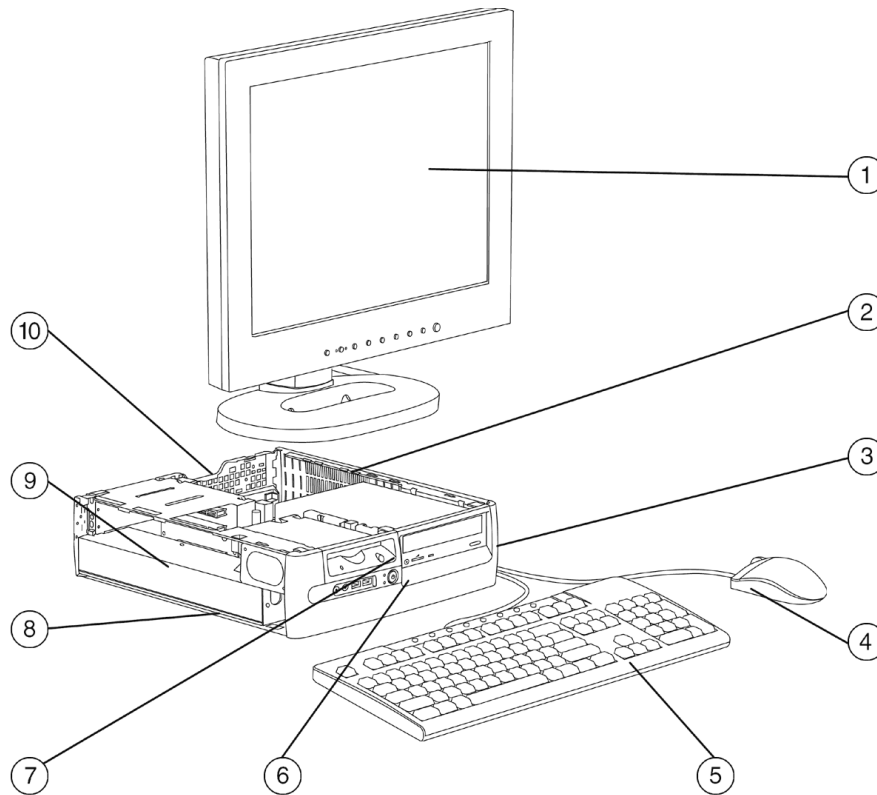


Overview



HP workstation xw3100
3.95 x 13.3 x 15.1 inches/10 x 33.8 x 38.3 centimeters

- | | |
|--|--|
| 1. HP Monitor (optional) | 6. 2 USB 2.0, headphone and microphone |
| 2. Expansion: 2 full-height PCI slots 1 low-profile AGP 8X slot | 7. Optional diskette drive or 3.5" external bay |
| 3. 1 3.5" internal bay and 1 5.25" external bay for CD-ROM, DVD-ROM, CD-RW or Combo Drives | 8. Small Form Factor (also available as Tower Form Factor) |
| 4. 2-Button Scroll Mouse | 9. 185W Power Supply |
| 5. Easy Access Keyboard | 10. Rear I/O: 4 USB 2.0, 1 standard serial port, 1 optional serial port, 1 parallel port, 2 PS/2, 1 RJ-45, 1 VGA, audio in/out |

At A Glance

- Intel® Pentium® 4 processors
- Windows® XP Professional preinstalled with full HP support
- Intel 865G chipset with Intel Extreme 2 integrated graphics
- Integrated Broadcom NetXtreme Gigabit ethernet for HP
- 800-MHz processor front side bus support
- Intel HyperThread support
- Choice of leadership graphics:
Integrated Intel Extreme Graphics,
NVIDIA Quadro NVS 200,
NVIDIA Quadro NVS 400,
ATI FireGL T2-64s
- EIDE ATA/100 Hard Drives
- Five total slots – four PCI and one AGP 8X
- MultiBay support
- Choice of: CD-ROM, DVD-ROM, CD-RW, or Combo CD-RW/DVD-ROM
- Energy Star compliance with energy-saving features
- Full Independent Software Vendor (ISV) certification and support for leading technical applications
- 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.

Standard Features

Processor Intel Pentium 4 Processors 2.6-GHz, 2.8-GHz, 3.0-GHz, or 3.2-GHz (800-MHz Front Side Bus) with HyperThreading*
* Hyper-Threading Technology requires a computer system with an Intel Pentium 4 processor supporting HT Technology and a Hyper-Threading Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See <http://www.intel.com/info/hyperthreading/> for more information including details on which processors support HT Technology

Operating System Microsoft® Windows XP Professional preinstall – Service Pack 1a

Cache Memory 512 KB integrated, full speed Level 2 cache per processor

Memory Maximum 4 GB of dual-channel PC2700 DDR-333 or
2 GB of dual-channel PC3200 DDR-400

Network Controller Integrated Broadcom Gbit LAN 10/100/1000Mbps Network Interface

Expansion Slots I/O (Total) 3 total slots available
PCI - 32-bit/33 MHz 2 slots available
AGP 8X 1 slot available

Expansion Bays (Total/Available) 3/0
Internal 3.5 inch 1 bay (for Hard Disk Drive)
External 5.25 inch 1 bay (for Optical Disk Drive)
External 3.5 inch 1 bay (for optional floppy or second hard drive)

Storage Floppy Diskette Drive (optional) 1.44 MB
Removable Media CD-ROM, CD-RW, DVD-ROM, Combo DVD-ROM/CD-RW, or no optical disk
Hard Drive 40, 80 or 160 GB EIDE ATA/100 (7200 rpm)

Interfaces Parallel 1 25-pin port, rear
USB 2.0 6 USB 2.0 ports (2 front, 4 rear)
Serial One 9-pin connectors (rear)
Ultra ATA/100 2 connectors (internal)
Keyboard 1 PS/2 keyboard port (rear)
Pointing Device 1 PS/2 mouse port (rear)
Keyboard 1 PS/2 keyboard port (rear)
Network interface 1 RJ-45 connector (rear)
Microphone Jack 1 (front)
Headphone Jack 1 (front)
Line-In Jack 1 (rear)
Line-Out Jack 1 (rear)
Graphics/Video 1 VGA port (rear, for Intel Extreme integrated graphics)
IEEE 1394/Firewire (optional) 3 connectors (1 internal, 2 rear)

Standard Features

Graphics

One of the following:

Integrated Intel Extreme 2 Graphics
NVIDIA Quadro NVS 200 (64M AGP LP)
NVIDIA Quadro NVS 400 (64M PCI)
ATI FireGL T2-64s (64MB AGP LP)

Audio

AC97/16-bit stereo full-duplex

Management

System Software Manager
Insight Management Agent
Altiris Express
Asset Control
Alert on LAN (AoL)
Wake on LAN (WoL)
Fault Management
Security Management
Pre-Failure Warranty (hard drives and memory)

Remote Management

Remote Wakeup
Remote ROM Flash
Remote Security
Remote Shut Down

Bios Features

Advanced Configuration and Power Interface (ACPI) 1.0b
Advanced Power Management (APM) 1.2
Desktop Management Interface (DMI) 2.0
System Management (SM) Bios 2.3

Security

Diskette write and boot control
Port Control
Flash ROM lock
Keyboard password
Network server mode
Parallel interface control
Power-on password
Serial interface control
Setup password
Cable lock provision
Kensington lock provision
Solenoid Hood Lock/Sensor (optional)

Power Supply

185 watts

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, and processors.

NOTE: Certain restrictions and exclusions apply. Consult the customer support center for details.
Three-year, onsite and labor not available in all countries.

Standard Features Pre-Configured Global Models

<p>xw3100X/PC3.00/A80/E512/XdF/s</p> <p>Processor</p> <p>OS</p> <p>Cache Memory</p> <p>Memory</p> <p>Optical Drive</p> <p>Hard Drive</p> <p>Graphics</p> <p>Mouse</p> <p>Other</p>	<p>Intel Pentium 4 processor 3.0 GHz with 800 MHz front side bus (Hyper-Threading support)</p> <p>Windows XP Professional</p> <p>512 KB</p> <p>512 MB (2x256MB dual-channel non-ECC PC3200 DDR-400); 6.4 GB/sec throughput</p> <p>DVD-ROM</p> <p>80GB EIDE ATA/100, 7200 rpm</p> <p>Integrated Intel Extreme Graphics Integrated in the base system For additional functionality and performance please choose a graphics card option below: NVIDIA Quadro4 200NVS NVIDIA Quadro4 400NVS ATI FireGL T2-64s NOTE: Please see Part Numbers in After market options/Standalone accessories section.</p> <p>HP scroll mouse, PS/2</p> <p>Includes Floppy Drive and HP Easy Access Keyboard PS/2 carbonite, Energy Star Settings</p>
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xw3100X/PC3.00/A80/E512/XdF/s Country Code Key

N. America	DL414A#ABA	NL	DL414A#ABH
Fr. Canadian	DL414A#ABC	Europe	DL414A#AK6
L. America	DL414A#ABM	Switzerland (Eng, It)	DL414A#ACN
Japan	DL414A#ABJ	Switzerland	DL414A#AR8
Japan (English)	DL414A#ACF	Dutch	DL414A#ACE
UK	DL414A#ABU	Asia/Pacific (English)	DL414A#AB4
Germany	DL414A#ABD	China	DL414A#AB2
France	DL414A#ABF	Taiwan	DL414A#AB0
Italy	DL414A#ABZ	Australia	DL414A#ABG
Spain	DL414A#ABE		

Configure to order options

HP workstation xw3100 Base System When buying a basic system, you have many configuration options. The basic system includes: Small Form Factor Chassis, System Board, Cables, etc.

Processor

- Intel Pentium 4 Processor 2.6-GHz, 512-KB cache, 800-MHz front side bus (Hyper-Threading support)
- Intel Pentium 4 Processor 2.8-GHz, 512-KB cache, 800-MHz front side bus (Hyper-Threading support)
- Intel Pentium 4 Processor 3.0-GHz, 512-KB cache, 800-MHz front side bus (Hyper-Threading support)
- Intel Pentium 4 processor 3.2 GHz, 512-KB cache, 800 MHz front side bus (Hyper-Threading support)

Operating System Windows XP Professional SP1a preloaded; incl. Win XP recovery CD

Graphic Card
(Video Card)

- Integrated Intel Extreme Graphics Graphics (Single Display)
- NVIDIA Quadro4 200NVS (64 MB, Dual Display, AGP, LP)
- NVIDIA Quadro4 400NVS (64 MB, Quad Display, PCI)
- ATI FireGL T2-64s (64MB, Dual Display, AGP, LP)

Memory

- 128 MB (1x128 MB) PC2700 DDR-333 non-ECC
- 256 MB (2x128MB) PC2700 DDR-333 non-ECC
- 512 MB (2x256MB) PC2700 DDR-333 non-ECC
- 1 GB (2x512 MB) PC2700 DDR-333 non-ECC
- 512 MB (2x256 MB) PC3200 DDR-400 non-ECC
- 1 GB (2x512 MB) PC3200 DDR-400 non-ECC
- 1.5 GB (2x512,2x256) PC3200 DDR-400 non-ECC
- 2 GB (4x512 MB) PC3200 DDR-400 non-ECC

Monitors

- HP L1825 Flat Panel Color Monitor (18-inch, Carbon/Silver)
- HP L2025 Flat Panel Color Monitor (20-inch, Carbon/Silver)
- HP p930 Flat screen (19-inch, Carbon/Silver or Carbonite)
- HP p1230 Flat screen CRT (22-inch, Carbon/Silver)

NOTE: AssetControl monitor. AssetControl features are accessible with HP workstations featuring Intelligent Manageability.

Primary hard disks

- 40 GB EIDE ATA/100 EIDE (7,200 rpm)
- 80 GB EIDE ATA/100 EIDE (7,200 rpm)
- 160 GB EIDE ATA/100 EIDE (7,200 rpm)

Secondary Hard Disks

- 40 GB EIDE ATA/100 EIDE (7,200 rpm)
- 80 GB EIDE ATA/100 EIDE (7,200 rpm)
- 160 GB EIDE ATA/100 EIDE (7,200 rpm)

HDD Controller ULTRA ATA/100

Configure to order options

Removable Media HP 48X CD-ROM
 HP 48X CD-RW
 HP 16X DVD-ROM
 HP 48X CDRW/DVD Combo

Keyboard HP Easy Access Keyboard (PS/2) carbonite
 No Keyboard option

Input Devices HP 3-Button Mouse (PS/2)
 HP Scroll Mouse (PS/2)
 No Mouse option

I/O PCI Cards and Other IEEE 1394/Firewire PCI Card
 Solenoid Hood Lock and Sensor
 Lucent V90 56K Modem PCI card
 Energy Star Settings
 Floppy Disk Drive
 No Floppy Disk Drive Kit

After market options/Standalone accessories

		Part #: Europe/Asia Pacific	Part #: Americas/ Japan
Memory (dual-channel, DDR, unbuffered, ECC)	256MB (1x256MB) PC2700 DDR333 non-ECC		DC339A
	512MB (1x512MB) PC3200 DDR400 non-ECC		DE467A
	1GB (1x1GB) PC2700 DDR333 non-ECC		DC341A
	1GB (1x1GB) PC2700 DDR333 non-ECC		DC341A
Monitors	HP L1825 Flat Panel Color Monitor (18-inch, Carbon/Silver)	P9021W	303486-003
	HP L2025 flat panel color monitor (20-inch, carbon/silver)	P4831D#XXX	303102-003 (NA only)
	HP p930 flat screen CRT color monitor (19-inch, carbon/silver or carbonite)	P9009W#XXX	302268-003 (NA only)
	HP p1230 Flat screen CRT Monitor color (22-inch, Carbon/Silver)	P9613A #XXX	P9613A#ABA (NA only)
NOTE: AssetControl features are accessible with HP workstations featuring Intelligent Manageability.			
Graphics	Integrated Intel Extreme 2 Graphics		
	NVIDIA Quadro4 400NVS (64 MB, Quad Display, PCI)		AA605A
	NVIDIA Quadro4 400NVS DVI Cables		AA606A
	DMS-59 to Dual DVI Cable for NVS cards		DL139A
	ATI FireGL T2-64s		DK599A
Multimedia	HP 48X CD-ROM Drive		DC143B
	HP 48X CD-RW Drive		DE205A
	HP 16X DVD-ROM Drive		AA620A
	HP 48X DVD/CD-RW Combo		DE206A
Communications	HP Gbit by Broadcom PCI Card		DC194A
	Intel Pro/1000 MT Gbit PCI Card		DC193A
	V92 56K PCI Modem		DC131B
	IEEE 1394 Firewire PCI card		AA638A
Speakers	Labtec Spin-22 Carbon Speakers		246637-001
Input Devices & Other	HP Easy Access Keyboard (PS/2)		DC167B
	HP Three Button Mouse (PS/2)		AA778A
	HP Scroll Mouse (PS/2)		DD440B
	Floppy Disk Drive		DK518AV
	Solenoid Hood Lock and Sensor		252076-B21
Security	USB Fingerprint Identification		240238-B21
	USB SmartCard Keyboard		267147-008
	Corvadis USB Enhanced SmartCard Reader		240154-B21

Memory

Standard Memory

This system supports both PC3200 DDR-400 and PC2700 DDR-333 non-ECC memory. The mainboard is based on the Intel 865G chipset and has 4 DIMM slots (6.4 GB/s and 5.4 GB/s throughput respectively). It can support a maximum of 4 GB of RAM when optional memory upgrades are included.

Here are memory options available from HP:

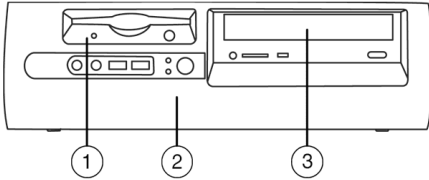
- 256MB (1x256MB) PC2700 DDR333 non-ECC
- 256MB (1x256MB) PC3200 DDR400 non-ECC
- 512MB (1x512MB) PC3200 DDR400 non-ECC
- 1GB (1x1GB) PC2700 DDR333 non-ECC

Part

DC339A
DE466A
DE467A
DE341A

Storage

Drive Bay Locations



Drive Support

	Quantity Supported	Position Supported	Controller
Floppy Diskette Drives	Up to 1	1	Diskette
3.5" SMART III Ultra ATA Hard Drives	Up to 2	1, 2	Integrated IDE
5 1/4" Optical Storage Drive	Up to 1	3	Integrated IDE
MultiBay Drive (optional, with adapter)	Up to 1	3	Integrated IDE

Maximum Storage Capacity

Internal 320 GB (Ultra ATA)

TechSpecs

System Unit	Chassis Dimensions (HxWxD)	3.95 x 13.3 x 15.1 in (10 x 33.8 x 38.3cm)	
	Weight (standard configuration)	22.2 lb (10.1 kg)	
	Power Supply	Custom Power Supply – PFC With in 230V (115v/230V line switch)	
		Line Frequency 47 to 63 Hz	
		Maximum Rated Power 185 W input, 185 W output	
	Temperature (Values are subject to change)	Operating 50° to 95° F (10° to 35° C) Non-operating -22° to 140°F (-30° to 60°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 (3,048 m) Non-operating 15,000 ft (4,572 m)	
	<hr/>		
	HP Easy Access Keyboard	Dimensions (HxWxD)	18.3 x 6.3 x 1.4 in (46.48 x 16.0 x 3.56 cm)
Weight		Approximately 2 lb (0.9 kg)	
Input Specifications		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 30+ 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	4 g peak acceleration		

TechSpecs

HP PS/2 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	5.30 oz (150 g)
	Environmental	Operating Temperature	32° to 104° F (0° to 40° C)
		Non-operating Temperature	-4° to 140° F (-20° to 60° C)
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-Operating Humidity	10% to 90% (non condensing at ambient)
	Electrical	Operating Voltage	+5 VDC ± 10%
		Power Consumption	10 mA maximum
		Interface	PS/2 six-pin mini-din connector
		ESD	CE level 4, 15 kV air discharge
	Mechanical	EMI-RFI	Conforms to FCC rules for a Class B computing device
		Resolution	400 ± 20% DPI
		Tracking Speed	10 in/s (25 cm/sec) Maximum
		Tracking Acceleration	100 inches/sec/sec 2.5 m/sec/sec
		Tracking Mechanism Life	Exceeds 300 miles (483) km at an average speed of 10 in/sec with no operational degradation
		Switch Type	Electronically debounced micro-switch
		Switch Activation	Approximately 60 g
Regulatory Approvals	Switch Life	1,000,000 operations with no operational degradation	
	Cable Length	7.0 ft (2.14 m)	
	Compliant	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI	

TechSpecs

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
	Mechanical	PC98	Functionally compliant	
		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			

1.44-MB Diskette Drive	Size	3.5 in (8.89 cm)	
	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	

TechSpecs

EIDE ATA Hard Drives 160 GB

Capacity	160 MB	
Height	1 in (2.54 cm)	
Width	3.5 in (8.9 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 (approx)	7200 rpm	
Logical blocks	320,173,056	
Operating temperature	41° to 131° F (5° to 55° C)	

80 GB

Capacity	80 GB	
Dimensions (HxWxD)	1.00 x 4.00 x 5.75 in (2.61 x 10.16 x 14.6 cm)	
Interface	Ultra ATA/100	
Synchronous Transfer Rate (Maximum)	100 MB/s	
Seek time (typical reads, including settling)	Single track	2.0 ms
	Average	12.0 ms
	Full-stroke	22.0 ms
Average rotational latency	4.2ms	
Rotational speed (approx)	7200 rpm	
Logical blocks	150,301,488	
Operating temperature	41° to 131° F (5° to 55° C)	

40 GB

Capacity	40 GB	
Dimensions (HxWxD)	1.00 x 4.00 x 5.75 in (2.61 x 10.16 x 14.6 cm)	
Width	3.5 in (8.9 cm)	
Interface	Ultra ATA/100	
Synchronous Transfer Rate (Maximum)	100 MB/s	
Seek time (typical reads, including settling)	Single track	2.0 ms
	Average	12.0 ms
	Full-stroke	22.0 ms
Average rotational latency	4.2ms	
Rotational speed	7200 rpm	
Logical blocks	78,165,360	
Operating temperature	41° to 131° F (5° to 55° C)	

TechSpecs

48X CD-ROM Drive	Capacity	650 MB CD disc
	Dimensions (HxWxD)	1.7 x 5.9 x 8.0 in (4.3 x 15.0 x 20.3 cm)
	Weight	2.6 lb (1200 g)
	Interface	ATAPI
	Mounting Orientation	Horizontal
	Data Transfer Rates - Read	Digital audio extraction (minimum) -1,200 KB/s CD read - up to 7,200 KB/s
	Media and Formats - Read	Formats: CD-DA, CD-ROM (Mode 1 and 2), CD-XA Ready, Photo CD (Single and Multi-session), Mixed Mode (Audio and Data combined), CD-I (FMV), CD Plus, CD-Extra; Media: stamped, CD-R, CD-RW
	Data Transfer Modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 0 (16.7 MB/s); UltraDMA Mode 2 (33.3 MB/s)
	Access Times (typical)	Random < 100 ms @ 48x Full-Stroke < 150 ms
	Start-up Time (typical)	< 7 s (single session) < 30 s (multisession)
	Stop Time (typical)	< 4 s
	Read Buffer size	128 KB (minimum)
	Audio Output	Line-Out 0.7 VRMS Signal-to-Noise Ratio 80 dB Channel Separation 65 dB
	Configuration Jumper Block	Master, slave, and cable select modes
	Operating Conditions	Temperature 41° to 122° F (5° to 50° C) Humidity 10% to 90%
	Approvals/ Environmental	UL 1950 (US and Canada), CSA, SEMKO, TUV; CE, FDA, FCC, IC, C-TICK
	Operating Systems Supported	Microsoft Windows 2000 and Microsoft Windows XP Pro.
	Supplied Software	None

TechSpecs

40+ 16XDVD-ROM Drive with +R Read Support	Capacity	4.7 and 9.4 GB DVD disc/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	1.72 lb (0.78 kg)	
	Interface	ATAPI/EIDE	
	Mounting Orientation	Horizontal or vertical	
	Data Transfer Rates -	Read Digital audio extraction (minimum) -2,700 KB/s (18X) CD read - up to 6,000 KB/s (40X) 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), CD-Extra, CD-Text, CD-I (Mode 2, Form 1 and 2), PhotoCD (single and multi-session), CD-I FMV, Video CD CD Media: stamped, CD-R, CD-RW DVD Formats: DVD-ROM, DVD-R (version 1.0 and 2.0), DVD-R multi-border, DVD-RW (version 1.0 and 1.1), DVD-RAM, DVD-Video (with application support) DVD Media: stamped (single or dual layer, single sided), DVD+RW, DVD+R, DVD-R, DVD-RW	
	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	<100ms
		Full stroke DVD (seek)	< 180 ms (seek)
		Full stroke CD(seek)	< 160 ms (seek)
	Start-up Time (typical)	9 s	
	Read Buffer Size	256 Kbytes (minimum)	
	Stop Time (typical)	4 s	
	Audio Output	Line-Out	0.7 VRMS
		Signal-to-Noise Ratio	75 dB
		Channel Separation	65 dB
	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)	15% to 85%	
Approvals/ Environmental	UL 1695 (US and Canada), CSA, TUV, SEMKO, IC, CE, FDA, FCC, C-TICK, CB, EMC (Taiwan, Korea)		
Operating Systems Supported	Microsoft Windows 2000 and Microsoft Windows XP.		
Supplied software	Intervideo WinDVD 4.0: Play DVD movies		

48/24/48+ 16X Combo CD-RW/DVD-ROM	Capacity	4.7 and 9.4 GB DVD disc/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) —1,200 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	<p>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)</p>										
Media and Formats - Write	<p>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</p>										
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)	<table border="0"> <tr> <td>DVD-ROM Single Layer</td> <td>120 ms</td> </tr> <tr> <td>Random</td> <td></td> </tr> <tr> <td>CD-ROM Mode 1</td> <td>110 ms</td> </tr> <tr> <td>Full Stroke DVD</td> <td>210 ms</td> </tr> <tr> <td>Full Stroke CD</td> <td>160 ms</td> </tr> </table>	DVD-ROM Single Layer	120 ms	Random		CD-ROM Mode 1	110 ms	Full Stroke DVD	210 ms	Full Stroke CD	160 ms
DVD-ROM Single Layer	120 ms										
Random											
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	<table border="0"> <tr> <td>Line-Out</td> <td>0.7 VRMS</td> </tr> <tr> <td>Signal-to-Noise Ratio</td> <td>74 dB</td> </tr> <tr> <td>Channel Separation</td> <td>65 dB</td> </tr> </table>	Line-Out	0.7 VRMS	Signal-to-Noise Ratio	74 dB	Channel Separation	65 dB				
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	<table border="0"> <tr> <td>Temperature</td> <td>41° to 122° F (5° to 50° C)</td> </tr> <tr> <td>Humidity</td> <td>10% to 85%</td> </tr> </table>	Temperature	41° to 122° F (5° to 50° C)	Humidity	10% to 85%						
Temperature	41° to 122° F (5° to 50° C)										
Humidity	10% to 85%										
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	<p>Intervideo WInDVD 4.0: Play DVD movies; 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.</p>										

TechSpecs

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.

TechSpecs

HP Broadcom NetXtreme Gigabit Ethernet	Dimensions	4.7 x 2.0 x 0.08 in (12 x 5 x 1.9 cm)
	Connector	RJ-45
	Controller	Broadcom 5782 PCI LAN Controller
	Memory	Integrated 96Kb 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)
	Operating system driver support	Microsoft Windows NT 4.0, Microsoft Windows 98, Microsoft 2000, Microsoft XP, Linux 2.2, Linux 2.4
	Management capabilities	ACPI, WOL and DMI 2.0, PXE 2.0, WfM 2.0, Broadcom mgmt utility
	Alerting	ASF 1.0
	Kit contents	Broadcom 5782, CD, Broadcom Gigabit Ethernet for HP, drivers, quick install guide, product warranty statement

TechSpecs

Intel Pro 1000 MT	Dimensions	6.4 x 4.8 x 0.8 in (16.3 x 12.1 x 1.9 cm)
	Connector	RJ-45
	Controller	Intel 82540EM Gigabit Controller
	Memory	Integrated 96Kb 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)
	Management capabilities	ACPI, WOL and DMI 2.0, PXE 2.0, WfM 2.0, Broadcom mgmt utility
	Kit contents	The Intel Pro 1000 MT NIC, CD containing Intel PROset II NIC drivers, quick install guide, product warranty statement

TechSpecs

Lucent V.90 56K PCI Win Modem	Dimensions (L X H)	Complies with PCI low profile specifications-6.7 x 2.3 in (17.0 x 5.8 cm), supports high- and low-profile brackets
	Data Transmission	V.90/K56flex technology speeds: 56,000 Kbps maximum downstream data, controllerless NOTE: 56 Kbps technology refers to download speeds only and requires compatible modems at server sites. Other conditions may limit modem speed. FCC limitations allow a maximum of 53 Kbps during download transmissions.
	Data Speeds	(Upload only) 33,600/31,200/28,800/26,400/21,600/19,200/ 16,800/14,400/12,000/9,600/7,200/4,800/2,400/1,200/300
	Data Standards	ITU V.90, ITU-T, V.34bis, V.22bis, V.22bis, V.21, V.23, Bell 212A, and Bell 103
	Fax Speeds	14,400/12,000/9,600/7,200/4,800/2,400/1,200/300 b/s
	Fax Mode Capabilities	Group3 FAX, V. 17, V.29, V.27ter, and V.21 Channel 2, Class 1
	Error Correction and Data Compression	V.44 (software upgradeable), 4.2bis, V.42 and MNP2-5
	Power Management	APM and ACPI states D0, D1, D2, and D3; meets PCI 2.2 requirements and PC'99 requirements
	Upgradability	Software driver upgradable for v.92 and future enhancements
	Video	ITU-T V.80 video ready interface
	Power requirement	1.48 watts @ +3.3V AUX supply with 5V tolerance
	Other	TIA/EIA 602 standard AT command set Integrated DTE interface with speeds of up to 115.2 Kbps, parallel 16550a UART-compatible interface Optional ring wakeup signal
	Operating Temperature	32° to 158° F (0° to 70° C)
	Operating Humidity	20% to 90%, non-condensing
	Power	Requires a 3.3-V auxiliary power rail on PCI bus Uses only one PCI load (i.e., one grant/request pair), one shared IRQ, one electrical load
	Chipset	Agere Systems 1648C (Mars 3.2)-Integrated PCI interface with 5-V tolerant buffers and CardBus support
	Connection	Dual, parallel RJ-11 support with auxiliary Tip/Ring connector
	Other Features	Digital line protection, call progress monitoring via on-board piezo device, transformer-based DAA design, support for high profile and low profile brackets, PnP ID supports via external EEPROM
	Safety	UL recognized to UL 1950, 3rd edition (U.S. and Canada); IEC 950 (TUV, NEMKO, DEMKO, SEMKO); CE Mark, EC 950 (TUV, NEMKO, DEMKO, SEMKO, CE mark
	EMC	FCC Part 15, IC ES003, EN 55022, 3rd edition, EN 55024, annex A, EN 61000-4-6, EN 61000-4-8
	Telecom	FCC Part 68, IC-CS-03 (Canada); Worldwide PTT approvals
	Health	Bare PCB material compliant to 94V-0 or better (marked as such), Microsoft Windows Me health compliant
	Other	PC'99 compliant, PCI version 2.2, WHQL approved; support for ACPI revision 1.1
	Kit Contents	Lucent V.90 56-K PCI Win Modem, brackets/screws, HP installation guide

TechSpecs

<p>NVIDIA Quadro NVS 200 Graphics Card</p>	<p>Form Factor Graphics Controller Bus Type RAMDAC Memory Connectors Dimensions Multi-monitor support nView Hardware Architecture</p>	<p>Low profile Integrated Quadro 2D/3D 128-bit graphics processor unit (GPU) AGP 4x Dual 350 MHz 64 MB 166MHz 4 M x 16 SDR 6ns unified frame buffer Single LFH-60 low-profile form factor Dual monitors with NVIDIA's nView 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</p>
	<p>High definition video processor</p>	<p>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</p>
	<p>Supported graphics APIs</p>	<p>Fully compliant with OpenGL 1.3 and DirectX 8.1</p>
	<p>Available graphics drivers</p>	<p>Microsoft Windows XP and Microsoft Windows 2000, Linux See: http://www.hp.com/support/workstation_drivers</p>

NVIDIA Quadro NVS 200 Graphics Card display resolutions & refresh rates

Resolution	Single CRT display 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

TechSpecs

<p>NVIDIA Quadro NVS 400 Graphics Card</p>	<p>Form Factor</p> <p>Graphics Controller</p> <p>Bus Type</p> <p>RAMDAC</p> <p>Memory</p> <p>Connectors</p> <p>Dimensions</p> <p>Multi-monitor support</p> <p>nView Hardware Architecture</p> <p>High-definition video processor (HDVP)</p> <p>Supported graphics APIs</p> <p>Available graphics drivers</p>	<p>ATX</p> <p>Integrated Quadro4 2D/3D 128-bit graphics processor unit (GPU)</p> <p>PCI</p> <p>Dual 350 MHz</p> <p>64 MB 220 MHz, 4mx 32 DDR per GPU, 32 MB per GPU unified frame buffer</p> <p>Dual LFH-60</p> <p>Low-profile form factor</p> <p>1 to 4 displays with nView – with two cards (1 PCI per card), up to 8 monitors can be driven</p> <p>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</p> <p>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</p> <p>Fully compliant with OpenGL 1.3 and DirectX 8.1</p> <p>Microsoft Windows XP and Microsoft Windows 2000, Linux See: http://www.hp.com/workstations/support</p>
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NVIDIA Quadro NVS 400 Graphics Card display resolutions & refresh rates

Resolution	Single CRT display 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

TechSpecs

ATI FireGL T2-64s Graphics Card	Form Factor	Low Profile
	Graphics Controller	ATI FGL 9600 GPU
	Bus Type	AGP 1x/2x/4x/8x Version 3.0 compliant
	RAMDAC	Dual 400MHz/30-bit
	Memory	64MB DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	VGA DB-15 and DVI-I analog/digital monitor outputs, 4-pin mini DIN providing TV output
	Multi-monitor support	Dual Screen output for resolutions up to 2x2048x1536x32 bit for analog display
	Additional product features	64MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 2D and 3D acceleration provided for 16-bit and 32-bit RGBa 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 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 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 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 9600 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 a 4 rendering pipelines CHARISMA ENGINE III, geometry unit utilizing 2 vertex processing engines VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/decode Dual independent display controllers with 4K x 4K address space each 128-bit external frame buffer interface providing memory bandwidth of up to 10 GB per second
	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 Linux See: http://www.hp.com/workstations/support

TechSpecs

ATI FireGL T2-64s

Graphics Card display resolutions & refresh rates

Resolution

640x480
800x600
1024x768
1152x864
1280x960
1280x1024
1600x1000
1600x1024
1600x1200
1792x1344
1920x1080
1920x1200
2048x1536

CRT DISPLAY (SINGLE OR DUAL)

Maximum Refresh Rate

100Hz
100Hz
100Hz
100Hz
100Hz
100Hz
100Hz
76Hz
100Hz
100Hz
100Hz
100Hz
85Hz

Bits per Pixel

16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32

DIGITAL DISPLAY (SINGLE)

Single CRT Display Resolution

640x480
800x600
1024x768
1280x1024
1600x1000
1600x1200
1920x1080
1920x1200

Maximum Refresh Rate

75Hz
75Hz
75Hz
75Hz
60Hz
60Hz
60Hz
60Hz

Bits per Pixel

16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 32
16, 24, 24, 32
16, 24, 32

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 (WxH)

14.2 x 11.4 in (36.2 x 28.9 cm)

Viewing Angle

160° horizontal/160° vertical (10:1 minimum contrast ratio)

Pixel Pitch

0.281 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
1024 x 768 @ 60 Hz, 75 Hz
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	
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
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 \pm 10%
Input Signal		Two connectors: one 15-pin mini D-sub analog VGA; and one DVI-I (VGA analog or digital)
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 (HxWxD)	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.

Compatibility

The following graphics controllers and chipsets have been tested and proven compatible for use with the hp L1825 Flat Panel Monitor.

Graphic Controllers Compatible with "VESA Video Signal Standard (VSI) Compliant" video cards.

NOTE: Features are subject to change without notice.

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 (WxH)	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/m2) typical
Contrast Ratio	350:1 typical

TechSpecs

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 1024 x 768 @ 60 Hz, 75 Hz, 85 Hz 800 x 600 @ 60 Hz, 85Hz 640 x 480 @ 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	
User-Programmable Modes	18	
Anti-Glare/Anti-Static	Yes/Yes	
Asset Control	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 Controls	Yes	
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)
Language Selection	Factory reset	Yes
	English	Yes
	Spanish	Yes
	French	Yes
	German	Yes
	Simplified Chinese	Yes
Agency Approvals/ Certifications	Italian	Yes
	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 \pm 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 (HxWxD)	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)

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Approximate Weight	Without stand	16.1 x 19.2 x 3.0 in (40.8 x 48.8 x 7.6 cm)
	With height-adjustable stand	26.4 lb (12 kg)
Temperature	Without stand	17.2 lb (7.8 kg)
	Operating	46° to 95° F (10° to 35° C)
Humidity	Non-operating	6° to 140° F (-10° to 60° C)
	Operating	20% to 80%
Warranty	Non-operating	5% to 85%
	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.	

Compatibility

The following graphics controllers and chipsets have been tested and proven compatible for use with the HP L2025 Flat Panel Monitor.

Graphic Controllers Compatible with "VESA Video Signal Standard (VSI) Compliant" video cards.

NOTE: Features are subject to change without notice.

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	
Preset Graphic Modes (non-interlaced)	1600 x 1200 @ 85 Hz and 75 Hz	
	1280 x 1024 @ 85 Hz and 75 Hz	
	1024 x 768 @ 85 Hz	
	640 x 480 @ 85 Hz and 60 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

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Approvals/ Certifications	Convergence	Yes
	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 ft (1.8 m)	
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	
Off Mode	0 watts	
Dimensions (HxWxD)	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).	

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HP p1230 CRT Monitor	<p>Tube Type Diamondtron NF Aperture Grille CRT</p> <p>Picture Tube Size (diagonal) 22 in (55 cm)</p> <p>Viewable Image Area (diagonal) 20 in (51 cm)</p> <p>Aperture Grille Pitch 0.24 mm</p> <p>Screen Curvature Flat</p> <p>Horizontal Frequency (kHz) 30 to 140 kHz</p> <p>Vertical Frequency (Hz) 50 to 160 Hz</p> <p>Maximum Resolution 2048 x 1536 @ 85 Hz (GTF)</p> <p>Recommended Resolution 1600 x 1200 @ 85 Hz or 1280 x 1024 @ 85 Hz</p> <p>Preset VESA Graphic Modes (non-interlaced) 1920 x 1440 @ 60 Hz, 75 Hz 1792 x 1344 @ 60 Hz, 75 Hz 1600 x 1200 @ 75 Hz, 85 Hz 1280 x 1024 @ 60 Hz, 75 Hz, 85 Hz 1024 x 768 @ 75 Hz, 85 Hz 800 x 600 @ 75 Hz, 85 Hz 640 x 480 @ 60 Hz, 85 Hz</p> <p>Preset MAC Mode 1152 x 870 @ 75 Hz</p> <p>Preset VGA Mode 640 x 480 @ 60 Hz and 720 x 400 @ 70 Hz</p> <p>Maximum Pixel Clock Speed 420 MHz</p> <p>User Programmable Modes 15 (10 preset modes and 5 additional modes)</p> <p>Anti-Glare Yes</p> <p>Anti-Static Yes</p> <p>Asset Control Yes</p> <p>Default Color Temperature 9300 K</p> <p>Buttons or Switches OSD menu, brightness, contrast, Super Bright, dual input, power on/off</p> <p>Languages English, Spanish, French, German, Italian, Japanese</p> <p>User Controls Brightness, contrast, pincushion, pincushion balance, trapezoid, tilt (rotation), color temperature, degauss, parallelogram, individual color control, zoom, moiré cancellation, convergence, corner purity, image control, language, OSD control, factory reset</p> <p>Plug and Play Yes, DDC/CI compatible</p> <p>Input Signal Two 15-pin D-sub connections</p> <p>Input Impedance 75 ohms</p> <p>Sync Input Separate sync (HSYNC/VSYNC)</p> <p>Video Cable Detachable 15-pin D-sub mini connector (included)</p> <p>Video Cable Length 70 in (1.8 m); non-captive</p> <p>Power Supply Universal 100-120/220-240 VAC</p> <p>Frequency 50/60 Hz</p> <p>Maximum 135 watts</p> <p>Power Saving 2 watts maximum</p> <p>Off Mode 0 watts</p> <p>Power Cable Length 70 in (1.8 m); non-captive</p> <p>Dimensions (HxWxD) Unpacked 19.1 x 19.5 x 18.8 in (48.6 x 49.5 x 47.7 cm) (including pedestal) Packaged 25.6 x 25.0 x 25.4 in (65.1 x 63.6 x 64.6 cm)</p> <p>Weight Unpacked 66.1 lb (30 kg) Packaged 77.1 lb (35 kg)</p>
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Tilt Range	10° upward and 5° downward
Swivel Range	90° either side of center
Temperature – Operating	41° to 90° F (5° to 35° C) Non-condensing
Temperature – Non-operating	-4° to 140° F (-20° to 60° C)
Humidity – Operating	10% to 90% non-condensing
Humidity – Non-operating	10% to 90%
Altitude – Operating	0 to 7,200 ft (0 to 2,195 m)
Altitude – Non-operating	0 to 30,000 ft (0 to 9,144 m)
Accessories Included	Power cable, video cable (D-sub to D-sub), documentation kit
User Guide Languages	English, French, German, Spanish, Italian, Dutch, Brazilian Portuguese, Danish, Finnish, Greek, Japanese, Korean, Latin American Spanish, Norwegian, Polish, Russian, Slovenian, Turkish, Swedish, Traditional Chinese, Simplified Chinese
Warranty Languages	English, French, Spanish, Brazilian Portuguese, Danish, German, Castilian Spanish, French, Italian, Dutch, Norwegian, Finnish, Swedish, Bahasa Indonesian, Japanese, Korean, T. Chinese, S. Chinese
Color	Carbon and silver
Certification and Compliance	MPR-II (Low Emissions), TCO '03, Energy Star Compliant, UL Listing, ISO9241-3 VOT Guidelines Approval, FCC Approval, CE Mark (including PFC), GS Mark
Compatibility	Compatible with platforms using the VESA standard video modes and HP Compaq Business Desktops d500, d300, and d200 Series, Compaq Evo Desktops, HP workstations, and HP Business Desktops d300 series.
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.

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