# Redefine high-performance with an uncompromising desktop series.

**The Sun™ Ultra™ 1 series with Creator and Creator3D technology: uniprocessor desktop workstations that combine exceptional processor speed, high-bandwidth networking, accelerated graphics, and outstanding application performance.**

The Ultra™ 1 series with Creator3D technology brings you all the fast image processing and MPEG video decompression of Creator graphics, plus accelerated 24-bit, double- and Z-buffered 3-D rendering. Sun's 24-bit, single-buffered 2-D graphics and imaging enables you to pan, zoom, rotate, convolve, and perform color conversion at unprecedented speeds.

The UltraSPARC Port Architecture (UPA) is a crossbar-switched interconnect that enables multiple simultaneous data transfers.

All the Ultra 1 systems are built around the same core technology, the UltraSPARC™-I microprocessor. These workstations combine high processor speeds with an efficient four-way superscalar design for unprecedented desktop performance.

Creator and Creator3D graphics, tightly coupled to the processor through the UPA interconnect, allow the entire system to act as a graphics engine, utilizing floating-point processor speed, VIS capabilities, and memory capacity to their fullest. At the same time, 3D-RAM technology combines the best features of DRAM, SRAM, and VRAM onto one chip.

The UltraSPARC processors' revolutionary Visual Instruction Set (VIS™) is the industry's most flexible and comprehensive array of on-chip multimedia, graphics, and imaging technologies. Because these systems are designed for compute-intensive and visualization-demanding applications, key ISVs are signing up to further develop our innovative UltraComputing™ technology.

For MCAD, EDA, oil and gas exploration, software development, medical imaging, and ETCA, as well as rendering with Adobe® Photoshop and Web publishing, you won't find better, more economical solutions than Sun's Ultra 1 Creator and Creator3D series.

# Sun Ultra 1 Series Specifications

## Processor Options

| | |
|---|---|
| Architecture | Superscalar SPARC™ Version 9, UltraSPARC |
| Memory management | MMU with 64 I-TLB entries and 64 D-TLB entries, 8192 hardware supported contexts |
| Cache | 16-KB data and 16-KB instruction on chip<br>Secondary: 512-KB external |

## Main Memory

Total of 8 SIMM memory slots available (1GB maximum)
16-, 32-, 64-, and 128-MB SIMM expansion
128MB maximum (with 16-MB SIMMs, in pairs)
256MB maximum (with 32-MB SIMMs, in pairs)
512MB maximum (with 64-MB SIMMs, in pairs)
1GB maximum (with 128-MB SIMMs, in pairs)

## Standard Interfaces

| | |
|---|---|
| Network | Model 170 entry configurations: Ethernet, twisted pair standard (10-BaseT) or AUI for external transceiver<br>Model 170E/200E Creator/Creator3D: Ethernet/Fast Ethernet, twisted pair standard (10-BaseT and 100-BaseT) or MII for external transceiver |
| I/O | Model 170 entry configurations: 10-MB/sec fast SCSI-2 (synchronous)<br>Model 170E/200E Creator/Creator3D: 20-MB/sec fast/wide SCSI-2 (synchronous) |
| Serial | Two RS-232C/RS423 serial ports (DB25) |
| Parallel | Centronics-compatible parallel port (DB25) |
| Audio | 16-bit audio, 8 kHz to 48 kHz; internal speaker and external microphone |
| Expansion Bus | SBus (IEEE 1496)<br>Model 170 entry configurations: Three SBus expansion slots; 32/64-bit data bus width<br>Model 170E/200E Creator/Creator3D: Two SBus expansion slots; 32/64-bit data bus width |

## Mass Storage and Media

| | |
|---|---|
| Internal floppy disk | Optional 3.5-in. MS-DOS/IBM compatible (720 KB, 1.2 MB, 1.44 MB formatted) |
| Internal CD | Optional 644 MB SunCD,™ 12X-speed, Photo CD compatible |
| Internal tape | Optional 12- to 24-GB DDS3 4-mm or 14-GB 8-mm |
| Internal disk | Up to two 3.5- x 1-in. (2.1 GB, 4.2 GB formatted) |
| External desktop storage | Disk: 2.1- to 4.2-GB SPARCstorage™ UniPack,™ 12.6- to 25.2-GB SPARCstorage MultiPack,™ 31.5- to 126-GB SPARCstorage Array<br>Tape: 2.5-GB QIC; 20- to 40-GB 8-mm, 4- to 8-GB 4-mm DDS2, 12- to 24-GB 4-mm DDS3, 72- to 144-GB 4-mm DDS3 auto-loader; 140-GB SPARCstorage Library Model 8/140 |

## Sun Ultra 1 Graphics and Imaging

| | |
|---|---|
| TurboGX | 8-bit 2-D/3-D wireframe, up to 1152 x 900 at 76 Hz |
| Creator | Accelerated 24-bit 2-D/3-D graphics and imaging with 8-bit overlay plane, high-speed convolution, rotation, panning, zooming, color conversion, up to 1280 x 1024 at 76 Hz, stereo 960 x 680 at 112 Hz |
| Creator3D | High-performance 3-D graphics, 24-bit double buffering with 8-bit overlay planes, 28-bit Z-buffer, 4-bit stencil support, transparency, Gouraud shading, anti-aliasing, depth-cueing, up to 1280 x 1024 at 76 Hz, stereo 960 x 680 at 112 Hz |
| Ultra 1 with Freedom Series | Very high performance 3-D graphics, Gouraud shading, with Phong shading, anti-aliasing, depth-cueing, alpha blending, high-speed hardware texture mapping and MIP mapping, dynamic pixel allocation, stereo viewing option, video in/out option, up to 1536 x 1280 at 60 Hz |

## Monitor Options

| | |
|---|---|
| 17-in. color | 1152 x 900 resolution, 76- or 66-Hz refresh rate, 100 dots per inch<br>1280 x 1024 resolution, 76- or 66-Hz refresh rate, 110 dots per inch<br>960 x 680 resolution, 112-Hz refresh rate, 81 dots per inch |
| 20-in. color | 1152 x 900 resolution, 76- or 66-Hz refresh rate, 84 dots per inch<br>1280 x 1024 resolution, 76- or 66-Hz refresh rate, 93 dots per inch<br>960 x 680 resolution, 112-Hz refresh rate, 70 dots per inch |

## Input Devices

| | |
|---|---|
| Keyboard | Sun Type 5; AT 101 or UNIX® layout available<br>More than 18 international keyboards available |
| Mouse | Opto-mechanical, 3-button |
| Microphone | SunMicrophone™ II |
| Color camera | Optional SunVideo and SunCamera™ |

## Software

| | |
|---|---|
| Operating system | Solaris™ 2.5 operating environment, Solaris NEO™ 2.0, Solaris OpenStep 1.0 |
| Windowing system | OpenWindows™ Version 3.5, Common Desktop Environment Version 1.0.1 |
| Development environments | Sun WorkShop,™ Internet WorkShop 1.0, WorkShop OpenStep 1.0 |
| Languages | C, C++, Pascal, FORTRAN, Java™ |
| Networking | ONC,™ NFS,™ TCP/IP, SunLink™ OSI, MHS, IPX/SPX, DCE |
| Graphics | XGL,™ XIL,™ OpenGL, Xlib, PostScript™ |

## Environment

| | |
|---|---|
| AC power | 100-240 VAC, 47-63 Hz, 0.4 K VA |
| Operating | 5° C to 40° C (41° F to 104° F)<br>20% to 80% relative humidity, noncondensing |
| Nonoperating | –40° C to 60° C (–4° F to 140° F) 5% to 93% relative humidity, noncondensing |
| Operating acoustic noise | 5.4 bels |
| Idling acoustic noise | 5.2 bels |

Declared noise emissions in accordance with ISO 9296, measured at 23° C

## Regulations

Meets or exceeds the following requirements:

| | |
|---|---|
| Safety | UL 1950, CSA C22.2 No. 950, TUV EN 60950, CB Scheme with Nordic deviations EMKO-TSE (74-SEC) 203, ZH1/618 |
| RFI/EMI | FCC Class B, DOC Class B, VCCI Class 2, EN 55022 Class B, EN61000-3-2 |
| Immunity | EN 50082-1 |
| X-ray | DHHS 21 Subchapter J; PTB German X-ray Decree |

## Dimensions and Weights

**Sun Ultra 1 chassis**

| | |
|---|---|
| Height | 10.25 cm (4.03 in.) |
| Width | 41.75 cm (16.44 in.) |
| Depth | 44.30 cm (17.44 in.) |
| Shipping weight | 9.55 to 12.50 kg (21.0 to 27.5 lb.) |

**17-in. color monitor**

| | |
|---|---|
| Height | 41.4 cm (16.4 in.) |
| Width | 40.6 cm (16.0 in.) |
| Depth | 45.0 cm (17.7 in.) |
| Shipping weight | 25.9 kg (57.0 lb.) |

**20-in. color monitor**

| | |
|---|---|
| Height | 47.1 cm (18.5 in.) |
| Width | 47.5 cm (18.7 in.) |
| Depth | 49.5 cm (19.5 in.) |
| Shipping weight | 36.5 kg (80.3 lb.) |

## Upgrades

Upgrades are available from SPARCstation systems.

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**Sun microsystems**

THE NETWORK IS THE COMPUTER™

### Sales Offices

Argentina: +54-1-311-0700
Australia: +61-2-9844-5000
Austria: +43-1-60563-0
Belgium: +32-2-716-7911
Brazil: +55-11-524-8988
Canada: +905-477-6745
Chile: +56-2-638-6364
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Commonwealth of Independent States: +7-502-935-8411
Czech/Slovak Republics: +42-2-205-102-33
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Finland: +358-9-525-561
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Germany: +49-89-46008-0
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Hong Kong: +852-2802-4188
Hungary: +36-1-202-4415
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Ireland: +353-1-8055-666
Israel: +972-9-956-9250
Italy: +39-39-60551
Japan: +81-3-5717-5000
Korea: +822-3469-0114
Latin America/Caribbean: +1-415-688-9464
Latvia: +371-755-11-33
Lithuania: +370-729-8468
Luxembourg: +352-491-1331
Malaysia: +603-264-9988
Mexico: +52-5-258-6100
Netherlands: +31-33-450-1234
New Zealand: +64-4-499-2344
Norway: +47-2218-5800
People's Republic of China:
    Beijing: +86-10-6849-2828
    Chengdu: +86-28-678-0121
    Guangzhou: +86-20-8777-9913
    Shanghai: +86-21-6247-4068
Poland: +48-22-658-4535
Portugal: +351-1-412-7710
Russia: +7-502-935-8411
Singapore: +65-224-3388
South Africa: +2711-805-4305
Spain: +34-1-596-9900
Sweden: +46-8-623-90-00
Switzerland: +41-1-825-7111
Taiwan: +886-2-514-0567
Thailand: +662-636-1555
Turkey: +90-212-236-3300
United Arab Emirates: +971-4-366-333
United Kingdom: +44-1-276-20444
United States: +1-800-821-4643
Venezuela: +58-2-286-1044
Worldwide Headquarters: +1-415-960-1300