



# Breakthrough innovation for 3D CAD workflows

A close technology partnership between AMD and PTC brings advanced features and productivity gains to AMD FirePro™ Professional Graphics and PTC Creo® Parametric 3.0 users

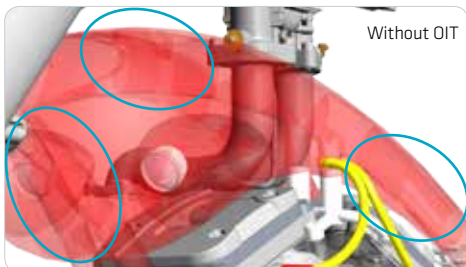
## Higher Performance and Interactivity for PTC Creo® Designers

The AMD FirePro™ graphics team works closely with PTC to deliver optimal workflow performance and productivity for PTC Creo users. The latest generation of AMD FirePro professional graphics cards give PTC Creo 3.0 users outstanding performance and greater interactivity when working with large assemblies and complex models.

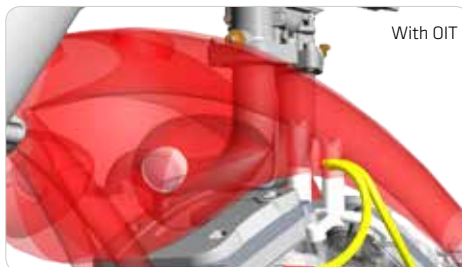
## Up to 40x Faster with GPU-Accelerated Features<sup>1</sup>

Developed by AMD in close collaboration with PTC, advanced OpenGL optimizations, Vertex Buffer Object (VBO) and Order Independent Transparency (OIT), greatly increase the 3D frame rate and interactivity for large assemblies. These performance benefits exploit the large on-board memory processing of modern GPUs to deliver additional, always-on 3D acceleration with complex mechanical assemblies and advanced multidiscipline workflows. As a result, PTC Creo designers using AMD FirePro graphics experience up to 40x faster 3D frame rates than PTC Pro/ENGINEER Wildfire 5<sup>1</sup>, helping them maintain their productivity and creative flow.

At the same time, OIT assembles a “pixel-accurate” representation of the model and its surrounding geometry while maintaining user interactivity and visual quality. This creates a more practical transparent 3D viewpoint to continuously work within, helping improve the sense of “design intuition” and aid in better decision-making throughout the product development stages



Without OIT



With OIT

OIT fixes visual artifacts caused by inaccurate “depth sorting” of the geometry that often happens in the older “blended mode”. This means some parts of the object are being rendered incorrectly with the old blended mode technology.

## Scalability for Large Assemblies

The latest AMD FirePro professional graphics cards feature support for PCI Express® 3.0, for increased data transfer between the system and the graphics card, helping reduce loading and rendering times of large assemblies. Viewing large assemblies with increased realism puts a higher demand on the GPU, which can reduce performance, interactivity and application responsiveness. Thanks to the large frame buffer memory and AMD’s advanced Graphics Core Next (GCN) GPU architecture<sup>4</sup>, AMD FirePro graphics cards can help increase the visual quality inside the modeling environments virtually without any loss of model interactivity. Users no longer have to manage a trade-off between visual fidelity and model complexity.

## PTC Creo®

### Industry:

Manufacturing (CAD/CAM PLM)

### Application:

PTC Creo® Parametric 3.0

### Challenges:

- ▲ Competitive pressure
- ▲ Faster time-to-market
- ▲ More demanding designs

### Solution:

- ▲ AMD FirePro professional graphics cards are certified for PTC Creo and enable advanced workflows at incredible value

### Value Propositions:

- ▲ Supercharge workflow performance with PTC Creo Parametric 3.0 and AMD FirePro professional graphics
- ▲ Rapid design and greater “design intuition” with GPU-accelerated transparency mode (OIT)
- ▲ Overall enhanced performance and interactivity
- ▲ AMD Catalyst Pro drivers optimized and certified for PTC Creo Parametric 3.0

### The AMD FirePro Graphics Advantage:

- ▲ Three-year warranty and extended availability – AMD FirePro graphics cards have a planned minimum four-year lifecycle.
- ▲ High level of customer support – Customers have the ability to contact the AMD technical support team directly.

## Optimized and Certified for PTC Creo

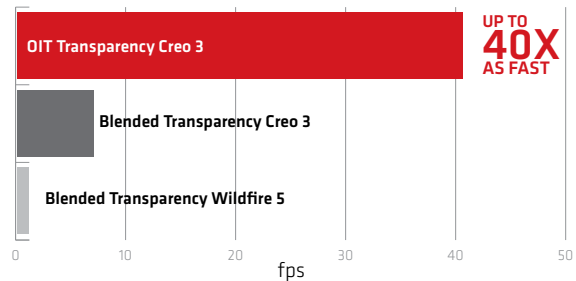
In order to help ensure optimized performance and compatibility, AMD FirePro professional graphics solutions are thoroughly tested and certified by PTC for workstation-class reliability across the suite of PTC applications. When combined with Dell, HP, and other workstations certified by PTC, AMD FirePro professional graphics deliver advanced performance, reliability and value: providing an unbeaten user experience for PTC Creo designers.

### OIT Comparisons (GPU-accelerated Transparency Mode vs. “Blended Mode”)

OIT takes full advantage of the graphics power of AMD FirePro cards and delivers up to 40x faster performance than solutions running PTC Pro/ENGINEER Wildfire 5.0<sup>1</sup>

Transparency Performance – PTC Creo Parametric 3.0 vs. PTC Pro/ENGINEER Wildfire 5 (large dataset, shaded mode) measured in frames per second – higher scores = better user interactivity

Acceleration from Pro/ENGINEER Wildfire 5.0 to PTC Creo 3.0 Transparency - Combine<sup>1</sup>

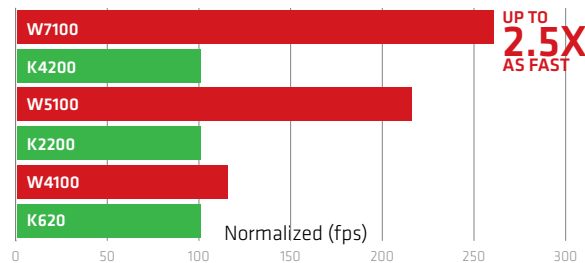


### Shaded Mode Comparisons (AMD FirePro vs. Nvidia Quadro)

When compared to alternative workstation graphics solutions, PTC Creo 3.0 and AMD FirePro graphics can also run up to 2.5x faster in the traditional shaded mode.<sup>2</sup>

Shaded Performance for PTC Creo Parametric 3.0 AMD FirePro vs. Nvidia Quadro (large dataset, shaded mode) measured in frames per second – higher scores = better user interactivity

PTC Creo 3.0 Shaded AMD Internal Motorcycle<sup>2</sup>



## Collaboration and Communication Across Workflow

Product development workflows have changed significantly over recent years. Working with multiple applications is common in many development workflows with design, simulation, data management and collaboration all happening in unison. AMD FirePro graphics cards features AMD Eyefinity multi-display technology that empowers engineers to view multiple applications and product assemblies across three, four or even six high-resolution monitors all from a single graphics card, at up to 4K x 2K resolution for each output. Users can view designs at ultra-high resolutions for increased design accuracy, realism and better insight, or speed up workflow by using the extra screens to view additional applications. Using the new Creo 3.0 Unite Technology and AMD Eyefinity, collaboration and multi-CAD data consolidation across the family of PTC products in design, manufacturing and simulation is made easy.

## Recommended for PTC Creo 3.0

	AMD FirePro W4100 graphics	AMD FirePro W5100 graphics	AMD FirePro W7100 graphics
GPU Memory	2GB GDDR5	4GB GDDR5	8GB GDDR5
Memory Bandwidth	Up to 72 GB/s	Up to 96 GB/s	Up to 160 GB/s
AMD GCN Stream Processors	512	768	1792
Compute Performance (Single Precision)	.645 TFLOPS	1.43 TFLOPS	3.3 TFLOPS
GeometryBoost	No	Yes	Yes
Physical Display Outputs	Four Mini DisplayPort	Four DisplayPort	Four DisplayPort
Total Display Outputs with AMD Eyefinity and DisplayPort 1.2a <sup>3</sup>	6	6	6
Ready for 4K (UHD)	Yes	Yes	Yes
System Interface	PCIe® 3.0, Single-slot	PCIe® 3.0, Single-slot	PCIe® 3.0, Single-slot
OpenGL	4.4	4.4	4.4

For more information visit: [in.amdfireprohub.com/solutions/creo/](http://in.amdfireprohub.com/solutions/creo/)



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<sup>1</sup> Based on comparison of AMD FirePro W7100, Creo 3.0 in OIT transparency mode vs. Pro/ENGINEER Wildfire 5 blended transparency mode, running AMD internal benchmark “Creo Benchmark v3.1” using AMD’s Internal Motorcycle dataset. Intel Xeon X5570 at 2.93GHz 4-Core, 12GB RAM, Windows 7 64-bit, 120GB SSD, AMD FirePro driver 14.301, display 1920x1200, Creo Parametric 3.0 F000, and PTC Pro/ENGINEER Wildfire 5.0 M250.

<sup>2</sup> Based on comparison of AMD FirePro W7100 vs Nvidia Quadro K4200 in Creo 3.0 running AMD internal benchmark “Creo Benchmark v3.1” using AMD’s motorcycle dataset and shaded mode. Windows 7 64-bit, Intel Xeon E5-2630 at 2.30 GHz, 18GB RAM, Seagate 250 GB 7200 SATA 16 MB HDD, AMD driver 14.30-140915a-175805E-ATI, Nvidia driver 340.66.

<sup>3</sup> AMD Eyefinity technology supports up to six DisplayPort monitors on an enabled graphics card. Supported display quantity, type and resolution vary by model and board design. Mixed monitors of different resolutions are supported by select AMD FirePro™ professional graphics cards. Confirm specifications with manufacturer before purchase. To enable more than two displays, or multiple displays from a single output, additional hardware such as DisplayPort™-ready monitors or DisplayPort 1.2 MST-enabled hubs may be required. A maximum of two active adapters is recommended for consumer systems. See [www.amd.com/eyefinityfaq](http://www.amd.com/eyefinityfaq) for full details.

<sup>4</sup> Select AMD FirePro graphic cards are based on the GCN Architecture and include its associated features (AMD PowerTune technology, AMD ZeroCore Power technology, PCI Express 3.0, etc.). Not all features are supported by all products—check with your system manufacturer for specific model capabilities. SG10/15 #657