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## renoir

AMD Ryzen 7 4800U testing with a ASRock 4X4-4000 (P1.30Q BIOS) and AMD Renoir 512MB on Ubuntu 21.10 via the Phoronix Test Suite.

### Automated Executive Summary

A had the most wins, coming in first place for 42% of the tests.

Based on the geometric mean of all complete results, the fastest (A) was 1.003x the speed of the slowest (B). F was 0.998x the speed of A, E was 1x the speed of F, D was 1x the speed of E, C was 0.999x the speed of D, B was 0.999x the speed of C.

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

LuxCoreRender (Scene: Danish Mood - Acceleration: CPU) at 1.1x

OpenSSL (Algorithm: SHA256) at 1.067x

RAR Compression (Linux Source Tree Archiving To RAR) at 1.044x

LuxCoreRender (Scene: LuxCore Benchmark - Acceleration: CPU) at 1.026x

LuxCoreRender (Scene: Rainbow Colors and Prism - Acceleration: CPU) at 1.025x

AOM AV1 (Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K) at 1.022x

srsRAN (Test: 4G PHY\_DL\_Test 100 PRB SISO 64-QAM) at 1.02x

ONNX Runtime (Model: yolov4 - Device: CPU) at 1.017x

Kvazaar (Video Input: Bosphorus 4K - Video Preset: Very Fast) at 1.017x  
 LuxCoreRender (Scene: Orange Juice - Acceleration: CPU) at 1.016x.

## Test Systems:

**A**

**B**

**C**

**D**

**E**

**F**

Processor: AMD Ryzen 7 4800U @ 1.80GHz (8 Cores / 16 Threads), Motherboard: ASRock 4X4-4000 (P1.30Q BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 512GB TS512GMTS952T-I, Graphics: AMD Renoir 512MB (1750/400MHz), Audio: AMD Renoir Radeon HD Audio, Monitor: DELL P2415Q, Network: Realtek RTL8125 2.5GbE + Realtek RTL8111/8168/8411 + Intel 8265 / 8275

OS: Ubuntu 21.10, Kernel: 5.16.0-051600rc5daily20211217-generic (x86\_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.2.2 (LLVM 12.0.1), Vulkan: 1.2.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise

Compiler Notes: --build=x86\_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --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-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-gcn/usr --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: acpi-cpufreq schedutil (Boost: Disabled) - CPU Microcode: 0x8600103

Python Notes: Python 3.9.7

Security Notes: itlb\_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec\_store\_bypass: Mitigation of SSB disabled via prctl + spectre\_v1: Mitigation of usercopy/swapgs barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Full AMD retrpeline IBPB: conditional IBRS\_FW STIBP: conditional RSB filling + srbs: Not affected + tsx\_async\_abort: Not affected

	A	B	C	D	E	F
<b>Timed Node.js Compilation - Time To Compile (sec)</b>	<b>1447</b>	<b>1458</b>	1455	1456	1456	1454
Normalized	100%	99.26%	99.43%	99.38%	99.39%	99.53%
Standard Deviation		0.4%	0.3%	0.4%	0.3%	0.3%

<b>KTX-Software toktx - U.4.Z.C.1 (sec)</b>	<b>757.699</b>	757.290	757.554	757.312	757.314	<b>757.262</b>
Normalized	99.94%	100%	99.96%	99.99%	99.99%	100%
Standard Deviation		0%	0%	0%	0%	0%
<b>Gcrypt Library (sec)</b>	<b>486.391</b>	485.610	483.397	483.995	484.707	<b>483.158</b>
Normalized	99.34%	99.5%	99.95%	99.83%	99.68%	100%
Standard Deviation		0.1%	0.1%	0.4%	0.3%	0.2%
<b>CLOMP - Static OMP</b>	1.3	1.3	1.3	1.3	1.3	1.3
<b>Speedup (Speedup)</b>						
Standard Deviation		0%	0%	0%	0%	5.2%
<b>Blender - BMW27 - CPU-Only (sec)</b>	336.92	<b>339.22</b>	336.93	336.86	<b>336.78</b>	337.81
Normalized	99.96%	99.28%	99.96%	99.98%	100%	99.7%
Standard Deviation		0.1%	0.1%	0.1%	0%	0.3%
<b>AOM AV1 - Speed 6</b>	<b>3.23</b>	3.21	<b>3.19</b>	3.20	<b>3.19</b>	3.20
<b>Two-Pass - Bosphorus 4K</b>						
Normalized	100%	99.38%	98.76%	99.07%	98.76%	99.07%
Standard Deviation		0.6%	0.7%	0.2%	0.3%	0.7%
<b>LuxCoreRender - Danish</b>	<b>0.33</b>	<b>0.30</b>	<b>0.30</b>	0.31	0.32	0.32
<b>Mood - CPU (M samples/sec)</b>						
Normalized	100%	90.91%	90.91%	93.94%	96.97%	96.97%
Standard Deviation		1.9%	1.9%	4.5%	7.8%	7.7%
<b>AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)</b>	<b>3</b>	<b>3</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>2.99</b>
Normalized	100%	100%	100%	100%	100%	99.67%
Standard Deviation		0%	0.2%	0.2%	0.2%	0.2%
<b>ASTC Encoder - Exhaustive (sec)</b>	<b>184.9346</b>	185.0696	185.0089	185.0154	<b>185.0745</b>	184.9447
Normalized	100%	99.93%	99.96%	99.96%	99.92%	99.99%
Standard Deviation		0%	0%	0%	0%	0%
<b>OpenSSL - SHA256 (byte/s)</b>	5152867790	5085716627	<b>5174930810</b>	5074969070	<b>4850554620</b>	5115284250
Normalized	99.57%	98.28%	100%	98.07%	93.73%	98.85%
Standard Deviation		1.5%	0.2%	1.8%	0.6%	2%
<b>Stargate Digital Audio</b>	0.952933	0.947587	<b>0.958450</b>	<b>0.943091</b>	0.957263	0.957634
<b>Workstation - 96000 - 512 (Render Ratio)</b>						
Normalized	99.42%	98.87%	100%	98.4%	99.88%	99.91%
Standard Deviation		1.2%	0%	2.5%	0.1%	0.3%
<b>Kvazaar - Bosphorus 4K - Medium (FPS)</b>	<b>3.4</b>	<b>3.40</b>	<b>3.41</b>	<b>3.41</b>	<b>3.40</b>	<b>3.41</b>
Normalized	99.71%	99.71%	100%	100%	99.71%	100%
Standard Deviation		0.2%	0.2%	0%	0.2%	0.3%
<b>Stargate Digital Audio</b>	<b>0.991425</b>	<b>0.986954</b>	0.988583	0.991071	0.988045	0.988560
<b>Workstation - 96000 - 1024 (Render Ratio)</b>						
Normalized	100%	99.55%	99.71%	99.96%	99.66%	99.71%
Standard Deviation		0.6%	0.1%	0.1%	0.2%	0.2%
<b>AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)</b>	<b>3.78</b>	3.72	3.74	3.74	3.77	<b>3.70</b>
Normalized	100%	98.41%	98.94%	98.94%	99.74%	97.88%
Standard Deviation		0.2%	0.9%	0.8%	0.5%	0.4%

<b>Stargate Digital Audio</b>	1.228738	1.233753	1.229013	<b>1.221517</b>	1.232117	<b>1.233987</b>
<b>Workstation - 480000 - 512</b>						
<b>(Render Ratio)</b>						
Normalized	99.57%	99.98%	99.6%	98.99%	99.85%	100%
Standard Deviation	0.1%	0.1%	1.3%	0.3%	0.1%	0.1%
<b>Basis Universal - UASTC</b>	131.916	<b>132.023</b>	<b>131.769</b>	131.801	131.779	131.895
<b>Level 3 (sec)</b>						
Normalized	99.89%	99.81%	100%	99.98%	99.99%	99.9%
Standard Deviation	0%	0%	0%	0%	0%	0%
<b>Stargate Digital Audio</b>	<b>1.260982</b>	1.259613	1.256147	1.256337	1.260939	<b>1.254549</b>
<b>Workstation - 480000 - 1024</b>						
<b>(Render Ratio)</b>						
Normalized	100%	99.89%	99.62%	99.63%	100%	99.49%
Standard Deviation	0.2%	0.1%	0.6%	0.2%	0.6%	0.6%
<b>Stargate Digital Audio</b>	<b>1.266561</b>	1.263429	<b>1.259634</b>	1.265569	1.264211	1.265437
<b>Workstation - 44100 - 512</b>						
<b>(Render Ratio)</b>						
Normalized	100%	99.75%	99.45%	99.92%	99.81%	99.91%
Standard Deviation	0.5%	0.5%	0.2%	0.3%	0.2%	0.2%
<b>Stargate Digital Audio</b>	<b>1.299137</b>	1.295556	1.295461	<b>1.294324</b>	1.294364	1.298092
<b>Workstation - 44100 - 1024</b>						
<b>(Render Ratio)</b>						
Normalized	100%	99.72%	99.72%	99.63%	99.63%	99.92%
Standard Deviation	0.4%	0.1%	0.6%	0.4%	0.2%	0.2%
<b>RAR Compression - L.S.T.A.T.R (sec)</b>	<b>120.442</b>	125.444	125.233	125.274	125.367	<b>125.694</b>
Normalized	100%	96.01%	96.17%	96.14%	96.07%	95.82%
Standard Deviation	0.7%	0.1%	0.3%	0.2%	0.4%	0.4%
<b>ONNX Runtime - 22</b>	22	22	22	22	22	22
<b>fcn-resnet101-11 - CPU</b>						
<b>(Inferences/min)</b>						
Standard Deviation	0%	0%	0%	0%	0%	0%
<b>ONNX Runtime - yolov4 - CPU (Inferences/min)</b>	<b>119</b>	118	<b>117</b>	118	118	118
Normalized	100%	99.16%	98.32%	99.16%	99.16%	99.16%
Standard Deviation	0.4%	0.4%	1%	0.9%	0.2%	0.6%
<b>ONNX Runtime - 10559</b>	<b>10520</b>	10604	10604	<b>10617</b>	10595	
<b>shufflenet-v2-10 - CPU</b>						
<b>(Inferences/min)</b>						
Normalized	99.45%	99.09%	99.88%	99.88%	100%	99.79%
Standard Deviation	1.1%	0.2%	0.1%	0.1%	0.1%	0.3%
<b>ONNX Runtime - 1546</b>	1550	1550	1546	<b>1552</b>	<b>1544</b>	
<b>super-resolution-10 - CPU</b>						
<b>(Inferences/min)</b>						
Normalized	99.61%	99.87%	99.87%	99.61%	100%	99.48%
Standard Deviation	0.5%	0.3%	0.2%	0.2%	0.4%	0.4%
<b>srsRAN - 4.P.1.P.M.2.Q (UE Mb/s)</b>	<b>58.9</b>	<b>59.2</b>	<b>58.9</b>	59.1	59.1	59.1
Normalized	99.49%	100%	99.49%	99.83%	99.83%	99.83%
Standard Deviation	0.5%	0.6%	0.3%	0.6%	0.6%	0.2%

srsRAN - 4.P.1.P.M.2.Q (eNb Mb/s)	<b>151.9</b>	<b>153.0</b>	152.3	152.1	152.3	152.2
Normalized	99.28%	100%	99.54%	99.41%	99.54%	99.48%
Standard Deviation		0.5%	0.3%	0.4%	0.7%	0.1%
rav1e - 1 (FPS)	<b>0.205</b>	0.203	<b>0.205</b>	0.204	<b>0.205</b>	<b>0.202</b>
Normalized	100%	99.02%	100%	99.51%	100%	98.54%
Standard Deviation		0.3%	0.3%	0.3%	0%	0%
srsRAN - 4.P.1.P.M.6.Q (UE Mb/s)	<b>55.2</b>	55.5	55.4	<b>55.6</b>	55.5	55.5
Normalized	99.28%	99.82%	99.64%	100%	99.82%	99.82%
Standard Deviation		0.1%	0.3%	0.1%	0.2%	0.2%
srsRAN - 4.P.1.P.M.6.Q (eNb Mb/s)	139.9	140.3	140.3	<b>139.8</b>	140.1	<b>140.5</b>
Normalized	99.57%	99.86%	99.86%	99.5%	99.72%	100%
Standard Deviation		0.4%	0.4%	0.1%	0.3%	0.2%
LuxCoreRender - LuxCore Benchmark - CPU (M samples/sec)	<b>0.39</b>	<b>0.39</b>	<b>0.39</b>	<b>0.39</b>	<b>0.39</b>	<b>0.38</b>
Normalized	100%	100%	100%	100%	100%	97.44%
Standard Deviation		0%	2.1%	0%	2.1%	2.3%
AOM AV1 - Speed 6	<b>8.93</b>	8.86	8.89	8.87	<b>8.84</b>	8.87
Two-Pass - Bosphorus						
Normalized	100%	99.22%	99.55%	99.33%	98.99%	99.33%
Standard Deviation		0.2%	0.3%	0.1%	0.1%	0.1%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	<b>7.64</b>	<b>7.77</b>	7.73	<b>7.77</b>	7.76	<b>7.77</b>
Normalized	98.33%	100%	99.49%	100%	99.87%	100%
Standard Deviation		0.3%	0.4%	0.1%	0.1%	0.2%
srsRAN - OFDM_Test (Samples / Second)	61100000	<b>60700000</b>	61166667	61233333	<b>61500000</b>	61100000
Normalized	99.35%	98.7%	99.46%	99.57%	100%	99.35%
Standard Deviation		1.4%	0.6%	1.6%	0.8%	0.9%
Basis Universal - UASTC Level 2 (sec)	70.95	<b>71.103</b>	70.918	<b>70.898</b>	70.951	70.972
Normalized	99.93%	99.71%	99.97%	100%	99.93%	99.9%
Standard Deviation		0%	0%	0%	0%	0%
LuxCoreRender - Orange	<b>1.24</b>	<b>1.22</b>	1.23	<b>1.22</b>	1.23	1.23
Juice - CPU (M samples/sec)						
Normalized	100%	98.39%	99.19%	98.39%	99.19%	99.19%
Standard Deviation		0.5%	0.5%	0.5%	0.5%	0.8%
7-Zip Compression - D.R (MIPS)	<b>26394</b>	26279	<b>26247</b>	26351	26305	26380
Normalized	100%	99.56%	99.44%	99.84%	99.66%	99.95%
Standard Deviation		0.1%	0.3%	0.3%	0.6%	0.1%
7-Zip Compression - Compression Rating (MIPS)	<b>27473</b>	27479	27481	27506	<b>27538</b>	27491
Normalized	99.76%	99.79%	99.79%	99.88%	100%	99.83%
Standard Deviation		0.2%	0.2%	0.3%	0.5%	0.3%
Etpak - ETC2 (Mpx/s)	<b>76.206</b>	76.169	<b>76.167</b>	76.179	76.180	76.190
Normalized	100%	99.95%	99.95%	99.96%	99.97%	99.98%
Standard Deviation		0%	0%	0%	0%	0%

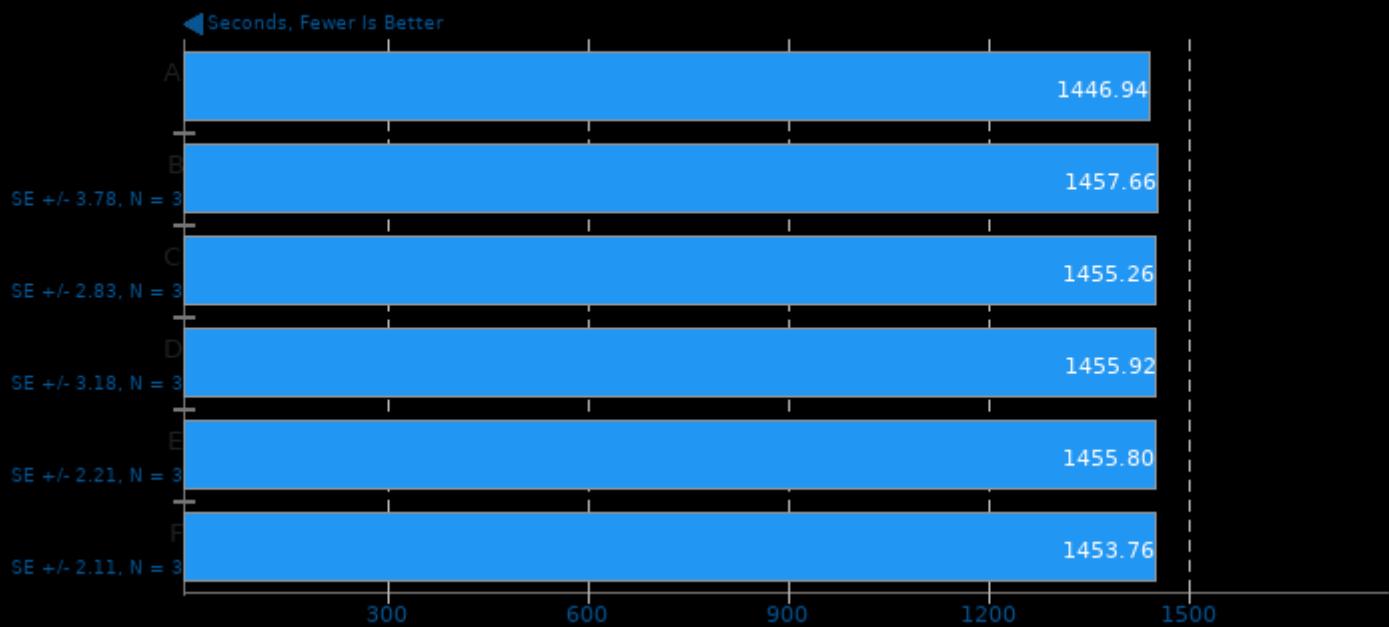
<b>LuxCoreRender - DLSC -</b>	<b>0.77</b>	<b>0.76</b>	<b>0.76</b>	<b>0.77</b>	<b>0.77</b>	<b>0.76</b>
<b>CPU (M samples/sec)</b>						
Normalized	100%	98.7%	98.7%	100%	100%	98.7%
Standard Deviation		1.3%	0.8%	0.8%	1.5%	0.8%
<b>Basis Universal - ETC1S</b>	<b>61.043</b>	<b>61.004</b>	<b>61.155</b>	<b>60.981</b>	<b>61.065</b>	<b>60.900</b>
Normalized	99.77%	99.83%	99.58%	99.87%	99.73%	100%
Standard Deviation		0.3%	0.1%	0.2%	0.6%	0.2%
<b>OpenSSL - RSA4096</b>	<b>68821</b>	<b>68806</b>	<b>68803</b>	<b>68825</b>	<b>68812</b>	<b>68836</b>
Normalized	99.98%	99.96%	99.95%	99.98%	99.97%	100%
Standard Deviation		0.1%	0%	0.1%	0%	0%
<b>OpenSSL - RSA4096 (sign/s)</b>	<b>1059</b>	<b>1060</b>	<b>1059</b>	<b>1060</b>	<b>1060</b>	<b>1060</b>
Normalized	99.94%	100%	99.9%	99.98%	99.98%	99.97%
Standard Deviation		0%	0.1%	0%	0%	0%
<b>rav1e - 5 (FPS)</b>	<b>1.061</b>	<b>1.064</b>	<b>1.067</b>	<b>1.064</b>	<b>1.070</b>	<b>1.059</b>
Normalized	99.16%	99.44%	99.72%	99.44%	100%	98.97%
Standard Deviation		0.5%	0.4%	0.4%	0.4%	0.6%
<b>srsRAN - 5.P.T.5.P.S.6.Q (UE</b>	<b>24.4</b>	<b>24.3</b>	<b>24.3</b>	<b>24.3</b>	<b>24.4</b>	<b>24.4</b>
<b>Mb/s)</b>						
Normalized	100%	99.59%	99.59%	99.59%	100%	100%
Standard Deviation		0%	0.6%	0%	0.2%	0.2%
<b>srsRAN - 5.P.T.5.P.S.6.Q</b>	<b>43</b>	<b>43.3</b>	<b>43.2</b>	<b>43.1</b>	<b>43.2</b>	<b>43.3</b>
<b>(eNb Mb/s)</b>						
Normalized	99.31%	100%	99.77%	99.54%	99.77%	100%
Standard Deviation		0.5%	0.4%	0.1%	0.1%	0.5%
<b>Primesieve - 1.P.N.G (sec)</b>	<b>50.506</b>	<b>50.437</b>	<b>50.456</b>	<b>50.472</b>	<b>50.437</b>	<b>50.457</b>
Normalized	99.86%	100%	99.96%	99.93%	100%	99.96%
Standard Deviation		0.1%	0.1%	0.2%	0.3%	0.1%
<b>KTX-Software toktx - Z.C.1</b>	<b>47.343</b>	<b>47.620</b>	<b>47.711</b>	<b>47.358</b>	<b>47.480</b>	<b>47.443</b>
<b>(sec)</b>						
Normalized	100%	99.42%	99.23%	99.97%	99.71%	99.79%
Standard Deviation		0%	0.7%	0.1%	0.1%	0.3%
<b>LuxCoreRender - R.C.a.P -</b>	<b>3.34</b>	<b>3.26</b>	<b>3.29</b>	<b>3.29</b>	<b>3.27</b>	<b>3.27</b>
<b>CPU (M samples/sec)</b>						
Normalized	100%	97.6%	98.5%	98.5%	97.9%	97.9%
Standard Deviation		1.4%	1.6%	1.7%	1.1%	0.9%
<b>srsRAN - 4.P.1.P.S.2.Q (UE</b>	<b>70.4</b>	<b>70.1</b>	<b>70.2</b>	<b>70.5</b>	<b>70.3</b>	<b>70.6</b>
<b>Mb/s)</b>						
Normalized	99.72%	99.29%	99.43%	99.86%	99.58%	100%
Standard Deviation		0.5%	0.3%	0.4%	0.4%	0.2%
<b>srsRAN - 4.P.1.P.S.2.Q (eNb</b>	<b>166</b>	<b>165.2</b>	<b>166.1</b>	<b>166.4</b>	<b>166.2</b>	<b>166.3</b>
<b>Mb/s)</b>						
Normalized	99.76%	99.28%	99.82%	100%	99.88%	99.94%
Standard Deviation		0.5%	0.6%	0.4%	0.2%	0.2%
<b>Kvazaar - Bosphorus 4K -</b>	<b>13.5</b>	<b>13.52</b>	<b>13.45</b>	<b>13.48</b>	<b>13.52</b>	<b>13.49</b>
<b>Ultra Fast (FPS)</b>						
Normalized	99.85%	100%	99.48%	99.7%	100%	99.78%
Standard Deviation		0.1%	0.1%	0.1%	0.4%	0.3%
<b>AOM AV1 - Speed 8 Realtime</b>	<b>14.48</b>	<b>14.44</b>	<b>14.46</b>	<b>14.45</b>	<b>14.46</b>	<b>14.51</b>
<b>- Bosphorus 4K (FPS)</b>						
Normalized	99.79%	99.52%	99.66%	99.59%	99.66%	100%
Standard Deviation		0.3%	0.3%	0.6%	0.3%	0.2%
<b>rav1e - 6 (FPS)</b>	<b>1.448</b>	<b>1.435</b>	<b>1.431</b>	<b>1.440</b>	<b>1.440</b>	<b>1.430</b>
Normalized	100%	99.1%	98.83%	99.45%	99.45%	98.76%
Standard Deviation		0.1%	0.3%	0.6%	0.7%	0.3%

EtcPak - ETC1 + Dithering	<b>118.424</b>	118.724	<b>118.833</b>	118.601	118.667	118.582
	(Mpx/s)					
Normalized	99.66%	99.91%	100%	99.8%	99.86%	99.79%
Standard Deviation		0.2%	0%	0.2%	0.3%	0.2%
KTX-Software toktx - U.3.Z.C.1 (sec)	<b>40.281</b>	40.197	40.207	40.254	40.249	<b>40.189</b>
Normalized	99.77%	99.98%	99.96%	99.84%	99.85%	100%
Standard Deviation		0.2%	0.3%	0.1%	0.1%	0.2%
EtcPak - ETC1 (Mpx/s)	<b>126.711</b>	126.415	126.572	<b>126.278</b>	126.399	126.419
	(Mpx/s)					
Normalized	100%	99.77%	99.89%	99.66%	99.75%	99.77%
Standard Deviation		0.2%	0.2%	0%	0.2%	0.2%
srsRAN - 4.P.1.P.S.6.Q (UE Mb/s)	<b>65.8</b>	67.0	67.0	<b>67.1</b>	<b>67.1</b>	<b>67.1</b>
	Mb/s)					
Normalized	98.06%	99.85%	99.85%	100%	100%	100%
Standard Deviation		0.2%	0.2%	0.4%	0.4%	0.3%
srsRAN - 4.P.1.P.S.6.Q (eNb Mb/s)	<b>155.8</b>	<b>154.9</b>	155.7	155.4	155.4	155.3
	Mb/s)					
Normalized	100%	99.42%	99.94%	99.74%	99.74%	99.68%
Standard Deviation		0.1%	0.3%	0.1%	0.7%	0.2%
Kvazaar - Bosphorus 1080p - Medium (FPS)	<b>16.98</b>	<b>17.06</b>	17.02	17.04	17.05	17.03
	Medium (FPS)					
Normalized	99.53%	100%	99.77%	99.88%	99.94%	99.82%
Standard Deviation		0.2%	0.2%	0.4%	0.2%	0.3%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	18.56	18.58	<b>18.60</b>	<b>18.54</b>	<b>18.54</b>	18.56
	Bosphorus 4K (FPS)					
Normalized	99.78%	99.89%	100%	99.68%	99.68%	99.78%
Standard Deviation		0.3%	0.1%	0.2%	0.1%	0.3%
AOM AV1 - Speed 10	<b>20.34</b>	<b>20.16</b>	20.27	20.25	<b>20.16</b>	20.17
Realtime - Bosphorus 4K						
Normalized	100%	99.12%	99.66%	99.56%	99.12%	99.16%
Standard Deviation		0.5%	0.3%	0.1%	0.1%	0.2%
ASTC Encoder - Thorough (sec)	20.2858	<b>20.3005</b>	<b>20.2825</b>	20.2878	20.2925	20.2976
	(sec)					
Normalized	99.98%	99.91%	100%	99.97%	99.95%	99.93%
Standard Deviation		0%	0%	0%	0%	0%
KTX-Software toktx - UASTC 3 (sec)	<b>27.999</b>	<b>28.016</b>	28.013	28.005	28.004	28.001
	3 (sec)					
Normalized	100%	99.94%	99.95%	99.98%	99.98%	99.99%
Standard Deviation		0.1%	0.1%	0.1%	0.1%	0.1%
rav1e - 10 (FPS)	<b>3.551</b>	3.586	<b>3.597</b>	<b>3.597</b>	3.587	3.593
	FPS)					
Normalized	98.72%	99.69%	100%	100%	99.72%	99.89%
Standard Deviation		0.7%	0.6%	1.1%	1.6%	1%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	<b>31.28</b>	<b>31.52</b>	31.39	31.47	31.44	31.45
	Very Fast (FPS)					
Normalized	99.24%	100%	99.59%	99.84%	99.75%	99.78%
Standard Deviation		0.2%	0.3%	0.2%	0.1%	0.1%
Basis Universal - UASTC Level 0 (sec)	17.071	<b>17.127</b>	17.100	17.060	17.059	<b>17.048</b>
	Level 0 (sec)					
Normalized	99.87%	99.54%	99.7%	99.93%	99.94%	100%
Standard Deviation		0%	0.2%	0%	0.2%	0.1%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	40.67	40.60	40.66	<b>40.59</b>	40.60	<b>40.92</b>
	FPS)					
Normalized	99.39%	99.22%	99.36%	99.19%	99.22%	100%

	Standard Deviation	0.8%	0.5%	0.2%	0.2%	0.1%
<b>AOM AV1 - Speed 9 Realtime</b>	48.35	48.53	48.46	48.42	<b>48.19</b>	<b>48.56</b>
- <b>Bosphorus 1080p (FPS)</b>						
Normalized	99.57%	99.94%	99.79%	99.71%	99.24%	100%
Standard Deviation	0.8%	0.4%	0.2%	0.5%	0.7%	
<b>AOM AV1 - Speed 10</b>	52.07	51.80	<b>51.68</b>	52.06	51.81	<b>52.18</b>
<b>Realtime - Bosphorus 1080p</b>						
Normalized	99.79%	99.27%	99.04%	99.77%	99.29%	100%
Standard Deviation	0.7%	0.2%	0.5%	0.1%	0.5%	
<b>ASTC Encoder - Medium</b>	<b>2.81</b>	<b>2.8170</b>	2.8144	2.8122	2.8154	2.8139
Normalized	100%	99.75%	99.84%	99.92%	99.81%	99.86%
Standard Deviation	0.2%	0.1%	0.1%	0.2%	0.1%	
<b>Kvazaar - Bosphorus 1080p -</b>	57.8	57.90	<b>57.60</b>	<b>58.03</b>	57.97	57.97
<b>Ultra Fast (FPS)</b>						
Normalized	99.6%	99.78%	99.26%	100%	99.9%	99.9%
Standard Deviation	0.2%	0.2%	0.2%	0.2%	0.3%	
<b>EtcPak - DXT1 (Mpx/s)</b>	<b>569.26</b>	<b>575.765</b>	573.603	570.949	571.325	573.060
Normalized	98.87%	100%	99.62%	99.16%	99.23%	99.53%
Standard Deviation	0%	0.7%	0.6%	0.7%	0.7%	
<b>KTX-Software toktx - Zstd</b>	<b>7.503</b>	7.505	<b>7.531</b>	7.511	7.526	7.526
<b>Compression 9 (sec)</b>						
Normalized	100%	99.97%	99.63%	99.89%	99.69%	99.69%
Standard Deviation	0%	0.3%	0.2%	0.5%	0.4%	

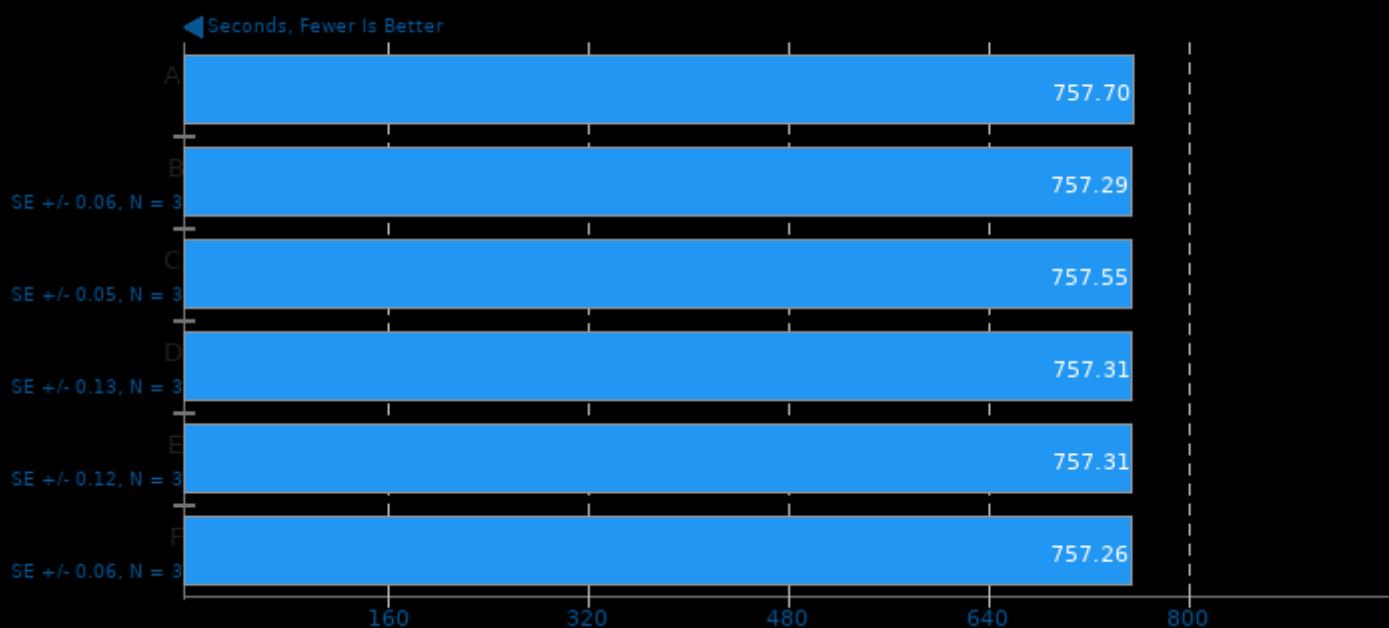
## Timed Node.js Compilation 17.3

Time To Compile

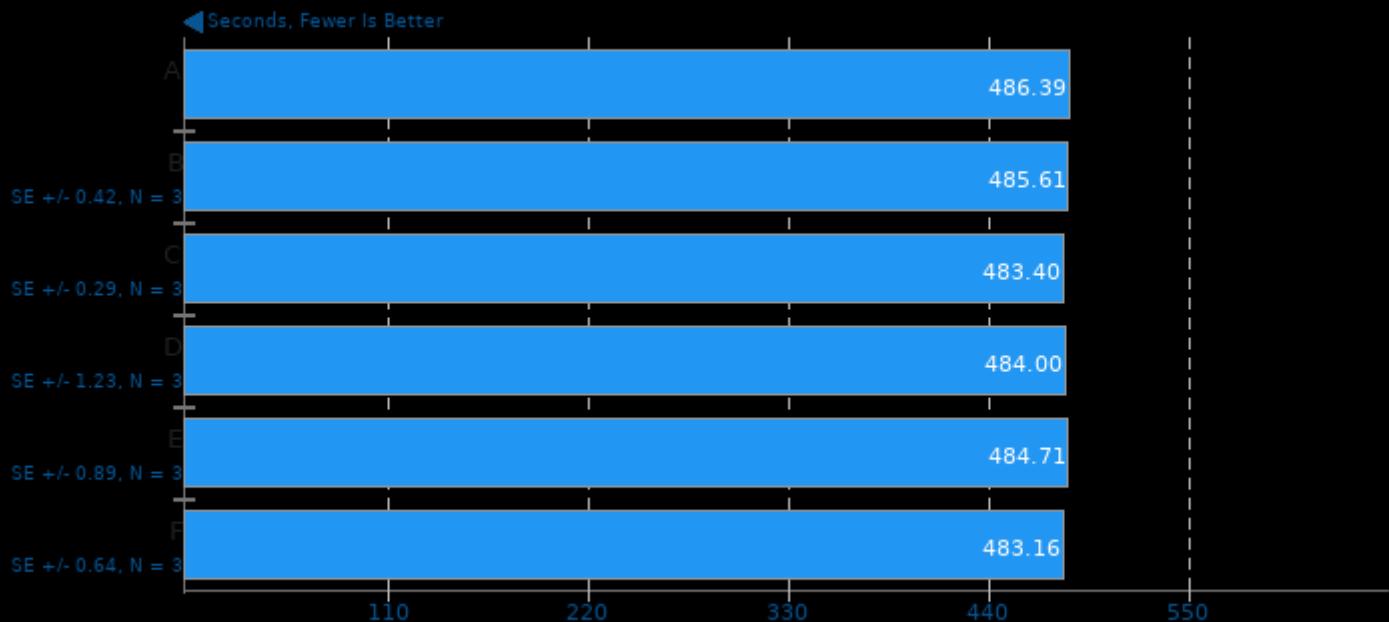


## KTX-Software toktx 4.0

Settings: UASTC 4 + Zstd Compression 19



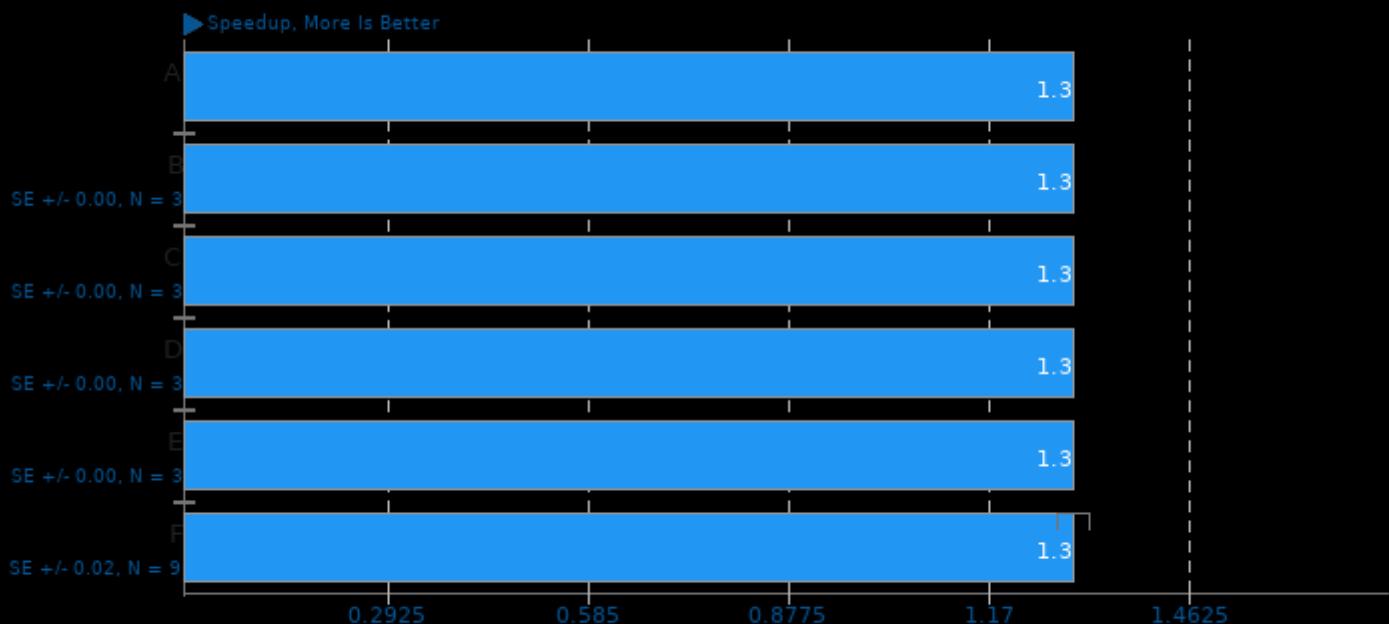
## Gcrypt Library 1.9



1. (CC) gcc options: -O2 -fvisibility=hidden -lgpg-error

## CLOMP 1.2

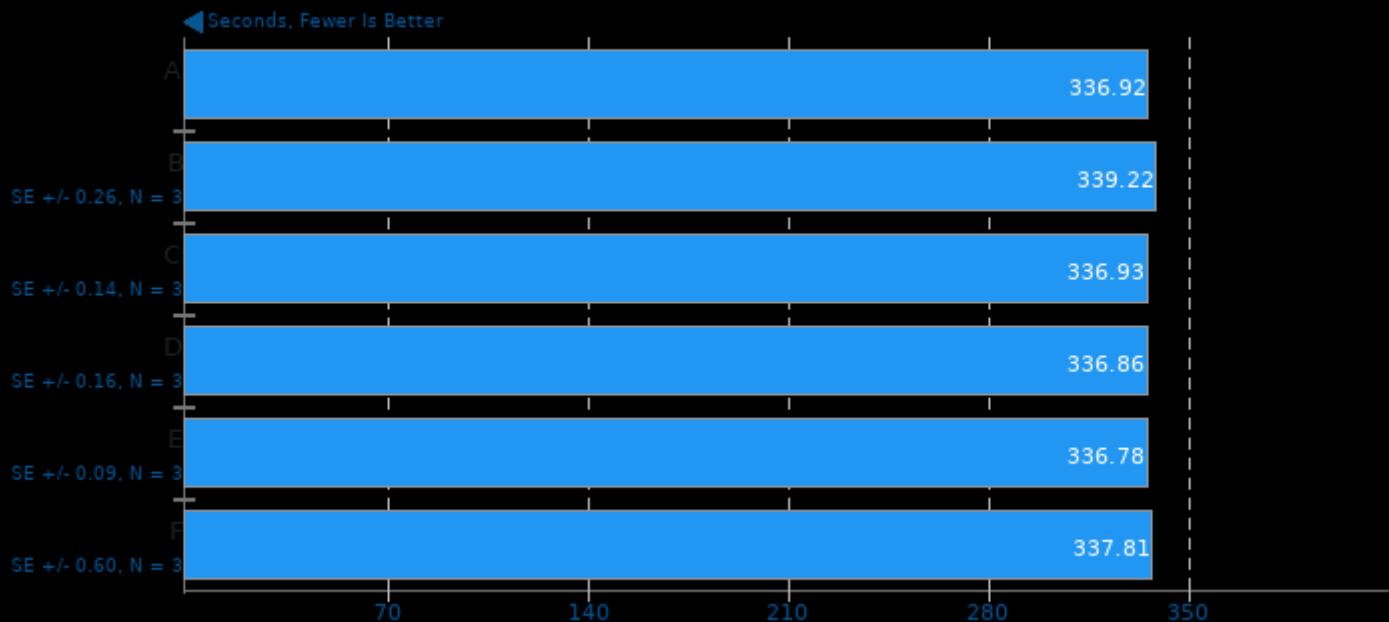
### Static OMP Speedup



1. (CC) gcc options: -fopenmp -O3 -lm

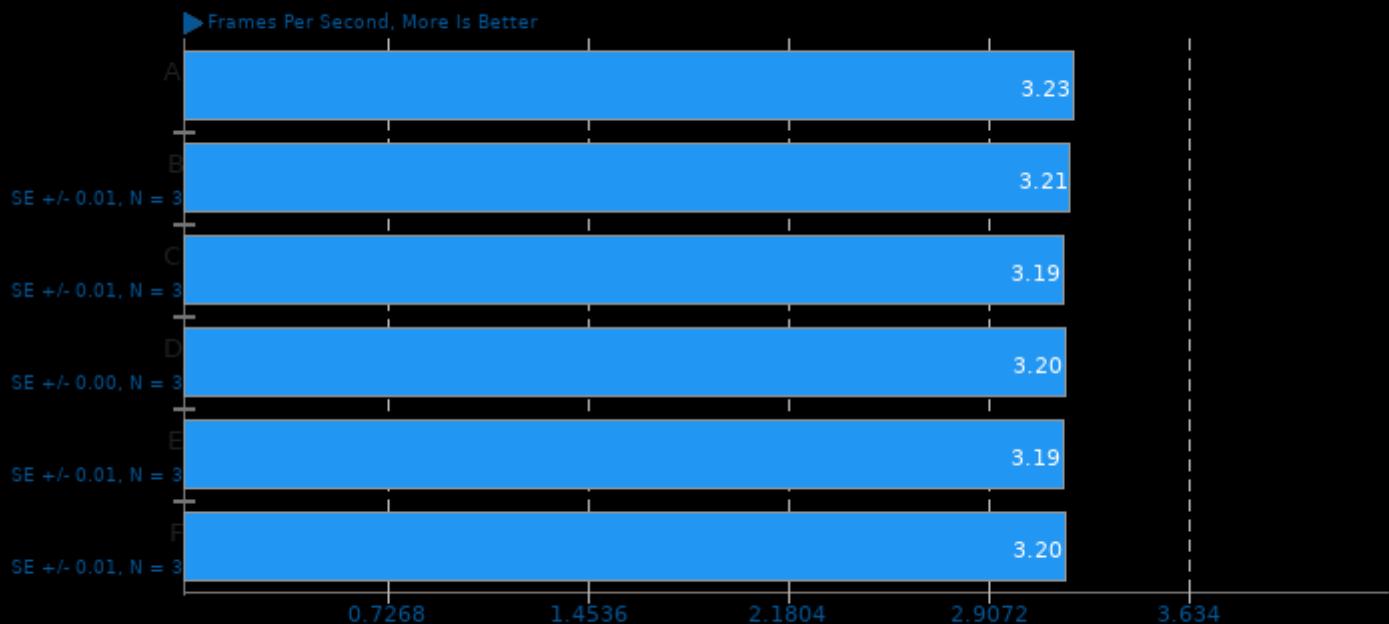
## Blender 3.0

Blend File: BMW27 - Compute: CPU-Only



## AOM AV1 3.2

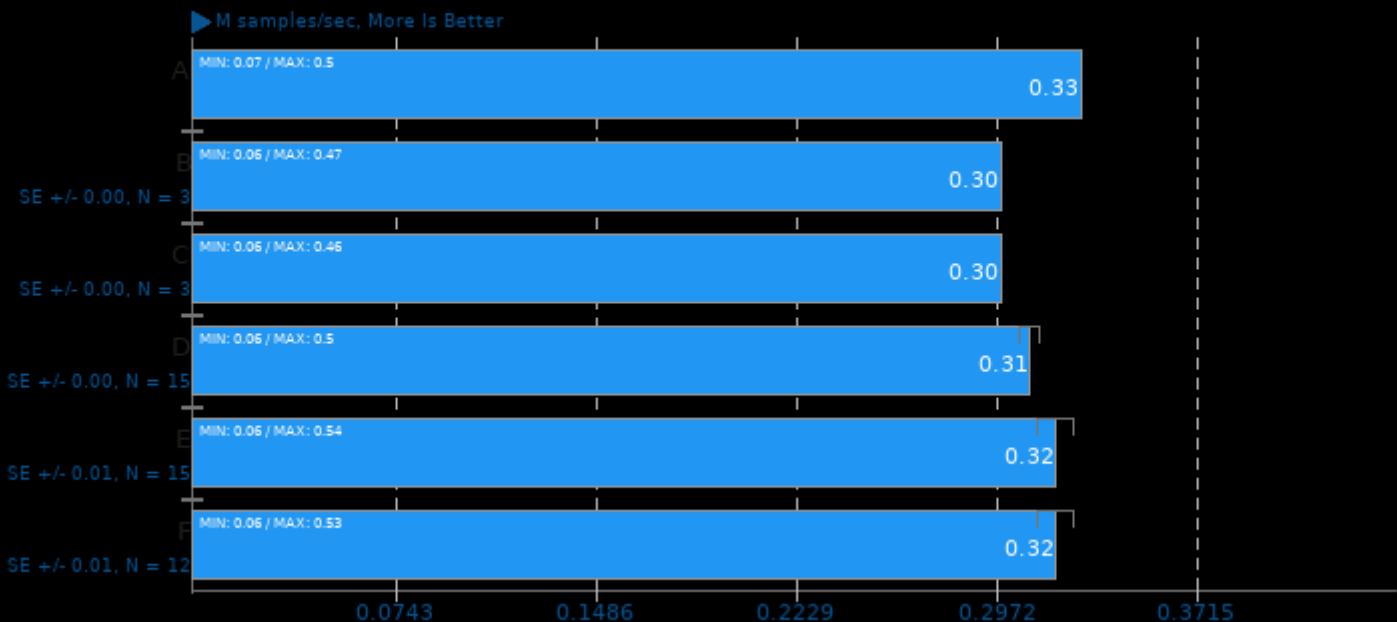
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm

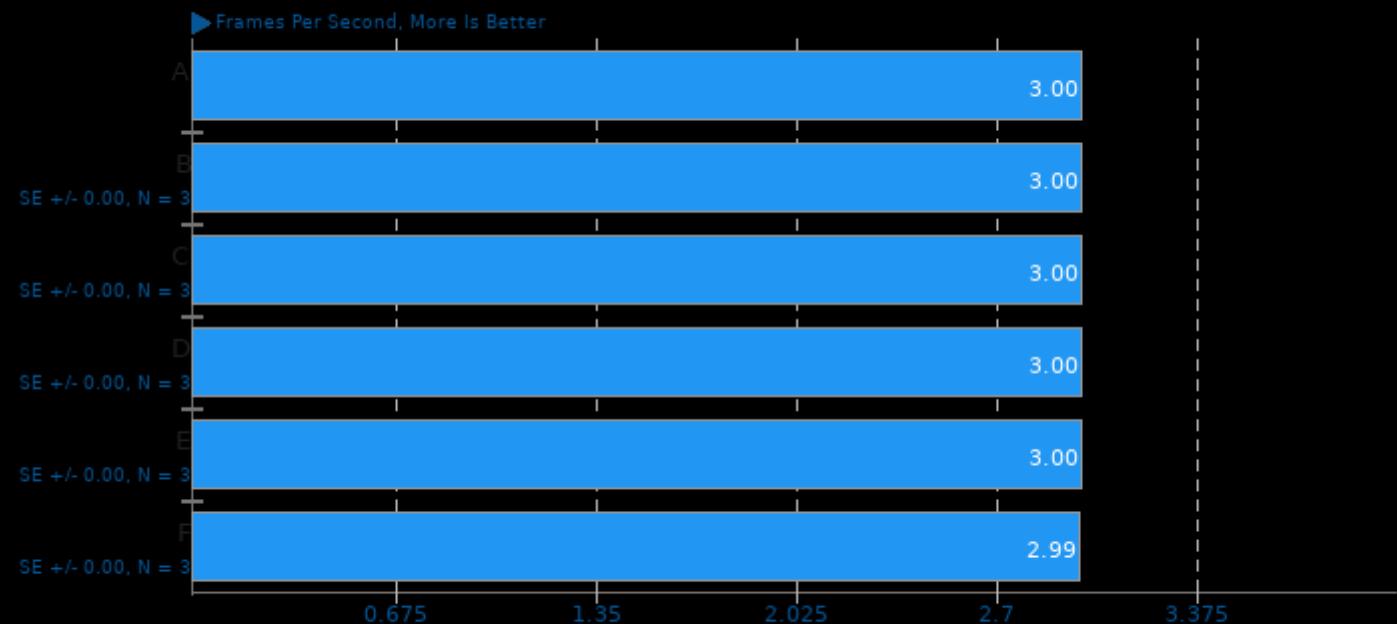
## LuxCoreRender 2.6

Scene: Danish Mood - Acceleration: CPU



## AOM AV1 3.2

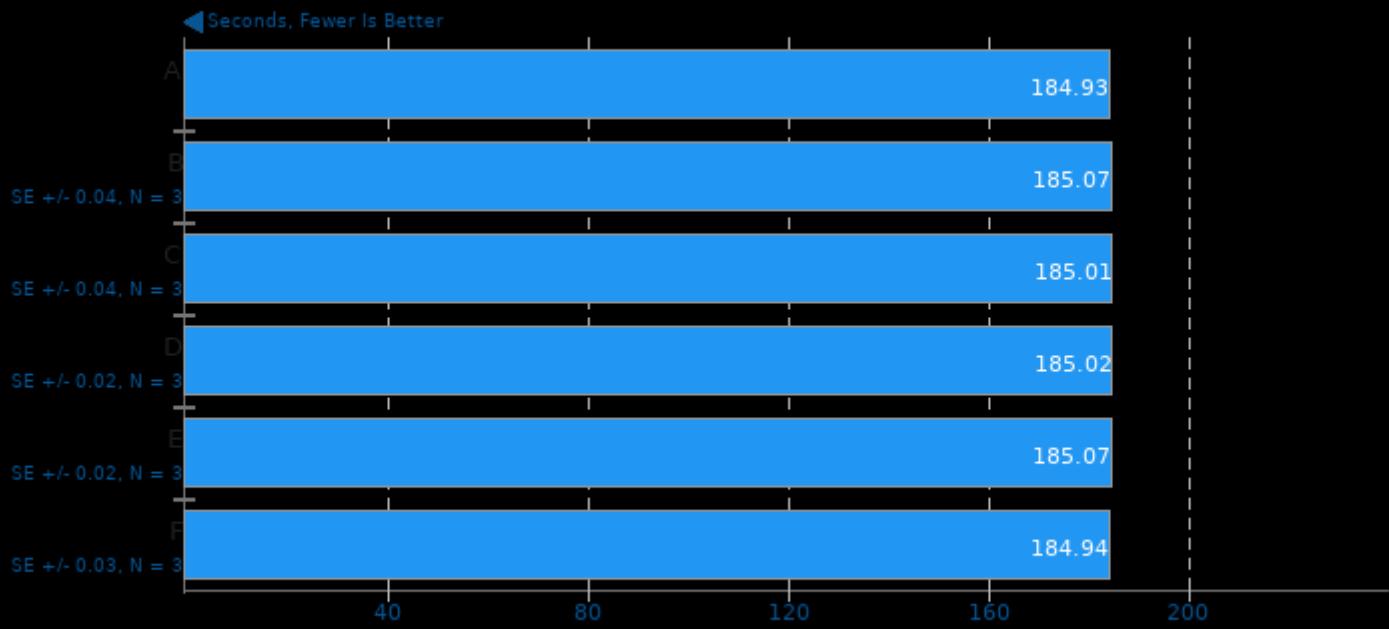
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm

## ASTC Encoder 3.2

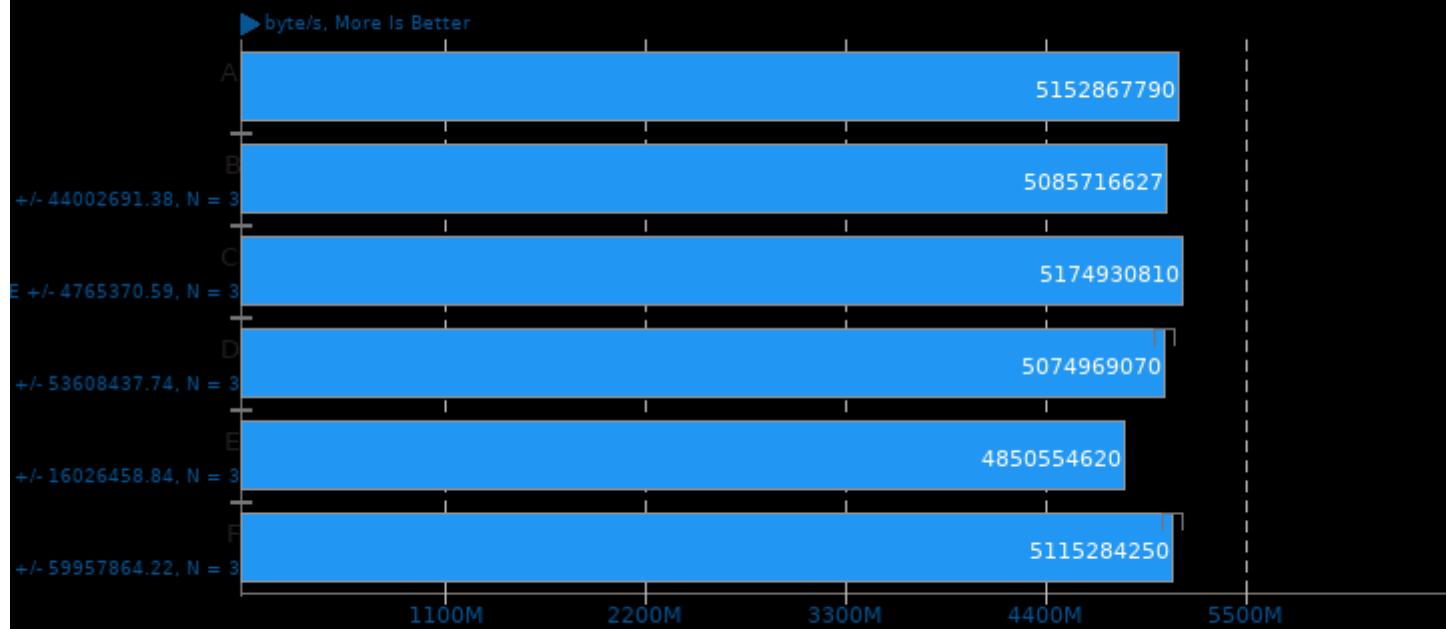
Preset: Exhaustive



1. (CXX) g++ options: -O3 -fno -pthread

## OpenSSL 3.0

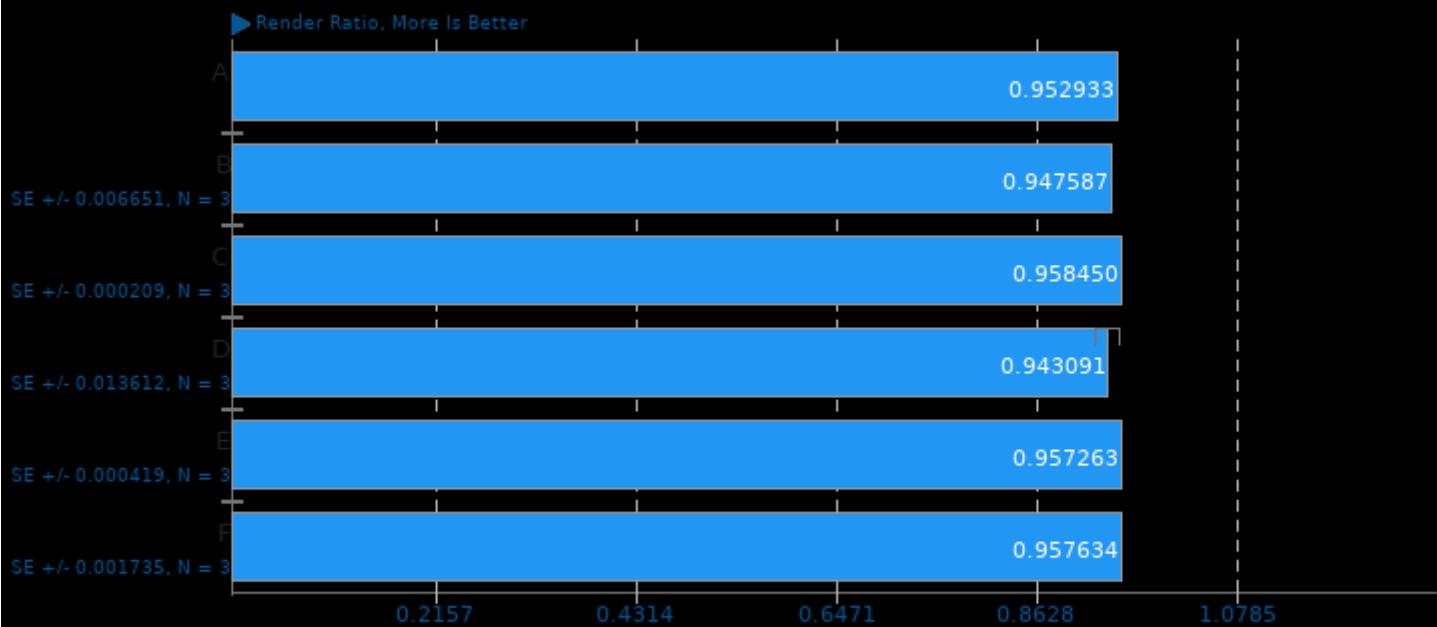
Algorithm: SHA256



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

## Stargate Digital Audio Workstation 21.10.9

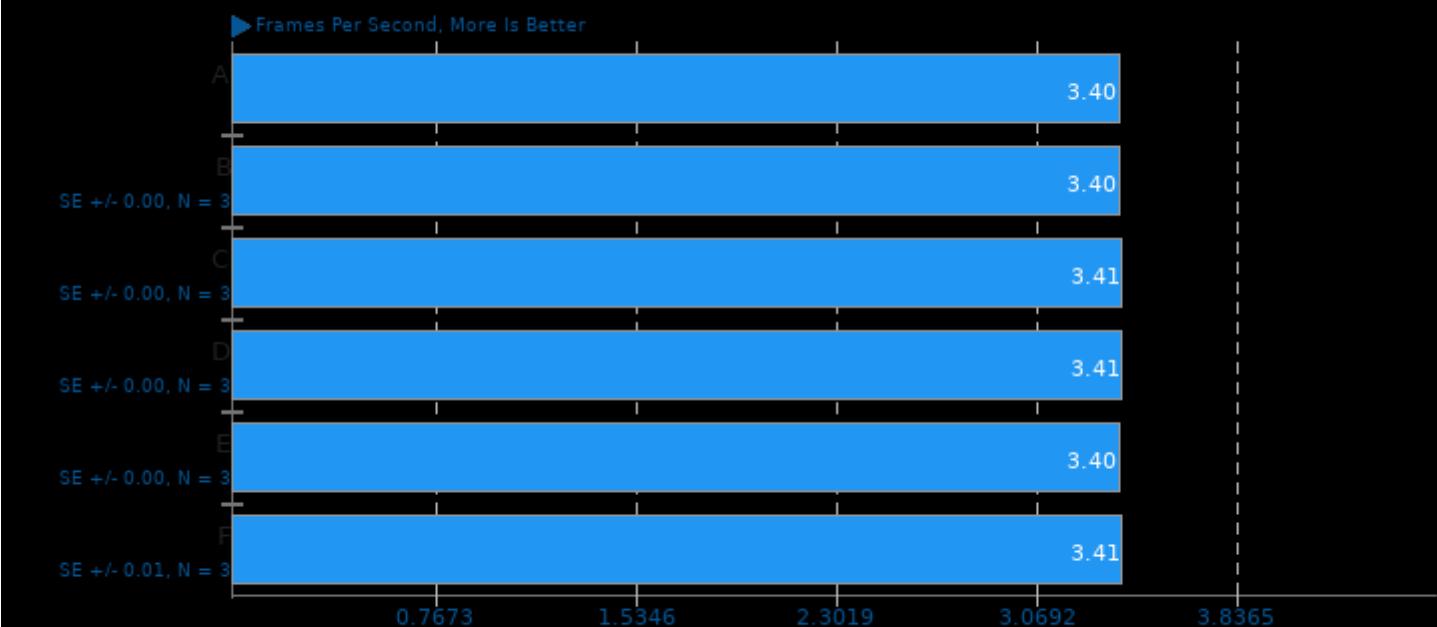
Sample Rate: 96000 - Buffer Size: 512



1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

## Kvazaar 2.1

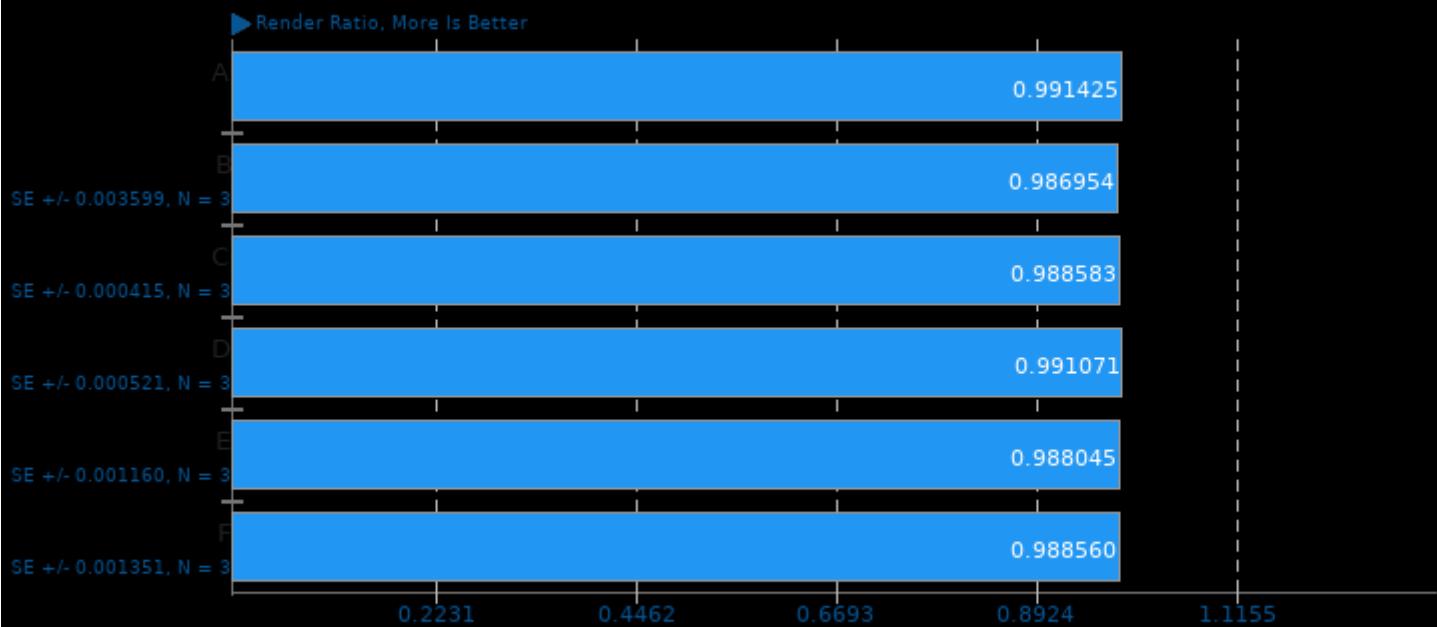
Video Input: Bosphorus 4K - Video Preset: Medium



1. (CC) gcc options: -lpthread -fno-tree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lt

## Stargate Digital Audio Workstation 21.10.9

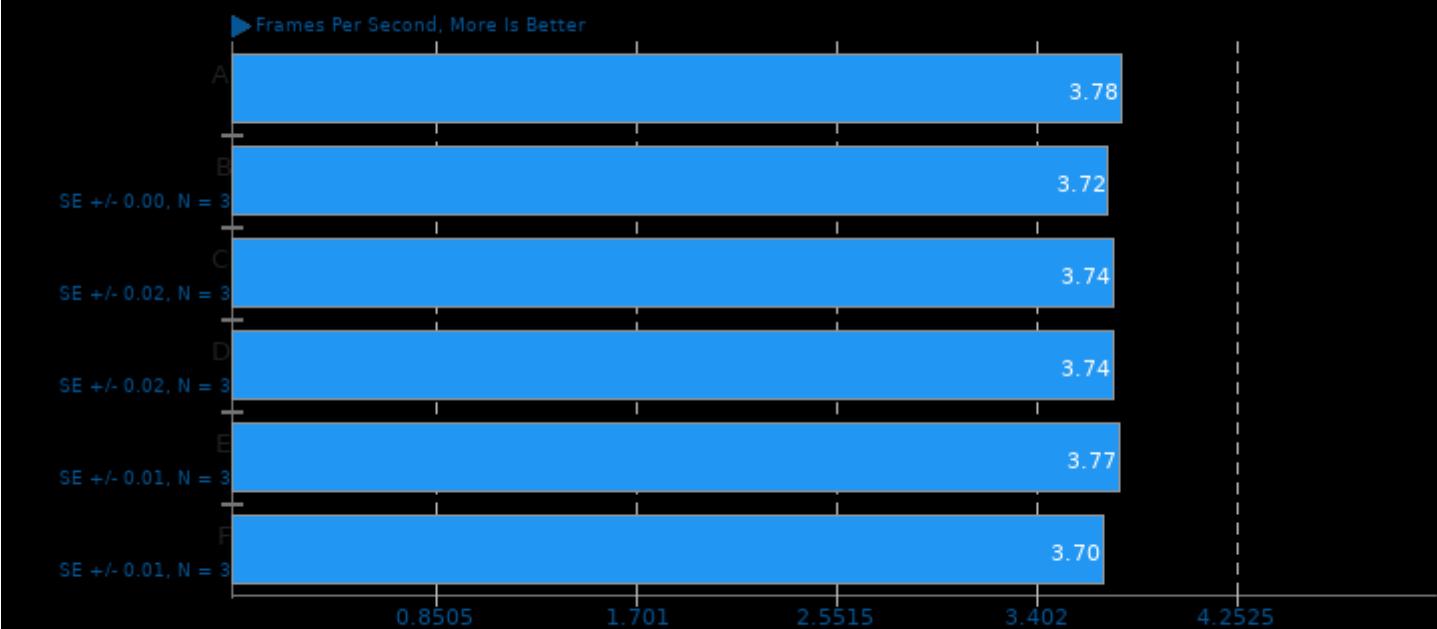
Sample Rate: 96000 - Buffer Size: 1024



1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

## AOM AV1 3.2

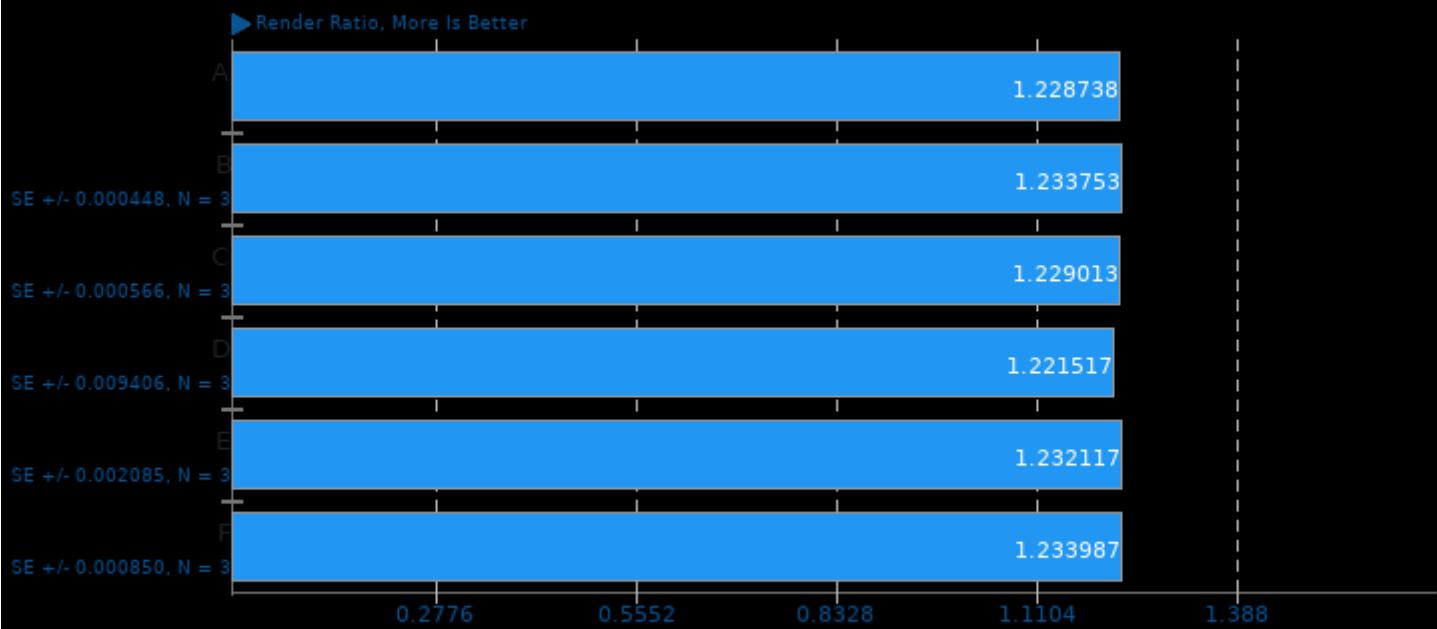
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm

## Stargate Digital Audio Workstation 21.10.9

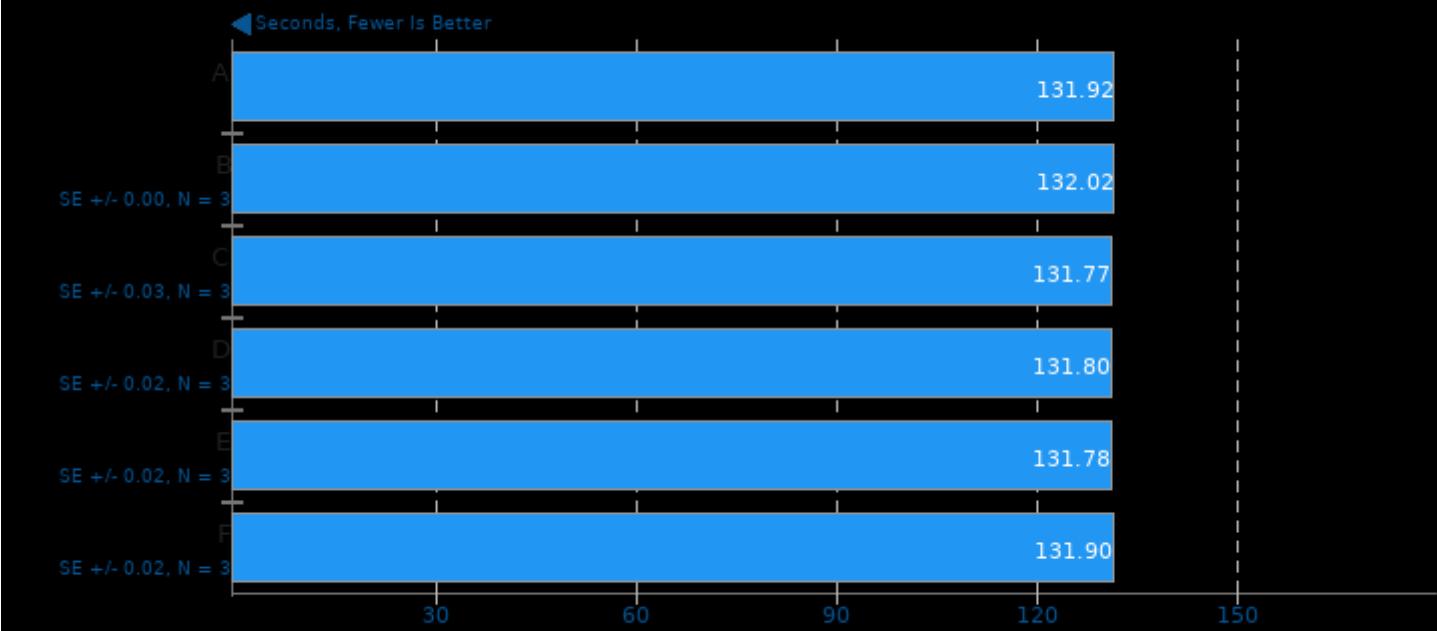
Sample Rate: 480000 - Buffer Size: 512



1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

## Basis Universal 1.13

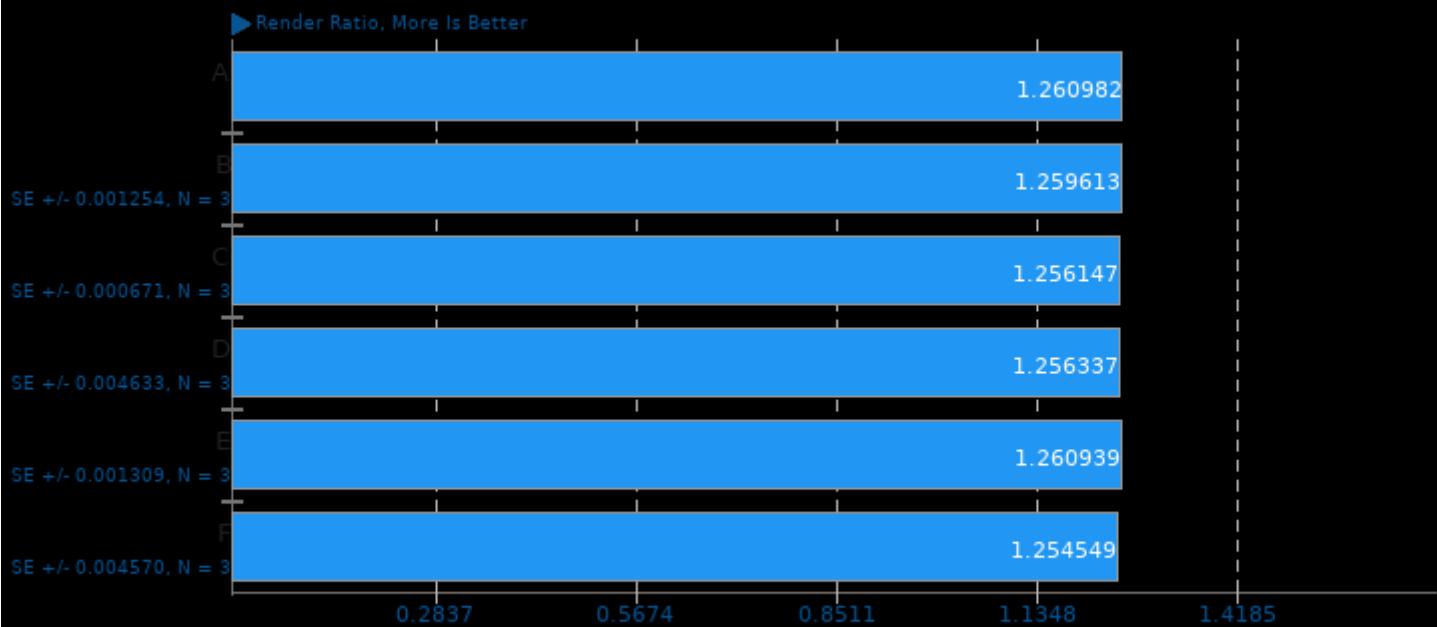
Settings: UASTC Level 3



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

## Stargate Digital Audio Workstation 21.10.9

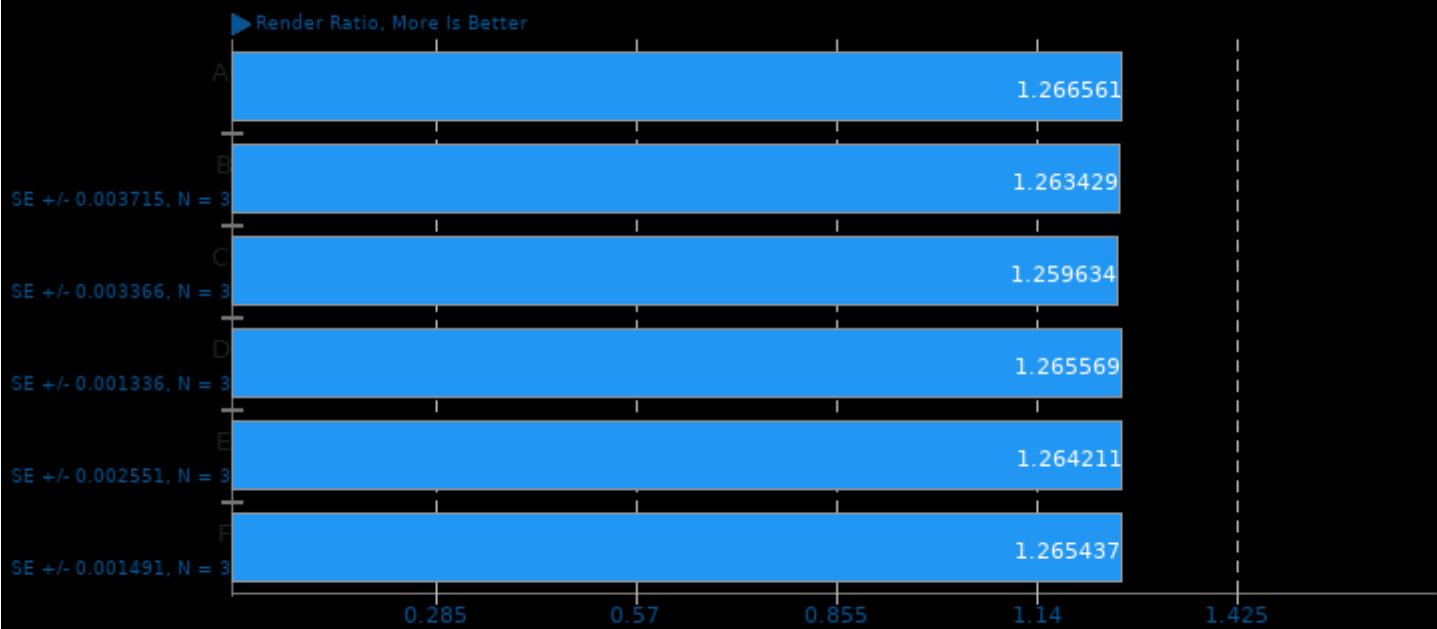
Sample Rate: 480000 - Buffer Size: 1024



1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

## Stargate Digital Audio Workstation 21.10.9

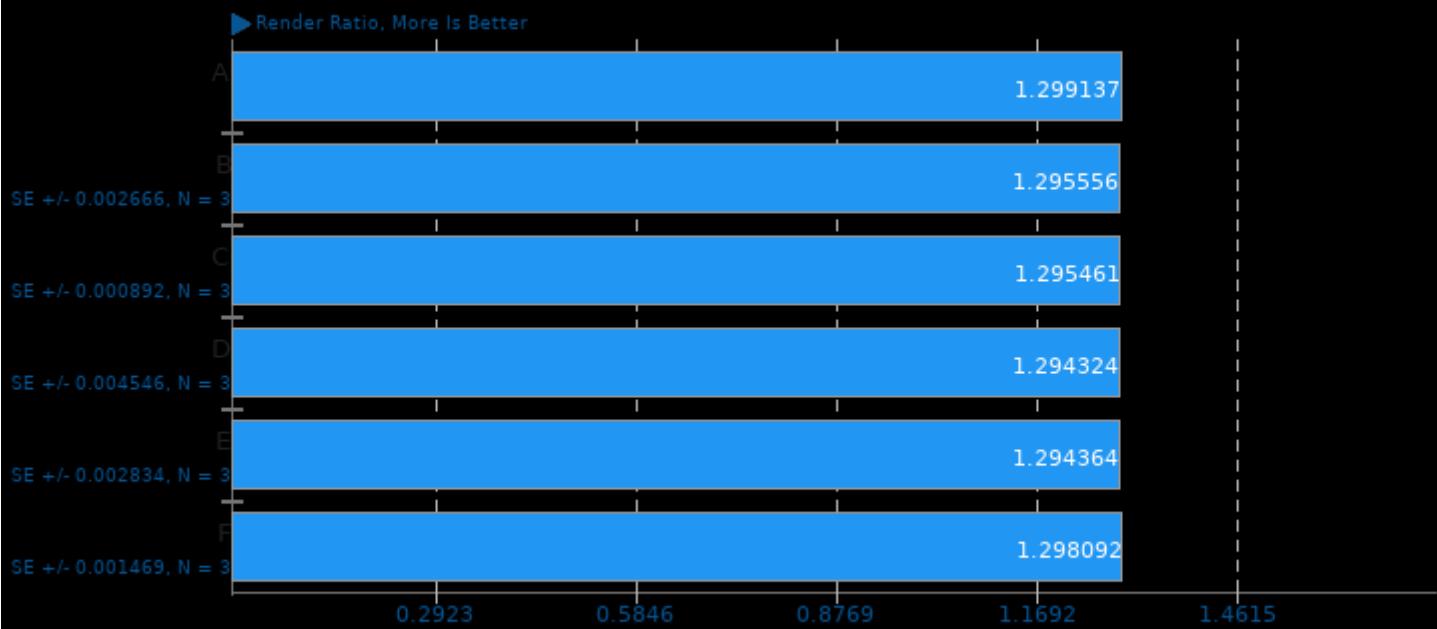
Sample Rate: 44100 - Buffer Size: 512



1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

## Stargate Digital Audio Workstation 21.10.9

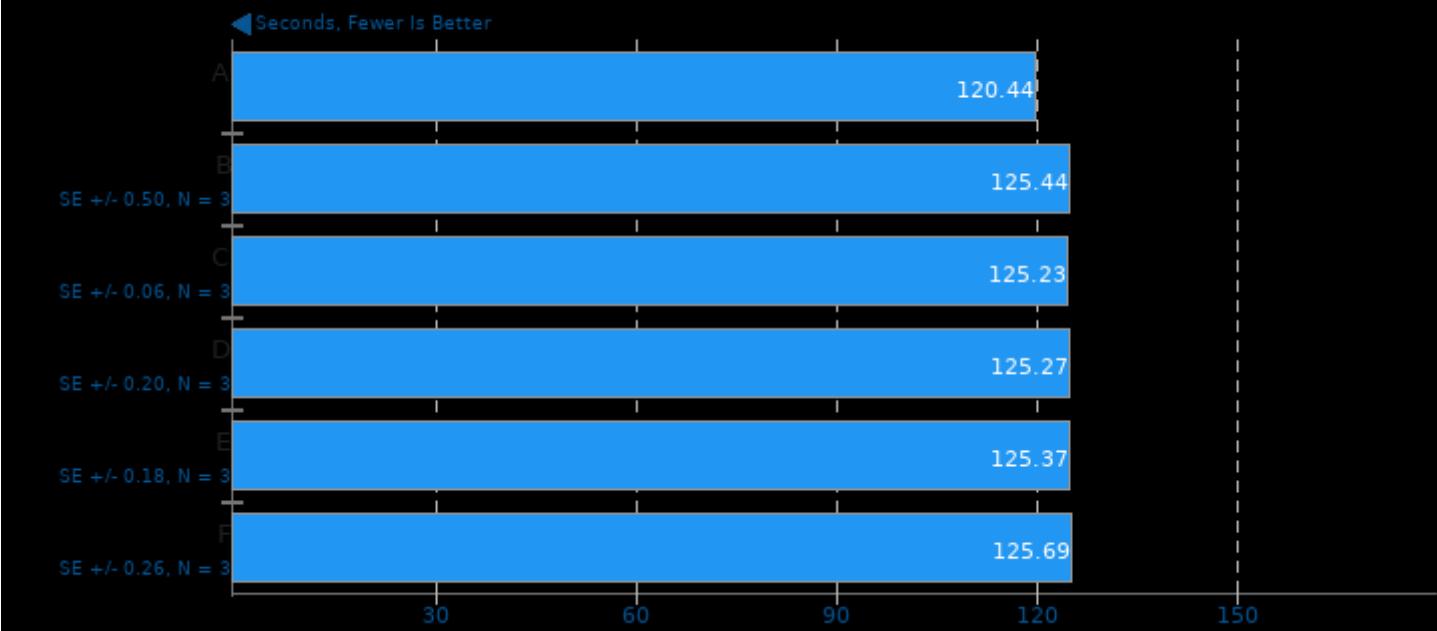
Sample Rate: 44100 - Buffer Size: 1024



1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

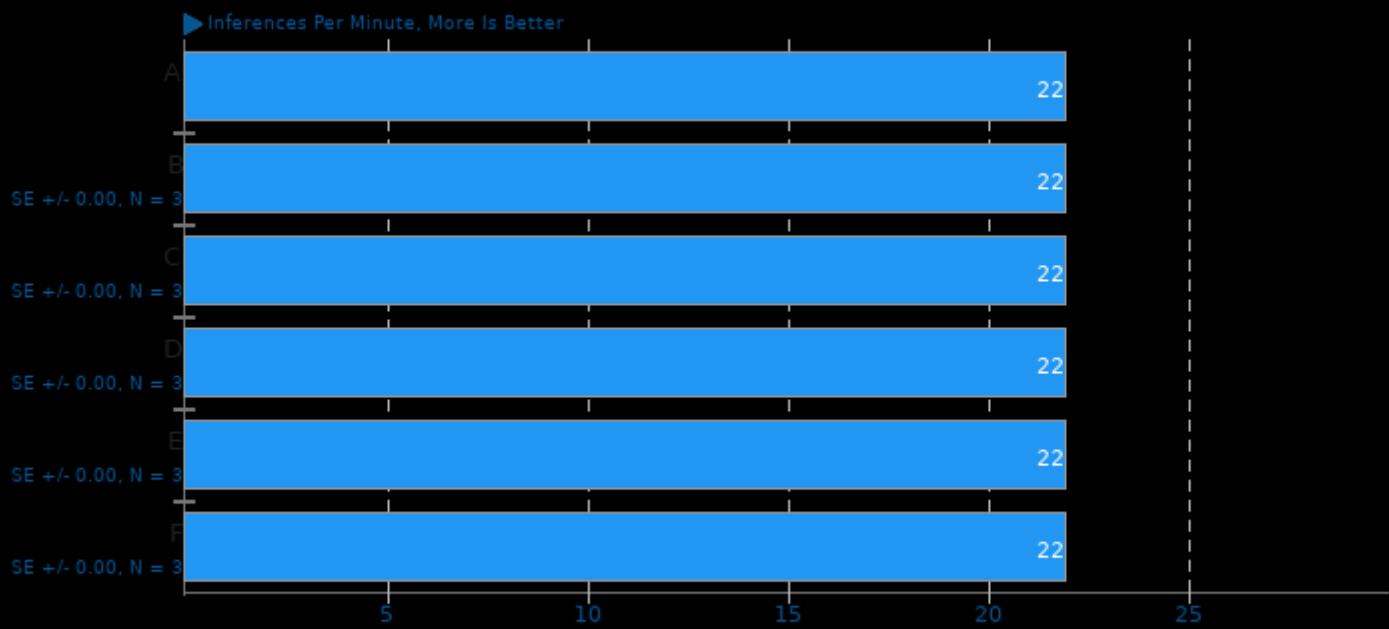
## RAR Compression 6.0.2

Linux Source Tree Archiving To RAR



## ONNX Runtime 1.10

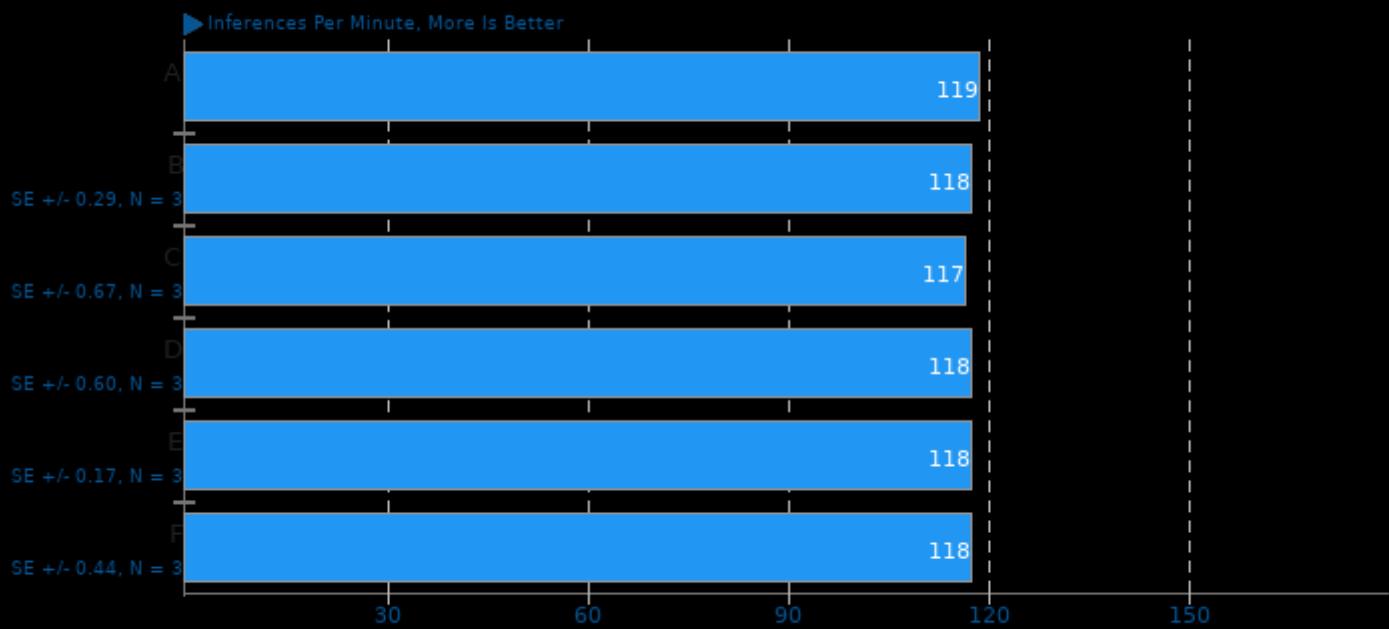
Model: fcn-resnet101-11 - Device: CPU



1. (CXX) g++ options: -ffunction-sections -fdata-sections -march=native -mtune=native -O3 -flto -fno-fat-lto-objects -ldl -lrt

## ONNX Runtime 1.10

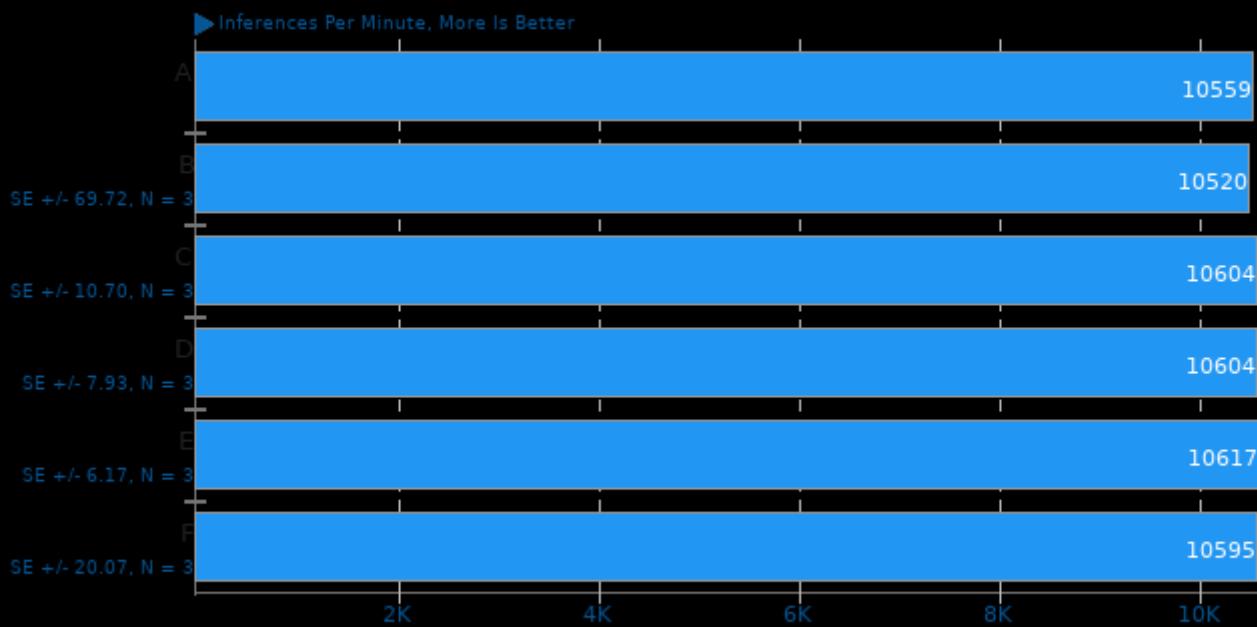
Model: yolov4 - Device: CPU



1. (CXX) g++ options: -ffunction-sections -fdata-sections -march=native -mtune=native -O3 -flto -fno-fat-lto-objects -ldl -lrt

## ONNX Runtime 1.10

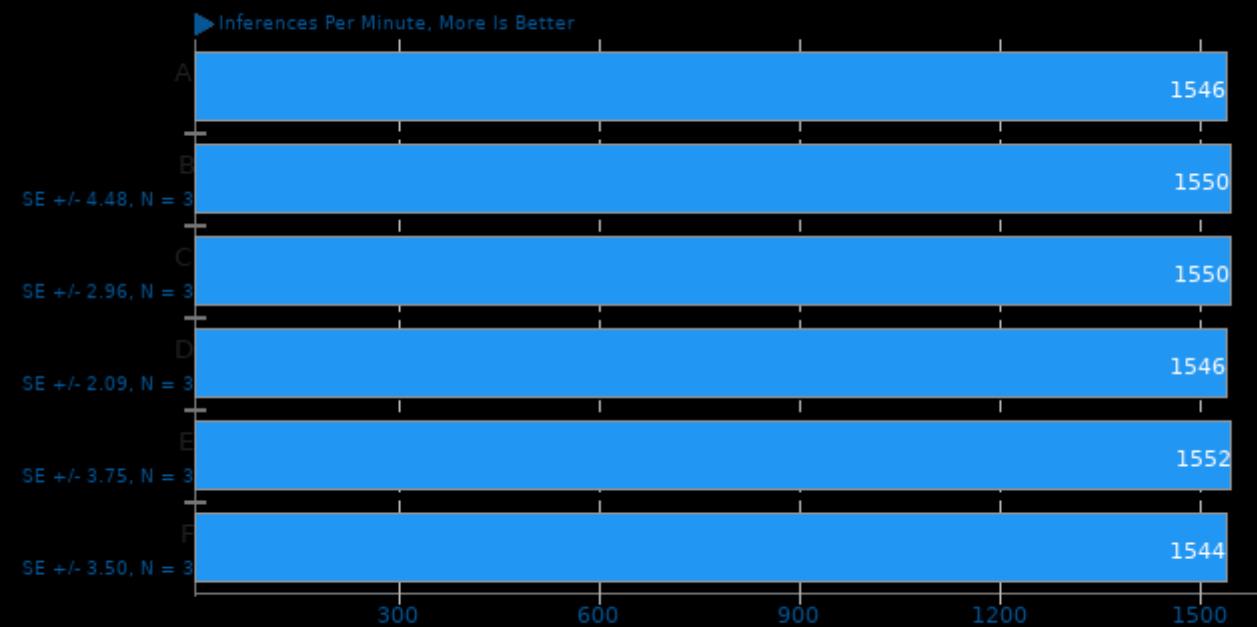
Model: shufflenet-v2-10 - Device: CPU



1. (CXX) g++ options: -ffunction-sections -fdata-sections -march=native -mtune=native -O3 -fipa -fno-fat-lto-objects -ldl -lrt

## ONNX Runtime 1.10

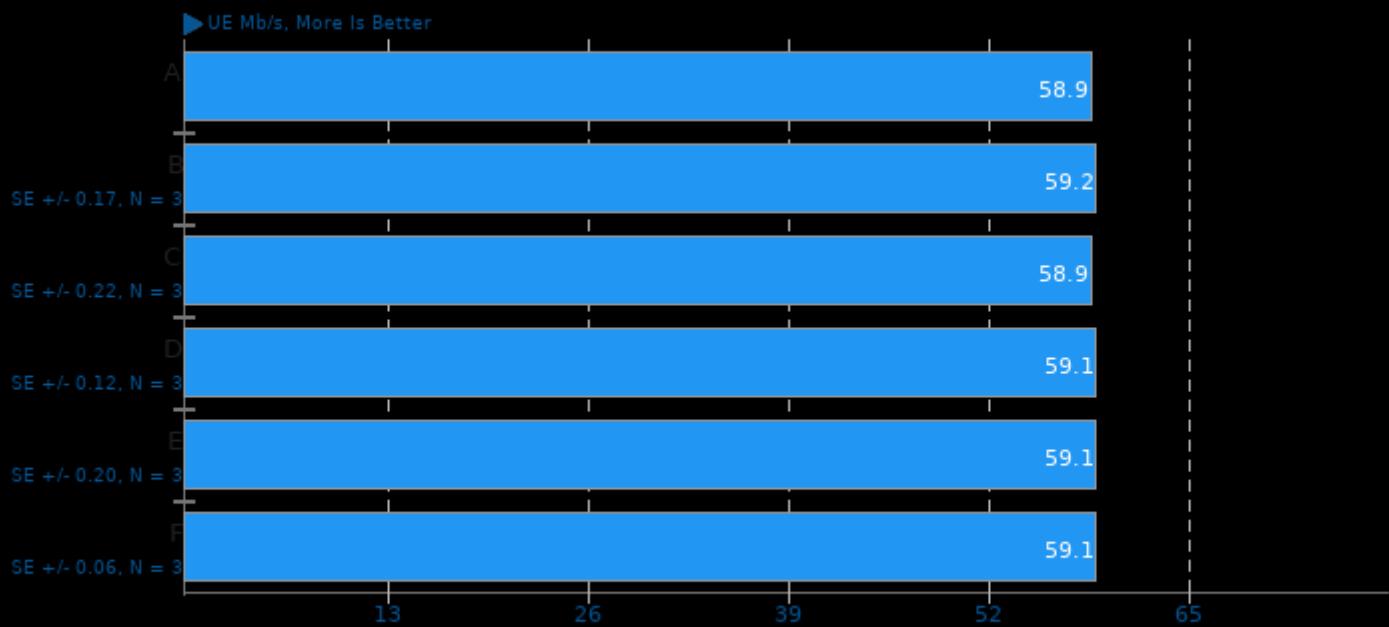
Model: super-resolution-10 - Device: CPU



1. (CXX) g++ options: -ffunction-sections -fdata-sections -march=native -mtune=native -O3 -fipa -fno-fat-lto-objects -ldl -lrt

## srsRAN 21.10

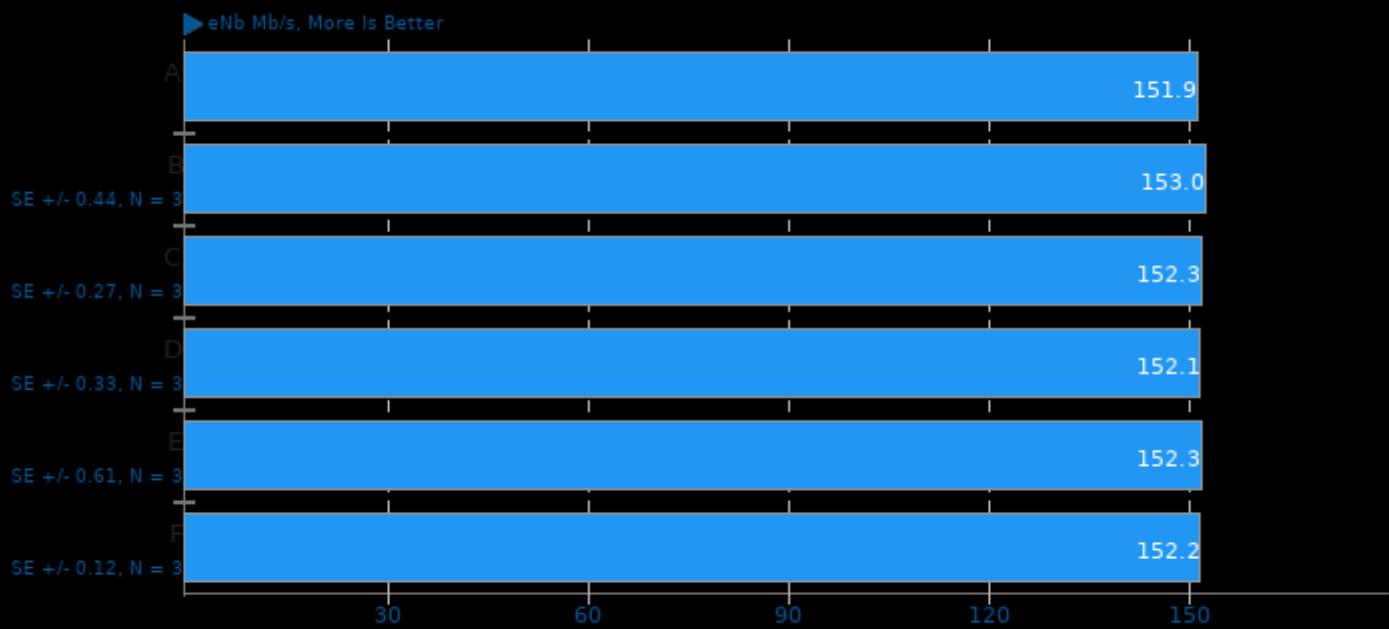
Test: 4G PHY\_DL\_Test 100 PRB MIMO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.10

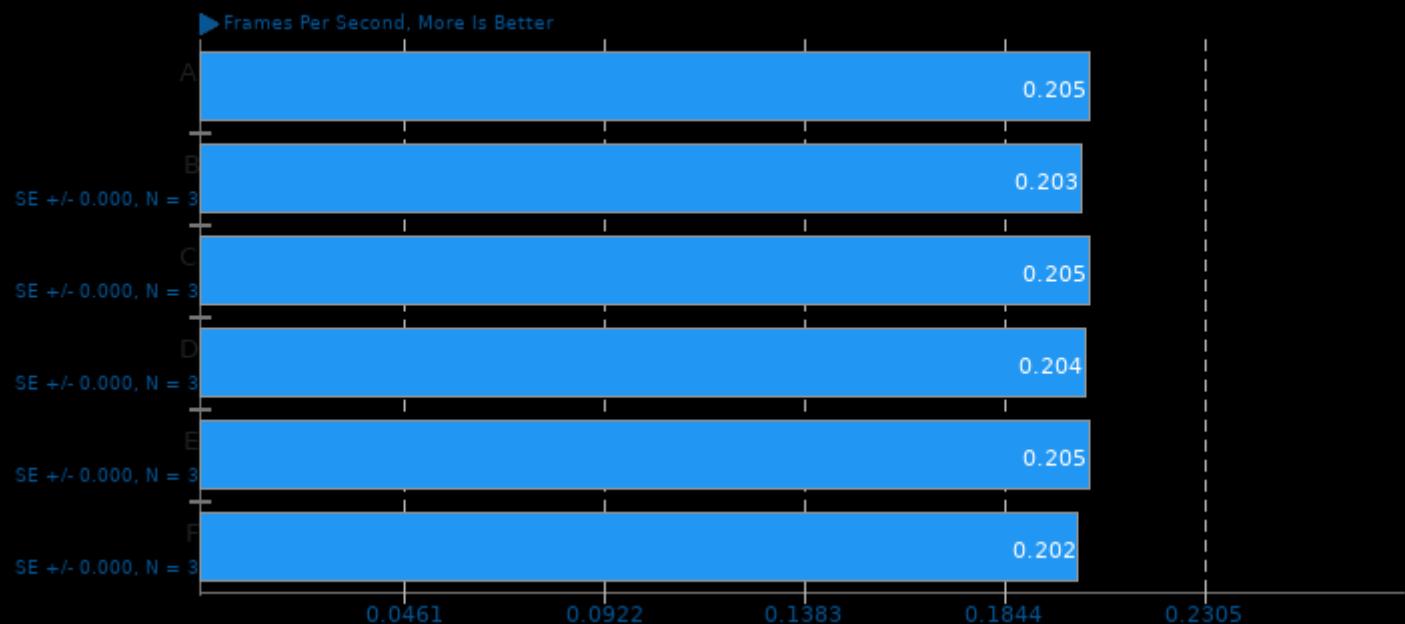
Test: 4G PHY\_DL\_Test 100 PRB MIMO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

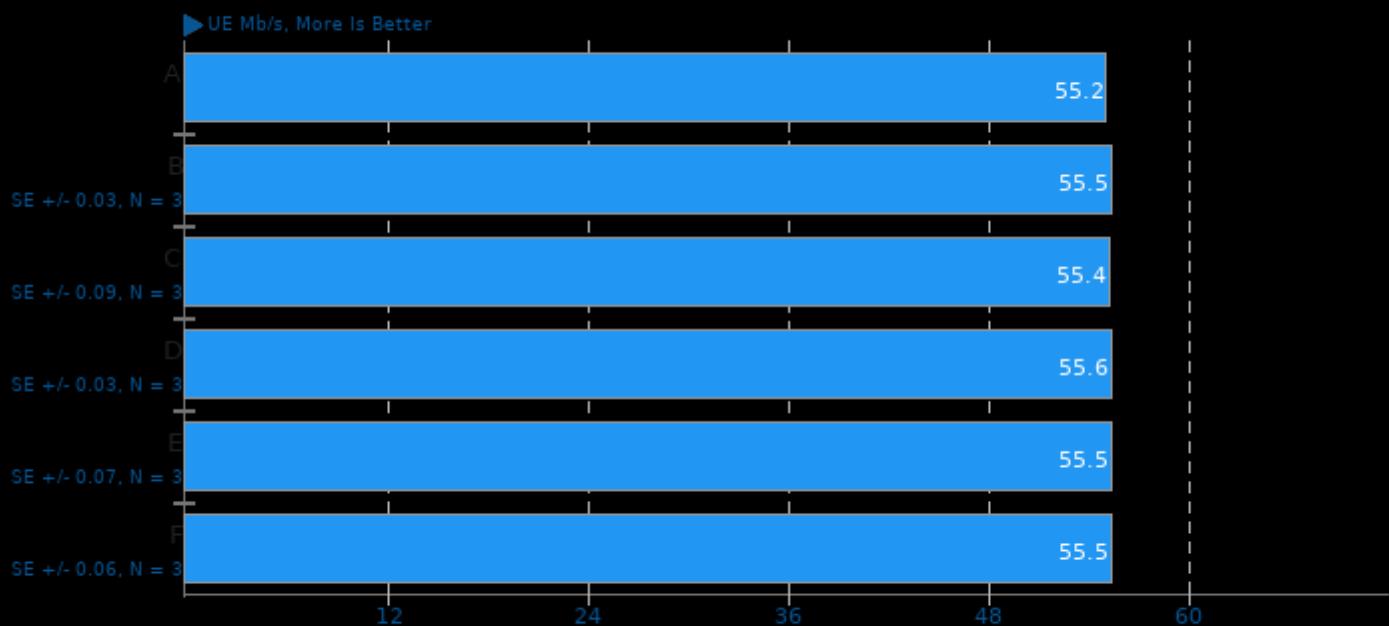
## rav1e 0.5

Speed: 1



## srsRAN 21.10

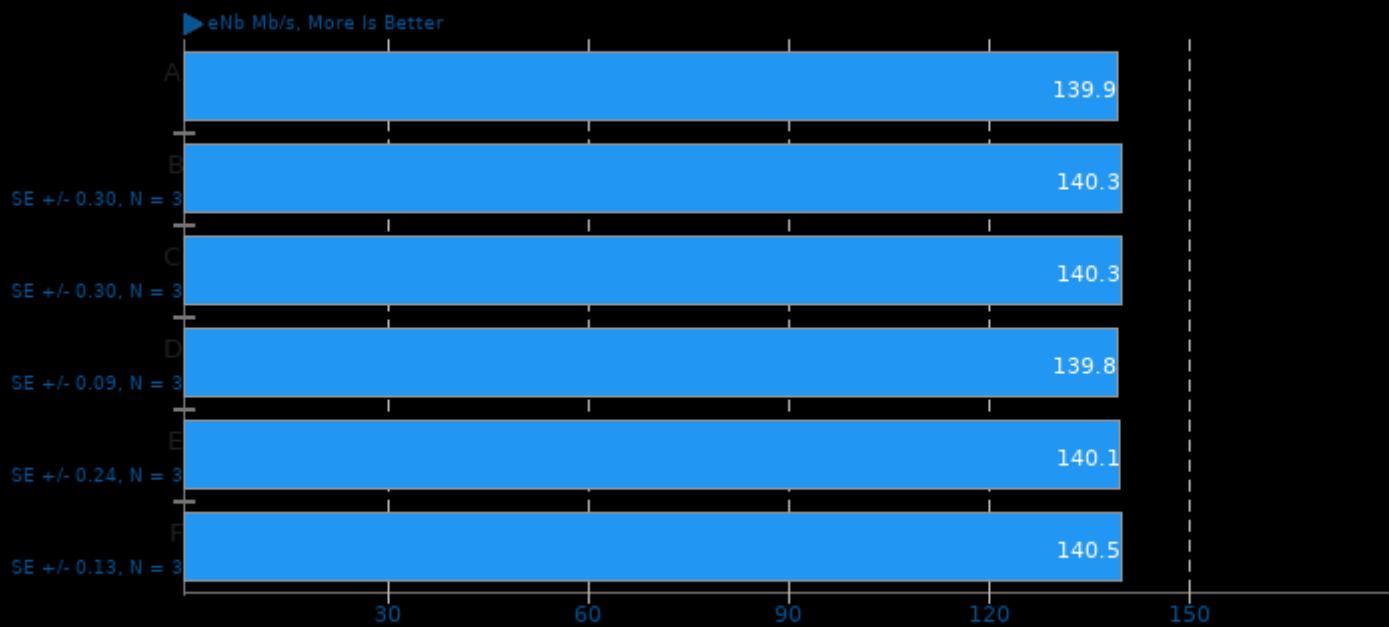
Test: 4G PHY\_DL\_Test 100 PRB MIMO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.10

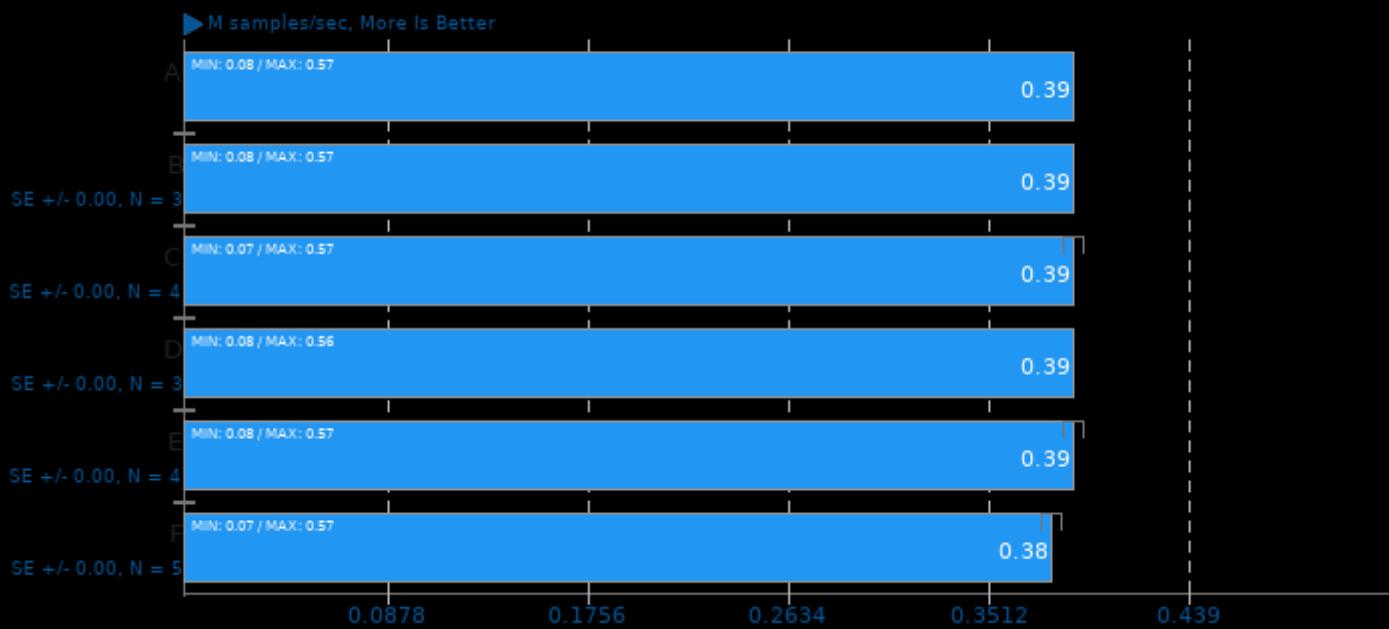
Test: 4G PHY\_DL\_Test 100 PRB MIMO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

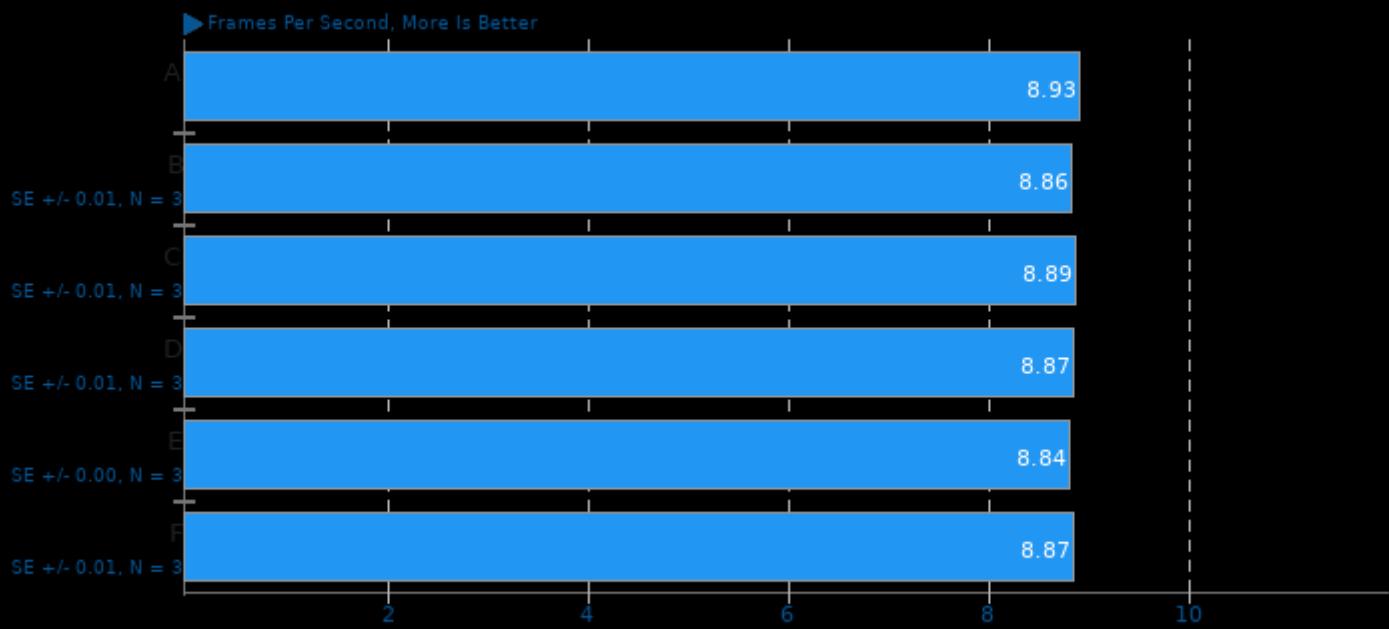
## LuxCoreRender 2.6

Scene: LuxCore Benchmark - Acceleration: CPU



## AOM AV1 3.2

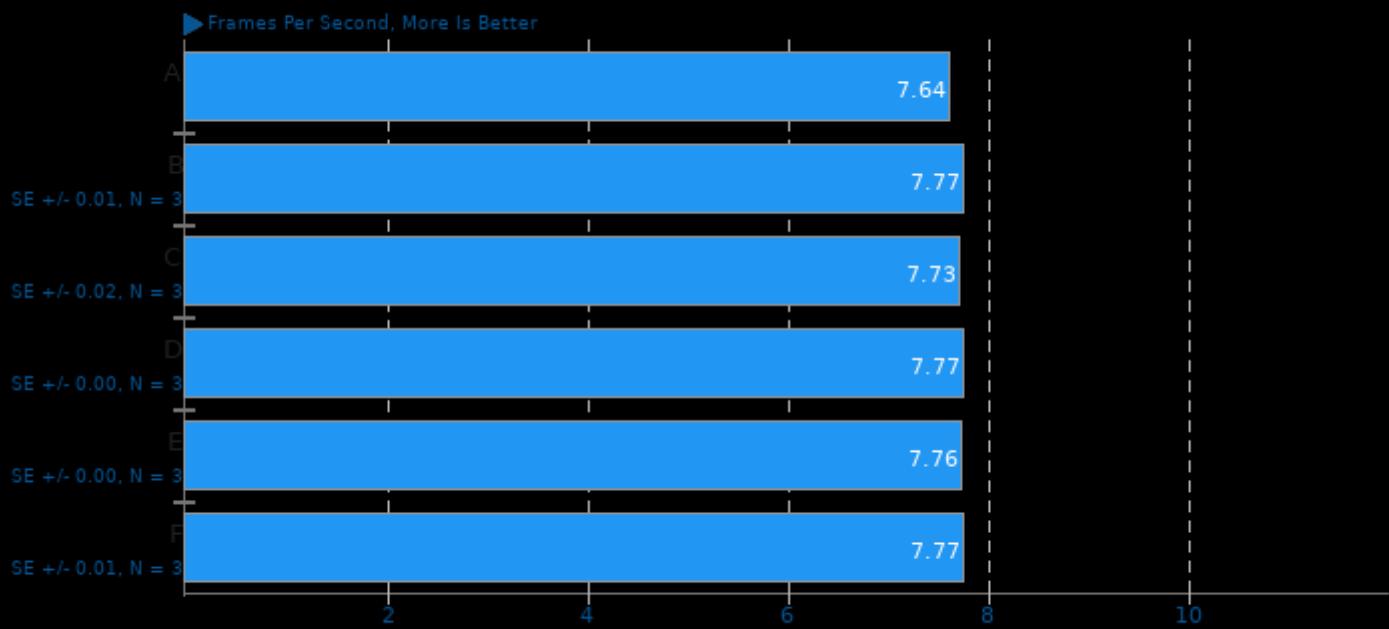
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -fno-rtti

## Kvazaar 2.1

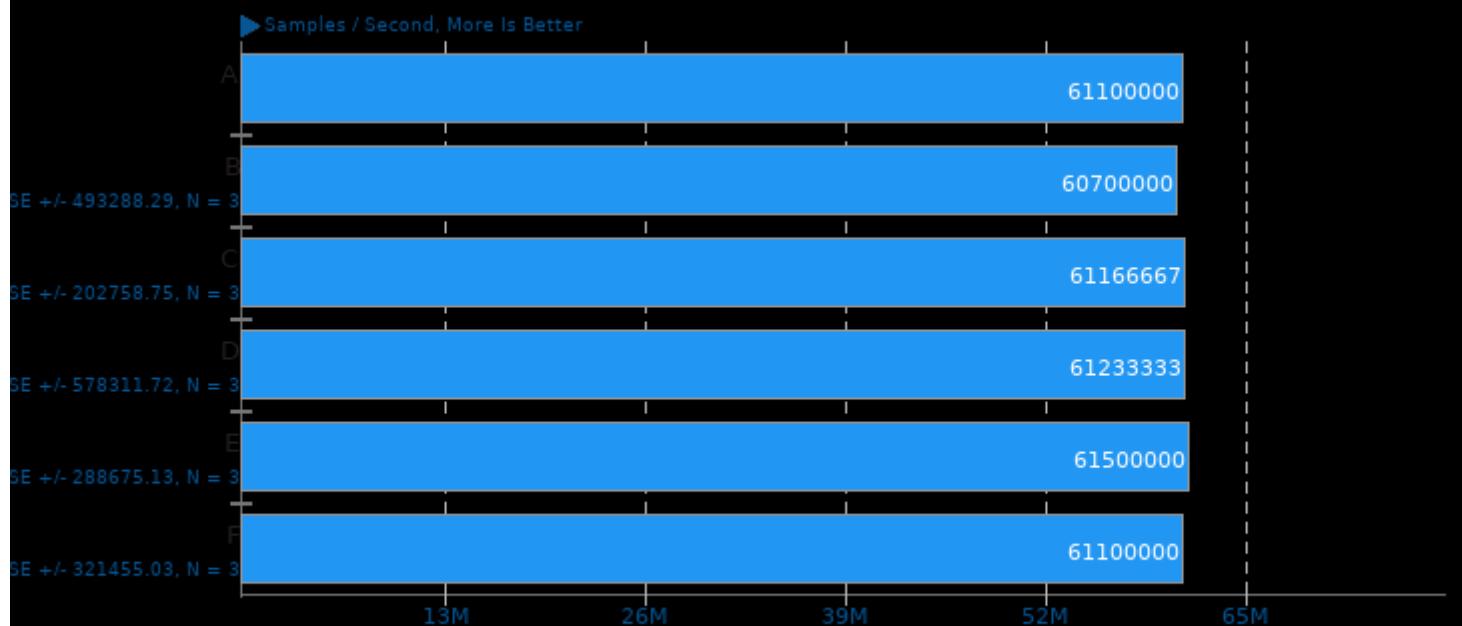
Video Input: Bosphorus 4K - Video Preset: Very Fast



1. (CC) gcc options: -fthreadsafe-statics -fvisibility=hidden -O2 -fthreadsafe-statics -fvisibility=hidden -fno-rtti

## srsRAN 21.10

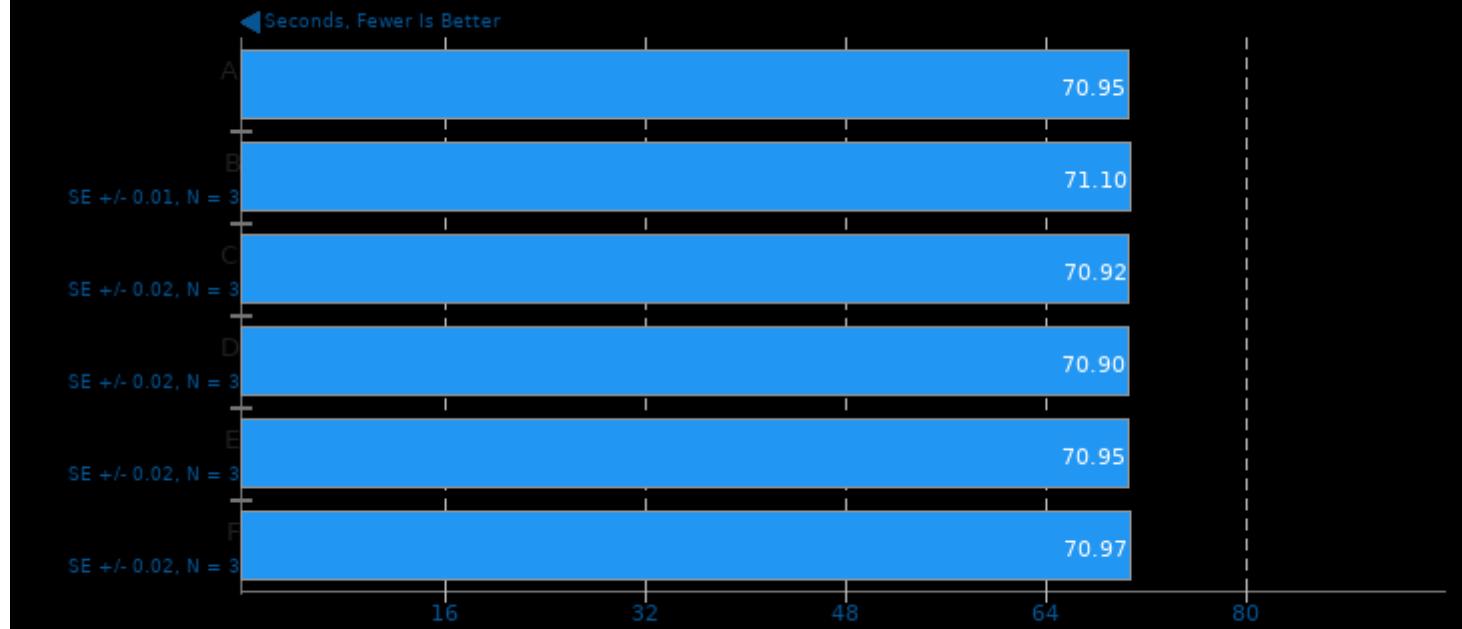
Test: OFDM\_Test



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## Basis Universal 1.13

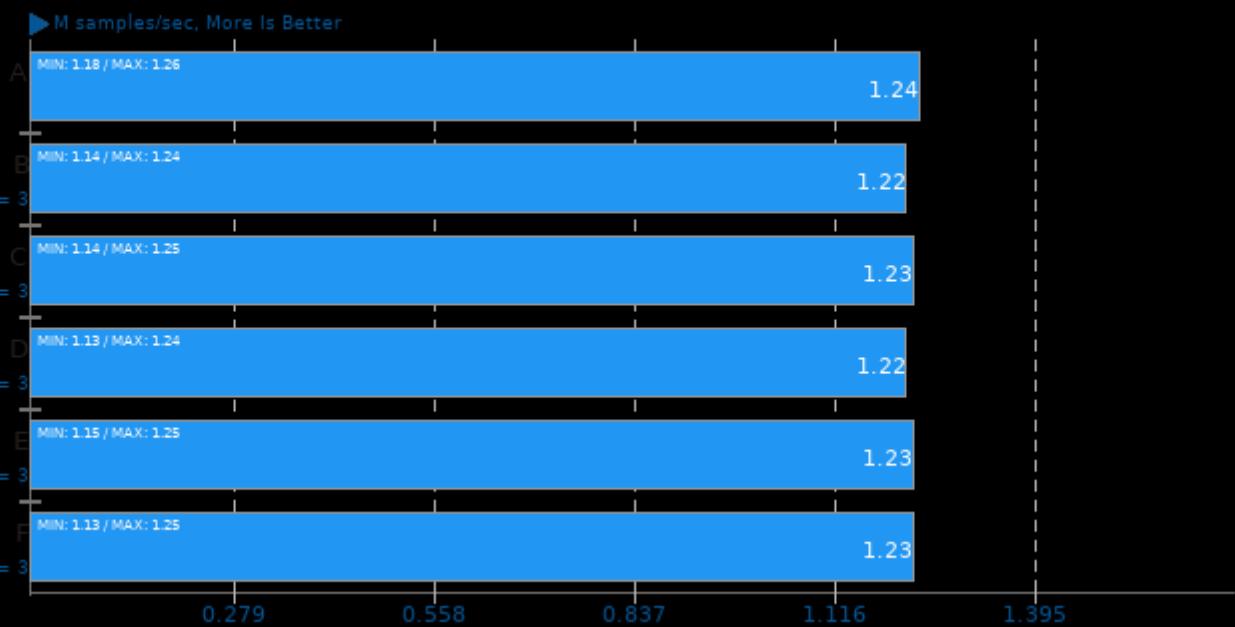
Settings: UASTC Level 2



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

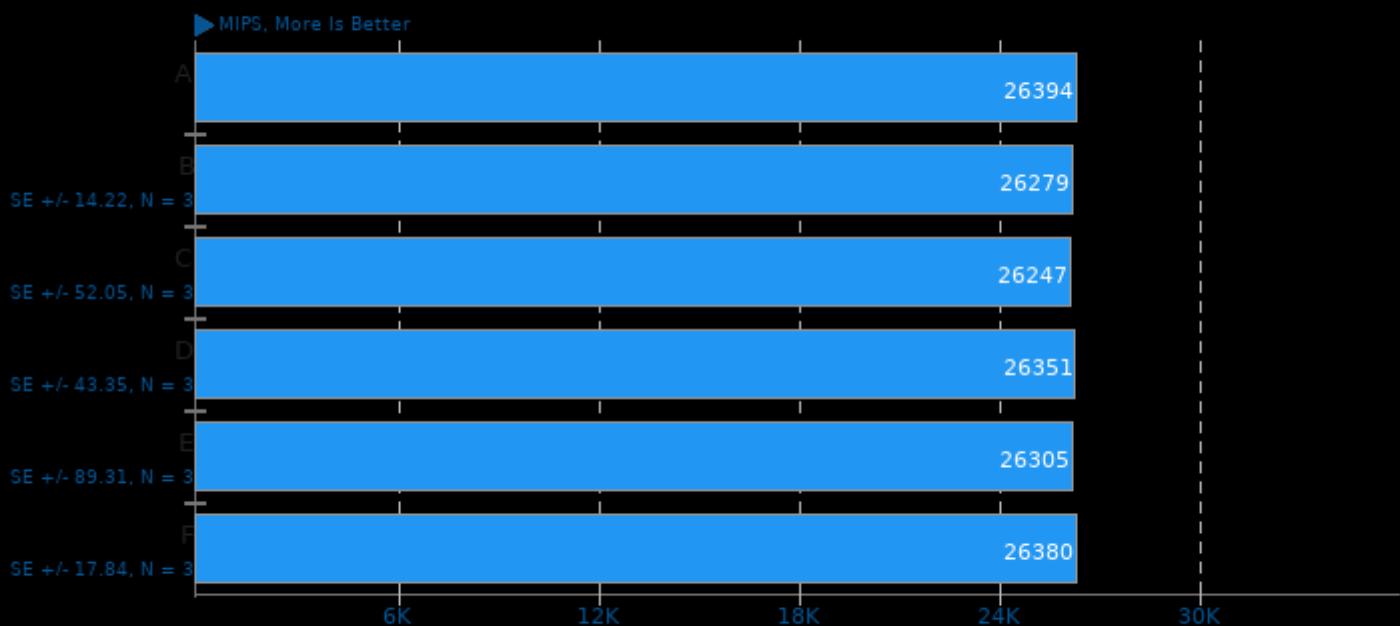
## LuxCoreRender 2.6

Scene: Orange Juice - Acceleration: CPU



## 7-Zip Compression 21.06

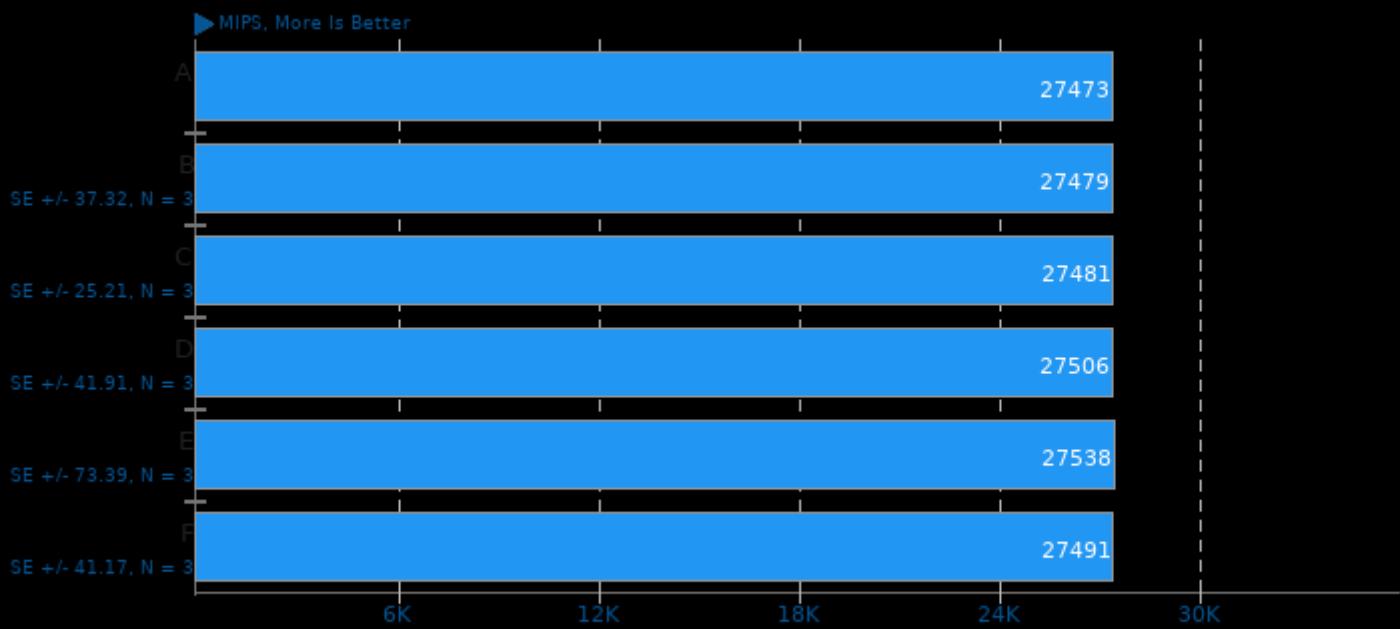
Test: Decompression Rating



1. (CXX) g++ options: -fthread -fO2 -fPIC

## 7-Zip Compression 21.06

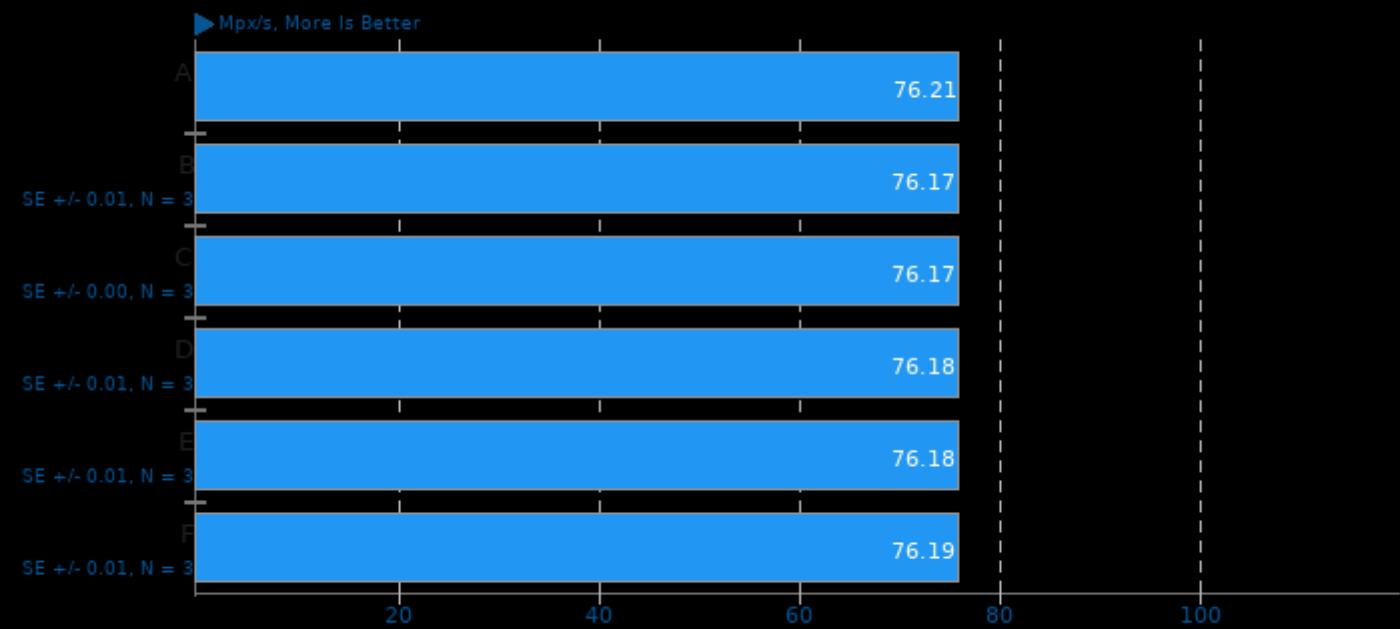
Test: Compression Rating



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

## EtcPak 0.7

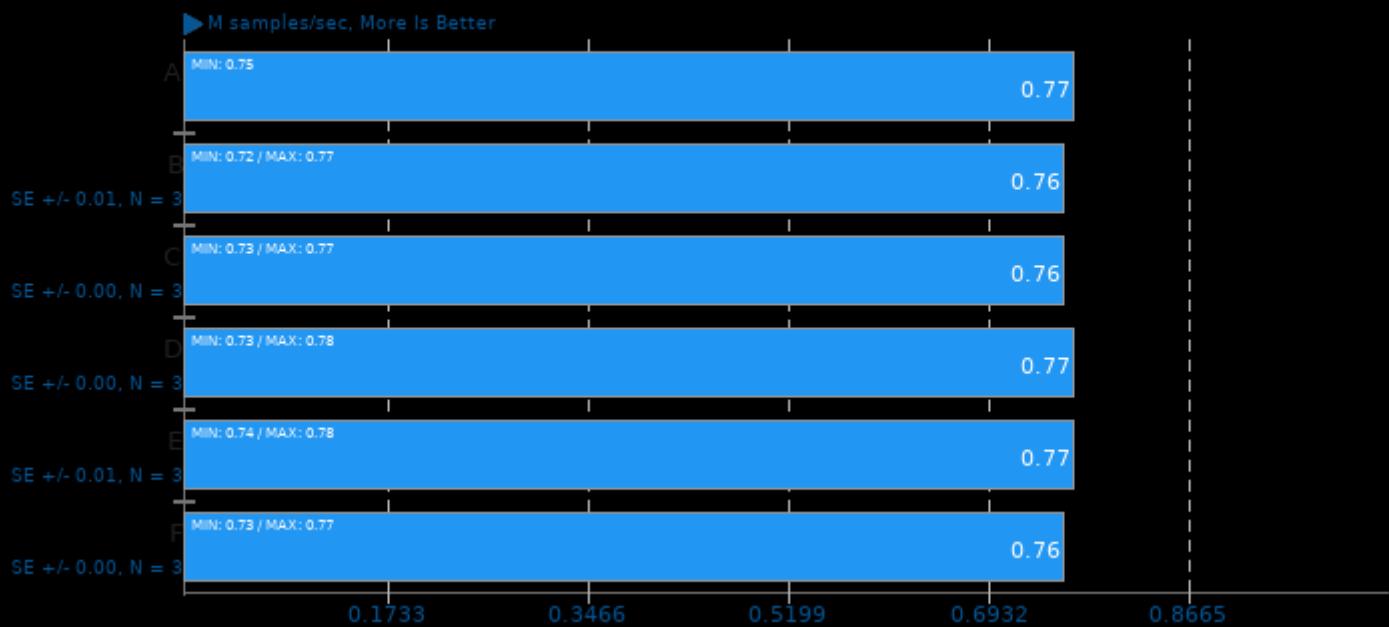
Configuration: ETC2



1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

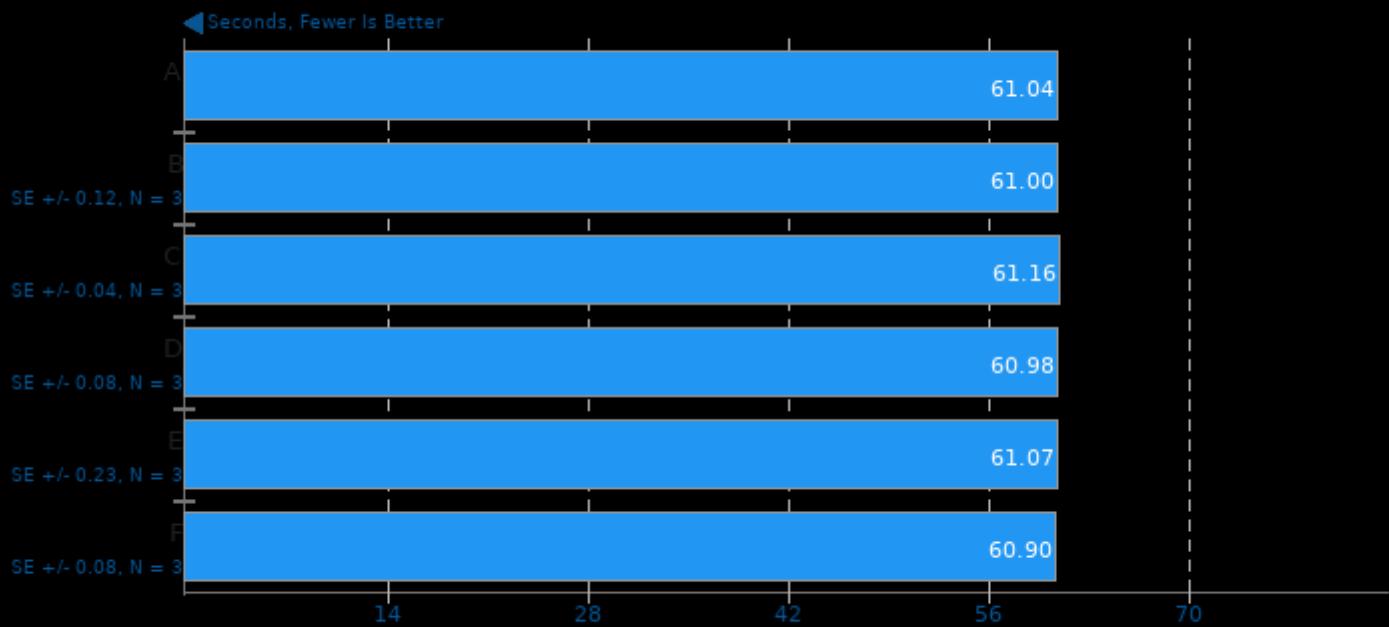
## LuxCoreRender 2.6

Scene: DLSC - Acceleration: CPU



## Basis Universal 1.13

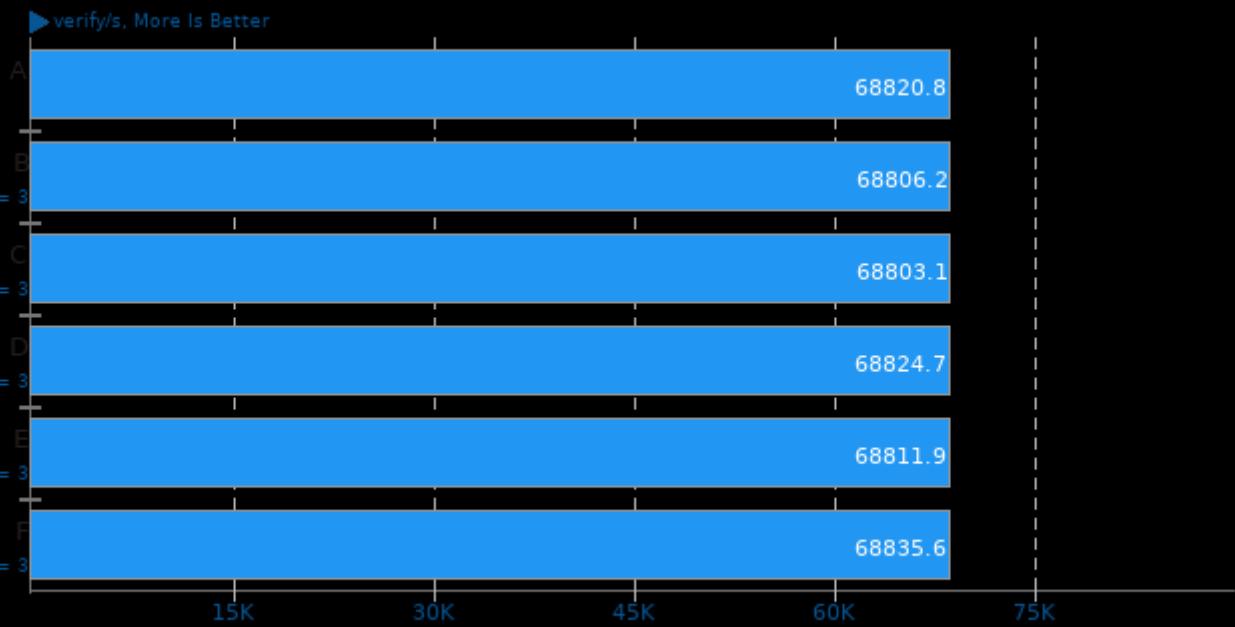
Settings: ETC1S



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

## OpenSSL 3.0

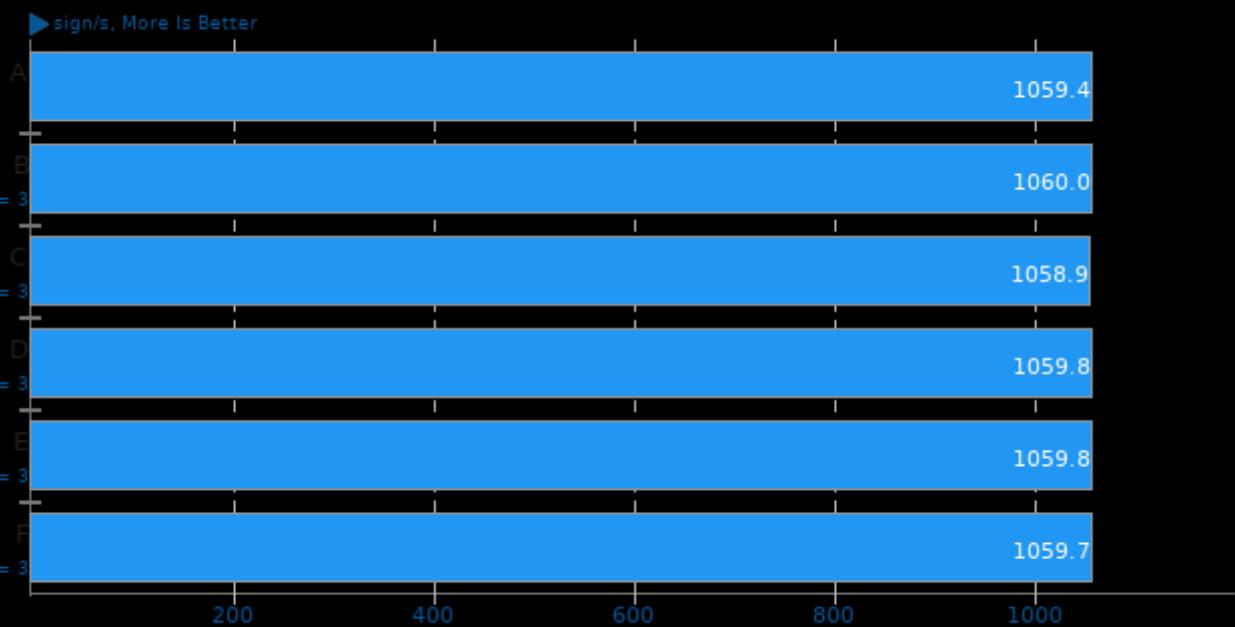
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

## OpenSSL 3.0

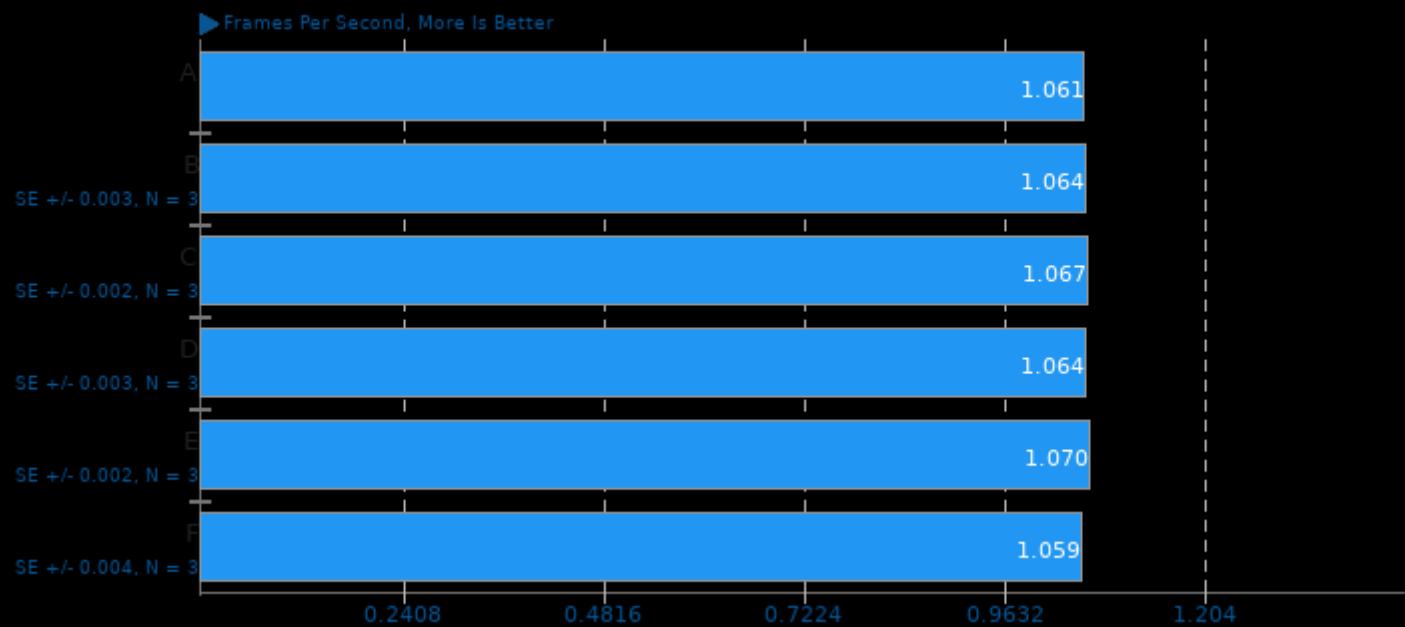
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

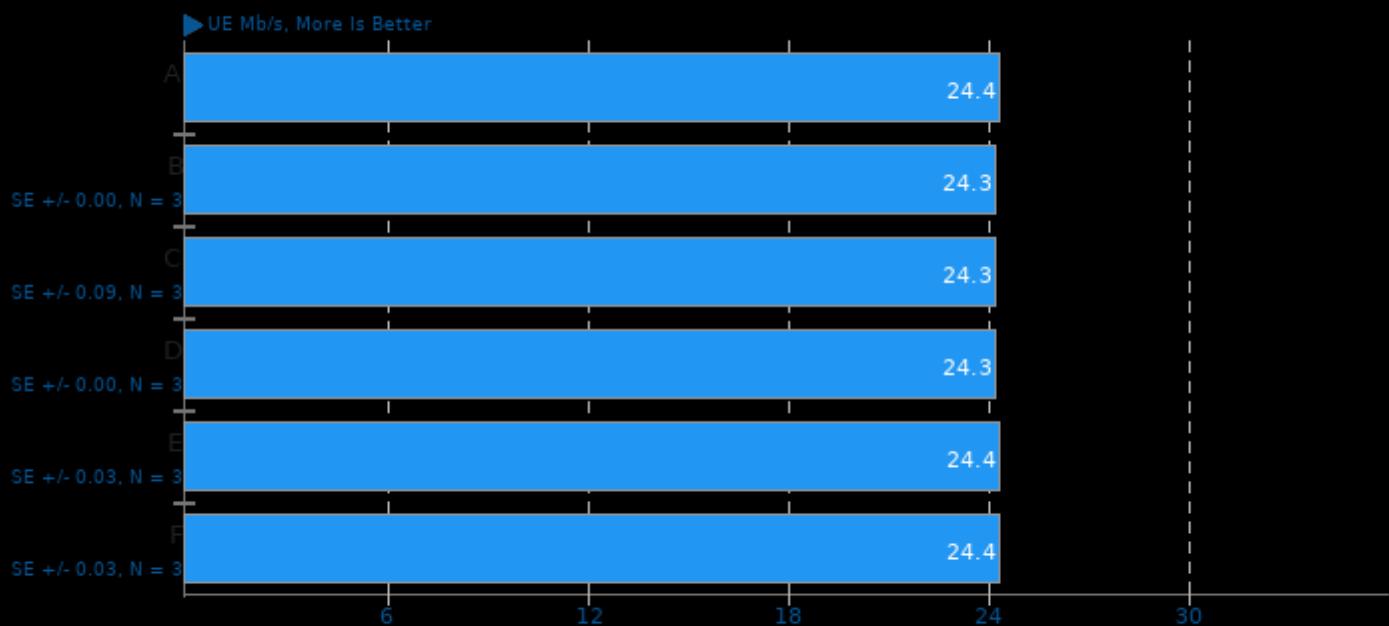
## rav1e 0.5

Speed: 5



## srsRAN 21.10

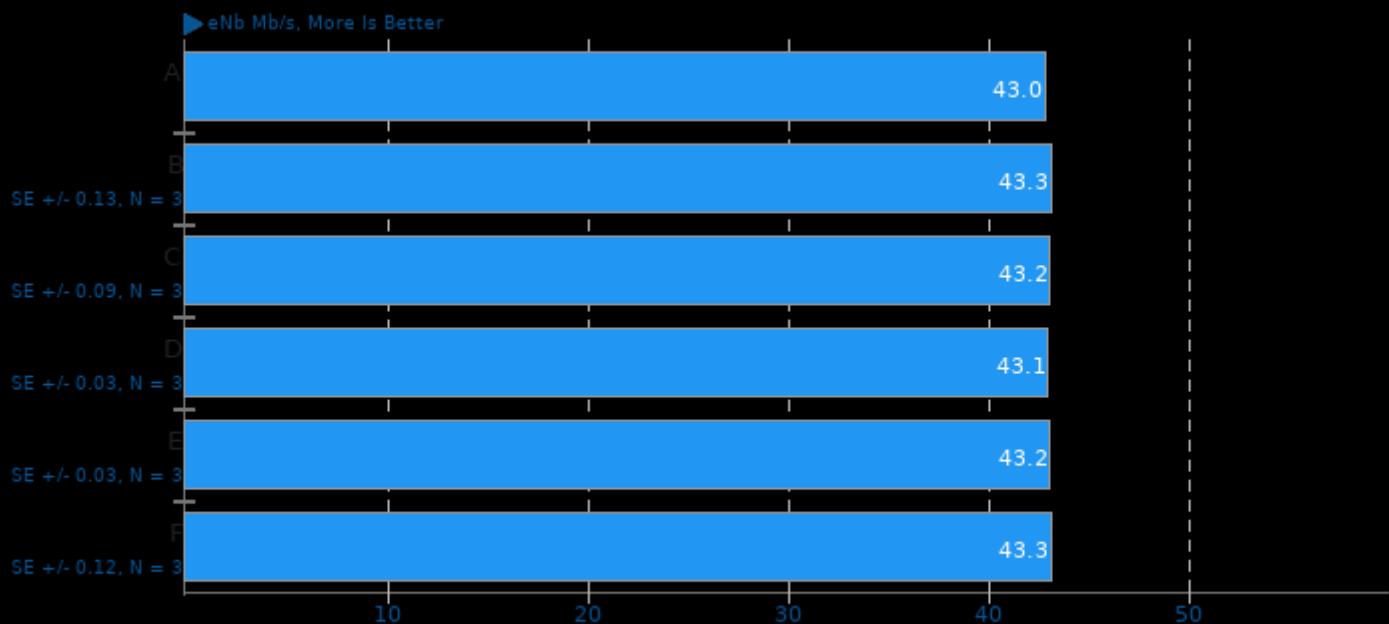
Test: 5G PHY\_DL\_NR Test 52 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.10

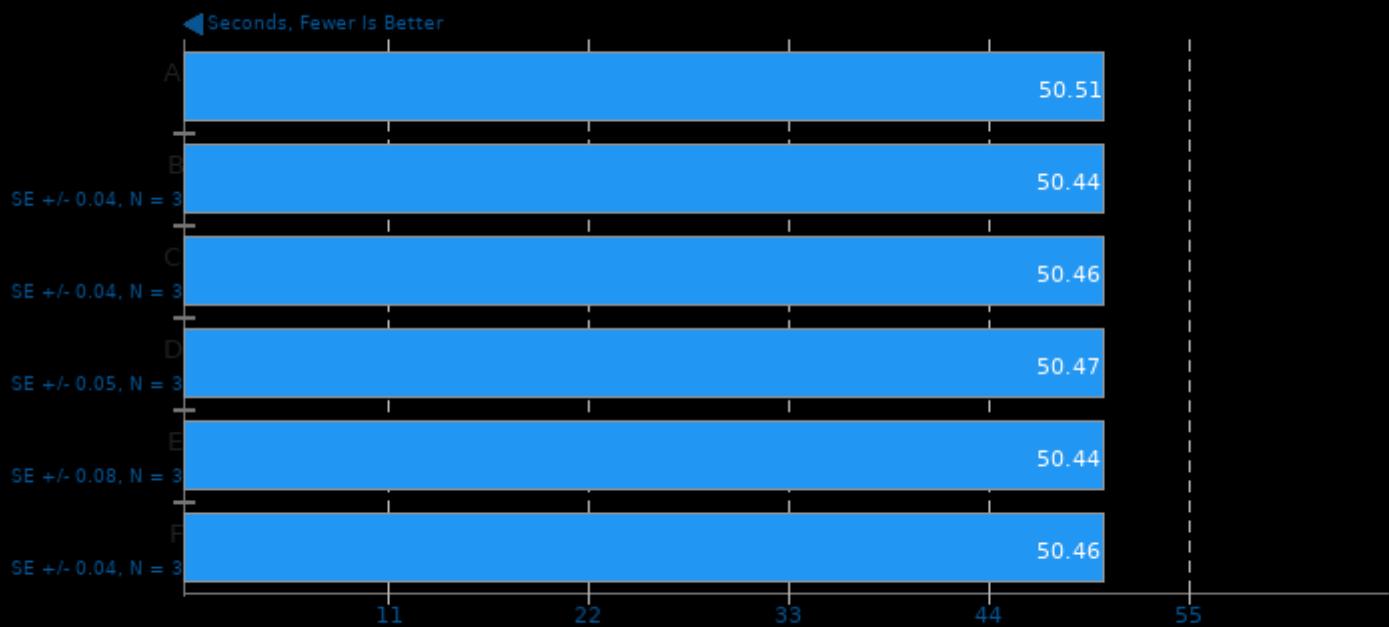
Test: 5G PHY\_DL\_NR Test 52 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## Primesieve 7.7

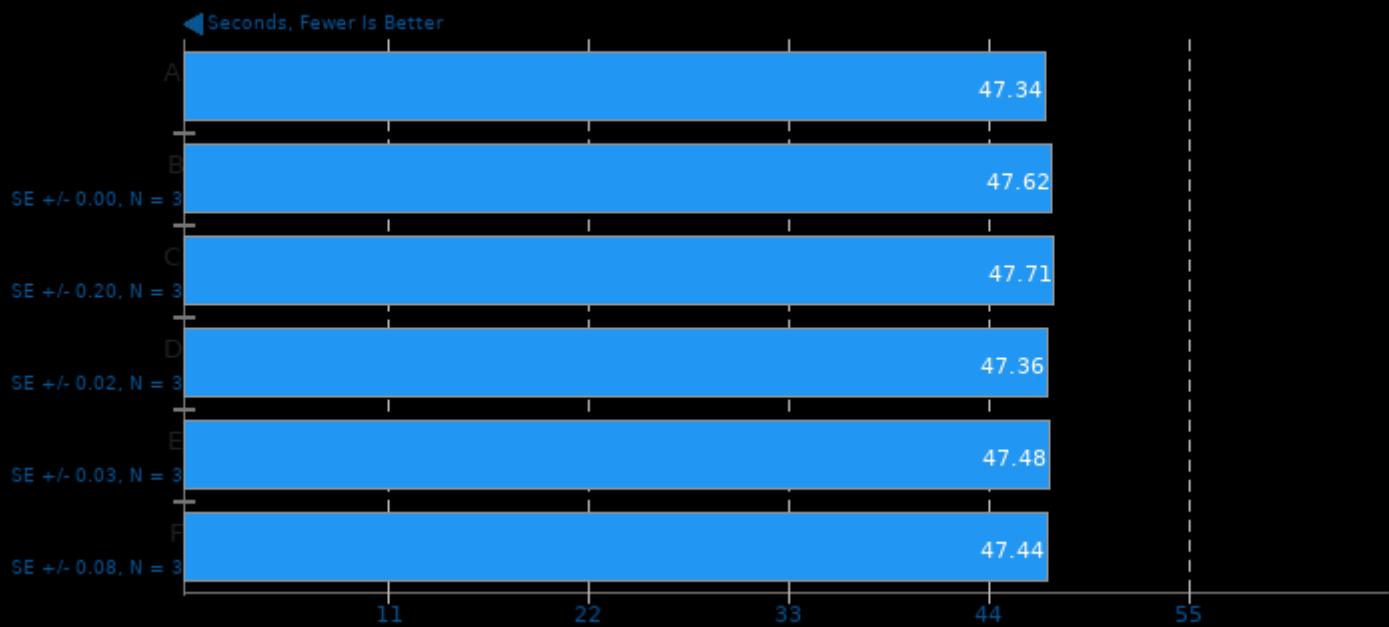
le12 Prime Number Generation



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

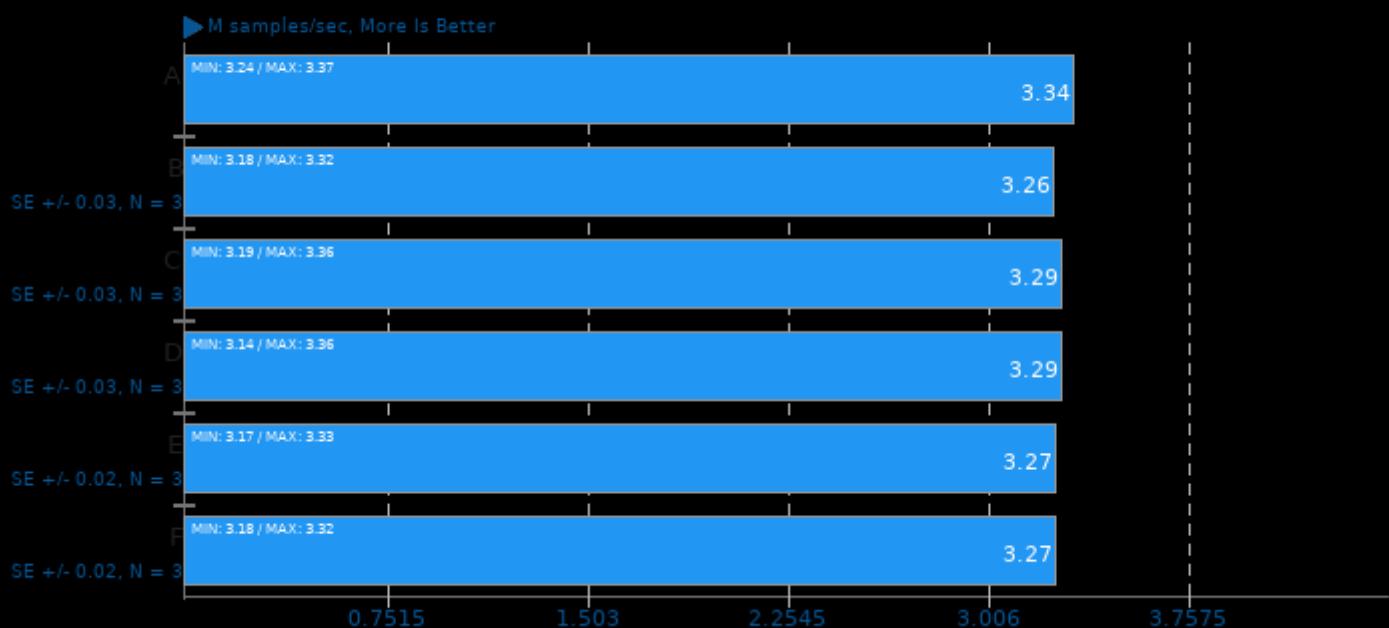
## KTX-Software toktx 4.0

Settings: Zstd Compression 19



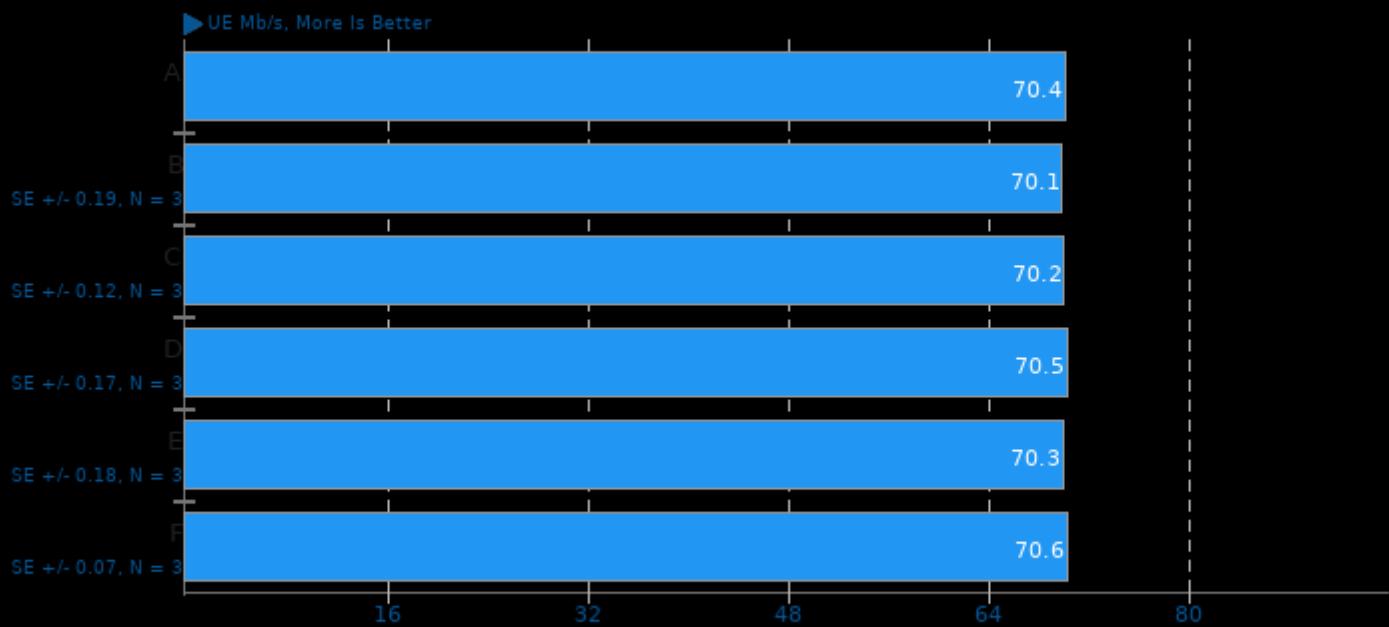
## LuxCoreRender 2.6

Scene: Rainbow Colors and Prism - Acceleration: CPU



## srsRAN 21.10

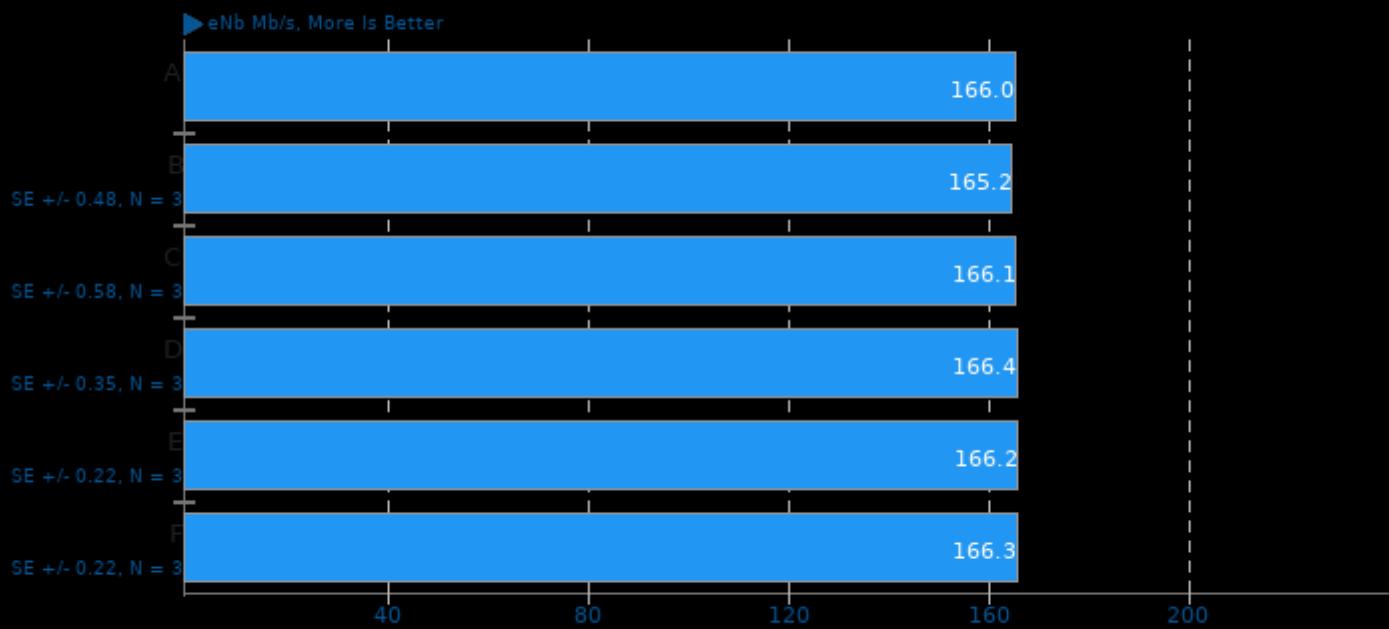
Test: 4G PHY\_DL\_Test 100 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.10

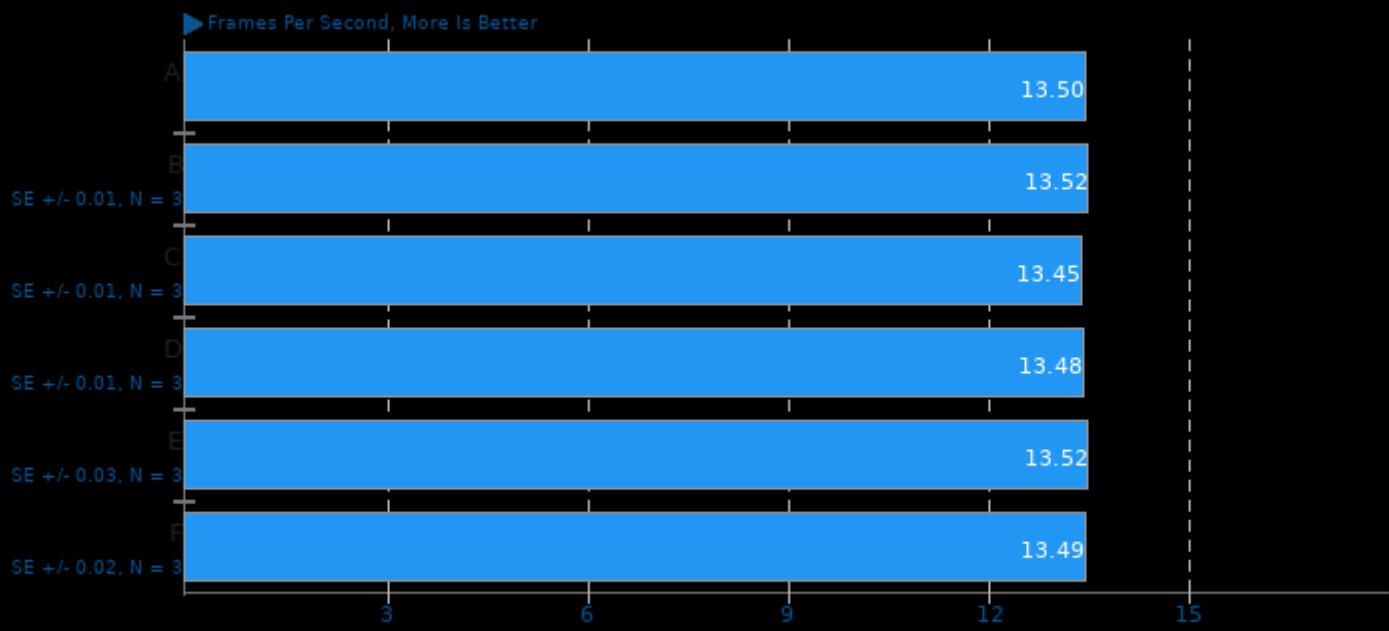
Test: 4G PHY\_DL\_Test 100 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## Kvazaar 2.1

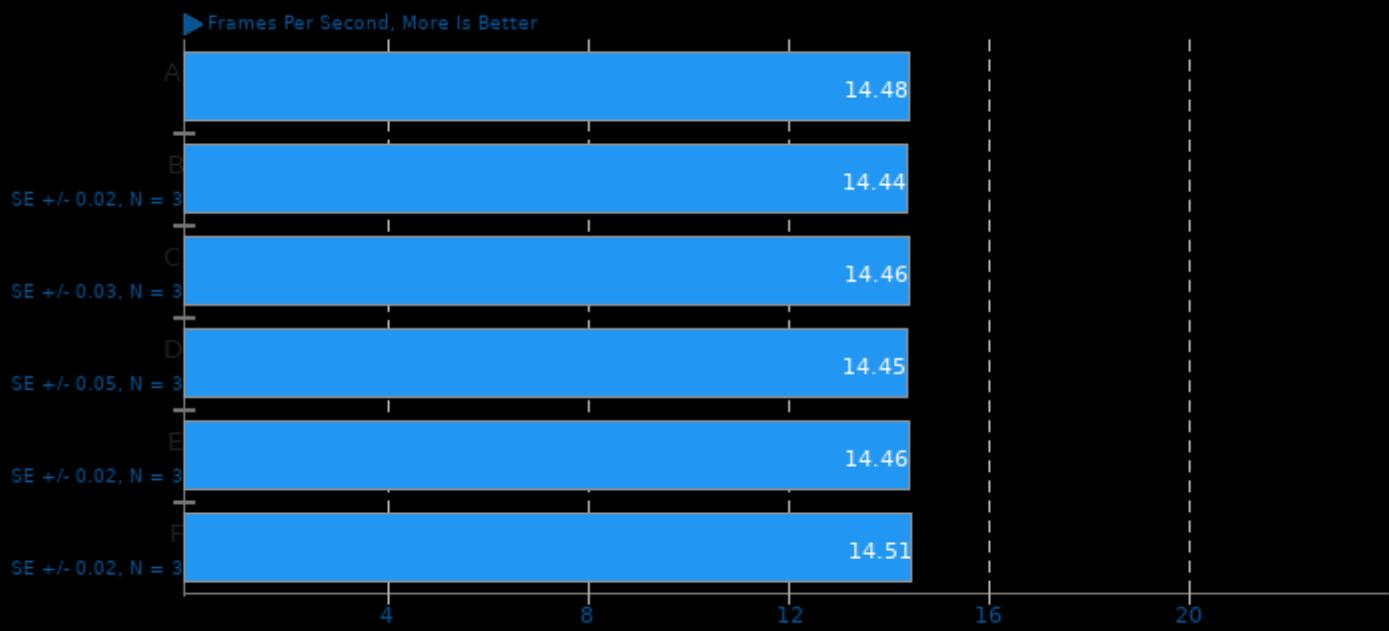
Video Input: Bosphorus 4K - Video Preset: Ultra Fast



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

## AOM AV1 3.2

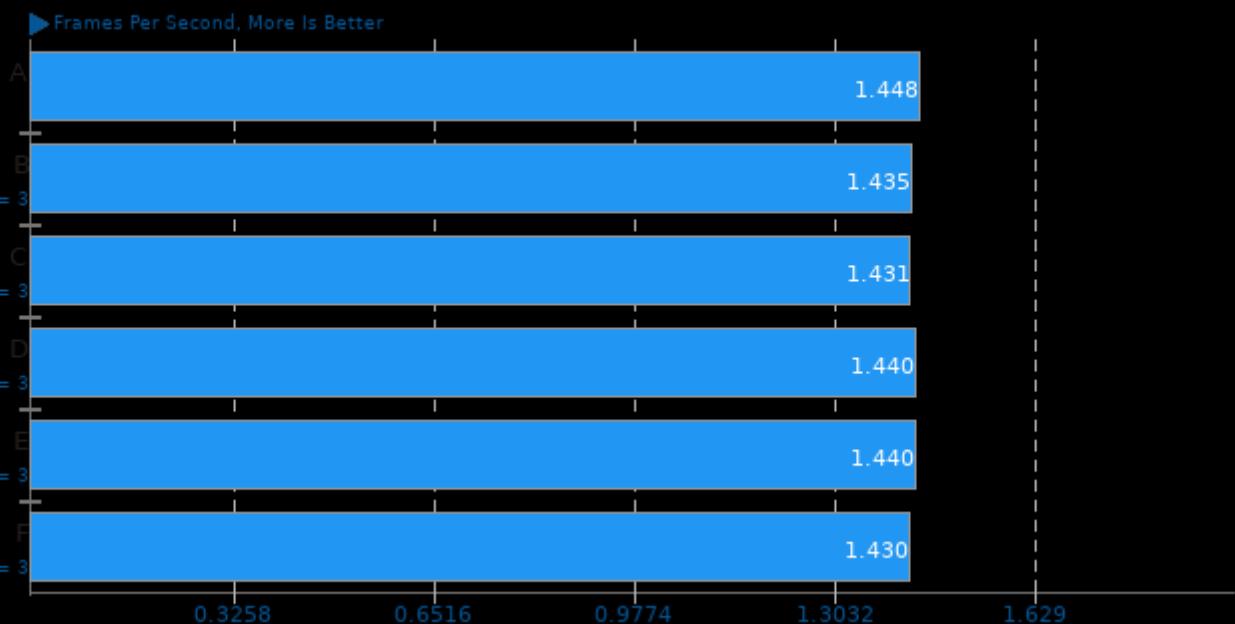
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K



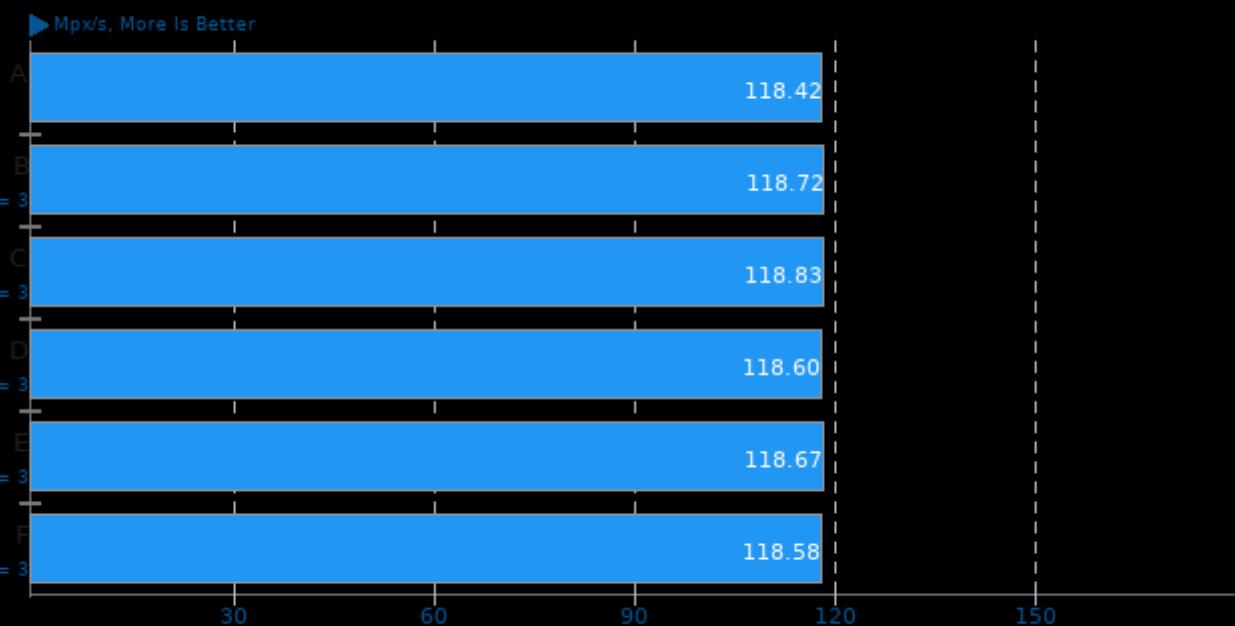
1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm

**rav1e 0.5**

Speed: 6

**EtcPak 0.7**

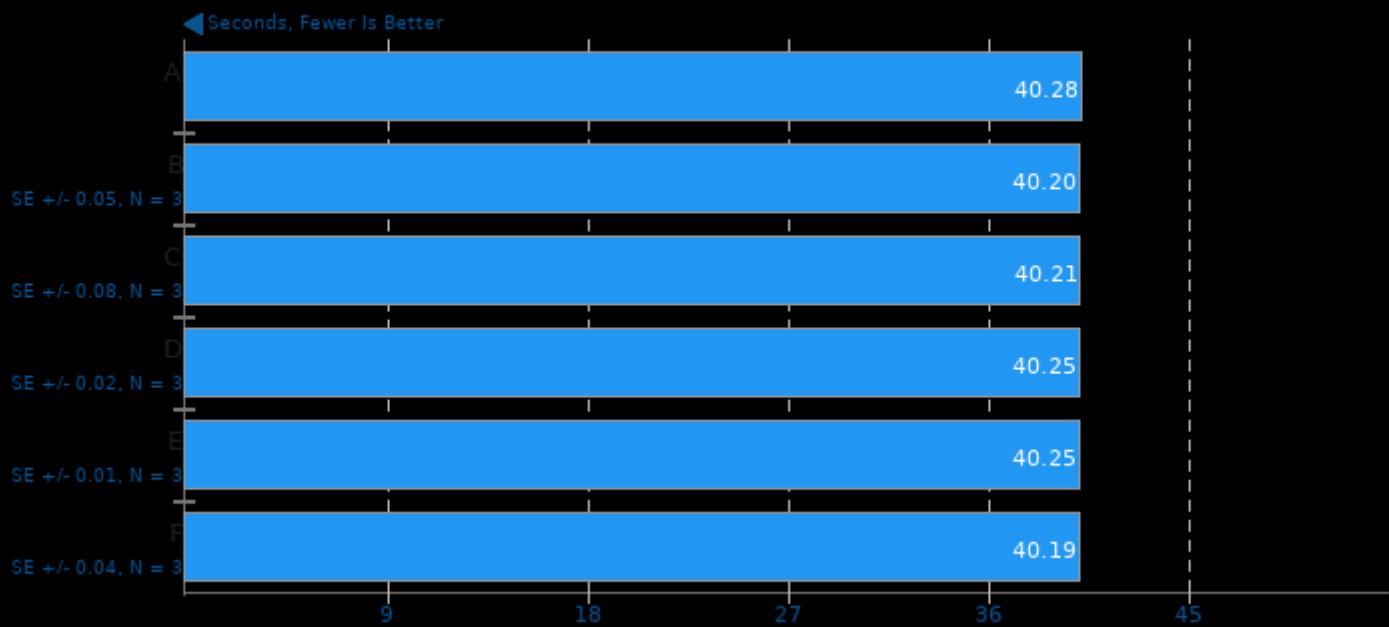
Configuration: ETC1 + Dithering



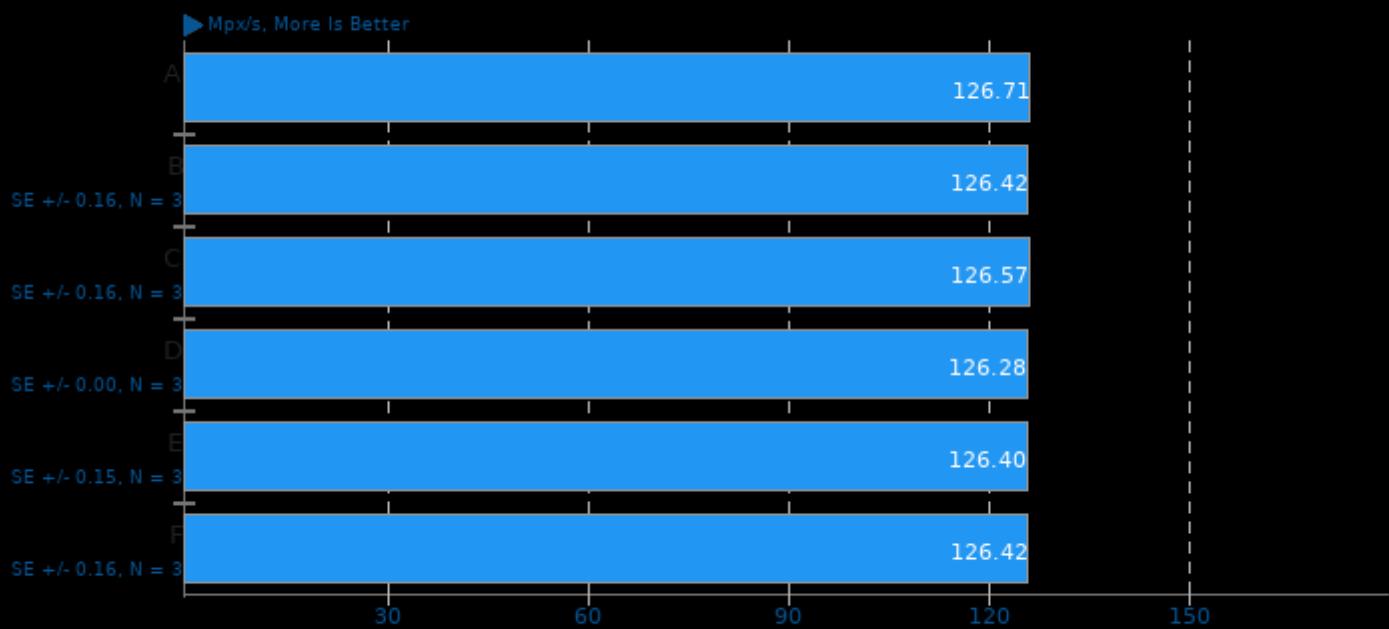
1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

**KTX-Software toktx 4.0**

Settings: UASTC 3 + Zstd Compression 19

**EtcPak 0.7**

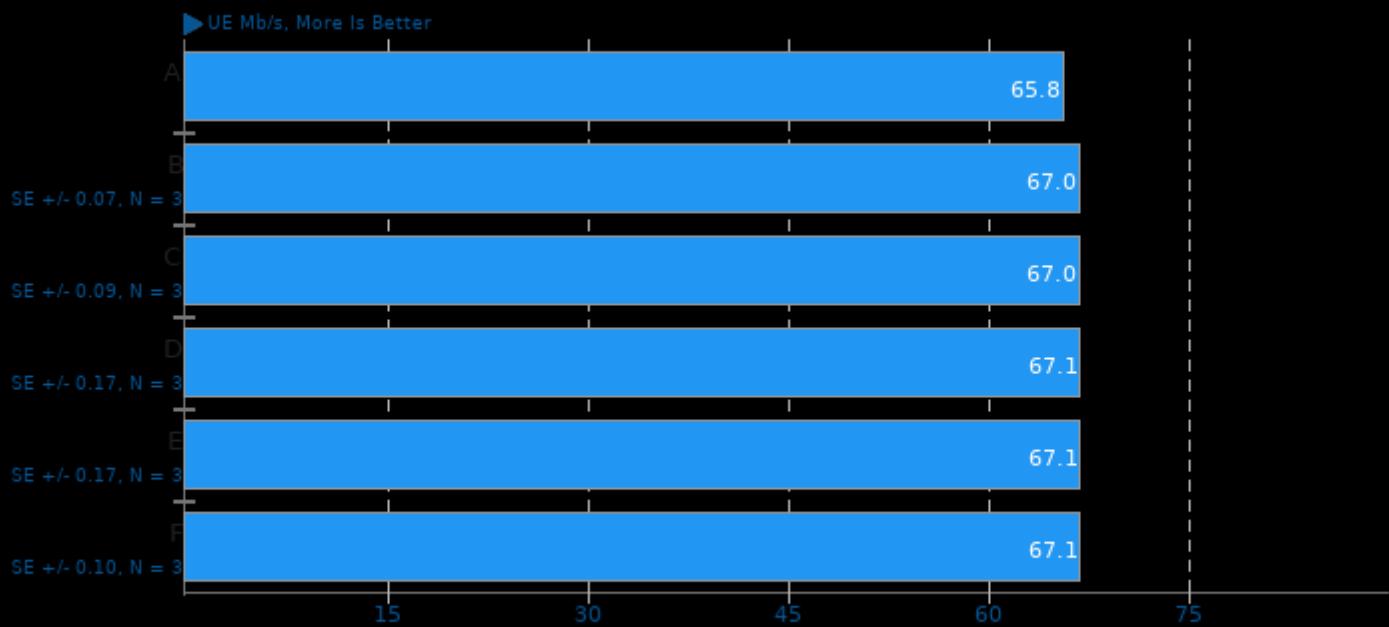
Configuration: ETC1



1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

## srsRAN 21.10

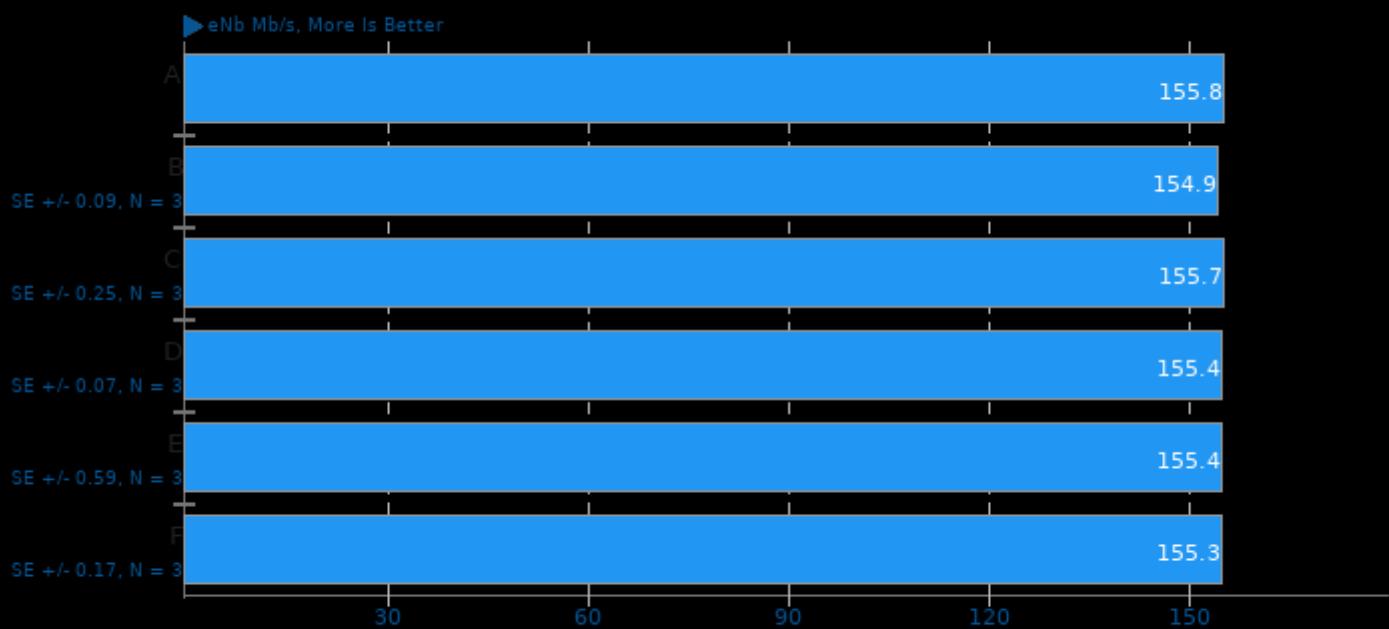
Test: 4G PHY\_DL\_Test 100 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.10

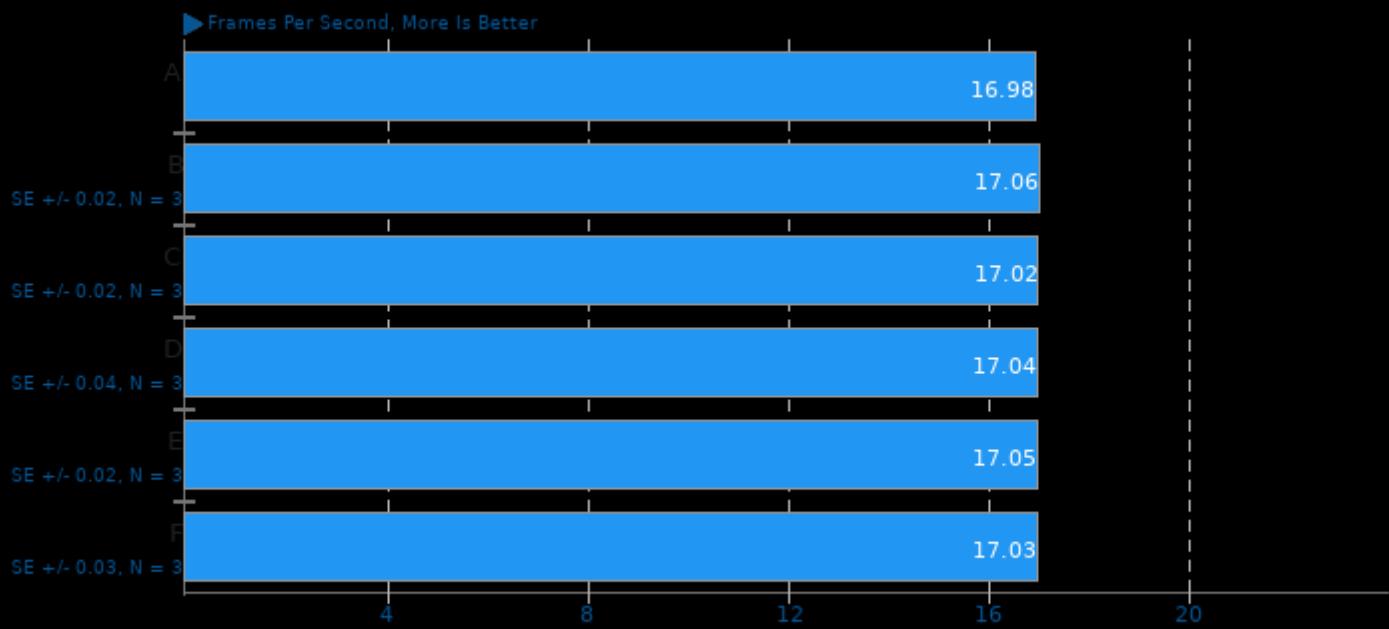
Test: 4G PHY\_DL\_Test 100 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## Kvazaar 2.1

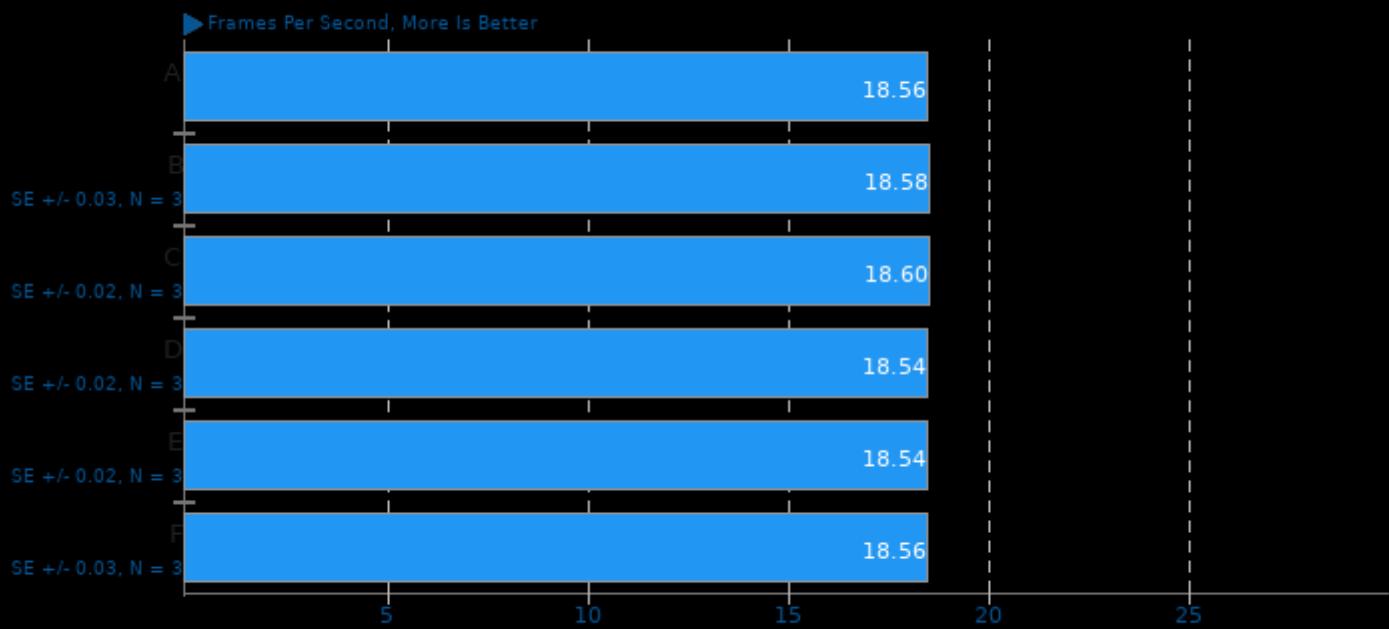
Video Input: Bosphorus 1080p - Video Preset: Medium



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

## AOM AV1 3.2

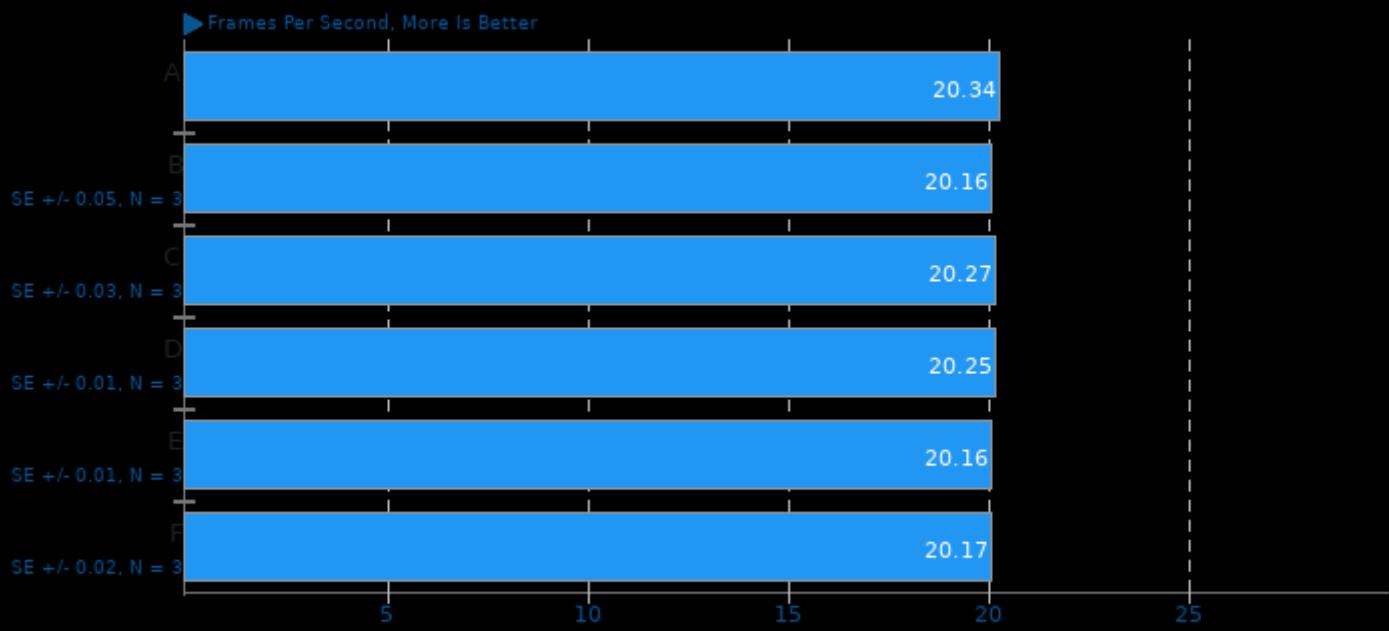
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm

## AOM AV1 3.2

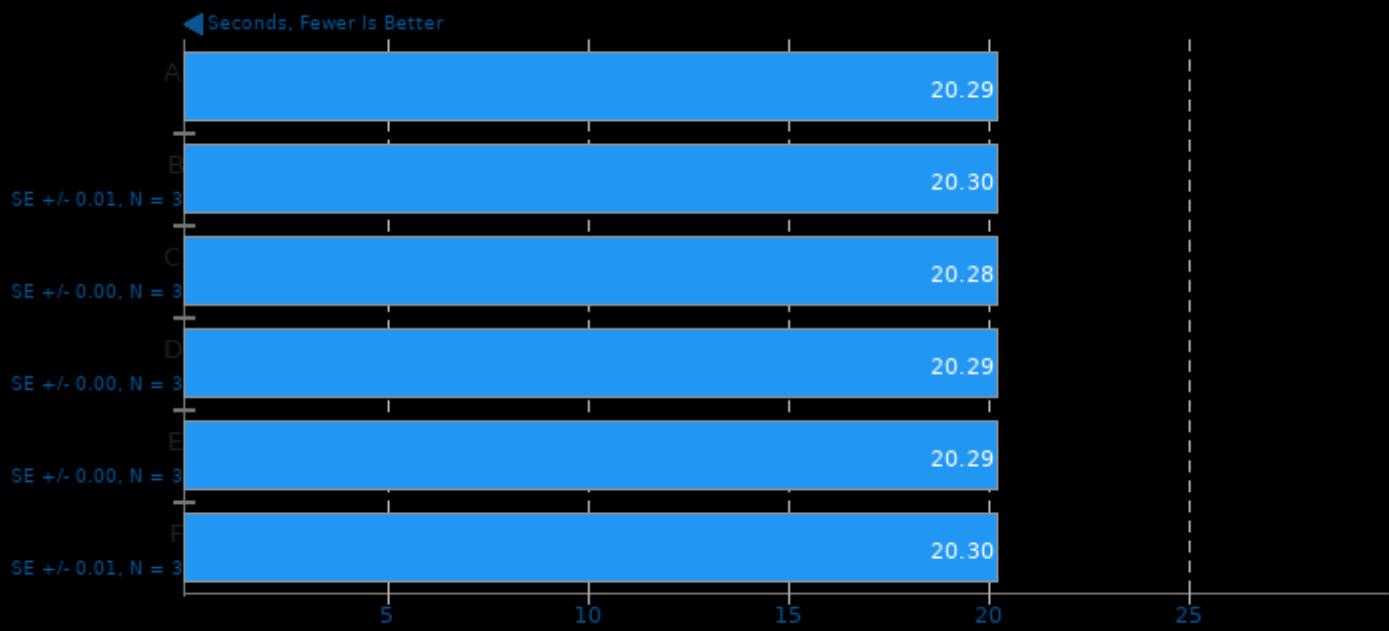
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -fno-rtti

## ASTC Encoder 3.2

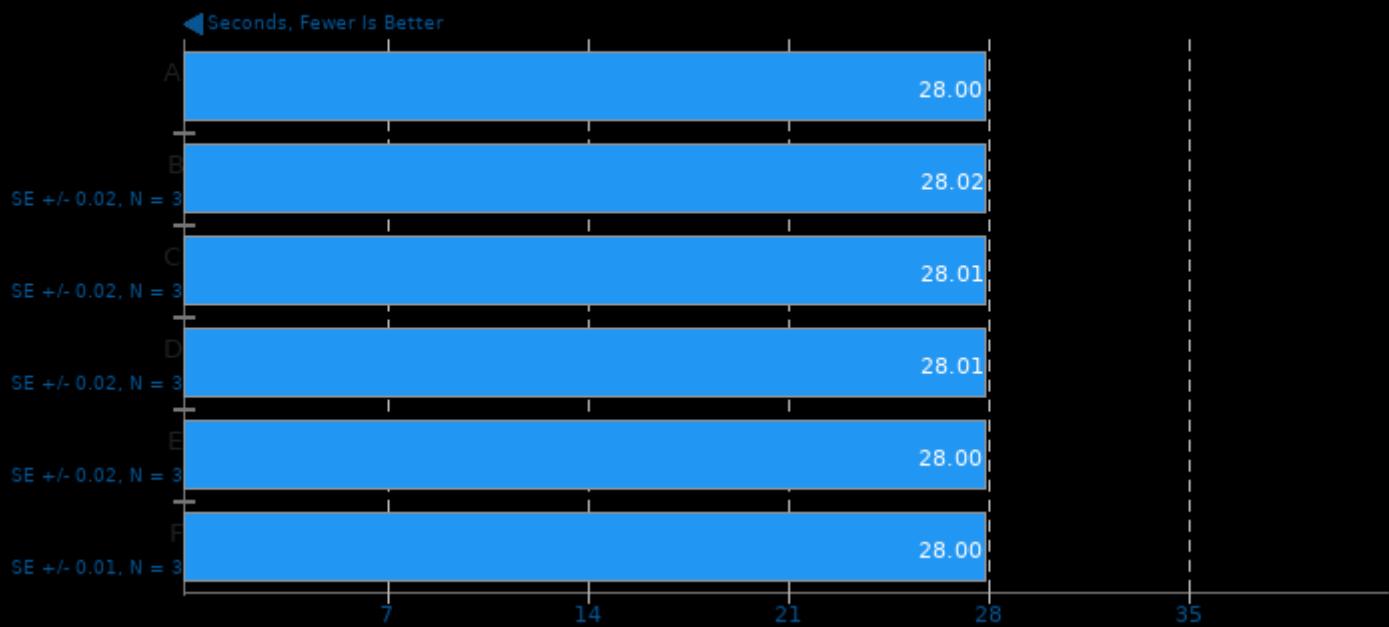
Preset: Thorough



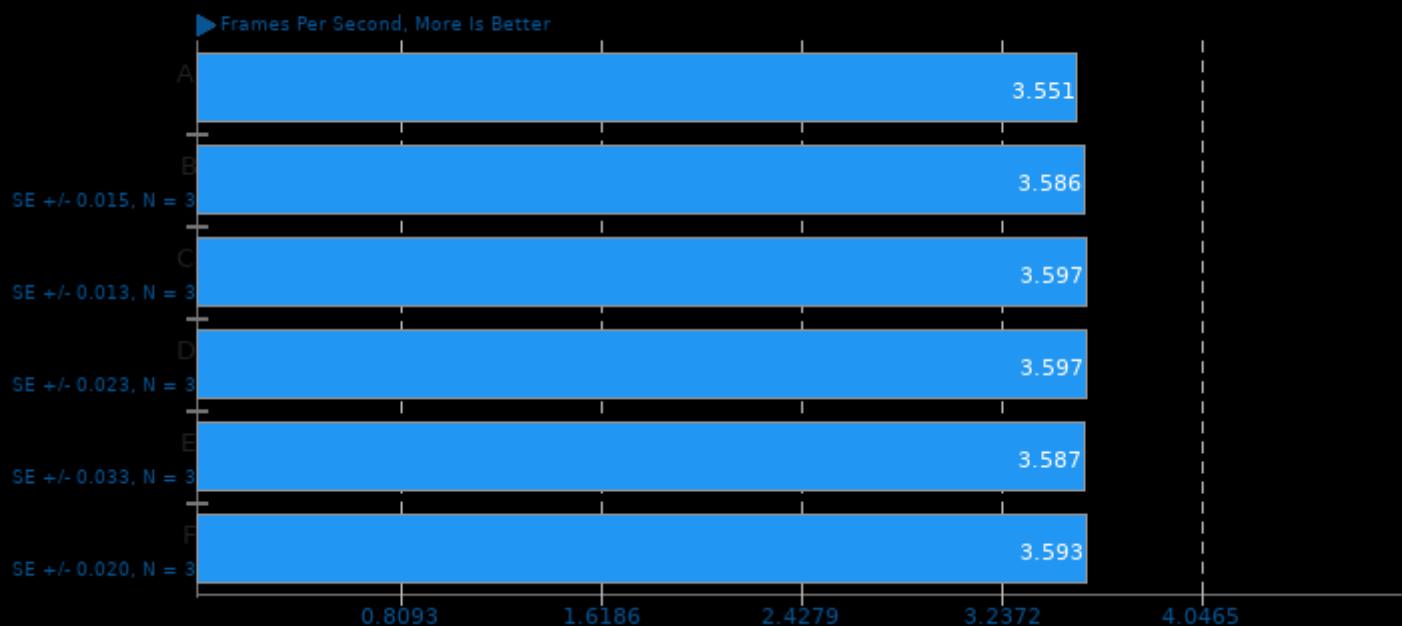
1. (CXX) g++ options: -O3 -fno-rtti

**KTX-Software toktx 4.0**

Settings: UASTC 3

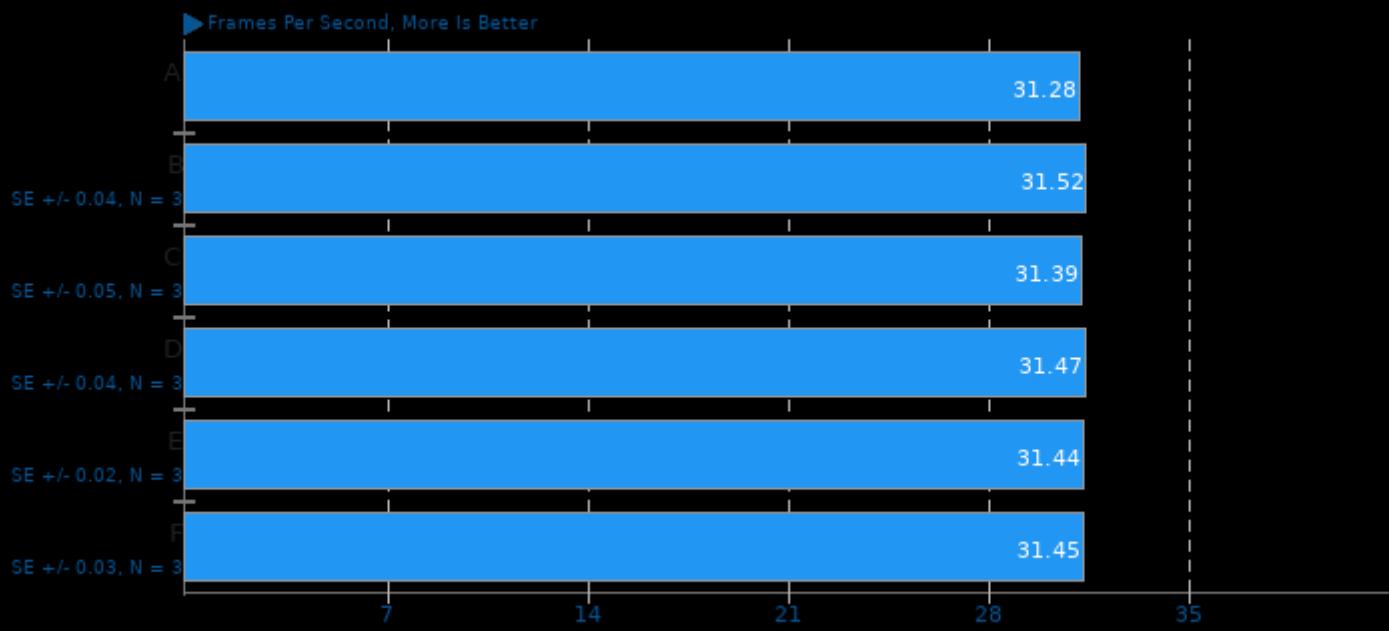
**rav1e 0.5**

Speed: 10



## Kvazaar 2.1

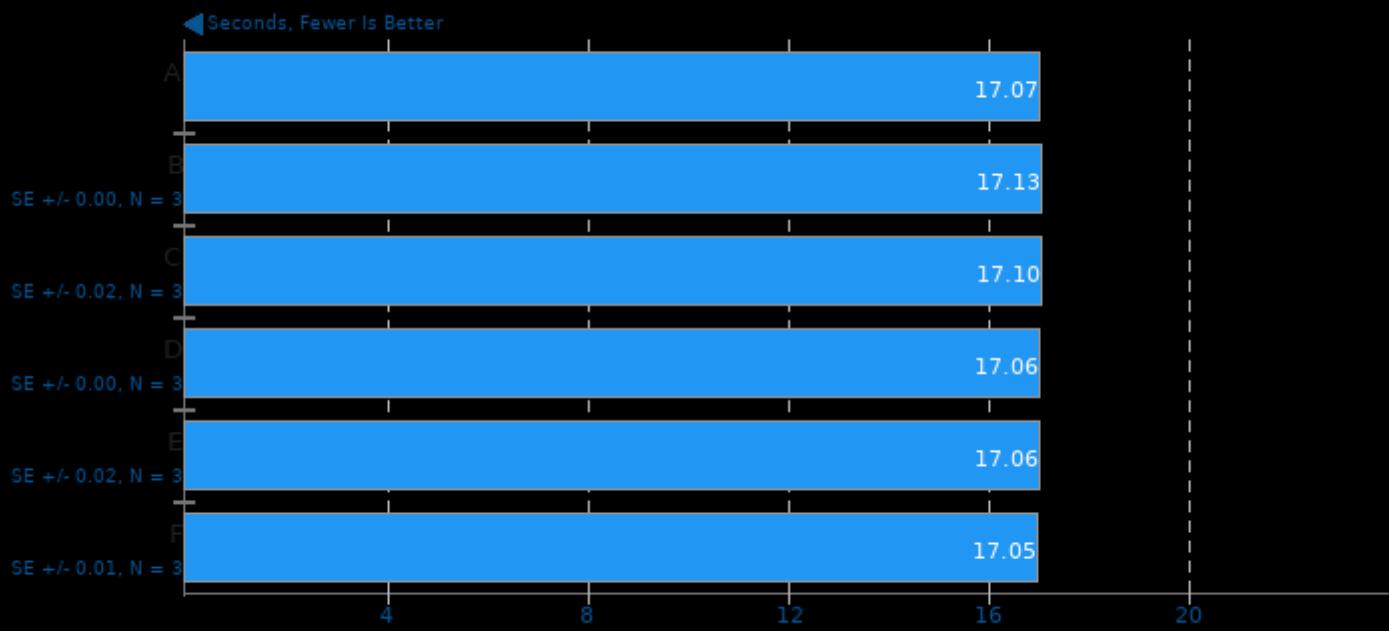
Video Input: Bosphorus 1080p - Video Preset: Very Fast



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

## Basis Universal 1.13

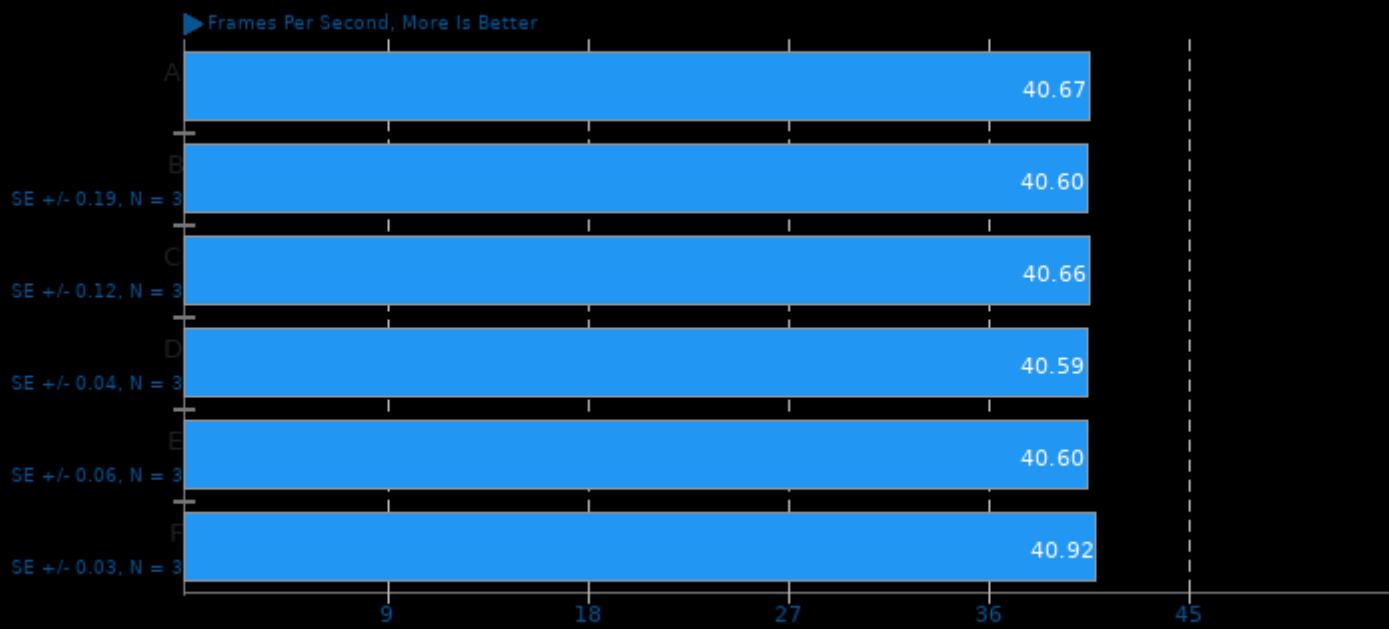
Settings: UASTC Level 0



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lpthread

## AOM AV1 3.2

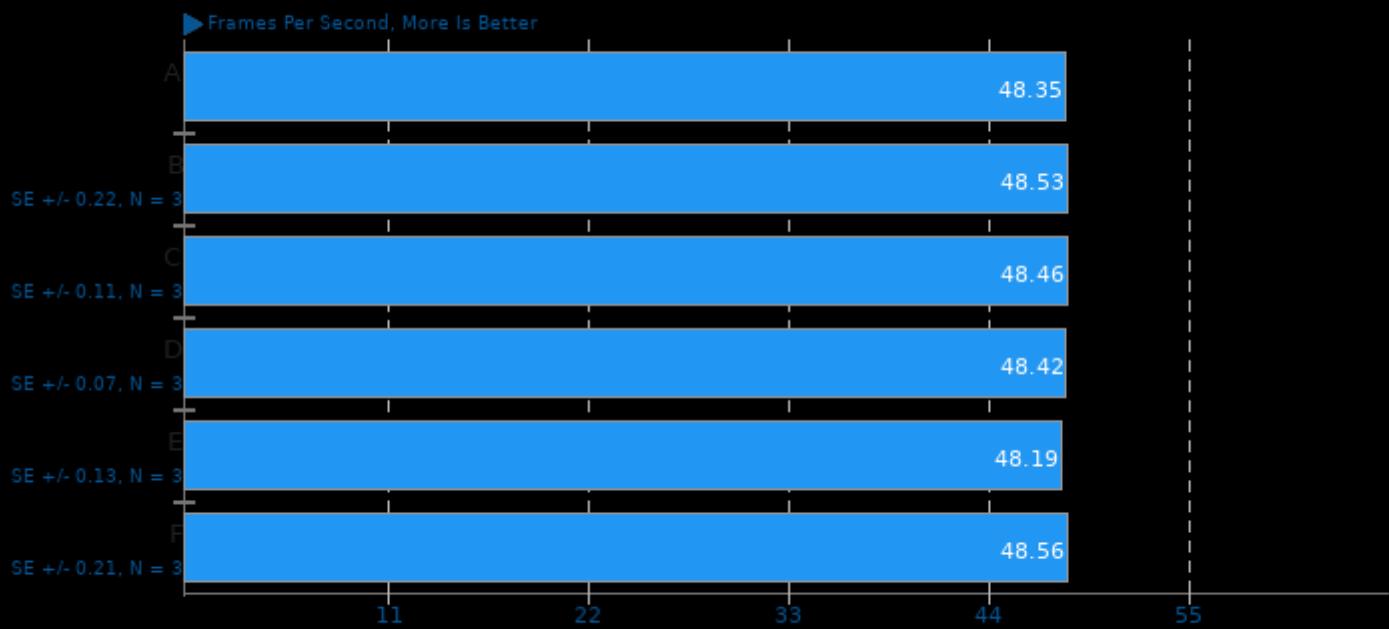
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm

## AOM AV1 3.2

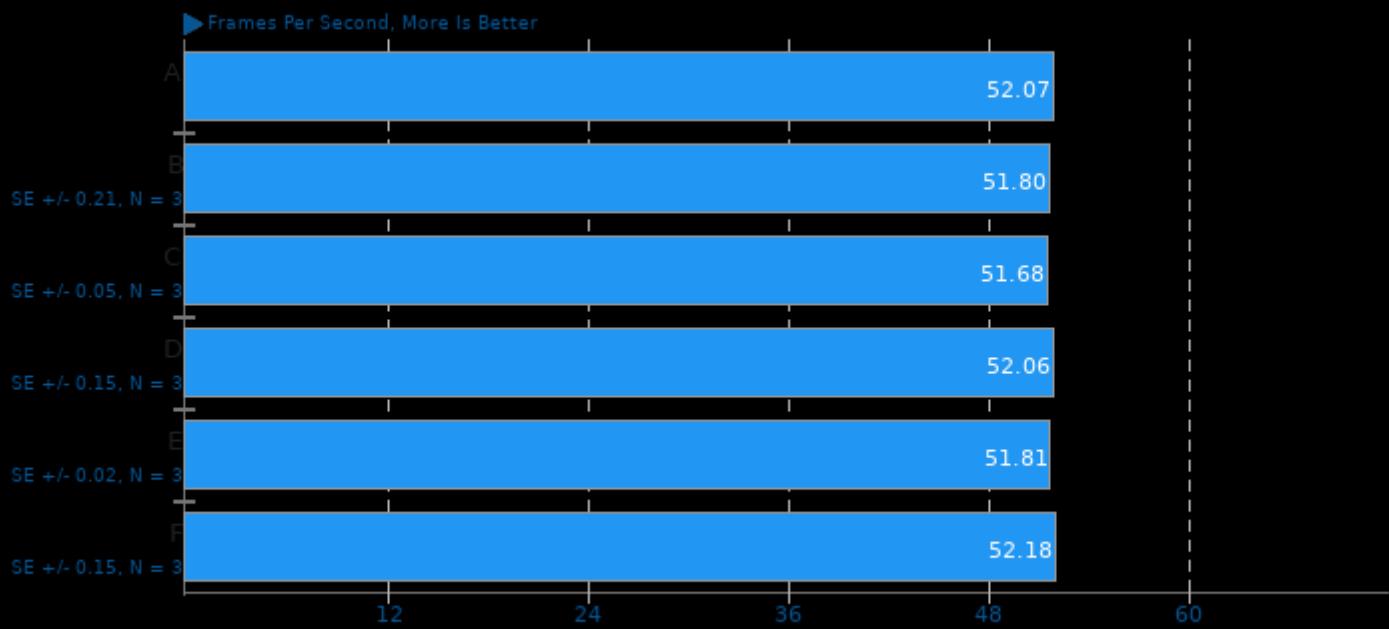
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm

## AOM AV1 3.2

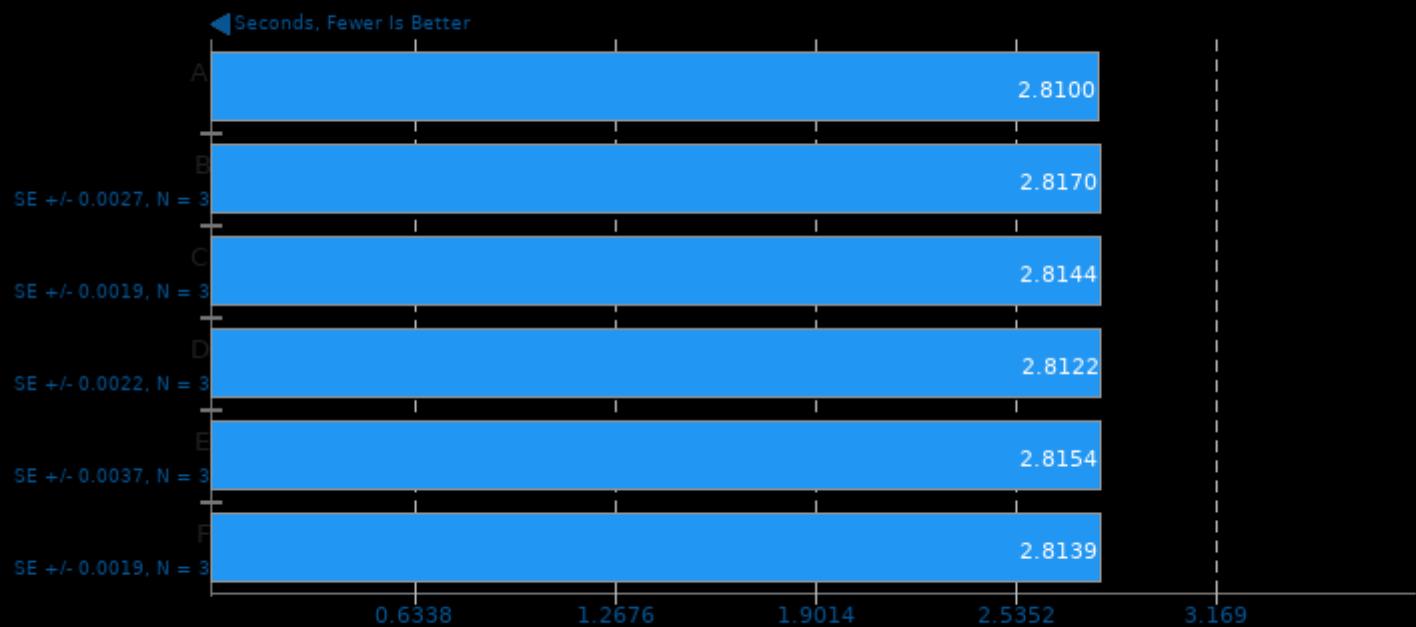
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm

## ASTC Encoder 3.2

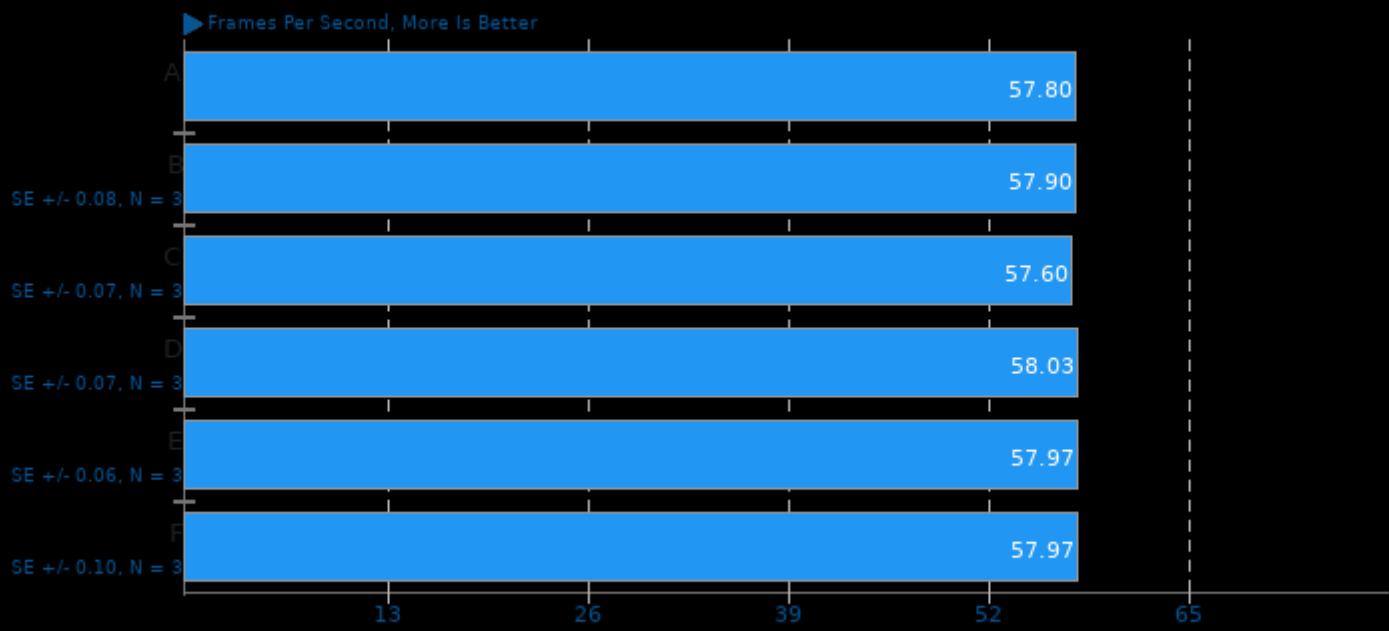
Preset: Medium



1. (CXX) g++ options: -O3 -fno -pthread

## Kvazaar 2.1

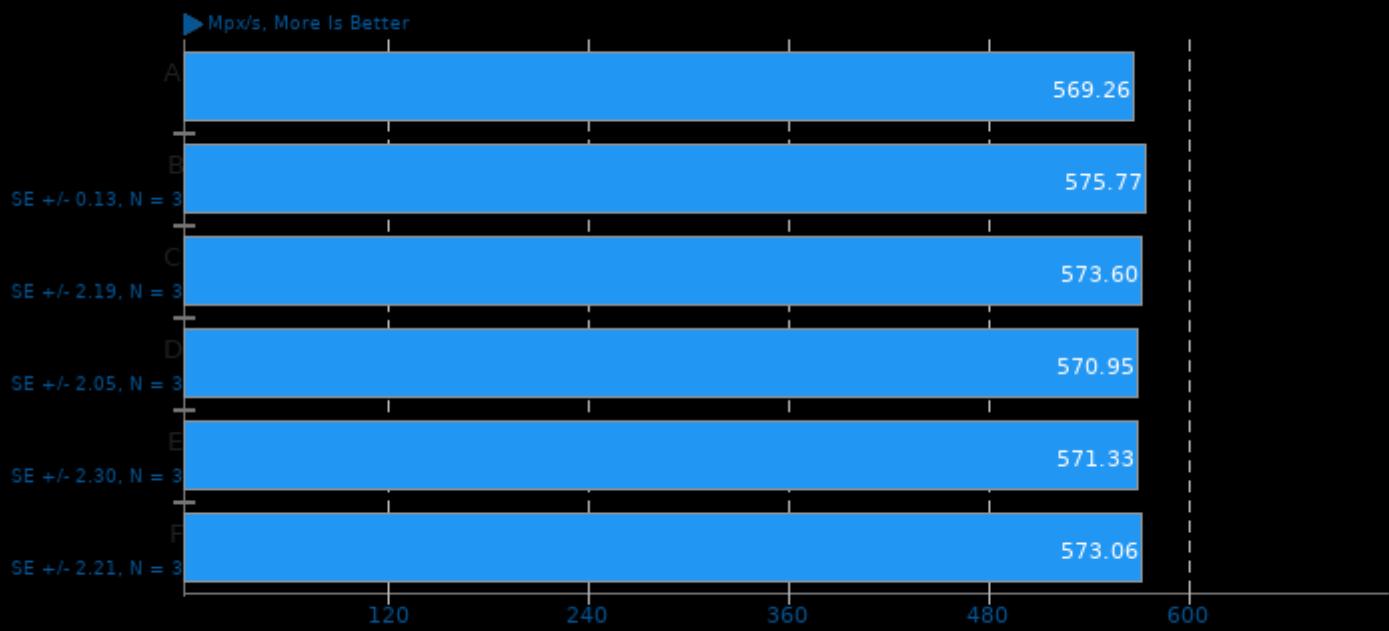
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast



1. (CC) gcc options: -pthread -fno-tree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lt

## EtcPak 0.7

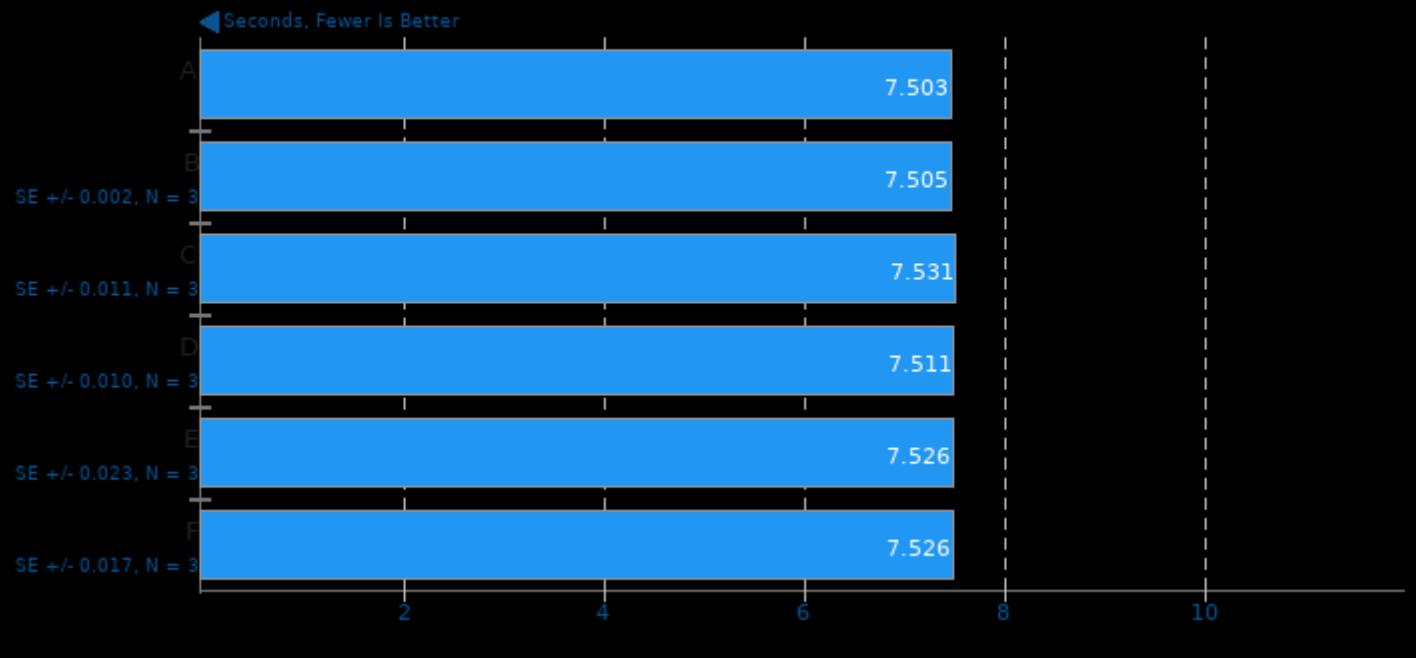
Configuration: DXT1



1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

**KTX-Software toktx 4.0**

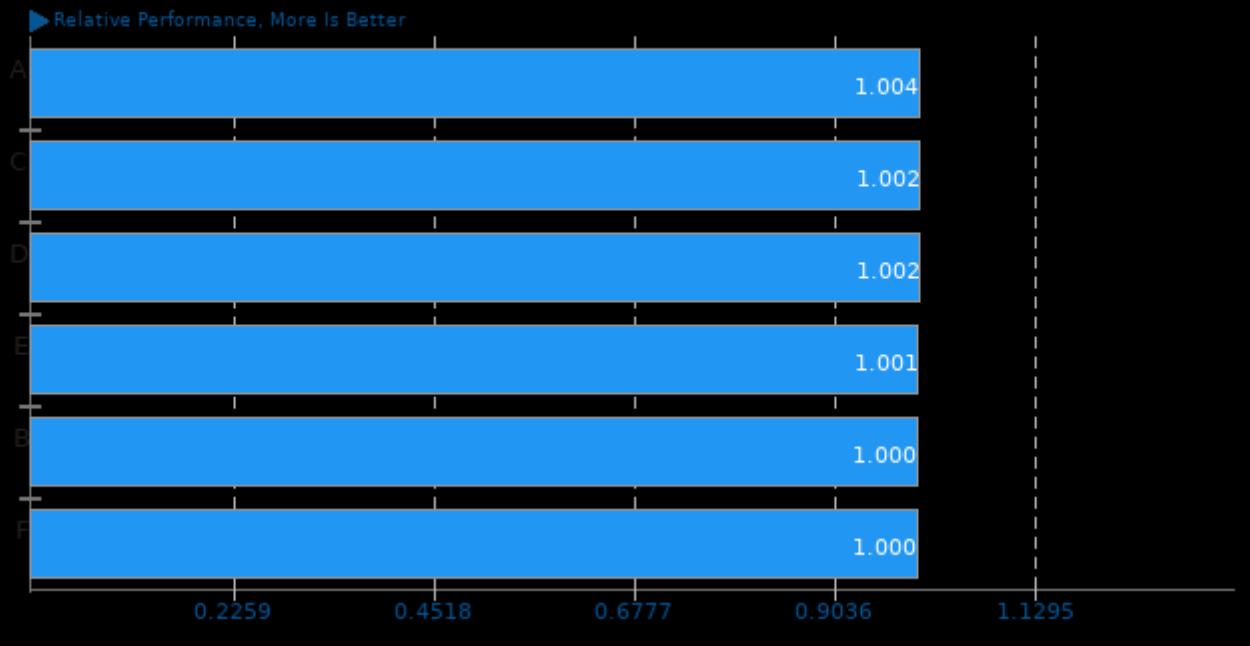
Settings: Zstd Compression 9



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

### Geometric Mean Of AV1 Tests

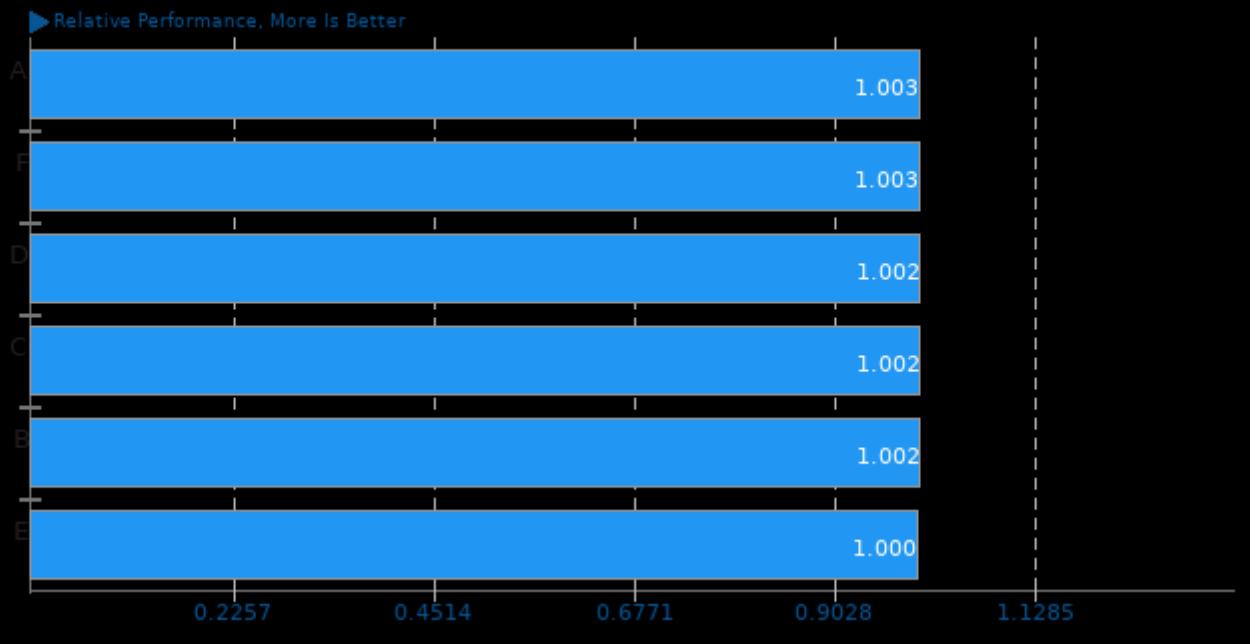
Result Composite - renoir



Geometric mean based upon tests: pts/aom-av1 and pts/rav1e

### Geometric Mean Of C/C++ Compiler Tests

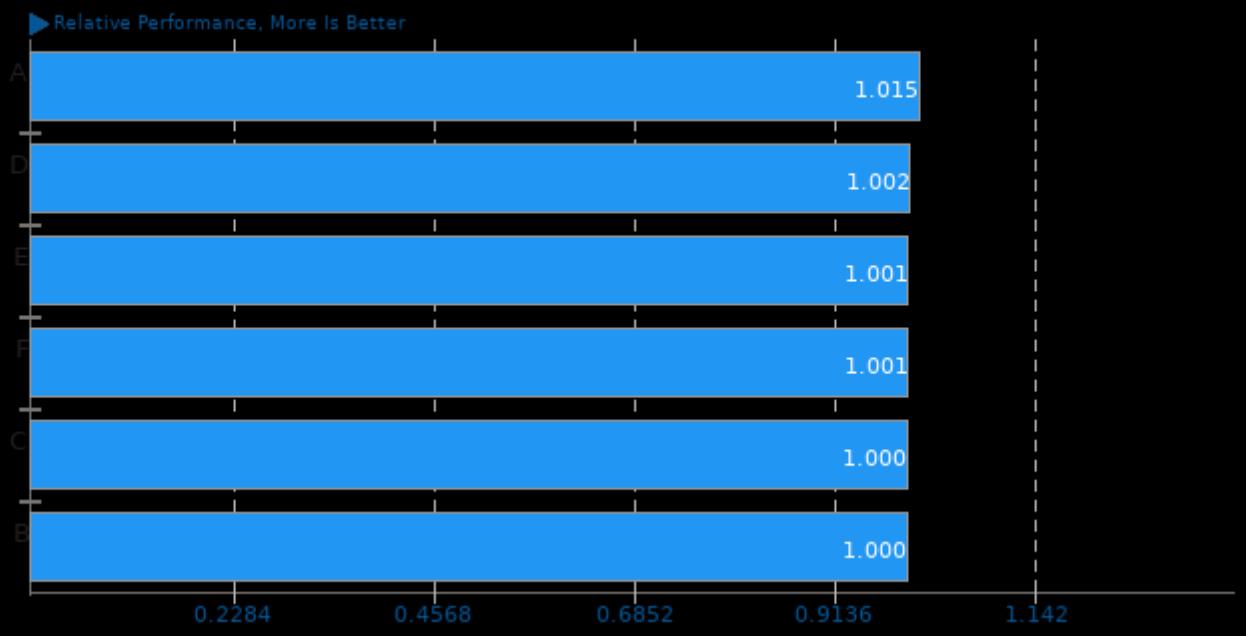
Result Composite - renoir



Geometric mean based upon tests: pts/compress-7zip, pts/kvazaar, pts/clomp, pts/openssl, pts/aom-av1 and pts/basis

## Geometric Mean Of Compression Tests

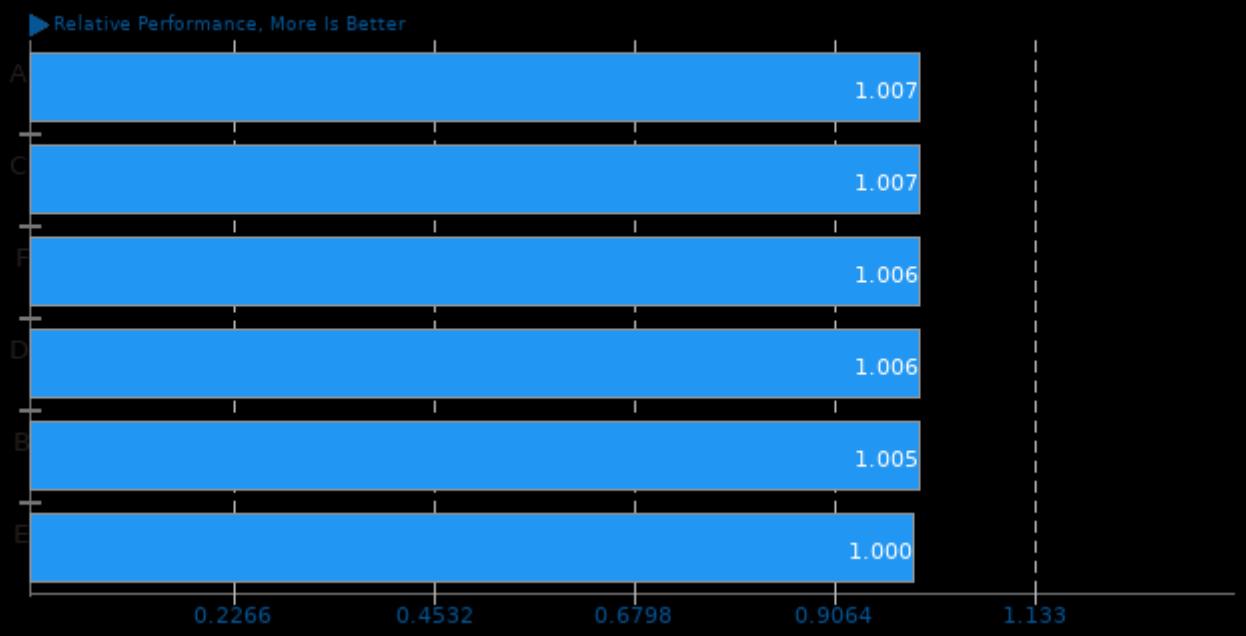
Result Composite - renoir



Geometric mean based upon tests: pts/compress-7zip and pts/compress-rar

## Geometric Mean Of CPU Massive Tests

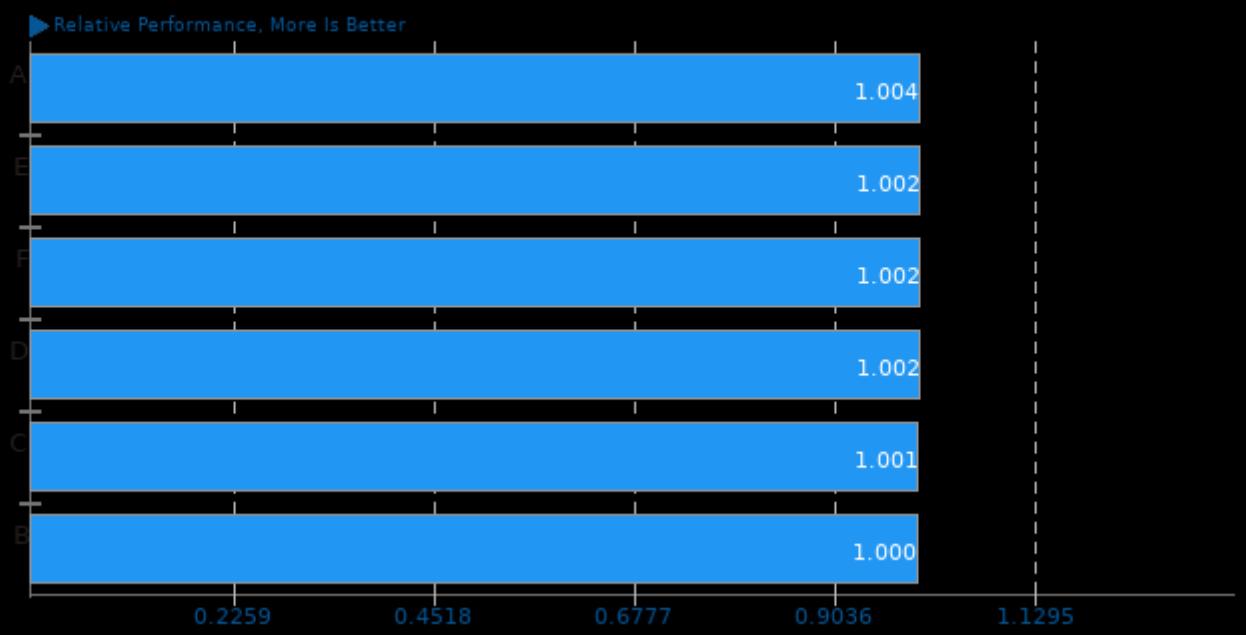
Result Composite - renoir



Geometric mean based upon tests: pts/compress-7zip, pts/openssl, pts/primesieve, pts/blender and pts/clomp

## Geometric Mean Of Creator Workloads Tests

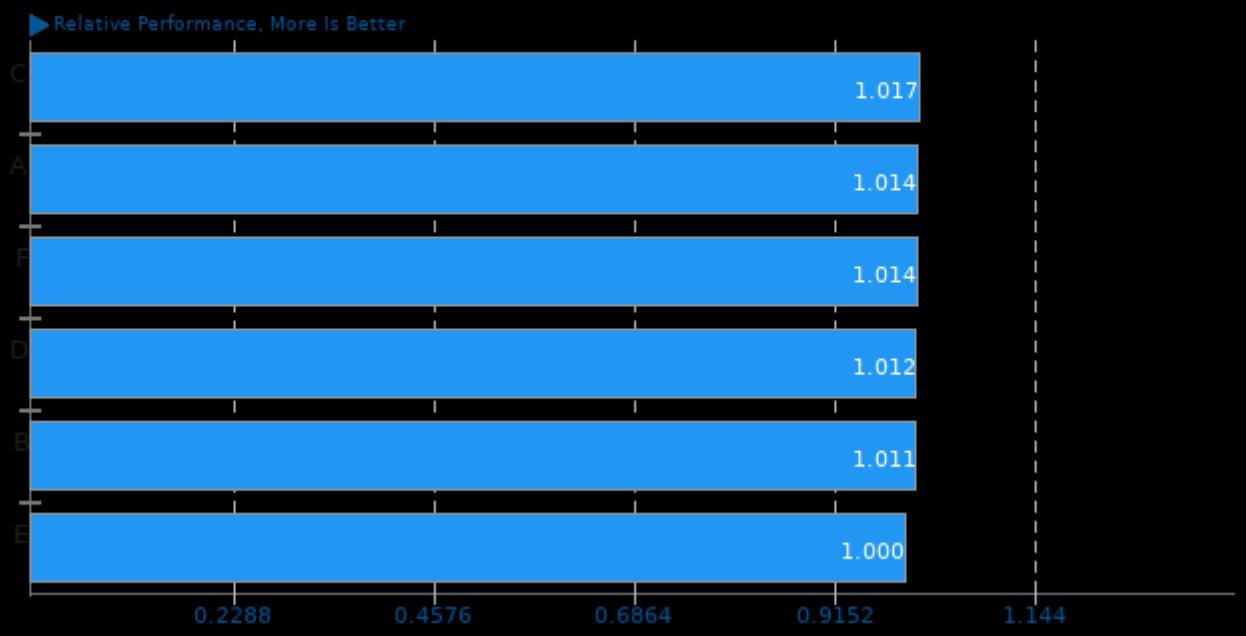
Result Composite - renoir



Geometric mean based upon tests: pts/blender, pts/luxcorerender, pts/kvazaar, pts/aom-av1, pts/rav1e, pts/stargate, pts/openjpeg, pts/basis, pts/astcenc, pts/etcpk and pts/toktx

## Geometric Mean Of Cryptography Tests

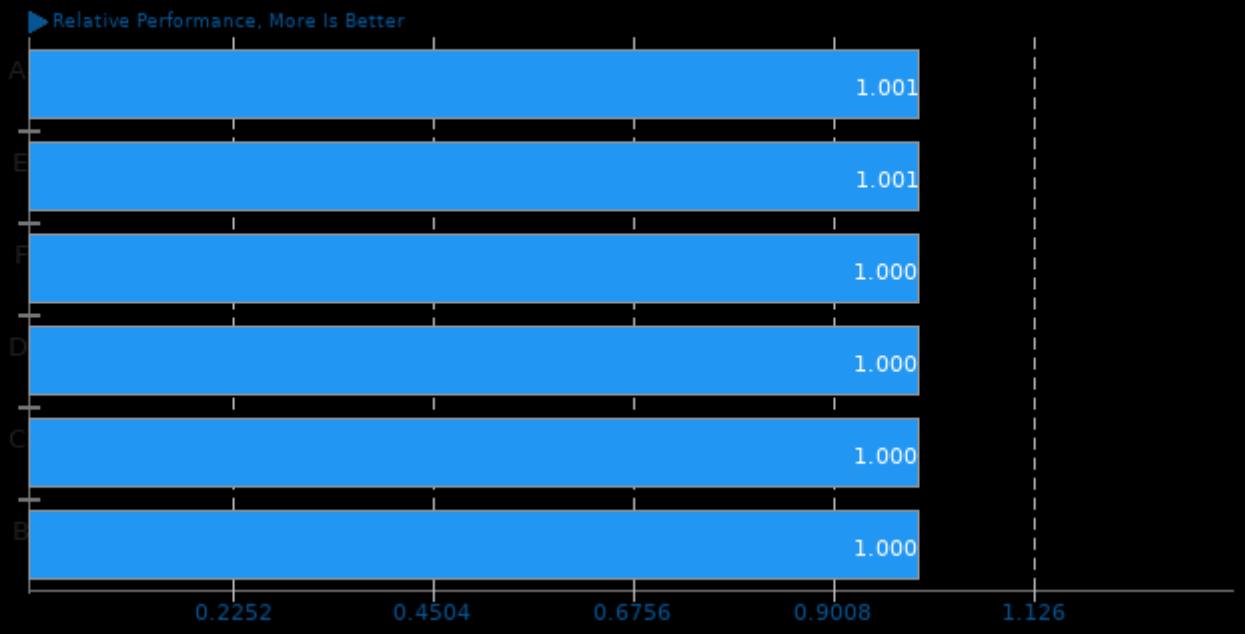
Result Composite - renoir



Geometric mean based upon tests: pts/openssl and pts/gcrypt

## Geometric Mean Of Encoding Tests

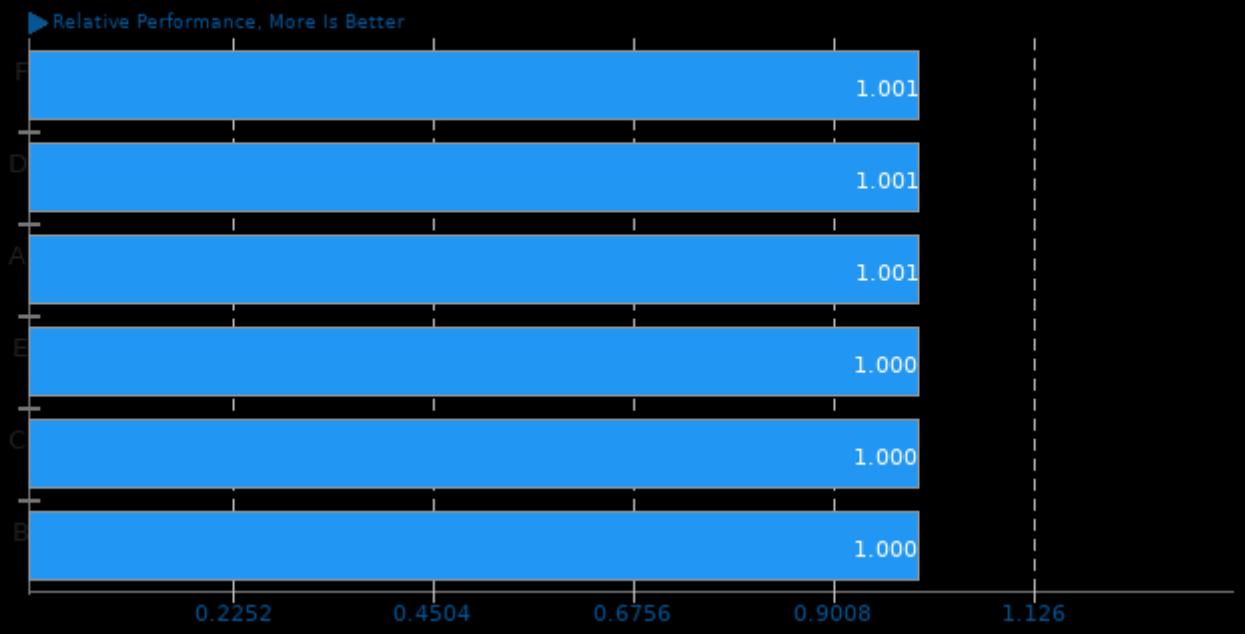
Result Composite - renoir



Geometric mean based upon tests: pts/stargate, pts/kvazaar, pts/aom-av1 and pts/rav1e

## Geometric Mean Of Game Development Tests

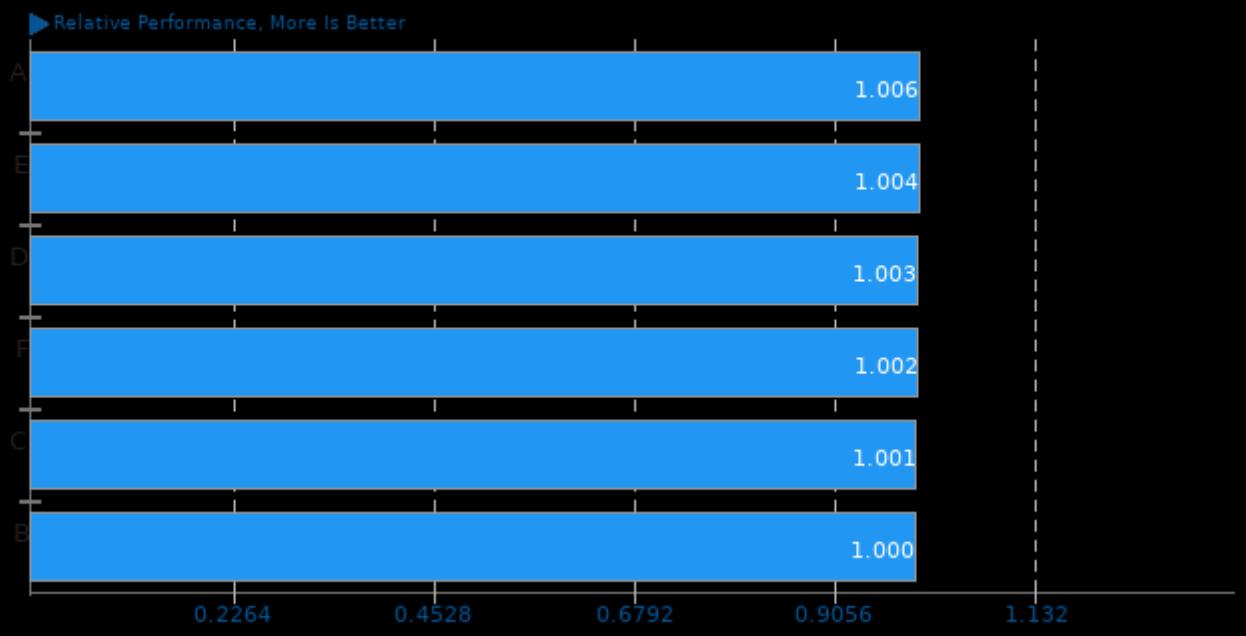
Result Composite - renoir



Geometric mean based upon tests: pts/basis, pts/astcenc, pts/etcpack, pts/toktx and pts/blender

## Geometric Mean Of Multi-Core Tests

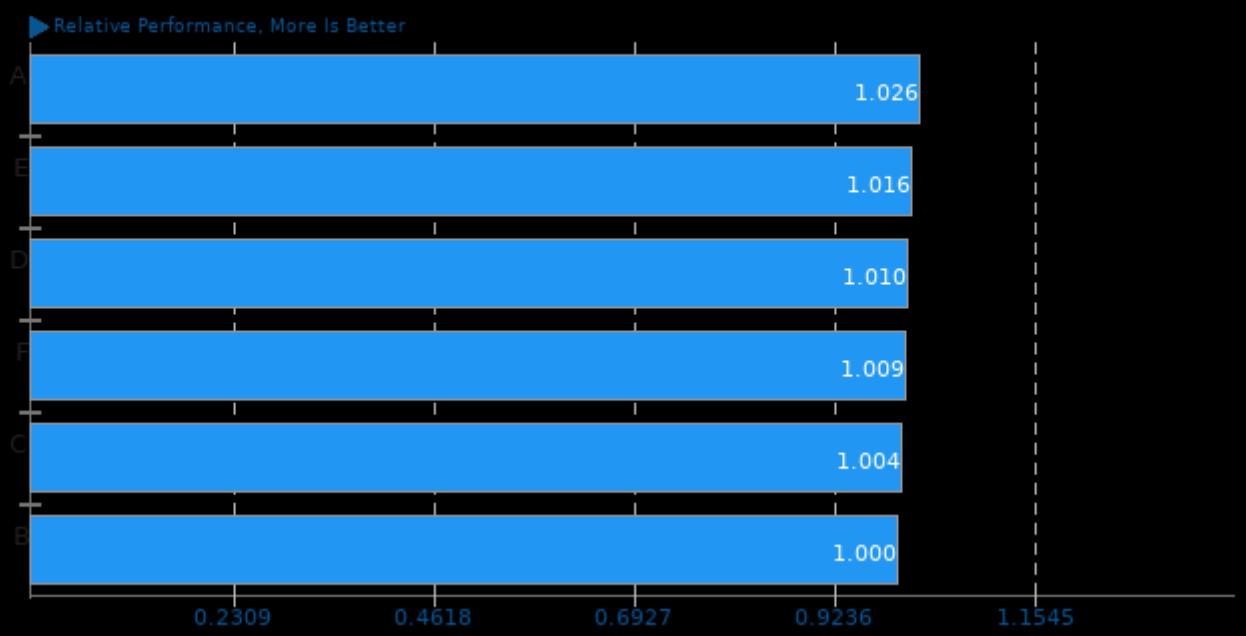
Result Composite - renoir



Geometric mean based upon tests: pts/blender, pts/kvazaar, pts/aom-av1, pts/rav1e, pts/primesieve, pts/compress-7zip, pts/build-nodejs and pts/luxcorerender

## Geometric Mean Of NVIDIA GPU Compute Tests

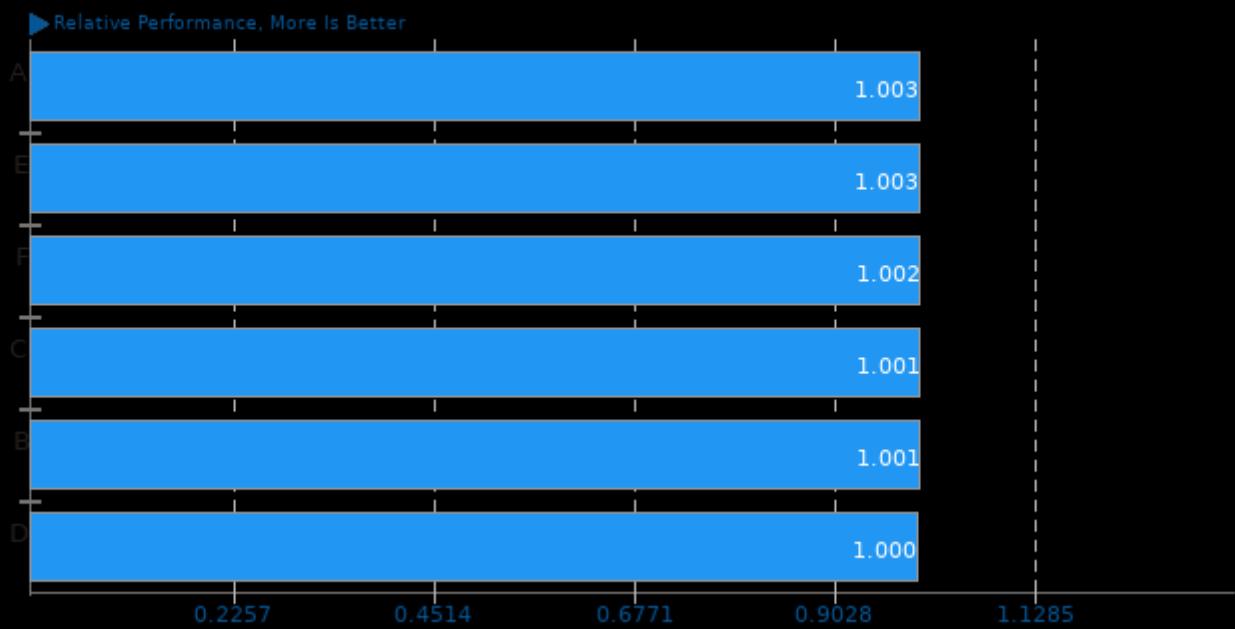
Result Composite - renoir



Geometric mean based upon tests: pts/luxcorerender and pts/blender

## Geometric Mean Of Python Tests

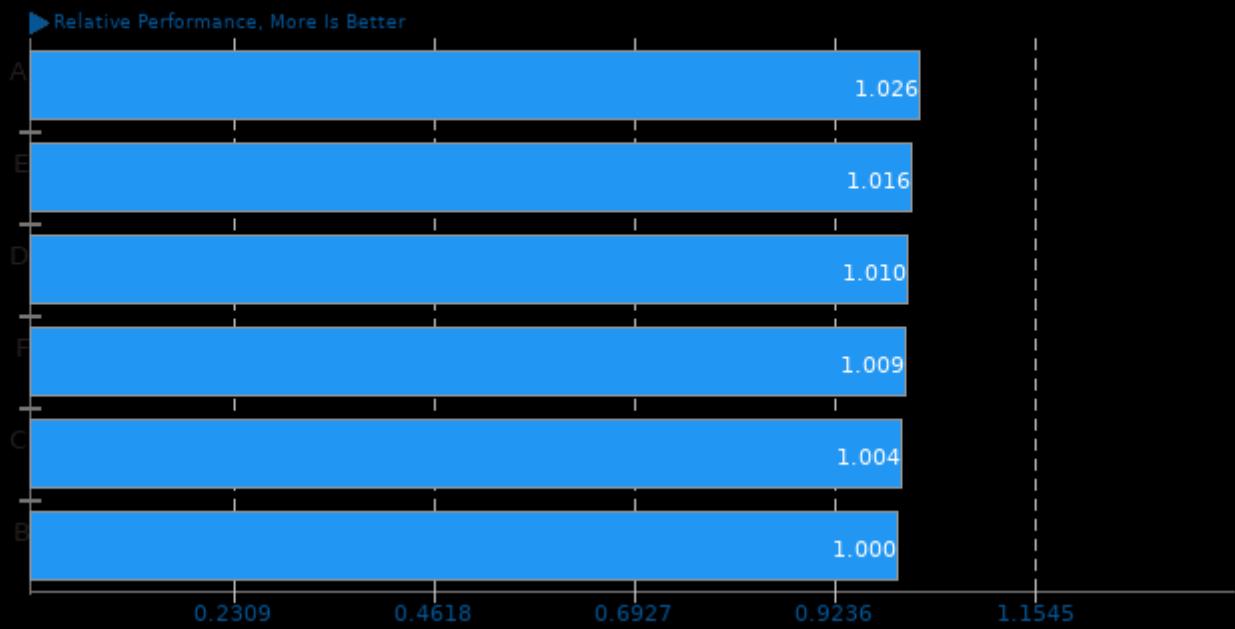
Result Composite - renoir



Geometric mean based upon tests: pts/build-nodejs, pts/stargate and pts/onnx

## Geometric Mean Of Renderers Tests

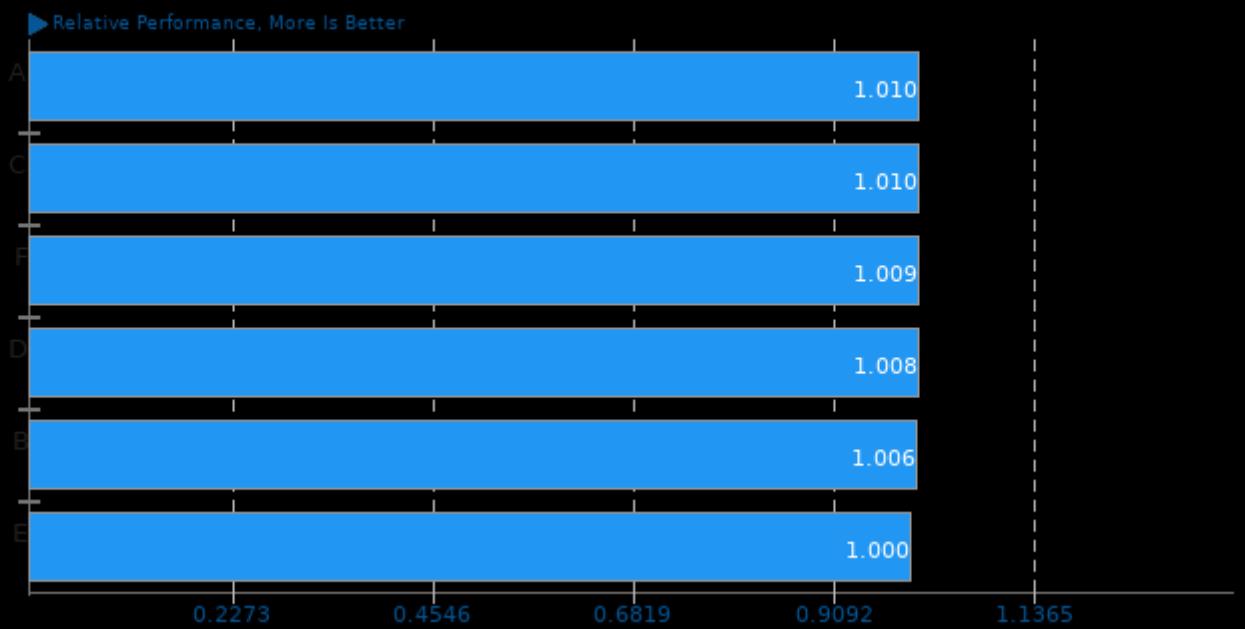
Result Composite - renoir



Geometric mean based upon tests: pts/blender and pts/luxcorerender

## Geometric Mean Of Server CPU Tests

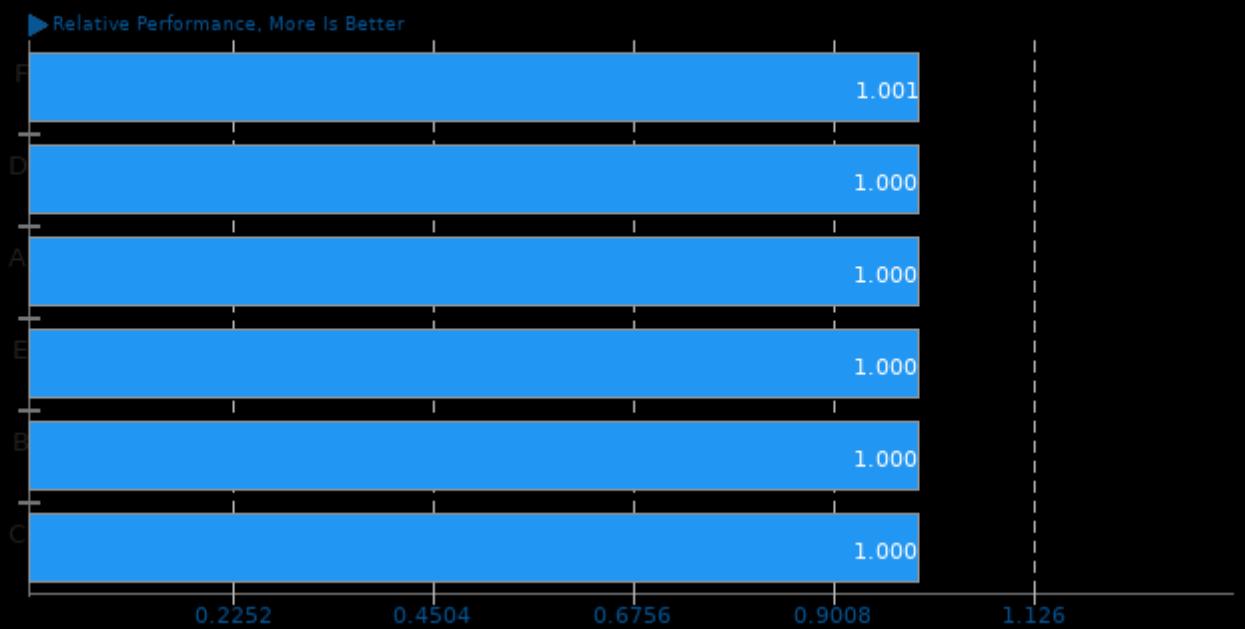
Result Composite - renoir



Geometric mean based upon tests: pts/compress-7zip, pts/openssl and pts/blender

## Geometric Mean Of Texture Compression Tests

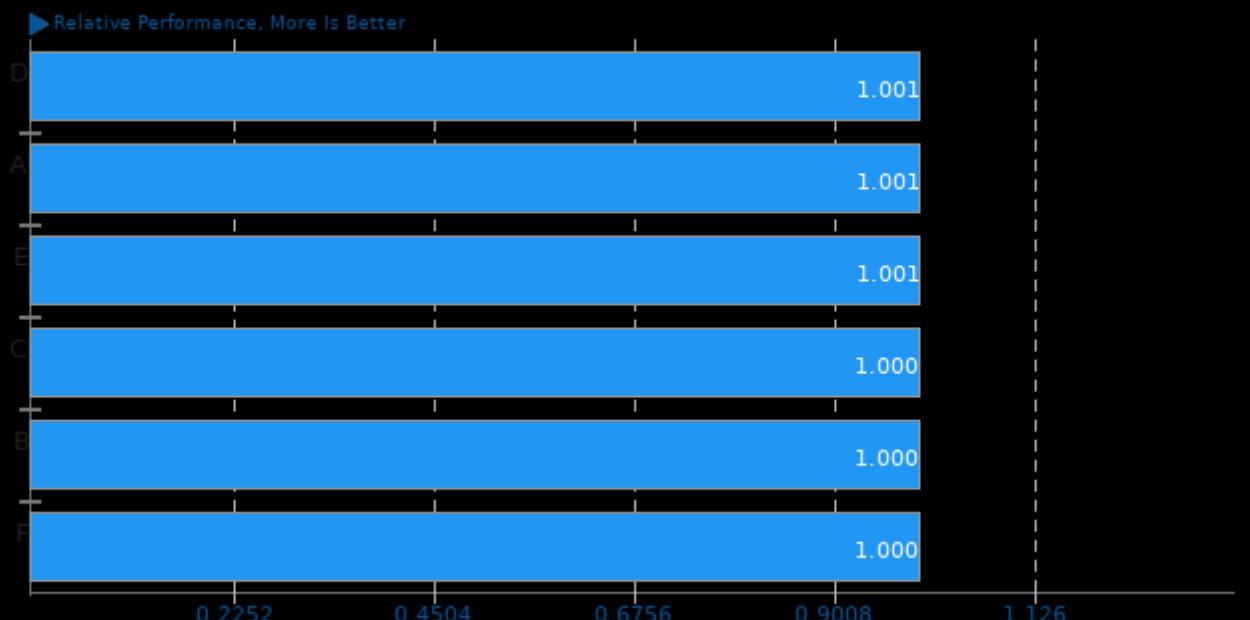
Result Composite - renoir



Geometric mean based upon tests: pts/basis, pts/astcenc, pts/etcpk and pts/toktx

## Geometric Mean Of Video Encoding Tests

Result Composite - renoir



Geometric mean based upon tests: pts/kvazaar, pts/aom-av1 and pts/rav1e

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 06:56.*