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## RDNA3 OpenCL Compute

AMD Ryzen 9 7950X 16-Core testing with a ASUS ROG CROSSHAIR X670E HERO (0805 BIOS) and AMD Radeon RX 6800 XT 16GB on Ubuntu 22.04 via the Phoronix Test Suite.

### Test Systems:

#### RX 7900 XTX

Processor: AMD Ryzen 9 7950X 16-Core @ 5.88GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR X670E HERO (0805 BIOS), Chipset: AMD Device 14d8, Memory: 32GB, Disk: Western Digital WD\_BLACK SN850X 1000GB + 2000GB, Graphics: AMD Radeon RX 7900 XTX 24GB (3220/1249MHz), Audio: AMD Device ab30, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.04, Kernel: 5.15.0-56-generic (x86\_64), Desktop: GNOME Shell 42.5, Display Server: X Server 1.21.1.3 + Wayland, OpenGL: 4.6 Mesa 22.3.0-devel (LLVM 15.0.3 DRM 3.49), OpenCL: OpenCL 2.1 AMD-APP (3513.0), Vulkan: 1.3.232, Compiler: GCC 11.3.0, 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-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/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: amd-pstate performance (Boost: Enabled) - CPU Microcode: 0xa601203
Graphics Notes: BAR1 / Visible vRAM Size: 24560 MB - vBIOS Version: 113-D7020100-102
Security Notes: itlb_multihit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + rebleed: 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 Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling PBRSB-elBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected
```

## RX 7900 XT

Processor: AMD Ryzen 9 7950X 16-Core @ 5.88GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR X670E HERO (0805 BIOS), Chipset: AMD Device 14d8, Memory: 32GB, Disk: Western Digital WD\_BLACK SN850X 1000GB + 2000GB, Graphics: AMD Radeon RX 7900 XT 20GB (3125/1249MHz), Audio: AMD Device ab30, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.04, Kernel: 5.15.0-56-generic (x86\_64), Desktop: GNOME Shell 42.5, Display Server: X Server 1.21.1.3 + Wayland, OpenGL: 4.6 Mesa 22.3.0-devel (LLVM 15.0.3 DRM 3.49), OpenCL: OpenCL 2.1 AMD-APP (3513.0), Vulkan: 1.3.232, Compiler: GCC 11.3.0, 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-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/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: amd-pstate performance (Boost: Enabled) - CPU Microcode: 0xa601203
Graphics Notes: BAR1 / Visible vRAM Size: 20464 MB - vBIOS Version: 113-D70401-00
Security Notes: itlb_multihit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + rebleed: 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 Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling PBRSB-elBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected
```

## RX 6800 XT

### Radeon RX 6800 XT

Processor: AMD Ryzen 9 7950X 16-Core @ 5.88GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR X670E HERO (0805 BIOS), Chipset: AMD Device 14d8, Memory: 32GB, Disk: Western Digital WD\_BLACK SN850X 1000GB + 2000GB, Graphics: AMD Radeon RX 6800 XT 16GB (2575/1000MHz), Audio: AMD Navi 21 HDMI Audio, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.04, Kernel: 5.15.0-56-generic (x86\_64), Desktop: GNOME Shell 42.5, Display Server: X Server 1.21.1.3 + Wayland, OpenGL: 4.6 Mesa 22.3.0-devel (LLVM 15.0.3 DRM 3.49), OpenCL: OpenCL 2.1 AMD-APP (3513.0), Vulkan: 1.3.232, Compiler: GCC 11.3.0, 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-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/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: amd-pstate performance (Boost: Enabled) - CPU Microcode: 0xa601203
Graphics Notes: BAR1 / Visible vRAM Size: 16368 MB - vBIOS Version: 113-D4120500-101
Security Notes: itlb_multihit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + rebleed: 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 Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling PBRSB-elBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected
```

## RDNA3 OpenCL Compute

|                                     | RX 7900 XTX        | RX 7900 XT   | RX 6800 XT     | Radeon RX 6800 XT  |
|-------------------------------------|--------------------|--------------|----------------|--------------------|
| <b>cl-mem - Read (GB/s)</b>         | <b>864.5</b>       | 714.3        | <b>470.4</b>   | <b>470.4</b>       |
| Normalized                          | 100%               | 82.63%       | 54.41%         | 54.41%             |
| Standard Deviation                  | 0.1%               | 0.6%         | 0%             | 0.1%               |
| <b>cl-mem - Read (GB/s/Watt)</b>    | <b>8.675</b>       | 8.081        | <b>5.837</b>   | 6.267              |
| Normalized                          | 100%               | 93.15%       | 67.29%         | 72.24%             |
| <b>cl-mem - Write (GB/s)</b>        | <b>839.9</b>       | 702.8        | <b>437.1</b>   | <b>437.1</b>       |
| Normalized                          | 100%               | 83.68%       | 52.04%         | 52.04%             |
| Standard Deviation                  | 0.2%               | 0.1%         | 0.6%           | 0.9%               |
| <b>cl-mem - Write (GB/s/Watt)</b>   | <b>8.247</b>       | 7.877        | <b>5.453</b>   | 5.666              |
| Normalized                          | 100%               | 95.51%       | 66.12%         | 68.7%              |
| <b>cl-mem - Copy (GB/s)</b>         | <b>458.0</b>       | 431.4        | <b>360.9</b>   | 361.1              |
| Normalized                          | 100%               | 94.19%       | 78.8%          | 78.84%             |
| Standard Deviation                  | 0.1%               | 0%           | 0%             | 0%                 |
| <b>cl-mem - Copy (GB/s/Watt)</b>    | <b>4.421</b>       | <b>4.806</b> | 4.582          | 4.782              |
| Normalized                          | 91.99%             | 100%         | 95.34%         | 99.5%              |
| <b>clpeak - G.M.B (GBPS)</b>        | <b>716.12</b>      | 618.37       | 457.15         | <b>457.12</b>      |
| Normalized                          | 100%               | 86.35%       | 63.84%         | 63.83%             |
| Standard Deviation                  | 0.1%               | 0%           | 0%             | 0%                 |
| <b>clpeak - G.M.B (GBPS/Watt)</b>   | <b>32.854</b>      | 27.088       | 20.058         | <b>19.396</b>      |
| Normalized                          | 100%               | 82.45%       | 61.05%         | 59.04%             |
| <b>clpeak - S.P.F (GFLOPS)</b>      | <b>28204</b>       | 26459        | <b>22436</b>   | 22447              |
| Normalized                          | 100%               | 93.81%       | 79.55%         | 79.59%             |
| Standard Deviation                  | 0.4%               | 0.4%         | 0%             | 0%                 |
| <b>clpeak - S.P.F (GFLOPS/Watt)</b> | <b>1002</b>        | 950.181      | <b>909.18</b>  | 912.471            |
| Normalized                          | 100%               | 94.81%       | 90.71%         | 91.04%             |
| <b>clpeak - I.C.I (GIOPS)</b>       | <b>7751</b>        | 7245         | 5627           | <b>5626</b>        |
| Normalized                          | 100%               | 93.48%       | 72.6%          | 72.59%             |
| Standard Deviation                  | 0.3%               | 0.1%         | 0.1%           | 0%                 |
| <b>clpeak - I.C.I (GIOPS/Watt)</b>  | <b>133.425</b>     | 128.375      | <b>86.227</b>  | 87.119             |
| Normalized                          | 100%               | 96.22%       | 64.63%         | 65.29%             |
| <b>clpeak - T.B.e (GBPS)</b>        | <b>59.87</b>       | 59.16        | 45.22          | <b>44.68</b>       |
| Normalized                          | 100%               | 98.81%       | 75.53%         | 74.63%             |
| Standard Deviation                  | 1%                 | 1%           | 0.3%           | 1.5%               |
| <b>clpeak - T.B.e (GBPS/Watt)</b>   | <b>2.949</b>       | 3.207        | <b>5.981</b>   | 5.564              |
| Normalized                          | 49.31%             | 53.62%       | 100%           | 93.03%             |
| <b>Hashcat - MD5 (H/s)</b>          | <b>69946742857</b> | 61478800000  | 51997257143    | <b>51928800000</b> |
| Normalized                          | 100%               | 87.89%       | 74.34%         | 74.24%             |
| Standard Deviation                  | 0.3%               | 0.3%         | 0.2%           | 0.2%               |
| <b>Hashcat - MD5 (H/s/Watt)</b>     | <b>485301685</b>   | 481295379    | 419567692      | <b>397986269</b>   |
| Normalized                          | 100%               | 99.17%       | 86.46%         | 82.01%             |
| <b>Hashcat - SHA1 (H/s)</b>         | <b>30341983333</b> | 26333283333  | 204667666667   | <b>20418200000</b> |
| Normalized                          | 100%               | 86.79%       | 67.45%         | 67.29%             |
| Standard Deviation                  | 0.2%               | 0.7%         | 0.3%           | 0.2%               |
| <b>Hashcat - SHA1 (H/s/Watt)</b>    | <b>202366928</b>   | 190426636    | 156571010      | <b>154701936</b>   |
| Normalized                          | 100%               | 94.1%        | 77.37%         | 76.45%             |
| <b>Hashcat - SHA-512 (H/s)</b>      | <b>3422016667</b>  | 2986050000   | 2368250000     | <b>2367950000</b>  |
| Normalized                          | 100%               | 87.26%       | 69.21%         | 69.2%              |
| Standard Deviation                  | 0.1%               | 0.3%         | 0.2%           | 0.1%               |
| <b>Hashcat - SHA-512 (H/s/Watt)</b> | <b>21965872</b>    | 21484716     | 17986709       | <b>17714646</b>    |
| Normalized                          | 100%               | 97.81%       | 81.88%         | 80.65%             |
| <b>Hashcat - 7-Zip (H/s)</b>        | <b>1449211</b>     | 1291544      | <b>1072944</b> | 1075600            |
| Normalized                          | 100%               | 89.12%       | 74.04%         | 74.22%             |

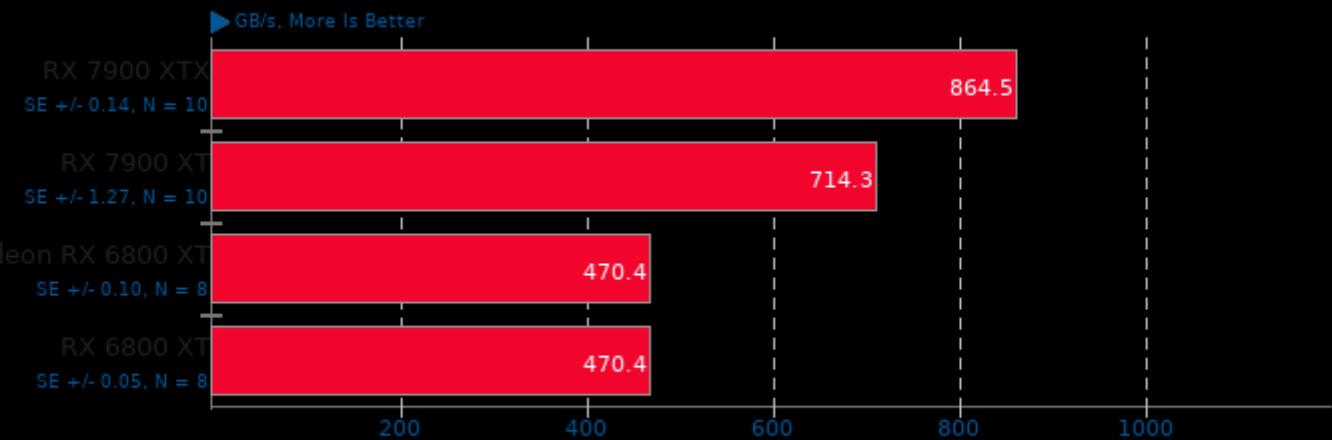
|   |               |               |               |               |
|---|---------------|---------------|---------------|---------------|
| Standard Deviation  | 0.7%          | 0.9%          | 0.5%          | 0.2%          |
| <b>Hashcat - 7-Zip (H/s/Watt)</b>   | <b>15856</b>  | <b>17359</b>  | <b>15720</b>  | <b>15517</b>  |
| Normalized  | 91.34%        | 100%          | 90.56%        | 89.39%        |
| <b>Hashcat - T.R.X (H/s)</b>  | <b>939493</b> | <b>799393</b> | <b>588340</b> | <b>577387</b> |
| Normalized  | 100%          | 85.09%        | 62.62%        | 61.46%        |
| Standard Deviation  | 2.7%          | 3.2%          | 3.3%          | 4.9%          |
| <b>Hashcat - T.R.X (H/s/Watt)</b>   | <b>7757</b>   | <b>10185</b>  | <b>8841</b>   | <b>8733</b>   |
| Normalized  | 76.16%        | 100%          | 86.8%         | 85.74%        |
| <b>LuxCoreRender - DLSC - GPU (M samples/sec)</b>                         | <b>7.93</b>   | <b>6.82</b>   | <b>5.21</b>   | <b>5.37</b>   |
| Normalized  | 100%          | 86%           | 65.7%         | 67.72%        |
| Standard Deviation  | 10%           | 9.8%          | 9.6%          | 0.2%          |
| <b>LuxCoreRender - DLSC - GPU (M samples/sec/Watt)</b>                    | <b>0.03</b>   | <b>0.029</b>  | <b>0.024</b>  | <b>0.024</b>  |
| Normalized  | 100%          | 96.67%        | 80%           | 80%           |
| <b>LuxCoreRender - R.C.a.P - GPU (M samples/sec)</b>                      | <b>27.71</b>  | <b>21.86</b>  | <b>17.82</b>  | <b>17.82</b>  |
| Normalized  | 100%          | 78.89%        | 64.31%        | 64.31%        |
| Standard Deviation  | 0.8%          | 6.3%          | 0.1%          | 0%            |
| <b>LuxCoreRender - R.C.a.P - GPU (M samples/sec/Watt)</b>                 | <b>0.162</b>  | <b>0.148</b>  | <b>0.138</b>  | <b>0.139</b>  |
| Normalized  | 100%          | 91.36%        | 85.19%        | 85.8%         |
| <b>LuxCoreRender - LuxCore Benchmark - GPU (M samples/sec)</b>            | <b>9.48</b>   | <b>7.91</b>   | <b>6.33</b>   | <b>6.49</b>   |
| Normalized  | 100%          | 83.44%        | 66.77%        | 68.46%        |
| Standard Deviation  | 8.5%          | 8.5%          | 8.6%          | 0.3%          |
| <b>LuxCoreRender - LuxCore Benchmark - GPU (M samples/sec/Watt)</b>       | <b>0.038</b>  | <b>0.036</b>  | <b>0.034</b>  | <b>0.035</b>  |
| Normalized  | 100%          | 94.74%        | 89.47%        | 92.11%        |
| <b>LuxCoreRender - Orange Juice - GPU (M samples/sec)</b>                 | <b>3.12</b>   | <b>2.82</b>   | <b>2.31</b>   | <b>2.31</b>   |
| Normalized  | 100%          | 90.38%        | 74.04%        | 74.04%        |
| Standard Deviation  | 0.2%          | 2.3%          | 0.3%          | 0.5%          |
| <b>LuxCoreRender - Orange Juice - GPU (M samples/sec/Watt)</b>            | <b>0.017</b>  | <b>0.019</b>  | <b>0.02</b>   | <b>0.021</b>  |
| Normalized  | 80.95%        | 90.48%        | 95.24%        | 100%          |
| <b>LuxCoreRender - Danish Mood - GPU (M samples/sec)</b>                  | <b>8.89</b>   | <b>7.61</b>   | <b>5.88</b>   | <b>5.79</b>   |
| Normalized  | 100%          | 85.6%         | 66.14%        | 65.13%        |
| Standard Deviation  | 1.1%          | 1.8%          | 0.6%          | 1.1%          |
| <b>LuxCoreRender - Danish Mood - GPU (M samples/sec/Watt)</b>             | <b>0.036</b>  | <b>0.035</b>  | <b>0.031</b>  | <b>0.031</b>  |
| Normalized  | 100%          | 97.22%        | 86.11%        | 86.11%        |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - T.R.B (GB/s)</b>      | <b>2197</b>   | <b>1888</b>   | <b>1098</b>   | <b>1093</b>   |
| Normalized  | 100%          | 85.94%        | 50%           | 49.75%        |
| Standard Deviation  | 0.8%          | 2.4%          | 0.8%          | 0.5%          |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - T.R.B (GB/s/Watt)</b> | <b>26.507</b> | <b>22.847</b> | <b>21.402</b> | <b>17.892</b> |
| Normalized  | 100%          | 86.19%        | 80.74%        | 67.5%         |

|  |                |                |                |                |
|--|----------------|----------------|----------------|----------------|
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - FFT SP (GFLOPS)</b>            | <b>2720</b>    | 2249           | 1689           | <b>1688</b>    |
| Normalized   | 100%           | 82.69%         | 62.08%         | 62.05%         |
| Standard Deviation   | 0.3%           | 0.2%           | 0.2%           | 0.2%           |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - FFT SP (GFLOPS/Watt)</b>       | <b>86.078</b>  | <b>71.352</b>  | <b>147.037</b> | <b>143.584</b> |
| Normalized   | 58.54%         | 48.53%         | 100%           | 97.65%         |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - GEMM SGEMM_N (GFLOPS)</b>      | <b>9471</b>    | 7899           | <b>7318</b>    | 7352           |
| Normalized   | 100%           | 83.4%          | 77.27%         | 77.62%         |
| Standard Deviation   | 7.2%           | 7.3%           | 6%             | 5.1%           |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - GEMM SGEMM_N (GFLOPS/Watt)</b> | <b>151.87</b>  | <b>111.176</b> | 147.496        | <b>153.241</b> |
| Normalized   | 99.11%         | 72.55%         | 96.25%         | 100%           |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - MD5 Hash (GHash/s)</b>         | <b>39.1395</b> | 36.1749        | 28.3924        | <b>28.3906</b> |
| Normalized   | 100%           | 92.43%         | 72.54%         | 72.54%         |
| Standard Deviation   | 0.4%           | 0.7%           | 0%             | 0%             |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - MD5 Hash (GHash/s/Watt)</b>    | <b>0.938</b>   | 0.876          | 0.753          | <b>0.688</b>   |
| Normalized   | 100%           | 93.39%         | 80.28%         | 73.35%         |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - Reduction</b>                  | <b>610.739</b> | 568.366        | 481.604        | <b>469.754</b> |
| Normalized   | 100%           | 93.06%         | 78.86%         | 76.92%         |
| Standard Deviation   | 0.4%           | 0.7%           | 2.5%           | 2.3%           |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - Reduction (GB/s/Watt)</b>      | <b>15.204</b>  | 16.169         | 24.283         | <b>24.569</b>  |
| Normalized   | 61.88%         | 65.81%         | 98.84%         | 100%           |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - S3D (GFLOPS)</b>               | <b>368.910</b> | 297.509        | 96.2093        | <b>93.3978</b> |
| Normalized   | 100%           | 80.65%         | 26.08%         | 25.32%         |
| Standard Deviation   | 2.9%           | 3.1%           | 2%             | 1.9%           |
| <b>SHOC Scalable Heterogeneous Computing - OpenCL - S3D (GFLOPS/Watt)</b>          | <b>4.583</b>   | <b>4.393</b>   | <b>11.963</b>  | 11.756         |
| Normalized   | 38.31%         | 36.72%         | 100%           | 98.27%         |
| <b>ViennaCL - OpenCL BLAS - dCOPY (GB/s)</b>                                       | <b>673</b>     | 590            | <b>406</b>     | <b>406</b>     |
| Normalized   | 100%           | 87.67%         | 60.33%         | 60.33%         |
| Standard Deviation   | 1.3%           | 0.9%           | 0.9%           | 1.9%           |
| <b>ViennaCL - OpenCL BLAS - sCOPY (GB/s)</b>                                       |                |                |                | 556            |
| Standard Deviation   |                |                |                | 2%             |

|   |      |       |
|---|------|-------|
| ViennaCL - OpenCL BLAS - sAXPY<br>(GB/s)                  |      | 810   |
| Standard Deviation  | 1.9% |       |
| ViennaCL - OpenCL BLAS - sDOT<br>(GB/s)                   |      | 564   |
| Standard Deviation  | 3.5% |       |
| ViennaCL - OpenCL BLAS - dAXPY<br>(GB/s)                  |      | 823   |
| Standard Deviation  | 1.1% |       |
| ViennaCL - OpenCL BLAS - dDOT<br>(GB/s)                   |      | 557   |
| Standard Deviation  | 1.4% |       |
| ViennaCL - OpenCL BLAS - dGEMV-N<br>(GB/s)                |      | 147   |
| Standard Deviation  | 0.8% |       |
| ViennaCL - OpenCL BLAS - dGEMV-T<br>(GB/s)                |      | 532   |
| Standard Deviation  | 1.3% |       |
| ViennaCL - OpenCL BLAS -<br>dGEMM-NN (GFLOPs/s)           |      | 1197  |
| Standard Deviation  | 0.5% |       |
| ViennaCL - OpenCL BLAS -<br>dGEMM-NT (GFLOPs/s)           |      | 1220  |
| Standard Deviation  | 0.8% |       |
| ViennaCL - OpenCL BLAS -<br>dGEMM-TN (GFLOPs/s)           |      | 1173  |
| Standard Deviation  | 0.5% |       |
| ViennaCL - OpenCL BLAS -<br>dGEMM-TT (GFLOPs/s)           |      | 1210  |
| Standard Deviation  | 0%   |       |
| ViennaCL - OpenCL BLAS -<br>dGEMM-TT (GFLOPs/s/Watt)      |      | 9.711 |
| Meta Performance Per Watts - P.P.W<br>(Performance/Watts) |      | 3724  |

## cl-mem 2017-01-13

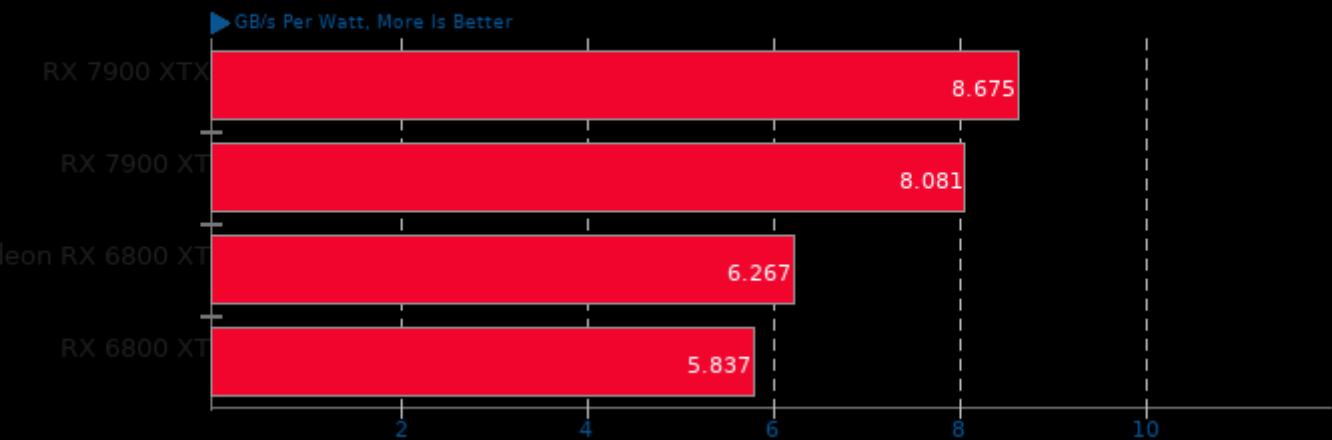
Benchmark: Read



1. (CC) gcc options: -O2 -fno -lOpenCL

## cl-mem 2017-01-13

Benchmark: Read

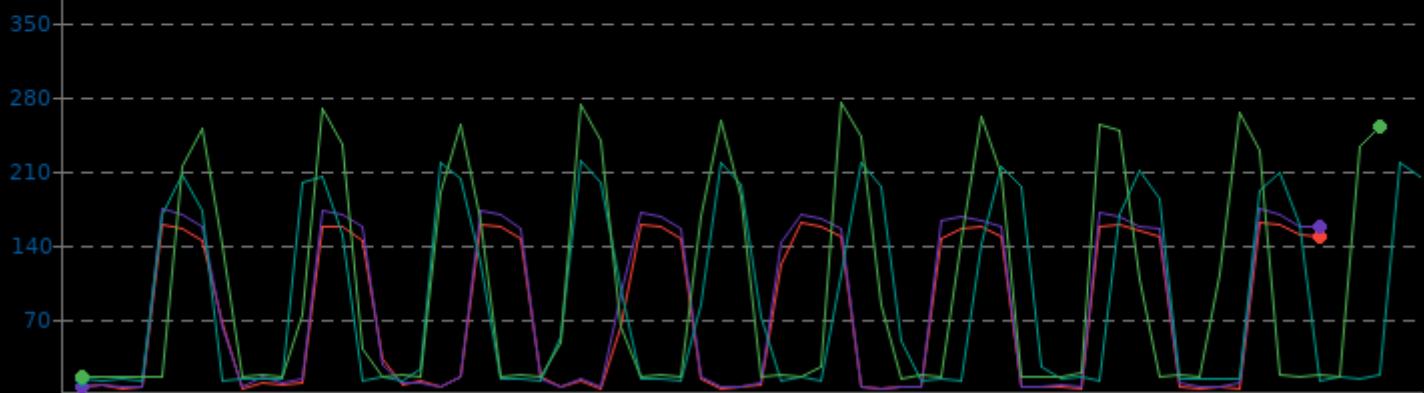


### cl-mem 2017-01-13

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| Radeon RX 6800 XT | 6.0  | 75.1 | 162.0 |
| RX 6800 XT        | 6.0  | 80.6 | 174.0 |
| RX 7900 XT        | 13.0 | 88.4 | 219.0 |
| RX 7900 XTX       | 15.0 | 99.7 | 273.0 |

▼ Watts, Fewer Is Better

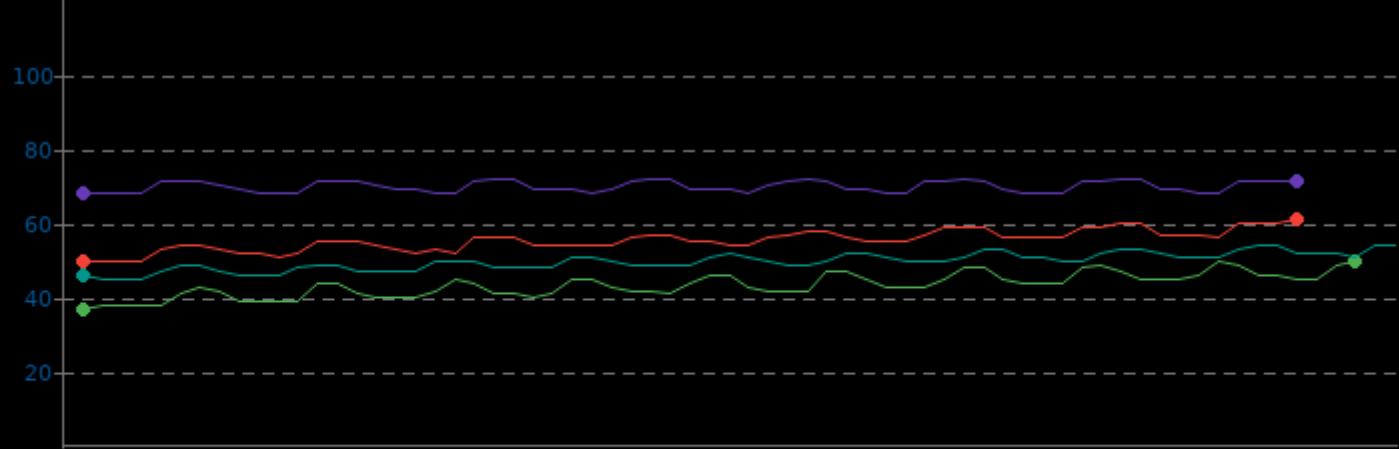


### cl-mem 2017-01-13

GPU Temperature Monitor

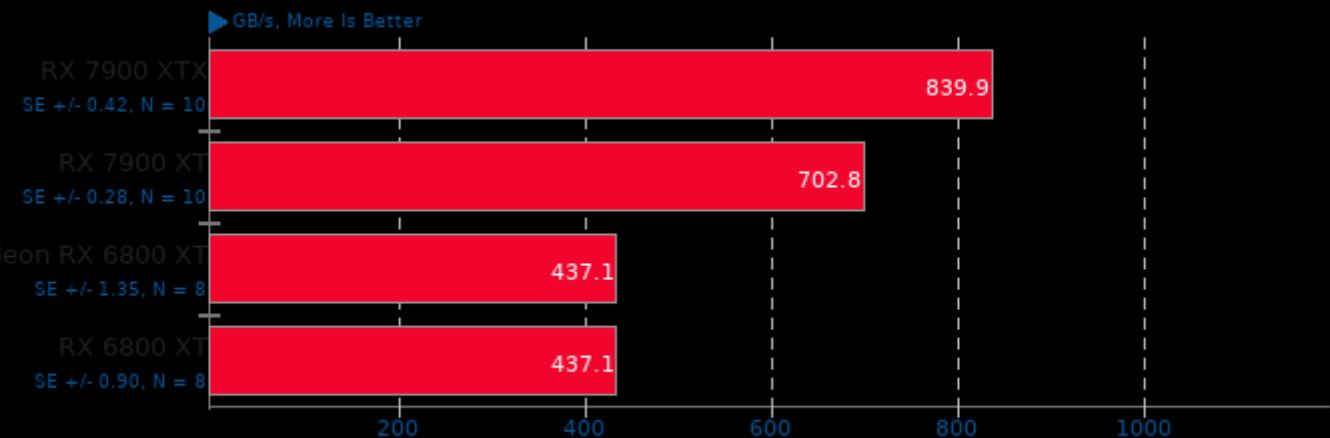
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XTX       | 37.0 | 43.5 | 50.0 |
| RX 7900 XT        | 45.0 | 49.9 | 54.0 |
| Radeon RX 6800 XT | 50.0 | 55.4 | 61.0 |
| RX 6800 XT        | 68.0 | 69.7 | 72.0 |

▼ Celsius, Fewer Is Better



## cl-mem 2017-01-13

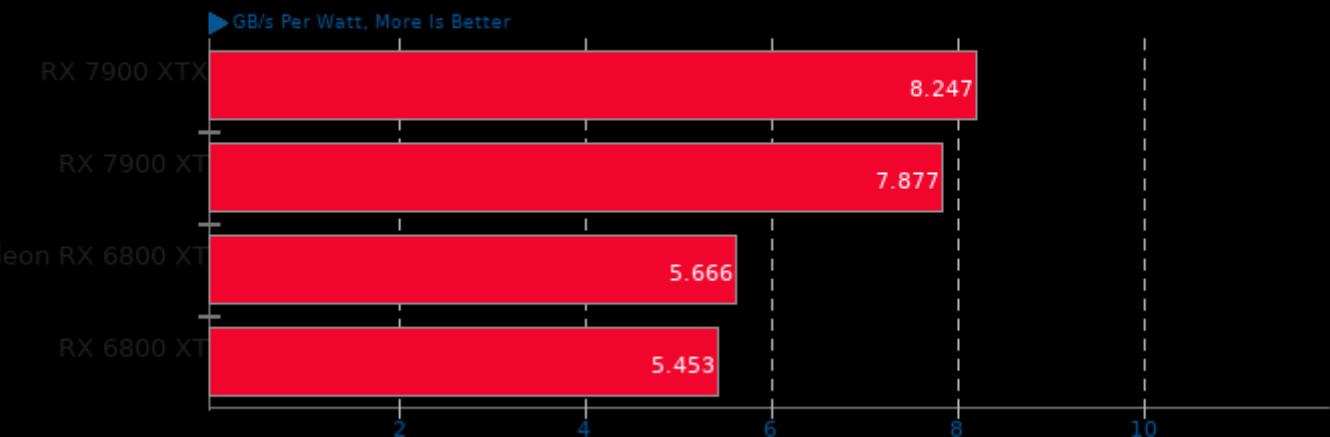
Benchmark: Write



1. (CC) gcc options: -O2 -fno -lOpenCL

## cl-mem 2017-01-13

Benchmark: Write

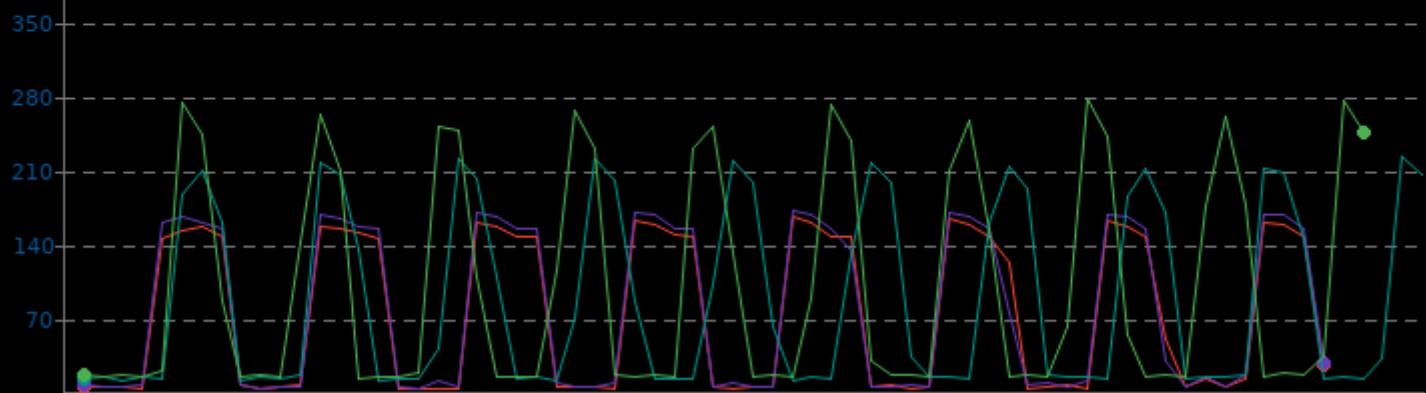


### cl-mem 2017-01-13

GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| Radeon RX 6800 XT | 6.0  | 77.1  | 167.0 |
| RX 6800 XT        | 6.0  | 80.2  | 172.0 |
| RX 7900 XT        | 13.0 | 89.2  | 223.0 |
| RX 7900 XTX       | 15.0 | 101.8 | 277.0 |

▼ Watts, Fewer Is Better

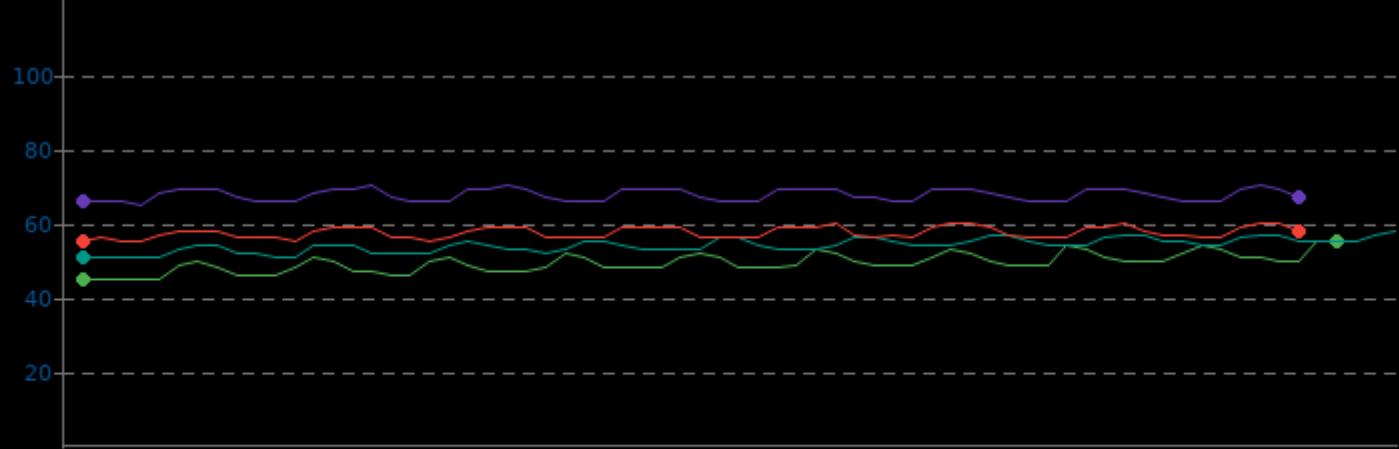


### cl-mem 2017-01-13

GPU Temperature Monitor

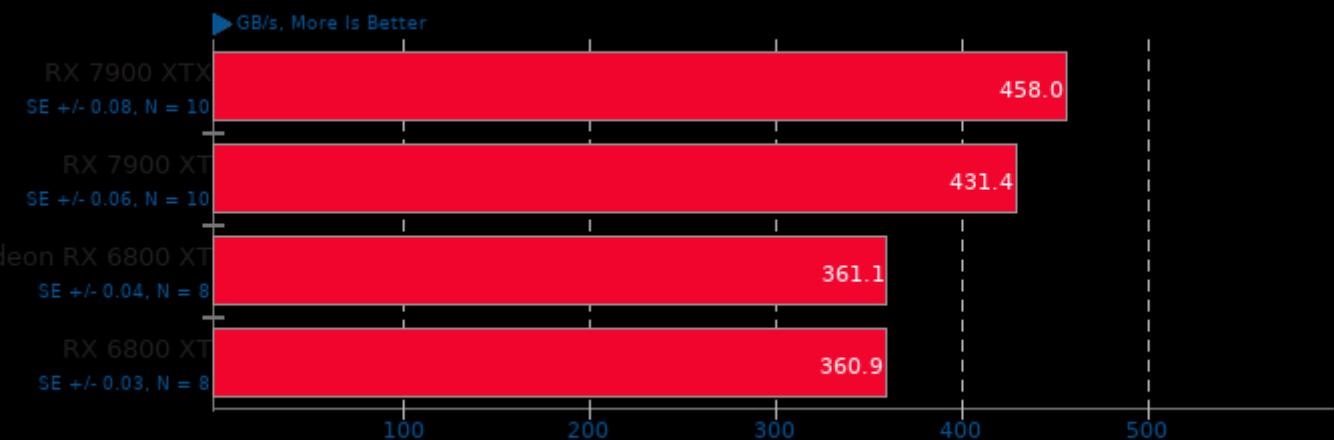
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XTX       | 45.0 | 49.4 | 55.0 |
| RX 7900 XT        | 51.0 | 54.0 | 58.0 |
| Radeon RX 6800 XT | 55.0 | 57.5 | 60.0 |
| RX 6800 XT        | 65.0 | 67.6 | 70.0 |

▼ Celsius, Fewer Is Better



## cl-mem 2017-01-13

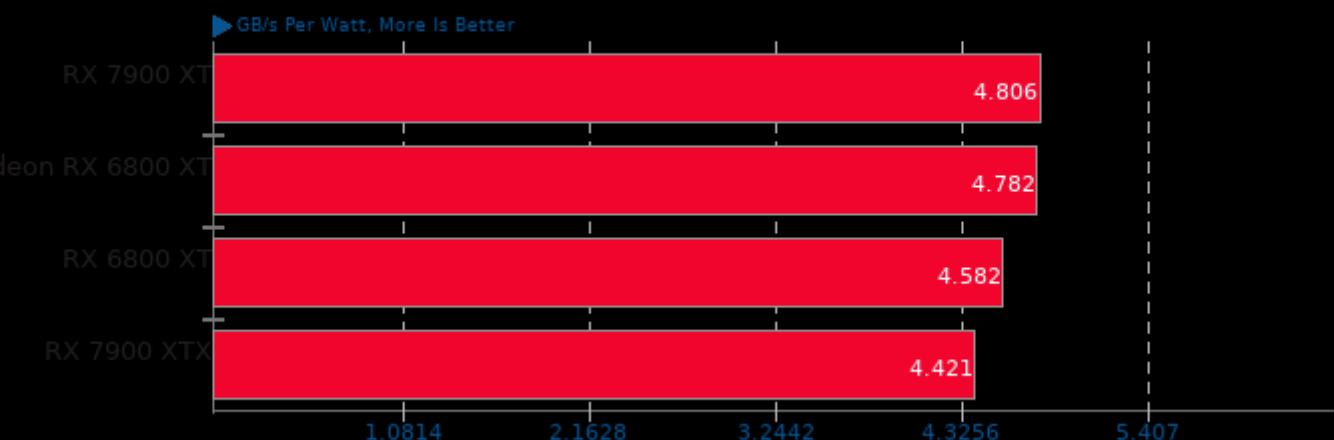
Benchmark: Copy



1. (CC) gcc options: -O2 -fno -lOpenCL

## cl-mem 2017-01-13

Benchmark: Copy

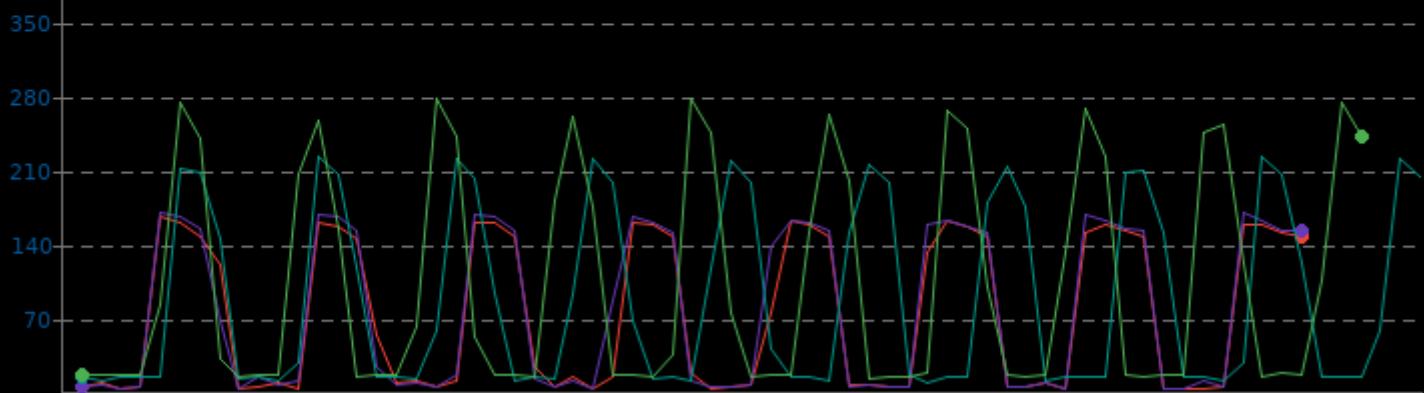


### cl-mem 2017-01-13

GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| Radeon RX 6800 XT | 6.0  | 75.5  | 166.0 |
| RX 6800 XT        | 6.0  | 78.8  | 170.0 |
| RX 7900 XT        | 12.0 | 89.8  | 224.0 |
| RX 7900 XTX       | 15.0 | 103.6 | 278.0 |

▼ Watts, Fewer Is Better

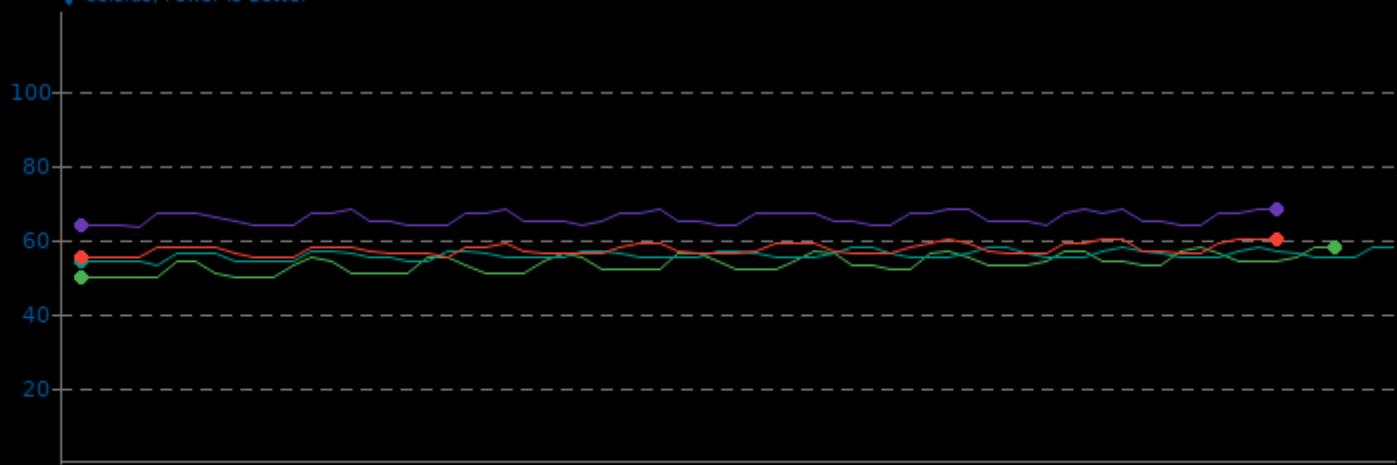


### cl-mem 2017-01-13

GPU Temperature Monitor

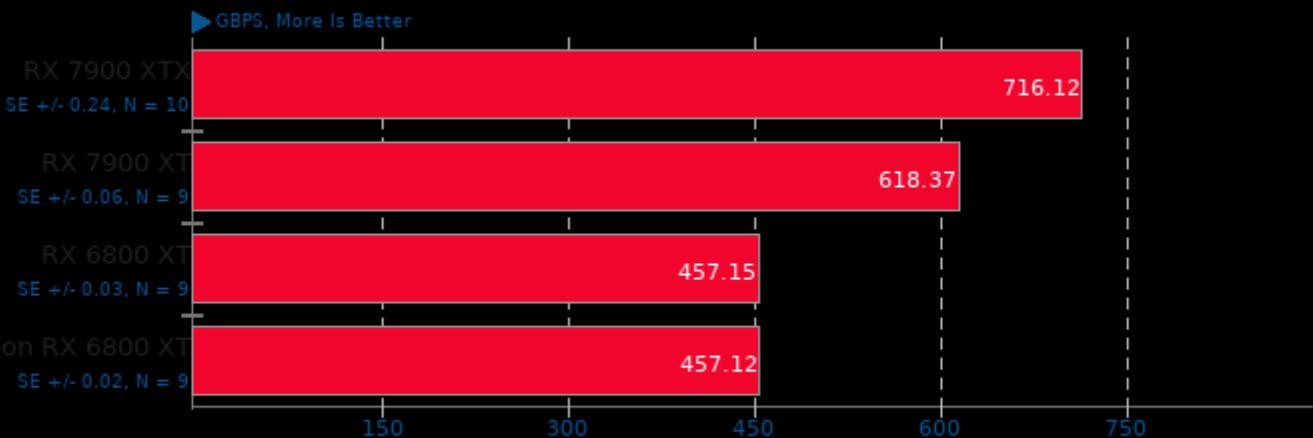
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XTX       | 50.0 | 53.4 | 58.0 |
| RX 7900 XT        | 53.0 | 55.7 | 58.0 |
| Radeon RX 6800 XT | 55.0 | 57.3 | 60.0 |
| RX 6800 XT        | 63.0 | 65.7 | 68.0 |

▼ Celsius, Fewer Is Better



**clpeak**

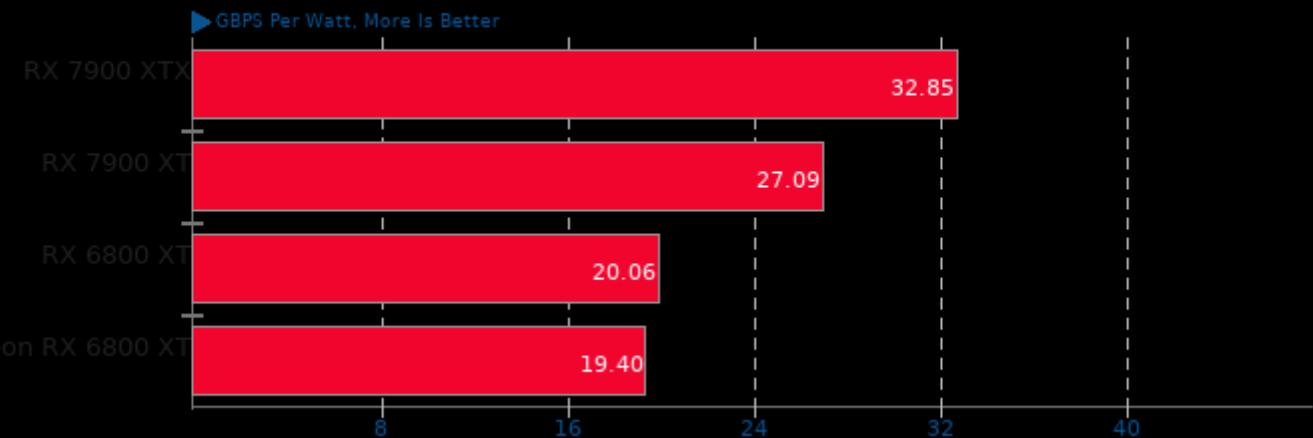
OpenCL Test: Global Memory Bandwidth



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

**clpeak**

OpenCL Test: Global Memory Bandwidth

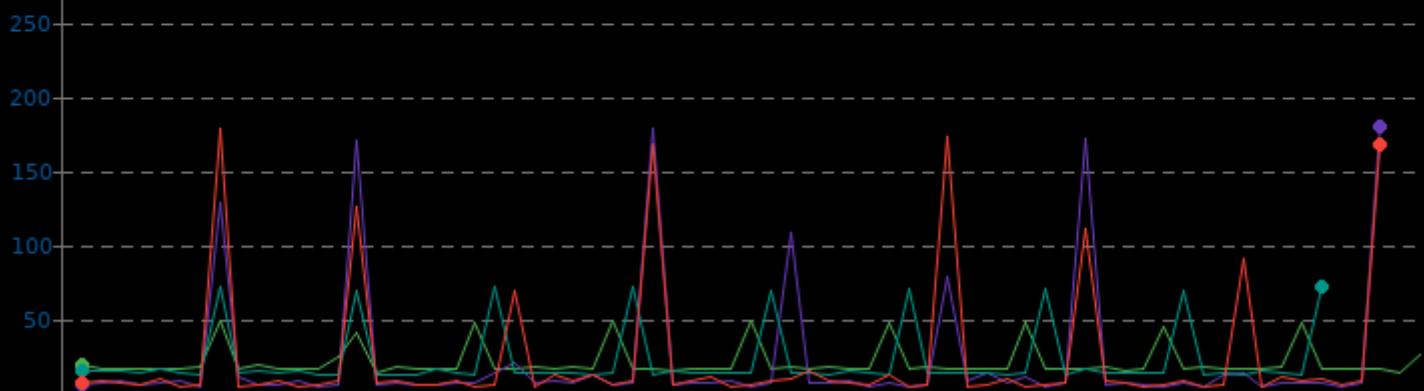


**clpeak**

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| RX 7900 XTX       | 15.0 | 21.8 | 49.0  |
| RX 6800 XT        | 6.0  | 22.8 | 180.0 |
| RX 7900 XT        | 13.0 | 22.8 | 72.0  |
| Radeon RX 6800 XT | 6.0  | 23.6 | 178.0 |

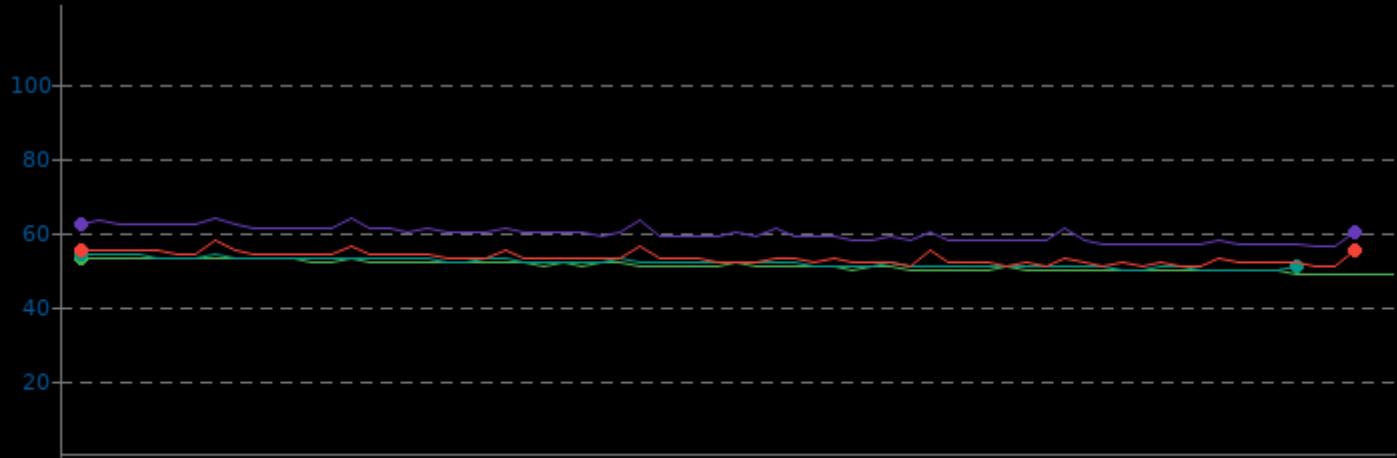
▼ Watts, Fewer Is Better

**clpeak**

GPU Temperature Monitor

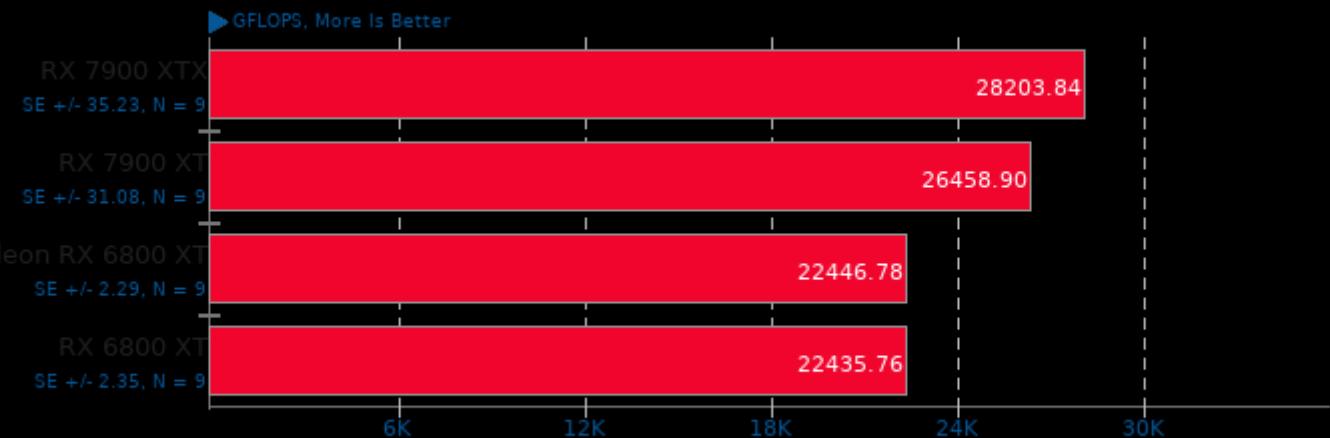
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XTX       | 49.0 | 51.1 | 53.0 |
| RX 7900 XT        | 50.0 | 51.9 | 54.0 |
| Radeon RX 6800 XT | 51.0 | 53.1 | 58.0 |
| RX 6800 XT        | 56.0 | 59.5 | 64.0 |

▼ Celsius, Fewer Is Better



**clpeak**

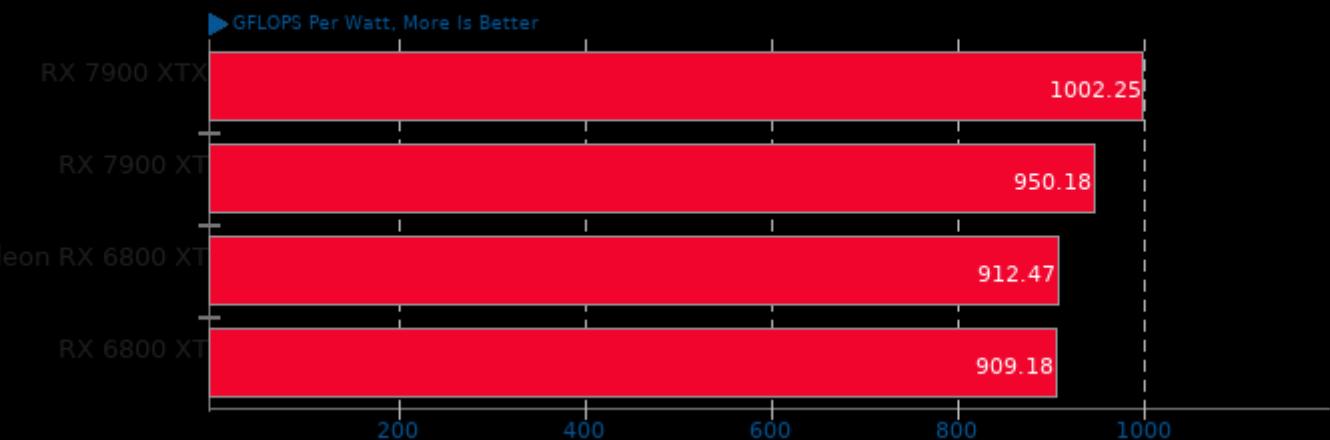
OpenCL Test: Single-Precision Float



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

**clpeak**

OpenCL Test: Single-Precision Float

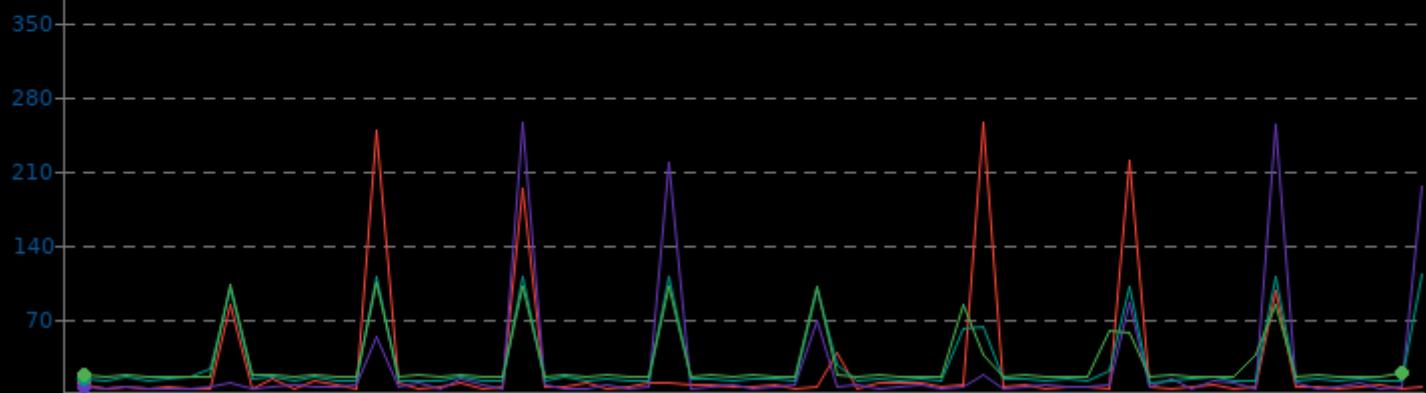


**clpeak**

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| Radeon RX 6800 XT | 6.0  | 24.6 | 255.0 |
| RX 6800 XT        | 6.0  | 24.7 | 255.0 |
| RX 7900 XT        | 12.0 | 27.8 | 112.0 |
| RX 7900 XTX       | 16.0 | 28.1 | 105.0 |

▼ Watts, Fewer Is Better

**clpeak**

GPU Temperature Monitor

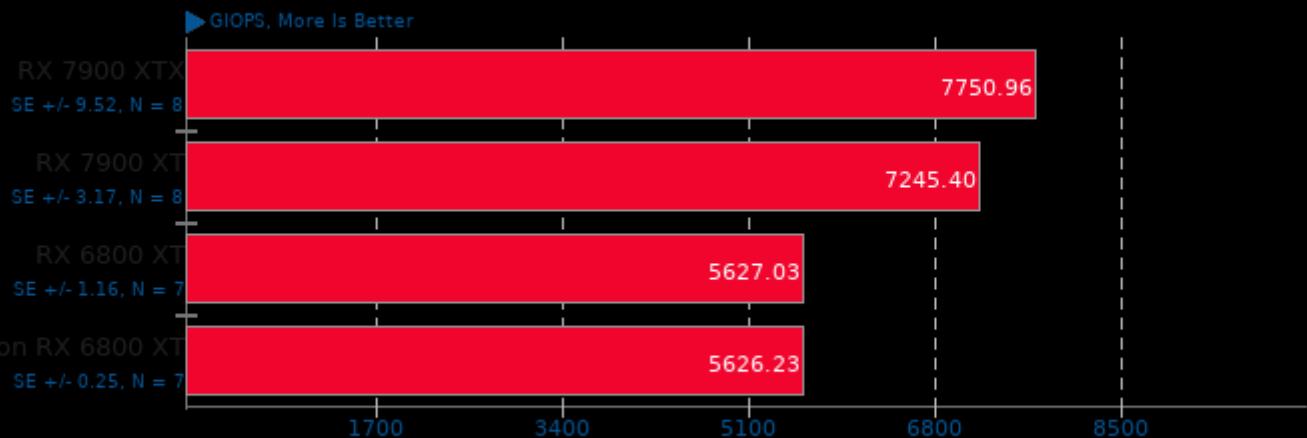
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XTX       | 47.0 | 48.0 | 51.0 |
| RX 7900 XT        | 47.0 | 48.5 | 51.0 |
| Radeon RX 6800 XT | 50.0 | 51.6 | 58.0 |
| RX 6800 XT        | 52.0 | 54.4 | 62.0 |

▼ Celsius, Fewer Is Better



**clpeak**

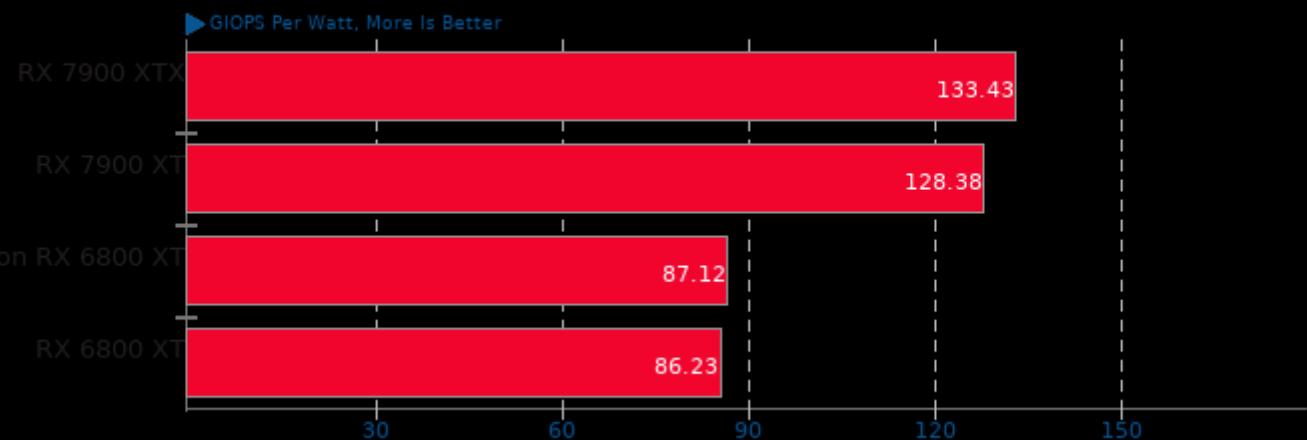
OpenCL Test: Integer Compute INT



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

**clpeak**

OpenCL Test: Integer Compute INT

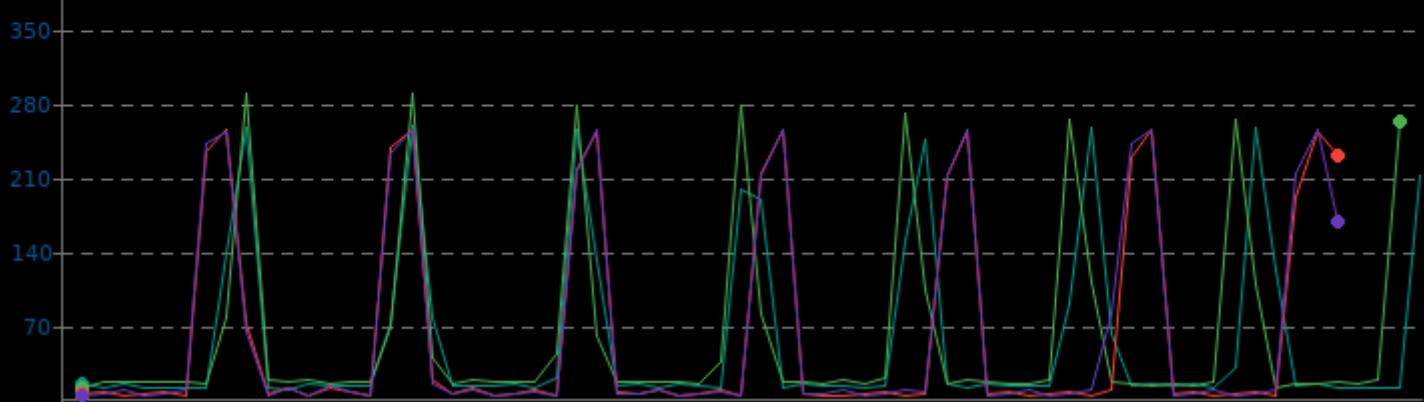


**clpeak**

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| RX 7900 XT        | 11.0 | 56.4 | 258.0 |
| RX 7900 XTX       | 13.0 | 58.1 | 288.0 |
| Radeon RX 6800 XT | 6.0  | 64.6 | 255.0 |
| RX 6800 XT        | 6.0  | 65.3 | 255.0 |

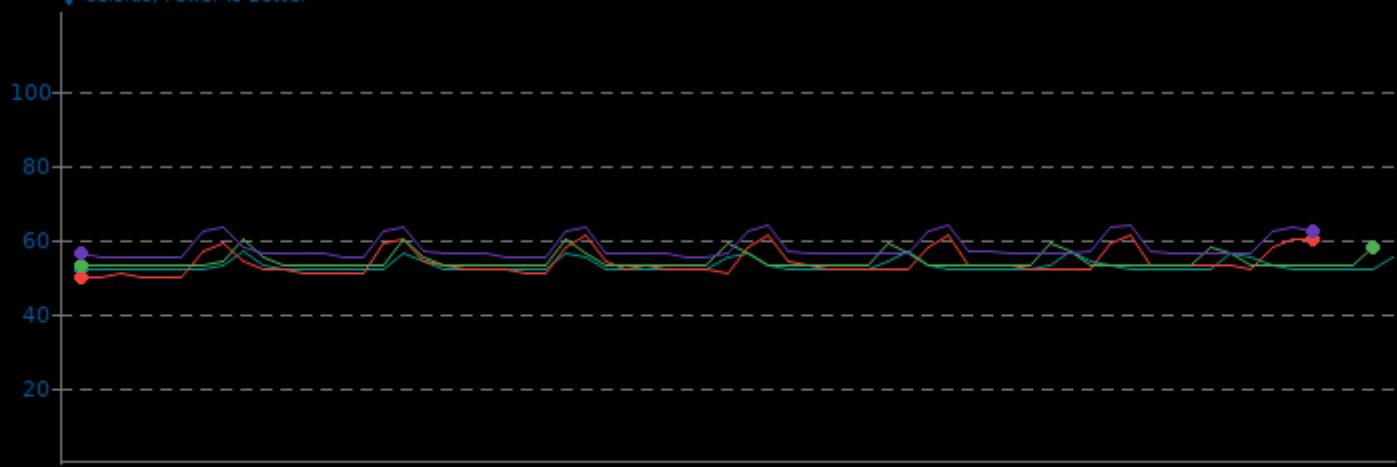
▼ Watts, Fewer Is Better

**clpeak**

GPU Temperature Monitor

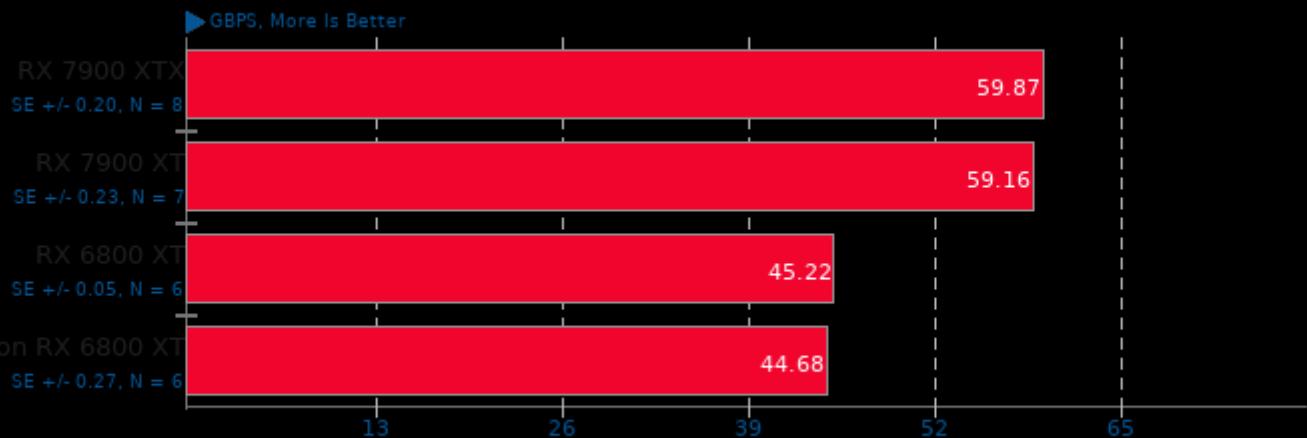
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 52.0 | 52.8 | 57.0 |
| Radeon RX 6800 XT | 50.0 | 53.8 | 61.0 |
| RX 7900 XTX       | 53.0 | 54.1 | 60.0 |
| RX 6800 XT        | 55.0 | 57.6 | 64.0 |

▼ Celsius, Fewer Is Better



**clpeak**

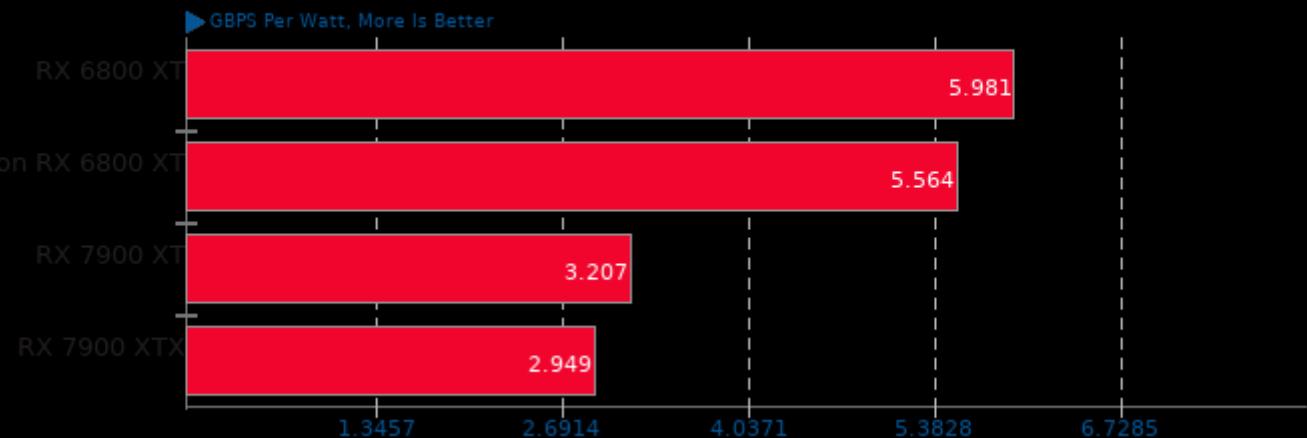
OpenCL Test: Transfer Bandwidth enqueueWriteBuffer



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

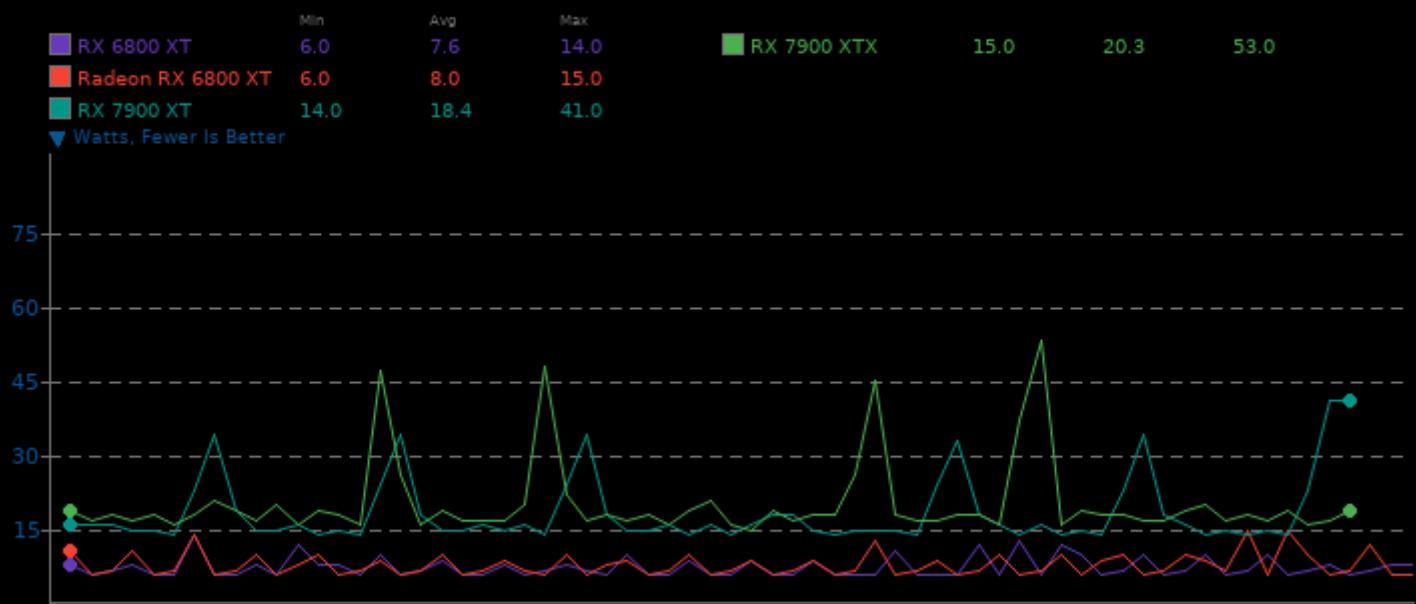
**clpeak**

OpenCL Test: Transfer Bandwidth enqueueWriteBuffer



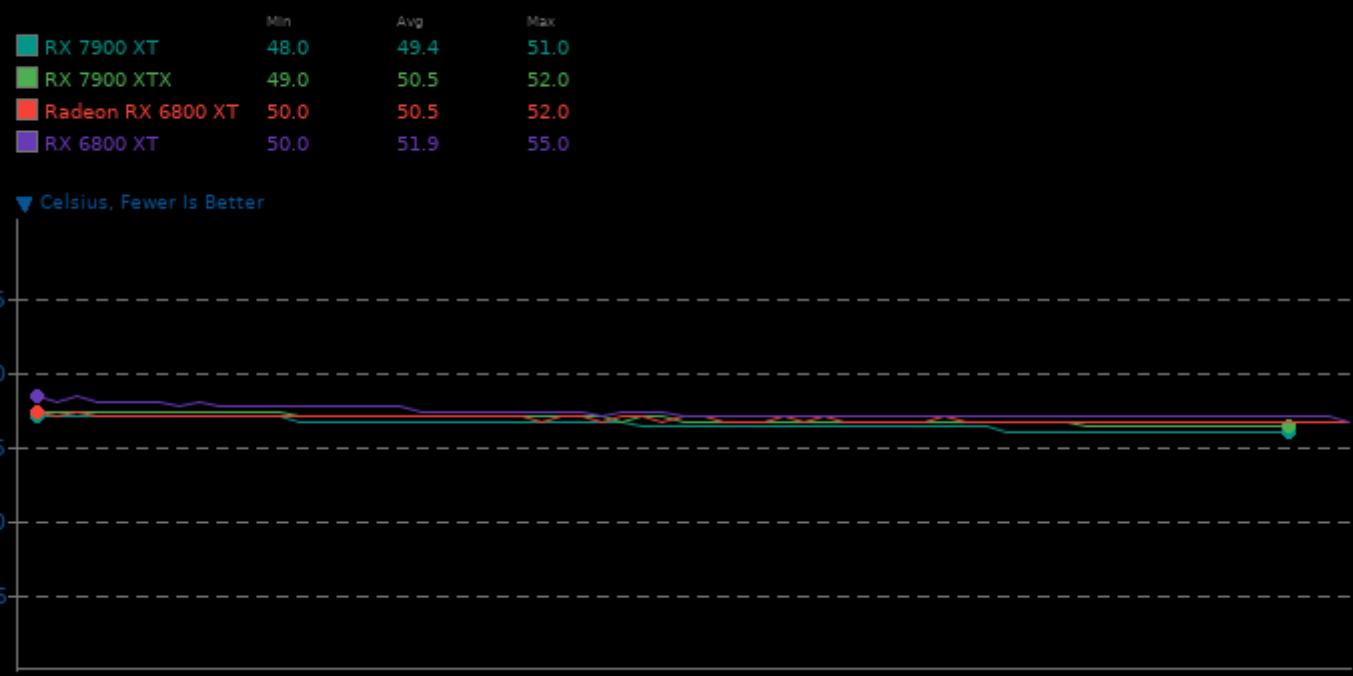
## clpeak

GPU Power Consumption Monitor



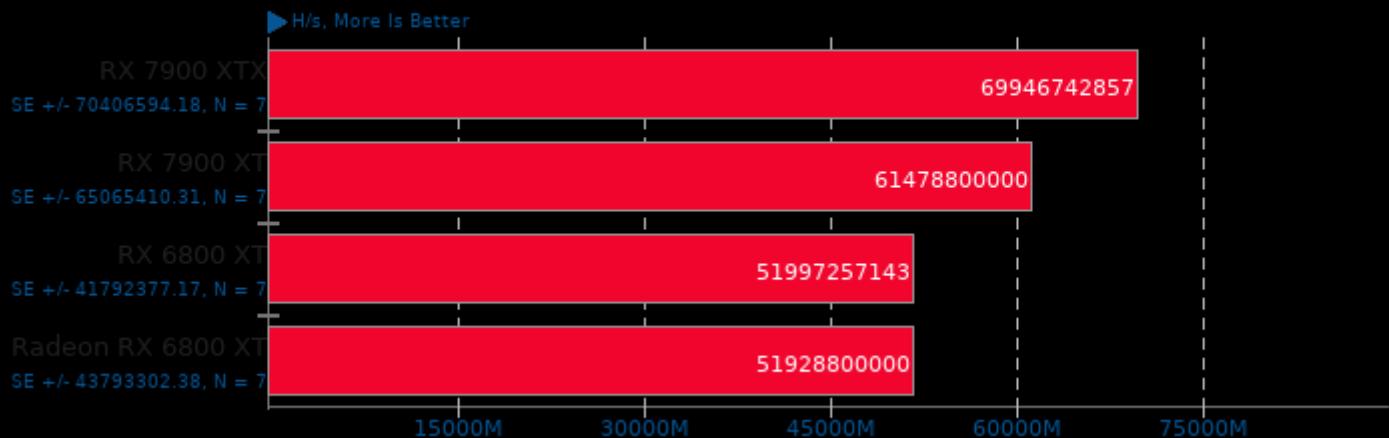
## clpeak

GPU Temperature Monitor



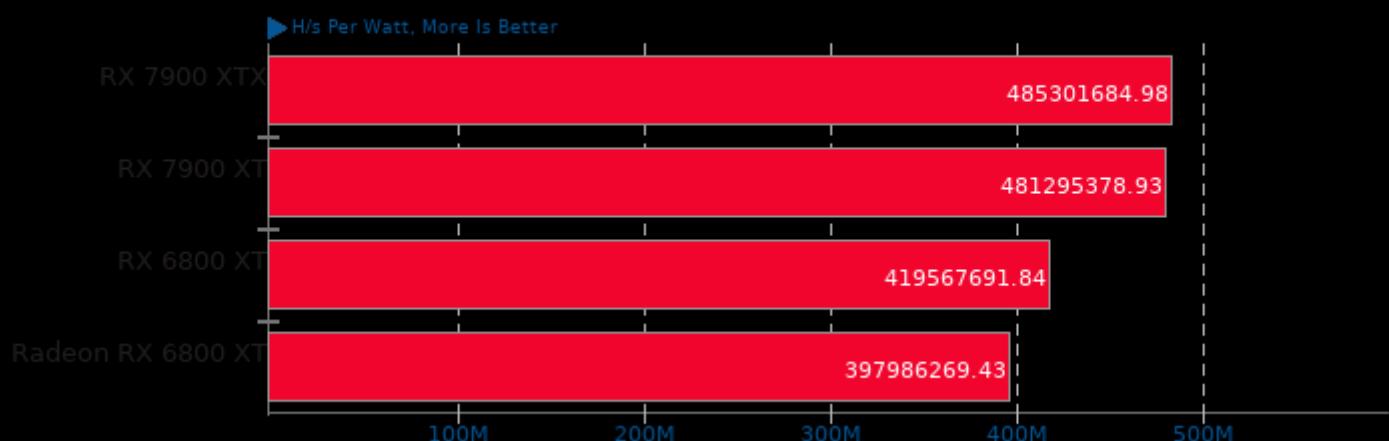
## Hashcat 6.2.4

Benchmark: MD5



## Hashcat 6.2.4

Benchmark: MD5

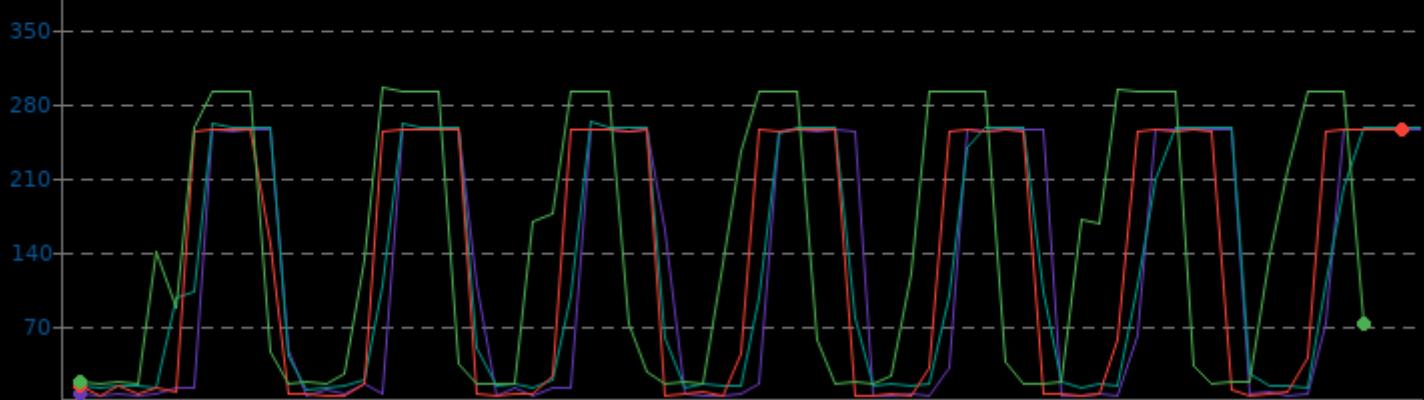


## Hashcat 6.2.4

GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| RX 6800 XT        | 6.0  | 123.9 | 255.0 |
| RX 7900 XT        | 12.0 | 127.7 | 262.0 |
| Radeon RX 6800 XT | 6.0  | 130.5 | 255.0 |
| RX 7900 XTX       | 16.0 | 144.1 | 295.0 |

▼ Watts, Fewer Is Better

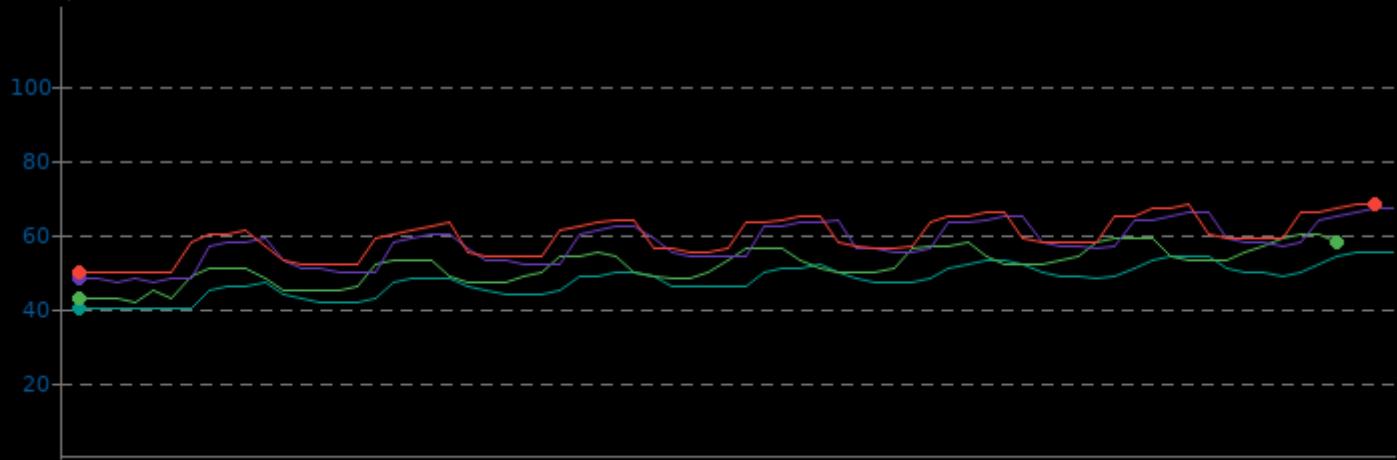


## Hashcat 6.2.4

GPU Temperature Monitor

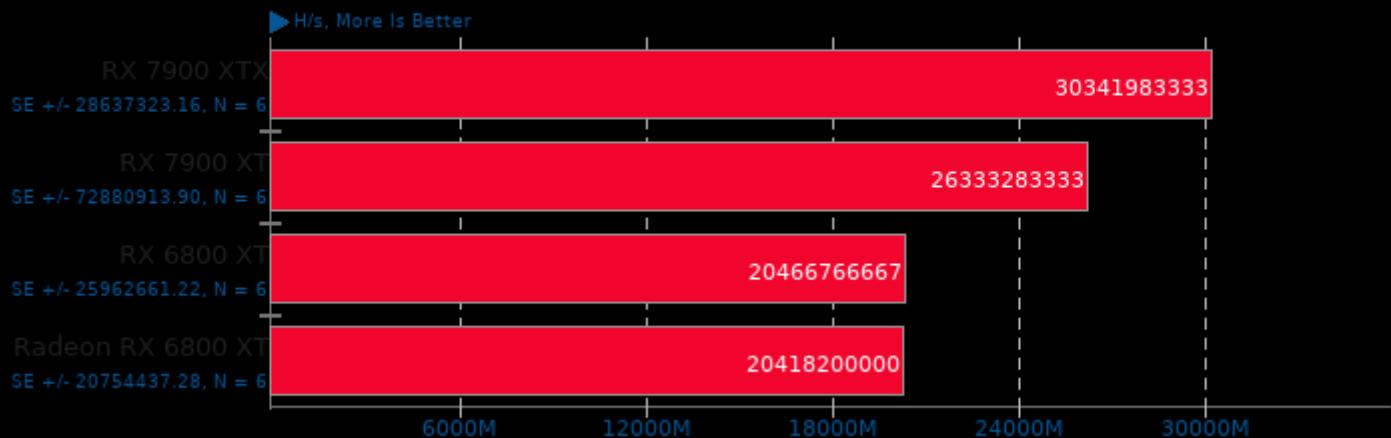
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 40.0 | 47.8 | 55.0 |
| RX 7900 XTX       | 42.0 | 51.7 | 60.0 |
| RX 6800 XT        | 47.0 | 57.5 | 67.0 |
| Radeon RX 6800 XT | 50.0 | 59.3 | 68.0 |

▼ Celsius, Fewer Is Better



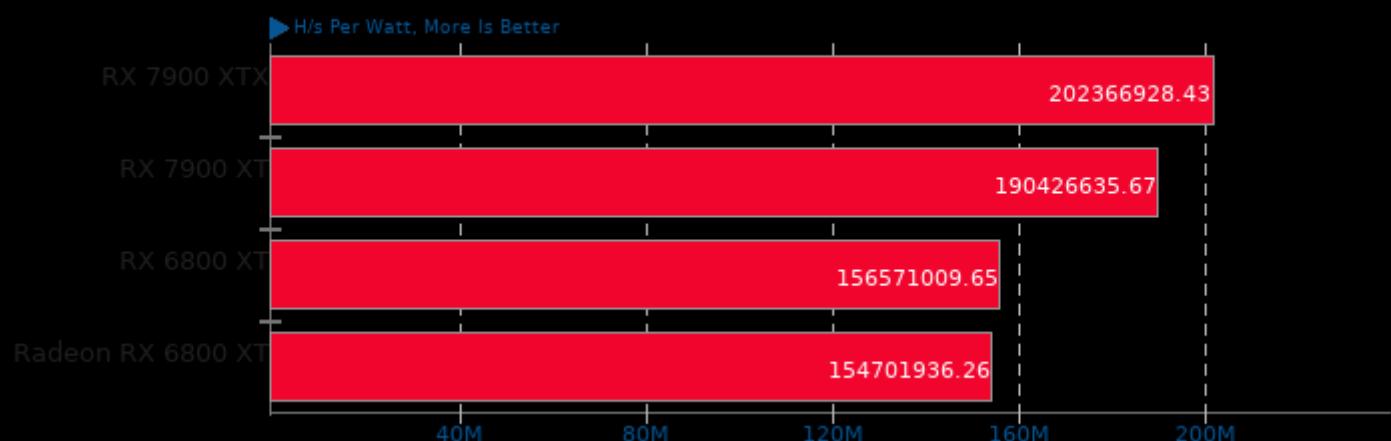
## Hashcat 6.2.4

Benchmark: SHA1



## Hashcat 6.2.4

Benchmark: SHA1

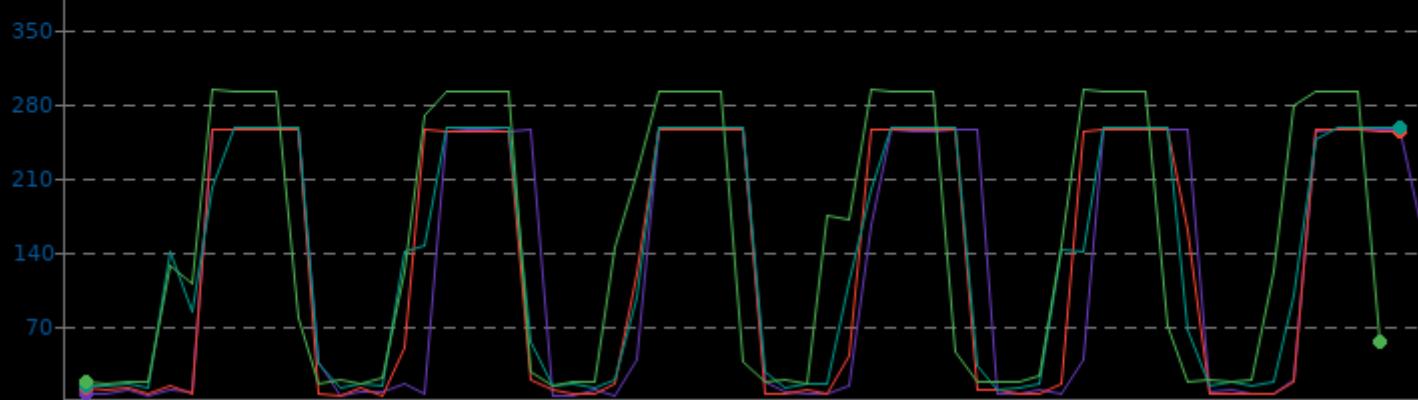


## Hashcat 6.2.4

GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| RX 6800 XT        | 6.0  | 130.7 | 255.0 |
| Radeon RX 6800 XT | 6.0  | 132.0 | 255.0 |
| RX 7900 XT        | 12.0 | 138.3 | 257.0 |
| RX 7900 XTX       | 15.0 | 149.9 | 293.0 |

▼ Watts, Fewer Is Better

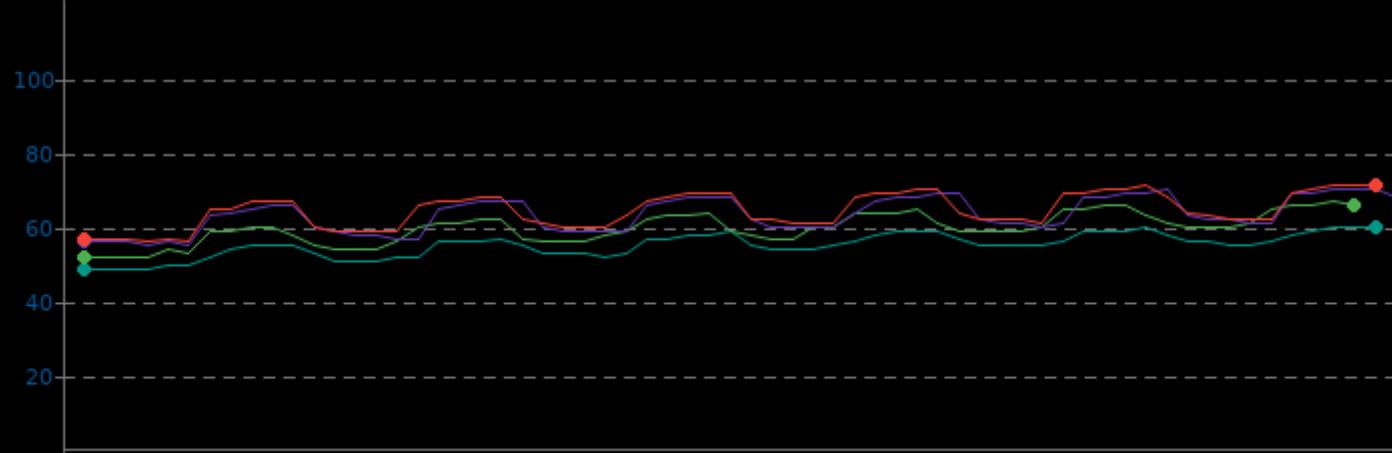


## Hashcat 6.2.4

GPU Temperature Monitor

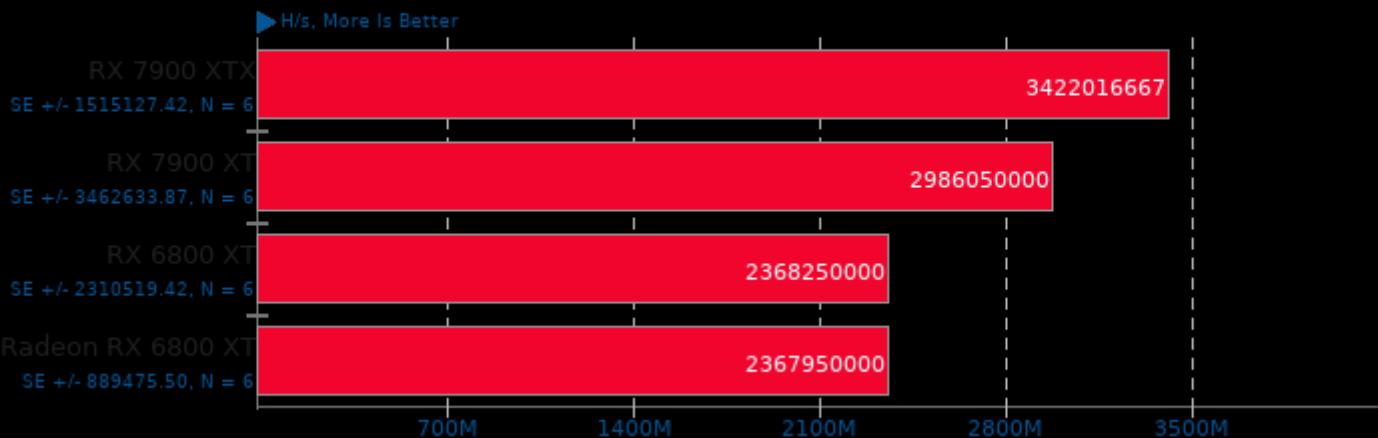
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 49.0 | 55.2 | 60.0 |
| RX 7900 XTX       | 52.0 | 59.8 | 67.0 |
| RX 6800 XT        | 55.0 | 63.3 | 70.0 |
| Radeon RX 6800 XT | 56.0 | 64.4 | 71.0 |

▼ Celsius, Fewer Is Better



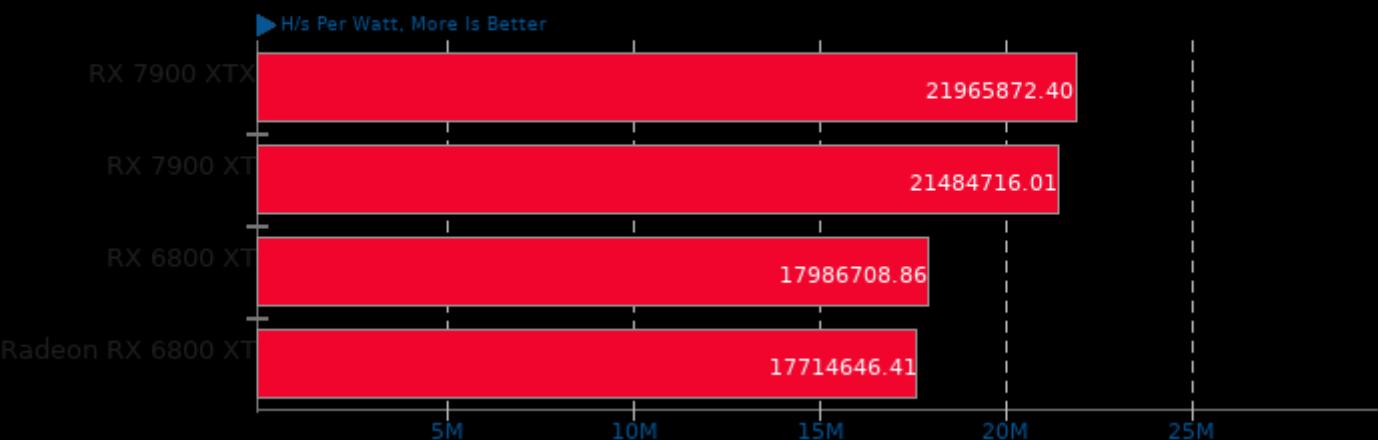
## Hashcat 6.2.4

Benchmark: SHA-512



## Hashcat 6.2.4

Benchmark: SHA-512

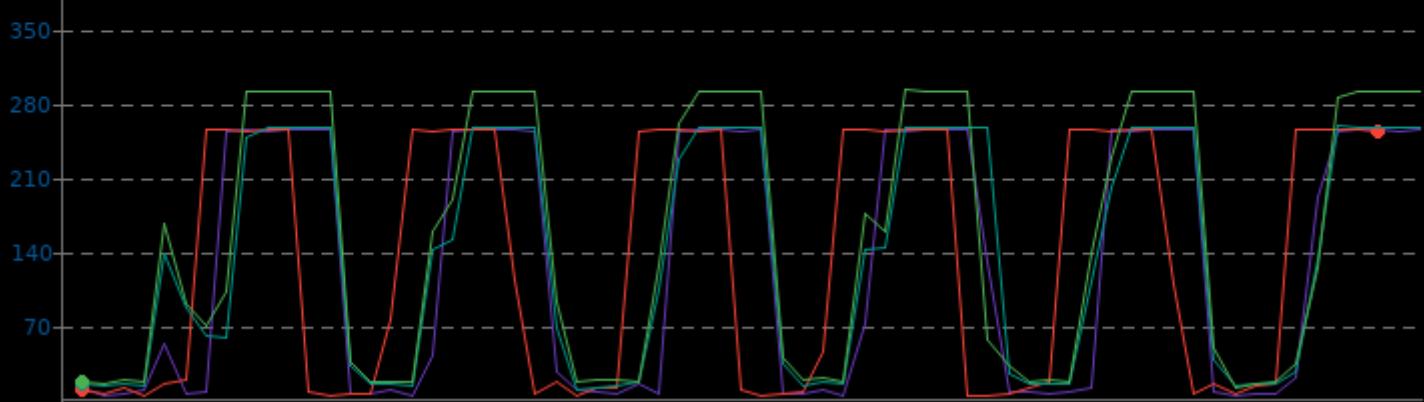


## Hashcat 6.2.4

GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| RX 6800 XT        | 6.0  | 131.7 | 255.0 |
| Radeon RX 6800 XT | 6.0  | 133.7 | 255.0 |
| RX 7900 XT        | 12.0 | 139.0 | 258.0 |
| RX 7900 XTX       | 14.0 | 155.8 | 292.0 |

▼ Watts, Fewer Is Better

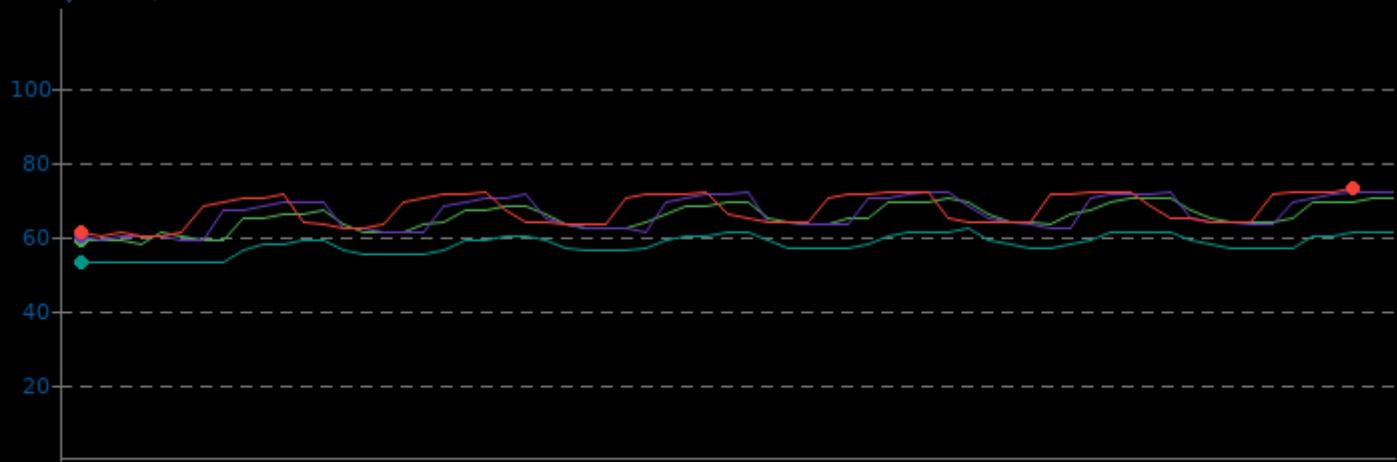


## Hashcat 6.2.4

GPU Temperature Monitor

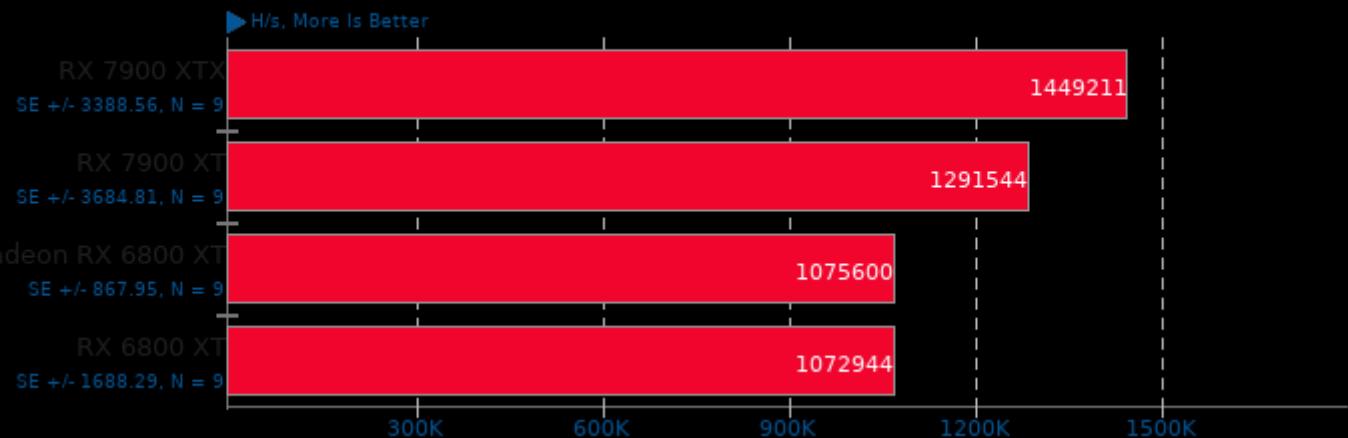
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 53.0 | 57.8 | 62.0 |
| RX 7900 XTX       | 58.0 | 65.2 | 70.0 |
| RX 6800 XT        | 59.0 | 66.1 | 72.0 |
| Radeon RX 6800 XT | 60.0 | 67.1 | 73.0 |

▼ Celsius, Fewer Is Better



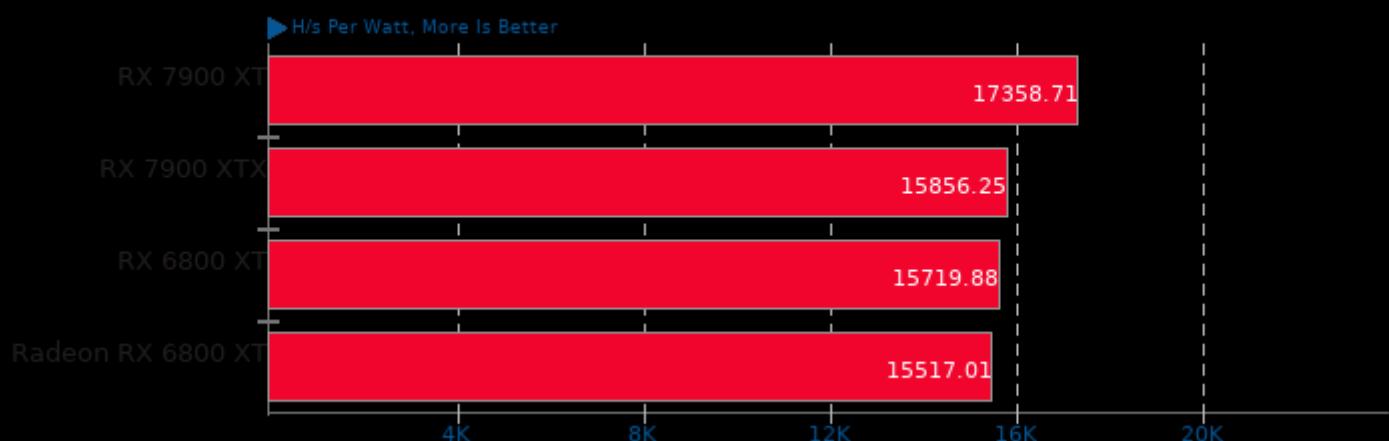
## Hashcat 6.2.4

Benchmark: 7-Zip



## Hashcat 6.2.4

Benchmark: 7-Zip

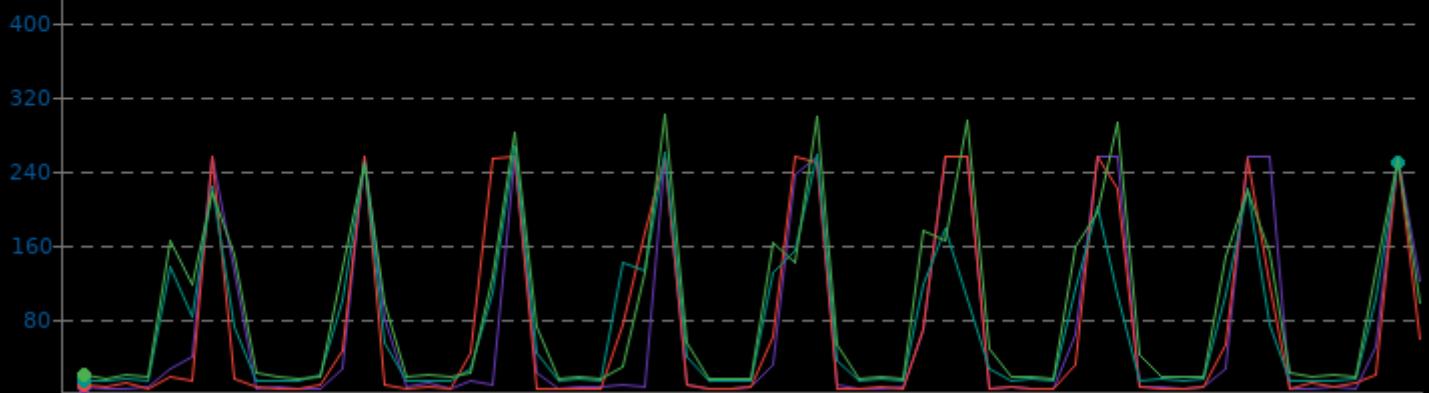


## Hashcat 6.2.4

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| RX 6800 XT        | 6.0  | 68.3 | 256.0 |
| Radeon RX 6800 XT | 6.0  | 69.3 | 256.0 |
| RX 7900 XT        | 14.0 | 74.4 | 265.0 |
| RX 7900 XTX       | 17.0 | 91.4 | 300.0 |

▼ Watts, Fewer Is Better

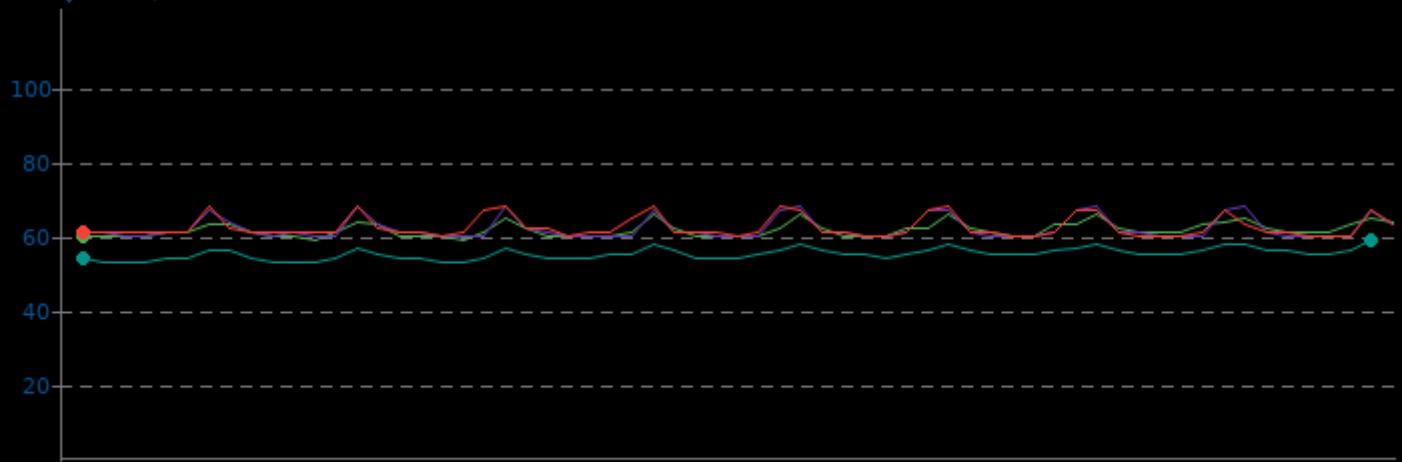


## Hashcat 6.2.4

GPU Temperature Monitor

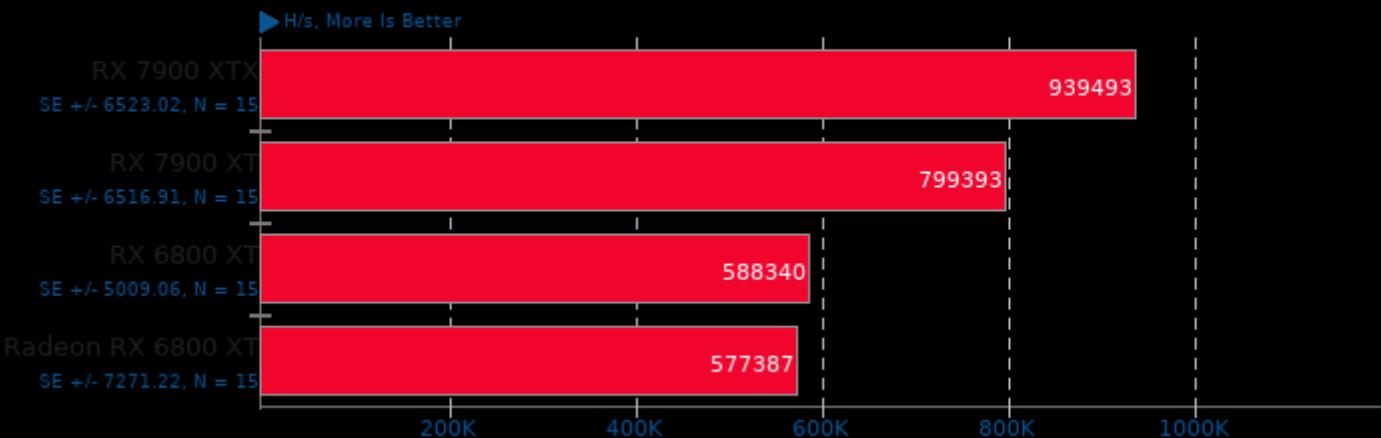
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 53.0 | 55.2 | 59.0 |
| RX 7900 XTX       | 59.0 | 61.6 | 66.0 |
| RX 6800 XT        | 60.0 | 62.0 | 68.0 |
| Radeon RX 6800 XT | 60.0 | 62.3 | 68.0 |

▼ Celsius, Fewer Is Better



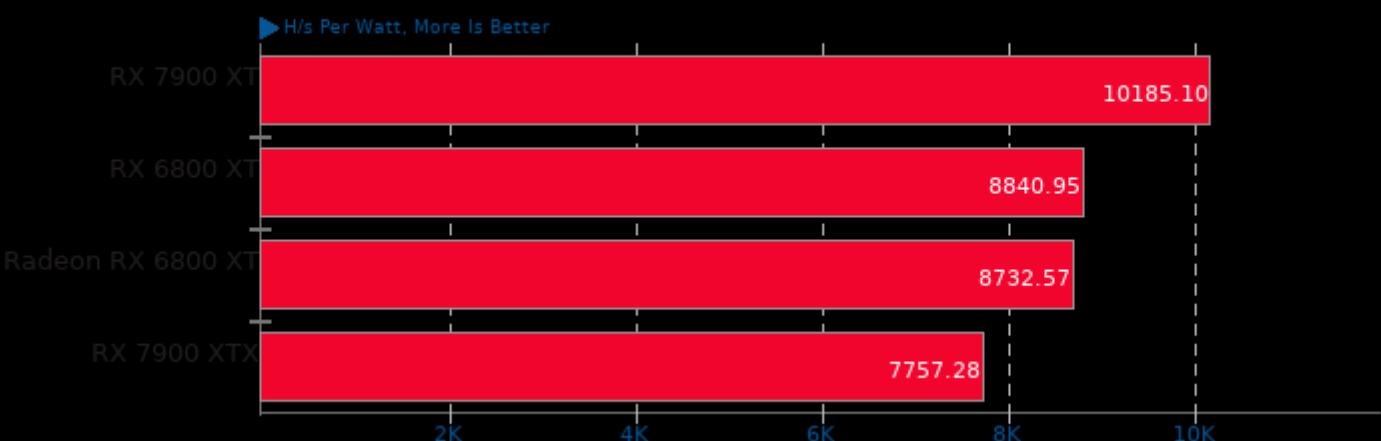
## Hashcat 6.2.4

Benchmark: TrueCrypt RIPEMD160 + XTS



## Hashcat 6.2.4

Benchmark: TrueCrypt RIPEMD160 + XTS

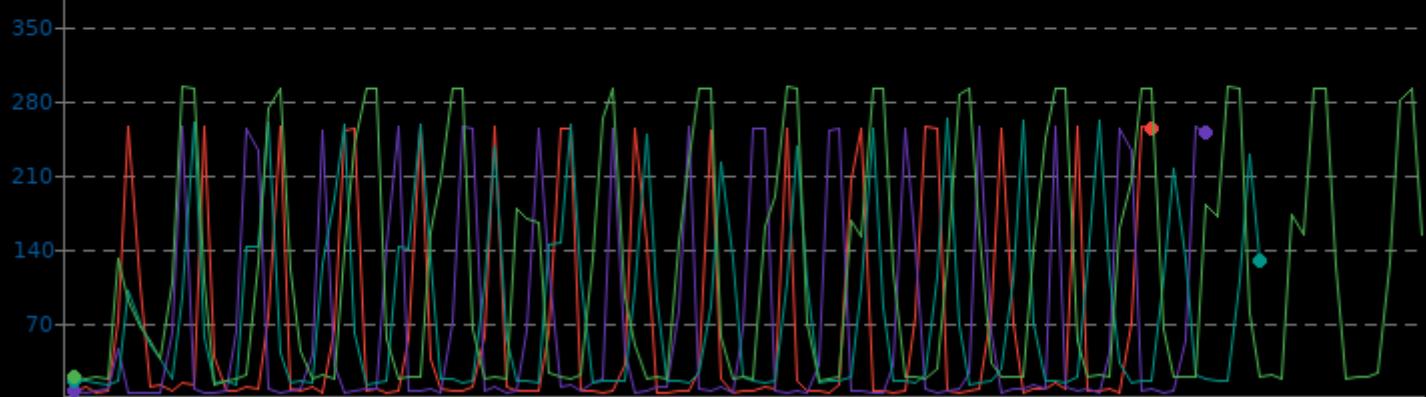


## Hashcat 6.2.4

GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| Radeon RX 6800 XT | 6.0  | 66.1  | 255.0 |
| RX 6800 XT        | 6.0  | 66.5  | 255.0 |
| RX 7900 XT        | 13.0 | 78.5  | 262.0 |
| RX 7900 XTX       | 14.0 | 121.1 | 293.0 |

▼ Watts, Fewer Is Better

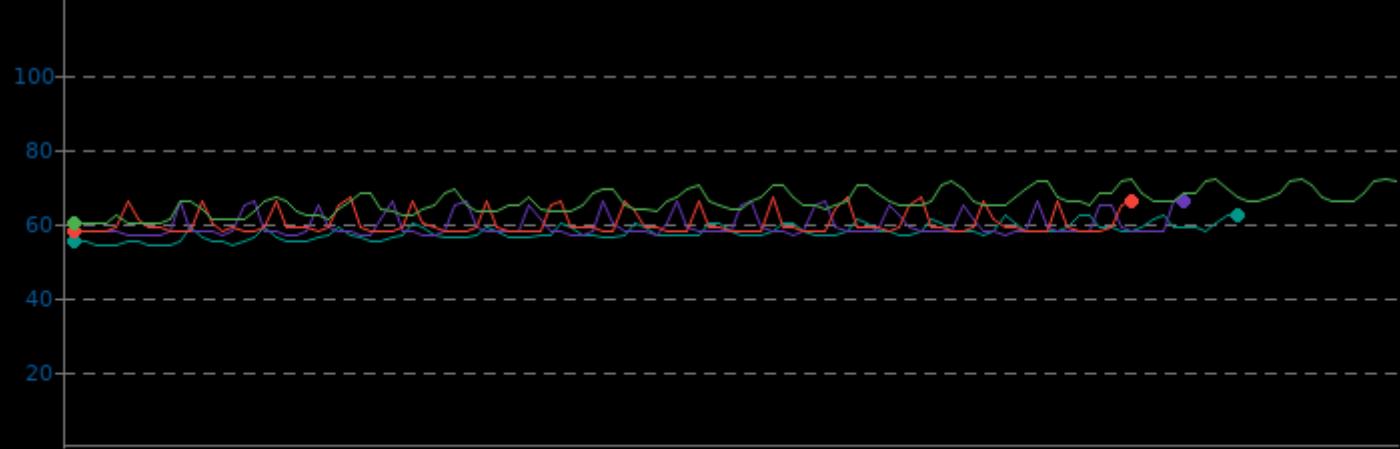


## Hashcat 6.2.4

GPU Temperature Monitor

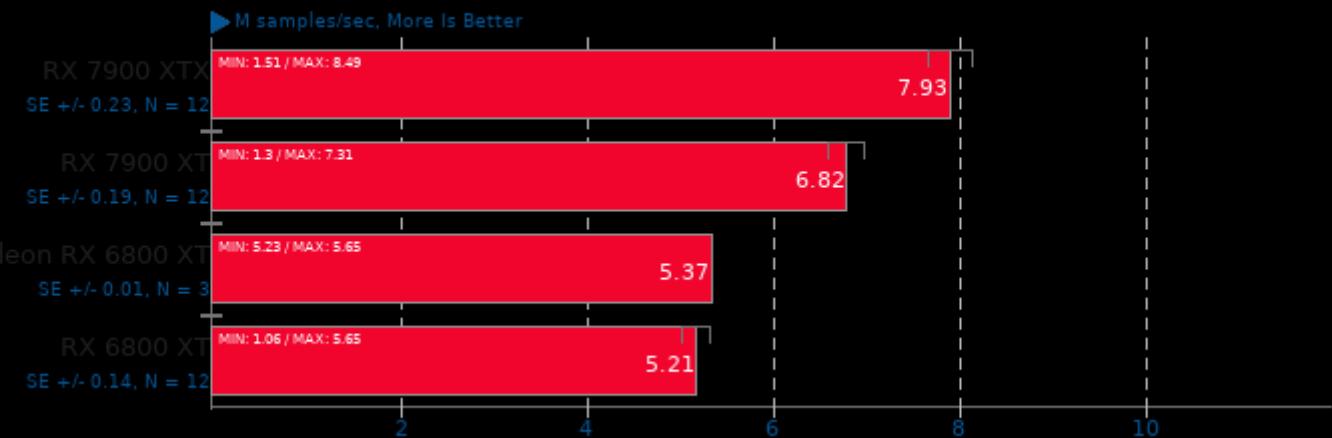
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 54.0 | 57.5 | 62.0 |
| RX 6800 XT        | 57.0 | 59.6 | 66.0 |
| Radeon RX 6800 XT | 58.0 | 60.0 | 67.0 |
| RX 7900 XTX       | 60.0 | 65.9 | 72.0 |

▼ Celsius, Fewer Is Better



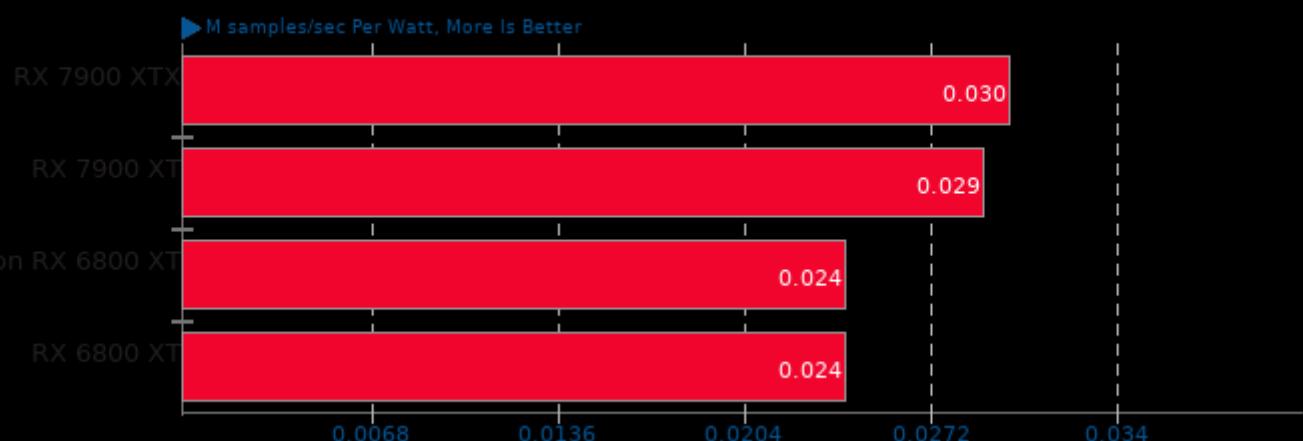
## LuxCoreRender 2.6

Scene: DLSC - Acceleration: GPU



## LuxCoreRender 2.6

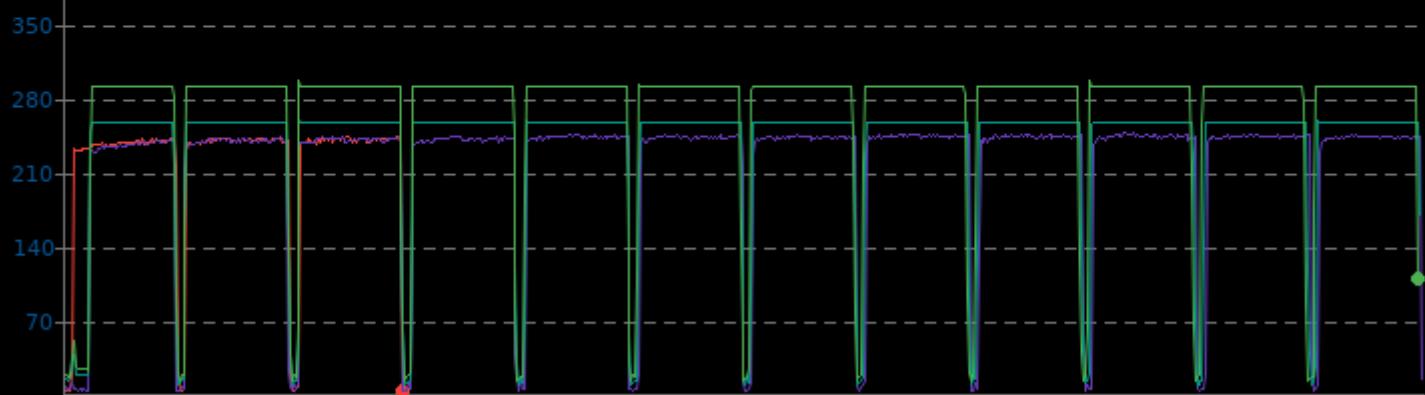
Scene: DLSC - Acceleration: GPU



## LuxCoreRender 2.6 GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| Radeon RX 6800 XT | 6.0  | 219.5 | 243.0 |
| RX 6800 XT        | 6.0  | 219.6 | 247.0 |
| RX 7900 XT        | 11.0 | 234.5 | 261.0 |
| RX 7900 XTX       | 15.0 | 265.6 | 297.0 |

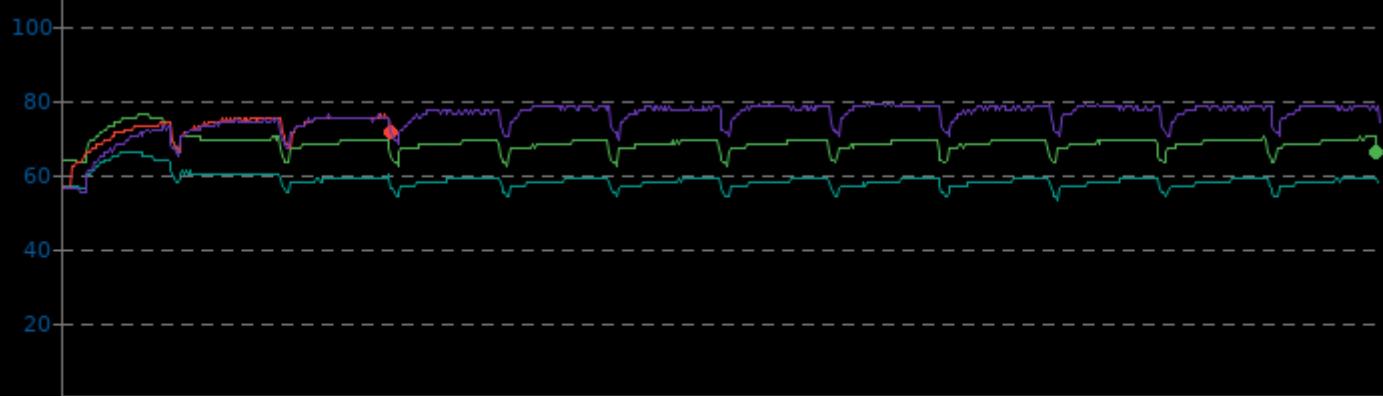
▼ Watts, Fewer Is Better



## LuxCoreRender 2.6 GPU Temperature Monitor

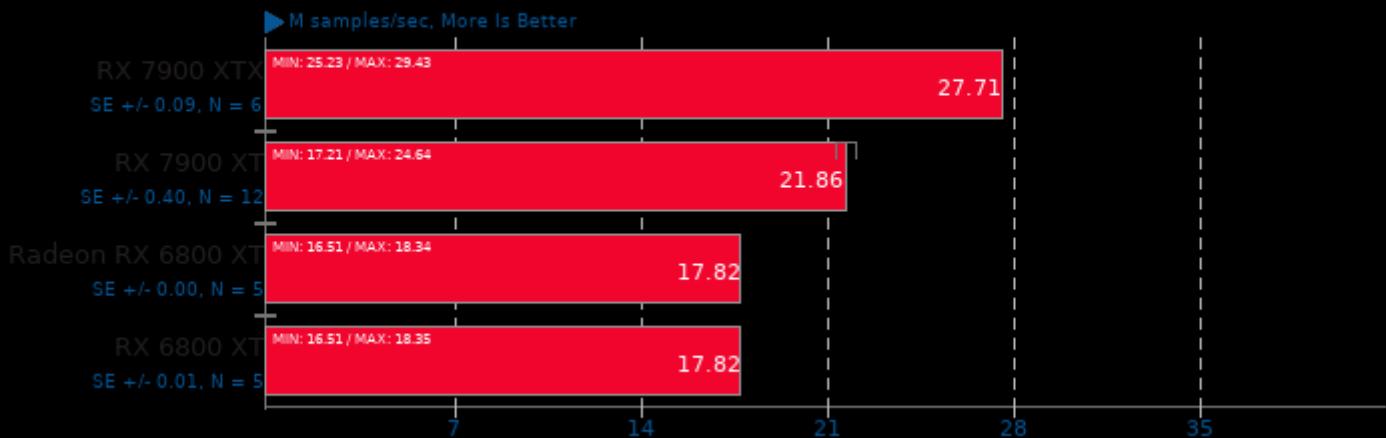
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 53.0 | 58.5 | 66.0 |
| RX 7900 XTX       | 62.0 | 68.3 | 76.0 |
| Radeon RX 6800 XT | 56.0 | 72.2 | 76.0 |
| RX 6800 XT        | 55.0 | 75.3 | 79.0 |

▼ Celsius, Fewer Is Better



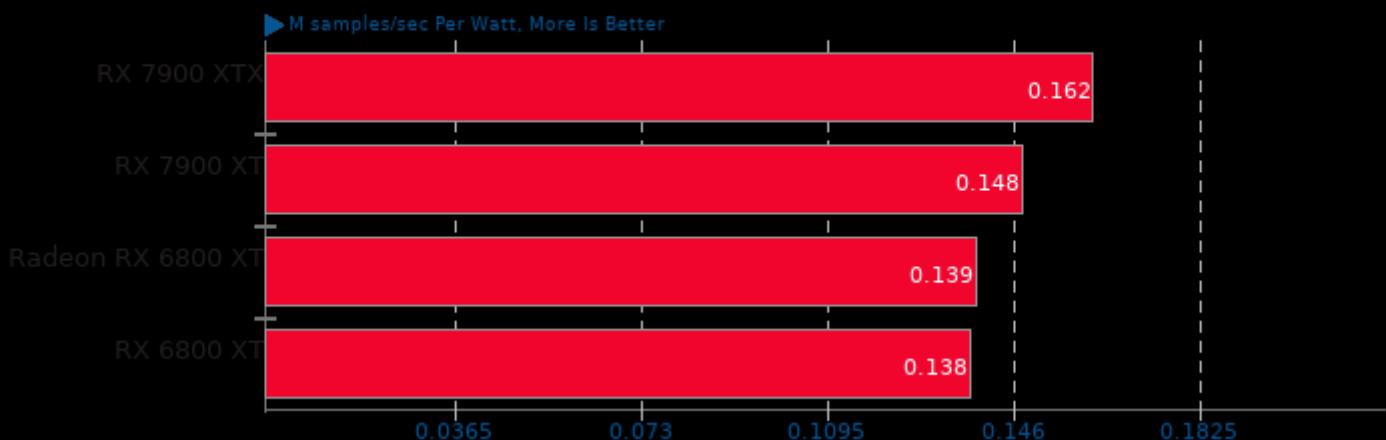
## LuxCoreRender 2.6

Scene: Rainbow Colors and Prism - Acceleration: GPU



## LuxCoreRender 2.6

Scene: Rainbow Colors and Prism - Acceleration: GPU



## LuxCoreRender 2.6

GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| Radeon RX 6800 XT | 6.0  | 128.5 | 199.0 |
| RX 6800 XT        | 6.0  | 129.1 | 203.0 |
| RX 7900 XT        | 11.0 | 147.4 | 236.0 |
| RX 7900 XTX       | 14.0 | 171.1 | 293.0 |

▼ Watts, Fewer Is Better

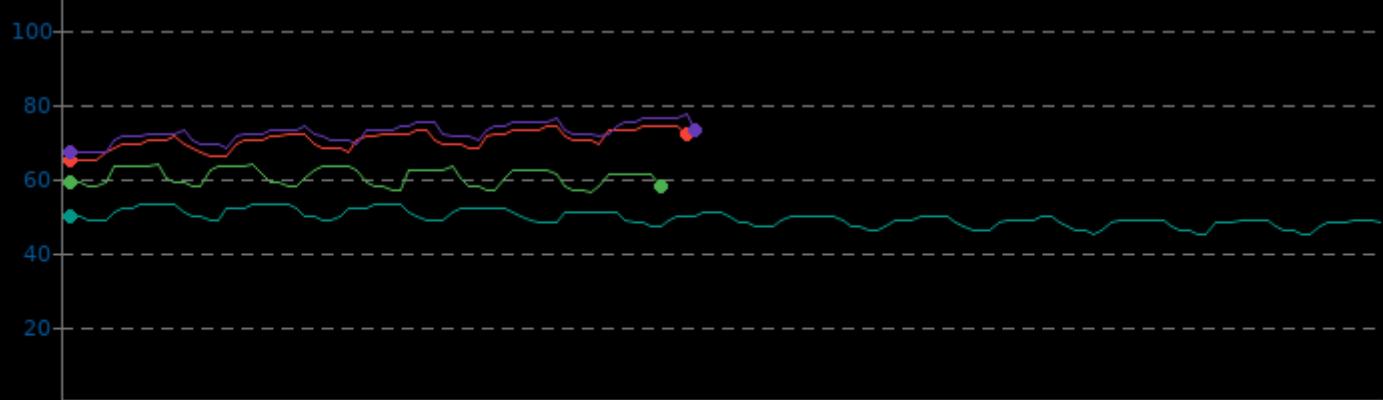


## LuxCoreRender 2.6

GPU Temperature Monitor

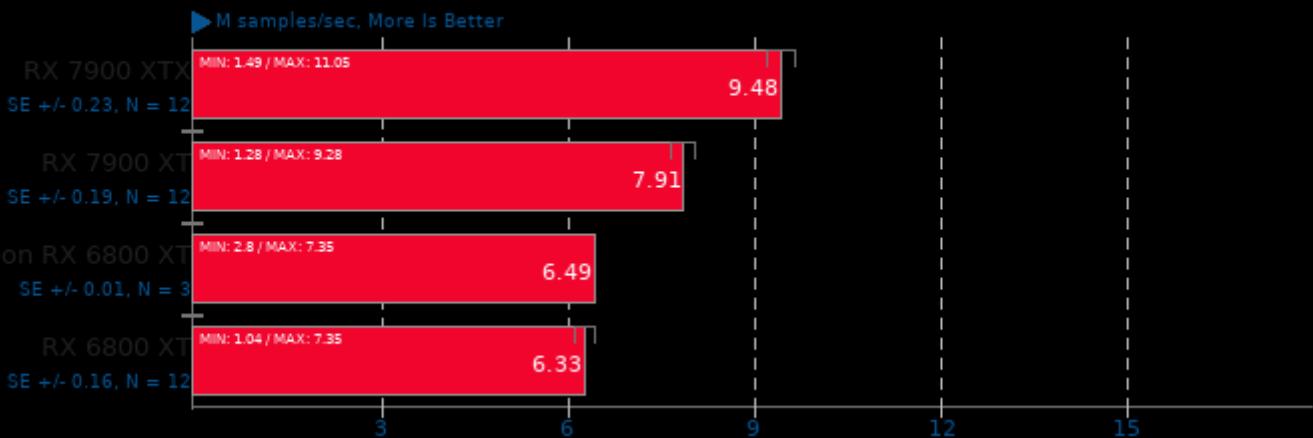
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 45.0 | 49.4 | 53.0 |
| RX 7900 XTX       | 56.0 | 60.4 | 64.0 |
| Radeon RX 6800 XT | 65.0 | 70.3 | 74.0 |
| RX 6800 XT        | 67.0 | 72.3 | 77.0 |

▼ Celsius, Fewer Is Better



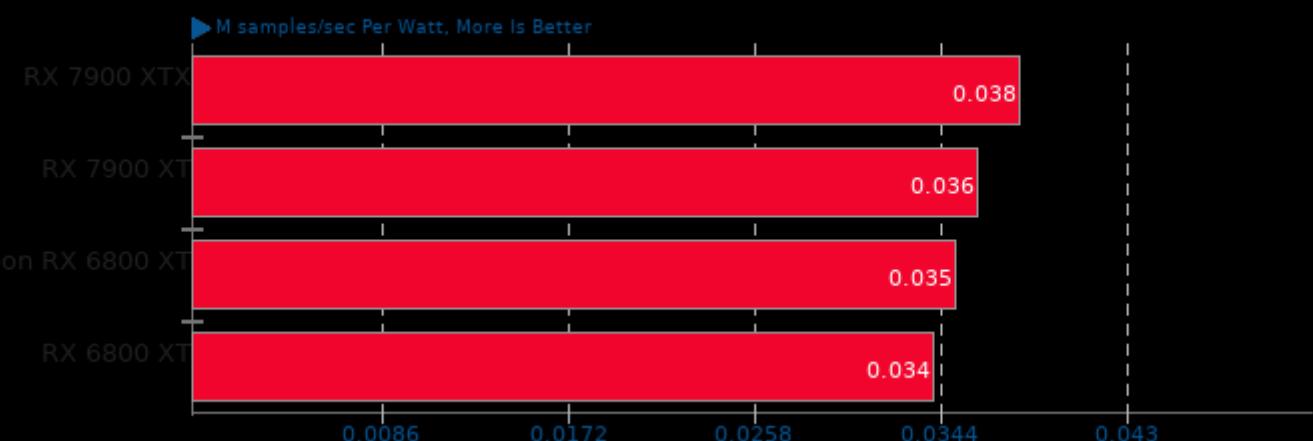
## LuxCoreRender 2.6

Scene: LuxCore Benchmark - Acceleration: GPU



## LuxCoreRender 2.6

Scene: LuxCore Benchmark - Acceleration: GPU

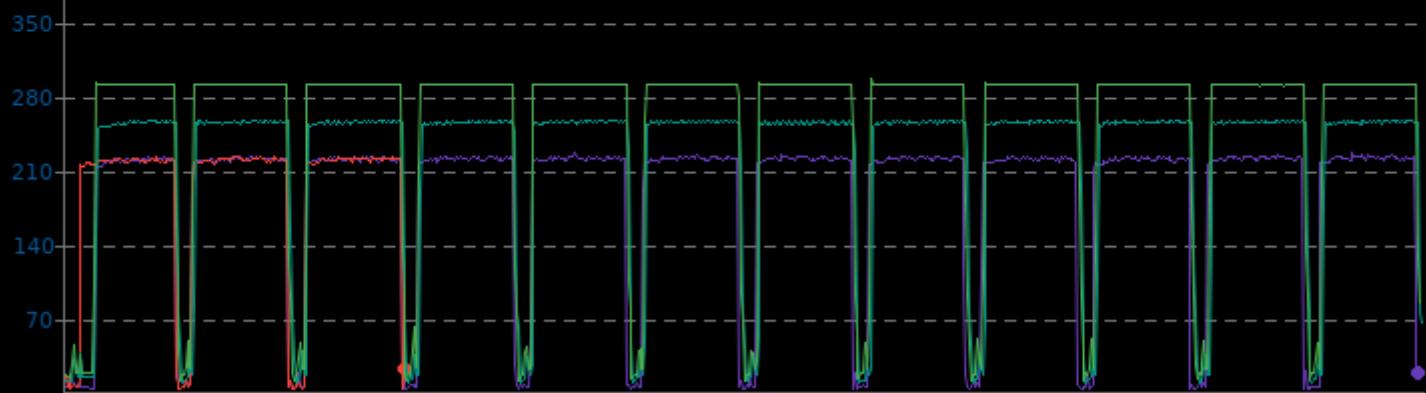


## LuxCoreRender 2.6

GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| RX 6800 XT        | 6.0  | 186.6 | 226.0 |
| Radeon RX 6800 XT | 6.0  | 187.4 | 224.0 |
| RX 7900 XT        | 11.0 | 218.1 | 257.0 |
| RX 7900 XTX       | 14.0 | 249.0 | 296.0 |

▼ Watts, Fewer Is Better

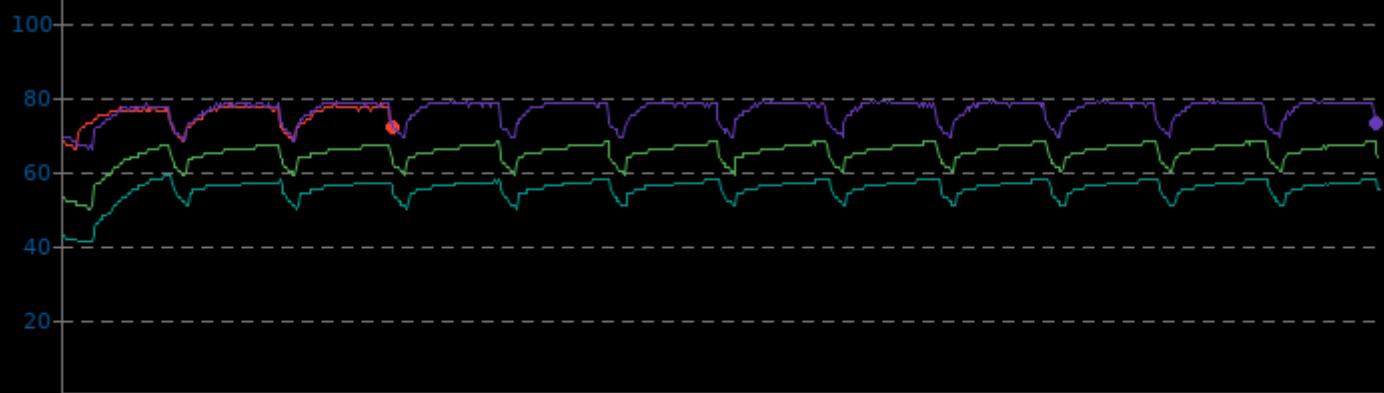


## LuxCoreRender 2.6

GPU Temperature Monitor

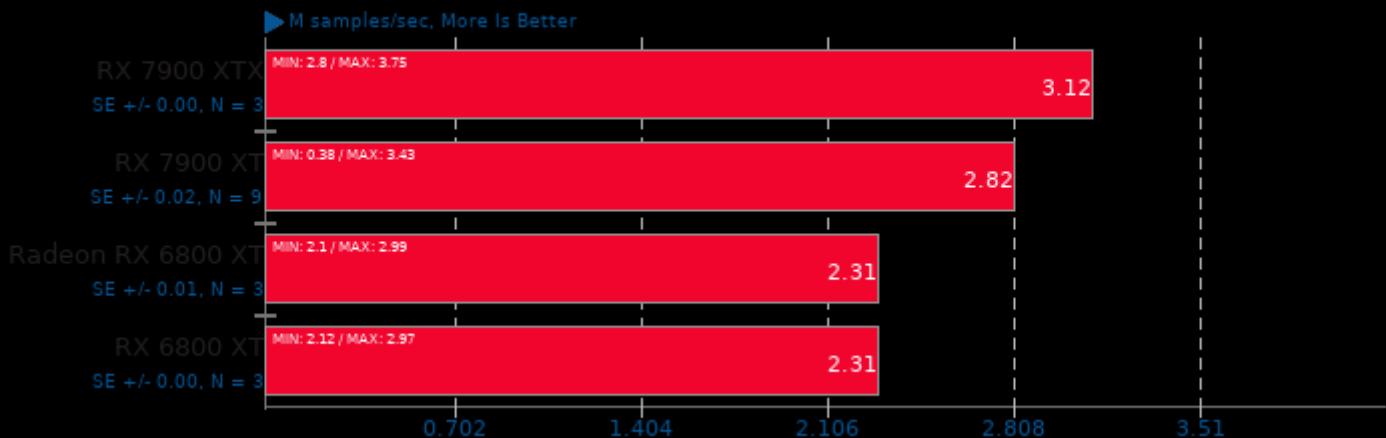
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 41.0 | 55.3 | 59.0 |
| RX 7900 XTX       | 50.0 | 65.0 | 68.0 |
| Radeon RX 6800 XT | 66.0 | 74.8 | 78.0 |
| RX 6800 XT        | 66.0 | 76.1 | 79.0 |

▼ Celsius, Fewer Is Better



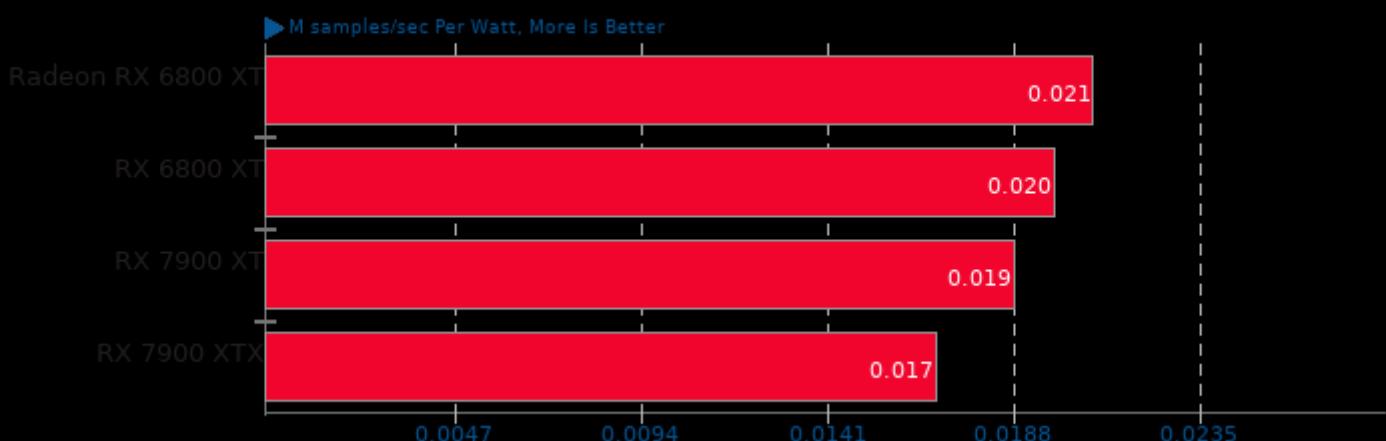
## LuxCoreRender 2.6

Scene: Orange Juice - Acceleration: GPU



## LuxCoreRender 2.6

Scene: Orange Juice - Acceleration: GPU



## LuxCoreRender 2.6 GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| Radeon RX 6800 XT | 6.0  | 112.4 | 137.0 |
| RX 6800 XT        | 6.0  | 113.2 | 138.0 |
| RX 7900 XT        | 11.0 | 147.9 | 168.0 |
| RX 7900 XTX       | 14.0 | 182.9 | 209.0 |

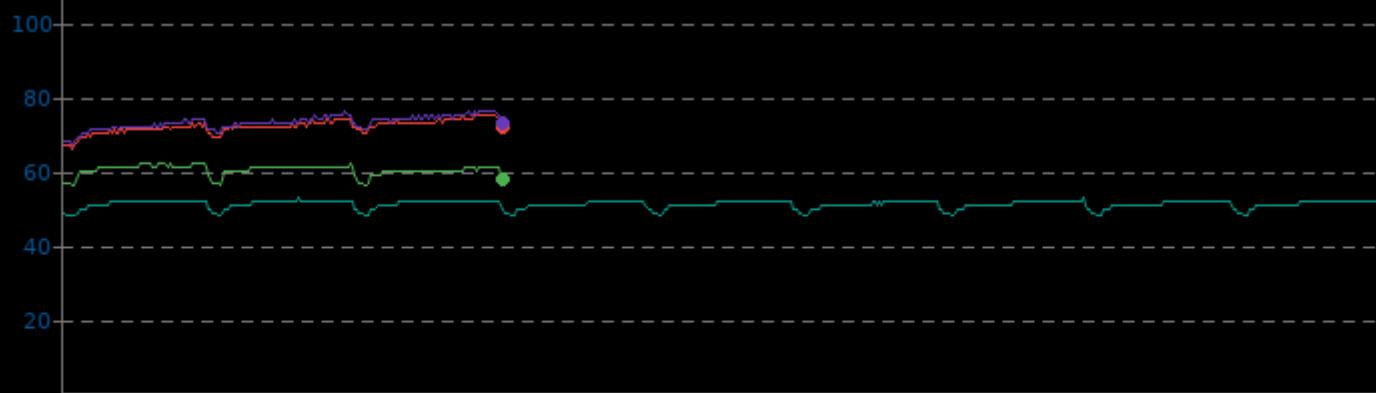
▼ Watts, Fewer Is Better



## LuxCoreRender 2.6 GPU Temperature Monitor

|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 48.0 | 51.3 | 53.0 |
| RX 7900 XTX       | 56.0 | 60.3 | 62.0 |
| Radeon RX 6800 XT | 66.0 | 72.0 | 75.0 |
| RX 6800 XT        | 67.0 | 73.1 | 76.0 |

▼ Celsius, Fewer Is Better



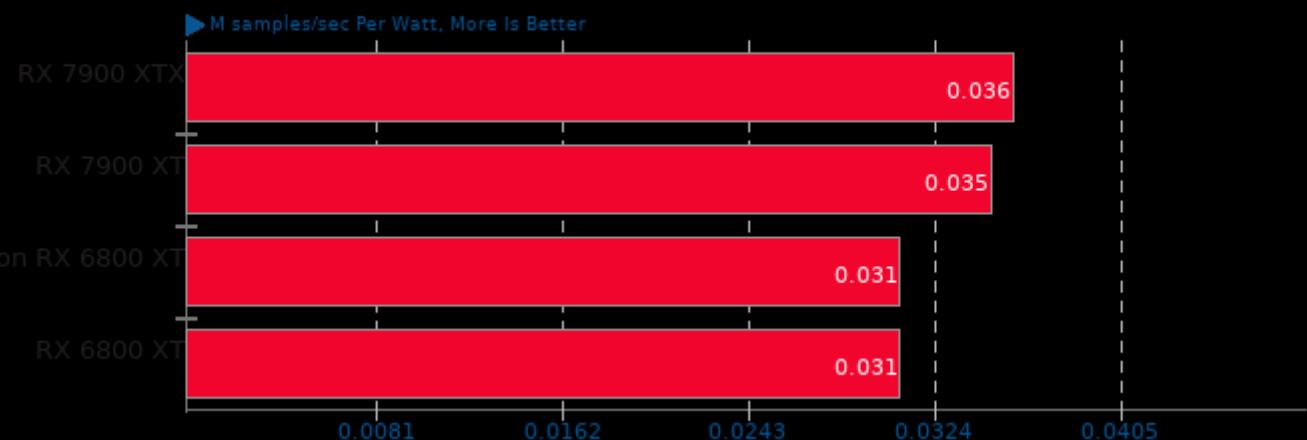
## LuxCoreRender 2.6

Scene: Danish Mood - Acceleration: GPU



## LuxCoreRender 2.6

Scene: Danish Mood - Acceleration: GPU



## LuxCoreRender 2.6 GPU Power Consumption Monitor

|                   | Min  | Avg   | Max   |
|-------------------|------|-------|-------|
| Radeon RX 6800 XT | 6.0  | 188.9 | 228.0 |
| RX 6800 XT        | 6.0  | 191.1 | 230.0 |
| RX 7900 XT        | 11.0 | 219.7 | 258.0 |
| RX 7900 XTX       | 14.0 | 249.8 | 295.0 |

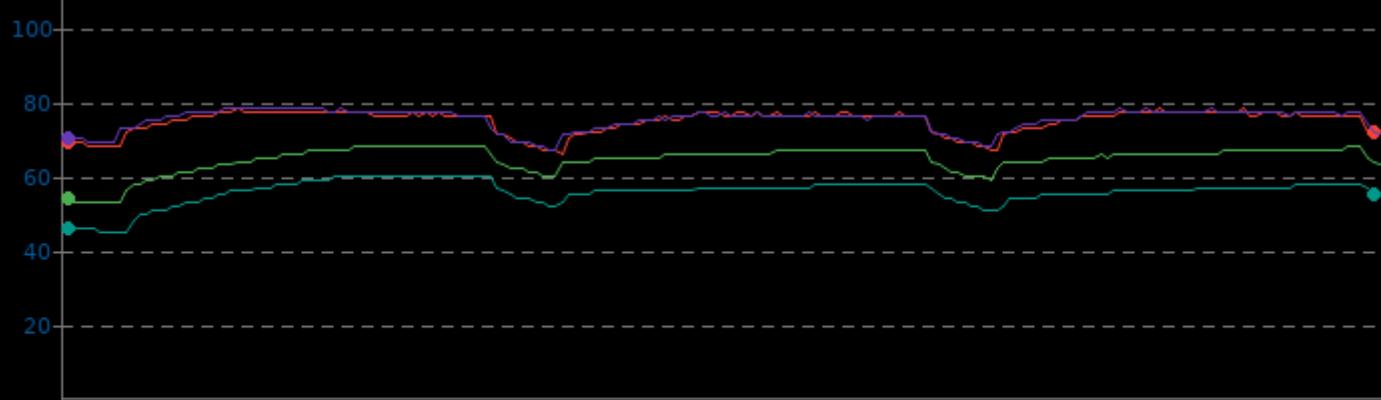
▼ Watts, Fewer Is Better



## LuxCoreRender 2.6 GPU Temperature Monitor

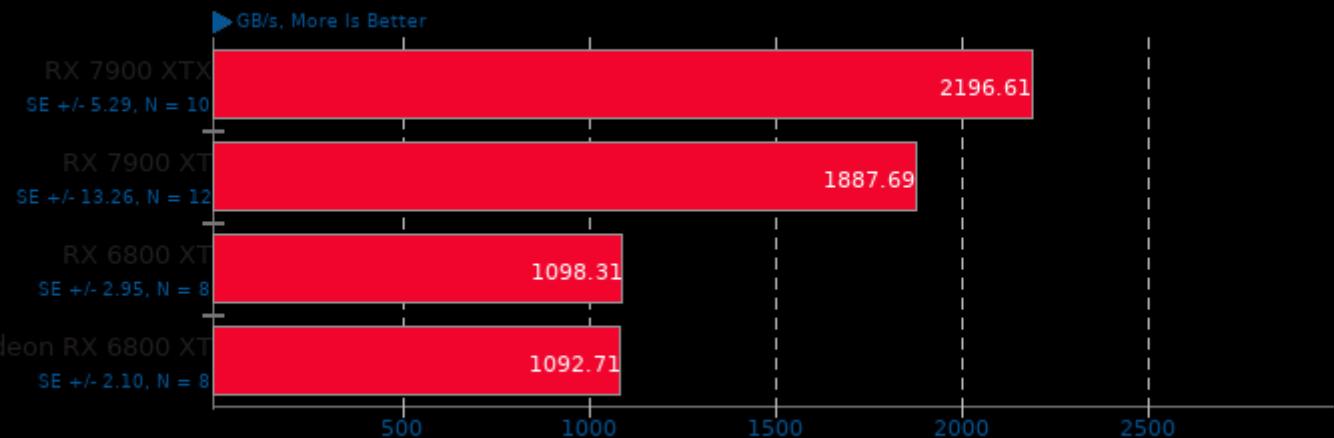
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 45.0 | 55.8 | 60.0 |
| RX 7900 XTX       | 53.0 | 64.7 | 68.0 |
| Radeon RX 6800 XT | 66.0 | 74.7 | 78.0 |
| RX 6800 XT        | 67.0 | 75.1 | 78.0 |

▼ Celsius, Fewer Is Better



**SHOC Scalable Heterogeneous Computing 2020-04-17**

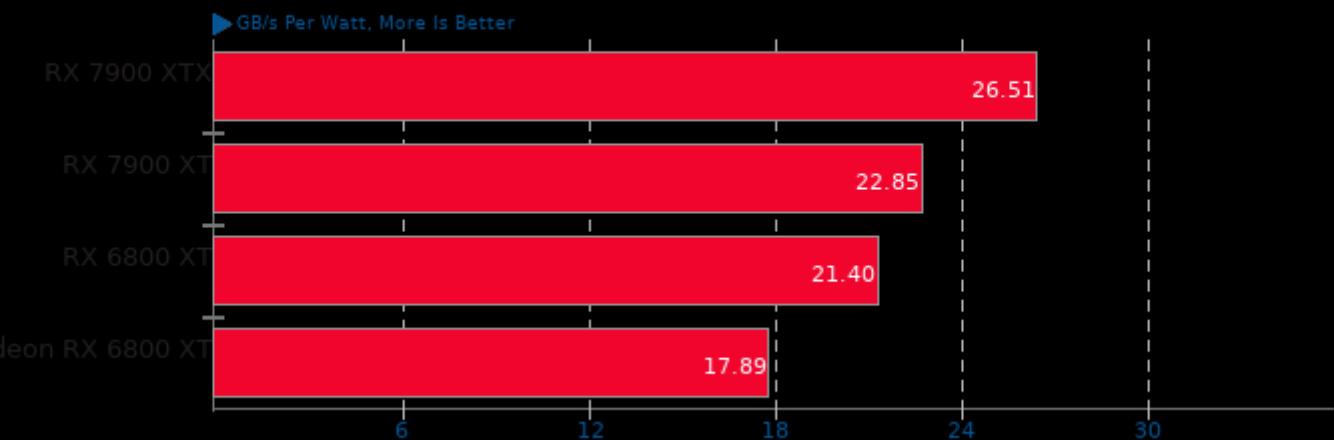
Target: OpenCL - Benchmark: Texture Read Bandwidth



1. (CXX) g++ options: -O2 -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt

**SHOC Scalable Heterogeneous Computing 2020-04-17**

Target: OpenCL - Benchmark: Texture Read Bandwidth



## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| RX 6800 XT        | 6.0  | 51.3 | 132.0 |
| Radeon RX 6800 XT | 6.0  | 61.1 | 150.0 |
| RX 7900 XT        | 11.0 | 82.6 | 146.0 |
| RX 7900 XTX       | 14.0 | 82.9 | 219.0 |

▼ Watts, Fewer Is Better

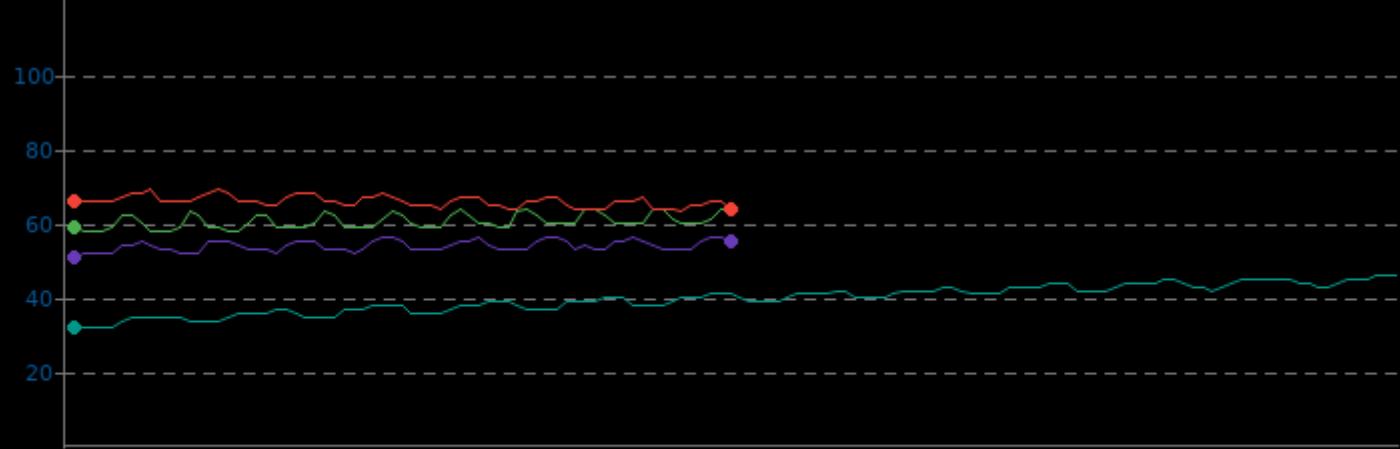


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Temperature Monitor

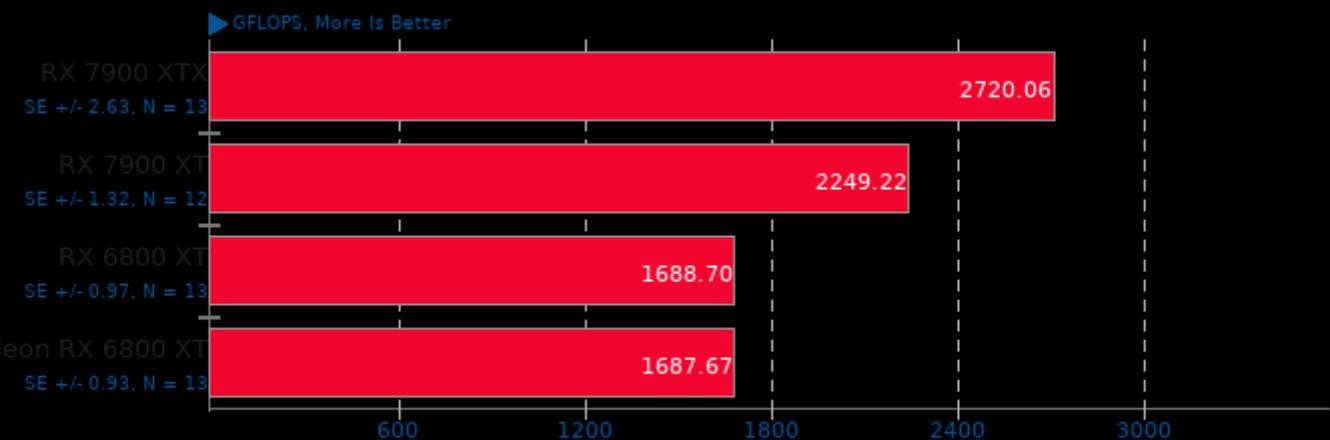
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 32.0 | 39.8 | 46.0 |
| RX 6800 XT        | 51.0 | 53.8 | 56.0 |
| RX 7900 XTX       | 58.0 | 60.5 | 64.0 |
| Radeon RX 6800 XT | 63.0 | 66.0 | 69.0 |

▼ Celsius, Fewer Is Better



**SHOC Scalable Heterogeneous Computing 2020-04-17**

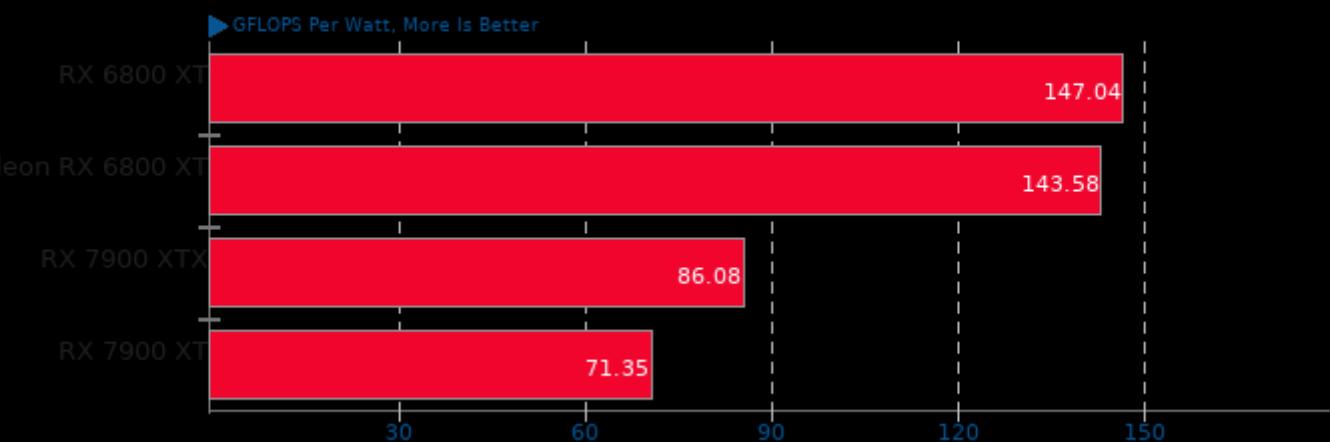
Target: OpenCL - Benchmark: FFT SP



1. (CXX) g++ options: -O2 -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt

**SHOC Scalable Heterogeneous Computing 2020-04-17**

Target: OpenCL - Benchmark: FFT SP

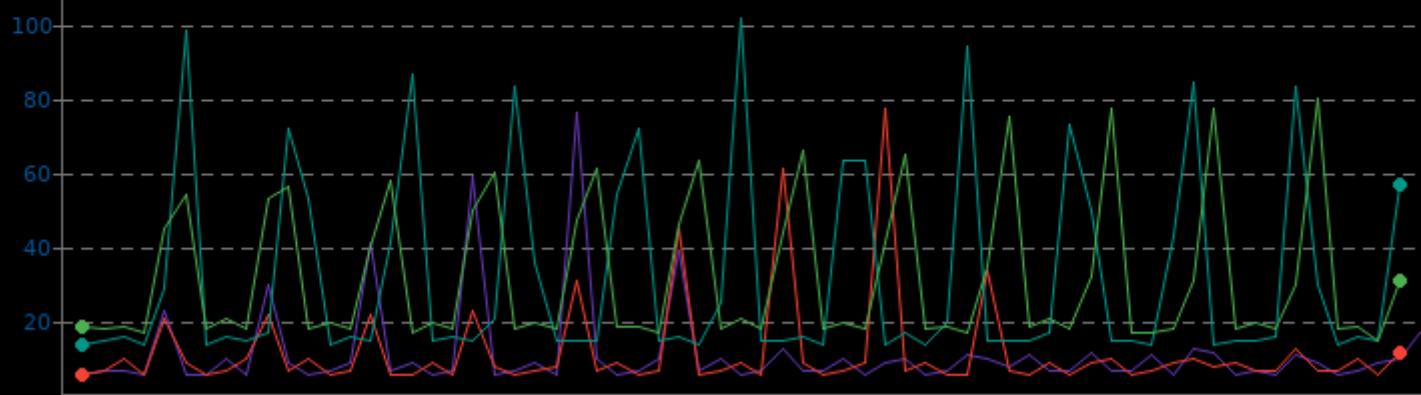


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| RX 6800 XT        | 6.0  | 11.5 | 76.0  |
| Radeon RX 6800 XT | 6.0  | 11.8 | 77.0  |
| RX 7900 XT        | 14.0 | 31.5 | 101.0 |
| RX 7900 XTX       | 15.0 | 31.6 | 80.0  |

▼ Watts, Fewer Is Better

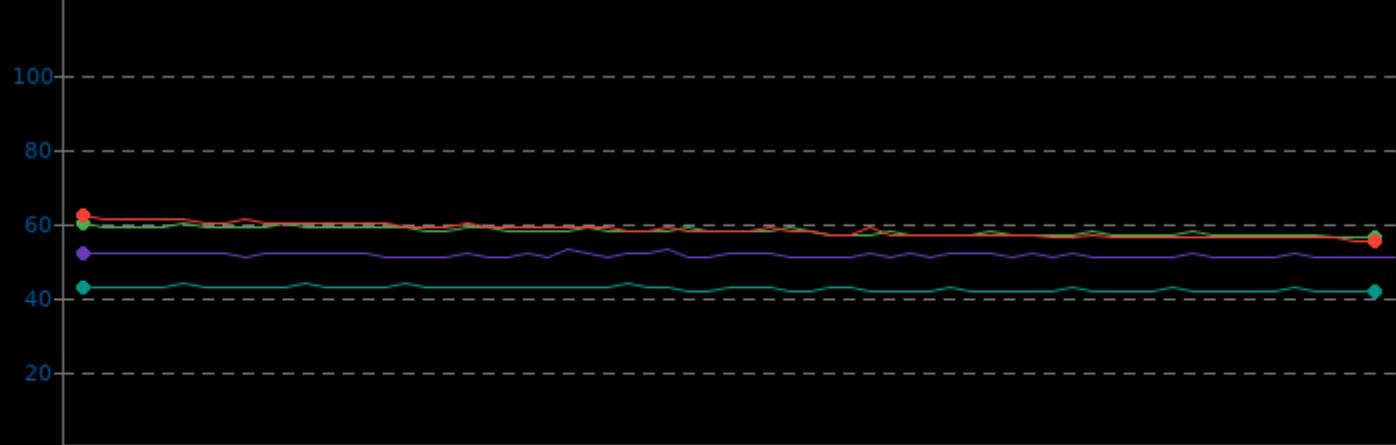


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Temperature Monitor

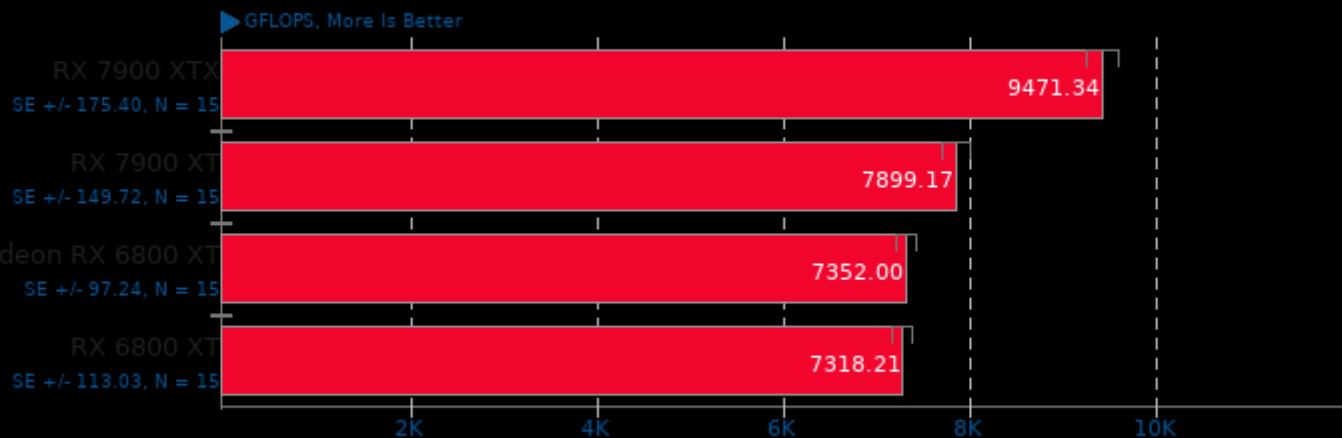
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 42.0 | 42.7 | 44.0 |
| RX 6800 XT        | 51.0 | 51.5 | 53.0 |
| RX 7900 XTX       | 56.0 | 58.0 | 60.0 |
| Radeon RX 6800 XT | 55.0 | 58.2 | 62.0 |

▼ Celsius, Fewer Is Better



**SHOC Scalable Heterogeneous Computing 2020-04-17**

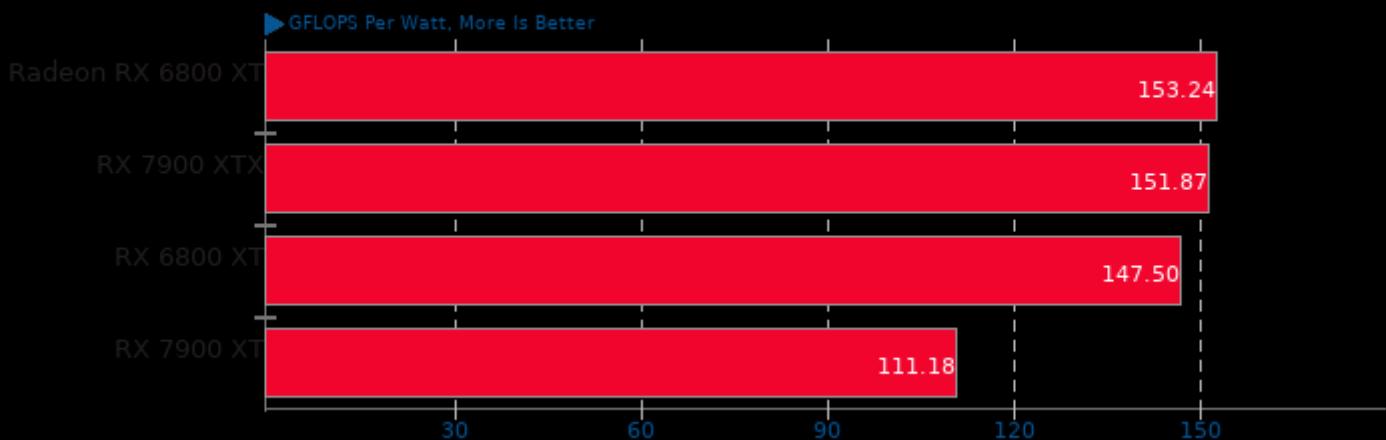
Target: OpenCL - Benchmark: GEMM SGEMM\_N



1. (CXX) g++ options: -O2 -I SHOCCommonOpenCL -I SHOCCommon -I OpenCL -I rt

**SHOC Scalable Heterogeneous Computing 2020-04-17**

Target: OpenCL - Benchmark: GEMM SGEMM\_N

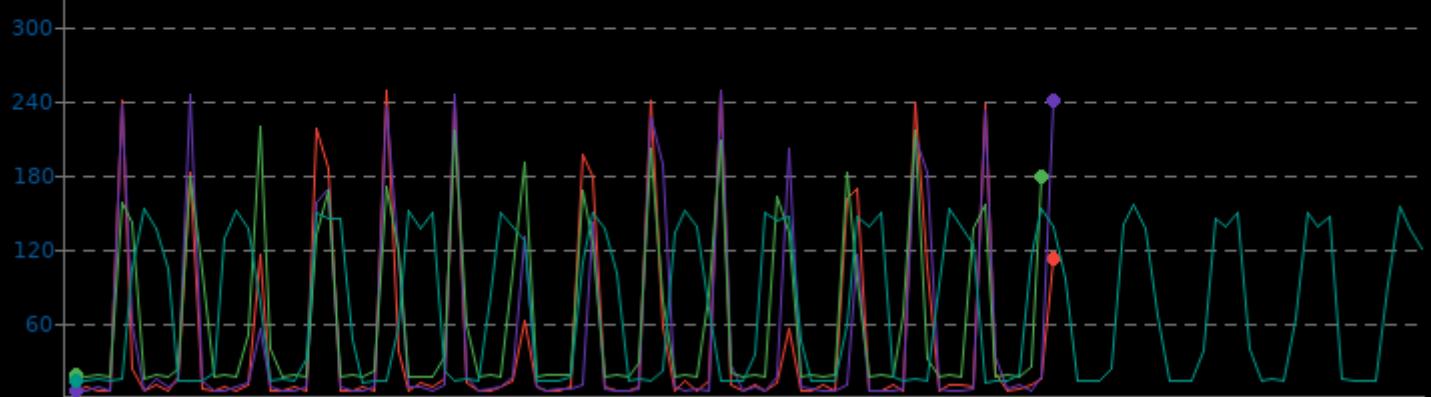


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| Radeon RX 6800 XT | 6.0  | 48.0 | 248.0 |
| RX 6800 XT        | 6.0  | 49.6 | 248.0 |
| RX 7900 XTX       | 16.0 | 62.4 | 218.0 |
| RX 7900 XT        | 13.0 | 71.1 | 156.0 |

▼ Watts, Fewer Is Better

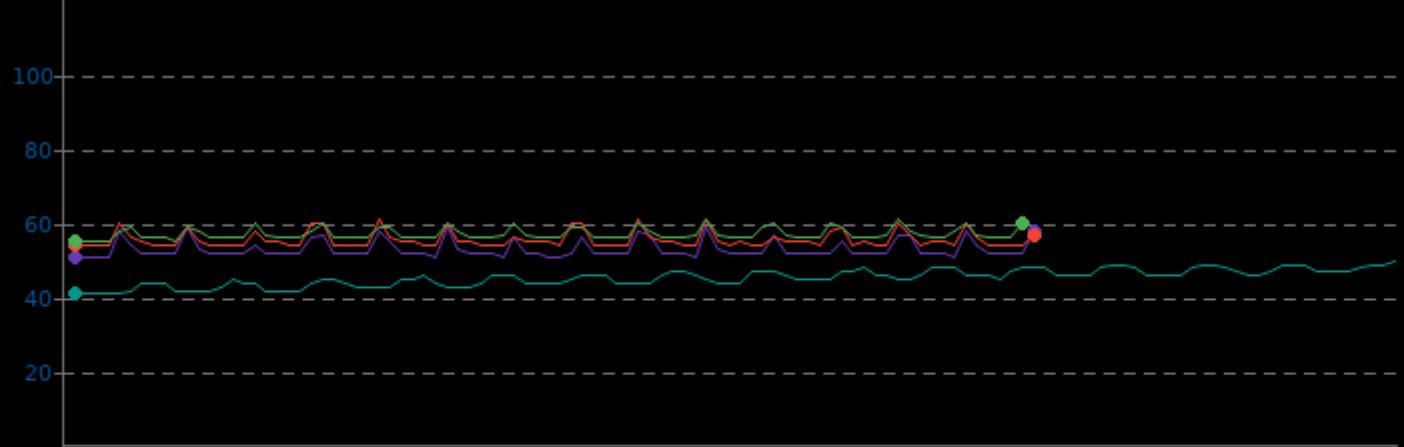


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Temperature Monitor

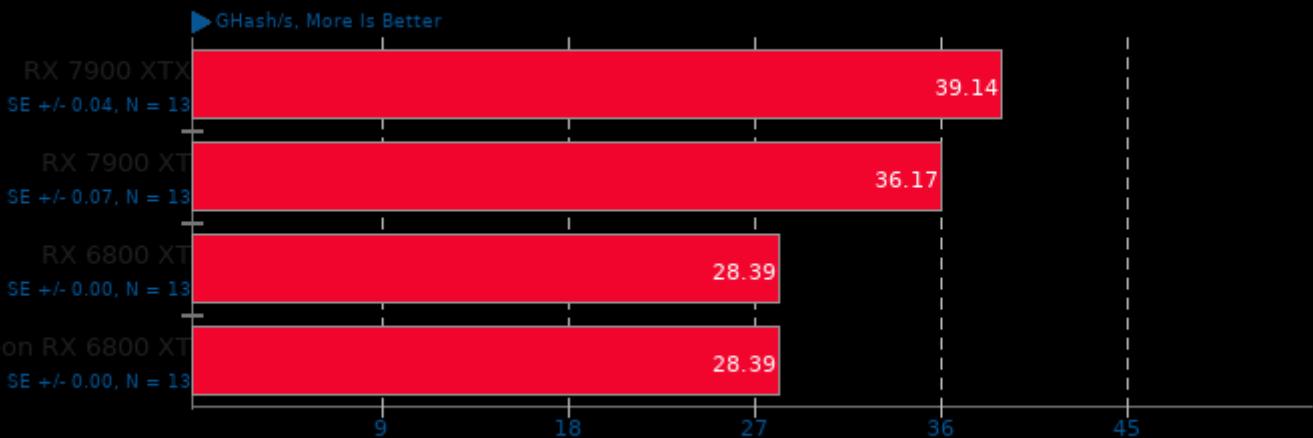
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 41.0 | 45.4 | 50.0 |
| RX 6800 XT        | 51.0 | 53.1 | 59.0 |
| Radeon RX 6800 XT | 54.0 | 55.5 | 61.0 |
| RX 7900 XTX       | 55.0 | 57.0 | 61.0 |

▼ Celsius, Fewer Is Better



**SHOC Scalable Heterogeneous Computing 2020-04-17**

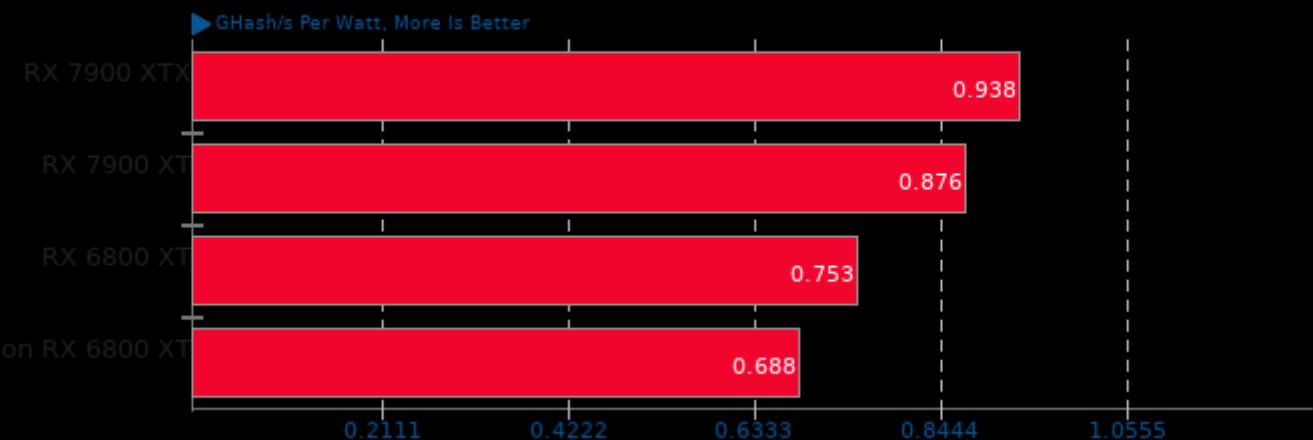
Target: OpenCL - Benchmark: MD5 Hash



1. (CXX) g++ options: -O2 -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt

**SHOC Scalable Heterogeneous Computing 2020-04-17**

Target: OpenCL - Benchmark: MD5 Hash

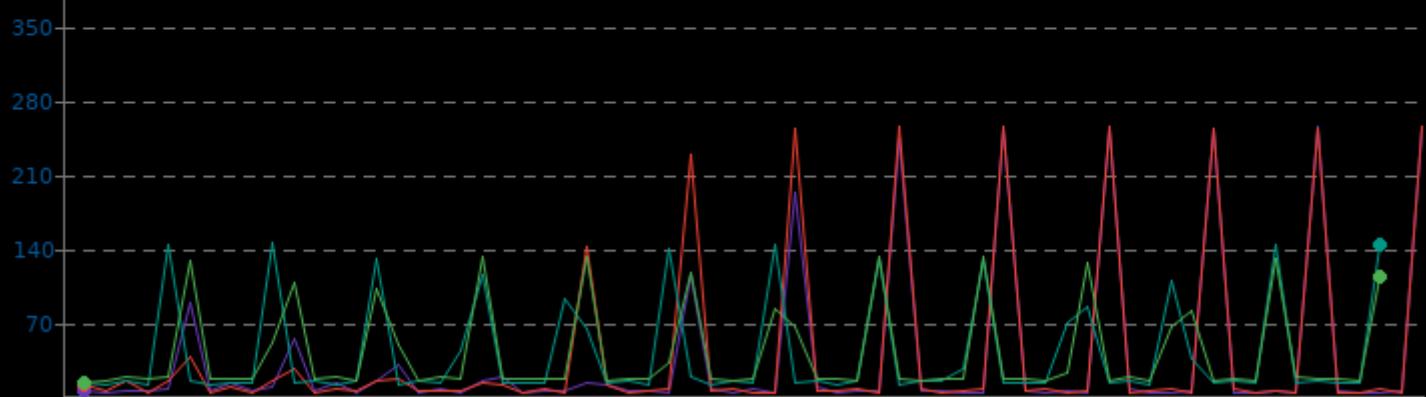


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| RX 6800 XT        | 6.0  | 37.7 | 255.0 |
| Radeon RX 6800 XT | 6.0  | 41.3 | 255.0 |
| RX 7900 XT        | 13.0 | 41.3 | 146.0 |
| RX 7900 XTX       | 15.0 | 41.7 | 134.0 |

▼ Watts, Fewer Is Better

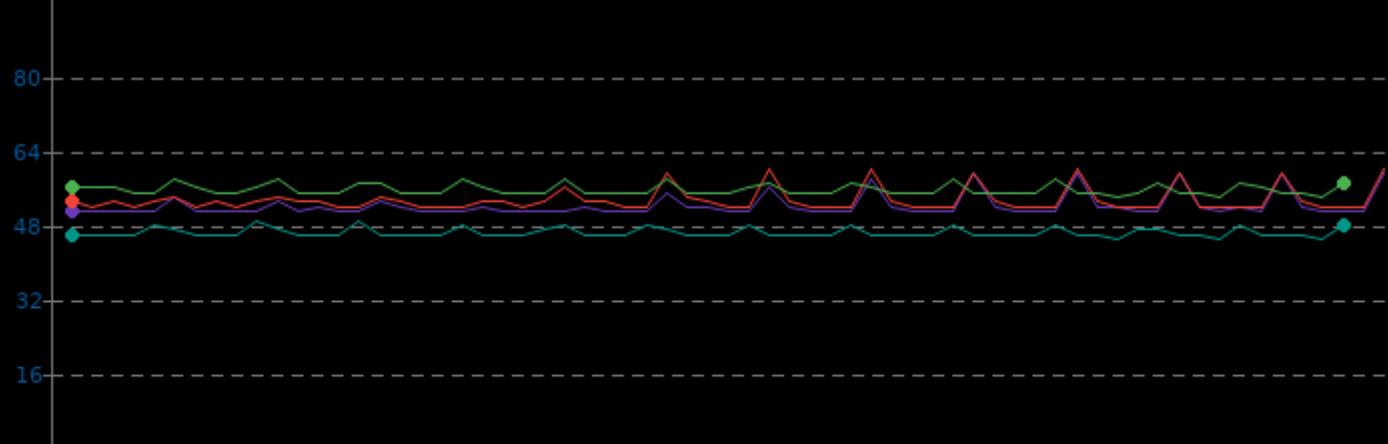


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Temperature Monitor

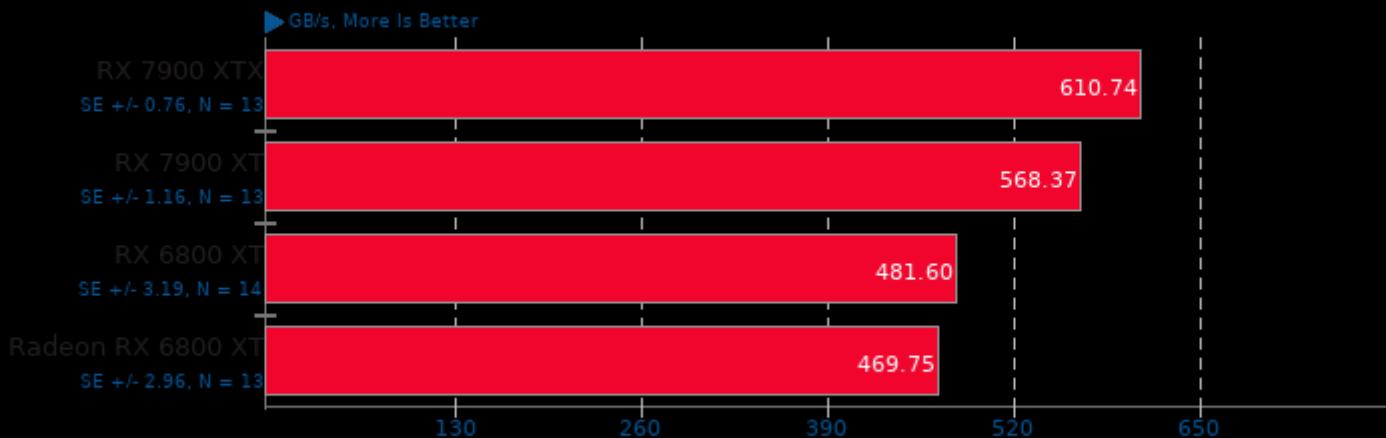
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 45.0 | 46.5 | 49.0 |
| RX 6800 XT        | 51.0 | 52.2 | 59.0 |
| Radeon RX 6800 XT | 52.0 | 53.4 | 60.0 |
| RX 7900 XTX       | 54.0 | 55.7 | 58.0 |

▼ Celsius, Fewer Is Better



**SHOC Scalable Heterogeneous Computing 2020-04-17**

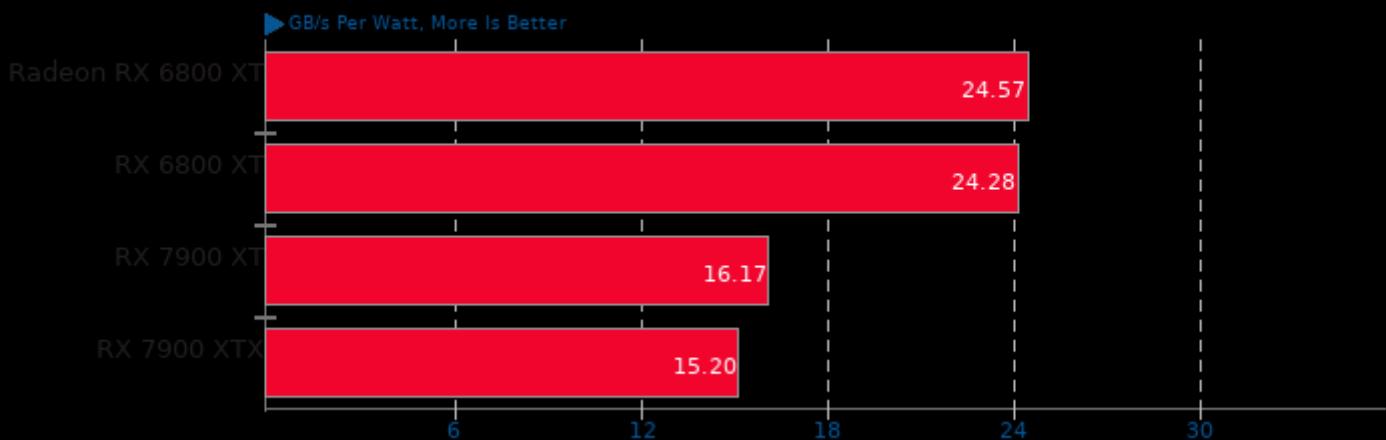
Target: OpenCL - Benchmark: Reduction



1. (CXX) g++ options: -O2 -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt

**SHOC Scalable Heterogeneous Computing 2020-04-17**

Target: OpenCL - Benchmark: Reduction

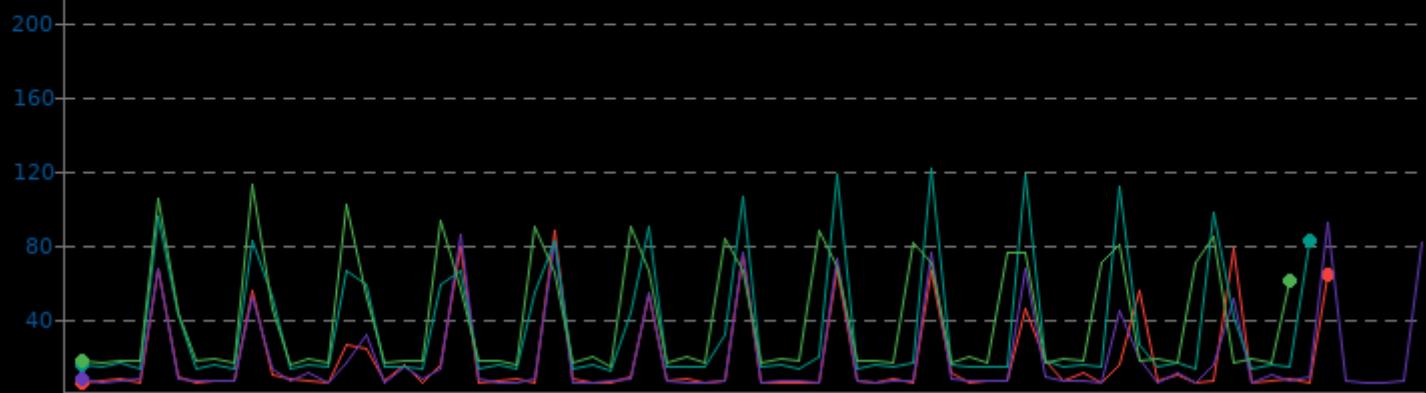


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max   |
|-------------------|------|------|-------|
| Radeon RX 6800 XT | 6.0  | 19.1 | 88.0  |
| RX 6800 XT        | 6.0  | 19.8 | 92.0  |
| RX 7900 XT        | 13.0 | 35.2 | 121.0 |
| RX 7900 XTX       | 15.0 | 40.2 | 112.0 |

▼ Watts, Fewer Is Better

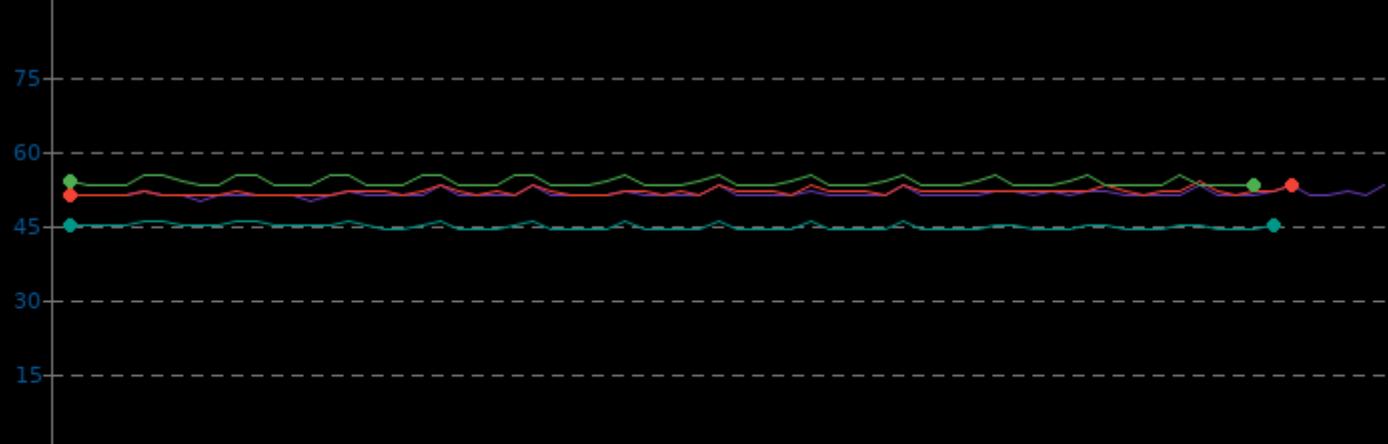


## SHOC Scalable Heterogeneous Computing 2020-04-17

GPU Temperature Monitor

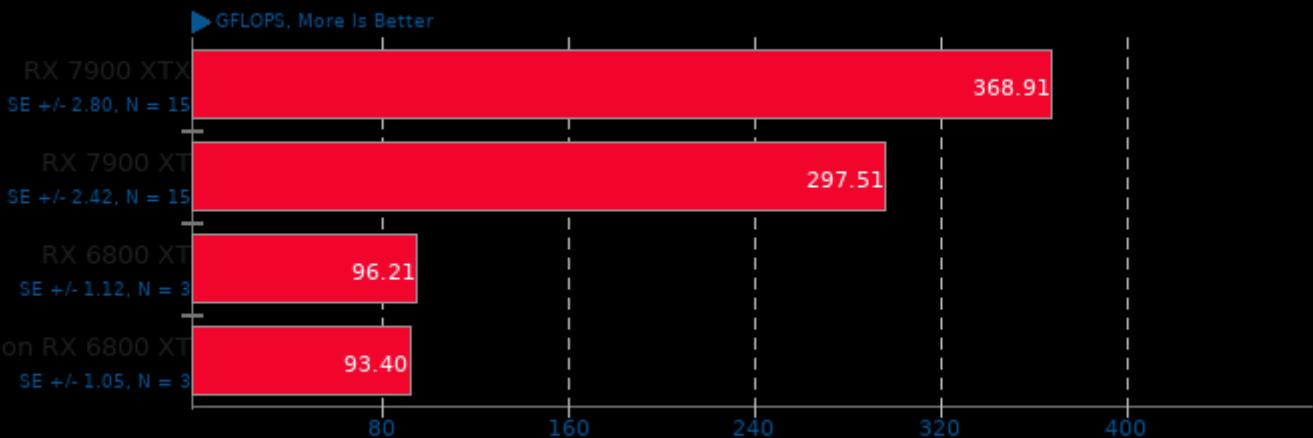
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 7900 XT        | 44.0 | 44.7 | 46.0 |
| RX 6800 XT        | 50.0 | 51.3 | 53.0 |
| Radeon RX 6800 XT | 51.0 | 51.8 | 54.0 |
| RX 7900 XTX       | 53.0 | 53.6 | 55.0 |

▼ Celsius, Fewer Is Better



**SHOC Scalable Heterogeneous Computing 2020-04-17**

Target: OpenCL - Benchmark: S3D



1. (CXX) g++ options: -O2 -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt

**SHOC Scalable Heterogeneous Computing 2020-04-17**

Target: OpenCL - Benchmark: S3D



**SHOC Scalable Heterogeneous Computing 2020-04-17**

GPU Power Consumption Monitor

|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| Radeon RX 6800 XT | 6.0  | 7.9  | 16.0 |
| RX 6800 XT        | 5.0  | 8.0  | 18.0 |
| RX 7900 XT        | 11.0 | 67.7 | 77.0 |
| RX 7900 XTX       | 13.0 | 80.5 | 93.0 |

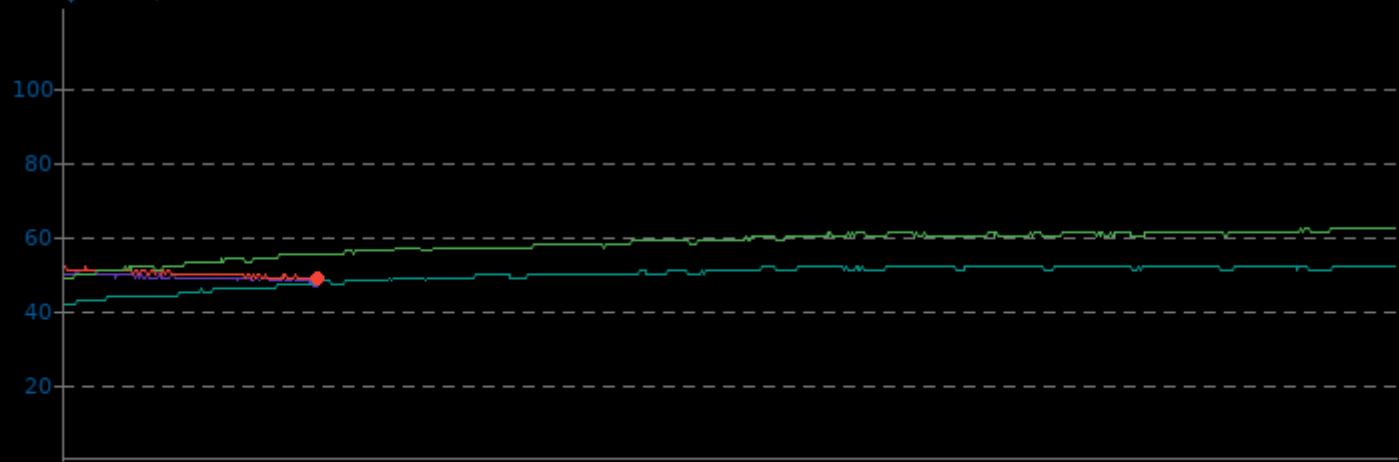
▼ Watts, Fewer Is Better

**SHOC Scalable Heterogeneous Computing 2020-04-17**

GPU Temperature Monitor

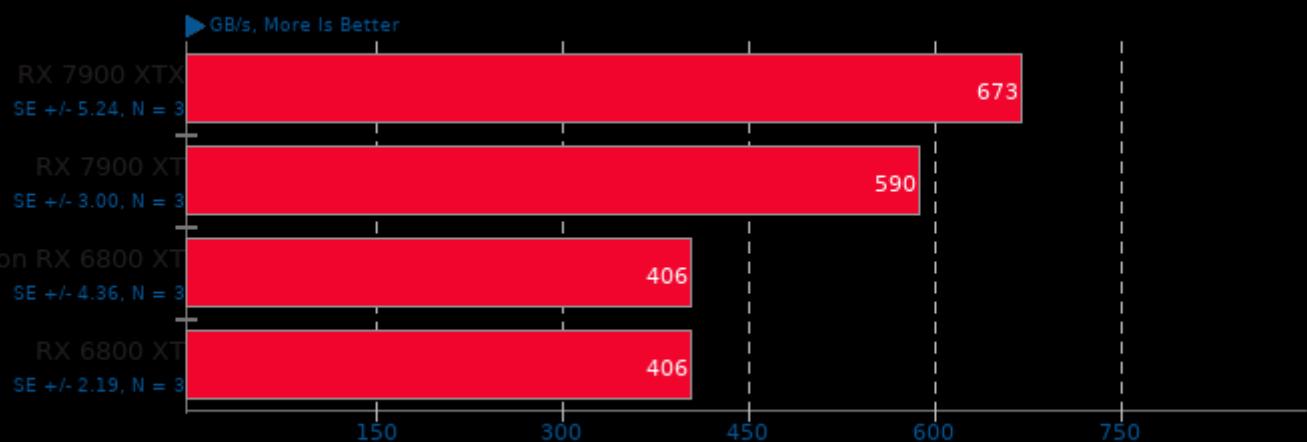
|                   | Min  | Avg  | Max  |
|-------------------|------|------|------|
| RX 6800 XT        | 48.0 | 49.1 | 51.0 |
| RX 7900 XT        | 42.0 | 49.8 | 52.0 |
| Radeon RX 6800 XT | 49.0 | 50.1 | 52.0 |
| RX 7900 XTX       | 49.0 | 58.1 | 62.0 |

▼ Celsius, Fewer Is Better



## ViennaCL 1.7.1

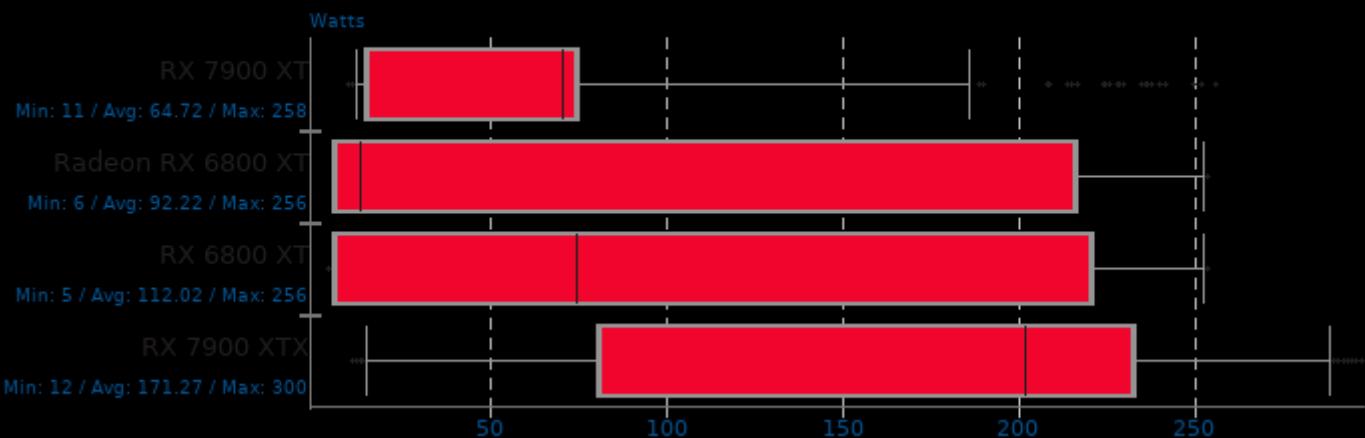
Test: OpenCL BLAS - dCOPY



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

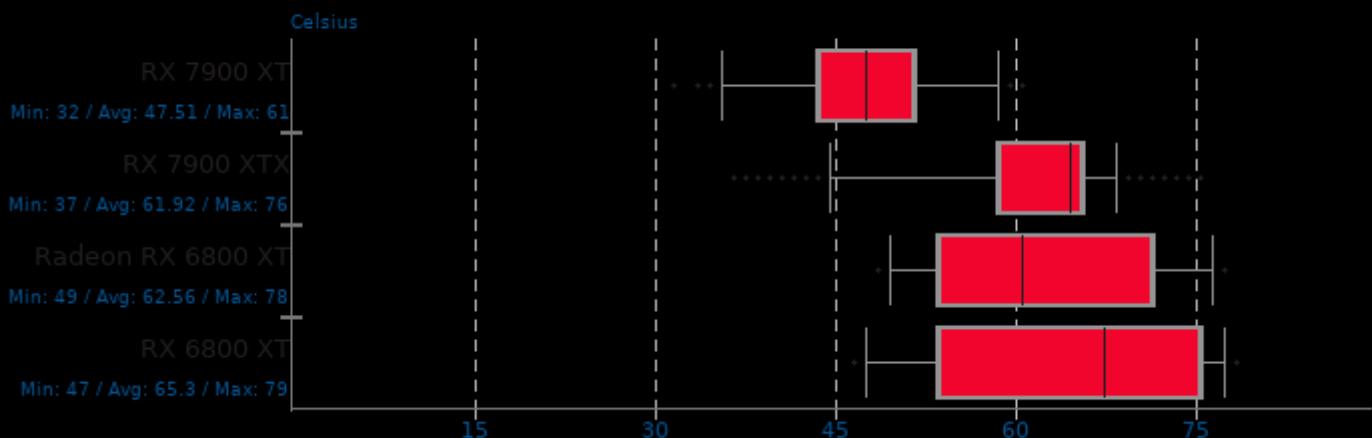
## GPU Power Consumption Monitor

Phoronix Test Suite System Monitoring



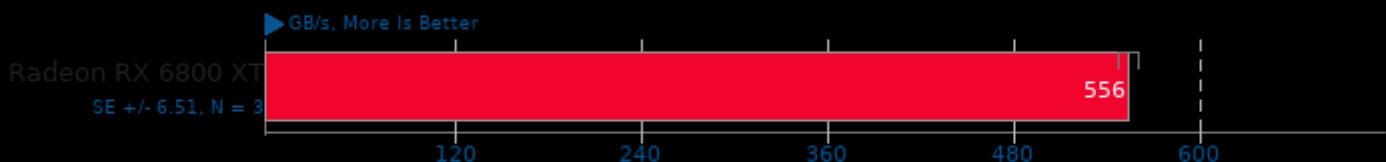
## GPU Temperature Monitor

Phoronix Test Suite System Monitoring



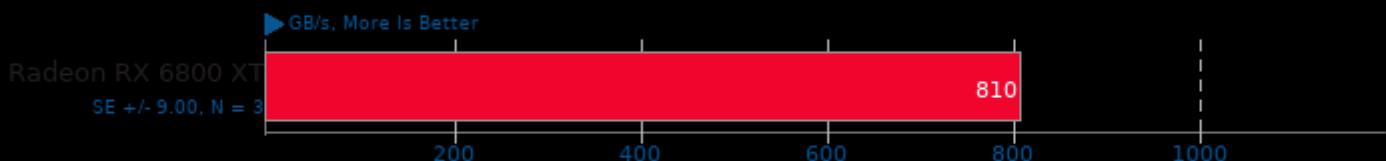
## ViennaCL 1.7.1

Test: OpenCL BLAS - sCOPY



## ViennaCL 1.7.1

Test: OpenCL BLAS - sAXPY



## ViennaCL 1.7.1

Test: OpenCL BLAS - sDOT



## ViennaCL 1.7.1

Test: OpenCL BLAS - dAXPY



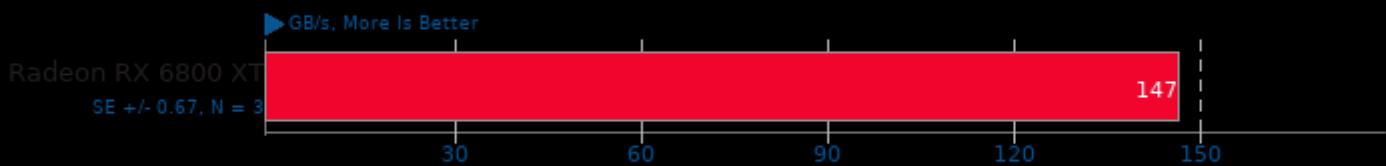
## ViennaCL 1.7.1

Test: OpenCL BLAS - dDOT



## ViennaCL 1.7.1

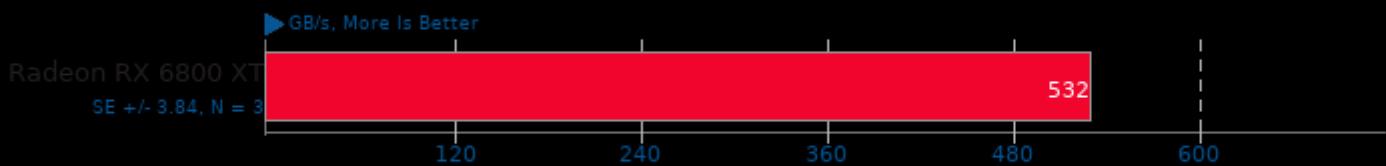
Test: OpenCL BLAS - dGEMV-N



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

## ViennaCL 1.7.1

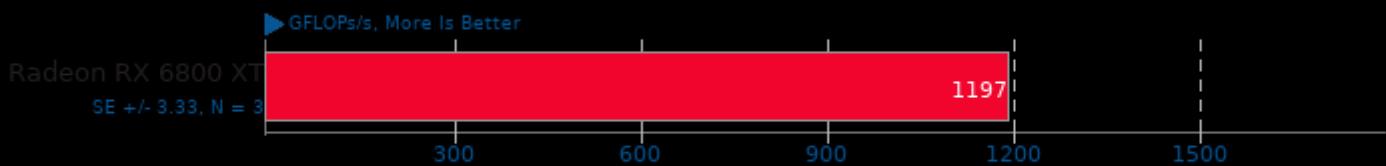
Test: OpenCL BLAS - dGEMV-T



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

## ViennaCL 1.7.1

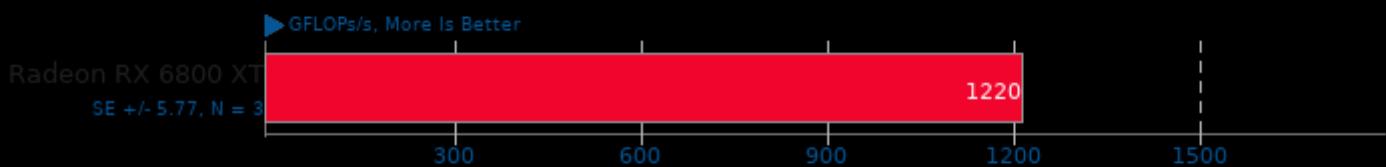
Test: OpenCL BLAS - dGEMM-NN



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

## ViennaCL 1.7.1

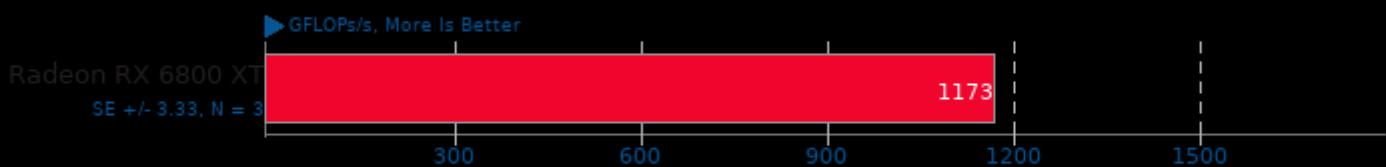
Test: OpenCL BLAS - dGEMM-NT



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

## ViennaCL 1.7.1

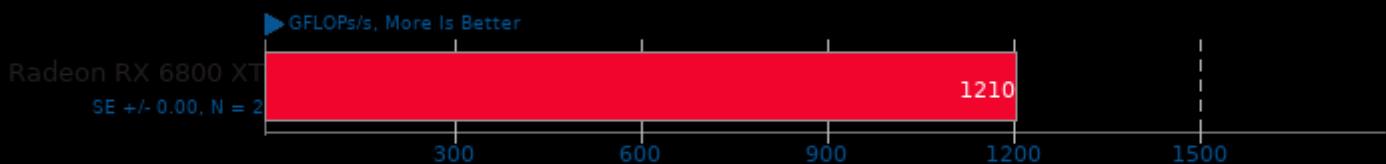
Test: OpenCL BLAS - dGEMM-TN



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

## ViennaCL 1.7.1

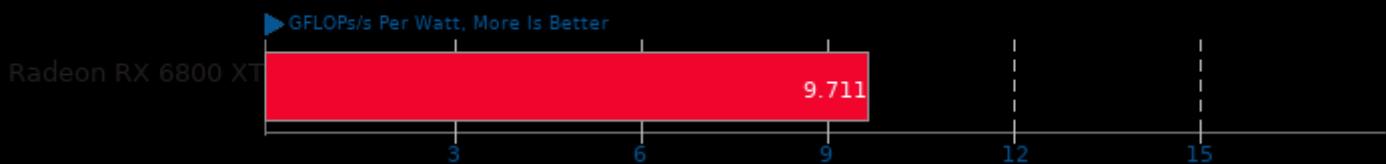
Test: OpenCL BLAS - dGEMM-TT



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

## ViennaCL 1.7.1

Test: OpenCL BLAS - dGEMM-TT



## ViennaCL 1.7.1

GPU Power Consumption Monitor

Min      Avg      Max  
Radeon RX 6800 XT    6.0    124.6    252.0

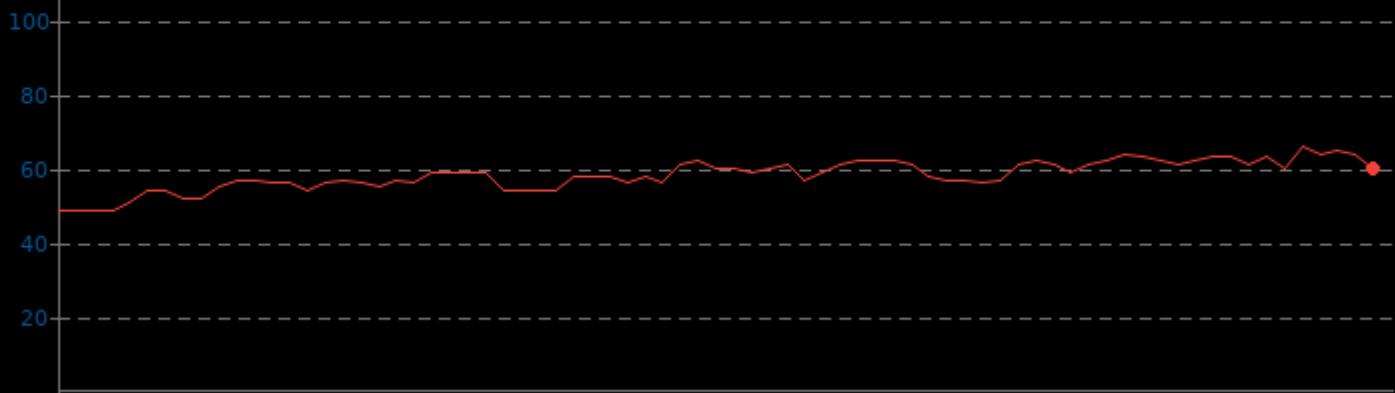


## ViennaCL 1.7.1

GPU Temperature Monitor

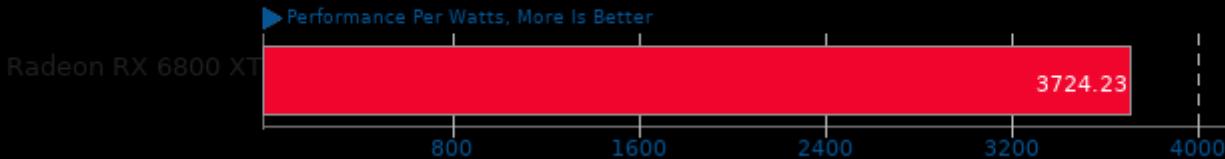
Radeon RX 6800 XT    Min 49.0    Avg 58.2    Max 66.0

▼ Celsius, Fewer Is Better

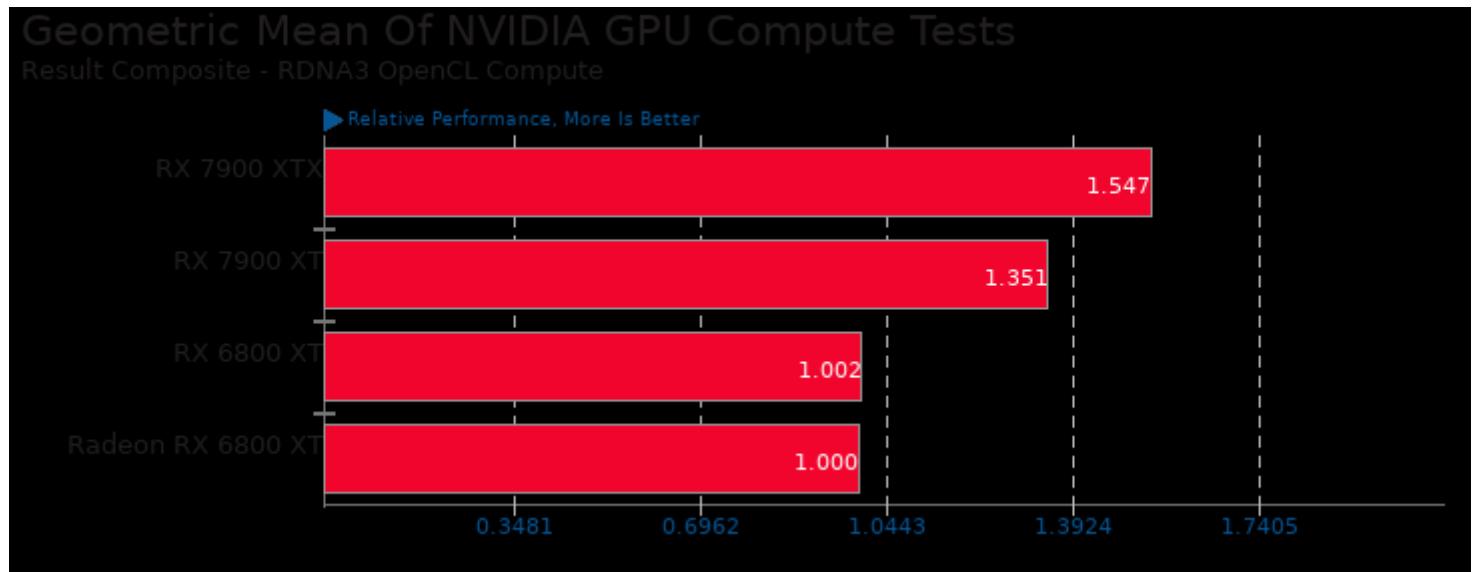


## Meta Performance Per Watts

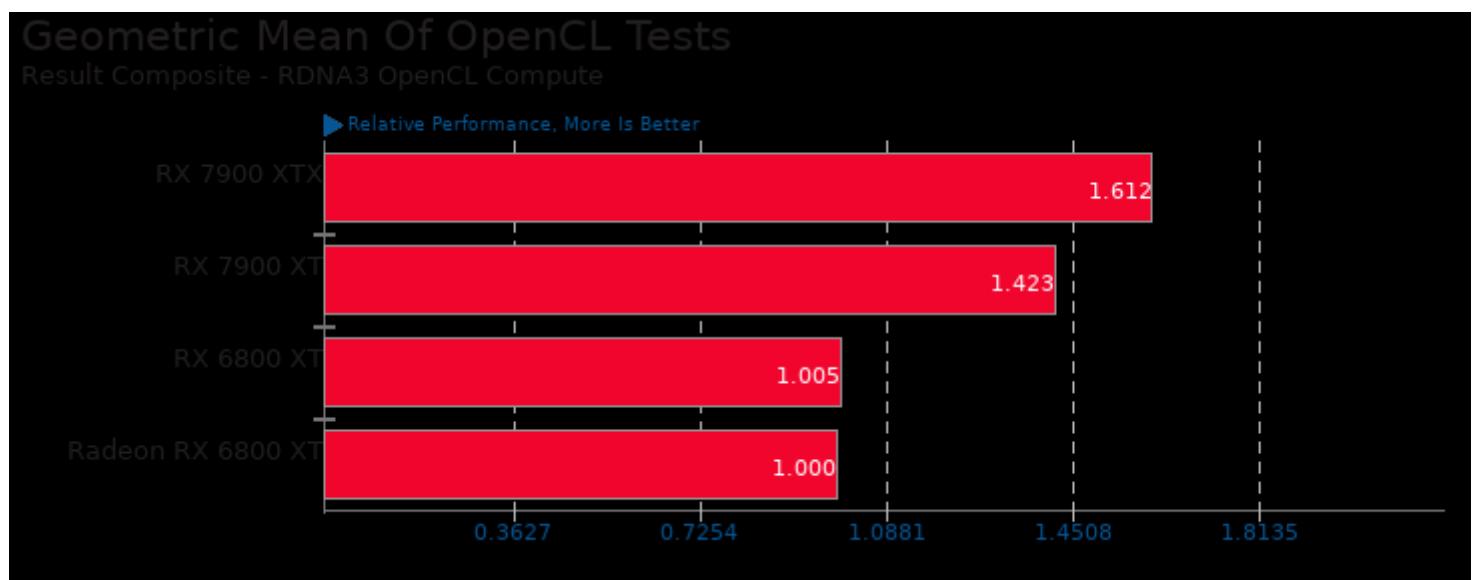
Performance Per Watts



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



Geometric mean based upon tests: pts/hashcat, pts/luxcorerender, pts/clpeak, pts/cl-mem, pts/viennacl and pts/shoc



Geometric mean based upon tests: pts/shoc, pts/cl-mem, pts/clpeak and pts/viennacl

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 08:02.*