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Core i3 8100 Nov

Intel Core i3-8100 testing with a ASRock Z370M-ITX/ac (P4.10 BIOS) and Intel 8th Gen Core Gaussian Mixture Model 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 50% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.002x the speed of the slowest (3). 1 was 0.999x the speed of 2 and 3 was 0.999x the speed of 1.

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

OpenVINO (Model: Person Detection 0106 FP32 - Device: CPU) at 1.014x
LAMMPS Molecular Dynamics Simulator (Model: 20k Atoms) at 1.013x
x265 (Video Input: Bosphorus 4K) at 1.009x
OpenVINO (Model: Face Detection 0106 FP32 - Device: CPU) at 1.009x
OpenVINO (Model: Face Detection 0106 FP16 - Device: CPU) at 1.009x
Sunflow Rendering System (Global Illumination + Image Synthesis) at 1.008x
Kvazaar (Video Input: Bosphorus 4K - Video Preset: Ultra Fast) at 1.008x
Waifu2x-NCNN Vulkan (Scale: 2x - Denoise: 3 - TAA: No) at 1.006x
OpenVINO (Model: Face Detection 0106 FP16 - Device: CPU) at 1.005x

OpenVINO (Model: Person Detection 0106 FP32 - Device: CPU) at 1.005x.

Test Systems:

1

2

3

Processor: Intel Core i3-8100 @ 3.60GHz (4 Cores), Motherboard: ASRock Z370M-ITX/ac (P4.10 BIOS), Chipset: Intel 8th Gen Core 4-core Desktop, Memory: 8GB, Disk: 60GB DREVO X1 SSD, Graphics: Intel 8th Gen Core Gaussian Mixture Model 3GB (1100MHz), Audio: Realtek ALC892, Monitor: VA2431, Network: Intel I219-V + Intel I211 + Intel Dual Band-AC 3168NGW

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc1daily20200819-generic (x86_64) 20200818, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.8, Vulkan: 1.2.131, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

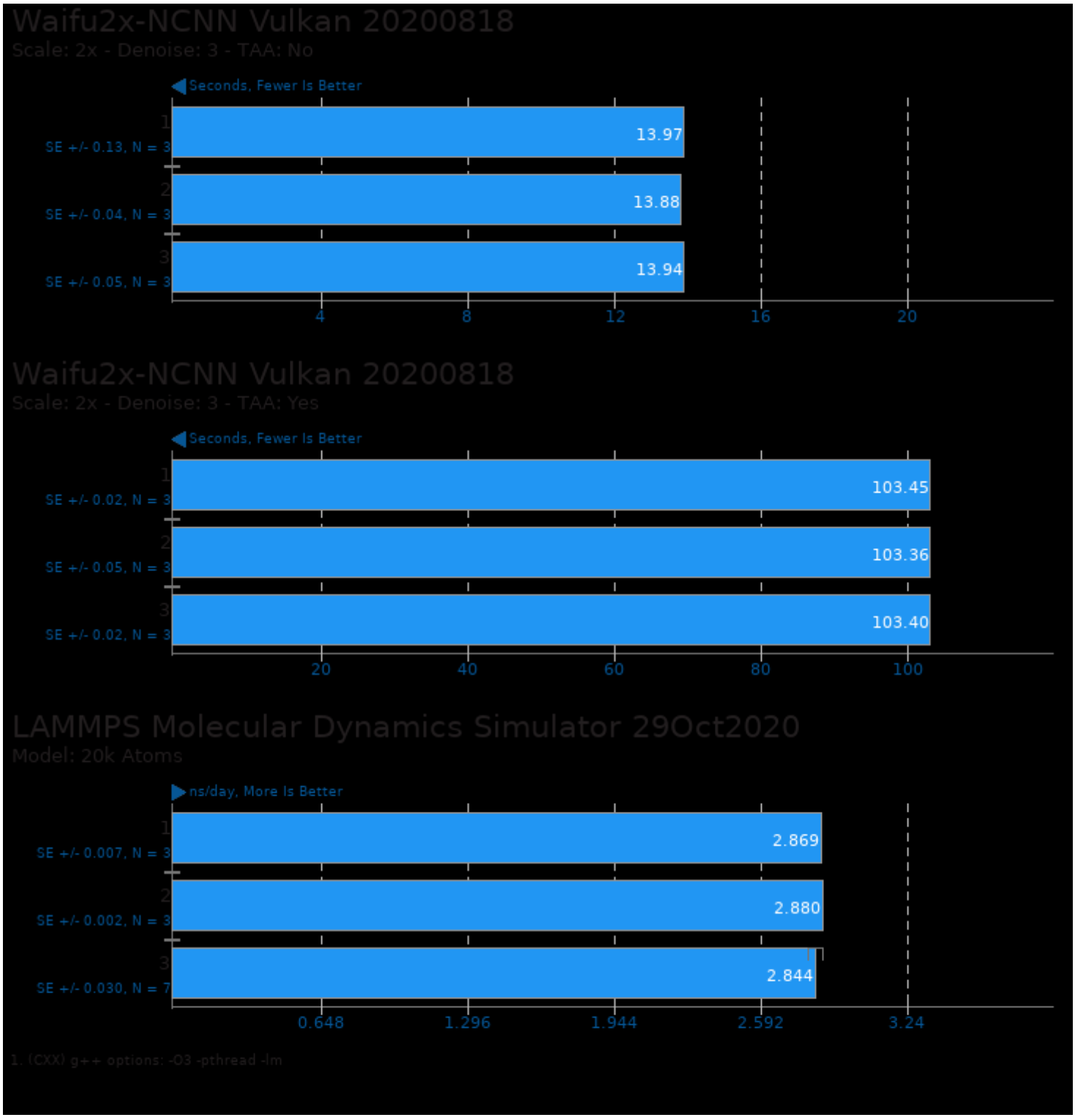
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,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 - CPU Microcode: 0xd6 - Thermald 1.9.1
Java Notes: OpenJDK Runtime Environment (build 11.0.8+10-post-Ubuntu-0ubuntu120.04)
Python Notes: Python 3.8.2
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + 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 STIBP: disabled RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

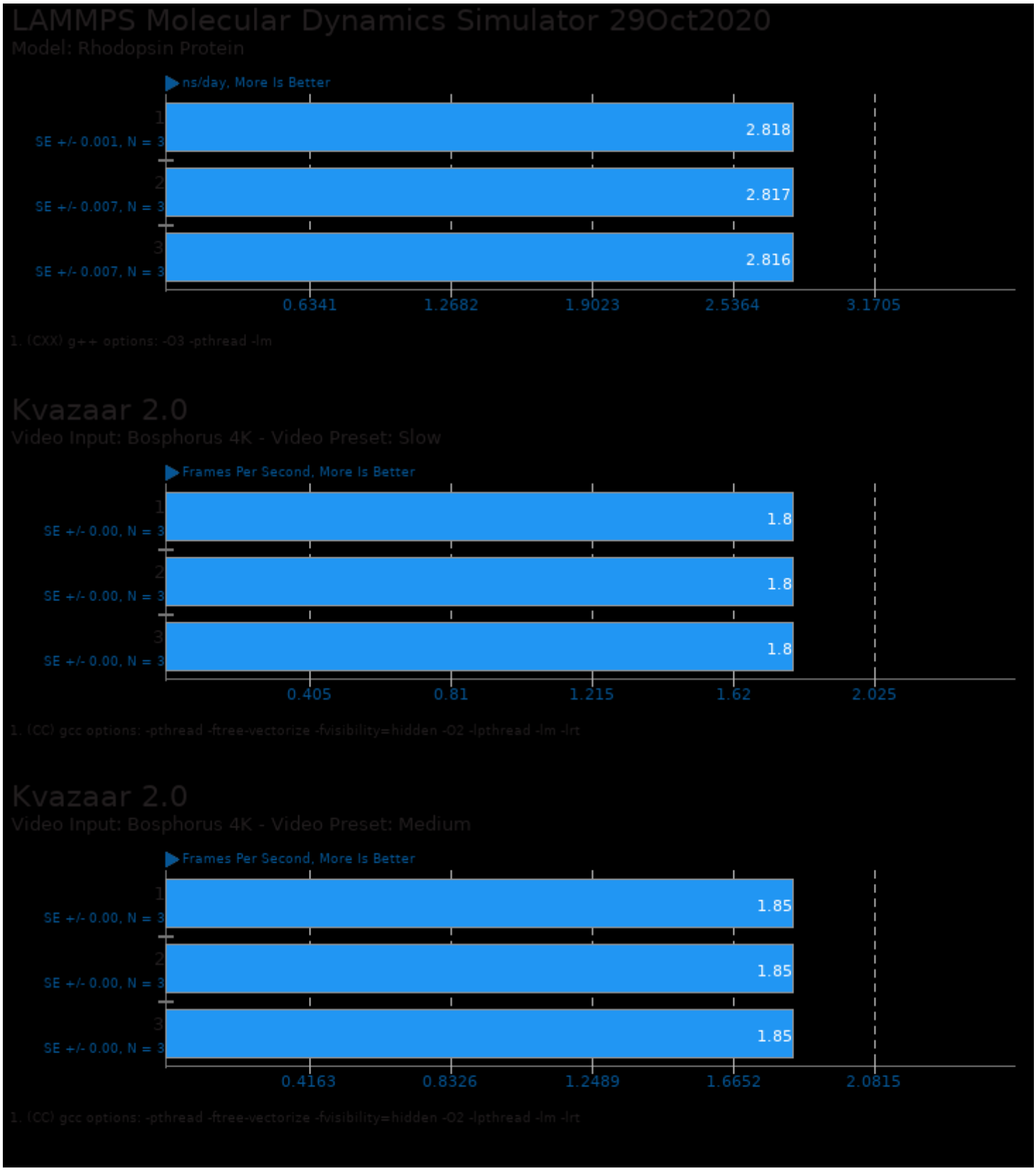
	1	2	3
Waifu2x-NCNN Vulkan - 2x - 3 - No (sec)	**13.968**	**13.881**	13.941
Normalized	99.38%	100%	99.57%
Standard Deviation	1.6%	0.5%	0.6%
Waifu2x-NCNN Vulkan - 2x - 3 - Yes (sec)	**103.446**	**103.363**	103.404
Normalized	99.92%	100%	99.96%
Standard Deviation	0%	0.1%	0%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	2.869	**2.880**	**2.844**
Normalized	99.62%	100%	98.75%
Standard Deviation	0.4%	0.1%	2.8%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	**2.818**	2.817	**2.816**
Normalized	100%	99.96%	99.93%
Standard Deviation	0.1%	0.5%	0.4%

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Kvazaar - Bosphorus 4K - Slow (FPS)	1.8	1.8	1.8
Standard Deviation	0%	0%	0%
Kvazaar - Bosphorus 4K - Medium (FPS)	1.85	1.85	1.85
Standard Deviation	0%	0%	0%
Kvazaar - Bosphorus 1080p - Slow (FPS)	7.97	**7.98**	**7.96**
Normalized	99.87%	100%	99.75%
Standard Deviation	0.2%	0.3%	0.1%
Kvazaar - Bosphorus 1080p - Medium (FPS)	**8.21**	**8.22**	**8.21**
Normalized	99.88%	100%	99.88%
Standard Deviation	0.2%	0.1%	0%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	5.03	5.03	5.03
Standard Deviation	0.1%	0.3%	0.1%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	**8.94**	8.96	**9.01**
Normalized	99.22%	99.45%	100%
Standard Deviation	0.2%	0.3%	0.4%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	**20.72**	**20.72**	**20.68**
Normalized	100%	100%	99.81%
Standard Deviation	0.4%	0.5%	0.4%
Kvazaar - Bosphorus 1080p - Ultra Fast	36.58	**36.59**	**36.49**
Normalized	99.97%	100%	99.73%
Standard Deviation	0.1%	0.3%	0.1%
x265 - Bosphorus 4K (FPS)	**6.63**	6.65	**6.69**
Normalized	99.1%	99.4%	100%
Standard Deviation	0.5%	1.1%	0.8%
x265 - Bosphorus 1080p (FPS)	**28.85**	28.79	**28.75**
Normalized	100%	99.79%	99.65%
Standard Deviation	0.6%	0.3%	0.7%
RNNoise (sec)	30.423	**30.410**	**30.448**
Normalized	99.96%	100%	99.88%
Standard Deviation	1.4%	1.5%	1.3%
OpenVINO - F.D.0.F - CPU (FPS)	**1.16**	**1.17**	**1.16**
Normalized	99.15%	100%	99.15%
Standard Deviation	0%	0.5%	0%
OpenVINO - F.D.0.F - CPU (ms)	3430	**3413**	**3432**
Normalized	99.51%	100%	99.47%
Standard Deviation	0%	0.3%	0.2%
OpenVINO - F.D.0.F - CPU (FPS)	**1.16**	**1.15**	**1.15**
Normalized	100%	99.14%	99.14%
Standard Deviation	0.5%	0%	0.5%
OpenVINO - F.D.0.F - CPU (ms)	3426	**3425**	**3428**
Normalized	99.96%	100%	99.89%
Standard Deviation	0.2%	0.3%	0.3%
OpenVINO - P.D.0.F - CPU (FPS)	0.7	0.70	0.70
Standard Deviation	0%	0.8%	0.8%
OpenVINO - P.D.0.F - CPU (ms)	**5642**	5646	**5647**
Normalized	100%	99.94%	99.92%
Standard Deviation	0%	0%	0.1%
OpenVINO - P.D.0.F - CPU (FPS)	**0.71**	**0.71**	**0.7**
Normalized	100%	100%	98.59%
Standard Deviation	0.8%	0.8%	0%
OpenVINO - P.D.0.F - CPU (ms)	5647	**5634**	**5662**
Normalized	99.77%	100%	99.5%
Standard Deviation	0.1%	0.3%	0.2%
OpenVINO - A.G.R.R.0.F - CPU (FPS)	**2540**	2538	**2534**
Normalized	100%	99.89%	99.73%

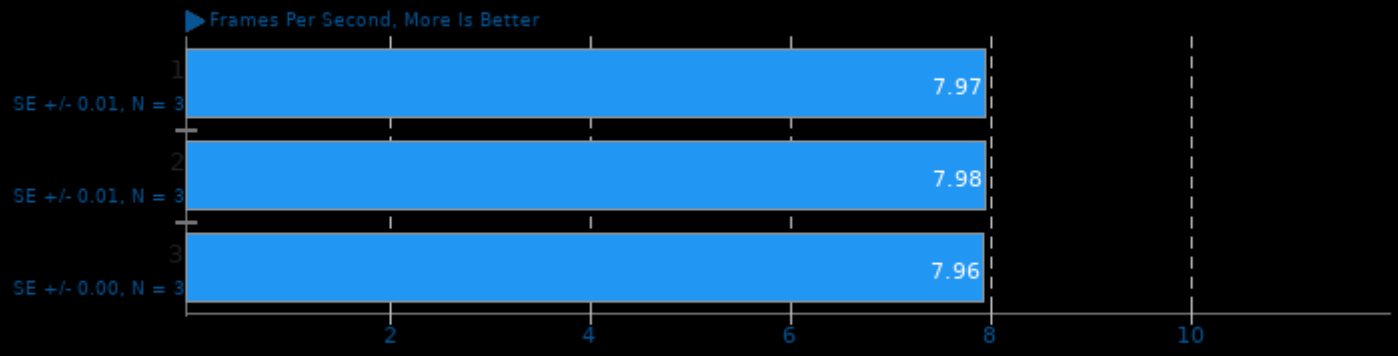
Standard Deviation	0.1%	0.2%	0.4%
OpenVINO - A.G.R.R.0.F - CPU (ms)	1.46	1.46	1.46
Standard Deviation	0%	0%	0%
OpenVINO - A.G.R.R.0.F - CPU (FPS)	**2549**	2546	**2539**
Normalized	100%	99.92%	99.64%
Standard Deviation	0.2%	0.1%	0.1%
OpenVINO - A.G.R.R.0.F - CPU (ms)	1.46	1.46	1.46
Standard Deviation	0.4%	0.4%	0%
Sunflow Rendering System - G.I.I.S (sec)	**2.888**	2.867	**2.865**
Normalized	99.2%	99.93%	100%
Standard Deviation	2%	1.6%	2.9%


Waifu2x-NCNN Vulkan 20200818
Scale: 2x - Denoise: 3 - TAA: No
Seconds, Fewer Is Better
1
SE +/- 0.13, N = 3
13.97
2
SE +/- 0.04, N = 3
13.88
3
SE +/- 0.05, N = 3
13.94
4
8
12
16
20
Waifu2x-NCNN Vulkan 20200818
Scale: 2x - Denoise: 3 - TAA: Yes
Seconds, Fewer Is Better
1
SE +/- 0.02, N = 3
103.45
2
SE +/- 0.05, N = 3
103.36
3
SE +/- 0.02, N = 3
103.40
20
40
60
80
100
LAMMPS Molecular Dynamics Simulator 29Oct2020
Model: 20k Atoms
ns/day, More Is Better
1
SE +/- 0.007, N = 3
2.869
2
SE +/- 0.002, N = 3
2.880
3
SE +/- 0.030, N = 7
2.844
0.648
1.296
1.944
2.592
3.24
1. (CXX) g++ options: -O3 -pthread -lm


LAMMPS Molecular Dynamics Simulator 29Oct2020
Model: Rhodopsin Protein
ns/day, More Is Better
1
SE +/- 0.001, N = 3
2.818
2
SE +/- 0.007, N = 3
2.817
3
SE +/- 0.007, N = 3
2.816
0.6341
1.2682
1.9023
2.5364
3.1705
1. (CXX) g++ options: -O3 -pthread -lm
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Slow
Frames Per Second, More Is Better
1
SE +/- 0.00, N = 3
1.8
2
SE +/- 0.00, N = 3
1.8
3
SE +/- 0.00, N = 3
1.8
0.405
0.81
1.215
1.62
2.025
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Medium
Frames Per Second, More Is Better
1
SE +/- 0.00, N = 3
1.85
2
SE +/- 0.00, N = 3
1.85
3
SE +/- 0.00, N = 3
1.85
0.4163
0.8326
1.2489
1.6652
2.0815
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.0

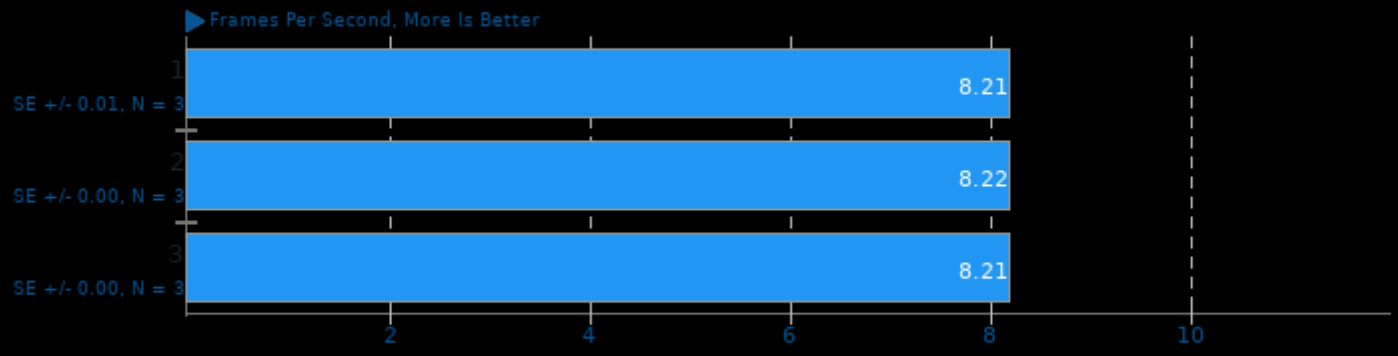
Video Input: Bosphorus 1080p - Video Preset: Slow



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.0

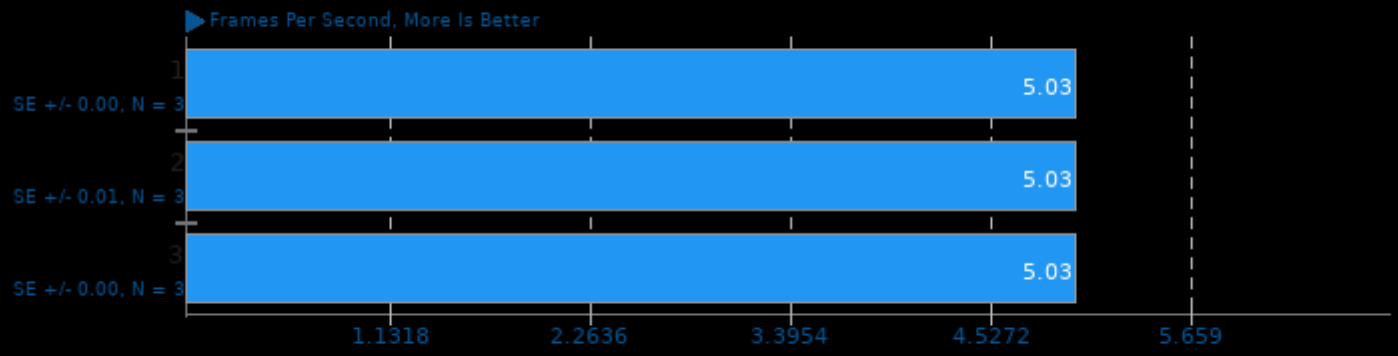
Video Input: Bosphorus 1080p - Video Preset: Medium



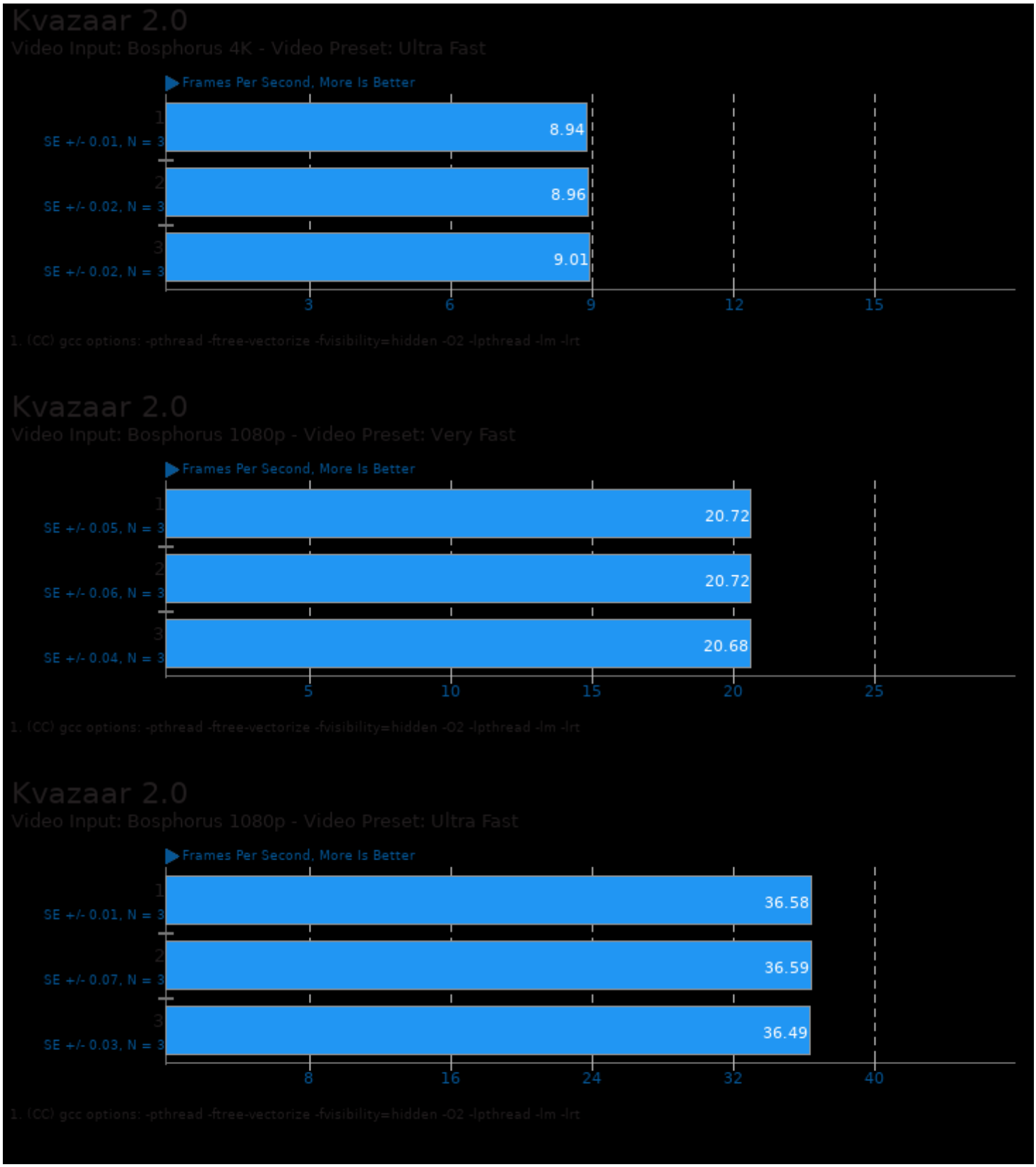
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

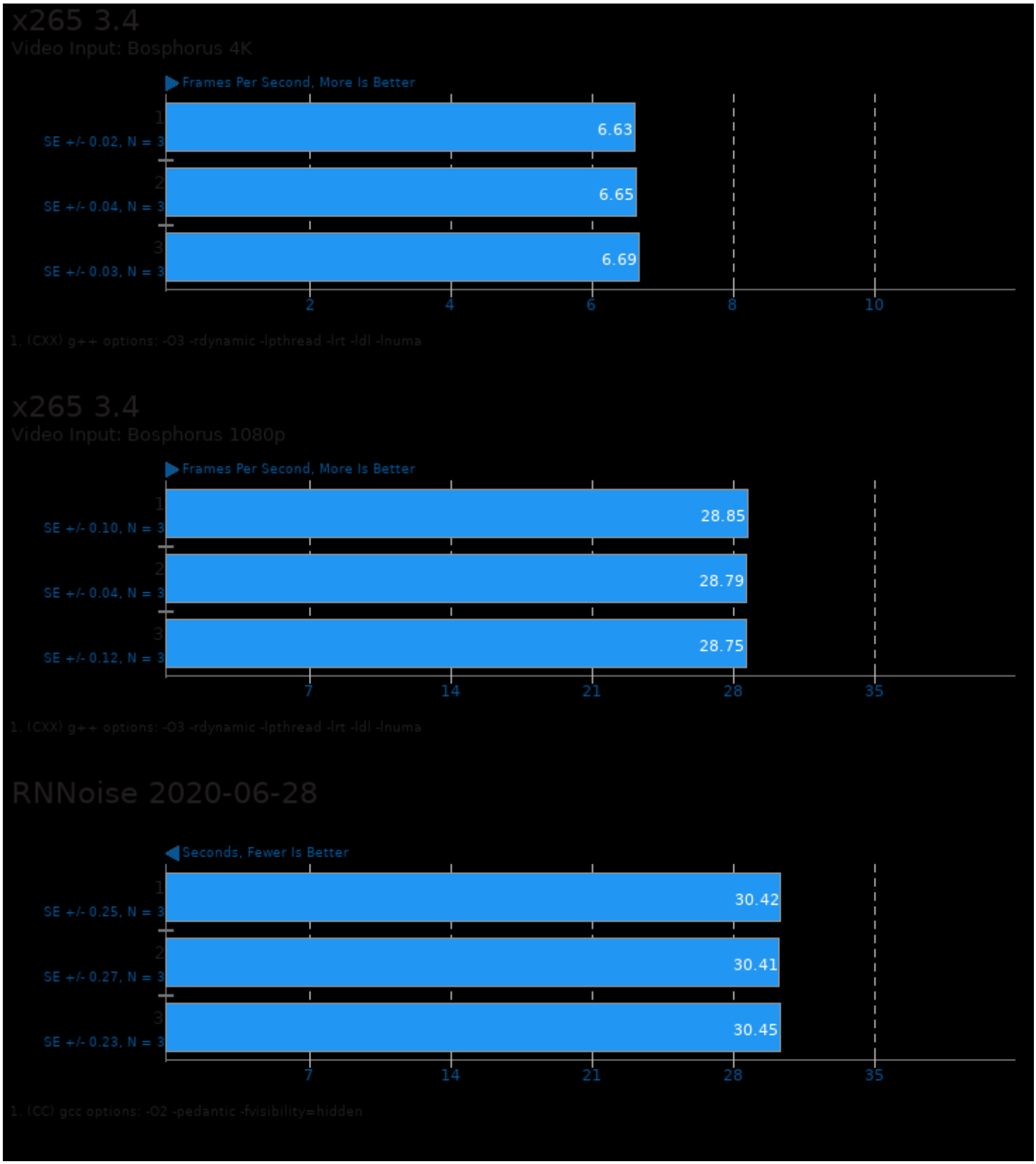
Kvazaar 2.0

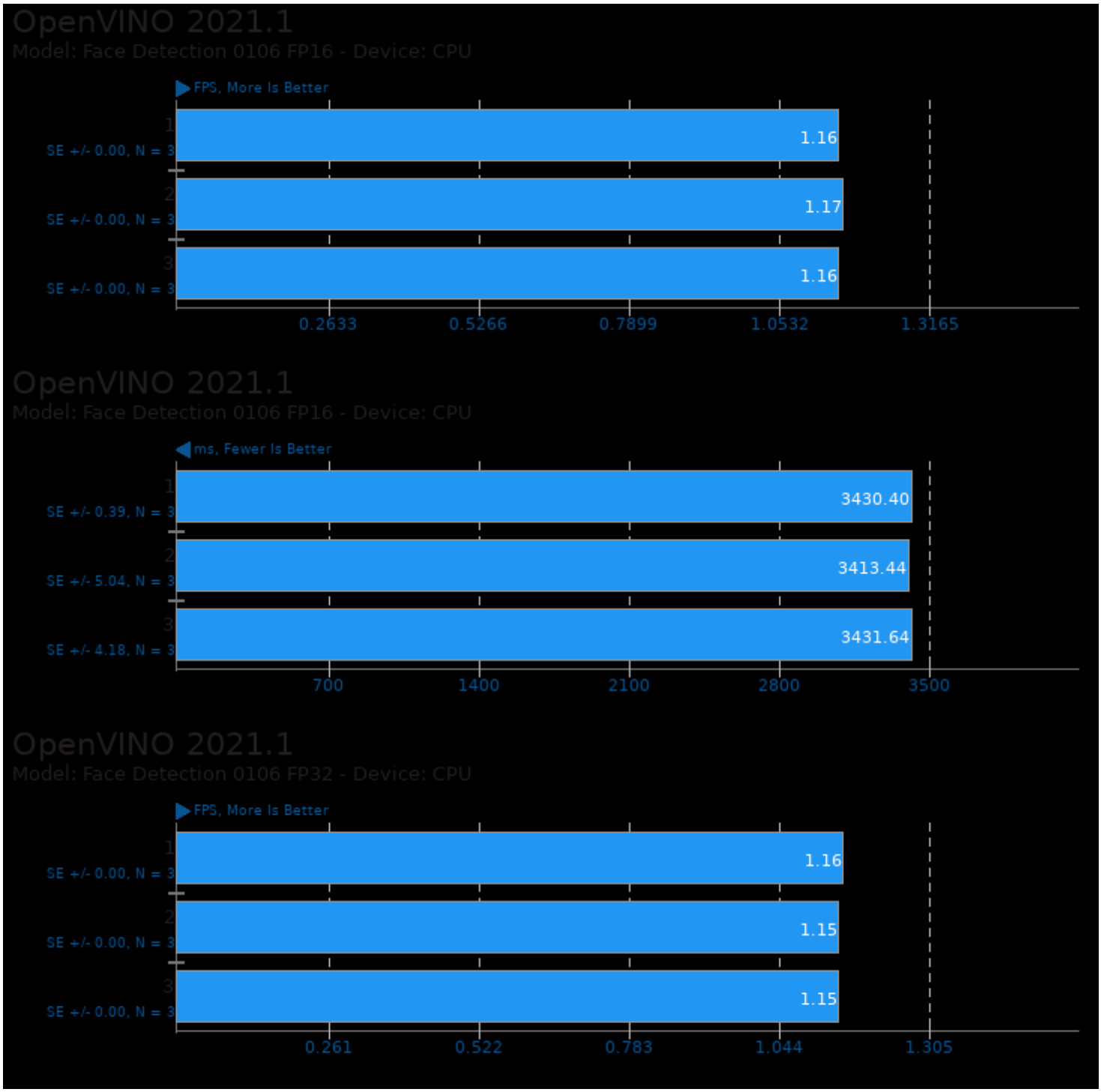
Video Input: Bosphorus 4K - Video Preset: Very Fast

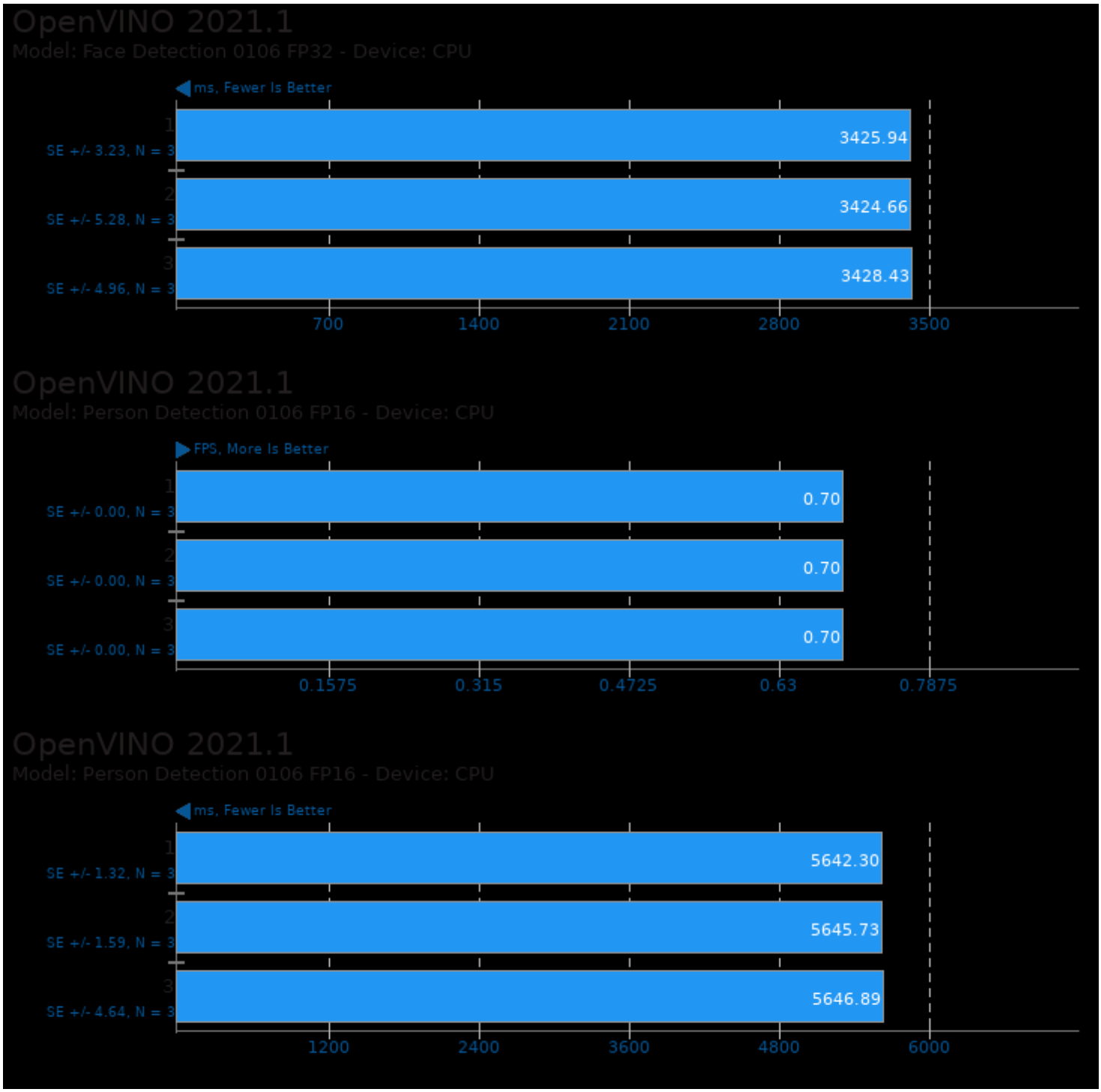


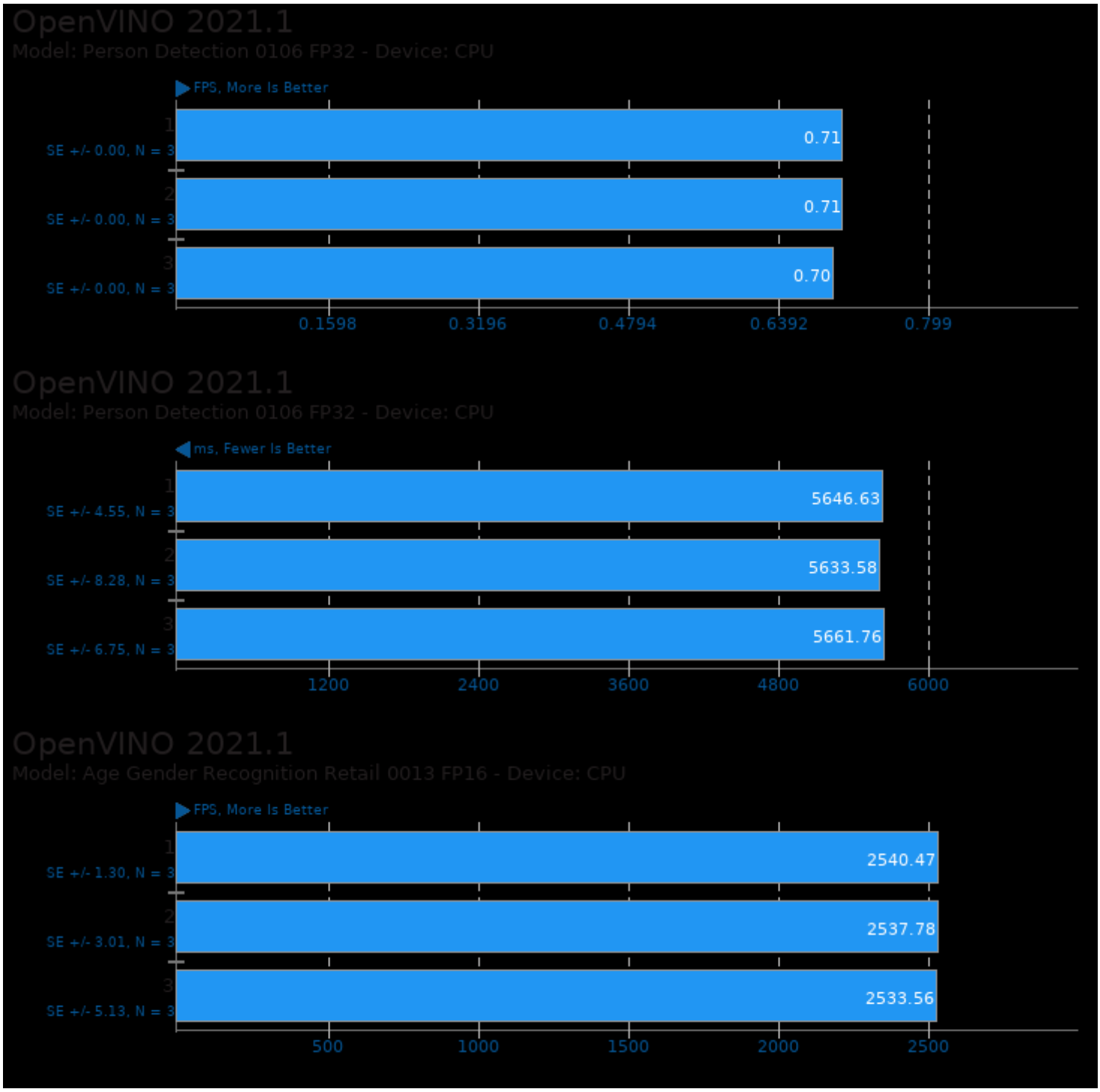
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

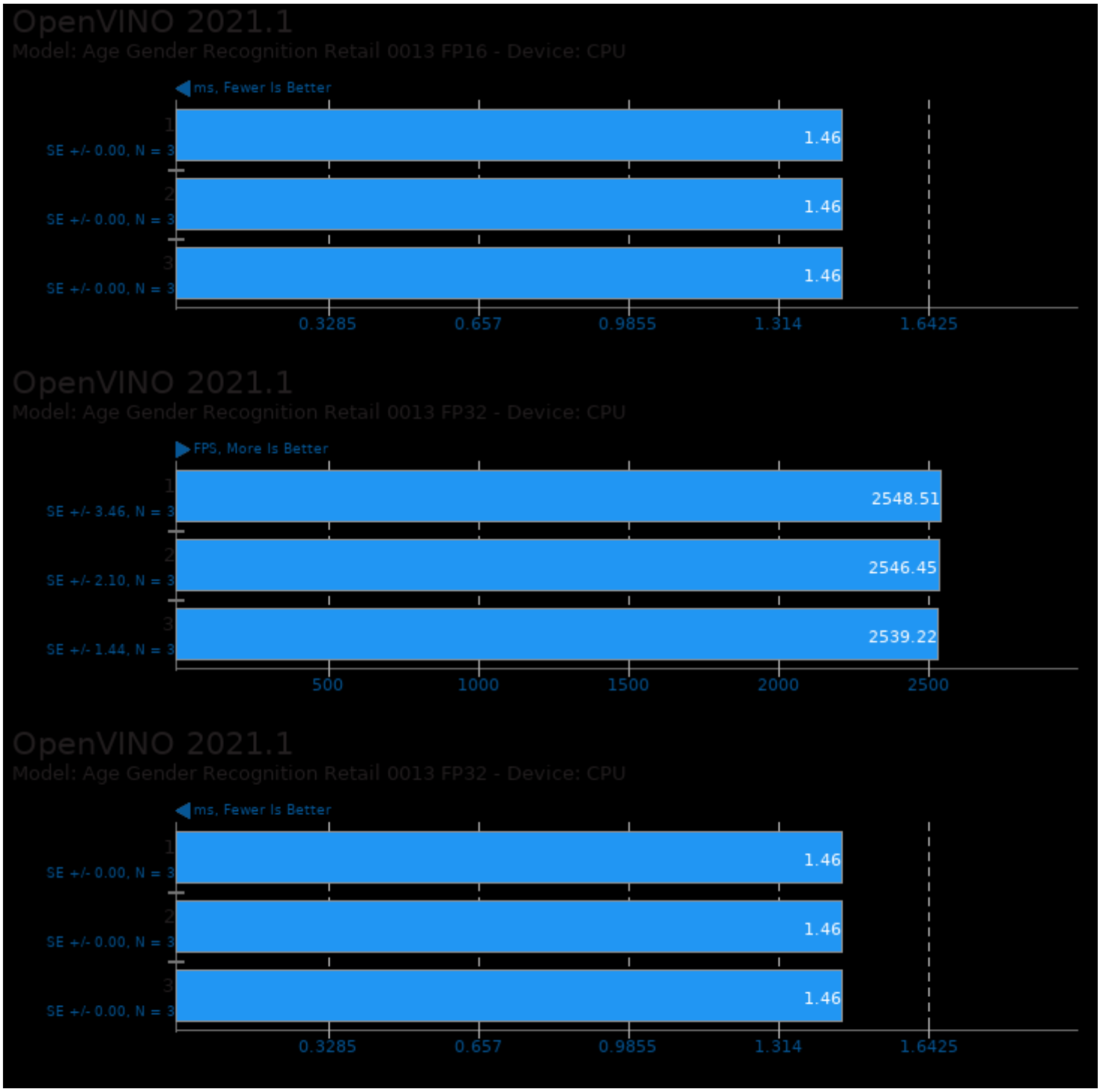

Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Ultra Fast
Frames Per Second, More Is Better
1
SE +/- 0.01, N = 3
8.94
2
SE +/- 0.02, N = 3
8.96
3
SE +/- 0.02, N = 3
9.01
3
6
9
12
15
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Very Fast
Frames Per Second, More Is Better
1
SE +/- 0.05, N = 3
20.72
2
SE +/- 0.06, N = 3
20.72
3
SE +/- 0.04, N = 3
20.68
5
10
15
20
25
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast
Frames Per Second, More Is Better
1
SE +/- 0.01, N = 3
36.58
2
SE +/- 0.07, N = 3
36.59
3
SE +/- 0.03, N = 3
36.49
8
16
24
32
40
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

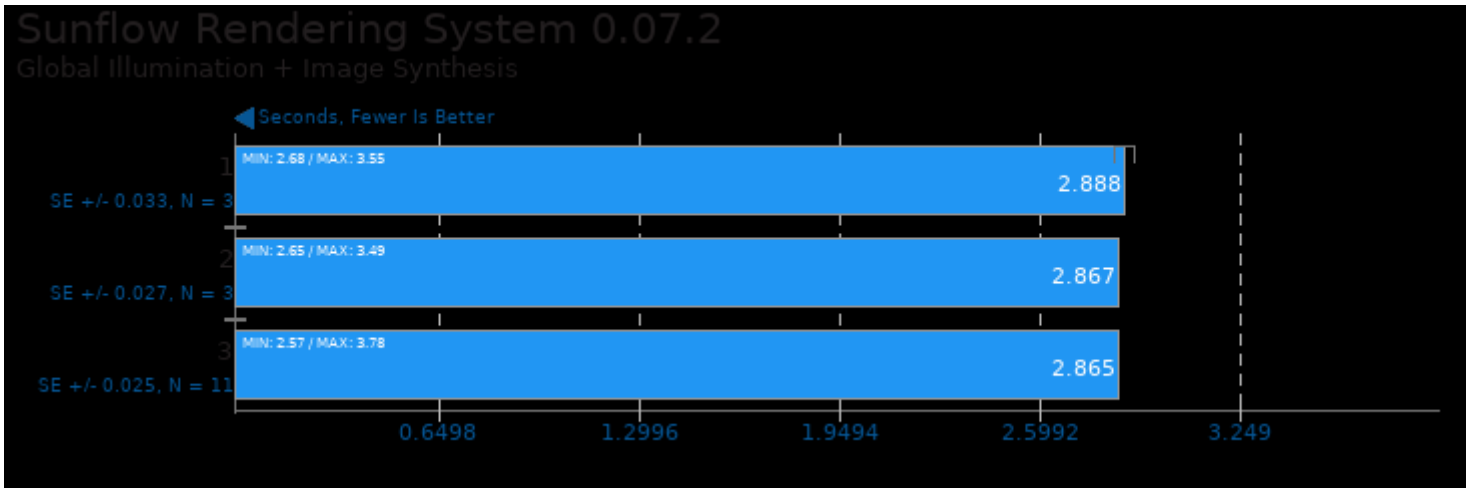

x265 3.4
Video Input: Bosphorus 4K
Frames Per Second, More Is Better
1
SE +/- 0.02, N = 3
6.63
2
SE +/- 0.04, N = 3
6.65
3
SE +/- 0.03, N = 3
6.69
2
4
6
8
10
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma
x265 3.4
Video Input: Bosphorus 1080p
Frames Per Second, More Is Better
1
SE +/- 0.10, N = 3
28.85
2
SE +/- 0.04, N = 3
28.79
3
SE +/- 0.12, N = 3
28.75
7
14
21
28
35
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma
RNNoise 2020-06-28
Seconds, Fewer Is Better
1
SE +/- 0.25, N = 3
30.42
2
SE +/- 0.27, N = 3
30.41
3
SE +/- 0.23, N = 3
30.45
7
14
21
28
35
1. (CC) gcc options: -O2 -pedantic -fvisibility=hidden


OpenVINO 2021.1
Model: Face Detection 0106 FP16 - Device: CPU
FPS, More Is Better
1
SE +/- 0.00, N = 3
1.16
2
SE +/- 0.00, N = 3
1.17
3
SE +/- 0.00, N = 3
1.16
0.2633
0.5266
0.7899
1.0532
1.3165
OpenVINO 2021.1
Model: Face Detection 0106 FP16 - Device: CPU
ms, Fewer Is Better
1
SE +/- 0.39, N = 3
3430.40
2
SE +/- 5.04, N = 3
3413.44
3
SE +/- 4.18, N = 3
3431.64
700
1400
2100
2800
3500
OpenVINO 2021.1
Model: Face Detection 0106 FP32 - Device: CPU
FPS, More Is Better
1
SE +/- 0.00, N = 3
1.16
2
SE +/- 0.00, N = 3
1.15
3
SE +/- 0.00, N = 3
1.15
0.261
0.522
0.783
1.044
1.305

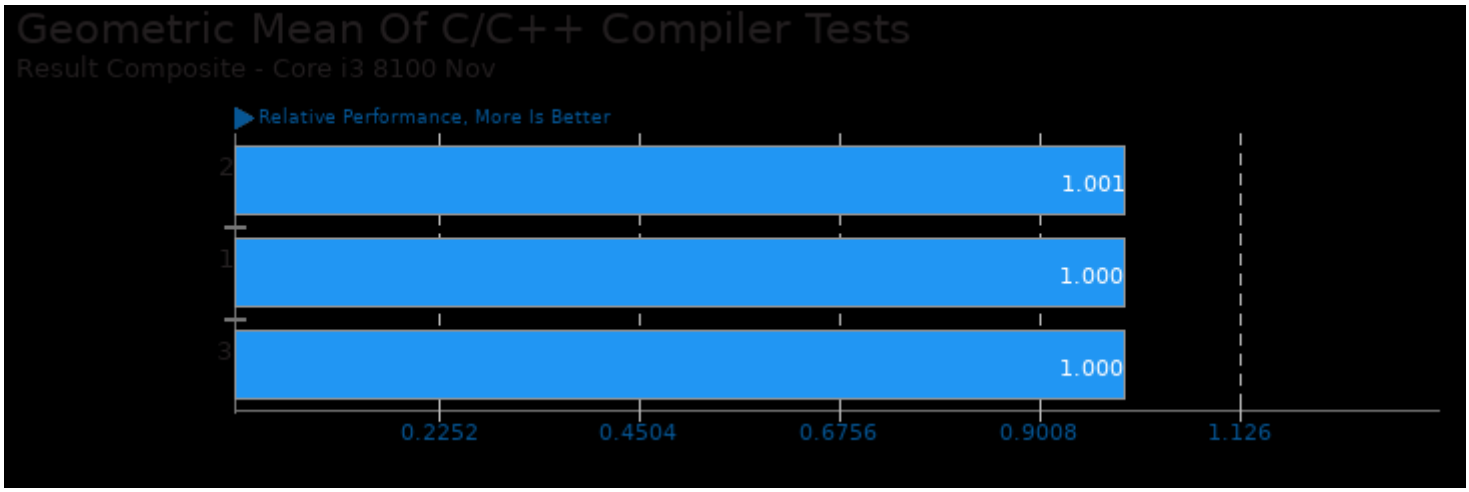

OpenVINO 2021.1
Model: Face Detection 0106 FP32 - Device: CPU
ms, Fewer Is Better
1
SE +/- 3.23, N = 3
3425.94
2
SE +/- 5.28, N = 3
3424.66
3
SE +/- 4.96, N = 3
3428.43
700
1400
2100
2800
3500
OpenVINO 2021.1
Model: Person Detection 0106 FP16 - Device: CPU
FPS, More Is Better
1
SE +/- 0.00, N = 3
0.70
2
SE +/- 0.00, N = 3
0.70
3
SE +/- 0.00, N = 3
0.70
0.1575
0.315
0.4725
0.63
0.7875
OpenVINO 2021.1
Model: Person Detection 0106 FP16 - Device: CPU
ms, Fewer Is Better
1
SE +/- 1.32, N = 3
5642.30
2
SE +/- 1.59, N = 3
5645.73
3
SE +/- 4.64, N = 3
5646.89
1200
2400
3600
4800
6000


OpenVINO 2021.1
Model: Person Detection 0106 FP32 - Device: CPU
FPS, More Is Better
1
SE +/- 0.00, N = 3
0.71
2
SE +/- 0.00, N = 3
0.71
3
SE +/- 0.00, N = 3
0.70
0.1598
0.3196
0.4794
0.6392
0.799
OpenVINO 2021.1
Model: Person Detection 0106 FP32 - Device: CPU
ms, Fewer Is Better
1
SE +/- 4.55, N = 3
5646.63
2
SE +/- 8.28, N = 3
5633.58
3
SE +/- 6.75, N = 3
5661.76
1200
2400
3600
4800
6000
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU
FPS, More Is Better
1
SE +/- 1.30, N = 3
2540.47
2
SE +/- 3.01, N = 3
2537.78
3
SE +/- 5.13, N = 3
2533.56
500
1000
1500
2000
2500


OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU
ms, Fewer Is Better
1
SE +/- 0.00, N = 3
1.46
2
SE +/- 0.00, N = 3
1.46
3
SE +/- 0.00, N = 3
1.46
0.3285
0.657
0.9855
1.314
1.6425
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU
FPS, More Is Better
1
SE +/- 3.46, N = 3
2548.51
2
SE +/- 2.10, N = 3
2546.45
3
SE +/- 1.44, N = 3
2539.22
500
1000
1500
2000
2500
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU
ms, Fewer Is Better
1
SE +/- 0.00, N = 3
1.46
2
SE +/- 0.00, N = 3
1.46
3
SE +/- 0.00, N = 3
1.46
0.3285
0.657
0.9855
1.314
1.6425


Sunflow Rendering System 0.07.2
Global Illumination + Image Synthesis
Seconds, Fewer Is Better
1
MIN: 2.68 / MAX: 3.55
2.888
SE +/- 0.033, N = 3
2
MIN: 2.65 / MAX: 3.49
2.867
SE +/- 0.027, N = 3
3
MIN: 2.57 / MAX: 3.78
2.865
SE +/- 0.025, N = 11
0.6498
1.2996
1.9494
2.5992
3.249

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



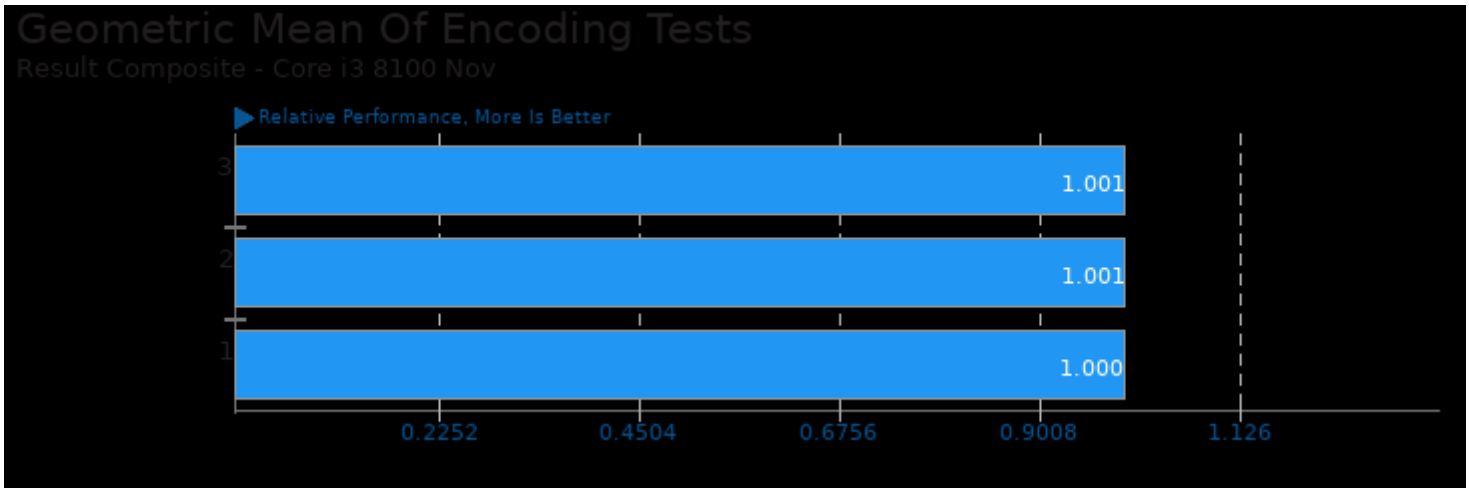
Geometric mean based upon tests: pts/x265, pts/kvazaar and pts/lammps



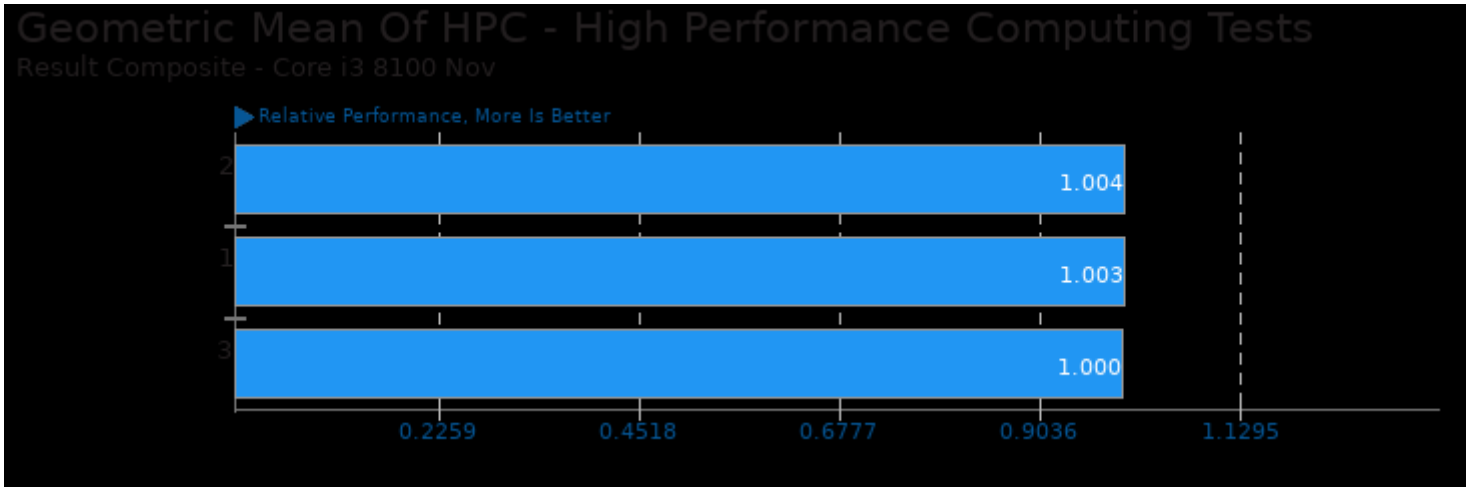
Geometric mean based upon tests: pts/x265 and pts/lammps



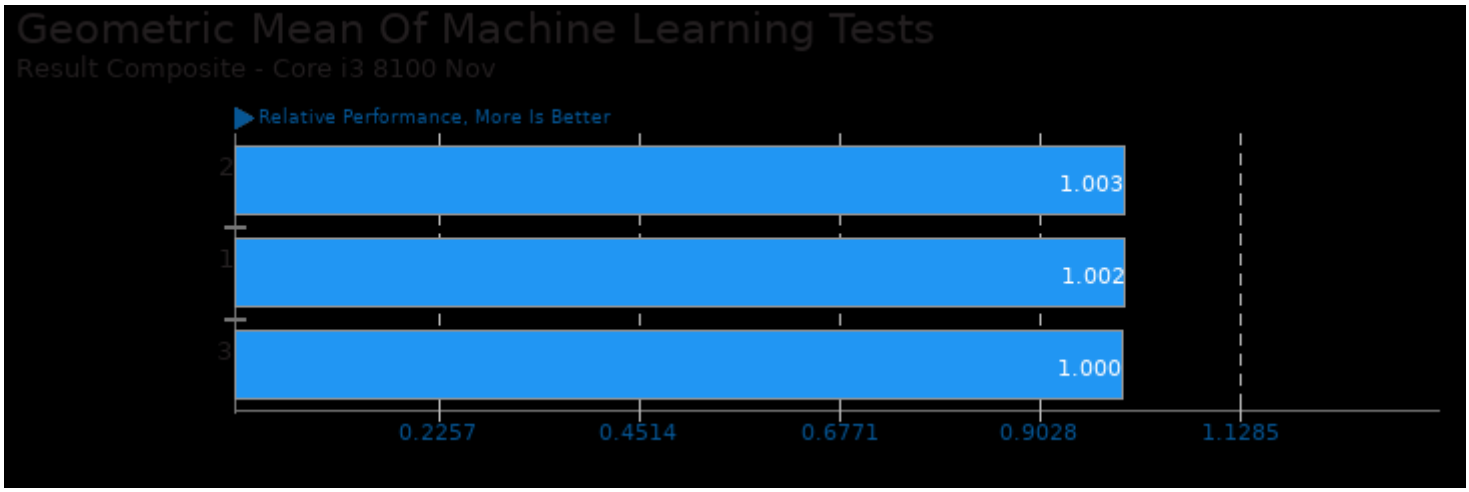
Geometric mean based upon tests: pts/x265, pts/kvazaar, pts/openvino and pts/rnnoise



Geometric mean based upon tests: pts/x265 and pts/kvazaar



Geometric mean based upon tests: pts/lammps, pts/rnnoise and pts/openvino

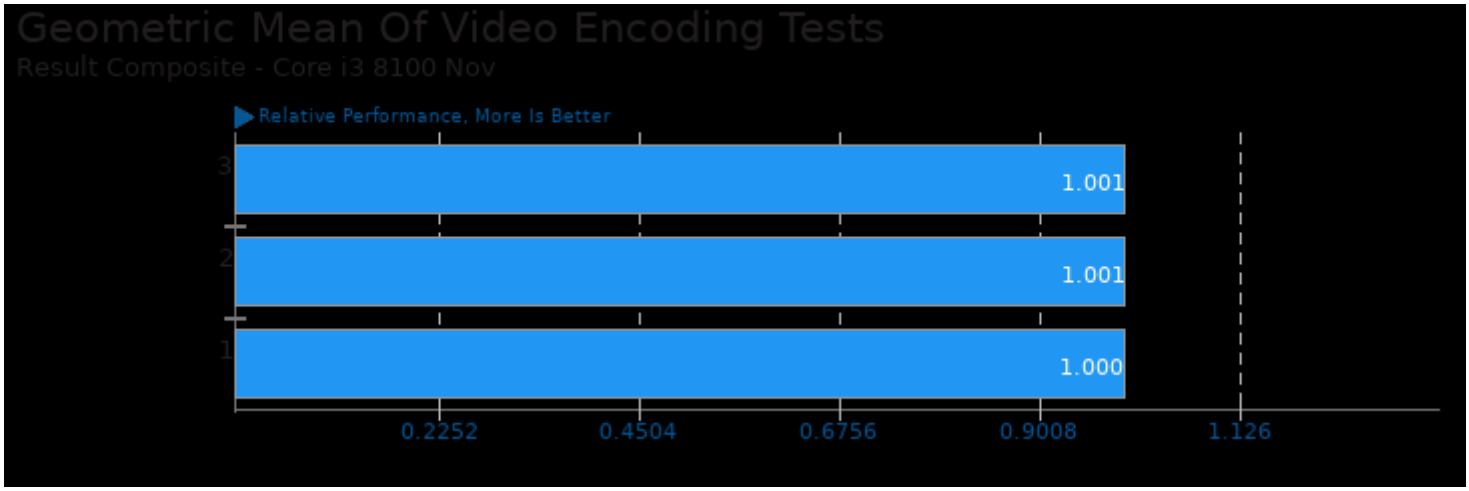


Geometric mean based upon tests: pts/rnnoise and pts/openvino

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Geometric mean based upon tests: pts/x265, pts/kvazaar, pts/lammps and pts/openvino



Geometric mean based upon tests: pts/x265 and pts/kvazaar

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 04:44.