



Data courtesy of Paradigm Geophysical using VoxelGeo application.

Data courtesy of VERITAS DGC using Paradigm Geophysical's VoxelGeo application.

## SUN™ EXPERT3D GRAPHICS

### High-performance graphics with texture-mapping acceleration for demanding 3-D applications.

For demanding applications in geotechnical, high-end MCAD, digital content creation, visualization and simulation — where hardware-based texture mapping is essential — Sun has a high-performance, affordable solution. The Sun™ Expert3D graphics accelerator features 128 MB total on-board memory with 64 MB for accelerated texture-mapping performance. Expert3D also supports true-color 3-D double- and Z-buffering

at very high resolutions for large screen HDTV monitor support, stereo-mode graphics for enhanced realism at high resolutions, and much more. Combine Sun Expert3D graphics acceleration with Sun Ultra™ workstations' balanced performance and the reliable, robust Solaris™ Operating Environment, and you have a very high-performance visualization tool for demanding technical professionals.

### HIGHLIGHTS

- On-board 3-D geometry accelerator delivers up to 6-million triangles/sec with up to 3.2 GFLOPS of performance.
- On-board rasterization engine performs triangle setup, texture processing, and pixel operations at up to 143-Mpixels/sec fill rate.
- 64 MB of on-board texture-mapping memory provides significant acceleration for complex true-color 2-D/3-D textures.
- Multiple Expert3Ds supported per system providing support for multiple high resolution displays.
- 64-MB of on-board frame-buffer memory supports 24-bit 2-D/3-D up to 1920 x 1200 resolution, and all Sun displays from Sun's 19-inch display to Sun's 24-inch display.
- Enables display of 3-D data in stereoscopic video at 1280 x 1024 resolution for enhanced realism in immersive applications and environments.

# Sun Expert3D Graphics

Sun Expert3D: An ideal texture-mapping solution for seismic data visualization for oil and gas exploration, terrain mapping for GIS, auto-styling applications in mechanical computer-aided design, digital content creation, and medical imaging applications that rely on 3-D graphics to analyze patient data.

## FEATURES

- On-board 3-D geometry accelerator
- On-board rasterization engine
- 64 MB of on-board frame buffer memory
- 64 MB of dedicated on-board texture-mapping memory
- Supports stereoscopic video graphics at 1280 x 1024 resolution
- Multidisplay support
- True-color double- and Z-buffering at up to 1920 x 1200 resolution
- 32-bit Z-buffer at all resolutions

## BENEFITS

- Accelerates 3-D geometry up to 6 million triangles/sec with up to 3.2 GFLOPS of performance.
- Performs triangle setup, texture processing, and all pixel operations in rasterization, with a peak performance of 143 million pixels/sec (trilinear) fill rate.
- Supports 24-bit 2-D and 3-D graphics up to 1920 x 1200 and all Sun displays, including the Sun 24-inch monitor. Allows users to display all windows with minimal or no overlapping. 103 dpi at 1920 x 1200 provides more image detail and higher accuracy.
- Provides significant texture-mapping acceleration, allowing complex true-color 2-D and 3-D textures for applications requiring texture mapping.
- Allows customers to display 3-D data in stereoscopic graphics mode at higher resolutions, providing enhanced realism for immersive applications and environments.
- Allows users to run multiple displays when multiple Expert3D cards are installed. Enables applications to span multiple displays for command and control applications, animation, automotive design and analysis, and more.
- Allows users to employ large-screen, super-high-resolution monitors, including Sun's 24-inch HDTV-style monitor, to display 2-D and 3-D graphics data.
- Provides high level of three-dimensional accuracy, eliminating anomalies such as the flickering of objects when moving around a 3-D image.

## SPECIFICATIONS AND REQUIREMENTS

<b>Supported systems</b>	Sun Ultra 60 workstation Sun Ultra 80 workstation		
<b>Operating system and API requirements</b>	Solaris™ 2.6 Operating Environment or later Sun OpenGL® version 1.1.2 or later, Java 3D™		
<b>Resolutions supported</b>	<b>Resolution</b>	<b>Refresh Rate</b>	<b>Standard</b>
	1920 x 1200	70, 75 Hz	Sun
	1920 x 1080	72 Hz	Sun
	1792 x 1344	75 Hz	VESA
	1600 x 1280	76 Hz	Sun
	1600 x 1200	75 Hz	VESA
	1600 x 1000	66, 76 Hz	Sun
	1440 x 900	76 Hz	Sun
	1280 x 800	76 Hz	Sun
	1280 x 1024	60, 75, 85 Hz	VESA
	1280 x 1024	67, 76 Hz	Sun
	1280 x 1024	112 Hz	Sun-Stereo
	1152 x 900	66, 76 Hz	Sun
	1024 x 800	84 Hz	Sun
	1024 x 768	75 Hz	VESA
	1024 x 768	60, 70, 77 Hz	Sun
	960 x 680	108, 112 Hz	Sun-Stereo
	768 x 575	50 Hz	PAL
	640 x 480	60 Hz	VESA
	640 x 480	60 Hz	NTSC

Note: Expert3D supports full 24-bit 2-D and 3-D (double/Z buffered) at all resolutions.

## Number of frame buffers that can be supported in the system at one time:

Workstation	Expert3D	Elite3D	Creator3D
Ultra 60	2	0	0
	1	1	0
	1	0	1
	0	1 (m6)	1
	0	2 (m3)	0
Ultra 80	0	0	2
	2	0	—
	1	1	—
POWER	<b>Voltage</b>	<b>Current</b>	<b>Wattage</b>
	3.3 V	10.6 A	35 W
	5.0 V	0.9 A	4.5 W
	12.0 V	0.05 A	0.6 W
<b>Total power consumption</b>			<b>40 W</b>

## DIMENSIONS AND WEIGHT

Plugs into 64-bit/66-MHz and/or 64-bit/33-MHz PCI bus slot in supported systems.

<b>Board height</b>	9.8 cm (3.875 in.) (not including gold fingers)
<b>Total height</b>	10.7 cm (4.2 in.)
<b>Board length</b>	28.6 cm (11.257 in.) (does not include connector overhang/extender)
<b>Weight</b>	406 g (13.1 oz. tray)

**HEADQUARTERS SUN MICROSYSTEMS, INC.**, 901 SAN ANTONIO ROAD, PALO ALTO, CA 94303-4900 USA  
PHONE: 650 960-1300 OR 800-555-9SUN INTERNET: [www.sun.com](http://www.sun.com)



We're the dot in .com™

## SALES OFFICES

AFRICA (NORTH, WEST, AND CENTRAL): +33-1-3067-4680 • ARGENTINA: +54-11-4317-5600 • AUSTRALIA: +61-2-9844-5000 • AUSTRIA: +43-1-60563-0 • BELGIUM: +32-2-716-79-11 • BRAZIL: +55-11-5187-2100 • CANADA: +905-477-6745 • CHILE: +56-2-372-4500  
COLOMBIA: +571-629-2323 • COMMONWEALTH OF INDEPENDENT STATES: +7-502-935-8411 • CZECH REPUBLIC: +420-2-33-00-93-11 • DENMARK: +45-4556-5000 • EGYPT: +202-570-9442 • ESTONIA: +372-6-308-900 • FINLAND: +358-9-525-561 • FRANCE: +33-01-30-67-50-00  
GERMANY: +49-89-46008-0 • GREECE: +30-1-618-8111 • HUNGARY: +36-1-202-4415 • ICELAND: +354-563-3010 • INDIA: +91-80-559-9595 • IRELAND: +353-1-8055-666 • ISRAEL: +972-9-951-3465 • ITALY: +39-039-60551 • JAPAN: +81-3-5717-5000  
KAZAKHSTAN: +7-3272-466774 • KOREA: +822-3469-0114 • LATVIA: +371-750-3700 • LITHUANIA: +370-729-8468 • LUXEMBOURG: +352-49-11-33-1 • MALAYSIA: +603-264-9988 • MEXICO: +52-5-258-6100 • THE NETHERLANDS: +31-33-450-1234 • NEW ZEALAND: +64-4-499-2344  
NORWAY: +47-2202-3900 • PEOPLE'S REPUBLIC OF CHINA: BEIJING: +86-10-6803-5588; CHENGDU: +86-28-619-9333; GUANGZHOU: +86-20-8755-5900; HONG KONG: +852-2802-4188; SHANGHAI: +86-21-6466-1228 • POLAND: +48-22-874-7800 • PORTUGAL: +351-21-4134000  
RUSSIA: +7-502-935-8411 • SINGAPORE: +65-438-1888 • SLOVAK REPUBLIC: +421-7-4342-94-85 • SOUTH AFRICA: +2711-805-4305 • SPAIN: +34-91-596-9900 • SWEDEN: +46-8-623-90-00 • SWITZERLAND: +41-1-825-7111 • TAIWAN: +886-2-2514-0567 • THAILAND: +662-636-1555  
TURKEY: +90-212-236-3300 • UNITED ARAB EMIRATES: +971-4-366333 • UNITED KINGDOM: +44-1-276-20444 • UNITED STATES: +1-800-555-9SUN OR +1-650-960-1300 • VENEZUELA: +58-2-905-3800 • WORLDWIDE HEADQUARTERS: +1-800-555-9SUN OR +1-650-960-1300



Specifications are subject to change without notice. © 2000 Sun Microsystems, Inc. All rights reserved. Sun, Sun Microsystems, the Sun logo, Solaris, Ultra, Java 3D, and We're the dot in .com are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the United States and other countries. OpenGL is a registered trademark of Silicon Graphics, Inc. LFC1.4 3/00 DE1148/0/60K