

### Overview

### NVIDIA Quadro M4000 8GB Graphics



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M6V52AA

## INTRODUCTION

The NVIDIA Quadro M4000, now based on the new Maxwell GPU architecture, delivers incredible 3D application performance and capability, allowing you to take advantage of dual copy-engines for seamless data movement within GPU memory—all in a flexible, single-slot form factor. 8 GB of GDDR5 GPU memory with ultra-fast bandwidth is ideal for creating and rendering large, complex models. An enhanced display engine drives up to four displays via 4 DisplayPort 1.2 connectors, each connector supporting ultra-high resolutions up to 4096 x 2160 @ 60 Hz with 30-bit color. Plus, NVIDIA Sync (sold separately) allows you to frame-lock multiple displays together and take advantage of SDI video input/output.

The NVIDIA Quadro M4000 is an excellent choice for the most demanding product design challenges. It can also easily handle most media and entertainment needs.

### Overview

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### PERFORMANCE AND FEATURES

- Powerful high end GPU based on the NVIDIA Maxwell GPU architecture in a single slot form factor
  - Large 8GB ultra-fast GDDR5 memory accommodates larger models and datasets
  - Dual copy-engines for fast and efficient data movement within GPU memory
  - Quad-display support that can drive ultra-high resolutions up to 4096 x 2160 @ 60Hz with 30-bit color depth
  - Support for NVIDIA® Quadro® Mosaic, NVIDIA® nView® multi-display technology
  - Professional 3D Stereo Synchronization (sold separately) enables robust control of stereo effect through a dedicated three-pin mini-din connection to directly synchronize 3D stereo hardware to Quadro graphics card.
  - NVIDIA® GPU Boost automatically maximizes application performance in real time while staying within the power and thermal envelope of the card
  - 1664 CUDA parallel processing cores providing up to 2.6 TFlops (single precision) is well suited to accelerate single precision computing workflows
  - Comprehensive set of ISV application certifications
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### COMPATIBILITY

The NVIDIA Quadro M4000 is supported in the following HP Z Workstations:

- Z240 Tower, Z440, Z640, Z840

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### SERVICE AND SUPPORT

The NVIDIA Quadro M4000 has a one-year limited warranty or the remainder of the warranty of the HP product in which it is installed. Technical support is available seven days a week, 24 hours a day by phone, as well as online support forums. Parts and labor are available on-site within the next business day. Telephone support is available for parts diagnosis and installation. Certain restrictions and exclusions apply.

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### Technical Specifications

#### TECHNICAL SPECIFICATIONS

<b>Form Factor</b>	Dimensions: 4.4" H x 9.5" L Single Slot, Full Height Cooling: Active Weight: 475 grams (without extender)
<b>Graphics Controller</b>	NVIDIA Quadro M4000 GPU: GM204 with 1664 CUDA cores Power: 120 Watts
<b>Bus Type</b>	PCI Express 3.0 x16
<b>Memory</b>	Size: 8GB GDDR5 Memory Bandwidth: 192 GB/s Memory Width: 256-bit
<b>Connectors</b>	4 DisplayPort 1.2a Factory configured Option: No video cable adapter included After market option kit: No video cable adapter included  Additional DisplayPort-to-VGA or DisplayPort-to-DVI adapters are available as accessories
<b>Maximum Resolution</b>	DisplayPort: - single DisplayPort up to 4096 x 2160 x 30 bpp @ 60Hz - supports High Bit Rate 2 (HBR2) and Multi-Stream Transport (MST)  DL-DVI(I) output: - up to 2560 x 1600 x 32 bpp @ 60Hz  Single Link-DVI(I) output: - up to 1920 x 1200 x 32 bpp @ 60Hz  VGA (via adapter cable): - 2048 x 1536 x 32 bpp at 85 Hz
<b>Image Quality Features</b>	12-bit internal display pipeline (hardware support for 12-bit scanout on supported panels, applications and connection)  NVIDIA® 3D Vision™ technology, 3D DLP, Interleaved, and other 3D stereo format support  Full OpenGL quad buffered stereo support  Support for large-scale, ultra-high resolution visualization using the NVIDIA® SVS platform which includes NVIDIA® Mosaic, NVIDIA® Sync and NVIDIA® Warp/Blend technologies

### Technical Specifications

#### Display Output

- Maximum number of displays
- 4 direct attached monitors
  - 4 using DP 1.2a with MST and HBR2 enabled monitors

Maximum number of DisplayPort displays possible:

- 4 1920x1200
- 4 2560x1600
- 4 4096x2160
- 2 5120x2880 (requires dual DP input capable 5k displays)

Maximum number of monitors across all available Quadro M4000 outputs is 4.

#### Shading Architecture

Shader Model 5.0

#### Supported Graphics APIs

OpenGL 4.5  
DirectX 12

API support includes:

CUDA C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, and Fortran

#### Available Graphics Drivers

Microsoft Windows 10  
Microsoft Windows 8.1  
Microsoft Windows 8  
Microsoft Windows 7  
Linux - Full OpenGL implementation, complete with NVIDIA and ARB extensions

HP qualified drivers may be preloaded or available from the HP support Web site:

<http://welcome.hp.com/country/us/en/support.html>

#### Notes

1. Configurations using the Quadro M4000 graphics card in HP Z440 Workstation require the HP Z440 Fan and Front Card Guide Kit, configurable from the factory (CTO PN: G8T99AV) or as an Aftermarket Option (AMO PN: J9P80AA).

### Summary of Changes

Date of change:	Version History:		Description of change:
	From v1 to v2		

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