



NVIDIA PROFESSIONAL GRAPHICS SOLUTIONS

Part Numbers	GPU SPECIFICATIONS			PERFORMANCE		DISPLAY TECHNOLOGY							OPTIONS							
	NVIDIA® CUDA™ ¹⁾ Processing Cores	GPU Memory	Memory Bandwidth	Floating-Point Performance (Single Precision)	Error-Correcting Code (ECC) Memory	Dual-Link DVI ²⁾	DisplayPort ¹³⁾	Maximum Active Displays ⁴⁾	Maximum Resolution Support @ 60 Hz	FSAA (Maximum)	NVIDIA® FXAA™ Antialiasing	NVIDIA™ TXAA™ Antialiasing	NVIDIA Quadro® Mosaic Technology	Maximum Power Consumption	NVIDIA® Multi-OS Workstation Support	Vulkan Support	GPUDirect™ for Video	Graphics Synchronization ⁵⁾	NVIDIA 3D Vision Pro ⁶⁾	NVIDIA Multi-GPU Technology Enabled ⁷⁾
NVIDIA QUADRO for Desktop Workstations																				
Quadro P6000	NEW	VGQP6000-PB	3 840	24 GB	432 GB/s	12 000	√ ⁸⁾	1	4	4	5120x2880	64x	√	√	√	250W	√	√	√	√
Quadro M6000 24GB		VGQM6000-24GB-PB	3 072	24 GB	317 GB/s	7 000	√ ⁸⁾	1	4	4	4096x2160	64x	√	√	√	250W	√	√	√	√
Quadro P5000		VGQP5000-PB	2 560	16 GB	288 GB/s	8 900	√ ⁸⁾	1	4	4	5120x2880	64x	√	√	√	180W	√	√	√	√
Quadro M5000	NEW	VGQM5000-PB	2 048	8 GB	211 GB/s	4 200	√ ⁸⁾	1	4	4	4096x2160	64x	√	√	√	150W	√	√	√	√
Quadro M4000		VGQM4000-PB	1 644	8 GB	192 GB/s	2 500		-	4	4	4096x2160	64x	√	√	√	108W		√	√	√
Quadro M2000		VGQM2000-PB	768	4 GB	106 GB/s	2 200		-	4	4	4096x2160	64x	√	√	√	75W		√		√
Quadro K2200		VGQK2200-PB	640	4 GB	80 GB/s	1 300		-	2	4 ⁴⁾	4096x2160	64x	√	√	√	60W		√		√
Quadro K1200		VGQK1200-PB	512	4 GB	80 GB/s	1 000		-	4	4	4096x2160	64x	√	√	√	45W		√		√
Quadro K620		VGQK620-PB	384	2 GB	29 GB/s			1	1	2 ⁴⁾	4096x2160	64x	√	√	√	41W		√		√
Quadro K420		VGQK420-2GB-PB	192	2 GB	29 GB/s			1	1	2 ⁴⁾	3840x2160	64x	√	√	√	45W		√		√

NVIDIA TESLA for Desktop Workstations (Co-Processors)																				
Tesla K40		TCSK40CARD-PB	2 880	12 GB	288 GB/s	5 040 ¹⁰⁾	√									235W	√	√	√	√

NVIDIA NVS for Desktop Workstations																				
NVS 810		VCNVNVS810DP-PB VCNVNVS810DVI-PB	1024 512/GPU	4 GB 2 GB/GPU	28.8 GB/s			8 ¹²⁾	8 ¹¹⁾	8	4096x2160 ¹³⁾			√		68W		√		
NVS 510		VCNVNVS510DP-PB VCNVNVS510DVI-PB VCNVNVS510VGA-PB	192	2 GB	28.5 GB/s			4 ¹²⁾	4 ¹¹⁾	4	3840x2160			√		35W		√		
NVS 315		VCNVNVS315DP-PB VCNVNVS315DVI-PB	48	1 GB	14 GB/s			2 ¹²⁾	2 ¹¹⁾	2	2560x1600			√		19.5W		√		
NVS 310		VCNVNVS310DP-1GB-PB VCNVNVS310DVI-1GB-PB	48	1 GB	14 GB/s			2 ¹²⁾	2	2	2560x1600			√		19.5W		√		

1. CUDA parallel processing cores cannot be compared between GPU generations due to several important architectural differences that exist between designs.
 2. Maximum display resolution: 330M Pixels/sec (ex 2560x1600 @ 60Hz or 1920x1200@120Hz).
 3. Adapters available for DVI-SL, DVI-DL, HDMI, and VGA. NVS 315 offers DP1.2 through the use of DMS-59 to DP1.2 cable.
 4. Option to connect a third and/or fourth display using DisplayPort 1.2's new multi-streaming capabilities. 4 Displays require a supported DisplayPort 1.2 Multi-Stream capable hub.
 5. Quadro K-series and M-series GPUs are compatible with NVIDIA Quadro Sync. Quadro P-series is compatible with NVIDIA Quadro Sync II.
 6. Requires 3D Vision-ready display. Visit: www.nvidia.com/3dvision.
 7. Quadro K-series and M-series GPUs are compatible with K40 for Desktop and Workstation
 8. Ensures data integrity and reliability by eliminating soft errors on both GPU cache and on-board DRAM.

9. Ensures data integrity and reliability by eliminating soft errors on DRAM only.
 10. The Single Precision theoretical peak performance is calculated for the highest GPU Boost level of 875MHz.
 11. Using included adapters.
 12. Using optional adapters.
 13. 8 x 4096 x 2160 @ 30 Hz, 4 x 4096 x 2160 @ 60 Hz.

NVIDIA QUADRO BY PNY

ULTRA HIGH-END

			PACKAGE CONTENT	IDEAL FOR
	QUADRO P6000 VCGP6000-PB	NEW	3 x DP to DVI (SL) adapters 1 x Driver & Quick Installation Guide 1 x Stereo Connector Bracket 1 x Dual 8-pin to 8-pin power cable	Animation - Visualization Broadcast - Video Editing Design Oil & Gas Medical Imaging
	QUADRO M6000 24GB VCGM6000-24GB-PB		3 x DP to DVI (SL) adapters 1 x DVI to VGA adapter 1 x Driver & Quick Installation Guide 1 x Stereo Connector Bracket 1 x Dual 8-pin to 8-pin power cable	Animation - Visualization Broadcast - Video Editing Design Oil & Gas Medical Imaging

HIGH-END

	QUADRO P5000 VCGP5000-PB	NEW	3 x DP to DVI (SL) adapters 1 x Driver & Quick Installation Guide 1 x Stereo Additional Connector	Animation - Visualization Broadcast - Video Editing Design Manufacturing - large models Medical Imaging
	QUADRO M5000 VCGM5000-PB		3 x DP to DVI (SL) adapters 1 x DVI to VGA adapter 1 x Driver & Quick Installation Guide 1 x Stereo Additional Connector	Animation - Visualization Broadcast - Video Editing Design Manufacturing - large models Medical Imaging
	QUADRO M4000 VCGM4000-PB		4 x DP to DVI (SL) adapter 1 x Stereo Connector Bracket 1 x Driver & Quick Installation Guide	Animation / Video Editing Design Manufacturing - med./large models Medical Imaging

MID-RANGE

	QUADRO M2000 VCGM2000-PB		4 x DP to DVI (SL) adapter 1 x Driver & Quick Installation Guide	Animation / Video Editing Manufacturing - med./large models Medical Imaging
	QUADRO K1200 VCGK1200DP-PB VCGK1200DVI-PB		4 x mDP to DP adapter 4 x mDP to DVI (SL) adapter (DVI) ¹ 1 x Driver & Quick Installation Guide 1 x Standard-Height Bracket	Animation Video Editing Manufacturing - medium models

ENTRY-LEVEL

	QUADRO K620 VCGK620-PB		1 x DP to DVI (SL) adapter 1 x DVI to VGA adapter 1 x Attached Standard-Height Bracket 1 x Unattached LP Bracket 1 x Driver & Quick Installation Guide	Video Editing Manufacturing - small / medium models
	QUADRO K420 VCGK420-2GB-PB		1 x DP to DVI (SL) adapter 1 x DVI to VGA adapter 1 x Attached LP Bracket 1 x unattached Standard-Height Bracket 1 x Driver & Quick Installation Guide	Manufacturing - volume CAD

¹ only included with VCGK1200DVI

NVIDIA TESLA BY PNY

HIGH-PERFORMANCE COMPUTING

	TESLA P100 TCSP100M-12GB-PB TESLA P100 TCSP100M-16GB-PB	NEW	- Server	SP Peak Performance: 9.3 Tflops DP Peak Performance: 4.7 Tflops
	TESLA P40 TCSP40-PB		- Server	SP Peak Performance: 12 Tflops
	TESLA M40 24GB TCSM40M-24GB-PB		- Server	SP Peak Performance: 6.80 Tflops
	TESLA P4 TCSP4M-PB		- Server	SP Peak Performance: 5.5 Tflops Power consumption 50W/75W
	TESLA M4 TCSM4-PB		- Server	SP Peak Performance: 2.2 Tflops Power consumption below 75W

VIRTUALIZED GRAPHICS

	TESLA M60 TCSM60M-R2L-PB TCSM60M-L2R-PB		- 2 x High-End Maxwell GPUs	Designer / Engineer / Power User
	TESLA M10 TCSM10M-PB	NEW	4 x Mid-Range GPUs	Office Workers

NVIDIA NVS BY PNY

MULTI-DISPLAY BUSINESS GRAPHICS

	NVS 810 VCNVS810DP-PB VCNVS810DVI-PB		Octa-Display	Financial Trading
	NVS 510 VCNVS510DP-PB VCNVS510DVI-PB VCNVS510VGA-PB		Quad-Display	Digital Signage Call Center
	NVS 315 VCNVS315DP-PB VCNVS315DVI-PB		Dual-Display	General Productivity Applications
	NVS 310 VCNVS310DP-1GB-PB VCNVS310DVI-1GB-PB		Dual-Display	Upgrade From Integrated Graphics

TESLA PLATFORM - BUILT FOR THE DATA CENTER

Delivered application performance is more than raw flops. Computational professionals depend on mission critical applications to accelerate discoveries and insights at scale. It starts with the world's fastest accelerators and includes a reliable infrastructure, the ability to monitor and manage that infrastructure, and the ability to quickly move data where it is needed. The NVIDIA Tesla Accelerated Computing Platform provides all of these to deliver unprecedented performance in scientific, analytics, engineering, consumer, and enterprise applications.

- > **Differentiated Engineering:** Low Operating Voltage for Long Term Reliability. Large Guard-Band for Guaranteed Quality. Error Correction Code (ECC) for Data Integrity.
- > **Extensive Qualification & Testing:** Long Burn-in-Testing. Zero Error Tolerance at Agressive Clocks. Result: 5% of GPUs screened out. Guaranteed Quality.
- > **Enterprise Tools:** Simplify Data Center Operations. Manage and Monitor GPUs. System Diagnostics, GPU recovery, RMA diagnostics. GPU Cluster Management.

QUADRO PLATFORM - MOST POWERFUL VISUAL COMPUTING

The term "professional workstation" implies many things to many people. However, it usually translates to expectations of high quality, excellent reliability, responsive support, and high performance. The Nvidia professional series is built to provide this high level of quality and reliability.

- > **Performance:** Application specific feature development & tuning. Driver optimizations to maximize GPU features. Unique features to support pro workflows. IT tools for easy deployment & management
- > **Reliability:** Application specific testing by Nvidia. 100+ professional application certifications by ISVs. Unique rock-solid driver with deterministic release schedule. Designed and built by Nvidia to a single specification for 24/7 reliability & stability
- > **Support:** Deep workflow experience across vertical industries. Long-Life Cycle availability and support. Bulk availability for large Enterprise. Global technical pre-sales and post-sales support.
- > **Quadro Application Value-add:** Solidworks Realview. 3ds Max Shade. Solidworks Visualize. PTC Creo OIT. Solidworks Ambient Occlusion. Catia Live Rendering.
- > **Quadro Unique Features:** Large memory with ECC. nView Desktop Manager. GPUdirect for Video. Higher Level of FSAA (64x). Multi-GPU. Enterprise IT Tools. Iray Server Streaming. Quad Buffered Stereo. Mosaic. Warp & Blend. Bezel Correction & Overlap. Genlock & Framelock.
- > **NVIDIA Iray GPU rendering:** Catia & Industrial Designer®, 3ds Max®, DAZ Studio®, Patchwork 3D®, Solidworks Visualizer®, Siemens NX®, SketchUp®, Substance Designer®, Revit®, Cinema 4D®, Maya®, Rhino®, Iray Server. More plug-in solutions coming.



Should I use a professional graphics card?

PNY offers a suite of professional solutions that enable designers, manufacturers, scientists and researchers to do their work smarter, faster, with greater reliability and with energy efficiency. If you answer one or more of the below questions with yes we recommend to use professional NVIDIA Quadro or Tesla cards.

- > **DOES YOUR WORK INVOLVE CREATING, RENDERING, OR VISUALIZING DATA AND IMAGES?:** NVIDIA's professional cards are fully compatible, tested & certified on all your professional applications for more performance & reliability.
- > **IS HARDWARE RELIABILITY IMPORTANT?:** Time spent troubleshooting is lost time for your creativity. NVIDIA® Quadro® graphics cards are designed for 24/7 operation with pro support.
- > **DO YOU PREFER LONG AVAILABILITY FOR YOUR HARDWARE?:** Professional NVIDIA cards are usually available for 3 or more years while gaming cards often have a lifetime below 6 months.

Which NVIDIA Quadro for my application?

ENTRY	BASIC	MID-RANGE	UPPER-RANGE	HIGH-END	ULTRA HIGH-END
Quadro K620 Quadro K420	Quadro M2000 Quadro K1200	Quadro M4000	Quadro P5000	Quadro P6000	2x P6000 and/or Tesla cards
Microsoft Office		Siemens NX			
Trimble SketchUp		PTC Creo			
Adobe Illustrator CC Photoshop CC		After Effects CC, Premiere Pro CC			
Autodesk AutoCAD, Inventor, Revit			Maya, 3ds MAX		
	Dassault Systems Solidworks	CATIA			
			3DEXCITE CATIA Live Rendering	Solidworks Visualize ABAGUS, SIMULA	
		The Foundry Mari, Nuke			
				Ansys Mechanical	
			Schlumberger Petrel		
Small/simple CAD models, Video, entry PLM • ISV Certs • Higher performance vs. IGP, gfx GPU • NVIDIA Mosaic	Medium size/complexity CAD models, basic DCC, Medical Imaging, PLM • +2GB memory • Approx. 118% faster	Large/complex CAD models, Advanced DCC, Medical Imaging • +4GB memory • Approx. 37% faster • NVIDIA Mosaic with sync	Large/complex CAD models, Seismic exploration, complex DCC effects • +8GB memory • Approx. 65% faster • Error Correcting Code (ECC) Memory	Largest CAD models, CAE, Photo-realistic rendering, Seismic exploration, GPGPU compute • +8GB memory • Approx. 61% faster	Most demanding rendering and GPGPU compute applications • Multi-GPU solution • Highest performance

For a full list of recommendations please visit our Quadro Online Configurator at:

<http://pny.quadro-selector.com>

PNY ADVANTAGE

PNY PROVIDES UNSURPASSED SERVICE AND COMMITMENT TO ITS PROFESSIONAL GRAPHICS CUSTOMERS

- > 3 Year standard warranty
- > Pre-sales support and system configuration assistance
- > Dedicated Field Application engineers
- > Direct tech support hot lines
- > Support escalation for prompt issue resolution
- > Certified software support and bug reporting
- > Published product support and training materials
- > Advanced replacement options for mission-critical deployments
- > Long product life cycles and availability
- > Loyalty partner channel programs

COMPATIBILITY & SUPPORT FOR ALL WORKSTATION BRANDS

PNY WARRANTY EXTENSION SERVICE

- > To better protect your investment, PNY offers a comprehensive extended 5 Year warranty to your NVIDIA QUADRO, NVS, TESLA or GRID card from PNY.

Main features:

- > **Additional 2 Year Extended Warranty Service** for your NVIDIA card by PNY
- > **Advanced Product Replacement** *(for European Union countries, Norway and Switzerland)*

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