



NVIDIA  
PROFESSIONAL  
GRAPHICS  
SOLUTIONS



Part Numbers	GPU SPECIFICATIONS			PERFORMANCE		DISPLAY TECHNOLOGY							OPTIONS								
	NVIDIA® CUDA® <sup>1</sup> Processing Cores	GPU Memory	Memory Bandwidth	Floating-Point Performance (GigaFlops Peak)	Error Correcting Code (ECC) Memory	Dual-Link DVI <sup>2</sup>	DisplayPort 1.2 <sup>3</sup>	Maximum Active Displays <sup>4</sup>	Maximum Resolution Support @ 60 Hz	FSAA (Maximum)	NVIDIA® FXAA™ Antialiasing	NVIDIA® TXAA™ Antialiasing	NVIDIA Quadro® Mosaic Technology	Maximum Power Consumption	H.264 and HEVC Encode/Decode Engines	Vulkan Support	GPUDirect™ for Video	Graphics Synchronization <sup>5</sup>	Quadro NVLink Bridge support	Quadro SLI HB Bridge support	
<b>NVIDIA QUADRO for Desktop Workstations</b>																					
<b>Quadro GP100</b>	<b>NEW</b>	VCQGP100-PB	3 584	16 GB	732 GB/s	5 200 DP 10 300 SP	√ <sup>6</sup>	1	4	4	5120x2880	64x	√	√	√	235W	√	√	√	√	√
Quadro P6000		VCQP6000-PB	3 840	24 GB	433 GB/s	12 000 SP	√ <sup>6</sup>	1	4	4	5120x2880	64x	√	√	√	250W	√	√	√	√	√
Quadro P5000		VCQP5000-PB	2 560	16 GB	288 GB/s	8 900 SP	√ <sup>6</sup>	1	4	4	5120x2880	64x	√	√	√	180W	√	√	√	√	√
<b>Quadro P4000</b>	<b>NEW</b>	VCQP4000-PB	1 792	8 GB	243 GB/s	5 300 SP	√ <sup>6</sup>	-	4	4	5120x2880	64x	√	√	√	105W	√	√	√	√	√
Quadro M4000		VCQM4000-PB	1 644	8 GB	192 GB/s	2 500 SP		-	4	4	4096x2160	64x	√	√	√	108W	√	√	√	√	
<b>Quadro P2000</b>	<b>NEW</b>	VCQP2000-PB	1 024	5 GB	192 GB/s	3 000 SP		-	4	4	5120x2880	64x	√	√	√	75W	√	√	√		
Quadro M2000		VCQM2000-PB	768	4 GB	106 GB/s	2 200 SP		-	4	4	4096x2160	64x	√	√	√	75W	√	√			
<b>Quadro P1000</b>	<b>NEW</b>	VCQP1000-PB VCQP1000DVI-PB	640	4 GB	80 GB/s	1 894 SP		-	4	4	5120x2880	64x	√	√	√	47W	√	√			
Quadro K1200		VCQK1200DP-PB VCQK1200DVI-PB	512	4 GB	80 GB/s	1 000 SP		-	4	4	4096x2160	64x	√	√	√	45W		√			
<b>Quadro P600</b>	<b>NEW</b>	VCQP600-PB VCQP600DVI-PB	384	2 GB	64 GB/s	1 195 SP		-	4	4	5120x2880	64x	√	√	√	40W	√	√			
Quadro K620		VCQK620-PB	384	2 GB	29 GB/s	812 SP		1	1	2 <sup>4</sup>	4096x2160	64x	√	√	√	41W		√			
<b>Quadro P400</b>	<b>NEW</b>	VCQP400-PB VCQP400DVI-PB	256	2 GB	32 GB/s	641 SP		-	3	3 <sup>4</sup>	5120x2880	64x	√	√	√	30W	√	√			
Quadro K420		VCQK420-2GB-PB	192	2 GB	29 GB/s	336 SP		1	1	2 <sup>4</sup>	4096x2160	64x	√	√	√	45W		√			
<b>NVIDIA TESLA for Desktop Workstations (Co-Processors)</b>																					
Tesla K40		TCSK40CARD-PB	2 880	12 GB	288 GB/s	5 040 <sup>10</sup>	√									235W		√	√		
<b>NVIDIA NVS for Desktop Workstations</b>																					
NVS 810		VCNVS810DP-PB VCNVS810DVI-PB	1024 512/GPU	4 GB 2 GB/GPU	28.8 GB/s			8 <sup>12</sup>	8 <sup>11</sup>	8	4096x2160 <sup>13</sup>			√	68W		√				
NVS 510		VCNVS510DP-PB VCNVS510DVI-PB VCNVS510VGA-PB	192	2 GB	28.5 GB/s			4 <sup>12</sup>	4 <sup>11</sup>	4	3840x2160			√	35W		√				
NVS 315		VCNVS315DP-PB VCNVS315DVI-PB	48	1 GB	14 GB/s			2 <sup>12</sup>	2 <sup>11</sup>	2	2560x1600			√	19,5W		√				
NVS 310		VCNVS310DP-1GB-PB VCNVS310DVI-1GB-PB	48	1 GB	14 GB/s			2 <sup>12</sup>	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: DVI/DL: 2560x1600 @ 60Hz or 1920x1200@120Hz; DVI/SL: 1920 x 1200 @ 60Hz  
 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/DP1.4 cable.  
 4. Option to connect a third and/or fourth display using DisplayPort 1.2s/1.4s 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](http://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 GP100 VCQGP100-PB	<b>NEW</b>	3 x DP to DVI (SL) adapters 1 x Driver & Quick Installation Guide 1 x Stereo Connector Bracket 1 x Dual 6-pin to 8-pin power cable	Animation - Visualization Broadcast - Video Editing Design Oil & Gas Medical Imaging
	QUADRO P6000 VCQGP6000-PB		3 x DP to DVI (SL) adapters 1 x Driver & Quick Installation Guide 1 x Stereo Connector Bracket 1 x Dual 6-pin to 8-pin power cable	Animation - Visualization Broadcast - Video Editing Design Oil & Gas Medical Imaging



#### HIGH-END

	QUADRO P5000 VCQGP5000-PB		3 x DP to DVI (SL) adapters 1 x Driver & Quick Installation Guide 1 x Stereo Connector Bracket 1 x Dual 6-pin to 8-pin power cable	Animation - Visualization Broadcast - Video Editing Design Manufacturing - large models Medical Imaging
	QUADRO P4000 VCQM5000-PB	<b>NEW</b>	4 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

#### MID-RANGE

	QUADRO P2000 VCQGP2000-PB	<b>NEW</b>	4 x DP to DVI (SL) adapter 1 x Driver & Quick Installation Guide	Animation / Video Editing Manufacturing - med./large models Medical Imaging
	QUADRO P1000 VCQP1000-PB VCQP100DVI-PB	<b>NEW</b>	4 x mDP to DP adapter <sup>1</sup> 1 x mDP to DVI (SL) adapter <sup>1</sup> 4 x mDP to DVI (SL) adapter <sup>2</sup> 1 x Driver & Quick Installation Guide 1 x attached ATX Bracket 1 x unattached LP Bracket	Animation Video Editing Manufacturing - medium models






#### ENTRY-LEVEL

	QUADRO P600 VCQP600-PB VCQP600DVI-PB	<b>NEW</b>	4 x mDP to DP adapter <sup>1</sup> 1 x mDP to DVI (SL) adapter <sup>1</sup> 4 x mDP to DVI (SL) adapter <sup>2</sup> 1 x Attached ATX Bracket 1 x Unattached LP Bracket 1 x Driver & Quick Installation Guide	Video Editing Manufacturing - small / medium models
	QUADRO P400 VCQP400-PB VCQP400DVI-PB	<b>NEW</b>	3 x mDP to DP adapter 1 x mDP to DVI (SL) adapter 3 x mDP to DVI (SL) adapter <sup>2</sup> 1 x Attached LP Bracket 1 x Unattached ATX Bracket 1 x Driver & Quick Installation Guide	Manufacturing - volume CAD



<sup>1</sup> only included with VCQP1000, VCQP600, VCQP400  
<sup>2</sup> only included with VCQP1000DVI, VCQP600DVI, VCQP400DVI

### NVIDIA TESLA BY PNY

#### HIGH-PERFORMANCE COMPUTING









	TESLA P100 TCSP100M-12GB-PB TESLA P100 TCSP100M-16GB-PB	- Server	SP Peak Performance: 9.3 Tflops DP Peak Performance: 4.7 Tflops
	TESLA P40 TCSP40M-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 TCSM4M-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	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

**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 P600 Quadro P400	Quadro P2000 Quadro P1000	Quadro P4000	Quadro P5000	Quadro GP100 Quadro P6000	2 x GP100 or 2 x 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 ABAQUS, SIMULA	
		The Foundry Mari, Nuke		Ansys Mechanical	
			Schlumberger Petrel		
Small/simple CAD models, Video, entry PLM • ISV Certs • Higher performance vs. IGP, gtx 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>

**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 Aggressive 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.



## 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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