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AMD A10-7800 Radeon R7 12 Compute Cores 4C+8G testing with a MSI A88XM-E35 (MS-7721) v6.0 and MSI AMD Radeon R7 512MB on Ubuntu 16.10 via the Phoronix Test Suite.

Automated Executive Summary

MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute had the most wins, coming in first place for 55% of the tests.

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

C-Ray (Total Time) at 1.915x
Warsow (Resolution: 800 x 600) at 1.576x
Xonotic (Resolution: 800 x 600 - Effects Quality: Ultimate) at 1.53x
X-Plane (Quality Setting: Ultra - Resolution: 800 x 600) at 1.464x
Xonotic (Resolution: 800 x 600 - Effects Quality: Low) at 1.37x
NoiseLevel (Phoronix Test Suite v7.0.0) at 1.289x
GIMP (Test: unsharp-mask) at 1.249x
Xonotic (Resolution: 800 x 600 - Effects Quality: Ultra) at 1.229x
CacheBench (Test: Read / Modify / Write) at 1.169x
GIMP (Test: auto-levels) at 1.154x.

Test Systems:

AMD A4-6320 APU

MSI AMD Radeon HD 8370D

Processor: AMD A4-6320 APU @ 3.80GHz (2 Cores), Motherboard: MSI A88XM-E35 (MS-7721) v6.0, Chipset: AMD Family 15h, Memory: 16384MB, Disk: 750GB Seagate ST3750528AS, Graphics: MSI AMD Radeon HD 8370D 512MB, Audio: AMD Trinity HDMI Audio, Monitor: X193HQL + BenQ GW2265, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.10, Kernel: 4.8.0-30-generic (x86_64), Desktop: KDE Frameworks 5, Display Server: X Server 1.18.4, Display Driver: modesetting 1.18.4, OpenGL: 4.1 Mesa 12.0.6 Gallium 0.4 (LLVM 3.8.1), Compiler: GCC 6.2.0 20161005 + Clang 3.8.1-12ubuntu1, File-System: ext4, Screen Resolution: 3286x1080

Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: EXA

AMD A10-7800 Radeon R7 12 Compute Cores 4C

MSI AMD Radeon R7

MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute

Processor: AMD A10-7800 Radeon R7 12 Compute Cores 4C+8G @ 3.50GHz (4 Cores), Motherboard: MSI A88XM-E35 (MS-7721) v6.0, Chipset: AMD Family 15h, Memory: 16384MB, Disk: 750GB Seagate ST3750528AS, Graphics: MSI AMD Radeon R7 512MB, Audio: AMD Kaveri HDMI/DP, Monitor: BenQ GW2265 + X193HQL, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 16.10, Kernel: 4.8.0-42-generic (x86_64), Desktop: KDE Frameworks 5, Display Server: X Server 1.18.4, Display Driver: modesetting 1.18.4, OpenGL: 4.1 Mesa 12.0.6 Gallium 0.4 (LLVM 3.8.1), Compiler: GCC 6.2.0 20161005 + Clang 3.8.1-12ubuntu1, File-System: ext4, Screen Resolution: 3286x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc --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-arch-directory=amd64 --with-default-libstdcxx-abi=new --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR

Phoronix Test Suite

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	AMD A4-6320 APU	MSI AMD Radeon HD 8370D	AMD A10-7800 Radeon R7 12 Compute Cores 4C	MSI AMD Radeon R7	MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
C-Ray - Total Time (sec)	**110.67**		**57.79**		
Normalized	52.22%		100%		
Standard Deviation	1.1%		0.4%		
CacheBench - Read (MB/s)		**1704**			**1555**
Normalized		100%			91.23%
Standard Deviation		1%			0%
CacheBench - Write (MB/s)		**10559**			**11497**
Normalized		91.84%			100%
Standard Deviation		3.3%			0.8%
CacheBench - R.M.W (MB/s)		**19538**			**22846**
Normalized		85.52%			100%
Standard Deviation		3.2%			0.2%
GIMP - resize (sec)		**5.67**			**7.40**
Normalized		100%			76.62%
Standard Deviation		0.3%			17.6%
GIMP - auto-levels (sec)		**10.94**			**12.62**
Normalized		100%			86.69%
Standard Deviation		0.5%			1.3%
GIMP - unsharp-mask (sec)		**20.70**			**25.85**
Normalized		100%			80.08%
Standard Deviation		0.8%			0.9%
GnuPG - L.4.3.P.F.E (sec)		**17.51**			**19.21**
Normalized		100%			91.15%
Standard Deviation		0%			3.5%
NoiseLevel - P.T.S.v.0.0 (Activity Level)		**43680057**			**33879270**
Normalized		77.56%			100%
Unigine Heaven - 800 x 600 - Windowed (FPS)		**2.07**			**13.91**
Normalized		14.88%			100%
Standard Deviation		14%			1.6%
Unigine Heaven - 800 x 600 - Fullscreen (FPS)					20.74
Standard Deviation					0.2%
VP8 libvpx Encoding - vpxenc (FPS)		1.05			1.05
Standard Deviation		1%			3.1%
Warsow - 800 x 600 (FPS)		**40.30**			**63.53**
Normalized		63.43%			100%
Standard Deviation		0.7%			1.9%
X-Plane - High - 800 x 600 (FPS)		**29**		52	**57**
Normalized		50.88%		91.23%	100%
Standard Deviation		4%		6.7%	
X-Plane - Ultra - 800 x 600 (FPS)		**28**			**41**
Normalized		68.29%			100%
Standard Deviation					1.4%
Xonotic - 800 x 600 - Low (FPS)		**159.76**			**116.60**
Normalized		100%			72.98%
Standard Deviation		1%			0.9%

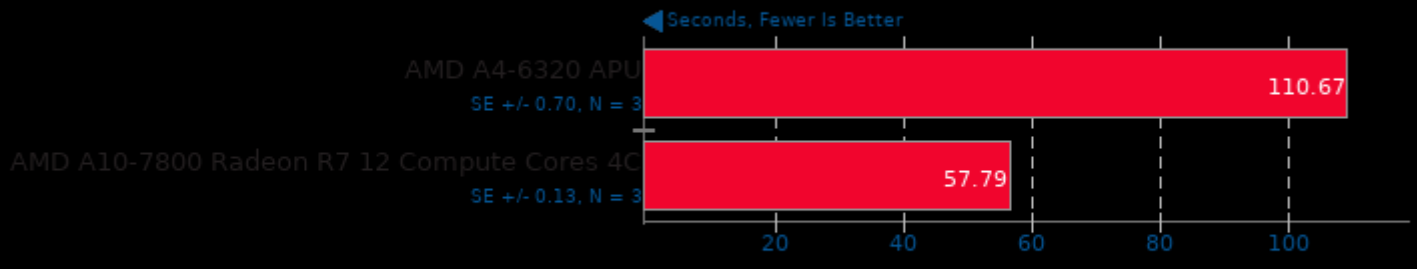
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Xonotic - 800 x 600 - High (FPS)	**76.54**	**79.18**
Normalized	96.67%	100%
Standard Deviation	0.2%	0.2%
Xonotic - 800 x 600 - Ultra (FPS)	**57.40**	**70.55**
Normalized	81.36%	100%
Standard Deviation	2.8%	0.4%
Xonotic - 800 x 600 - Ultimate (FPS)	**36.56**	**55.95**
Normalized	65.34%	100%
Standard Deviation	3.3%	0.4%

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C-Ray 1.1

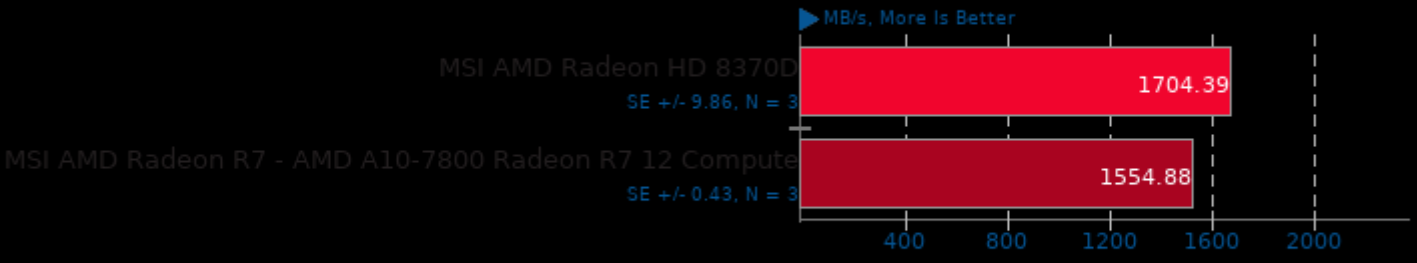
Total Time



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

CacheBench

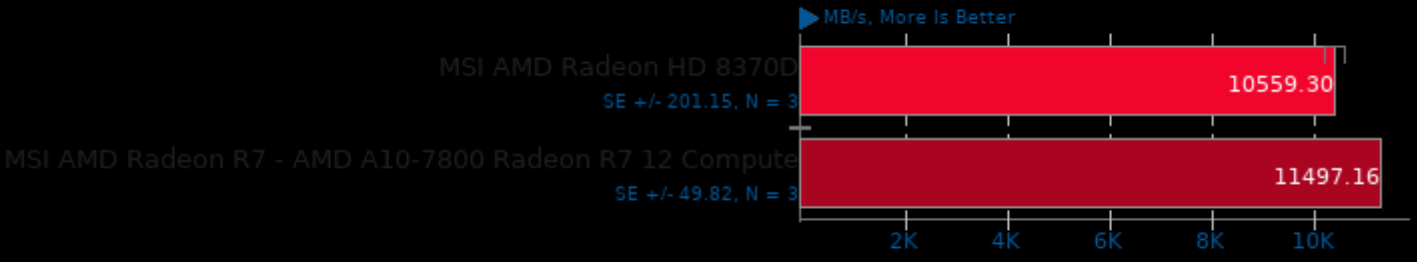
Test: Read



1. (CC) gcc options: -lrt

CacheBench

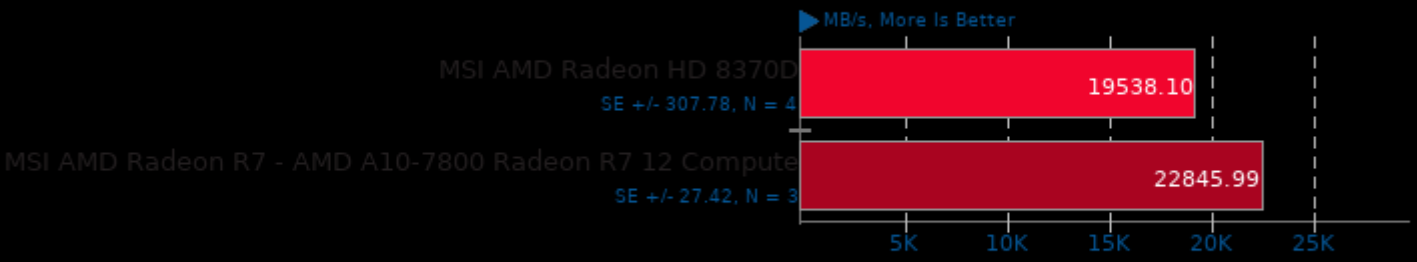
Test: Write



1. (CC) gcc options: -lrt

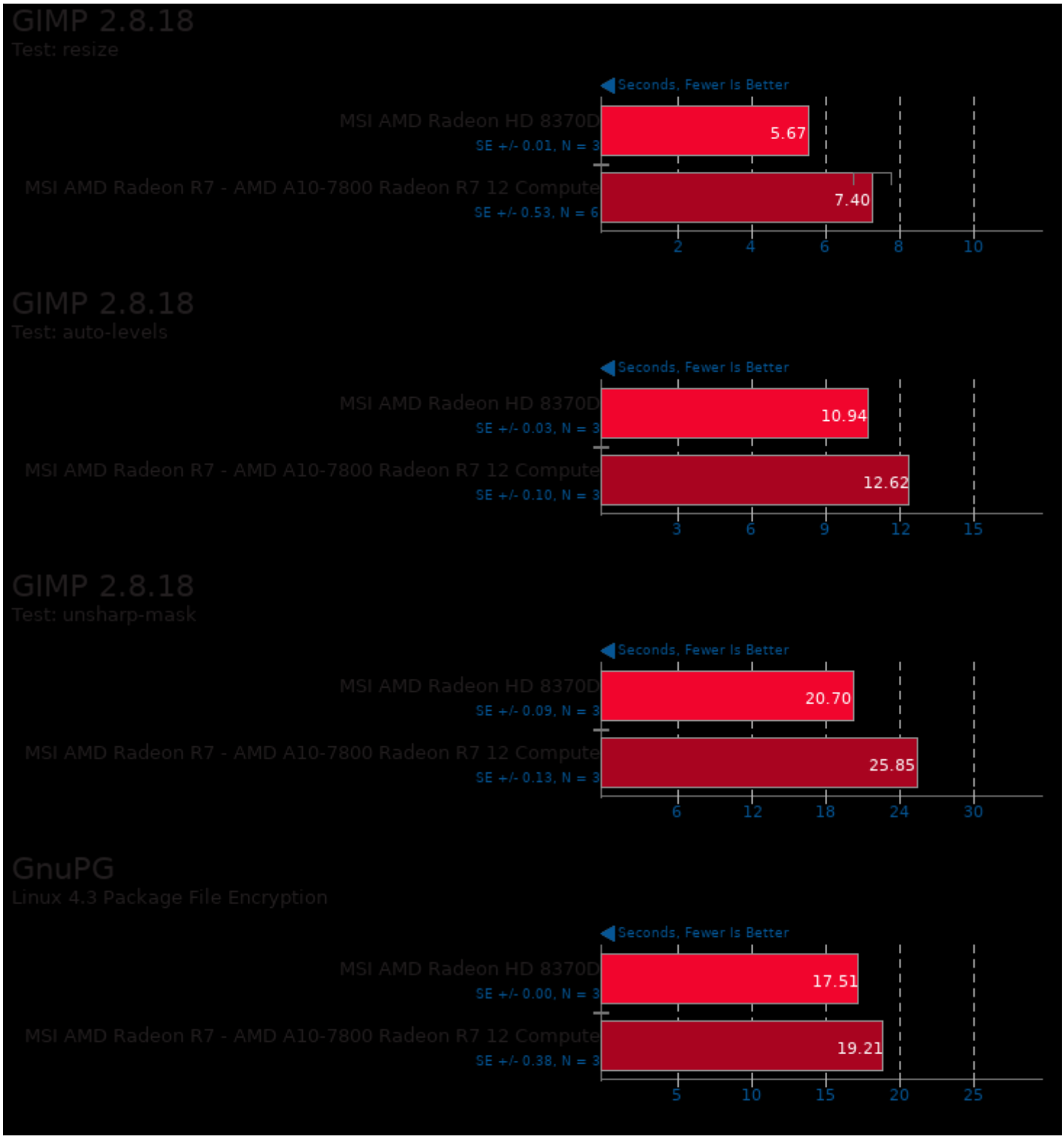
CacheBench

Test: Read / Modify / Write

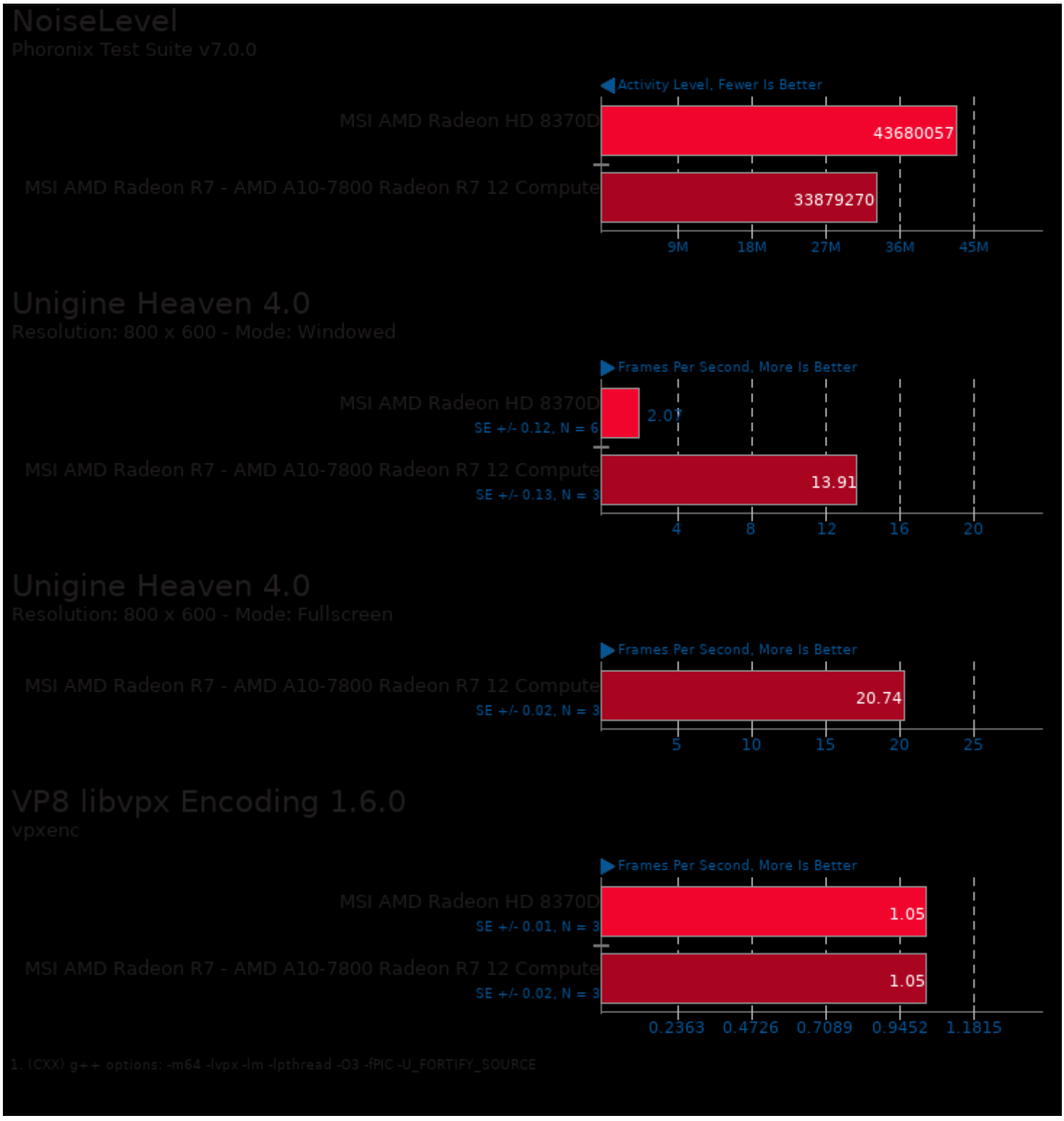


1. (CC) gcc options: -lrt

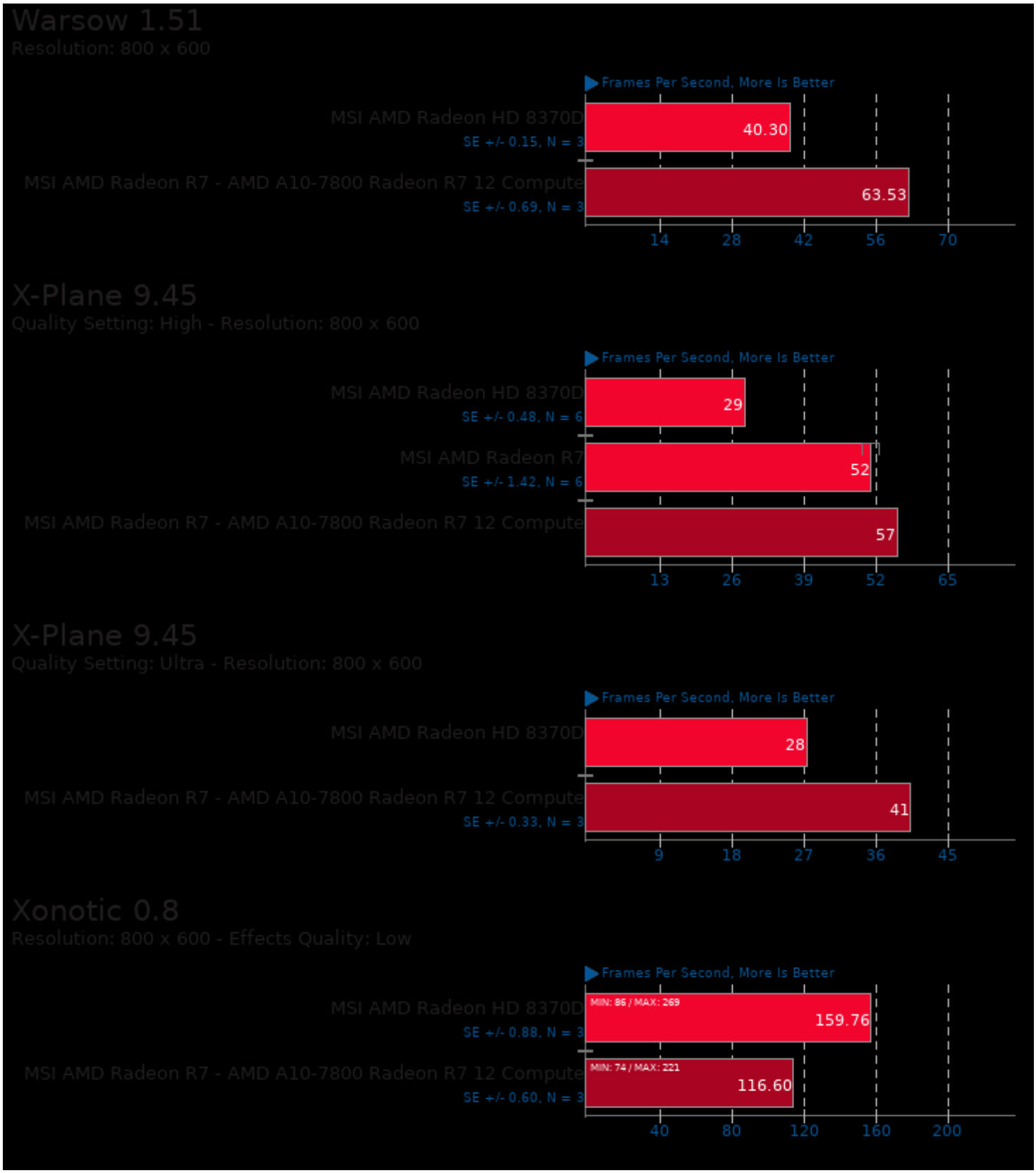
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GIMP 2.8.18
Test: resize
Seconds, Fewer Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.01, N = 3
5.67
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.53, N = 6
7.40
2
4
6
8
10
GIMP 2.8.18
Test: auto-levels
Seconds, Fewer Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.03, N = 3
10.94
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.10, N = 3
12.62
3
6
9
12
15
GIMP 2.8.18
Test: unsharp-mask
Seconds, Fewer Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.09, N = 3
20.70
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.13, N = 3
25.85
6
12
18
24
30
GnuPG
Linux 4.3 Package File Encryption
Seconds, Fewer Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.00, N = 3
17.51
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.38, N = 3
19.21
5
10
15
20
25

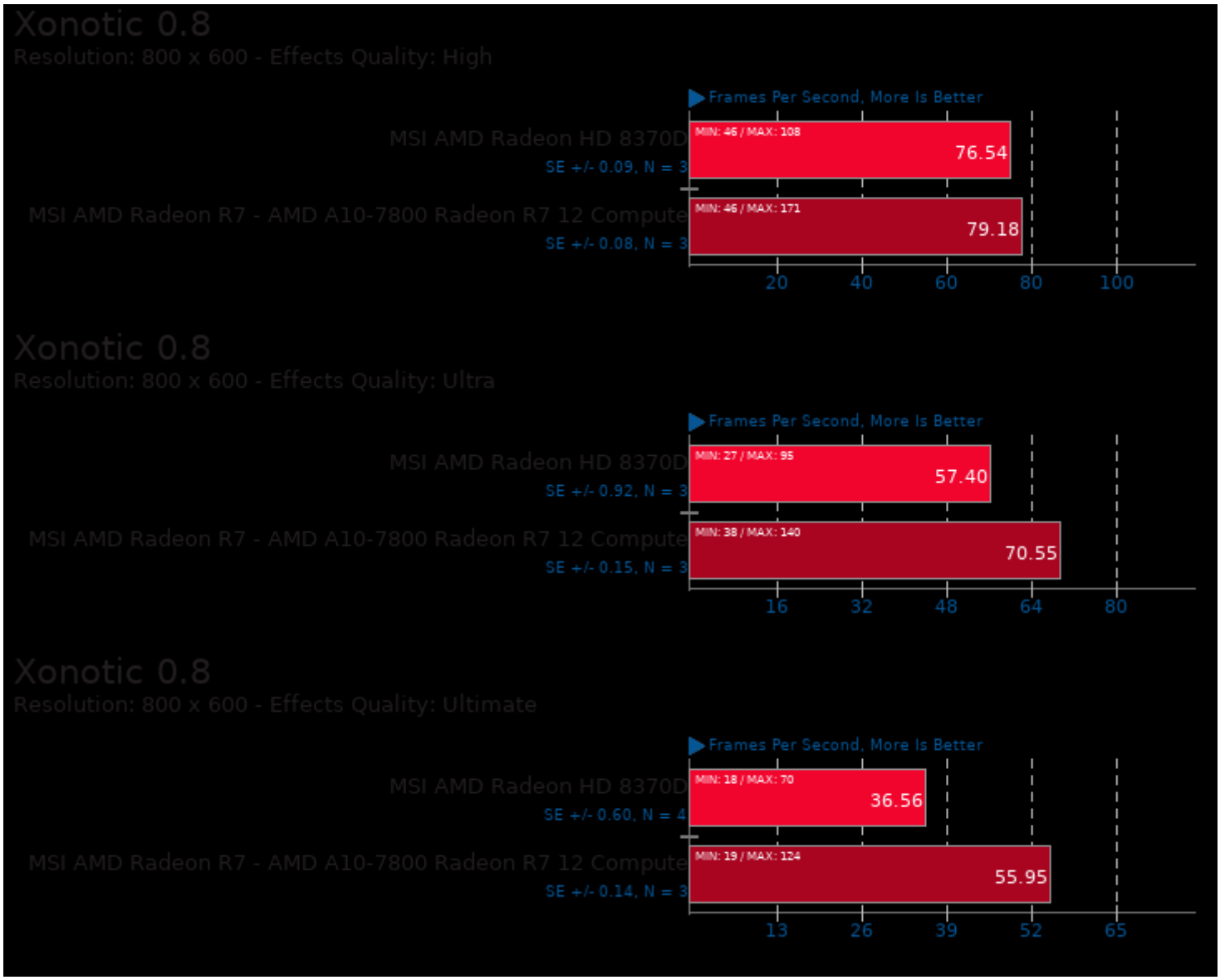
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NoiseLevel
Phoronix Test Suite v7.0.0
Activity Level, Fewer Is Better
MSI AMD Radeon HD 8370D
43680057
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
33879270
9M
18M
27M
36M
45M
Unigine Heaven 4.0
Resolution: 800 x 600 - Mode: Windowed
Frames Per Second, More Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.12, N = 6
2.01
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.13, N = 3
13.91
4
8
12
16
20
Unigine Heaven 4.0
Resolution: 800 x 600 - Mode: Fullscreen
Frames Per Second, More Is Better
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.02, N = 3
20.74
5
10
15
20
25
VP8 libvpx Encoding 1.6.0
vpxenc
Frames Per Second, More Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.01, N = 3
1.05
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.02, N = 3
1.05
0.2363
0.4726
0.7089
0.9452
1.1815
1. (CXX) g++ options: -m64 -lvpx -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE

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Warsow 1.51
Resolution: 800 x 600
Frames Per Second, More Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.15, N = 3
40.30
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.69, N = 3
63.53
14
28
42
56
70
X-Plane 9.45
Quality Setting: High - Resolution: 800 x 600
Frames Per Second, More Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.48, N = 6
29
MSI AMD Radeon R7
SE +/- 1.42, N = 6
52
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
57
13
26
39
52
65
X-Plane 9.45
Quality Setting: Ultra - Resolution: 800 x 600
Frames Per Second, More Is Better
MSI AMD Radeon HD 8370D
28
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.33, N = 3
41
9
18
27
36
45
Xonotic 0.8
Resolution: 800 x 600 - Effects Quality: Low
Frames Per Second, More Is Better
MSI AMD Radeon HD 8370D
SE +/- 0.88, N = 3
MIN: 86 / MAX: 269
159.76
MSI AMD Radeon R7 - AMD A10-7800 Radeon R7 12 Compute
SE +/- 0.60, N = 3
MIN: 74 / MAX: 221
116.60
40
80
120
160
200

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