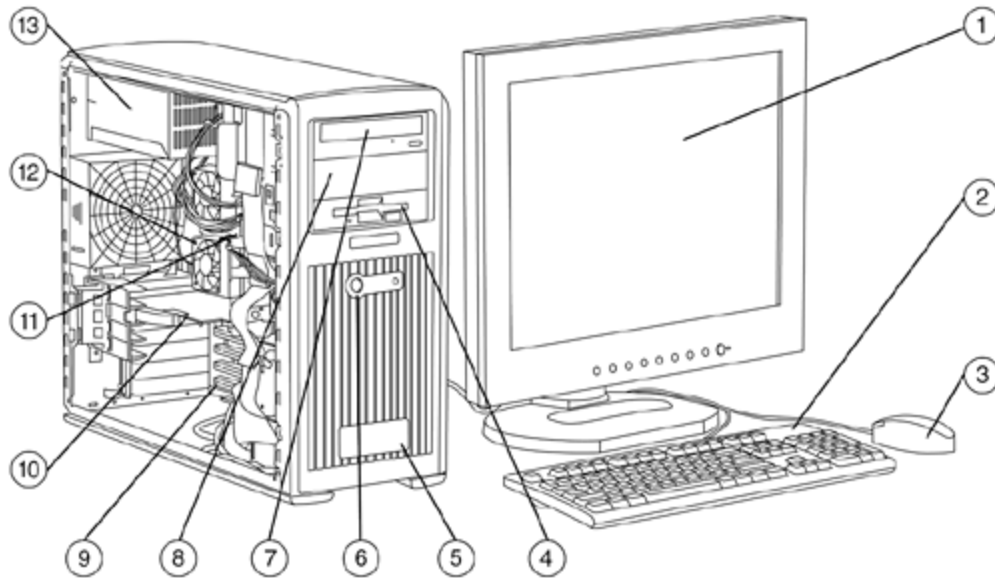


### Overview



- |  |                        |
|--|------------------------|
| 1. HP Monitor (optional)                             | 8. Available drive bay |
| 2. HP Keyboard                                       | 9. Expansion slots     |
| 3. HP Mouse  | 10. Graphics slot      |
| 4. Floppy Drive                                      | 11. Memory sockets     |
| 5. Port cover: USB, IEEE-1394, microphone, headphone | 12. Processor          |
| 6. On-Off Button                                     | 13. Power supply       |
| 7. Optical Drive                                     |                        |

### At A Glance

- Supports Intel® Xeon processor, 2.4 to 3.2 GHz
- Microsoft Windows XP Professional, HP Installation Kit for Linux (see <http://www.hp.com/workstations/software/linux/> for details)
- Red Hat Linux 7.3 or Red Hat Enterprise WS 3
- Up to 1 MB L3 cache integrated on processor
- Intel E7505 chipset with dual memory channels (4.2 GB/s throughput) and 533 MHz front side bus
- PC2100 ECC registered DDR-266 expandable to 12 GB (with 2GB DIMMs)
- Integrated Ultra320 SCSI hard drives (10,000 or 15,000 rpm) and Ultra ATA/100 hard drives (7200 rpm) or optional Serial ATA Hard Drive (7200 rpm or 10,000 rpm)
- Dual Channel Ultra320 SCSI and Ultra ATA/100 controllers
- Optional 4-channel Serial ATA (SATA) RAID PCI Controller (Windows only)
- Up to 1000 GB of high-performance internal storage
- Choice of leadership graphics:
  - NVIDIA Quadro NVS 280,
  - NVIDIA Quadro NVS 400,
  - NVIDIA Quadro4 380 XGL,
  - ATI FireGL T2-128,
  - NVIDIA Quadro FX1100, and
  - NVIDIA Quadro FX3000
- Support for up to 8 displays
- Integrated Intel 10/100/1000 Mb Ethernet adapter
- Six total slots – one PCI-X 133MHz, two PCI-X 100MHz, two PCI and one AGP 8X
- Eight bays (five internal, three external)
- CD-ROM, CD-RW, DVD-ROM, or DVD+RW
- 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

<b>Processor</b>	<p>Intel Xeon processor 2.4 GHz, 512 KB cache, 533 MHz front side bus</p> <p>Intel Xeon processor 2.66 GHz, 512 KB cache, 533 MHz front side bus</p> <p>Intel Xeon processor 2.8 GHz, 512 KB cache, 533 MHz front side bus</p> <p>Intel Xeon processor 3.06 GHz, 512 KB cache, 533 MHz front side bus</p> <p>Intel Xeon processor 3.2 GHz, 512 KB/1 MB L3 cache, 533 MHz front side bus</p>	
<b>Operating System</b>	<p>Microsoft Windows XP Professional preinstall - SP1</p> <p>HP Installer Kit for Linux (supports custom installations of Red Hat 7.2, 7.3, 8.0, 9 and Enterprise Workstation Edition 3).</p> <p>Red Hat Enterprise Linux WS 3 (update 2)</p>	
<b>Cache Memory</b>	<p>512 KB integrated, full speed Level 2 cache per processor</p> <p>1 MB integrated, full speed Level 3 cache option on the 3.2 GHz processor</p>	
<b>Chipset</b>	<p>Intel E7505 chipset</p>	
<b>Processor Upgradability</b>	<p>Upgradable to dual processor</p>	
<b>Memory</b>	<p>Standard</p> <p>Maximum</p>	<p>512-MB of PC2100 ECC registered DDR-266</p> <p>12-GB of PC2100 ECC registered DDR-266</p> <p><b>NOTE:</b> Microsoft Windows supports 4GB; Maximum configurable memory is 12GB; up to 8GB configurations are supported on Linux only (2nd processor required).</p>
<b>Network Controller</b>	<p>Integrated Intel 10/100/1000 Mb Ethernet adapter</p>	
<b>Expansion Slots</b>	<p>I/O (Total)</p> <p>PCI-X 1.0 64b/133MHz</p> <p>PCI-X 1.0 64b/100MHz</p> <p>PCI 2.2 32b/33MHz</p> <p>AGP 8x Pro 50 (50w)</p>	<p>6, up to 5 available</p> <p>1, up to 1 depending on model</p> <p>2, up to 2 depending on model</p> <p>2, up to 2 depending on model</p> <p>1, up to 1 depending on model</p>
<b>Expansion Bays</b>	<p>(Total/Available)</p> <p>Internal 3.5 inch</p> <p>External 5.25 inch</p> <p>External 3.5 inch</p>	<p>8 total/5available</p> <p>5 bays/4available</p> <p>2 bays/1 available</p> <p>1 external floppy drive</p>
<b>Controllers</b>	<p>SCSI</p> <p>Ultra ATA/100</p> <p>4-channel Serial ATA</p>	<p>Integrated dual channel Ultra320 SCSI controller</p> <p>Integrated Ultra ATA/100</p> <p>SATA RAID PCI Controller (Windows only)</p>

### Standard Features

---

<b>Storage</b>	Diskette Drive	1.44 MB
	Removable Media	CD-ROM, DVD-ROM, CD-RW, or DVD+ RW
	Removable Storage	128 or 256 MB HP Drive Key (USB 2.0)
	Hard Drive	40-GB, 80-GB, 160-GB, or 250-GB Ultra ATA/100 EIDE (7,200 rpm) 36-GB, or 73-GB Ultra320 SCSI (15,000 rpm); 36-GB, 73-GB, or 146-GB Ultra320 SCSI (10,000 rpm)

---

<b>Interfaces</b>	Parallel	One 25-pin (rear)
	USB 2.0	6 (2 front, 4 rear)
	Serial	One 9-pin DIN (rear)
	Ultra320 SCSI	2 (68-pin internal and optional 68-pin external)
	Ultra ATA/100	2 (internal)
	IEEE 1394	2 (1 front, 1 back)
	Keyboard (PS/2)	1 (rear)
	Pointing Device (PS/2 mouse)	1 (rear)
	Video	choice of professional graphics options
	Network	1 RJ-45 connector (rear)
	Microphone Jack	2 (front & rear)
	Headphone Jack	1 (front)
	Line-In Jack	1 (rear)
	Line-Out Jack	1 (rear)

---

<b>Graphics</b> <i>One of the following:</i>	NVIDIA Quadro NVS 280 (AGP)
	NVIDIA Quadro NVS 400 (AGP)
	NVIDIA Quadro4 380 XGL (AGP)
	ATI FireGL T2-128
	NVIDIA Quadro FX1100 (AGP)
	NVIDIA Quadro FX3000 (AGP)

---

<b>Input devices</b>	Easy Access Keyboard (PS/2)
	3-Button Mouse (PS/2)

---

<b>Audio</b>	AC97/16-bit stereo full-duplex and Integrated speaker
	Sound Blaster Audigy 2 ZS PCI card

---

### Standard Features

---

#### Management

##### Bios Features

Advanced Configuration and Power Interface (ACPI) 1.0b  
Desktop Management Interface (DMI) 2.0  
System Management (SM) Bios 2.3.1

##### NIC Hardware

Remote Wakeup  
Wake on LAN (WoL)

##### Web downloads

System Software Manager  
Insight Management Agent  
Altiris Express  
Remote ROM Flash  
Remote Shut Down

---

#### Security

Diskette write and boot control  
Flash ROM lock  
Network server mode  
Parallel interface control  
Power-on password  
Serial interface control  
Setup password  
Cable lock provision

---

#### Power Supply

450 watts, with Power Factor Correction

---

#### Service and Support

Protected by HP services including a three-year, limited warranty with three-year parts coverage, three year, on-site service, and three-year labor (in many countries); 7 x 24 hardware technical phone support and on-line support through the Internet; Pre-Failure Warranty coverage of hard drives, memory.

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

### Standard Features Pre-Configured Global Models

**X8X/2.4/36S/512/Xd**  
DS729AW

<b>Processor</b>	Intel Xeon processor 2.4 GHz
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Cache Memory</b>	512 KB integrated L2
<b>Memory</b>	512MB (2x256 MB) PC2100 ECC registered DDR-266
<b>Optical Drive</b>	16X/40X DVD-ROM Drive
<b>Hard Drive</b>	36 GB Ultra320 SCSI (10,000 rpm)
<b>Graphics</b>	<b>Not included in base configuration</b> – Please choose a graphics card option below: NVIDIA Quadro NVS 280 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FireGL T2-128 NVIDIA Quadro FX1100 NVIDIA Quadro FX3000 <b>NOTE:</b> Please see Part Numbers in After market options/Standalone accessories section.
<b>Mouse</b>	HP scroll mouse (PS/2)

#### X8X/2.4/36S/512/Xd Country Code Key

<b>N. America</b>	DS729AW#ABA	<b>Switzerland</b>	DS729AW#AR8
<b>Fr. Canada</b>	DS729AW#ABC	<b>Switzerland (Eng, It)</b>	DS729AW#ACN
<b>L. America</b>	DS729AW#ABM	<b>Europe (English, Fr, Ger, It, Dutch, Sp)</b>	DS729AW#AK6
<b>Japan</b>	DS729AW#ABJ	<b>Thai</b>	DS729AW#AKL
<b>Japan (English)</b>	DS729AW#ACF	<b>Asia/Pacific (English)</b>	DS729AW#AB4
<b>UK</b>	DS729AW#ABU	<b>Korea</b>	DS729AW#AB1
<b>Germany</b>	DS729AW#ABD	<b>China</b>	DS729AW#AB2
<b>France</b>	DS729AW#ABF	<b>Taiwan</b>	DS729AW#AB0
<b>Italy</b>	DS729AW#ABZ	<b>India</b>	DS729AW#ACJ
<b>Netherlands</b>	DS729AW#ABH	<b>Aus/NZ</b>	DS729AW#ABG
<b>Spain</b>	DS729AW#ABE	<b>Denmark</b>	DS729AW#ACE

### Standard Features Pre-Configured Global Models

**X8X/2.8/36S/512/Xd**  
DS731AW

<b>Processor</b>	Intel Xeon processor 2.8 GHz
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Cache Memory</b>	512 KB integrated L2
<b>Memory</b>	512MB (2x256 MB) PC2100 ECC registered DDR-266
<b>Optical Drive</b>	16X/40X DVD-ROM Drive
<b>Hard Drive</b>	36 GB Ultra320 SCSI (10,000 rpm)
<b>Graphics</b>	<b>Not included in base configuration</b> – Please choose a graphics card option below: NVIDIA Quadro NVS 280 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FireGL T2-128 NVIDIA Quadro FX1100 NVIDIA Quadro FX3000 <b>NOTE:</b> Please see Part Numbers in After market options/Standalone accessories section.
<b>Mouse</b>	HP scroll mouse (PS/2)

#### X8X/2.8/36S/512/Xd Country Code Key

<b>N. America</b>	DS731AW#ABA	<b>Switzerland</b>	DS731AW#AR8
<b>Fr. Canadian</b>	DS731AW#ABC	<b>Switzerland (Eng, It)</b>	DS731AW#CAN
<b>L. America</b>	DS731AW#ABM	<b>Europe (English, Fr, Ger, It, Dutch, Sp)</b>	DS731AW#AK6
<b>Japan</b>	DS731AW#ABJ	<b>Thai</b>	DS731AW#AKL
<b>Japan (English)</b>	DS731AW#ACF	<b>Asia/Pacific (English)</b>	DS731AW#AB4
<b>UK</b>	DS731AW#ABU	<b>Korea</b>	DS731AW#AB1
<b>Germany</b>	DS731AW#ABD	<b>China</b>	DS731AW#AB2
<b>France</b>	DS731AW#ABF	<b>Taiwan</b>	DS731AW#AB0
<b>Italy</b>	DS731AW#ABZ	<b>India</b>	DS731AW#ACJ
<b>Netherlands</b>	DS731AW#ABH	<b>Aus/NZ</b>	DS731AW#ABG
<b>Spain</b>	DS731AW#ABE	<b>Denmark</b>	DS731AW#ACE

### Standard Features Pre-Configured Global Models

**X8X/3.06/36S/512/Xd**  
DS732AW

<b>Processor</b>	Intel Xeon processor 3.06 GHz
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Cache Memory</b>	512 KB integrated L2
<b>Memory</b>	512MB (2x256 MB) PC2100 ECC registered DDR-266
<b>Optical Drive</b>	16X/40X DVD-ROM Drive
<b>Hard Drive</b>	36 GB Ultra320 SCSI (10,000 rpm)
<b>Graphics</b>	<b>Not included in base configuration</b> – Please choose a graphics card option below: NVIDIA Quadro NVS 280 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FireGL T2-128 NVIDIA Quadro FX1100 NVIDIA Quadro FX3000 <b>NOTE:</b> Please see <a href="#">Part Numbers in After market options/Standalone accessories section.</a>
<b>Mouse</b>	HP scroll mouse (PS/2)

#### X8X/3.06/36S/512/Xd Country Code Key

<b>N. America</b>	DS732AW#ABA	<b>Switzerland</b>	DS732AW#AR8
<b>Fr. Canadian</b>	DS732AW#ABC	<b>Switzerland (Eng, It)</b>	DS732AW#CAN
<b>L. America</b>	DS732AW#ABM	<b>Europe (English, Fr, Ger, It, Dutch, Sp)</b>	DS732AW#AK6
<b>Japan</b>	DS732AW#ABJ	<b>Thai</b>	DS732AW#AKL
<b>Japan (English)</b>	DS732AW#ACF	<b>Asia/Pacific (English)</b>	DS732AW#AB4
<b>UK</b>	DS732AW#ABU	<b>Korea</b>	DS732AW#AB1
<b>Germany</b>	DS732AW#ABD	<b>China</b>	DS732AW#AB2
<b>France</b>	DS732AW#ABF	<b>Taiwan</b>	DS732AW#AB0
<b>Italy</b>	DS732AW#ABZ	<b>India</b>	DS732AW#ACJ
<b>Netherlands</b>	DS732AW#ABH	<b>Aus/NZ</b>	DS732AW#ABG
<b>Spain</b>	DS732AW#ABE	<b>Denmark</b>	DS732AW#ACE

### Configure to order options

#### Processor

Intel Pentium 4 processor 2.4-GHz, 512-KB cache, 533-MHz system bus  
Intel Pentium 4 processor 2.66-GHz, 512-KB cache, 533-MHz system bus  
Intel Pentium 4 processor 2.8-GHz, 512-KB cache, 533-MHz system bus  
Intel Pentium 4 processor 3.06-GHz, 512-KB cache, 533-MHz system bus  
Intel Xeon processor 3.2-GHz/533-MHz front side bus, 1-MB L3 cache  
2nd Xeon processor 2.4-GHz, 512-KB cache, 533-MHz front side bus  
2nd Xeon processor 2.66-GHz, 512-KB cache, 533-MHz front side bus  
2nd Xeon processor 2.8-GHz, 512-KB cache, 533-MHz front side bus  
2nd Xeon processor 3.06-GHz, 512-KB cache, 533-MHz front side bus  
2nd Intel Xeon processor 3.2-GHz/533-MHz front side bus, 1-MB L3 cache

**NOTE:** When adding an additional processor, both processors must have the same speed and cache size.

#### Operating System

Windows XP Professional SP1a preloaded; incl. Windows XP recovery CD  
HP Installer Kit for Linux  
Red Hat Enterprise Linux WS Edition 3.0 (32-bit Update 2)

#### Memory (DDR-SDRAM)

256-MB PC2100 ECC registered DDR-266  
512-MB PC2100 ECC registered DDR-266  
1-GB PC2100 ECC registered DDR-266  
1.5-GB PC2100 ECC registered DDR-266  
2-GB PC2100 ECC registered DDR-266  
3-GB PC2100 ECC registered DDR-266  
4-GB PC2100 ECC registered DDR-266  
6-GB PC2100 ECC registered DDR-266 (available on Linux models with 2nd processor only)  
8-GB PC2100 ECC registered DDR-266 (available on Linux models with 2nd processor only)  
**NOTE:** Microsoft Windows supports 4GB; Maximum configurable memory is 12GB; up to 8GB configurations are supported on Linux only (2nd processor required). Memory must be added in like pairs.

#### Monitors

HP L1925 19-inch TFT Flat Panel Display – Analog/Digital  
HP L2035 20-inch TFT Flat Panel Display  
HP L2335 23-inch TFT Widescreen Flat Panel Display  
HP p1230 22-inch (20.0-inch vis) Performance Natural-flat CRT Monitor

#### Graphic Card (Video Card)

NVIDIA Quadro NVS 280 (AGP)  
NVIDIA Quadro NVS 400 (AGP) for Windows models only  
NVIDIA Quadro4 380 XGL (AGP)  
ATI FireGL T2-128 (AGP)  
NVIDIA Quadro FX1100 (AGP)  
NVIDIA Quadro FX3000 (AGP) for Windows models only



### Configure to order options

#### Primary hard disks

(\* SATA drives work with Windows models only)

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)  
250-GB Ultra ATA/100 EIDE (7,200 rpm)

80-GB Serial ATA/150 (7,200 rpm)\*  
160-GB Serial ATA/150 (7,200 rpm)\*  
250-GB Serial ATA/150 (7,200 rpm)\*  
36-GB Serial ATA/150 (10,000 rpm)\*  
74-GB Serial ATA/150 (10,000 rpm)\*

36-GB Ultra320 SCSI (10,000 rpm)  
73-GB Ultra320 SCSI (10,000 rpm)  
146-GB Ultra320 SCSI (10,000 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)  
250-GB Ultra ATA/100 EIDE (7,200 rpm)

80-GB Serial ATA/150 (7,200 rpm)\*  
160-GB Serial ATA/150 (7,200 rpm)\*  
250-GB Serial ATA/150 (7,200 rpm)\*  
36-GB Serial ATA/150 (10,000 rpm)\*  
74-GB Serial ATA/150 (10,000 rpm)\*

36-GB Ultra320 SCSI (10,000 rpm)  
73-GB Ultra320 SCSI (10,000 rpm)  
146-GB Ultra320 SCSI (10,000 rpm)  
36-GB Ultra320 SCSI (15,000 rpm)  
73-GB Ultra320 SCSI (15,000 rpm)

---

#### Third hard disks

80-GB Serial ATA/150 (7,200 rpm)\*  
160-GB Serial ATA/150 (7,200 rpm)\*  
250-GB Serial ATA/150 (7,200 rpm)\*  
36-GB Serial ATA/150 (10,000 rpm)\*  
74-GB Serial ATA/150 (10,000 rpm)\*

36-GB Ultra320 SCSI (10,000 rpm)  
73-GB Ultra320 SCSI (10,000 rpm)  
146-GB Ultra320 SCSI (10,000 rpm)  
36-GB Ultra320 SCSI (15,000 rpm)  
73-GB Ultra320 SCSI (15,000 rpm)

### Configure to order options

<b>4th hard disks</b>	80-GB Serial ATA/150 (7,200 rpm)*
	160-GB Serial ATA/150 (7,200 rpm)*
	250-GB Serial ATA/150 (7,200 rpm)*
	36-GB Serial ATA/150 (10,000 rpm)*
	74-GB Serial ATA/150 (10,000 rpm)*
	36-GB Ultra320 SCSI (10,000 rpm)
	73-GB Ultra320 SCSI (10,000 rpm)
	146-GB Ultra320 SCSI (10,000 rpm)
	36-GB Ultra320 SCSI (15,000 rpm)
	73-GB Ultra320 SCSI (15,000 rpm)

---

<b>5th hard disks</b> (SCSI only)	36-GB Ultra320 SCSI (10,000 rpm)
	73-GB Ultra320 SCSI (10,000 rpm)
	146-GB Ultra320 SCSI (10,000 rpm)
	36-GB Ultra320 SCSI (15,000 rpm)
	73-GB Ultra320 SCSI (15,000 rpm)

---

<b>Optical Drives</b>	48X CD-ROM
	48X CD-RW
	16X DVD-ROM
	48X CD-RW/DVD-ROM combo
	4.7-GB 8X DVD+RW for Windows models only

---

<b>Removable storage</b>	128 MB HP Drive Key (USB 2.0)
	256 MB HP Drive Key (USB 2.0)

---

<b>Input devices</b>	Easy Access Keyboard (PS/2)
	No Keyboard Kit
	3-Button Mouse (PS/2)
	Scroll Mouse (PS/2)
	No Mouse Option

---

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

### After market options/Standalone accessories

		<b>Part Number</b>
<b>2nd Processor</b>	Intel Xeon processor 2.4 GHz, 512 KB cache, 533 MHz front side bus	AA661A
	Intel Xeon processor 2.66 GHz, 512 KB cache, 533 MHz front side bus	AA662A
	Intel Xeon processor 2.8 GHz, 512 KB cache, 533 MHz front side bus	AA663A
	Intel Xeon processor 3.06 GHz, 512 KB cache, 533 MHz front side bus	AA849A
	Intel Xeon processor 3.06 GHz, 512 KB L2/1 MB L3 cache, 533 MHz front side bus	DG154A
	Intel Xeon processor 3.2 GHz, 1 MB L3, 533 MHz front side bus cache	DP042A
	<b>NOTE:</b> When adding an additional processor, both processors must have the same speed and cache size.	
<b>Operating System</b>	Red Hat Enterprise Linux WS 3.0 (32-bit Update 2)	PD862A
<b>Memory</b>	256 MB (1x256) PC2100 ECC registered DDR-266	DQ744A
	512 MB PC2100 ECC registered DDR-266	AA656A
	1 GB PC2100 ECC registered DDR-266	AA657A
	2 GB PC2100 ECC registered DDR-266	AA834A
	<b>NOTE:</b> Microsoft Windows supports 4GB; Maximum configurable memory is 12GB; up to 8GB configurations are supported on Linux only. Memory must be added in like pairs.	
<b>Graphics</b>	NVIDIA Quadro NVS 280 (AGP)	AA931A
	NVIDIA Quadro NVS 280 DVI Cables	DL929A
	NVIDIA Quadro NVS 400 (AGP) for Windows models only	AA605A
	NVIDIA Quadro NVS 400 DVI Cables	AA606A
	NVIDIA Quadro4 380 XGL (AGP)	AA653A
	ATI FireGL T2-128 (AGP)	AA929A
	NVIDIA Quadro FX1100 (AGP)	DL489A
	NVIDIA Quadro FX3000 (AGP) for Windows models only	DL488B
<b>Hard Drives</b>	<b>Ultra ATA/100 Drives</b>	
	40-GB ATA/100 EIDE (7,200 rpm)	DC180A
	80-GB ATA/100 EIDE (7,200 rpm)	DC181A
	160-GB Ultra ATA/100 EIDE (7,200 rpm)	DC189A
	250-GB Ultra ATA/100 EIDE (7,200 rpm)	DC516A
	<b>Serial ATA Drives</b> (for Windows models only)	
	80-GB Serial ATA Hard Drive (7200 rpm)	DE705A
	160-GB Serial ATA Hard Drive (7200 rpm)	DE706A
	250-GB Serial ATA/150 Hard Drive (7200 rpm)	DS702A
	36-GB Serial ATA Hard Drive (10,000 rpm)	DU962A
	74-GB Serial ATA Hard Drive (10,000 rpm)	DX760A
	<b>Ultra320 SCSI Drives</b>	
	36-GB Ultra320 SCSI (10,000 rpm)	AA612A
	73-GB Ultra320 SCSI (10,000 rpm)	AA613A
	146-GB Ultra320 SCSI (10,000 rpm)	AA614A
	36-GB Ultra320 SCSI (15,000 rpm)	AA616A
	73-GB Ultra320 SCSI (15,000 rpm)	AA617A

### After market options/Standalone accessories

<b>Optical Drives</b>	48X CD-ROM Drive	DC143B
	48X/24X/48X CD-RW Drive	DE205A
	16X DVD Drive	AA620A
	48X CD-RW/DVD-ROM combo drive	DE206A
	4.7GB 8X DVD+R/RW Drive – 400i for Windows models only	DS703A

<b>Removable Storage</b>	128 MB HP Drive Key (USB 2.0)	DQ819B
	256 MB HP Drive Key (USB 2.0)	DL973B

<b>Storage Controllers</b>	Ultra320 Dual Channel SCSI Controller Card (PCI) cable sold separately	AA611A
	Ultra320 SCSI back panel connect on chassis (2nd channel of dual-channel U320) cable sold separately. Uses HDCI, HD68, or mini DB680 connector.	AA658A
	4-channel Serial ATA (SATA) RAID PCI Controller (A power cable is needed for every 2 drives. Power cords sold separately.)	DM294A
	Cable, SATA power (1 required for every 2 SATA drives)	DN733A
	Adaptec SCSI RAID 2120S Card (cable sold separately)	AA850A
	5-device SCSI cable	AA818A

<b>Rack Options</b>	Rack mounting kits	AA640A
	Fixed shelf kit	253449-B21
	Sliding Shelf Kit	234672-B21
	Depth Adjustable Rails	332558-B21

<b>Backup Devices</b>	Exabyte 33/66 GB VXA-1 IDE Tape Drive	237109-B22
	Exabyte 33/66 GB VXA-1 SCSI Tape Drive	237108-B22
	TR5 10/20 GB iTape Drive (IDE, carbon)	294243-B22
	lomega ZIP 250 MB (internal, IDE, carbon)*	294416-B22
	HP DAT24i Internal DDS3 tape drive	C1555D
	HP DAT24e External DDS3 tape drive	C1556D
	HP DAT40i Internal DDS4 tape drive	C5686B
	HP DAT40e External DDS4 tape drive	C5687C
	HP DAT72i Internal DAT72 tape drive	Q1522A
	HP DAT72e External DAT72 tape drive	Q1523A

<b>Communications</b>	Intel Pro/1000 XT Server Adapter Gigabit PCI card	AA660A
	Intel Pro 1000 MT NIC	DC193A
	Broadcom Gigabit NIC	DC194A

<b>Input devices</b>	PS/2 Easy Access keyboard (carbonite)	DC167B
	Three button mouse-carbon (PS2)	AA778A
	Scroll Mouse-Carbon (PS2)	DD440B
	Spaceball 5000	DE934A

### *After market options/Standalone accessories*

---

<b>Security</b>	USB Fingerprint Identification	240238-B21
	USB SmartCard Keyboard	267147-008
	Corvadis USB Enhanced SmartCard Reader	240154-B21

---

<b>Other</b>	Expansion kit	AA857A
	Remote Workstation Sender Software Module	DM497A
	Remote Workstation Receiver Software Module	DM498A
	Sound Blaster Audigy 2 ZS	DV440A

---

<b>Monitors</b>	HP L1925 19-inch TFT Flat Panel Display – Analog/Digital	P9626A
	HP L2035 20-inch TFT Flat Panel Display	P9614A
	HP L2335 23-inch TFT Widescreen Flat Panel Display	P9615A
	HP p1230 22-inch (20.0-inch vis) Performance Natural-flat CRT Monitor	P9613A

### Memory

#### Standard Memory

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

**NOTE:** Microsoft Windows supports 4GB; Maximum configurable memory is 12GB; up to 8GB configurations are supported on Linux only (2nd processor required).

#### These memory options are available from HP:

- 256 MB upgrade kit PC2100 ECC registered DDR-266
- 512 MB upgrade kit PC2100 ECC registered DDR-266
- 1 GB upgrade kit PC2100 ECC registered DDR-266
- 2 GB upgrade kit PC2100 ECC registered DDR-266

#### Part Number

DQ744A

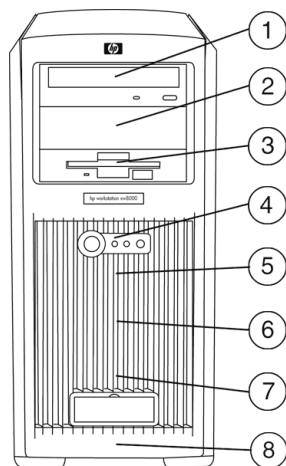
AA656A

AA657A

AA834A

### Storage

#### Drive Bay Locations



#### Drive Support

	Quantity Supported	Position Supported	Controller
<b>Removable Media</b>			
1.44-MB Diskette Drive	Up to 1	3	Integrated
Optical Drives	Up to 2		
CD-ROM Drive		1, 2	Integrated Ultra ATA/100
DVD-ROM Drive		1, 2	Integrated Ultra ATA/100
CD-RW Drive		1, 2	Integrated Ultra ATA/100
16x CD-RW/DVD-ROM		1, 2	Integrated Ultra ATA/100
DVD+RW		1, 2	Integrated Ultra ATA/100

### Storage

#### Hard Drives

##### **Ultra320 SCSI Drives**

<b>1-inch</b>	Up to 5	4, 5, 6, 7, 8	Integrated dual channel Ultra320 SCSI controller
36-GB 10,000 rpm			
73-GB 10,000 rpm			
146-GB 10,000 rpm			
36-GB 15,000 rpm			
73-GB 15,000 rpm			

##### **Ultra ATA Drives**

<b>1-inch</b>	Up to 2	5, 6	Integrated Ultra ATA/100 controller
40-GB 7200 rpm			
80-GB 7200 rpm			
160-GB 7200 rpm			
250-GB 7200 rpm			

<b>Serial ATA Drives</b> (for Windows models only)	Up to 4	1, 2, 4, 5	4-channel Serial ATA (SATA) RAID PCI Controller
---	---------	------------	---

80-GB (7200 rpm)	Up to 4	1, 2, 4, 5	4-channel Serial ATA (SATA) RAID PCI Controller
160-GB (7200 rpm)			
250-GB (7200 rpm)			
36-GB (10,000 rpm)			
74-GB (10,000 rpm)			

#### Maximum Storage Capacity

Internal	730-GB SCSI (assumes 5 SCSI drives installed)
	500-GB Ultra ATA
	1000 GB for SATA



### Technical Specifications

<b>Base Workstation</b>	<b>System Characteristics</b>	Processor	Intel Xeon		
		CPU Bus Speed Supported	533 MHz front side bus		
		Standard Cache	512 KB integrated, full speed Level 2 1 MB integrated, full speed Level 3 cache with 3.2GHz model processors only Upgradeable to up to 2 processors		
		System board with Intel E7505 chipset	Yes		
	<b>Expansion Options</b>	Memory Expansion Slots	6 DIMMs		
		Memory Type Supported	PC2100 ECC registered DDR-266 only		
		Maximum Memory	12-GB		
		Expansion Slots	I/O (Total)	6, up to 5 available	
			PCI-X 1.0 64b/133MHz	1, up to 1 depending on model	
			PCI-X 1.0 64b/100MHz	2, up to 2 depending on model	
			PCI 2.2 32b/33MHz	2, up to 2 depending on model	
			AGP 8x Pro 50 (50w)	1, up to 1 depending on model	
		Expansion Bays	(Total/Available)	8 total/5 available	
			Internal 3.5 inch	5 bays/4 available	
	External 5.25 inch		2 bays/1 available		
	External 3.5 inch		1 external floppy drive		
	<b>Interfaces</b>	Parallel	One 25-pin (rear)		
		USB 2.0	6 (2 front, 4 rear)		
		Serial	One 9-pin DIN (rear)		
		Ultra320 SCSI	2 (68-pin internal and optional 68-pin external)		
		Ultra ATA/100	2 (internal)		
		IEEE 1394	2 (1 front, 1 back)		
		Keyboard (PS/2)	1 (rear)		
		Pointing Device (PS/2 mouse)	1 (rear)		
		Video	choice of professional graphics options		
		Network	1 RJ-45 connector (rear)		
		Microphone Jack	2 (front & rear)		
		Headphone Jack	1 (front)		
		Line-In Jack	1 (rear)		
		Line-Out Jack	1 (rear)		
	<b>System Unit</b>	Tower Dimensions (HxWxD)	17.7 x 8.3 x 20.3 in (44.9 x 21 x 51.5 cm)		
		Weight (standard configuration)	40 lb (18 kg)		
		Power Supply	Operating Voltage Range	100 VAC to 240 VAC	
			Rated Voltage Range	100 VAC to 120 VAC; 200 VAC to 240 VAC	
			Rated Line Frequency	50-Hz to 60-Hz	
			Rated Input Current	6.4A @ 100 VAC; 3.2A @ 240 VAC	
			Maximum Rated Power	692-Watt input, 450-Watt output	
			Physical Dimensions	3.85 x 6.3 x 7.35 in (9.78 x 16 x 18.67 cm)	

### Technical Specifications

	Weight	<5.7 lb (<2.6 kg)
Temperature (Values are subject to change)	Operating	50° to 95° F (10° to 35° C)
	Non-operating	-40° to 158° F (-40° to 70° C)
Humidity (non-condensing) (Values are subject to change)	Operating	15% to 80%
	Non-operating	10% to 90%
Maximum Altitude (nonpressurized)	Operating	10000 ft (3100 m max)
	Non-operating	15000 ft (4600 m max)

<b>HP Easy Access Keyboard</b>	<b>Dimensions (HxWxD)</b>	18.3 x 6.3 x 1.4 in (46.48 x 16.0 x 3.56 cm)	
	<b>Weight</b>	Approximately 2 lb (0.9 kg)	
<b>Input Specifications</b>	<b>Operating Voltage</b>	+ 5VDC ± 5%	
	<b>Power Consumption</b>	50 mA maximum (with 3 LEDs on)	
	<b>System Interface</b>	PS/2 mini-din connector	
	<b>ESD</b>	CE level 4, 15 kV air discharge	
	<b>EMI-RFI</b>	Conforms to FCC rules for a Class B computing device	
	<b>PC98</b>	Functionally compliant	
	<b>Mechanical</b>	<b>Languages</b>	18 available
		<b>Keycaps</b>	Low-profile design
		<b>Switch Actuation</b>	55 g nominal peak force with tactile feedback
		<b>Switch Life</b>	20 million keystrokes (using Hasco modified tester)
<b>Switch Type</b>		Contamination resistant membrane	
<b>Environmental</b>	<b>Key Leveling Mechanism</b>	For all double wide and greater length keys	
	<b>Cable Length</b>	6 ft (1.8 m)	
	<b>PC98-99</b>	Mechanically compliant	
	<b>Acoustics</b>	50 dBA maximum sound pressure level	
	<b>Operating Temperature</b>	50° to 122° F (10° to 50° C)	
	<b>Non-operating Temperature</b>	-22° to 140° F (-30° to 60° C)	
	<b>Operating Humidity</b>	10% to 90% (non condensing at ambient)	
	<b>Non-operating Humidity</b>	20% to 80% (non condensing at ambient)	
	<b>Operating Shock</b>	40 g, 6 surfaces	
	<b>Non-operating Shock</b>	80 g, 6 surfaces	
<b>Operating Vibration</b>	2 g peak acceleration		
<b>Non-operating Vibration</b>	50° to 122° F (10° to 50° C)		

### Technical Specifications

<b>1.44-MB Diskette Drive</b>	<b>Size</b>	3.5 in (8.89 cm)	
	<b>LED Indicators</b> (front panel)	Green	
	<b>Read/Write Capacity per Diskette</b> (high/low)	1.44 MB/720 KB	
	<b>Drive Height</b>	One-third	
	<b>Drive Rotation</b>	300 rpm	
	<b>Transfer Rate</b> (high/low)	500/250 KB/s	
	<b>Bytes/Sector</b>	512	
	<b>Sectors/Track</b> (high/low)	18/9	
	<b>Tracks/Side</b> (high/low)	80/80	
	<b>Access Times</b>	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	94/173 ms
		Settling Time	15 ms
		Latency Average	100 ms
	<b>Cylinders</b> (high/low)	80/80	
<b>Read/Write Heads</b>	Two		

---

<b>HP 3-Button Mouse</b>	<b>Dimensions/Weight</b>	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)	
	<b>Environmental</b>	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)	
	<b>Mechanical</b>	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	
	<b>Regulatory Approvals</b>	Compliant	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick	

---

### Technical Specifications

<b>HP 2-Button Scroll Mouse</b>	<b>Scroll Wheel</b>	8 mm		
	<b>Maximum Rotation Speed</b>	30 mm/s		
	<b>Switch Type</b>	Light force micro-switch		
	<b>Switch Life</b>	1 million operations		
	<b>Mechanical Life</b>	Minimum 200,000 revolutions		
	<b>Environmental</b>	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	
		<b>Electrical</b>	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
	<b>Mechanical</b>	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	
	<b>Regulatory Approvals</b>	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BCIQ, C -Tick		

### Technical Specifications

<b>SpaceBall 5000</b>	<b>Features</b>	Six degrees of freedom motion control through the X, Y, Z axis (pitch, roll, yaw)		
	<b>Ball Diameter</b>	2.2 in (5.6 cm)		
	<b>Dimensions/Weight</b>	Height	3.0 in (7.6 cm)	
		Length	6.0 in (15.2 cm)	
		Width	8.4 in (21.3 cm)	
		Weight	2.1 lb (9.94 kg)	
		<b>Environmental</b>	Operating Temperature	50° to 104° F (10° to 40° C)
		Non-operating Temperature	43° to 140° F (6° to 60° C)	
		Operating Humidity	8% to 80% (non-condensing at ambient)	
		Non-operating Humidity	5% to 80% (non-condensing at ambient)	
	<b>Mechanical</b>	Force range	0.5 - 8.2N (1.8 – 29.5 oz)	
		Torque range	0.085 – 0.33 oz-in. (6.91 Nmm)	
		Resolution	10 bits	
	<b>Serial Specifications</b>	Connector	9-pin D-subminiature receptacle (DB9S)	
		Cable Length	12.8 ft. (3.9 m)	
		Data rate	9600 bps	
		Flow control	Xon/Xoff	
<b>Regulatory Approvals</b>	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		

<b>Adaptec SCSI RAID 2120S Card</b>	<b>Dimensions (H x D)</b>	2.5 x 6.6 in (6.4 x 16.8 cm) Low profile card	
	<b>RAID Level</b>	0, 1, 10, 5, JBOD	
	<b>Data Transfer Rate</b>	Up to 320 MB/s	
	<b>Cache Memory</b>	64 MB (onboard)	
	<b>Device Support</b>	Up to 15 SCSI devices	
	<b>Bus Type</b>	64-bit/66MHz PCI	
		(Also support 32-bit/33MHz PCI)	
	<b>Internal Connectors</b>	One 68-pin high-density	
	<b>External Connectors</b>	One 68-pin VHDCI	
	<b>System Requirements</b>	Intel PC or equivalent with available PCI slot	
	<b>Operating Temperature</b>	32°to 131° F (0°to 55° C)	
	<b>Power Requirements</b>	4 amps @ +5V	
	<b>Operating System Support</b>	Windows 2000 Professional, Windows XP Professional	
	<b>Other</b>	Optimized disk utilization	
		Online RAID Level Migration	
Online capacity expansion			
Immediate RAID availability (background initialization) S.M.A.R.T. support			

### Technical Specifications

<b>4-channel Serial ATA (SATA) RAID PCI Controller</b>	<b>Dimensions (H x D)</b>	2.375 x 5.5 in (6 x 14 cm)
	<b>RAID level</b>	RAID 0+1 striping/mirroring; RAID 1 mirroring; RAID 0 striping
	<b>Data Transfer Rate</b>	Up to 266MB/sec (66 MHz PCI); Up to 133MB/sec (33 MHz PCI)
	<b>Cache Memory</b>	64 MB (onboard)
	<b>Device Support</b>	Up to (4) Serial ATA/150 Drives
	<b>Bus Type</b>	32-bit 33/66MHz PCI bus; PCI 2.3 compliant
	<b>BIOS</b>	Optimizes drive performance by drive type; flashable for future upgrades; supports multiple arrays; boots system from any array; BBS compliant; setup menus for custom array creation
	<b>48-bit LBA Support</b>	Recognizes drive capacities exceeding 137GB each
	<b>Data Protection Features</b>	Mirrors data to second drive or drive pair for RAID 1 and RAID 0+1; offers hot spare support for instant rebuild of failed drive in 2-drive RAID 1
	<b>Advanced Data Features</b>	Bus mastering offloads data I/O handling from host CPU; CRC error-checking of Serial ATA and Ultra ATA drives for data reliability during transfers; tagged command queuing and elevator seek for optimized data handling
	<b>ACPI Support</b>	S1, S3, & S4
	<b>Internal Connectors</b>	4 standard 7-pin SATA connectors
	<b>External Connectors</b>	None
	<b>System Requirements</b>	Intel PC or equivalent with available PCI slot
	<b>Operating Temperature</b>	32° F to 131° F (0° C to 55° C)
	<b>Power Requirements</b>	4 amps @ +5V
	<b>Operating System Support</b>	Windows 2000 Professional, Windows XP Professional and RedHat Linux
	<b>Other</b>	Optimized disk utilization Monitors status of arrays, hard drives, and controller via TCP/IP Synchronizes data in fault-tolerant arrays Email notification for specified array events S.M.A.R.T. support

**NOTE:** For Windows models only. A power cable is needed for every 2 drives. Power cords sold separately.

### Technical Specifications

<b>Ultra ATA Hard Drives</b>	<b>40 GB, 4200rpm</b>	<b>Capacity</b>	40 GB			
		<b>Height</b>	1.0 in (2.54 cm)			
		<b>Width</b>	2.75 in (8.9 cm)			
		<b>Interface</b>	Ultra ATA/100			
		<b>Synchronous Transfer Rate (Maximum)</b>	100 MB/s			
		<b>Seek time</b> (typical reads, including settling)	Single track	3 ms		
			Average	13 ms		
			Full-stroke	24.0 ms		
		<b>Rotational speed</b>	4200 rpm			
		<b>Logical blocks</b>	78,140,160			
		<b>Operating temperature</b>	41° to 131° F (5° to 55° C)			
		<b>Average rotational latency</b>	4.2 ms			
			<b>80 GB, 7200rpm</b>	<b>Capacity</b>	80 GB	
				<b>Height</b>	1.0 in (2.54 cm)	
<b>Width</b>	3.5 in (8.9 cm)					
<b>Interface</b>	Ultra ATA/100					
<b>Synchronous Transfer Rate (Maximum)</b>	100 MB/s					
<b>Seek time</b> (typical reads, including settling)	Single track			0.8 ms		
	Average			9.0 ms		
	Full-stroke			17.0 ms		
<b>Rotational speed</b>	7200 rpm					
<b>Logical blocks</b>	156,301,488					
<b>Operating temperature</b>	41° to 131° F (5° to 55° C)					
<b>Average rotational latency</b>	4.2 ms					
	<b>160 GB, 7200rpm</b>			<b>Capacity</b>	160 MB	
				<b>Height</b>	1.0 in (2.54 cm)	
		<b>Width</b>	3.5 in (8.9 cm)			
		<b>Interface</b>	Ultra ATA/100			
		<b>Synchronous Transfer Rate (Maximum)</b>	100 MB/s			
		<b>Seek time</b> (typical reads, including settling)	Single track	0.8 ms		
			Average	< 9.1 ms		
			Full-stroke	17.0 ms		
		<b>Rotational speed</b>	7200 rpm			
		<b>Logical blocks</b>	320,173,056			
		<b>Operating temperature</b>	41° to 131° F (5° to 55° C)			
		<b>Average rotational latency</b>	4.2 ms			
			<b>250 GB, 7200rpm</b>	<b>Capacity</b>	250 GB	
				<b>Height</b>	1.0 in (2.54 cm)	
<b>Width</b>	3.5 in (8.9 cm)					
<b>Interface</b>	Ultra ATA/100					
<b>Synchronous Transfer Rate (Maximum)</b>	100 MB/s					
<b>Seek time</b>	Single track			0.8 ms		

### Technical Specifications

(typical reads, including settling)	Average	9.0 ms
	Full-stroke	17.0 ms
<b>Rotational speed</b>	7200 rpm	
<b>Logical blocks</b>	488,397,168	
<b>Operating temperature</b>	41° to 131° F (5° to 55° C)	

#### Ultra320 SCSI Hard Drives 36 GB, 10K rpm

<b>Capacity</b>	36,400 MB	
<b>Height</b>	1.0 in (2.54 cm)	
<b>Width</b>	3.5 in (8.9 cm)	
<b>Interface</b>	Ultra320 SCSI	
<b>Transfer rate</b> synchronous (maximum)	320 MB/s	
<b>Seek time</b> (typical reads, including settling)	Single track	0.6 ms
	Average	4.5 ms
	Full-stroke	11.0 ms
<b>Rotational speed</b>	10,000 rpm	
<b>Logical blocks</b>	71,631,920	
<b>Operating temperature</b>	41° to 131° F (5° to 55° C)	

#### 73 GB, 10K rpm

<b>Capacity</b>	73,000 MB	
<b>Height</b>	1.0 in (2.54 cm)	
<b>Width</b>	3.5 in (8.9 cm)	
<b>Interface</b>	Ultra320 SCSI	
<b>Transfer rate</b> synchronous (maximum)	320 MB/s	
<b>Seek time</b> (typical reads, including settling)	Single track	0.55 ms
	Average	4.9 ms
	Full-stroke	9.2 ms
<b>Rotational speed</b>	10,000 rpm	
<b>Logical blocks</b>	143,374,744	
<b>Operating temperature</b>	41° to 131° F (5° to 55° C)	

#### 146 GB, 10K rpm

<b>Capacity</b>	146,000 MB	
<b>Height</b>	1.0 in (2.54 cm)	
<b>Width</b>	3.5 in (8.9 cm)	
<b>Interface</b>	Ultra320 SCSI	
<b>Transfer rate</b> synchronous (maximum)	320 MB/s	
<b>Seek time</b> (typical reads, including settling)	Single track	0.55 ms
	Average	4.9 ms
	Full-stroke	9.2 ms
<b>Rotational speed</b>	10,000 rpm	
<b>Logical blocks</b>	143,374,744	
<b>Operating temperature</b>	41° to 131° F (5° to 55° C)	

#### 73 GB, 15K rpm

<b>Capacity</b>	73,000 MB
<b>Height</b>	1.0 in (2.54 cm)
<b>Width</b>	3.5 in (8.9 cm)



### Technical Specifications

<b>Interface</b>	Ultra320 SCSI	
<b>Transfer rate</b> synchronous (maximum)	320 MB/s	
<b>Seek time</b> (typical reads, including settling)	Single track	0.4 ms
	Average	3.8 ms
	Full-stroke	6.7 ms
<b>Rotational speed</b>	15,000 rpm	
<b>Logical blocks</b>	143,337,744	
<b>Operating temperature</b>	41° to 131° F (5° to 55° C)	

**Serial ATA Hard Drives**    **80 GB, 7200rpm**  
(Windows or Linux models only)

<b>Capacity</b>	85,899,345,920 bytes	
<b>Height</b>	1.0 in (2.54 cm)	
<b>Width</b>	3.5 in (8.9 cm)	
<b>Interface</b>	SATA	
<b>Synchronous Transfer Rate (Maximum)</b>	150 MB/s	
<b>Buffer</b>	8 MB	
<b>Seek time</b> (typical reads, includes controller overhead, including settling)	Single track	0.9 ms
	Average	9.3 ms
	Full-stroke	9.2 ms
<b>Rotational speed</b>	7,200 rpm	
<b>Logical blocks</b>	160,086,528	
<b>Operating temperature</b>	41° to 131° F (5° to 55° C)	

**160 GB, 7200rpm**

<b>Capacity</b>	171,798,691,840 bytes	
<b>Height</b>	1.0 in (2.54 cm)	
<b>Width</b>	4 in (10.2 cm)	
<b>Interface</b>	SATA	
<b>Synchronous Transfer Rate (Maximum)</b>	150 MB/s	
<b>Buffer</b>	8 MB	
<b>Seek Time</b> (typical reads, includes controller overhead, including settling)	Single Track	0.9 ms
	Average	9.3 ms
	Full-Stroke	20 ms
<b>Rotational Speed</b>	7,200 rpm	
<b>Logical Blocks</b>	320,173,056	
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)	

**250 GB, 7200rpm**

<b>Capacity</b>	250,000,000,000 bytes	
<b>Height</b>	1 in (2.6 cm)	
<b>Width</b>	Media diameter: 3.5 in (8.9.x cm)	
	Physical size: 4 in (10.2 cm)	
<b>Interface</b>	SATA	
<b>Synchronous Transfer Rate (Maximum)</b>	150 MB/s	
<b>Buffer</b>	8 MB	
<b>Seek Time</b> (typical reads, includes controller overhead,	Single Track	0.8 ms

### Technical Specifications

		including settling)	Full-Stroke	<17.0 ms
		<b>Rotational Speed</b>	7,200 rpm	
		<b>Logical Blocks</b>	490,234,752	
		<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)	
<b>36 GB, 10K rpm</b>	<b>Capacity</b>		37,019,566,080 bytes	
	<b>Height</b>		1.028 in (25.4 mm)	
	<b>Width</b>		Media diameter: 3.3 in (84mm) Physical size: 4 in (10.2 cm)	
	<b>Interface</b>		ESATA	
	<b>Synchronous Transfer Rate (Maximum)</b>		150 MB/s	
	<b>Buffer</b>		8 MB	
	<b>Seek Time</b> (typical reads, includes controller overhead, including settling)	Single Track		0.3 ms
		Average		5.2 ms
		Full-Stroke		9.5 ms
	<b>Rotational Speed</b>		10,000 rpm	
	<b>Logical Blocks</b>		72,303,840	
	<b>Operating Temperature</b>		41° to 131° F (5° to 55° C)	
<b>74 GB, 10K rpm</b>	<b>Capacity</b>		74,355,769,344 bytes	
	<b>Height</b>		1.028 in (25.4 mm)	
	<b>Width</b>		Media diameter: 3.3 in (84mm) Physical size: 4 in (10.2 cm)	
	<b>Interface</b>		ESATA	
	<b>Synchronous Transfer Rate (Maximum)</b>		150 MB/s	
	<b>Buffer</b>		8 MB	
	<b>Seek time</b> (typical reads, includes controller overhead, including settling)	Single track		0.3 ms
		Average		4.5 ms
		Full-stroke		10.2 ms
	<b>Rotational speed</b>		10,000 rpm	
	<b>Logical blocks</b>		145,226,112	
	<b>Operating temperature</b>		41° to 131° F (5 to 55° C)	

### Technical Specifications

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



### Technical Specifications

<b>16X/40 DVD-ROM Read</b>	<b>Height</b>	5.25-inch, half-height	
	<b>Interface type</b>	ATAPI	
	<b>Dimensions—External, Excluding Bezel (W x H)</b>	5.88 x 1.71 in (14.9 x 4.34 cm)	
	<b>Disc diameter</b>	5 in, 3 in (12 cm, 8 cm)	
	<b>Disc thickness</b>	0.05 inch (1.2 mm)	
	<b>Track pitch</b>	1.6 µm (CD), 0.74 µm (DVD)	
	<b>Disc center hole diameter</b>	0.6 inch (15 mm)	
	<b>Disc formats</b>	DVD-ROM (single and dual layer); DVD-video; DVD-R version 1.0 and 2.0; DVD-RW version 1.0 and 1.1; DVD-R/RW multi-border; DVD+RW; CD-ROM Mode 1 and 2; CD-DA; CD-ROM XA Mode 2, Form 1 and 2; CD-extra; CD-text; CD-I Mode 2, Form 1 and 2; CD-I ready; video CD, CD-bridge; PhotoCD (single and multi-session); CD-R; CD-RW	
	<b>Disc capacity</b>	<b>DVD-ROM</b>	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)
		<b>CD-ROM</b>	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)
	<b>Block size (bytes)</b>	DVD-ROM – 2048; CD-ROM Mode 0 – 2352; CD-ROM Mode 1 – 2352, 2340, 2336, 2048; CD-ROM Mode 2 – 2352, 2340, 2336, 2048	
	<b>Access times (typical reads, including settling)</b>	<b>DVD-ROM single layer</b>	< 120 ms
		<b>CD-ROM Mode 1</b>	< 90 ms
		<b>Full stroke DVD</b>	< 240 ms (seek)
		<b>Full stroke CD</b>	< 160 ms (seek)
	<b>Data transfer rates</b>	2600 – 6000 KB/s (40X CAV CD-ROM mode) 8100 – 21,600 KB/s (16X CAV DVD-ROM mode)	
	<b>Data transfer modes</b>	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 3 (44.4 MB/s)	
	<b>Power</b>	<b>Source</b>	Four-pin, DC power receptacle
		<b>DC power requirement</b>	5 VDC ± 5%—100 mV ripple p-p 12 VDC ± 5%—200 mV ripple p-p
		<b>DC current</b>	5 VDC - <800 mA typical, < 1000 mA maximum 12 VDC - < 870 mA typical
	<b>Audio Output Level</b>	0.7 Vrms (typical)	
	<b>Configuration Jumper Block</b>	Master, slave, and cable select modes	
<b>Data interface connector</b>	40-pin, shrouded and keyed, flat ribbon		
<b>Environmental (all conditions non-condensing)</b>	<b>Temperature (operating)</b>	41° to 122° F (5° to 50° C)	
	<b>Relative humidity (operating)</b>	10% to 85%	
	<b>Maximum wet bulb temperature (operating)</b>	86° F (30° C)	
<b>Certifications, approvals</b>	MMC II support, multi-read certification, Microsoft WHQL certification, ACA AS/NZS 3548 class B, CNS 13438, C.I.S.P.R. Pub 22, TUV or VDE EN60950, EN 55022, EN55024, SEMKO, NEMKO, DEMKO, FIMKO, EN 60825-1, UL 60950, CSA C22.2 60950-2000		
<b>Operating systems supported</b>	Microsoft Windows 2000, Windows XP Professional		

### Technical Specifications

<b>48/24/48+16X Combo CD-RW/DVD-ROM</b>	<b>Capacity</b>	4.7 and 9.4 GB DVD disc/700 MB CD disc
	<b>Dimensions (HxWxD)</b>	1.63 x 5.75 x 7.27 in (4.13 x 14.6 x 18.5 cm)
	<b>Weight</b>	2.0 lb (0.9 kg)
	<b>Interface</b>	ATAPI/EIDE
	<b>Mounting Orientation</b>	Horizontal or vertical
	<b>Data Transfer Rates – Read</b>	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)
	<b>Media and Formats - Read</b>	<b>CD Formats:</b> 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 <b>DVD Formats:</b> 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; <b>DVD Media:</b> stamped (single or dual layer, single sided), DVD+ RW, DVD+ R, DVD-R, DVD-RW
	<b>Data Transfer Rates - Write</b>	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)
	<b>Media and Formats - Write</b>	<b>CD Formats:</b> 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; <b>CD Media:</b> CD-R; CD-RW
	<b>Write Methods</b>	Disc-at-once, session-at-once,, track-at-once, incremental fixed and variable packet, multisession
	<b>Data Transfer Modes</b>	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 2 (33.3 MB/s)
	<b>Access Times</b> (typical reads, including settling)	<b>DVD-ROM Single Layer</b> 120 ms <b>Random</b> <b>CD-ROM Mode 1</b> 110 ms <b>Full Stroke DVD</b> 210 ms <b>Full Stroke CD</b> 160 ms
	<b>Start-up Time</b> (typical)	<4 seconds (single session), <30 seconds (multisession)
	<b>Stop Time</b> (typical)	4 s
	<b>Write Buffer Size</b>	2 MB (minimum)
	<b>Audio Output</b>	<b>Line-Out</b> 0.75 VRMS <b>Signal-to-Noise Ratio</b> 74 dB <b>Channel Separation</b> 65 dB
	<b>Configuration Jumper Block</b>	Master, slave, and cable select modes
	<b>Operating Conditions</b>	<b>Temperature</b> 41° to 122° F (5° to 50° C) <b>Humidity</b> 10% to 85%
	<b>Approvals/ Environmental</b>	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
	<b>Operating Systems Supported</b>	Microsoft Windows 2000, Windows XP

### Technical Specifications

<b>HP 400i DVD+RW</b> (8X/4X/12X/24X/10X/40X (DVD+R/+RW))	<b>Capacity</b>	4.7 GB 5.25-inch
	<b>Orientation</b>	Either horizontal or vertical
	<b>Interface Type</b>	ATAPI
	<b>Dimensions (W x H x D)</b>	8.0 x 5.9 x 1.7 in (20.3 x 15.0 x 4.4 cm) half-height, tray-load
	<b>Track Pitch</b>	1.6 um (CD), 0.74 um (DVD)
	<b>Reference Scanning Velocity</b>	1.2 m/s (CD); 3.49 m/s (DVD SL); 3.84 m/s (DVD DL)
	<b>Recording Method</b>	Disc-at-once, Track-at-once, and Session-at-once; Variable Packet and Fixed Packet
	<b>Write Support</b>	DVD+R, DVD+RW, CD-R, CD-RW
	<b>Read Support</b>	DVD-ROM (single- and dual-layer), DVD+R, DVD+RW, DVD-R, DVD-RW, CD-ROM Mode 1, CD-ROM XA (Mode 2, forms 1 and 2), CD TEXT, Photo CD single- and multi-session), CD-DA (Audio CD), CD-Extra, CD-R, CD-RW (supports AM2)
	<b>Write Speed</b>	<b>DVD+R</b> 8X CLV (10800 KB/s) <b>DVD+RW</b> 4X CLV (5400 KB/s) <b>CD-R</b> 24X CLV (3600 KB/s) <b>CD-RW</b> 10X CLV (1500 KB/s)
	<b>Read Speed</b>	<b>DVD-ROM</b> 12X CAV (6750 - 16200 KB/s) <b>DVD+R, DVD+RW, DVD-R, DVD-RW</b> 8X CAV (5400 - 10800 KB/s) <b>CD-ROM, CD-R, CD-RW, CD-Audio</b> 40X CAV (2550 to 6000 KB/s)
	<b>Date Buffer</b>	<b>Read</b> 2 MB <b>Write</b> 2 MB
	<b>Access Time</b> (typical reads, including settling)	<b>Random DVD</b> < 140 ms (typical) <b>Random CD</b> < 125 ms (typical) <b>Full Stroke DVD</b> < 250 ms (seek) <b>Full Stroke CD</b> < 210 ms (seek)
	<b>Operating Systems Support</b>	Microsoft® Windows® XP Professional
	<b>Power Requirement</b>	5 V, +12 V (1.6A, 1.4A)
	<b>Front Panel Features</b>	Disc loading tray, forced eject hole read/write indicator, eject button
	<b>Rear Panel Features</b>	ATAPI interface, digital audio output 1, analog audio output, device configuration jumper, DC input DC Power Connector, 4 pin; Line Out Connector, 4 pin; IDE Bus Connector, 40 pin; Configuration Jumper Pins; Label to identify each connect
	<b>Regulatory Approvals</b>	UL, CSA, CB Report, FIMKO, SEMKO, FCC Class B, FDA, CE Marking, C-Tick, CISPR-229, Korean EMC, Taiwan EMC
	<b>Option Kit contents</b>	DVD+R/+RW Drive, InterVideo WinDVD, InterVideo WinDVD Creator, Roxio Easy CD Creator, Dantz Retrospect Express Backup Software and DVD+R media.

### Technical Specifications

<b>HP Drive Key (USB 2.0)</b>	<b>Dimensions (HxWxD)</b>	0.9 x 0.7 x 3.9 in (2.3 x 1.8 x 9.8 cm)
	<b>Storage Capacity</b>	128 MB or 256 MB
	<b>Weight</b>	0.05 lb (0.02 kg)
	<b>Transfer Rates</b>	Read-1023 KB/Sec; Write-850 KB/Sec
	<b>Operating Temperature</b>	32° to 113° F (0° to 45° C)
	<b>Non-operating Temperature</b>	4° to 140° F (-20° to 60° C)
	<b>Operating System Support</b>	Microsoft Windows 2000, Windows XP Professional. No driver is required for this device. Native support is provided by the operating system.
	<b>Option Kit Contents</b>	HP Drive Key, documentation

<b>Intel Pro/1000 XT Server Adapter Gigabit PCI card</b>	<b>Network Interface</b>	10Base-T, 100Base-TX, 1000Base-T		
	<b>Expansion Bus Architecture</b>	PCI 2.2, PCI-X 1.0		
	<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10-Mb/s	
		10Base-T (Full-Duplex)	20-Mb/s	
		100Base-TX (Half-Duplex)	100-Mb/s	
		100Base-TX (Full-Duplex)	200-Mb/s	
		1000Base-TX (Half-Duplex)	1000-Mb/s	
	<b>Connectors</b>	RJ-45		
	<b>Standards Compliance</b>	10-Mb/s Ethernet	IEEE 802.3	
		100-Mb/s Ethernet	IEEE 802.3u	
		1000-Mb/s Ethernet	IEEE 80	
	<b>I/O Address</b>	Auto-configured		
	<b>Remote Wakeup</b>	Yes		
	<b>Management capabilities</b>	Wired for management (WfM) Baseline v2.0; DMI 2.0 support, WMI and SNMP-manageable; Offline diagnostics; ACPI Power Management; WoL		
	<b>Operating Temperature</b>	0° to 55° F (10° to 35° C)		
	<b>Operating Humidity</b> (non-condensing)	85% at 131° F (55° C)		
<b>Operating Altitude</b>	10,000 ft (3,048 m)			
<b>Communication Processor</b>	Intel 82559			
<b>Memory</b>	64KB integrated			



### Technical Specifications

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

### Technical Specifications

<b>NVIDIA Quadro NVS 280 Graphics Card</b>	<b>2D controller</b>	Integrated Quadro 280 2-D graphics processor unit (GPU)
	<b>VGA controller</b>	Integrated into the Quadro GPU
	<b>Bus type</b>	AGP 8X
	<b>RAMDAC</b>	Dual 350 MHz
	<b>Memory speed and type</b>	200 MHz 8M x16 DDR
	<b>Memory amount</b>	64 MB
	<b>Texture Memory</b>	Unified with frame buffer
	<b>Form Factor</b>	ATX
	<b>Controller clock speed</b>	275 MHz
	<b>Color planes</b>	32-bit color buffer
	<b>Overlay planes</b>	1 16-bit Video overlay plane
	<b>Maximum vertical refresh rate</b>	120 Hz
	<b>Maximum pixel clock</b>	350 MHz
	<b>Dual Screen support</b>	Yes
	<b>Single DVI Support</b>	Yes
	<b>Dual DVI Support</b>	Yes
	<b>Operating systems</b>	Microsoft Windows 2000: Full native Dual View mode, Span or Big Desktop mode, and Clone mode Microsoft Windows XP: Full native Dual View mode, Span or Big Desktop mode, and Clone mode
	<b>Available graphics drivers</b>	See: <a href="http://www.hp.com/support/workstation_drivers/">http://www.hp.com/support/workstation_drivers/</a>
	<b>Physical dimensions</b>	2.586 x 6.6 in (6.57 x 16.76 cm)
	<b>High-definition Video Processor (HDVP)</b>	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

NVIDIA Quadro NVS 280 Graphics Card display resolutions & refresh rates	Analog Resolution	Maximum Colors Supported	Maximum Refresh Rate
	640 x 480	16.7 M	240 Hz
	800 x 600	16.7 M	240 Hz
	1024 x 768	16.7 M	200 Hz
	1152 x 864	16.7 M	170 Hz
	1280 x 1024	16.7 M	150 Hz
	1600 x 1200	16.7 M	100 Hz
	1920 x 1080	16.7 M	85 Hz
	1920 x 1200	16.7 M	85 Hz
	1920 x 1440	16.7 M	75 Hz
	2048 x 1536	16.7 M	60 Hz
	Digital Resolution Maximum	Colors Supported Maximum	Refresh Rate
	640 x 480	16.7 M	75 Hz
	800 x 600	16.7 M	75 Hz
	1024 x 768	16.7 M	75 Hz
	1152 x 864	16.7 M	60 Hz
	1280 x 1024	16.7 M	60 Hz
	1600 x 1200	16.7 M	60 Hz (primary only)

### Technical Specifications

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

**NVIDIA Quadro NVS 400 Graphics Card display resolutions & refresh rates**

	<b>Single CRT display</b>		
	<b>Resolution</b>	<b>Maximum Refresh Rate</b>	<b>Bits per Pixel</b>
	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	75 Hz	8, 16
	1920 x 1440	60 Hz	8, 16, 24
	2048 x 1536	60 Hz	8, 16

### Technical Specifications

<b>NVIDIA Quadro4 380 XGL Graphics Card</b>	<b>Form Factor</b>	ATX
	<b>Graphics Controller</b>	NVIDIA NV18GL GPU
	<b>Bus Type</b>	AGP 8x Version 3.0 compliant AGP 4x/2x Version 2.0 compliant
	<b>RAMDAC</b>	Dual 350MHz integrated
	<b>Memory</b>	64MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	<b>Connectors</b>	VGA DB-15 and DVI-I analog/digital monitor outputs, 4-pin mini DIN providing TV output
	<b>Dimensions</b>	AGP full height ATX card. 4.25 x 6.875 in (10.795 x 17.463 cm)
	<b>Multi-monitor support</b>	Dual monitor
	<b>Additional product features</b>	64 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines TV Output Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support for Windows 2000 and Windows XP ACPI Version 1.0b Power Management support (all modes)
	<b>AGP 8x Version 3.0 compliant and 2x/4x Version 2.0 compliant including</b>	Sideband Addressing AGP Texturing (Execute Mode) Fast writes support
<b>NV18GL GPU featuring:</b>	275 MHz engine clock rate 250 MHz memory clock rate 128-bit memory interface VGA controller Dual integrated display controllers supporting up to 1920x1440 @ 85Hz and 2048x1536 @ 75Hz on both displays 4 parallel pixel pipelines 2 parallel geometry engines nfiniteFX II programmable Vertex and Pixel Shader technology and NVIDIA OpenGL extensions Full hardware support for NVIDIA Cg shader programming language	
<b>Supported graphics APIs</b>	OpenGL 1.3 (and OpenGL 2.0 when available) ICD with immediate mode support for all OGL primitive types DirectX 8 and above	
<b>Available graphics drivers</b>	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: <a href="http://www.hp.com/support/workstation_drivers/">http://www.hp.com/support/workstation_drivers/</a>	

### Technical Specifications

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

<b>Resolution</b>	<b>Monitor 1, 2 Analog/Digital Maximum Refresh Rate</b>	<b>Bits per Pixel</b>
640x480	240Hz/240Hz	8, 16, 24
800x600	240Hz/200Hz	8, 16, 24
1024x768	170Hz/140Hz	8, 16, 24
1152x864	170Hz/100Hz	8, 16, 24
1280x720	150Hz/120Hz	8, 16, 24
1280x960	150Hz/85Hz	8, 16, 24
1280x1024	150Hz/75Hz	8, 16, 24
1600x900	120Hz/75Hz/ No Digital Display Support (unbold)	8, 16, 24
1600x1024	100Hz/72Hz/ No Digital Display Support	8, 16, 24
1600x1200	120Hz/60Hz/ No Digital Display Support	8, 16
1600x1200	100Hz/60Hz/ No Digital Display Support	24
1920x1080	100Hz/ No Digital Display Support	8, 16
1920x1080	85Hz/ No Digital Display Support	24
1920x1200	100Hz/ No Digital Display Support	8, 16
1920x1200	85Hz/ No Digital Display Support	24
1920x1440	85Hz/ No Digital Display Support	8, 16
1920x1440	75Hz/ No Digital Display Support	24
2048x1536	75Hz/ No Digital Display Support	8, 16
2048x1536	60Hz/ No Digital Display Support	24

### Technical Specifications

<b>ATI FireGL T2-128 Graphics Card</b>	<b>Form Factor</b>	ATX
	<b>Graphics Controller</b>	ATI FGL 9600 VPU
	<b>Bus Type</b>	AGP-8x/4x compliant
	<b>DAC</b>	Dual 400MHz/16-bit
	<b>Memory</b>	128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	<b>Connectors</b>	DVI-I and VGA monitor outputs
	<b>Dimensions</b>	Single AGP/ATX card. 230.28mm x 107.96mm
	<b>Multi-monitor support</b>	DVI-I and VGA connectors support dual display, maximum resolution of 2048x1536 analog, 1600x1200 digital
	<b>Additional product features</b>	<p>128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage</p> <p>64-KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers</p> <p>2D and 3D acceleration provided for 16-bit and 32-bit RGB? modes</p> <p>Hardware cursor with full color alpha channel</p> <p>32-bit (24+8-bit stencil) Z buffer</p> <p>Bus mastering support for 2D/3D display lists and local memory vertex list execution</p> <p>Hardware lighting support for 8 light sources</p> <p>Bilinear, Trilinear and Anisotropic texturing</p> <p>Cubic Environment and Perturbation Bump Mapping</p> <p>Projective Texture, 3D Texture and Video Texture support</p> <p>Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples</p> <p>Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion</p> <p>Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats</p> <p>Per pixel quad buffering on all screen resolutions</p> <p>VESA compliant Stereoscopic Interface on MiniDin Connector</p> <p>Compliant with Microsoft/Intel PC2001 Workstation requirements</p> <p>Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications</p> <p>DDC2B+ Monitor support on all OS platforms</p> <p>ACPI Version 1.0b Power Management support (all modes)</p>
	<b>AGP4x/8x Version 3.0 compliant including</b>	<p>Sideband Addressing</p> <p>AGP Texturing (Execute Mode)</p> <p>AGP Read and AGP Write Support</p> <p>8X Fast write support</p>
	<b>FGL 9600 GPU featuring</b>	<p>VGA controller supporting full standard feature set</p> <p>2D Engine with 128-bit datapath processing multiple pixels per clock</p> <p>PIXEL TAPESTRY III, 3D rendering engine utilizing 2 parallel pipelines with two texture blending units each capable, of handling up to 8 texels in a single pass, delivering 2.4 Gigatexels/s fill rate</p> <p>CHARISMA ENGINE III, geometry unit utilizing 4 vertex processing engines, capable of executing two instructions per clock cycle each, thus yielding up to 200 million transformed, clipped and lit triangles per second.</p> <p>VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/decode</p> <p>Dual independent display controllers with 4K x 4K address space each</p> <p>128-bit external frame buffer interface</p>
	<b>Supported graphics APIs</b>	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 9.0
	<b>Processor requirements</b>	Intel Pentium 4, or Xeon processor
	<b>Available graphics drivers</b>	Windows 2000 with SP1 (or higher) Windows XP Linux HP qualified drivers may be preloaded or available from the HP support Web site:

### Technical Specifications

[http://www.hp.com/support/workstation\\_drivers/](http://www.hp.com/support/workstation_drivers/)

#### ATI FireGL T2-128 Graphics Card display resolutions & refresh rates

#### Analog and Digital Display with 15-pin VGA Connector

Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	100Hz	16, 32
800x600	100Hz	16, 32
1024x768	100Hz	16, 32
1152x864	100Hz	16, 32
1280x960	100Hz	16, 32
1280x1024	100Hz	16, 32
1600x1000	100Hz	16, 32
1600x1024	85Hz	16, 32
1600x1200	85Hz	16, 32
1792x1344	75Hz	16, 32
1920x1080	75Hz	16, 32
1920x1200	75Hz	16, 32
2048x1536	60Hz	16, 32

#### Digital Monitor with DVI Connector

Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	75Hz	16, 32
800x600	75Hz	16, 32
1024x768	75Hz	16, 32
1152x864	75Hz	16, 32
1280x1024	75Hz	16, 32
1600x1000	60Hz	16, 32
1600x1024	60Hz	16, 32
1600x1200	60Hz	16, 32

### Technical Specifications

<b>NVIDIA Quadro FX1100 Graphics Card</b>	<b>Form Factor</b>	ATX
	<b>Graphics Controller</b>	NVIDIA NV36GL GPU
	<b>Bus Type</b>	AGP 8X Version 3.0 compliant
	<b>RAMDAC</b>	Dual 400 MHz integrated
	<b>Memory</b>	128 MB 650MHz DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage
	<b>Connectors</b>	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
	<b>Multi-monitor support</b>	Dual integrated analog display controllers supporting up to 2048 x1536 @ 85Hz on both displays Dual external digital display controllers supporting up to 1600 x 1200 @ 60Hz on both displays
	<b>Additional product features</b>	128 MB DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines Quad-buffered Stereo Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling 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)
	<b>AGP1x/2x/4x/8x Version 3.0 compliant including</b>	Sideband Addressing AGP Texturing (Execute Mode) Fast writes support
	<b>NV35GL GPU featuring</b>	425 MHz engine clock rate 325 MHz memory clock rate 128-bit memory interface VGA controller 128-bit precision throughout the graphics pipeline 12 bit sub-pixel precision nfiniteFX II programmable vertex and pixel shader technology
	<b>Supported graphics APIs</b>	OpenGL 2.0 ICD with immediate mode support for all OGL primitive types DirectX 8,9
	<b>Available graphics drivers</b>	Microsoft: Windows® XP, Windows 2000 HP qualified drivers may be preloaded or available from the HP support Web site: <a href="http://welcome.hp.com/country/us/eng/software_drivers.html">http://welcome.hp.com/country/us/eng/software_drivers.html</a>



### Technical Specifications

#### NVIDIA Quadro FX 1100 Graphics Card display resolutions & refresh rates

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

### Technical Specifications

<b>NVIDIA Quadro FX3000 Graphics Card</b>	<b>Form Factor</b>	ATX
	<b>Graphics Controller</b>	NVIDIA NV35GL GPU
	<b>Bus Type</b>	AGP 8X Version 3.0 compliant
	<b>RAMDAC</b>	Dual 400MHz integrated
	<b>Memory</b>	256 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	<b>Connectors</b>	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
	<b>Dimensions</b>	AGP full height ATX card. 4.25 x 6.875 in (10.795 x 17.463 cm)
	<b>Multi-monitor support</b>	Dual integrated display controllers supporting up to 2048x1536 @ 85Hz on both displays
	<b>Additional product features</b>	256 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines Quad-buffered Stereo Diamond exit rule line rasterization for improved line quality 3D Texture support 12-bit subpixel precision 128-bit precision graphics pipeline Occlusion Culling Dual Link DVI on one output enabling driving digital displays up to 2048x1536 Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
	<b>AGP8xVersion 3.0 compliant including</b>	Sideband Addressing AGP Texturing (Execute Mode) Fast write support
	<b>NV35GL GPU featuring</b>	400 MHz engine clock rate 425 MHz memory clock rate 250-bit memory interface VGA controller 8 parallel pixel pipelines 3 parallel geometry engines nfiniteFX II programmable dual Vertex Shader and Pixel Shader technology
	<b>Supported graphics APIs</b>	OpenGL 1.5 ICD with immediate mode support for all OGL primitive types DirectX 9
	<b>Available graphics drivers</b>	Windows 2000 Windows XP HP-tested Linux HP qualified drivers may be preloaded or available from the HP support Web site: See: <a href="http://www.hp.com/support/workstation_drivers/">http://www.hp.com/support/workstation_drivers/</a>

### Technical Specifications

#### NVIDIA Quadro FX3000 Graphics Card display resolutions & refresh rates

Resolution	MONITOR 1, 2 ANALOG/DIGITAL Maximum refresh rate	Bits per pixel
640x480	240Hz/240Hz	8, 16, 32
800x600	240Hz/200Hz	8, 16, 32
1024x768	200Hz/140Hz	8, 16, 32
1152x864	170Hz/100Hz	8, 16, 32
1280x720	150Hz/120Hz	8, 16, 32
1280x960	150Hz/85Hz	8, 16, 32
1280x1024	150Hz/85Hz	8, 16, 32
1600x900	120Hz/75Hz	8, 16, 32
1600x1024	100Hz/72Hz	8, 16, 32
1600x1200	120Hz/60Hz	8, 16
1600x1200	100Hz/60Hz	32
1920x1080	100Hz/60Hz in Dual Link Mode	8, 16
1920x1080	85Hz/60Hz in Dual Link Mode	32
1920x1200	100Hz/60Hz in Dual Link Mode	8, 16
1920x1200	85Hz/60Hz in Dual Link Mode	32
1920x1440	85Hz/60Hz in Dual Link Mode	8, 16, 32
2048x1536	85Hz/60Hz in Dual Link Mode	8, 16, 32
3840x1200	21Hz/24Hz	8, 16, 32
3840x2400	13Hz	8, 16, 32

<b>IT &amp; Broadcast Rack Kit</b>	<b>Dimensions (H x W)</b>	7.75 (5U) x 19 in (22.23 x 48.26 cm)	
	<b>Rack Mounting Depth</b>	Adjustable: Minimum Mounting Depth: 19 inch (48.26 cm) Maximum Mounting Depth: 31 inch (79.65 cm)	
	<b>Weight Capacity</b>	300 lb (136 kg)	
	<b>Material</b>	Steel (graphite color)	
	<b>Rack Mounting kit</b>		Left and right flanges with handles
			Four M4 flathead screws
			Left and right rails
		Two glide strips	
	Top trim strip		
		3 mounting hardware kits (M6 for Compaq Racks, M5 for HP Series-E racks, rail adapters and 10-32 hardware for racks with pre-threaded columns)	

### Technical Specifications

<b>Sound Blaster Audigy 2 ZS PCI card</b>	<b>Audio Quality</b>	Sound Blaster 24-bit ADVANCED HD Quality
	<b>Signal to Noise Ratio (SNR)</b>	108dB
	<b>Max. Audio Resolution Playback</b>	24-bit/192kHz in Stereo 24-bit/96kHz in 5.1 DVD-Audio Quality
	<b>Max. Recording/ Sampling Rate</b>	24-bit/96kHz
	<b>DACs</b>	24-bit/192kHz
	<b>Max. No. of 3D Voices</b>	64
	<b>Max. Channels in 3D Positional Audio</b>	7.1
	<b>EAX® and EAX® ADVANCED HD™</b>	Yes including Hardware Acceleration of EAX and/or EAX ADVANCED HD
	<b>Connectors</b>	PCI 2.1 or higher compliant slot Analog Speakers Support for Headphone, 2.1, 4.1, 5.1, 6.1, 7.1 Digital Speakers Support for Headphone, 2.1, 4.1, 5.1 and 24-bit/96kHz speakers One High Speed FireWire® port
<b>Additional product features</b>	<b>Music Playback/ Music Creation</b>	Integrated Digital Music Player Integrated Digital Music Ripping (in Player) - MP3 & WMA True Bit Accurate Recording w/o SRC Advanced Resolution DVD-Audio Playback EAX® Music Enhancements EAX Effects CMSS 3D Up mixing of Stereo to Multi-Channels Audio Clean-up Smart Volume Management (SVM) Karaoke Multi-Channel Graphic Equalizer Bass Boost Virtual Surround over 2 Channel or Headphones Full Support for Windows® Media 9 24-bit/96kHz 5.1 content ASIO Low Latency Multi-Track Recording Support (16-bit/48kHz) ASIO 2.0 Direct Monitoring
	<b>Movies</b>	THX Certification THX Setup Console Dolby Digital 5.1 Playback Dolby Digital EX 6.1 Playback DTS-ES 6.1 Playback
	<b>Gaming</b>	EAX EAX ADVANCED HD Hardware Acceleration of EAX &/or EAX ADVANCED HD Up to 64 3D Voices 7.1 Max. Channels in 3D Positional Audio Speaker Calibration for Optimal 3D Positional Audio

### Technical Specifications

#### HP L1925 19-inch TFT Flat Panel Monitor

	<b>Type</b>	Thin film transistor (TFT)
	<b>Viewable Image Area</b> (diagonal)	19 in (48.25 cm) maximum viewable
	<b>Screen Opening</b> (WxH)	14.9 x 11.9 in (37.8 x 30.3 cm)
	<b>Viewing Angle</b> (typical)	170 degrees horizontal/170 degrees vertical (10:1 minimum contrast ratio)
	<b>Brightness</b> (typical)	Up to 250 nits (cd/m <sup>2</sup> )
	<b>Contrast Ratio</b> (typical)	Up to 500:1 (typical)
	<b>Response Rate</b> (typical)	<20 ms (typical rise + fall)
	<b>Pixel Pitch</b>	0.294 mm
	<b>Color Depth Support</b>	16.7 million colors
<b>Video Input</b>	<b>Plug and Play</b>	Yes (supports VESA DDC2B; PC2001 compliant)
	<b>Input Signal</b>	Two connectors: one 15-pin mini D-sub analog VGA; and one DVI-I (VGA analog or digital)
	<b>Input Impedance</b>	75 ohms ± 2%
	<b>Sync Input</b>	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green
	<b>Video Cable</b>	VGA and DVI-D
	<b>Video Cable Length</b>	78 in (2.0 m)
<b>Signal Interface/ Performance</b>	<b>Horizontal Frequency</b>	30 to 82 kHz
	<b>Vertical Frequency</b>	56 to 75 Hz
	<b>Graphics Controller</b>	Pixelworks 131
	<b>Native Resolution</b>	1280x1024@75Hz analog 1280x 1024@60Hz digital
	<b>Maximum Resolution</b> (Analog)	1280x1024@75Hz analog
	<b>Maximum Resolution</b> (Digital)	1280x1024@75Hz analog
<b>On Screen Display (OSD) Controls</b>	<b>Preset VESA Graphic Modes</b> (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
	<b>Preset MAC Mode</b>	832 x 624 @ 75 Hz 1152 x 870 @ 75 Hz
	<b>Preset VGA Mode</b>	640 x 480 @ 60 Hz, 72 Hz
	<b>Preset SUN Mode</b>	1152x900@66Hz
	<b>Fail Safe Mode</b>	Yes (limits out of range signal messages)
	<b>Maximum Pixel Clock Speed</b>	140 MHz
	<b>User Programmable Modes</b>	Yes, 10
	<b>Anti-Glare</b>	Yes
	<b>Anti-Static</b>	Yes
	<b>AssetControl</b>	Yes (accessible on HP/Compaq desktops featuring Intelligent Manageability)
	<b>Default Color Temperature</b>	Yes (6500k, 9300k, Custom User)
	<b>Buttons or Switches</b>	Power on/off; 4-button OSD; second level OSD buttons include auto adjust and dual-input switch
	<b>Languages</b>	English, Spanish, French, German, Dutch, Italian
	<b>User Controls</b>	Size and Positioning

### Technical Specifications

		Contrast	
		Brightness	
		Clock, Clock Phase	
		Selectable Color Temperature	
		Input Selection	
		Factory Reset	
		Individual Color Contrast	
		Full-screen Resolution	
<b>Power</b>	<b>Power Supply</b>	Auto-ranging, 90 to 265 VAC; internal power supply,	47.5-63 Hz
	<b>Input Power</b>	100 ~ 240 VAC	
	<b>Nominal Current</b>	1.5 A maximum	
	<b>Frequency</b>	50 ~ 60 Hz	
	<b>Average</b>	33 watts when displaying standard office software	
	<b>Maximum</b>	< 40 watts	
	<b>Power Saving</b>	< 2 watts	
	<b>Off Mode</b>	< 1 watts (switch off)	
	<b>Power Cable Length</b>	70 in (1.8 m); non-captive	
<b>Mechanical</b>	<b>Dimensions</b> (H x W x D)	<b>Unpacked w/ stand minimum height</b>	14.8 x 16.4 x 8.2 in (39.8 x 41.6 x 20.8 cm)
		<b>Unpacked w/ stand maximum height</b>	20 x 16.4 x 8.2 in (50.8 x 41.6 x 20.8 cm)
		<b>Base Area</b> (Footprint d x w)	8.2 x 12.2 in (20.8 x 30.9 cm)
		<b>Panel only</b> (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)
		<b>Packaged</b>	26.0 x 26.0 x 26.0 in (66.0 x 66.0 x 66.0 cm)
	<b>Weight</b>	<b>Unpacked w/ stand</b>	17.6 lb (8 kg)
		<b>Unpacked w/o stand</b>	12 lb (5.5 kg)
		<b>Packaged</b>	23.5 l (10.7 kg)
	<b>Tilt Range</b>	-5° to +20°	
	<b>Swivel Range</b>	± 45° horizontal swivel	
	<b>Height Adjustable</b>	Yes (4.3 in/110 mm adjustment range)	
	<b>Pivot Rotation</b>	Yes, 90 °	
	<b>Base</b>	Ships attached and is removable after installation	
<b>Environmental</b>	<b>Temperature – Operating</b>	41° to 95° F (5° to 35° C)	
	<b>Temperature – Non-operating</b>	-4° to 140° F (-20° to 60° C)	
	<b>Humidity – Operating</b>	20% to 80%	
	<b>Humidity – Non-operating</b>	5% to 95%	
	<b>Altitude – Operating</b>	0 to 13,000 ft (0 to 4,000 m)	
	<b>Altitude – Non-operating</b>	0 to 40,000 ft (0 to 12,192 m)	
<b>Options</b>	<b>PC Comm Station</b>	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).	
<b>Other</b>	<b>Accessories Included</b>	VGA cable, DVI-D cable, user CD-ROM with Portrait software	
	<b>User Guide Languages</b>	English	
	<b>Warranty Languages</b>	English	
	<b>Color</b>	Carbon/Silver	

### Technical Specifications

	<b>VESA Mounting</b>	Yes (swing arm/ wall mount not included; base is shipped attached and must be removed for mounting options)
	<b>VESA External Mounting</b>	Yes (Standard 4 hole pattern, 100 mm)
	<b>Kensington Lock-ready</b>	Yes
<b>Certification and Compliance</b>		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.
<b>Compatibility</b>		VESA Video Signal Standard (VSIS) Compliant video cards have been tested and proven compatible for use with the HP Flat Panel Monitor L1925. The HP L1925 has been tested for use with all HP workstations. <b>NOTE:</b> Features are subject to change without notice.
<b>Service and Warranty</b>		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).

### Technical Specifications

#### HP L2035 20-inch TFT Flat Panel Monitor

<b>Type</b>	20-inch Active Matrix TFT (thin film transistor)
<b>Viewable Image Area</b> (diagonal)	20.1 in (51 cm)
<b>Screen Opening</b> (W x H)	16.2 x 12.17 in (41.1 x 30.9 cm)
<b>Viewing Angle</b> (typical)*	Up to 170° H/170° V (10:1 minimum contrast ratio)
<b>Brightness</b> (typical)*	Up to 250 nits (cd/m <sup>2</sup> )
<b>Contrast Ratio</b> (typical)*	Up to 400:1
<b>Response Rate</b> (typical)*	16 ms (typical, rise + fall)
<b>Pixel Pitch</b>	0.255 mm
<b>Color Depth Support</b>	16.7 million colors

\*All specifications are provided by the component manufacturers. Performance specifications represent the highest specification of all HP's component manufacturers' typical level specifications for performance. Actual performance may vary either higher or lower.

#### On Screen Display (OSD) Controls

<b>Buttons or Switches</b>	PiP (Picture in Picture), Input select, auto adjust, OSD up, OSD down, OSD menu select, power
<b>Languages</b>	English, French, German, Spanish, Italian
<b>User Controls</b>	Brightness, contrast, positioning, color temperature, individual color control, serial number display, full screen resolutions, clock, clock phase, video picture-in-picture (size and position), input selection (includes separate direct access key for dedicated swap between inputs 1 and 2), factory reset

#### Signal Interface/ Performance

<b>Horizontal Frequency</b>	30 to 94 kHz (VGA input); 30 to 92 KHz (DVI input) (for modes with pixel clock less than 157 MHz)
<b>Vertical Frequency</b>	48 to 85 Hz (VGA input); 30 to 92 KHz (DVI input) (for modes with pixel clock less than 157 MHz)
<b>Graphics Controller</b>	Pixelworks PW171
<b>Native Resolution</b>	1600 x 1200 @ 60 Hz (recommended)
<b>Preset VESA Graphic Modes</b> (non-interlaced)	1600 x 1200 @ 60 Hz, 75 Hz (VGA input) 1280 x 1024 @ 60 Hz, 75 Hz, 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, 85 Hz 640 x 480 @ 60 Hz, 75 Hz, 85 Hz
<b>Text Mode</b>	720 x 400 @ 70 Hz
<b>Mac Mode</b>	1152 x 870 @ 75 Hz and 832 x 624 @ 75 Hz
<b>Sun Mode</b>	1152 x 900 @ 66 Hz
<b>Maximum Pixel Clock Speed</b>	202 MHz (VGA input); 162 MHz (DVI input)
<b>User Programmable Modes</b>	Yes, 10
<b>Anti-Glare</b>	Yes
<b>Anti-Static</b>	Yes
<b>Default Color Temperature</b>	6500 K
<b>Plug and Play</b>	Yes
<b>Input Signal</b>	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

#### Video Input



### Technical Specifications

	<b>Input Impedance</b>	75 ohms ± 10%	
	<b>Sync Input</b>	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green	
	<b>Video Cable</b>	VGA to VGA; VGA to DVI-I; DVI-D to DVI-I	
	<b>Video Cable Length</b>	5.9 ft (1.8 m)	
<b>Power</b>	<b>Input Power</b>	Auto-Ranging, 90 to 132 VAC and 195 to 265 VAC; internal power supply, 50 Hz/60 Hz	
	<b>Frequency</b>	47.5 to 63 Hz	
	<b>Maximum</b>	< 75 watts	
	<b>Power Saving</b>	< 5 watts	
	<b>Power Cable Length</b>	5.9 ft (1.8 m)	
<b>Mechanical</b>	<b>Dimensions (H x W x D)</b>	Unpacked w/stand	17.36 to 20.9 x 17.8 x 8.27 in (44.1 to 53.1 x 45.2 x 21.0 cm)
		Unpacked w/o stand (head only)	14.29 x 17.8 x 3.19 in (36.3 x 45.2 x 8.1 cm)
		Packaged	11.5 x 21.9 x 23.9 in (29.2 x 55.6 x 60.6 cm)
	<b>Weight</b>	Unpacked	With stand: 20.28 lb (9.2 kg); Without stand: 12.35 lb (5.6 kg)
		Packaged	26.9 lb (12.2 kg)
	<b>Tilt Range</b>	-5° to + 25° vertical	
	<b>Swivel Range</b>	-35° to + 35°	
	<b>Height Adjustable</b>	Yes, range 3.54 in (9.0 cm)	
	<b>Pivot Rotation</b>	Yes	
	<b>Base</b>	Attached	
<b>Environmental</b>	<b>Temperature – Operating</b>	46° to 95° F (10° to 35° C)	
	<b>Temperature – Non-operating</b>	6° to 140° F (-10° to 60° C)	
	<b>Humidity – Operating</b>	20% to 80% non-condensing	
	<b>Humidity – Non-operating</b>	5% to 85%	
	<b>Altitude – Operating</b>	+12,000 ft	
	<b>Altitude – Non-operating</b>	+40,000 ft	
<b>Options</b>	<b>HP Desktop Access Center</b>	Sold separately, the HP Desktop Access Center features integrated microphone/headset jacks, dual function headset for phone/PC support, a MultiBay slot for adding an optical drive (sold separately), and four USB ports for easy integration of third-party digital solutions; part number DK985A. For more information, refer to the HP Desktop Access Center QuickSpecs.	
<b>Other</b>	<b>Accessories Included</b>	VGA to VGA cable – connects the graphic card's VGA analog connector to the monitor's input #1 (VGA analog) connector VGA to DVI-I cable – connects the graphic card's VGA connector to the monitor's input #2 (DVI-I analog) connector DVI-D to DVI-I cable – connects the graphic card's DVI-D digital connector to the monitor's input #2 (DVI-I digital) connector	
	<b>User Guide Languages</b>	English, B. Portuguese, French, LA Spanish, Korean, S. Chinese, T. Chinese, Bahasa, Japanese, Danish,	

### Technical Specifications

		Finnish, German, Norwegian, Spanish, Swedish, Greek, Polish, Russian, Slovenian, Turkish
	<b>Warranty Languages</b>	English, Canadian French, LA Spanish, Brazilian Portuguese, Danish, German, Castilian Spanish, French, Italian, Dutch, Norwegian, Finnish, Swedish, Bahasa Indonesian, Korean, T. Chinese, S. Chinese
	<b>Color</b>	Carbonite/Silver
	<b>VESA External Mounting</b>	Yes (Standard 4 hole pattern, 100 mm)
	<b>Kensington Lock-Ready</b>	Yes
<b>Certification and Compliance</b>		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 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 (Microsoft® Windows® 98, Microsoft Windows 2000, and Microsoft Windows XP)
<b>Compatibility</b>		Compatible with platforms using the VESA standard video modes and HP Compaq Business Desktops d500, d300, and d200 Series, Compaq Evo Desktops, and HP Business Desktops d300 series.
<b>Service and Warranty</b>		Limited three years parts, labor, and on-site service, including backlight. Availability varies by region. Certain restrictions and exclusions apply. Consult HP Customer Service for details.

#### HP L2335 23-inch TFT Widescreen Flat Panel Display

<b>Panel</b>	<b>Type</b>	23-inch Active Matrix TFT (thin film transistor)
	<b>Viewable Image Area</b> (diagonal)	23 in (58.4 cm)
	<b>Screen Opening</b> (W x H)	19.53 x 12.24 in (49.6 x 31.1 cm)
	<b>Viewing Angle</b> (typical)*	Up to 170° H/170° V (10:1 minimum contrast ratio)
	<b>Brightness</b> (typical)*	Up to 250 nits (cd/m <sup>2</sup> )
	<b>Contrast Ratio</b> (typical)*	Up to 350:1
	<b>Response Rate</b> (typical)*	25 ms (typical, rise + fall)
	<b>Pixel Pitch</b>	0.258 mm
	<b>Color Depth Support</b>	16.7 million colors
	<i>* All specifications are provided by the component manufacturers. Performance specifications represent the highest specification of all HP's component manufacturers' typical level specifications for performance. Actual performance may vary either higher or lower.</i>	
<b>On Screen Display (OSD) Controls</b>	<b>Buttons or Switches</b>	PiP (Picture in Picture), Input Select, Auto Adjust, OSD Up, OSD Down, OSD Menu Select, Power
	<b>Languages</b>	English, French, German, Spanish, Italian
	<b>User Controls</b>	Brightness, contrast, positioning, color temperature, individual color control, serial number display, full screen resolutions, clock, clock phase, video picture-in-picture (size and position), input selection (includes separate direct access key for dedicated swap between inputs 1 and 2), factory reset
<b>Signal Interface/ Performance</b>	<b>Horizontal Frequency</b>	30 to 94 kHz (VGA input); 30 to 92 KHz (DVI input) (for modes with pixel clock less than 157 MHz)
	<b>Vertical Frequency</b>	48 to 85 Hz (VGA and DVI input)
	<b>Graphics Controller</b>	Pixelworks PW172
	<b>Native Resolution</b>	1920 x 1200 @ 60 Hz (recommended)

### Technical Specifications

	<b>Preset VESA Graphic Modes</b> (non-interlaced)	1920 x 1200 @ 60Hz 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, 75Hz 640 x 480 @ 60 Hz, 75 Hz
	<b>Text Mode</b>	720 x 400 @ 70 Hz
	<b>Mac Mode</b>	1152 x 870 @ 75 Hz and 832 x 624 @ 75 Hz
	<b>Sun Mode</b>	1152 x 900 @ 66 Hz
	<b>Maximum Pixel Clock Speed</b>	202 MHz (VGA input); 162 MHz (DVI input)
	<b>User Programmable Modes</b>	Yes, 10
	<b>Anti-Glare</b>	Yes
	<b>Anti-Static</b>	Yes
	<b>Default Color Temperature</b>	6500 K
<b>Video Input</b>	<b>Plug and Play</b>	Yes
	<b>Input Signal</b>	Five connectors, including one 15-pin mini D-sub VGA, one DVI-I (VGA analog and digital input), one composite video, one s-video, component video
	<b>Input Impedance</b>	75 ohms $\pm$ 10%
	<b>Sync Input</b>	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green
	<b>Video Cable</b>	VGA to VGA; VGA to DVI-I; DVI-D to DVI-I
	<b>Video Cable Length</b>	5.9 ft (1.8 m)
<b>Power</b>	<b>Input Power</b>	Auto-Ranging, 90 to 132 VAC and 195 to 265 VAC; internal power supply, 50 Hz/60 Hz
	<b>Frequency</b>	47.5 to 63 Hz
	<b>Maximum</b>	< 100 watts
	<b>Power Saving</b>	< 5 watts
	<b>Power Cable Length</b>	5.9 ft (1.8 m)
<b>Mechanical</b>	<b>Dimensions (H x W x D)</b>	<b>Unpacked</b> 17.36 to 20.90 x 21.46 x 8.27 in (44.1 to 53.1 x 54.5 x 21.0 cm) <b>Unpacked w/o stand (head only)</b> 14.57 x 21.46 x 3.35 in (37.0 x 54.5 x 8.5 cm)
	<b>Weight</b>	<b>Unpacked</b> 22.27 lb (10.1 kg) <b>Packaged</b> 30.87 lb (14.0 kg)
	<b>Tilt Range</b>	-5° to + 25° vertical
	<b>Swivel Range</b>	-35° to + 35°
	<b>Height Adjustable</b>	Yes, range 3.54 in (9.0 cm)
	<b>Pivot Rotation</b>	Yes
	<b>Base</b>	Attached
<b>Environmental</b>	<b>Temperature – Operating</b>	46° to 95° F (10° to 35° C)
	<b>Temperature – Non-operating</b>	6° to 140° F (-10° to 60° C)

### Technical Specifications

	<b>Humidity – Operating</b>	20% to 80% non-condensing
	<b>Humidity – Non-operating</b>	5% to 85%
	<b>Altitude – Operating</b>	+12,000 ft
	<b>Altitude – Non-operating</b>	+40,000 ft
<b>Options</b>	<b>HP Desktop Access Center</b>	Sold separately, the HP Desktop Access Center Features integrated microphone/headset jacks, dual function headset for phone/PC support, a MultiBay slot for adding an optical drive (sold separately), and four USB ports for easy integration of third-party digital solutions; part number DK985A. For more information, refer to the HP Desktop Access Center QuickSpecs.
<b>Other</b>	<b>Accessories Included</b>	VGA to VGA cable - connects the graphic card's VGA analog connector to the monitor's input #1 (VGA analog) connector VGA to DVI-I cable - connects the graphic card's VGA connector to the monitor's input #2 (DVI-I analog) connector DVI-D to DVI-I cable - connects the graphic card's DVI-D digital connector to the monitor's input #2 (DVI-I digital) connector
	<b>User Guide Languages</b>	English, B. Portuguese, French, LA Spanish, Korean, S. Chinese, T. Chinese, Bahasa, Japanese, Danish, Finnish, German, Norwegian, Spanish, Swedish, Greek, Polish, Russian, Slovenian, Turkish
	<b>Warranty Languages</b>	English, Canadian French, LA Spanish, Brazilian Portuguese, Danish, German, Castilian Spanish, French, Italian, Dutch, Norwegian, Finnish, Swedish, Bahasa Indonesian, Korean, T. Chinese, S. Chinese
	<b>Color</b>	Carbonite/silver
	<b>VESA External Mounting</b>	Yes (Standard 4 hole pattern, 100 mm)
	<b>Kensington Lock-Ready</b>	Yes
<b>Certification and Compliance</b>		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 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 (Microsoft® Windows® 98, Microsoft Windows 2000, and Microsoft Windows XP).
<b>Compatibility</b>		Compatible with platforms using the VESA standard video modes and HP Compaq Business Desktops d500, d300, and d200 Series, Compaq Evo Desktops, and HP Business Desktops d300 series.
<b>Service and Warranty</b>		Limited three years parts, labor, and on-site service, including backlight. Availability varies by region. Certain restrictions and exclusions apply. Consult HP Customer Service for details.

### Technical Specifications

<b>HP p1230 22-inch CRT Monitor</b>	<b>Tube Type</b>	Diamondtron NF Aperture Grille CRT
	<b>Picture Tube Size</b> (diagonal)	22 in (55 cm)
	<b>Viewable Image Area</b> (diagonal)	20 in (51 cm)
	<b>Aperture Grille Pitch</b>	0.24 mm
	<b>Screen Curvature</b>	Flat
	<b>Horizontal Frequency</b> (kHz)	30 to 140 kHz
	<b>Vertical Frequency</b> (Hz)	50 to 160 Hz
	<b>Maximum Resolution</b>	2048 x 1536 @ 85 Hz (GTF)
	<b>Recommended Resolution</b>	1600 x 1200 @ 85 Hz or 1280 x 1024 @ 85 Hz
	<b>Preset VESA Graphic Modes</b> (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
	<b>Preset MAC Mode</b>	1152 x 870 @ 75 Hz
	<b>Preset VGA Mode</b>	640 x 480 @ 60 Hz and 720 x 400 @ 70 Hz
	<b>Maximum Pixel Clock Speed</b>	420 MHz
	<b>User Programmable Modes</b>	15 (10 preset modes and 5 additional modes)
	<b>Anti-Glare</b>	Yes
	<b>Anti-Static</b>	Yes
	<b>Asset Control</b>	Yes
	<b>Default Color Temperature</b>	9300 K
	<b>Buttons or Switches</b>	OSD menu, brightness, contrast, Super Bright, dual input, power on/off
	<b>Languages</b>	English, Spanish, French, German, Italian, Japanese
	<b>User Controls</b>	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
	<b>Plug and Play</b>	Yes, DDC/CI compatible
	<b>Input Signal</b>	Two 15-pin D-sub connections
	<b>Input Impedance</b>	75 ohms
	<b>Sync Input</b>	Separate sync (HSYNC/VSYNC)
	<b>Video Cable</b>	Detachable 15-pin D-sub mini connector (included)
<b>Video Cable Length</b>	70 in (1.8 m); non-captive	
<b>Power Supply</b>	Universal 100-120/220-240 VAC	
<b>Frequency</b>	50/60 Hz	
<b>Maximum</b>	135 watts	
<b>Power Saving</b>	2 watts maximum	
<b>Off Mode</b>	0 watts	
<b>Power Cable Length</b>	70 in (1.8 m); non-captive	
<b>Dimensions</b> (HxWxD)	<b>Unpacked</b>	19.1 x 19.5 x 18.8 in (48.6 x 49.5 x 47.7 cm) (including pedestal)
	<b>Packaged</b>	25.6 x 25.0 x 25.4 in (65.1 x 63.6 x 64.6 cm)

### Technical Specifications

<b>Weight</b>	<b>Unpacked</b>	66.1 lb (30 kg)
	<b>Packaged</b>	77.1 lb (35 kg)
<b>Tilt Range</b>	10° upward and 5° downward	
<b>Swivel Range</b>	90° either side of center	
<b>Temperature – Operating</b>	41° to 90° F (5° to 35° C) Non-condensing	
<b>Temperature – Non-operating</b>	-4° to 140° F (-20° to 60° C)	
<b>Humidity – Operating</b>	10% to 90% non-condensing	
<b>Humidity – Non-operating</b>	10% to 90%	
<b>Altitude – Operating</b>	0 to 7,200 ft (0 to 2,195 m)	
<b>Altitude – Non-operating</b>	0 to 30,000 ft (0 to 9,144 m)	
<b>Accessories Included</b>	Power cable, video cable (D-sub to D-sub), documentation kit	
<b>User Guide Languages</b>	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	
<b>Warranty Languages</b>	English, French, Spanish, Brazilian Portuguese, Danish, German, Castilian Spanish, French, Italian, Dutch, Norwegian, Finnish, Swedish, Bahasa Indonesian, Japanese, Korean, T. Chinese, S. Chinese	
<b>Color</b>	Carbon and silver	
<b>Certification and Compliance</b>	MPR-II (Low Emissions), TCO '03, Energy Star Compliant, UL Listing, ISO9241-3 VOT Guidelines Approval, FCC Approval, CE Mark (including PFC), GS Mark	
<b>Compatibility</b>	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.	
<b>Warranty</b>	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.	

© Copyright 2002-2004 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Microsoft, Windows, and Windows NT are U.S. registered trademarks of Microsoft Corporation. Intel and Pentium are U.S. registered trademarks of the Intel Corporation. All other product names mentioned herein may be trademarks of their respective companies.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.