

Oxygen GVX210 delivers high-end geometry and rasterization graphics acceleration on a single AGP card for the most demanding workstation professional. By integrating two 3Dlabs® GLINT® R3 rasterizers, the new generation GLINT Gamma G2 geometry processor and 64MB of memory on a single card, Oxygen GVX210 boosts the interactivity of huge models with a 256-bit memory bus and Virtual Textures that shatter the limitation of on-board graphics memory capacity.

#### **PRAISE FOR OXYGEN GVX210**

"Side Effects Software Inc. is a long-time supporter of the Oxygen family. The combination of Houdini 3D software and Oxygen GVX210 results in a powerful, interactive authoring environment. The dual GLINT R3 rasterization engines and Gamma G2 geometry processor on the GVX210 raises the bar for professional performance at an affordable price."

#### **Paul Salvini**

Chief Technology Officer,  
Side Effects Software Inc.

# OXYGEN™ GVX210

*High-end, 256-bit Graphics Power for Demanding Workstation Professionals*

- **100% Complete OpenGL Geometry and Lighting Acceleration in Hardware**  
On-board hardware geometry acceleration boosts the interactivity of large models by up to three times and offloads the CPU for increased application performance. The 5Gflop, new generation GLINT Gamma G2 processes 100% of the OpenGL® geometry pipeline in silicon, including 16 simultaneous light sources.
- **Virtual Textures Allow You to Manipulate up to 256MB of Textures**  
An industry first that lets you manipulate up to 256MB of textures in a single scene. Oxygen GVX210 implements a full demand-paged virtual texture sub-system in hardware, using on-board graphics memory to cache huge textures stored in main system memory.
- **PowerThreads™ SSE OpenGL Drivers with Dynamic Load Balancing**  
3Dlabs' new-generation PowerThreads SSE OpenGL drivers are fully optimized for Intel Pentium® III and AMD® Athlon processors and dynamically balance the geometry and lighting load between the GLINT Gamma hardware geometry processor and the host CPU. PowerThreads SSE combines the power of geometry hardware plus the additional power of today's processors for full performance scalability.
- **Seamless Dual-head Support**  
The Oxygen GVX210 supports dual high-resolution displays under Windows NT 4.0 and Windows 2000 from a single card, seamlessly supporting a total multi-monitor true-color desktop size of up to 4096x1536, with the flexibility to place a window anywhere on the desktop without interrupting OpenGL 3D acceleration.
- **Control Panel Application Configuration**  
3Dlabs' advanced control panel and task-bar applet let you point-and-click to effortlessly optimize your system configuration for your favorite professional applications.



# 3Dlabs

## Technical Specifications

### Dual GLINT R3 Rasterization Processors

- Virtual Texture memory management unit
- Full 256-bit memory bus architecture, drives 64MB of high-speed SGRAM
- 256MB Virtual Texture address space
- Texture Unit with single pass, multi-texture capability
- Integrated 300MHz RAMDAC
- High-speed 128-bit memory interface per processor
- 7 independent DMA engines
- 2D/3D Raster Engine
- Integrated SVGA Controller

### GLINT Gamma G2 Geometry Processor

- 100% OpenGL Transform and Lighting in hardware
- Full OpenGL 1.2 functionality in hardware
- 5 Gflop floating point performance
- 16 Simultaneous light sources
- 6.3 Million lit, transformed triangles/sec

### PowerThreads™ SSE OpenGL Drivers

- PowerThreads SSE OpenGL ICD with full Intel Pentium III SSE and AMD Athlon 3DNow! optimizations
- Dynamic Load Balancing distributes geometry and lighting load between GLINT Gamma G2 and host CPU
- OpenGL 1.1 ICD (OpenGL 1.2 ready)
- Multiprocessor system optimized

### Professional 3D Rendering

- Complete OpenGL 1.2 functionality in silicon
- Virtual Texturing in silicon
- Up to 256MB virtual texture space
- 2048x2048x32 maximum individual texture size
- Single pass bump-mapping, per-pixel lighting
- Gouraud shading
- Perspectively correct bilinear and trilinear filtering
- Perspectively correct per pixel mip-mapping
- Dual bilinear mip-mapped textures in a single pass
- Volumetric rendering with up to 8-way filtering
- Source and destination alpha blending
- Fogging and depth cueing
- Anti-aliased lines and polygons
- Full-scene anti-aliasing
- Scissoring and stippling
- Overlay and stencil buffers
- 32 bit Z-buffering
- GID clipping

### Hardware Performance

- Fill rate - 460Mtexels/sec dual bilinear mip-map textures
- Fill rate - 230Mpixels/sec trilinear mip-map texture
- Polygon rate - 6.3M lit, transformed polygons/sec (50% backface culled)
- SPECviewperf
  - DX-05 score of 30.5 (1024x768 true-color 75Hz)
  - DRV-06 score of 21.3 (1024x768 true-color 75Hz)
  - Light-03 score of 3.5 (1280x1024 true-color 75Hz)
- 2D Winbench 99 HE 384 (1024x768 true color)
- 2D Winbench 99 BG 182 (1024x768 true color)
- APC ProE Composite Score 5.48

Test system: Intel Pentium III 733MHz, Intel SE440BX motherboard, 512MB of RAM, 75Hz refresh rate. The board used for the tests was the Oxygen GVX210 with Windows NT driver version 216-0060

### Board Physical

- Full-length ATX form-factor
- AGP - AGP Version 2.0 Compliant
- AGP Pro Compatible

### Memory

- 64MB of high-speed SGRAM for framebuffer, Z-buffer and texture memory
- Up to 256MB of host memory used as a Virtual Texture store

### Display

- True color resolutions up to 2048x1536 double-buffered and 32-bit Z per monitor
- 4096x1536 total desktop size with dual monitors
- 60Hz-150Hz screen refresh rates (monitor dependant)
- Softimage-compliant 8-bit double-buffered overlay planes
- DDC2B support on all operating systems

### Multi-head Capable

- Supports dual high-resolution displays from a single card under Windows NT4.0 or Windows 2000
- Featuring a seamless desktop displayed across dual monitors with total resolutions up to 4096x1536 true-color

### Stereo Support

- True Quad-buffered stereo support up to 1280x1024 true-color, 118Hz refresh rate

### Drivers

- Windows NT 4.0 and PowerThreads SSE OpenGL ICD
- Windows 98, fully DirectX 7.0 compatible and PowerThreads SSE OpenGL
- Windows 2000

### Advanced Control Panel

- Point-and-click to automatically optimize system configuration for each professional application

### Value-added Software Bundles

- Soft Engine 4, for up to 400% AutoCAD performance boost (a \$300 value)
- Colorific, for accurate color calibration and matching (a \$50 value)

### Video

- Bilinear filtered playback re-scaling
- Hardware YUV-RGB conversion
- Hardware MPEG-2 Motion Compensation

### Connectors

- Dual DB-15 analog connector
- 3-pin Mini-din stereo connector

### System Requirements

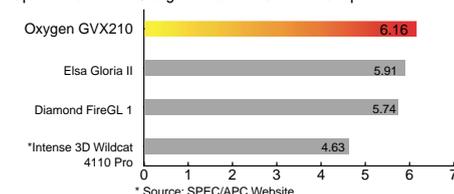
- 100% IBM-compatible PC
- Intel Pentium, AMD Processor or compatible
- IBM Compatible motherboard with AGP or AGP Pro slot
- Microsoft Windows NT 4.0 with Service Pack 5 or higher
- 64MB system memory
- 16MB free disk space

### Warranty

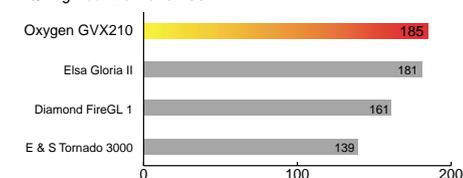
- Three (3) years parts and labor limited warranty

## Outstanding Performance on Leading Industry Benchmarks

Spec APC for Pro/Engineer 2000i Shaded Graphics



Pro/Engineer 20 Bench 99



## Supported Screen Resolutions

Display Resolution	Color Depth	Refresh Rates
640x480	8-bit, 16-bit, True-color	100,85,75,60Hz
800x600	8-bit, 16-bit, True-color	100,85,75,60Hz
1024x768	8-bit, 16-bit, True-color	100,85,75,60Hz
1152x864	8-bit, 16-bit, True-color	100,85,75,60Hz
1280x960	8-bit, 16-bit, True-color	100,85,75,60Hz
1280x1024	8-bit, 16-bit, True-color	100,85,75,60Hz
1600x1200	8-bit, 16-bit, True-color	75,60Hz
1920x1080	8-bit, 16-bit, True-color	100,85,75,60Hz
1920x1200	8-bit, 16-bit, True-color	75,60Hz
2048x1536	8-bit, 16-bit, True-color	60Hz

## Fully Tested Applications

Fully-tested for DCC applications, including:

3D Studio Max	3D Studio Viz	Houdini
Lightscape	LightWave 3D	Maya NT
Mirai	MultiGen Creator	SOFTIMAGE 3D

Fully-tested for CAD applications, including:

AutoCAD	CATIA	I-DEAS
MicroStation	Pro/ENGINEER	Solid Edge
SolidDesigner	SolidWorks	Unigraphics

## Software Bundles to increase your productivity

- Vibrant's Soft Engine 4 improves display performance of AutoCAD by up to four times
- Colorific from E-Color, Inc. calibrates your screen for display and printing consistency



## Contacts, Service and Support

For more information and online technical support, visit us at [www.3dlabs.com](http://www.3dlabs.com). Buy online at [www.3dlabs.com/store](http://www.3dlabs.com/store)

### In North America

480 Potrero Avenue, Sunnyvale, CA 94086  
Tel: (800) 434-3348

### In Europe

Meadlake Place, Thorpe Lea Road, Egham,  
Surrey TW20 8HE, UK  
Tel: (44) 1784-470 555

### In Asia Pacific

Shiroyama JT Mori Bldg., 16F Toranomon, 4-3-1 Minato-ku,  
Tokyo 105-6016, Japan  
Tel: (81) 3-5403-4653

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