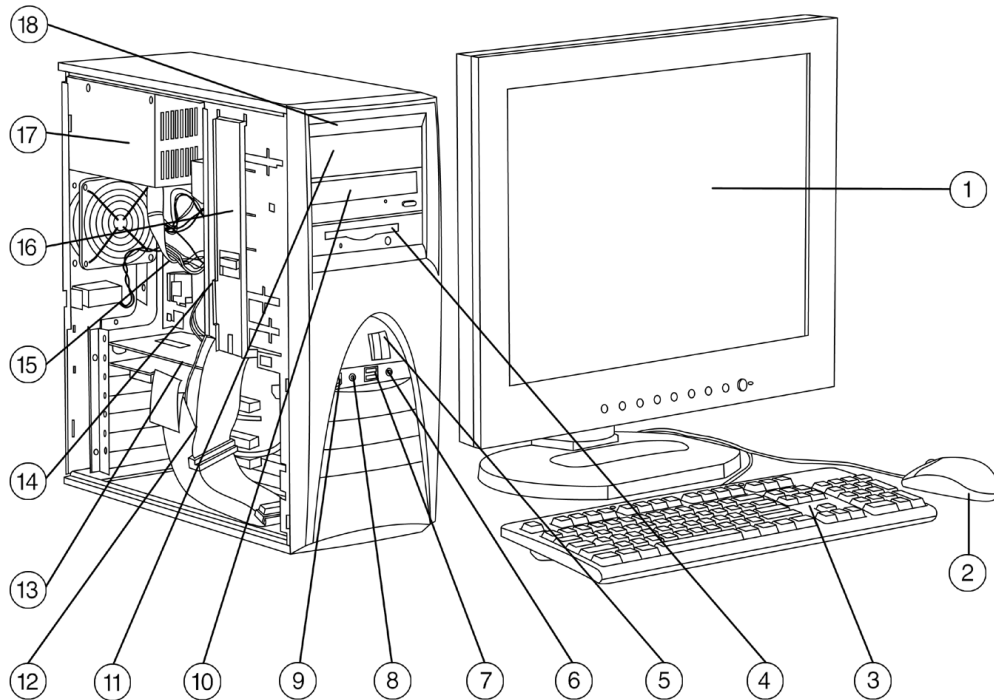


Overview



- | | |
|---------------------------|-----------------------------------|
| 1. HP Monitor (Optional) | 10. Optical Drive |
| 2. HP Scroll Mouse | 11. 5.25-in Drive Bay (available) |
| 3. Easy Access Keyboard | 12. PCI Slots (5) |
| 4. 1.44 MB Diskette Drive | 13. AGP 4x Slot |
| 5. On-Off Button | 14. Memory Sockets (2) |
| 6. Microphone Port | 15. Intel Pentium 4 Processor |
| 7. USB 2D Ports (2) | 16. Drivelock |
| 8. Audio Port | 17. 250-Watt Power Supply |
| 9. IEEE 1394 Port | 18. Rotating Drive Cage |

At A Glance

- Convertible mini-tower form factor
- Supports one Intel® Pentium 4 processor, up to 2.8 GHz
- 512 KB onboard L2 cache
- Intel 845E chipset with 533 MHz front side bus
- PC2100 DDR-266 DDR SDRAM, expandable to 2 GB
- Ultra320 SCSI hard drives (10,000 or 15,000 rpm) or Ultra ATA/100 hard drives (7200 rpm)
- Ultra ATA/100 controllers, optional Ultra160 SCSI controller
- Up to 438 GB of high-performance internal storage
- Choice of leadership graphics:
NVIDIA Quadro NVS 200, NVIDIA Quadro NVS 400, NVIDIA Quadro4 380 XGL, NVIDIA Quadro4 980 XGL
- Integrated 10/100 Mb Ethernet adapter
- Six total slots - five PCI and one AGP 4X
- Five bays (three external and two internal)
- CD-ROM, DVD-ROM, DVD+RW, CD-RW, or DVD/CD-RW combo drive
- Windows® XP Professional, Windows 2000 Professional, Red Hat 7.3 and HP support software pre-installed
- 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 processor 2.4-GHz, 2.66-GHz, and 2.8-GHz (533-MHz front side bus)

One of the following:

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

Memory Maximum 2 GB of PC2100 DDR-266

One of the following:

Network Controller Integrated Intel LAN 10/100 Network Interface

Expansion Slots

I/O (Total)	6/5 total slots available
PCI - 32-bit/33 MHz	5/5 slots available
AGP 4X	1/0 slot available

Expansion Bays

(Total/Available)	5 total/2 available
Internal 3.5 inch	2 bays/1 available
External 5.25 inch	2 external bays/1 available

Storage

Diskette Drive	1.44 MB
Removable Media	CD-ROM, CD-RW, DVDROM, CD-RW/DVD-ROM combo, or DVD+RW/+R
Hard Drive	40 80 or 160-GB Ultra ATA (7200 rpm) 36, 72, or 146-GB Ultra320 SCSI (10K rpm) 36 or 72-GB Ultra320 SCSI (15K rpm) Ultra320 drives have Ultra160 performance with Ultra160 controller

Interfaces

Parallel	1 25-pin port (rear)
USB 2.0	4 USB ports (2 front, 2 rear)
Serial	2 9-pin connectors (rear)
Ultra320 SCSI	1 with external connector (rear)
Ultra ATA/100	2 connectors (internal)
Keyboard	1 PS/2 keyboard port (rear)
Pointing Device	1 PS/2 mouse port (rear)
Network interface	1 RJ-45 connector (rear)
Microphone Jack	1 (front)
Headphone Jack	1 (front)
Line-In Jack	1 (back)
Line-Out Jack	1 (back)
IEEE 1394 Firewire	Optional – 3 (1 front, 2 rear)

Graphics NVIDIA Quadro NVS 200
One of the following: NVIDIA Quadro NVS 400
NVIDIA Quadro4 380 XGL
NVIDIA Quadro4 980 XGL

Standard Features

Audio AC97/16-bit stereo full-duplex

Operating System Microsoft Windows XP Professional preinstall
Microsoft® Windows 2000 Professional, service pack 2, preinstall
Red Hat Linux 7.3 preinstalled

Manageability 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
Flash ROM lock
Keyboard password
Network server mode
Parallel interface control
Power-on password
Serial interface control
Setup password
Cable lock provision

Power Supply 250 Watt, 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, 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

x4x/2.4F/40/512/Xv	Processor	Intel Pentium 4 processor 2.4-GHz with 533-MHz front side bus	
	Cache Memory	512-KB	
	Memory	512-MB ECC DDR; 2.1-GB/sec throughput	
	Optical Drive	Combo CD-RW/DVD-ROM	
	Hard Drive	40-GB UATA/100 7200 rpm	
	Graphics	Not included in base configuration - graphics card options are: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL NVIDIA Quadro4 980 XGL NOTE: Please see Part Numbers in After market options/Standalone accessories section.	
	Mouse	HP scroll mouse	
	OS	Windows XP Professional	
x4x/2.4F/40/512/Xv Country Code Key			
N. America	470047-281	Spain	AA684A#ABE
Fr. Canadian	470047-299	Europe	AA684A#AK6
L. America	470047-320	Switzerland (Eng, It)	AA684A#ACN
Japan	470047- 340	Switzerland	AA684A#AR8
Japan (English)	470047-354	Dutch	AA684A#ABH
UK	AA684A#ABU	Korea	AA684A#AB1
Germany	AA684A#ABD	China	AA684A#AB2
France	AA684A#ABF	Taiwan	AA684A#AB0
Italy	AA684A#ABZ	Hong Kong	AA684A#AB5

x4x/2.4F/36S/512/Xd	Processor	Intel Pentium 4 processor 2.4-GHz with 533-MHz front side bus	
	Cache Memory	512-KB	
	Memory	512-MB ECC DDR; 2.1GB/sec throughput	
	Optical Drive	DVD-ROM	
	Hard Drive	36-GB Ultra320 SCSI 10,000 rpm	
	Graphics	Not included in base configuration - graphics card options are: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL NVIDIA Quadro4 980 XGL NOTE: Please see Part Numbers in After market options/Standalone accessories section.	
	Mouse	HP scroll mouse	
	OS	Windows XP Professional	
x4x/2.4F/40/512/Xv Country Code Key			
N. America	470047-282	Spain	AA665A#ABE
Fr. Canadian	470047-300	Europe	AA665A#AK6
L. America	470047-321	Switzerland (Eng, It)	AA665A#ACN
Japan	470047- 341	Switzerland	AA665A#AR8
Japan (English)	470047-355	Dutch	AA665A#ABH
UK	AA665A#ABU	Korea	AA665A#AB1
Germany	AA665A#ABD	China	AA665A#AB2
France	AA665A#ABF	Taiwan	AA665A#AB0
Italy	AA665A#ABZ	Hong Kong	AA665A#AB5

Standard Features Pre-Configured Global Models

x4x/2.8F/80/512/Xv	Processor Cache Memory Memory Optical Drive Hard Drive Graphics	Intel Pentium 4 processor 2.8-GHz with 533-MHz front side bus 512-KB 512-MB ECC DDR; 2.1-GB/sec throughput Combo CD-RW/DVD-ROM 80-GB UATA/100 7200 rpm Not included in base configuration - graphics card options are: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL NVIDIA Quadro4 980 XGL NOTE: Please see Part Numbers in After market options/Standalone accessories section.	
	Mouse OS	HP scroll mouse Windows XP Professional	
x4x/2.4F/40/512/Xv Country Code Key			
N. America	470047-293	Spain	AA672A#ABE
Fr. Canadian	470047-311	Europe	AA672A#AK6
L. America	470047-333	Switzerland (Eng, It)	AA672A#ACN
Japan	470047- 349	Switzerland	AA672A#AR8
Japan (English)	470047-360	Dutch	AA672A#ABH
UK	AA672A#ABU	Korea	AA672A#AB1
Germany	AA672A#ABD	China	AA672A#AB2
France	AA672A#ABF	Taiwan	AA672A#AB0
Italy	AA672A#ABZ	Hong Kong	AA672A#AB5

x4x/2.8F/36S/512/Xd	Processor Cache Memory Memory Optical Drive Hard Drive Graphics	Intel Pentium 4 processor 2.8-GHz with 533-MHz front side bus 512-KB 512-MB ECC DDR; 2.1-GB/sec throughput DVD-ROM 36-GB Ultra320 SCSI 10,000 rpm (Ultral60 controller) Not included in base configuration - graphics card options are: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL NVIDIA Quadro4 980 XGL NOTE: Please see Part Numbers in After market options/Standalone accessories section.	
	Mouse OS	HP scroll mouse Windows XP Professional	
x4x/2.4F/40/512/Xv Country Code Key			
N. America	470047-294	Spain	AA674A#ABE
Fr. Canadian	470047-312	Europe	AA674A#AK6
L. America	470047-334	Switzerland (Eng, It)	AA674A#ACN
Japan	470047- 350	Switzerland	AA674A#AR8
Japan (English)	470047-361	Dutch	AA674A#ABH
UK	AA674A#ABU	Korea	AA674A#AB1
Germany	AA674A#ABD	China	AA674A#AB2
France	AA674A#ABF	Taiwan	AA674A#AB0
Italy	AA674A#ABZ	Hong Kong	AA674A#AB5

Configure to order options

HP workstation xw4000 Base System When buying a basic system, you have many configuration options. The basic system includes: Convertible Mini-tower Chassis, System Board, Floppy Drive, Cable, etc.

Operating System Windows XP Professional preloaded; incl. Win XP recovery CD
Windows 2000 Professional SP2 preloaded; incl. Win 2000 recovery CD
Red Hat Linux 7.3 preinstalled, preconfigured and supported

Processor Intel Pentium 4 processor 2.4-GHz, 512-KB cache, 533-MHz front side bus
Intel Pentium 4 processor 2.66-GHz, 512-KB cache, 533-MHz front side bus
Intel Pentium 4 processor 2.8-GHz, 512-KB cache, 533-MHz front side bus

Graphic Card (Video Card) No Video Card
NVIDIA Quadro NVS 200 (AGP)
NVIDIA Quadro NVS 400 (PCI)
NVIDIA Quadro4 380 XGL (AGP)
NVIDIA Quadro4 980 XGL (AGP)

Memory (DDR-SDRAM) 256-MB (1X256-MB) PC2100 DDR-266 ECC
512-MB (1X512-MB) PC2100 DDR-266 ECC
512-MB (2x256-MB) PC2100 DDR-266 ECC
1-GB (2x512-MB) PC2100 DDR-266 ECC
1-GB (1X1-GB) PC2100 DDR-266 ECC
1.5-GB (1x1-GB + 1x512-MB) PC2100 DDR-266 ECC
2-GB (2x1GB) PC2100 DDR-266 ECC

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 (19-inch, Carbon/Silver)
HP p1130 Flat screen (21-inch, Carbon/Silver)
NOTE: AssetControl monitor. AssetControl features are accessible with hp workstations featuring Intelligent Manageability.

Base system Convertible Mini-tower Chassis, System Board, Floppy Drive, Cable, etc.

Configure to order options

Primary hard disks	40-GB Ultra ATA/100 EIDE (7,200 rpm)
	80-GB Ultra ATA/100 EIDE (7,200 rpm)
	160-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)

Secondary hard disks	40-GB Ultra ATA/100 EIDE (7,200 rpm)
	80-GB Ultra ATA/100 EIDE (7,200 rpm)
	160-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)

Controller Card	Adaptec 29160N single-channel Ultra160 SCSI controller
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Primary removable media	HP 48X CD-ROM
	HP 48X Combo (with Roxio and WinDVD software)
	HP 48X/24X/48X CDRW Drive (with Roxio software)
	HP 16X DVD-ROM
	HP 4.7GB DVD+R/RW Drive – 300i

Secondary removable media	HP 48X CR-RW
	HP 16X DVD-ROM
	HP 48X/24X/48X CDRW Drive (with Roxio software)
	HP 4.7GB DVD+R/RW Drive – 300i

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

I/O PCI Cards and Other	IEEE 1394 Firewire Card
	USB 2.0 PCI Card
	Solenoid/Hood Lock
	Lucent V90 56K Modem PCI card

After market options/Standalone accessories

		Part #: Europe/Asia Pacific	Part #: Americas/Japan
Memory (DDR-SDRAM unbuffered)	256-MB PC-2100 DDR-266 ECC	AA632A	AA632A
	512-MB PC-2100 DDR-266 ECC	AA633A	AA633A
	1-GB PC-2100 DDR-266 ECC	AA634A	AA634A
	1-GB PC-2100 DDR-266 ECC	AA634A	AA634A
Monitors	HP L2025 flat panel color monitor (21-inch, carbon/silver)	P4831D #XXX	303486-003 (NA only)
	HP L1925 flat panel color monitor (19-inch, carbon/silver)	P9626A	P9626A
	HP L1825 flat panel color monitor (18-inch, carbon/silver)	P9021A #XXX	303102-003 (NA only)
	HP p930 flat screen CRT color monitor (19-inch, carbon/silver)	P9009W#XXX	302268-003 (NA only)
	HP p1130 flat screen CRT color monitor (21-inch, carbon/silver)	P4819 #XXX	302270-003 (NA only)
	NOTE: AssetControl features are accessible with HP workstations featuring Intelligent Manageability.		
Graphics	NVIDIA Quadro4 200 NVS (AGP)	AA603A	AA603A
	NVIDIA Quadro4 200 NVS DVI Cables	AA604A	AA604A
	NVIDIA Quadro4 400 NVS (PCI)	AA605A	AA605A
	NVIDIA Quadro4 400 NVS DVI Cables	AA606A	AA606A
	NVIDIA Quadro4 380 XGL (AGP)	AA653A	AA653A
	NVIDIA Quadro4 980 XGL (AGP)	AA623A	AA623A
Hard Drives	Ultra320 SCSI Drives		
	36 GB Ultra320 SCSI 10,000 rpm	AA612A	AA612A
	73 GB Ultra320 SCSI 10,000 rpm	AA613A	AA613A
	146 GB Ultra320 SCSI, 10,000 rpm	AA614A	AA614A
	36 GB Ultra320 SCSI, 15,000 rpm	AA616A	AA616A
	73 GB Ultra320 SCSI, 15,000 rpm	AA617A	AA617A
	Ultra ATA/100 Drives		
	40 GB ATA/100, 7,200 rpm	DC180A	DC180A
	80 GB ATA/100, 7,200 rpm	DC181A	DC181A
	160 GB ATA/100, 7,200 rpm	DC189A	DC189A
Storage Controllers	Adaptec 29160N Ultra160 Single Channel SCSI Controller (PCI)	AA610A	AA610A
	Ultra320 Dual Channel SCSI Controller Card (PCI) Cable not included	AA611A	AA611A
	StorageWorks Smart Array Controller 5304/128	N/A	158939-B21
	StorageWorks Smart Array Controller 5302/64	N/A	124992-B21
	Cable, 3 part SCSI	AA832A	AA832A

After market options/Standalone accessories

Backup Devices	Exabyte 33/66-GB VXA-1 IDE Tape Drive	DC136A	237109-B22
	Exabyte 33/66-GB VXA-1 SCSI Tape Drive	DC135A	237108-B22
	TR5 10/20-GB iTape Drive (IDE, carbon)	N/A	294243-B22
	lomega ZIP 250-MB (internal, IDE, carbon)	DC140A	294416-B22
Multimedia	HP 48X CD-ROM Drive (carbon)	DC143B	DC143B
	48X/24X/48X CD-RW Drive (carbon – Veritas software)	DE205A	DE205A
	HP 48X Combo (with Roxio and WinDVD software)	DE206A	DE206A
	HP 16X DVD Drive (carbon)	AA620A	AA620A
	4.7GB DVD+R/RW Drive – 300i	AA851A	AA851A
I/O cards	HP IEEE 1394/Firewire Card (PCI)	AA638A	AA638A
	USB 2.0 PCI Card	AA639A	287636-B21
Communications	Intel 10/100 S Management Adapter	DC133A	DC133A
	V90 56K PCI WIN Modem	DC131A	239137-xxx
	V90 56K International Soft WIN Modem	DC132A	259032-B24
Speakers	Labtec Spin-22 Carbon Speakers	DC186A	246637-0xx
Input devices & other	Easy Access keyboard - carbonite (PS/2)	DC167B	DC167B
	Three button mouse-carbon (PS/2)	AA778A	AA778A
	Solenoid/Hood Lock	252076-B21	252076-B21
	Bracket HDD 3.5 to 5.25-WS	AA833A	313039-B21
	USB Optical scroll mouse (carbon)	DC172B	DC172B
	Spaceball 5000	DE934A	DE934A
Security	USB Fingerprint Identification	N/A	240238-B21
	USB SmartCard Keyboard	DC169A	267147-008
	Corvadis USB Enhanced SmartCard Reader	N/A	240154-B21
Rack kits	Fixed shelf kit	253449-B21	253449-B21
	Sliding Shelf Kit	234672-B21	234672-B21
	Depth Adjustable Rails	332558-B21	332558-B21

Memory

Standard Memory

This system supports PC-2100 266-MHz DDR ECC. The mainboard is based on the i845E chipset and has 2 DIMM slots (2.1-GB/s throughput). It can support a maximum of 2-GB of RAM when optional memory upgrades are included.

Following are memory options available from HP:

256-MB upgrade kit PC-2100 DDR-266 ECC (unbuffered)

512-MB upgrade kit PC-2100 DDR-266 ECC (unbuffered)

1-GB upgrade kit PC-2100 DDR-266 ECC (unbuffered)

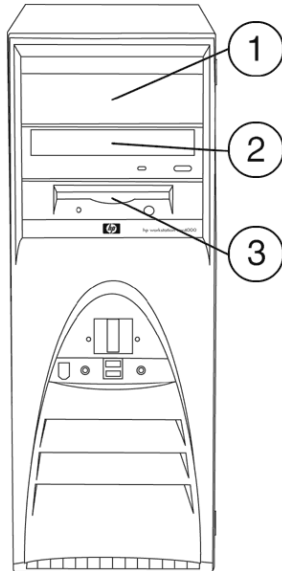
Part #:

AA632A

AA633A

AA634A

Storage



Drive Support

	Quantity Supported	Position Supported	Controller
1.44-MB Diskette Drive	Up to 1	3	Integrated
CD-ROM Drive	Up to 1	1, 2	Integrated EIDE
DVD-ROM Drive	Up to 1	1, 2	Integrated EIDE
CD-RW Drive	Up to 1	1, 2	Integrated EIDE
DVD+ RW	Up to 1	1, 2	Integrated EIDE
Combo CD-RW/DVD-ROM	Up to 1	1, 2	Integrated EIDE

Hard Drives

Ultra320 SCSI Drives

1-inch	Quantity Supported	Position Supported	Controller
Up to 3	Up to 3	1, 2, 4, 5	Optional Ultra160 SCSI Controller
36-GB Ultra320 SCSI (10K rpm)			
72-GB Ultra320 SCSI (10K rpm)			
146-GB Ultra320 SCSI (10K rpm)			
36-GB Ultra320 SCSI (15K rpm)			
73-GB Ultra320 SCSI (15K rpm)			

Ultra ATA Drives

1-inch	Quantity Supported	Position Supported	Controller
Up to 2	Up to 2	1, 2, 4, 5	Integrated EIDE Controller
40-GB (7200 rpm)			
80-GB (7200 rpm)			
160-GB (720 rpm)			

Storage

Maximum Storage Capacity

Internal

438-GB (SCSI)
320-GB (Ultra ATA)

TechSpecs

System Unit

Tower Dimensions (HxWxD)	17.65 x 6.6 x 17.61 in (44.8 x 17 x 44.7 cm)		
Weight (standard configuration)	26 lb (2 kg)		
Power Supply	Input current	4.5 A @ 115 VAC	3.0 A @ 230 VAC
	Line Frequency	47 to 63 Hz	
	Maximum Rated Power	385-Watt input, 250-Watt output	
	Operating	50° to 95° F (10° to 35° C)	
Temperature (Values are subject to change)	Non-operating		
Humidity (non-condensing) (Values are subject to change)	Operating	20% to 80%	
	Non-operating	10% to 90%	
Maximum Altitude (nonpressurized)	Operating	10,000 ft (3,048 m)	
	Non-operating	30,000 ft (9,144 m)	

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

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
	Cylinders (high/low)	Latency Average	100 ms
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° 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		

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			

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. 12.8 ft/3.9m 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	

Ultra320 SCSI Hard Drives	146 GB	Capacity	146,000 MB
		Height	1 in (2.5 cm)
		Width	3.5 in (8.89 cm)



	Interface	Ultra320 SCSI	
	Transfer rate synchronous (maximum)	320 MB/s	
	Seek time (typical reads, including settling)	Single track	0.55 ms
		Average	4.9 ms
		Full-stroke	9.2 ms
	Rotational speed	10,000 rpm	
	Logical blocks	289,749,488	
	Operating temperature	41° to 131° F (5° to 55° C)	
73 GB	Capacity	73,000 MB	
	Height	1 in (2.5 cm)	
	Width	3.5 in (8.89 cm)	
	Interface	Ultra320 SCSI	
	Transfer rate synchronous (maximum)	320 MB/s	
	Seek time (typical reads, including settling)	Single track	0.55 ms
		Average	4.9 ms
		Full-stroke	9.2 ms
	Rotational speed	10,000 rpm	
	Logical blocks	143,374,744	
	Operating temperature	41° to 131° F (5° to 55° C)	
73 GB	Capacity	73,000 MB	
	Height	1 in (2.5 cm)	
	Width	3.5 in (8.89 cm)	
	Interface	Ultra320 SCSI	
	Transfer rate synchronous (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	143,337,744	
	Operating temperature	41° to 131° F (5° to 55° C)	
36 GB	Capacity	36,400 MB	
	Height	1 in (2.5 cm)	
	Width	3.5 in (8.89 cm)	
	Interface	Ultra320 SCSI	
	Transfer rate synchronous (maximum)	320 MB/s	
	Seek time (typical reads, including settling)	Single track	0.6 ms
		Average	4.5 ms
		Full-stroke	11.0 ms
	Rotational speed	10,000 rpm	
	Logical blocks	71,631,920	
	Operating temperature	41° to 131° F (5° to 55° C)	

TechSpecs

36 GB	Capacity	36,400 MB	
	Height	1 in (2.5 cm)	
	Width	3.5 in (8.89 cm)	
	Interface	Ultra320 SCSI	
	Transfer rate synchronous (maximum)	320 MB/s	
	Seek time (typical reads, including settling)	Single track	0.4 ms
		Average	3.7 ms
		Full-stroke	7.0 ms
	Rotational speed	15,000 rpm	
	Logical blocks	71,132,000	
	Operating temperature	41° to 131° F (5° to 55° C)	
18 GB	Capacity	18,209 MB	
	Height	1 in (2.5 cm)	
	Width	3.5 in (8.89 cm)	
	Interface	Ultra320 SCSI	
	Transfer rate synchronous (maximum)	320 MB/s	
	Seek time (typical reads, including settling)	Single track	0.4 ms
		Average	3.7 ms
		Full-stroke	7.0 ms
	Rotational speed	15,000 rpm	
	Logical blocks	35,566,000	
	Operating temperature	41° to 131° F (5° to 55° C)	

TechSpecs

Ultra ATA Hard Drives

120 GB	<p>Capacity 120,000 MB</p> <p>Height 1 in (2.54 cm)</p> <p>Width 3.5 in (8.89 cm)</p> <p>Interface Ultra ATA/100</p> <p>Synchronous Transfer Rate (Maximum) 100 MB/s</p> <p>Seek time (typical reads, including settling)</p> <table border="0" style="margin-left: 20px;"> <tr> <td>Single track</td> <td>1.2 ms</td> </tr> <tr> <td>Average</td> <td>8.0 ms</td> </tr> <tr> <td>Full-stroke</td> <td>18.0 ms</td> </tr> </table> <p>Rotational speed 7200 rpm</p> <p>Logical blocks 234,441,648</p> <p>Operating temperature 41° to 131° F (5° to 55° C)</p>	Single track	1.2 ms	Average	8.0 ms	Full-stroke	18.0 ms
Single track	1.2 ms						
Average	8.0 ms						
Full-stroke	18.0 ms						
80 GB	<p>Capacity 80,000 MB</p> <p>Height 1 in (2.54 cm)</p> <p>Width 3.5 in (8.89 cm)</p> <p>Interface Ultra ATA/100</p> <p>Synchronous Transfer Rate (Maximum) 100 MB/s</p> <p>Seek time (typical reads, including settling)</p> <table border="0" style="margin-left: 20px;"> <tr> <td>Single track</td> <td>1.2 ms</td> </tr> <tr> <td>Average</td> <td>8.0 ms</td> </tr> <tr> <td>Full-stroke</td> <td>18.0 ms</td> </tr> </table> <p>Rotational speed 7200 rpm</p> <p>Logical blocks 157,278,240</p> <p>Operating temperature 41° to 131° F (5° to 55° C)</p>	Single track	1.2 ms	Average	8.0 ms	Full-stroke	18.0 ms
Single track	1.2 ms						
Average	8.0 ms						
Full-stroke	18.0 ms						
40 GB	<p>Capacity 40,000 MB</p> <p>Height 1 in (2.54 cm)</p> <p>Width 3.5 in (8.89 cm)</p> <p>Interface Ultra ATA/100</p> <p>Synchronous Transfer Rate (Maximum) 100 MB/s</p> <p>Seek time (typical reads, including settling)</p> <table border="0" style="margin-left: 20px;"> <tr> <td>Single track</td> <td>1.2 ms</td> </tr> <tr> <td>Average</td> <td>8 ms</td> </tr> <tr> <td>Full-stroke</td> <td>18.0 ms</td> </tr> </table> <p>Rotational speed 7200 rpm</p> <p>Logical blocks 78,165,360</p> <p>Operating temperature 41° to 131° F (5° to 55° C)</p>	Single track	1.2 ms	Average	8 ms	Full-stroke	18.0 ms
Single track	1.2 ms						
Average	8 ms						
Full-stroke	18.0 ms						

16/10/40+4/2.4/8x 4.7 GB DVD+ RW – 300i	<p>Capacity 4.7 GB DVD disc /700 MB CD disc</p> <p>Dimensions (HxWxD) 1.66 x 5.83 x 7.74 in (4.23 x 14.6 x 19.8 cm)</p> <p>Weight 2.3 lb (1.06 kg)</p> <p>Interface ATAPI/EIDE</p> <p>Mounting Orientation Horizontal (80 or 120 mm discs) or vertical (120 mm discs only)</p> <p>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)</p> <p>Media and Formats - CD formats: CD-DA (Red Book), CD-ROM (Modes 1 and 2 - Yellow Book), CD-ROM</p>
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TechSpecs

Read	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 140 ms Random 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 32° to 122° F (0° to 50° C) Humidity 10% to 70% (non-condensing)
Approvals/ Environmental	UL 1950 (US and Canada), CE, FDA, FCC (B), TUV, C-TICK (B)
Operating Systems Supported	Microsoft Windows XP Professional, Microsoft Windows 2000 SP3
Supplied Software	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; Sonic myDVD Video Suite 4.0: includes myDVD for DVD authoring and ArcSoft ShowBiz 1.3 for video title creation and editing; Dantz Retrospect Express 6.0: Back up systems to CD, DVD, or tape media.

TechSpecs

48X CD-ROM Drive	Disk	Applicable Disk	CD-ROM (Mode 1 and 2), CD-R/W, CD-R Photo CD (Single and Multi-session), Mixed Mode (Audio and Data combined), CDI Ready, CD-XA Ready, CD TEXT, CD EXTRA
		Capacity	540 MB (Mode 1, 12 cm) 650 MB (Mode 2, 12 cm)
		Rotational Speed	8750 maximum
		Diameter	4.7 in, 3.15 in/12 cm, 8 cm
		Centre Hole	0.6 in/1.52 cm diameter
		Thickness	0.05 in/0.13 cm
		Track Pitch	1.6 μ m
	Block Size	Mode 1	2,048 bytes
		Mode 2	2,340, 2,336 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
	Interface	IDE	
	Access Times (typical)	Random	< 100 ms
		Full-Stroke	< 150 ms
	Audio Output Level	Line-Out	0.7 VRMS
	Data Transfer Rate	Sustained	150 KB/s (1X, using audio disc)
		Variable	3,000 to 7,200 KB/s
	Cache Buffer	128 KB minimum	
	Start-up Time (typical)	< 7 s	
	Stop Time	< 4 s	
	Operating Conditions	Temperature	41° to 113° F/5° to 45° C
		Humidity	10% to 80%
	Dimensions	(HxWxD, maximum)	1.7 x 5.9 x 8.19 in/4.29 x 15 x 20.8 cm
		Weight	2.65 lb/1.2 kg

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

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	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 and 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 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	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 41° to 122° F (5° to 50° C) Humidity 10% to 85%

16X/40X DVD-ROM Drive with + R Read Support

Height	5.25-in, half-height
Interface Type	ATAPI
Dimensions— External,	5.88 x 1.71 in (14.94 x 4.34 cm)



TechSpecs

Excluding Bezel (W x H)									
Disc Diameter	12 cm, 8 cm								
Disc Thickness	1.2 mm								
Track Pitch	1.6 μ m (CD), 0.74 μ m (DVD)								
Disc Center Hole Diameter	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 multi-border; DVD+ RW; DVD+ R; 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	<table border="0"> <tr> <td>DVD-ROM</td> <td>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), 4.7G (DVD+R)</td> </tr> <tr> <td>CD-ROM</td> <td>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)</td> </tr> </table>	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), 4.7G (DVD+R)	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)				
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), 4.7G (DVD+R)								
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)	<table border="0"> <tr> <td>DVD-ROM Single Layer</td> <td>< 120 ms</td> </tr> <tr> <td>CD-ROM Mode 1</td> <td>< 90 ms</td> </tr> <tr> <td>Full Stroke DVD</td> <td>< 240 ms (seek)</td> </tr> <tr> <td>Full Stroke CD</td> <td>< 160 ms (seek)</td> </tr> </table>	DVD-ROM Single Layer	< 120 ms	CD-ROM Mode 1	< 90 ms	Full Stroke DVD	< 240 ms (seek)	Full Stroke CD	< 160 ms (seek)
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	<table border="0"> <tr> <td>Source</td> <td>Four-pin, DC power receptacle</td> </tr> <tr> <td>DC Power Requirement</td> <td>5 VDC \pm 5% – 100 mV ripple p-p 12 VDC \pm 5% – 200 mV ripple p-p</td> </tr> <tr> <td>DC Current</td> <td>5 VDC – <800 mA typical, < 1000 mA maximum 12 VDC – < 870 mA typical</td> </tr> </table>	Source	Four-pin, DC power receptacle	DC Power Requirement	5 VDC \pm 5% – 100 mV ripple p-p 12 VDC \pm 5% – 200 mV ripple p-p	DC Current	5 VDC – <800 mA typical, < 1000 mA maximum 12 VDC – < 870 mA typical		
Source	Four-pin, DC power receptacle								
DC Power Requirement	5 VDC \pm 5% – 100 mV ripple p-p 12 VDC \pm 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)	<table border="0"> <tr> <td>Temperature (operating)</td> <td>41° to 122° F (5° to 50° C)</td> </tr> <tr> <td>Relative Humidity (operating)</td> <td>10% to 85%</td> </tr> <tr> <td>Maximum Wet Bulb Temperature (operating)</td> <td>86° F (30° C)</td> </tr> </table>	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)		
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, and CSA C22.2 60950-2000.								
Operating Systems Supported	Microsoft Windows NT, Microsoft Windows 2000, and Microsoft Windows XP.								

TechSpecs

Integrated 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	IEEE 802.2		
		IEEE 802.3		
	I/O Address	Auto-configured		
Remote Wakeup	Yes			
Operating Temperature	32° to 131° F (-0° to 55° 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		

TechSpecs

Lucent V.90 56K PIC 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
	Upgradeability	Software driver upgradeable for v.92 and future enhancements
	Video	ITU-T V.80 video ready interface
	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, Compaq installation guide

TechSpecs

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, Linux See: http://www.hp.com/workstations/support

NVIDIA Quadro NVS 200 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

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	4.2 x 8 in/10.67 x 20.32 cm
	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

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

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	<ul style="list-style-type: none">● AGP 8x Version 3.0 compliant and 2x/4x Version 2.0 compliant including<ul style="list-style-type: none">○ Sideband Addressing○ AGP Texturing (Execute Mode)○ Fast writes support● 64 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage● 128 KB BIOS 3.3V Flash ROM reprogrammable by SW● NV18GL GPU featuring:<ul style="list-style-type: none">○ 275 MHz engine clock rate○ 250 MHz memory clock rate○ 128-bit memory interface○ VGA controller○ Dual integrated display controllers supporting up to 1920x1440 @ 85 Hz and 2048x1536 @ 75 Hz 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● 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)
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 2000, HP-tested Windows XP, 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

TechSpecs

**NVIDIA Quadro4 380 XGL
Graphics Card display
resolutions & refresh rates**

Resolution	Monitor 1, 2 Analog/Digital Maximum Refresh Rate	Bits per Pixel
640x480	240Hz/240Hz	8, 16, 24,32
800x600	240Hz/200Hz	8, 16, 24,32
1024x768	170Hz/140Hz	8, 16, 24,32
1152x864	170Hz/100Hz	8, 16, 24,32
1280x720	150Hz/120Hz	8, 16, 24,32
1280x960	150Hz/85Hz	8, 16, 24,32
1280x1024	150Hz/75Hz	8, 16, 24,32
1600x900	120Hz/75Hz/ NoDigitalDisplaySupport (unbold)	8, 16, 24,32
1600x1024	100Hz/72Hz/ NoDigitalDisplaySupport	8, 16, 24,32
1600x1200	120Hz/60Hz/ NoDigitalDisplaySupport	8, 16
1600x1200	100Hz/60Hz/ NoDigitalDisplaySupport	24,32
1920x1080	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1080	85Hz/ NoDigitalDisplaySupport	24,32
1920x1200	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1200	85Hz/ NoDigitalDisplaySupport	24,32
1920x1440	85Hz/ NoDigitalDisplaySupport	8, 16
1920x1440	75Hz/ NoDigitalDisplaySupport	24,32
2048x1536	75Hz/ NoDigitalDisplaySupport	8, 16

TechSpecs

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 8.55 in (10.795 x 21.59 cm)
Multi-monitor support	Dual integrated display controllers supporting up to 1920x1440 @ 85Hz on both displays
Additional product features	<ul style="list-style-type: none">● AGP8xVersion 3.0 compliant including<ul style="list-style-type: none">○ Sideband Addressing○ AGP Texturing (Execute Mode)○ Fast writes support● 128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage● 128 KB BIOS 3.3V Flash ROM reprogrammable by SW● NV28GL GPU featuring:<ul style="list-style-type: none">○ 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● 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)
Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8
Available graphics drivers	HP-tested Windows 2000 HP-tested Windows XP HP-tested Linux HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support

TechSpecs

**NVIDIA Quadro4 980 XGL
Graphics Card display
resolutions & refresh rates**

Resolution	Monitor 1, 2 Analog/Digital Maximum Refresh Rate	Bits per Pixel
640x480	240Hz/240Hz	8, 16, 24,32
800x600	240Hz/200Hz	8, 16, 24,32
1024x768	170Hz/140Hz	8, 16, 24,32
1152x864	170Hz/100Hz	8, 16, 24,32
1280x720	150Hz/120Hz	8, 16, 24,32
1280x960	150Hz/85Hz	8, 16, 24,32
1280x1024	150Hz/75Hz	8, 16, 24,32
1600x900	120Hz/75Hz	8, 16, 24,32
1600x1024	100Hz/72Hz	8, 16, 24,32
1600x1200	120Hz/60Hz	8, 16
1600x1200	100Hz/60Hz	24,32
1920x1080	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1080	85Hz/ NoDigitalDisplaySupport	24,32
1920x1200	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1200	85Hz/ NoDigitalDisplaySupport	24,32
1920x1440	85Hz/ NoDigitalDisplaySupport	8, 16
1920x1440	75Hz/ NoDigitalDisplaySupport	24,32
2048x1536	75Hz/ NoDigitalDisplaySupport	8, 16
2048x1536	60Hz/ NoDigitalDisplaySupport	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 degrees horizontal/160 degrees 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 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	832 x 624 @ 75 Hz

(adapter required)	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.
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	(diagonal)	
	Screen Opening (WxH)	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 \pm 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
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, 75 Hz 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
	AssetControl	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	
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	17.6 lb (8 kg)
		Unpacked w/o stand	12 lb (5.5 kg)
		Packaged	23.5 l (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 meters)	
	Altitude – Non-operating	0 to 40,000 ft (0 to 12,192 meters)	
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)	

Certification and Compliance	Kensington Lock-ready Yes 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 (VSI) 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).

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
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

TechSpecs

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)
	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.

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

TechSpecs

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 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 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).

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	
	Preset Graphic 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	
	Asset Control	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 Contrast Brightness Moiré Correction Tilt (rotation) Selectable Color temperature Orthogonality Degauss Convergence (h/v/pre-set) Reset	Yes Yes Yes Yes Yes Yes Yes (automatic at power on; manual) Yes Yes
	Approvals/ Certifications	UL/CSA/CUL Approval ISO9241-3, -7, -8 VDT Guidelines Approval MPR-II Compliant TCO '99 FCC Approval Microsoft WHQL Certified Energy Star Compliant CE Compliant	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

TechSpecs

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	
Maximum Power Rating	135 watts	
Low Power Sleep Mode	< 3 watts	
Off Mode	0 watts	
Dimensions (HxWxD)	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	Non-condensing	50° to 104° F (10° to 40° C)
Operating Humidity	Non-condensing	10% to 80%
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, 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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