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NVIDIA 384.47 Linux Driver

NVIDIA 384.47 Linux driver benchmarking by Michael Larabel.

Automated Executive Summary

NVIDIA 384.47 had the most wins, coming in first place for 58% of the tests.

Based on the geometric mean of all complete results, the fastest (NVIDIA 381.22) was 1.013x the speed of the slowest (NVIDIA 384.47).

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

OpenArena (Resolution: 2560 x 1440 - Total Frame Time) at 27x
Darktable (Test: Server Room - Acceleration: OpenCL) at 1.579x
Darktable (Test: Boat - Acceleration: OpenCL) at 1.137x
Darktable (Test: Masskrug - Acceleration: OpenCL) at 1.089x
Mad Max (Resolution: 2560 x 1440 - Graphics Preset: High - Renderer: Vulkan - Scene: Hope, Glory, and Dog is Dead) at 1.086x
Mad Max (Resolution: 2560 x 1440 - Graphics Preset: Low - Renderer: Vulkan - Scene: Camp Hollow Point) at 1.082x
Serious Sam 3: BFE (Resolution: 2560 x 1440 - Quality: Ultra - Renderer: Vulkan) at 1.068x
Blender (Blend File: BMW27 - Compute: CUDA) at 1.066x
Mad Max (Resolution: 2560 x 1440 - Graphics Preset: High - Renderer: Vulkan - Scene: Camp Hollow Point) at 1.05x

Mad Max (Resolution: 2560 x 1440 - Graphics Preset: High - Renderer: Vulkan - Scene: Stronghold) at 1.039x.

Test Systems:

NVIDIA 381.22

Processor: Intel Core i7-6800K @ 3.80GHz (12 Cores), Motherboard: MSI X99A WORKSTATION (MS-7A54) v1.0, Chipset: Intel Xeon E7 v4/Xeon, Memory: 16384MB, Disk: 120GB Samsung SSD 850 + 4 x 120GB TOSHIBA-TR150, Graphics: NVIDIA GeForce GTX TITAN X 12288MB (1001/3505MHz), Audio: Realtek ALC1150, Network: Intel Connection

OS: Ubuntu 17.04, Kernel: 4.10.0-24-generic (x86_64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.3, Display Driver: NVIDIA 381.22, OpenGL: 4.5.0, OpenCL: OpenCL 1.2 CUDA 8.0.0, Vulkan: 1.0.42, Compiler: GCC 6.3.0 20170406 + Clang 4.0.0-1ubuntu1, File-System: ext4, Screen Resolution: 2560x1440

Processor Notes: Scaling Governor: intel_pstate performance

NVIDIA 384.47

Processor: Intel Core i7-6800K @ 3.80GHz (12 Cores), Motherboard: MSI X99A WORKSTATION (MS-7A54) v1.0, Chipset: Intel Xeon E7 v4/Xeon, Memory: 16384MB, Disk: 120GB Samsung SSD 850 + 4 x 120GB TOSHIBA-TR150, Graphics: NVIDIA GeForce GTX TITAN X 12288MB (1001/3505MHz), Audio: Realtek ALC1150, Network: Intel Connection

OS: Ubuntu 17.04, Kernel: 4.10.0-24-generic (x86_64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.3, Display Driver: NVIDIA 384.47, OpenGL: 4.5.0, OpenCL: OpenCL 1.2 CUDA 9.0.101, Vulkan: 1.0.42, Compiler: GCC 6.3.0 20170406 + Clang 4.0.0-1ubuntu1, File-System: ext4, Screen Resolution: 2560x1440

Processor Notes: Scaling Governor: intel_pstate performance

	NVIDIA 381.22	NVIDIA 384.47
Dota 2 - 2560 x 1440 - Vulkan (FPS)	**151.97**	**150.97**
Normalized	100%	99.34%
Standard Deviation	0.3%	1.6%
Dawn of War III - 2560 x 1440 - Low - Vulkan (FPS)	**73.10**	**73.36**
Normalized	99.65%	100%
Standard Deviation	0.5%	0.2%
Dawn of War III - 2560 x 1440 - High - Vulkan (FPS)	**60.34**	**60.86**
Normalized	99.15%	100%
Standard Deviation	0.7%	0.5%
Dawn of War III - 2560 x 1440 - Ultra - Vulkan (FPS)	**53.55**	**54.24**
Normalized	98.73%	100%
Standard Deviation	0.3%	0.6%

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Mad Max - 2560 x 1440 - Low - Vulkan - Camp Hollow Point (FPS)	182.43	168.62
Normalized	100%	92.43%
Mad Max - 2560 x 1440 - Low - Vulkan - Stronghold (FPS)	94.25	95.48
Normalized	98.71%	100%
Mad Max - 2560 x 1440 - Low - Vulkan - H.G.a.D.i.D (FPS)	164.47	168.83
Normalized	97.42%	100%
Mad Max - 2560 x 1440 - Low - Vulkan - Landmover (FPS)	199.41	198.31
Normalized	100%	99.45%
Mad Max - 2560 x 1440 - High - Vulkan - Camp Hollow Point (FPS)	185.33	194.57
Normalized	95.25%	100%
Mad Max - 2560 x 1440 - High - Vulkan - Stronghold (FPS)	90.53	94.04
Normalized	96.27%	100%
Mad Max - 2560 x 1440 - High - Vulkan - H.G.a.D.i.D (FPS)	164.18	178.22
Normalized	92.12%	100%
Mad Max - 2560 x 1440 - High - Vulkan - Landmover (FPS)	199.95	207.43
Normalized	96.39%	100%
Serious Sam 3: BFE - 2560 x 1440 - Low - Vulkan	258.73	268.25
Normalized	96.45%	100%
Standard Deviation	1.9%	3.9%
Serious Sam 3: BFE - 2560 x 1440 - High - Vulkan	116.70	121.03
Normalized	96.42%	100%
Standard Deviation	0.2%	2.5%
Serious Sam 3: BFE - 2560 x 1440 - Ultra - Vulkan	93.27	99.60
Normalized	93.64%	100%
Standard Deviation	2%	1.4%
The Talos Principle - Vulkan - 2560 x 1440 (FPS)	124.33	122.52
Normalized	100%	98.54%
Standard Deviation	1.2%	3.7%
Dota 2 - 2560 x 1440 - OpenGL (FPS)	128.07	128.43
Normalized	99.72%	100%
Standard Deviation	0.7%	0.8%
Dawn of War III - 2560 x 1440 - Low - OpenGL (FPS)	71.60	71.22
Normalized	100%	99.47%
Standard Deviation	0.1%	1.5%
Dawn of War III - 2560 x 1440 - Ultra - OpenGL (FPS)	53.03	53.84
Normalized	98.5%	100%
Standard Deviation	0.8%	0.5%
ET: Legacy - Renderer2 - 2560 x 1440 (FPS)	190.83	191.07
Normalized	99.87%	100%
Standard Deviation	0.6%	0.5%
Mad Max - 2560 x 1440 - Default - OpenGL - Camp Hollow Point (FPS)	160.42	162.95
Normalized	98.45%	100%

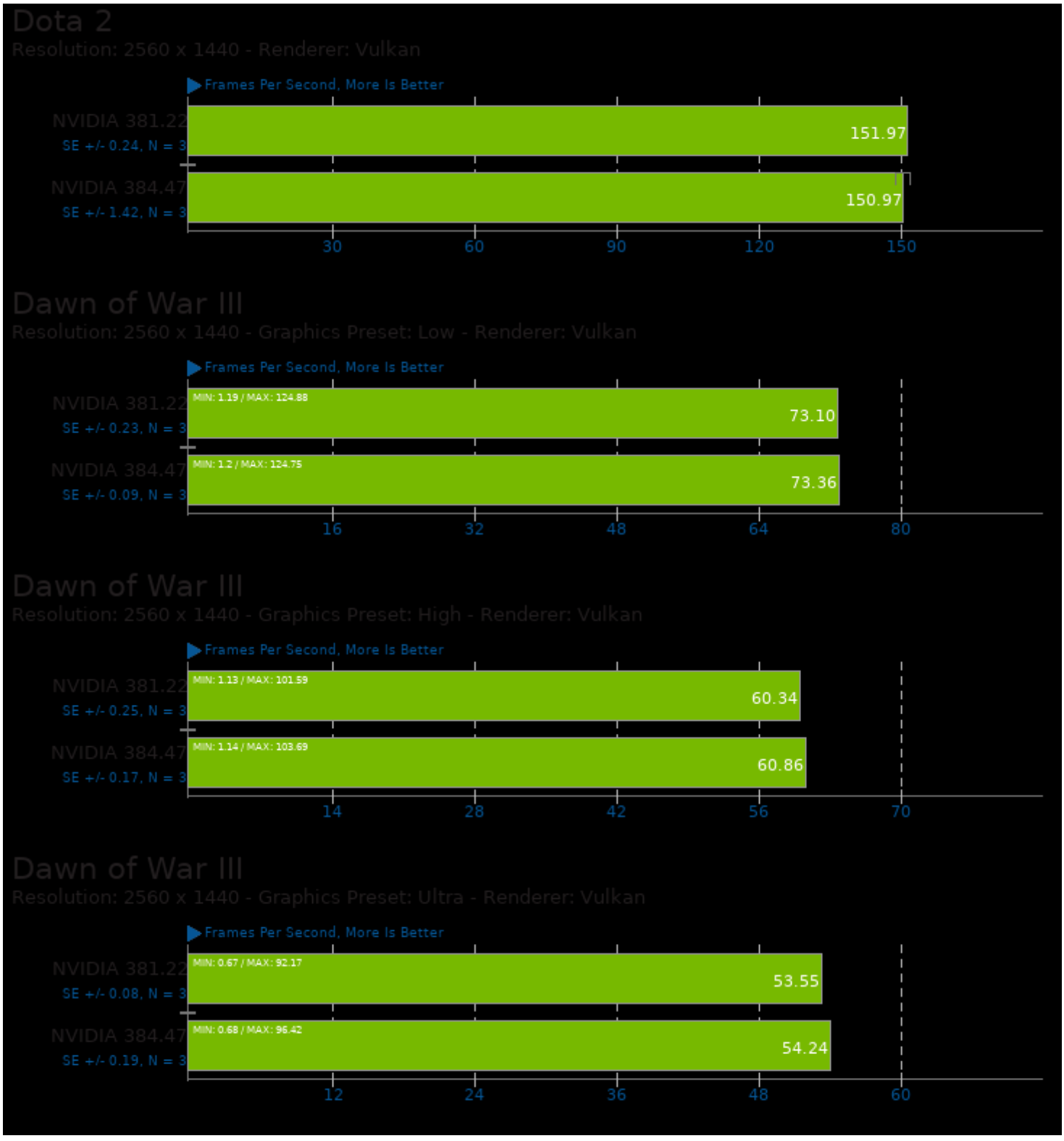
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Mad Max - 2560 x 1440 - Default - OpenGL - Stronghold (FPS)	**92.94**	**93.02**
Normalized	99.91%	100%
Mad Max - 2560 x 1440 - Default - OpenGL - H.G.a.D.i.D (FPS)	**150.99**	**147.44**
Normalized	100%	97.65%
Mad Max - 2560 x 1440 - Default - OpenGL - Landmover (FPS)	**182.40**	**179.46**
Normalized	100%	98.39%
OpenArena - 2560 x 1440 (FPS)	**427.00**	**428.80**
Normalized	99.58%	100%
Standard Deviation	2.7%	1.1%
Serious Sam 3: BFE - 2560 x 1440 - Ultra - OpenGL (FPS)	**79.20**	**78.25**
Normalized	100%	98.8%
Standard Deviation	0.4%	5.1%
Tesseract - 2560 x 1440 (FPS)	**337.04**	**338.46**
Normalized	99.58%	100%
Standard Deviation	1.1%	1.9%
Unigine Superposition - 2560 x 1440 - Fullscreen - High (FPS)	**33.40**	**33.50**
Normalized	99.7%	100%
Unigine Superposition - 2560 x 1440 - Fullscreen - Ultra (FPS)	12.20	12.20
Xonotic - 2560 x 1440 - Ultimate (FPS)	**232.65**	**233.05**
Normalized	99.83%	100%
Standard Deviation	1.4%	0.9%
SHOC Scalable HeterOgeneous Computing - OpenCL - Triad (GB/s)	**11.91**	**11.90**
Normalized	100%	99.92%
Standard Deviation	0%	0%
SHOC Scalable HeterOgeneous Computing - OpenCL - Bus Speed Download (GB/s)	**12.13**	**12.14**
Normalized	99.92%	100%
Standard Deviation	0%	0%
SHOC Scalable HeterOgeneous Computing - OpenCL - Bus Speed Readback (GB/s)	13.20	13.20
Standard Deviation	0%	0%
SHOC Scalable HeterOgeneous Computing - OpenCL - T.R.B (GB/s)	**352.21**	**353.34**
Normalized	99.68%	100%
Standard Deviation	0.2%	0.8%
SHOC Scalable HeterOgeneous Computing - OpenCL - FFT SP (GFLOPS)	**729.27**	**719.70**
Normalized	100%	98.69%
Standard Deviation	0.1%	0.5%
SHOC Scalable HeterOgeneous Computing - OpenCL - Max SP Flops (GFLOPS)	**6878**	**6953**
Normalized	98.92%	100%
Standard Deviation	0.1%	0.9%

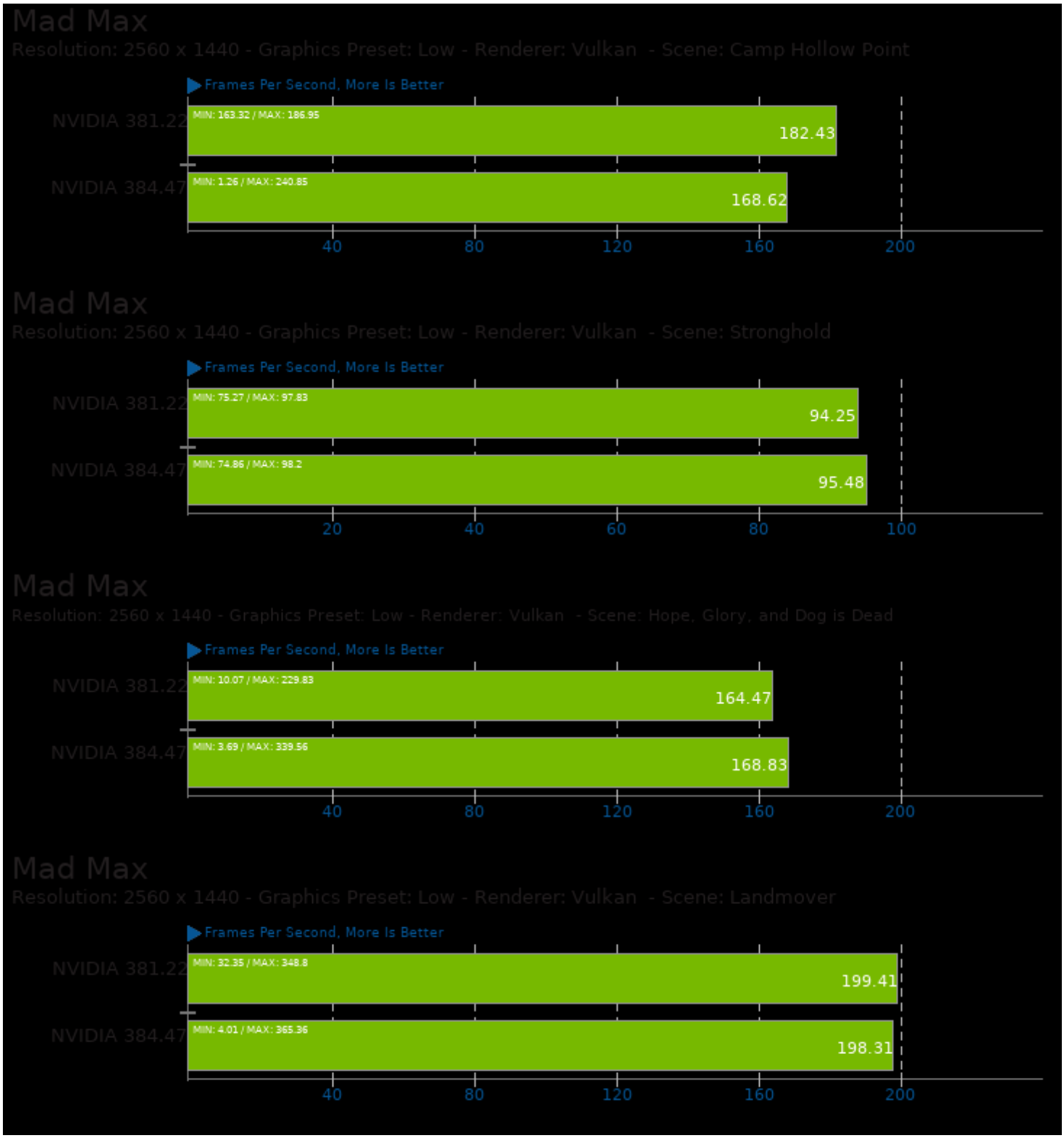
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SHOC Scalable HeterOgeneous Computing - OpenCL - MD5 Hash (GHash/s)	**10.46**	**10.41**
Normalized	100%	99.52%
Standard Deviation	0%	0%
GpuTest - Furmark - 2560 x 1440 - Fullscreen (Points)	**4747**	**4752**
Normalized	99.89%	100%
Standard Deviation	0.4%	0.5%
GpuTest - TessMark - 2560 x 1440 - Fullscreen	**17413**	**17442**
Normalized	99.83%	100%
Standard Deviation	0.9%	0.8%
GpuTest - Triangle - 2560 x 1440 - Fullscreen (Points)	**336023**	**335687**
Normalized	100%	99.9%
Standard Deviation	0%	0%
JuliaGPU - GPU (Samples/sec)	**133296630**	**134109479**
Normalized	99.39%	100%
Standard Deviation	1.3%	1.7%
LuxMark - GPU - Hotel (Score)	**2300**	**2247**
Normalized	100%	97.7%
Standard Deviation	0.7%	1.8%
LuxMark - GPU - Luxball HDR (Score)	**15133**	**15350**
Normalized	98.59%	100%
Standard Deviation	0.4%	1.3%
Darktable - Boat - OpenCL (sec)	**3.15**	**3.58**
Normalized	100%	87.99%
Standard Deviation	0.3%	0.7%
Darktable - Masskrug - OpenCL (sec)	**4.49**	**4.89**
Normalized	100%	91.82%
Standard Deviation	0.9%	0.4%
Darktable - Server Room - OpenCL (sec)	**0.95**	**1.50**
Normalized	100%	63.33%
Standard Deviation	1.3%	0.7%
Blender - BMW27 - CUDA (sec)	**535.35**	**502.39**
Normalized	93.84%	100%
Blender - BMW27 - OpenCL (sec)	**500.67**	**511.34**
Normalized	100%	97.91%

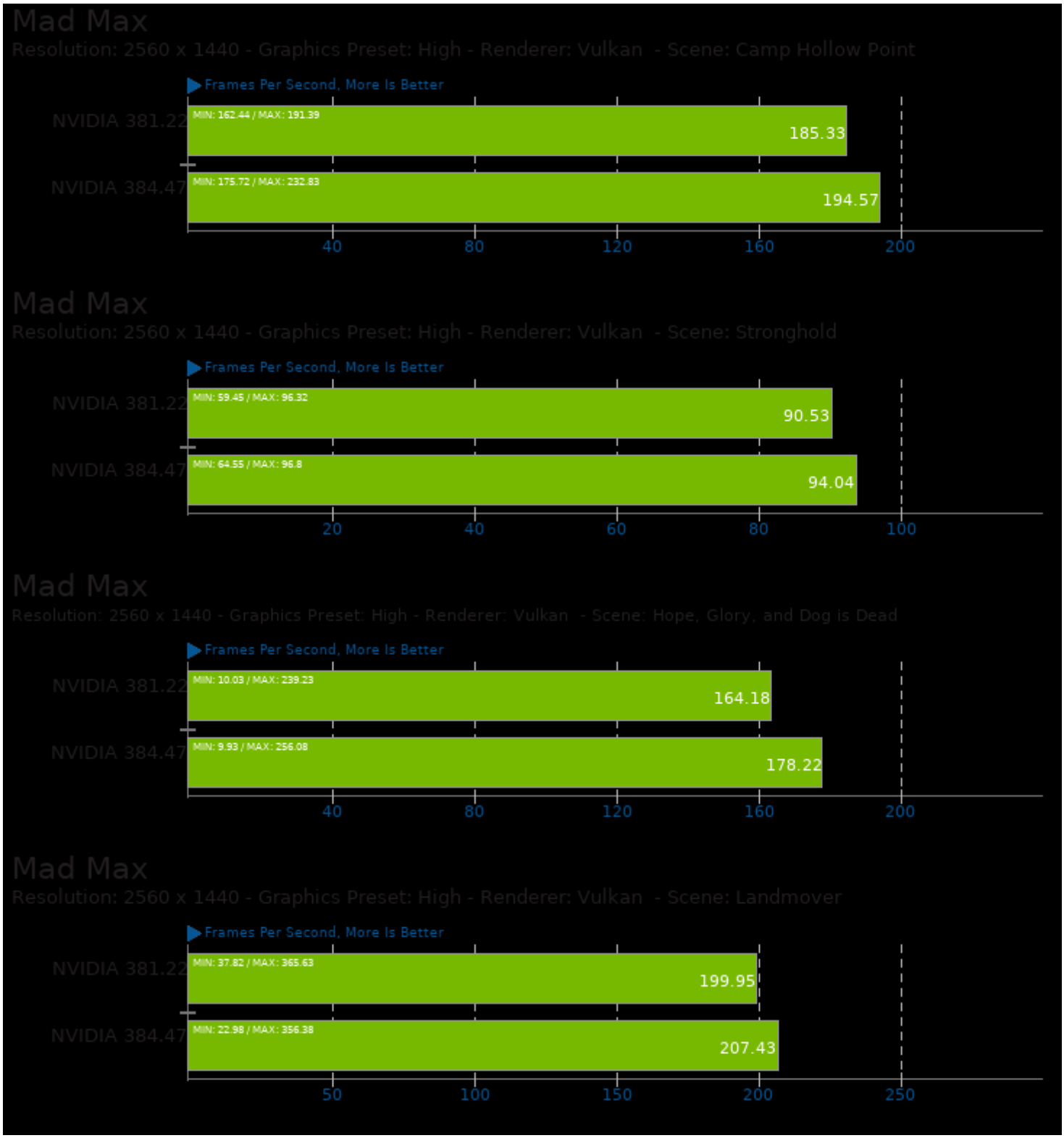
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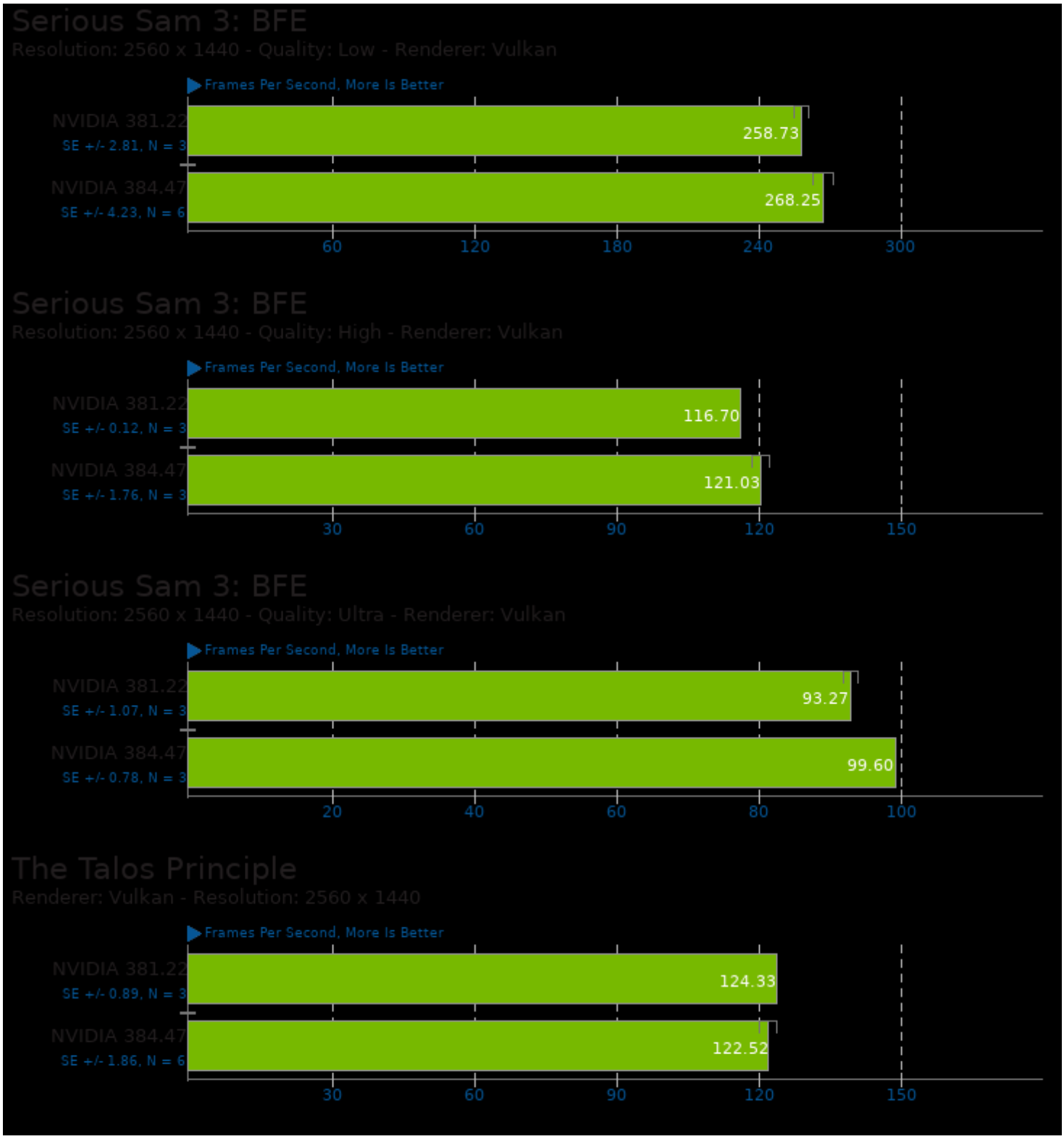
NVIDIA 384.47 Linux Driver



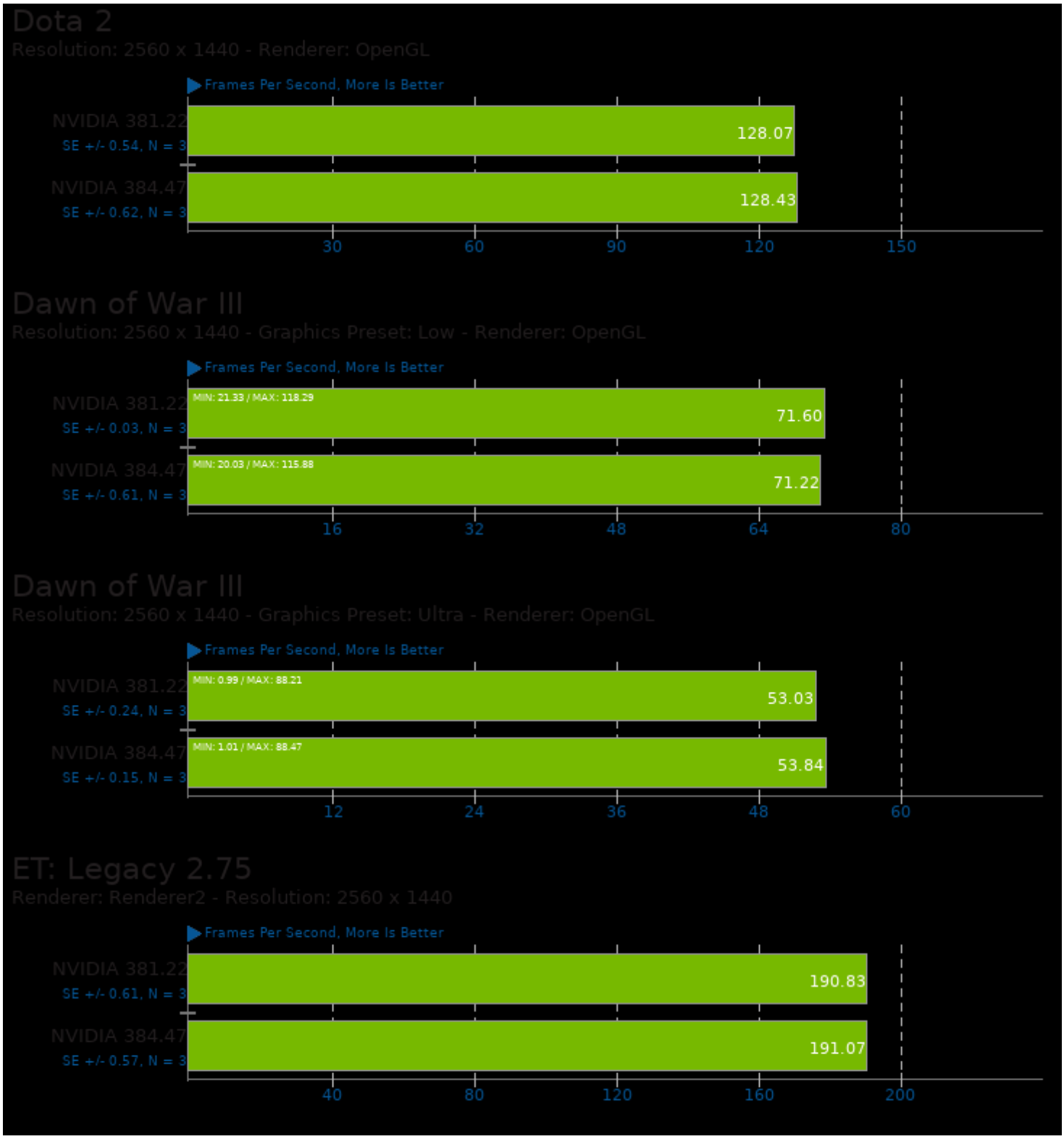
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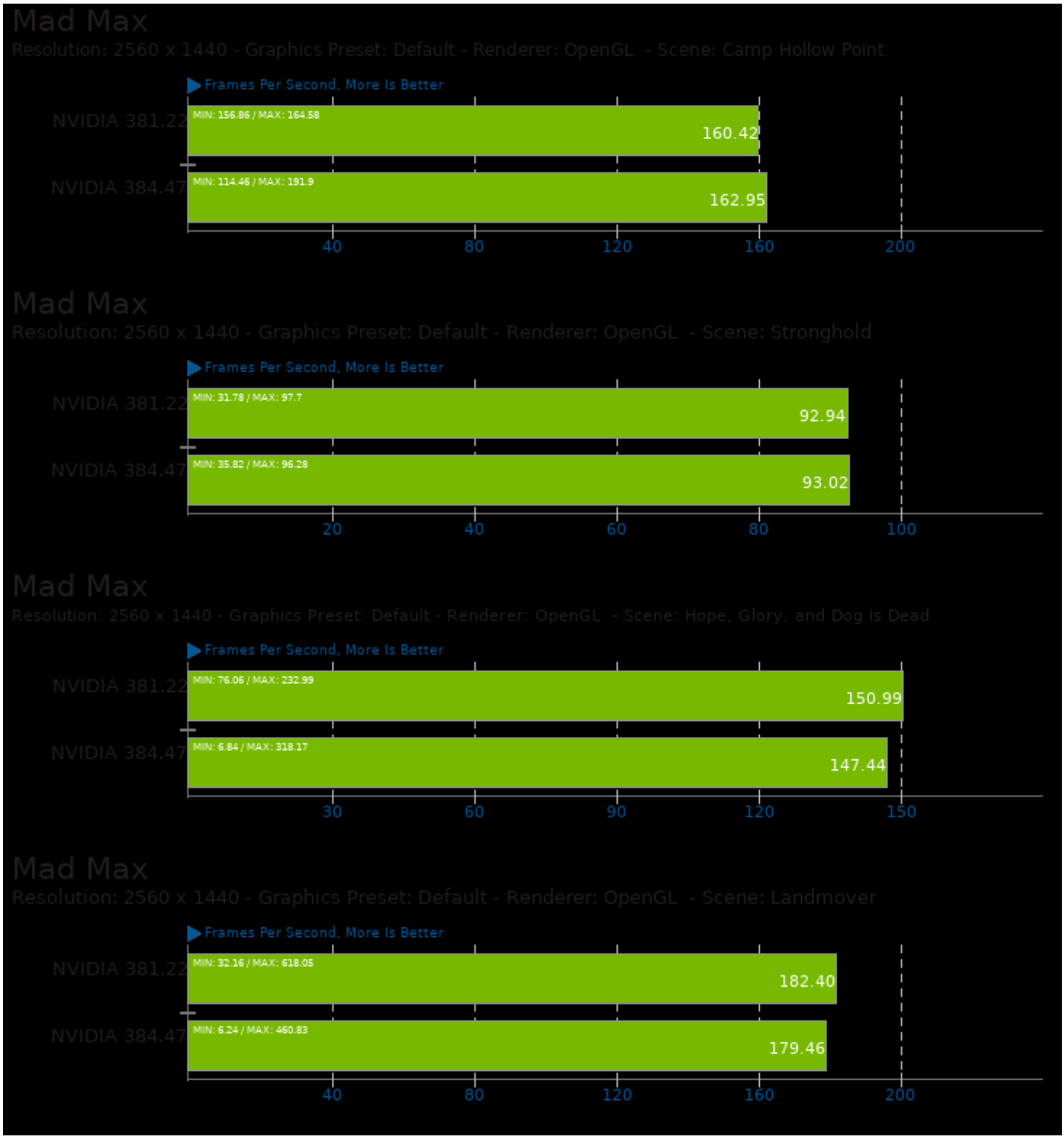
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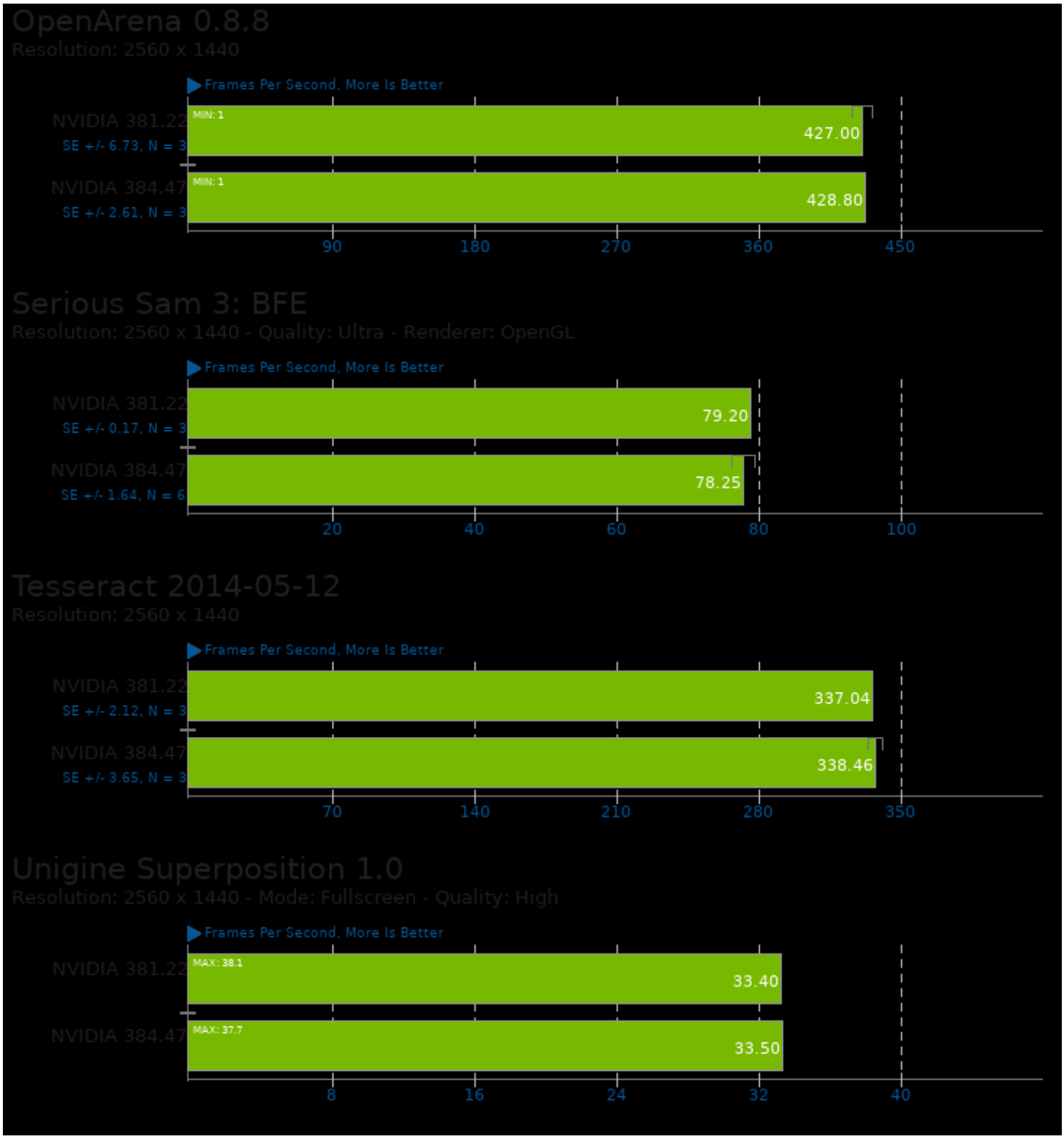
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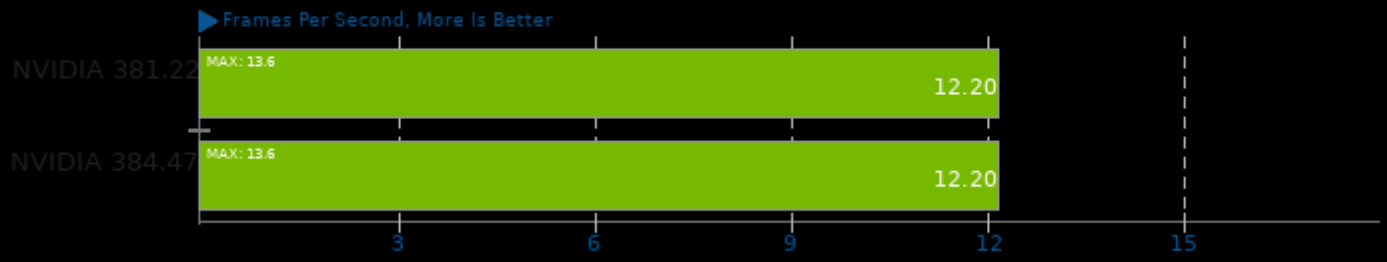
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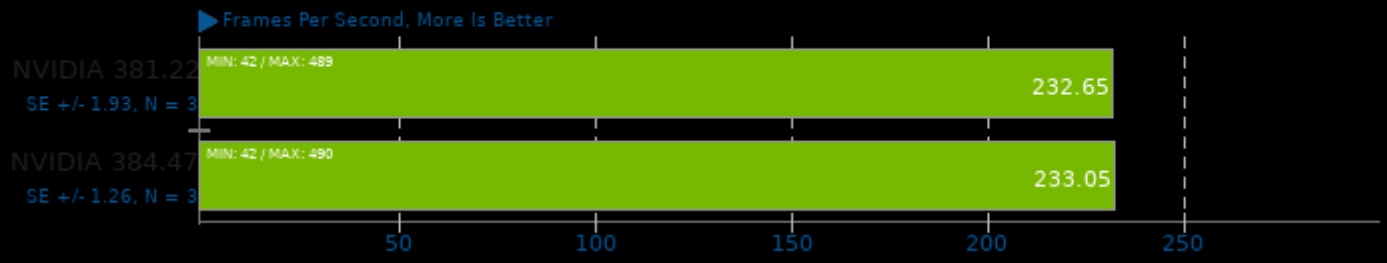
Unigine Superposition 1.0

Resolution: 2560 x 1440 - Mode: Fullscreen - Quality: Ultra



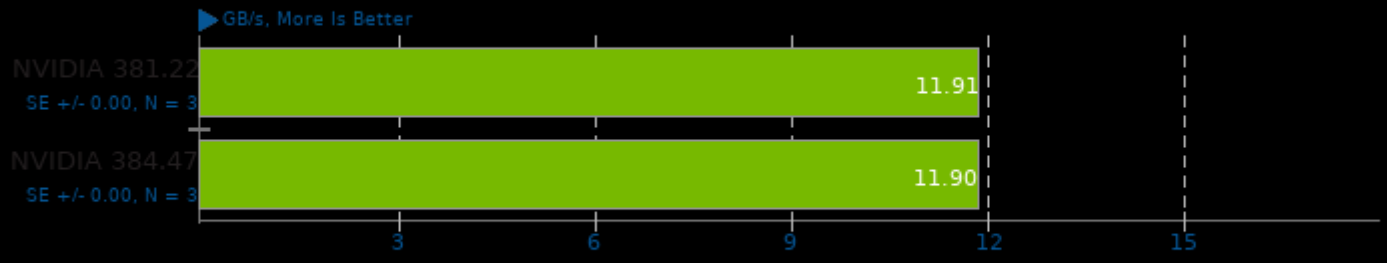
Xonotic 0.8.2

Resolution: 2560 x 1440 - Effects Quality: Ultimate



SHOC Scalable HeterOgeneous Computing 2015-11-10

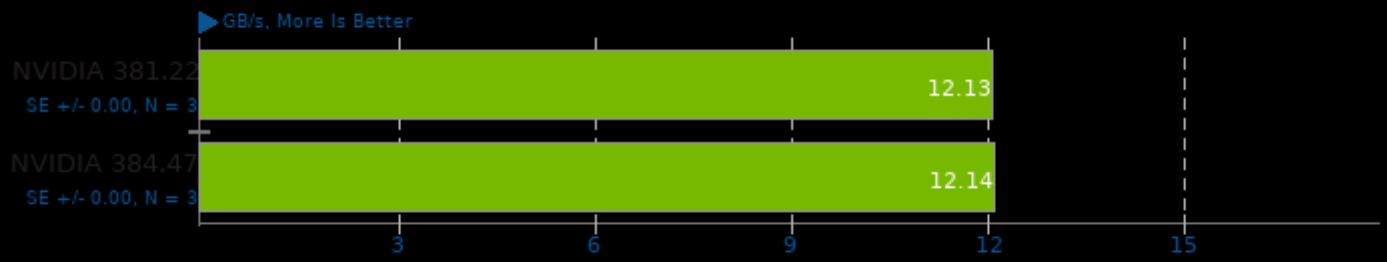
Target: OpenCL - Benchmark: Triad



1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

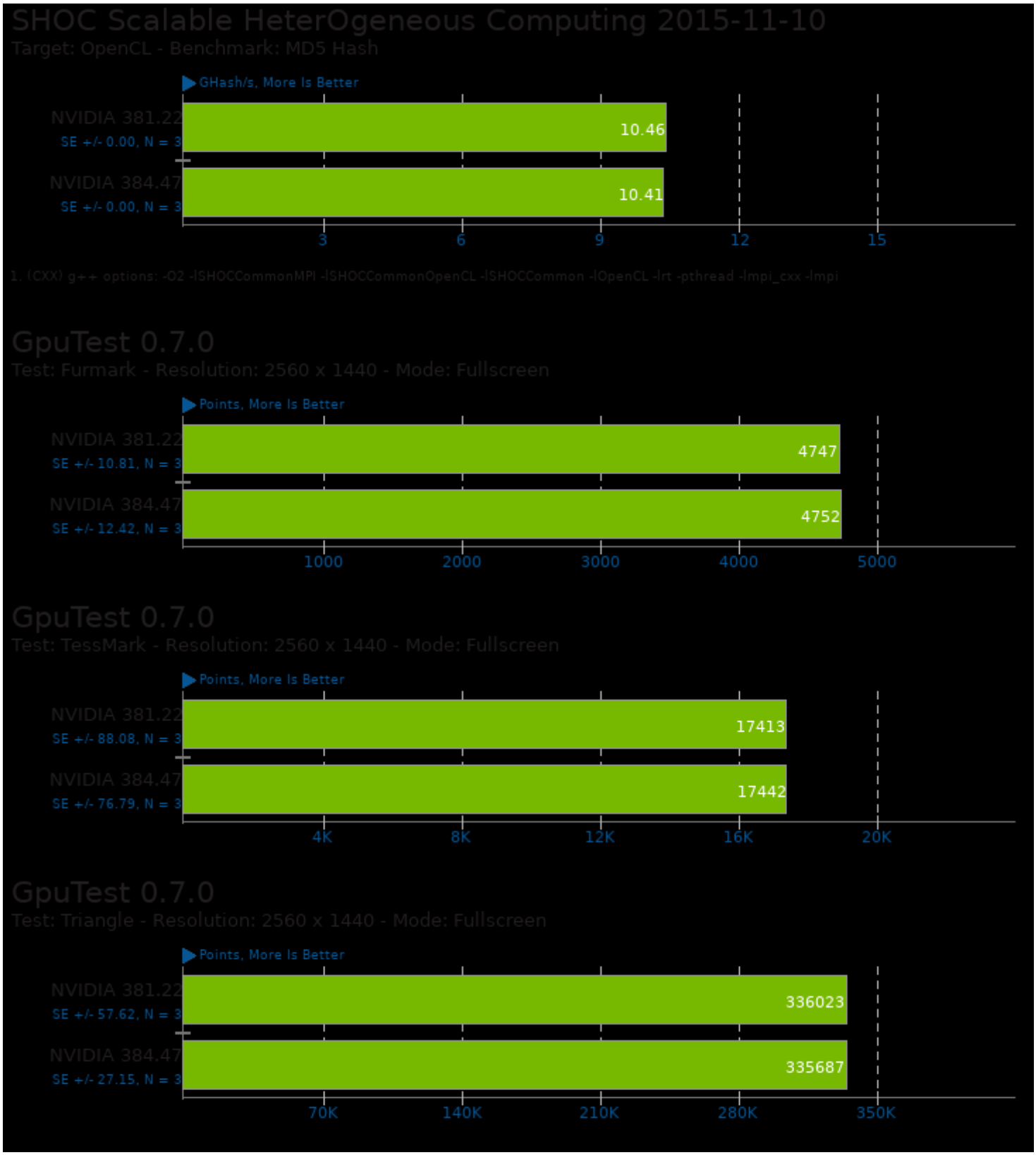
SHOC Scalable HeterOgeneous Computing 2015-11-10

Target: OpenCL - Benchmark: Bus Speed Download

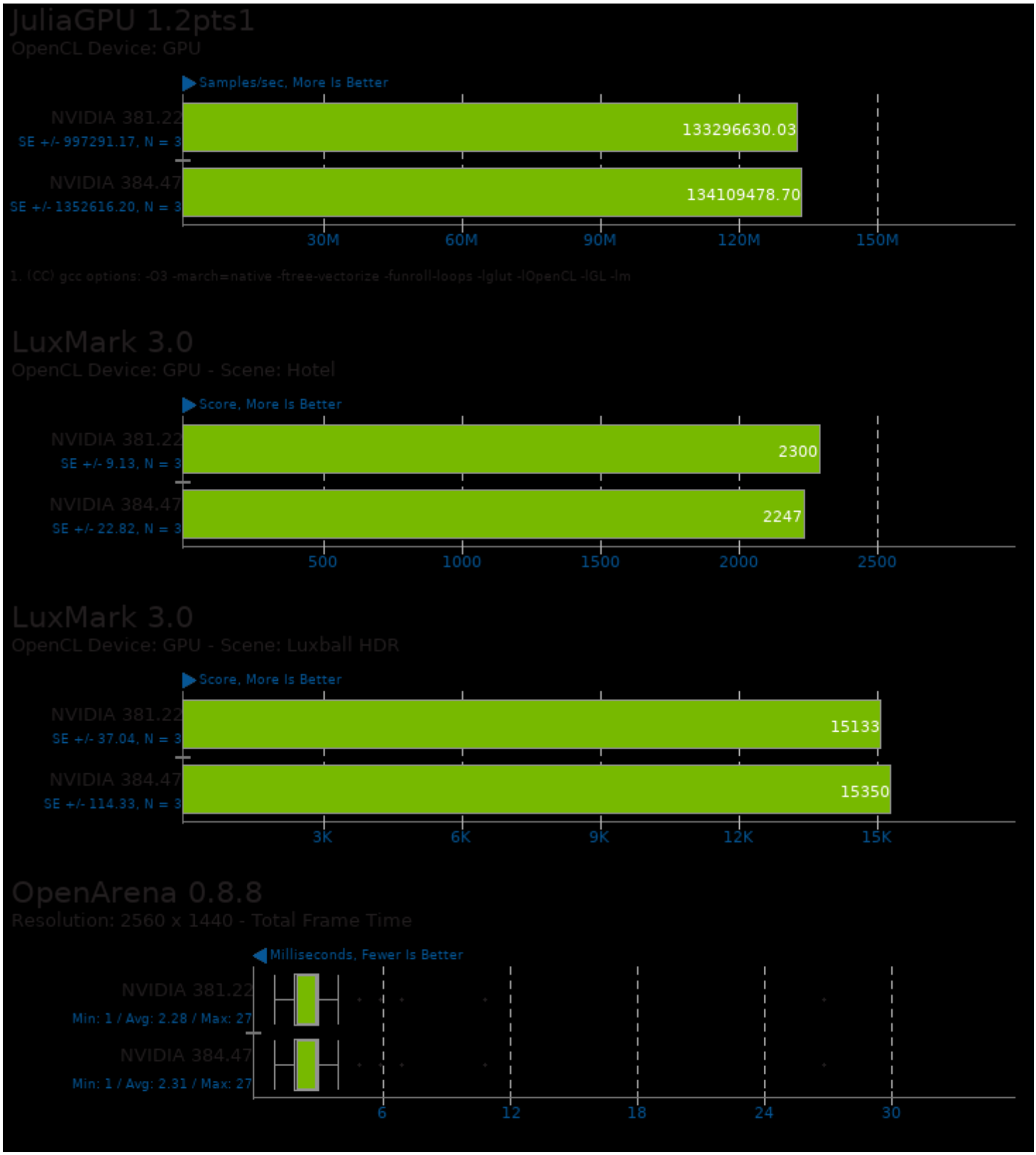


1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

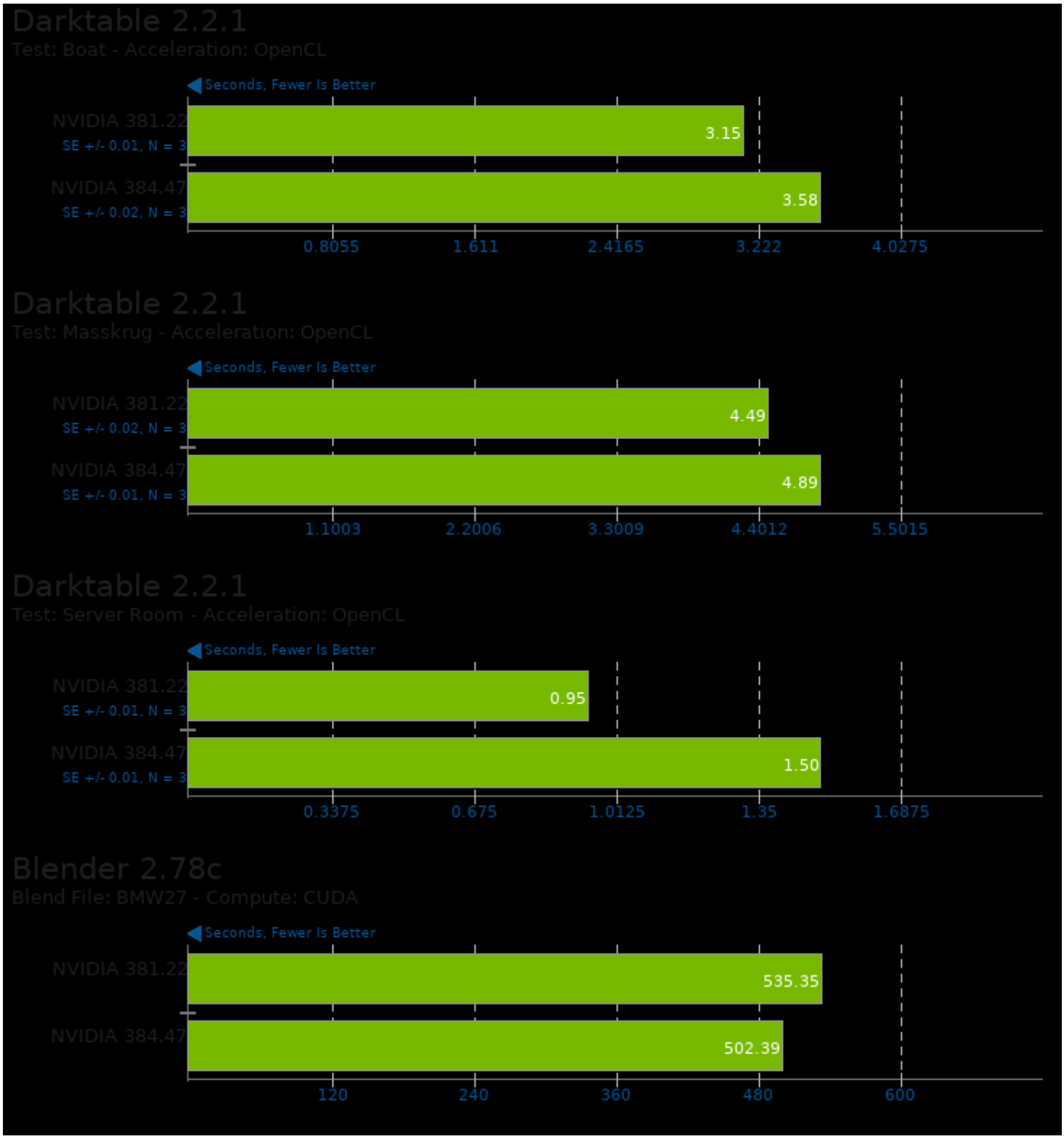

SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: Bus Speed Readback
GB/s, More Is Better
NVIDIA 381.22
SE +/- 0.00, N = 3
13.20
NVIDIA 384.47
SE +/- 0.00, N = 3
13.20
3
6
9
12
15
1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi
SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: Texture Read Bandwidth
GB/s, More Is Better
NVIDIA 381.22
SE +/- 0.44, N = 3
352.21
NVIDIA 384.47
SE +/- 1.66, N = 3
353.34
80
160
240
320
400
1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi
SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: FFT SP
GFLOPS, More Is Better
NVIDIA 381.22
SE +/- 0.48, N = 3
729.27
NVIDIA 384.47
SE +/- 2.20, N = 3
719.70
160
320
480
640
800
1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi
SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: Max SP Flops
GFLOPS, More Is Better
NVIDIA 381.22
SE +/- 2.05, N = 3
6877.71
NVIDIA 384.47
SE +/- 36.65, N = 3
6953.12
1500
3000
4500
6000
7500
1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi


SHOC Scalable HeterOgeneous Computing 2015-11-10
Target: OpenCL - Benchmark: MD5 Hash
GHash/s, More Is Better
NVIDIA 381.22
SE +/- 0.00, N = 3
10.46
NVIDIA 384.47
SE +/- 0.00, N = 3
10.41
3
6
9
12
15
1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi
GpuTest 0.7.0
Test: Furmark - Resolution: 2560 x 1440 - Mode: Fullscreen
Points, More Is Better
NVIDIA 381.22
SE +/- 10.81, N = 3
4747
NVIDIA 384.47
SE +/- 12.42, N = 3
4752
1000
2000
3000
4000
5000
GpuTest 0.7.0
Test: TessMark - Resolution: 2560 x 1440 - Mode: Fullscreen
Points, More Is Better
NVIDIA 381.22
SE +/- 88.08, N = 3
17413
NVIDIA 384.47
SE +/- 76.79, N = 3
17442
4K
8K
12K
16K
20K
GpuTest 0.7.0
Test: Triangle - Resolution: 2560 x 1440 - Mode: Fullscreen
Points, More Is Better
NVIDIA 381.22
SE +/- 57.62, N = 3
336023
NVIDIA 384.47
SE +/- 27.15, N = 3
335687
70K
140K
210K
280K
350K

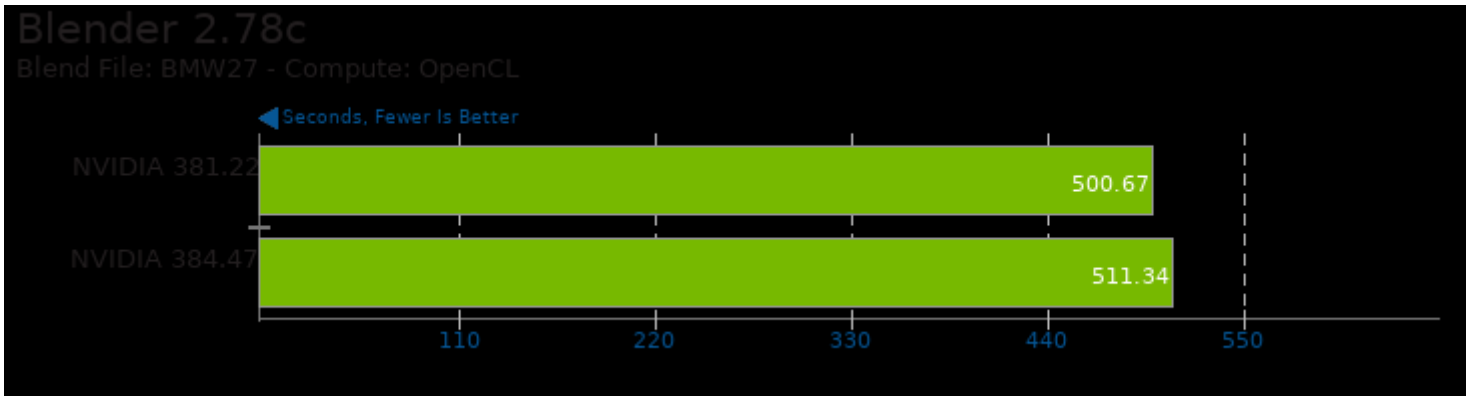
NVIDIA 384.47 Linux Driver



NVIDIA 384.47 Linux Driver



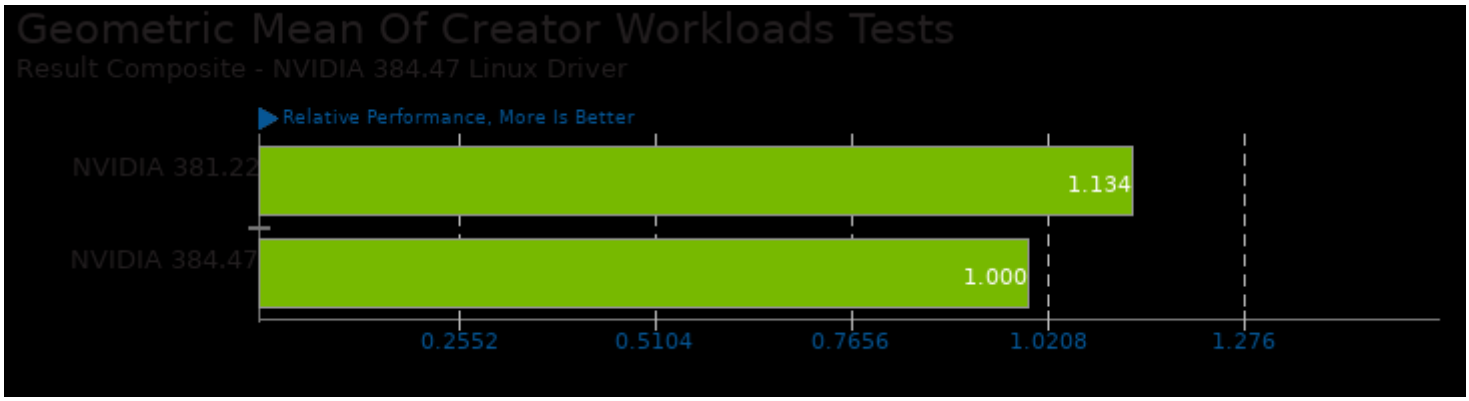
NVIDIA 384.47 Linux Driver



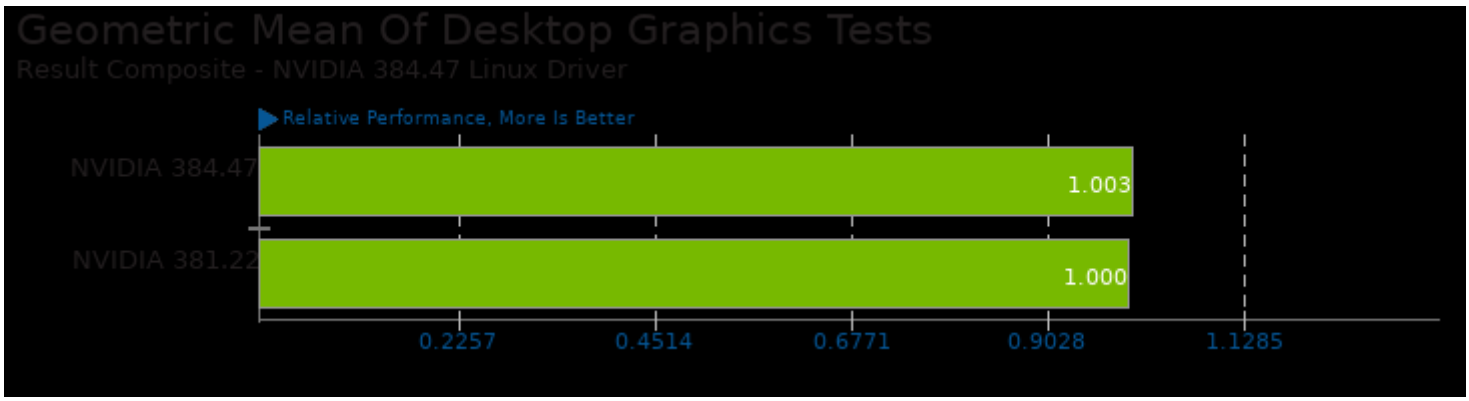
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/blender and system/darktable

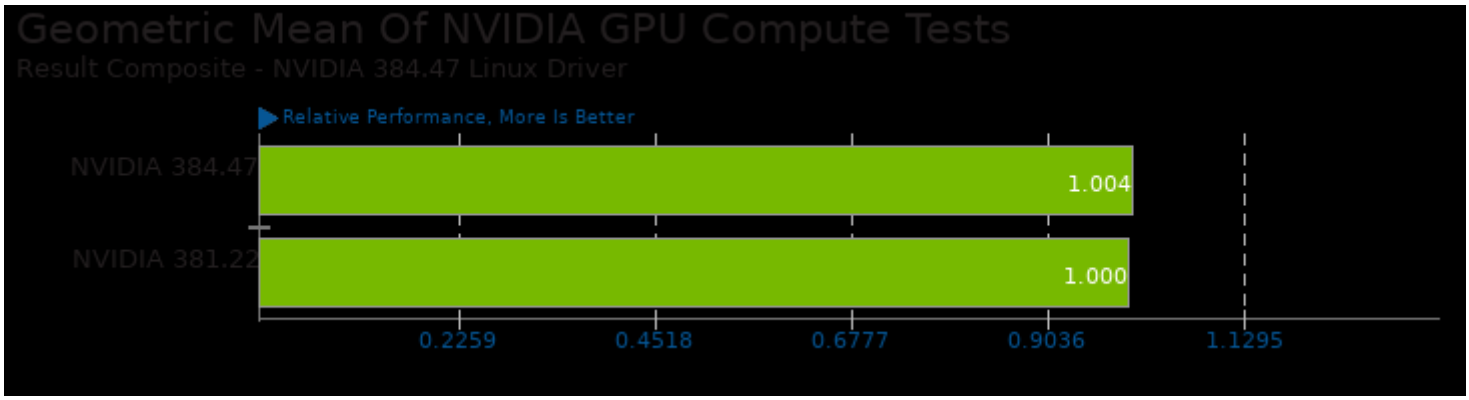


Geometric mean based upon tests: pts/blender and system/darktable

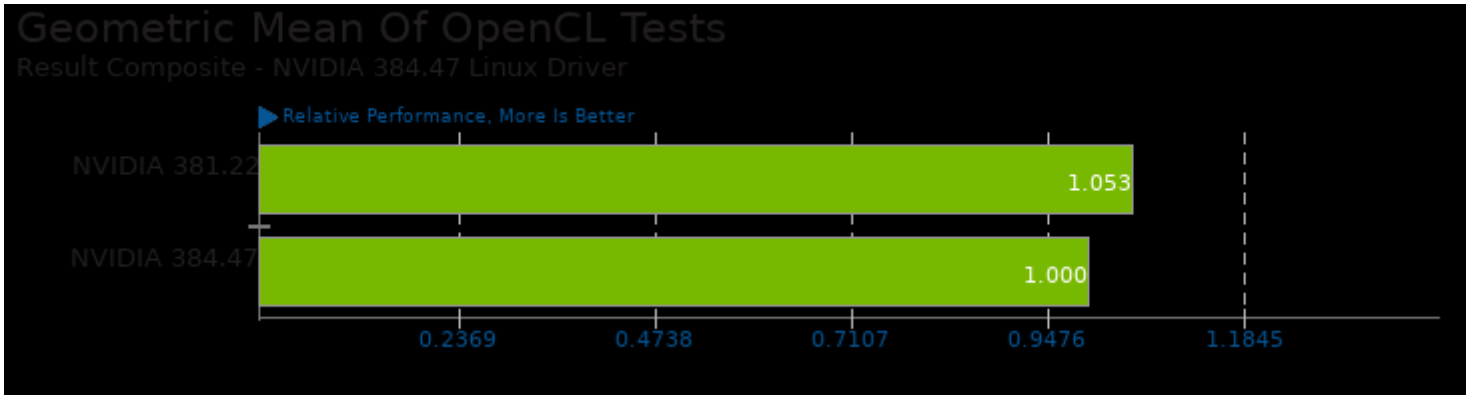


Geometric mean based upon tests: pts/xonotic, pts/openarena and pts/tesseract

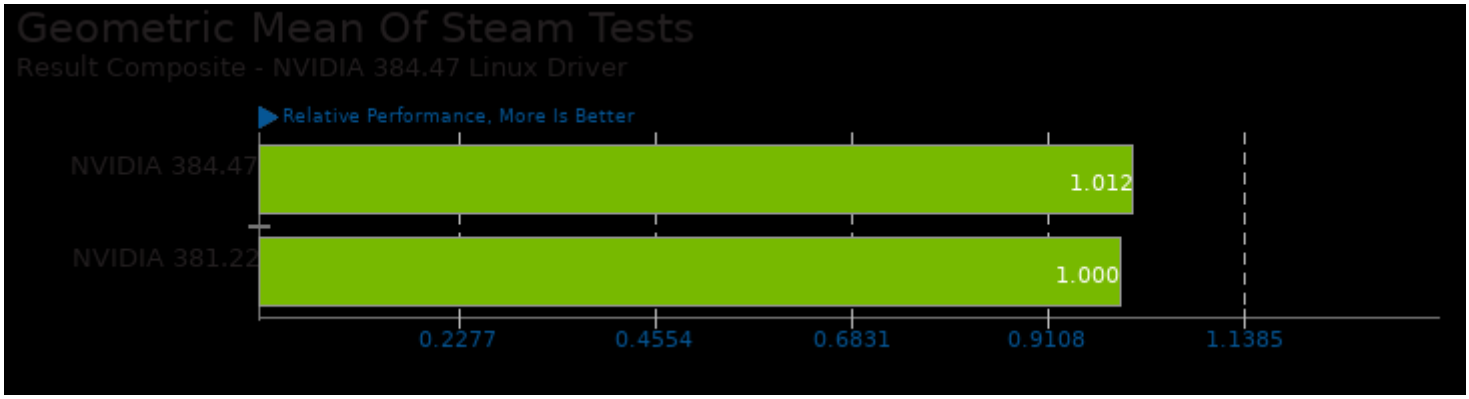
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Geometric mean based upon tests: pts/shoc and pts/blender



Geometric mean based upon tests: pts/juliagpu, pts/luxmark, pts/shoc and system/darktable



Geometric mean based upon tests: pts/dota2, pts/dow3, pts/ss3bfe and pts/talos-principle

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 19:29.