OXYGEN™ VX1

Industrial Strength Graphics for Workstation Professionals

Oxygen VX1 uses the new 3Dlabs GLINT R3 workstation graphics processor to deliver high-quality, industrial-strength graphics for the price of a games-only board. It boosts the productivity of design professionals with best-of-class 2D and 3D performance through innovative technology such as Virtual Texturing. System performance is further scaled with PowerThreads SSE OpenGL Drivers, designed to exploit single and multiple CPUs to enhance productivity using the latest professional 2D and 3D applications.

Oxygen VX1 benefits 3Dlabs' extensive Software Certification Program - ensuring that all Oxygen boards work optimally with your key professional applications.

- **Highly-optimized, Multi-Threaded PowerThreads SSE OpenGL Drivers**
  3Dlabs' new-generation PowerThreads SSE OpenGL drivers are fully optimized for Intel Pentium III and AMD Athlon processors to maximize your geometry throughput. The multithreaded architecture of PowerThreads SSE unleashes the power of your current single or multiple CPU system, scaling geometry performance as more CPU processing power is added.

- **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, shattering the limitations of on-board graphics memory. Oxygen VX1 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.

- **Legendary, Workstation-class 3Dlabs Drivers**
  16 years of 3Dlabs' OpenGL experience provides you quality you can trust - backed by the industry's most extensive application certification program.

- **Sophisticated Rendering Pipeline**
  The GLINT R3 graphics processor accelerates 100% of OpenGL 1.2 and DirectX 7.0 primitives, including filtered volumetric rendering, advanced bump-mapping with per pixel lighting and multiple textures in a single pass.

- **Fully Accelerated Windows 98 and Direct3D Drivers**
  Oxygen VX1 ships with 100% natively accelerated drivers for Windows 98 with OpenGL and Direct3D support to give you the flexibility to run all the latest leading professional applications.

- **Advanced Software and Control Panel**
  3Dlabs' advanced control panel optimizes your system for your applications with three mouse clicks. Colorific color-calibrates your display. Soft Engine 4 significantly enhances AutoCAD performance.

PRAISE FOR OXYGEN VX1

"The Oxygen VX1 board is another outstanding example of 3Dlabs' commitment to providing cost-effective, high performance solutions for serious 3D animators. Artists will appreciate 3Dlabs' new PowerThreads SSE driver for optimal, interactive performance within 3D Studio MAX."

Phillip Miller
3D Studio MAX Product Manager at Discreet

3Dlabs®

Technical Specifications

GLINT R3 Rasterization Processor
- Virtual Texture memory management unit
- 256MB Virtual Texture address space
- Texture Unit with single pass, multi-texture capability
- Integrated 300MHz RAMDAC
- High-speed 128-bit Memory interface
- 7 independent DMA engines
- 2D/3D Raster Engine
- Integrated SVGA Controller

PowerThreads SSE OpenGL Drivers
- PowerThreads™ SSE OpenGL ICD with full Pentium III and AMD Athlon 3DNow! optimizations
- 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 - 220Mtexels/sec dual bilinear mip- map textures
- Fill rate - 110Mpixels/sec trilinear mip-map texture
- Polygon setup rate - 11M polygons/sec
- Polygon rate - 2M lit, transformed, displayed, polygons/sec (for 600MHz Pentium III)
- Viewperf Light-02 - 1.89 (1280x1024 true color)
- Indy 3D Simulation - 23.9 (1280x1024 true color)
- 2D Winbench 99 HE - 394 (1024x768 true color)*
- 2D Winbench 99 BG - 187 (1024x768 true color)*
- AutoCAD R14 C96 Score: 26.6

  Test system: Intel Pentium III 600MHz, Intel SE440BX motherboard, 128MB of RAM, 75Hz refresh rate. The board used for the tests was the Oxygen VX1 with Windows NT driver version 2.15-0146.

Board Physical
- Short-card AGP NLX/ATX form-factor
- AGP - AGP Version 2.0 Compliant

Memory
- 32MB of unified SDRAM framebuffer, Z-buffer and texture memory
- Up to 256MB of host memory used as a Virtual Texture store

Display
- True color resolutions up to 1920x1200 or 2048x1536 with 32-bit Z
- 60Hz-150Hz screen refresh rates (monitor dependant)
- Softimage-compliant 8-bit double-buffered overlay planes
- DDC2B support on all operating systems

Multi-head Capable
- Drive up to 4 displays using multiple AGP and PCI Oxygen boards
  - PCI version of Oxygen VX1 coming in 2000

Drivers
- Windows NT 4.0 and PowerThreads SSE OpenGL ICD
- Windows 98, DirectX 7.0 and PowerThreads SSE OpenGL ICD
- Multi-threaded and thread safe
- Windows 2000

Advanced Control Panel
- Point and click automatically optimize system configuration for each professional application

Value-added Software Bundles
- Soft Engine 4, from Vibrant, for up to 400% AutoCAD performance boost (a $300 value)
- Colorific, from E-Color,Inc. for accurate color calibration and matching (a $50 value)

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

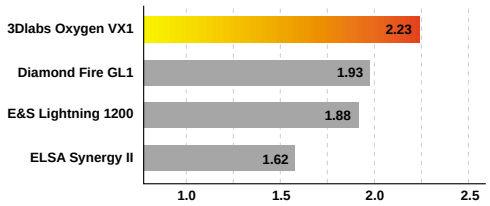
Connectors
- DB-15 analog connector

System Requirements
- 100% IBM-compatible PC
- Intel Pentium, AMD Processor or compatible
- IBM Compatible motherboard with AGP slot
- Compatible with Microsoft Windows NT 4.0 with Service Pack 3 or higher, Windows 98 or Windows 2000
- 64MB system memory
- 16MB free disk space

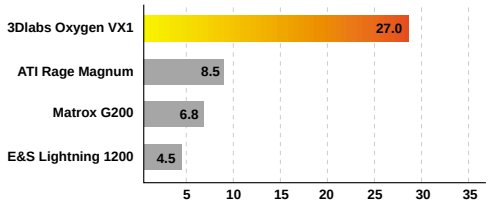
Warranty
- Three (3) years parts and labor limited warranty

Outstanding Performance on Industry-leading Benchmarks

Viewperf Light-02



AutoCAD R14 C96



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	100, 85, 75, 60Hz
1920x1080	8-bit, 16-bit, True-color	100, 85, 75, 60Hz
1920x1200	8-bit, 16-bit, True-color	76Hz
2048x1536	8-bit, 16-bit, True-color	60Hz

Fully Tested on all Leading Professional Applications

3D Studio Max	3D Studio Viz	Houdini
Lightscape	LightWave	3D Maya NT
Mirai	MultiGen Creator	Softimage/3D
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. Buy online at www.3dlabs.com/store

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