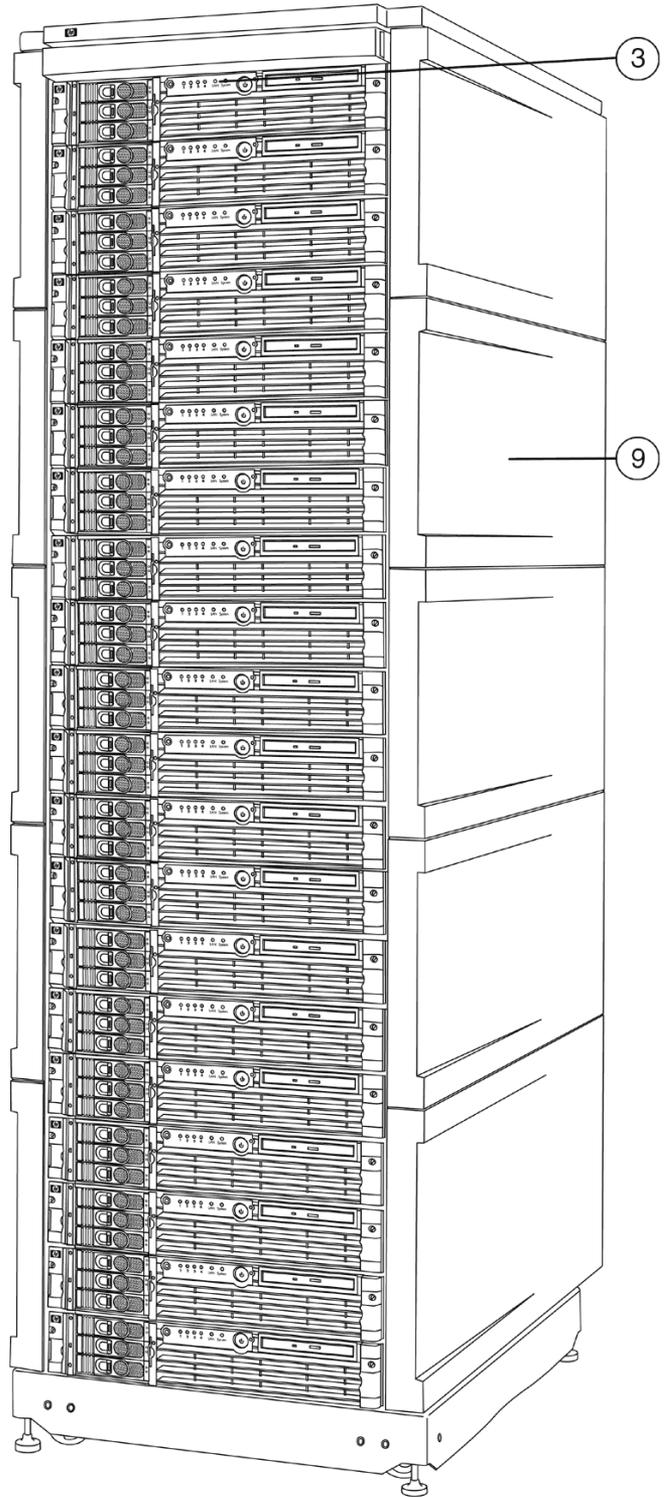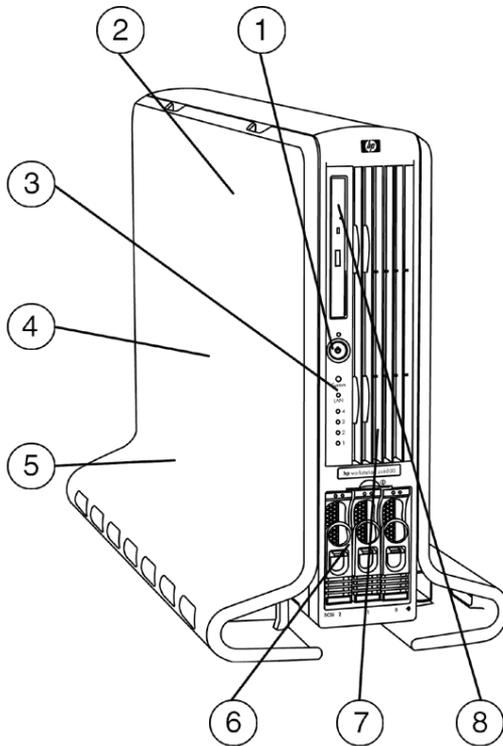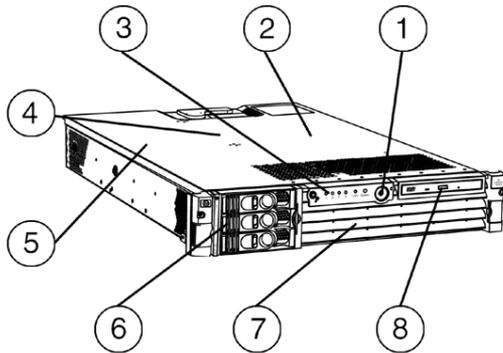## Overview

1. On/Off Button
2. Processor(s)
3. Status/diagnostic LEDs
4. Memory DIMMs
5. Expansion card cage
6. Hard disk drives
7. Power supply
8. Optical drive
9. 20 systems in a 2-meter rack

QuickSpecs

Overview

At A Glance

- Up to two Intel® Itanium 2 processors,
    - 1.3GHz or 1.5GHz
    - Up to 6 MB L3 onboard cache
    - HP zx1 chipset with 400 MHz system bus
- Support for three enterprise-class operating systems:
  HP-UX 11i v2.0
  Red Hat Linux Advanced Workstation 2.1
  HP Linux Installation Kit
- ECC PC2100 DDR-266 memory, expandable to 24 GB
- Ultra320 SCSI hard drives, with up to 438 GB of internal storage
- Choice of leadership graphics:
  ATI RADEON 7000
  ATI FireGL Z1-128p
  NVIDIA Quadro4 980 XGL
  ATI FireGL X1-256p
- Integrated Ethernet adapters: Intel 82550C (10/100 Mbps) and Broadcom 5701 (10/100/1000 Mbps)
- AGP 4X Pro50 graphics interface
- Three available PCI slots
- Four external bays (one slimline and three hot-pluggable)
- DVD-ROM Slimline or DVD-ROM/CD-RW Combo Drive
- Full Independent Software Vendor (ISV) certification and support for leading technical applications
- Protected by HP Services, including a one-year limited warranty. For details, consult the Product Information Centre at 1-888-882-6672.

QuickSpecs

Standard Features

Processor	Up to two Intel Itanium 2 processors – 1.3 GHz, or 1.5 GHz (400 MHz system bus)	
Operating System	HP-UX 11i v2.0 Red Hat Linux Advanced Workstation 2.1 HP Linux Installation Kit	
Cache Memory	3 MB L3 on-chip cache (1.3 GHz processor) 6 MB L3 on-chip cache (1.5 GHz processor)	
Memory	Maximum of 24 GB ECC PC2100 DDR-266 memory (12 DIMMs)	
Network Controller	Integrated Intel 82550C Wake-on-LAN 10/100 Mbps Ethernet Network Interface Broadcom 5701 10/100/1000 Mbps Ethernet Network Interface	
Expansion Slots	I/O (Total) PCI - 32-bit/33 MHz AGP 4X Pro 50	Four available slots 3 full-length 64-bit/133 MHz PCI-X 1 slot – 32-bit/66 MHz 1.5V 1.06 GB/s
Expansion Bays	(Total/Available) External	4 total/2 available Three hot-pluggable 3.5 inch bays One slimline 5.25 inch bay
Storage	Removable Media Hard Drive	DVD+RW Slimline, DVD-ROM Slimline, or DVD-ROM/CD-RW Slimline Combo Drive 36 GB or 146 GB Ultra320 SCSI (10K rpm) 36 GB or 73 GB Ultra320 SCSI (15K rpm)
Interfaces	USB 2.0 (1.1 compatible) Serial Ultra320 SCSI Network interface Microphone Jack Line-In Jack Line-Out Jack	Four (2 front, 2 rear) Two 9-pin DIN connectors (rear) Internal and external (rear) connectors Two RJ-45 connectors (rear) 1 (front) 1 (rear) 1 (rear)
Graphics *Choose from:*	ATI RADEON 7000 ATI FireGL Z1-128p (2 slots) NVIDIA Quadro4 980 XGL ATI FireGL X1-256p (2 slots)	
Audio	AC97/16-bit stereo full-duplex	

Standard Features

Remote Management	Baseboard management controller (integrated) allows power and reset management, health management, event logging and reporting, hardware and data protection, and highly available management console. Management processor card (optional) manages resources, diagnostics, system repair, 2D graphics console, and 10/100Base-T LAN for out-of-band management.
Power Supply	650W maximum output Optional hot-swap 2nd power supply for n+1 redundancy
Service and Support	Standard limited warranty: 1 year next business day onsite Hardware support upgrades available: 3 Years Next Business Day Onsite, 3 Years Same Business Day Onsite, and 3 Years 24 x7 Onsite. Telephone support upgrade available: 3 Years telephone support for LINUX operating system. **NOTE:** Certain restrictions and exclusions may apply. For details, consult the Product Information Centre at 1-888-882-6672.

HP Workstation zx6000 Base System

HP Workstation zx6000 Base Unit (Partner Prime and Partner Direct)
DM487AV

HP Workstation zx6000 with 1.3 GHz Processor (HIP Partner)
A9664A

HP Workstation zx6000 with 1.5 GHz Processor (HIP Partner)
A9665A

QuickSpecs

Standard Features Pre-Configured Regional Models

zx6000/2x900/2/36/ GL4/U *A9373BF#ABA*		
	Processor	Dual Intel Itanium 2 processors. 900 MHz
	Cache Memory	1.5MB L3
	Memory	2 GB ECC PC2100 DDR-266 (4x512 MB)
	Optical Drive	DVD-ROM drive
	Hard Drive	36 GB Ultra320 SCSI 10K rpm
	Graphics	ATI Fire GL4
	Mouse	HP scroll mouse
	OS	HP-UX 11i TCOE

zx6000/2x900/2/36/ R7/U *A9372BF#ABA*		
	Processor	Dual Intel Itanium 2 processors. 900 MHz
	Cache Memory	1.5MB L3
	Memory	2 GB ECC PC2100 DDR-266 (4x512 MB)
	Optical Drive	DVD-ROM drive
	Hard Drive	36 GB Ultra320 SCSI 10K rpm
	Graphics	ATI RADEON 7000
	Mouse	HP scroll mouse
	OS	HP-UX 11i TCOE

zx6000/2x900/2/36/ R7/L *A9374DF#ABA*		
	Processor	Dual Intel Itanium 2 processors. 900 MHz
	Cache Memory	1.5MB L3
	Memory	2 GB ECC PC2100 DDR-266 (4x512 MB)
	Optical Drive	DVD-ROM drive
	Hard Drive	36 GB Ultra320 SCSI 10K rpm
	Graphics	ATI RADEON 7000
	Mouse	HP scroll mouse
	OS	Red Hat Linux Advanced Workstation 2.1

zx6000/2x900/2/36/ Q4980/L *A9375DF#ABA*		
	Processor	Intel Itanium 2 processor 900 MHz
	Cache Memory	1.5 MB L3
	Memory	2GB ECC PC2100 DDR-266 (4x512 MB)
	Optical Drive	DVD-ROM drive
	Hard Drive	36 GB Ultra320 SCSI 10K rpm
	Graphics	NVIDIA Quadro4 980 XGL
	Mouse	HP scroll mouse
	OS	Red Hat Linux Advanced Workstation 2.1

zx6000 LEK/FldRk/ 2x900/1G/36G/ DVD/Q2EX *A9680AF#ABA*		
	Processor	Intel Itanium 2 processor 900 MHz
	Cache Memory	1.5 MB L3
	Memory	1GB ECC PC2100 DDR-266 (2x512MB)
	Optical Drive	DVD-ROM drive
	Hard Drive	36 GB Ultra320 SCSI 10K rpm
	Graphics	NVIDIA Quadro2 EX
	Mouse	HP scroll mouse
	OS	Linux Enabled Kit

Standard Features Pre-Configured Regional Models

zx6000 LEK/FdRk/
2x1.3/1G/36G/
DVD/Q2EX
A9680BF#ABA

Processor	Intel Itanium 2 processor 1.3 GHz
Cache Memory	3 MB L3
Memory	1GB ECC PC2100 DDR-266 (2x512MB)
Optical Drive	DVD-ROM drive
Hard Drive	36 GB Ultra320 SCSI 10K rpm
Graphics	NVIDIA Quadro2 EX
Mouse	HP scroll mouse
OS	Linux Enabled Kit

Configure to order options (custom configurations)

When buying a basic system, you have many configuration options. Base System includes one processor, no RAM, no disk, Ultra320 SCSI, external SCSI connector, 10/100/1000BT LAN, 10/100BT LAN, 2 serial, 4 USB, 1 AGP-4X slot, 3 PCI-X slots, and all required power cords.

		HP-UX	Linux
HP workstation zx6000 base system	HP Workstation zx6000, Intel Itanium 2 processor, 1.3GHz 3.0MB cache	X	X
	HP Workstation zx6000, Intel Itanium 2 processor, 1.5GHz 6.0MB cache	X	X
Second Processor	1.3GHz Intel Itanium 2 processor with 3.0MB integrated cache	X	X
	1.5GHz Intel Itanium 2 processor with 6.0MB integrated cache	X	X
Operating System	HP-UX 11i v2	X	
	Red Hat Linux Advanced Workstation 2.1		X
Graphics Card	ATI RADEON 7000 (32 MB, dual display, AGP)	X	X
	ATI FireGL Z1-128p (128MB, dual display, AGP 8X)	X	X
	NVIDIA Quadro4 980 XGL (128 MB, dual display, AGP 8X)		X
	ATI FireGL X1-256p (256 MB, dual display, AGP 8X)	X	X
	NOTE: ATI FireGL graphics cards occupy 2 physical slots in the system.		
Memory	512 MB PC2100 DDR SDRAM memory kit (2x256MB DIMMs)	X	X
	1 GB PC2100 DDR SDRAM memory kit (2x512MB DIMMs)	X	X
	2 GB PC2100 DDR SDRAM memory kit (2x1GB DIMMs)	X	X
	4 GB PC2100 DDR SDRAM memory kit (2x2GB DIMMs)	X	X
Monitors	HP p1230 22-inch (20.0-inch vis) Performance Natural-flat CRT Monitor	X	X
	HP L1925 19-inch TFT Flat Panel Display – Analog/Digital	X	X
	HP L2035 20-inch TFT Flat Panel Display	Analog mode only	X
	HP L2335 23-inch TFT Widescreen Flat Panel Display	1600x1200 or lower resolution only	X
Internal hard disks (minimum 1, maximum 3)	**Ultra320 SCSI Drives**		
	36 GB Ultra320 SCSI 10,000 rpm (hot plug)	X	X
	36 GB Ultra320 SCSI 15,000 rpm (hot plug)	X	X
	73 GB Ultra320 SCSI 15,000 rpm (hot plug)	X	X
	146 GB Ultra320 SCSI 10,000 rpm (hot plug)	X	X
Storage Controllers	Ultra160 SCSI Adapter for HP-UX, 1 channel	X	
	Ultra160 SCSI Adapter for HP-UX, 2-channel	X	
	Fibre Channel Adapter for Linux - (no boot)		X
	Fibre Channel Adapter, 2GB, for HP-UX	X	
	FWD SCSI Adapter, 2-channel (no boot)	X	
	Ultra160 SCSI Adapter for Linux, 1-channel		X
	Ultra160 SCSI Adapter for Linux, 2-channel		X

Configure to order options (custom configurations)

Optical Drive	4.7GB DVD+RW, 4X Max, Slimline Drive		X
	DVD-ROM Drive, 8X Max, Slimline, Carbon	X	X
	CD-RW/DVD-ROM Combo Drive, 12X/8X Max, Slimline, Carbon	X	X
Input Devices	HP USB Keyboard Kit, includes USB scroll mouse	X	X
	HP USB Keyboard Kit, includes USB 3-button mouse	X	X
	HP USB scroll mouse	X	X
	SpaceBall 5000, Serial Interface	X	X
	USB to PS/2 Adapter	X	X
Network Adapters	1000BaseTX PCI LAN Adapter for HP-UX (Required for HP-UX)	X	
	1000BaseSX (Fibre) PCI LAN Adapter for HP-UX	X	
	100BaseT PCI LAN Adapter for HP-UX (Does not support boot.)	X	
	100BaseT PCI LAN Adapter, Quad Port	X	
	HyperFabric2 PCI Fiber Adapter for HP-UX	X	
	1000BaseTX PCI LAN Adapter for Linux		X
	1000BaseSX (Fibre) PCI LAN Adapter for Linux		X
	LAN, MUX, 8-port (1.3 and 1.5GHz models only)	X	
	I/O and Networking Documentation kit	X	X
Management Processor Card	HP Management Processor Card	X	X
Redundant Power Supply	Redundant Hotswap Power Supply	X	X
Rack and Tower Options (must order 1)	Workstation Field Rack Kit	X	X
	Workstation Factory Rack Kit	X	X
	Workstation Tower Kit	X	X

After market options/Standalone accessories

		HP-UX	Linux	
Second Processor (must be same frequency as primary processor)	Intel Itanium 2, 1.3 GHz, 3.0 MB integrated cache	X	X	A9666A
	Intel Itanium 2, 1.5 GHz, 6.0 MB integrated cache	X	X	A9667A
Processor Upgrades	Upgrade kit: Intel Itanium 2, 1.3 GHz, 3.0 MB integrated cache	X	X	A9666A
	Upgrade kit: Intel Itanium 2, 1.5 GHz, 6.0 MB integrated cache	X	X	A9666A
	Return credit for Intel Itanium 2, 1 GHz, 3.0 MB integrated cache	X	X	A7848AN
Operating System	HP-UX 11i MTOE, License-to-use	X		B6867AA
	HP-UX 11i TCOE, License-to-use	X		B6868AA
	HP-UX 11i MTOE media kit	X		B9000AA
	HP-UX 11i TCOE media kit	X		B9001AA
	Linux Enablement Kit for HP Itanium-based workstation		X	T1502AA
	Red Hat Linux Advanced WS for zx6000		X	T2381AA
	Red Hat Linux Adv. WS for zx (0D1 only)		X	T2379AA
	HP Linux Installation Kit			T2170A
	Red Hat Linux Advanced Workstation for zx6000 License-to-use		X	T2381AA
Memory	512MB PC2100 DDR SDRAM memory kit (2x256MB DIMMs)	X	X	A7840A
	1GB PC2100 DDR SDRAM memory kit (2x512MB DIMMs)	X	X	A7841A
	2GB PC2100 DDR SDRAM memory kit (2x1GB DIMMs)	X	X	A7842A
	4GB PC2100 DDR SDRAM memory kit (2x2GB DIMMs)	X	X	A7843A
Monitors	HP p1230 22-inch (20.0-inch vis) Performance Natural-flat CRT Monitor	X	X	P9613#ABA
	HP L1925 19-inch TFT Flat Panel Display – Analog/Digital	X	X	P9626A#ABA
	HP L2035 20-inch TFT Flat Panel Display	Analog mode only	X	P9614A#ABA
	HP L2335 23-inch TFT Widescreen Flat Panel Display	1600x1200 or lower resolution only	X	P9615A#ABA
Graphics	ATI RADEON 7000 (32 MB, dual display, AGP)	X	X	A8049B
	ATI FireGL Z1-128p (128MB, dual display, AGP 8X)	X	X	A9654A
	NVIDIA Quadro4 980 XGL (128 MB, dual display, AGP 8X)		X	A9655A
	ATI FireGL X1-256p* (256 MB, dual display, AGP 8X)	X	X	A9653A
	NOTE: ATI FireGL graphics cards occupy 2 physical slots in the system.			

After market options/Standalone accessories

Hard Drives	Ultra320 SCSI Drives			
	36 GB Ultra320 SCSI, 10,000 rpm, hot plug	X	X	A7835B
	36 GB Ultra320 SCSI, 15,000 rpm, hot plug	X	X	A7836A
	73 GB Ultra320 SCSI, 15,000 rpm, hot plug	X	X	A7838A
	146 GB Ultra320 SCSI, 10,000 rpm, hot plug	X	X	A7839A
Storage Controllers	Ultra160 SCSI Adapter for HP-UX, 1-channel	X		A6828A
	Ultra160 SCSI Adapter for HP-UX, 2-channel	X		A6829A
	Fibre Channel Adapter, for Linux - No Boot for 1.3GHx and 1.5GHz models only		X	AB234A
	Fibre Channel Adapter, 2GB, for HP-UX	X		A6795A
	FWD SCSI adapter, 2-channel (does not support boot)	X		A5159A
	Ultra160 SCSI Adapter for Linux, 1-channel		X	A7059A
	Ultra160 SCSI Adapter for Linux, 2-channel		X	A7060A
Optical Drives	4.7GB DVD+RW, 4X Max, Slimline Drive		X	AB616A
	DVD-ROM Drive, 8X Max, Slimline, Carbon	X	X	A7850A
	CD-RW/DVD-ROM Combo Drive, 12X/8X Max, Slimline, Carbon	X	X	A7851A
Network Adapters	1000BaseTX PCI LAN Adapter for HP-UX	X		A6825A
	1000BaseSX (Fibre) PCI LAN Adapter for HP-UX	X		A6847A
	100BaseT PCI LAN Adapter for HP-UX	X		B5509BA
	100BaseT PCI LAN Adapter, Quad Port	X		A5506B
	HyperFabric2 PCI Fiber Adapter for HP-UX	X		A6386A
	1000BaseTX PCI LAN Adapter for Linux		X	A7061A
	1000BaseSX (Fibre) PCI LAN Adapter for Linux		X	A7073A
	LAN, MUX, 8-port (1.3 and 1.5GHz models only)	X		A6748A
	I/O and Networking Documentation kit	X	X	A520
Input Devices	Keyboard Kit, USB, PC-104/105, Carbon black; includes USB keyboard and USB Scroll Mouse.	X	X	A7861C
	USB to PS/2 adapter (allows the use of a PS/2 keyboard and mouse, or KVM switch)	X	X	A7782A
	SpaceBall 5000, Serial Interface	X	X	AB602A
Audio	Adaptor, PCI-1xU, Audio, FM801	X	X	A7784A
Management Processor Card	HP Management Processor Card	X	X	A6875A
Redundant Power Supply	Redundant Hotswap Power Supply	X	X	A6874A
Rack and Tower Kits	Rack to Tower Conversion Kit	X	X	A8718A
	Tower to Rack Conversion Kit	X	X	A8082A

QuickSpecs

Memory

ECC PC2100 DDR-266 memory

Memory must be installed in pairs of the same size. Memory upgrade kits come in pairs.
This chart does not represent all possible memory configurations.
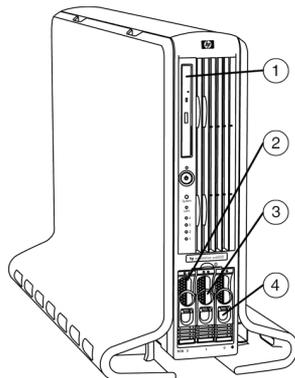
Minimum Memory

512-MB (2x256-MB)

Maximum Memory

24-GB (12x2-GB)

Memory		Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6
Minimum	512 MB	256 MB	256 MB				
Maximum	24 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Memory		Slot 7	Slot 8	Slot 9	Slot 10	Slot 11	Slot 12
Minimum	512 MB						
Maximum	24 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB

QuickSpecs

Storage

Drive Bay Locations

Drive Support

	Quantity Supported	Position Supported	Controller
Optical Drives			
Slimline DVD+RW Drive	Up to 1	1	Integrated EIDE
Slimline DVD-ROM Drive	Up to 1	1	Integrated EIDE
Slimline DVD-ROM/CD-RW Combo Drive	Up to 1	1	Integrated EIDE

	Quantity Supported	Position Supported	Controller
Hard Drives			
Ultra320 SCSI Drives			
1-inch	Up to 3	2, 3, 4	Optional Ultra160 SCSI Controller or Fibre Channel Adapter for Linux - no boot
36 GB Ultra320 SCSI (10K rpm)			
73 GB Ultra320 SCSI (15K rpm)			
146 GB Ultra320 SCSI (10K rpm)			

Maximum Storage Capacity	438 GB (SCSI)

QuickSpecs

Technical Specifications

System Unit			
	Tower Dimensions (HxWxD)	19.5 x 11.7 x 26.5 in (49.5 x 29.7 x 67.3 cm)	
	Weight (tower configuration)	Minimum Tower Configuration 49.4 lb (22.4 kg)	
		Maximum Tower Configuration 56.3 lb (25.5 kg)	
	Rack Dimensions (HxWxD)	3.4 x 19.0 x 26.8 in (8.6 x 48.3 x 68.1 cm)	
	EIA Units	2U (20 units possible per 2 meter rack)	
	Weight (rack configuration)	Minimum Rack Configuration 38.6 lb (17.5 kg)	
		Maximum Rack Configuration 49.0 lb (22.2 kg)	
	Power Supply	Input current (autoranging)	8.0A max @ 100-127V, 3.9A max @ 200-240V
		Line Frequency	50- 60 Hz
		Maximum Power Input	714 W
	Temperature	Operating	41° to 95° F (5° to 35° C)
		Non-operating	-40° to 158° F (-40° to 70° C)
	Humidity (non-condensing)	Operating	15% to 80% relative
	Maximum Altitude (non-pressurized)	Operating	10,000 ft (3,048 m)
		Non-operating	15,000 ft (4572 m)

HP Keyboard			
	Dimensions (HxWxD)	18.82 x 7.3 x 1.85 in (47.8 x 18.6 x 4.7 cm)	
	Weight	Approx.1.2 kg ± 0.1 kg	
	Electrical	Operating Voltage	+ 5VDC ± 5%
		Power Consumption	60 mA maximum (with 3 LEDs on)
		System Interface	USB 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	12 available
		Keycaps	Standard 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	2.9 m
		PC98-99	Mechanically compliant
		Acoustics	65 dBA for spacebar, 55 dBA for all others maximum sound pressure level
	Environmental	Operating Temperature	41° to 95° F (5° to 35° C)
		Non-operating Temperature	-40° to 140° F (-40° to 60° C)
		Operating Humidity	10% to 80% (non condensing at ambient)
		Non-operating Humidity	10% to 90% (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

Technical Specifications

SpaceBall 5000			
	Dimensions (HxWxD)	3.0 x 6.0 x 8.4 in (7.6 x 15.2 x 21.3 cm)	
	Ball Diameter	2.2 in (5.6 cm)	
	Weight	2.1 lb (9.94 kg)	
	Features	Six degrees of freedom motion control through the X, Y, Z axis (pitch, roll, yaw)	
		Device sensitivity adjustable to preference	
		Certified for leading CAD and DCC applications	
	Environmental	Operating Temperature	50° to 104° F (10° to 40° C)
		Non-operating Temperature	43° to 140° F (6° to 60° C)
		Operating Humidity	8% to 80% (non-condensing at ambient
		Non-operating Humidity	5% to 80% (non-condensing at ambient)
	Mechanical	Buttons	12 programmable (unshifted)
			23 programmable (shifted)
		Ball Force range	0.5 - 8.2N (1.8 - 29.5 oz)
		Ball Torque range	0.085 - 0.33 oz-in. (6.91 Nmm)
		Resolution	10 bits
	Serial Specifications	Connector	9-pin D-subminiature receptacle (DB9S)
		Cable Length	12.8 ft. (3.9 m)
		Data rate	9600 bps
		Flow control	Xon/Xoff
	System Requirements	10 Megabytes free disk space for driver and plug-in installation	
		CD-ROM device required	
	Software Drivers	Unix drivers for HP-UX	
		Red Hat Linux	
	Regulatory Approvals	Compliant	UL, cUL, EN 950, EN 60950, CSA, FCC, CE Mark, TUV, CISPR 22, EN 50082, IEC 1000 4-2, IEC 1000-4-3, AS/NZS, VCCI, BSMI, C-Tick, PCI, MIC

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

Technical Specifications

HP 2-button Scroll Mouse	Scroll Wheel	8 mm	
	Maximum Rotation Speed	30 mm/s	
	Switch Type	Light force micro-switch	
	Switch Life	1 million operations	
	Mechanical Life	Minimum 200,000 revolutions	
	Environmental	Operating Temperature	50° to 122° F (10° to 50° C)
		Non-operating Temperature	-22° to 140° F (-30° to 60° C)
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	4 g peak acceleration
	Electrical	Operating Voltage	+ 5VDC ± 10%
		Power Consumption	15mA
		System Consumption	USB 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	

LSI Logic Ultra320 SCSI Dual Channel host adapter	**Bus architecture**	PCI-X (backward compatible to PCI)
	Number of supported devices	30
	Interface protocol	64-bit PCI-X bus-master
	Host bus transfer rate	Up to 133 MB/s
	SCSI data transfer rate	Up to 640 MB/s
	Bus width	64-bit (fits both 32-bit and 64-bit bus widths)
	Internal SCSI connectors	Two 68-pin HD
	External SCSI connector	Two 68-pin VHDCI
	Total connectors	4
	Plug and Play Support	Yes
	Dimensions (H x L)	6.7 x 4.2 in (17.3 x 11.4 cm)
	Approvals/ environmental	CE, VCCI, Canada, C-Tick, FCC class B, UL 94VO, BSMI, MIC
	Operating system support	Red Hat Enterprise Linux Workstation 3.0

Technical Specifications

Ultra320 SCSI Hard Drives	146 GB, 10K rpm		
		Nominal Capacity	146.8 GB
		Dimensions (HxWxD)	1.00 x 4.00 x 5.75 in (2.54 x 10.16 x 14.61 cm)
		Interface	Ultra320 SCSI
		Transfer rate synchronous (maximum)	320 MB/s
		Seek time (typical reads, including settling)	Single track: 0.35 ms Average: 4.7 ms Full-stroke: 10.0 ms
		Average rotational latency	2.99 ms
		Rotational speed	10,000 rpm
		Logical blocks	289,749,488
		Operating temperature	41° to 131° F (5° to 55° C)
	73 GB, 15K rpm		
		Nominal Capacity	73.4 GB
		Dimensions (HxWxD)	1.00 x 4.00 x 5.75 in (2.54 x 10.16 x 14.61 cm)
		Interface	Ultra320 SCSI
		Transfer rate synchronous (maximum)	320 MB/s
		Seek time (typical reads, including settling)	Single track: 0.35 ms Average: 4.7 ms Full-stroke: 10.0 ms
		Average rotational latency	2.99 ms
		Rotational speed	10,000 rpm
		Logical blocks	289,749,488
		Operating temperature	41° to 131° F (5° to 55° C)
	36 GB, 15K rpm		
		Nominal Capacity	36.4 GB
		Dimensions (HxWxD)	1.00 x 4.00 x 5.75 in (2.54 x 10.16 x 14.61 cm)
		Interface	Ultra320 SCSI
		Transfer rate synchronous (maximum)	320 MB/s
		Seek time (typical reads, including settling)	Single track: 35 ms Average: 4.7 ms Full-stroke: 10.0 ms
		Average rotational latency	2.99 ms
		Rotational speed	15,000 rpm
		Logical blocks	71,132,960
		Operating temperature	41° to 131° F (5° to 55° C)

Technical Specifications

36 GB, 10K	**Nominal Capacity**	36.4 GB
	Dimensions (HxWxD)	1.00 x 4.00 x 5.75 in (2.54 x 10.16 x 14.61 cm)
	Interface	Ultra320 SCSI
	Transfer rate synchronous (maximum)	320 MB/s
	Seek time (typical reads, including settling)	Single track: 35 ms Average: 4.7 ms Full-stroke: 10.0 ms
	Average rotational latency	2.99 ms
	Rotational speed	10,000 rpm
	Logical blocks	71,132,960
	Operating temperature	41° to 131° F (5° to 55° C)

HP 4.7GB DVD+RW Slimline Drive	**Capacity**		4.7 GB DVD disc/700 MB CD disc
	Dimensions (HxWxD)		0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 cm)
	Weight		0.551 lb (250 g)
	Interface		ATAPI/EIDE
	Mounting Orientation		Horizontal or vertical (within 15 degrees)
	Data Transfer Rates - Read	**Digital audio extraction** (minimum)	1,200 KB/s (8X)
		CD read	Up to 3,600 KB/s (24X)
		DVD read	Up to 8,100 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
	Data Transfer Rates - Write	**DVD+R write**	5.54 MB/s (4X)
		DVD+RW write or rewrite	3.32 MB/s (2.4X)
		CD-R write	1200 KB/s (8X)
		CD-R write	1800 KB/s (12X)
		CD-R write	2,400 KB/s (10X)
		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

Technical Specifications

Write Methods	Disc-at-once, track-at-once, incremental fixed and variable packet, random access write (DVD+RW only), sequential write (DVD +R, +RW). Writing method is application dependant.	
Data Transfer Mode	ATA PIO mode 4-16.6-Mbps, ATA UltraDMA mode 2-33-Mbps (default)	
Access Times (typical)	**DVD-ROM Single Layer Random**	150 ms typical
	CD-ROM Random	140 ms typical
	CD-ROM Full stroke	200 ms typical
Start-up Time (typical)	**DVD-ROM**	9.5 s typical (time from disk insertion to drive ready)
	CD-ROM	8.0 s typical (time from disk insertion to drive ready)
Stop Time (typical)	< 9 s	
Write Buffer Size	2 MB (minimum)	
Audio Output	**16 bit data output**	Through ATA interface
	Volume Control	Software controlled
Operating Conditions	**Temperature** (Read)	41° to 122° F (5° to 50° C)
	Humidity (Write)	41° to 113° F (5° to 45° C)
Approvals/ Environmental	UL 1950 (US and Canada), CE, FDA, FCC (B), TUV, C-TICK (B)	
Operating Systems Supported	Red Hat LINUX Advanced Workstation version 2.1	
Supplied Software	Ahead Nero Enterprise Edition, including the Nero5 Express basic user interface and the Nero5 Burning ROM advanced user interface.	

Slimline CD-RW/ DVD-ROM Combo Drive	**Drive**	Manual tray-load
	Orientation	Horizontal or vertical
	Interface Type	ATAPI
	Dimensions (W x H x D)	5.23 x 0.5 x 5.46 in (13.28 x 1.27 x 13.87 cm)
	Disc Diametre	12 cm, 8 cm
	Disc Thickness	1.2 mm
	Track Pitch	1.6 µm (CD-ROM); 0.74 m m (DVD-ROM)
	Disc Centre Hole Diametre	15 mm
	Reference Scanning Velocity	1.2 m/s (CD); 3.49 m/s (DVD SL); 3.84 m/s (DVD DL)
	Read Only Disc Parametres	**Formats and Modes Supported** CD-ROM—Mode 1; CD-ROM XA—Mode 2 (forms 1 and 2); CD digital audio; CD Extra; CD-I—Mode 2 (forms 1 and 2) and CD-I-Ready; Photo CD (single and multi-session); video CD; DVD (single and doublelayer); DVD-R 3.95 GB; DVD-R 4.7 GB; DVD-RW 4.7 GB; DVD+ RW 4.7 GB
		Capacity 550 MB (Mode 1, 12 cm); 650 MB (Mode 1, 12 cm); 630 MB (Mode 2, 12 cm); 740 MB (Mode 2, 12 cm); 700 MB (CD-ROM 80 min); 180 MB (CD-ROM 8 cm) 4.7 GB (DVD-5); 8.54 GB (DVD-9); 9.4 GB (DVD-10)
		Block Size Mode 1—2,048 and 2,352 bytes; mode 2, form 1—2,048; 2,328; 2,336; 2,340 and 2,352 bytes; mode 2, form 2—2,328; 2,336; 2,340 and 2,352 bytes; CD-DA—2,352 and 2,368 bytes; DVD—2,048 bytes
	Writeable Disc Parametres	**Disc Type** CD-R and CD-RW
		Write Methods Disc at Once, Track at Once, Session at Once, Variable Packet, Fixed Packet
		Format and Modes CD-ROM (mode 1); CD-ROM XA (mode 2, forms 1 and

Technical Specifications

	Supported	2); CD digital audio, CD-I (mode 2, forms 1 and 2); video CD
	Capacity	550 MB (Mode 1, 12 cm); 650 MB (Mode 1, 12 cm); 630 MB (Mode 2, 12 cm); 740 MB (Mode 2, 12 cm); 700 MB (CD-ROM 80 min); 180 MB (8 cm)
	Block Size	Mode 1—2,048 bytes; mode 2, form 1—2,048 and 2,352 bytes; mode 2, form 2—2,352 bytes; CD-DA —2,353 bytes
Access Times (typical)	**Random DVD**	< 130 ms
	Random CD	< 110 ms
	Full Stroke DVD	< 225 ms
	Full Stroke CD	< 210 ms
Data Transfer Rates	**Maximum – CD-R Write**	3600 KB/s (24X CAV)
	Sustained — CD-RW Write	1500 KB/s (10X CLV)
	Minimum — CD-R Read	3600 KB/s (24X ZCLV)
	Minimum — CD-ROM Read	3600 KB/s (24X CAV)
	Minimum — DVD-ROM Read	10800 KB/s (8X CAV)
	Minimum — Digital Audio Extraction	1200 KB/s (8X CLV)
Data Transfer Modes	ATA PIO mode 4 (16.7 MB/s); ATA Multi-word DMA mode 2 (16.7 MB/s)	
Bus Rate	16.6 MB/s (burst) with DMA support	
Cache Buffer	2 MB (minimum)	
Startup Time (single)	< 9 seconds (typical)	
Startup Time (multi-session)	< 30 seconds (typical)	
Stop Time	< 6 seconds	
Power	**Source**	Four-pin, DC power receptacle
	DC Power Requirement	5 VDC ± 5%—100 mV ripple p-p
	DC Current	< 800 mA read (typical at Outer Diametre) < 900 mA write (typical at Outer Diametre) < 1600 mA (maximum excluding spike current < 1 ms duration) < 1600 mA (maximum excluding spike current < 1 ms duration) < 100 mA (low power mode) < 70 mA (sleep mode)
	Total Drive Power (standby mode)	< 70 mA
Audio Output Level	0.7 – 0.9 Vrms	
Configuration Jumper Block	Cable select mode	
Data Interface Connector	68-pin interface connector	
Environmental (all conditions non-condensing)	**Temperature** (operating)	41° to 122° F (5° to 50° C)
	Relative Humidity (operating)	10% to 80%
	Maximum Wet Bulb Temperature (operating)	84° F (29° C)
Certifications, Requirements	Multi-read requirements, ACA AS/NZS 3548, ANSI C63.4–1992 CB Test Certificate for IEC 60950, CFR 47 part 15, CSA C22.2 No. 60950, DHSS/FDA - 1040, EN55022, EN55024, EN60 950:2000, IEC 68, 908, 61000-4, ISO 9660, 10149, 13346,TUV or VDE EN60 950, UL 60950, ICES-003 class B, CE Mark	

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Technical Specifications

Slimline DVD-ROM Drive	Capacity	4.7 GB DVD disc/700 MB CD disc	
	Drive	Manual tray-load	
	Orientation	Horizontal or vertical	
	Dimensions (W x H x D)	5.23 x 0.5 x 5.46 in (13.28 x 1.27 x 13.88 cm)	
	Weight	280g	
	Interface	ATAPI/EIDE	
	Mounting Orientation	Horizontal (80 or 120 mm discs) or vertical (120 mm discs only)	
	Form Factor	12.7 mm Slim Line	
	Centre Hole Diametre	15 mm	
	Disc Diametre	120 mm and 80 mm	
	Disc Thickness	1.2 mm	
	Track Pitch	1.60 μm (CD), 0.74 μm (DVD)	
	Access Times (typical reads, including settling)	**Random**	< 100 ms (CD), < 125 ms (DVD)
		Full stroke	< 175 ms (CD), < 225 ms (DVD)
	Audio Output Level	**Line out**	0.7 – 0.9 Vrms
	Cache Buffer	128 KB/s (minimum)	
	Data Transfer Rate (typical, including settling)	**Sustained 24XCD-ROM**	3.6 MB/s
		Sustained 8X DVD	10.08 MB/s
		MultiWord DMA Mode 2	16.6 MB/s
		PIO Mode 4 (single burst)	16.6 MB/s
	Start-up Time	< 15 seconds	
	Stop Time	< 4 seconds	

PCI-Universal audio card	Audio processor	Forte Media FM801-AU, with Stac 9721T & 9708T codecs, AC97 v2.1	
	Connectors	**External**	MIC in: 3.5mm phone LINE IN: 3.5mm phone (stereo) AUDIO OUT: 3.5mm phone (stereo)
		Internal	CD IN: Molex SL or 4-pinbb Supplied CD-ROM audio cable uses 4-pin connector AUX IN: 4-pin MODEM: 4-pin mono in/out
	Configuration	Jumper-less: all configuration either automatic or under host software control	
	Dimensions	12.2cm:bulkhead face to rear edge Length: 5.4 in (13.4 cm) Height: 4.78 in (12.0 cm) 10.0cm clearance required above PCI connector if SL connectors used Thickness: 0.8 in (1.2 cm)	
	Weight	3.0 oz (85 g) card alone 1.5 lb (0.68 kg) in shipping carton	
	Power	3 watts max	
	Temperature	**Operating**	41° to 95° F (5° C to 35° C)
		Non-operating	-40° to 158° F (-40° C to 70° C)
	Altitude	**Operating**	3.0 km
		Non-operating	4.6 km
	Relative humidity	15% to 80%, non-condensing	
	PCI specifications	**Version**	PCI 2.1
		Signaling	Voltage:3.3 or 5.0V (PCI Universal) rate:33 MHz
		Width	32-bit

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	Interrupts	Shareable, system-managed
Audio specifications	Channels	1 or 2 (mono or stereo) (5.1 surround channels not supported)
	Line-in	10 KW , 1.0V full-scale, linear, 20 Hz to 19,200 Hz, ± 1 dB
	CD-in	47 KW, 1.0V full-scale, linear 20 Hz to 19,200 Hz, ± 1 dB
	Line-out	10 KW, 1.0V full-scale 20 Hz to 19,200 Hz, ± 1 dB
	Phone-out	5 KW , 60mW/channel, linear 65 Hz to 19,200 Hz, ± 1 dB
	Mic in	10 kW , 100mV full-scale, curve 20 Hz to 19,200 Hz, ± 1 dB
	Distortion	Line/CD In/Out: 0.02% THD
		Mic In/Phone Out: 0.05% THD
	Noise	Line/CD In: > 75 dB Line Out: > 90dB
	Sampling rates	8, 3x, 44.1 and 48 KHz, 1 or 2-channel
	Encodings	CCITT A-law, CCITT µ-law
Headphone specifications	Type	open-air (on-ear), with adjustable band, 27mm Mylar drivers, anisotropic magnet
	Weight	71g (2.5 oz.)
	Channels	2 (stereo)
	Impedance	32O
	Sensitivity	94 dB SPL/1mW
	Power handling	5 mW
	Response	20-20,000 Hz
	Distortion	3% THD
	Cord	10 ft (3m), shielded, single-sided, straight (uncoiled)
	Connector	3.5mm stereo phone plug
Kit contents	PCI-Universal audio card Stereo headphones CD-ROM-to-card audio cable Signal-integrity clips	

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Technical Specifications

100BaseT PCI LAN Adapter **B5509BA**	**Dimensions** (H x D)	5.6 x 4.75 in (14.2 x 12.1 cm)	
	Ethernet Controller	Digital 21143	
	Software Driver	btlan5 or btlan (for HP-UX 11i)	
	Data Transfer Rate	10 and 100mbps, half and full duplex	
	Max Bandwidth	200mbps	
	PHY	National DP83840	
	Device Support	One	
	Bus Type	2.1 PCI, 32-bit bus master, 33 MHz	
	Internal Connectors	Single RJ-45 port. Support for Category 5 UTP cable	
	Access Method	CSMA/CD, 10/100mbps, auto-negotiation	
	System Requirements	Available PCI slot (2.1 compliant)	
	Environmental	**Operating Temperature**	41° to 122° F (5° to 50° C)
		Operating Humidity	5% to 85% non-condensing
		Operating Altitude	10000 ft (3000 m) max
	Power Requirements	+5 volts @ 5 amp. max	
	Operating System Support	HP-UX 10.20 or later	
	Other	B5509BA: includes hardware, software (can be pre-installed with HP-UX operating system and hardware platform or can come with an application CD as stand-alone product), and the User's Guide	

100BaseT PCI LAN Adapter **Quad Port** **A5506B**	**Dimensions** (H x D)	6.75 x 4.75 in (17.1 x 12.1 cm) to conform to PCI half length card specifications	
	Ethernet Controller	Digital 21143	
	Software Driver	btlan	
	Data Transfer Rate	10 and 100mbps, half and full duplex	
	Max Bandwidth	800mbps	
	PHY	Level One LXT970ATC	
	Device Support	Up to 4	
	Bus Type	2.1 PCI, 64-bit bus master, 33 MHz	
	Internal Connectors	Four RJ-45 ports. Support for Category 5 UTP.	
	External Connectors	One 68-pin VHDCI	
	Access Method	CSMA/CD, 10/100mbps, auto-negotiation	
	System Requirements	Available PCI slot (2.1 compliant)	
	Environmental	**Operating Temperature**	41° to 122° F (5° to 50° C)
		Operating Humidity	5% to 85% non-condensing
		Operating Altitude	10000 ft (3000 m) max
	Power Requirements	+5 volts @ 5 amp. max	
	Operating System Support	HP-UX 10.20 HP-UX 11.00 HP-UX 11i HP-UX 11.22	
	Other	A5506B: includes hardware and software (can be pre-installed with HP-UX operating system and hardware platform or come with an application CD as stand-alone product), and the User's Guide	

Technical Specifications

1000BaseTX PCI LAN Adapter for HP-UX *A6825A*	**Dimensions**	2.536 x 6.6 in (6.44 x 16.76 cm)	
	Connector	RJ-45	
	Controller	Digital 21143	
	O/S	HP-UX 11.0 HP-UX 11i v1 HP-UX 11i v1.6	
	Data rates supported	10/100/1000 Mbps	
	Compliance	CE Mark EMC directive 89/336/EEC & 92/31/EEC & 93/68/EEC Low Voltage Directive 73/23/EEC and 93/68/EEC	
		CISPR 22:1993 / EN 55022:1994 Class B radiated emissions	
		EN 50082-1:1992 IEC 801-2:1991 / prEN 55024-2:1992 - 4kV CD, 8kV AD IEC 801-3:1984 / prEN 55024-3:1991, 3 V/m IEC 801-4:1998 / prEN 55024-4:1993, 0.5 kV Signal lines	
		FCC Part 15, Class B	
		GB 9254-1988	
	Bus architecture	64-bit/66 MHz PCI	
	Data path width	64-bit	
	Data transfer mode	Bus-master DMA	
	Interrupts	Interrupt-A, shareable, system-managed	
	Power requirement	1.5A @ 5Vdc max. (7.5W)	
	Boot ROM support	Yes	
	Network transfer rate	33MHz, 133MBytes/sec. burst, zero-wait-state bus-mastered DMA	
		10BASE-T (full-duplex) 20 Mbps	
	Environmental	**Operating Temperature**	32° to 131°F (0° to 55° C)
		Operating Humidity	85% at 131° F (55° C)
	Management capabilities	ACPI, WOL and DMI 2.0, PXE 2.0, WfM 2.0, Intel PROset II utility	
	Kit contents	One PCI 10/100 LAN card, [DS1]	

Technical Specifications

ATI Radeon 7000 Graphics Card		
	Form Factor	ATX
	Graphics Controller	ATI Radeon 7000 GPU
	Bus Type	AGP 2x/4x Version 2.0 compliant
	RAMDAC	300MHz Dual DACs. 165MHz TMDS for Digital Display
	Memory	32MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	DB-15 analog and DVI-I analog/digital monitor outputs.
	Dimensions	Single short form factor AGP/ATX card
	Multi-monitor support	Dual Independent Display (VGA+DVI or VGA+VGA with DVI-to-VGA converter)
	Additional product features	AGP 2x/4x Version 2.0 compliant. 32MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage VESA 3 (flash ROM) BIOS HydraVision Display Management Software Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC1/2B/2B+ Monitor support on all OS platforms VESA Display Power Management support
	ATI RADEON 7000 GPU featuring	183 MHz engine clock rate 128-bit GPU engine 64-bit external frame buffer interface running at a clock rate of 183 MHz VGA controller Triangle Setup Engine Texture Cache Bilinear and Trilinear Texture filtering Line and Edge Anti-aliasing Specular Highlights Z-Buffering and Double Buffering High performance 2D rendering engine DVD playback with integrated motion compensation and iDCT
	Supported graphics APIs	OpenGL 1.2 and below DirectX 8.0 and below
	Available graphics drivers	HP-UX and Red Hat Linux Advanced Workstation 2.1 for Itanium. See http://www.hp.com/support/zx6000.

ATI RADEON 7000 display, resolutions & refresh rates

CRT Displays

Single CRT Display Resolution	Maximum Refresh Rate	Bits Per Pixel
640x480	200Hz	8, 16, 32
800x600	200Hz	8, 16, 32
1024x768	200Hz	8, 16, 32
1152x864	180Hz	8, 16, 32
1280x1024	140Hz	8, 16, 32
1600x1200	100Hz	8, 16, 32
1920x1080	90Hz	8, 16, 32
1920x1200	85Hz	8, 16, 32
1920x1440	75Hz	8, 16, 32
2048x1536	66Hz	8, 16, 32

Digital Displays

Single CRT Display Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	75Hz	8, 16, 32
800x600	75Hz	8, 16, 32
1024x768	75Hz	8, 16, 32
1280x1024	75Hz	8, 16, 32
1600x1200	60Hz	8, 16, 32

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Technical Specifications

ATI FireGL Z1-128p Graphics Card		
	Form Factor	ATX
	Graphics Controller	ATI FGL 9700 GPU
	Bus Type	AGP-Pro50 1x/2x/4x/8x Version 3.0 compliant
	RAMDAC	Dual 400MHz/30-bit
	Memory	128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	Dual DVI-I analog/digital monitor outputs
	Slots required	Occupies 2 physical slots in the system
	Dimensions	Single AGP/ATX card. 12.61 x 4.25 in (23.03 x 10.7 cm)
	Multi-monitor support	Dual Screen output for resolutions up to 2x2048x1536x32 bit
	Additional product features	256 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 64 KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers 2D and 3D acceleration provided for 16-bit and 32-bit RGB? modes Hardware cursor with full color alpha channel 16/32 bit Z buffer, 16/32 bit W-buffer, 8-bit stored alpha and 8-bit Stencil planes Bus mastering support for 2D/3D display lists and local memory vertex list execution Hardware lighting support for up to 8 lights Bilinear, Trilinear and Anisotropic texturing Cubic Environment and Perturbation Bump Mapping Projective Texture, 3D Texture and Video Texture support Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats Per pixel quad buffering on all screen resolutions VESA compliant Stereoscopic Interface on MiniDin Connector Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
	AGP1x/2x/4x/8x Version 3.0 compliant including:	Sideband Addressing AGP Texturing (Execute Mode) AGP Read and AGP Write Support 8X Fast write support
	FGL 9700 GPU featuring:	VGA controller supporting full standard feature set 2D Engine with 128-bit datapath processing multiple pixels per clock PIXEL TAPESTRY III, 3D rendering engine utilizing 2 parallel pipelines with two texture blending units each capable, of handling up to 8 texels in a single pass, delivering 2.4 Gigatexels/s fill rate CHARISMA ENGINE III, geometry unit utilizing 4 vertex processing engines, capable of executing two instructions per clock cycle each, thus yielding up to 200 million transformed, clipped and lit triangles per second. VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/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	HP-UX and Red Hat Linux Advanced Workstation 2.1 for Itanium. See http://www.hp.com/support/zx6000.

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Technical Specifications

ATI FireGL Z1-128p display, resolutions & refresh rates

CRT Display (Single or Dual)

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

Digital Display (Single or Dual)

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

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HP Workstation zx6000

Technical Specifications

NVIDIA Quadro4 980 XGL Graphics Card		
	Form Factor	ATX
	Graphics Controller	NVIDIA NV28GL GPU
	Bus Type	AGP 8X Version 3.0 compliant
	RAMDAC	Dual 350 MHz integrated
	Memory	128 MB 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 (10.8 x 21.6 cm)
	Multi-monitor support	Dual integrated display controllers supporting up to 1920x1440 @ 85Hz on both displays

Additional product features

- AGP8xVersion 3.0 compliant including
- Sideband Addressing
- AGP Texturing (Execute Mode)
- Fast writes support
- 128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
- 128 KB BIOS 3.3V Flash ROM reprogrammable by SW
  NV28GL GPU featuring:
- 300 MHz engine clock rate
- 325 MHz memory clock rate
- 128-bit memory interface
- VGA controller
- 4 parallel pixel pipelines
- 2 parallel geometry engines
- nfiniteFX II programmable Vertex and Pixel Shader technology
- Hardware Overlay Planes
- Hardware two-sided lighting
- Hardware accelerated antialiased points and lines
- Quad-buffered Stereo
- Diamond exit rule line rasterization for improved line quality
- 3D Texture support
- Occlusion Culling
- Frame synchronization
- Compliant with Microsoft/Intel PC2001 Workstation requirements
- Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
- DDC2B+ Monitor support on all OS platforms
- ACPI Version 1.0b Power Management support (all modes)

Supported graphics APIs OpenGL 1.3 ICD with immediate mode support for all OGL primitive types
DirectX 8

Available graphics drivers Red Hat Linux Advanced Workstation 2.1 for Itanium.
See http://www.hp.com/support/zx6000.

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HP Workstation zx6000

Technical Specifications

NVIDIA Quadro4 980 XGL 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/No Digital Display Support	8, 16
1920x1080	85Hz/No Digital Display Support	24, 32
1920x1200	100Hz/No Digital Display Support	8, 16
1920x1200	85Hz/No Digital Display Support	24, 32
1920x1440	85Hz/No Digital Display Support	8, 16
1920x1440	75Hz/No Digital Display Support	24, 32
2048x1536	75Hz/No Digital Display Support	8, 16
2048x1536	60Hz/No Digital Display Support	24, 32

QuickSpecs

HP Workstation zx6000

Technical Specifications

ATI FireGL 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	256 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	Dual DVI-I analog/digital monitor outputs
	Slots required	Occupies 2 physical slots in the system
	Dimensions	Single AGP/ATX card. 9.06 x 4.25 in (23.01 x 10.8 cm)
	Multi-monitor support	Dual Screen output for resolutions up to 2x2048x1536x32 bit
	Additional product features	256 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 64 KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers 2D and 3D acceleration provided for 16-bit and 32-bit RGB? modes Hardware cursor with full color alpha channel 16/32 bit Z buffer, 16/32 bit W-buffer, 8-bit stored alpha and 8-bit Stencil planes Bus mastering support for 2D/3D display lists and local memory vertex list execution Hardware lighting support for up to 8 lights Bilinear, Trilinear and Anisotropic texturing Cubic Environment and Perturbation Bump Mapping Projective Texture, 3D Texture and Video Texture support Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats Per pixel quad buffering on all screen resolutions VESA compliant Stereoscopic Interface on MiniDin Connector Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
	AGP1x/2x/4x/8x Version 3.0 compliant including:	Sideband Addressing AGP Texturing (Execute Mode) AGP Read and AGP Write Support 8X Fast write support
	FGL 9700 GPU featuring:	VGA controller supporting full standard feature set 2D Engine with 128-bit datapath processing multiple pixels per clock PIXEL TAPESTRY III, 3D rendering engine utilizing 2 parallel pipelines with two texture blending units each capable, of handling up to 8 texels in a single pass, delivering 2.4 Gigatexels/s fill rate CHARISMA ENGINE III, geometry unit utilizing 4 vertex processing engines, capable of executing two instructions per clock cycle each, thus yielding up to 200 million transformed, clipped and lit triangles per second. VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/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	HP-UX and Red Hat Linux Advanced Workstation 2.1 for Itanium. See http://www.hp.com/support/zx6000.

Technical Specifications

ATI FireGL X1-256p display, resolutions & refresh rates

CRT Display (Single or Dual)

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

Digital Display (Single or Dual)

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

Technical Specifications

HP p1230 22-inch CRT Monitor		
Tube Type	Diamondtron NF Aperture Grille CRT	
Picture Tube Size (diagonal)	22 in (55 cm)	
Viewable Image Area (diagonal)	20 in (51 cm)	
Aperture Grille Pitch	0.24 mm	
Screen Curvature	Flat	
Horizontal Frequency (kHz)	30 to 140 kHz	
Vertical Frequency (Hz)	50 to 160 Hz	
Maximum Resolution	2048 x 1536 @ 85 Hz (GTF)	
Recommended Resolution	1600 x 1200 @ 85 Hz or 1280 x 1024 @ 85 Hz	
Preset VESA Graphic Modes (non-interlaced)	1920 x 1440 @ 60 Hz, 75 Hz	
	1792 x 1344 @ 60 Hz, 75 Hz	
	1600 x 1200 @ 75 Hz, 85 Hz	
	1280 x 1024 @ 60 Hz, 75 Hz, 85 Hz	
	1024 x 768 @ 75 Hz, 85 Hz	
	800 x 600 @ 75 Hz, 85 Hz	
	640 x 480 @ 60 Hz, 85 Hz	
Preset MAC Mode	1152 x 870 @ 75 Hz	
Preset VGA Mode	640 x 480 @ 60 Hz and 720 x 400 @ 70 Hz	
Maximum Pixel Clock Speed	420 MHz	
User Programmable Modes	15 (10 preset modes and 5 additional modes)	
Anti-Glare	Yes	
Anti-Static	Yes	
Asset Control	Yes	
Default Color Temperature	9300 K	
Buttons or Switches	OSD menu, brigthness, contrast, Super Bright, dual input, power on/off	
Languages	English, Spanish, French, German, Italian, Japanese	
User Controls	Brightness, contrast, pincushion, pincushion balance, trapezoid, tilt (rotation), color temperature, degauss, parallelogram, individual color control, zoom, moiré cancellation, convergence, corner purity, image control, language, OSD control, factory reset	
Plug and Play	Yes, DDC/CI compatible	
Input Signal	Two 15-pin D-sub connections	
Input Impedance	75 ohms	
Sync Input	Separate sync (HSYNC/VSYNC)	
Video Cable	Detachable 15-pin D-sub mini connector (included)	
Video Cable Length	70 in (1.8 m); non-captive	
Power Supply	Universal 100-120/220-240 VAC	
Frequency	50/60 Hz	
Maximum	135 watts	
Power Saving	2 watts maximum	
Off Mode	0 watts	
Power Cable Length	70 in (1.8 m); non-captive	
Dimensions (HxWxD)	**Unpacked** (including pedestal)	19.1 x 19.5 x 18.8 in (48.6 x 49.5 x 47.7 cm)
	Packaged	25.6 x 25.0 x 25.4 in (65.1 x 63.6 x 64.6 cm)

Technical Specifications

Weight	**Unpacked**	66.1 lb (30 kg)	
	Packaged	77.1 lb (35 kg)	
Tilt Range	10° upward and 5° downward		
Swivel Range	90°either side of center		
Temperature – Operating	41° to 90° F (5° to 35° C) Non-condensing		
Temperature – Non-operating	-4° to 140° F (-20° to 60° C)		
Humidity – Operating	10% to 90% non-condensing		
Humidity – Non-operating	10% to 90%		
Altitude – Operating	0 to 7,200 ft (0 to 2,195 m)		
Altitude – Non-operating	0 to 30,000 ft (0 to 9,144 m)		
Accessories Included	Power cable, video cable (D-sub to D-sub), documentation kit		
User Guide Languages	English, French, German, Spanish, Italian, Dutch, Brazilian Portuguese, Danish, Finnish, Greek, Japanese, Korean, Latin American Spanish, Norwegian, Polish, Russian, Slovenian, Turkish, Swedish, Traditional Chinese, Simplified Chinese		
Warranty Languages	English, French, Spanish, Brazilian Portuguese, Danish, German, Castilian Spanish, French, Italian, Dutch, Norwegian, Finnish, Swedish, Bahasa Indonesian, Japanese, Korean, T. Chinese, S. Chinese		
Color	Carbon and silver		
Certification and Compliance	MPR-II (Low Emissions), TCO '03, Energy Star Compliant, UL Listing, ISO9241-3 VOT Guidelines Approval, FCC Approval, CE Mark (including PFC), GS Mark		
Compatibility	Compatible with platforms using the VESA standard video modes and HP Compaq Business Desktops d500, d300, and d200 Series, Compaq Evo Desktops, HP workstations, and HP Business Desktops d300 series.		
Warranty	Limited three-year parts and repair labor, service provider labor, and on-site service. Next business day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply.		

HP L1925 19-inch TFT Flat Panel Monitor	**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
		Colour Depth Support	16.7 million colours
	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

Technical Specifications

	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 Colour 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 Colour Temperature Input Selection Factory Reset Individual Colour 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)

Technical Specifications

		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° to +20°
	Swivel Range		± 45° horizontal swivel
	Height Adjustable		Yes (4.3 in/110 mm adjustment range)
	Pivot Rotation		Yes, 90 °
	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
	Colour		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.
Compatibility			VESA Video Signal Standard (VSIS) Compliant video cards have been tested and proven compatible for use with the HP Flat Panel Monitor L1925. The HP L1925 has been tested for use with all HP workstations.
			NOTE: Features are subject to change without notice.
Service and Warranty			Limited three-year parts and repair labour, service provider labour, 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	Panel	Type	20-inch Active Matrix TFT (thin film transistor)
		Viewable Image Area (diagonal)	20.1 in (51 cm)
		Screen Opening (W x H)	16.2 x 12.17 in (41.1 x 30.9 cm)
		Viewing Angle (typical)*	Up to 170° H/170° V (10:1 minimum contrast ratio)
		Brightness (typical*	Up to 250 nits (cd/m^2)
		Contrast Ratio (typical)*	Up to 400:1
		Response Rate (typical)*	16 ms (typical, rise + fall)
		Pixel Pitch	0.255 mm
		Color Depth Support	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**	**Buttons or Switches**	PiP (Picture in Picture), Input select, auto adjust, OSD up, OSD down, OSD menu select, power
		Languages	English, French, German, Spanish, Italian
		User Controls	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	**Horizontal Frequency**	30 to 94 kHz (VGA input); 30 to 92 KHz (DVI input) (for modes with pixel clock less than 157 MHz)
		Vertical Frequency	48 to 85 Hz (VGA input); 30 to 92 KHz (DVI input) (for modes with pixel clock less than 157 MHz)
		Graphics Controller	Pixelworks PW171
		Native Resolution	1600 x 1200 @ 60 Hz (recommended)
		Preset VESA Graphic Modes (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
		Text Mode	720 x 400 @ 70 Hz
		Mac Mode	1152 x 870 @ 75 Hz and 832 x 624 @ 75 Hz
		Sun Mode	1152 x 900 @ 66 Hz
		Maximum Pixel Clock Speed	202 MHz (VGA input); 162 MHz (DVI input)
		User Programmable Modes	Yes, 10
		Anti-Glare	Yes
		Anti-Static	Yes
		Default Color Temperature	6500 K
	Video Input	**Plug and Play**	Yes
		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

QuickSpecs

Technical Specifications

	Input Impedance	75 ohms ± 10%	
	Sync Input	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green	
	Video Cable	VGA to VGA; VGA to DVI-I; DVI-D to DVI-I	
	Video Cable Length	5.9 ft (1.8 m)	
Power	**Input Power**	Auto-Ranging, 90 to 132 VAC and 195 to 265 VAC; internal power supply, 50 Hz/60 Hz	
	Frequency	47.5 to 63 Hz	
	Maximum	< 75 watts	
	Power Saving	< 5 watts	
	Power Cable Length	5.9 ft (1.8 m)	
Mechanical	**Dimensions** (H x W x D)	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)
	Weight	Unpacked	With stand: 20.28 lb (9.2 kg); Without stand: 12.35 lb (5.6 kg)
		Packaged	26.9 lb (12.2 kg)
	Tilt Range	-5° to + 25° vertical	
	Swivel Range	-35° to + 35°	
	Height Adjustable	Yes, range 3.54 in (9.0 cm)	
	Pivot Rotation	Yes	
	Base	Attached	
Environmental	**Temperature – Operating**	46° to 95° F (10° to 35° C)	
	Temperature – Non-operating	6° to 140° F (-10° to 60° C)	
	Humidity – Operating	20% to 80% non-condensing	
	Humidity – Non-operating	5% to 85%	
	Altitude – Operating	+12,000 ft	
	Altitude – Non-operating	+40,000 ft	
Options	**HP Desktop Access Center**	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.	
Other	**Accessories Included**	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	
	User Guide Languages	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
	Warranty Languages	English, Canadian French, LA Spanish, Brazilian Portuguese, Danish, German, Castilian Spanish, French, Italian, Dutch, Norwegian, Finnish, Swedish, Bahasa Indonesian, Korean, T. Chinese, S. Chinese
	Color	Carbonite/Silver
	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 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.
Compatibility		Compatible with platforms using the VESA standard video modes and all HP workstations.
Service and Warranty		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	**Panel**	**Type**	23-inch Active Matrix TFT (thin film transistor)
		Viewable Image Area (diagonal)	23 in (58.4 cm)
		Screen Opening (W x H)	19.53 x 12.24 in (49.6 x 31.1 cm)
		Viewing Angle (typical)*	Up to 170° H/170° V (10:1 minimum contrast ratio)
		Brightness (typical)*	Up to 250 nits (cd/m^2)
		Contrast Ratio (typical)*	Up to 350:1
		Response Rate (typical)*	25 ms (typical, rise + fall)
		Pixel Pitch	0.258 mm
		Colour Depth Support	16.7 million colours

* 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**	**Buttons or Switches**	PiP (Picture in Picture), Input Select, Auto Adjust, OSD Up, OSD Down, OSD Menu Select, Power
		Languages	English, French, German, Spanish, Italian
		User Controls	Brightness, contrast, positioning, colour temperature, individual colour 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	**Horizontal Frequency**	30 to 94 kHz (VGA input); 30 to 92 KHz (DVI input) (for modes with pixel clock less than 157 MHz)
		Vertical Frequency	48 to 85 Hz (VGA and DVI input)
		Graphics Controller	Pixelworks PW172
		Native Resolution	1920 x 1200 @ 60 Hz (recommended)
		Preset VESA Graphic Modes (non-interlaced)	1920 x 1200 @ 60Hz
			1600 x 1200 @ 60 Hz, 75 Hz

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		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	
	Text Mode	720 x 400 @ 70 Hz	
	Mac Mode	1152 x 870 @ 75 Hz and 832 x 624 @ 75 Hz	
	Sun Mode	1152 x 900 @ 66 Hz	
	Maximum Pixel Clock Speed	202 MHz (VGA input); 162 MHz (DVI input)	
	User Programmable Modes	Yes, 10	
	Anti-Glare	Yes	
	Anti-Static	Yes	
	Default Colour Temperature	6500 K	
Video Input	**Plug and Play**	Yes	
	Input Signal	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	
	Input Impedance	75 ohms ± 10%	
	Sync Input	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green	
	Video Cable	VGA to VGA; VGA to DVI-I; DVI-D to DVI-I	
	Video Cable Length	5.9 ft (1.8 m)	
Power	**Input Power**	Auto-Ranging, 90 to 132 VAC and 195 to 265 VAC; internal power supply, 50 Hz/60 Hz	
	Frequency	47.5 to 63 Hz	
	Maximum	< 100 watts	
	Power Saving	< 5 watts	
	Power Cable Length	5.9 ft (1.8 m)	
Mechanical	**Dimensions** (H x W x D)	**Unpacked**	17.36 to 20.90 x 21.46 x 8.27 in (44.1 to 53.1 x 54.5 x 21.0 cm)
		Unpacked w/o stand (head only)	14.57 x 21.46 x 3.35 in (37.0 x 54.5 x 8.5 cm)
	Weight	**Unpacked**	22.27 lb (10.1 kg)
		Packaged	30.87 lb (14.0 kg)
	Tilt Range	-5° to + 25° vertical	
	Swivel Range	-35° to + 35°	
	Height Adjustable	Yes, range 3.54 in (9.0 cm)	
	Pivot Rotation	Yes	
	Base	Attached	
Environmental	**Temperature – Operating**	46° to 95° F (10° to 35° C)	
	Temperature – Non-operating	6° to 140° F (-10° to 60° C)	
	Humidity – Operating	20% to 80% non-condensing	
	Humidity –	5% to 85%	

Technical Specifications

	Non-operating	
	Altitude – Operating	+12,000 ft
	Altitude – Non-operating	+40,000 ft
Options	**HP Desktop Access Centre**	Sold separately, the HP Desktop Access Centre 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 Centre QuickSpecs.
Other	**Accessories Included**	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
	User Guide Languages	English, B. Portuguese, French, LA Spanish, Korean, S. Chinese, T. Chinese, Bahasa, Japanese, Danish, Finnish, German, Norwegian, Spanish, Swedish, Greek, Polish, Russian, Slovenian, Turkish
	Warranty Languages	English, Canadian French, LA Spanish, Brazilian Portuguese, Danish, German, Castilian Spanish, French, Italian, Dutch, Norwegian, Finnish, Swedish, Bahasa Indonesian, Korean, T. Chinese, S. Chinese
	Colour	Carbonite/silver
	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 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.
Compatibility		Compatible with platforms using the VESA standard video modes and all HP workstations.
Service and Warranty		Limited three years parts, labour, and on-site service, including backlight. Availability varies by region. Certain restrictions and exclusions apply. Consult HP Customer Service for details.