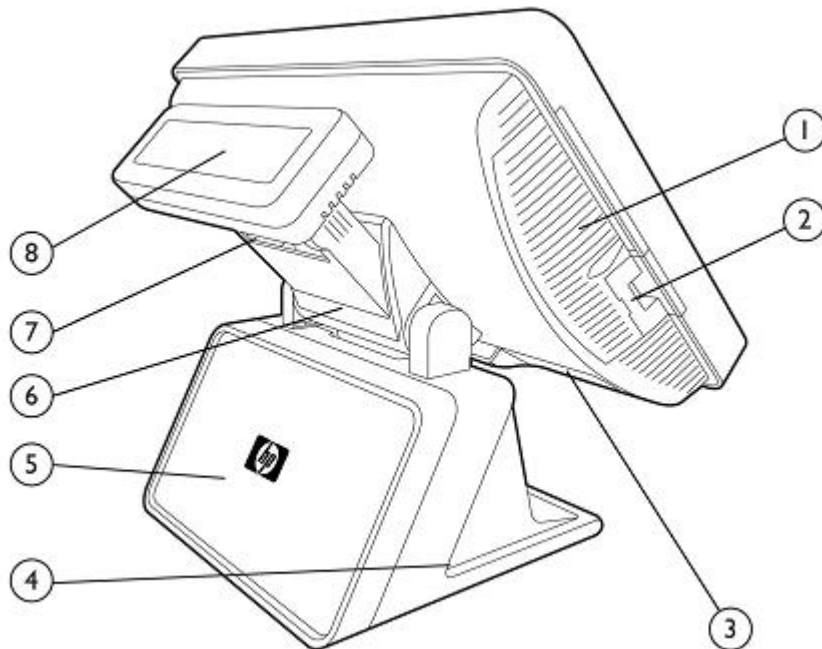


### Overview



1. Power LED/Beep LED
2. Multi-Track (3) Magnetic Stripe Reader (MSR) - Available on select models
3. 15" TFT 5-Wire Resistive Touch Screen – standard on all models



1. Two 2.5" Storage Drive bays
2. One USB 2.0 port, one audio line-out and one microphone-in jack
3. Advertisement panel (non-electrical)
4. Main display hinge, allows for 90-degree pitch adjustment

### Overview

3. I/O Panel with cover
  4. Stand with 130W 87% Energy Efficient internal power supply adapter. Includes Kensington lock support for added security.
  7. Customer Facing Display hinge, allows for 80degree pitch adjustment
  8. Customer facing two line Vacuum Florescent Display (VFD) on select models and as option kit. Optional 10" LCD Customer Display also available.
- 

### At a Glance

- aDesigned for long-term deployment within general retail, hospitality, and other retail market
- Integrated 15" TFT 5-Wire Resistive Touchscreen and Magnetic Stripe Reader (MSR)
- Customer-facing 2 line VFD (Vacuum Florescent Display); standard on select models
- Customer-facing 10.4" LCD Display; optional (cannot be used in conjunction with 2 Line VFD)
- Integrated dual independent monitor support through secondary VGA interface
- Intel® Core™ 2 Duo E7400 processor or Intel Celeron 440 processor
- Intel Q965/ICH8R Chipset
- Integrated Intel Graphics Media Accelerator 3000
- Dual Channel DDR2 Memory
- iOne of the following operating systems: Genuine Windows 7 Professional 32-bit/64-bit\*, Windows Embedded POSReady 2009, FreeDOS
- 10/100/1000 NIC
- Powered ports (Serial and USB+POWER 24Volts)
- SMART III HHD or SSD
- RAID level 0,1 capable (RAID 1 can be HP Factory preconfigured)
- Manageability Tools
- Cable Management Features
- Advertising Panel (for print ads) standard on all models
- Energy Star 5 qualified, EU Compliant, RoHS2 Compliant
- 87% energy efficient internal power supply adapter
- HP Limited Warranty, 3/3/3 standard: 3 years parts, 3 years labor, and 3 years on-site services

**NOTE\*:** Factory preinstall not available. Drivers support only.

**NOTE:** All models and features may not be available in all countries.



### Standard Features

<b>Processors</b>	Intel® Celeron® 440 (2.0 GHz, 512K L2 Cache, 800 MHz FSB) Intel Core™ 2 Duo E7400 (2.8 GHz, 3 MB L2 Cache, 1066 MHz FSB)																								
<b>Operating System</b>	<b>Preinstalled</b> Genuine Windows 7 Professional 32-bit* Genuine Windows 7 Professional 64-bit*† FreeDOS Windows Embedded POS Ready 2009 <i>*This system may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See <a href="http://www.microsoft.com/windows/windows-7/">http://www.microsoft.com/windows/windows-7/</a> for details.</i> <i>† Factory preinstall not available. Drivers support only.</i>																								
<b>Graphics</b>	Integrated Intel Graphics Media Accelerator 3000																								
<b>Display</b>	15-inch diagonal TFT dual-bulb display, 1024 x 768 resolution, with 5-wire resistive type touchscreen. Precalibrated at factory but should be recalibrated after initial software via the calibration wizard. Hard or soft stylus input: finger tip, finger nail, or credit card edge to perform touch.  <table><tr><td>Touch Technology</td><td>5-wire resistive type</td></tr><tr><td>Resolution</td><td>1024 x 768</td></tr><tr><td>Max Color</td><td>16.7M</td></tr><tr><td>Contrast Ratio</td><td>800:1</td></tr><tr><td>Brightness</td><td>300 cd/m<sup>2</sup></td></tr><tr><td>Pixel Pitch</td><td>0.297mm</td></tr><tr><td>Viewing Angle</td><td>140° horizontally and 140° vertically</td></tr><tr><td>Response rate</td><td>2ms (rise time), 6ms (decay time)</td></tr><tr><td>Default Color Temperature</td><td>6488° K</td></tr><tr><td>Anti Glare Harness</td><td>3H</td></tr><tr><td>Color Gamut</td><td>61.56%</td></tr><tr><td>Backlight Units</td><td>2 CCFL</td></tr></table>	Touch Technology	5-wire resistive type	Resolution	1024 x 768	Max Color	16.7M	Contrast Ratio	800:1	Brightness	300 cd/m <sup>2</sup>	Pixel Pitch	0.297mm	Viewing Angle	140° horizontally and 140° vertically	Response rate	2ms (rise time), 6ms (decay time)	Default Color Temperature	6488° K	Anti Glare Harness	3H	Color Gamut	61.56%	Backlight Units	2 CCFL
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<b>Memory</b>	<b>Dual-channel</b> DDR2 up to 4 GB capacity, 2 slots, supports 800 MHz; most configurations ship with 1 x 2GB or 1 x 1 GB + 1 x 2 GB (3 GB)  Configurable Model: (Available in AsiaPacific region only) 1-GB DDR2 Synch DRAM PC2-6400 (800 MHz) Non ECC (1 x 1 GB) 2-GB DDR2 Synch DRAM PC2-6400 (800 MHz) Non ECC (1 x 2 GB) 2-GB DDR2 Synch DRAM PC2-6400 (800 MHz) Non ECC (2 x 1 GB) 3-GB DDR2 Synch DRAM PC2-6400 (800 MHz) Non ECC (1 x 1 GB, 1 x 2 GB) 4-GB DDR2 Synch DRAM PC2-6400 (800 MHz) Non ECC (2 x 2 GB)																								



### Standard Features

**NIC** Realtek RTL8111C Ethernet Connection, 10/100/1000, with WOL support

LAN STATUS:	10MB	100MB	1000MB
Activity is occurring (Left LED):	LED ACTIVE	LED ACTIVE	LED ACTIVE
Link Status (right LED):	None	LED On	LED On

**Keyboard** Keyboard not included. PS/2 or USB supported.  
**NOTE:** A keyboard is required to unbundle the software image.

**Pointing Device** Pointing Device not included. USB supported. Pointing devices include a mouse, trackball, touch pad, etc.

**Multi Track (3) Magnetic stripe reader (MSR)** Integrated MSR available on some select models. Conforms to ANSI/ISO 7810, 7811 1/5, 7812, and 7813;  
Supports OPOS and JPOS drivers layer; 3 tracks: IATA, ABA, THRIFT; bi-directional swipe, LED indicates status of reader.

**NOTE:** The MSR is standard on some models and optional on others

**Vacuum Fluorescent Display (VFD) (Customer Facing)** 2 line x20 character display (40 characters total), RS232 interface, DC 5Volts (V) (COM 2 port set to 5V at HP factory in BIOS setup). Supports complex character set, control commands, user-defined fonts and international fonts. Display pitch adjustment 80 degrees (10 degrees to 90 degrees)

**WARNING:** VFD must be connected to the COM 1 or COM 2 port (It should not be connected to COM3 port because COM 3 does not support DC5V. Connecting the VFD into COM 3 port may damage the VFD COM 1 may be used for the VFD but 5V will need to be selected in BIOS Setup for COM 1.

**NOTE:** The VFD occupies COM 2 port from the HP factory. Although three COM ports are present on the HP ap5000, COM 2 port is occupied by the VFD on factory configured models; therefore, only two COM ports are available to the end user when the VFD is installed.

**NOTE:** The VFD is standard on select models and also available as an optional kit

**Advertisement panel** This non-electrical panel features a clear cover. It may be removed so that print material/advertisements can be displayed. HP provides a template for the advertisement panel.



# QuickSpecs

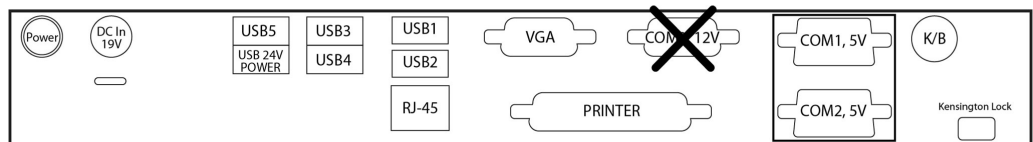
## HP ap5000 All-in-One (AiO) Point of Sale (POS) System

### Standard Features

Storage	Hard Drive or Solid State Drive	(2) 2.5" internal storage bays: 160 GB or 250GB 2.5" Hard Disk Drive (HDD) (select models), 64 GB or 80GB 2.5" Solid State Drive (SSD) (select models)
	Optical Drive	External USB only (not included). <b>NOTE:</b> an optical drive is required to restore the software image.

I/O Panel	VGA	1
	<b>Warning:</b> This is a Powered VGA Port. Do not hot plug a monitor into the VGA port. Doing so may damage the monitor. Always power down the ap5000 when removing or attaching a monitor to the VGA port.	
	USB 2.0	6: 5 (located at bottom of main display behind access panel), 1 left side (behind access panel)
	Audio line out	1
	Microphone in	1
	Power connector	1: DC 19Volts for 130W AC power adapter
	RJ-45/Ethernet	1
	RS232 ports	3: COM 1 and COM 2 (5 V configurable in BIOS), COM 3 (12V configurable in BIOS)
	<b>NOTE:</b> When the HP 2-line VFD is preconfigured by the HP factory, COM 2 port is occupied. When the optional 10.4" Customer Facing Display is installed, all three COM ports become available.	
	USB+power	1: 24 Volts
	Keyboard (PS/2)	1
	Parallel port	1
	Kensington Lock Hole	2 (lock kit sold separately)
	<b>Warning:</b> This is a Powered VGA Port. Do not hot plug a monitor into the VGA port. Doing so may damage the monitor. Always power down the ap5000 when removing or attaching a monitor to the VGA port.	

#### I/O Panel Layout:



(screen side)

**NOTE:** I/O Panel located at rear, lower side of display under cover; I/O view when facing 15" touch screen and bottom flipped up

Audio/Visual	Intel integrated high-definition audio with 2-channel Via VT1708S codec
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### Standard Features

<b>Software</b>	<b>Preinstalled software</b>	PDF Complete, HP Client Automation Agent McAfee Total Protection (Windows 7 and Windows XP only)
<b>Power Manager</b>	Advanced Configuration and Power Management Interface (ACPI) allows the system to wake from a low power mode.  <b>NOTE:</b> Power button is located on I/O panel and concealed under the I/O cover.	
<b>SMBIOS</b>	System Management BIOS, previously known as DMI BIOS, for system management information	
<b>Security</b>	Kensington Lock Support, (located in two places: underneath the base and on I/O panel), Power-On password protection, Setup password protection, USB port disable.	
<b>Power Supply</b>	130 W AC power adapter, ENERGY STAR 5.0 qualified, European Union 2005/32/EC (EUP LOT 6, EUP LOT 7), input 90 to 260 VAC; Frequency range 47 to 63 Hz	
<b>Service and Support</b>	Standard 3/3/3 limited warranty: 3 years parts, 3 years labor, 3 years on-site service. OS support for 90 days; quick restore solution included (requires external optical drive/not included)	



### Options

Customer Facing Displays	HP 2-line x 20 characters, Vacuum Florescent Display (VFD) kit	BV495AA
	HP 10" LCD Customer facing display kit	AZ191AA
<hr/>		
Magnetic Stripe Reader	HP ap5000 Magnetic Stripe Reader	BZ721AA
<hr/>		
Hard Drives	HP 160GB 7.2K SATA 3.0-Gb/s 2.5" Hard Disk Drive	BS582AA
	HP 250GB 7.2K SATA 3.0-Gb/s 2.5" Hard Disk Drive	BZ724AA
	HP ap5000 64GB SATA 2.5" Solid State Drive	BT391AA
	HP 80 GB Solid State Drive for HP Business Desktop PCs	BM848AV**
	<b>NOTE:</b> Drive caddy included with HP ap5000 base system	
	*Alternative if BT391AA is not available for 64GB.	
<hr/>		
Optical Drives	External USB CD/DVD R/RW Drive	FS943AA#ABA
<hr/>		
Input/Output Devices	HP USB 2-Button Optical Scroll Mouse	DC172AT
	HP USB Washable Keyboard	VF097AA
<hr/>		
POS Peripherals	HP Heavy Duty Cash Drawer	FK182AA
	HP Flip-Top Cash Drawer	BW867AA
	HP Laser Barcode Scanner	EY022AA
	HP Imaging Barcode Scanner	BW868AA
	HP USB Single Station Thermal Receipt Printer	FK224AA
	HP USB Multifunction Thermal Receipt Printer with MICR	FK184AA
<hr/>		
Memory (DIMMs)	HP 1 GB PC2-6400 (DDR2 800 MHz)	BZ722AA*
	HP 2 GB PC2-6400 (DDR2 800 MHz)	BZ723AA**
	* Desktop PC memory AH058AA also compatible	
	** Desktop PC memory AH060AA also compatible	
<hr/>		
Security	HP Keyed Cable Lock	BV411AA
<hr/>		
Accessories	HP ap5000 Wall Mount kit	BT390AA
	HP Quick Release Mechanism Kit (for use with Wall Mount Kit)	EM870AA
	HP PS/2 Standard Keyboard	DT527A
	HP PS/2 2-Button Optical Scroll Mouse	EY703AA
	HP USB-P/S2 Optical Mouse	DC369A
	HP USB Optical Travel Mouse	RH304AA



# QuickSpecs

## HP ap5000 All-in-One (AiO) Point of Sale (POS) System

### Technical Specifications

<b>System Unit</b>	<b>Dimensions (HxWxD)</b>	(12.40 x 15.79 x 9.33 in) 31.5 x 40.1 x 23.7 cm Bottom footprint: (W: 9.84 x D: 9.33 in) W: 25.0 x D: 23.7 cm
	<b>Weight</b>	24.36 lb (11.05 kg)
	<b>Stand-Alone Power Requirements</b>	Electrical Ratings 90 to 264 VAC; 47 to 63 Hz Average Operating Power 47.3W under normal operation Max Operating Power 130 watts
	<b>Temperature</b>	Operating 50° to 104° F (10 to 40° C) Non-operating -20° to 140° F (-30° to 60° C)
	<b>Relative Humidity</b>	Operating 20 to 85%
	<b>Altitude</b>	Operating 0 to 10,000 ft (3,048 m) (unpressurized) Non-operating 0 to 30,000 ft (9,144 m)
	<b>Industry Standard Certifications</b>	UL, CSA, FCC Compliance, ENERGY STAR®, EPEAT® Silver

For accessibility information on HP products, please visit: <http://www.hp.com/accessibility>.

<b>Integrated Graphics Media Accelerator 3000</b>	<b>Graphic Controller</b>	Integrated GMA 3000
	<b>Bus type</b>	Integrated
	<b>RAMDAC</b>	Single 400 MHz integrated
	<b>Memory</b>	UMA with DVMT 4.0 support for frame buffer sizes 8-256 MB
	<b>Controller clock speed</b>	667 MHz
	<b>Overlay planes</b>	One 16-bit video overlay plane
	<b>Maximum Color Depth</b>	32 bpp
	<b>Maximum vertical refresh rate</b>	85 Hz
	<b>Multi-display Support</b>	Dual independent monitor support through secondary VGA interface. Primary display is 15" touch screen. Optional, secondary 10" LCD Customer Facing Display may be attached to VGA port in I/O Panel.
	<b>Graphics/Video API Support</b>	DirectX 9.0c, WGF 1.0, DirectX VA 2.0, Shader Model 3.0, OpenGL 1.5

**Resolutions Supported<sup>1</sup>**

Resolution	Maximum Refresh Rate (Hz)	
	Analog Monitor	Digital Monitor
640 x 480	85	60
800 x 600	85	60
1024 x 768	85	60
1280 x 1024	85	60
1600 x 1200	85	60
1920 x 1080	85	60-R <sup>2</sup>
1920 x 1200	85	60-R <sup>2</sup>
1920 x 1440	60	N/A

**NOTES:**

<sup>1</sup> Modes listed are supported with a single active display. The supported mode list for multiple active displays is a subset of this list. Not all modes will support video playback and some supported modes may use software MC (motion compensation) rather than hardware MC. Not all modes will support 3D





### Technical Specifications

acceleration depending on the system configuration (e.g., resolution selected, size of frame buffer, number of installed memory modules, etc.).

<sup>2</sup> -R denotes reduced blanking timings (some digital monitors may not support reduced blanking timings).

2.5" 7200 RPM Serial ATA Hard Drive	250-GB	<b>Capacity</b>	250,059,350,016 bytes		
		<b>Height</b>	0.374 in (9.5 mm)		
		<b>Width</b>	Media diameter: 2.5 in (63.5 mm)		
			Physical size: 2.75 in (70 mm)		
		<b>Interface</b>	Serial ATA (3.0 Gb/s)		
		<b>Synchronous Transfer Rate (Maximum)</b>	Up to 3 Gb/s		
		<b>Cache</b>	8 MB		
		<b>Seek Time</b> (typical reads, includes controller overhead, including settling)	<b>Single Track</b>	2.0 ms	
			<b>Average</b>	12 ms	
			<b>Full-Stroke</b>	22 ms	
		<b>Rotational Speed</b>	7,200 rpm		
		<b>Logical Blocks</b>	488,397,168		
		<b>Operating Temperature</b>	41° to 131°F (5° to 55°C)		
		2.5" Solid State Drives	80-GB	<b>Capacity</b>	160,041,885,696 bytes
<b>Height</b>	0.374 in (9.5 mm)				
<b>Width</b>	Media diameter: 2.5 in (63.5 mm)				
	Physical size: 2.75 in (70 mm)				
<b>Interface</b>	Serial ATA (3.0 Gb/s)				
<b>Synchronous Transfer Rate (Maximum)</b>	Up to 3 Gb/s				
<b>Cache</b>	8 MB				
<b>Seek Time</b> (typical reads, includes controller overhead, including settling)	<b>Single Track</b>			2.0 ms	
	<b>Average</b>			12 ms	
	<b>Full-Stroke</b>			22 ms	
<b>Rotational Speed</b>	7,200 rpm				
<b>Logical Blocks</b>	312,581,808				
<b>Operating Temperature</b>	41° to 131°F (5° to 55°C)				
2.5" Solid State Drives	80-GB			<b>Unformatted Capacity*</b>	80 GB
		<b>Architecture</b>	Multi Level Cell (MLC) NAND Flash with wear leveling 10 channel controller		
		<b>Interface type</b>	SATA 3Gb/sec		
		<b>Dimensions-external</b> (W x H x D)	2.74 x 0.37 x 4 in (6.98 x 0.95 x 10.2 cm)		



### Technical Specifications

<b>Weight</b>	0.18 lb (80 g)	
<b>Bandwidth Performance</b>	<b>Sustained Sequential Read</b>	Up to 250 MB/s
	<b>Sustained Sequential Write</b>	Up to 70 MB/s
	<b>Random Read (4KB)</b>	up to 35K IOPs
	<b>Random Write (4KB)</b>	up to 6.6K IOPs
<b>Latency</b>	<b>Read</b>	65 ms
	<b>Write</b>	85 ms
<b>Power</b>	<b>Total power consumption</b>	0.15 Watt (Active); 0.075 Watt (Idle)
<b>Useful drive life</b>	<b>5 years</b>	35TB written, up to 20GB/day for 5 years
<b>Environmental</b> (all conditions, non- condensing)	<b>Temperature</b> (operating)	32° to 158° F (0° to 70° C)
	<b>Relative Humidity</b> (operating)	5% to 95%
	<b>Maximum Wet Bulb</b> <b>Temperature</b> (operating)	84° F (29° C)
	<b>Shock</b> (operating)	1,500 G/0.5 msec
<b>Regulations</b>	UL, CSA, EN 60950-2000, CISPR Pub 22 Class B, CNS 13438, AS/NZS CISPR 22:2002 Class B, R1113 and C1172 Class B	

\* For solid state disk drives, GB means 1 billion bytes. 80GB is the unformatted capacity of this drive before a portion of the drive is reserved for flash management features. Actual capacity will vary by content

### 64-GB

<b>Unformatted Capacity</b>	64 GB	
<b>NAND Flash Memory</b>	Multi Level Cell (MLC) with wear leveling controller	
<b>Interface type</b>	SATA 3Gb/sec	
<b>Dimensions-external</b> (W x H x D)	2.74 x 0.37 x 4 in (6.98 x 0.95 x 10.2 cm)	
<b>Weight</b>	0.14 lb (65 g)	
<b>Internal transfer rate</b>	<b>Write speed</b>	Up to 220 MB/s
	<b>Read speed</b>	Up to 120 MB/s
<b>Host transfer rate</b>	<b>Ultra DMA mode</b>	Up to 150 MB/s
<b>Environmental</b> (all conditions, non- condensing)	<b>Temperature</b> (operating)	32° to 158° F (0° to 70° C)
	<b>Relative Humidity</b> (operating)	5% to 95%
	<b>Maximum Wet Bulb</b> <b>Temperature</b> (operating)	84° F (29° C)



### Technical Specifications

#### Regulations

UL, CSA, EN 60950-2000, CISPR Pub 22 Class B, CNS 13438, AS/NZS CISPR 22:2002 Class B, R1113 and C1172 Class B

#### ROM BIOS Information

Key features of the HP BIOS in the ap5000 include:

- Security – Power on password, F-10 Setup password, USB port disable,
- Thermal and power management – The BIOS provides and enables thermal and power management technologies
- Administrator password – Also known as the setup password, this helps prevent unauthorized changes to the system configuration. If the administrator password is not known, the BIOS version cannot be changed and changes cannot be made to BIOS settings using F10 setup or under the OS.
- Advanced Configuration and Power Interface (ACPI) – Represents a significant innovation in power and configuration management, allowing operating systems and applications to manage power based on activity and usage. Provides power conservation features under Windows XP.
- Ability to disable the internal speaker

Other Features	Description
ACPI-Ready Hardware	Advanced Configuration and Power Management Interface (ACPI) allows the system to wake from a low power mode.
SMBIOS Ver. 2.4	System Management BIOS, previously known as DMI BIOS, for system management information
Dual-State Power Button	Power button acts as both an on/off button and suspend-to-sleep button

#### Serviceability Features of System

Dual Color Power LED on Front of Computer (Indicates Normal Operations and Fault Conditions)

Diagnostic LED Explanation Table		Number of repeated red LED blinks:
		2-processor thermal protection activated
		3-processor not installed
		4-power supply failure
		5-memory error
		6-video error
		7-PCA failure (ROM detected failure prior to video)
		8-invalid ROM, bootblock recover mode
<ul style="list-style-type: none"> <li>• Flash Recovery with Video</li> </ul>	<ul style="list-style-type: none"> <li>• DIMM Connectors for easy Upgrade</li> </ul>	<ul style="list-style-type: none"> <li>• Socketed Processor for easy Upgrade</li> </ul>
<ul style="list-style-type: none"> <li>• Restore CD</li> </ul>	<ul style="list-style-type: none"> <li>• NIC LEDs (integrated)</li> </ul>	<ul style="list-style-type: none"> <li>• DIMM Connectors for easy Upgrade</li> </ul>



### Technical Specifications

Serviceability Features of Chassis	
<ul style="list-style-type: none"> <li>• Dual Color Power LED – To indicate normal operations and fault conditions</li> <li>• System memory can be upgraded</li> <li>• Tool-less removal power supply</li> </ul>	
Feature	Description
ASF 2.0 support (Alert Standard Format)	Industry-standard specification for network alerting and remote control in operating system-absent environments
SMART Technology (Self-Monitoring, Analysis and Reporting Technology)	<p>Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted</p> <ul style="list-style-type: none"> <li>• Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count</li> <li>• By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure</li> </ul>

**Eco-Label Certifications & declarations** This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US ENERGY STAR®
- IT ECO declaration
- EPEAT Silver where HP registers commercial desktop products. See <http://www.epeat.net> for registration status in your country.

<b>Energy Consumption</b>	115 VAC	230 VAC	100 VAC
Normal Operation	34 W	29 W	33.5 W
Sleep (Energy Star low power mode)	1 W	1.1 W	1 W
Off	0.8 W	0.9 W	0.8 W
<b>Heat Dissipation*</b>	115 VAC	230 VAC	100 VAC
Normal Operation	116 BTU/hr	99 BTU/hr	115 BTU/hr
Sleep	3 BTU/hr	4 BTU/hr	3 BTU/hr
Off	3 BTU/hr	3 BTU/hr	3 BTU/hr

\* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.



### Technical Specifications

#### Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle (Fan, default speed)	3.6	26.9
Fixed Disk (random writes)	4.4	34

#### Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater than 5ppm by weight
- Cadmium greater than 10ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium Metal

#### RoHS Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

#### Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at [http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen\\_specifications.html](http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html)):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
- Nickel finishes that release greater than 0.5 micro-grams/cm<sup>2</sup>/week, measured according to EN



### Technical Specifications

1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

#### Packaging

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

#### End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

#### Hewlett-Packard Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html>

ISO 14001 certificates:

<http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html>

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