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# intel i3 12100f cpu stress test v1.1

Intel Core i3-12100F testing with a Gigabyte H610I DDR4 (F3 BIOS) and ASUS NVIDIA NV106 2GB on Debian 11 via the Phoronix Test Suite.

**Automated Executive Summary**

*i3-12100F Debian 11 had the most wins, coming in first place for 75% of the tests.*

*Based on the geometric mean of all complete results, the fastest (i3-12100F Debian 11) was 1.096x the speed of the slowest (intel i3 v1.1).*

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

*Stress-NG (Test: MMAP) at 1.945x*
*Stress-NG (Test: Malloc) at 1.833x*
*Stress-NG (Test: Memory Copying) at 1.393x*
*Stress-NG (Test: NUMA) at 1.384x*
*Stress-NG (Test: Context Switching) at 1.356x*
*Stress-NG (Test: CPU Cache) at 1.336x*
*Stress-NG (Test: MEMFD) at 1.334x*
*Stress-NG (Test: Matrix Math) at 1.143x*
*Stress-NG (Test: SENDFILE) at 1.106x*

*Stress-NG (Test: Glibc C String Functions) at 1.087x.*

# Test Systems:

## intel i3 v1.1

Processor: Intel Core i3-12100F @ 5.50GHz (4 Cores / 8 Threads), Motherboard: ASRock B660M-HDV (3.02 BIOS), Chipset: Intel Device 7aa7, Memory: 16GB, Disk: 500GB KINGSTON SNVS500G + 1000GB Transcend, Graphics: NVIDIA GeForce RTX 3050 8GB, Audio: Realtek ALC897, Monitor: DELL P2414H, Network: Intel

OS: Linuxmint 20.3, Kernel: 5.4.0-104-generic (x86_64), Desktop: Cinnamon 5.2.7, Display Server: X Server 1.20.13, Display Driver: NVIDIA 510.47.03, OpenGL: 4.6.0, Vulkan: 1.3.194, Compiler: GCC 9.4.0 + LLVM 10.0.0 + CUDA 11.6, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-yTrUTS/gcc-9-9.4.0/debian/tmp-nvptx/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave (EPP: balance_performance) - CPU Microcode: 0x18 - Thermald 1.9.1
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

## i3-12100F Debian 11

Processor: Intel Core i3-12100F @ 5.50GHz (4 Cores / 8 Threads), Motherboard: Gigabyte H610I DDR4 (F3 BIOS), Chipset: Intel Device 7aa7, Memory: 16GB, Disk: 128GB INTEL SSDSC2KW12, Graphics: ASUS NVIDIA NV106 2GB, Audio: Realtek ALC897, Monitor: 220P4LPY, Network: Intel

OS: Debian 11, Kernel: 5.10.0-14-amd64 (x86_64), Desktop: GNOME Shell 3.38.6, Display Server: X Server 1.20.11, Display Driver: nouveau, OpenGL: 4.3 Mesa 20.3.5, Vulkan: 1.0.2, Compiler: GCC 10.2.1 20210110, File-System: ext4, Screen Resolution: 1680x1050

Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave (EPP: balance_performance) - CPU Microcode: 0x18
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

| | intel i3 v1.1 | i3-12100F Debian 11 |
|---|---|---|

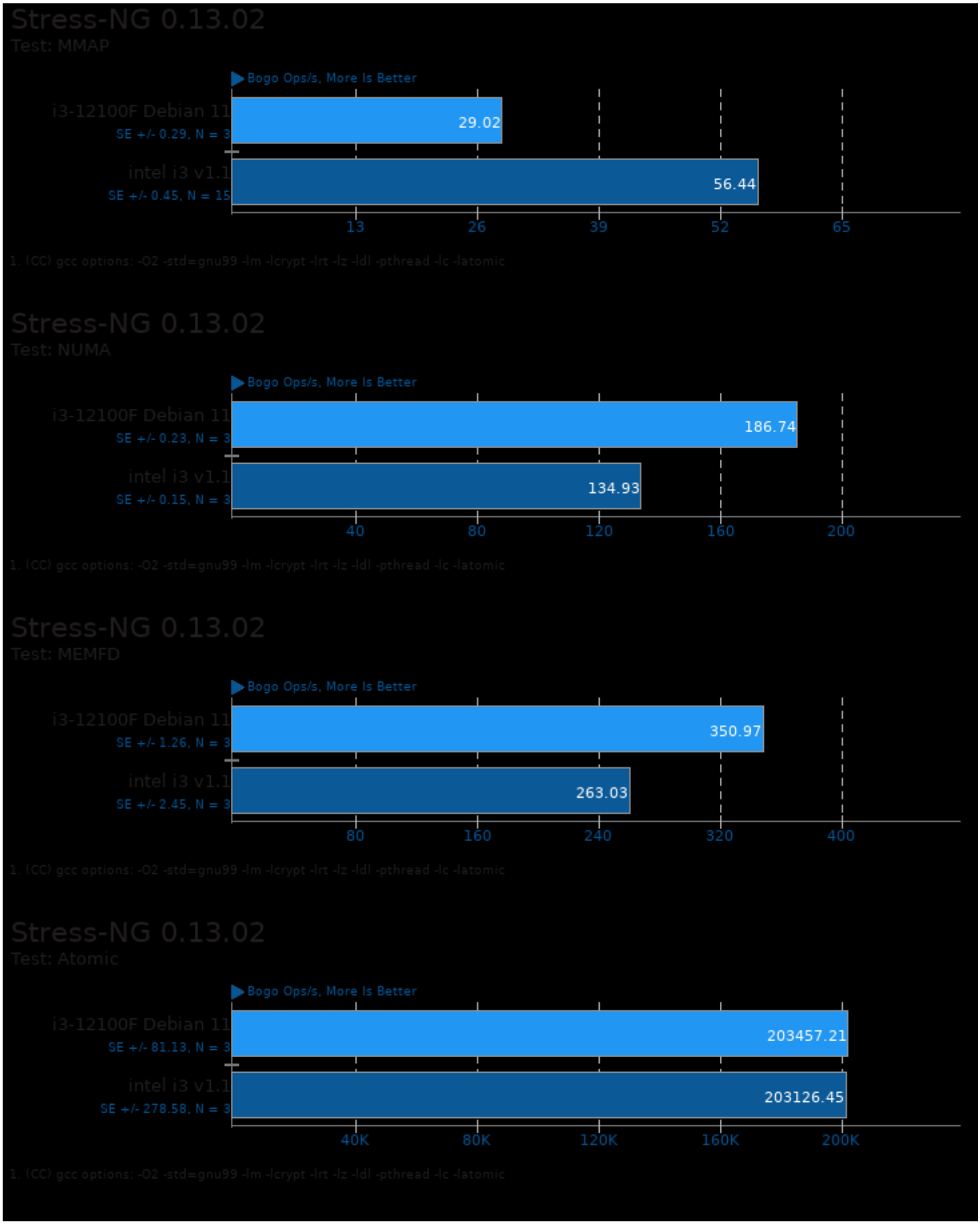
# intel i3 12100f cpu stress test v1.1

| | | |
|---|---|---|
| **Stress-NG - MMAP (Bogo Ops/s)** | **56.44** | **29.02** |
| Normalized | 100% | 51.42% |
| Standard Deviation | 3.1% | 1.8% |
| **Stress-NG - NUMA (Bogo Ops/s)** | **134.93** | **186.74** |
| Normalized | 72.26% | 100% |
| Standard Deviation | 0.2% | 0.2% |
| **Stress-NG - MEMFD (Bogo Ops/s)** | **263.03** | **350.97** |
| Normalized | 74.94% | 100% |
| Standard Deviation | 1.6% | 0.6% |
| **Stress-NG - Atomic (Bogo Ops/s)** | **203126** | **203457** |
| Normalized | 99.84% | 100% |
| Standard Deviation | 0.2% | 0.1% |
| **Stress-NG - Crypto (Bogo Ops/s)** | **1139** | **1213** |
| Normalized | 93.85% | 100% |
| Standard Deviation | 0.1% | 0.1% |
| **Stress-NG - Malloc (Bogo Ops/s)** | **22388851** | **41047869** |
| Normalized | 54.54% | 100% |
| Standard Deviation | 0.2% | 0.1% |
| **Stress-NG - RdRand (Bogo Ops/s)** | **81923** | **82071** |
| Normalized | 99.82% | 100% |
| Standard Deviation | 0.1% | 0.1% |
| **Stress-NG - Forking (Bogo Ops/s)** | **40554** | **39601** |
| Normalized | 100% | 97.65% |
| Standard Deviation | 1.9% | 2.9% |
| **Stress-NG - SENDFILE (Bogo Ops/s)** | **117973** | **130495** |
| Normalized | 90.4% | 100% |
| Standard Deviation | 0.9% | 0.1% |
| **Stress-NG - CPU Cache (Bogo Ops/s)** | **152.85** | **204.22** |
| Normalized | 74.85% | 100% |
| Standard Deviation | 2.3% | 2% |
| **Stress-NG - CPU Stress (Bogo Ops/s)** | **8404** | **8706** |
| Normalized | 96.53% | 100% |
| Standard Deviation | 0.6% | 0.2% |
| **Stress-NG - Semaphores (Bogo Ops/s)** | **710643** | **696282** |
| Normalized | 100% | 97.98% |
| Standard Deviation | 1.2% | 0.1% |
| **Stress-NG - Matrix Math (Bogo Ops/s)** | **28866** | **33000** |
| Normalized | 87.47% | 100% |
| Standard Deviation | 0.4% | 0.4% |
| **Stress-NG - Vector Math (Bogo Ops/s)** | **20275** | **21497** |
| Normalized | 94.32% | 100% |
| Standard Deviation | 1.5% | 0.1% |
| **Stress-NG - Memory Copying (Bogo Ops/s)** | **1784** | **2485** |
| Normalized | 71.77% | 100% |
| Standard Deviation | 0.7% | 1.2% |
| **Stress-NG - Socket Activity (Bogo Ops/s)** | **5236** | **4755** |
| Normalized | 100% | 90.82% |
| Standard Deviation | 2.3% | 10.7% |
| **Stress-NG - Context Switching (Bogo Ops/s)** | **2231086** | **3025362** |
| Normalized | 73.75% | 100% |
| Standard Deviation | 0.3% | 1% |
| **Stress-NG - G.C.S.F (Bogo Ops/s)** | **808480** | **878927** |
| Normalized | 91.98% | 100% |
| Standard Deviation | 0.5% | 0.2% |
| **Stress-NG - G.Q.D.S (Bogo Ops/s)** | **88.62** | **91.09** |

# intel i3 12100f cpu stress test v1.1

| | | |
|---|---|---|
| **Normalized** | 97.29% | 100% |
| **Standard Deviation** | 1% | 0.9% |
| **Stress-NG - S.V.M.P (Bogo Ops/s)** | **7111422** | **6996064** |
| **Normalized** | 100% | 98.38% |
| **Standard Deviation** | 0.5% | 0.2% |
| **Stress-NG - IO_uring (Bogo Ops/s)** | | 30747 |
| **Standard Deviation** | | 4.1% |

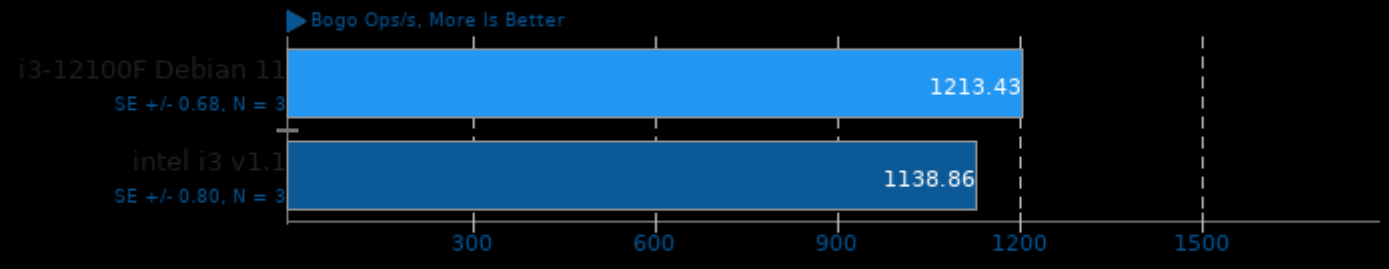
# intel i3 12100f cpu stress test v1.1



# intel i3 12100f cpu stress test v1.1

## Stress-NG 0.13.02

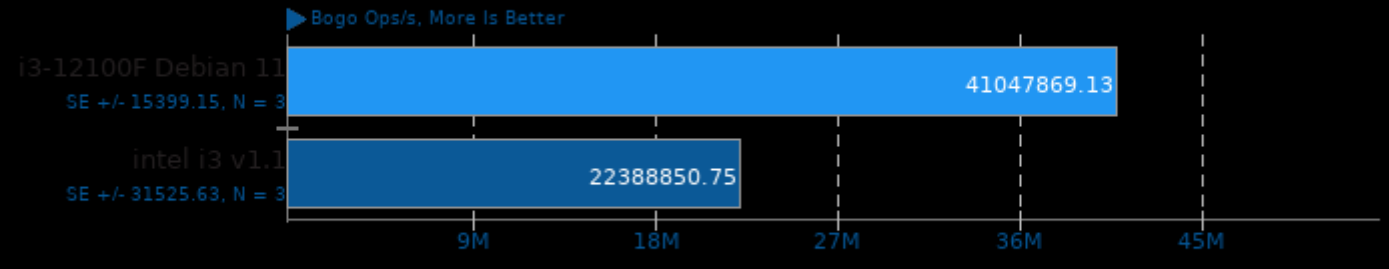
Test: Crypto




1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

## Stress-NG 0.13.02

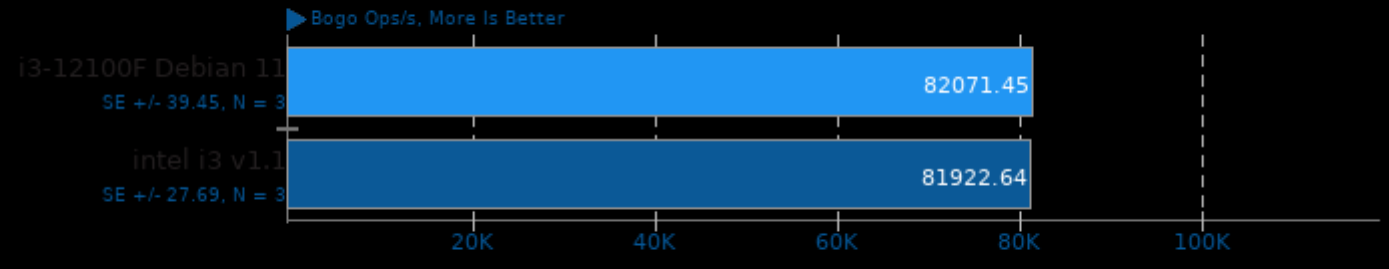
Test: Malloc




1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

## Stress-NG 0.13.02

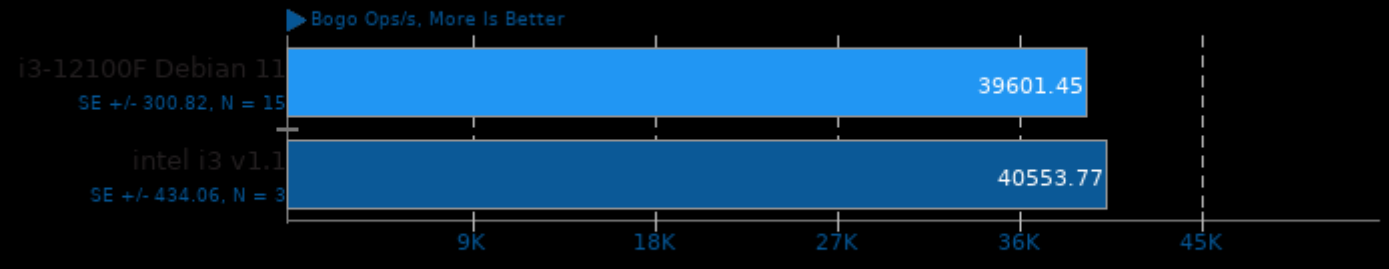
Test: RdRand




1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

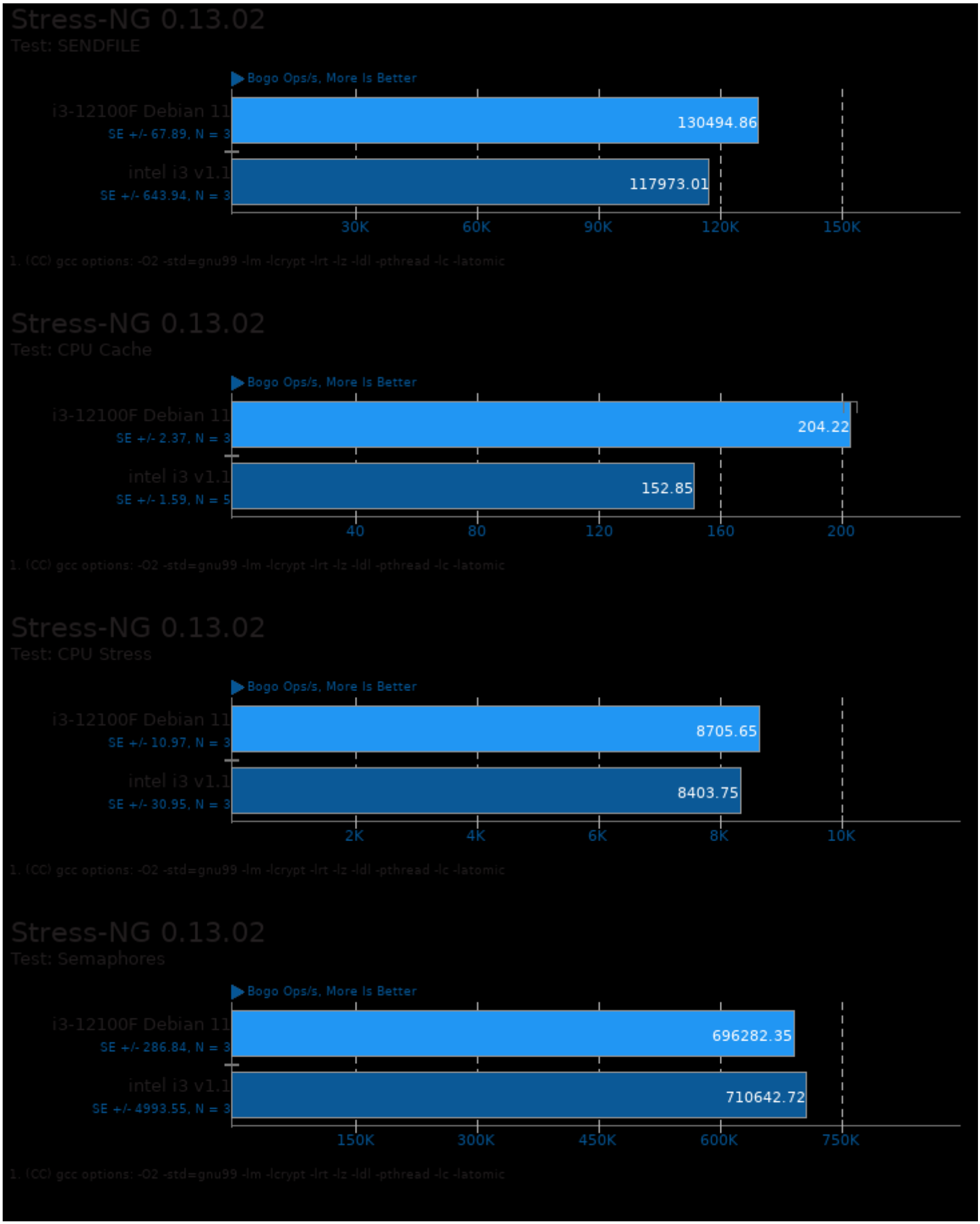
## Stress-NG 0.13.02

Test: Forking

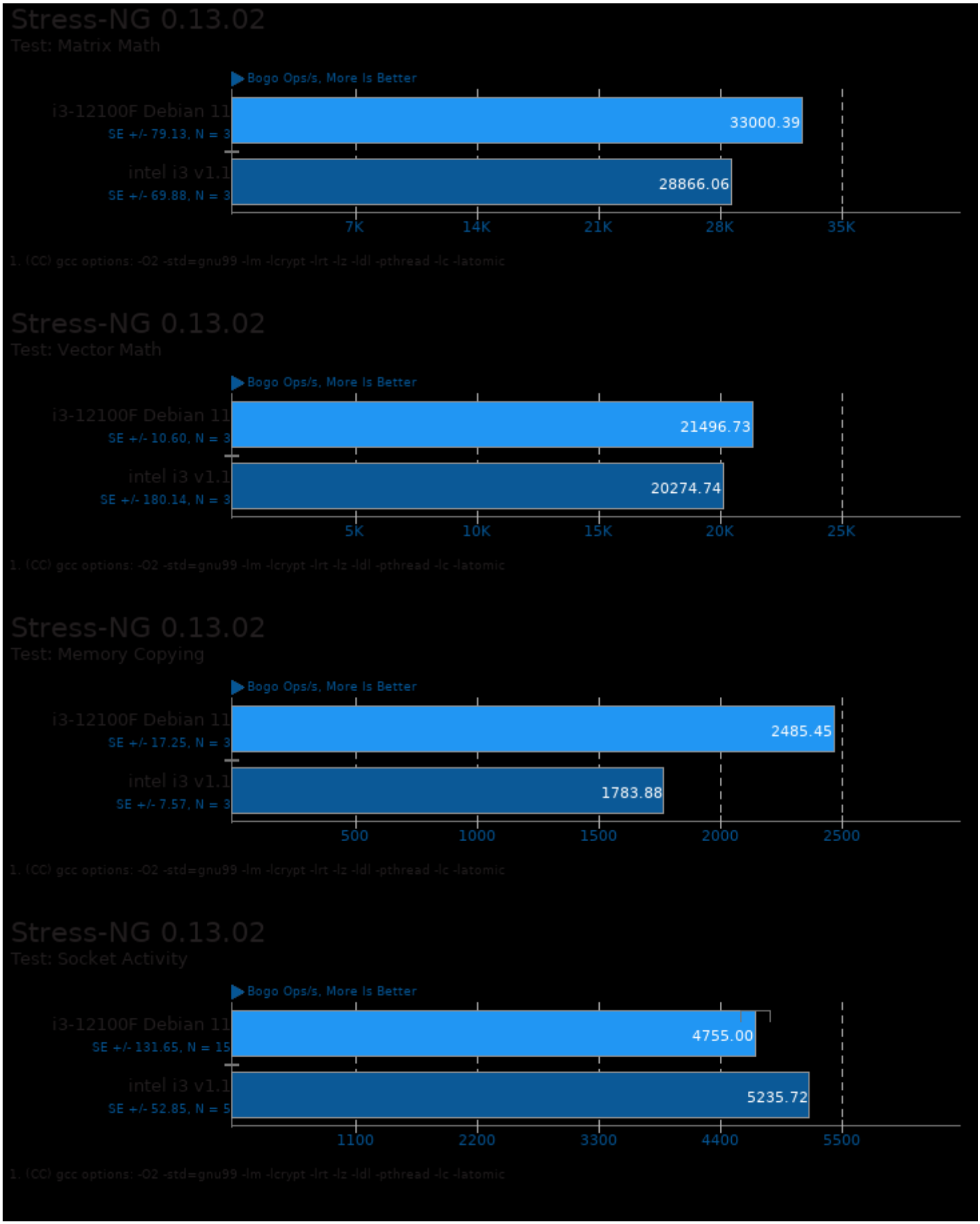



1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

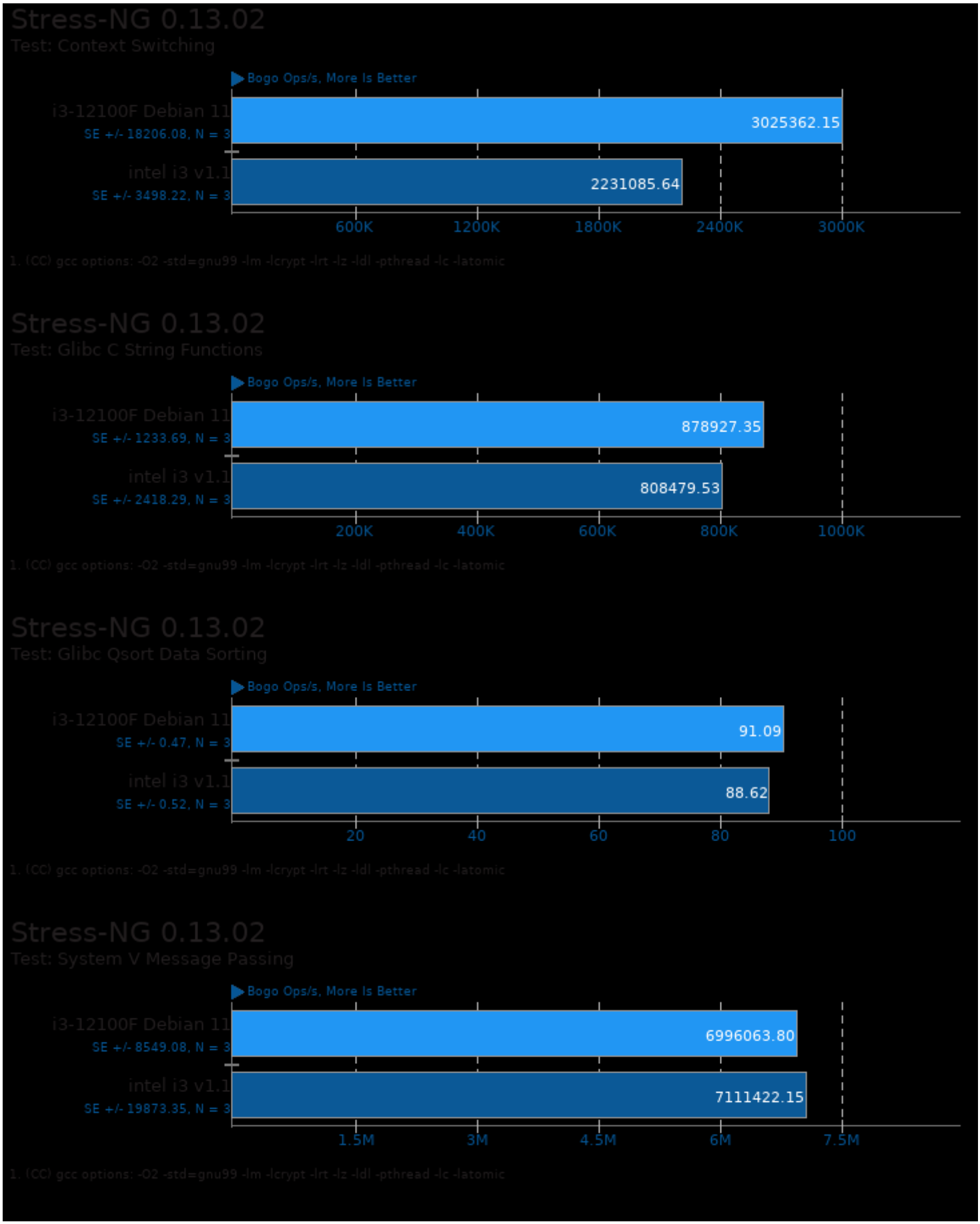
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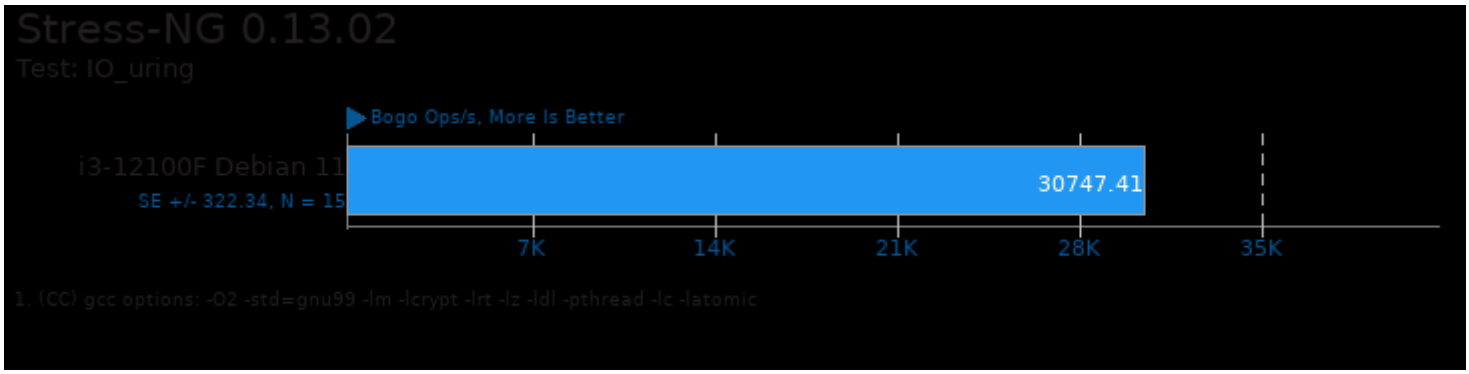
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