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OpenCL Intel Beignet

Intel Core i7-7700K testing with a ASUS PRIME Z270-P and Intel Kabylake GT2 3072MB on Clear Linux 12960 via the Phoronix Test Suite.

Automated Executive Summary

Core i7 7700K had the most wins, coming in first place for 66% of the tests.

Based on the geometric mean of all complete results, the fastest (Core i7 7700K) was 1.11x the speed of the slowest (Core i3 7100). Core i5 7600K was 0.966x the speed of Core i7 7700K and Core i3 7100 was 0.932x the speed of Core i5 7600K.

Test Systems:

Core i3 7100

Processor: Intel Core i3-7100 @ 3.90GHz (4 Cores), Motherboard: ASUS PRIME Z270-P, Chipset: Intel Device 590f, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: Intel Kabylake GT2 3072MB (1100MHz), Audio:

Realtek ALC887-VD, Monitor: DELL P2415Q, Network: Realtek RTL8111/8168/8411

OS: Clear Linux 12950, Kernel: 4.9.5-302.native (x86_64), Desktop: Xfce 4.12, Display Server: X Server 1.19.1, Display Driver: modesetting 1.19.1, OpenGL: 4.5 Mesa 17.0.0-devel, OpenCL: OpenCL 2.0 beignet 1.3, Vulkan: 1.0.37, Compiler: GCC 6.3.0 + Clang 3.9.1 + LLVM 3.9.1, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-generic-linux --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --enable-__cxa_atexit --enable-bootstrap --enable-clocale=gnu --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libmpx --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: acpi-cpufreq performance

Core i5 7600K

Processor: Intel Core i5-7600K @ 3.80GHz (4 Cores), Motherboard: ASUS PRIME Z270-P, Chipset: Intel Device 591f, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: Intel Kabylake GT2 3072MB (1150MHz), Audio: Realtek ALC887-VD, Monitor: DELL P2415Q, Network: Realtek RTL8111/8168/8411

OS: Clear Linux 12950, Kernel: 4.9.5-302.native (x86_64), Desktop: Xfce 4.12, Display Server: X Server 1.19.1, Display Driver: modesetting 1.19.1, OpenGL: 4.5 Mesa 17.0.0-devel, OpenCL: OpenCL 2.0 beignet 1.3, Vulkan: 1.0.37, Compiler: GCC 6.3.0 + Clang 3.9.1 + LLVM 3.9.1, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-generic-linux --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --enable-__cxa_atexit --enable-bootstrap --enable-clocale=gnu --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libmpx --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: acpi-cpufreq performance

Core i7 7700K

Processor: Intel Core i7-7700K @ 4.20GHz (8 Cores), Motherboard: ASUS PRIME Z270-P, Chipset: Intel Device 591f, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: Intel Kabylake GT2 3072MB (1150MHz), Audio: Realtek ALC887-VD, Monitor: DELL P2415Q, Network: Realtek RTL8111/8168/8411

OS: Clear Linux 12960, Kernel: 4.9.5-302.native (x86_64), Desktop: Xfce 4.12, Display Server: X Server 1.19.1, Display Driver: modesetting 1.19.1, OpenGL: 4.5 Mesa 17.0.0-devel, OpenCL: OpenCL 2.0 beignet 1.3, Vulkan: 1.0.37, Compiler: GCC 6.3.0 + Clang 3.9.1 + LLVM 3.9.1, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-generic-linux --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --enable-__cxa_atexit --enable-bootstrap --enable-clocale=gnu --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libmpx --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: acpi-cpufreq performance

	Core i3 7100	Core i5 7600K	Core i7 7700K
SHOC Scalable HeterOgeneous Computing - OpenCL - Triad (GB/s)	6.61	8.37	12.23
Normalized	54.05%	68.44%	100%
Standard Deviation	0.2%	0.4%	2.7%

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SHOC Scalable HeterOgeneous Computing - OpenCL - Bus Speed Download (GB/s)	**24.86**	26.18	**28.39**
Normalized	87.57%	92.22%	100%
Standard Deviation	0.2%	1.3%	0.3%
SHOC Scalable HeterOgeneous Computing - OpenCL - Bus Speed Readback (GB/s)	**32.08**	35.12	**38.52**
Normalized	83.28%	91.17%	100%
Standard Deviation	1.6%	1.8%	1.4%
SHOC Scalable HeterOgeneous Computing - OpenCL - T.R.B (GB/s)	**51.52**	**58.11**	57.89
Normalized	88.66%	100%	99.62%
Standard Deviation	0%	0%	0.7%
cl-mem - Read (GB/s)	**44.12**	**39.72**	41.07
Normalized	100%	90.03%	93.09%
Standard Deviation	8%	8.5%	14.3%
cl-mem - Write (GB/s)	**47.97**	42.92	**39.13**
Normalized	100%	89.47%	81.57%
Standard Deviation	17.1%	11.6%	3.4%
SHOC Scalable HeterOgeneous Computing - OpenCL - FFT SP (GFLOPS)	**9.67**	**10.90**	10.88
Normalized	88.72%	100%	99.82%
Standard Deviation	0.1%	0%	0%
SHOC Scalable HeterOgeneous Computing - OpenCL - Max SP Flops (GFLOPS)	**297.39**	340.69	**340.71**
Normalized	87.29%	99.99%	100%
Standard Deviation	0%	0%	0%
SHOC Scalable HeterOgeneous Computing - OpenCL - MD5 Hash (GHash/s)	**0.28**	**0.32**	**0.32**
Normalized	87.5%	100%	100%
Standard Deviation	0%	0%	0%
JuliaGPU - GPU (Samples/sec)	**31987657**	36333557	**37085080**
Normalized	86.25%	97.97%	100%
Standard Deviation	0.2%	1.8%	2.2%
MandelbulbGPU - GPU (Samples/sec)	**6991142**	7893609	**7953468**
Normalized	87.9%	99.25%	100%
Standard Deviation	0%	0.4%	0.4%
MandelGPU - GPU (Samples/sec)	**8031119**	9180692	**9186739**
Normalized	87.42%	99.93%	100%
Standard Deviation	0%	0%	0.1%
SmallPT GPU - GPU - Complex	1485491582	**1485461759**	**1485532534**
Normalized	100%	100%	100%
Standard Deviation	0%	0%	0%
SmallPT GPU - GPU - Cornell (Samples/sec)	1485492354	**1485462437**	**1485533211**
Normalized	100%	100%	100%
Standard Deviation	0%	0%	0%
SmallPT GPU - GPU - Caustic3	1485492483	**1485462559**	**1485533333**
Normalized	100%	100%	100%
Standard Deviation	0%	0%	0%

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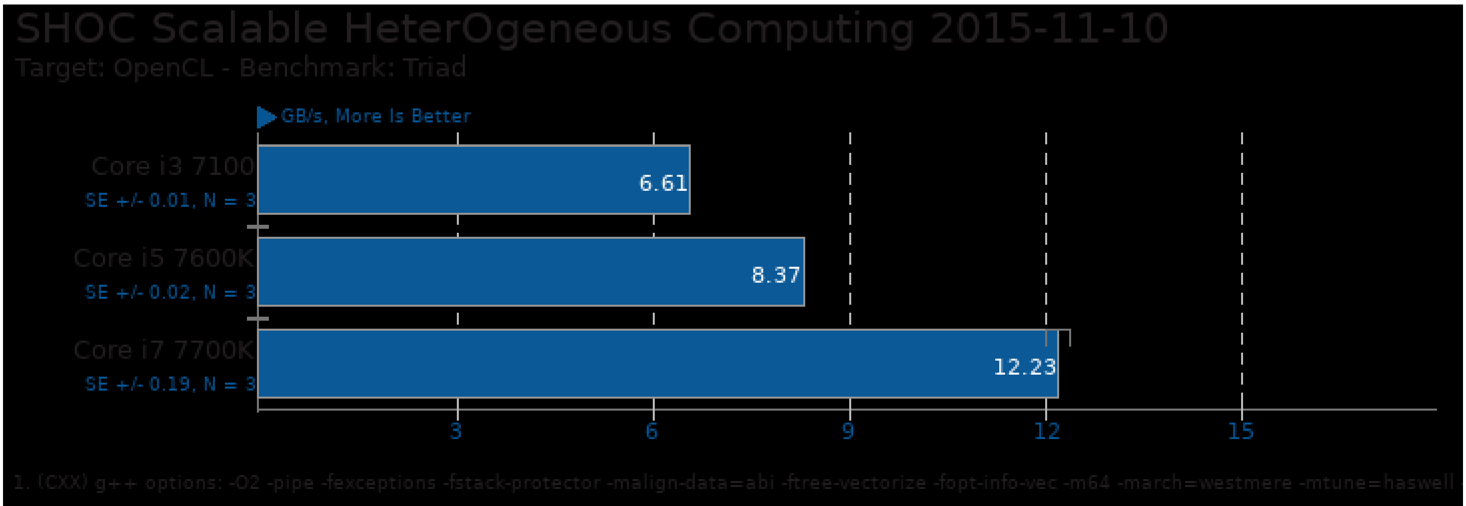
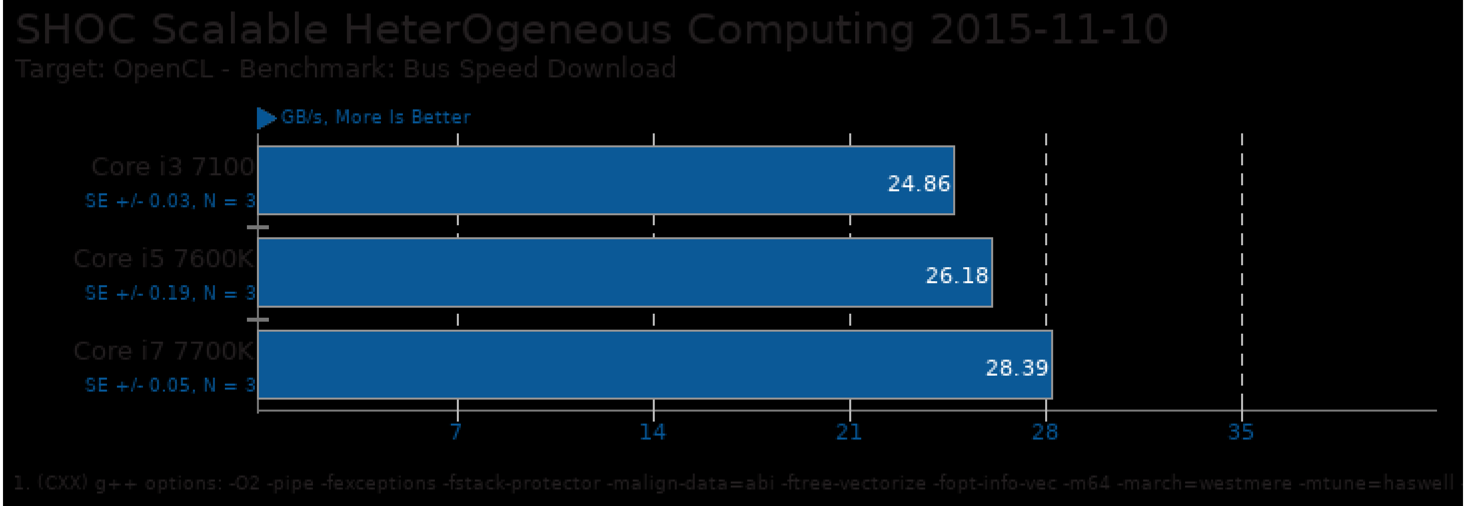
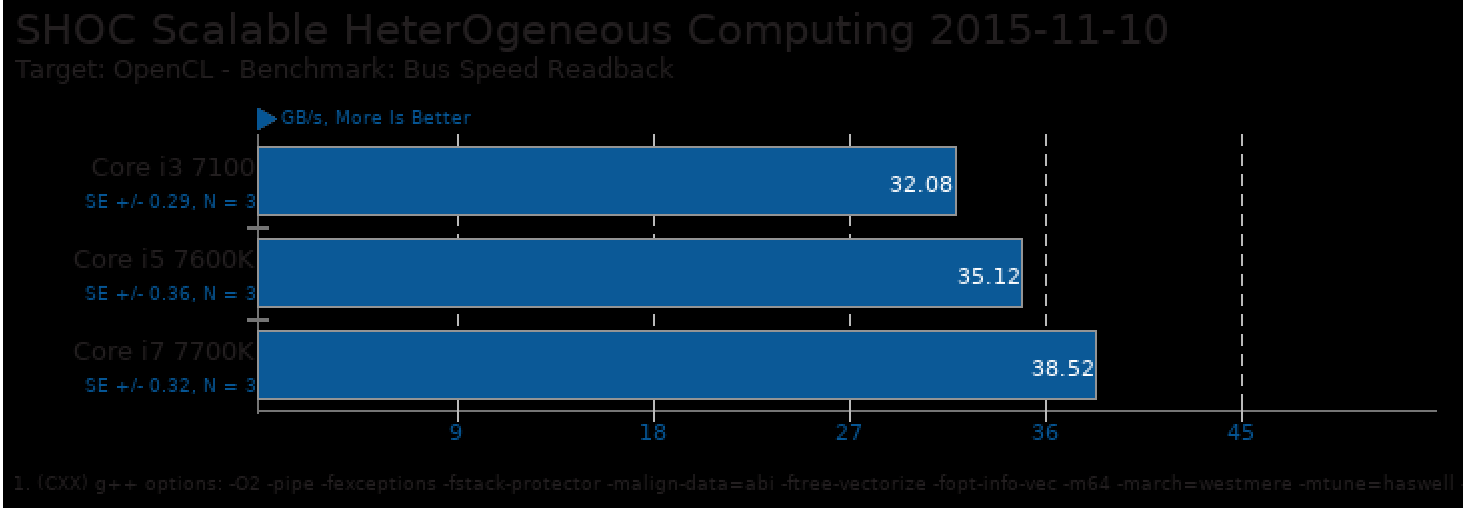
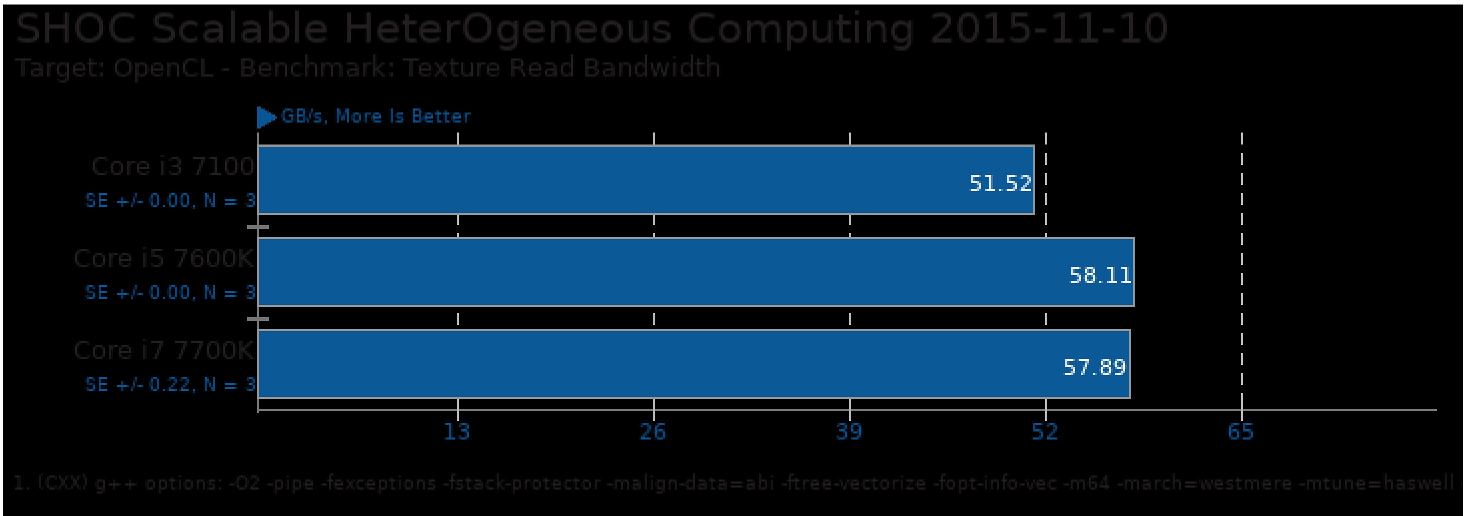
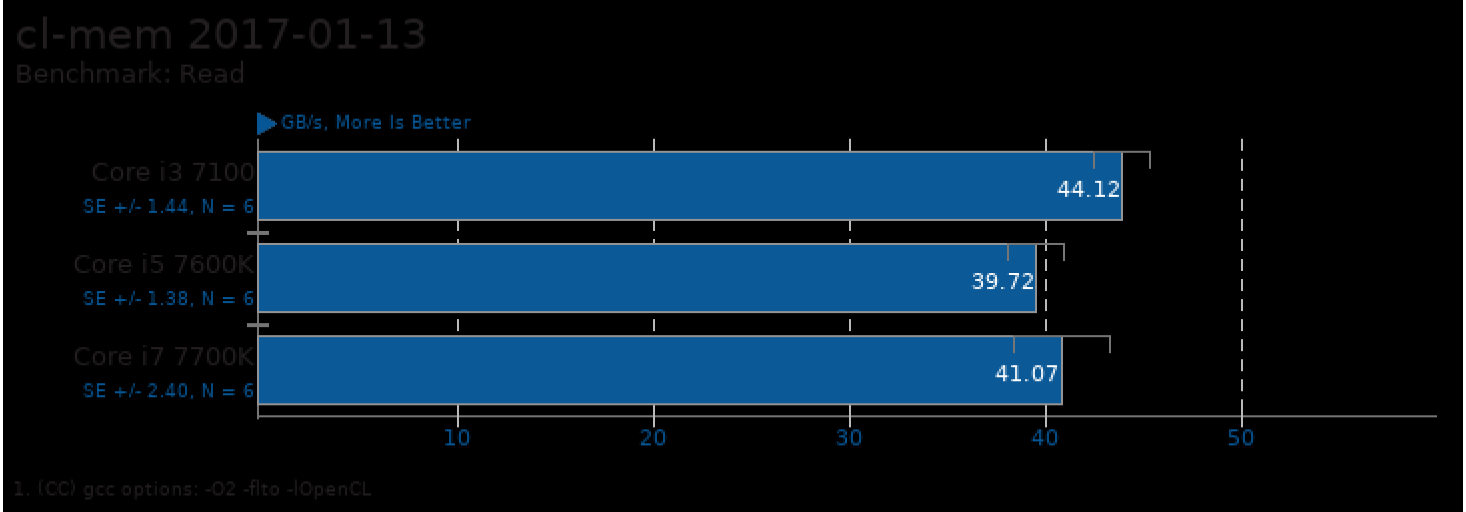
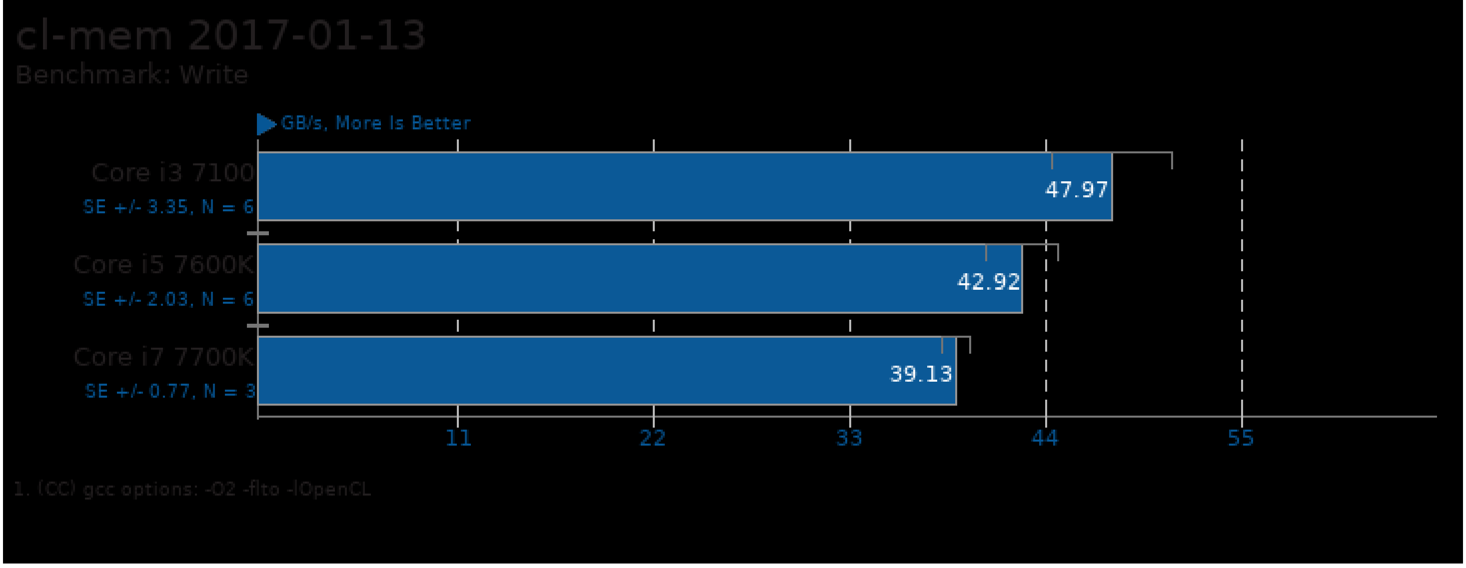


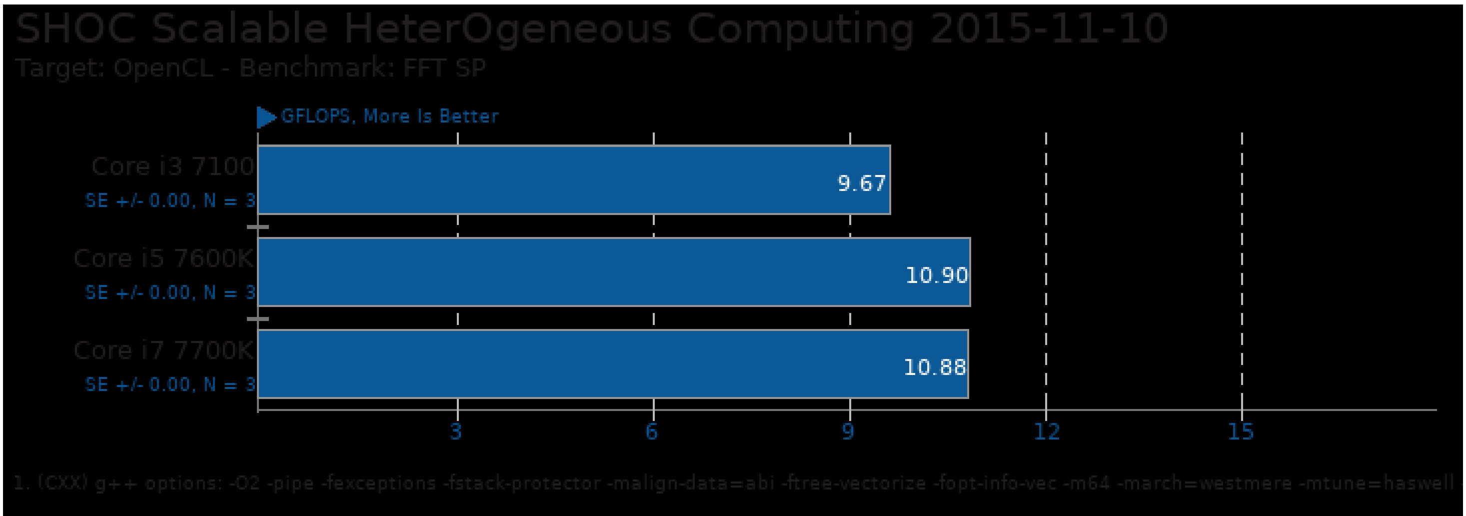


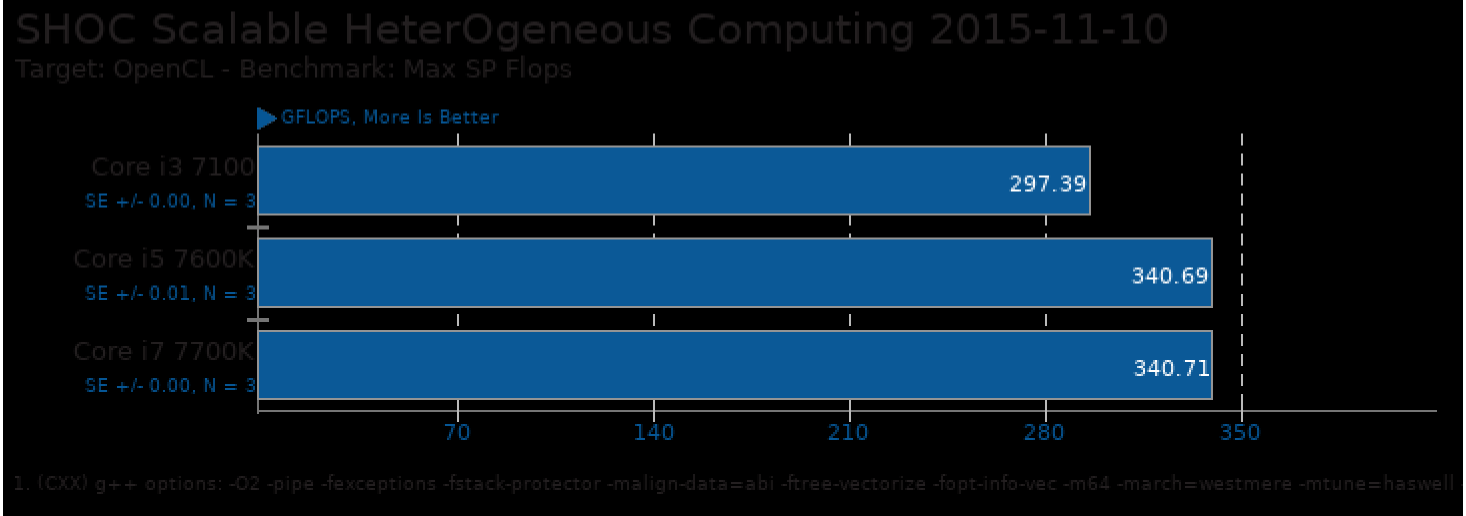


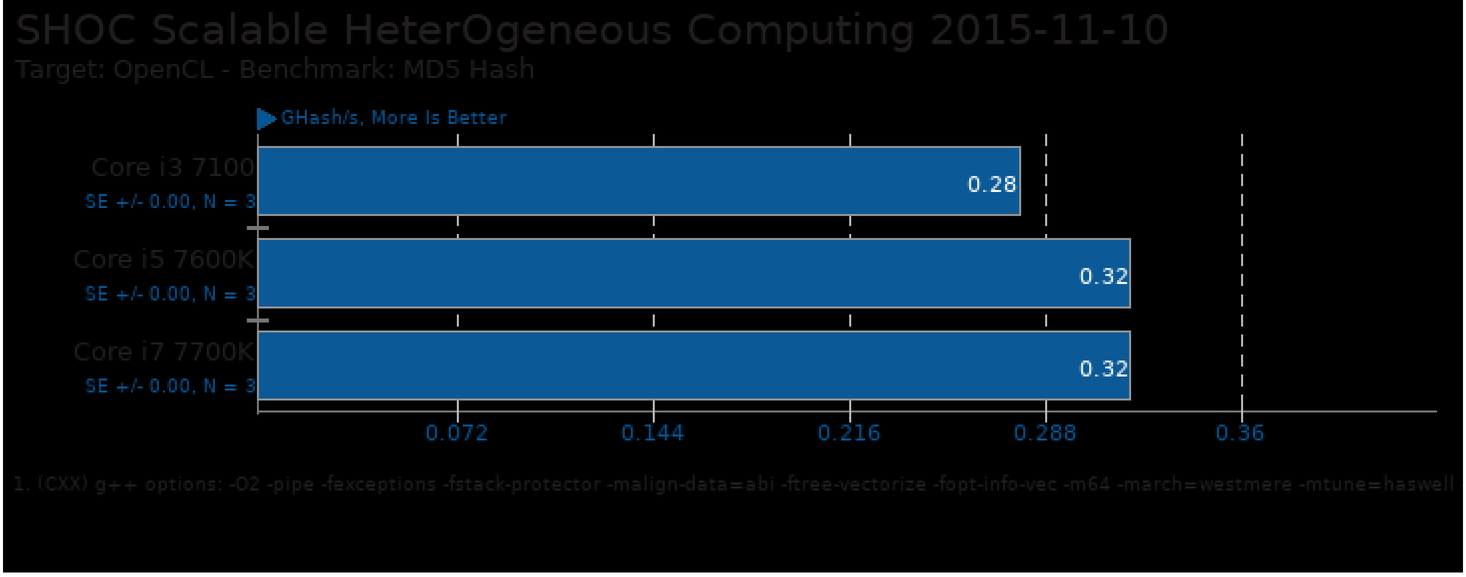

SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: Texture Read Bandwidth
GB/s, More Is Better
Core i3 7100
SE +/- 0.00, N = 3
51.52
Core i5 7600K
SE +/- 0.00, N = 3
58.11
Core i7 7700K
SE +/- 0.22, N = 3
57.89
13
26
39
52
65
1. (CXX) g++ options: -O2 -pipe -fexceptions -fstack-protector -malign-data=abi -ftree-vectorize -fopt-info-vec -m64 -march=westmere -mtune=haswell


cl-mem 2017-01-13
Benchmark: Read
GB/s, More Is Better
Core i3 7100
SE +/- 1.44, N = 6
44.12
Core i5 7600K
SE +/- 1.38, N = 6
39.72
Core i7 7700K
SE +/- 2.40, N = 6
41.07
10
20
30
40
50
1. (CC) gcc options: -O2 -flto -lOpenCL


cl-mem 2017-01-13
Benchmark: Write
GB/s, More Is Better
Core i3 7100
SE +/- 3.35, N = 6
47.97
Core i5 7600K
SE +/- 2.03, N = 6
42.92
Core i7 7700K
SE +/- 0.77, N = 3
39.13
11
22
33
44
55
1. (CC) gcc options: -O2 -flto -lOpenCL


SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: FFT SP
GFLOPS, More Is Better
Core i3 7100
SE +/- 0.00, N = 3
9.67
Core i5 7600K
SE +/- 0.00, N = 3
10.90
Core i7 7700K
SE +/- 0.00, N = 3
10.88
3
6
9
12
15
1. (CXX) g++ options: -O2 -pipe -fexceptions -fstack-protector -malign-data=abi -ftree-vectorize -fopt-info-vec -m64 -march=westmere -mtune=haswell


SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: Max SP Flops
GFLOPS, More Is Better
Core i3 7100
SE +/- 0.00, N = 3
297.39
Core i5 7600K
SE +/- 0.01, N = 3
340.69
Core i7 7700K
SE +/- 0.00, N = 3
340.71
70
140
210
280
350
1. (CXX) g++ options: -O2 -pipe -fexceptions -fstack-protector -malign-data=abi -ftree-vectorize -fopt-info-vec -m64 -march=westmere -mtune=haswell


SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: MD5 Hash
GHash/s, More Is Better
Core i3 7100
SE +/- 0.00, N = 3
0.28
Core i5 7600K
SE +/- 0.00, N = 3
0.32
Core i7 7700K
SE +/- 0.00, N = 3
0.32
0.072
0.144
0.216
0.288
0.36
1. (CXX) g++ options: -O2 -pipe -fexceptions -fstack-protector -malign-data=abi -ftree-vectorize -fopt-info-vec -m64 -march=westmere -mtune=haswell

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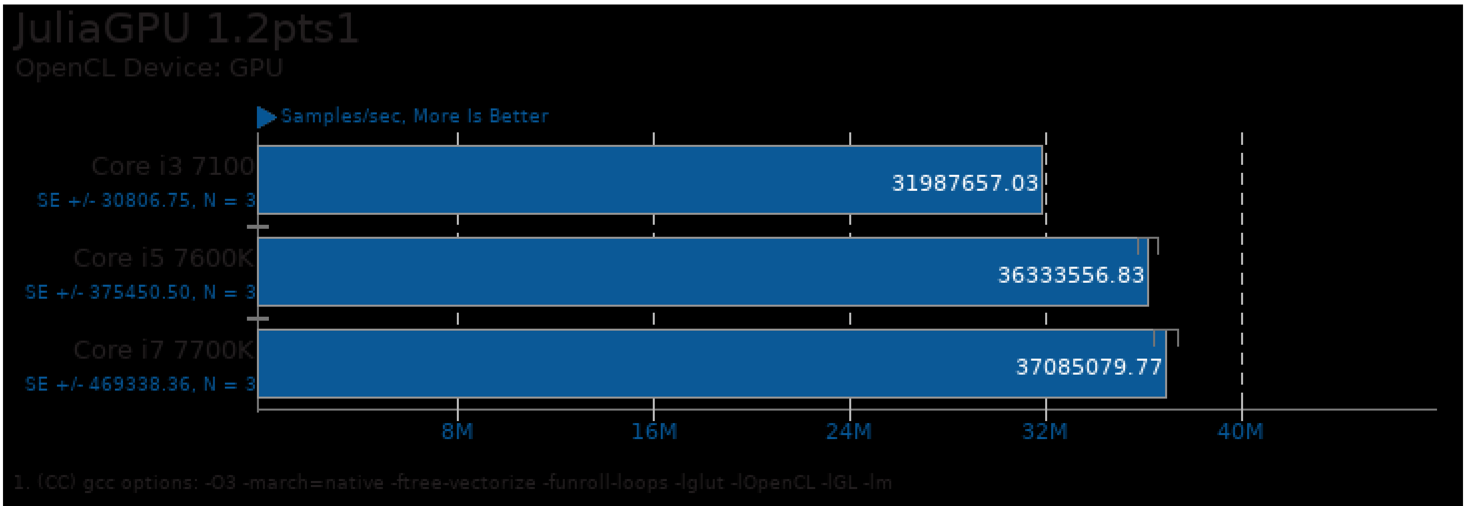
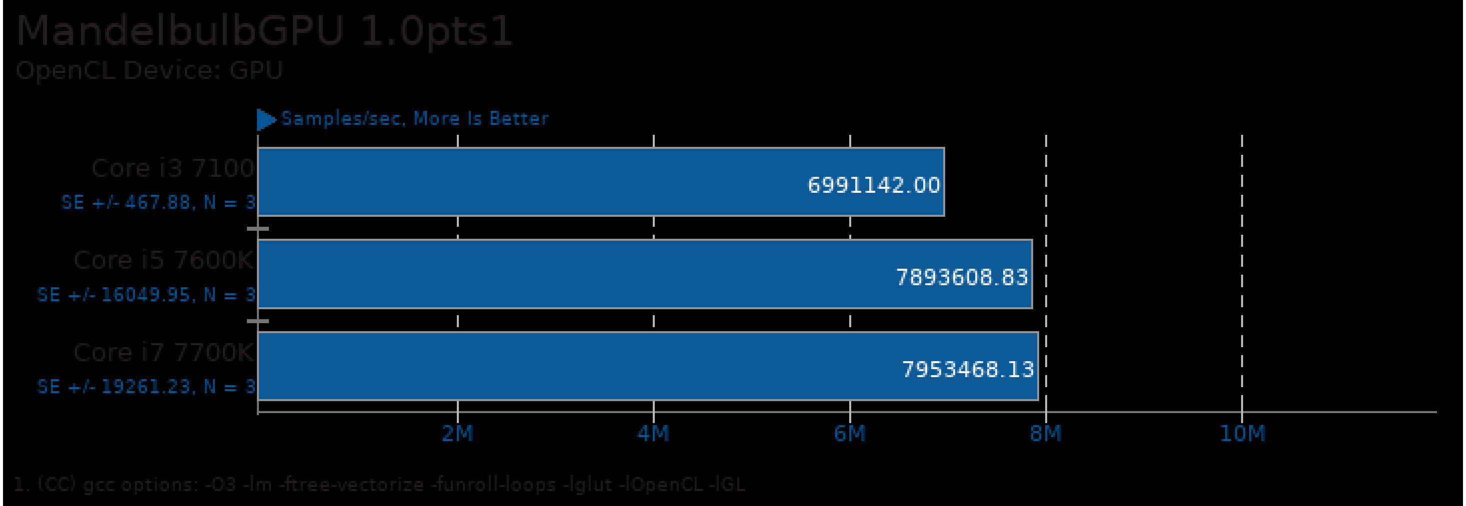
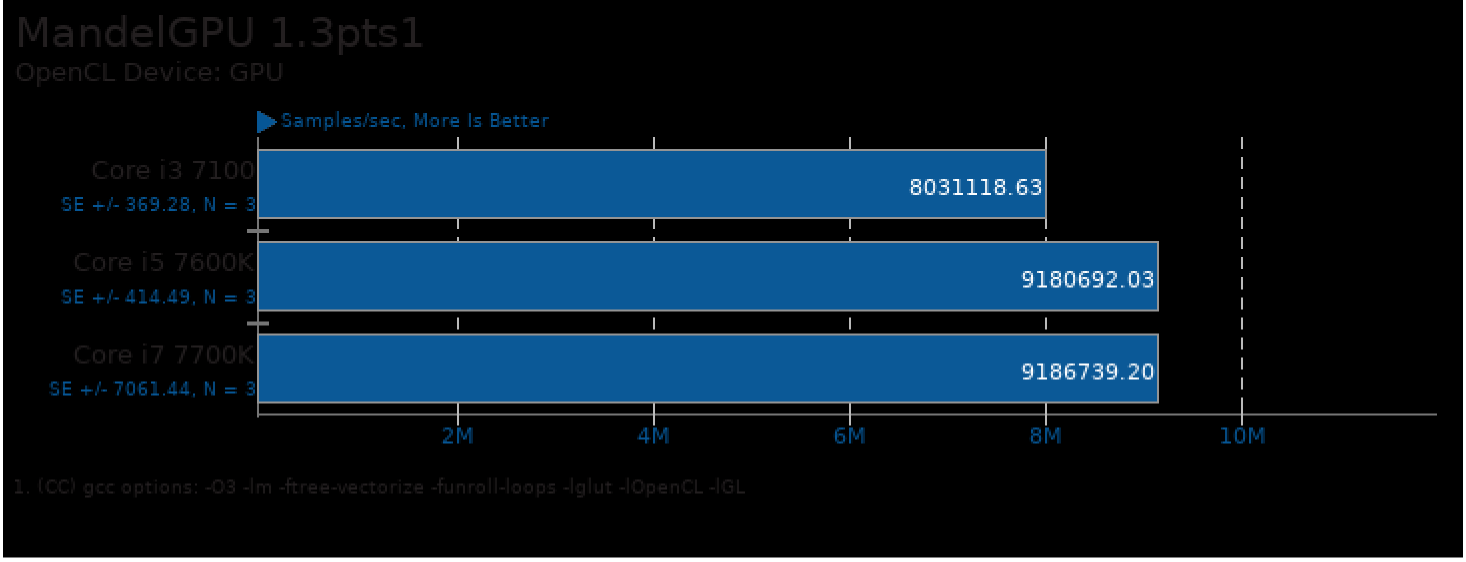
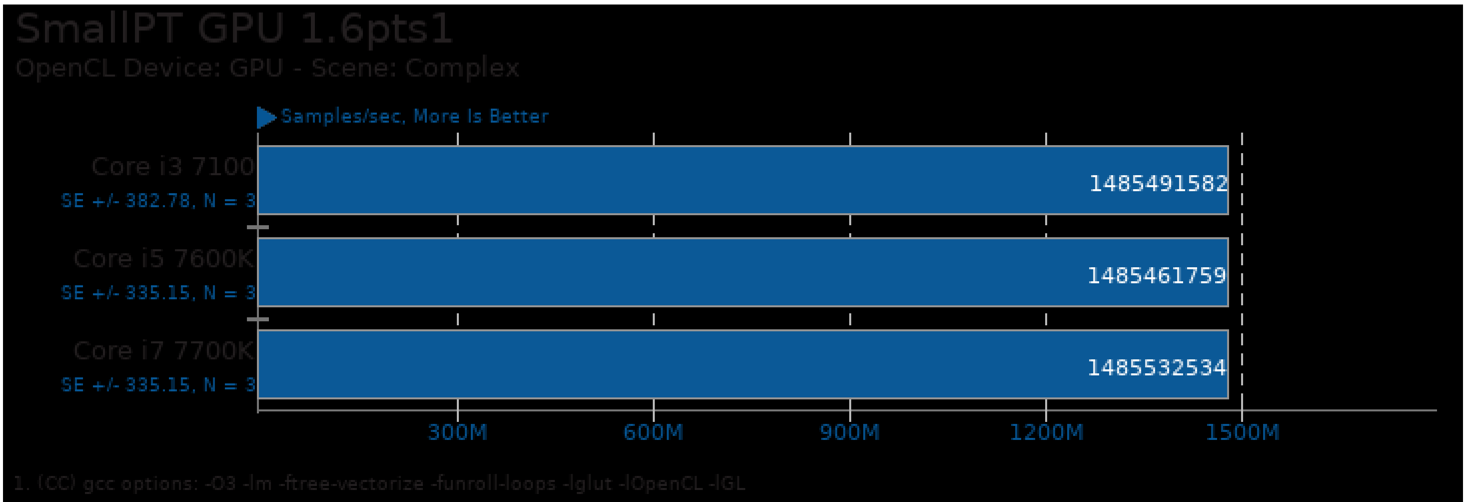
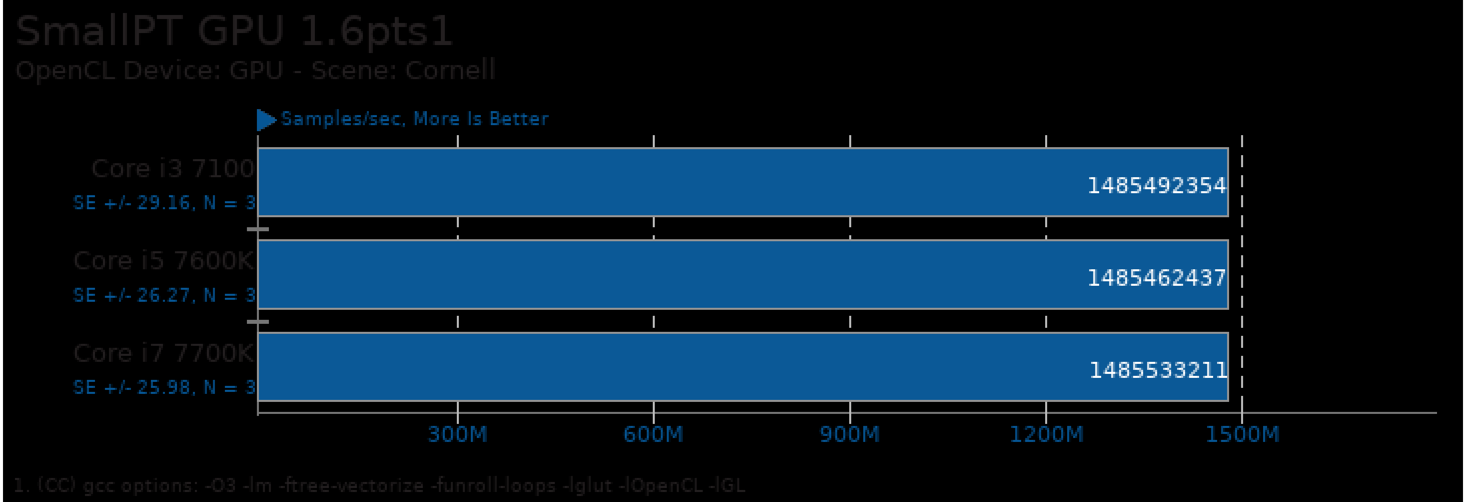
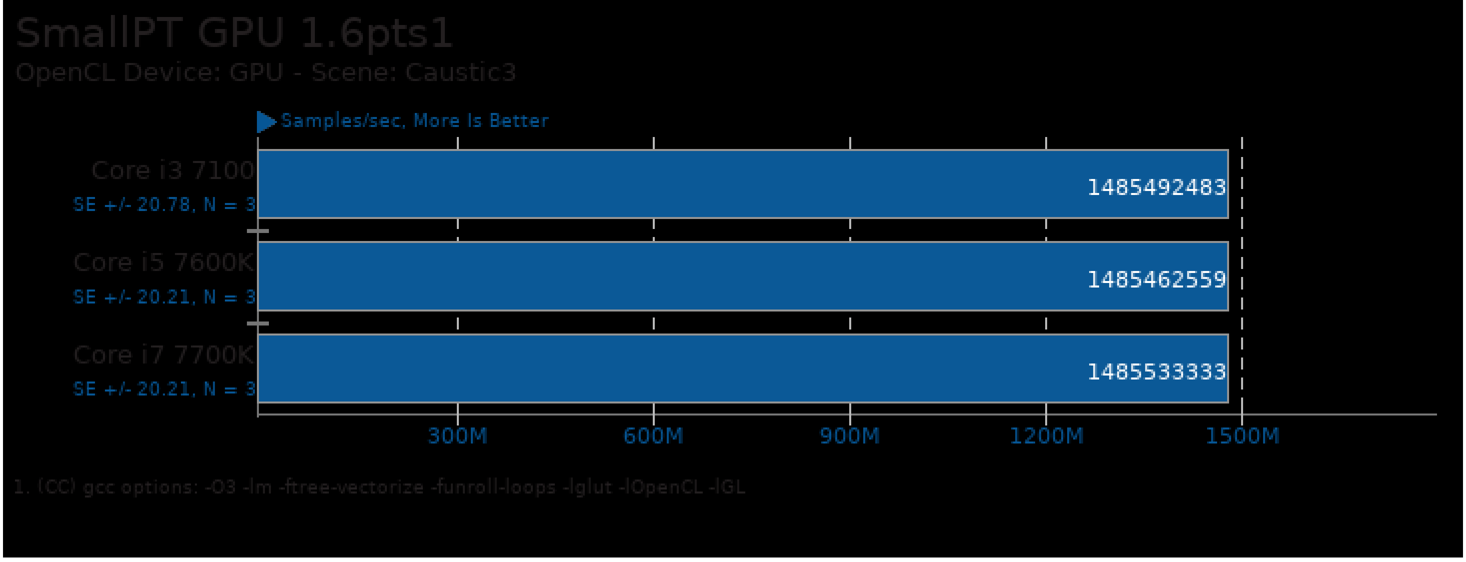




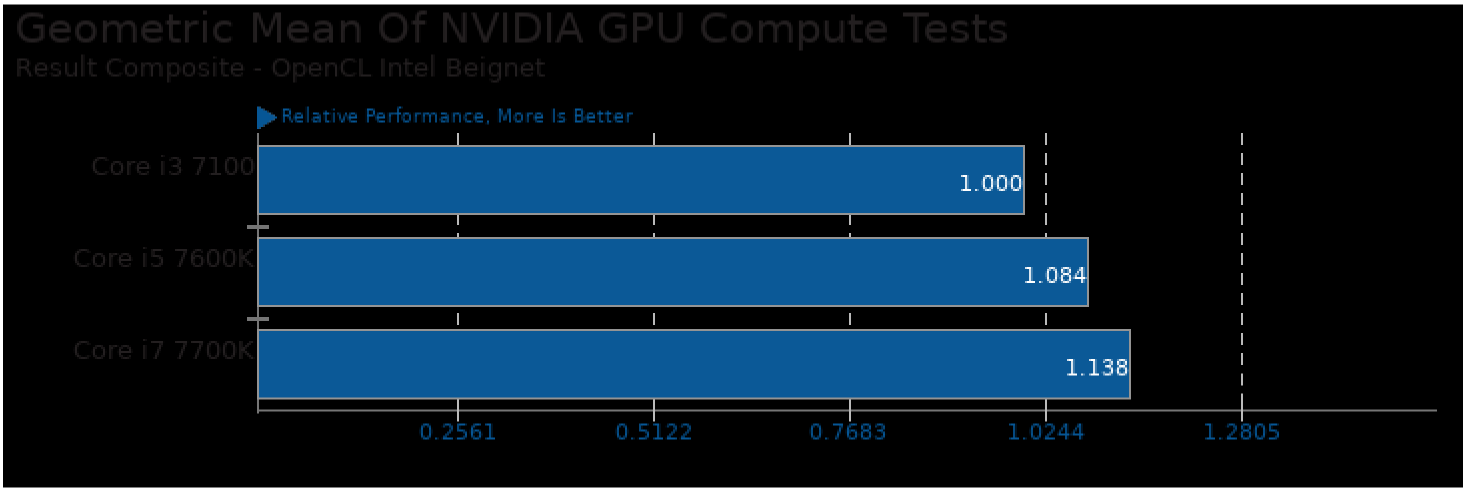



SmallPT GPU 1.6pts1
OpenCL Device: GPU - Scene: Complex
Samples/sec, More Is Better
Core i3 7100
SE +/- 382.78, N = 3
1485491582
Core i5 7600K
SE +/- 335.15, N = 3
1485461759
Core i7 7700K
SE +/- 335.15, N = 3
1485532534
300M
600M
900M
1200M
1500M
1. (CC) gcc options: -O3 -lm -ftree-vectorize -funroll-loops -lglut -lOpenCL -lGL


SmallPT GPU 1.6pts1
OpenCL Device: GPU - Scene: Cornell
Samples/sec, More Is Better
Core i3 7100
SE +/- 29.16, N = 3
1485492354
Core i5 7600K
SE +/- 26.27, N = 3
1485462437
Core i7 7700K
SE +/- 25.98, N = 3
1485533211
300M
600M
900M
1200M
1500M
1. (CC) gcc options: -O3 -lm -ftree-vectorize -funroll-loops -lglut -lOpenCL -lGL


SmallPT GPU 1.6pts1
OpenCL Device: GPU - Scene: Caustic3
Samples/sec, More Is Better
Core i3 7100
SE +/- 20.78, N = 3
1485492483
Core i5 7600K
SE +/- 20.21, N = 3
1485462559
Core i7 7700K
SE +/- 20.21, N = 3
1485533333
300M
600M
900M
1200M
1500M
1. (CC) gcc options: -O3 -lm -ftree-vectorize -funroll-loops -lglut -lOpenCL -lGL

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



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

Geometric mean based upon tests: pts/juliagpu, pts/mandelgpu, pts/smallpt-gpu, pts/mandelbulbgpu, pts/shoc and pts/cl-mem

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 08:38.