

# WILDCAT REALiZM™ 800

## The Ultimate in Professional 3D Graphics Processing

Welcome to a new kind of Realizm . . . where precision, speed, and your creativity combine in ways you've only dreamed. 3Dlabs® puts the power of the industry's most advanced visual processing right at your fingertips with Wildcat® Realizm™ 800 – the flagship in a fully programmable lineup of graphics accelerators developed exclusively for professional designers. 3Dlabs' x16 PCI Express-based graphics feature dual Visual Processing Units (VPUs). Twice the processing power. Twice the performance.



### Remove the boundaries to your creativity.

With Wildcat Realizm 800's no-compromise performance, powerful dual-VPU capabilities, and unmatched memory resources, you'll have more time to devote to your creativity.

### Unmatched Dual VPU Performance

- Unique Vertex/Scalability Unit (VSU) optimizes data transfer and load balancing across dual Visual Processing Units (VPUs), offering twice the performance of other single-VPU solutions
- Optimized floating-point precision across the entire pipeline
- 67 GFLOPS of 36-bit precision floating-point power
- DirectBurst™ Memory support to transparently store rendering commands and geometry data onboard

### The Most Memory Available on Any Graphics Card

- Handles more textures without stressing system memory
- Provides ample frame buffer to support high-resolution, true-color displays, with SuperScene™ antialiasing for the ultimate in visual quality
- Precise floating-point conversions across the entire graphics pipeline maximize image accuracy, storage, and processing capabilities with zero performance impact
- Enough memory to provide off-screen support for Pbuffers while providing abundant memory for highly detailed, true-color 2D and 3D textures – all simultaneously

### High Onboard Bandwidth

- High onboard bandwidth means professional performance
- 512-bit memory bus delivers the highest possible throughput

### Hardware Accelerated 3D Volumetric Textures

- 3D textures are applied throughout the volume of your model, not just on the external surfaces – and it happens in real-time for the precision display capabilities you demand

### Supports 32 Lights in Hardware

- Designed to minimize any performance hits to your CPU and system memory

This rendering from the "Helen of Troy" mini-series was produced by Stargate Films, Inc. and is used with permission. © 2003 USA Cable Entertainment LLC. All Rights Reserved. CAD image courtesy of Mark Tyler.



### Remove the boundaries to your productivity.

Wildcat Realizm graphics accelerators offer the highest levels of image precision. You get quality and performance in one advanced technology solution.

### Extreme Geometry Performance

- Manipulate the most complex models easily in real-time
- Wildcat Realizm's VPU features full floating-point pipelines from input vertices to displayed pixels to offer you unparalleled levels of performance, programmability, accuracy and fidelity

### Image Quality

- Genuine real-time image manipulation and rendering using advanced programmable features so your projects are on spec and on time
- Graphics architecture is able to directly display 16-bit floating-point pixels with 3-channel, 10-bit video-rate alpha blending, 10-bit LUT, and 8-bit WIDs
- Independent dual 400 MHz 10-bit DACs, creating the highest level of displayed color quality with no compromise in display resolution or performance

### 36-Bit High-Precision Floating-Point Vertex Pipeline

- Wildcat Realizm delivers images so accurate you won't worry about display anomalies or rendering errors on your next time-critical masterpiece

### High-Speed Rendering

- At 24 pixels per clock cycle, Wildcat Realizm processes your pixels faster than any other professional graphics card
- Virtual shader program memory support up to 256 K fragment shader instructions plus flow control and loops
- With Wildcat Realizm you get unmatched OpenGL® Shading Language performance and functionality to insure robust execution and acceleration for industrial-strength shaders – from the company that initiated OpenGL Shading Language development



### Remove the boundaries to your view of the world.

Innovative, advanced display features and maximum programmability let your creativity take you further.

### 64-Bit Hardware Accumulation Buffers

- Accelerated performance of accumulation buffer operations used in depth-of-field, motion blur, shadow, and multi-pass rendering algorithms

### Stereo Support

- Provides a tangible appearance of depth, enhancing visual immersion into the 3D environments you create

### Multiview Option with Framelock/Genlock

- Most advanced framelock/genlock capabilities in the industry
- Facilitates multi-system video walls and supports genlock to a house sync source.
  - Supports tri-level sync for HDTV; bi-level sync for NTSC; and PAL



With over 40 years of combined engineering talent, 3Dlabs is the only graphics hardware developer 100% dedicated to building solutions designed specifically for graphics professionals.

### The Advanced Benefits of Wildcat Realizm 800... Realize Your Potential

#### Optimized for Running Multiple Applications Simultaneously

- Designed to minimize CPU load while driving the graphics pipeline at maximum capacity
- Innovative 256 GB virtual memory support shatters the limits of onboard memory by automatically handling huge datasets while caching essential data for fastest access

#### Maximum Scalability, Maximum Performance

- 3Dlabs' unique Vertex/Scalability Unit (VSU) delivers the ultimate in geometry (vertex) processing, allowing you to easily handle the largest models while also providing powerful and flexible surface and vertex processing
- Wildcat Realizm 800's VSU also enables dual-VPU configurations that literally double performance over single-VPU solutions
- Huge fragment shader program support for 256 K individual instructions with looping and conditionals where competing technologies only support 64 K

#### Video Display Capabilities

- Industry's only isochronous command channel with fast context switching and automatic hardware scheduling to insure you "glitch-free" effects with real-time video
- Dual link, dual display for today's megapixel display requirements. Capable of driving resolutions of 3840 x 2400 at the highest refresh rates

#### Optimized Dual-Display Acceleration

- Innovative multi-VPU design allows improved graphics accelerations for your dual-display configurations
- Gives you more visual elbow room on your desktop

#### Windows Acuity Manager

- Next generation display management technology for application and performance optimization and control
- Ergonomic, dual taskbar minimizes cursor and mouse movement for dual displays or 9.2- megapixel (3840 x 2400) displays

#### Minimal System Load = Maximum Graphics Acceleration

- 3Dlabs professional-focused graphics accelerator driver works in close concert with the Realizm hardware to reduce your system's CPU and system memory load for all display related activities

# 3Dlabs®

A CREATIVE™ Company

## WILDCAT REALIZM 800

### Key Architectural Features:

- Dual VPU's plus one VSU (provides advanced geometry processing, VPU management, and a PCI Express interface) for performance doubling
- Full programmability and floating-point capabilities through entire graphics processing pipeline
- Seamless 32- to 16-bit and 16- to 32-bit conversion with zero overhead
- x16 PCI Express for faster data transfer through the system bus
- Dual-display, dual-link DVI to double the digital display bandwidth (for true 3840 x 2400 resolution capabilities)
- 512-bit GDDR3 memory interface for higher memory performance
- Hardware accelerated pixel readback up to 4 GB/sec.
- SuperScene multisampling, full-scene antialiasing support
- Support for both DirectBurst™ and unified memory for professional resource allocation and utilization
- Texture sizes up to 4 K x 4 K
- Dedicated isochronous channel
- Orthogonal, compiler-friendly SIMD arrays throughout pipeline allowing compilers to deliver optimal performance
- Independent dual 400 MHz 10-bit DACs
- Supported APIs:
  - > OpenGL 2.0 (full support when ratified)
  - > OpenGL 1.5 with OpenGL Shading Language
  - > Microsoft DirectX® 9.0 with High Level Shading Language (HLSL, VS 2.0, PS 3.0)
- Supports optional Wildcat Realizm Multiview card for framelock/genlock capabilities

### Programmability Features

- Leading support for OpenGL Shading Language and DirectX 9 HLSL
- Full floating-point programmability
  - > Optimized floating-point precision at each pipeline stage (36-bit vertices, 32-bit pixels, 16-bit back-end pixel processing) for the highest precision rendering accuracy and fidelity
- 32 programmable 36-bit floating-point vertex shaders supporting:
  - > Up to 1K instructions
  - > Up to 32 light sources
  - > Subroutines, loops and conditionals
- 96 programmable 32-bit floating-point fragment shaders supporting:
  - > Up to 256K instructions
  - > Subroutines, loops and conditionals
- Unique final stage programmable pixel shader with 32 programmable 32-bit shaders

### Board Physical

- 16-lane PCI Express, single-slot card. Occupies two slots for the quiet cooling solution
- Compliant to the PCI Express High-End graphics electromechanical and power specification

### Memory

- 640 MB GDDR3 total memory
  - > 512 MB GDDR3 unified memory with 512-bit-wide interface bus
  - > 128 MB GDDR3 DirectBurst memory with 128-bit-wide interface bus
- 64 KB flashable EEPROM memory for VGA bios and product configuration storage
- Virtual memory support allowing:
  - > Onboard memory to be used as an efficient L2 cache
  - > Seamless handling of huge datasets
  - > Automatic paging out of unused buffers
  - > Very large individual texture sizes (ex: 4 K x 4 K)

### Drivers

- Compatible with Intel Pentium® 4 and AMD™ Opteron® Processors
- Microsoft® Windows® 2000 and Microsoft XP (32- and 64-bit) Windows driver includes 3Dlabs Acuity™ Windows Manager
- Red Hat Linux Enterprise Edition (version 3.0 or later; 32- and 64-bit)

### Connectors

- Two DVI-I analog/digital video output ports – dual-link DVI capable supporting the following configurations:
  - > One or two analog display devices
  - > One or two single-link digital display devices
  - > One or two dual-link digital display devices
  - > One single-link or two dual-link digital display devices and one analog display device.
- Stereo Sync Support
  - > VESA-standard frame sequential stereo
  - > 3-pin, mini-DIN connector provides connection to LCD shutter glasses or other stereo shutter devices

### 3Dlabs Wildcat Realizm Multiview (optional)

- Multiview card supports frame locking, genlocking, synchronized frame buffer swap, and synchronized refresh rate. Framelock synchronizes display refresh and buffer swaps of multi-system displays (can be used simultaneously with genlock). Genlock synchronizes video timing to an external timing source. When provided with an appropriate periodic signal, the graphics card will lock its display refresh rate to this signal.
- Requires installed Wildcat Realizm Multiview card (sold separately)
  - Most advanced framelock/genlock solution available
  - Enables multi-system video walls and supports genlock to a house sync
  - Supports tri-level sync for HDTV; bi-level sync for NTSC; and PAL

### Warranty

Three (3) years parts and labor



### Resolutions Table

Resolution	Refresh Rates (Hz)	Stereo Support
3840 x 2400	50	-
2456 x 1536	60	-
2728 x 1536	60	-
2048 x 1536	60	-
1920 x 1200	100	Yes
1920 x 1080	100	Yes
1600 x 1200	100	Yes
1520 x 856	120	Yes
1440 x 900	120	Yes
1360 x 766	120	Yes
1280 x 1024	120	Yes
1280 x 960	120	Yes
1280 x 800	120	Yes
1280 x 720	120	Yes
1152 x 864	120	Yes
1152 x 720	120	Yes
1024 x 768	140	Yes
856 x 480	100	Yes
800 x 600	120	Yes
640 x 480	120	Yes

#### Notes:

- 1 – Resolutions and refresh rates for digital display devices are limited by pixel clocks of 165MHz.
- 2 – Frame sequential stereo is supported for all resolutions and refresh rates listed above.
- 3 – Many other resolutions available; contact 3Dlabs or visit our web site for your specific needs.

### System Requirements

- Intel® Pentium®, Athlon™ or compatible processor (Pentium 4, Athlon 64 or Opteron™ recommended)
- Microsoft® Windows® 2000, Windows XP, Red Hat® Linux® Enterprise Edition (ver. 3.0 or later)
- One x16 PCI Express slot adjacent empty slot for cooling solution
- PCI Express High-End graphics support
- 150 Watts available system power for graphics card
- 512 MB system memory recommended
- 25 MB free disk space

### Professional Applications Certifications from Major 3D Design Software Vendors. Check [www.3dlabs.com](http://www.3dlabs.com) for specific applications.

Alias™	Dassault	Opticore
Alibre®	discreet®	PTC®
Altair	Kaydara	Side Effects
ANSYS®	MSC.Software®	Softimage®
Autodesk®	MultiGen-Paradigm	SolidWorks®
Bentley®	NavisWorks™	think3®
Caligari	Nemetschek	UGS PLM Solutions
Co Create™	Newtek™	Volume Graphics

### Retail Package Contents

- Wildcat Realizm 800 PCI Express High-End Power professional graphics accelerator
- Two DVI-VGA adapters for analog displays
- High-end power adapter cable
- International installation guide
- Product CD with electronic manual, drivers, and bonus software

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