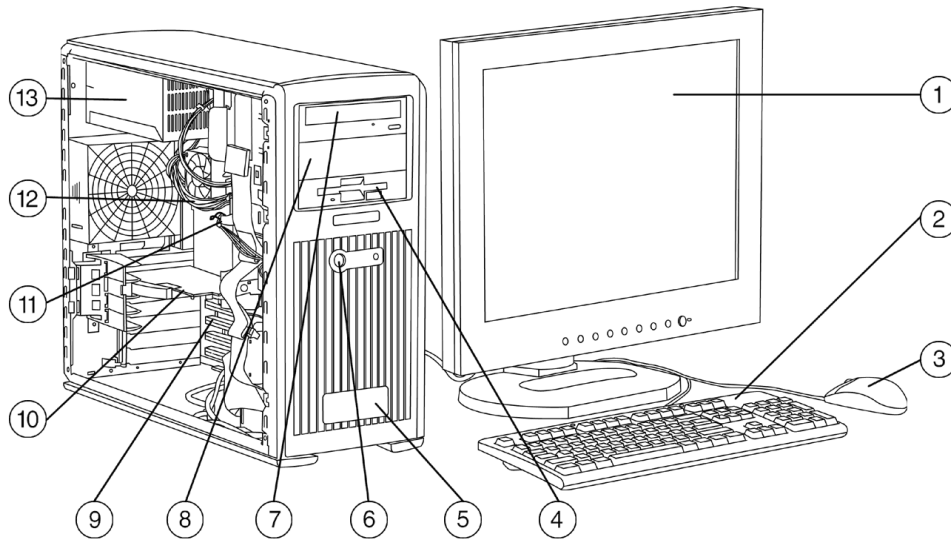


Overview



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

At A Glance

- Minitower form factor
 - Supports one Intel® Pentium® 4 processor, up to 3.06GHz
 - Integrated 512-KB L2 cache
 - Intel E7205 chipset with dual memory channels (4.2 GB/s throughput) and 533-MHz system bus
 - PC2100 ECC DDR-266 expandable to 4-GB
 - Ultra320 SCSI hard drives (10,000 or 15,000 rpm) or Ultra ATA/100 hard drives (7200 rpm)
 - Integrated Ultra ATA/100 and optional Ultra320 SCSI controllers
 - Up to 730-GB of high-performance Ultra320 SCSI internal storage
 - Choice of professional graphics:
 - NVIDIA Quadro NVS 200,
 - NVIDIA Quadro NVS 400,
 - NVIDIA Quadro4 380 XGL,
 - ATI FIREGL Z1-128p,
 - NVIDIA Quadro4 750 XGL
 - NVIDIA Quadro4 980 XGL,
 - NVIDIA Quadro4 900 XGL
 - ATI FIREGL X1-256p
 - Dual display support
 - Integrated Intel 10/100 network controller
 - 10/100/1000 Gigabit Adapter
 - 6 total slots (5 PCI and 1 AGP 8X Pro 50)
 - 6 bays (3 external and 3internal)
 - CD-ROM, DVD-ROM, CD-RW, or DVD+ RW drive
 - AC97/16-bit stereo full duplex
 - Microsoft® Windows® 2000 Professional, Microsoft Windows XP Professional, Red Hat Linux
- Protected by HP Services, including a three-year, limited warranty — certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. Three-year onsite and labor not available in all countries

Standard Features

Processor Intel Pentium 4 processor 2.4 GHz, 512-KB cache
One of the following: Intel Pentium 4 processor 2.66 GHz, 512-KB cache
Intel Pentium 4 processor 2.8 GHz, 512-KB cache
Intel Pentium 4 processor 3.06 GHz, 512-KB cache

Cache Memory 512 KB integrated, full speed Level 2 cache

Upgradability Uniprocessor

Memory Standard 512-MB or 1-GB of PC2100 ECC DDR-266 (unbuffered)
Maximum 4-GB of PC2100 ECC DDR-266 (unbuffered)

Network Controller Integrated Intel PRO/100+ Management Adapter
Broadcom NetXtreme 10/100/1000 Gigabit adapter

Expansion Slots I/O (total/available) 6/5
32-bit/33-MHz PCI 2.2 5/5
AGP Pro 8X Pro 50 1/0 (choice of graphics card)

Expansion Bays (Total/Available) 6 total / 3available
Internal 3.5 inch 3 bays / 2available
External 5.25 inch 2 bays / 1 available
External 3.5 inch 1 external floppy drive

Storage Diskette Drive 1.44 MB 3.5 inch
Removable Media CD-ROM, DVD-ROM, CD-RW, or DVD+ RW
Hard Drive 18-GB Ultra320 SCSI (15,000 rpm),
36-GB Ultra320 SCSI (10,000 rpm or 15,000),
73 GB-Ultra320 SCSI (10,000 or 15,000 rpm),
146-GB Ultra320 SCSI (10,000 rpm)
40-GB, 80-GB or 120-GB Ultra ATA/100 (7200 rpm)

Standard Features

| | | |
|-------------------|--------------------------|-------------------------------|
| Interfaces | Parallel | One 25-pin (rear) |
| | USB 2.0 | 6 (2 front, 4 rear) |
| | Serial | One 9-pin (rear) |
| | Ultra160 SCSI (optional) | 2 (68-pin internal) |
| | Ultra ATA/100 | 2 (internal) |
| | Keyboard (PS/2) | 1 (rear) |
| | Pointing Device | 1 (rear) |
| | Network | 1 RJ-45 (rear) |
| | Video | Choice of graphics controller |
| | Microphone Jack | 2 (1 front & 1 rear) |
| | Headphone Jack | 1 (front) |
| | Line-In Jack | 1 (rear) |
| | Line-Out Jack | 1 (rear) |

| | |
|------------------------------|------------------------------|
| Graphics | NVIDIA Quadro NVS 200 (AGP) |
| <i>One of the following:</i> | NVIDIA Quadro NVS 400 (AGP) |
| | NVIDIA Quadro4 380 XGL (AGP) |
| | ATI FIREGL Z1-128p (AGP) |
| | NVIDIA Quadro4 750 XGL (AGP) |
| | NVIDIA Quadro4 980 XGL (AGP) |
| | NVIDIA Quadro4 9 XGL (AGP) |
| | ATI FIREGL X1-256p (AGP) |

| | |
|--------------|--------------------------------|
| Audio | AC97/16-bit stereo full duplex |
|--------------|--------------------------------|

| | |
|-----------------|--|
| Software | Windows XP Professional preinstalled |
| | Windows 2000 Professional, service pack 3, preinstalled |
| | Red Hat Linux 7.3 preinstalled, preconfigured, and supported |
| | Red Hat 8.0 supported |

| | | |
|----------------------------------|----------------------|---|
| Intelligent Manageability | Bios Features | Advanced Configuration and Power Interface (ACPI) 1.0b Desktop Management Interface (DMI) 2.0 System Management (SM) Bios 2.3 |
| | NIC Hardware | Remote Wakeup Wake on LAN (WoL) |
| | Web downloads | System Software Manager Insight Management Agent Altiris Express Remote ROM Flash Remote Shut Down |

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

Standard Features

Power Supply 320 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; 7 x 24 hardware technical phone support and on-line support through the Internet; Pre-Failure Warranty coverage of hard drives and memory.

NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. Three-year, onsite and labor not available in all countries

Standard Features Pre-Configured Global Models

| | | |
|--------------------|--|--|
| X5K/2.8/36S/512/Xd | Processor Cache Memory Memory Optical Drive Hard Drive Graphics | Intel Pentium 4 processor 2.8-GHz 512-KB integrated L2 512-MB PC2100 ECC DDR-266 (unbuffered) 16X/40X DVD-ROM Drive 36-GB Ultra320 SCSI 10,000 rpm Not included in base configuration – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section |
| | Mouse Operating System | 3-button mouse Microsoft Windows 2000 Professional SP3 |

X5K/2.8/36S/512/Xd Country Code Key

| | | | |
|-----------------|-------------|-----------------------|------------|
| N. America | 470047-868 | Spain | AA810A#ABE |
| Fr. Canadian | 470047-869 | Europe | AA810A#AK6 |
| L. America | 470047-870 | Switzerland (Eng, It) | AA810A#ACN |
| Japan | 470047- 871 | Switzerland | AA810A#AR8 |
| Japan (English) | 470047-872 | Dutch | AA810A#ABH |
| UK | AA810A#ABU | Korea | AA810A#AB1 |
| Germany | AA810A#ABD | China | AA810A#AB2 |
| France | AA810A#ABF | Taiwan | AA810A#AB0 |
| Italy | AA810A#ABZ | Hong Kong | AA810A#AB5 |

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

Graphics Card (Video Card)

- NVIDIA Quadro NVS 200 (AGP)
- NVIDIA Quadro NVS 400 (AGP)
- NVIDIA Quadro4 380 XGL (AGP)
- ATI FIREGL Z1-128p (AGP)
- NVIDIA Quadro4 750 XGL
- NVIDIA Quadro4 980 XGL (AGP)
- NVIDIA Quadro4 900 XGL
- ATI FIREGL X1-256p (AGP)

Memory

- 256-MB (1X256-MB) PC2100 ECC DDR-266 (unbuffered)
- 256-MB (2X128-MB) PC2100 ECC DDR-266 (unbuffered)
- 512-MB (1X512-MB) PC2100 ECC DDR-266 (unbuffered)
- 512-MB (2x256-MB) PC2100 ECC DDR-266 (unbuffered)
- 1-GB (2x512-MB) PC2100 ECC DDR-266 (unbuffered)
- 1-GB (1X1-GB) PC2100 ECC DDR-266 (unbuffered)
- 2-GB (4x512-MB) PC2100 ECC DDR-266 (unbuffered)
- 2-GB (2x1-GB) PC2100 ECC DDR-266 (unbuffered)
- 3-GB (2x512-MB 2x1-GB) PC2100 ECC DDR-266 (unbuffered)
- 4-GB (4X1-GB) PC2100 ECC DDR-266 (unbuffered)

Monitors

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

Primary hard disks

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

Configure to order options

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

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

| | |
|------------------------|---|
| SCSI Controller | LSI Logic single-channel Ultra160 SCSI controller |
|------------------------|---|

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

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

| | |
|-------------|-----------------------------|
| NICs | 10/100/1000 Gigabit adapter |
|-------------|-----------------------------|

| | |
|-----------------|-------------------------|
| I/O Card | IEEE 1394 Firewire Card |
|-----------------|-------------------------|

| | |
|-------------------------|--|
| Operating System | Windows XP Professional preloaded |
| | Windows 2000 Professional SP3 preloaded |
| | Red Hat Linux 8.0 preloaded (available early 2003) |

After market options/Standalone accessories

| | | Part #: | | |
|---|---|---|------------|--------|
| Memory | 256-MB PC-2100 ECC DDR-266 (unbuffered) | | AA632A | |
| | 512-MB PC-2100 ECC DDR-266 (unbuffered) | | AA633A | |
| | 1-GB PC-2100 ECC DDR-266 (unbuffered) | | AA634A | |
| <hr/> | | | | |
| Graphics | NVIDIA Quadro NVS 200 (AGP) | | AA603A | |
| | NVIDIA Quadro NVS 200 DVI Cables | | AA604A | |
| | NVIDIA Quadro NVS 400 (PCI) | | AA605A | |
| | NVIDIA Quadro NVS 400 DVI Cables | | AA606A | |
| | NVIDIA Quadro4 380 XGL (AGP) | | AA653A | |
| | ATI FIREGL Z1-128p | | AA624A | |
| | NVIDIA Quadro4 750 XGL (AGP) | AA628A | 270731-B21 | |
| | NVIDIA Quadro4 980 XGL (AGP) | | AA623A | |
| | NVIDIA Quadro4 900 XGL (AGP) | AA630A | 284279-B21 | |
| | ATI FIREGL X1-256p | | AA625A | |
| | <hr/> | | | |
| Hard Drives | Ultra320 SCSI Drives | | | |
| | 36-GB Ultra320 SCSI (10,000 rpm) | | AA612A | |
| | 73-GB Ultra320 SCSI (10,000 rpm) | | AA613A | |
| | 146-GB Ultra320 SCSI (10,000 rpm) | | AA614A | |
| | 18-GB rpm Ultra320 SCSI (15,000 rpm) | AA615A | 310506-B21 | |
| | 36-GB Ultra320 SCSI (15,000 rpm) | | AA616A | |
| | 73-GB Ultra320 SCSI (15,000 rpm) | | AA617A | |
| | Ultra ATA/100 Drives | | | |
| | 40 GB ATA/100 EIDE (7,200 rpm) | | DC180A | |
| | 80 GB ATA/100 EIDE (7,200 rpm) | | DC181A | |
| | 160 GB ATA/100 EIDE (7,200 rpm) | | DC189A | |
| | <hr/> | | | |
| | Storage Controllers | LSI Logic single-channel Ultra160 SCSI controller (cable sold separately) | | AA601A |
| Ultra320 dual channel SCSI controller (cable sold separately) | | | AA611A | |
| Ultra320 SCSI RAID controller (cable sold separately) | | | AA850A | |
| 5-device SCSI cable | | | AA818A | |
| <hr/> | | | | |
| Optical Drives | 48X/24X/48X CD-RW Drive | DE205A | DE205A | |
| | 16X DVD +/- Drive with Windows DVD software | AA620A | AA620A | |
| | 16X DVD +/- Drive with Power DVD Software | AA817A | 310475-B21 | |
| | 4.7GB DVD+R/RW Drive – 300i | AA851A | AA851A | |
| <hr/> | | | | |
| I/O cards | IEEE 1394/Firewire Card (PCI) | | AA638A | |
| | USB 2.0 PCI Card | | AA639A | |

After market options/Standalone accessories

| | | | |
|-----------------------|--------------------------------------|--------|------------|
| Communications | V90 56K PCI WIN Modem | DC131A | 239137-xxx |
| | V90 56K International Soft WIN Modem | NA | 259032-B24 |
| | V90 56K PCI WIN Modem | DC131A | 239137-xxx |

| | | | |
|----------------------|---|--|--------|
| Input devices | Easy Access keyboard - carbonite (PS/2) | | DC167B |
| | Three button mouse-carbon (PS/2) | | AA778A |
| | Two button Optical Mouse - carbonite/silver (USB) | | DC172B |
| | Two button Scroll Mouse - carbonite (PS/2) | | DD440B |
| | Spaceball 5000 | | DE934A |

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

| | | | |
|---------------------|------------------------------|--|------------|
| Rack options | StorageWorks Enclosure 4314R | | 190209-001 |
| | Rack mounting kits | | AA640A |
| | Fixed shelf kit | | 253449-B21 |
| | Sliding Shelf Kit | | 234672-B21 |
| | Depth Adjustable Rails | | 332558-B21 |

| | | Part #: <i>Europe/ Asia-Pacific</i> | Part #: <i>Americas/ Japan</i> |
|-----------------|--|---|--|
| Monitors | HP L1825 Flat Panel Color Monitor (18-inch, Carbon/Silver) | P9021W | 303486-003 |
| | HP L1925 Flat Panel Color Monitor (19-inch, Carbon/Silver) | P9626A | P9626A |
| | HP L2025 Flat Panel Color Monitor (20-inch, Carbon/Silver) | P4831W | 303102-003 |
| | HP p930 Flat screen CRT Monitor (19-inch, Carbon/Silver) | P9009W | 302268-003 |
| | HP p1130 Flat screen CRT Monitor (21-inch, Carbon/Silver) | P4819X | 302270-003 |

Memory

Standard Memory

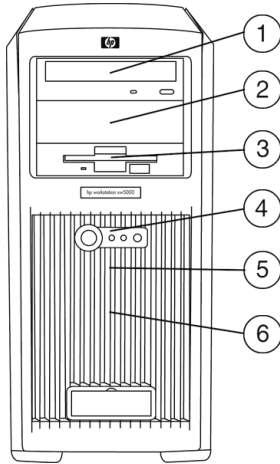
This system supports unbuffered PC2100 DDR-266 ECC DDR memory. The mainboard has 4 DIMM slots (2 pairs, 2 dual channel) and ships with 512-MB as standard. It can support a maximum of 4 GB of RAM when optional memory upgrades are included.

These memory options are available from HP:

| | <i>Part #</i> |
|---|---------------|
| ● 256-MB Upgrade Kit PC-2100 ECC DDR-266 ECC (unbuffered) | AA632A |
| ● 512-MB Upgrade Kit PC-2100 ECC DDR-266 (unbuffered) | AA633A |
| ● 1-GB Upgrade Kit PC-2100 ECC DDR-266 ECC (unbuffered) | AA634A |

Storage

Drive Bay Locations



Drive Support

| | Quantity Supported | Position Supported | Controller |
|------------------------|--------------------|--------------------|--------------------------|
| Removable Media | | | |
| 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 |
| DVD+ RW | | 1,2 | Integrated Ultra ATA/100 |

Hard Drives

Ultra320 SCSI Drives

| | | | |
|-------------------|---------|--------|-----------------------------------|
| 1-inch | Up to 3 | 4, 5,6 | Optional Ultra160 SCSI Controller |
| 146-GB 10,000 rpm | | | |
| 73-GB 10,000 rpm | | | |
| 73-GB 15,000rpm | | | |
| 36-GB 15,000 rpm | | | |
| 18-GB 10,000 rpm | | | |
| 18-GB 15,000 rpm | | | |

Ultra ATA Drives

| | | | |
|-----------------|---------|------|-----------------|
| 1-inch | Up to 2 | 4, 5 | Integrated EIDE |
| 160-GB 7200 rpm | | | |
| 80-GB 7200 rpm | | | |
| 40-GB 7200 rpm | | | |

Maximum Storage Capacity

| | |
|----------|---|
| Internal | SCSI: 438 GB (assumes three 146-GB SCSI drives installed) |
| | IDE: 320 GB |

TechSpecs

| | | | | |
|---|---|--|--|---------------|
| System Unit | Tower Dimensions (HxWxD) | 17.7 x 8.3 x 20.3 in/44.9 x 21 x 51.5 cm | | |
| | Weight (standard configuration) | 38 lb/17 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 | 5.0-A @ 100 VAC; 2.5A @ 240 VAC | |
| | | Maximum Rated Power | 500-Watt input, 320-Watt output | |
| | | Physical Dimensions | 5.9 x 3.4 x 5.5 in/15x 8.6 x 14 cm | |
| | | Weight | <5.7 lb/< 2.6kg | |
| | 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% relative @ 95° F /35° C | |
| | | Non-operating | 0% to 90% @ 158° F/70° C | |
| Maximum Altitude (nonpressurized) | Operating | 10000 ft/3100 m max | | |
| | Non-operating | 15000 ft/4600 m max | | |
| <hr/> | | | | |
| HP Easy Access Keyboard | Dimensions (HxWxD) | 18.3 x 6.3 x 1.4 in/46.48 x 16.0 x 3.56 cm | | |
| | Weight | Approximately 2 lb/0.9 kg | | |
| | Input Specifications | Operating Voltage | + 5VDC ± 5% | |
| | | Power Consumption | 50 mA maximum (with 3 LEDs on) | |
| | | System Interface | PS/2 mini-din connector | |
| | | ESD | CE level 4, 15 kV air discharge | |
| | | EMI-RFI | Conforms to FCC rules for a Class B computing device | |
| | | PC98 | Functionally compliant | |
| | | Mechanical | Languages | 18+ available |
| | Keycaps | | Low-profile design | |
| | Switch Actuation | | 55 g nominal peak force with tactile feedback | |
| | Switch Life | | 20 million keystrokes (using Hasco modified tester) | |
| | Switch Type | | Contamination resistant membrane | |
| | Key Leveling Mechanism | | For all double wide and greater length keys | |
| | Cable Length | | 6 ft/1.8 m | |
| | Environmental | PC98-99 | Mechanically compliant | |
| | | Acoustics | 50 dBA maximum sound pressure level | |
| | | Operating Temperature | 50° to 122° F/10° to 50° C | |
| | | | -22° to 140° F/-30° to 60° C | |
| | | Operating Humidity | 10% to 90% (non condensing at ambient) | |
| | | | 20% to 80% (non condensing at ambient) | |
| | | Operating Shock | 40 g, 6 surfaces | |
| | | | 80 g, 6 surfaces | |
| Operating Vibration | | 2 g peak acceleration | | |
| | | 4 g peak acceleration | | |

TechSpecs

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

| | | | | |
|--------------------------|-----------------------------|---------------------------|--|--|
| HP 3-Button Mouse | Dimensions/Weight | Height | 1.42 in (3.6 cm) | |
| | | Length | 4.17 in (10.7 cm) | |
| | | Width | 2.87 in (7.4 cm) | |
| | | Weight | 5.20 oz (150 g) | |
| | Environmental | Operating Temperature | 32° to 104° F (0° to 40° C) | |
| | | Non-operating Temperature | -4° to 140° F (-20° to 60° C) | |
| | | Operating Humidity | 10% to 90% (non condensing at ambient) | |
| | Mechanical | Resolution | 400 ± 20% DPI | |
| | | Tracking Speed | 10 in/s Maximum | |
| | | Switch Life | 1,000,000 operations (using Hasco modified tester) | |
| | | Switch Type | Micro-switches | |
| | | Tracking Mechanism Life | 155 miles (250 km) at average speed of 10 in/s | |
| | | Cable Length | 6 ft (1.8 m) | |
| | | PC98-99 | Mechanically compliant | |
| | Regulatory Approvals | Compliant | UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick | |

TechSpecs

| | | |
|---------------------------------|-------------------------------|---|
| HP 2-Button Scroll Mouse | Scroll Wheel | 8 mm |
| | Maximum Rotation Speed | 30 mm/s |
| | Switch Type | Light force micro-switch |
| | Switch Life | 1 million operations |
| | Mechanical Life | Minimum 200,000 revolutions |
| | Environmental | Operating Temperature 50° to 122° F (10° to 50° C) |
| | | Non-operating Temperature -22° to 140° F (-30° to 60° C) |
| | | Operating Humidity 10% to 90% (non condensing at ambient) |
| | | Non-operating Humidity 20% to 80% (non condensing at ambient) |
| | | Operating Shock 40 g, 6 surfaces |
| | | Non-operating Shock 80 g, 6 surfaces |
| | | Operating Vibration 2 g peak acceleration |
| | | Non-operating Vibration 4 g peak acceleration |
| | Electrical | Operating Voltage + 5VDC ± 10% |
| | | Power Consumption 15mA |
| | | System Consumption PS/2 mini-din connector |
| | | ESD CE level 4, 15 kV air discharge |
| | | EMI-RFI Conforms to FCC rules for a Class B computing device |
| | PC98 | Functionally compliant |
| | Mechanical | Resolution 400 ± 20% DPI |
| | | Tracking Speed 10 in/s Maximum |
| | | Acceleration 100 in/s |
| | | Switch Actuation 85 g nominal peak force |
| | | Switch Life 1,000,000 operations (using Hasco modified tester) |
| | | Cable Length 2 m |
| | | PC98-99 Mechanically compliant |
| | Regulatory Approvals | UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BCIQ, C -Tick |

TechSpecs

Ultra320 SCSI Hard Drives

146 GB, 10K

| | | |
|---|---------------------------|---------|
| Capacity | 146,815,737,856 bytes | |
| Height | 1 in/2.54 cm | |
| Width | 3.5 in/8.89 cm | |
| Interface | Ultra320 SCSI | |
| Transfer rate synchronous (maximum) | 320 MB/s | |
| Seek time (typical reads, including settling) | Single track | 0.55 ms |
| | Average | 4.9 ms |
| | Full-stroke | 9.2 ms |
| Rotational speed | 10,000 rpm | |
| Logical blocks | 286,749,488 | |
| Operating temperature | 41° to 131° F/5° to 55° C | |

73 GB, 15K

| | | |
|---|---------------------------|--------|
| Capacity | 73,407,865,856 bytes | |
| Height | 1 in/2.54 cm | |
| Width | 3.5 in/8.89 cm | |
| Interface | Ultra320 SCSI | |
| Transfer rate synchronous (maximum) | 320 MB/s | |
| Seek time (typical reads, including settling) | Single track | 0.4 ms |
| | Average | 3.8 ms |
| | Full-stroke | 6.7 ms |
| Rotational speed | 15,000 rpm | |
| Logical blocks | 143,374,744 | |
| Operating temperature | 41° to 131° F/5° to 55° C | |

73 GB, 10K

| | | |
|---|---------------------------|---------|
| Capacity | 73,407,865,856 bytes | |
| Height | 1 in/2.54 cm | |
| Width | 3.5 in/8.89 cm | |
| Interface | Ultra320 SCSI | |
| Transfer rate synchronous (maximum) | 320 MB/s | |
| Seek time (typical reads, including settling) | Single track | 0.55 ms |
| | Average | 4.90 ms |
| | Full-stroke | 9.20 ms |
| Rotational speed | 10,000 rpm | |
| Logical blocks | 143,337,744 | |
| Operating temperature | 41° to 131° F/5° to 55° C | |

36 GB, 15K

| | | |
|---|----------------------|--------|
| Capacity | 36,420,075,520 bytes | |
| Height | 1 in/2.54 cm | |
| Width | 3.5 in/8.89 cm | |
| Interface | Ultra320 SCSI | |
| Transfer rate synchronous (maximum) | 320 MB/s | |
| Seek time (typical reads, including settling) | Single track | 0.4 ms |
| | Average | 3.8 ms |
| | Full-stroke | 6.7 ms |
| Rotational speed | 15,000 rpm | |

TechSpecs

| | | | |
|-------------------|---|---------------------------|---------|
| | Logical blocks | 71,631,920 | |
| | Operating temperature | 41° to 131° F/5° to 55° C | |
| 36 GB, 10K | Capacity | 36,420,075,520 bytes | |
| | Height | 1 in/2.54 cm | |
| | Width | 3.5 in/8.89 cm | |
| | Interface | Ultra320 SCSI | |
| | Transfer rate synchronous (maximum) | 320 MB/s | |
| | Seek time (typical reads, including settling) | Single track | 0.55 ms |
| | | Average | 4.90 ms |
| | | Full-stroke | 9.20 ms |
| | Rotational speed | 10,000 rpm | |
| | Logical blocks | 71,132,960 | |
| | Operating temperature | 41° to 131° F/5° to 55° C | |
| 18 GB, 15K | Capacity | 18,209 MB | |
| | Height | 1 in/2.54 cm | |
| | Width | 3.5 in/8.89 cm | |
| | Interface | Ultra320 SCSI | |
| | Transfer rate synchronous (maximum) | 320 MB/s | |
| | Seek time (typical reads, including settling) | Single track | 0.4 ms |
| | | Average | 3.8 ms |
| | | Full-stroke | 6.7 ms |
| | Rotational speed | 15,000 rpm | |
| | Logical blocks | 35,566,480 | |
| | Operating temperature | 41° to 131° F/5° to 55° C | |

TechSpecs

Ultra ATA Hard Drives

| | | | | | | | |
|--------------|---|--------------|--------|---------|--------|-------------|---------|
| 160 GB | <p>Capacity 160,000-MB</p> <p>Height 1 in/2.54 cm</p> <p>Width 4 in/10.16 cm</p> <p>Interface Ultra ATA/100</p> <p>Synchronous Transfer Rate (Maximum) 100 MB/s</p> <p>Seek time (typical reads, including settling)</p> <table border="0" style="margin-left: 20px;"> <tr> <td>Single track</td> <td style="text-align: right;">0.8 ms</td> </tr> <tr> <td>Average</td> <td style="text-align: right;">9.0 ms</td> </tr> <tr> <td>Full-stroke</td> <td style="text-align: right;">17.0 ms</td> </tr> </table> <p>Rotational speed 7200 rpm</p> <p>Logical blocks 122,942,324,736</p> <p>Operating temperature 41° to 131° F/5° to 55° C</p> | Single track | 0.8 ms | Average | 9.0 ms | Full-stroke | 17.0 ms |
| Single track | 0.8 ms | | | | | | |
| Average | 9.0 ms | | | | | | |
| Full-stroke | 17.0 ms | | | | | | |
| 80 GB | <p>Capacity 81,964-MB</p> <p>Height 1 in/2.54 cm</p> <p>Width 4 in/10.16 cm</p> <p>Interface Ultra ATA/100</p> <p>Synchronous Transfer Rate (Maximum) 100 MB/s</p> <p>Seek time (typical reads, including settling)</p> <table border="0" style="margin-left: 20px;"> <tr> <td>Single track</td> <td style="text-align: right;">0.8 ms</td> </tr> <tr> <td>Average</td> <td style="text-align: right;">9.0 ms</td> </tr> <tr> <td>Full-stroke</td> <td style="text-align: right;">17.0 ms</td> </tr> </table> <p>Rotational speed 7200 rpm</p> <p>Logical blocks 81,964,302,336</p> <p>Operating temperature 41° to 131° F/5° to 55° C</p> | Single track | 0.8 ms | Average | 9.0 ms | Full-stroke | 17.0 ms |
| Single track | 0.8 ms | | | | | | |
| Average | 9.0 ms | | | | | | |
| Full-stroke | 17.0 ms | | | | | | |
| 40 GB | <p>Capacity 80,293-MB</p> <p>Height 1 in/2.54 cm</p> <p>Width 4 in/10.16 cm</p> <p>Interface Ultra ATA/100</p> <p>Synchronous Transfer Rate (Maximum) 100 MB/s</p> <p>Seek time (typical reads, including settling)</p> <table border="0" style="margin-left: 20px;"> <tr> <td>Single track</td> <td style="text-align: right;">0.8 ms</td> </tr> <tr> <td>Average</td> <td style="text-align: right;">9.0 ms</td> </tr> <tr> <td>Full-stroke</td> <td style="text-align: right;">17.0 ms</td> </tr> </table> <p>Rotational speed 7200 rpm</p> <p>Logical blocks 80,293,248</p> <p>Operating temperature 41° to 131° F/5° to 55° C</p> | Single track | 0.8 ms | Average | 9.0 ms | Full-stroke | 17.0 ms |
| Single track | 0.8 ms | | | | | | |
| Average | 9.0 ms | | | | | | |
| Full-stroke | 17.0 ms | | | | | | |

TechSpecs

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

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

TechSpecs

48/24/48X CD-RW

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

TechSpecs

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|--|--|--|--|--|
| 16X/40 DVD-ROM Read | Height | 5.25-inch, half-height | | |
| | Interface type | ATAPI | | |
| | Dimensions—External, Excluding Bezel (W x H) | 5.88 x 1.71 in/14.9 x 4.34 cm | | |
| | Disc diameter | 5 in, 3 in (12 cm, 8 cm) | | |
| | Disc thickness | 0.05 inch (1.2 mm) | | |
| | Track pitch | 1.6 μ m (CD), 0.74 μ m (DVD) | | |
| | Disc center hole diameter | 0.6 inch (15 mm) | | |
| | Disc formats | DVD-ROM (single and dual layer); DVD-video; DVD-R version 1.0 and 2.0; DVD-RW version 1.0 and 1.1; DVD-R/RW multi-border; DVD+RW; CD-ROM Mode 1 and 2; CD-DA; CD-ROM XA Mode 2, Form 1 and 2; CD-extra; CD-text; CD-I Mode 2, Form 1 and 2; CD-I ready; video CD, CD-bridge; PhotoCD (single and multi-session); CD-R; CD-RW | | |
| | Disc capacity | DVD-ROM | 4.7 GB (DVD-5), 8.54 GB (DVD-9), 9.4 GB (DVD-10), 3.95 GB (DVD-R version 1.0), 4.7 GB (DVD-R version 2.0), 4.7 GB (DVD-RW version 1.0 and 1.1), 4.7 GB (DVD+ RW) | |
| | | CD-ROM | 540 MB (Mode 1, 12 cm), 640 MB (Mode 2, 12 cm), 700 MB (80 minimum CD-R and CD-RW), 180 MB (8 cm) | |
| | Block size (bytes) | DVD-ROM – 2048; CD-ROM Mode 0 – 2352; CD-ROM Mode 1 – 2352, 2340, 2336, 2048; CD-ROM Mode 2 – 2352, 2340, 2336, 2048 | | |
| | Access times (typical reads, including settling) | DVD-ROM single layer | < 120 ms | |
| | | CD-ROM Mode 1 | < 90 ms | |
| | | Full stroke DVD | < 240 ms (seek) | |
| | | Full stroke CD | < 160 ms (seek) | |
| | Data transfer rates | 2600 – 6000 KB/s (40X CAV CD-ROM mode) 8100 – 21,600 KB/s (16X CAV DVD-ROM mode) | | |
| | Data transfer modes | PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 3 (44.4 MB/s) | | |
| | Power | Source | Four-pin, DC power receptacle | |
| | | DC power requirement | 5 VDC \pm 5%—100 mV ripple p-p 12 VDC \pm 5%—200 mV ripple p-p | |
| | | DC current | 5 VDC - <800 mA typical, < 1000 mA maximum 12 VDC - < 870 mA typical | |
| Audio Output Level | 0.7 Vrms (typical) | | | |
| Configuration Jumper Block | Master, slave, and cable select modes | | | |
| Data interface connector | 40-pin, shrouded and keyed, flat ribbon | | | |
| Environmental (all conditions non-condensing) | Temperature (operating) | 41° to 122° F/5° to 50° C | | |
| | Relative humidity (operating) | 10% to 85% | | |
| | Maximum wet bulb temperature (operating) | 86° F/30° C | | |
| Certifications, approvals | MMC II support, multi-read certification, Microsoft WHQL certification, ACA AS/NZS 3548 class B, CNS 13438, C.I.S.P.R. Pub 22, TUV or VDE EN60950, EN 55022, EN55024, SEMKO, NEMKO, DEMKO, FIMKO, EN 60825-1, UL 60950, CSA C22.2 60950-2000 | | | |
| Operating systems supported | Microsoft Windows 98, Microsoft Windows NT® 4.0, Microsoft Windows 2000, Windows XP Professional | | | |

TechSpecs

48/24/48+16X Combo CD-RW/DVD-ROM

| | |
|---|--|
| Capacity | 4.7 and 9.4 GB DVD disc / 700 MB CD disc |
| Dimensions (HxWxD) | 1.63 x 5.75 x 7.27 in/4.13 x 14.6 x 18.5 cm |
| Weight | 2.0 lb/0.9 kg |
| Interface | ATAPI/EIDE |
| Mounting Orientation | Horizontal or vertical |
| Data Transfer Rates – Read | Digital audio extraction (minimum) —1,200 KB/s (8X) CD read — up to 7,200 KB/s (48X) DVD read — up to 21,600 KB/s (16X) |
| Media and Formats - Read | CD Formats: CD-DA, CD-ROM (Modes 1 and 2), CD-ROM XA (Mode 2, Form 1 and 2), Mixed mode, CD-Extra, CD-I FMV, Video CD, Photo CD (single and multi-session), CD-Text, CD-Plus; CD Media: stamped, CD-R; CD-RW DVD Formats: DVD-ROM, DVD-Video (with application support), DVD-R (version 1.0 and 2.0), DVD-RW (version 1.0 and 1.1), DVD-R multi-border; DVD Media: stamped (single or dual layer, single sided), DVD+ RW, DVD+ R, DVD-R, DVD-RW |
| Data Transfer Rates - Write | CD-R write — 600 KB/s (4X) CD-R write — 1200 KB/s (8X) CD-R write — 1800 KB/s (12X) CD-R write — 2400 KB/s (16X) CD-R write — 3600 KB/s (24X) CD-R write — 4800 KB/s (32X) CD-R write — 6000 KB/s (40X) CD-R write — 7200 KB/s (48X) CD-RW write — 600 KB/s (4X) CD-RW write — 1500 KB/s (10X) CD-RW write — 2400 KB/s (16X) CD-RW write — 3600 KB/s (24X) |
| Media and Formats - Write | CD Formats: CD-DA, CD-ROM (Mode 1), CD-ROM XA (Mode 2, Form 1 and 2), Mixed mode, CD-Extra, CD-I FMV, Video CD, CD-Plus; CD Media: CD-R; CD-RW |
| Write Methods | Disc-at-once, session-at-once,, track-at-once, incremental fixed and variable packet, multisession |
| Data Transfer Modes | PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 2 (33.3 MB/s) |
| Access Times (typical reads, including settling) | DVD-ROM Single Layer 120 ms Random CD-ROM Mode 1 110 ms Full Stroke DVD 210 ms Full Stroke CD 160 ms |
| Start-up Time (typical) | <4 seconds (single session), <30 seconds (multisession) |
| Stop Time (typical) | 4 s |
| Write Buffer Size | 2 MB (minimum) |
| Audio Output | Line-Out 0.7 VRMS Signal-to-Noise Ratio 74 dB Channel Separation 65 dB |
| Configuration Jumper Block | Master, slave, and cable select modes |
| Operating Conditions | Temperature 41° to 122° F/5° to 50° C Humidity 10% to 85% |
| Approvals / Environmental | MPC-3 compliant, multi-read requirements, UL 1950, ACA AS/NZS 3548, ANSI C63.4-1992, ATAPI Spec SFF-8020, ATA Spec X3T9.2, CB Bulletin No. 92A, CSA C22.2 No. 950-1995, C.I.S.P.R. Pub 22, DHHS/FDA, EMKO-TSE 07/94, TUV, EN60825-1 |
| Operating Systems Supported | Microsoft Windows 2000, Windows XP |

TechSpecs

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|--------------------------|---|
| Supplied software | Intervideo WInDVD 4.0: Play DVD movies; Roxio Easy CD Creator 5.3.4: Create or copy CDs and DVDs, including music and data CDs, and data DVDs; Dantz Retrospect Express 6.0: Back up systems to CD, DVD, or tape media. |
|--------------------------|---|

16/10/40+4/2.4/8x 4.7 GB DVD+ RW – 300i

| | |
|---|--|
| Capacity | 4.7 GB DVD disc / 700 MB CD disc |
| Dimensions (HxWxD) | 1.66 x 5.83 x 7.74 in/4.23 x 14.6 x 19.8 cm |
| Weight | 2.3 lb/1.06 kg |
| Interface | ATAPI/EIDE |
| Mounting Orientation | Horizontal (80 or 120 mm discs) or vertical (120 mm discs only) |
| Data Transfer Rates – Read | Digital audio extraction (minimum) —1,200 KB/s (8X) CD read — up to 6,000 KB/s (40X) DVD read — up to 10,800 KB/s (8X) |
| Media and Formats - Read | CD formats: CD-DA (Red Book), CD-ROM (Modes 1 and 2 - Yellow Book), CD-ROM XA (Mode 2, Forms 1 and 2), CD-I (FMV), Photo CD (single and multi-session), Video CD, CD-Text, CD Extra; CD media: stamped, CD-R, CD-RW DVD formats: DVD-ROM, DVD-Video (with application support); DVD media: stamped (single or dual layer, single sided), DVD+ RW, DVD+ R, DVD-R, DVD-RW |
| Data Transfer Rates - Write | DVD+R write — 5,412 KB/s (4X) DVD+RW write or rewrite — 3,247 KB/s (2.4X) CD-R write — 600 KB/s (4X) CD-R write — 1200 KB/s (8X) CD-R write — 2,400 KB/s (16X) CD-RW write — 600 KB/s (4X) CD-RW write —1500 KB/s (10X) |
| Media and Formats - Write | CD formats: CD-DA (Red Book), CD-ROM (Modes 1 and 2 - Yellow Book), CD-ROM XA (Mode 2, Forms 1 and 2), CD-I (FMV), Photo CD (single and multi-session), Video CD, CD-Text, CD Extra; CD media: CD-R, CD-RW DVD formats: DVD-ROM, DVD-Video (with application support); DVD media: DVD+ RW, DVD+ R |
| Write Methods | Disc-at-once, track-at-once, incremental fixed and variable packet, random access write (DVD+RW only), sequential write (DVD +R, +RW) |
| Data Transfer Modes | ATA PIO mode 4—16.7-Mbps, ATA UltraDMA mode 2—33-Mbps (default) |
| Access Times (typical reads, including settling) | DVD-ROM Single Layer 140 ms Random CD-ROM Random 120 ms CD-ROM Full stroke 200 ms |
| Start-up Time (typical) | < 5 s |
| Stop Time (typical) | < 6 s |
| Write Buffer Size | 2 MB (minimum) |
| Audio Output | Line-Out 0.7 VRMS Signal-to-Noise Ratio 75 dB Channel Separation 60 dB |
| Configuration Jumper Block | Master, slave, and cable select modes |
| Operating Conditions | Temperature 32° to 122° F/0° to 50° C Humidity 10% to 70% (non-condensing) |

TechSpecs

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

TechSpecs

Broadcom Gigabit Ethernet Adapter

| | | |
|---|--|------------------------------|
| Network Interface | 10Base-T or 100Base-TX | |
| Expansion Bus Architecture | PCI 2.2 | |
| Network Transfer Rate | 10Base-T (Half-Duplex) | 10-Mb/s |
| | 10Base-T (Full-Duplex) | 20-Mb/s |
| | 100Base-TX (Half-Duplex) | 100-Mb/s |
| | 100Base-TX (Full-Duplex) | 200-Mb/s |
| | 1000Base-TX (Half-Duplex) | 1000-Mb/s |
| | 1000Base-TX (Full-Duplex) | 2000-Mb/s |
| Connectors | RJ-45 | |
| Standards Compliance | 10-Mb/s Ethernet | IEEE 802.3 |
| | 100-Mb/s Ethernet | IEEE 802.3u |
| | 1000-Mb/s Ethernet | IEEE 80 |
| I/O Address | Auto-configured | |
| Remote Wakeup | Yes | |
| Operating Temperature | 0° to 55° F/10° to 35° C | |
| Operating Humidity (non-condensing) | 85% at 131° F/55° C | |
| Operating Altitude | 10,000 ft/3,048 m | |
| Communication Processor | Intel 82559 | |
| OS Driver Support | Windows XP Pro Windows NT 4.0 | NDIS 3.0, 4.0 Compliant |
| | Windows 95, 98, 2000, | NDIS 3.0, 4.0, 5.0 Compliant |
| | Novell®NetWare®Server v. 3.x, 4.x and 5.0 | ODI Compliant |
| | SunSoft Solaris™ | Not supported |
| | SCO®UnixWare®, OpenDesktop, OpenServer® | Supported |

TechSpecs

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

NVIDIA Quadro NVS 200 display resolutions & refresh rates

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

TechSpecs

NVIDIA Quadro4 380 XGL Graphics Card

| | |
|---|---|
| Form Factor | ATX |
| Graphics Controller | NVIDIA NV18GL GPU |
| Bus Type | AGP 8x Version 3.0 compliant AGP 4x/2x Version 2.0 compliant |
| RAMDAC | Dual 350MHz integrated |
| Memory | 64MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage |
| Connectors | VGA DB-15 and DVI-I analog/digital monitor outputs, 4-pin mini DIN providing TV output |
| Dimensions | AGP full height ATX card. 4.25 x 6.875 in (10.795 x 17.463 cm) |
| Multi-monitor support | Dual monitor |
| Additional product features | 64 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines TV Output Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support for Windows 2000 and Windows XP ACPI Version 1.0b Power Management support (all modes) |
| AGP 8x Version 3.0 compliant and 2x/4x Version 2.0 compliant including | Sideband Addressing AGP Texturing (Execute Mode) Fast writes support |
| NV18GL GPU featuring: | 275 MHz engine clock rate 250 MHz memory clock rate 128-bit memory interface VGA controller Dual integrated display controllers supporting up to 1920x1440 @ 85Hz and 2048x1536 @ 75Hz on both displays 4 parallel pixel pipelines 2 parallel geometry engines nfiniteFX II programmable vertex shader technology and NVIDIA OpenGL extensions Full hardware support for NVIDIA Cg shader programming language |
| Supported graphics APIs | OpenGL 1.3 (and OpenGL 2.0 when available) ICD with immediate mode support for all OGL primitive types DirectX 8 and above |
| Available graphics drivers | HP-tested Windows 2000, HP-tested Windows XP, HP-tested Linux (1st Calendar Quarter 2003) HP qualified drivers may be preloaded or available from the HP support web site: http://www.hp.com/workstations/support |

TechSpecs

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

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

TechSpecs

| | |
|---|--|
| ATI FIREGL Z1-128p Graphics Card | <p>Form Factor ATX</p> <p>Graphics Controller ATI FGL 9700 GPU</p> <p>Bus Type AGP-Pro50 1x/2x/4x/8x Version 3.0 compliant</p> <p>RAMDAC Dual 400MHz / 30-bit</p> <p>Memory 256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage</p> <p>Connectors Dual DVI-I analog/digital monitor outputs</p> <p>Dimensions Single AGP/ATX card. 230.28mm x 107.96mm</p> <p>Multi-monitor support Dual Screen output for resolutions up to 2x2048x1536x32 bit</p> <p>Additional product features 256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 64-KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers 2D and 3D acceleration provided for 16-bit and 32-bit RGB modes Hardware cursor with full color alpha channel 16/32 bit Z buffer, 16/32 bit W-buffer, 8-bit stored alpha and 8-bit Stencil planes Bus mastering support for 2D/3D display lists and local memory vertex list execution Hardware lighting support for up to 8 lights Bilinear, Trilinear and Anisotropic texturing Cubic Environment and Perturbation Bump Mapping Projective Texture, 3D Texture and Video Texture support Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats Per pixel quad buffering on all screen resolutions VESA compliant Stereoscopic Interface on MiniDin Connector Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)</p> <p>AGP1x/2x/4x/8x Version 3.0 compliant including Sideband Addressing AGP Texturing (Execute Mode) AGP Read and AGP Write Support 8X Fast write support</p> <p>FGL™ 9700 GPU featuring: 2VGA controller supporting full standard feature set 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 of up to 20 GB per second</p> |
| Supported graphics APIs | OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8.1 |
| Available graphics drivers | Windows 2000 Windows XP Linux HP qualified drivers may be preloaded or available from the HP support web site: See: http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?prodTypeld=12454&prodCatId=296719&locale=en_US&taskId=135 |

TechSpecs

**ATI FIREGL Z1-128p
Graphics Card display,
resolutions & refresh rates**

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

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

**NVIDIA Quadro4 750
XGL Graphics Card**

| | |
|--|---|
| Form Factor | ATX |
| Graphics Controller | Integrated Quadro4 2D/3D 128-bit graphics processor unit |
| Bus Type | AGP4x |
| RAMDAC | 350 MHz dual |
| Memory | 128 MB 275 MHz 4Mx32DDR 5ns |
| Connectors | 1 HD15 (VGA), 1 DVI-I |
| Dimensions (LxWxH) | 9.75 x 6.50 x 2.00 in/24.77 x 16.51 x 5.08 cm |
| Multi-monitor support | Dual monitors supported through NVIDIA nView with 2048 x 1536 resolution per display |
| Additional product features | <ul style="list-style-type: none"> Features hardware overlay planes and hardware antialiased lines Offers two-sided lighting Full-scene antialiasing Provides second-generation occlusion culling Delivers 2048 x 1536 resolution per display OpenGL quad-buffered stereo |
| XGL GPU Special Features: | <ul style="list-style-type: none"> Integrated Transformation & Lighting (T&L) Fully programmable nfiniteFX II Graphics Engine |
| Lightspeed Memory Architecture II | <ul style="list-style-type: none"> Supports 128 MB of DDR unified graphics memory Uses memory at peak efficiency by dynamically allocating it among graphics subsystems, increasing performance |
| Supported graphics APIs | OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8 |
| Available graphics drivers | <ul style="list-style-type: none"> HP-tested Windows XP HP-tested Windows 2000 HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support |

TechSpecs

NVIDIA Quadro4 750 XGL display resolutions & refresh rates

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

NVIDIA Quadro4 980 XGL Graphics Card

| | |
|--|--|
| Form Factor | ATX |
| Graphics Controller | NVIDIA NV25GL GPU |
| Bus Type | AGP 8X |
| RAMDAC | Dual 350MHz integrated |
| Memory | 128MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage |
| Connectors | 2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output |
| Dimensions | AGP full height ATX card. 4.25 x 8.55 in (10.795 x 21.59 cm) |
| Multi-monitor support | Dual integrated display controllers supporting up to 1920x1440 @ 85Hz on both displays |
| Additional product features | 128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines Quad-buffered Stereo Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Frame synchronization Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes) |
| AGP1x/2x/4x Version 2.0 compliant including | Sideband Addressing AGP Texturing (Execute Mode) Fast writes support |
| NV25GL GPU featuring: | 300 MHz engine clock rate 325 MHz memory clock rate 128-bit memory interface VGA controller 4 parallel pixel pipelines 2 parallel geometry engines nfiniteFX II programmable vertex and pixel shader technology |
| Supported graphics APIs | OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8 |
| Available graphics drivers | HP-tested Windows 2000 HP-tested Windows XP HP-tested Linux HP qualified drivers may be preloaded or available from the HP support web site: http://www.hp.com/workstations/support |

TechSpecs

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

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

TechSpecs

NVIDIA Quadro4 900 XGL Graphics Card

| | |
|--|--|
| Form Factor | ATX |
| Graphics Controller | NVIDIA NV25GL GPU |
| Bus Type | AGP 1x/2x/4x Version 2.0 compliant |
| RAMDAC | Dual 350MHz integrated |
| Memory | 128MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage |
| Connectors | 2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output |
| Dimensions | AGP full height ATX card. 4.25 x 8.5 in/10.80 x 21.6 cm |
| Multi-monitor support | Dual integrated display controllers supporting up to 1920x1440 @ 85Hz on both displays |
| Additional product features | 128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines Quad-buffered Stereo Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Frame synchronization Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes) |
| AGP1x/2x/4x Version 2.0 compliant including | Sideband Addressing AGP Texturing (Execute Mode) Fast writes support |
| NV25GL GPU featuring: | 300 MHz engine clock rate 325 MHz memory clock rate 128-bit memory interface VGA controller 4 parallel pixel pipelines 2 parallel geometry engines nfiniteFX II programmable vertex and pixel shader technology |
| Supported graphics APIs | OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8 |
| Available graphics drivers | HP-tested Windows XP HP-tested Windows 2000 HP-tested Linux HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support |

TechSpecs

**NVIDIA Quadro4 900 XGL
Graphics Card display
resolutions & refresh rates**

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

**ATI FIR GL X1-256p
Graphics Card**

| | |
|------------------------------------|--|
| Form Factor | ATX |
| Graphics Controller | ATI FGL 9700 GPU |
| Bus Type | AGP-Pro50 1x/2x/4x/8x Version 3.0 compliant |
| RAMDAC | Dual 400MHz / 30-bit |
| Memory | 256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage |
| Connectors | Dual DVI-I analog/digital monitor outputs |
| Dimensions | Single AGP/ATX card. 230.28mm x 107.96mm |
| Multi-monitor support | Dual Screen output for resolutions up to 2x2048x1536x32 bit |
| Additional product features | 256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 64 KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers 2D and 3D acceleration provided for 16-bit and 32-bit RGB? modes Hardware cursor with full color alpha channel 16/32 bit Z buffer, 16/32 bit W-buffer, 8-bit stored alpha and 8-bit Stencil planes Bus mastering support for 2D/3D display lists and local memory vertex list execution Hardware lighting support for up to 8 lights Bilinear, Trilinear and Anisotropic texturing Cubic Environment and Perturbation Bump Mapping Projective Texture, 3D Texture and Video Texture support Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats |



Per pixel quad buffering on all screen resolutions

VESA compliant Stereoscopic Interface on MiniDin Connector
 Compliant with Microsoft/Intel PC2001 Workstation requirements
 Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
 DDC2B+ Monitor support on all OS platforms
 ACPI Version 1.0b Power Management support (all modes)

AGP1x/2x/4x/8x Version Sideband Addressing
3.0 compliant including: AGP Texturing (Execute Mode)
 AGP Read and AGP Write Support
 8X Fast write support

FGL 9700 GPU featuring: VGA controller supporting full standard feature set
 2D Engine with 128-bit datapath processing multiple pixels per clock

PIXEL TAPESTRY III, 3D rendering engine utilizing 2 parallel pipelines with two texture blending units each capable, of handling up to 8 texels in a single pass, delivering 2.4 Gigatexels/s fill rate

CHARISMA ENGINE III, geometry unit utilizing 4 vertex processing engines, capable of executing two instructions per clock cycle each, thus yielding up to 200 million transformed, clipped and lit triangles per second.

VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/decode

Dual independent display controllers with 4K x 4K address space each

256-bit external frame buffer interface providing memory bandwidth of up to 20 GB per second

Supported graphics APIs OpenGL 1.3 ICD with immediate mode support for all OGL primitive types
 DirectX 8.1

Available graphics drivers Windows 2000
 Windows XP
 Linux
 HP qualified drivers may be preloaded or available from the HP support web site:
 See: http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?prodTypeId=12454&prodCatId=296719&locale=en_US&taskId=135

ATI FIREGL X1-256p
Graphics Card display, resolutions & refresh rates

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

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

| | | |
|-----------------------------|---|---|
| NVIDIA Quadro FX2000 | Form Factor | ATX |
| | Graphics Controller | NVIDIA NV30GL GPU |
| | Bus Type | AGP 8X Version 3.0 compliant |
| | RAMDAC | Dual 400MHz integrated |
| | Memory | 128MB DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage |
| | Connectors | 2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output |
| | Dimensions | AGP full height ATX card. 4.25 x 6.875 in (10.795 x 17.463 cm) |
| | Multi-monitor support | Dual integrated display controllers supporting up to 2048x1536 @ 85Hz on both displays |
| | Additional product features | 128 MB DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines Quad-buffered Stereo Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Dual Link DVI on one output enabling driving digital displays up to 2048x1536 Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes) |
| | AGP8xVersion 3.0 compliant including | Sideband Addressing AGP Texturing (Execute Mode) Fast write support |
| | NV30GL GPU featuring | 400 MHz engine clock rate 400 MHz memory clock rate 128-bit memory interface VGA controller 8 parallel pixel pipelines 3 parallel geometry engines nfiniteFX II programmable vertex and pixel shader technology |
| | Supported graphics APIs | OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8,9 |
| | Available graphics drivers | Windows 2000 Windows XP HP-tested Linux HP qualified drivers may be preloaded or available from the HP support Web site: See: http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?prodTypeId=12454&prodCatId=296719&locale=en_US&taskId=135 See: http://www.hp.com/workstations/support NOTE: These Web sites are available in English only. |

TechSpecs

NVIDIA Quadro FX2000 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 |

IT & Broadcast Rack Kit

| | |
|----------------------------|--|
| Dimensions (H x W) | 7.75 (5U) x 19 in (22.23 x 48.26 cm) |
| Rack Mounting Depth | Adjustable: Minimum Mounting Depth: 19 inch (48.26 cm) Maximum Mounting Depth: 31 inch (79.65 cm) |
| Weight Capacity | 300 lb (136 kg) |
| Material | Steel (graphite color) |
| Rack Mounting kit | 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) |

HP L1825 Flat Panel Monitor (Carbon/Silver)

| | |
|-----------------------------------|---|
| Display Type | TFT large viewing angle |
| Viewable Image Size | 45.9 cm/18.1 in maximum viewable |
| Screen Opening (W x H) | 14.2 x 11.4 in/36.2 x 28.9 cm |
| Viewing Angle | 160 degrees horizontal/160 degrees vertical (10:1 minimum contrast ratio) |
| Pixel Pitch | 0.281 mm |
| Pixel Clock Speed | 135 MHz |
| Brightness | 250 nits (cd/m ²) |
| Contrast Ratio | 350:1 (typical) |
| Response Rate | 30 ms (typical rise + fall) |
| Horizontal Frequency (kHz) | 30 to 82 kHz |
| Vertical Frequency (Hz) | 56 to 75 Hz |
| Color Depth Support | 16.7 million colors |
| Graphics Controller | Genesis gm5020 |

TechSpecs

| | | |
|--|--|----------------------------|
| Factory Preset Modes | 15 | |
| Graphic Preset Modes (non-interlaced) | 640 x 480 @ 60 Hz, 72 Hz, 75 Hz 800 x 600 @ 56 Hz, 60 Hz, 75Hz 1024 x 768 @ 60 Hz, 75 Hz 1280 x 1024 @ 60 Hz, 75 Hz | |
| Mac Compatible Modes (adapter required) | 832 x 624 @ 75 Hz 1152 x 870 @75 Hz | |
| Text Mode | 720 x 400 @ 70 Hz | |
| VGA Mode | 640 x 480 @ 60 Hz, 72 Hz | |
| User-Programmable Modes | 15 | |
| Anti-Glare/Anti-Static | Yes/Yes | |
| Asset Control | Yes (accessible on HP desktops featuring Intelligent Manageability) | |
| Plug and Play | Yes (supports VESA DDC2B; PC2001 compliant) | |
| Protective Panel | No | |
| Kensington Lock-ready | Yes | |
| Accessories Included | VGA cable, DVI-D cable | |
| VESA Mounting | 100 mm x 100 mm screw-mounting option; pedestal is attached | |
| VESA External Mounting | Yes (standard 4-hole pattern, 100 mm) | |
| Detachable Base | Yes | |
| Tilt | Yes (-5° to + 35°) | |
| Swivel | Yes (-35° to + 35°) | |
| Height Adjustable | Yes (130 mm adjustment range) | |
| Portrait Mode Supported | Yes | |
| Touchscreen Option | No | |
| Fail Safe Mode | Yes | |
| Icon Based On-Screen Controls | Yes | |
| User Controls | Brightness, contrast | Yes |
| | Positioning | Yes |
| | Color temperature | Yes (6500k, 9300k, User) |
| | Individual color control | Yes |
| | Serial number display | Yes |
| | Full screen resolutions | Yes (640 x 480, 800 x 600) |
| | Clock | Yes |
| | Clock phase | Yes |
| | Monitor management | No |
| | Recall | No |
| | Audio recall | No |
| | Input selection | Yes |
| | Factory reset | Yes |
| Language Selection | English | Yes |
| | Spanish | Yes |
| | French | Yes |
| | German | Yes |
| | Simplified Chinese | Yes |
| | Italian | Yes |
| Agency Approvals/ Certifications | Australian ACA Approval | Yes |
| | Canadian Requirements/CSA | Yes |
| | CE Marking | Yes |

| | | |
|---|---|---|
| | China CCIB/CCEE Approval | Yes |
| | CISPR Requirements | Yes |
| | Eastern European Approvals | Yes |
| | Energy Star Compliant | Yes |
| | FCC Approval | Yes |
| | German Ergonomic (TUV and GS Mark) | Yes |
| | ISO 9241-3,7,8 VDT Guidelines | Yes |
| | ISO 13406-2 Compliant (Pixel Defect Guidelines) | Yes |
| | Mexican NOM Approval | Yes |
| | MIC Requirements (New Zealand) | Yes |
| | MPR-II Compliant | Yes |
| | Nordic Approvals (Nemko, Fimko, Demko, Semko) | Yes |
| | PC2001 Compliant | Yes |
| | PC99 Certified | Yes |
| | S. Korean MIC Approval | Yes |
| | Taiwan BSMI Approval | Yes |
| | TCO 99 (emissions, ergonomics, environment) | Yes |
| | TUV-Ergo | Yes |
| | UL Listed | Yes |
| | VCCI Approvals | Yes |
| | Windows Certification | Microsoft Windows 98, Windows 2000, and Windows XP |
| Input Impedance | | 75 ohms \pm 10% |
| Input Signal | | Two connectors: one 15-pin mini D-sub analog VGA; and one DVI-I (VGA analog or digital) |
| Sync Input | | Separate sync (HSYNC/VSYNC); composite sync, Sync on Green |
| Power Supply ALS | | Auto-ranging, 90 to 264 VAC; internal power supply, 60 Hz |
| Power Rating | Maximum Mode | < 60 W |
| | Power Saving Mode | < 5 W |
| | Off Mode | < 5 W |
| Dimensions (H x W x D) | With stand - min height | 14.8 x 15.8 x 8.2 in/37.6 x 40.2 x 20.8 cm |
| | With stand - max height | 19.9 x 15.8 x 8.2 in/50.6 x 40.2 x 20.8 cm |
| | Without stand | 13.5 x 15.8 x 2.9 in/34.2 x 40.2 x 7.3 cm |
| Approximate Weight | With height-adjustable stand | 22.9 lb/10.4 kg |
| | Without stand | 13.6 lb/6.2 kg |
| Temperature | Operating | 32° to 95° F/0° to 35° C |
| | Non-operating | -4° to 140° F/-20° to 60° C |
| Humidity | Operating | 20% to 80% |
| | Non-operating | 8% to 85% |
| Warranty | | Limited three years parts, labor, and on-site service, including backlight. Availability varies by region. Consult HP Customer Service for details. |
| Graphic Controller Compatibility | | Compatible with "VESA Video Signal Standard (VSI) Compliant" video cards. |

NOTE: Features are subject to change without notice.

TechSpecs

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|--|---|--|---|
| HP L1925 Flat Panel Monitor (Carbon/Silver) | Panel | Type | Thin film transistor (TFT) |
| | | Viewable Image Area (diagonal) | 19 in (48.25 cm) maximum viewable |
| | | Screen Opening (WxH) | 14.9 x 11.9 in (37.8 x 30.3 cm) |
| | | Viewing Angle (typical) | 170 degrees horizontal/170 degrees vertical (10:1 minimum contrast ratio) |
| | | Brightness (typical) | Up to 250 nits (cd/m ²) |
| | | Contrast Ratio (typical) | Up to 500:1 (typical) |
| | | Response Rate (typical) | <20 ms (typical rise + fall) |
| | | Pixel Pitch | 0.294 mm |
| | | Color Depth Support | 16.7 million colors |
| | Video Input | Plug and Play | Yes (supports VESA DDC2B; PC2001 compliant) |
| | | Input Signal | Two connectors: one 15-pin mini D-sub analog VGA; and one DVI-I (VGA analog or digital) |
| | | Input Impedance | 75 ohms ± 2% |
| | | Sync Input | Separate sync (HSYNC/VSYNC); composite sync, Sync on Green |
| | | Video Cable | VGA and DVI-D |
| | | Video Cable Length | 78 in (2.0 m) |
| | Signal Interface/ Performance | Horizontal Frequency | 30 to 82 kHz |
| | | Vertical Frequency | 56 to 75 Hz |
| | | Graphics Controller | Pixelworks 131 |
| | | Native Resolution | 1280x1024@75Hz analog 1280x 1024@60Hz digital |
| | | Maximum Resolution (Analog) | 1280x1024@75Hz analog |
| | | Maximum Resolution (Digital) | 1280x1024@75Hz analog |
| | On Screen Display (OSD) Controls | Preset VESA Graphic Modes (non-interlaced) | 640 x 480 @ 60 Hz, 72 Hz, 75 Hz 800 x 600 @ 60 Hz, 72 Hz, 75 Hz 1024 x 768 @ 60 Hz, 75 Hz 1280 x 1024 @ 60 Hz, 75 Hz |
| | | Preset MAC Mode | 832 x 624 @ 75 Hz 1152 x 870 @75 Hz |
| | | Preset VGA Mode | 640 x 480 @ 60 Hz, 72 Hz |
| | | Preset SUN Mode | 1152x900@66Hz |
| | | Fail Safe Mode | Yes (limits out of range signal messages) |
| | | Maximum Pixel Clock Speed | 140 MHz |
| | | User Programmable Modes | Yes, 10 |
| | | Anti-Glare | Yes |
| | | Anti-Static | Yes |
| | | AssetControl | Yes (accessible on HP/Compaq desktops featuring Intelligent Manageability) |
| | | Default Color Temperature | Yes (6500k, 9300k, Custom User) |
| | | Buttons or Switches | Power on/off; 4-button OSD; second level OSD buttons include auto adjust and dual-input switch |
| | | Languages | English, Spanish, French, German, Dutch, Italian |
| | | User Controls | Size and Positioning |

| | | | |
|----------------------|------------------------------------|--|--|
| | | Contrast | |
| | | Brightness | |
| | | Clock, Clock Phase | |
| | | Selectable Color Temperature | |
| | | Input Selection | |
| | | Factory Reset | |
| | | Individual Color Contrast | |
| | | Full-screen Resolution | |
| Power | Power Supply | Auto-ranging, 90 to 265 VAC; internal power supply, | 47.5-63 Hz |
| | Input Power | 100 ~ 240 VAC | |
| | Nominal Current | 1.5 A maximum | |
| | Frequency | 50 ~ 60 Hz | |
| | Average | 33 watts when displaying standard office software | |
| | Maximum | < 40 watts | |
| | Power Saving | < 2 watts | |
| | Off Mode | < 1 watts (switch off) | |
| | Power Cable Length | 70 in (1.8 m); non-captive | |
| Mechanical | Dimensions (H x W x D) | Unpacked w/ stand minimum height | 14.8 x 16.4 x 8.2 in (39.8 x 41.6 x 20.8 cm) |
| | | Unpacked w/ stand maximum height | 20 x 16.4 x 8.2 in (50.8 x 41.6 x 20.8 cm) |
| | | Base Area (Footprint d x w) | 8.2 x 12.2 in (20.8 x 30.9 cm) |
| | | Panel only (w/o stand) (h x w x d) | 13.5 x 16.4 x 2.6 in (34.2 x 41.6 x 6.6 cm) |
| | | Packaged | 26.0 x 26.0 x 26.0 in (66.0 x 66.0 x 66.0 cm) |
| | Weight | Unpacked w/ stand | 17.6 lb (8 kg) |
| | | Unpacked w/o stand | 12 lb (5.5 kg) |
| | | Packaged | 23.5 l (10.7 kg) |
| | Tilt Range | -5 degrees to +20 degrees | |
| | Swivel Range | ± 45 degrees horizontal swivel | |
| | Height Adjustable | Yes (4.3 in/110 mm adjustment range) | |
| | Pivot Rotation | Yes, 90 degrees | |
| | Base | Ships attached and is removable after installation | |
| Environmental | Temperature – Operating | 41° to 95° F (5° to 35° C) | |
| | Temperature – Non-operating | -4° to 140° F (-20° to 60° C) | |
| | Humidity – Operating | 20% to 80% | |
| | Humidity – Non-operating | 5% to 95% | |
| | Altitude – Operating | 0 to 13,000 ft (0 to 4,000 m) | |
| | Altitude – Non-operating | 0 to 40,000 ft (0 to 12,192 m) | |
| Options | PC Comm Station | Communication/audio hub that includes two stereo speakers (8 PMPO each), integrated microphone/dual function headset (phone and PC support), and USB port. Optional, part number 304251-008 (US) or P8814A (EMEA). | |
| Other | Accessories Included | VGA cable, DVI-D cable, user CD-ROM with Portrait software | |
| | User Guide Languages | English | |
| | Warranty Languages | English | |
| | Color | Carbon/Silver | |

| | |
|-------------------------------------|---|
| VESA Mounting | Yes (swing arm/ wall mount not included; base is shipped attached and must be removed for mounting options) |
| VESA External Mounting | Yes (Standard 4 hole pattern, 100 mm) |
| Kensington Lock-ready | Yes |
| Certification and Compliance | Australian ACA Approval, Canadian Requirements/CSA, CE Marking, China CCIB/CCEE Approval, CISPR Requirements, Eastern European Approvals, Energy Star Compliant, FCC Approval, German Ergonomic (TUV and GS Mark), ISO 9241-3,7,8 VDT Guidelines, ISO 13406-2 Compliant (Pixel Defect Guidelines), Mexican NOM Approval, MIC Requirements (New Zealand), MPR-II Compliant, Nordic Approvals (Nemko, Fimko, Demko, Semko), PC2001 Compliant, PC99 Certified, S. Korean MIC Approval, Taiwan BSMI Approval, TCO 03 (emissions, ergonomics, environment), TUV-Ergo, UL Listed, VCCI Approvals, Windows Certification |
| Compatibility | VESA Video Signal Standard (VSI) Compliant video cards have been tested and proven compatible for use with the HP Flat Panel Monitor L1925. The HP L1925 has been tested for use with Compaq Evo PCs and Thin Clients and Compaq D315 Business PCs. NOTE: Features are subject to change without notice. |
| Service and Warranty | Limited three-year parts and repair labor, service provider labor, and on-site service. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada). |

HP L2025 Flat Panel Monitor (Carbon/Silver)

| | |
|--|---|
| Display Type | TFT large viewing angle |
| Viewable Image Size | 20.1 in (51 cm) maximum viewable |
| Screen Opening (WxH) | 16.2 x 22 in (41.1 x 30.9 cm) |
| Viewing Angle | 170 degrees horizontal/170 degrees vertical (10:1 minimum contrast ratio) |
| Pixel Pitch | 0.255 mm |
| Pixel Clock Speed | 202 MHz |
| Brightness | 250 nits (cd/m ²) typical |
| Contrast Ratio | 350:1 typical |
| Response Rate | 25 ms typical (rise + fall) |
| Color Depth Support | 16.7 million colors |
| Horizontal Frequency (kHz) | 30 to 94 kHz (analog); 30 to 92 KHz (digital) |
| Vertical Frequency (Hz) | 56 to 85 Hz |
| Graphics Controller | Pixelworks PW171 |
| Factory Preset Modes | 18 |
| Graphic Preset Modes (non-interlaced) | 1600 x 1200 @ 60 Hz, 75 Hz 1280 x 1024 @ 60 Hz, 75Hz, 85 Hz 1280 x 960 @ 60 Hz 1152 x 900 @ 66 Hz 1024 x 768 @ 60 Hz, 75 Hz, 85 Hz 800 x 600 @ 60 Hz, 85Hz 640 x 480 @ 60 Hz, 75 Hz |
| Mac Compatible Modes (adapter required) | 832 x 624 @ 75 Hz 1152 x 870 @ 75 Hz |
| Text Mode | 720 x 400 @ 70 Hz |
| VGA Mode | 640 x 480 @ 60 Hz |
| User-Programmable Modes | 18 |
| Anti-Glare/Anti-Static | Yes/Yes |
| Asset Control | Yes (accessible on HP desktops featuring Intelligent Manageability) |
| Plug and Play | Yes |
| Kensington Lock-ready | Yes |

TechSpecs

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|---|---|--|-----|
| Accessories Included | VGA cable, DVI-D cable | | |
| Protective Panel | No | | |
| VESA Mounting | 100 mm x 100 mm screw-mounting option; pedestal is attached | | |
| VESA External Mounting | Yes (Standard 4 hole pattern, 100 mm) | | |
| Portrait Mode Supported | No | | |
| Touchscreen Option | No | | |
| Detachable Base | Yes | | |
| Tilt | Yes (-5° to + 35°) | | |
| Swivel | Yes (-35° to + 35°) | | |
| Height Adjustable | Yes (130 mm adjustment range) | | |
| Fail Safe Mode | Yes | | |
| Icon Based On-Screen Controls | Yes | | |
| User Controls | Brightness, contrast | Yes | |
| | Positioning | Yes | |
| | Color temperature | Yes (6500k, 9300k, User) | |
| | Individual color control | Yes | |
| | Serial number display | Yes | |
| | Full screen resolutions | Yes (640 x 480, 800 x 600) | |
| | Clock | Yes | |
| | Clock phase | Yes | |
| | Monitor management | No | |
| | Recall | No | |
| | Audio recall | No | |
| | Video PIP | Yes (size and position) | |
| | Input selection | Yes (includes separate direct access key for dedicated swap between inputs 1 and 2) | |
| | Language Selection | Factory reset | Yes |
| | | English | Yes |
| | | Spanish | Yes |
| French | | Yes | |
| German | | Yes | |
| Simplified Chinese | | Yes | |
| Agency Approvals/ Certifications | Italian | Yes | |
| | Australian ACA Approval | Yes | |
| | Canadian Requirements/CSA | Yes | |
| | CE Marking | Yes | |
| | China CCIB/CCEE Approval | Yes | |
| | CISPR Requirements | Yes | |
| | Eastern European Approvals | Yes | |
| | Energy Star Compliant | Yes | |
| | FCC Approval | Yes | |
| | German Ergonomic (TUV and GS Mark) | Yes | |
| | ISO 9241-3,7,8 VDT Guidelines | Yes | |
| | ISO 13406-2 Compliant (Pixel Defect Guidelines) | Yes | |
| | Mexican NOM Approval | Yes | |

| | | |
|---------------------------|---|--|
| | MIC Requirements (New Zealand) | Yes |
| | MPR-II Compliant | Yes |
| | Nordic Approvals (Nemko, Fimko, Demko, Semko) | Yes |
| | PC2001 Compliant | Yes |
| | PC99 Certified | Yes |
| | S. Korean MIC Approval | Yes |
| | Taiwan BSMI Approval | Yes |
| | TCO 99 (emissions, ergonomics, environment) | Yes |
| | TUV-Ergo | Yes |
| | UL Listed | Yes |
| | VCCI Approvals | Yes |
| | Windows Certification | Microsoft Windows 98, Windows 2000, and Windows XP |
| Input Impedance | | 75 ohms \pm 10% |
| Input Signal | | Four connectors, including one 15-pin mini D-sub VGA; one DVI-I (VGA analog and digital input), one composite video, and one s-video |
| Sync Input | | Separate sync (HSYNC/VSYNC); composite sync, Sync on Green |
| Power Supply ALS | | Auto-Ranging, 90 to 264 VAC; internal power supply, 60 Hz |
| Power Rating | Maximum Mode | < 70 W |
| | Power Saving Mode | < 5 W |
| | Off Mode | < 5 W |
| Dimensions (HxWxD) | With stand - min height | 16.3 x 19.2 x 8.2 in (41.4 x 48.8 x 20.8 cm) |
| | With stand - max height | 21.4 x 19.2 x 8.2 in (54.4 x 48.8 x 20.8 cm) |
| | Without stand | 16.1 x 19.2 x 3.0 in (40.8 x 48.8 x 7.6 cm) |
| Approximate Weight | With height-adjustable stand | 26.4 lb (12 kg) |
| | Without stand | 17.2 lb (7.8 kg) |
| Temperature | Operating | 46° to 95° F (10° to 35° C) |
| | Non-operating | 6° to 140° F (-10° to 60° C) |
| Humidity | Operating | 20% to 80% |
| | Non-operating | 5% to 85% |
| Warranty | | Three-year limited warranty parts, including backlight and on-site labor or 48 hour direct unit replacement. Certain restrictions apply. Some terms vary depending on sales region. Consult HP Customer Service for details. |

Compatibility

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

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

NOTE: Features are subject to change without notice.

HP p930 CRT Monitor (Carbon/Silver)

| | |
|---------------------------------------|--|
| Tube Type | Diamondtron Natural Flat (NF) aperture grille tube; anti-reflection, anti-static |
| Picture Tube Size (diagonal) | 19 in (48.26 cm) |
| Viewable Image Area (diagonal) | 18 in (45.72 cm) |
| Aperture Grille Pitch | 0.24 mm |
| Horizontal Frequency (kHz) | 30 to 110 kHz |
| Vertical Frequency (Hz) | 50 to 160 Hz |

| | | |
|--|---|---|
| Maximum Resolution | 1920 x 1440 @ 60 Hz | |
| Preferred Flicker Free Resolution | 1280 x 1024 @ 85 Hz | |
| Preset Graphic Modes (non-interlaced) | 1600 x 1200 @ 85 Hz and 75 Hz 1280 x 1024 @ 85 Hz and 75 Hz 1024 x 768 @ 85 Hz 800 x 600 @ 85 Hz 640 x 480 @ 85 Hz and 60 Hz 720 x 400 @ 70 Hz | |
| User-Modes | Yes, 8 modes | |
| Anti-Glare/Anti-Static | Yes/Yes | |
| Asset Control | Yes | |
| Plug and Play | VESA DDC2B; PC2001 compliant | |
| Front Panel User Controls | Power on/off; menu button; 4 OSD adjustment buttons; OSD exit button, information button | |
| On-Screen User Controls | Brightness, contrast | Yes |
| | Size and Positioning | Yes |
| | Pincushion (barrel) | Yes |
| | Trapezoid | Yes |
| | Moiré Correction | Yes |
| | Tilt (rotation) | Yes |
| | Selectable Color Temperature | Yes |
| | Factory Reset/Recall | Yes |
| | Orthogonality | Yes |
| | Current Display Mode | Yes |
| | Degauss | Yes |
| | Convergence | Yes |
| Approvals/Certifications | UL/CSA/CUL Approval | Yes |
| | ISO9241-3, -7, -8 VDT Guidelines Approval | Yes |
| | MPR-II Compliant | Yes |
| | TCO '99 | Yes |
| | FCC Approval | Yes |
| | Microsoft WHQL Certified | Yes |
| | Energy Star Compliant | Yes |
| | CE Compliant | Yes |
| Signal Cable | Attached 15-pin D-sub connector, 5.9 ft (1.8 m) | |
| Maximum Pixel Clock Speed | 290 MHz | |
| Power Supply | Universal; 100–240 V (auto-ranging), 50–60 Hz | |
| Maximum Power Rating | = 120 watts | |
| Low Power Sleep Mode | < 3 watts | |
| Off Mode | 0 watts | |
| Dimensions (HxWxD) | Unpacked | 18.8 x 18.5 x 18.5 in (47.6 x 46.9 x 46.9 cm) |
| | Packaged | 22.0 x 22.3 x 22.8 in (55.9 x 56.5 x 57.8 cm) |
| Weight | Unpacked | 55 lb (24.9 kg) |
| | Packaged | 61 lb (27.7 kg) |
| Tilt/Swivel Base | -5 to + 10 degrees vertical tilt; ± 45 degrees horizontal swivel | |
| Operating Temperature | 50° to 95° F (10° to 35° C) non-condensing | |
| Operating Humidity | 20% to 80% non-condensing | |

TechSpecs

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| Warranty | Limited three-year parts and repair labor, three-year service provider labor, and three-year on-site service warranty. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada). |
|-----------------|---|

**HP p1130 CRT Monitor
(Carbon/Silver)**

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

TechSpecs

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|------------------------------|---|---|
| Dual Input | Yes, two 15-pin D-sub connections | |
| Signal Cable | Detachable 15-pin D-sub mini connector | |
| Power Supply | Universal; 100–240 V (auto-ranging), 50–60 Hz | |
| Maximum Power Rating | 135 watts | |
| Low Power Sleep Mode | < 3 watts | |
| Off Mode | 0 watts | |
| Dimensions (HxWxD) | Unpacked | 19.7 x 19.6 x 19.3 in (50.2 x 49.7 x 49.0 cm) |
| | Packaged | 26.0 x 26.0 x 26.0 in (66.0 x 66.0 x 66.0 cm) |
| Weight | Unpacked | 67.2 lb (30.5 kg) |
| | Packaged | 72.5 lb (32.9 kg) |
| Tilt/Swivel Base | -5 to + 15 degrees vertical tilt; ± 45 degrees horizontal swivel | |
| Operating Temperature | Non-condensing | 50° to 104° F (10° to 40° C) |
| Operating Humidity | Non-condensing | 10% to 80% |
| Altitude | Operating | 0 to 13,000 ft (0 to 4,000 m) |
| | Non-Operating | 0 to 50,000 ft (0 to 15,250 m) |
| Warranty | Limited three-year parts and repair labor, three-year service provider labor, and three-year on-site service warranty. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada). | |

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