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Xavier_720_32_3_1

ARMv8 rev 0 testing with a Jetson-AGX and NVIDIA Tegra Xavier on Ubuntu 18.04 via the Phoronix Test Suite.

Automated Executive Summary

SSD_PX2569M9P had the most wins, coming in first place for 50% of the tests.

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

Flexible IO Tester (Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory) at 99x
Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory) at 70x
Flexible IO Tester (Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory) at 45.684x
Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory) at 30.211x
Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory) at 14.326x
Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory) at 14.312x
Flexible IO Tester (Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk

Target: Default Test Directory) at 13.249x
Flexible IO Tester (Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory) at 13.237x
Stress-NG (Test: Vector Math) at 1.102x
Stress-NG (Test: Glibc C String Functions) at 1.075x.

Test Systems:

eMMC

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 62GB Ultra USB 3.0 + 31GB HBG4a2, Graphics: NVIDIA TEGRA, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 1.0.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

USB3.0 Innodisk

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 62GB Ultra USB 3.0 + 31GB HBG4a2, Graphics: NVIDIA TEGRA, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 1.0.0, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

USB3.0 Innodisk run 2

USB2.0 Innodisk

SD Card Innodisk

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 16GB USB Drive 3ME + 31GB HBG4a2, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display

Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

mSATA Innodisk

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 63GB M.2 (S80) 3MG2-P + 8GB USB Drive 2SE + 62GB Ultra USB 3.0 + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

SSD_760P

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB INTEL SSDPEKKW256G8 + 62GB Ultra USB 3.0 + 8GB USB Drive 2SE + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: none / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

SSD_760P Run2

CPU Stress

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB INTEL SSDPEKKW256G8 + 8GB USB Drive 2SE + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++

--enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

CPU Stress run

LPDDR4

Graphics Test

CPU-7ZIP

CUDA Test

TTSIOD

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB INTEL SSDPEKKW256G8 + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: 23MP65, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

TYPE C /digifusion

TYPE C /digifusion run2

TYPE C /digifusion run3

TYPE C /digifusion run4

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB Generic + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: 23MP65, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

SSD_PX2569M9P

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB PLEXTOR

PX-256M9PeGN + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: 23MP65, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: none / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

TYPE C /digifusion run5

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB PLEXTOR PX-256M9PeGN + 256GB Generic + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: none / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

m.2 digifusion to USB A

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB Generic + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

Xavier_720_32_3_1

	eMMC	USB3.0 Innodisk	USB3.0 Innodisk run 2	USB2.0 Innodisk	SD Card Innodisk	mSATA Innodisk	SSD_760P	SSD_760P Run 2	CPU Stress	CPU Stress run	LPDDR4	Graphics Test	CPU-7ZIP	CUDA Test	TTSIOD	TYPEC /digifusion	TYPEC /digifusion run 2	TYPEC /digifusion run 3	TYPEC /digifusion run 4	SSD_PX2569M9P	TYPEC /digifusion run 5	m.2 digifusion to USB A
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (MB/s)	96.3	89.3	89.6	27.7	54.8	194		367												336		134
Normalized	26.24%	24.33%	24.41%	7.55%	14.93%	52.86%		100%												91.55%		36.51%
Standard Deviation	25.8%	0.1%	1.2%	0.6%	0.3%	0.8%		1.7%												2.9%		0.4%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (IOPS)	24593	22833	22933	7099	13700	49833		93967												85850		34167
Normalized	26.17%	24.33%	24.41%	7.55%	14.58%	53.03%		100%												91.36%		36.36%
Standard Deviation	26.1%	0.3%	1.3%	0.6%	4.4%	0.8%		1.8%												2.8%		0.2%

Xavier_720_32_3_1

Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB (MB/s)	293	120	120	**52.6**	102	425	219 3			100 6	100 5	100 5	**240 3**	100 8	452	
Normalized	12.19%	4.99%	4.99%	2.19%	4.24%	17.69%	91.26%			41.86%	41.82%	41.82%	100%	41.98%	18.81%	
Standard Deviation				0.5%	0.6%		2.6%			0.1%	0.2%		0.5%			
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB (IOPS)	33	12	12	**3**	9	49	271			122	122	122	**297**	122	53	
Normalized	11.11%	4.04%	4.04%	1.01%	3.03%	16.50%	91.25%			41.08%	41.08%	41.08%	100%	41.08%	17.85%	
Standard Deviation							2.7%						0.4%			
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (MB/s)	79.0	24.4	24.6	24.8	**21.8**	85.5	**312**						295		136	
Normalized	25.32%	7.82%	7.88%	7.95%	6.99%	27.40%	100%						94.55%		43.59%	
Standard Deviation	1.1%	2.9%	0.6%	2.1%	1.6%	0.1%	2.9%						5%		9%	

Xavier_720_32_3_1

Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (IOPS)	20267	6240	6284	6344	**5569**	21900	**79783**						75400	34667
Normalized	25.4%	7.82%	7.88%	7.95%	6.98%	27.45%	100%						94.51%	43.45%
Standard Deviation	0.3%	2.9%	0.6%	1.9%	1.4%		2.9%						0.2%	0.4%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 8MB (MB/s)	136	38.6	**38.0**	48.9	66.5	103	**1148**			136	180	1021	441	
Normalized	11.85%	3.36%	3.31%	4.26%	5.79%	8.97%	100%			11.85%	15.68%	88.94%	38.41%	
Standard Deviation	0.7%	2.4%	2.8%	0.9%	0.2%		2%			0.9%	49%	0.1%		
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 8MB (IOPS)	13	**2**	**2**	3	5	9	**140**			13	19	124	52	
Normalized	9.29%	1.43%	1.43%	2.14%	3.57%	6.43%	100%			9.29%	13.57%	88.57%	37.14%	
Standard Deviation	4.3%						2.2%				56.7%			
Stress-NG - Crypto (Bogo Ops/s)								**1246**	**1224**					
Normalized								100%	98.23%					
Standard Deviation								1.2%	2.5%					

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Stress-NG - Bsearch (Bogo Ops/s)	**1947**	**1866**
Normalized	100%	95.8%
Standard Deviation	0.9%	2.8%
Stress-NG - CPU Stress (Bogo Ops/s)	**768.27**	**754.26**
Normalized	100%	98.1%
Standard Deviation	2.9%	2.9%
Stress-NG - Matrix Math (Bogo	**14882**	**11249**
Normalized	100%	75.5%
Standard Deviation	17.9%	1.5%
Stress-NG - Vector Math (Bogo Ops/s)	**12745**	**11569**
Normalized	100%	90.7%
Standard Deviation	2.8%	0.2%
Stress-NG - Memory Copying (Bogo Ops/s)	**3811**	**3646**
Normalized	100%	95.6%
Standard Deviation	0.8%	0.6%

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Stress-NG - G.C.S.F (Bogo Ops/s)	169	157			
	168	339			
Normalized	100%	93.0%			
Standard Deviation	2.9%	2.2%			
Stress-NG - G.Q.D.S (Bogo Ops/s)	51.02	44.63			
Normalized	100%	87.4%			
Standard Deviation	15.3%	13.2%			
Stream - Copy (MB/s)			671.10		
Standard Deviation			0.4%		
Stream - Scale (MB/s)			670.43		
Standard Deviation			1%		
Stream - Triad (MB/s)			601.23		
Standard Deviation			0.2%		
Stream - Add (MB/s)			598.12		
Standard Deviation			0.3%		
GLmark2 - 800 x 600 (Score)				579.2	
GLmark2 - 1024 x 768 (Score)				467.2	

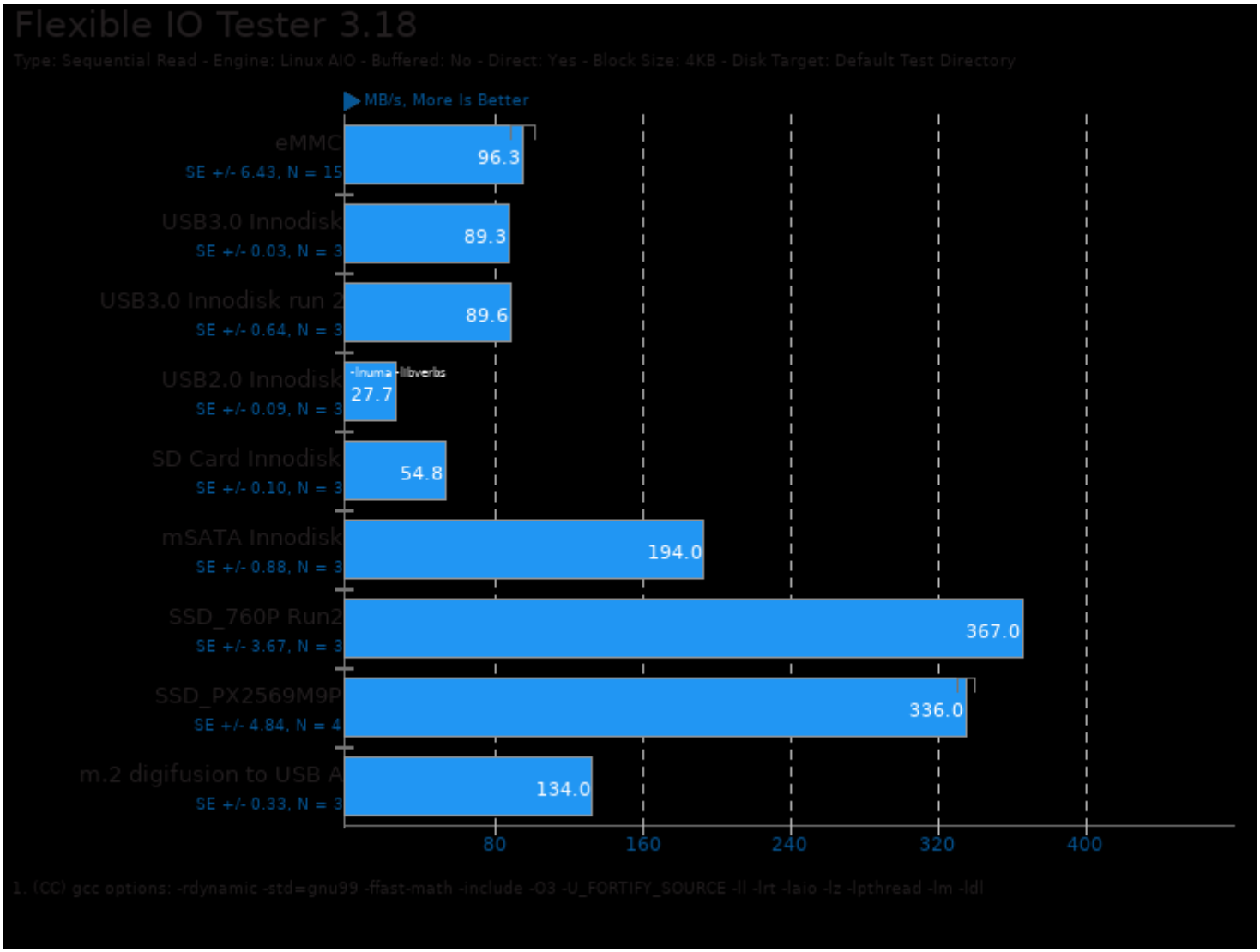
GLmark2 - 1280 x 1024 (Score)	336			
	4			
GLmark2 - 1920 x 1080 (Score)	263			
	6			
7-Zip Compression - C.S.T (MIPS)		201		
		36		
Standard Deviation		3%		
CUDA Mini-Nbody - Original ((NBody^2)/s)			46.918	
Standard Deviation			0.1%	
CUDA Mini-Nbody - Cache Blocking ((NBody^2)/s)			55.618	
Standard Deviation			0%	
CUDA Mini-Nbody - Loop Unrolling ((NBody			54.802	
Standard Deviation			0%	

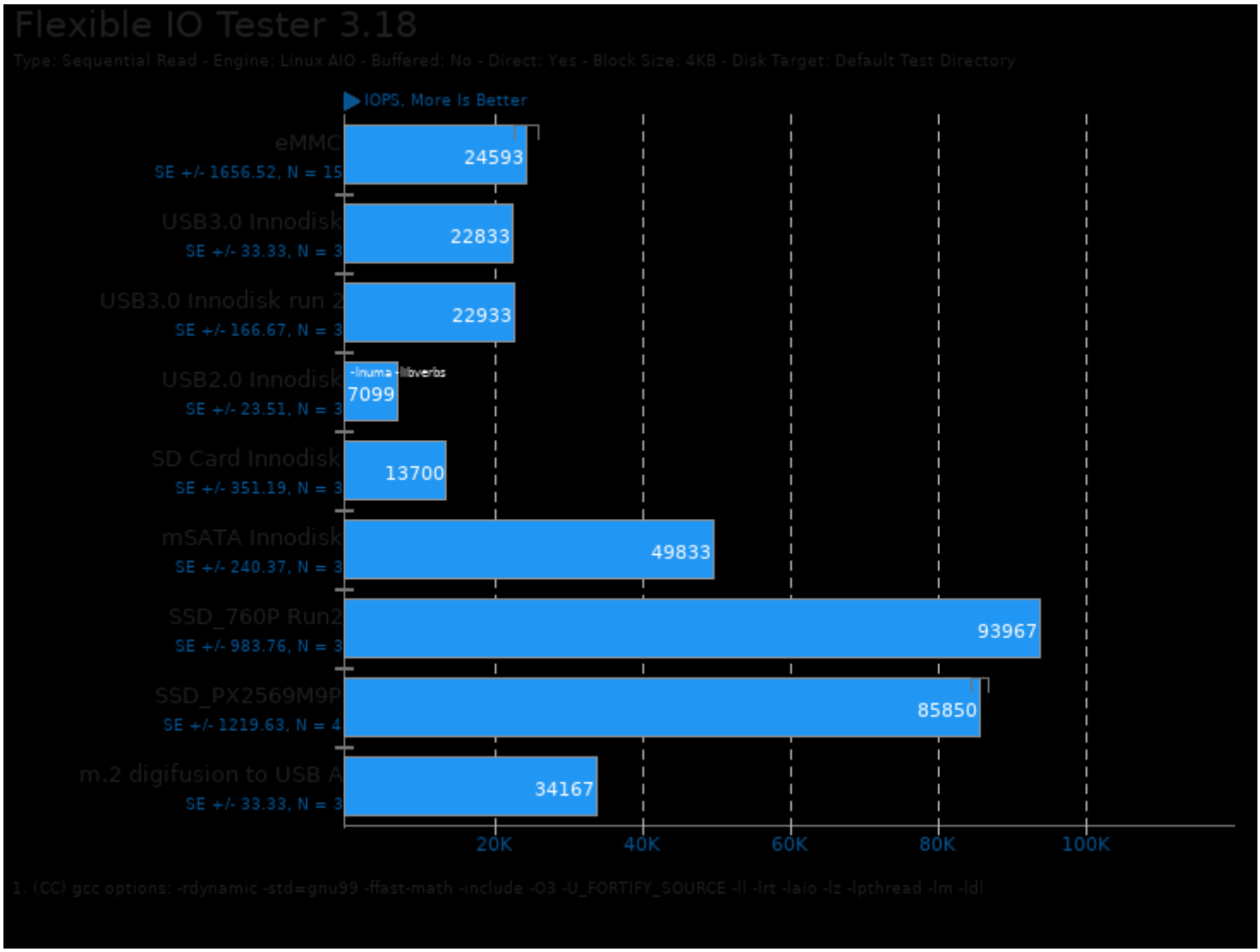
Xavier_720_32_3_1

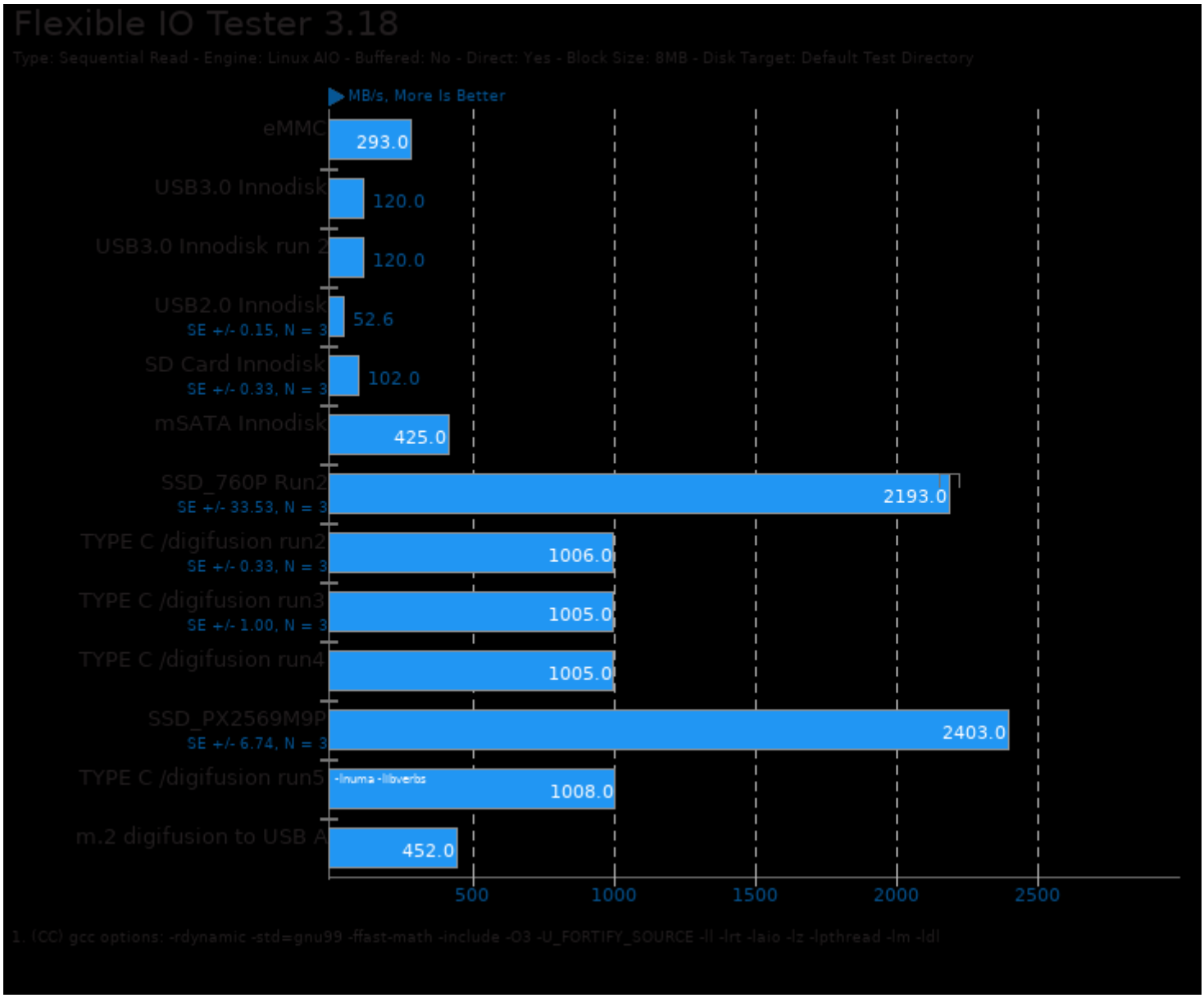
CUDA Mini-Nbody - SOA Data Layout ((NBody ^2)/s)	47.885			
Standard Deviation	0.1%			
CUDA Mini-Nbody - F.D.T.Z ((NBody ^2)/s)	55.126			
Standard Deviation	0.1%			
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)		145.84		
Standard Deviation		2.9%		
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 1MB (MB/s)			981	984
Normalized			99.7 %	100 %

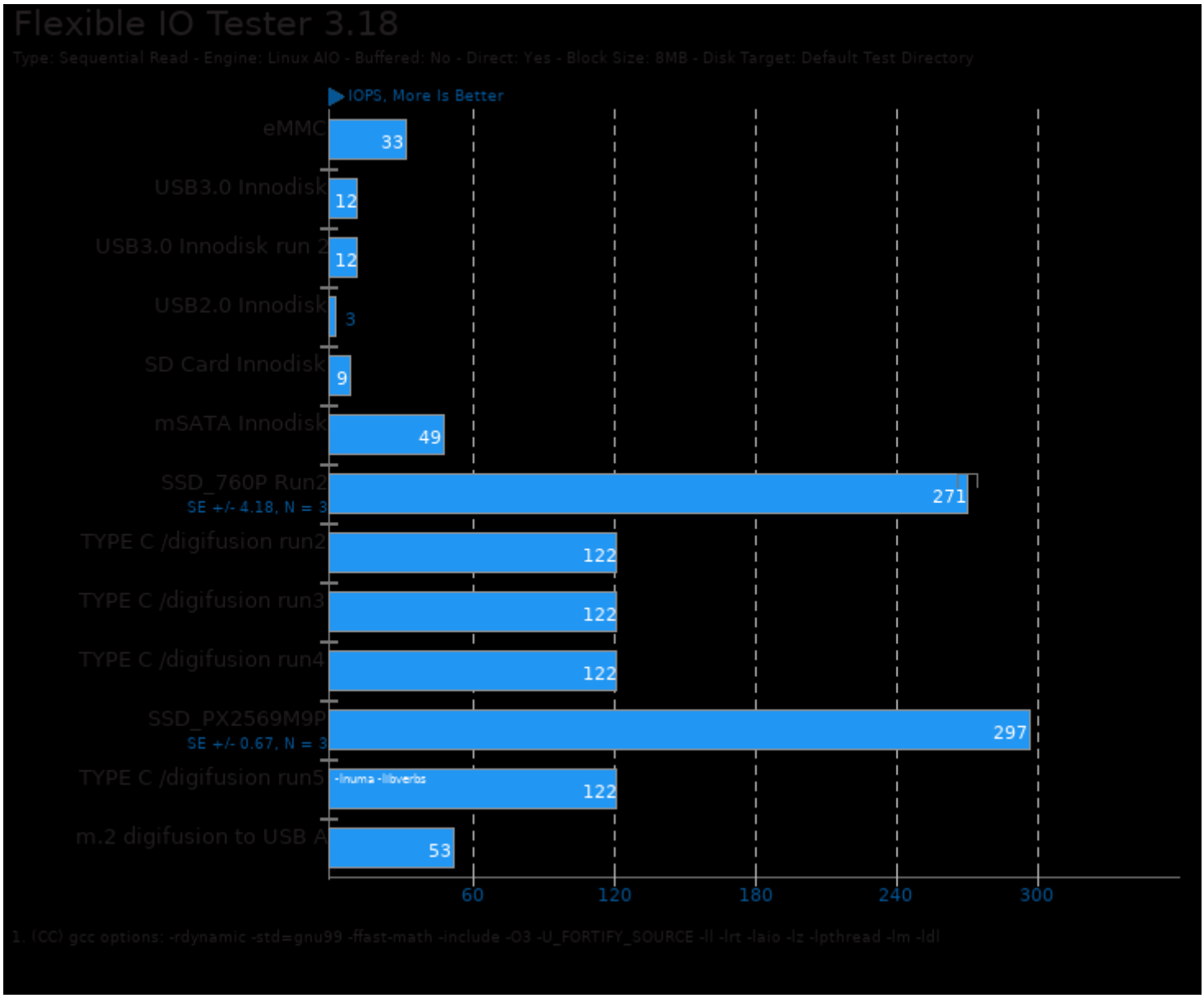
Xavier_720_32_3_1

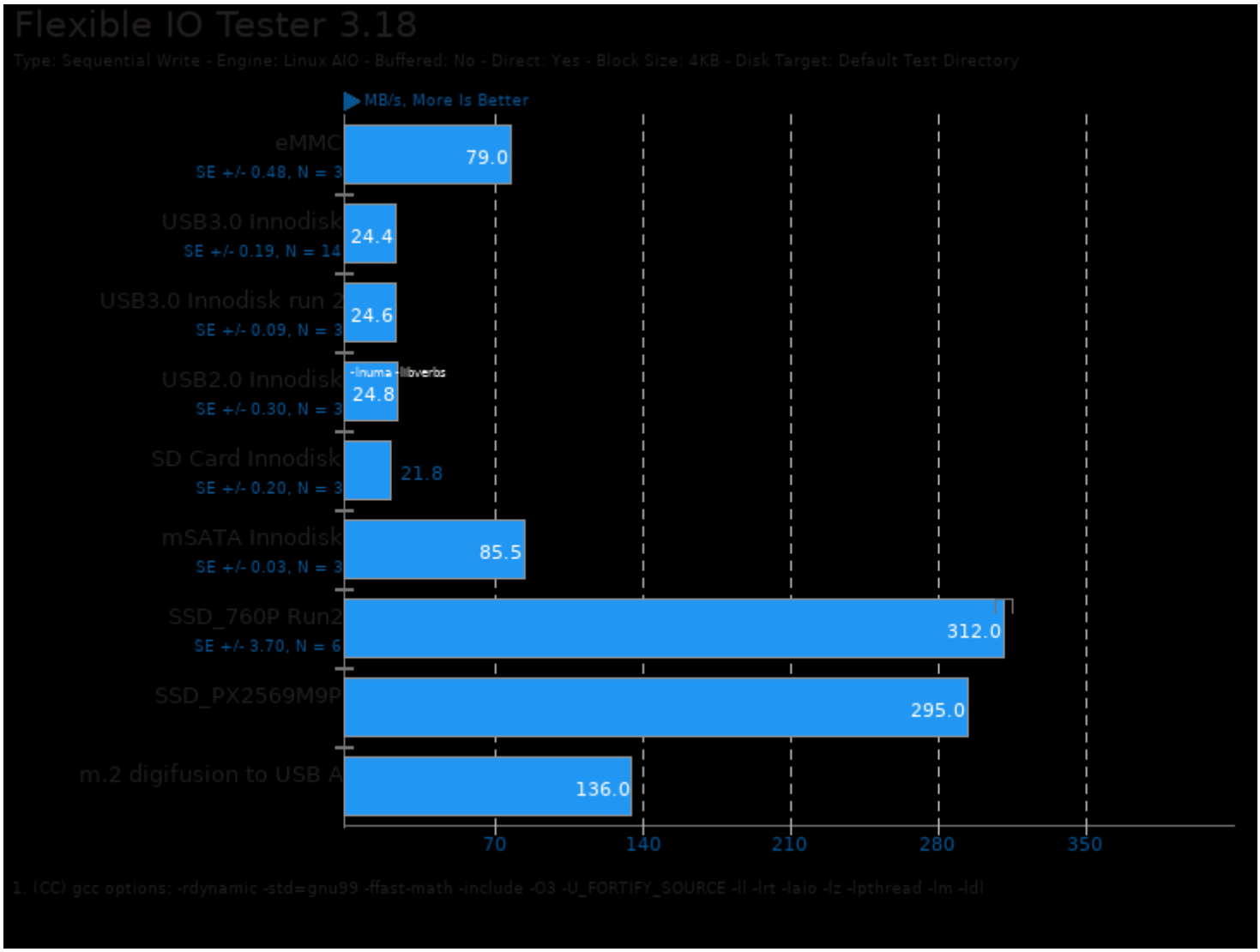
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 1MB (IOPS)	**978**	**981**
Normalized	99.6	100
	9%	%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 1MB (MB/s)	338	
Standard Deviation	41.3	
	%	
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 1MB (IOPS)	335	
Standard Deviation	41.6	
	%	

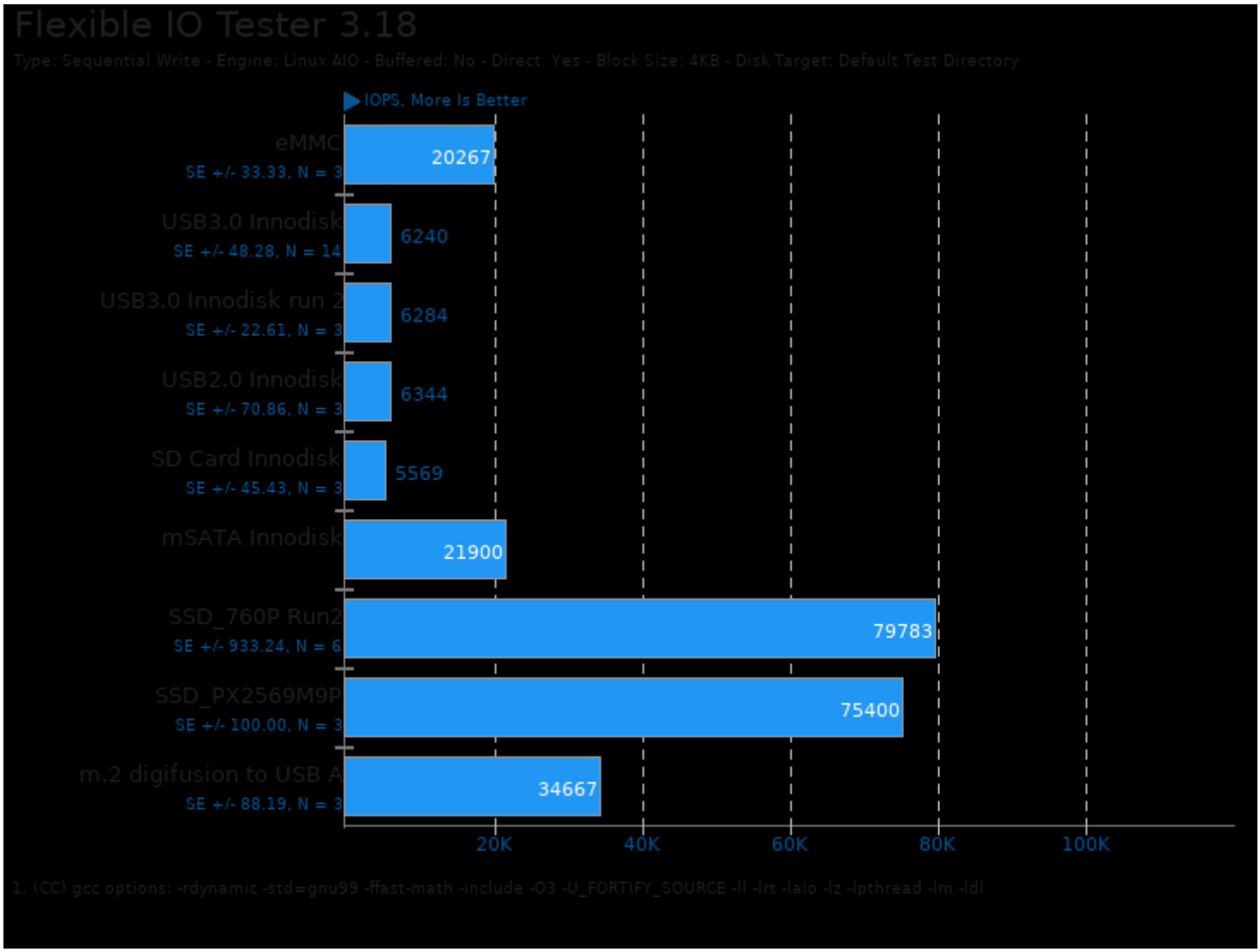

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
eMMC
SE +/- 6.43, N = 15
96.3
USB3.0 Innodisk
SE +/- 0.03, N = 3
89.3
USB3.0 Innodisk run 2
SE +/- 0.64, N = 3
89.6
USB2.0 Innodisk
SE +/- 0.09, N = 3
-lnuma -libverbs
27.7
SD Card Innodisk
SE +/- 0.10, N = 3
54.8
mSATA Innodisk
SE +/- 0.88, N = 3
194.0
SSD_760P Run2
SE +/- 3.67, N = 3
367.0
SSD_PX2569M9P
SE +/- 4.84, N = 4
336.0
m.2 digifusion to USB A
SE +/- 0.33, N = 3
134.0
80
160
240
320
400
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl

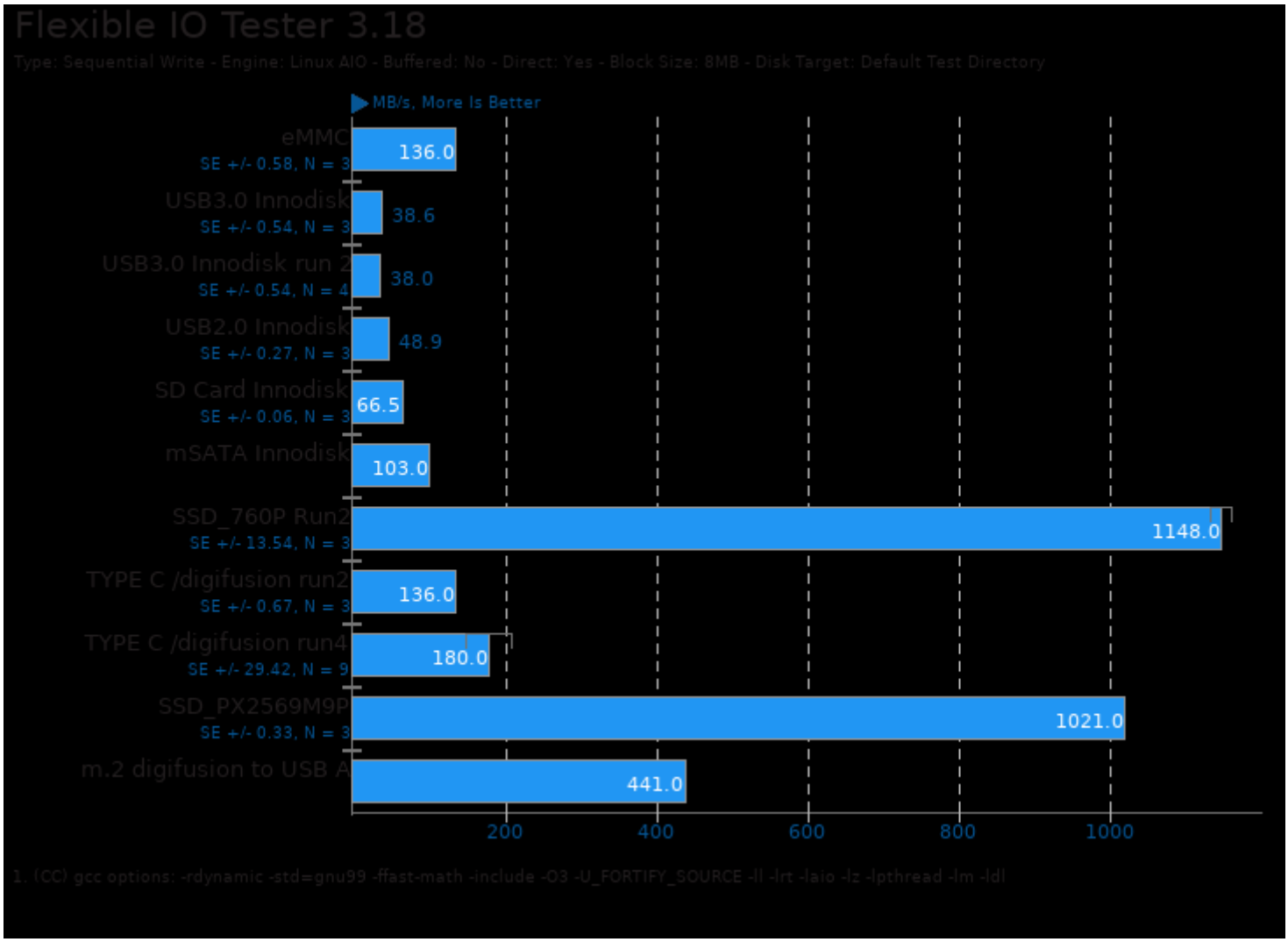

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
eMMC
SE +/- 1656.52, N = 15
24593
USB3.0 Innodisk
SE +/- 33.33, N = 3
22833
USB3.0 Innodisk run 2
SE +/- 166.67, N = 3
22933
USB2.0 Innodisk
SE +/- 23.51, N = 3
-lnuma -libverbs
7099
SD Card Innodisk
SE +/- 351.19, N = 3
13700
mSATA Innodisk
SE +/- 240.37, N = 3
49833
SSD_760P Run2
SE +/- 983.76, N = 3
93967
SSD_PX2569M9P
SE +/- 1219.63, N = 4
85850
m.2 digifusion to USB A
SE +/- 33.33, N = 3
34167
20K
40K
60K
80K
100K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl

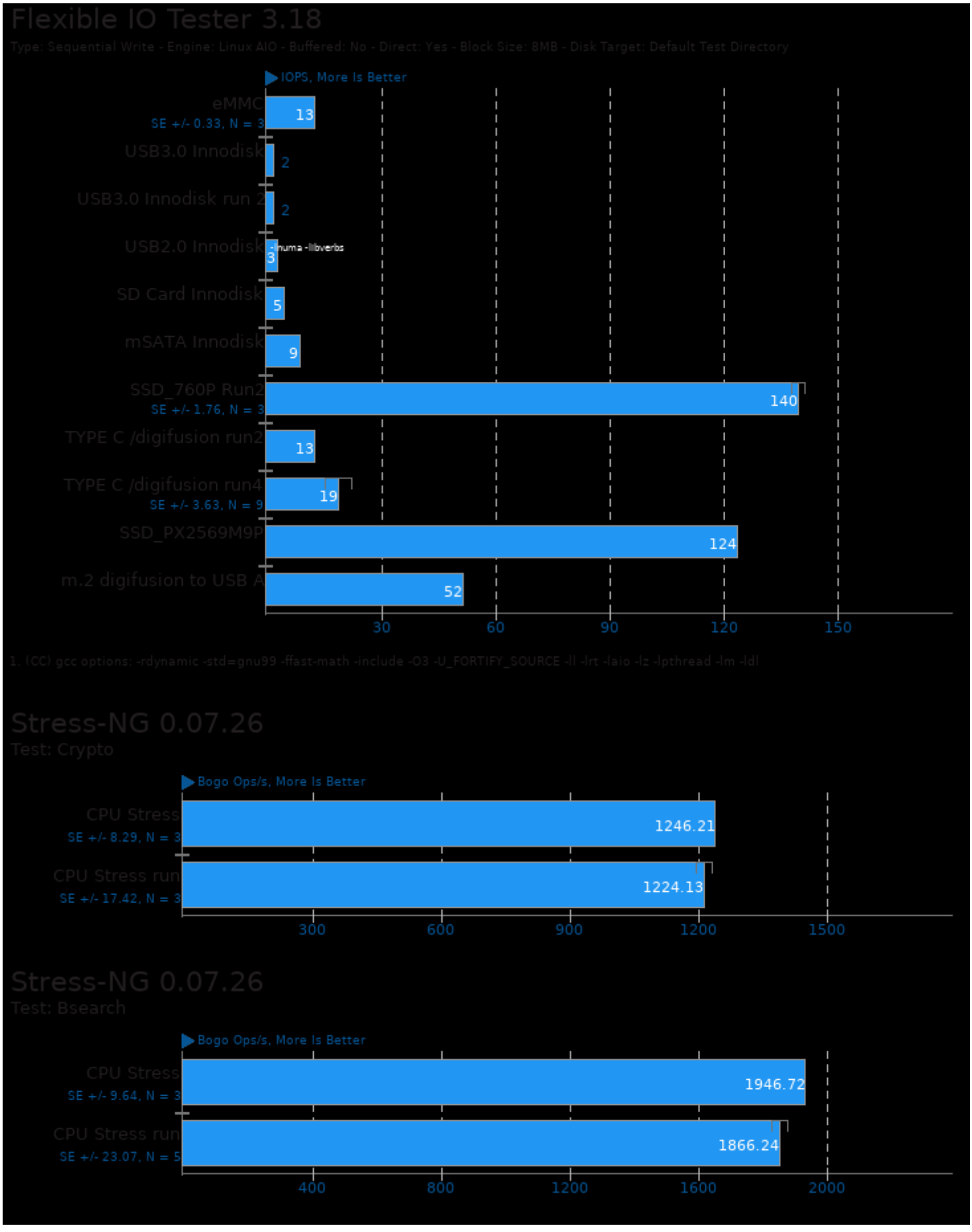

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
eMMC
293.0
USB3.0 Innodisk
120.0
USB3.0 Innodisk run 2
120.0
USB2.0 Innodisk
SE +/- 0.15, N = 3
52.6
SD Card Innodisk
SE +/- 0.33, N = 3
102.0
mSATA Innodisk
425.0
SSD_760P Run2
SE +/- 33.53, N = 3
2193.0
TYPE C /digifusion run2
SE +/- 0.33, N = 3
1006.0
TYPE C /digifusion run3
SE +/- 1.00, N = 3
1005.0
TYPE C /digifusion run4
1005.0
SSD_PX2569M9P
SE +/- 6.74, N = 3
2403.0
TYPE C /digifusion run5
-linuma -libverbs
1008.0
m.2 digifusion to USB A
452.0
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl

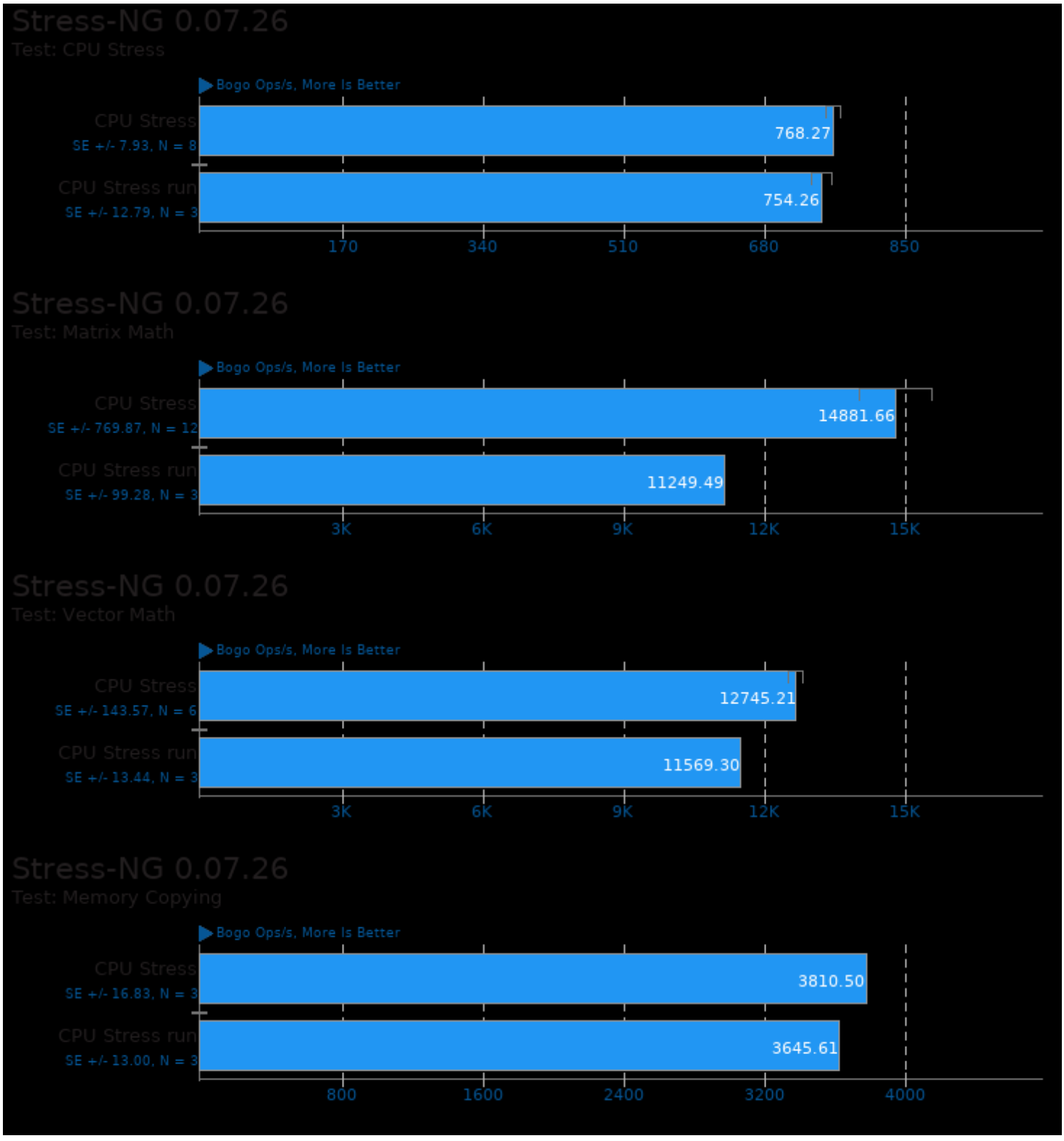

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
IOPS, More Is Better
eMMC
33
USB3.0 Innodisk
12
USB3.0 Innodisk run 2
12
USB2.0 Innodisk
3
SD Card Innodisk
9
mSATA Innodisk
49
SSD_760P Run2
SE +/- 4.18, N = 3
271
TYPE C /digifusion run2
122
TYPE C /digifusion run3
122
TYPE C /digifusion run4
122
SSD_PX2569M9P
SE +/- 0.67, N = 3
297
TYPE C /digifusion run5
-linuma -libverbs
122
m.2 digifusion to USB A
53
60
120
180
240
300
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl

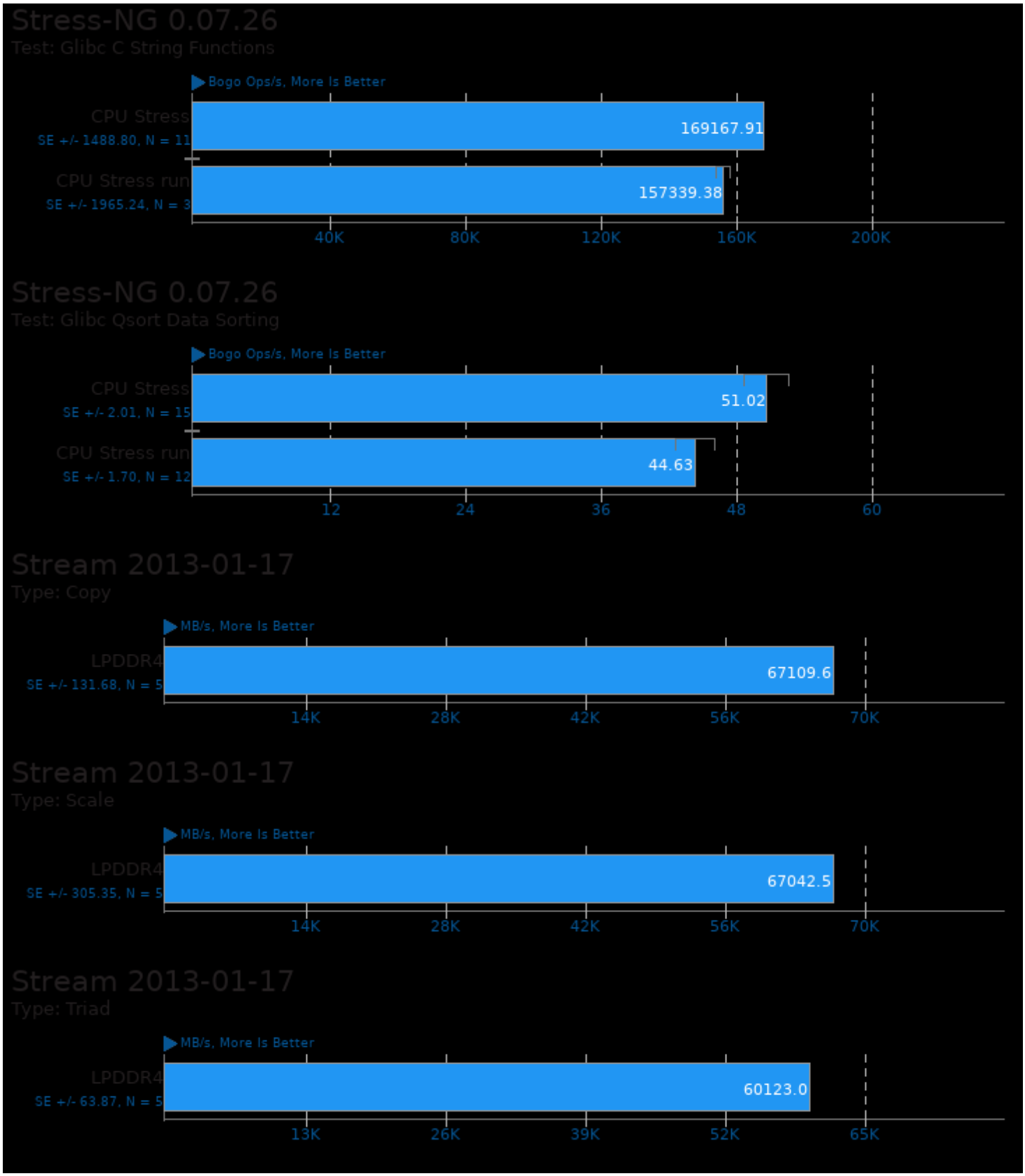

Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
eMMC
SE +/- 0.48, N = 3
79.0
USB3.0 Innodisk
SE +/- 0.19, N = 14
24.4
USB3.0 Innodisk run 2
SE +/- 0.09, N = 3
24.6
USB2.0 Innodisk
SE +/- 0.30, N = 3
-linuma -libverbs
24.8
SD Card Innodisk
SE +/- 0.20, N = 3
21.8
mSATA Innodisk
SE +/- 0.03, N = 3
85.5
SSD_760P Run2
SE +/- 3.70, N = 6
312.0
SSD_PX2569M9P
295.0
m.2 digifusion to USB A
136.0
70
140
210
280
350
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl

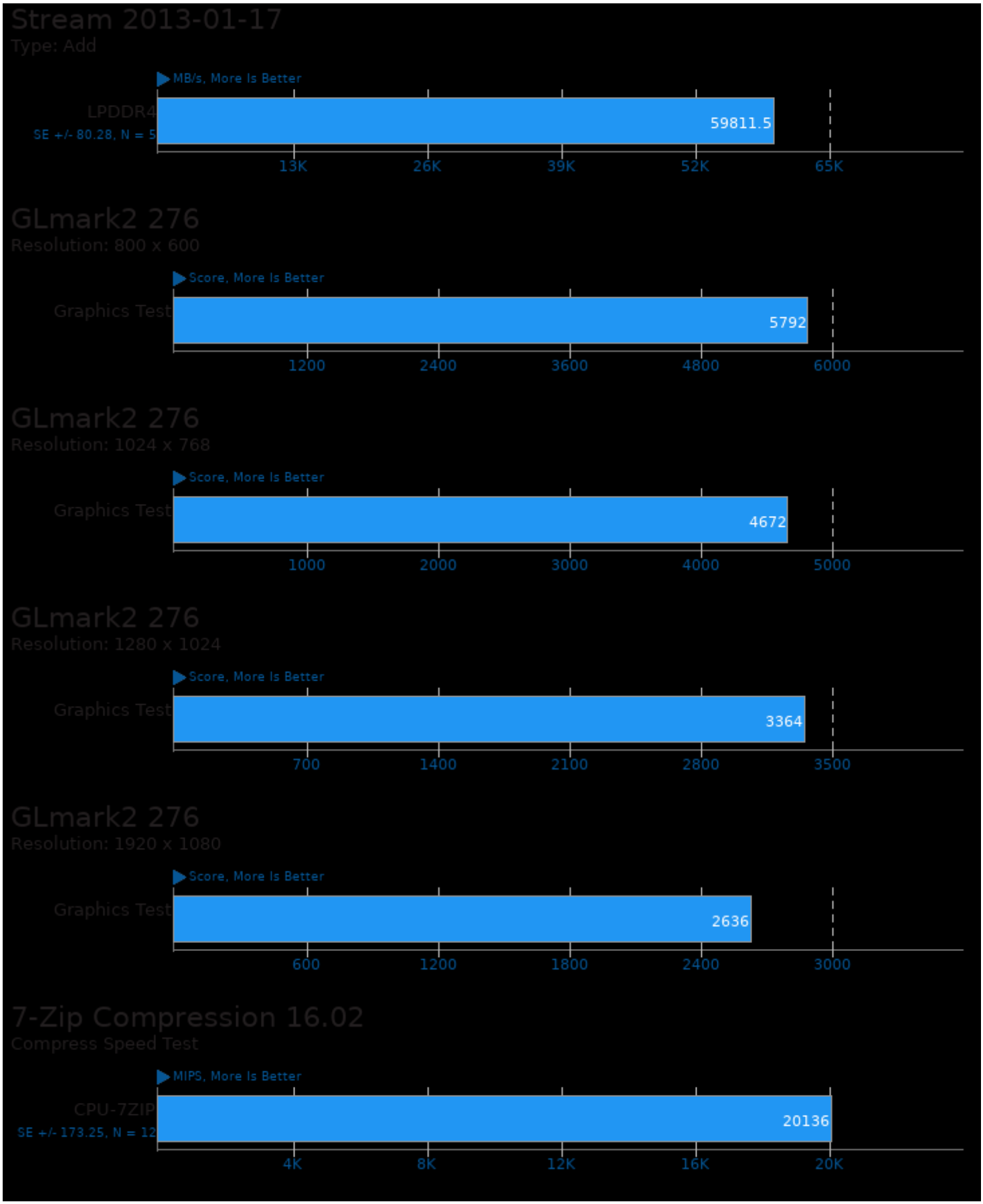

Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
eMMC
SE +/- 33.33, N = 3
20267
USB3.0 Innodisk
SE +/- 48.28, N = 14
6240
USB3.0 Innodisk run 2
SE +/- 22.61, N = 3
6284
USB2.0 Innodisk
SE +/- 70.86, N = 3
6344
SD Card Innodisk
SE +/- 45.43, N = 3
5569
mSATA Innodisk
21900
SSD_760P Run2
SE +/- 933.24, N = 6
79783
SSD_PX2569M9P
SE +/- 100.00, N = 3
75400
m.2 digifusion to USB A
SE +/- 88.19, N = 3
34667
20K
40K
60K
80K
100K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl


Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
eMMC
SE +/- 0.58, N = 3
136.0
USB3.0 Innodisk
SE +/- 0.54, N = 3
38.6
USB3.0 Innodisk run 2
SE +/- 0.54, N = 4
38.0
USB2.0 Innodisk
SE +/- 0.27, N = 3
48.9
SD Card Innodisk
SE +/- 0.06, N = 3
66.5
mSATA Innodisk
103.0
SSD_760P Run2
SE +/- 13.54, N = 3
1148.0
TYPE C /digifusion run2
SE +/- 0.67, N = 3
136.0
TYPE C /digifusion run4
SE +/- 29.42, N = 9
180.0
SSD_PX2569M9P
SE +/- 0.33, N = 3
1021.0
m.2 digifusion to USB A
441.0
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl


Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
IOPS, More Is Better
eMMC
SE +/- 0.33, N = 3
13
USB3.0 Innodisk
2
USB3.0 Innodisk run 2
2
USB2.0 Innodisk
3
-lnuma -libverbs
SD Card Innodisk
5
mSATA Innodisk
9
SSD_760P Run2
SE +/- 1.76, N = 3
140
TYPE C /digifusion run2
13
TYPE C /digifusion run4
SE +/- 3.63, N = 9
19
SSD_PX2569M9P
124
m.2 digifusion to USB A
52
30
60
90
120
150
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl
Stress-NG 0.07.26
Test: Crypto
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 8.29, N = 3
1246.21
CPU Stress run
SE +/- 17.42, N = 3
1224.13
300
600
900
1200
1500
Stress-NG 0.07.26
Test: Bsearch
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 9.64, N = 3
1946.72
CPU Stress run
SE +/- 23.07, N = 5
1866.24
400
800
1200
1600
2000

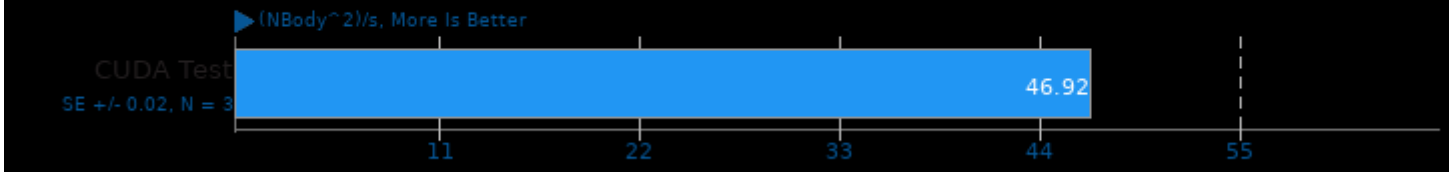

Stress-NG 0.07.26
Test: CPU Stress
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 7.93, N = 8
768.27
CPU Stress run
SE +/- 12.79, N = 3
754.26
170
340
510
680
850
Stress-NG 0.07.26
Test: Matrix Math
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 769.87, N = 12
14881.66
CPU Stress run
SE +/- 99.28, N = 3
11249.49
3K
6K
9K
12K
15K
Stress-NG 0.07.26
Test: Vector Math
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 143.57, N = 6
12745.21
CPU Stress run
SE +/- 13.44, N = 3
11569.30
3K
6K
9K
12K
15K
Stress-NG 0.07.26
Test: Memory Copying
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 16.83, N = 3
3810.50
CPU Stress run
SE +/- 13.00, N = 3
3645.61
800
1600
2400
3200
4000


Stress-NG 0.07.26
Test: Glibc C String Functions
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 1488.80, N = 11
169167.91
CPU Stress run
SE +/- 1965.24, N = 3
157339.38
40K
80K
120K
160K
200K
Stress-NG 0.07.26
Test: Glibc Qsort Data Sorting
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 2.01, N = 15
51.02
CPU Stress run
SE +/- 1.70, N = 12
44.63
12
24
36
48
60
Stream 2013-01-17
Type: Copy
MB/s, More Is Better
LPDDR4
SE +/- 131.68, N = 5
67109.6
14K
28K
42K
56K
70K
Stream 2013-01-17
Type: Scale
MB/s, More Is Better
LPDDR4
SE +/- 305.35, N = 5
67042.5
14K
28K
42K
56K
70K
Stream 2013-01-17
Type: Triad
MB/s, More Is Better
LPDDR4
SE +/- 63.87, N = 5
60123.0
13K
26K
39K
52K
65K


Stream 2013-01-17
Type: Add
MB/s, More Is Better
LPDDR4
SE +/- 80.28, N = 5
59811.5
13K
26K
39K
52K
65K
GLmark2 276
Resolution: 800 x 600
Score, More Is Better
Graphics Test
5792
1200
2400
3600
4800
6000
GLmark2 276
Resolution: 1024 x 768
Score, More Is Better
Graphics Test
4672
1000
2000
3000
4000
5000
GLmark2 276
Resolution: 1280 x 1024
Score, More Is Better
Graphics Test
3364
700
1400
2100
2800
3500
GLmark2 276
Resolution: 1920 x 1080
Score, More Is Better
Graphics Test
2636
600
1200
1800
2400
3000
7-Zip Compression 16.02
Compress Speed Test
MIPS, More Is Better
CPU-7ZIP
SE +/- 173.25, N = 12
20136
4K
8K
12K
16K
20K

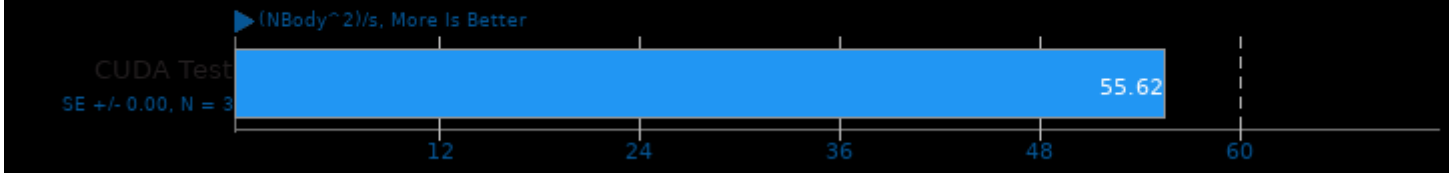
CUDA Mini-Nbody 2015-11-10

Test: Original



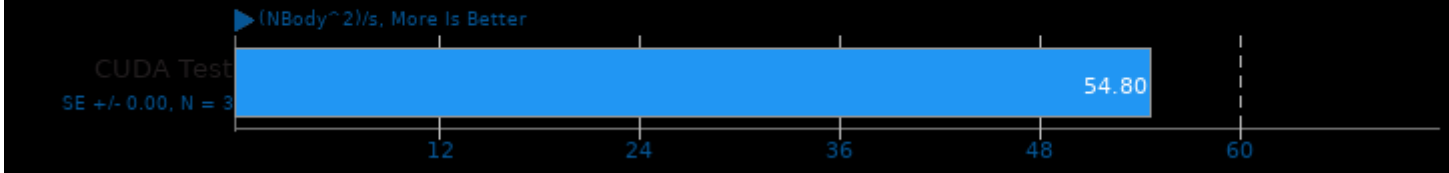
CUDA Mini-Nbody 2015-11-10

Test: Cache Blocking



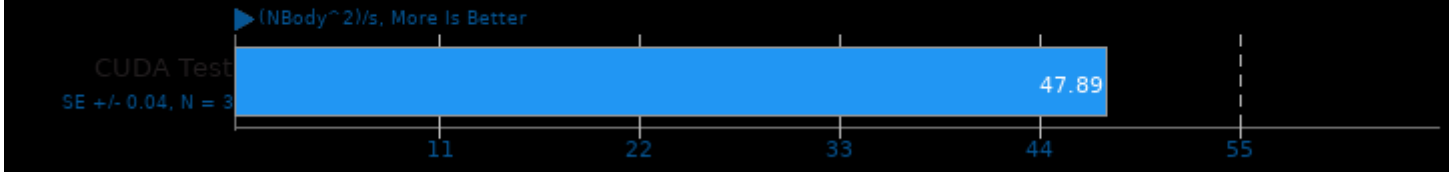
CUDA Mini-Nbody 2015-11-10

Test: Loop Unrolling



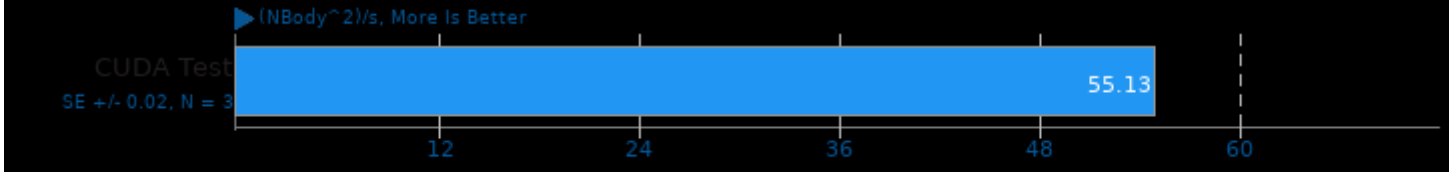
CUDA Mini-Nbody 2015-11-10

Test: SOA Data Layout



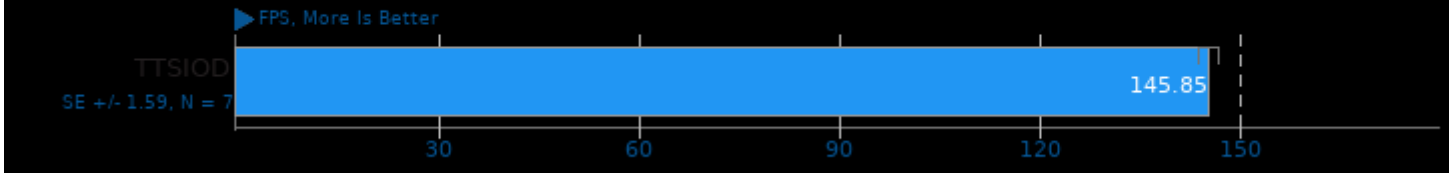
CUDA Mini-Nbody 2015-11-10

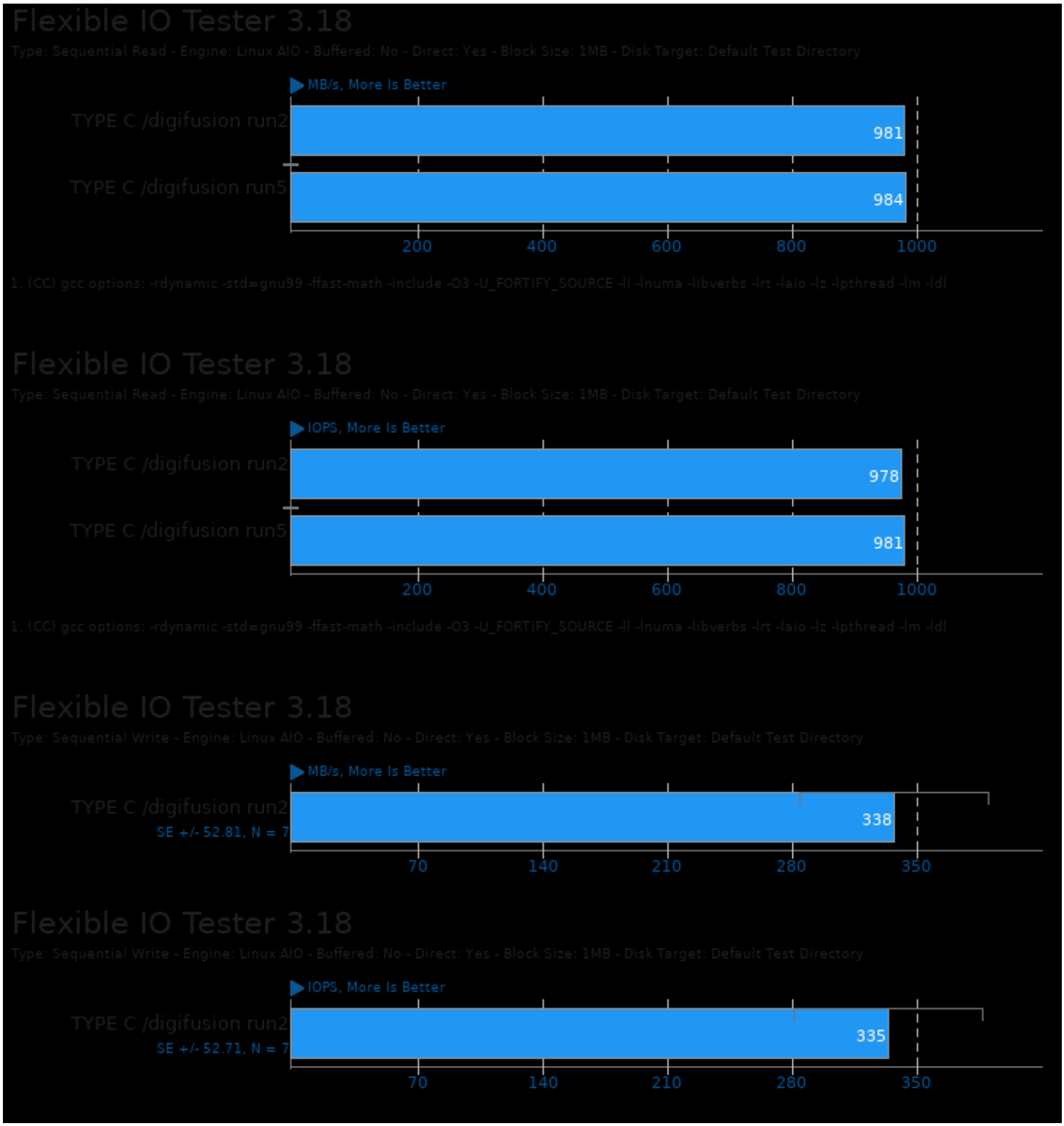
Test: Flush Denormals To Zero



TTSIOD 3D Renderer 2.3b

Phong Rendering With Soft-Shadow Mapping





This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 05:29.