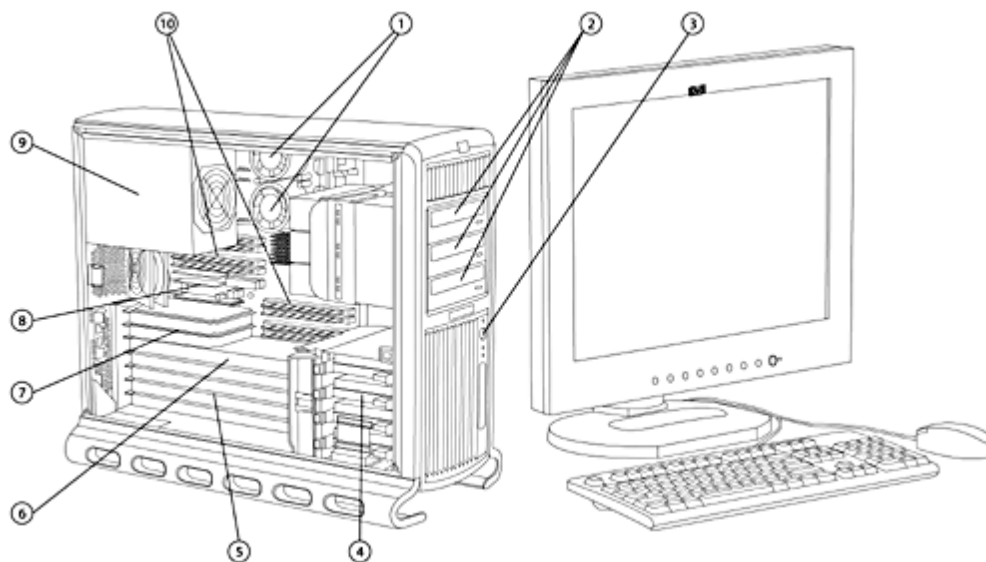


Overview



- | | |
|-----------------------------------|-------------------------|
| 1. Processor(s) | 6. Four full-length PCI |
| 2. Three 5.25" Optical drive bays | 7. Two half-length PCI |
| 3. On/Off Button | 8. 2-Way Motherboard |
| 4. Hard disk drives | 9. Power supply |
| 5. One full-length AGP 8x Slot | 10. Memory DIMMs |

At A Glance

- Up to two HP PA-8900 dual core processor modules (2-way standard; 4-way optional)
 - 2 or 4-way 1.0 GHz PA-8900 with 3.0 MB L1 cache (1.5MB per core)
 - 2 or 4-way 1.0 GHz PA-8900 with 3.0 MB L1 cache (1.5 MB per core) and 64 MB shared L2 cache
 - 2 or 4-way 1.1 GHz PA-8900 with 3.0 MB L1 cache (1.5 MB per core) and 64 MB L2 cache
- HP zx1 chipset with 400 MHz system bus
 - 6.4 GB/s effective processor bandwidth
 - 8.6 GB/s memory bandwidth
 - 3.5 GB/s I/O bandwidth
- 80 ns memory access latency
- Enterprise-class operating systems: HP-UX 11i v1
- ECC PC2100 DDR-266 memory, expandable to 32 GB
- Four Internal 3 1/2 inch drive bays; up to 1.2TB of SCSI or 160GB IDE hard drive storage
- Integrated 10/100/1000 Mbps Base-T Ethernet
- AGP 8X Pro 150 watts max power graphics interface
- Six PCI slots*
- Three external bays 5 1/4 inch drive bays
- DVD-ROM, DVDRW or CD-RW Optical Drive
- Full Independent Software Vendor (ISV) certification and support for leading technical applications
- Protected by HP Services, including a one-year limited warranty. Certain restrictions and exclusions apply.

NOTE: Accessory card slots have various configurations. See details in "Standard Features" area.

Standard Features

Processor Up to two 2-way (dual core) HP PA-8900 processor modules (1.0 or 1.1 Ghz)

Operating System HP-UX 11i version 1 TCOE (Technical Computing Operating Environment)
HP-UX 11i version 1 MTOE (Minimal Technical Operating Environment)

Cache Memory 3.0 MB L1 on-chip cache (1.5 MB per processor core)
PA-8900 – 64 MB L2 cache (optional shared)

Memory Maximum of 32 GB ECC PC2100 DDR-266 memory (8 DIMMs)

Network Controller Integrated 10/100/1000 Mbps Base-T Ethernet

Removable Storage 48X/32X/48X CD-RW Drive
16X/48X DVD-ROM with +R and -R Read
16X DVD+RW Drive

Expansion Slots	I/O (Total)	Seven available slots
	PCI – 32-bit/33 MHz	2 half-length 3.3V 32-bit/33 MHz PCI
	PCI – 64-bit/33 MHz	1 full-length 3.3V 64-bit/33 MHz PCI
	PCI – 64-bit/66 MHz	2 full-length 3.3V 64-bit/66 MHz PCI-X
	PCI – 64-bit/133 MHz	1 full-length 3.3V 64-bit/133 MHz PCI-X
	AGP 8X Pro	1 slot – 150W

Expansion Bays	(Total/Available)	7 total/7 available
	Internal	Four 3.5-inch bays
	External	Three accessible 5.25-inch bays

Storage	Removable Media	DVD-ROM, DVD+RW, or CD-RW Drive
	Hard Drive	80 GB Ultra/ATA100 IDE Drive (7200 rpm) 73, 146 or 300 GB Ultra320 SCSI (10K rpm) 73 GB Ultra 320 SCSI (15K rpm)
	Drive Controller(s)	Integrated Ultra320 SCSI controller Integrated Ultra/ATA100 IDE controller

Standard Features

Interfaces	USB 1.1	Five (2 front, 3 rear)
	Serial	Two 9-pin DIN connectors (rear)
	Ultra320 SCSI	Internal and optional external (rear) connector
	Network interface	One RJ-45 connector (rear)
	Microphone Jack	1 (optional audio card)
	Line-In Jack	1 (optional audio card)
	Line-Out Jack	1 (optional audio card)

Graphics – One of the following	ATI FireGL T2-128 (dual display)
	ATI FireGL X3-256 (dual display)

Audio	16-bit stereo full-duplex – uses half-length slot (optional card)
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Input Devices	HP 104/105 key keyboard, available in 21 localized layouts
	HP three-button optical mouse
	HP three-button optical scroll mouse
	HP SpaceBall 3D Input Device
	HP SpaceMouse 3D Input Device
	HP SpacePilot 3D Input Device

Power Supply	650W maximum output
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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.
	NOTE: Certain restrictions and exclusions apply. Consult the customer support centre for details.

Configure-to-order Options (custom configurations)

When buying a basic system, you have many configuration options. Base System includes Ultra320 SCSI, 10/100/1000BT LAN, 2 serial, 5 USB, 1 AGP-8X slot, 3 PCI slots, 3 PCI-X slots, and all required power cords. Base system does not include processor, RAM, disks or graphics.

HP c8000 Workstation base system Processor	2-way 1.0 GHz PA-8900 with 3 MB L1 cache (1.5 MB per processor core) 2-way 1.0 GHz PA-8900 with 3 MB L1 cache and 64 MB L2 cache 2-way 1.1 GHz PA-8900 with 3 MB L1 cache and 64 MB L2 cache
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Second Processor	2-way 1.0 GHz PA-8900 with 3 MB L1 cache and 64 MB L2 cache 2-way 1.1 GHz PA-8900 with 3 MB L1 cache and 64 MB L2 cache
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Operating System	HP-UX 11i version 1 TCOE (Technical Computing Operating Environment) HP-UX 11i version 1 MTOE (Minimum Technical Operating Environment)
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Graphics Card	ATI FireGL T2-128 (128MB, dual display, AGP 8X) ATI FireGL X3-256 (256 MB, dual display, AGP 8X)
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Memory	1 GB PC2100 DDR-266 SDRAM memory kit (2x512MB DIMMs) 2 GB PC2100 DDR-266 SDRAM memory kit (2x1 GB DIMMs) 4 GB PC2100 DDR-266 SDRAM memory kit (2x2GB DIMMs) 8 GB PC2100 DDR-266 SDRAM memory kit (2x4GB DIMMs)
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Monitors	HP L1955 19-inch TFT Flat Panel Display - Analog/Digital HP LP2065 20-inch TFT Flat Panel Display - Analog/Digital HP LP2465 24-inch TFT Widescreen Flat Panel Display (1920x1200 resolution)
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Internal hard disks (minimum 1)	Ultra320 SCSI Drives (max. 4) 73 GB Ultra320 SCSI 10,000 rpm 146 GB Ultra320 SCSI 10,000 rpm 300 GB Ultra320 SCSI 10,000 rpm 73 GB Ultra320 SCSI 15,000 rpm UltraATA IDE Drives (max. 2) 80 GB Ultra/ATA100 IDE Drive (7200 rpm)
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Storage Controllers	External Ultra320 SCSI Connector Option Ultra320 SCSI Adapter for HP-UX, 2-channel Fibre Channel Adapter, 2GB, for HP-UX
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Configure-to-order Options (custom configurations)

Optical Drive	16X DVD-ROM Drive
	16X DVDRW Drive
	48X CD-RW Drive

Rack and Tower Options (must order 1)	Workstation Rack Kit
	Workstation Tower Kit

After-Market Options/Standalone Accessories

Operating Systems	HP-UX 11i version 1 TCOE (Technical Computing Operating Environment)	B6821AA
	HP-UX 11i version 1 MTOE (Minimal Technical Operating Environment)	B6845AA
2nd Processor	2-way 1.0 GHz PA-8900 with 3 MB L1 cache and 64 MB L2 cache	AB675A
	2-way 1.1 GHz PA-8900 with 3 MB L1 cache and 64 MB L2 cache	AB676A
NOTE: The second processor must be the same as the first.		
Memory (DDR-SDRAM)	1 GB (2 x 512 MB) PC2100 DDR SDRAM Upgrade Kit	A8087B
	2 GB (2 x 1 GB) PC2100 DDR SDRAM Upgrade Kit	A8088B
	4 GB (2 x 2 GB) PC2100 DDR SDRAM Upgrade Kit	A8089B
	8 GB (2 x 4 GB) PC2100 DDR SDRAM Upgrade Kit	AB662A
NOTE: Memory sold in pairs.		
Graphics	ATI FireGL T2-128 (128 MB, dual display, AGP 8X)	AB638A
	ATI FireGL X3-256 (256 MB, dual display, AGP 8X)	AB668A
Optical Drives	48X CD-RW Drive	A8683B
	16X DVD-ROM Drive	A8682B
	16X DVDRW Drive	AB615A
Hard Drives	Ultra320 SCSI Drives (max. 4)	
	73 GB Ultra320 SCSI 10,000 rpm	AB628A
	146 GB Ultra320 SCSI 10,000 rpm	AA614A
	300 GB Ultra320 SCSI 10,000 rpm	AB663A
	73 GB Ultra320 SCSI 15,000 rpm	A7214B
	UltraATA IDE Drives (max. 2)	
	80 GB Ultra/ATA100 IDE Drive (7200 rpm)	AB680A
	Conversion Kit	
SCSI Cable Conversion Kit; IDE to SCSI	AB640A	
IDE Cable Conversion Kit; SCSI to IDE	AB641A	
Storage Controllers	Ultra320 SCSI Adapter for HP-UX, 2-channel	A7173A
	PCI 2GB Fibre Channel Adapter	A6795A
	External SCSI Cable Connector	AB642A
	(enables 68-pin high density SCSI connector on rear panel of workstation)	

After-Market Options/Standalone Accessories

Backup Devices	HP DAT40i Internal DDS4 tape drive	C5686B
	HP DAT40e External DDS4 tape drive	C5687C
	HP DAT72i Internal DAT72 tape drive	Q1522A
	HP DAT72e External DAT72 tape drive	Q1523A
	HP Ultrium 232 Tape Drive Internal	DW064A
	HP Ultrium 232 Tape Drive External	DW065A
Communications	1000BaseTX PCI LAN Adapter for HP-UX (Available OD1 only. For field add-on/standalone, use A6825A)	A6825A
	1000BaseSX (Fibre) PCI LAN Adapter for HP-UX	A6847A
	PCIX 4-Port 1000 Base-TX LAN Adapter	AB545A
	PCI 2GB Fiber Channel Adapter	A6795A
	8-Port Serial MUX Adapter	A6748A
	2-Port Serial Adapter	AD278A
Software Applications and Compilers	HP C++/ANSI C Developers Bundle	B9007AA
Rack Options	c8000 Tower to Rack Conversion Kit	AB626A
	c8000 Rack to Tower Conversion Kit	AB625A
Input Devices	Keyboard Kit, USB, PC-104/105, Carbon black – Includes USB keyboard and 3-button mouse. Must choose localization option	A4983D
	USB scroll mouse	064
	Delete keyboard	053
	Spaceball 5000, Serial Interface	AB602A
	SpaceMouse, Serial Interface	AB677A
	HP SpacePilot USB 3D Input Device	AB681A
Other	System C13 power cord only	A4199A
	System C13 and monitor C13 power cords	A4199B
	Remote Workstation Receiver Software Module	DM498A

After-Market Options/Standalone Accessories

Monitors	HP L1955 19-inch TFT Flat Panel Display - Analog/Digital	PD974A5 (Americas)
	HP LP2065 20-inch TFT Flat Panel Display - Analog/Digital	EF227A5 (Americas) EF227A4 (EMEA, APJ)
	HP LP2465 24-inch TFT Widescreen Flat Panel Display	EF224A5 (Americas) EF224A4 (EMEA, APJ)

NOTE: [AssetControl](#) features are accessible with HP workstations featuring [Intelligent Manageability](#).

Memory

ECC Registered 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. Peak bandwidth: up to 8.5 GB/s.

MINIMUM MEMORY

1 GB (2 x 512 MB)

MAXIMUM MEMORY

32 GB (8 x 4 GB)

Memory		Slot 0A	Slot 0B	Slot 1A	Slot 1B	Slot 2A	Slot 2B
Minimum	1 GB	512 MB	512 MB				
Maximum	32 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
Memory		Slot 3A	Slot 3B				
Minimum	1 GB						
Maximum	32 GB	4 GB	4 GB				

Storage

Drive Bay Locations



Drive Support

	Quantity Supported	Position Supported	Controller
Optical Drives			
DVD-ROM Drive	Up to 2	1, 2, 3	Integrated EIDE
CD-RW Drive	Up to 2	1, 2, 3	Integrated EIDE
DVDRW Drive	Up to 1	1, 2, 3	Integrated EIDE
Maximum 3 Optical Drives supported.			
<hr/>			
Hard Drives			
Ultra320 SCSI Drives			
1-inch	Up to 4	4, 5, 6, 7	68-pin interface connector plus four-pin standard power connector
73 GB Ultra320 SCSI (10K rpm)			
146 GB Ultra320 SCSI (10K rpm)			
300 GB Ultra320 SCSI (10K rpm)			
73 GB Ultra320 SCSI (15K rpm)			
UltraATA IDE Drives			
	Up to 2	4, 5, 6, 7	NOTE: This configuration reduces the number of optical drives supported to a maximum of two.
80 GB Ultra/ATA100 IDE Drive (7200 rpm)			
<hr/>			
Maximum Storage Capacity	1.2 TB (SCSI)		
	160 GB (IDE)		

Technical Specifications

System Unit	Tower Dimensions	Height	19.3 in (490.2 mm)
		Depth	22.5 in (571.4 mm)
		Chassis Width	8.0 in (203.2 mm)
		Pedestal Width	11.3 in (287.0 mm)
Weight (tower configuration)		Minimum Tower Configuration	49.5 lb (22.5 kg)
		Maximum Tower Configuration	62.5 lb (28.3 kg)
Rack Dimensions (HxWxD)		Chassis Height	8.0 in (203.2 mm)
		Front Panel Height	8.6 in (219.0 mm)
		Depth	22.4 in (568.9 mm)
		Chassis Width	16.7 in (424.2 mm)
		Front Panel Width	19.0 in (482.6 mm)
EIA Units		5U (8 units possible per 2 metre rack)	
Weight (rack configuration)		Minimum Rack Configuration	48.3 lb (21.9 kg)
		Maximum Rack Configuration	61.3 lb (27.8 kg)
Power Supply		Input current (auto-ranging)	8.7A max @ 100V, 4.4A max @ 200V
		Line Frequency	50 - 60 Hz
		Maximum Power Input	650 W
Temperature		Operating	41° to 95° F (5° to 35° C)
		Non-operating	-4° to 158° F (-20° to 70° C)
Maximum Altitude (non-pressurized)		Operating	10,000 ft (3,048 m)
		Non-operating	15,000 ft (4,572 m)

Technical Specifications - Controllers and Hard Drives

Ultra320 Embedded Dual Channel SCSI Controller	Number of supported devices	15 per channel
	Interface protocol	Supports Fast, Ultra, Ultra2, Ultra160 and Ultra320
	Host bus transfer rate	Up to 320 MB/s
	SCSI data transfer rate	Up to 320 MB/s
	Bus width	64-bit
	Internal connectors	Two 68-pin high density LVD SCSI
	External connector	Optional 68-pin HD SCSI - 16-bit SE or LVD

Ultra320 SCSI Hard Drives	73 GB	Capacity	73,407,865,856 bytes			
		Height	1.0 in (2.5 cm)			
		Width	3.5 in (8.9 cm)			
		Interface	68 pin LVD SCSI			
		Synchronous Transfer Rate (Maximum)	320 MB/s			
		Buffer	8 Mbytes			
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.3 msec		
			Average	<4.5 msec		
			Full-Stroke	<11.0 msec		
		Rotational Speed	10,000 rpm			
		Logical Blocks	143,374,738			
		Operating Temperature	40° to 130° F (5° to 55° C)			
		146 GB	146 GB	Capacity	146,815,737,856 bytes	
				Height	1.0 in (2.5 cm)	
				Width	3.5 in (8.9 cm)	
Interface	68-pin LVD SCSI					
Synchronous Transfer Rate (Maximum)	320 MB/s					
Buffer	8 Mbytes					
Seek Time (typical reads, includes controller overhead, including settling)	Single Track			0.3 msec		
	Average			<4.5 msec		
	Full-Stroke			<11.0 msec		
Rotational Speed	10,000 rpm					
Logical Blocks	286,749,488					
Operating Temperature	40° to 130° F (5° to 55° C)					

Technical Specifications - Controllers and Hard Drives

300 GB	Capacity	300,000,000,000 bytes		
	Height	1.0 in (2.5 cm)		
	Width	3.5 in (8.9 cm)		
	Interface	68-pin LVD SCSI		
	Synchronous Transfer Rate (Maximum)	320 MB/s		
	Buffer	8 Mbytes		
	Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.3 msec	
		Average	<4.5 msec	
		Full-Stroke	<11.0 msec	
	Rotational Speed	10,000 rpm		
	Logical Blocks	585,937,500		
	Operating Temperature	40° to 130° F (5° to 55° C)		
	73 GB	Capacity	73,407,865,856 bytes	
Height		1 in (2.5 cm)		
Width		3.5 in (8.9 cm)		
Interface		68 pin LVD SCSI		
Synchronous Transfer Rate (Maximum)		320 MB/s		
Buffer		8 Mbytes		
Seek Time (typical reads, includes controller overhead, including settling)		Single Track	0.3 msec	
		Average	<3.5 msec	
		Full-Stroke	<9.0 msec	
Rotational Speed		15,000 rpm		
Logical Blocks		143,374,738		
Operating Temperature		40° to 130°F (5° to 55° C)		

ATA/100 Hard Drive	80 GB	Capacity	80 GB	
		Dimensions (H x W)	1.0 x 3.5 in (2.5 x 8.9 cm)	
		Interface	Ultra ATA/100	
		Synchronous Transfer Rate (Maximum)	100 MB/s	
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.8 ms
			Average	11.0 ms
			Full-Stroke	19.0 ms
	Rotational Speed	7,200 rpm		
	Logical Blocks	156,301,488		
	Operating Temperature	41° to 131°F (5° to 55°C)		

Technical Specifications - Graphics

ATI FireGL T2-128 Graphics Card	Form Factor	ATX
	Graphics Controller	ATI FGL 9600 Visual Processing Unit (VPU)
	Bus Type	AGP 8X Version 3.0 compliant
	DAC	Dual 400 MHz/10-bit per component
	Memory	128-MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	DVI-I and VGA monitor outputs
	Slots required	Occupies 1 physical slot in the system
	Dimensions	Single AGP/ATX card. 9.07 x 4.25 in (230.28 x 107.96 mm)
	Multi-monitor support	DVI-I and DB-15 connectors support dual display, maximum HP-UX supported resolution of single display 1920 x 1200, maximum dual display 2560 x 1024
	Additional product features	128-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 models Hardware cursor with full colour alpha channel 32-bit (24+8-bit stencil) Z buffer Bus mastering support for 2D/3D display lists and local memory vertex list execution Hardware lighting support for 8 light sources Bilinear and Trilinear texturing Cubic Environment Mapping Projective Texture and 3D Texture support Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications
	AGP 4x/8x Version 3.0 compliant including:	Sideband Addressing AGP Texturing (Execute Mode) AGP Read and AGP Write Support 8X Fast write support
	FGL 9600 GPU featuring:	VGA controller supporting full standard feature set 2D Engine with 128-bit datapath processing multiple pixels per clock PIXEL TAPESTRY III, 3D rendering engine utilizing 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. Dual independent display controllers with 4K x 4K address space each 128-bit external frame buffer interface
	Supported graphics APIs	OpenGL 1.2 with immediate mode support for all OGL primitive types
	Available graphics drivers	HP-UX - see: http://www.hp.com/workstations/support NOTE: This Web site is available in English only.

Technical Specifications - Graphics

<p>ATI FireGL X3-256 Graphics Card</p>	<p>Form Factor</p> <p>Graphics Controller</p> <p>Bus Type</p> <p>RAMDAC</p> <p>Memory</p> <p>Connectors</p> <p>Slots required</p> <p>Dimensions</p> <p>Multi-monitor support</p> <p>Additional product features</p>	<p>ATX</p> <p>ATI FireGL Visual Processing Unit (VPU)</p> <p>AGP 4x/8x Version 3.0 compliant</p> <p>Dual 400 MHz/10-bit per component</p> <p>256-MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage</p> <p>Dual DVI-I analog/digital monitor outputs</p> <p>Occupies 1 physical slot in the system</p> <p>Single AGP/ATX card. 9.07 x 4.25 in (230.28 x 107.96 mm)</p> <p>Maximum HP-UX supported resolution of single display 1920 x 1200 analog or digital. Maximum dual display 3840 x 1200.</p> <p>256-MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage</p> <p>64-KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers</p> <p>2D and 3D acceleration provided for 16-bit and 32-bit RGB modes</p> <p>Hardware cursor with full colour alpha channel</p> <p>32-bit Z buffer, 8-bit stored alpha and 8-bit Stencil planes</p> <p>Bus mastering support for 2D/3D display lists and local memory vertex list execution</p> <p>Hardware lighting support for up to 8 lights</p> <p>Bilinear and Trilinear texturing</p> <p>Cubic Environment mapping</p> <p>Projective Texture and 3D Texture support</p> <p>Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples</p> <p>Per pixel quad buffering on all screen resolutions</p> <p>VESA compliant Stereoscopic Interface on MiniDin Connector</p> <p>Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications</p> <p>DDC2B+ Monitor support</p>
<p>AGP 4x/8x Version 3.0 compliant including:</p>	<p>FGL Parallel Processing VPU featuring:</p>	<p>Sideband Addressing</p> <p>AGP Texturing (Execute Mode)</p> <p>AGP Read and AGP Write Support</p> <p>8X Fast write support</p>
<p>Supported graphics APIs</p>	<p>VGA controller supporting full standard feature set</p> <p>256-bit external frame buffer interface providing memory bandwidth of 22 GB per second</p> <p>6 parallel geometry engines, 12 parallel pixel pipelines, 128-bit full floating point precision</p> <p>Programmable pixel and vertex shaders with 16 textures per pass</p> <p>2X/4X/6X full scene anti-aliasing modes</p>	<p>OpenGL 1.2 with immediate mode support for all OGL primitive types</p>

Technical Specifications - Monitors

HP L1955 Flat Panel Monitor	Panel	Type	Active matrix, thin film transistor (TFT)	
		Viewable Image Area (diagonal)	19 in (48.25 cm) maximum viewable	
		Screen Opening (WxH)	14.9 x 12.0 in (38.0 x 30.5 cm)	
		Viewing Angle (typical)	176 degrees horizontal/176 degrees vertical (10:1 minimum contrast ratio)	
		Brightness (typical)	Up to 250 nits (cd/m ²)	
		Contrast Ratio (typical)	Up to 1000:1 (typical)	
		Response Rate (typical)	<16 ms (typical rise + fall)	
		Pixel Pitch	0.294 mm	
		Video/Other Inputs	Plug and Play	Yes (supports VESA DDC2B; PC2001 compliant)
			Self Powered USB 2.0 Hub	One upstream, four downstream ports (cable included)
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 (activated through on-screen display)			
Video Cable	VGA to VGA, DVI-D to DVI-D, and DVI-I to VGA			
Signal Interface/ Performance	Video Cable Length	78 in (2.0 m)		
	Horizontal Frequency	30 to 82 kHz		
	Vertical Frequency	56 to 75 Hz		
	Native Resolution	1280 x 1024 @ 75 Hz analog 1280 x 1024 @ 60 Hz digital		
	Maximum Resolution (Analog)	1280 x 1024 @ 75 Hz analog		
	Maximum Resolution (Digital)	1280 x 1024 @ 75 Hz digital		
	Preset VESA Graphic Modes (non-interlaced)	640 x 480 @ 60 Hz, 72 Hz, 75 Hz		
		720 x 400 @ 70 Hz		
		800 x 600 @ 60 Hz, 72 Hz, 75 Hz		
		1024 x 768 @ 60 Hz, 70 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	1152 x 900 @ 76 Hz		
Fail Safe Mode	Yes (limits out of range signal messages)			
Maximum Pixel Clock Speed	140 MHz			
User Programmable Modes	Yes, 15			
Anti-Glare	Yes			
Anti-Static	Yes			

Technical Specifications - Monitors

	AssetControl	Yes (accessible on HP Compaq Business Desktops featuring Intelligent Manageability)
	Default Colour Temperature	Yes (6500k, 9300k, SRGB, Custom User)
On Screen Display (OSD) Controls	Buttons or Switches	Power on/off; 3-button OSD; second level OSD buttons include dual-input switch, dedicated auto adjust switch
	Languages	English, Spanish, French, German, Italian, Japanese, Simplified Chinese
	User Controls	Size and Positioning Contrast Brightness Clock, Clock Phase Selectable Colour Temperature Serial Number Mode Displayed Sleep Timer Input Selection Factory Reset Individual Colour Contrast Full-screen Resolution
Power	Power Supply	Auto-ranging, 90 to 265 VAC; internal power supply
	Input Power	100 ~ 240 VAC
	Nominal Current	1.5 A maximum
	Frequency	50 ~ 60 Hz
	Average	33 watts when displaying standard office software
	Typical Power Consumption	< 40 watts
	Maximum	< 60 watts
	Power Saving	< 2 watts
	Off Mode	0 watts (when master power switch is in the off position)
	Power Cable Length	70 in (1.8 m); non-captive

Technical Specifications - Monitors

Mechanical	Dimensions (H x W x D)	Unpacked with stand	16.8 (minimum) to 22.3 (maximum) x 15.9 x 8.3 in (42.7 (minimum) to 56.6 (maximum) x 40.4 x 21.1 cm)	
		Base Area (Footprint D x W)	8.3 x 12.2 in (21.1 x 30.9 cm)	
		Panel only (without stand) (H x W x D)	13.2 x 15.9 x 3.1 in (33.5 x 40.4 x 7.9 cm)	
	Weight		Unpacked with stand	16.5 lb (7.5 kg)
			Unpacked without stand	10.5 lb (4.75 kg)
			Packaged	23.5 lb (10.7 kg)
	Bezel Width			13 mm left and right, 14 mm top, and 15 mm bottom
	Tilt Range			-5° to +35°
	Swivel Range			± 50° horizontal swivel
	Height Adjustable			Yes (5.1 in/13 cm adjustment range)
	Pivot Rotation			Yes, 90 °
	Base			Ships detached 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	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. Sold separately; part number DK985A. For more information, refer to the HP Desktop Access Centre QuickSpecs.	
	HP Flat Panel Speaker Bar		Powered directly by the monitor, seamlessly attaches to the monitor's bezel to bring full multimedia support to select HP flat panel monitors. Features dual speakers with full sound range and external jack for headphones. Sold separately, part number PF804AA. For more information, refer to the HP Flat Panel Speaker Bar QuickSpecs.	

Technical Specifications - Monitors

Other	Accessories Included	VGA to VGA cable, DVI-D to DVI-D cable, DVI-I to VGA cable, USB cable, user CD-ROM with Pivot Pro software
	Software	Pivot Pro software from Portrait Displays, Inc. interacts with your PC's native graphics driver to enable seamless portrait screen redraws with a simple mouse-click or keyboard command. Pivot Pro supports 90-degree portrait and landscape views. Language support is available in English, Japanese, French, German, Spanish, Italian, and Traditional and Simplified Chinese.
	Software	HP Display LiteSaver feature lets you schedule Sleep mode at preset times to help protect the display against image retention, drastically lower power consumption and energy costs, and extend the lifespan of the monitor.
	User Guide Languages	English
	Warranty Languages	English
	Colour	Carbonite, two-tone carbonite and silver (EMEA only)
	VESA Mounting	Yes (swing arm/wall mount not included); base 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 13406-2 Compliant (Pixel Defect Guidelines), Mexican NOM Approval, MPR-II Compliant, PC2001 Compliant, PC99 Certified, S. Korean MIC Approval, Taiwan BSMI Approval, TCO 99 or 03 depending on region (emissions, ergonomics, environment), TUV-Ergo, UL Listed, VCCI Approvals, Microsoft® Windows® Certification
Compatibility		VESA Video Signal Standard (VSI) Compliant video cards have been tested and proven compatible for use with the HP L1955 Flat Panel Monitor. Recommended for use with HP products.
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.

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

Technical Specifications - Monitors

	Response Rate (typical)*	16 ms (typical, rise + fall)	
	Pixel Pitch	0.255 mm	
	*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 input); 30 to 92 Hz (DVI input) (for modes with pixel clock less than 162 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 Colour Temperature	6500 K	

Technical Specifications - Monitors

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		
	Input Impedance	75 ohms \pm 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		
Power	Video Cable Length	5.9 ft (1.8 m)		
	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		
Mechanical	Power Cable Length	5.9 ft (1.8 m)		
	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)	
	Environmental	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		
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 (3,657.6 m)		
Altitude – Non-operating	+40,000 ft (12,192 m)			

Technical Specifications - Monitors

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, Windows Certification (Microsoft Windows 98, Microsoft Windows 2000, and Microsoft Windows XP)
Compatibility		Compatible with platforms using the VESA standard video modes and HP Compaq Business Desktops d500, d300, and d200 Series, Compaq Evo Desktops, and HP Business Desktops d300 series.
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.

HP Flat Panel Monitor LP2465	Panel	Type	24-inch Active Matrix TFT (thin film transistor)
		Viewable Image Area (diagonal)	24 in (60.96 cm)

Technical Specifications - Monitors

	Screen Opening (W x H)	20.47 x 12.83 in (52.0 x 32.6 cm)
	Viewing Angle (typical)*	178° H/ 178° V (10:1 minimum contrast ratio)
	Brightness (typical)*	500 nits (cd/m ²)
	Contrast Ratio (typical)*	1000:1
	Response Rate (typical)*	8 ms (typical gray to gray)
	Pixel Pitch	0.270 mm
	Backlight Lamp Life (to half brightness)	50K hours
	<i>*Response time 13 ms rise and fall, 6 ms gray to gray.</i>	
On Screen Display (OSD) Controls	Buttons or Switches	Input Select, Auto Adjust, OSD Up, OSD Down, OSD Menu Select, Power
	Languages	English, French, German, Spanish, Italian, Japanese, Dutch
	User Controls	Brightness, contrast, positioning, colour temperature, individual colour control, serial number display, full screen resolutions, clock, clock phase, 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)
	Native Resolution	1920 x 1200 @ 60 Hz (recommended) (native aspect ratio of 16:10)
	Preset VESA Graphic Modes (non-interlaced)	1920 x 1200 @ 60 Hz
		1600 x 1200 @ 60 Hz, 75 Hz
		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, 75 Hz
	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, 20	
Anti-Glare	Yes	
Anti-Static	Yes	
Default Colour Temperature	6500 K	

Technical Specifications - Monitors

Video/Other Inputs	Plug and Play	Yes		
	Self Powered USB 2.0 Hub	One upstream, four downstream ports (located on side of monitor, cable included)		
	Input Signal	Two DVI-I (VGA analog and digital) inputs		
	Input Impedance	75 ohms \pm 10%		
	Sync Input	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green		
	Video Cable	VGA to DVI-I; DVI-D to DVI-D		
	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	
		Typical Power Consumption	75 watts	
Maximum		< 110 watts		
Power Saving		< 2 watts		
Power Cable Length		6.2 ft (1.9 m)		
Mechanical	Dimensions (H x W x D)	Unpacked w/ stand	14.6 (min) to 19.7 (max) x 22 x 9.1 in (37.1 (min) to 50.1 (max) x 55.4 x 23.2 cm)	
		Unpacked w/o stand (head only)	14.4 x 22 x 3.7 in (36.6 x 55.84 x 9.2 cm)	
		Packaged	11.7 x 22.1 x 25.6 in (29.8 x 56.0 x 65.1 cm)	
	Weight	Unpacked	23.6 lbs (10.7 kg)	
		Packaged	23.6 lbs (10.7 kg)	
	Tilt Range	-5° to + 25° vertical		
	Swivel Range	-45° to + 45°		
	Height Adjustable	Yes, range 5.1 in (130 mm)		
	Pivot Rotation	Yes		
	Base	Detachable, ships detached		
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 (3,657.6 m)		
	Altitude – Non-operating	+40,000 ft (12,192 m)		

Technical Specifications - Monitors

Other

Accessories Included

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-D cable - connects the graphic card's DVI-D digital connector to the monitor's input #2 (DVI-I digital) connector

Software

Pivot Pro software from Portrait Displays, Inc. interacts with your PC's native graphics driver to enable seamless portrait screen redraws with a simple mouse-click or keyboard command. Pivot Pro supports 90-degree portrait and landscape views. Language support is available in English, Japanese, French, German, Spanish, Italian, and Traditional and Simplified Chinese.

HP Display Assistant is a software utility that allows monitor adjustment, colour calibration, and security/asset management using the Display Data Channel Command Interface (DDC/CI) protocol of the connected desktop PC.

HP Display LiteSaver feature allows you to schedule Sleep mode at preset times to help protect the monitor against image retention, drastically lower power consumption and energy costs, and extend the lifespan of the monitor.

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

Options

HP Silver Flat Panel Speaker Bar - Part number: EE418AA

Powered directly by the monitor or PC, the Speaker Bar seamlessly attaches to the monitor's lower bezel to bring full audio support to select HP flat panel monitors. Features include dual speakers with full sound range and an external jack for headphones. Sold separately. For more information, refer to the HP Flat Panel Speaker Bar QuickSpec.

Technical Specifications - Monitors

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, Microsoft Windows Certification (Microsoft Windows 98, Microsoft Windows 2000, and Microsoft Windows XP)

Compatibility

Compatible with platforms using the VESA standard video modes. Recommended for use with HP products.

Service and Warranty

Three years parts, labour, and on-site service. 24-hour, 90-day, toll-free technical support. Replacement options may include second business day on-site service, or next business day direct replacement, at HP's sole discretion. With direct replacement, HP will ship a replacement display product directly to you. Using the prepaid shipping labels provided, return your failed display to HP in the same packaging as the replacement. Certain restrictions and exclusions apply. For details see your product warranty or contact HP Customer Support.

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