Overview

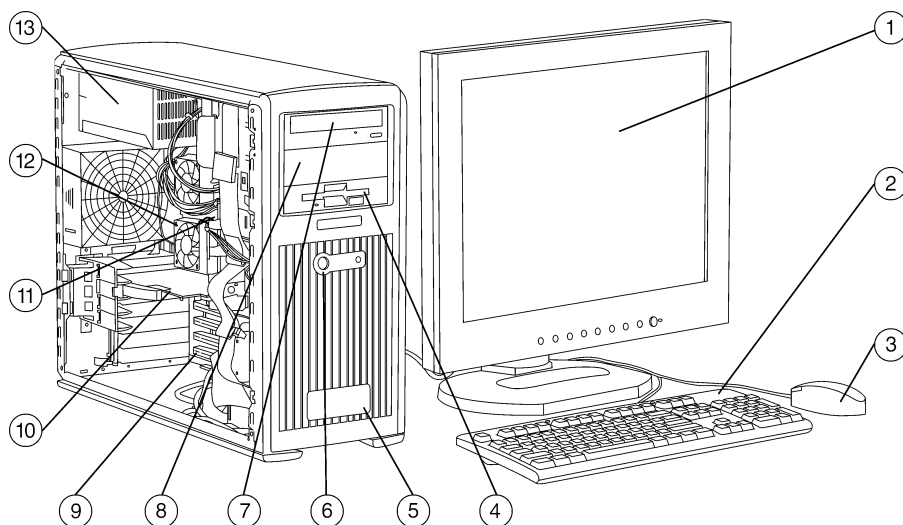### At A Glance

- Supports up to two Intel® Xeon™ processors, up to 3.06 GHz
- 512 KB L2 cache integrated on processor
- Intel E7505 chipset with dual memory channels (4.2 GB/s throughput) and 533 MHz front side bus
- PC2100 ECC registered DDR-266 expandable to 12 GB (with 2GB DIMMs)
- Ultra320 SCSI hard drives (10,000 or 15,000 rpm) or Ultra ATA/100 hard drives (7200 rpm)
- Integrated dual-channel Ultra320 SCSI and Ultra ATA/100 controllers
- Up to 730 GB of high-performance internal storage
- Choice of leadership graphics: NVIDIA Quadro NVS 200, NVIDIA Quadro NVS 400, NVIDIA Quadro4 380XGL, NVIDIA Quadro2 EX, ATI FIRE GL 8800, ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL, NVIDIA Quadro4 980 XGL, NVIDIA Quadro4 900 XGL, 3Dlabs Wildcat III 6110, ATI FIRE GL X1-256p, NVIDIA Quadro FX2000
- Support for up to 8 displays
- Integrated Intel 10/100/1000 Mb Ethernet adapter
- Six total slots – five PCI and one AGP 8X
- Eight bays (five internal, three external)
- CD-ROM, CD-RW, DVD-ROM, or DVD+RW
- Windows® XP Professional, Windows 2000 Professional, or Red Hat Linux
- Protected by HP services, including a three-year limited warranty in many countries. Certain restrictions and exclusions apply. Three-year onsite labor not available in all countries.

1. HP monitor (optional)
2. HP keyboard
3. HP mouse
4. Floppy drive
5. Port cover: USB, IEEE-1394, microphone, headphone
6. On-off button
7. Optical drive
8. Available drive bay
9. Expansion slots
10. Graphics slot
11. Memory sockets
12. Processor(s)
13. Power supply

QuickSpecs

HP Workstation xw8000

Standard Features

Processor	Intel Xeon processor 2.4-GHz, 512-KB cache, 533-MHz front side bus	
	Intel Xeon processor 2.66-GHz, 512-KB cache, 533-MHz front side bus	
	Intel Xeon processor 2.8-GHz, 512-KB cache, 533-MHz front side bus	
	Intel Xeon processor 3.06-GHz, 512-KB cache, 533-MHz front side bus	
Cache Memory	512-KB integrated, full speed Level 2 cache per processor	
Chipset	Intel E7505 chipset	
Processor Upgradability	Upgradable to dual processor	
Memory	Standard	512-MB of PC2100 ECC registered DDR-266
	Maximum	12-GB of PC2100 ECC registered DDR-266*
Network Controller	Integrated Intel 10/100/1000 Mb Ethernet adapter	
Expansion Slots	I/O (Total)	6, up to 5 available
	PCI-X 1.0 64b/133MHz	1, up to 1 depending on model
	PCI-X 1.0 64b/100MHz	2, up to 2 depending on model
	PCI 2.2 32b/33MHz	2, up to 2 depending on model
	AGP 8x Pro 50 (50w)	1, up to 1 depending on model
Expansion Bays	(Total/Available)	8 total / 5 available
	Internal 3.5 inch	5 bays / 4 available
	External 5.25 inch	2 bays / 1 available
	External 3.5 inch	1 external floppy drive
Controllers	SCSI	Integrated dual channel Ultra320 SCSI controller
	Ultra ATA/100	Integrated Ultra ATA/100
Storage	Diskette Drive	1.44 MB
	Removable Media	CD-ROM, DVD-ROM, CD-RW, or DVD+RW
	Hard Drive	40-GB, 80-GB, 120-GB, 160-GB Ultra ATA/100 EIDE (7,200 rpm)
		18-GB, 36-GB, or 73-GB Ultra320 SCSI (15,000 rpm);
		36-GB, 73-GB, or 146-GB Ultra320 SCSI (10,000 rpm)
Interfaces	Parallel	One 25-pin DIN (rear)
	USB 2.0	6 (2 front, 4 rear)
	Serial	One 9-pin DIN (rear)
	Ultra320 SCSI	2 (68-pin internal and optional 68-pin external)
	Ultra ATA/100	2 (internal)
	IEEE 1394	2 (1 front, 1 back)
	Keyboard (PS/2)	1 (rear)
	Pointing Device (PS/2 mouse)	1 (rear)
	Video	choice of professional graphics options
	Network	1 RJ-45 connector (rear)
	Microphone Jack	2 (front & rear)
	Headphone Jack	1 (front)
	Line-In Jack	1 (rear)
	Line-Out Jack	1 (rear)

QuickSpecs

Standard Features

Graphics *One of the following:*	NVIDIA Quadro NVS 200 (AGP) NVIDIA Quadro NVS 400 (AGP) NVIDIA Quadro2 EX (AGP) NVIDIA Quadro4 380 XGL (AGP) ATI FIRE GL 8800 (AGP) ATI FIRE GL Z1-128p (AGP) NVIDIA Quadro4 750 XGL (AGP) NVIDIA Quadro4 980 XGL (AGP) NVIDIA Quadro4 900 XGL (AGP) 3Dlabs Wildcat III 6110 (AGP) ATI FIRE GL X1-256p (AGP) NVIDIA Quadro FX2000
Input devices	Easy Access Keyboard (PS/2) 3-Button Mouse (PS/2)
Audio	AC97/16-bit stereo full-duplex and Integrated speaker
Software	Microsoft Windows XP Professional preinstall Microsoft Windows 2000 Professional, service pack 3, preinstall Red Hat Linux 7.3 preinstalled, preconfigured and supported Red Hat Linux 8.0 supported
Management	**Bios Features** Advanced Configuration and Power Interface (ACPI) 1.0b Desktop Management Interface (DMI) 2.0 System Management (SM) Bios 2.3 **NIC Hardware** Remote Wakeup Wake on LAN (WoL) **Web downloads** System Software Manager Insight Management Agent Altiris Express Remote ROM Flash Remote Shut Down
Security	Diskette write and boot control Flash ROM lock Network server mode Parallel interface control Power-on password Serial interface control Setup password Cable lock provision
Power Supply	450 watts, with Power Factor Correction
Service and Support	Protected by HP services including a three-year, limited warranty with three-year parts coverage, three year, on-site service, and three-year labor (in many countries); 7 x 24 hardware technical phone support and on-line support through the Internet; Pre-Failure Warranty coverage of hard drives, memory. **NOTE**: Certain restrictions and exclusions apply. Consult the customer support center for details. Three-year, onsite and labor not available in all countries.

QuickSpecs

Standard Features –Pre-configured Global Models

X8X/2.4/36S/512/Xd	Processor	Intel Xeon processor 2.4-GHz
470047-461	**Cache Memory**	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional
X8K/2.4/18K/512/Xd	Processor	Intel Xeon processor 2.4-GHz
470046-976	**Cache Memory**	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
		ATI FIRE GL X1
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional

Standard Features –Pre-configured Global Models

X8X/2.4/18K/512/Xd	Processor	Intel Xeon processor 2.4-GHz
470046-977	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

X8X/2.4/36S/512/Xc	Processor	Intel Xeon processor 2.4-GHz
470046-978	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

QuickSpecs

Standard Features –Pre-configured Global Models

X8K/2.4/40A/512/Xc *470046-979*	Processor	Intel Xeon processor 2.4-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM
	Hard Drive	40-GB Ultra ATA/100 EIDE (7,200 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional
X8X2.4/40A/512/Xc *470046-980*	Processor	Intel Xeon processor 2.4-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM
	Hard Drive	40-GB Ultra ATA/100 EIDE (7,200 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

QuickSpecs

Standard Features –Pre-configured Global Models

X8K/2.4/36S2/Xc *470046-981*	Processor	Intel Xeon processor 2.4-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional
X8X/2.66/36S/512/Xd *470047-466*	Processor	Intel Xeon processor 2.66-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

QuickSpecs

Standard Features –Pre-configured Global Models

X8K/2.66/18K/512/Xd		
470046-998	**Processor**	Intel Xeon processor 2.66-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional

X8X/2.66/18K/512/Xd		
470047-001	**Processor**	Intel Xeon processor 2.66-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	DVD-ROM
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

Standard Features –Pre-configured Global Models

X8K/2.66/18K/512/Xr *470047-002*	**Processor** **Cache Memory** **Memory**	Intel Xeon processor 2.66-GHz 512-KB integrated L2 512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive **Hard Drive**	CD-RW Drive 18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse **OS**	HP 3-button mouse (PS/2) Microsoft Windows 2000 Professional
X8X/2.66/18K/512/Xr *470047-003*	**Processor** **Cache Memory** **Memory**	Intel Xeon processor 2.66-GHz 512-KB integrated L2 512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive **Hard Drive**	CD-RW Drive 18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse **OS**	HP 3-button mouse (PS/2) Microsoft Windows XP Professional

QuickSpecs

HP Workstation xw8000

Standard Features –Pre-configured Global Models

X8K/2.66/36S/512/Xc *470047-004*		
	Processor	Intel Xeon processor 2.66-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional
X8X/2.66/36S/512/Xc *470047-005*		
	Processor	Intel Xeon processor 2.66-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

Standard Features –Pre-configured Global Models

X8X/2.8/36S/512/Xd *470047-471*	Processor	Intel Xeon processor 2.8-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional
X8K/2.8/18K/512/Xd *470047-019*	Processor	Intel Xeon processor 2.8-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional

QuickSpecs

Standard Features –Pre-configured Global Models

X8X/2.8/18K/512/Xd		
470047-020	**Processor**	Intel Xeon processor 2.8-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

X8K/2.8+/18K/1/Xr		
470047-021	**Processor**	2 Intel Xeon processors 2.8-GHz
	Cache Memory	512-KB integrated L2
	Memory	1GB (2x512-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-RW Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional

QuickSpecs

Standard Features –Pre-configured Global Models

X8X/2.8+/18K/1/Xr *470047-022*	Processor	2 Intel Xeon processors 2.8-GHz
	Cache Memory	512-KB integrated L2
	Memory	1GB (2x512-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-RW Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional
X8X/2.8/36S/512/Xc *470047-023*	Processor	Intel Xeon processor 2.8-GHz
	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro2 EX LP NVIDIA Quadro4 380XGL ATI FIRE GL 8800 ATI FIRE GL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL 3DLabs Wildcat III 6110 ATI FIRE GL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

Standard Features –Pre-configured Global Models

X8K/2.8/36S/512/Xc	Processor	Intel Xeon processor 2.8-GHz
470047-024	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional
X8X/3.06/36S/512/Xd	Processor	Intel Xeon processor 3.06-GHz
470054-343	Cache Memory	512-KB integrated L2
	Memory	512MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft XP Professional

Standard Features –Pre-configured Global Models

X8K/3.06/18K/1/Xd	Processor	Intel Xeon processor 3.06-GHz
470056-556	Cache Memory	512-KB integrated L2
	Memory	1-GB (2x512-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional
X8X/3.06/18K/1/Xd	Processor	Intel Xeon processor 3.06-GHz
470056-557	Cache Memory	512-KB integrated L2
	Memory	1-GB (2x512-MB) PC2100 ECC registered DDR-266
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

Standard Features –Pre-configured Global Models

X8K/3.06+/18K/1/Xr	**Processor**	2 Intel Xeon processor 3.06-GHz
470056-559	**Cache Memory**	512-KB integrated L2
	Memory	1-GB (2x512-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-RW Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional

X8X/3.06+/18K/1/Xr	**Processor**	2 Intel Xeon processor 3.06-GHz
470056-560	**Cache Memory**	512-KB integrated L2
	Memory	1-GB (2x512-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-RW Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

Standard Features –Pre-configured Global Models

X8K/3.06+/18K/1/Xr	Processor	2 Intel Xeon processor 3.06-GHz
470056-560	**Cache Memory**	512-KB integrated L2
	Memory	1-GB (2x512-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-RW Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional

X8X/3.06/36S/512/Xc	Processor	Intel Xeon processor 3.06-GHz
470056-561	**Cache Memory**	512-KB integrated L2
	Memory	512-MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows XP Professional

Standard Features –Pre-configured Global Models

X8K/3.06/36S/512/Xc	**Processor**	Intel Xeon processor 3.06-GHz
470056-562	**Cache Memory**	512-KB integrated L2
	Memory	512-MB (2x256-MB) PC2100 ECC registered DDR-266
	Optical Drive	CD-ROM Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please choose a graphics card option below:
		NVIDIA Quadro NVS 200
		NVIDIA Quadro NVS 400
		NVIDIA Quadro2 EX LP
		NVIDIA Quadro4 380XGL
		ATI FIRE GL 8800
		ATI FIRE GL Z1-128p
		NVIDIA Quadro4 750 XGL
		NVIDIA Quadro4 980 XGL
		NVIDIA Quadro4 900 XGL
		3DLabs Wildcat III 6110
		ATI FIRE GL X1-256p
		NVIDIA Quadro FX2000
		NOTE: Please see Part Numbers in After market options/Standalone accessories section.
	Mouse	HP 3-button mouse (PS/2)
	OS	Microsoft Windows 2000 Professional

QuickSpecs

HP Workstation xw8000

Configure-to-order options

When buying a system, you have many configuration options.

Processor	
	Intel Xeon processor 2.4-GHz, 512-KB cache, 533-MHz front side bus
	Intel Xeon processor 2.66-GHz, 512-KB cache, 533-MHz front side bus
	Intel Xeon processor 2.8-GHz, 512-KB cache, 533-MHz front side bus
	Intel Xeon processor 3.06-GHz, 512-KB cache, 533-MHz front side bus
	2nd Xeon processor 2.4-GHz, 512-KB cache, 533-MHz front side bus
	2nd Xeon processor 2.66-GHz, 512-KB cache, 533-MHz front side bus
	2nd Xeon processor 2.8-GHz, 512-KB cache, 533-MHz front side bus
	2nd Xeon processor 3.06-GHz, 512-KB cache, 533-MHz front side bus
	NOTE: When adding an additional processor, both processors must have the same speed and cache size.

Memory (DDR-SDRAM)	
	128-MB PC2100 ECC registered DDR-266
	256-MB PC2100 ECC registered DDR-266
	512-MB PC2100 ECC registered DDR-266
	1-GB PC2100 ECC registered DDR-266
	1.5-GB PC2100 ECC registered DDR-266
	2-GB PC2100 ECC registered DDR-266
	3-GB PC2100 ECC registered DDR-266
	4-GB PC2100 ECC registered DDR-266

Monitors	
	HP L1825 Flat Panel Color Monitor (18-inch, Carbon/Silver)
	HP L1925 Flat Panel Color Monitor (19-inch, Carbon/Silver)
	HP L2025 Flat Panel Color Monitor (20-inch, Carbon/Silver)
	HP p930 Flat screen CRT Monitor (19-inch, Carbon/Silver)
	HP p1130 Flat screen CRT Monitor (21-inch, Carbon/Silver)

Graphics	
	NVIDIA Quadro NVS 200 (AGP)
	NVIDIA Quadro NVS 400 (AGP)
	NVIDIA Quadro2 EX (AGP)
	NVIDIA Quadro4 380XGL (AGP)
	ATI FIRE GL 8800 (AGP)
	ATI FIRE GL Z1-128p (AGP)
	NVIDIA Quadro4 750 XGL (AGP)
	NVIDIA Quadro4 980 XGL (AGP)
	NVIDIA Quadro4 900 XGL (AGP)
	3DLabs Wildcat III 6110
	ATI FIRE GL X1-256p (AGP)
	NVIDIA Quadro FX2000 (AGP)

Primary hard disks	
	40-GB Ultra ATA/100 EIDE (7,200 rpm)
	80-GB Ultra ATA/100 EIDE (7,200 rpm)
	120-GB Ultra ATA/100 EIDE (7,200 rpm)
	36-GB Ultra320 SCSI (10,000 rpm)
	73-GB Ultra320 SCSI (10,000 rpm)
	146-GB Ultra320 SCSI (10,000 rpm)
	18-GB Ultra320 SCSI (15,000 rpm)
	36-GB Ultra320 SCSI (15,000 rpm)
	73-GB Ultra320 SCSI (15,000 rpm)

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Configure-to-order options

Secondary hard disks	40-GB Ultra ATA/100 EIDE (7,200 rpm)
	80-GB Ultra ATA/100 EIDE (7,200 rpm)
	120-GB Ultra ATA/100 EIDE (7,200 rpm)
	36-GB Ultra320 SCSI (10,000 rpm)
	73-GB Ultra320 SCSI (10,000 rpm)
	146-GB Ultra320 SCSI (10,000 rpm)
	18-GB Ultra320 SCSI (15,000 rpm)
	36-GB Ultra320 SCSI (15,000 rpm)
	73-GB Ultra320 SCSI (15,000 rpm)

Third hard disks (SCSI only)	36-GB Ultra320 SCSI (10,000 rpm)
	73-GB Ultra320 SCSI (10,000 rpm)
	146-GB Ultra320 SCSI (10,000 rpm)
	18-GB Ultra320 SCSI (15,000 rpm)
	36-GB Ultra320 SCSI (15,000 rpm)
	73-GB Ultra320 SCSI (15,000 rpm)

Optical Drives	48X CD-ROM
	48X CD-RW
	16X DVD-ROM
	48X CD-RW/DVD-ROM combo
	4.7GB DVD+RW

Input devices	Easy Access Keyboard (PS/2)
	3-Button Mouse (PS/2)
	Scroll Mouse (PS/2)

External SCSI connector	Ultra320 SCSI back panel connect on chassis (2nd channel of dual-channel Ultra320)

Operating System	Windows XP Professional preloaded; incl. Windows XP recovery CD
	Windows 2000 Professional SP3 preloaded; incl. Windows 2000 recovery CD

QuickSpecs

After-market options/Standalone accessories

2nd Processor	Intel Xeon processor 2.4-GHz, 512-KB cache, 533-MHz front side bus	310485-B21
	Intel Xeon processor 2.66-GHz, 512-KB cache, 533-MHz front side bus	310486-B21
	Intel Xeon processor 2.8-Hz, 512-KB cache, 533-MHz front side bus	310487-B21
	Intel Xeon processor 3.06-Hz, 512-KB cache, 533-MHz front side bus	AA849A
	NOTE: When adding an additional processor, both processors must have the same speed and cache size.	

Memory	128 MB PC2100 ECC registered DDR-266	310478-B21
	256 MB PC2100 ECC registered DDR-266	310479-B21
	512 MB PC2100 ECC registered DDR-266	310480-B21
	1 GB PC2100 ECC registered DDR-266	310481-B21
	2 GB PC2100 ECC registered DDR-266	313305-B21

Graphics	NVIDIA Quadro NVS 200 (AGP)	273304-B21
	NVIDIA Quadro NVS 200 DVI Cables	284281-B21
	NVIDIA Quadro NVS 400 (AGP)	273305-B21
	NVIDIA Quadro2 EX LP (AGP)	250066-B21
	NVIDIA Quadro4 380XGL (AGP)	310477-B21
	ATI FIRE GL 8800 (AGP)	314650-B21
	ATI FIRE GL Z1-128p (AGP)	AA624A
	NVIDIA Quadro4 980 XGL (AGP)	310517-B21
	3DLabs Wildcat III 6110 (AGP)	271685-B21
	ATI FIRE GL X1-256p(AGP)	310519-B21
	NVIDIA Quadro FX2000	DE806A

Hard Drives	*Ultra320 SCSI Drives*	
	36-GB Ultra320 SCSI (10,000 rpm)	310503-B21
	73-GB Ultra320 SCSI (10,000 rpm)	310504-B21
	146-GB Ultra320 SCSI (10,000 rpm)	310505-B21
	18-GB Ultra320 SCSI (15,000 rpm)	310506-B21
	36-GB Ultra320 SCSI (15,000 rpm)	310507-B21
	73-GB Ultra320 SCSI (15,000 rpm)	310508-B21
	Ultra ATA Drives	
	40-GB Ultra ATA/100 EIDE (7,200 rpm)	310498-B21
	80-GB Ultra ATA/100 EIDE (7,200 rpm)	310499-B21
	120-GB Ultra ATA/100 EIDE (7,200 rpm)	310500-B21
	160-GB Ultra ATA/100 EIDE (7,200 rpm)	DE204A

Optical Drives	48x CD-ROM Drive	310509-B21
	48X/24X/48X CD-RW	DE205A
	16X DVD-ROM Drive	311963-B21
	48X CD-RW/DVD-ROM Drive	DE206A
	4.7GB DVD+R/RW Drive – 300i	AA851A

QuickSpecs

After-market options/Standalone accessories

Storage Controllers	Ultra320 Dual Channel SCSI Controller Card (PCI)	310502-B21
	Ultra320 SCSI back panel connect on chassis (2nd channel of dual-channel U320)	310482-B21
	Adaptec SCSI RAID 2120S Card	AA850A
	5-device SCSI cable	312205-B21

Rack options	StorageWorks Enclosure 4314R	190209-001
	Rack mounting kits	308288-B21
	Fixed shelf kit	253449-B21
	Sliding Shelf Kit	234672-B21
	Depth Adjustable Rails	332558-B21

Backup Devices	Exabyte 33/66-GB VXA-1 IDE Tape Drive	237109-B22
	Exabyte 33/66-GB VXA-1 SCSI Tape Drive	237108-B22
	TR5 10/20-GB iTape Drive (IDE, car bon)	294243-B22
	Iomega ZIP 250-MB (internal, IDE, carbon)*	294416-B22

Communications	Intel Pro/100+ 10/100 PCI card	310483-B21
	Intel Pro/1000 XT Server Adapter Gigabit PCI card	310484-B21
	Intel Pro 1000 MT NIC	DC193A
	V90 56K PCI WIN Modem	239137-xxx
	V90 56K International Soft WIN Modem*	259032-B24

Input devices	PS/2 Easy Access keyboard (carbon/silver)	267145-xx5
	Three button mouse-carbon (PS2)	269192-B24
	Scroll Mouse-Carbon (PS2)	170299-B23
	Spaceball 4000	112138-B23
	Spaceball 5000	DE934A
	USB optical mouse (carbon/silver)	265985-B21
	USB scroll mouse (carbon)	195255-B25
	Mercury wireless keyboard with wireless optical mouse	300403-xx8

Security	USB Fingerprint Identification	240238-B21
	USB SmartCard Keyboard	267147-008
	Corvadis USB Enhanced SmartCard Reader	240154-B21

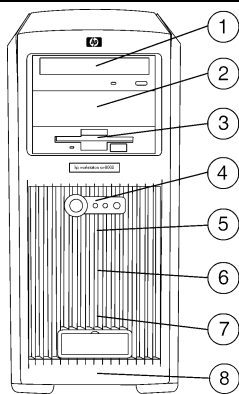| Monitors	HP L1825 Flat Panel Color Monitor (18-inch, Carbon/Silver)	303486-003
	HP L1925 flat panel color monitor (19-inch, carbon/silver)	P9626A
	HP L2025 Flat Panel Color Monitor (20-inch, Carbon/Silver)	303102-003
	HP p930 Flat screen CRT Monitor (19-inch, Carbon/Silver)	302268-003
	HP p1130 Flat screen CRT Monitor (21-inch, Carbon/Silver)	302270-003

Memory

STANDARD MEMORY

This system supports PC-2100 DDR-266 DDR-SDRAM ECC. The mainboard is based on the E7505 chipset and has 6 DIMM slots with dual memory channels (4.2 GB/s throughput). It ships with 512-MB as standard. It can support a maximum of 12-GB of RAM when optional memory upgrades are included. Memory must be installed in like pairs. Only 266-MHz memory speed is supported.

Following are memory options available from HP:

- 128 MB upgrade kit PC2100 ECC registered DDR-266   310478-B21

- 256 MB upgrade kit PC2100 ECC registered DDR-266   310479-B21

- 512 MB upgrade kit PC2100 ECC registered DDR-266   310480-B21

- 1 GB upgrade kit PC2100 ECC registered DDR-266   310481-B21

- 2 GB upgrade kit PC2100 ECC registered DDR-266   313305-B21

QuickSpecs

Storage

D RIVE S UPPORT

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Up to 1	3	Integrated
Optical Drives	Up to 2 total	1, 2	Integrated Ultra ATA/100
CD-ROM Drive		1, 2	Integrated Ultra ATA/100
DVD-ROM Drive		1, 2	Integrated Ultra ATA/100
CD-RW Drive		1, 2	Integrated Ultra ATA/100
16x CD-RW/DVD-ROM		1, 2	Integrated Ultra ATA/100
DVD+RW		1, 2	Integrated Ultra ATA/100
Hard Drives			
Ultra320 SCSI Drives			
1-inch 146-GB 10,000 rpm 73-GB 15,000 rpm 73-GB 10,000 rpm 36-GB 15,000 rpm 36-GB 10,000 rpm 18-GB 15,000 rpm	Up to 5	4, 5, 6, 7, 8	Integrated dual channel Ultra320 SCSI controller
Ultra ATA Drives			
1-inch 160-GB 7200 rpm 120-GB 7200 rpm 80-GB 7200 rpm 40-GB 7200 rpm	Up to 2	5, 6	Integrated Ultra ATA/100 controller
Maximum Storage Capacity			
Internal	730-GB SCSI (assumes 5 SCSI drives installed) 320-GB Ultra ATA		

Technical Specifications

System Unit	Tower Dimensions (HxWxD)	17.7 x 8.3 x 20.30 in/44.9 x 21.0 x 51.5 cm	
	Weight (standard configuration)	40 lb/18 kg	
	Power Supply	Operating Voltage Range	100 VAC to 240 VAC
		Rated Voltage Range	100- VAC to 120 VAC; 200 VAC to 240 VAC
		Rated Line Frequency	50 Hz to 60 Hz
		Rated Input Current	6.4A @ 100 VAC; 3.2A @ 240 VAC
		Maximum Rated Power	692-Watt input, 450-Watt output
		Physical Dimensions (HxWxD)	3.85 x 6.3 x 7.35 in/9.78 x 16 x 18.67 cm
		Weight	<5.7 lb; <2.6 kg
	Temperature (Values are subject to change)	Operating	50° to 95°F/10° to 35 °C
		Non-operating	-40° to 158°F/-40° to 70 °C
	Humidity (non-condensing) (Values are subject to change)	Operating	15% to 80%
		Non-operating	10% to 90%
	Maximum Altitude (nonpressurized)	Operating	10,000 ft/3048 m
		Storage	15,000 ft/4600 m
HP Easy Access Keyboard	**Dimensions** (HxWxD)	18.3 x 6.3 x 1.4 in/46.5 x 16 x 3.6 cm	
	Weight	Approximately 2 lb/0.9 kg	Approximately 2 lb/0.9 kg
	Electrical	Operating Voltage	+5VDC ± 5%
		Power Consumption	50 mA maximum (with 3 LEDs on)
		System Interface	PS/2 mini-din connector
		ESD	CE level 4, 15 kV air discharge
		EMI-RFI	Conforms to FCC rules for a Class B computing device
		PC98	Functionally compliant
	Mechanical	Languages	18 available
		Keycaps	Low-profile design
		Switch Actuation	55 g nominal peak force with tactile feedback
		Switch Life	20 million keystrokes (using Hasco modified tester)
		Switch Type	Contamination resistant membrane
		Key Leveling Mechanism	For all double wide and greater length keys
		Cable Length	6 ft/1.8 m
		PC98-99	Mechanically compliant
		Acoustics	50 dBA maximum sound pressure level
	Environmental	Operating Temperature	50° to 122° F/10° to 50° C
		Non-operating Temperature	−22° to 140° F/−30° to 60° C
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	50° to 122° F/10° to 50° C

QuickSpecs

Technical Specifications

1.44 MB Diskette Drive	Diskette Size	3.5 in	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per Diskette (high/low)	1.44 MB/720 KB	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500/250 Kb/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	94/173 ms
		Settling Time	15 ms
		Latency Average	100 ms
	Cylinders (high/low)	80/80	
	Read/Write Heads	Two	
HP 3-Button Mouse	Dimensions/Weight	Height	1.42 in/3.6 cm
		Length	4.17 in/10.7 cm
		Width	2.87 in/7.4 cm
		Weight	5.20 oz/150 g
	Environmental	Operating Temperature	32° to 104° F/0°C to 40° C
		Non-operating Temperature	–4° to 140° F/–20° to 60°C
		Operating Humidity	10% to 90% (non condensing at ambient)
	Mechanical	Resolution	400 ± 20% DPI
		Tracking Speed	10 in/s Maximum
		Switch Life	1,000,000 operations (using Hasco modified tester)
		Switch Type	Micro-switches
		Tracking Mechanism Life	155 miles/250 km at average speed of 10 in/s
		Cable Length	6 ft/1.8 m
		PC98-99	Mechanically compliant
	Regulatory Approvals	Compliant	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick

Technical Specifications

HP 2-button scroll mouse	Scroll Wheel	8 mm	
	Maximum Rotation Speed	30 mm/s	
	Switch Type	Light force micro-switch	
	Switch Life	1 million operations	
	Mechanical Life	Minimum 200,000 revolutions	
	Environmental	Operating Temperature	50° to 122° F/10° to 50° C
		Non-operating Temperature	-22° to 140° F/-30° to 60° C
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	4 g peak acceleration
	Electrical	Operating Voltage	+5VDC ± 10%
		Power Consumption	15mA
		System Consumption	PS/2 mini-din connector
		ESD	CE level 4, 15 kV air discharge
		EMI-RFI	Conforms to FCC rules for a Class B computing device
		PC98	Functionally compliant
	Mechanical	Resolution	400 ± 20% DPI
		Tracking Speed	10 in/s maximum
		Acceleration	100 in/s
		Switch Actuation	85 g nominal peak force
		Switch Life	1,000,000 operations (using Hasco modified tester)
		Cable Length	2 m
		PC98-99	Mechanically compliant
	Regulatory approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BCIQ, C -Tick	
SpaceBall 4000	Features	Six degrees of freedom motion control through the X, Y, Z axis (pitch, roll, yaw)	
		Certified for leading CAD and DCC applications	
	Dimensions/Weight	Height	3.0 in/7.6 cm
		Length	8.4 in/21.3 cm
		Width	6.0 in/15.2 cm
		Weight	1.4 lb/0.64 kg
	Mechanical	Force range	0.5 - 8.2N (1.8 – 29.5 oz)
		Torque range	6.91 Nmm (0.085 – 0.33 oz-in.)
		Resolution	10-bits
	Serial Specifications	Connector	9-pin D-subminiature receptacle (DB9S)
		Cable Length	Approx. 3.9m (12.8 ft) captive
		Data rate	9600 bps
		Flow control	Xon/Xoff
	Regulatory Approvals	Compliant	UL, cUL, EN 950, EN 60950, CSA, FCC, CE Mark, TUV, CISPR 22, EN 50082, IEC 1000 4-2, IEC 1000-4-3, AS/NZS, VCCI, BSMI, C-Tick

QuickSpecs

Technical Specifications

SpaceBall 5000	**Features**		Six degrees of freedom motion control through the X, Y, Z axis (pitch, roll, yaw)
	Ball Diameter		2.2 in (5.6 cm)
	Dimensions/Weight	Height	3.0 in/7.6 cm
		Length	6.0 in/15.2 cm
		Width	8.4 in/21.3 cm
		Weight	2.1 lbs (9.94 kg)
	Environmental	Operating Temperature	50° to 104° F (10° to 40° C)
		Non-operating Temperature	43° to 140° F (6° to 60° C)
		Operating Humidity	8% to 80% (non-condensing at ambient)
		Non-operating Humidity	5% to 80% (non-condensing at ambient)
	Mechanical	Force range	0.5 - 8.2N / 1.8 – 29.5 oz
		Torque range	0.085 – 0.33 oz-in. (6.91 Nmm)
		Resolution	10 bits
	Serial Specifications	Connector	9-pin D-subminiature receptacle (DB9S)
		Cable Length	12.8 ft. (3.9 m)
		Data rate	9600 bps
		Flow control	Xon/Xoff
	Regulatory Approvals	Compliant	UL, cUL, EN 950, EN 60950, CSA, FCC, CE Mark, TUV, CISPR 22, EN 50082, IEC 1000 4-2, IEC 1000-4-3, AS/NZS, VCCI, BSMI, C-Tick

Technical Specifications

Adaptec SCSI RAID 2120S Card	Dimensions (H x D)	2.5in x 6.6in (6.4cm x 16.8cm) Low profile card
	RAID level	0, 1, 10, 5, JBOD
	Data Transfer Rate	Up to 320 MB/s
	Cache Memory	64 MB (onboard)
	Device Support	Up to 15 SCSI devices
	Bus Type	64-bit/66MHz PCI
		(Also support 32-bit/33MHz PCI)
	Internal Connectors	One 68-pin high-density
	External Connectors	One 68-pin VHDCI
	System Requirements	Intel PC or equivalent with available PCI slot
	Operating Temperature	0° C to 55° C
	Power Requirements	4 amps @ +5V
	Operating System Support	Windows 2000 Professional, Windows XP Professional
	Other	Optimized disk utilization
		Online RAID Level Migration
		Online capacity expansion
		Immediate RAID availability (background initialization)
		S.M.A.R.T. support

Ultra320 SCSI Hard Drives	146 GB, 10K	Capacity	146,815,737,856 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI 68-pin	
		Synchronous Transfer Rate (Maximum)	320 MB/s	
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.55 ms
			Average	4.9 ms
			Full-Stroke	9.20 ms
		Rotational Speed	10,000 rpm	
		Logical Blocks	286,749,488	
		Operating Temperature	41° to 131° F/5° to 55°C	
	73 GB, 15K	Capacity	73,407,865,856 bytes	
		Height	1 in/2.54 cm	
		Width	4 in/10.16 cm	
		Interface	Ultra320 SCSI 68-pin	
		Synchronous Transfer Rate (Maximum)	320 MB/s	
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.4 ms
			Average	3.8 ms
			Full-Stroke	6.7 ms
		Rotational Speed	15,000 rpm	
		Logical Blocks	143,374,738	
		Operating Temperature	41° to 131° F/5° to 55°C	

Technical Specifications

Ultra320 SCSI Hard Drives *(continued)*	73 GB, 10K	Capacity	73,407,865,856 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI 68-pin	
		Synchronous Transfer Rate (Maximum)	320 MB/s	
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.55 ms
			Average	4.90 ms
			Full-Stroke	9.20 ms
		Rotational Speed	10,000 rpm	
		Logical Blocks	143,374,738	
		Operating Temperature	41° to 131° F/5° to 55°C	
	36 GB, 15K	Capacity	36,420,075,520 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI 68-pin	
		Synchronous Transfer Rate (Maximum)	320 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.4 ms
			Average	3.8 ms
			Full-Stroke	6.7 ms
		Rotational Speed	15,000 rpm	
		Logical Blocks	71,132,960	
		Operating Temperature	41° to 131° F/5° to 55°C	
	36 GB, 10K	Capacity	36,420,075,520 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI 68-pin	
		Synchronous Transfer Rate (Maximum)	320 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.55 ms
			Average	4.90 ms
			Full-Stroke	9.20 ms
		Rotational Speed	10,000 rpm	
		Logical Blocks	71,132,960	
		Operating Temperature	41° to 131° F/5° to 55°C	
	18 GB	Capacity	18,210,037,760 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI 68-pin	
		Synchronous Transfer Rate (Maximum)	320 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.4 ms
			Average	3.8 ms
			Full-Stroke	6.7 ms
		Rotational Speed	15,000 rpm	
		Logical Blocks	35,566,480	
		Operating Temperature	41° to 131° F/5° to 55°C	

Technical Specifications

Ultra ATA Hard Drives	160 GB		
		Capacity	160,000 MB
		Height	1 in/2.54 cm
		Width	4 in/10.16 cm
		Interface	Ultra ATA/100
		Synchronous Transfer Rate (Maximum)	100 MB/s
		Seek Time (typical reads, including settling)	Single Track 0.8 ms
			Average < 9.1 ms
			Full-Stroke 17.0 ms
		Rotational Speed	7,200 rpm
		Operating Temperature	41° to 131° F/5° to 55°C
	120 GB	**Capacity**	122,942 MB
		Height	1 in/2.54 cm
		Width	4 in/10.16 cm
		Interface	Ultra ATA/100
		Synchronous Transfer Rate (Maximum)	100 MB/s
		Seek Time (typical reads, including settling)	Single Track 0.8 ms
			Average < 9.1 ms
			Full-Stroke 17.0 ms
		Rotational Speed	7,200 rpm
		Operating Temperature	41° to 131° F/5° to 55°C
	80 GB	**Capacity**	81,964 MB
		Height	1 in/2.54 cm
		Width	4 in/10.16 cm
		Interface	Ultra ATA/100
		Synchronous Transfer Rate (Maximum)	100 MB/s
		Seek Time (typical reads, including settling)	Single Track 0.8 ms
			Average < 9.1 ms
			Full-Stroke 17.0 ms
		Rotational Speed	7,200 rpm
		Logical Blocks	81,964,302,336
		Operating Temperature	41° to 131° F/5° to 55°C
	40 GB	**Capacity**	80, 293 MB
		Height	1 in/2.54 cm
		Width	4 in/10.16 cm
		Interface	Ultra ATA/100
		Synchronous Transfer Rate (Maximum)	100 MB/s
		Seek Time (typical reads, including settling)	Single Track 0.8 ms
			Average < 9.1 ms
			Full-Stroke 17.0 ms
		Rotational Speed	7,200 rpm
		Logical Blocks	80,293,248
		Operating Temperature	41° to 131° F/5° to 55°C

QuickSpecs

Technical Specifications

48X CD-ROM Drive			
Height	5.25-inch, half-height		
Interface type	EIDE/ATAPI		
Dimensions– External, Excluding Bezel (W x H)	5.74 x 1.62 in/14.6 x 4.13 cm		
Weight	1.6 lb/0.75 kg		
Disc diameter	5 in, 3 in (12 cm, 8 cm)		
Disc thickness	0.05 inch (1.2 mm)		
Disk	Applicable Disk	Mixed Mode (Audio and Data Combined) CD-DA, Mode 1(basic format), Mode2 form1& form2 Photo-CD (Multi-Session), CD-XA Ready CD-I Ready, CD-Plus/CD-Extra, CD-RW	
	Capacity (yellow book)	2,048 bytes/block (Mode1&Mode2 Form 1)	
		2,340, 2,336 bytes/block (Mode2)	
		2,332 bytes/block (Mode2 Form2)	
		2,352 bytes/block (CD-DA)	
	Rotational Speed	22X~ 48X(CAV) 10,000 rpm maximum	
Block Size	Mode 1	2,048 bytes	
	Mode 2	2,340, 2,336 bytes	
	CD-DA	2,352 bytes	
	CD-XA	2,328 bytes	
Data transfer rate	Sustained	3,300 to 7,200 KB/s	
Data buffer	128 KB		
Access Times (typical)	Random	75 ms (typical)	
Audio Output Level	Line-Out	0.7 VRMS	
Start-up Time (typical)	< 3.3 s		
Stop Time	< 3.6 s		
Operating Conditions	Temperature	41° to 122° F/5° to 50° C	
	Humidity	10% to 80%	

QuickSpecs

Technical Specifications

48/24/48X CD-RW	Capacity	700 MB CD disc
	Dimensions (HxWxD)	1.63 x 5.75 x 7.27 in/4.13 x 14.6 x 18.5 cm
	Weight	2.0 lb/0.9 kg
	Interface	ATAPI/EIDE
	Mounting Orientation	Horizontal or vertical
	Data Transfer Rates – Read	Digital audio extraction (minimum) —1,800 KB/s (12X) CD read — up to 7,200 KB/s (48X) DVD read — up to 21,600 KB/s (16X)
	Media and Formats - Read	**Formats**: CD-DA, CD-ROM (Mode 1 and 2), CD-ROM XA (Mode 2, Form 1 and 2), Mixed Mode, CD-Plus, CD-Extra, CD-I FMV, Video CD, CD-Text, Photo CD (single and multisession); **Media**: stamped, CD-R, CD-RW
	Data Transfer Rates - Write	CD-R write — 1200 KB/s (8X) CD-R write — 1800 KB/s (12X) CD-R write — 2400 KB/s (16X) CD-R write — 3000 KB/s (20X) to 6000 KB/s (40X) CD-R write — 7200 KB/s (48X) CD-RW write — 600 KB/s (4X) CD-RW write —1500 KB/s (10X) CD-RW write — 2400 KB/s (16X) CD-RW write —3600 KB/s (24X)
	Media and Formats - Write	**Formats**: CD-DA, CD-ROM (Mode 1 and 2), CD-ROM XA (Mode 2, Form 1 and 2), Mixed Mode, CD-Plus, CD-Extra, CD-I FMV, Video CD, CD-Text; **Media**: CD-R, CD-RW (including ultra-speed)
	Write Methods	Disc-at-once, session-at-once,, track-at-once, incremental fixed and variable packet, multisession
	Data Transfer Modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 2 (33.3 MB/s)
	Access Times (typical reads, including settling)	CD-ROM Mode 1 — 100 ms Full Stroke CD — 160 ms (seek)
	Start-up Time (typical)	<4 s (single session), <30 s (multisession)
	Stop Time (typical)	<3 s
	Write Buffer Size	2 MB
	Audio Output	Line-Out — 0.7 VRMS Signal-to-Noise Ratio — 80 dB Channel Separation — 70 dB
	Configuration Jumper Block	Master, slave, and cable select modes
	Operating Conditions	Temperature — 41° to 113° F/5° to 45° C Humidity — 10% to 80%
	Approvals/Environmental	MPC-3 compliant, multi-read requirements, UL 1950, ACA AS/NZS 3548, ANSI C63.4–1992, ATAPI Spec SFF-8020, ATA Spec X3T9.2, CB Bulletin No. 92A, CSA C22.2 No. 950-1995, C.I.S.P.R. Pub 22, DHHS/FDA, EMKO-TSE 07/94, TUV, EN60825-1
	Operating Systems Supported	Microsoft Windows 2000, Windows XP
	Supplied software	Roxio Easy CD Creator 5.3.4: Create or copy CDs and DVDs, including music and data CDs, and data DVDs; Dantz Retrospect Express 6.0: Back up systems to CD, DVD, or tape media.

QuickSpecs

Technical Specifications

16X/40 DVD-ROM Read	Height	5.25-inch, half-height	
	Interface type	ATAPI	
	Dimensions– External, Excluding Bezel (W x H)	5.88 x 1.71 in/14.94 x 4.34 cm	
	Disc diameter	5 in, 3 in (12 cm, 8 cm)	
	Disc thickness	0.05 inch (1.2 mm)	
	Track pitch	1.6 µm (CD), 0.74 µm (DVD)	
	Disc center hole diameter	0.6 inch (15 mm)	
	Disc formats	DVD-ROM (single and dual layer); DVD-video; DVD-R version 1.0 and 2.0; DVD-RW version 1.0 and 1.1; DVD-R/RW multi-border; DVD+RW; CD-ROM Mode 1 and 2; CD-DA; CD-ROM XA Mode 2, Form 1 and 2; CD-extra; CD-text; CD-I Mode 2, Form 1 and 2; CD-I ready; video CD, CD-bridge; PhotoCD (single and multi-session); CD-R; CD-RW	
	Disc capacity	DVD-ROM	4.7 GB (DVD-5), 8.54 GB (DVD-9), 9.4 GB (DVD-10), 3.95 GB (DVD-R version 1.0), 4.7 GB (DVD-R version 2.0), 4.7 GB (DVD-RW version 1.0 and 1.1), 4.7 GB (DVD+RW)
		CD-ROM	540 MB (Mode 1, 12 cm), 640 MB (Mode 2, 12 cm), 700 MB (80 minimum CD-R and CD-RW), 180 MB (8 cm)
	Block size (bytes)	DVD-ROM – 2048; CD-ROM Mode 0 – 2352; CD-ROM Mode 1 – 2352, 2340, 2336, 2048; CD-ROM Mode 2 – 2352, 2340, 2336, 2048	
	Access times (typical reads, including settling)	DVD-ROM single layer	< 120 ms
		CD-ROM Mode 1	< 90 ms
		Full stroke DVD	< 240 ms (seek)
		Full stroke CD	< 160 ms (seek)
	Data transfer rates	2600 – 6000 KB/s (40X CAV CD-ROM mode)	
		8100 – 21,600 KB/s (16X CAV DVD-ROM mode)	
	Data transfer modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 3 (44.4 MB/s)	
	Power	Source	Four-pin, DC power receptacle
		DC power requirement	5 VDC ± 5%—100 mV ripple p-p
			12 VDC ± 5%—200 mV ripple p-p
		DC current	5 VDC – <800 mA typical, < 1000 mA maximum
			12 VDC – < 870 mA typical
	Audio Output Level	0.7 Vrms (typical)	
	Configuration Jumper Block	Master, slave, and cable select modes	
	Data interface connector	40-pin, shrouded and keyed, flat ribbon	
	Environmental (all conditions non-condensing)	Temperature (operating)	41° to 122° F/5° to 50° C
		Relative humidity (operating)	10% to 85%
		Maximum wet bulb temperature (operating)	86° F/30° C
	Certifications, approvals	MMC II support, multi-read certification, Microsoft WHQL certification, ACA AS/NZS 3548 class B, CNS 13438, C.I.S.P.R. Pub 22, TUV or VDE EN60950, EN 55022, EN55024, SEMKO, NEMKO, DEMKO, FIMKO, EN 60825-1, UL 60950, CSA C22.2 60950-2000,	
	Operating systems supported	Microsoft Windows 98, Microsoft Windows NT 4.0, Microsoft Windows 2000, Windows XP Professional	

Technical Specifications

48/24/48+16X Combo CD-RW/DVD-ROM			
Capacity	4.7 and 9.4 GB DVD disc / 700 MB CD disc		
Dimensions (HxWxD)	4.13 x 14.6 x 18.5 cm / 1.63 x 5.75 x 7.27 in		
Weight	0.9 kg / 2.0 lb		
Interface	ATAPI/EIDE		
Mounting Orientation	Horizontal or vertical		
Data Transfer Rates – Read	Digital audio extraction (minimum) —1,200 KB/s (8X) CD read — up to 7,200 KB/s (48X) DVD read — up to 21,600 KB/s (16X)		
Media and Formats - Read	CD Formats: CD-DA, CD-ROM (Modes 1 and 2), CD-ROM XA (Mode 2, Form 1 and 2), Mixed mode, CD-Extra, CD-I FMV, Video CD, Photo CD (single and multi-session), CD-Text, CD-Plus; CD Media: stamped, CD-R; CD-RW DVD Formats: DVD-ROM, DVD-Video (with application support), DVD-R (version 1.0 and 2.0), DVD-RW (version 1.0 and 1.1), DVD-R multi-border; DVD Media: stamped (single or dual layer, single sided), DVD+RW, DVD+R, DVD-R, DVD-RW		
Data Transfer Rates - Write	CD-R write — 600 KB/s (4X) CD-R write — 1200 KB/s (8X) CD-R write — 1800 KB/s (12X) CD-R write — 2400 KB/s (16X) CD-R write — 3600 KB/s (24X) CD-R write — 4800 KB/s (32X) CD-R write — 6000 KB/s (40X) CD-R write — 7200 KB/s (48X) CD-RW write — 600 KB/s (4X) CD-RW write —1500 KB/s (10X) CD-RW write — 2400 KB/s (16X) CD-RW write —3600 KB/s (24X)		
Media Formats - Write	CD Formats: CD-DA, CD-ROM (Mode 1), CD-ROM XA (Mode 2, Form 1 and 2), Mixed mode, CD-Extra, CD-I FMV, Video CD, CD-Plus; CD Media: CD-R; CD-RW		
Write Methods	Disc-at-once, session-at-once,, track-at-once, incremental fixed and variable packet, multisession		
Data Transfer Modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 2 (33.3 MB/s)		
Access Times (typical reads, including settling)	DVD-ROM Single Layer Random	120 ms	
	CD-ROM Mode 1	110 ms	
	Full Stroke DVD	210 ms	
	Full Stroke CD	160 ms	
Start-up Time (typical)	<4 seconds (single session), <30 seconds (multisession)		
Stop Time (typical)	4 s		
Write Buffer Size	2 MB (minimum)		
Audio Output	Line-Out	0.7 VRMS	
	Signal-to-Noise Ratio	74 dB	
	Channel Separation	65 dB	
Configuration Jumper Block	Master, slave, and cable select modes		
Operating Conditions	Temperature	5° to 50° C / 41° to 122° F	
	Humidity	10% to 85%	

QuickSpecs

Technical Specifications

16/10/40+4/2.4/8x 4.7 GB DVD+RW – 300i		
Capacity	4.7 GB DVD disc / 700 MB CD disc	
Dimensions (HxWxD)	4.23 x 14.6 x 19.8 cm / 1.66 x 5.83 x 7.74 in	
Weight	1.06 kg / 2.3 lb	
Interface	ATAPI/EIDE	
Mounting Orientation	Horizontal (80 or 120 mm discs) or vertical (120 mm discs only)	
Data Transfer Rates - Read	Digital audio extraction (minimum) —1,200 KB/s (8X) CD read — up to 6,000 KB/s (40X) DVD read — up to 10,800 KB/s (8X)	
Media and Formats - Read	**CD formats**: CD-DA (Red Book), CD-ROM (Modes 1 and 2 - Yellow Book), CD-ROM XA (Mode 2, Forms 1 and 2), CD-I (FMV), Photo CD (single and multi-session), Video CD, CD-Text, CD Extra; **CD media**: stamped, CD-R, CD-RW	
	DVD formats: DVD-ROM, DVD-Video (with application support); **DVD media**: stamped (single or dual layer, single sided), DVD+RW, DVD+R, DVD-R, DVD-RW	
Data Transfer Rates - Write	DVD+R write — 5,412 KB/s (4X) DVD+RW write or rewrite — 3,247 KB/s (2.4X)	
	CD-R write — 600 KB/s (4X) CD-R write — 1200 KB/s (8X) CD-R write — 2,400 KB/s (16X)	
	CD-RW write — 600 KB/s (4X) CD-RW write —1500 KB/s (10X)	
Media and Formats - Write	**CD formats**: CD-DA (Red Book), CD-ROM (Modes 1 and 2 - Yellow Book), CD-ROM XA (Mode 2, Forms 1 and 2), CD-I (FMV), Photo CD (single and multi-session), Video CD, CD-Text, CD Extra; **CD media**: CD-R, CD-RW **DVD formats**: DVD-ROM, DVD-Video (with application support); **DVD media**: DVD+RW, DVD+R	
Write Methods	Disc-at-once, track-at-once, incremental fixed and variable packet, random access write (DVD+RW only), sequential write (DVD +R, +RW)	
Data Transfer Modes	ATA PIO mode 4—16.7-Mbps, ATA UltraDMA mode 2—33-Mbps (default)	
Access Times (typical)	DVD-ROM Single Layer Random	140 ms
	CD-ROM Random	120 ms
	CD-ROM Full stroke	200 ms
Start-up Time (typical)	< 5 s	
Stop Time (typical)	< 6 s	
Write Buffer Size	2 MB (minimum)	
Audio Output	Line-Out	0.75 VRMS
	Signal-to-Noise Ratio	75 dB
	Channel Separation	60 dB
Configuration Jumper Block	Master, slave, and cable select modes	
Operating Conditions	Temperature	0° to 50°C / 32° to 122°F
	Humidity	10% to 70% (non-condensing)

QuickSpecs

Technical Specifications

Intel PRO/100 + Management Adapter	Network Interface	10Base-T or 100Base-TX	
	Expansion Bus Architecture	PCI 2.2	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 MB/s
		10Base-T (Full-Duplex)	20 MB/s
		100Base-TX (Half-Duplex)	100 MB/s
		100Base-TX (Full-Duplex)	200 MB/s
	Connectors	RJ-45	
	Standards Compliance	10 MB/s Ethernet	IEEE 802.3
		100 MB/s Ethernet	IEEE 802.3µ
	I/O Address	Auto-configured	
	Remote Wakeup	Yes	
	Operating Temperature	0° to 55° F/10° to 35° C	
	Operating Humidity (non-condensing)	85% at 131° F/55° C	
	Operating Altitude	10,000 ft/3,048 m	
	Communication Processor	Intel 82559	
	OS Driver Support	Windows NT 4.0	NDIS 3.0, 4.0 Compliant
		Windows 95, 98, 2000, XP Pro	NDIS 3.0, 4.0, 5.0 Compliant
		Novell NetWare Server v. 3.x, 4.x and 5.0	ODI Compliant
		SunSoft Solaris	Not supported
		SCO UnixWare®, OpenDesktop, OpenServer	Supported

Intel Pro/1000 XT Server Adapter Gigabit PCI card	Network Interface	10Base-T, 100Base-TX, 1000Base-T	
	Expansion Bus Architecture	PCI 2.2, PCI-X 1.0	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 MB/s
		10Base-T (Full-Duplex)	20 MB/s
		100Base-TX (Half-Duplex)	100 MB/s
		100Base-TX (Full-Duplex)	200 MB/s
		1000Base-T	1000 MB/s
	Connectors	RJ-45	
	Standards Compliance	10 MB/s Ethernet	IEEE 802.3
		100 MB/s Ethernet	IEEE 802.3µ
		1000 MB/s Ethernet	IEEE 802.3µ
	I/O Address	Auto-configured	
	Remote Wakeup	Yes	
	Management capabilities	Wired for management (WfM) Baseline v2.0; DMI 2.0 support, WMI and SNMP-manageable; Offline diagnostics; ACPI Power Management; WoL	
	Operating Temperature	0° to 55° F/10° to 35° C	
	Operating Humidity (non-condensing)	85% at 131° F/55° C	
	Communication Processor	Intel 82544EI	
	Memory	64KB integrated	

QuickSpecs

Technical Specifications

Intel Pro 1000 MT NIC DC193A	**Dimensions**	6.4 x 4.8 x 0.8 inches (16.3 x 12.1 x 1.9 cm)
	Connector	RJ-45
	Controller	Intel 82540EM Gigabit Controller
	Memory	Integrated 96 Kb frame buffer memory
	Data rates supported	10/100/1000 Mbps
	Compliance	IEEE 802.1A, 802.1P, 802.1P, 802.1Q, 802.2, 802.3, 802.3AB and 802.3u compliant, 802.3x flow control
	Bus architecture	PCI 2.2
	Data path width	32-bit, 33/66 MHz bus interface
	Data transfer mode	Bus-master DMA
	Hardware certifications	FCC, B, CE, TUV- cTUVus Mark Canada and United States, TUV- GS Mark for European Union
	Power requirement	1.48 watts @ +3.3V AUX supply with 5V tolerance
	Boot ROM support	Yes
	Network transfer rate	10BASE-T (half-duplex) 10 Mbps
		10BASE-T (full-duplex) 20 Mbps
		100BASE-TX (half-duplex) 100 Mbps
		100BASE-TX (full-duplex) 200 Mbps
		1000BASE-T, 1000 Mbps
	Environmental	Operating temperature 32° to 131°F (0° to 55° C)
		Operating humidity 85% at 131° F (55° C)
	Environmental	Operating temperature 32° to 131°F (0° to 55° C)
	Management capabilities	ACPI, WOL and DMI 2.0, PXE 2.0, WfM 2.0, Intel PROset II utility
	Kit contents	The Intel Pro 1000 MT NIC, CD containing Intel PROset II NIC drivers, quick install guide, product warranty statement

QuickSpecs

Technical Specifications

NVIDIA Quadro NVS 200 Graphics Card		
Form Factor	Low profile	
Graphics Controller	Integrated Quadro4 2D/3D 128-bit graphics processor unit (GPU)	
Bus Type	AGP 4x	
RAMDAC	Dual 350 MHz	
Memory	64 MB 166MHz 4 M x 16 SDR 6ns unified frame buffer	
Connectors	Single LFH-60	
Dimensions	low-profile form factor	
Multi-monitor support	Dual monitors with NVIDIA's nView	
nView Hardware Architecture	Dual 350MHz RAMDACs	
	Integrated TMDS	
	Digital Vibrance Control (DVC)	
	32-bit color	
	2048 x 1536 @ 60 Hz maximum resolution	
	2D rendering engine optimized for 32-, 24-, 16-, 15-, and 8-bpp modes	
	Unified driver architecture (UDA) provides easy installation and manageability	
High definition video processor	Full-screen, full-frame video playback of HDTV and DVD content	
	DVD-ready motion compensation for MPEG-2	
	Independent hardware color controls for video overlay	
	Hardware color-space conversion (YUV 4:2:2 and 4:2:0)	
	IDCT motion compensation	
	5-tap horizontal by 3-tap vertical filtering	
	8:1 up/down scaling	
Supported graphics APIs	Fully compliant with OpenGL 1.3 and DirectX 8.1	
Available graphics drivers	Microsoft Windows XP and Microsoft Windows 2000	

NVIDIA Quadro NVS 200 display resolutions & refresh rates

SINGLE CRT DISPLAY		
Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
640 x 480	120 Hz	8, 16, 24
800 x 600	120 Hz	8, 16, 24
1024 x 768	120 Hz	8, 16, 24
1152 x 864	120 Hz	8, 16, 24
1280 x 1024	120 Hz	8, 16, 24
1600 x 1200	100 Hz	8, 16
1600 x 1200	85 Hz	8, 16, 24
1920 x 1080	100 Hz	8, 16
1920 x 1080	75 Hz	8, 16, 24
1920 x 1200	85 Hz	8, 16
1920 x 1200	70 Hz	8, 16, 24
1920 x 1440	75Hz	8, 16
1920 x 1440	60Hz	8, 16, 24
2048 x 1536	60Hz	8, 16

Technical Specifications

NVIDIA Quadro NVS 400 Graphics Card		
Form Factor	ATX	
Graphics Controller	Integrated Quadro4 2D/3D 128-bit graphics processor unit (GPU)	
Bus Type	PCI	
RAMDAC	Dual 350 MHz	
Memory	64 MB 220 MHz, 4mx 32 DDR per GPU, 32 MB per GPU unified frame buffer	
Connectors	Dual LFH-60	
Dimensions	Low-profile form factor	
Multi-monitor support	1 to 4 displays with nView – with two cards (1 PCI per card), up to 8 monitors can be driven	
nView Hardware Architecture	32-bit color 2048x1536 @ 75Hz maximum resolution Dual 350MHz RAMDACs Integrated TMDS Digital Vibrance Control (DVC) High-performance 2D rendering engine Optimized for 32-, 24-, 16-, 15- and 8-bpp modes	
High-definition video processor (HDVP)	Full-screen, full-frame video playback of HDTV and DVD content DVD-ready motion compensation for MPEG-2 Independent hardware color controls for video overlay Hardware color-space conversion (YUV 4:2:2 and 4:2:0) IDCT Motion compensation 5-tap horizontal by 3-tap vertical filtering 8:1 up/down scaling	
Supported graphics APIs	Fully compliant with OpenGL 1.3 and DirectX 8.1	
Available graphics drivers	Microsoft Windows XP and Microsoft Windows 2000, Linux See: http://www.hp.com/workstations/support	

NVIDIA Quadro NVS 400 display resolutions & refresh rates

SINGLE CRT DISPLAY		
Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
640 x 480	120 Hz	8, 16, 24
800 x 600	120 Hz	8, 16, 24
1024 x 768	120 Hz	8, 16, 24
1152 x 864	120 Hz	8, 16, 24
1280 x 1024	120 Hz	8, 16, 24
1600 x 1200	100 Hz	8, 16
1600 x 1200	85 Hz	8, 16, 24
1920 x 1080	100 Hz	8, 16
1920 x 1080	75 Hz	8, 16, 24
1920 x 1200	85 Hz	8, 16
1920 x 1200	70 Hz	8, 16, 24
1920 x 1440	75Hz	8, 16
1920 x 1440	60Hz	8, 16, 24
2048 x 1536	60Hz	8, 16

QuickSpecs

HP Workstation xw8000

Technical Specifications

NVIDIA Quadro2 EX Graphics Card		
Form Factor	ATX	
Graphics Controller	NVIDIA NV11GL GPU	
Bus Type	AGP 2x/4x Version 2.0 compliant	
RAMDAC	350MHz	
Memory	32MB SDR SDRAM unified frame buffer, Z-buffer and Texture storage	
Connectors	DB-15 analog monitor output	
Dimensions (LxWxH)	Single short form factor AGP Low Profile card. 6.5 x 2.5 x 0.6 in/16.51 x 6.35 x 1.5 cm	
Multi-monitor support		
Additional product features	32MB SDR SDRAM unified frame buffer, Z-buffer and Texture storage	
	VESA 3 (flash ROM) BIOS	
	24-bit Z, 8-bit stored alpha and 8-bit Stencil planes	
	Compliant with Microsoft/Intel PC2001 Workstation requirements	
	Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications	
	DDC2B+ Monitor support on all OS platforms	
	ACPI Version 1.0b Power Management support (all modes)	
AGP 2X/4X Version 2.0 compliant including	Sideband Addressing	
	AGP Texturing (Execute Mode)	
	Fast writes support	
NVIDIA NV11GL GPU **featuring:**	175 MHz engine clock rate	
	128-bit external frame buffer interface running at a clock rate of 166 MHz	
	VGA controller	
	2D Engine with 128-bit datapath processing multiple pixels per clock	
	Integrated transform and lighting engines	
	NVIDIA Shading Rasterizer enabling real-time per-pixel effects	
	Cube environment mapping	
	Microsoft DirectX and SCTC Texture compression	
	High performance 2D rendering engine	
	High-Definition Video Processor for full-screen, full-frame DVD playback	
Supported graphics APIs	OpenGL 1.2 and below DirectX 7 and below	
Available graphics drivers	HP-tested Windows XP HP-tested Windows 2000 HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support	

NVIDIA Quadro2 EX Graphics Card display resolutions & refresh rates	SINGLE CRT DISPLAY		
	Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
	640x480	240Hz	8, 16, 24/8
	800x600	240Hz	8, 16, 24/8
	1024x768	200Hz	8, 16, 24/8
	1152x864	170Hz	8, 16, 24/8
	1280x1024	150Hz	8, 16, 24/8
	1600x900	120Hz	8, 16, 24/8
	1600x1200	100Hz	8, 16, 24/8
	1600x1280	127Hz	8, 16, 24/8
	1920x1080	85Hz	8, 16, 24/8
	1920x1200	85Hz	8, 16, 24/8
	1920x1440	85Hz	8, 16
	1920x1440	75Hz	24/8
	2048x1536	75Hz	8, 16
	2048x1536	60Hz	24/8

Technical Specifications

NVIDIA Quadro4 380 XGL Graphics Card	Form Factor	ATX
	Graphics Controller	NVIDIA NV18GL GPU
	Bus Type	AGP 8x Version 3.0 compliant AGP 4x/2x Version 2.0 compliant
	Memory	64MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	RAMDAC	Dual 350MHz integrated
	Connectors	VGA DB-15 and DVI-I analog/digital monitor outputs, 4-pin mini DIN providing TV output
	Dimensions	AGP full height ATX card. 4.25" x 6.875"
	Multi-monitor support	Dual monitor
	Additional product features	64 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
		128 KB BIOS 3.3V Flash ROM reprogrammable by SW
		Hardware Overlay Planes
		Hardware two-sided lighting
		Hardware accelerated antialiased points and lines
		TV Output
		Diamond exit rule line rasterization for improved line quality
		3D Texture support
		Occlusion Culling
		Compliant with Microsoft/Intel PC2001 Workstation requirements
		Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
		DDC2B+ Monitor support for Windows 2000 and Windows XP
		ACPI Version 1.0b Power Management support (all modes)
	AGP 8x Version 3.0 compliant and 2x/4x Version 2.0 compliant including	Sideband Addressing
		AGP Texturing (Execute Mode)
		Fast writes support
	NV18GL GPU featuring:	275 MHz engine clock rate
		250 MHz memory clock rate
		128-bit memory interface
		VGA controller
		Dual integrated display controllers supporting up to 1920x1440 @ 85Hz and 2048x1536 @ 75Hz on both displays
		4 parallel pixel pipelines
		2 parallel geometry engines
		nfiniteFX II programmable vertex shader technology and NVIDIA OpenGL extensions
		Full hardware support for NVIDIA Cg shader programming language
	Supported graphics APIs	OpenGL 1.3 (and OpenGL 2.0 when available) ICD with immediate mode support for all OGL primitive types DirectX 8 and above
	Available graphics drivers	HP-tested Windows XP, HP-tested Windows 2000, HP-tested Linux (1st Calendar Quarter 2003) HP qualified drivers may be preloaded or available from the HP support web site: http://www.hp.com/workstations/support

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Technical Specifications

NVIDIA Quadro4 380 XGL Graphics Card display resolutions & refresh rates

	MONITOR 1, 2 ANALOG/DIGITAL	
Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
640x480	240Hz/240Hz	8, 16, 24
800x600	240Hz/200Hz	8, 16, 24
1024x768	170Hz/140Hz	8, 16, 24
1152x864	170Hz/100Hz	8, 16, 24
1280x720	150Hz/120Hz	8, 16, 24
1280x960	150Hz/85Hz	8, 16, 24
1280x1024	150Hz/75Hz	8, 16, 24
1600x900	120Hz/75Hz/ NoDigitalDisplaySupport (unbold)	8, 16, 24
1600x1024	100Hz/72Hz/ NoDigitalDisplaySupport	8, 16, 24
1600x1200	120Hz/60Hz/ NoDigitalDisplaySupport	8, 16
1600x1200	100Hz/60Hz/ NoDigitalDisplaySupport	24
1920x1080	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1080	85Hz/ NoDigitalDisplaySupport	24
1920x1200	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1200	85Hz/ NoDigitalDisplaySupport	24
1920x1440	85Hz/ NoDigitalDisplaySupport	8, 16
1920x1440	75Hz/ NoDigitalDisplaySupport	24
2048x1536	75Hz/ NoDigitalDisplaySupport	8, 16
2048x1536	60Hz/ NoDigitalDisplaySupport	24

Technical Specifications

ATI FIRE GL 8800 Graphics Card	Form Factor	ATX
	Graphics Controller	ATI Radeon 8800 GPU
	Bus Type	AGP 1x/2x/4x Version 2.0 compliant
	RAMDAC	400MHz/30-bit
	Memory	128MB DDR SGRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	DB-15 analog and DVI-I analog/digital monitor outputs
	Dimensions	Single short form factor AGP/ATX card. 174.63mm x 107.96mm
	Multi-monitor support	Dual Screen output for resolutions up to 2x1600x1200x32 bit
	Additional product features	128 MB DDR SGRAM unified frame buffer, Z-buffer and Texture storage
		64 KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers
		2D and 3D acceleration provided for 16-bit and 32-bit RGB modes
		Hardware cursor with full color alpha channel (64x64x32bpp)
		24-bit Z, 8-bit stored alpha and 8-bit Stencil planes
		Bus mastering support for 2D/3D display lists and local memory vertex list execution
		Hardware lighting support for up to 8 lights
		Cubic Environment Mapping and 3D Texture support
		Full Scene Anti-Aliasing (FSAA) support with multisampling up to 6x
		Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) conversion
		Video scaling and up to 8x4 tap filtering supported for all YUV and RGB16/32 formats
		Dual Screen output for resolutions up to 2x1600x1200x32 bit
		Per window double buffering on all screen resolutions
		Compliant with Microsoft/Intel PC2001 Workstation requirements
		Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
		DDC2B+ Monitor support on all OS platforms
		ACPI Version 1.0b Power Management support (all modes)
	AGP1x/2x/4x Version 2.0 compliant including	Sideband Addressing
		AGP Texturing (Execute Mode)
		Fast writes support
	Radeon 8800 GPU **featuring:**	275 MHz engine clock rate
		VGA controller
		2D Engine with 128-bit datapath processing multiple pixels per clock
		PIXEL TAPESTRY II, 3D rendering engine utilizing 4 parallel pipelines each capable of handling up to 6 textures in a single pass, delivering 2.4 Gigatexels/s fill rate
		CHARISMA ENGINE II, geometry engine delivering up to 75 million transformed, clipped and lit triangles per second peak processing capability
		VIDEO IMMERSION II, industry leading video technology
		Dual independent display controllers
		128-bit external frame buffer interface running at a clock rate of 300 MHz DDR provides a memory bandwidth of up to 9.6 GB per second
	Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8.1
	Available graphics drivers	HP-tested Windows XP HP-tested Windows 2000 HP-tested Linux HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support

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Technical Specifications

ATI FIRE GL 8800 Graphics Card display resolutions & refresh rates

SINGLE CRT DISPLAY

Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	100Hz	16, 24
800x600	100Hz	16, 24
1024x768	100Hz	16, 24
1152x864	100Hz	16, 24
1280x960	100Hz	16, 24
1280x1024	100Hz	16, 24
1600x1000	100Hz	16, 24
1600x1024	100Hz	16, 24
1600x1200	100Hz	16, 24
1792x1344	85Hz	16, 24
1920x1080	100Hz	16, 24
1920x1200	100Hz	16, 24
2048x1536	75Hz	16, 24

SINGLE DIGITAL DISPLAY

Single CRT Display Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	75Hz	16, 24
800x600	75Hz	16, 24
1024x768	75Hz	16, 24
1152x864	75Hz	16, 24
1280x960	75Hz	16, 24
1280x1024	75Hz	16, 24
1600x1000	75Hz	16, 24
1600x1024	75Hz	16, 24
1600x1200	75Hz	16, 24

DUAL DISPLAY

Resolution	Monitor 1 Maximum Refresh Rate	Monitor 2 Analog/Digital Maximum Refresh Rate	Bits per Pixel
640x480	100Hz	100Hz/75Hz	16, 24
800x600	100Hz	100Hz/75Hz	16, 24
1024x768	100Hz	100Hz/75Hz	16, 24
1280x1024	100Hz	85Hz/75Hz	16, 24
1600x1200	100Hz	85Hz/75Hz	16, 24

Technical Specifications

ATI FIRE GL Z1-128p Graphics Card	Form Factor	ATX
	Graphics Controller	ATI FGL 9700 GPU
	Bus Type	AGP-Pro50 1x/2x/4x/8x Version 3.0 compliant
	RAMDAC	Dual 400MHz / 30-bit
	Memory	256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	Dual DVI-I analog/digital monitor outputs
	Dimensions	Single AGP/ATX card. 230.28mm x 107.96mm
	Multi-monitor support	Dual Screen output for resolutions up to 2x2048x1536x32 bit
	Additional product features	256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
		64-KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers
		2D and 3D acceleration provided for 16-bit and 32-bit RGB? modes
		Hardware cursor with full color alpha channel
		16/32 bit Z buffer, 16/32 bit W-buffer, 8-bit stored alpha and 8-bit Stencil planes
		Bus mastering support for 2D/3D display lists and local memory vertex list execution
		Hardware lighting support for up to 8 lights
		Bilinear, Trilinear and Anisotropic texturing
		Cubic Environment and Perturbation Bump Mapping
		Projective Texture, 3D Texture and Video Texture support
		Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples
		Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion
		Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats
		Per pixel quad buffering on all screen resolutions
		VESA compliant Stereoscopic Interface on MiniDin Connector
		Compliant with Microsoft/Intel PC2001 Workstation requirements
		Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
		DDC2B+ Monitor support on all OS platforms
		ACPI Version 1.0b Power Management support (all modes)
	AGP1x/2x/4x/8x Version 3.0 compliant including	Sideband Addressing
		AGP Texturing (Execute Mode)
		AGP Read and AGP Write Support
		8X Fast write support
	FGL 9700 GPU featuring:	VGA controller supporting full standard feature set
		2D Engine with 128-bit datapath processing multiple pixels per clock
		PIXEL TAPESTRY III, 3D rendering engine utilizing 2 parallel pipelines with two texture blending units each capable, of handling up to 8 texels in a single pass, delivering 2.4 Gigatexels/s fill rate
		CHARISMA ENGINE III, geometry unit utilizing 4 vertex processing engines, capable of executing two instructions per clock cycle each, thus yielding up to 200 million transformed, clipped and lit triangles per second.
		VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/decod
		Dual independent display controllers with 4K x 4K address space each of up to 20 GB per second
	Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8.1
	Available graphics drivers	Windows 2000 Windows XP Linux HP qualified drivers may be preloaded or available from the HP support web site: See: http://h20000.www2.hp.com/bizsupport/TechSupport/Product .jsp?prodTypeId=12454&prodCatId=296719&locale=en_US&taskId=135

Technical Specifications

ATI Fire GL Z1-128p Graphics Card display, resolutions & refresh rates

CRT Display (Single or Dual)		
Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
640x480	100Hz	16, 24, 32
800x600	100Hz	16, 24, 32
1024x768	100Hz	16, 24, 32
1152x864	100Hz	16, 24, 32
1280x960	100Hz	16, 24, 32
1280x1024	100Hz	16, 24, 32
1600x1000	100Hz	16, 24, 32
1600x1024	76Hz	16, 24, 32
1600x1200	100Hz	16, 24, 32
1792x1344	100Hz	16, 24, 32
1920x1080	100Hz	16, 24, 32
1920x1200	100Hz	16, 24, 32
2048x1536	85Hz	16, 24, 32

Digital Display (Single or Dual)		
Single CRT Display Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
640x480	75Hz	16, 24, 32
800x600	75Hz	16, 24, 32
1024x768	75Hz	16, 24, 32
1280x1024	75Hz	16, 24, 32
1600x1000	60Hz	16, 24, 32
1600x1200	60Hz	16, 24, 32
1920x1080	60Hz	16, 24, 32
1920x1200	60Hz	16, 24, 32

Technical Specifications

NVIDIA Quadro4 980 XGL Graphics Card		
Form Factor	ATX
Graphics Controller	NVIDIA NV25GL GPU
Bus Type	AGP 8X
RAMDAC	Dual 350MHz integrated
Memory	128MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
Connectors	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
Dimensions	AGP full height ATX card. 4.25 x 8.5 in/10.80 x 21.59 cm
Multi-monitor support	Dual integrated display controllers supporting up to 1920x1440 @ 85Hz on both displays
Additional product features	128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	128 KB BIOS 3.3V Flash ROM reprogrammable by SW
	Hardware Overlay Planes
	Hardware two-sided lighting
	Hardware accelerated antialiased points and lines
	Quad-buffered Stereo
	Diamond exit rule line rasterization for improved line quality
	3D Texture support
	Occlusion Culling
	Frame synchronization
	Compliant with Microsoft/Intel PC2001 Workstation requirements
	Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
	DDC2B+ Monitor support on all OS platforms
	ACPI Version 1.0b Power Management support (all modes)
AGP1x/2x/4x Version 2.0 compliant including	Sideband Addressing
	AGP Texturing (Execute Mode)
	Fast writes support
NV25GL GPU **featuring:**	300 MHz engine clock rate
	325 MHz memory clock rate
	128-bit memory interface
	VGA controller
	4 parallel pixel pipelines
	2 parallel geometry engines
	nfiniteFX II programmable vertex and pixel shader technology
Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8
Available graphics drivers	HP-tested Windows XP HP-tested Windows 2000 HP-tested Linux HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support

QuickSpecs

Technical Specifications

NVIDIA Quadro4 980 XGL Graphics Card display resolutions & refresh rates

MONITOR 1, 2 ANALOG/DIGITAL		
Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	240Hz/240Hz	8, 16, 24
800x600	240Hz/200Hz	8, 16, 24
1024x768	170Hz/140Hz	8, 16, 24
1152x864	170Hz/100Hz	8, 16, 24
1280x720	150Hz/120Hz	8, 16, 24
1280x960	150Hz/85Hz	8, 16, 24
1280x1024	150Hz/75Hz	8, 16, 24
1600x900	120Hz/75Hz	8, 16, 24
1600x1024	100Hz/72Hz	8, 16, 24
1600x1200	120Hz/60Hz	8, 16
1600x1200	100Hz/60Hz	24
1920x1080	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1080	85Hz/ NoDigitalDisplaySupport	24
1920x1200	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1200	85Hz/ NoDigitalDisplaySupport	24
1920x1440	85Hz/ NoDigitalDisplaySupport	8, 16
1920x1440	75Hz/ NoDigitalDisplaySupport	24
2048x1536	75Hz/ NoDigitalDisplaySupport	8, 16
2048x1536	60Hz/ NoDigitalDisplaySupport	24

Technical Specifications

3Dlabs Wildcat III 6110 Graphics Card	Form Factor	ATX
	Graphics Controller	3Dlabs' multi-chip design feature separate Bus Controller and Geometry/Rasterizer GPU
	Bus Type	AGP-Pro50/4x. Version 2.0 Compliant.
	RAMDAC	Dual 300 MHz
	Memory	64 MB DDR SDRAM frame buffer, Z-buffer. 128MB DDR SDRAM Texture storage. 16MB Direct Burst Memory
	Connectors	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
	Dimensions	AGP-Pro50 full height/length card.
	Multi-monitor support	Dual monitor
	Additional product features	64 MB DDR SDRAM frame buffer, Z-buffer storage. Allocated as 32MB/display when operating in dual display mode. Hardware Overlay Planes Quad-buffered, frame-sequential and interlaced Stereo Occlusion Culling Frame synchronization DDC Monitor support ACPI Version 1.0b Power Management support (D1, D2, D3)
	AGP1x/2x/4x Version 2.0 compliant including:	Sideband Addressing AGP Texturing (Execute Mode) Fast writes support
	Geometry Acceleration Featuring:	Model view matrix transformation of vertex and normal coordinates Texture matrix transformation of texture coordinates Full lighting calculations. Up to 32 lights. Local Display List and processing
	2D Acceleration Featuring:	16/32-bit Color Depths Area Fills, Block Moves, Vectors, Bilinear Scaling
	"*SuperScene*" Full Scene Antialiasing Featuring:	Point sampled with 16 samples Dynamic sample allocation and backoff Sample location jittering 1D, 2D, 3D and 4D texturing Multi-texture support 2 video look-up tables 10-bit gamma correction Hardware Cursor
	Product Compliance Features	Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
	Supported graphics APIs	OpenGL 1.3 Complaint DirectX 7 Compliant
	Available graphics drivers	HP-tested Windows XP HP-tested Windows 2000 HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support

Technical Specifications

3Dlabs Wildcat III 6110 Graphics Card display resolutions & refresh rates

HIGHEST RESOLUTIONS AVAILABLE FOR SINGLE DISPLAY

Resolution	Maximum Refresh Rate	Bits per Pixel
1920x1440	75Hz	24
1600x1280	76Hz	24
2048x1152	75Hz	24
1920x1200	76Hz	24

HIGHEST RESOLUTIONS AVAILABLE FOR SINGLE DISPLAY STEREO

Single CRT Display Resolution	Maximum Refresh Rate	Bits per Pixel
1280x1024	60Hz	24
1280x960	60Hz	24

HIGHEST RESOLUTIONS AVAILABLE FOR SINGLE DISPLAY AND FULL SCENE ANTIALIASING

Resolution	Maximum Refresh Rate	Bits per Pixel
1200x900	60Hz	24
1376x768	60Hz	24
1280x800	90Hz	24
1920x1200	76Hz	24

HIGHEST RESOLUTIONS AVAILABLE FOR SINGLE DISPLAY STEREO AND FSAA

Resolution	Maximum Refresh Rate	Bits per Pixel
1024x768	60Hz	24

HIGHEST RESOLUTIONS AVAILABLE FOR DUAL DISPLAY

Resolution	Maximum Refresh Rate	Bits per Pixel
1600x1200	90Hz	24
1600x1280	76Hz	24
1920x1080	85Hz	24
1824x1128	75Hz	24

HIGHEST RESOLUTIONS AVAILABLE FOR DUAL DISPLAY STEREO

Resolution	Maximum Refresh Rate	Bits per Pixel
1024x768	60Hz	24

HIGHEST RESOLUTIONS AVAILABLE FOR DIGITAL OUTPUT

Resolution	Maximum Refresh Rate	Bits per Pixel
1600x1200	60Hz	24

Technical Specifications

ATI FIRE GL X-256p Graphics Card	Form Factor	ATX
	Graphics Controller	ATI FGL 9700 GPU
	Bus Type	AGP-Pro50 1x/2x/4x/8x Version 3.0 compliant
	RAMDAC	Dual 400MHz / 30-bit
	Memory	256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	Dual DVI-I analog/digital monitor outputs
	Dimensions	Single AGP/ATX card. 230.28mm x 107.96mm
	Multi-monitor support	Dual Screen output for resolutions up to 2x2048x1536x32 bit
	Additional product features	256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 64 KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers 2D and 3D acceleration provided for 16-bit and 32-bit RGBα modes Hardware cursor with full color alpha channel 16/32 bit Z buffer, 16/32 bit W-buffer, 8-bit stored alpha and 8-bit Stencil planes Bus mastering support for 2D/3D display lists and local memory vertex list execution Hardware lighting support for up to 8 lights Bilinear, Trilinear and Anisotropic texturing Cubic Environment and Perturbation Bump Mapping Projective Texture, 3D Texture and Video Texture support Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats Per pixel quad buffering on all screen resolutions VESA compliant Stereoscopic Interface on MiniDin Connector Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
	AGP1x/2x/4x/8x Version 3.0 compliant including:	Sideband Addressing AGP Texturing (Execute Mode) AGP Read and AGP Write Support 8X Fast write support
	FGL 9700 GPU featuring:	VGA controller supporting full standard feature set 2D Engine with 128-bit datapath processing multiple pixels per clock PIXEL TAPESTRY III, 3D rendering engine utilizing 2 parallel pipelines with two texture blending units each capable, of handling up to 8 texels in a single pass, delivering 2.4 Gigatexels/s fill rate CHARISMA ENGINE III, geometry unit utilizing 4 vertex processing engines, capable of executing two instructions per clock cycle each, thus yielding up to 200 million transformed, clipped and lit triangles per second. VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/decode Dual independent display controllers with 4K x 4K address space each 256-bit external frame buffer interface providing memory bandwidth of up to 20 GB per second
	Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8.1
	Available graphics drivers	Windows 2000 Windows XP Linux See: http://www.hp.com/workstations/support

Technical Specifications

ATI FIRE GL X1 Graphics Card display resolutions & refresh rates

CRT DISPLAY (SINGLE OR DUAL)

Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	100Hz	16, 24
800x600	100Hz	16, 24
1024x768	100Hz	16, 24
1152x864	100Hz	16, 24
1280x960	100Hz	16, 24
1280x1024	100Hz	16, 24
1600x1000	100Hz	16, 24
1600x1024	76Hz	16, 24
1600x1200	100Hz	16, 24
1792x1344	100Hz	16, 24
1920x1080	100Hz	16, 24
1920x1200	100Hz	16, 24
2048x1536	85Hz	16, 24

DIGITAL DISPLAY (SINGLE OR DUAL)

Single CRT Display Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	75Hz	16, 24
800x600	75Hz	16, 24
1024x768	75Hz	16, 24
1280x1024	75Hz	16, 24
1600x1000	60Hz	16, 24
1600x1200	60Hz	16, 24
1920x1080	60Hz	16,24
1920x1200	60Hz	16, 24

Technical Specifications

NVIDIA Quadro FX2000	Form Factor	ATX
	Graphics Controller	NVIDIA NV30GL GPU
	Bus Type	AGP 8X Version 3.0 compliant
	RAMDAC	Dual 400MHz integrated
	Memory	128MB DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
	Multi-monitor support	Dual integrated display controllers supporting up to 2048x1536 @ 85Hz on both displays
	Additional product features	128 MB DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage
		128 KB BIOS 3.3V Flash ROM reprogrammable by SW
		Hardware Overlay Planes
		Hardware two-sided lighting
		Hardware accelerated antialiased points and lines
		Quad-buffered Stereo
		Diamond exit rule line rasterization for improved line quality
		3D Texture support
		Occlusion Culling
		Dual Link DVI on one output enabling driving digital displays up to 2048x1536
		Compliant with Microsoft/Intel PC2001 Workstation requirements
		Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
		DDC2B+ Monitor support on all OS platforms
		ACPI Version 1.0b Power Management support (all modes
	AGP8xVersion 3.0 compliant including:	Sideband Addressing AGP Texturing (Execute Mode) Fast write support
	NV30GL GPU featuring:	400 MHz engine clock rate 400 MHz memory clock rate 128-bit memory interface VGA controller 8 parallel pixel pipelines 3 parallel geometry engines nfiniteFX II programmable vertex and pixel shader technology
	Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8,9
	Available graphics drivers	Windows 2000
		Windows XP
		HP-tested Linux HP qualified drivers may be preloaded or available from the HP support web site: See: http://h20000.www2.hp.com/bizsupport/TechSupport/Product .jsp?prodTypeId=12454&prodCatId=296719&locale=en_US&taskId=135
		See: http://www.hp.com/workstations/support

QuickSpecs

Technical Specifications

NVIDIA Quadro FX2000 Display Resolutions & Refresh Rates

Resolution	Maximum Refresh Rate	Bits per Pixel
	MONITOR 1, 2 ANALOG/DIGITAL	
640x480	240Hz/240Hz	8, 16, 32
800x600	240Hz/200Hz	8, 16, 32
1024x768	200Hz/140Hz	8, 16, 32
1152x864	170Hz/100Hz	8, 16, 32
1280x720	150Hz/120Hz	8, 16, 32
1280x960	150Hz/85Hz	8, 16, 32
1280x1024	150Hz/85Hz	8, 16, 32
1600x900	120Hz/75Hz	8, 16, 32
1600x1024	100Hz/72Hz	8, 16, 32
1600x1200	120Hz/60Hz	8, 16
1600x1200	100Hz/60Hz	32
1920x1080	100Hz/60Hz in Dual Link Mode	

QuickSpecs

HP Workstation xw8000

Technical Specifications

HP L1825 Flat Panel Monitor (Carbon/Silver)		
Display Type	TFT large viewing angle	
Viewable Image Size	18.1 in/45.9 cm, maximum viewable	
Screen Opening (W x H)	14.2 x 11.4 in/36.2 x 28.9 cm	
Viewing Angle	160 degrees horizontal/160 degrees vertical (10:1 minimum contrast ratio)	
Pixel Pitch	.281 mm	
Pixel Clock Speed	135 MHz	
Brightness	250 nits (cd/m2)	
Contrast Ratio	350:1 (typical)	
Response Rate	30 ms (typical rise + fall)	
Horizontal Frequency (kHz)	30 to 82 kHz	
Vertical Frequency (Hz)	56 to 75 Hz	
Color Depth Support	16.7 million colors	
Graphics Controller	Genesis gm5020	
Factory Preset Modes	15	
Graphic Preset Modes (non-interlaced)	640 x 480 @ 60 Hz, 72 Hz, 75 Hz	
	800 x 600 @ 56 Hz, 60 Hz, 75Hz	
	1024 x 768 @ 60 Hz, 75 Hz	
	1280 x 1024 @ 60 Hz, 75 Hz	
Mac Compatible Modes (adapter required)	832 x 624 @ 75 Hz	
	1152 x 870 @75 Hz	
Text Mode	720 x 400 @ 70 Hz	
VGA Mode	640 x 480 @ 60 Hz, 72 Hz	
User-Programmable Modes	15	
Anti-Glare/Anti-Static	Yes/Yes	
Asset Control	Yes (accessible on HP desktops featuring Intelligent Manageability)	
Plug and Play	Yes (supports VESA DDC2B; PC2001 compliant)	
Protective Panel	No	
Kensington Lock-ready	Yes	
Accessories Included	VGA cable, DVI-D cable	
VESA Mounting	100 mm x 100 mm screw-mounting option; pedestal is attached	
VESA External Mounting	Yes (standard 4-hole pattern, 100 mm)	
Detachable Base	Yes	
Tilt	Yes (–5° to +35°)	
Swivel	Yes (–35° to +35°)	
Height Adjustable	Yes (130 mm adjustment range)	
Portrait Mode Supported	Yes	
Touchscreen Option	No	
Fail Safe Mode	Yes	
Icon Based On-Screen Controls	Yes	

Technical Specifications

HP L1825 Flat Panel Monitor (Carbon/Silver) *(continued)*	**User Controls**	Brightness, contrast	Yes
		Positioning	Yes
		Color temperature	Yes (6500k, 9300k, User)
		Individual color control	Yes
		Serial number display	Yes
		Full screen resolutions	Yes (640 x 480, 800 x 600)
		Clock	Yes
		Clock phase	Yes
		Monitor management	No
		Recall	No
		Audio recall	No
		Input selection	Yes
		Factory reset	Yes
	Language Selection	English	Yes
		Spanish	Yes
		French	Yes
		German	Yes
		Simplified Chinese	Yes
		Italian	Yes
	Agency Approvals/Certifications	Australian ACA Approval	Yes
		Canadian Requirements/CSA	Yes
		CE Marking	Yes
		China CCIB/CCEE Approval	Yes
		CISPR Requirements	Yes
		Eastern European Approvals	Yes
		Energy Star Compliant	Yes
		FCC Approval	Yes
		German Ergonomic (TUV and GS Mark)	Yes
		ISO 9241-3,7,8 VDT Guidelines	Yes
		ISO 13406-2 Compliant (Pixel Defect Guidelines)	Yes
		Mexican NOM Approval	Yes
		MIC Requirements (New Zealand)	Yes
		MPR-II Compliant	Yes
		Nordic Approvals (Nemko, Fimko, Demko, Semko)	Yes
		PC2001 Compliant	Yes
		PC99 Certified	Yes
		S. Korean MIC Approval	Yes
		Taiwan BSMI Approval	Yes
		TCO 99 (emissions, ergonomics, environment)	Yes
		TUV-Ergo	Yes
		UL Listed	Yes
		VCCI Approvals	Yes
		Windows Certification	Microsoft Windows 98, Windows 2000, and Windows XP
	Input Impedance	75 ohms ± 10%	
	Input Signal	Two connectors: one 15-pin mini D-sub analog VGA; and one DVI-I (VGA analog or digital)	

Technical Specifications

HP L1825 Flat Panel Monitor (Carbon/Silver) *(continued)*	**Sync Input**	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green
	Power Supply ALS	Auto-ranging, 90 to 264 VAC; internal power supply, 60 Hz
	Power Rating	**Maximum Mode** < 60 W
		Power Saving Mode < 5 W
		Off Mode < 5 W
	Dimensions (H x W x D)	**With stand - min height** 14.8 x 15.8 x 8.2 in/37.6 x 40.2 x 20.8 cm
		With stand - max height 19.9 x 15.8 x 8.2 in/50.6 x 40.2 x 20.8 cm
		Without stand 13.5 x 15.8 x 2.9 in/34.2 x 40.2 x 7.3 cm
	Approximate Weight	**With height-adjustable stand** 22.9 lb/10.4 kg
		Without stand 13.6 lb/6.2 kg
	Temperature	**Operating** 32° to 95° F/0° to 35° C
		Non-operating -4° to 140° F/-20° to 60° C
	Humidity	**Operating** 20% to 80%
		Non-operating 8% to 85%
	Warranty	Limited three years parts, labor, and on-site service, including backlight. Availability varies by region. Consult HP Customer Service for details.
	Graphic Controller Compatibilitys	Compatible with ″VESA Video Signal Standard (VSIS) Compliant″ video cards. **NOTE**: Features are subject to change without notice.

QuickSpecs

Technical Specifications

HP L1925 Flat Panel Monitor (Carbon/Silver)	**Panel**	**Type**	Thin film transistor (TFT)
		Viewable Image Area (diagonal)	19 in (48.25 cm) maximum viewable
		Screen Opening (W x H)	14.9 x 11.9 in (37.8 x 30.3 cm)
		Viewing Angle (typical)	170 degrees horizontal/170 degrees vertical (10:1 minimum contrast ratio)
		Brightness (typical)	Up to 250 nits (cd/m2)
		Contrast Ratio (typical)	Up to 500:1 (typical)
		Response Rate (typical)	<20 ms (typical rise + fall)
		Pixel Pitch	0.294 mm
		Color Depth Support	16.7 million colors
	Video Input	**Plug and Play**	Yes (supports VESA DDC2B; PC2001 compliant)
		Input Signal	Two connectors: one 15-pin mini D-sub analog VGA; and one DVI-I (VGA analog or digital)
		Input Impedance	75 ohms ± 2%
		Sync Input	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green
		Video Cable	VGA and DVI-D
		Video Cable Length	78 in (2.0 m)
	Signal Interface/ Performance	**Horizontal Frequency**	30 to 82 kHz
		Vertical Frequency	56 to 75 Hz
		Graphics Controller	Pixelworks 131
		Native Resolution	1280x1024@75Hz analog
			1280x 1024@60Hz digital
		Maximum Resolution (Analog)	1280x1024@75Hz analog
		Maximum Resolution (Digital)	1280x1024@75Hz analog

Technical Specifications

HP L1925 Flat Panel Monitor (Carbon/Silver) *(continued)*	**On Screen Display (OSD) Controls**	Preset VESA Graphic Modes (non-interlaced)	640 x 480 @ 60 Hz, 72 Hz, 75 Hz
			800 x 600 @ 60 Hz, 72 Hz, 75Hz
			1024 x 768 @ 60 Hz, 75 Hz
			1280 x 1024 @ 60 Hz, 75 Hz
		Preset MAC Mode	832 x 624 @ 75 Hz
			1152 x 870 @75 Hz
		Preset VGA Mode	640 x 480 @ 60 Hz, 72 Hz
		Preset SUN Mode	1152x900@66Hz
		Fail Safe Mode	Yes (limits out of range signal messages)
		Maximum Pixel Clock Speed	140 MHz
		User Programmable Modes	Yes, 10
		Anti-Glare	Yes
		Anti-Static	Yes
		Asset Control	Yes (accessible on HP/Compaq desktops featuring Intelligent Manageability)
		Default Color Temperature	Yes (6500k, 9300k, Custom User)
		Buttons or Switches	Power on/off; 4-button OSD; second level OSD buttons include auto adjust and dual-input switch
		Languages	English, Spanish, French, German, Dutch, Italian
		User Controls	Size and Positioning
			Contrast
			Brightness
			Clock, Clock Phase
			Selectable Color Temperature
			Input Selection
			Factory Reset
			Individual Color Contrast
			Full-screen Resolution

Technical Specifications

HP L1925 Flat Panel Monitor (Carbon/Silver) *(continued)*	**Power**	**Power Supply**	Auto-ranging, 90 to 265 VAC; internal power supply, 47.5-63 Hz
		Input Power	100 ~ 240 VAC
		Nominal Current	1.5 A maximum
		Frequency	50 ~ 60 Hz
		Average	33 watts when displaying standard office software
		Maximum	< 40 watts
		Power Saving	< 2 watts
		Off Mode	< 1 watts (switch off)
		Power Cable Length	70 in (1.8 m); non-captive
	Mechanical	**Dimensions** (H x W x D) **Unpacked w/ stand minimum height**	14.8 x 16.4 x 8.2 in (39.8 x 41.6 x 20.8 cm)
		Unpacked w/ stand maximum height	20 x 16.4 x 8.2 in (50.8 x 41.6 x 20.8 cm)
		Base Area (Footprint d x w)	8.2 x 12.2 in (20.8 x 30.9 cm)
		Panel only (w/o stand) (h x w x d)	13.5 x 16.4 x 2.6 in (34.2 x 41.6 x 6.6 cm)
		Packaged	26.0 x 26.0 x 26.0 in (66.0 x 66.0 x 66.0 cm)
		Weight **Unpacked w/ stand**	7.6 lb (8 kg)
		Unpacked w/o stand	2 lb (5.5 kg)
		Packaged	23.5 lb (10.7 kg)
		Tilt Range	–5 degrees to +20 degrees
		Swivel Range	± 45 degrees horizontal swivel
		Height Adjustable	Yes (4.3 in/110 mm adjustment range)
		Pivot Rotation	Yes, 90 degrees
		Base	Ships attached and is removable after installation
	Environmental	**Temperature – Operating**	41° to 95° F (5° to 35° C)
		Temperature – Non-operating	–4° to 140° F (–20° to 60° C)
		Humidity – Operating	20% to 80%
		Humidity – Non-operating	5% to 95%
		Altitude – Operating	0 to 13,000 ft (0 to 4,000 m)
		Altitude – Non-operating	0 to 40,000 ft (0 to 12,192 m)

QuickSpecs

HP Workstation xw8000

Technical Specifications

HP L1925 Flat Panel Monitor (Carbon/Silver) *(continued)*	Options	PC Comm Station	Communication/audio hub that includes two stereo speakers (8 PMPO each), integrated microphone/dual function headset (phone and PC support), and USB port. Optional, part number 304251-008 (US) or P8814A (EMEA).
	Other	Accessories Included	VGA cable, DVI-D cable, user CD-ROM with Portrait software
		User Guide Languages	English
		Warranty Languages	English
		Color	Carbon/Silver
		VESA Mounting	Yes (swing arm/ wall mount not included; base is shipped attached and must be removed for mounting options)
		VESA External Mounting	Yes (Standard 4 hole pattern, 100 mm)
		Kensington Lock-ready	Yes
	Certification and Compliance		Australian ACA Approval, Canadian Requirements/CSA, CE Marking, China CCIB/CCEE Approval, CISPR Requirements, Eastern European Approvals, Energy Star Compliant, FCC Approval, German Ergonomic (TUV and GS Mark), ISO 9241-3,7,8 VDT Guidelines, ISO 13406-2 Compliant (Pixel Defect Guidelines), Mexican NOM Approval, MIC Requirements (New Zealand), MPR-II Compliant, Nordic Approvals (Nemko, Fimko, Demko, Semko), PC2001 Compliant, PC99 Certified, S. Korean MIC Approval, Taiwan BSMI Approval, TCO 03 (emissions, ergonomics, environment), TUV-Ergo, UL Listed, VCCI Approvals, Windows Certification
	Compatibility		VESA Video Signal Standard (VSIS) Compliant video cards have been tested and proven compatible for use with the HP Flat Panel Monitor L1925. The HP L1925 has been tested for use with Compaq Evo PCs and Thin Clients and Compaq D315 Business PCs. NOTE: Features are subject to change without notice.
	Service and Warranty		Limited three-year parts and repair labor, service provider labor, and on-site service. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada).

QuickSpecs

Technical Specifications

HP L2025 Flat Panel Monitor (Carbon/Silver)	Display Type	TFT large viewing angle
	Viewable Image Size	20.1 in/51 cm maximum viewable
	Screen Opening (W x H)	16.2 x 22 in/41.1 x 30.9 cm
	Viewing Angle	170 degrees horizontal/170 degrees vertical (10:1 minimum contrast ratio)
	Pixel Pitch	0.255 mm
	Pixel Clock Speed	202 MHz
	Brightness	250 nits (cd/m^2) typical
	Contrast Ratio	350:1 typical
	Response Rate	25 ms typical (rise + fall)
	Color Depth Support	16.7 million colors
	Horizontal Frequency (kHz)	30 to 94 kHz (analog); 30 to 92 KHz (digital)
	Vertical Frequency (Hz)	56 to 85 Hz
	Graphics Controller	Pixelworks PW171
	Factory Preset Modes	18
	Graphic Preset Modes (non-interlaced)	1600 x 1200 @ 60 Hz, 75 Hz 1280 x 1024 @ 60 Hz, 75Hz, 85 Hz 1280 x 960 @ 60 Hz 1152 x 900 @ 66 Hz
	Mac or Other Compatible Modes (adapter may be required)	832 x 624 @ 75 Hz 1152 x 870 @ 75 Hz
	Text Mode	720 x 400 @ 70 Hz
	VGA Mode	640 x 480 @ 60 Hz
	User-Programmable Modes	18
	Anti-Glare/Anti-Static	Yes/Yes
	AssetControl	Yes (accessible on HP desktops featuring Intelligent Manageability)
	Plug and Play	Yes
	Kensington Lock-ready	Yes
	Accessories Included	VGA cable, DVI-D cable
	Protective Panel	No
	VESA Mounting	100 mm x 100 mm screw-mounting option; pedestal is attached
	VESA External Mounting	Yes (Standard 4 hole pattern, 100 mm)
	Portrait Mode Supported	No
	Touchscreen Option	No
	Detachable Base	Yes
	Tilt	Yes (–5° to +35°)
	Swivel	Yes (–35° to +35°)
	Height Adjustable	Yes (130 mm adjustment range)
	Fail Safe Mode	Yes
	Icon Based On-Screen Display Controls	Yes

Technical Specifications

HP L2025 Flat Panel Monitor (Carbon/Silver)*(continued)*	User Controls	Brightness, contrast	Yes
		Positioning	Yes
		Color temperature	Yes (6500k, 9300k, User)
		Individual color control	Yes
		Serial number display	Yes
		Full screen resolutions	Yes (640 x 480, 800 x 600)
		Clock	Yes
		Clock phase	Yes
		Monitor management	No
		Recall	No
		Audio recall	No
		Video PIP	Yes (size and position)
		Input selection	Yes (includes separate direct access key for dedicated swap between inputs 1 and 2)
		Factory reset	Yes
	Language Selection	English	Yes
		Spanish	Yes
		French	Yes
		German	Yes
		Simplified Chinese	Yes
		Italian	Yes
	Agency Approvals/Certifications	Australian ACA Approval	Yes
		Canadian Requirements/CSA	Yes
		CE Marking	Yes
		China CCIB/CCEE Approval	Yes
		CISPR Requirements	Yes
		Eastern European Approvals	Yes
		Energy Star Compliant	Yes
		FCC Approval	Yes
		German Ergonomic (TUV and GS Mark)	Yes
		ISO 9241-3,7,8 VDT Guidelines	Yes
		ISO 13406-2 Pixel Defect Guidelines	Yes
		Mexican NOM Approval	Yes
		MIC Requirements (New Zealand)	Yes
		MPR-II Compliant	Yes
		Nordic Approvals (Nemko, Fimko, Demko, Semko)	Yes
		PC2001 Compliant	Yes
		PC99 Certified	Yes
		S. Korean MIC Approval	Yes
		Taiwan BSMI Approval	Yes
		TCO 99 (emissions, ergonomics, environment)	Yes
		TUV-Ergo	Yes
		UL Listed	Yes
		VCCI Approvals	Yes
		Windows Certification	Microsoft Windows 98, Windows 2000, and Windows XP

QuickSpecs

Technical Specifications

HP L2025 Flat Panel Monitor
(Carbon/Silver)*(continued)*

Input Impedance	75 ohms ± 10%	
Input Signal	Four connectors, including one 15-pin mini D-sub VGA; one DVI-I (VGA analog and digital input), one composite video, and one s-video	
Sync Input	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green	
Power Supply ALS	Auto-Ranging, 90 to 264 VAC; internal power supply, 60 Hz	
Power Rating	**Maximum Mode**	< 70 W
	Power Saving Mode	< 5 W
	Off Mode	< 5 W
Dimensions (H x W x D)	**With Stand - Min height**	16.3 x 19.2 x 8.2 in/41.4 x 48.8 x 20.8 cm
	With Stand - Max height	21.4 x 19.2 x 8.2 in/54.4 x 48.8 x 20.8 cm
	Without Stand	16.1 x 19.2 x 3.0 in/40.8 x 48.8 x 7.6 cm
Approximate Weight	**With height-adjustable stand**	26.4 lb/12 kg
	Without stand	17.2 lb/7.8 kg
Temperature	**Operating**	46° to 95° F/10° to 35° C
	Non-operating	6° to 140° F/–10° to 60° C
Humidity	**Operating**	20% to 80%
	Non-operating	5% to 85%
Warranty	Three-year limited warranty parts, including backlight and on-site labor or 48 hour direct unit replacement. Certain restrictions apply. Some terms vary depending on sales region. Consult HP Customer Service for details.	
Graphic Controller Compatibility	Compatible with ″VESA Video Signal Standard (VSIS) Compliant″ video cards. **NOTE**: Features are subject to change without notice.	

QuickSpecs

Technical Specifications

HP p930 CRT Monitor (Carbon/Silver)	Tube Type	Diamondtron Natural Flat (NF) aperture grille tube; anti-reflection, anti-static	
	Picture Tube Size (diagonal)	19 in/48.26 cm	
	Viewable Image Area (diagonal)	18 in/45.72 cm	
	Aperture Grille Pitch	0.24 mm	
	Horizontal Frequency (kHz)	30 to 110 kHz	
	Vertical Frequency (Hz)	50 to 160 Hz	
	Maximum Resolution	1920 x 1440 @ 60 Hz	
	Preferred Flicker Free Resolution	1280 x 1024 @ 85 Hz	
	Graphic Preset Modes (non-interlaced)	1600 x 1200 @ 85 Hz and 75 Hz 1280 x 1024 @ 85 Hz and 75 Hz 1024 x 768 @ 85 Hz 800 x 600 @ 85 Hz 640 x 480 @ 85 Hz and 60 Hz 720 x 400 @ 70 Hz	
	User-Modes	Yes, 8 modes	
	Anti-Glare/Anti-Static	Yes/Yes	
	Asset Control	Yes	
	Plug and Play	VESA DDC2B; PC2001 compliant	
	Front Panel User Controls	Power on/off; menu button; 4 OSD adjustment buttons; OSD exit button, information button	
	On-Screen User Controls	Brightness, Contrast	Yes
		Size and Positioning	Yes
		Pincushion (barrel)	Yes
		Trapezoid	Yes
		Moiré Correction	Yes
		Tilt (rotation)	Yes
		Selectable Color Temperature	Yes
		Factory Reset/Recall	Yes
		Orthogonality	Yes
		Current Display Mode	Yes
		Degauss	Yes
		Convergence	Yes
	Approvals/Certifications	UL/CSA/CUL Approval	Yes
		ISO9241-3, -7, -8 VDT Guidelines Approval	Yes
		MPR-II Compliant	Yes
		TCO '99	Yes
		FCC Approval	Yes
		Microsoft WHQL Certified	Yes
		Energy Star Compliant	Yes
		CE Compliant	Yes
	Signal Cable	Attached 15-pin D-sub connector, 5.9 feet (1.8 meter)	
	Maximum Pixel Clock Speed	290 MHz	
	Power Supply	Universal; 100–240 V (auto-ranging), 50–60 Hz	
	Maximum Power Rating	≤ 120 watts	
	Low Power Sleep Mode	< 3 watts	

Technical Specifications

HP p930 CRT Monitor (Carbon/Silver) *(continued)*	**Off Mode**	0 watts	
	Dimensions (H x W x D)	**Unpacked**	18.8 x 18.5 x 18.5 in/47.6 x 46.9 x 46.9 cm
		Packaged	22.0 x 22.3 x 22.8 in/55.9 x 56.5 x 57.8 cm
	Weight	**Unpacked**	55 lb/24.9 kg
		Packaged	61 lb/27.7 kg
	Tilt/Swivel Base	–5 to +10 degrees vertical tilt; ±45 degrees horizontal swivel	
	Operating Temperature	50° to 95° F/10° to 35° C non-condensing	
	Operating Humidity	20% to 80% non-condensing	
	Warranty	Limited three-year parts and repair labor, three-year service provider labor, and three-year on-site service warranty. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada).	

QuickSpecs

Technical Specifications

HP p1130 CRT Monitor (Carbon/Silver)	**Tube Type**	FD Trinitron aperture grille tube	
	Picture Tube Size (diagonal)	21 in/53.3 cm	
	Viewable Image Area (diagonal)	19.8 in/50.3 cm	
	Aperture Grille Pitch	0.24 mm	
	Horizontal Frequency (kHz)	30 to 130 kHz	
	Vertical Frequency (Hz)	50 to 170 Hz	
	Maximum Resolution	2048 x 1536 @ 75Hz	
	Maximum Pixel Clock Speed	< 370 MHz	
	Preferred Flicker Free Resolution	1920 x 1440 @ 85 Hz	
	Graphic Preset Modes (non-interlaced)	1920 x 1440 @85Hz 1800 x 1440 @80Hz 1600 x 1200 @75, 85Hz 1280 x 1024 @75, 85Hz 1024 x 768 @75, 85Hz 800 x 600 @75, 85Hz 640 x 480 @65, 75 and 85Hz 640 x 400 @ 70Hz	
	User-Modes	8 preset modes and 10 additional modes	
	Anti-Glare/Anti-Static	Yes/Yes	
	AssetControl	Yes	
	Front Panel User Controls	Power on/off switch; 5-button OSD; dual-input switch	
	Languages	**Nine**	English, French, German, Spanish, Italian, Dutch, Swedish, Russian, Japanese
	On-Screen User Controls	**Size and Positioning**	Yes
		Contrast	Yes
		Brightness	Yes
		Moiré Correction	Yes
		Tilt (rotation)	Yes
		Selectable Color temperature	Yes
		Orthogonality	Yes
		Degauss	Yes (automatic at power on; manual)
		Convergence (h/v/pre-set)	Yes
		Reset	Yes
	Approvals/Certifications	**UL/CSA/CUL Approval**	Yes
		ISO9241-3, -7, -8 VDT Guidelines	Yes
		MPR-II Compliant	Yes
		TCO '99	Yes
		FCC Approval	Yes
		Microsoft WHQL Certified	Yes
		Energy Star Compliant	Yes
		CE Compliant	Yes
	Plug and Play	VESA DDC2Bi and DDC2B. PC2001 compliant	
	Dual Input	Yes, two 15-pin D-sub connections	
	Signal Cable	Detachable 15-pin D-sub mini connector	
	Power Supply	Universal; 100–240 V (auto-ranging), 50–60 Hz	

Technical Specifications

HP p1130 CRT Monitor (Carbon/Silver) *(continued)*		
Maximum Power Rating	135 watts	
Low Power Sleep Mode	< 3 watts	
Off Mode	0 watts	
Dimensions (H x W x D)	**Unpacked**	19.7 x 19.6 x 19.3 in/50.2 x 49.7 x 49.0 cm
	Packaged	26.0 x 26.0 x 26.0 in/66.0 x 66.0 x 66.0 cm
Weight	**Unpacked**	67.2 lb/30.5 kg
	Packaged	72.5 lb/32.9 kg
Tilt/Swivel Base	–5 to +15 degrees vertical tilt; ±45 degrees horizontal swivel	
Operating Temperature	50° to 104° F (10° to 40° C) non-condensing	
Operating Humidity	10% to 80% non-condensing	
Altitude	**Operating**	0 to 13,000 ft/0 to 4,000 m
	Non-Operating	0 to 50,000 ft/0 to 15,250 m
Warranty	Limited three-year parts and repair labor, service provider labor, and on-site service. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada).	

HP recommends Microsoft® Windows® XP Professional for Business