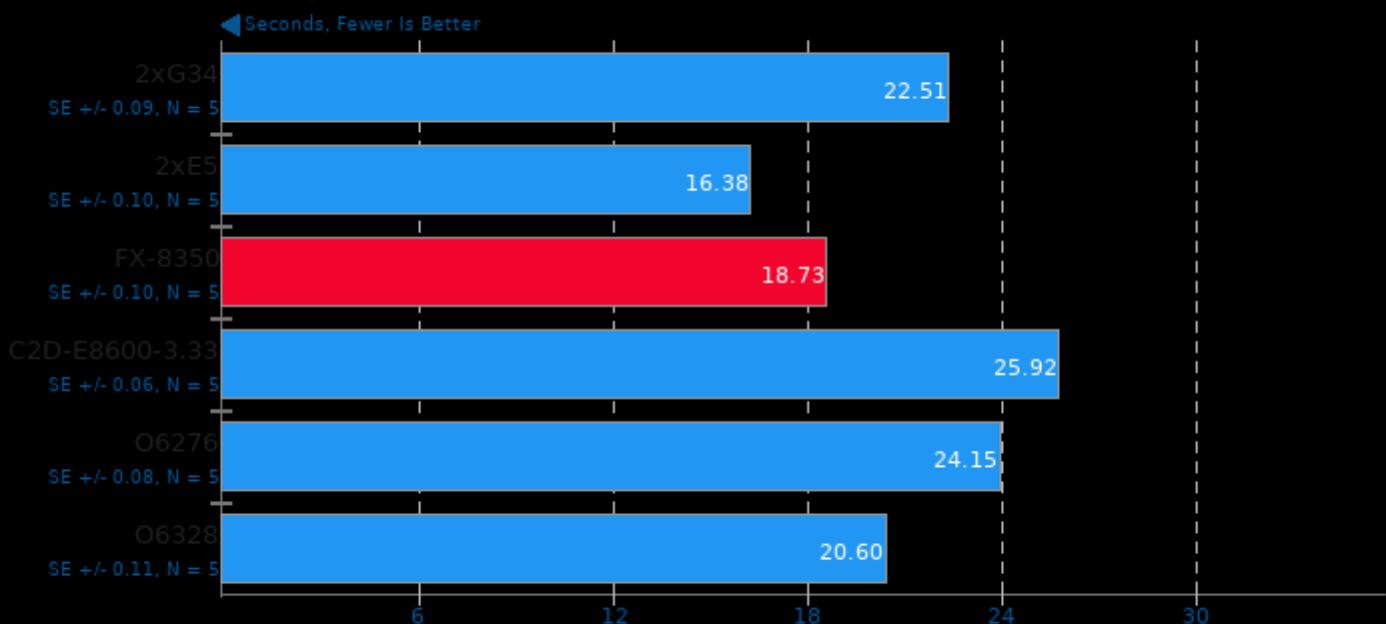
Gzip Compression

Linux Source Tree Archiving To .tar.gz



FLAC Audio Encoding 1.3.2

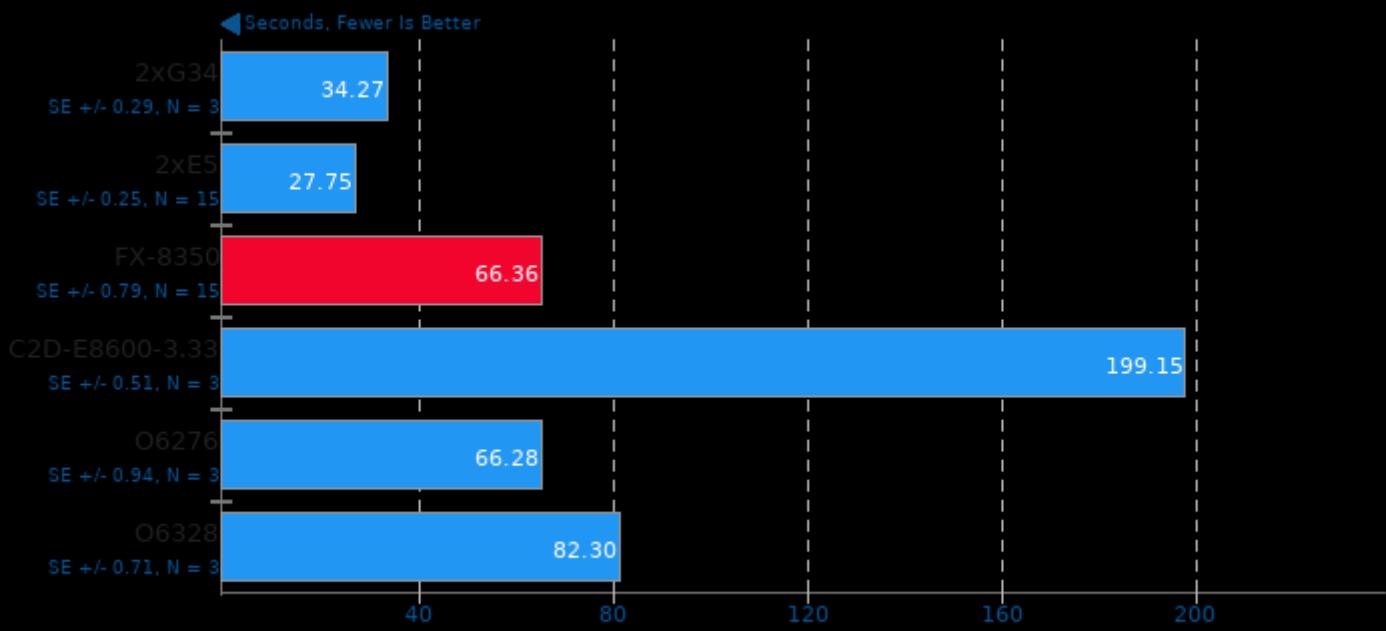
WAV To FLAC



1. (CXX) g++ options: -O2 -fvisibility=hidden -fno-rtti

Hackbench

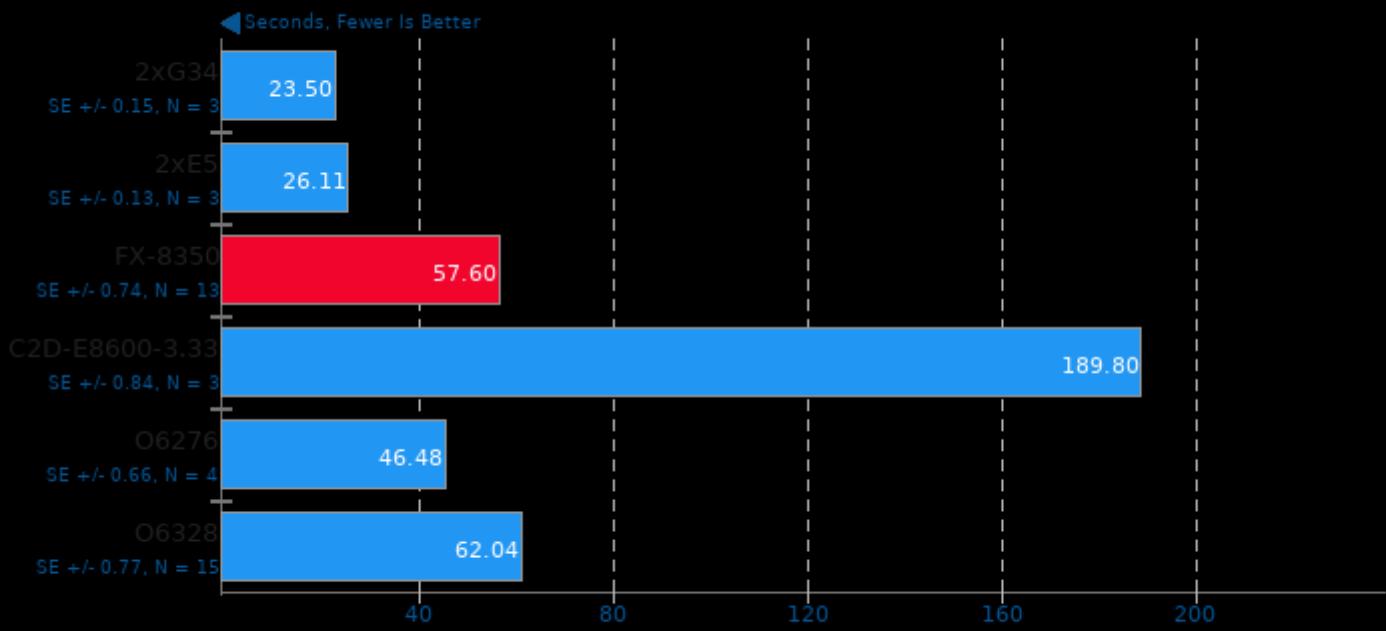
Count: 8 - Type: Thread



1. (CC) gcc options: -lpthread

Hackbench

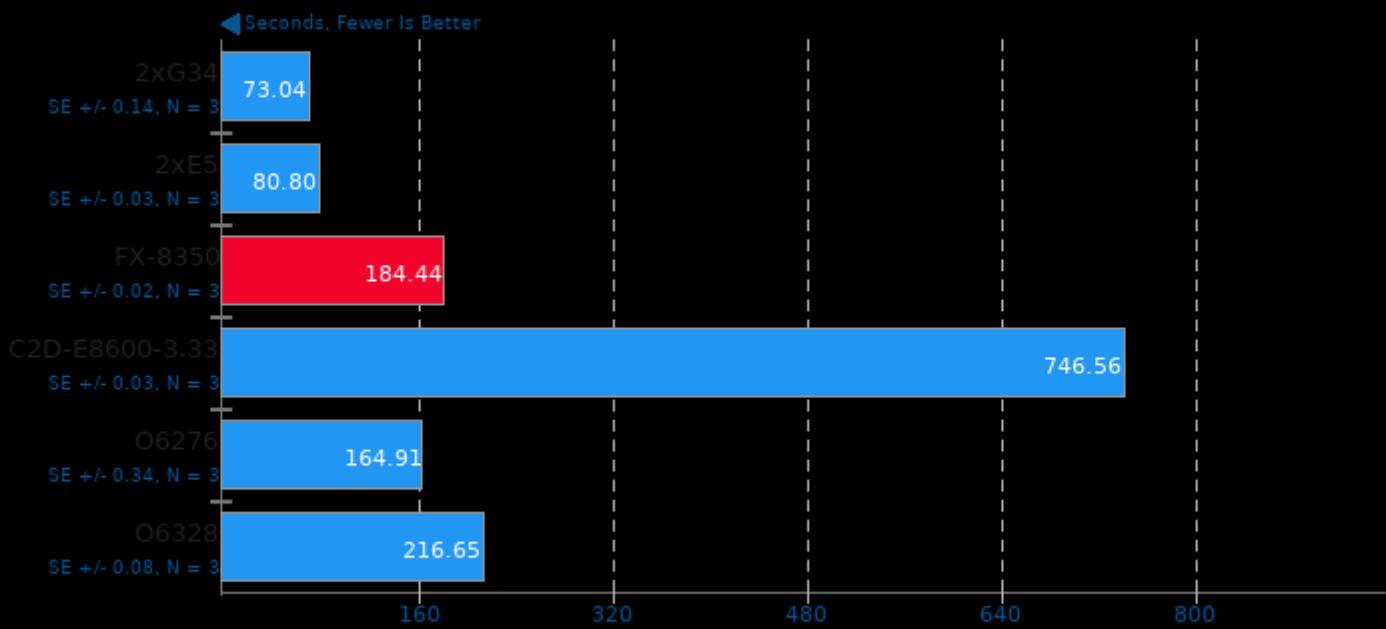
Count: 8 - Type: Process



1. (CC) gcc options: -lpthread

m-queens 1.2

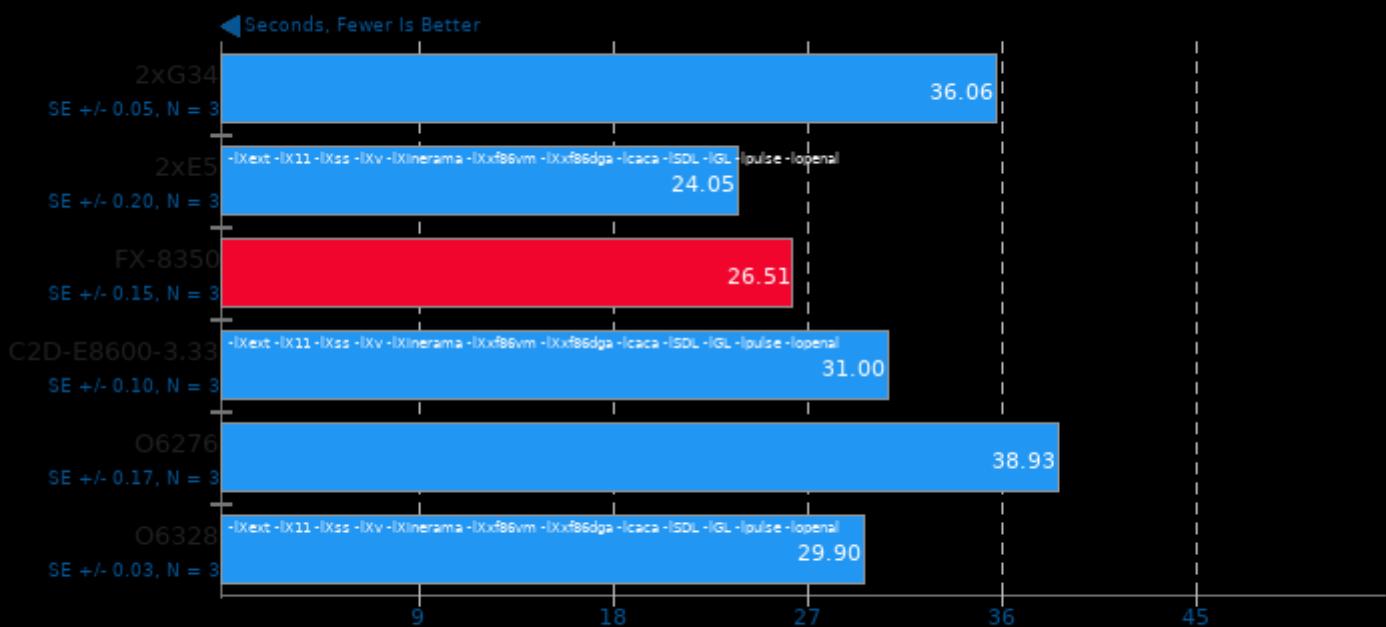
Time To Solve



1. (CXX) g++ options: -fopenmp -O2 -march=native

Mencoder 1.3.0

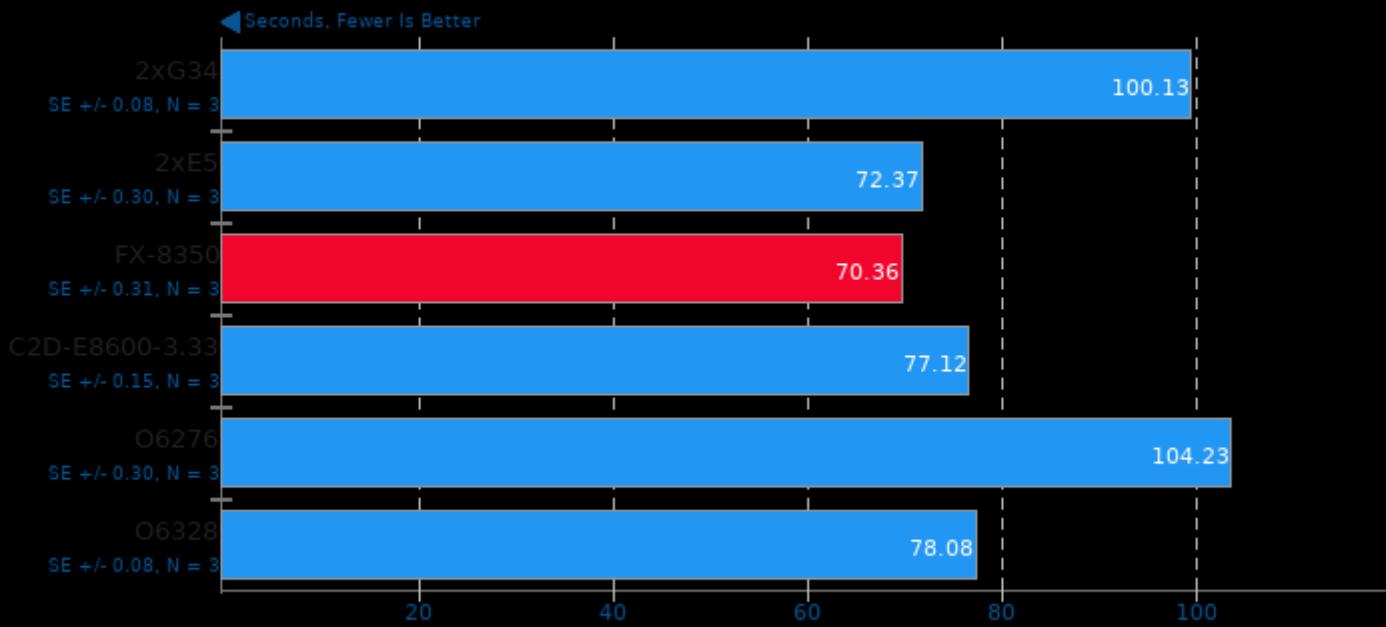
AVI To LAVC



1. (CC) gcc options: -ffast-math -fpie -pie -lncurses -lrt -lpng -lz -jpeg -lasound -ldl -lpthread -lfreetype -fontconfig -lbz2 -lmad -lvorbisenc -lvorbis -logg -

Minion 1.8

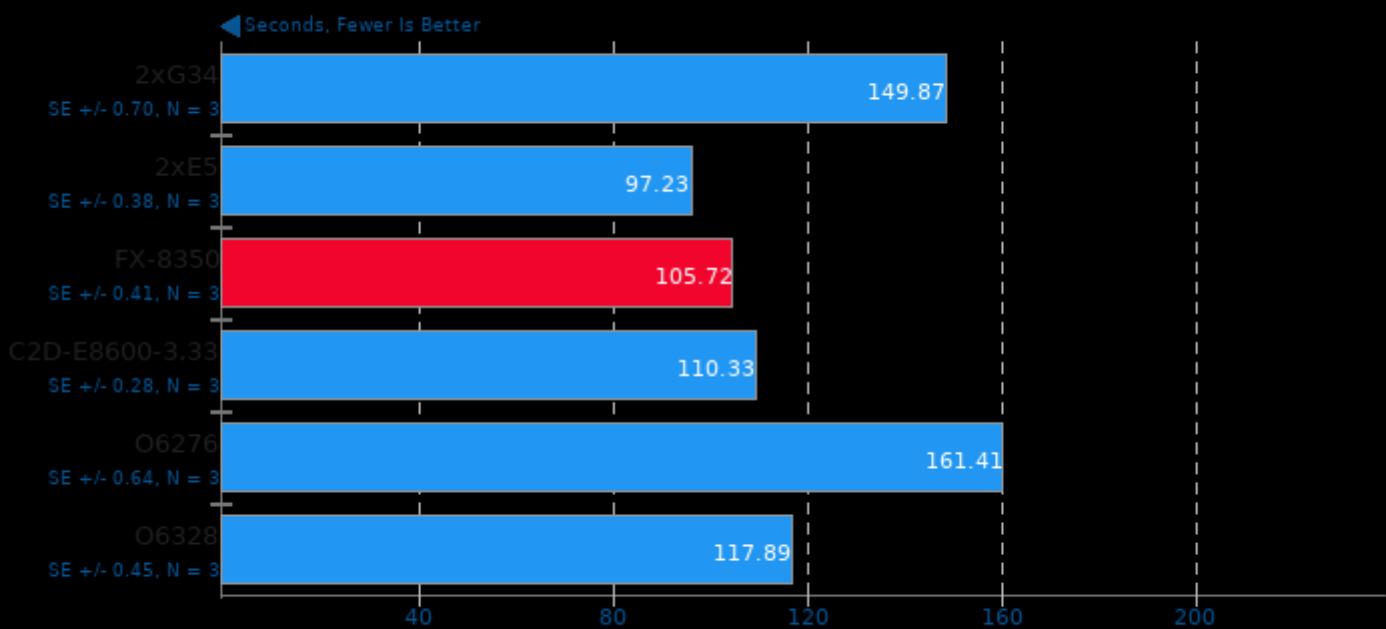
Benchmark: Graceful



1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Minion 1.8

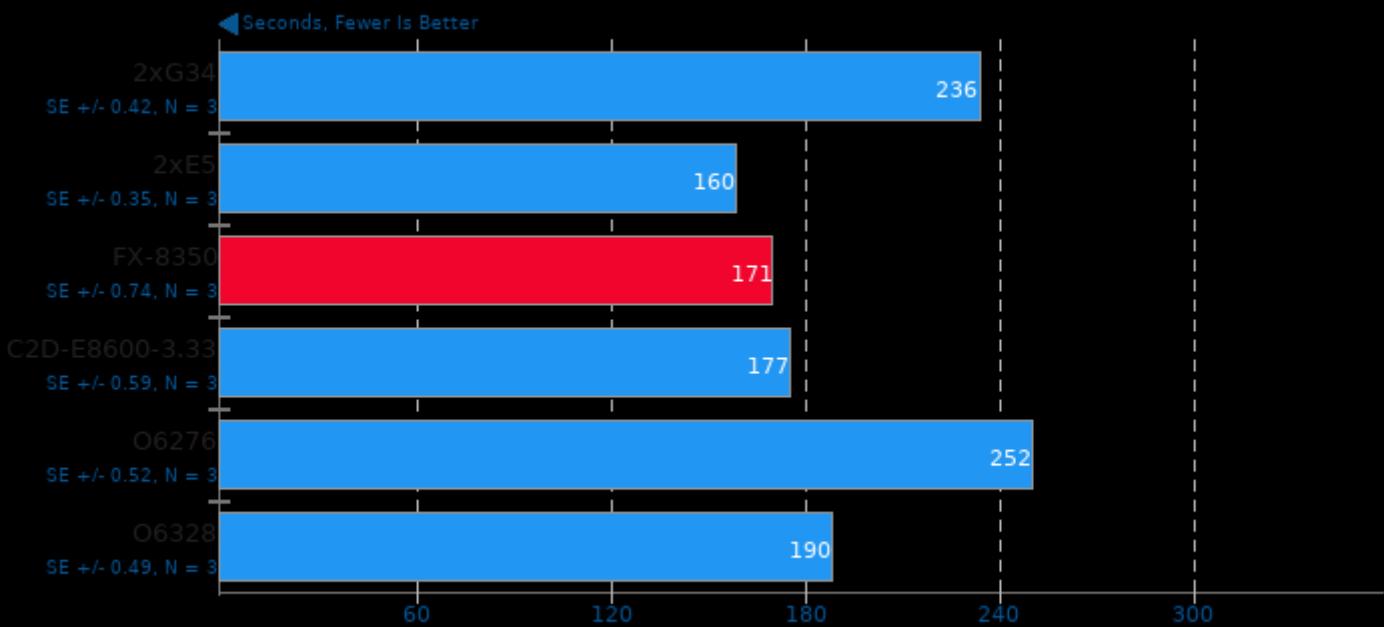
Benchmark: Solitaire



1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Minion 1.8

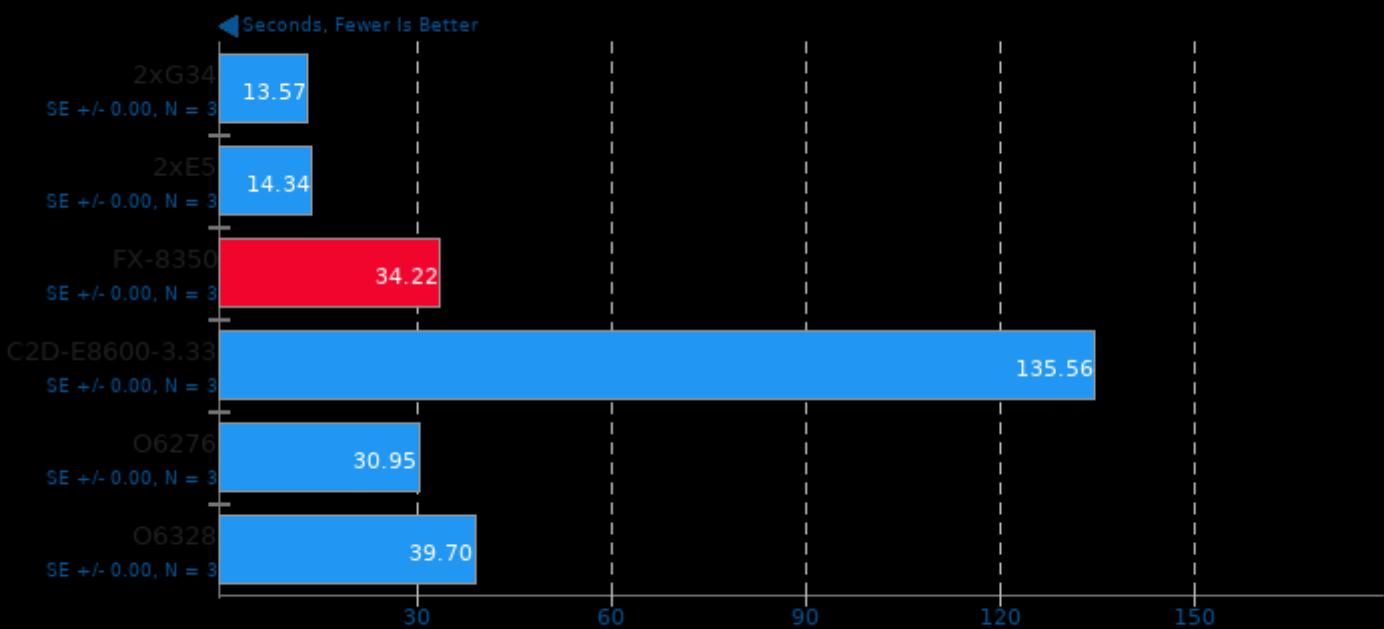
Benchmark: Quasigroup



1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

N-Queens 1.0

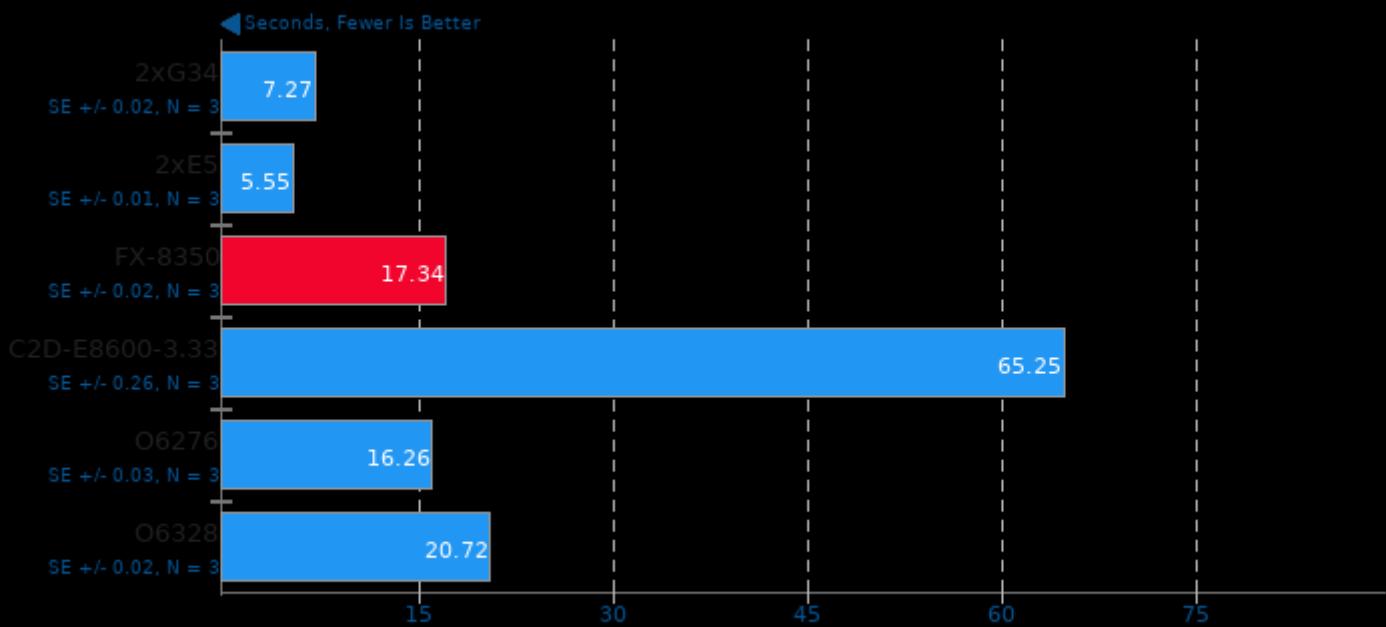
Elapsed Time



1. (CC) gcc options: -static -fopenmp -O3 -march=native

Tachyon 0.98.9

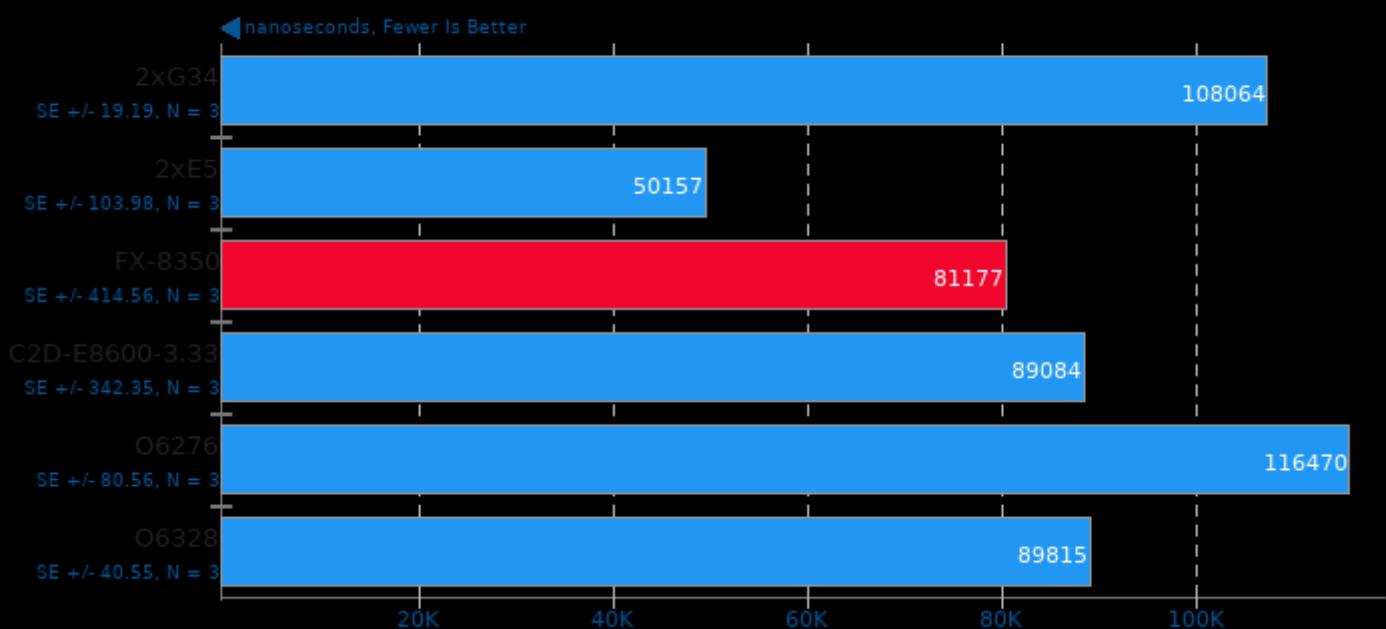
Total Time



1. (CC) gcc options: -m32 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

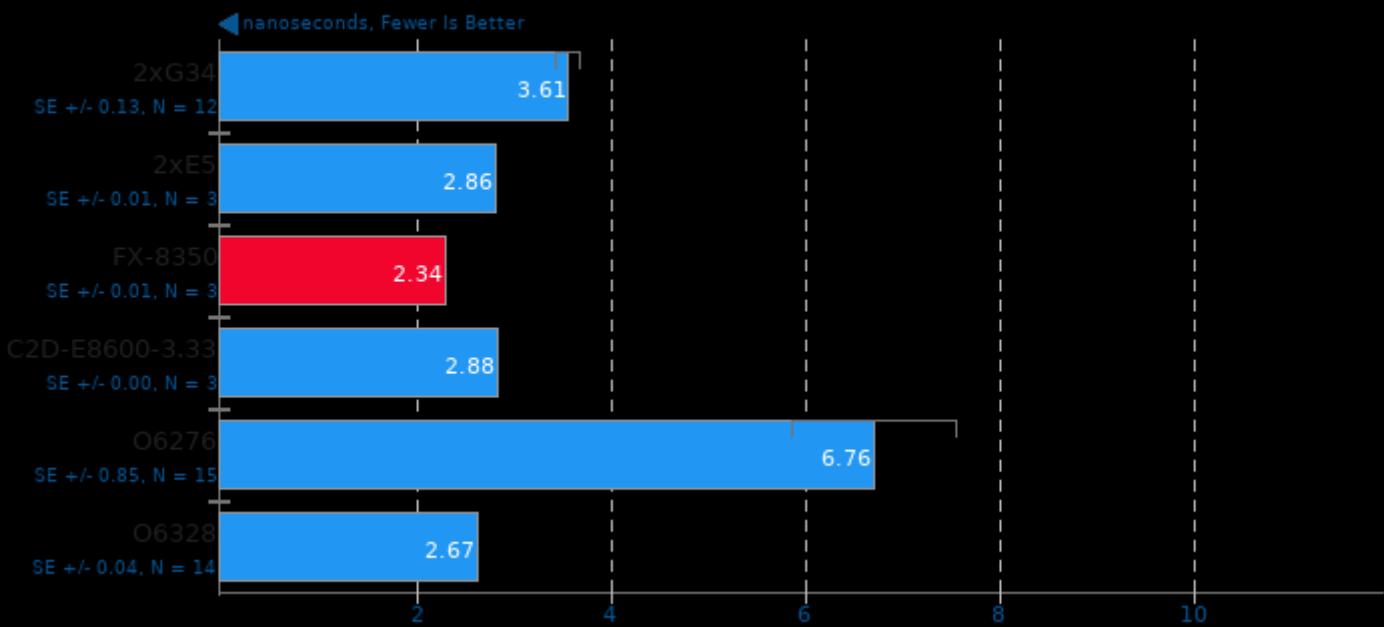
glibc bench 1.0

Benchmark: cos

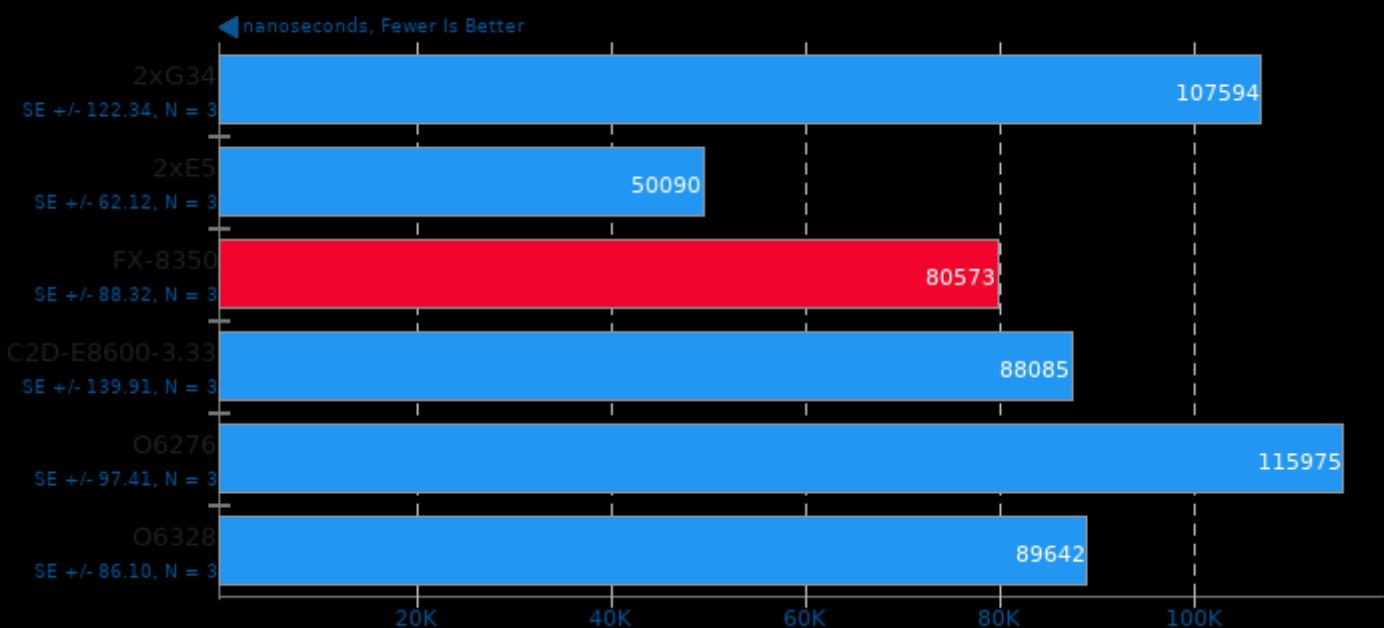


glibc bench 1.0

Benchmark: ffs

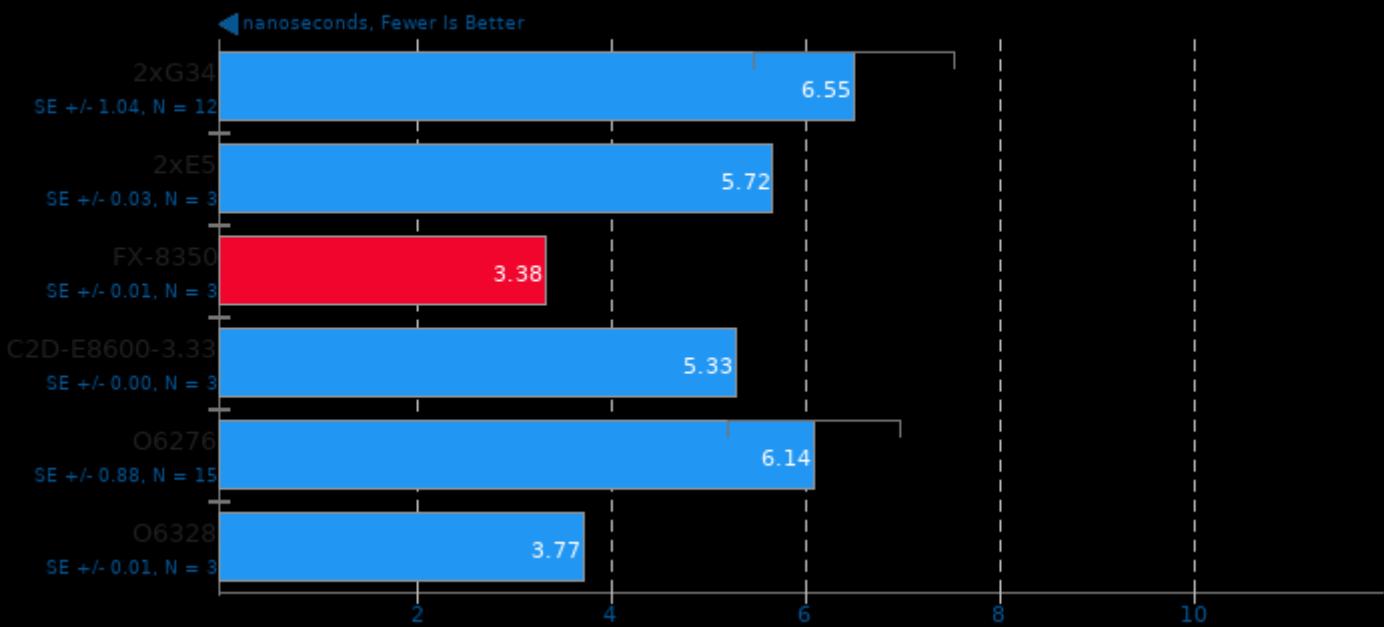
**glibc bench 1.0**

Benchmark: sin

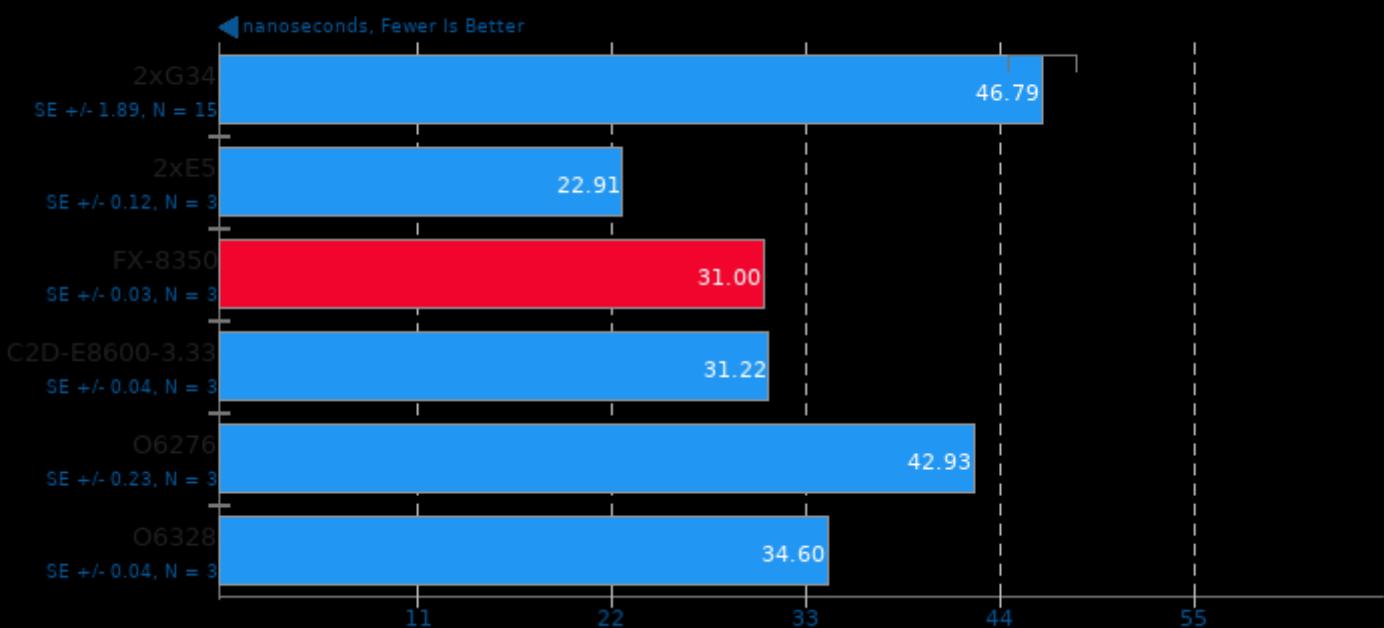


glibc bench 1.0

Benchmark: sqrt

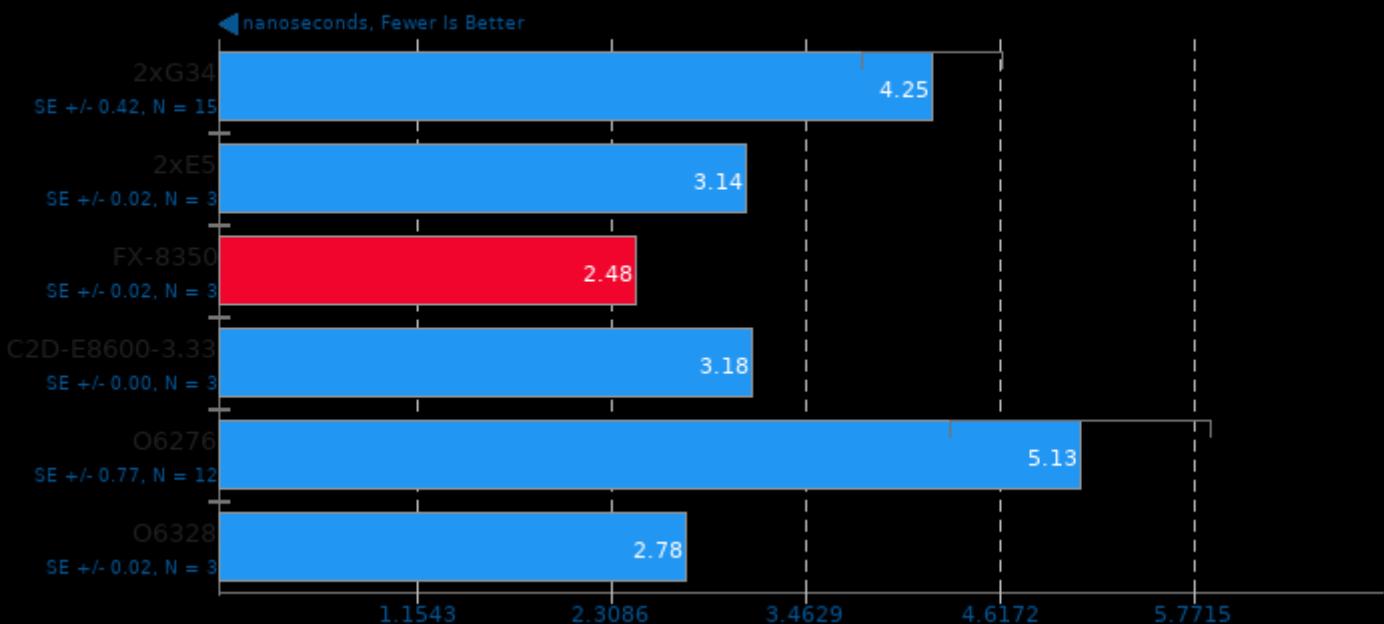
**glibc bench 1.0**

Benchmark: tanh

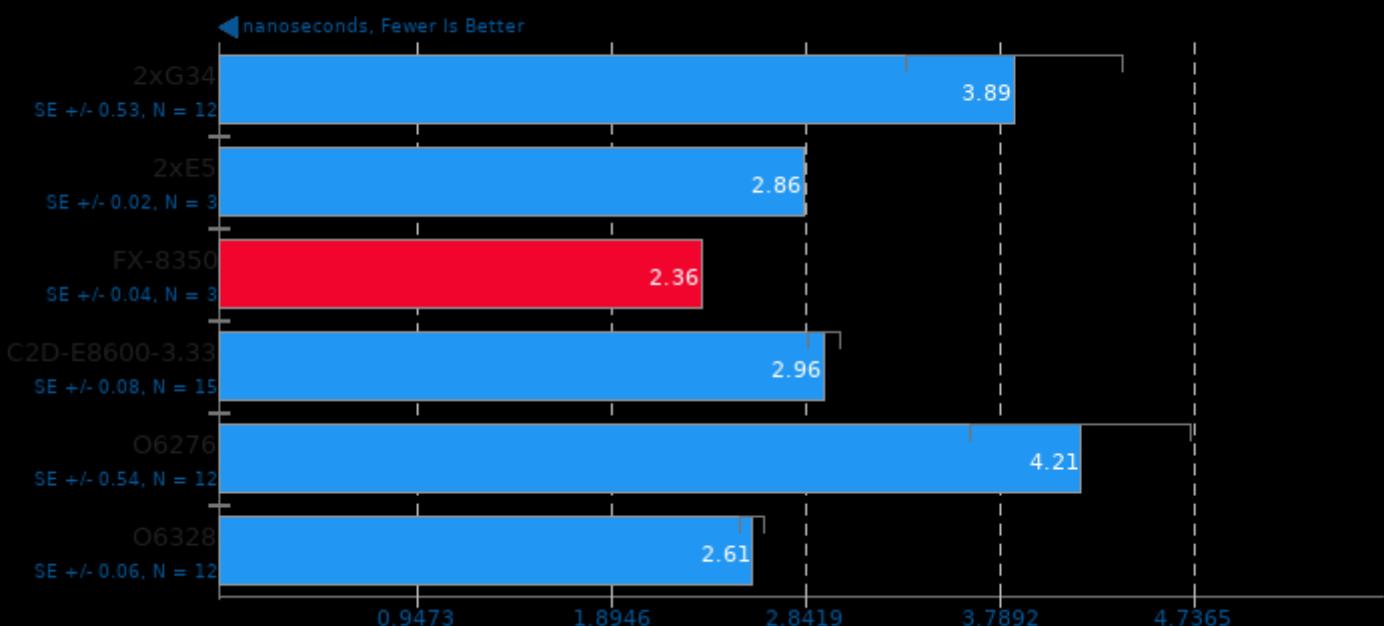


glibc bench 1.0

Benchmark: ffsll

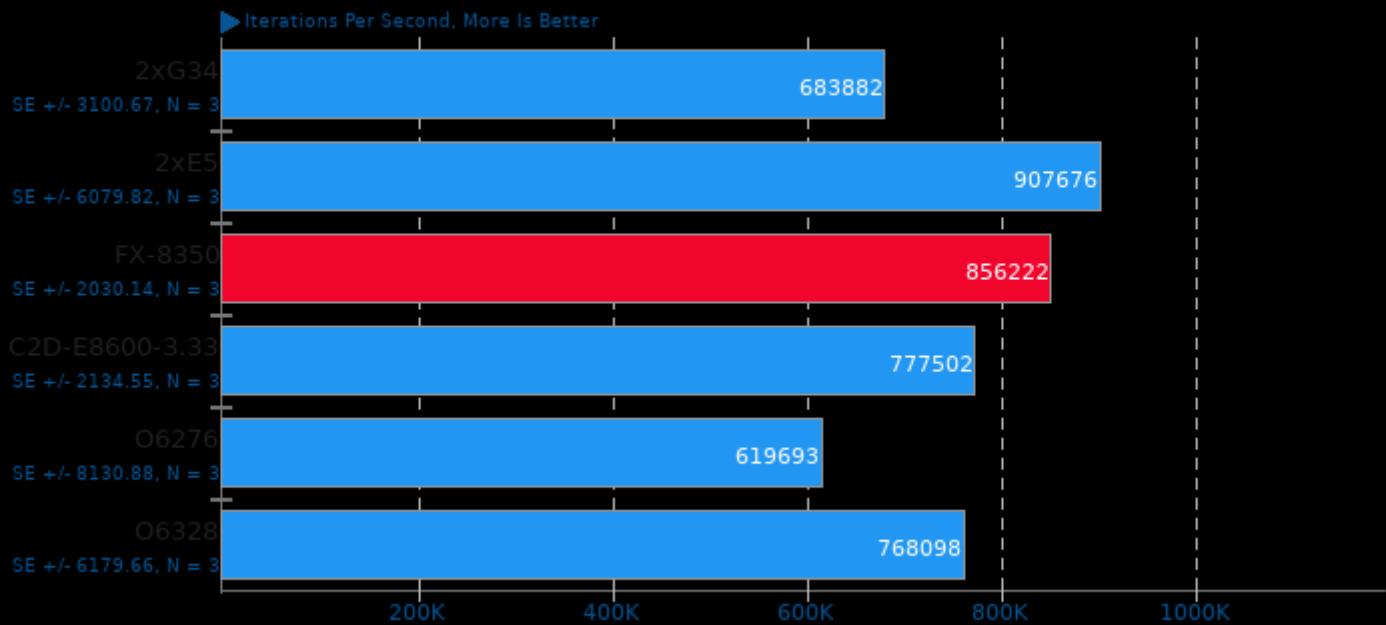
**glibc bench 1.0**

Benchmark: pthread_once



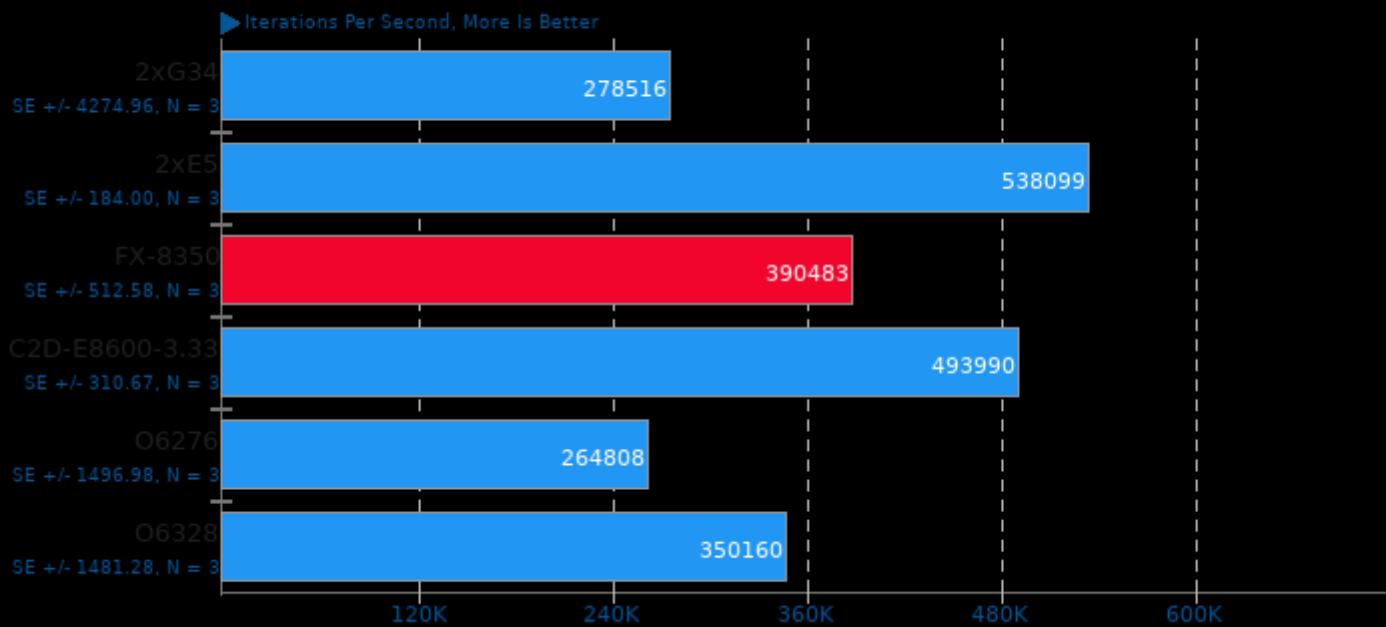
Cryptsetup 2.0.2

PBKDF2-sha512



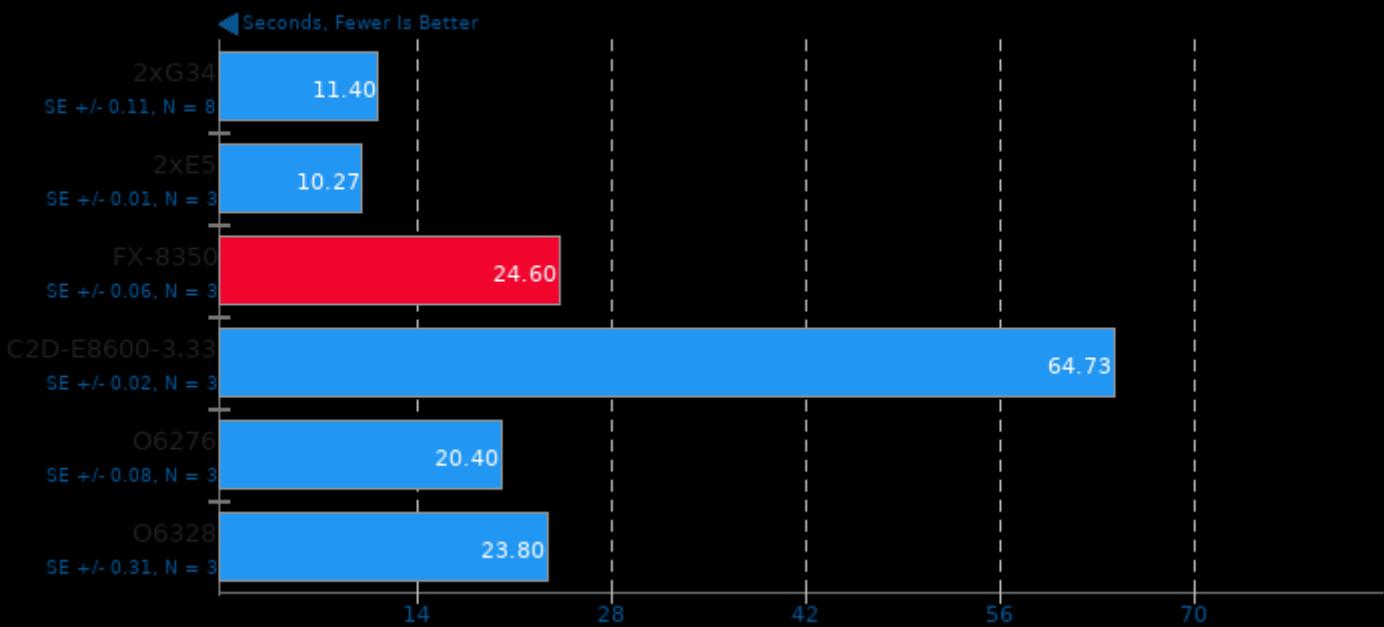
Cryptsetup

PBKDF2-whirlpool



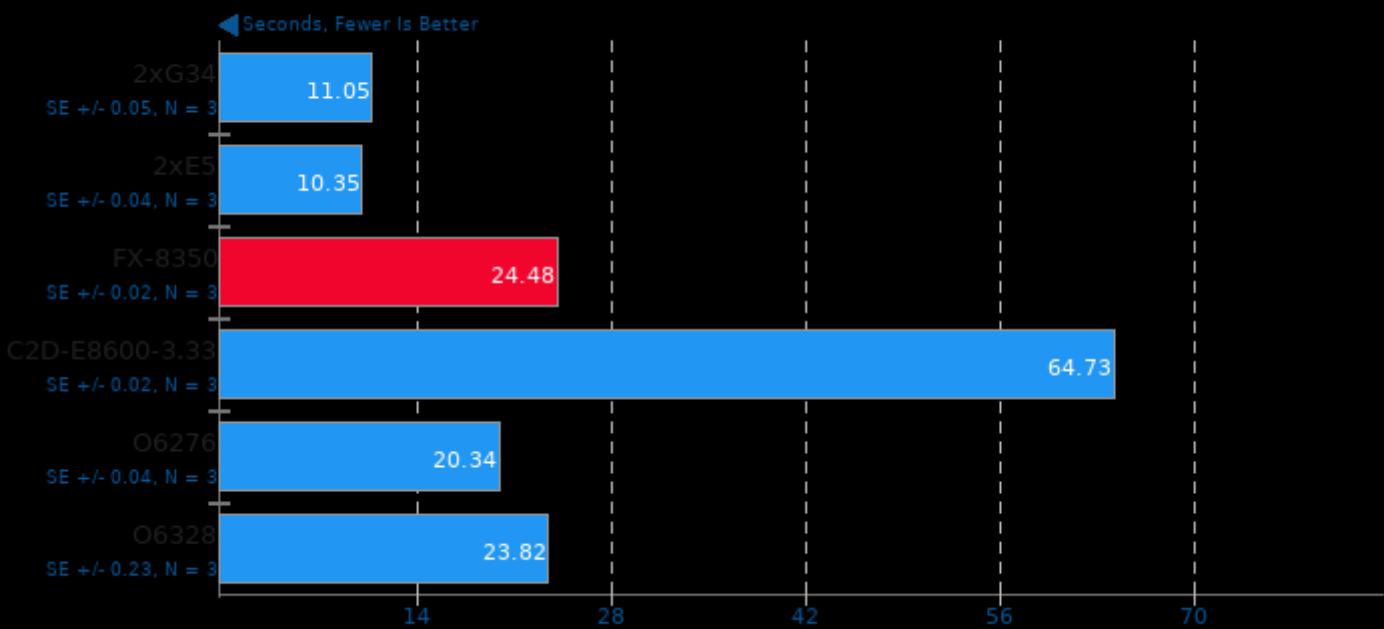
Darktable 2.4.2

Test: Boat - Acceleration: OpenCL



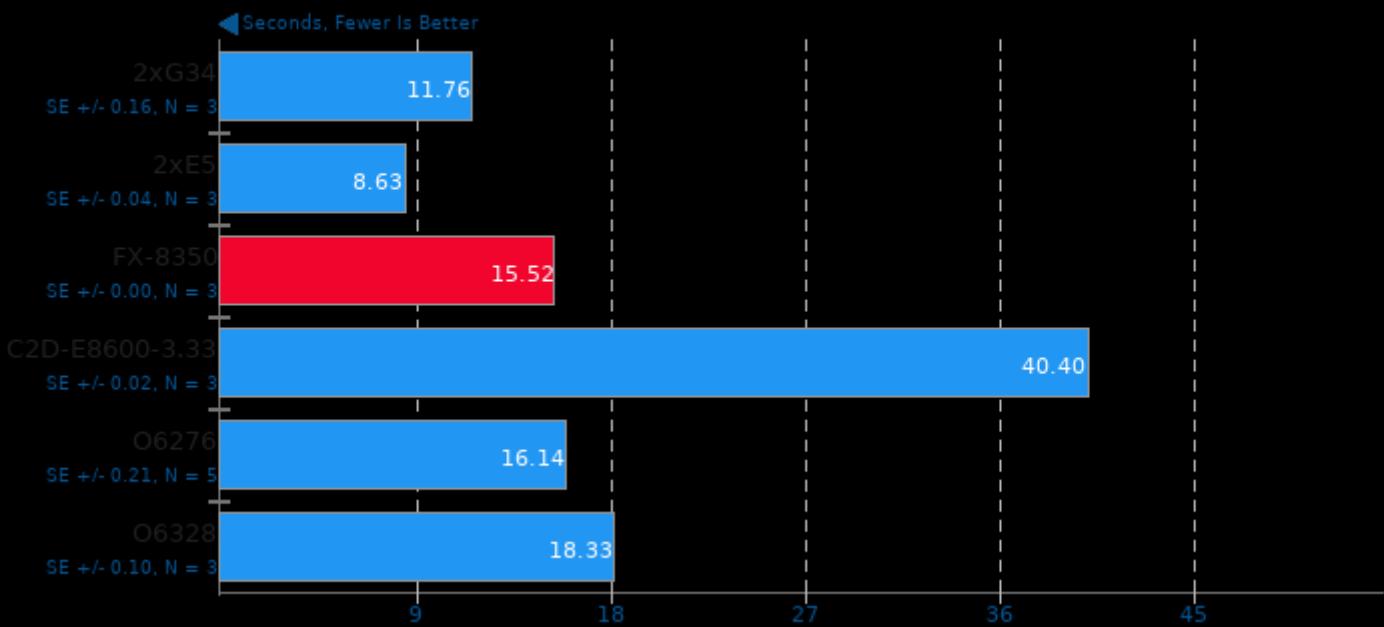
Darktable 2.4.2

Test: Boat - Acceleration: CPU-only



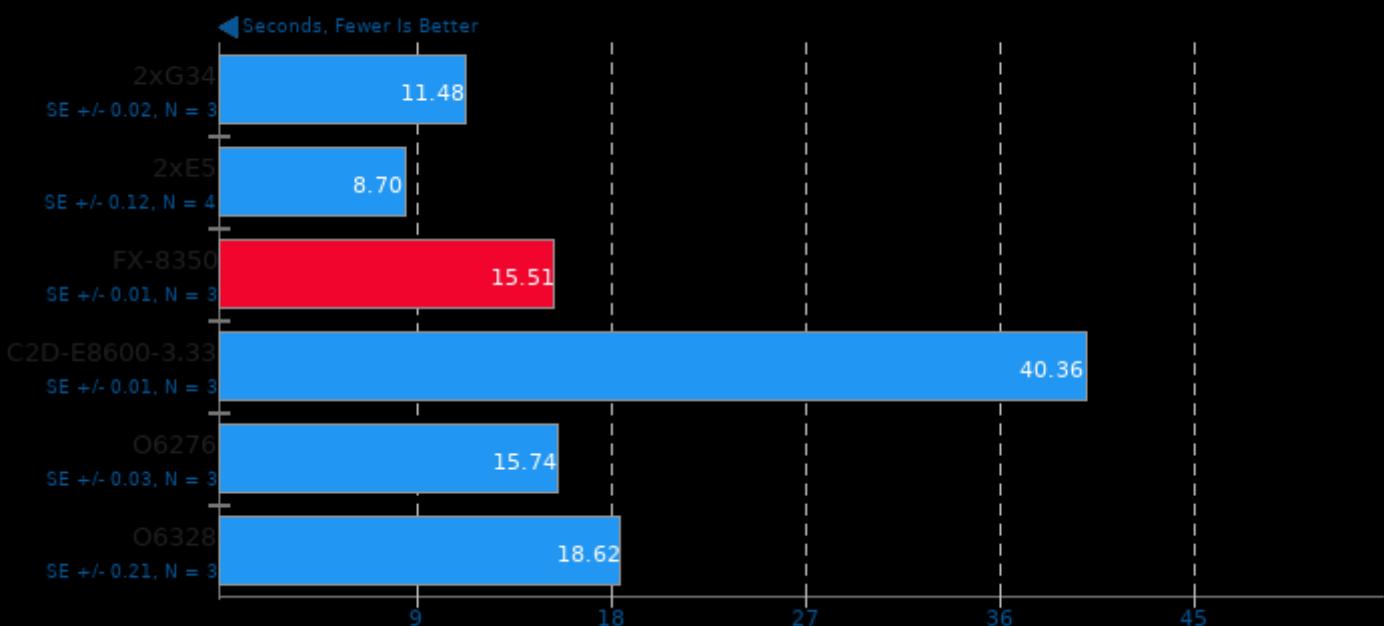
Darktable 2.4.2

Test: Masskrug - Acceleration: OpenCL



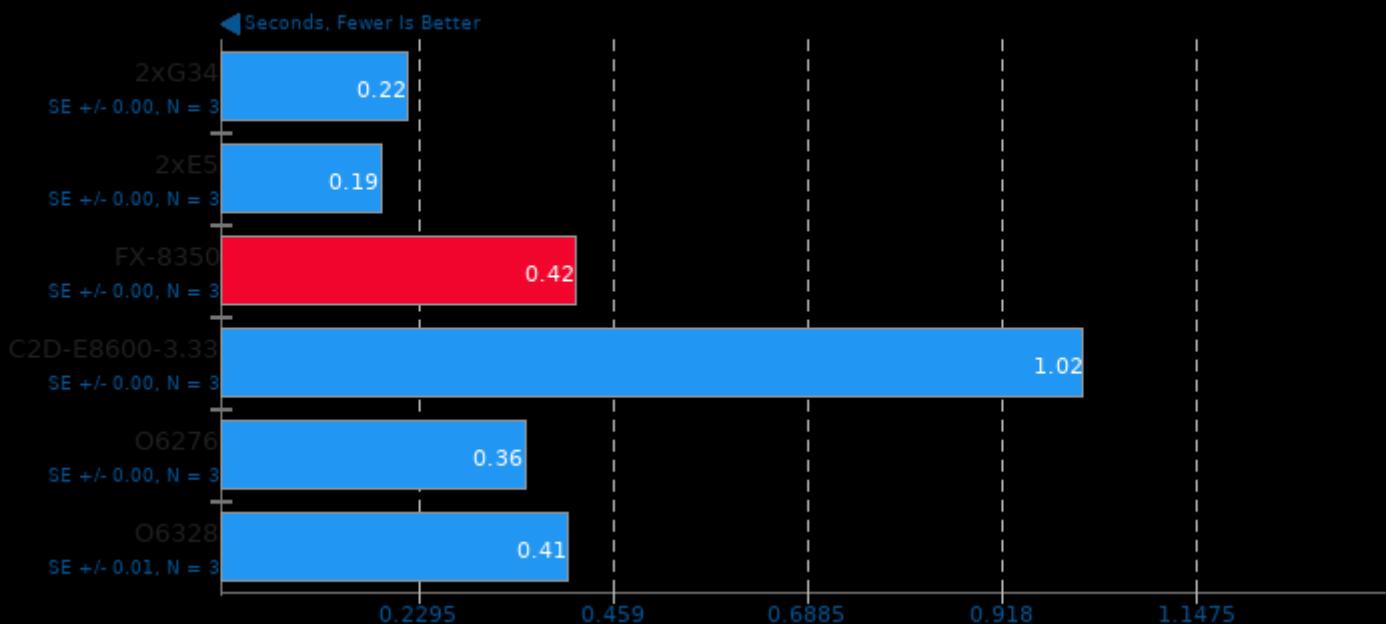
Darktable 2.4.2

Test: Masskrug - Acceleration: CPU-only



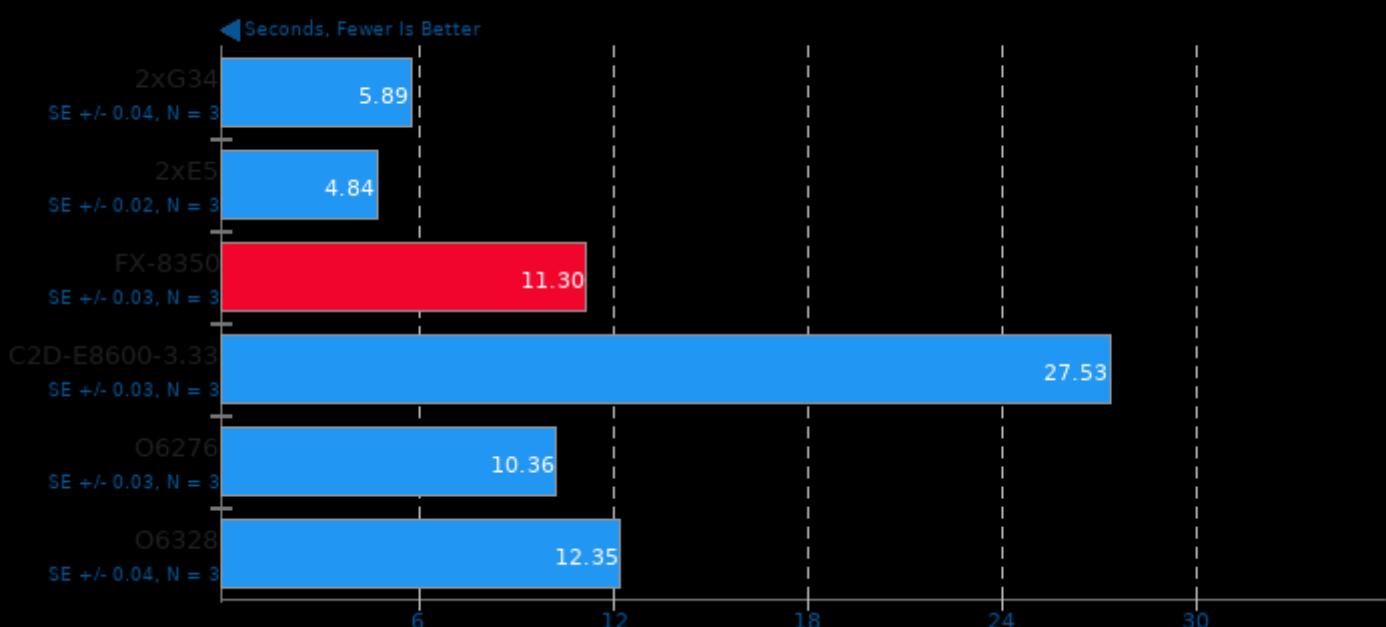
Darktable 2.4.2

Test: Server Rack - Acceleration: OpenCL



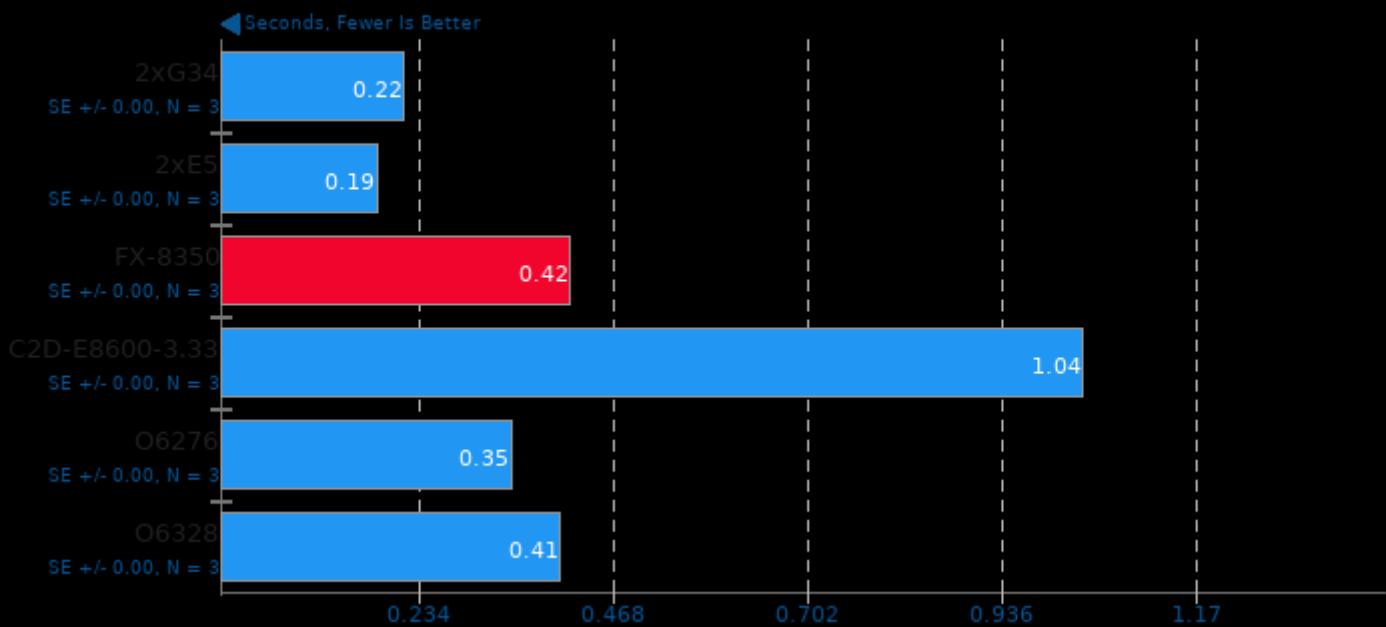
Darktable 2.4.2

Test: Server Room - Acceleration: OpenCL



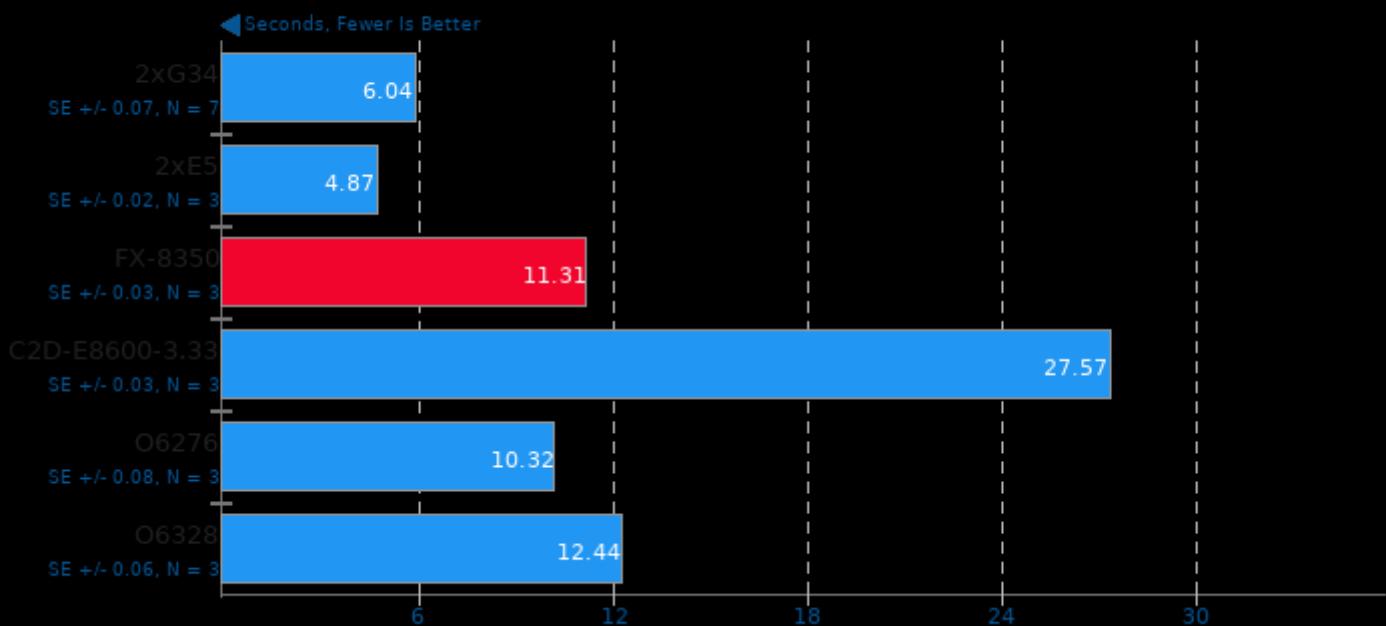
Darktable 2.4.2

Test: Server Rack - Acceleration: CPU-only



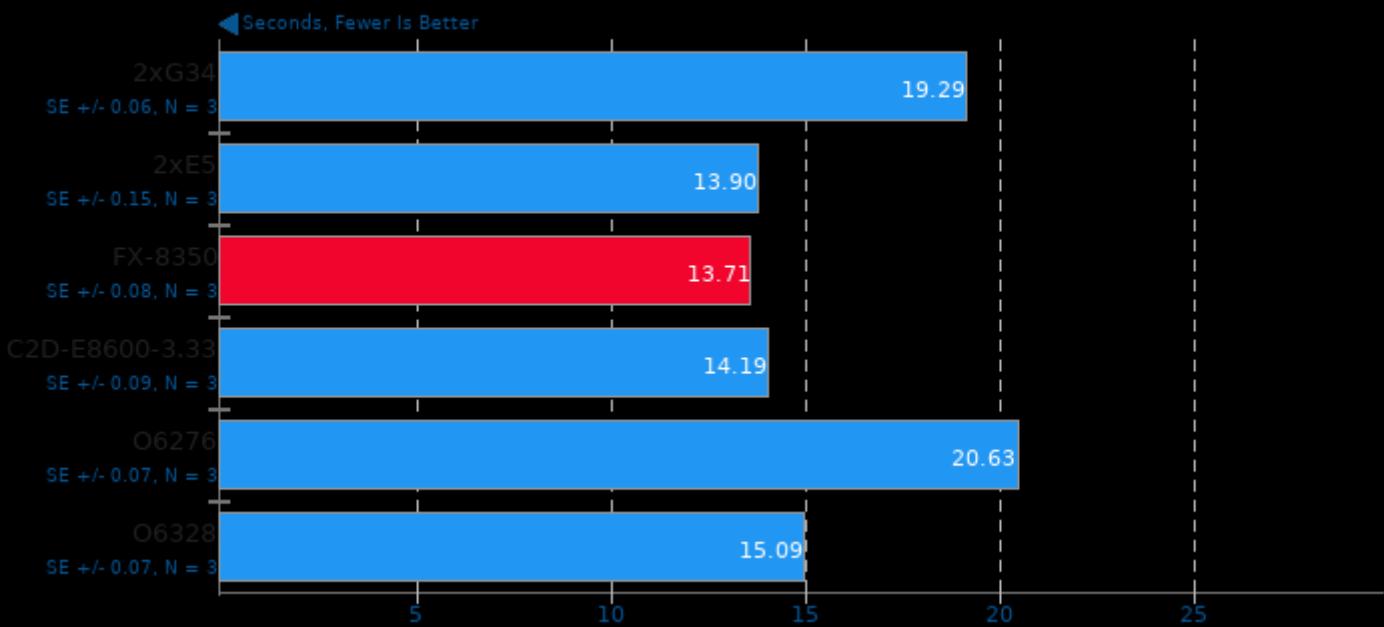
Darktable 2.4.2

Test: Server Room - Acceleration: CPU-only



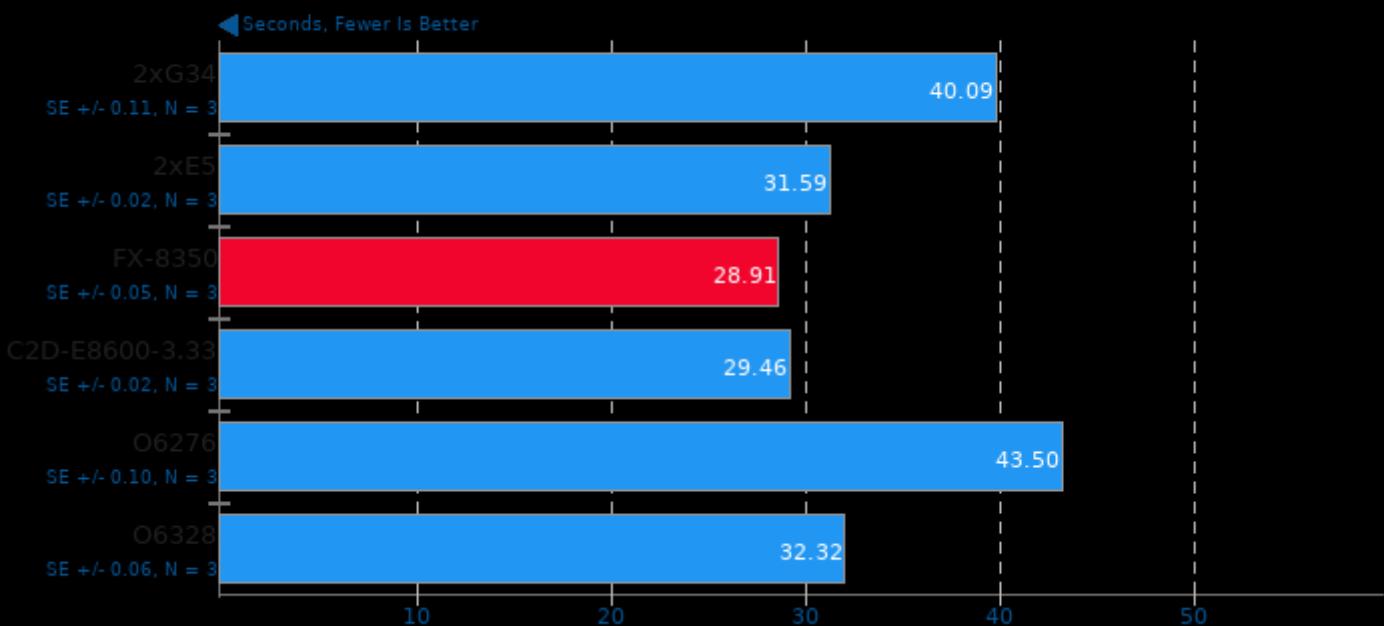
GIMP 2.8.22

Test: resize



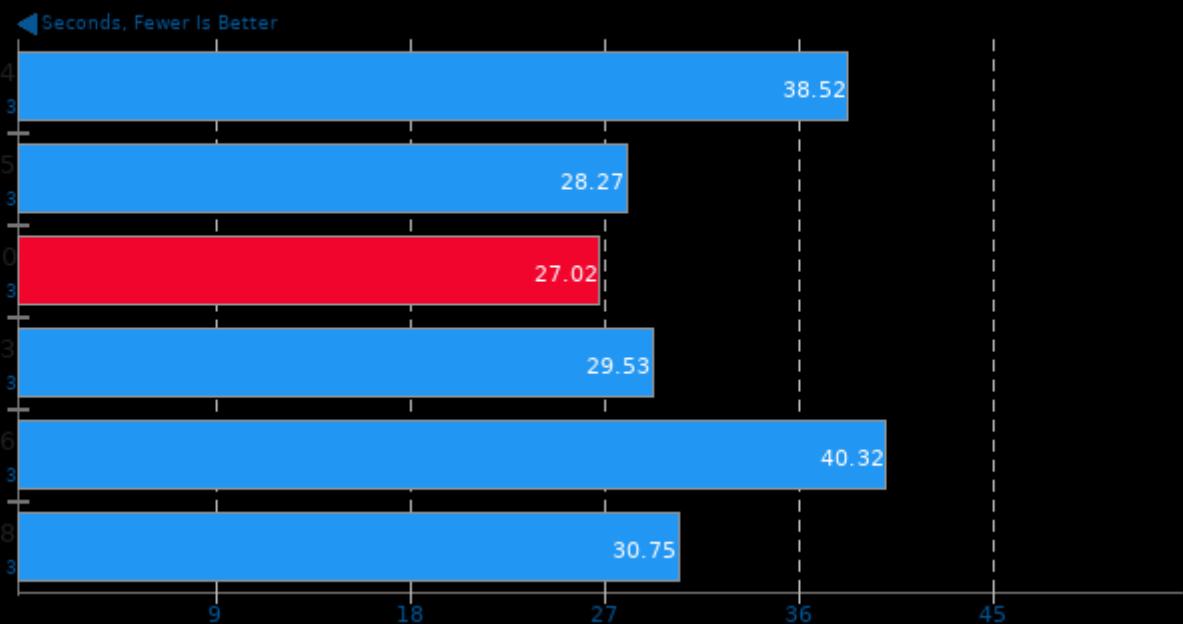
GIMP 2.8.22

Test: rotate

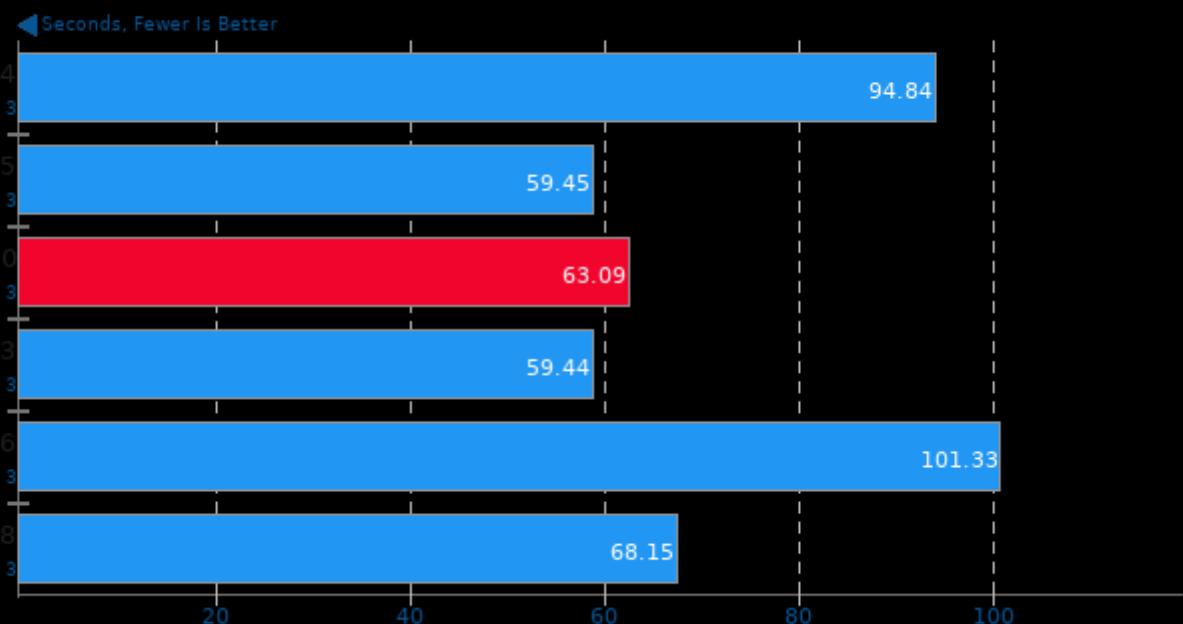


GIMP 2.8.22

Test: auto-levels

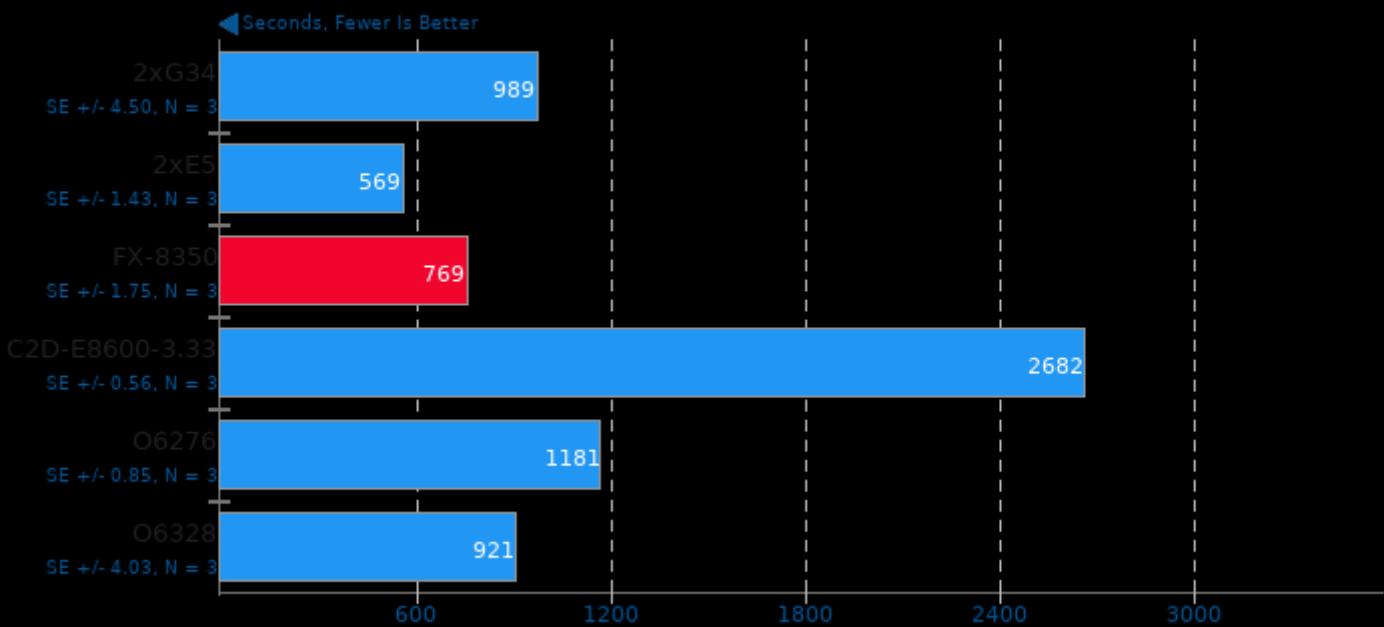
**GIMP 2.8.22**

Test: unsharp-mask



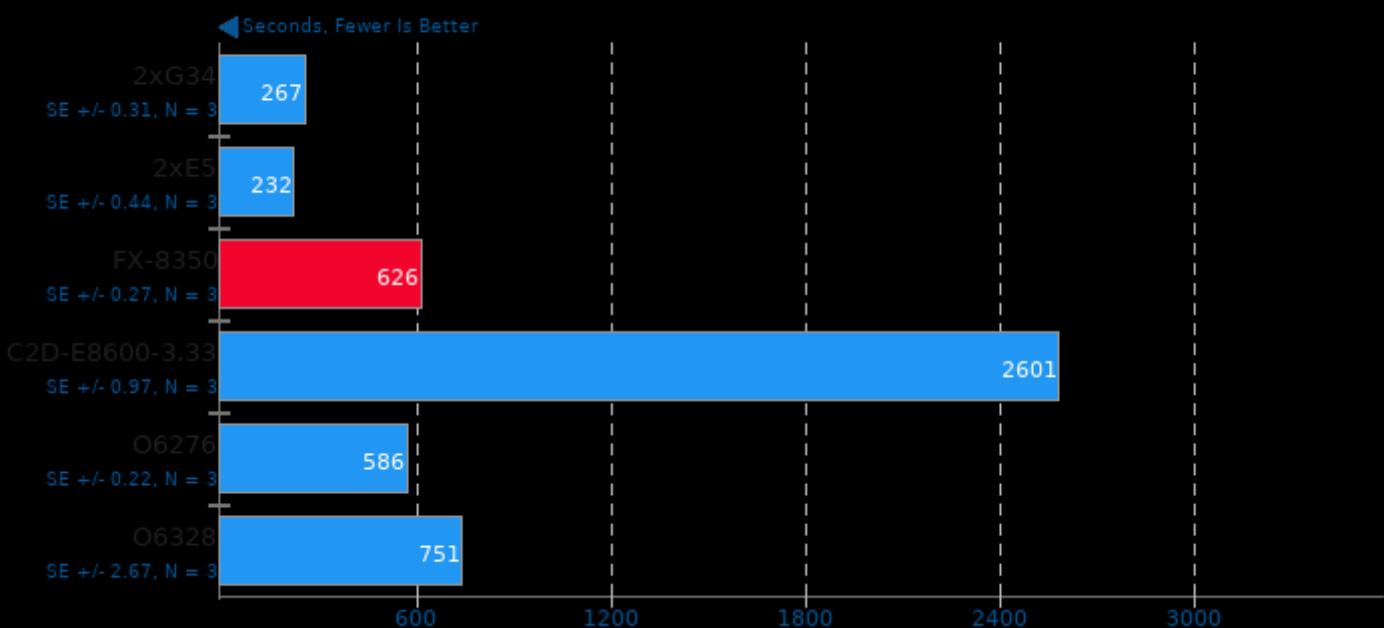
Blender 2.80

Blend File: BMW27 - Compute: OpenCL



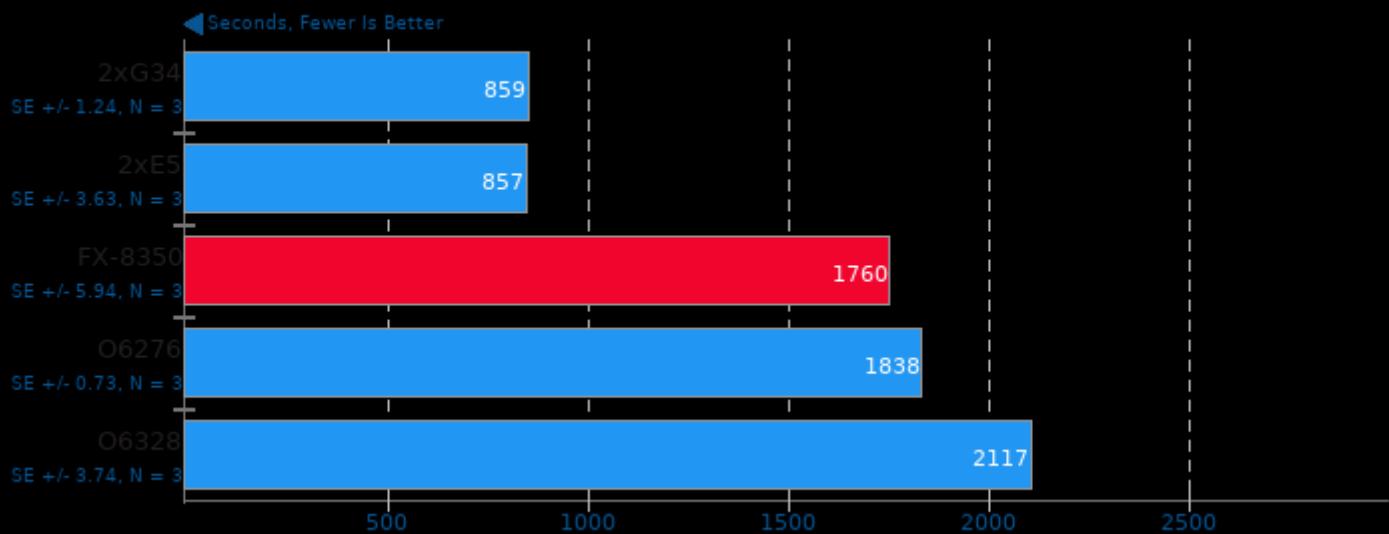
Blender 2.80

Blend File: BMW27 - Compute: CPU-Only



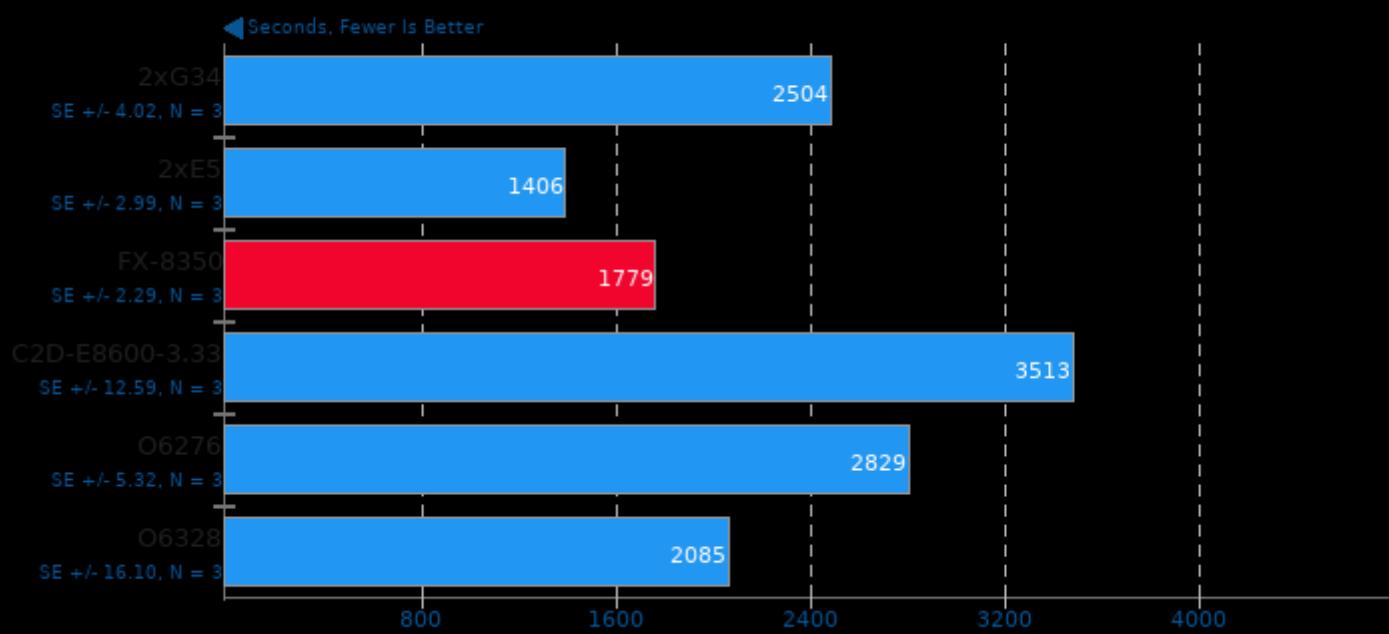
Blender 2.80

Blend File: Classroom - Compute: OpenCL



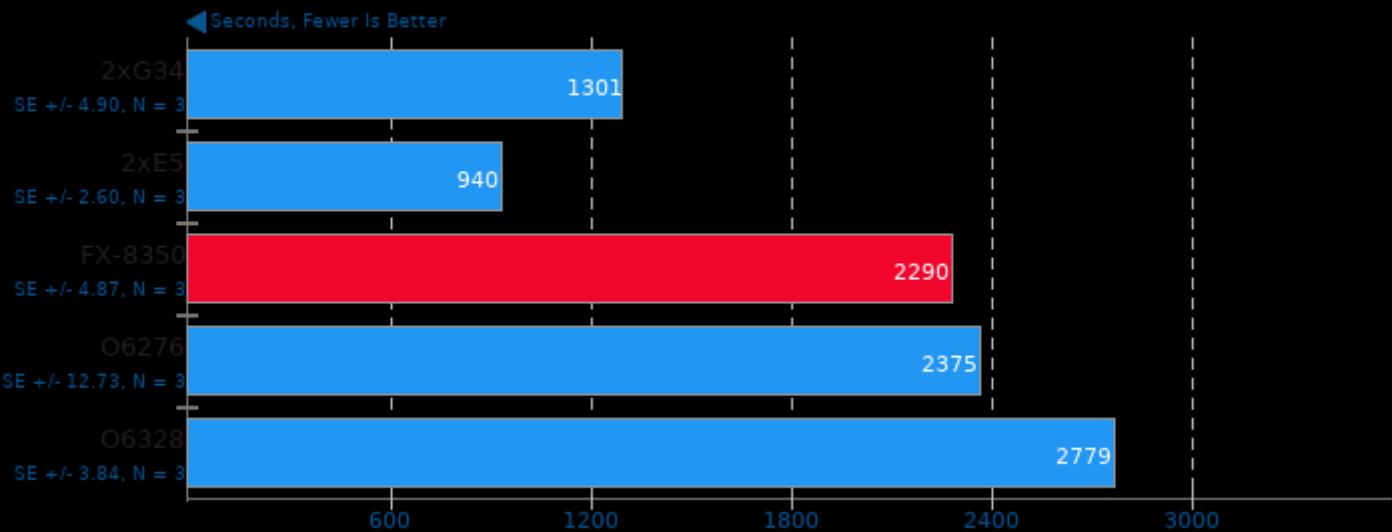
Blender 2.80

Blend File: Fishy Cat - Compute: OpenCL



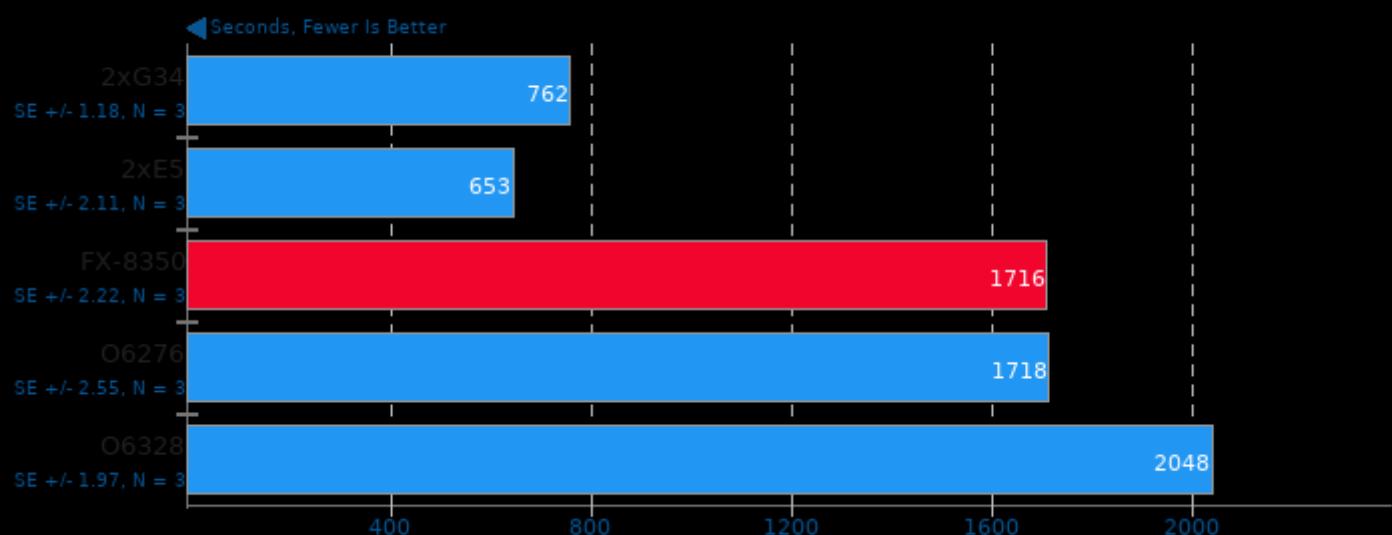
Blender 2.80

Blend File: Barbershop - Compute: OpenCL



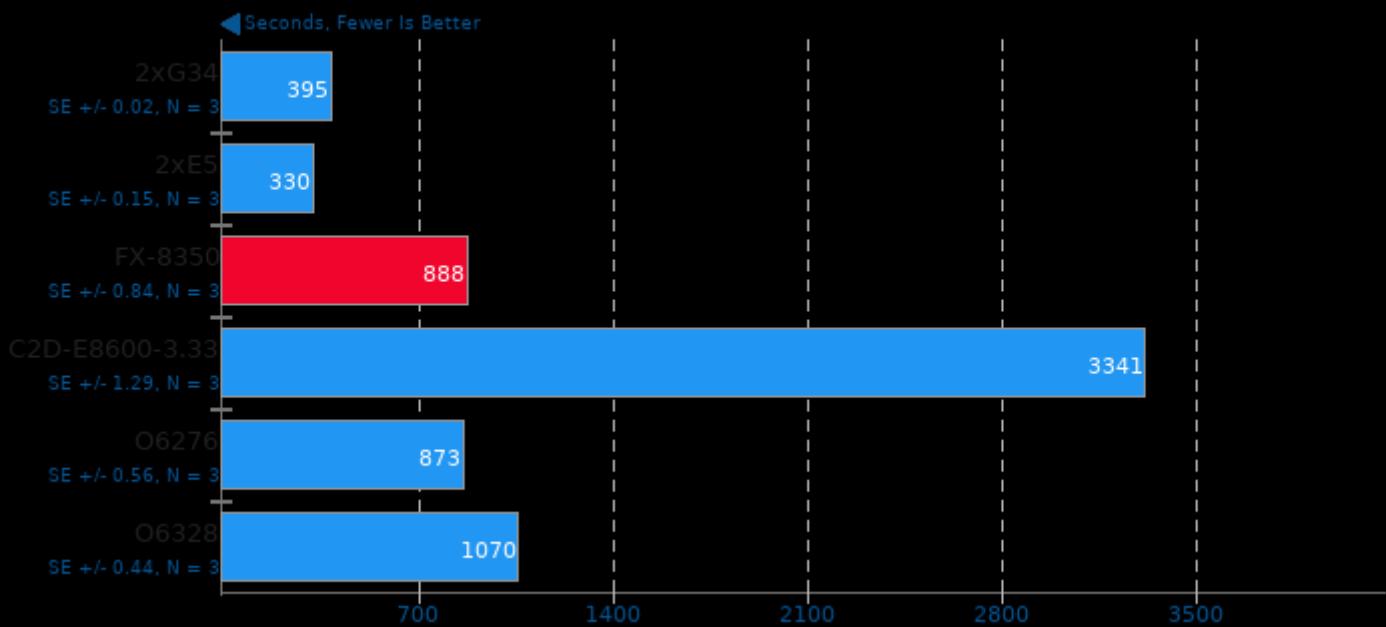
Blender 2.80

Blend File: Classroom - Compute: CPU-Only



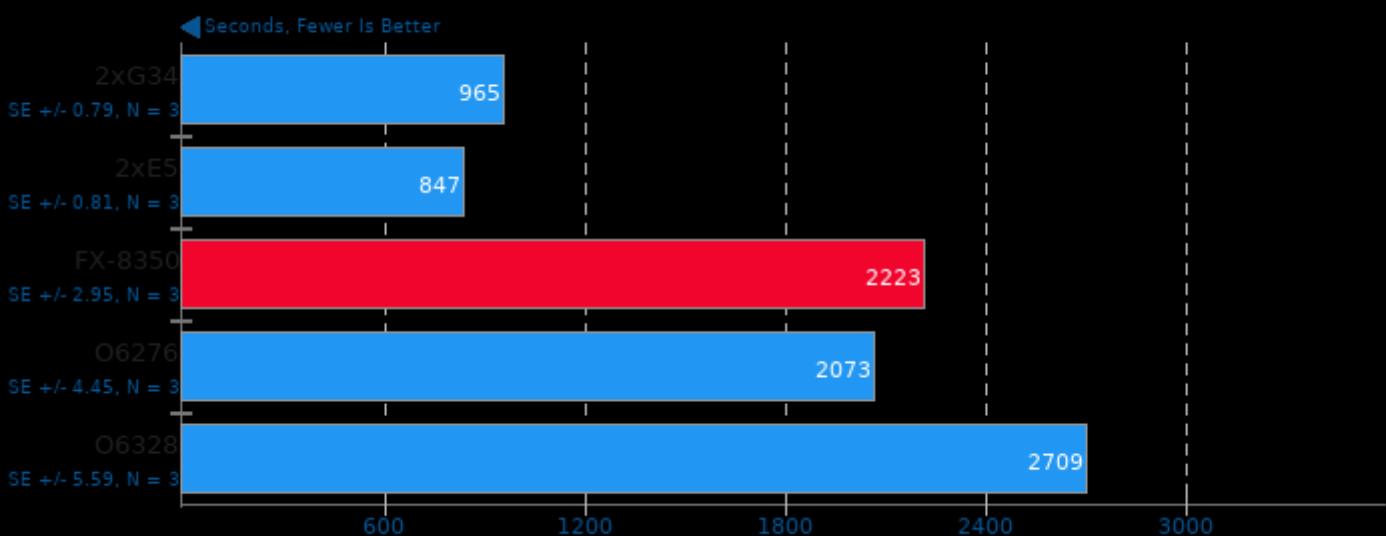
Blender 2.80

Blend File: Fishy Cat - Compute: CPU-Only



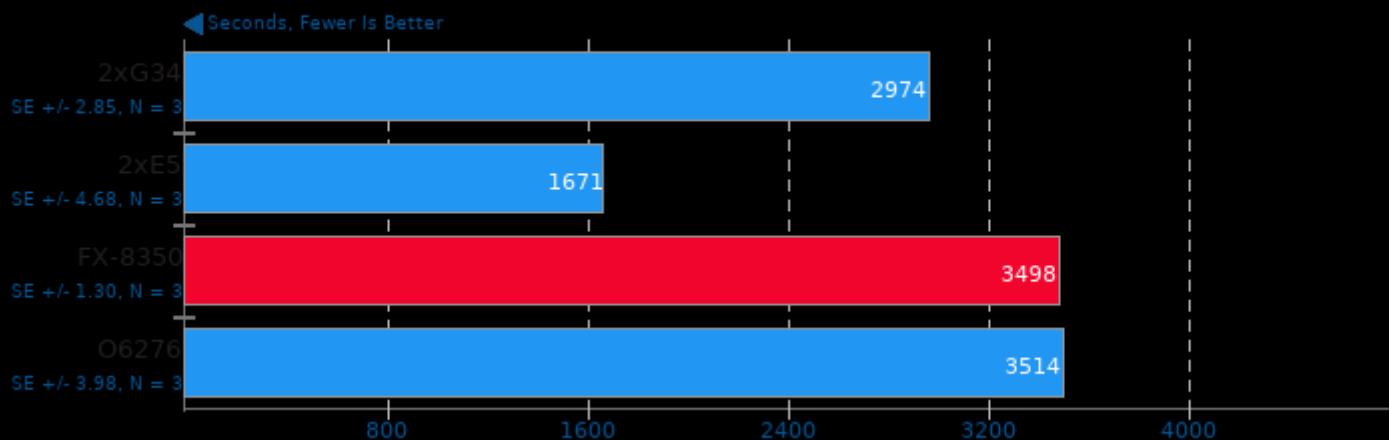
Blender 2.80

Blend File: Barbershop - Compute: CPU-Only



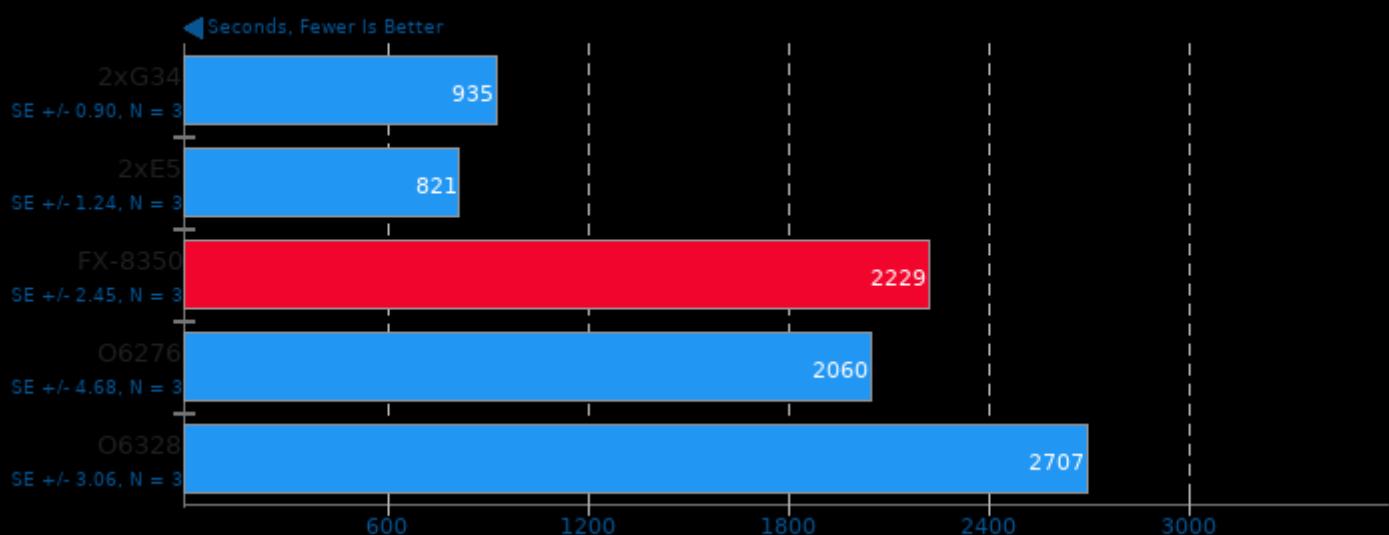
Blender 2.80

Blend File: Pabellon Barcelona - Compute: OpenCL



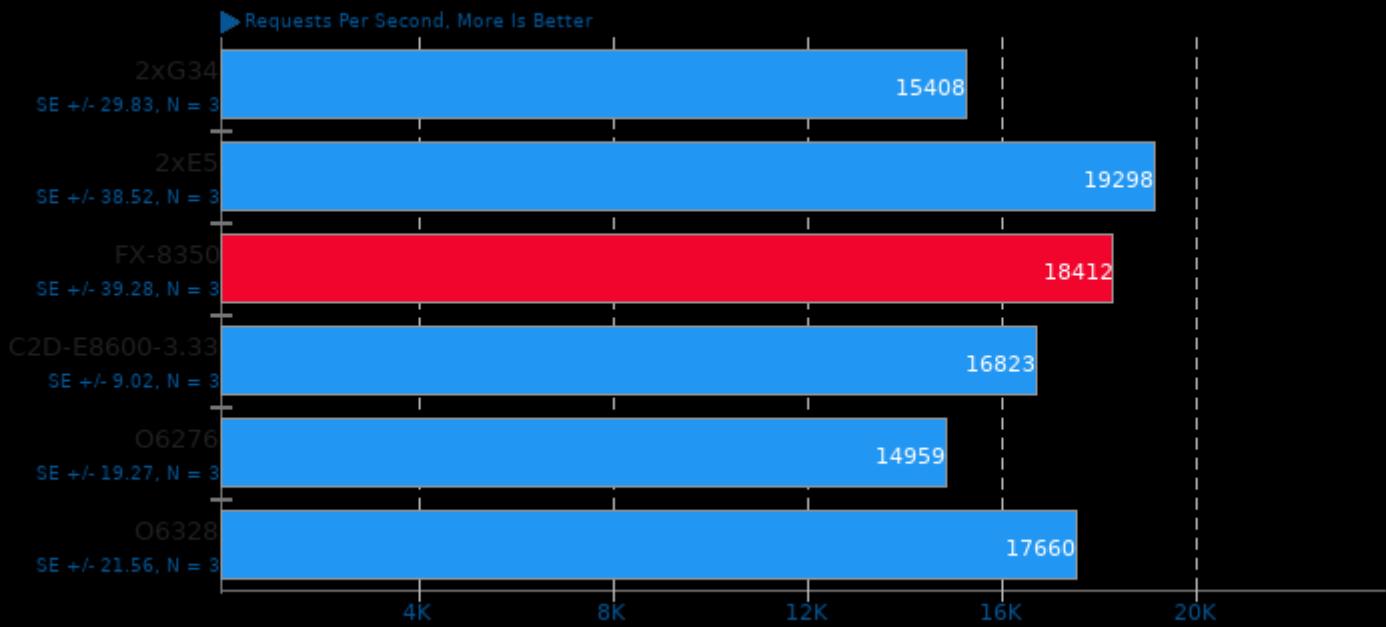
Blender 2.80

Blend File: Pabellon Barcelona - Compute: CPU-Only



NGINX Benchmark 1.9.9

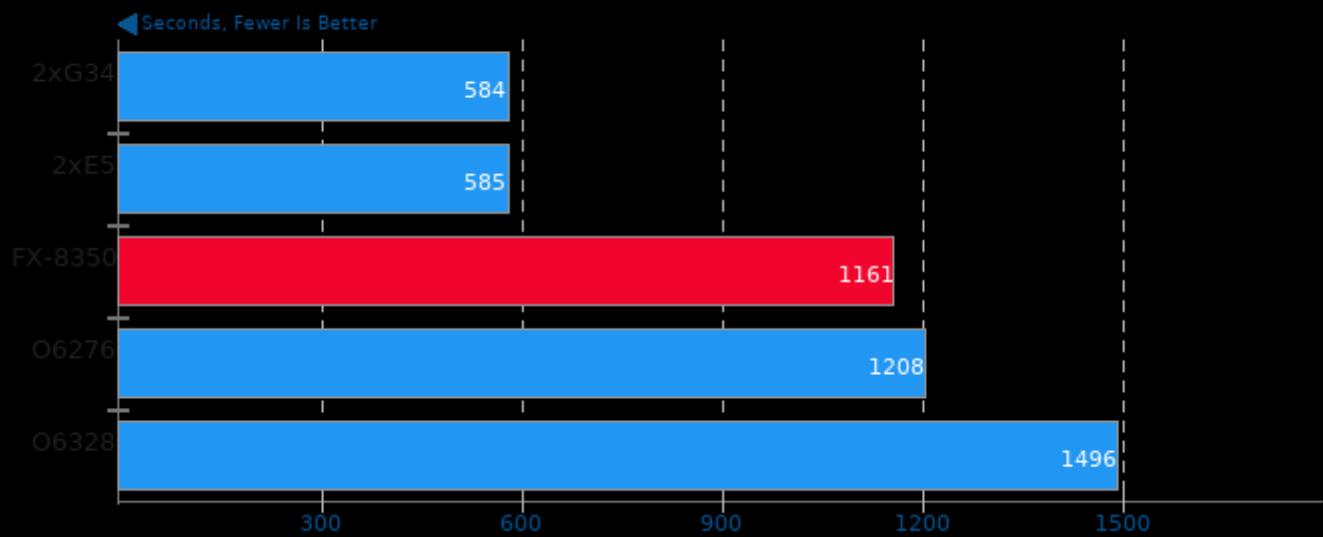
Static Web Page Serving



1. (CC) gcc options: -lpthread -lcrypt -lcrypto -lz -O3 -march=native

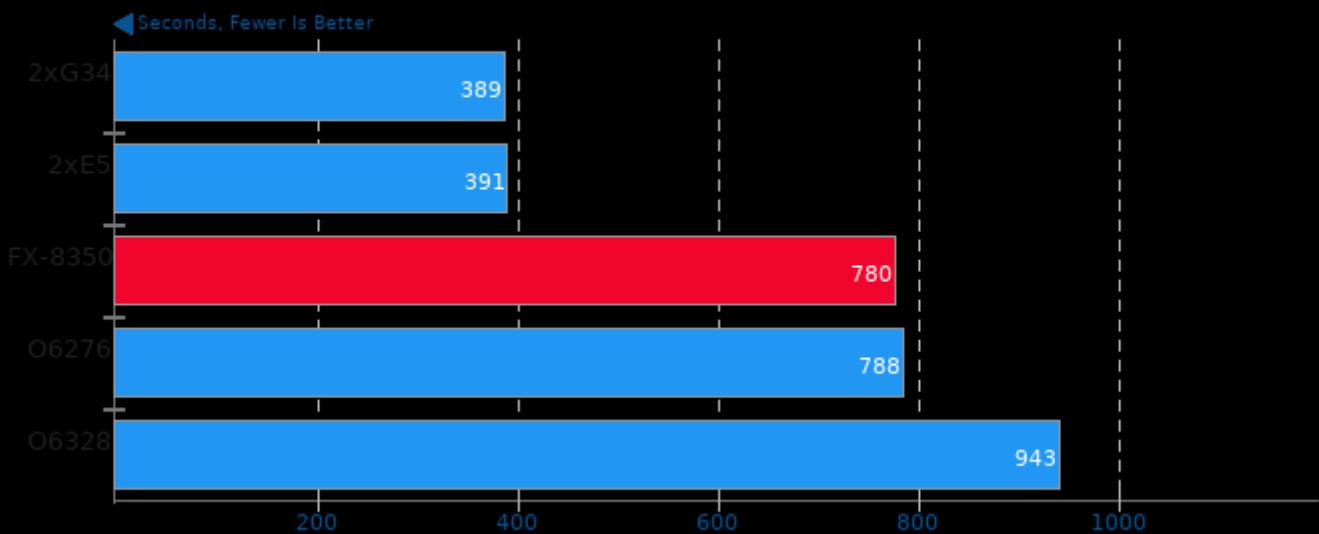
Appleseed 2.0 Beta

Scene: Emily



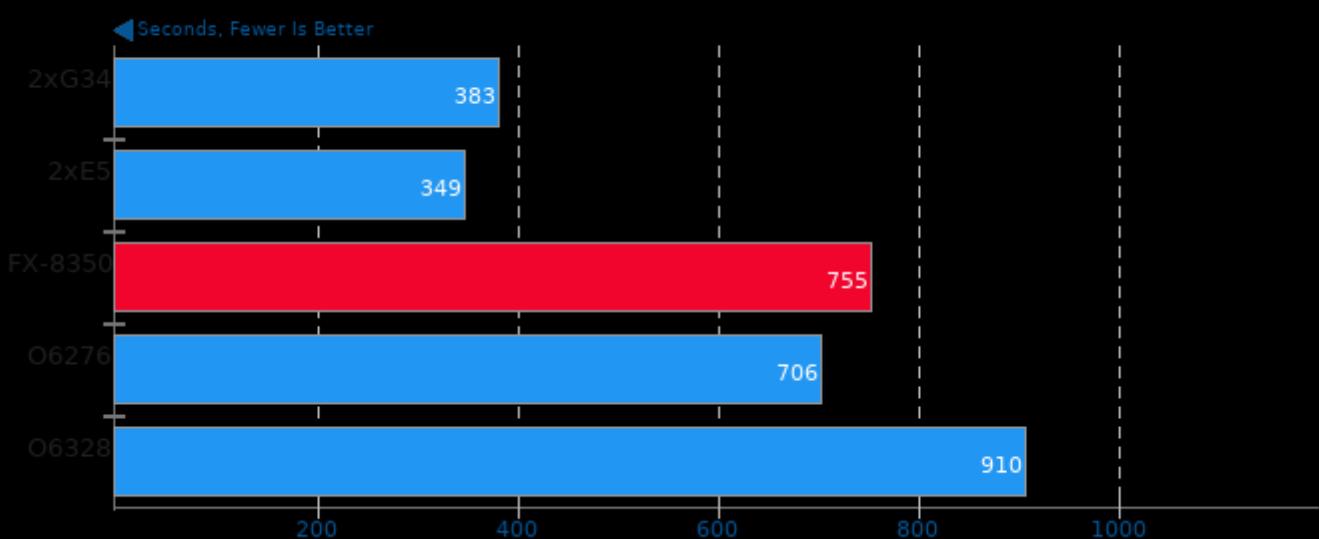
Appleseed 2.0 Beta

Scene: Disney Material



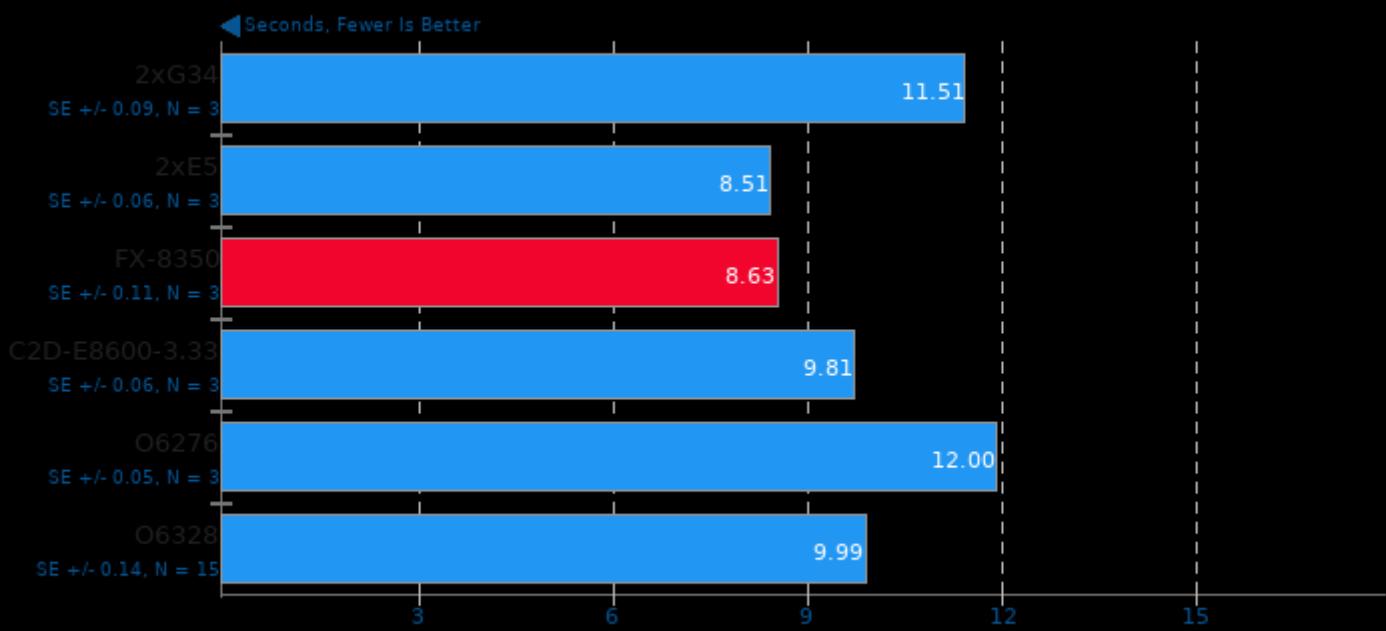
Appleseed 2.0 Beta

Scene: Material Tester



Git

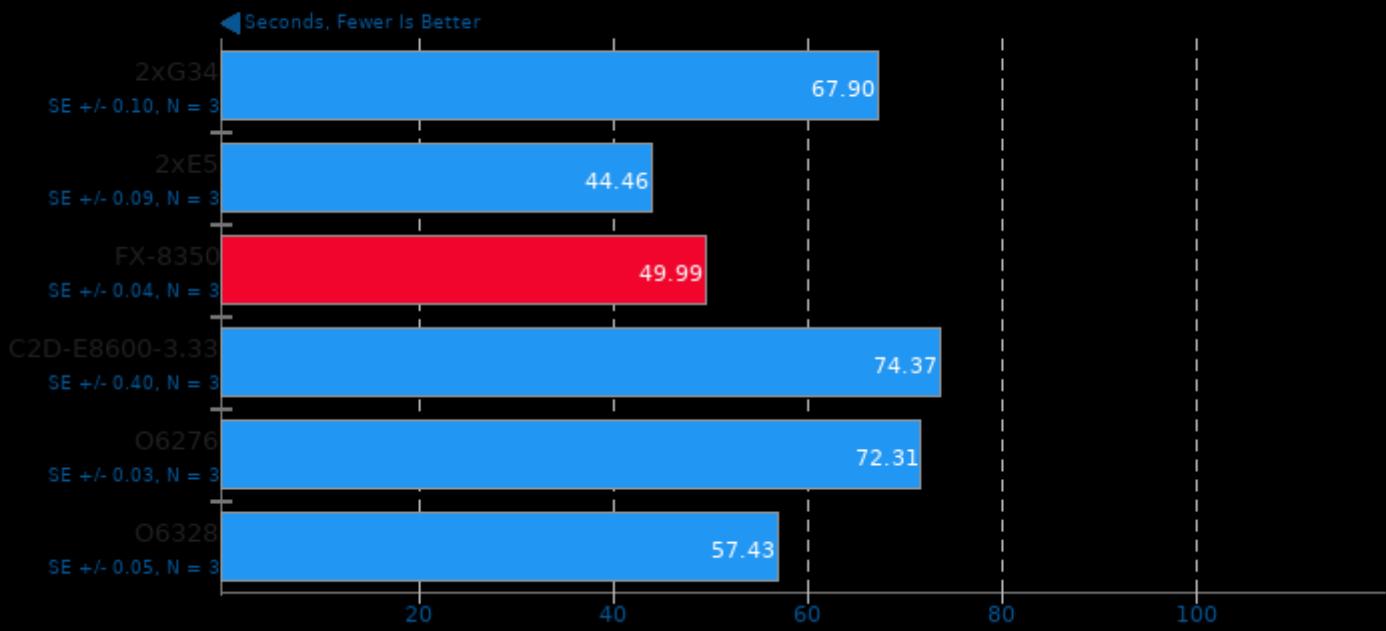
Time To Complete Common Git Commands



1. git version 2.17.1

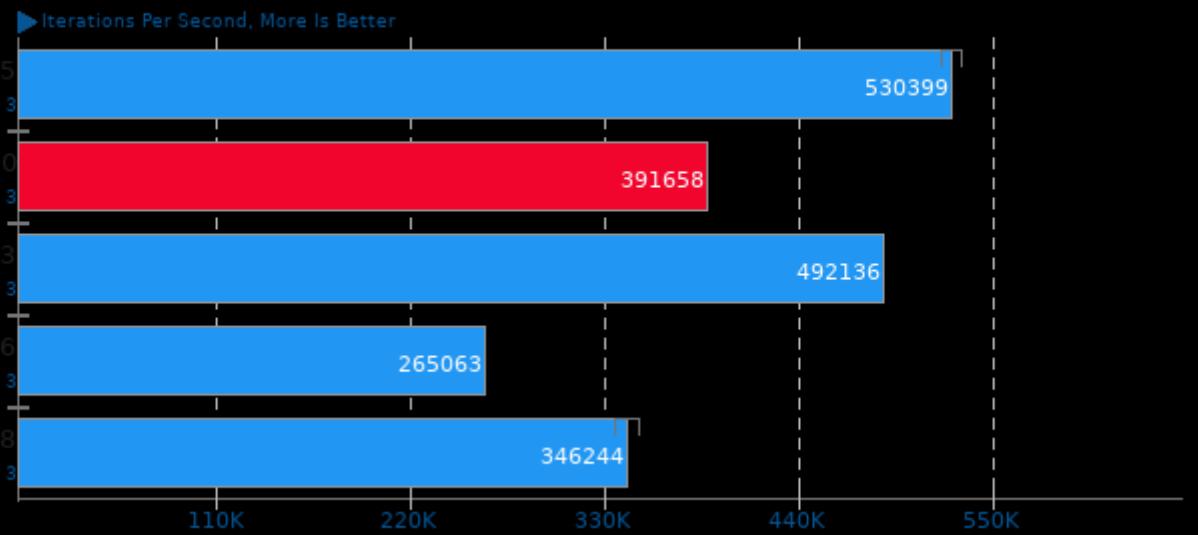
Tesseract OCR 4.0.0-beta.1

Time To OCR 7 Images

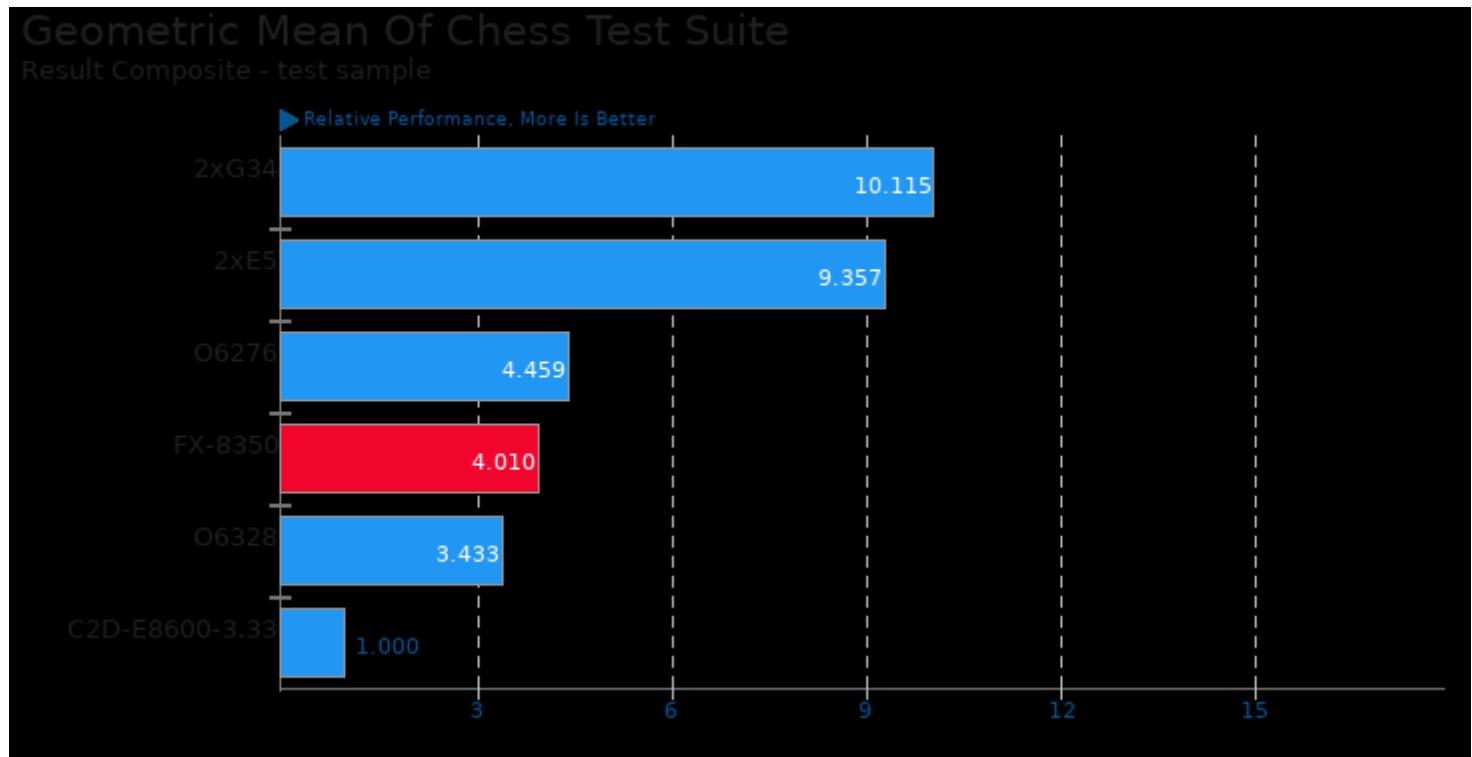


Cryptsetup 2.0.2

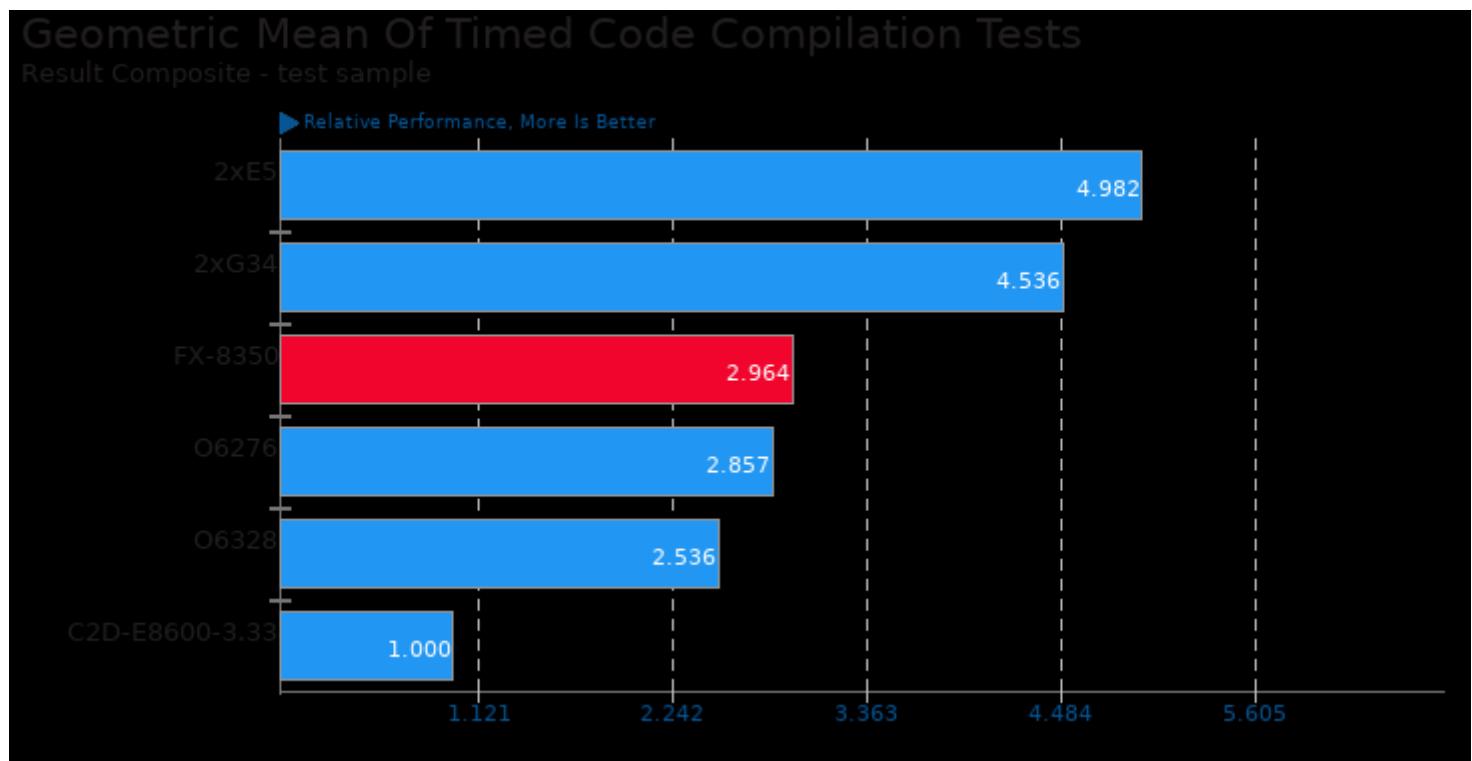
PBKDF2-whirlpool



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



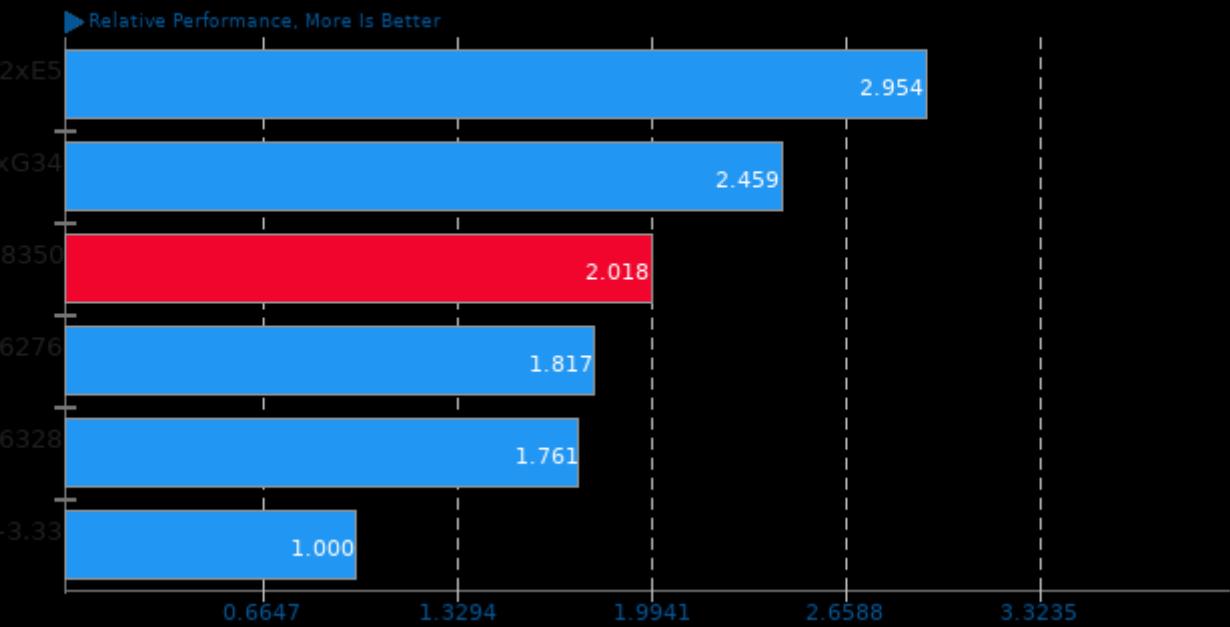
Geometric mean based upon tests: pts/stockfish, pts/n-queens and pts/m-queens



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

Geometric Mean Of C/C++ Compiler Tests

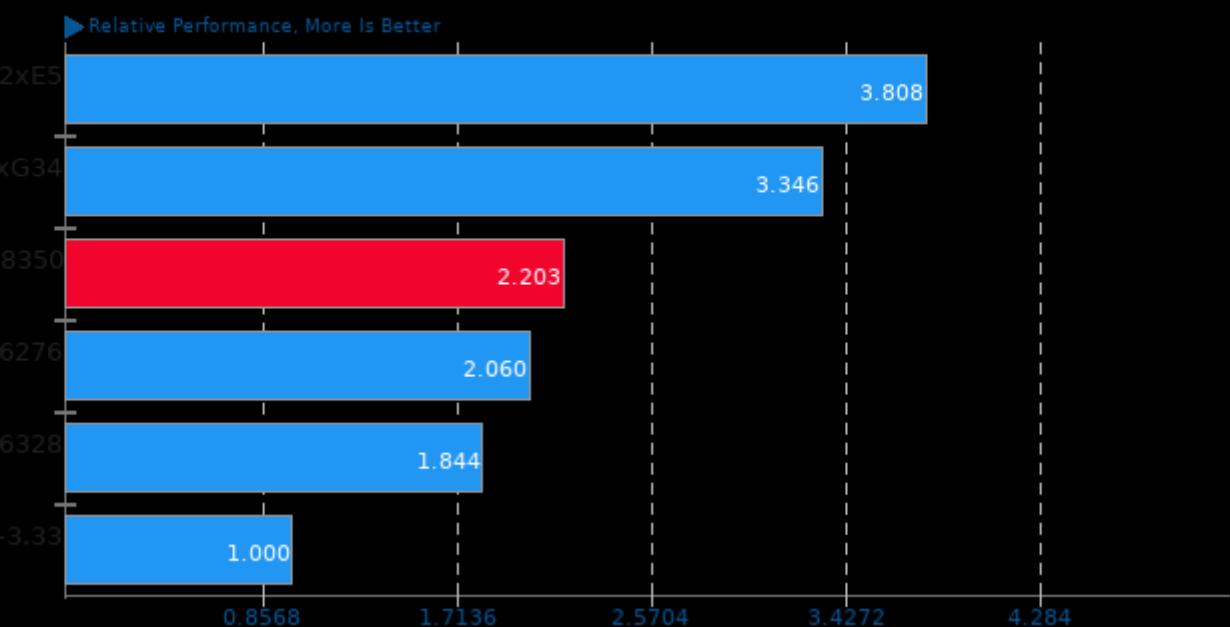
Result Composite - test sample



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 Of Compression Tests

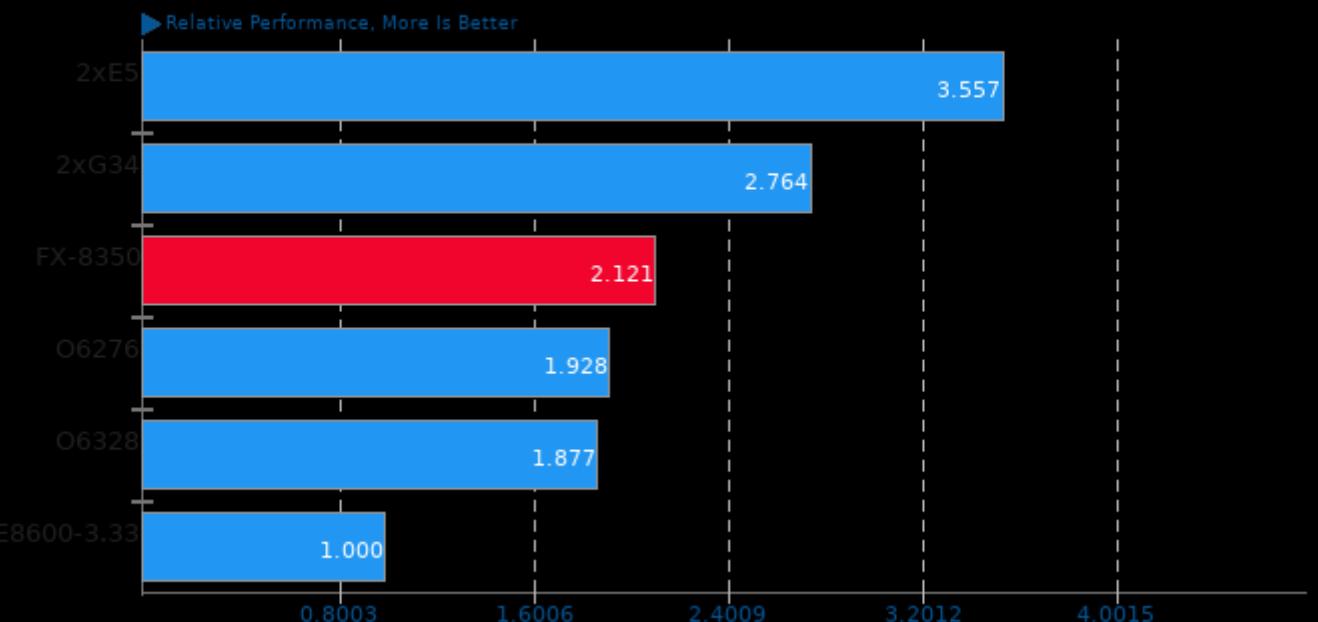
Result Composite - test sample



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

Geometric Mean Of Creator Workloads Tests

Result Composite - test sample



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 Of Cryptography Tests

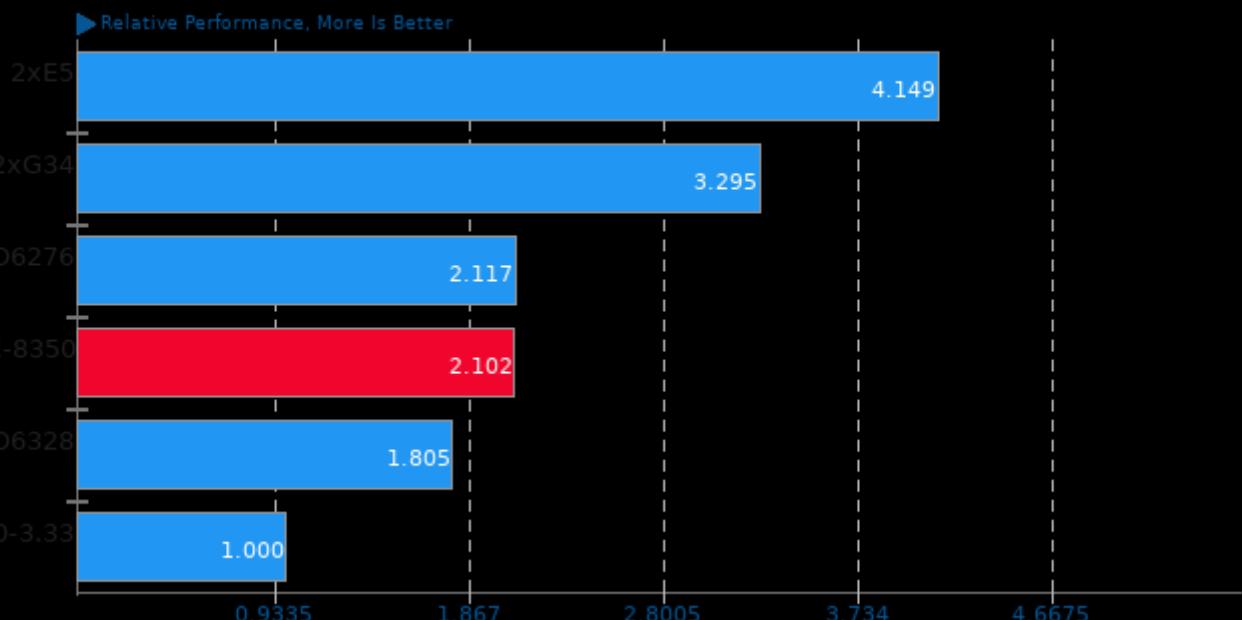
Result Composite - test sample



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

Geometric Mean Of Encoding Tests

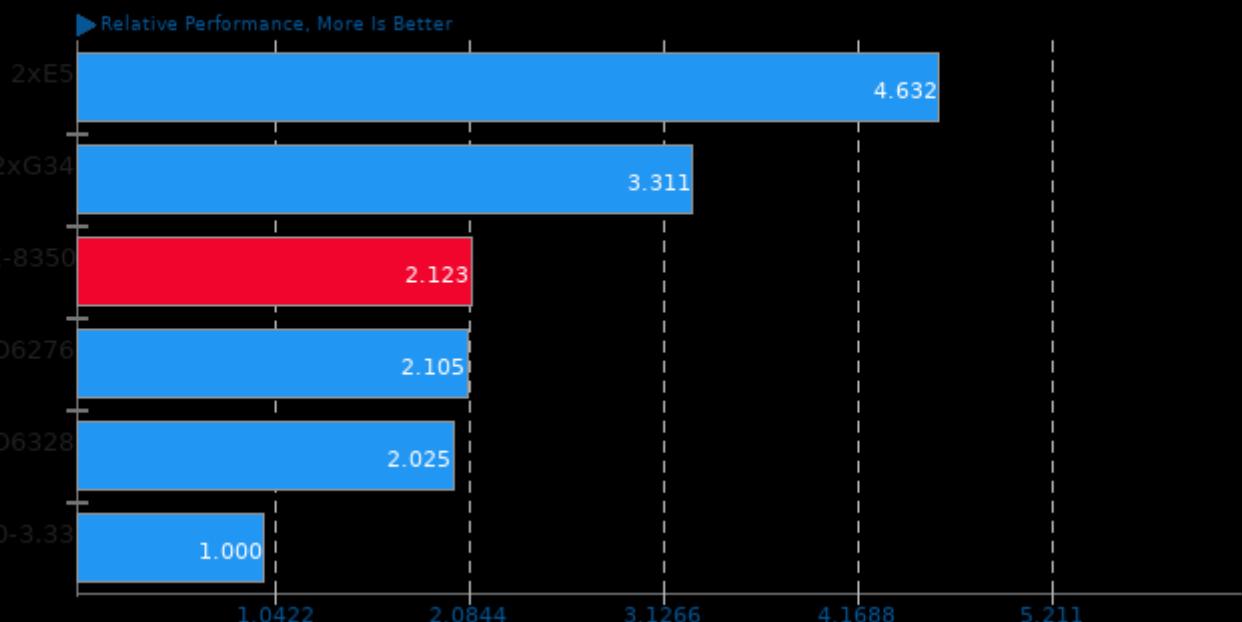
Result Composite - test sample



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

Geometric Mean Of HPC - High Performance Computing Tests

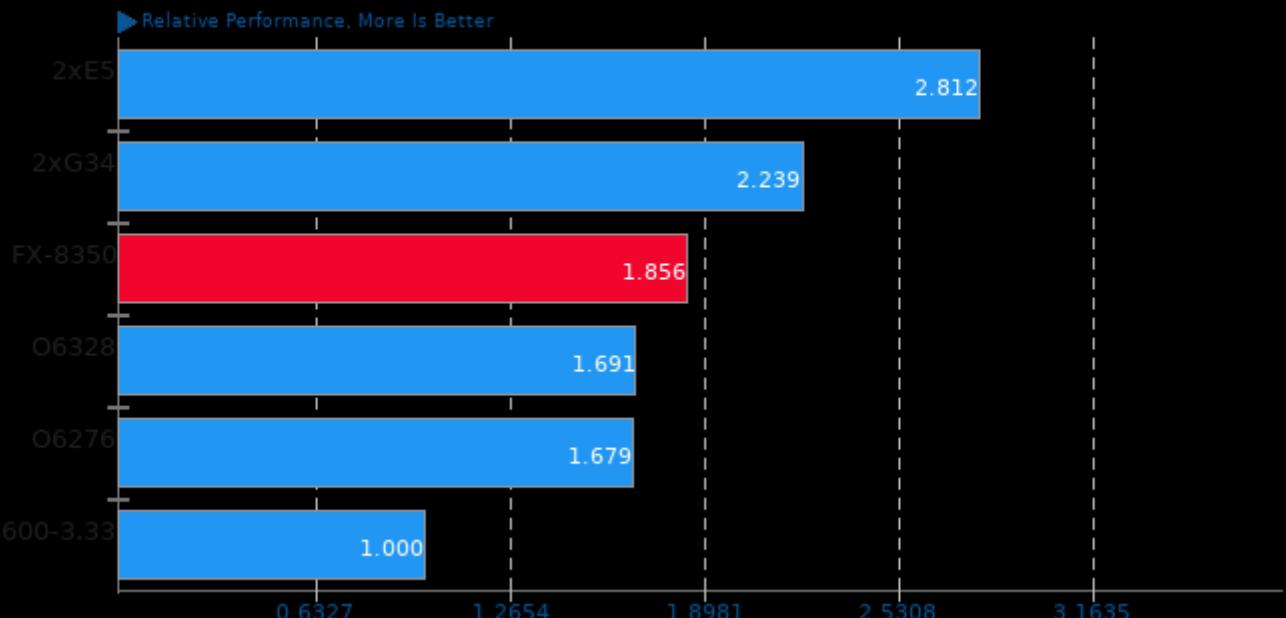
Result Composite - test sample



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

Geometric Mean Of Imaging Tests

Result Composite - test sample



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

Geometric Mean Of Common Kernel Benchmarks Tests

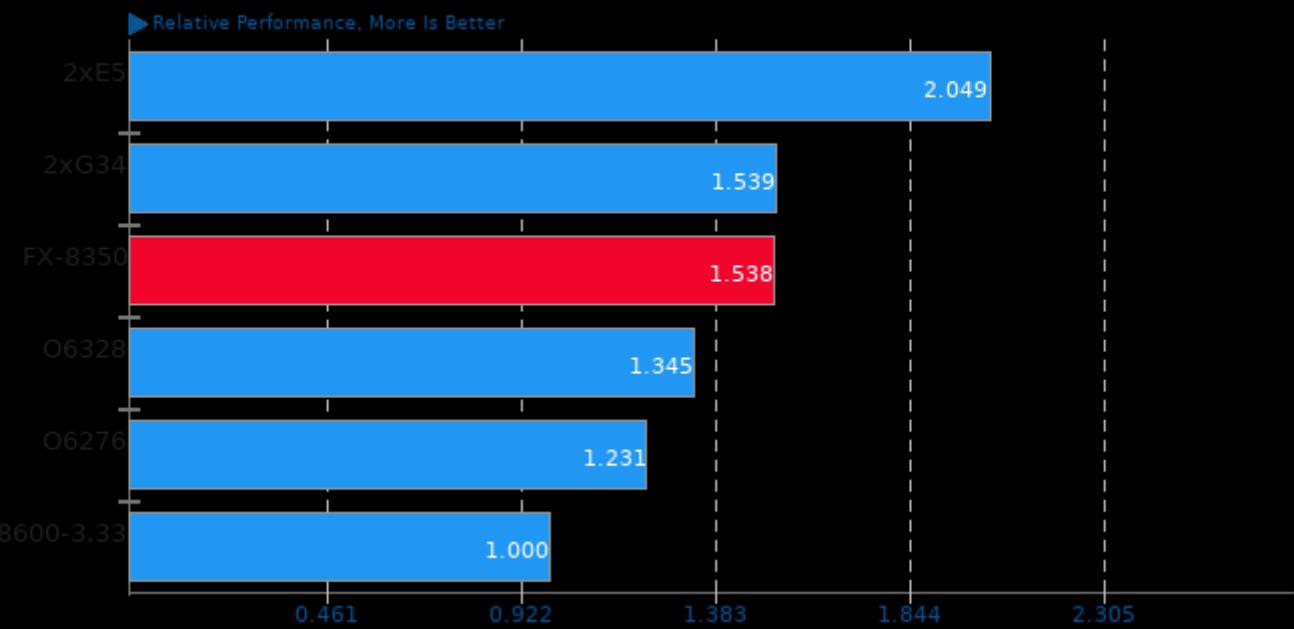
Result Composite - test sample



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

Geometric Mean Of Programmer / Developer System Benchmarks Tests

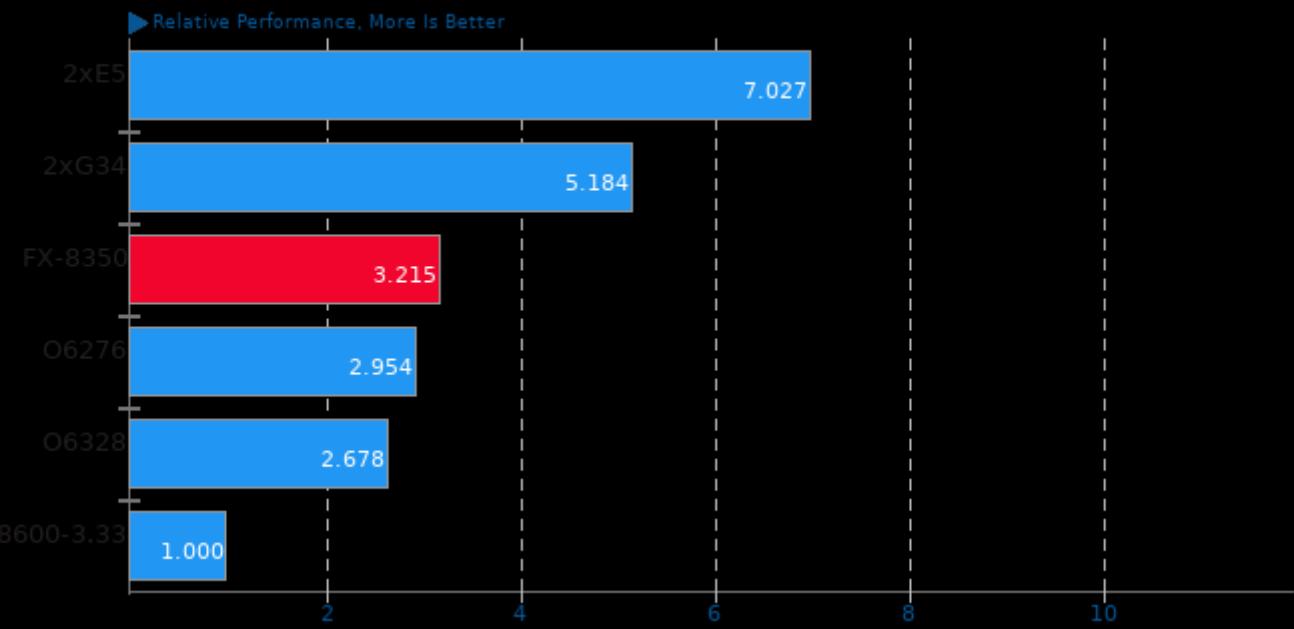
Result Composite - test sample



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

Geometric Mean Of Renderers Tests

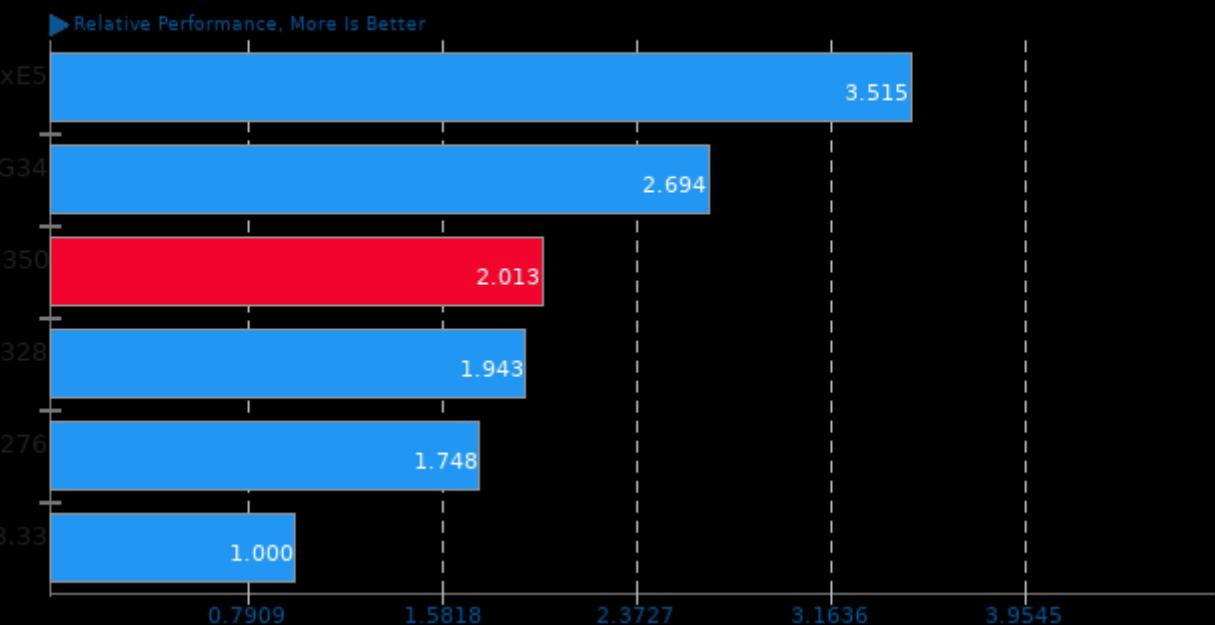
Result Composite - test sample



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

Geometric Mean Of Server CPU Tests

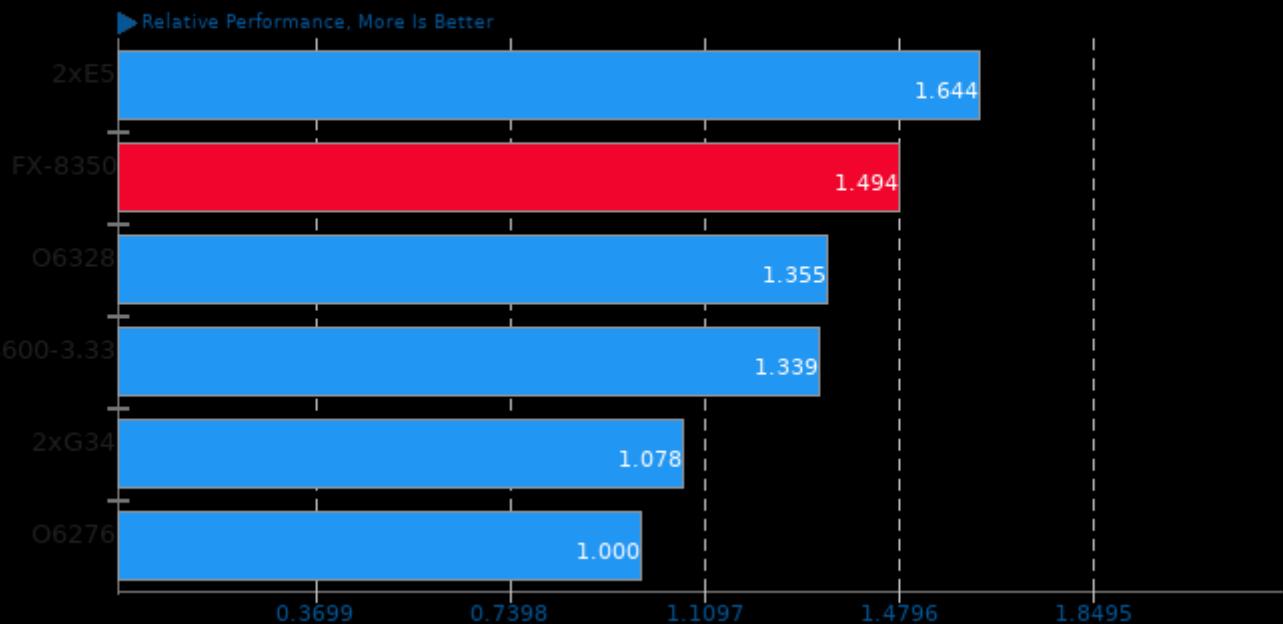
Result Composite - test sample



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 Of Single-Threaded Tests

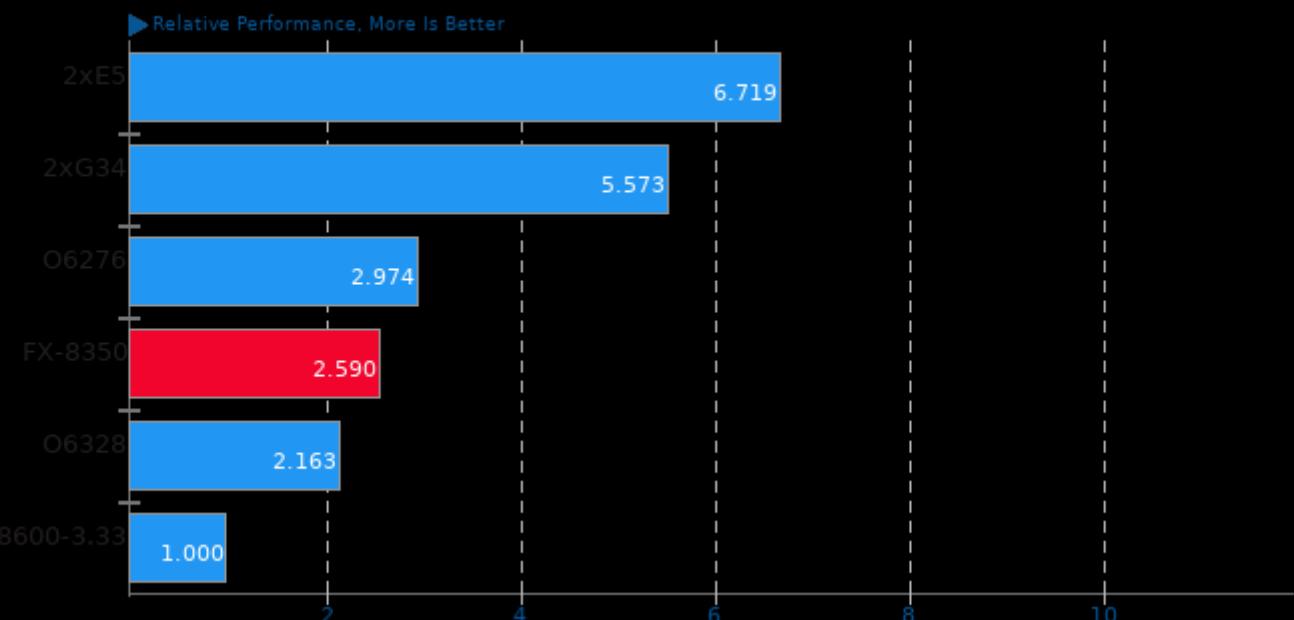
Result Composite - test sample



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 Of Video Encoding Tests

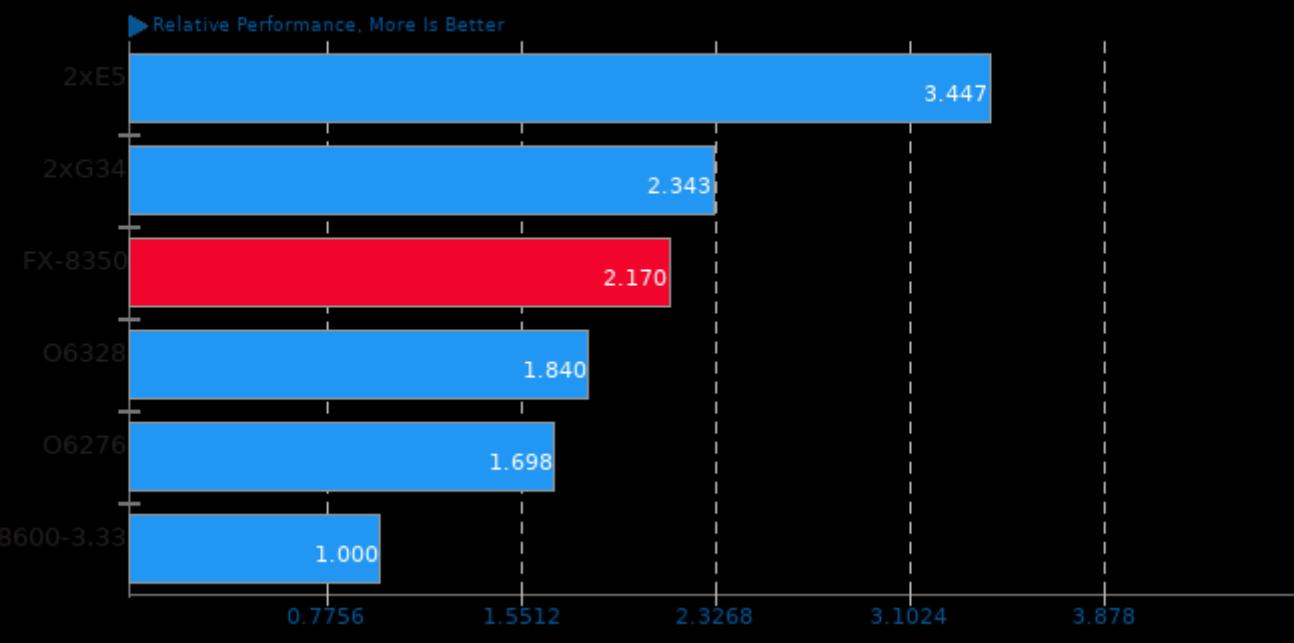
Result Composite - test sample



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

Geometric Mean Of Common Workstation Benchmarks Tests

Result Composite - test sample



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 15:41.