Overview
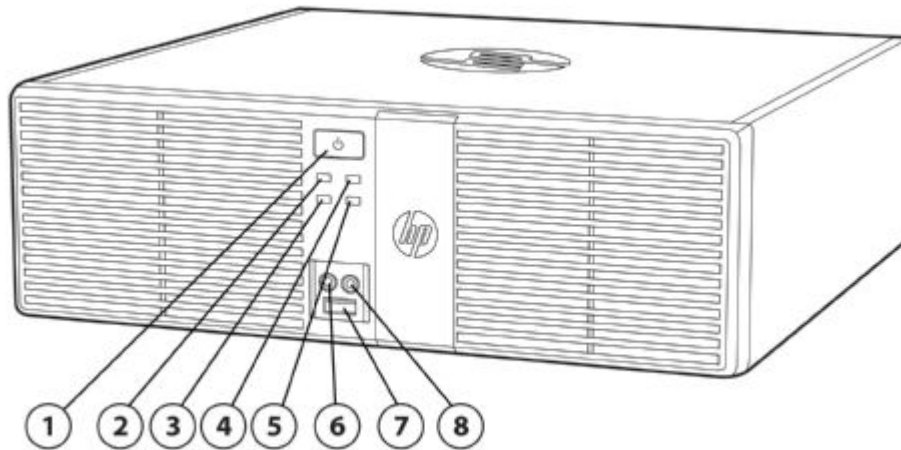

1.	Power button	5.	NIC activity indicator LED
2.	Power/ Diagnostic LED	6.	Line in audio jack
3.	NIC link indicator LED	7.	(1) USB 2.0 port with sliding door
4.	Hard Drive LED	8.	Line out audio jack
1.	Operator display	10.	Decorative panel
2.	Rear cover	11.	100 mm VESA mount (wall mountable)
3.	Dual hinge	12.	Customer-facing display hinge
4.	Cable retainer	13.	Customer-facing display
5.	I/O cover	14.	On-screen display LED's
6.	Kensington lock & padlock loop	15.	Customer-facing display power button
7.	Base & keyboard tray	16.	Decorative panel
8.	Power supply cover		
9.	Bolt-to-counter feature		
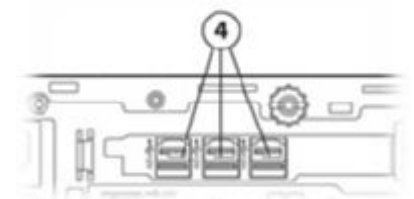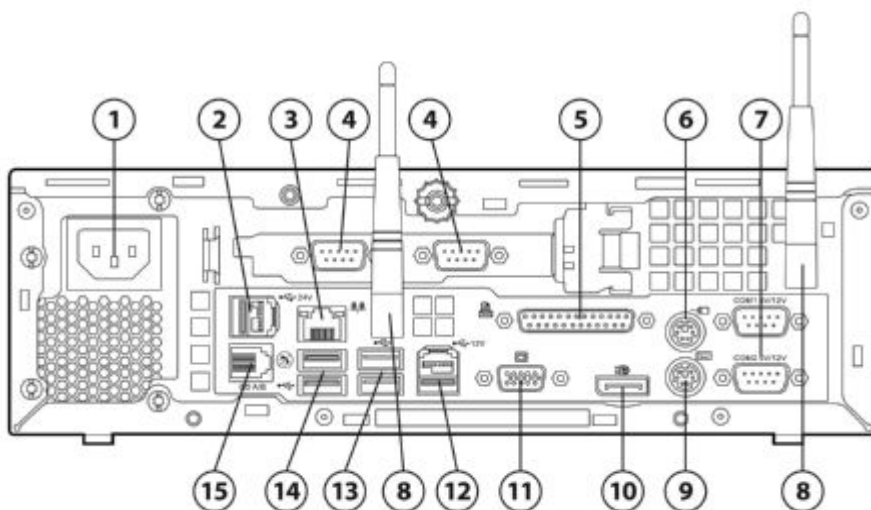
1.	115W EPA - Active PFC power supply	9.	PS/2 keyboard port
2.	24 Volt USB+PWR port	10.	Display Port
3.	RJ-45 LAN jack	11.	VGA port
4.	RS232 serial COM3 & COM4 or 12V USB+PWR ports	12.	12 Volt USB + PWR port
5.	Parallel port	13.	(2) USB 2.0 ports

Overview

6.	PS/2 mouse port	14.	(2) USB 2.0 ports
7.	RS232 serial (power configurable) COM1 & COM2 ports	15.	RJ12 cash drawer port
8.	WLAN Antennas		

* **NOTE:** A variety of cards are available to populate slots, dependent on riser choice and connectors utilized. For full details, please contact your HP sales representative for configuration choices.

At A Glance

- BIOS developed and engineered by HP for better security, manageability and software image stability
- Intel® HM65 Express chipset supporting an Intel™ Celeron® processor, featuring Intel™ HD Graphics
- Broadcom BCM57788 GbE integrated network connection
- DDR3 Synchronous Dynamic Random Access Memory (SDRAM)
- Integrated dual independent monitor support via VGA and digital DisplayPort v1.1a video interfaces
- 85% high efficiency energy saving power supply
- ENERGY STAR 5.0 qualified models available (dependent upon the desired configuration)
- Industry leading Design for Environment standards
- Protected by HP Services, including standard 3-3-3 warranty and warranties up to 5-5-5 (terms and conditions vary by country; certain restrictions and exclusions apply)
- Tool-less serviceability features for easier upgrades and repairs
- 40C ambient thermals standard
- Full set of Point of Sale I/O ports

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

Standard and Configurable Components

Operating Systems

Preinstalled
Windows® 7 Professional 32-bit
Windows® 7 Professional 64-bit
Windows® Embedded POSReady 2009
Windows® Embedded POSReady 7 32-bit
Windows® Embedded POSReady 7 64-bit
FreeDOS

For all Preinstalled operating systems HP provides Microsoft WHQL certified (where applicable) drivers on www.hp.com at the time of product announcement.

Limited Support
Windows® XP Professional (32-bit)

For all Limited Support operating systems HP will make available on www.hp.com certified drivers for major subsystems, if not provided by the operating system, within 30 days of product announcement.
HP performs functional testing on representative configurations. Some newer technologies may not be supported.
HP value added software and 3rd party applications (i.e., DVD players) are not supported.

Certified
Novell SUSE Linux Enterprise Desktop†

For all Certified operating systems HP will submit hardware to the operating system vendor for testing and certification. All drivers would be obtained from the operating system vendor, not supplied by HP. Certification will be posted by the operating system vendor.

† The following features are not supported by Novell SUSE Linux Enterprise Desktop¯

- Broadcom Gigabit CT Desktop NIC
- Broadcom NetXtreme Gigabit Ethernet Plus
- HP ProtectTools
- DisplayPort video interface
- HP 2nd serial port adapter
- Power Management features
- Systems configured with Linux do not qualify for ENERGY STAR®

Value Added Software (included with all models¯not included when configured with FreeDOS)

HP ProtectTools Security Suite	PDF Complete Corporate Edition
HP Retail Windows Management Instrumentation (WMI) Provider	Microsoft Office 2010 Starter
HP Power Assistant	

HP Client Management Solutions (available for free download from the Internet) http¯//www.hp.com/go/easydeploy

HP SoftPaq Download Manager	HP Systems Software Manager
HP Client Catalog for Microsoft SMS	HP Client Automation Starter

Retail Solutions Services and Features

Factory Express Deployment and Lifecycle Services	HP Global Series Services
Trusted Platform Module (TPM) v1.2[1]	

[1] TPM module disabled where restricted by law, i.e. Russia.

Standard and Configurable Components

Service and Support

On-site warranty and service[1]=This limited warranty and service offering delivers parts, labor and on-site repair for terms up to 5 years. Response time is next business day[2] and includes free telephone support[3] 24 x 7. Global coverage2 ensures any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering. Some countries/regions do not offer one year onsite and labor.

[1] Terms and conditions may vary by country. Certain restrictions and exclusions apply.
[2] On-site services may be provided pursuant to a service contract between HP and an authorized HP third party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
[3] Technical telephone support applies only to HP configured HP and HP qualified third party hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

Chipset

Intel® HM65 Express Chipset

Processor

Intel® Celeron® Processor 807UE
1.0GHz, 1MB cache, single-core

DDR3 Synchronous DRAM NON-ECC System Memory

Memory upgrades are accomplished by adding a single SODIMM. The HP RP3 Retail System, Model 3100 supports non-ECC DDR3 PC3-12800 (1600 MHz) and PC3-10600 (1333 MHz) memory.

CAUTION=You must shut down the Retail System and disconnect the power cord before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the Retail System is plugged in to an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

Memory Configurations=

Maximum Memory	Supports up to 8 GB of DDR3 SDRAM using a single SODIMM module

NOTE=
For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.

Total Memory	Slot
2 GB	Single 2 GB SODIMM
4 GB	Single 4 GB SODIMM
8 GB	Single 8 GB SODIMM

Standard and Configurable Components
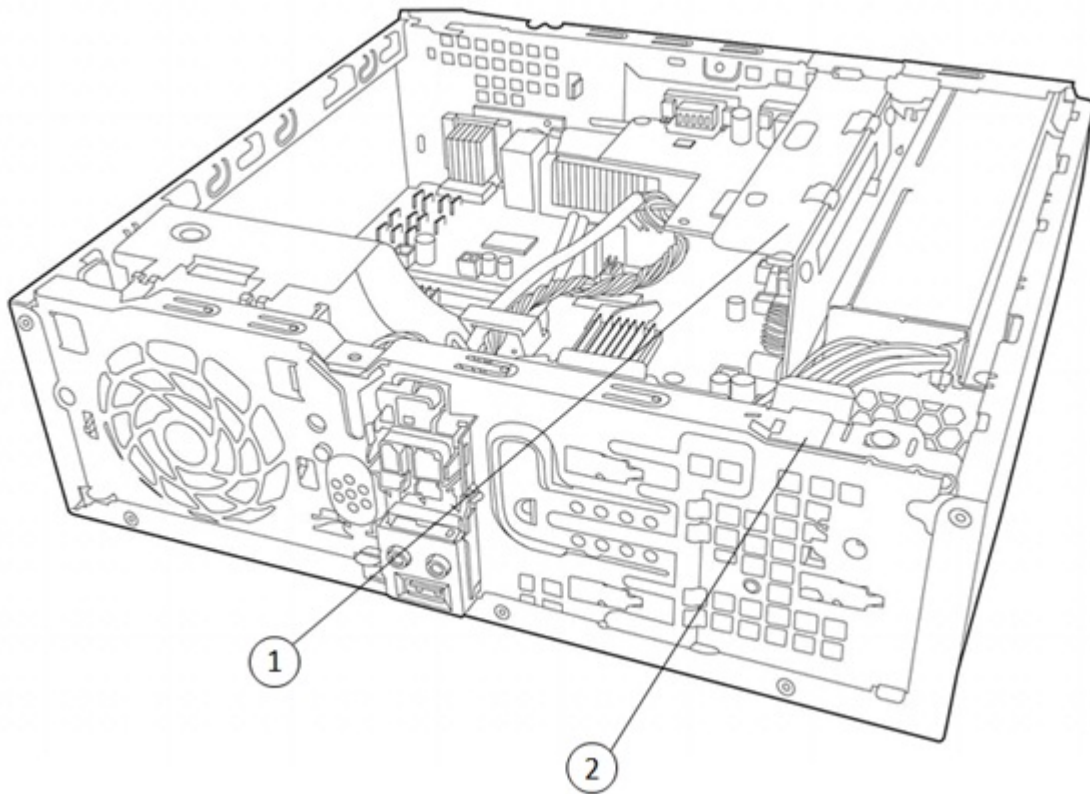
Data Storage Drives

320-GB Hard Disk Drive

HP 320-GB SATA 3.0 Hard Disk Drive (2.5")

- 7,200 rpm, 8MB cache, 6.0 GB/s, NCQ, Smart IV

Solid State Drives

HP 32-GB 2.5" Solid State Drive
HP 128-GB 2.5" Solid State Drive
HP 256-GB 2.5" Solid State Drive

Standard and Configurable Components

Security Solutions and Capabilities

Trusted Platform Module (TPM) 1.2[1]
Stringent security (via BIOS)[2]
SATA port disablement (via BIOS)
Drive lock
HP ProtectTools Security Software Suite
Serial, parallel, USB enable/disable (via BIOS)
Optional USB Port Disable at factory (user configurable via BIOS)
Power Configurable Serial Ports (COM 1, 2, 3 and 4) via the HP BIOS
Removable media write/boot control
Power-On password (via BIOS)
Setup password (via BIOS)
HP ProtectTools Security Software Suite with BIOS Configuration (serial (all 4), parallel, USB enable / disable), Credential Manager, Smart Card Manager (sold separately)
Three (3) port 12 Volt USB + PWR Card (sold separately)
Two (2) port Power Configurable RS232 Serial Card COM 3 & 4 (sold separately)
Wall Mount (sold separately)
HP Desktop Security Lock Kit (lock and cable) (sold separately)
Security Cable with Kensington lock (sold separately)
HP Rear Port/Cable Control Cover (sold separately)

[1] TPM module disabled where use is restricted by law–for example, Russia.
[2] This setting is defaulted to disable, but when enabled, the PW jumper will not clear the BIOS pre-boot authentication passwords.

I/O Ports

USB 2.0	Front–One (1), covered Rear–Four (4)
USB 24V	One (1) 24V powered USB
Serial	Two (2) RS-232 ports standard plus two (2) ports optional[1] (for a total of 4). All ports are power configurable
Parallel	One (1)
USB+PWR 12V	One (1) USB+PWR 12V port standard plus three (3) 12 Volt USB+ PWR ports optional[2]
PS/2	One (1) color-coded support for keyboard (purple) One (1) color-coded support for mouse (green)
RJ-12	One (1) RJ-12 Cash Drawer port
Video	One (1) VGA One (1) DisplayPort v1.1a Provides integrated dual independent monitor support
DVI output	Available via optional DisplayPort to DVI Adapter
Audio	Front–Line input (supports microphone or line input) and line out All ports are 3.5mm in diameter NOTE–See Audio/Visual section for information on re-taskable audio ports
NIC	One (1) Industry standard RJ-45 port accesses the integrated network interface controller

[1] The serial port card can be installed in the system when the system has either the PCI Riser Assembly or the PCIe Riser Assembly
[2] The USB+PWR card can only be installed in the system when the PCIe Riser Assembly is installed
[1,2] These options occupy the slot opening so no other expansion cards can be installed

Standard and Configurable Components

Slots

Full-Height	One slot available, with a choice of one of two interfaces‗
	1) HP RP3 PCI Riser Assembly. PCI - One (1) each‗4.2⸸full height, 6.6⸸length, 25W max. power
	2) HP RP3 PCIe Riser Assembly. PCIe x1 - One (1) each‗4.2⸸full height, 6.6⸸length, 10W max. power

Bays

Internal HDD	(1) 2.5⸸

Controllers

Hard drive	SATA⸸Supports up to SATA 6.0 Gb/s
SATA interfaces	One (1) SATA 3.0
Host SATA	Advanced Host Controller Interface (AHCI) Revision 1.2. The specification includes a description of the hardware/software interface between system software and the host controller hardware

Network Interface Connections

Broadcom BCM57788 GbE Network Connection (integrated)

HP WLAN 802.11 a/b/g/n 2x2 DB MCard BT (optional)

HP WLAN 802.11 b/g/n 1x1 MCard (optional)

Graphics

Intel HD Graphics (integrated)
HP DisplayPort to DVI-D Adapter
HP DisplayPort to HDMI Adapter
HP DisplayPort to VGA Adapter

Multi-Media

High Definition Audio with Realtek ALC221 codec - all ports are stereo (integrated)
Line-out and Line-In front Ports (3.5mm)
Internal Speaker (standard)

Input/Output Devices

HP PS/2 Standard Keyboard
HP USB Standard Keyboard
HP USB and PS/2 Washable Keyboard
HP PS/2 Optical Mouse
HP USB Optical Mouse
HP USB Laser Mouse
HP USB and PS/2 Washable Mouse

Standard and Configurable Components

Miscellaneous Devices and Configurations

HP RP3 PCI Riser Assembly
HP RP3 PCIe Riser Assembly
HP 3-port 12V Powered USB Port HH Card
HP 2-Port Powered Serial Card

After-Market Options (availability may vary by region)

After-Market Options (availability may vary by region)

Graphics Solutions	Part #
HP DisplayPort Cable Kit	VN567AA
HP DisplayPort To Dual Link DVI-D Adapter	NR078AA
HP DisplayPort To DVI-D Adapter	FH973AA
HP DisplayPort to HDMI Adapter	BP937AA
HP DisplayPort to VGA Adapter	AS615AA

Hard Disk Storage Drives	Part #
HP 128-GB Solid State Drive	QV063AA
HP 160-GB Solid State Drive	QV064AA

Input / Output Devices	Part #
HP PS/2 Standard Keyboard	DT527A
HP USB Standard Keyboard	DT528A
HP 2-port Powered Serial Port Card	QP906AA
HP 3-port 12 Volt Powered USB Port Card	C7T71AA
HP USB Washable Keyboard	VF097AA
HP USB and PS/2 Washable Mouse	BM866AA
HP USB and PS/2 Washable Keyboard and Mouse Kit	BU207AA
HP PS/2 Optical Mouse	EY703AA
HP USB Optical Mouse	DC172AT
HP USB Laser Mouse	GW405AT

System Memory	Part #
2GB DDR3-1600 SODIMM	B4U38AA
4GB DDR3-1600 SODIMM	B4U39AA
8GB DDR3-1600 SODIMM	B4U37AA

Security Devices	Part #
HP Chassis Security Kit	AR639AA
HP Business PC Security Lock	PV606AA
HP Wall Mount/Security Sleeve	VN570AA
HP Keyed Lock Cable	BV411AA

Retail Solutions Specific Accessories	Part #
HP Standard Duty Cash Drawer	QT457AA
HP Heavy Duty Cash Drawer	FK182AA
HP Till with Locking Cover	QT458AA
HP Flip-Top Cash Drawer	BW867AA
HP Flip-Top Till with Locking Cover	BZ335AA
HP Imaging Barcode Scanner	BW868AA
HP Linear Barcode Scanner	QY405AA
HP Presentation Barcode Scanner	QY439AA
HP POS Pole Display	FK225AA

After-Market Options (availability may vary by region)

HP Graphical Pole Display	QZ704AA
HP Mini MSR with Brackets	FK186AA
HP POS Keyboard without MSR	FK221AA
HP POS Keyboard with MSR	FK218AA
HP Powered USB Thermal Receipt Printer	FK224AA
HP Serial/USB Thermal Receipt Printer	BM476AA
HP Hybrid Printer with MICR	FK184AA
HP USB Y Cable (for Serial USB Receipt Printer)	BM477AA
HP Cable Pack for Dual Cash Drawers	QT538AA
HP L5006tm 15-inch LCD (SAW) Touchscreen Monitor	RB146AA
HP L5009tm 15-inch LCD (APR) Touchscreen Monitor	VK202AA
HP L1506x 15-inch LED Monitor (Non-Touchscreen)	LL543AA
HP L6010 10.4-inch Monitor (Non-Touchscreen)	A1X76A
HP Dual Position Stand for L6010	A1X79AA
HP L6015tm 15-inch (PCAP) Touchscreen Monitor	A1X78A
HP L6017tm 17-inch (PCAP) Touchscreen Monitor	A1X77A
HP Height Adjusting Stand for L6015/17tm	A1X81AA
HP Display Pole Mount Assembly	QQ973AA
HP Optional Display Arm Assembly	QQ974AA

Technical Specifications and Features

Weights & Dimensions
(configured with 1 HDD)

Chassis	3.5 x 11.2 x 10.69 in
(H x W x D)	88.9 x 284.5 x 271.5 mm
System Volume	419.05 cu in
	6.87 L
Packaging	8.9x 19.7 x 15.7 in
(H x W x D)	226 x 500 x 400 mm
System Weight*	7.98 lb
	3.63 kg
Shipping Weight*	16.06 lb
	7.3 kg
Max Supported Weight	77.0 lb
(desktop orientation)	35.0 kg

Unit Environment and Operating Conditions

General Unit Operating Guidelines

- Keep the POS System away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.
- Leave a 10.2-cm (4-in) clearance on front side and power supply side of the POS System to permit the required airflow.
- If within an enclosure, the front side should be 100% open. The clearance between the system and the cabinet must be at least 10 mm (0.4 inch) on the sides and top and at least 50-mm (2-inch) clearance in the rear with power supply venting area 100% open per the above bullet.
- Never restrict airflow into the POS System by blocking any vents or air intakes.
- Do not stack POS Systems on top of each other or place POS Systems so near each other that they are subject to each other's r circulated or preheated air.
- Occasionally clean the air vents on the front, back, and any other vented side of the POS System. Lint, dust and other foreign matter can block the vents and limit the airflow.

Temperature Range	Operating 32° to 104° F (0° to 40° C)*
	Non-operating -22° to 149° F (-30° to 65° C)
Relative Humidity	Operating 10% to 90% (non-condensing at ambient)
	Non-operating 0% to 95% (non-condensing at ambient)
Maximum Altitude	Operating 10,000 ft (3048 m)
(unpressurized)	Non-operating 30,000 ft (9144 m)

* Operating temperature is de-rated 1.0 deg C per 300 m (1000 ft) to 3000 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 10 deg C/Hr. The upper limit may be limited by the type and number of options installed.
NOTE An optional thermal configuration is available to support 50C ambient temperatures. This is a factory configurable configuratic only.

Technical Specifications and Features

Power

Power Supply	115-watt – EPA85 power supply – Active PFC
	*This power supply meets ENERGY STAR compliance in conjunction with a select range of processors and modules.
Operating Voltage Range	90 to 264 VAC
Rated Voltage Range	100 to 240VAC
Rated Line Frequency	50/60 Hz
Operating Line Frequency Range	47 – 63 Hz
Rated Input Current	≤1.5A
	Efficiency 82/85/82% at 20/50/100% load
Power Supply Fan	50 mm variable speed fan
ENERGY STAR Compliant	ENERGY STAR 5.0 compliant
Power Cord Length	6.0 ft. (1.83 m)
Current Leakage (NFPA99)	< 275 µA

HP BIOS Information

Key features of the HP BIOS include:

- Deployment and manageability – HP BIOS provides several technologies that help integrate the HP RP3 Retail System, Model 3100 into retail, such as PXE, remote configuration, remote control, and F10 Setup support for 12 languages.
- Computrace agent – For tracking and tracing services, available in select countries, separate software and purchase of a subscription is required.
- Thermal and power management – The HP BIOS provides and enables thermal and power management technologies so component temperatures are managed for high reliability and to assist in operating the HP RP3 Retail System, Model 3100 in any retail environment.
- Acoustic performance – Industry leading acoustic emissions across the range of operating conditions.
- Serviceability – HP BIOS provides diagnostic and detailed service information
- Upgrades and recovery – HP BIOS provides numerous ways to upgrade HP the HP RP3 Retail System, Model 3100, including BIO updates from within DOS (Flashbin), BIOS updates from within Windows (HPQFlash), HP Client Manager, and fail-safe recovery. In addition, the HP RP3 Retail System, Model 3100 BIOS Utilities tool enables replicated BIOS setup throughout the Enterprise. It is available from within the BIOS software and from the support website.

Additional HP BIOS Features

- Power-On password – Helps prevent an unauthorized user from powering on the system.
- 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. HP RP3 Retail System, Model 3100 uses ACPI to provide power conservation features.
- S5 Max Power Savings setting supports EU Lot6 requirement and allows the HP RP3 Retail System, Model 3100 to power down below 1W is S5 (when turned off). When S5 Max Power Savings feature is enabled power to slots is turned off along with WOL functionality.

Technical Specifications and Features

Other Features

- Advanced Configuration and Power Management Interface (ACPI). Allows the system to wake from a low power mode. Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system.
- System Management BIOS v2.6
- Intel Wired for Management support‡industry wide initiative to make Intel architecture based Retail Systems, PCs, servers and mobile computers more inherently manageable out-of-the-box and over the network
- Dual State Power Button‡acts as both an on/off button and a suspend-to-sleep button

Serviceability Features

- Dual colored power LED on front of the HP RP3 Retail System, Model 3100 to indicate either normal or fault condition
- Indicator Lights on front of system‡
    Power / Diagnostic LED   Hard Drive LED
    NIC Link LED   NIC Activity LED
- Diagnostic LED Explanation Table‡
    - Number of 1-second red LED blinks followed by a 2-second pause, then repeats‡
        - 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 recovery mode
        - 9 - system not fetching code
        - 10 - system hang while loading an option ROM
- System/Emergency ROM
- NIC Link and activity LED's on front bezel
- Flash ROM
- CMOS Battery Holder for easy replacement
- Flash Recovery with Video Configuration Record Software
- Aux Power LED on System PCA
- Over-Temp Warning on Screen (Requires IM Agents)
- Clear Password Jumper
- SODIMM Connector for easy upgrade
- Clear CMOS Button
- NIC LEDs (integrated) (Green & Amber) - Rear
- Color coordinated cables and connectors
- Tool-less Hood Removal
- Front power button
- System memory can be upgraded without removing the system board or any internal components
- Tool-less Hard Drive Removal

Technical Specifications and Features

Additional Features   **Description**

DASH 1.1 support (Desktop and Mobile Architecture for System Hardware)	A standards initiative for representing out-of-band management capability for Retail Systems. It is a secure, web-services based successor to ASF.
ASF 2.0 support (Alert Standard Format)	Industry-standard specification for network alerting in operating system-absent environments
Computrace	Computrace agent support standard
	DPS Access through F10 Setup during Boot
	A diagnostic hard drive self test. It scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user
Drive Protection System	Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the Retail System's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced
	The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures
SMART Technology (Self-Monitoring, Analysis and Reporting Technology)	Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted
SMART I – Drive Failure Prediction	Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count
SMART II – Off-Line Data Collection	By avoiding actual hard drive failures, SMART hard drives act as &insurance& against unplanned user downtime and potential data loss from hard drive failure
SMART III – Off-Line Read Scanning with Defect Reallocation	IOEDC=I/O Error Detection Circuitry
	Detects errors in Read/Write buffers on HDD cache RAM
SMART IV – End-to-End CRC for hard drives	Interface in F10 setup provides confirmation of SMART IV support.

Technical Specifications - Audio

High Definition Audio

Type	Integrated
HD Stereo Codec	Realtek 2-channel ALC221 codec
Audio I/O Ports	Front Line-In/Microphone input (150-K ohm Input Impedance, function is configurable by audio driver)
	Front Line-Out* (190 ohms Output Impedance, expects at least a 10-K ohm load)
	Line-in and Line-out, both on front
	All ports are 3.5mm in diameter
Internal Speaker Amplifier	1.5W amplifier for the internal speaker only. External speakers must be powered externally. Front Line-in audio port is re-taskable as either Line-in or Microphone-In.
Multi-streaming Capable	Multi-streaming can be enabled in the Realtek control panel to allow independent audio streams to be sent to/from the front and rear jacks.
Sampling	8 kHz – 192 kHz
Wavetable Syntheses (software)	Yes – Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out (mono/stereo)	Stereo (Left & Right channels)
Internal Speaker	Yes
External Speaker Jack (Line-Out)	Yes

Technical Specifications - Communications

Broadcom BCM57788 GbE Network Connection (integrated)

Connector	RJ-45
Controller	Broadcom BCM 57788 Netlink Network Adapter
Data rates supported	10/100/1000 Mbps
Compliance	IEEE 802.3, 802.3ab and 802.3u compliant
Bus architecture	Single Channel, PCI-E
Data transfer mode	Bus-master DMA
Power requirement	Max=0.8W @ 3.3V. Low=0.013W @ 3.3V
Boot ROM support	Yes
Network transfer mode	Full-duplex
	Half-duplex (not supported for the 1000BASE-T transceiver)
Network transfer rate	10BASE-T (half-duplex) 10 Mbps
	10BASE-T (full-duplex) 20 Mbps
	100BASE-TX (half-duplex) 100 Mbps
	100BASE-TX (full-duplex) 200 Mbps
	1000BASE-T (full-duplex) 2000 Mbps
Environmental	Operating Temperature= 32° to 131°F (0° to 55° C) to 70° C for external regulator
	Operating Humidity= 85% at 131° F (55° C)
Management	Management WOL, auto MDI crossover, PXE, Muti-port teaming, RSS, Advanced cable diagnostic.
Alerting	Alerting ACPI, WOL and DMI 2.0, PXE 2.0, WfM 2.0.

HP Wireless Network Cards

HP Wireless NIC 802.11b/g/n Mini Card (1x1)	Ralink RT5390R adapter
	Support for 802.11 b/g/n
	Up to 300 mbps data rate
	Built-in antennas (1 transmit, 1 receive)

Security

- IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only
- AES-CCMP=128 bit in hardware
- 802.1x authentication
- WPA, WPA2=802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
- WPA2 certification
- IEEE 802.11i
- Cisco Certified Extensions, all versions through V5
- WAPI

HP Wireless WLAN 802.11b/g/n Mini Card (2x2) with BT Combo	Atheros AR9462 adapter
	Support for 802.11 a/b/g/n and Bluetooth 4.0
	Up to 300 mbps data rate
	Built-in antennas (2 transmit, 2 receive)

Security

- IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only
- AES-CCMP=128 bit in hardware
- 802.1x authentication
- WPA, WPA2=802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
- WPA2 certification
- IEEE 802.11i
- Cisco Certified Extensions, all versions through V5
-

Technical Specifications - Communications

- WAPI

Technical Specifications - Graphics

Intel HD Graphics (integrated)

VGA Controller	Integrated
DisplayPort	v1.1a╪integrated, multimode capable╪supports HDCP and audio over DisplayPort
Bus Type	PCI Express x16
RAMDAC	Integrated, 350 MHz
Memory	Graphics memory is shared with system memory. Graphics memory usage varies depending on the amount of system memory installed, BIOS settings, operating system, and system load. 32 MB is pre-allocated for graphics use at system boot time. Additional memory can be allocated at boot time by the BIOS for PAVP (Protected Audio Video Playback) support for playback of protected video content. Additional memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.
HW Video Decode	AVC/VC1/MPEG2/JPEG/MJPEG/PAVP
Maximum Color Depth	32 bits/pixel
Maximum Vertical Refresh Rate	85 Hz at up to 1920x1440, 75 Hz at 2048x1536. Varies with mode and configuration. See table below.
Multi-display Support	Integrated dual independent monitor support facilitated via one VGA port and one DisplayPort v1.1a integrated on the back plane of the system board and presented as part of the rear I/O set of interfaces. Support for DVI, HDMI, dual link DVI or second VGA monitor provided by optional HP DisplayPort adapters. The system can support greater than two monitors with the addition of an optional discrete graphic card. Both integrated graphics and discrete graphics can be utilized simultaneously.
Graphics/Video API Support	Microsoft DirectX 10.1, OpenGL 3.0

HP DisplayPort to DVI-D Adapter

Connectors	DisplayPort and DVI-D single link connector
Adapter length	7.5 in (19.0 cm)
Adapter weight	.10 lbs (.05 kg)

HP DisplayPort to VGA Adapter

Connectors	DisplayPort and VGA connector
Adapter length	8 in (20 cm)
Adapter weight	.1 lbs (.06 kg)
Max. vertical refresh rate	85 Hz
Display support	162 MHz RAMDAC
Display max resolution	1600x1200

Resolutions Supported	Resolution	Max refresh rate
	640x480	85
	800x600	85
	1024x768	85
	1280x720	85
	1280x1024	85
	1440x900	75
	1600x1200	60

Technical Specifications - Graphics

1680x1050	60
1920x1080	60-R
1920x1200	60-R

NOTE:

Other resolutions may be available but are not recommended as they may not have been tested and qualified by HP. Using the HP DisplayPort to VGA Adapter may require an update to the graphics driver installed on your system. To install the most up-to-date graphics driver go to www.hp.com.

NOTE:

60-R denotes reduced blanking timings are used. Not all monitors support reduced blanking timing.

Technical Specifications - Storage

Introduction:

HP Serial Advanced Technology Attachment (SATA) Hard Drives maximize the performance of HP Retail Systems by providing the technologies to meet your increasing storage demands with high-capacity drives offering superior reliability and performance.

SATA provides faster data transfer speeds, better system cooling airflow, more bandwidth, more headroom for speed increases in future generations and better data integrity. A next-generation technology, the SATA interface connects hard drives to the Retail System platform enabling easy aggregation of multiple hard drives into a single Retail System. This offers you the additional benefits of dedicated bandwidth, the ability to more easily identify device failures and scalability. The HP RP3 Retail System, Model 3100 supports the latest SATA 6.0Gb/s specification.

HP Drive Lock

HP Serial ATA Hard Drives offer enhanced security via a new Drive Lock. When enabled, this ATA security feature set prevents software access to user data on the drive until one or two user-defined passwords are provided.

SMART IV Technology

Self Monitoring Analysis and Reporting Technology (SMART) hard drive technology allows hard drives to monitor their own health and to raise flags if imminent failures are predicted. If the drive determines that a failure is imminent, the SMART hard drive technology enables the intelligent manageability or management software to generate a fault alert. While the current versions of SMART hard drives do a good job monitoring the data on the hard drive media, the ever increasing emphasis on reliability and quality has promoted HP to implement SMART IV technology which constantly checks that the data flow from host interface to media and media to host interface is not compromised. This is accomplished by inserting a 2 byte parity code into every 512 byte block in the data path of the hard drive's Cache RAM. This unique parity checking performed by HP's SMART IV technology hard drives, allows for more complete error detection coverage encompassing the entire data path between the host and the hard drive.

Smart IV is also known as IOEDC: I/O Error Detection Code.

Native Command Queuing

NCQ or Native Command Queuing is a SATA protocol extension that allows the hard drive to have several write or read commands outstanding at the same time. In contrast, normal non-queued operation requires each command to be completed before the next command is issued by the host system. Queuing allows the drive to complete the commands in the order that allows for best overall throughput. It also involves an advanced method of transferring data to or from the host, called First Party Direct Memory Access (FPDMA), which allows the hard drive and the host controller to manage the data transfers for multiple outstanding commands, with involving the host processor. NCQ can contribute to better performance but the results are dependent on many factors, including the access patterns of the various applications and operating system functions that are initiating drive accesses. Enabling NCQ features in the hard drive requires AHCI support from the host system BIOS, controller, and driver. AHCI support is typically implemented in RAID configurations.

NOTE: GB = 1 billion bytes. Actual available capacity is less.

Technical Specifications - Storage

HP 32 GB Solid State Drive

Unformatted Capacities	32 GB**	
Architecture	Multi-Level Cell (MLC) NAND	
Interface	SATA 6 GB/sec	
Bandwidth Performance	**Sustained Sequential Read**	Up to 450 MB/s
	Sustained Sequential Write	Up to 110MB/s
	Random Read	Up to 9.4K IOPs
	Random Write	Up to 200 IOPs
Power	**DC power requirement**	Min 4.5 V ǂ Max 5.5 V
	Total power consumption	45mW (Active) ǂ 15mW ǂ (Idle)
Useful Drive Life	20TB written or 15GB/day for 5 years	
Environmental (all conditions, non-condensing)	**Operating Temperature**	32° to 158° F (0° to 70° C)
	Relative Humidity	5% to 95%
	Maximum Wet Bulb Temperature (operating)	84° F (29° C)
	Shock	1,500 G/1.0 msec
Regulations	UL, CSA, EN 60950-2000, CISPR Pub 22 Class B, CNS 13438, AS/NZS, CISPR 22 2002 Class B, Korea KCC, CE Mark	

HP 128 GB & 256GB Solid State Drives

Unformatted Capacities	128 GB* * 256 GB**	
Architecture	Multi-Level Cell (MLC) NAND	
Interface	SATA 6 GB/sec	
Dimensions (W x H x D)	2.75 x 0.276 x 3.96 in (6.985 x 0.7 x 10.05 cm)	
Weight	0.16 lb (73 g)	
Bandwidth Performance	**Sustained Sequential Read**	Up to 450 MB/s
	Sustained Sequential Write	Up to 260 MB/s
	Random Read	Up to 46K IOPs
	Random Write	Up to 56K IOPs
Latency	**Read**	55μs (TYP)
	Write	55μs (TYP)
Power	**DC power requirement**	Min 4.5 V ǂ Max 5.5 V
	Total power consumption	160 mW (Active) ǂ <85 mW ǂ (Idle)
Useful Drive Life	1.2 million device hours**	
Environmental (all conditions, non-condensing)	**Operating Temperature**	32° to 158° F (0° to 70° C)
	Relative Humidity	5% to 95%
	Maximum Wet Bulb Temperature (operating)	84° F (29° C)
	Shock	1,500 G/1.0 msec
Regulations	UL, CSA, EN 60950-2000, CISPR Pub 22 Class B, CNS 13438, AS/NZS, CISPR 22 2002 Class B, Korea KCC, CE Mark	

NOTE: For solid state disk drives, GB means 1 billion bytes. 16GB is the unformatted capacity of this drive before a portion of the drive is reserved for flash management features. Actual capacity varies by content and will be less than 15.8GB.

Technical Specifications - Storage

HP 320-GB Hard Disk Drive (2.5z)

Capacity	320,072,933,376 bytes
Rotational Speed	7,200 rpm
Interface	Serial ATA (SATA) 3.0
Synchronous Transfer Rate (maximum)	Up to 6 GB/s
Buffer Size	16 MB
Logical Blocks	488,397,168

Seek Time (typical reads, includes controller overhead, including settling)	**Single Track‾**	2.0 ms
	Average‾	12 ms
	Full-Stroke‾	22 ms

Height (nominal)	1 in/2.54 cm
Width (nominal)	Media diameter‾3.5 in/8.89 cm
	Physical size‾4 in/10.2 cm
Operating Temperature	41° to 131° F (5° to 55° C)

Technical Specifications – Input / Output

HP USB Standard Keyboard

Physical characteristics	**Keys**	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in 45.8 x 16.3 x 2.5 cm
	Weight	2 lb 0.9 kg
Electrical	**Operating voltage**	+ 5VDC ± 5%
	Power consumption	50-mA maximum (with three LEDs ON)
	System interface	USB Type A plug connector
	ESD	CE level 4, 15-kV air discharge
	EMI - RFI	Conforms to FCC rules for a Class B computing device
	Microsoft® PC 99 - 2001	Functionally compliant
Mechanical	**Languages**	38 available
	Keycaps	Low-profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (using Hasco modified tester)
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	6 ft (1.8 m)
	Microsoft PC 99 - 2001	Mechanically compliant
	Acoustics	43-dBA maximum sound pressure level
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, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	42 in (107 cm) on concrete, 16-drop sequence
Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

Technical Specifications – Input / Output

Kit contents	**Keyboard**	Installation Guide
	Warranty Card	Safety and Comfort Guide

HP PS/2 Standard Keyboard

Physical characteristics	**Keys**	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in (45.8 x 16.3 x 2.5 cm)
	Weight	2 lb (0.9 kg) minimum
Electrical	**Operating voltage**	+ 5VDC ± 5%
	Power consumption	50-mA maximum (with three LEDs ON)
	System interface	PS/2 6-pin mini din connector
	ESD	CE level 4, 15-kV air discharge
	EMI - RFI	Conforms to FCC rules for a Class B computing device
	Microsoft® PC 99 - 2001	Functionally compliant
Mechanical	**Languages**	38 available
	Keycaps	Low-profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (using Hasco modified tester)
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	6 ft 1.8 m
	Microsoft PC 99 - 2001	Mechanically compliant
	Acoustics	43-dBA maximum sound pressure level
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, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	42 in (107 cm) on concrete, 16-drop sequence
Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC	

Technical Specifications – Input / Output

Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

HP USB & PS2 Washable Keyboard

Physical characteristics	**Keys**	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in 45.8 x 16.3 x 2.5 cm
	Weight	2 lb (0.9 kg) minimum
Electrical	**Operating voltage**	+ 5VDC ±5%
	Power consumption	50-mA maximum (with three LEDs ON)
	System interface	USB Type A plug connector
	ESD	CE level 4, 15-kV air discharge
	EMI - RFI	Conforms to FCC rules for a Class B computing device
	Microsoft® PC 99 - 2001	Functionally compliant
Mechanical	**Keycaps**	Stepped -profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	7 ft 2.2 m
	Microsoft PC 99 - 2001	Mechanically compliant
	Acoustics	43-dBA maximum sound pressure level
Environmental	**Operating temperature**	50° to 122° F 10° to 50° C
	Non-operating temperature	-4° to 149° F -20° to 65° C
	Operating humidity	10% to 95% (non-condensing at ambient)
	Non-operating humidity	0% to 95% (non-condensing at ambient)
	Operating shock	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	42 in (107 cm) on concrete, 16-drop sequence
Approvals	UL, cUL, FCC, CE, TUV GS, VCCI, BSMI, C-Tick, KCC, USB-IF, WHQL, EN/IEC 60601-1, IP66/NEMA4X	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

Technical Specifications – Input / Output

HP PS/2 Optical Mouse

Dimensions (H x L x W)	1.56 x 2.44 x 4.61 in 3.95 x 6.21 x 11.7 cm	
Weight	4.44 oz 126 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)
	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
	Drop (out of box)	80 cm height onto asphalt tile over concrete or equivalent, 5-drop in 5 direction except the cable face
Electrical	**Operating voltage**	5 VDC ± 10%
	Power consumption	100mA
	System consumption	PS/2 mini-din connector
	ESD	CE level 4, 15 kV air discharge
	EMI-RFI	Conforms to FCC rules for a Class B computing device
	Microsoft PC99 - 2001	Functionally compliant
Mechanical	**Resolution**	400 ± 20% DPI
	Tracking speed	10 in/s (25.4 cm/s) maximum
	Acceleration	100 in/s/s (2.54 m/s/s)
	Switch actuation	61 g nominal peak force
	Switch life	3,000,000 operations (using Hasco modified tester)
	Switch type	Low force micro-switches
	Tracking mechanism life	155 mi (250 km) at average speed of 10 in/s
	Cable length	6 ft (1.8 m)
	Microsoft PC99 - 2001	Mechanically compliant
Scroll wheel	**Width**	8 mm
	Diameter	1.01 in (25.6 mm)

Technical Specifications – Input / Output

	Maximum rotation speed	48 rats/sec
	Switch type	Light force micro-switch
	Switch life	1 million operations
	Mechanical life	Minimum 200,000 revolutions
Regulatory Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC	

HP USB Optical Mouse

Dimensions (H x L x W)	1.5 x 4.5 x 2.5 in 3.8 x 11.6 x 6.3 cm
Weight	0.27 lb 0.12 kg
Cable length	72.8 in 185 cm
System requirements	Microsoft Windows 95, 98, 2000, Me, XP and Vista Available USB port

HP USB Laser Mouse

Scroll Wheel	24	
Maximum Rotation Speed	48 rats/sec	
Switch Type	Wheel	
Switch Life	Button - 3,000,000	
	Wheel - 1,000,000 times	
	Tilt switch - 500,000 times	
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)
	Non-operating Humidity	20% to 80% (non-condensing at ambient)
	Operating Shock	40 g, six surfaces
	Non-operating Shock	80 g, six surfaces
	Operating Vibration	2-g peak acceleration
	Non-operating Vibration	4-g peak acceleration
Electrical	**Operating Voltage**	+ 5VDC ± 5%
	Power Consumption	

Technical Specifications – Input / Output

	MTBF	> 150,000 hrs
	ESD	IEC–61000-4-2 criteria B, Contact discharge= +/- 4kV, Air discharge= +/- 8kV
	EMI-RFI	FCC Class B
	PC98	PC 99 Compliant
Mechanical	**Resolution**	800dpi
	Tracking Speed	25 cm/sec
	Acceleration	0.5mm
	Switch Actuation	0.6N (60gf)
	Switch Life	Button - 3,000,000
		Wheel - 1,000,000 times
		Tilt switch - 500,000 times
	Cable Length	1850mm
	PC98-99	PC99 compliant
Regulatory Approvals	UL60950-1, UL 94, UL 746 (A-E), UL 796 TUV/GS= EN 60950-1, EN 60825-1 FCC Class B, UL 1950, cUL, TUV GS, CE, C-tick, VCCI, BSMI, RRL	

Environmental

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 Gold where HP registers commercial desktop products. See http://www.epeat.net for registration status in your country.

Energy Consumption	**115 VAC**	**230 VAC**	**100 VAC**
Normal Operation	16.46W	15.8 W	16.55 W
Sleep (Energy Star low power mode)	1.6 W	1.74 W	1.58 W
Off	0.7 W	0.85 W	0.69 W

NOTE:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family . HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured model.

Heat Dissipation*	**115 VAC**	**230 VAC**	**100 VAC**
Normal Operation	56.13 BTU/hr	53.88 BTU/hr	56.44 BTU/hr
Sleep	5.5 BTU/hr	6 BTU/hr	5.4 BTU/hr
Off	2.4 BTU/hr	2.9 BTU/hr	2.4 BTU/hr

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

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

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.7	28
Fixed Disk (random writes)	3.8	29

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

Batteries used in the product do not contain:

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

Battery size: CR2032 (coin cell)
Battery type: Lithium

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

Environmental

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):

- 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^2/week, measured according to EN 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

Environmental

ISO 14001 certificates-
http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html