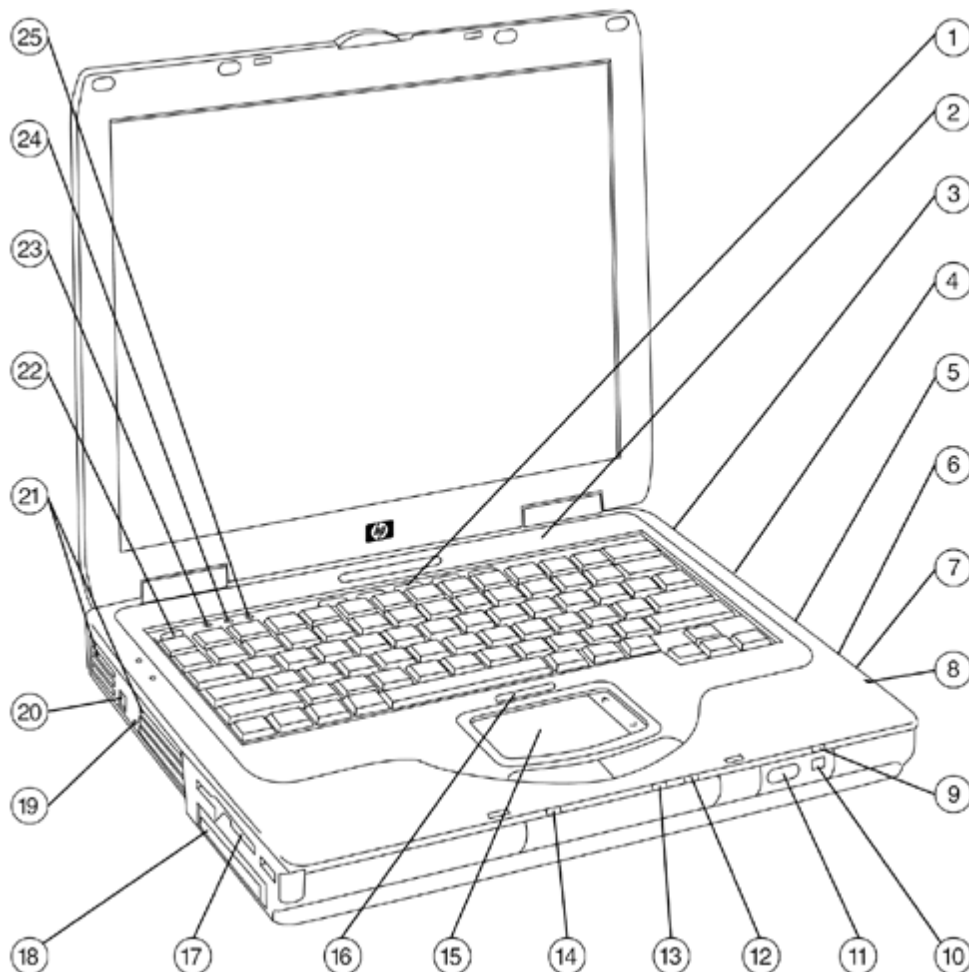
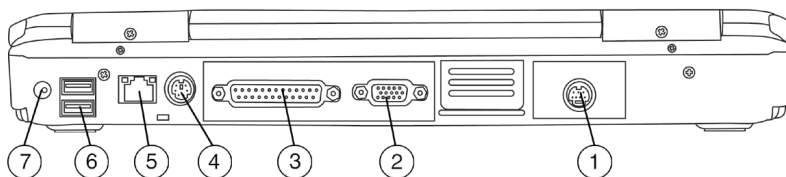


### Overview



- |                             |                             |
|-----------------------------|-----------------------------|
| 1. Easy Access Buttons (5)  | 14. System Drive LED        |
| 2. Stereo Speakers          | 15. Touch Pad               |
| 3. USB Port (1)             | 16. Touch Pad On/Off Button |
| 4. Fixed Optical Drive      | 17. Diskette Drive          |
| 5. Audio In                 | 18. PC Card Slot (1)        |
| 6. Headphone                | 19. 1394 Port               |
| 7. Volume Control           | 20. RJ-11 (Modem)           |
| 8. Mute Lock LED            | 21. Air Vents               |
| 9. Wireless LED             | 22. Power Buttons           |
| 10. Wireless On/Off Button  | 23. Cap Lock LED            |
| 11. Fast IR                 | 24. Num Lock LED            |
| 12. Battery Charging LED    | 25. Keypad LED              |
| 13. Hard Drive Activity LED |                             |

### Overview



- |                  |                  |
|------------------|------------------|
| 1. S-Video       | 5. RJ-45 (NIC)   |
| 2. VGA Video     | 6. USB Ports (2) |
| 3. Parallel Port | 7. DC In         |
| 4. PS/2 Port     |                  |

### At A Glance

- Microsoft Windows XP Professional or Microsoft Windows XP Home  
**NOTE:** [Microsoft Windows 2000 driver support via web.](#)
- Mobile Intel® Pentium® 4 processors – up to 3.06 GHz
  - Intel® Celeron® processors – up to 2.8 GHz
- 15-inch TFT XGA display
- Configurations as light as 7.07 lb/3.2 kg and as thin as 1.73 in/4.39 cm (14-inch panel)
- 256MB or 512MB DDR SDRAM (266 MHz), Upgradeable to 1GB
- Up to 80 GB (4200 rpm) hard drive
- Integrated NIC, high speed 56K modem, and available 802.11b and 802.11g Wireless LAN
- Full-size keyboard with 5 Quick Launch Buttons
- Includes a one-year, Worldwide Warranty – Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

### What's New

- Microsoft Windows XP Professional or Microsoft Windows XP Home  
**NOTE:** [Microsoft Windows 2000 driver support via web.](#)
- Mobile Intel Pentium 4 processors – up to 3.06 GHz
- Intel Celeron processors – up to 2.8 GHz
- DVD+RW optical drive

### What's Special

- Microsoft Windows XP Professional or Microsoft Windows XP Home  
**NOTE:** [Microsoft Windows 2000 driver support via web.](#)
- Mobile Intel Pentium 4 and Intel Celeron processors
- All-in-one convenient design
- Powerful Proven Technology
- USB 2.0 and IEEE 1394

### Standard Features

<b>Processors and Chipset</b>	One of the following: 3.06 GHz Mobile Intel Pentium 4 processor with 533-MHz Front Side Bus and 512-KB L2 cache 2.8 GHz Mobile Intel Pentium 4 processor with 533-MHz Front Side Bus and 512-KB L2 cache 2.66 GHz Mobile Intel Pentium 4 processor with 533-MHz Front Side Bus and 512-KB L2 cache 2.8 GHz Intel Celeron with 400-MHz Front Side Bus and 128-KB L2 cache Chipset: ATI Radeon IGP 345M (RS200MP)/ALI M1535+ <b>NOTE:</b> Mobile Intel Pentium 4 processor supports enhanced Intel SpeedStep™ technology.
<b>Operating System</b>	Microsoft Windows XP Professional, preinstalled or Microsoft Windows XP Home (limited language availability) preinstalled <b>NOTE:</b> Microsoft Windows 2000 Driver support via web.
<b>Displays</b>	Internal 15-inch color TFT XGA with 1024 x 768 resolution (up to 16.7M colors internal) External Up to 32-bit per pixel color depth. Supports 640 x 480, 800 x 600, 1024 x 768, 1280 x 768, 1280 x 1024, or 1600 x 1200 resolutions up to 100-Hz refresh rate, dependent upon monitor capability, and resolution and color depth settings
<b>Memory</b>	Standard 256 MB (266 MHz) DDR SDRAM (256 MB SODIMM in slot 1) or 512 MB (266 MHz) DDR SDRAM (256 MB SODIMM in slots 1 and 2) Maximum 1 GB (266 MHz) DDR SDRAM (512MB (266 MHz) in slots 1 and 2) <b>NOTE:</b> 256MB of DDR (64MB standard shared video memory). <b>NOTE:</b> Up to 64MB shared video memory user configurable.
<b>Communications</b>	10/100 NIC is integrated on the system board Integrated high speed 56K modem 802.11b on select models 802.11g on select models Wireless on/off Button
<b>Keyboard</b>	Full-size desktop-compatible keyboard; special feature hotkeys for instant access to toggling between internal and external displays, or simultaneous displays and brightness. Oversized keys and separate cursor control keys (87 keys) – 101-key compatible.
<b>Easy Access Buttons</b>	Five – One Touch Quick Launch Buttons
<b>Pointing Device</b>	Touch pad with on/off button and dedicated scroll up/down surface
<b>PC Card Slots</b>	One Type II PC Card slot with support for 16-bit PCMCIA and 32-bit Cardbus.

### Standard Features

<b>Storage</b>	Fixed Diskette Drive	1.44 MB Diskette Drive
	Primary Hard Drive	80-GB 4200 rpm SMART Ultra ATA Hard Drive
		60-GB 4200 rpm SMART Ultra ATA Hard Drive
		40-GB 4200 rpm SMART Ultra ATA Hard Drive
30-GB 4200 rpm SMART Ultra ATA Hard Drive		
Fixed Optical Drive	DVD/CD-RW combo Drive	
	DVD Drive	
	CD Drive	
	DVD+RW Drive	
<hr/>		
<b>Audio</b>	Integrated Speakers, Volume control & Mute buttons, AC/97, SoundBlaster Pro compatible, 16 bit stereo sound	
<hr/>		
<b>Multimedia</b>	Dual Speakers and 16-bit stereo sound Dedicated Hardware and Hotkey volume controls Headphone-out port Microphone-in port Software MPEG1 support, MPEG2 and DVD DVD/CD-RW Combination Drive (on select models) DVD-ROM Drive with movie playback software (on select models) CD-ROM Drive (on select models) S-video Port IEEE 1394 Port (on select models) USB 2.0 Ports (on select models) 4X AGP graphics 64MB of DDR (Double Date Rate) shared video memory	
<hr/>		
<b>Interfaces</b>	PC Card	1 Type 1/II
	Enhanced Parallel EPP/ECP	1
	PS/2	1
	S-Video (NTSC/PAL)	1
	VGA	1
	1394 - select models	1
	Port Replicator – select models	1
	Headphone/Line-out	1
	Microphone-in	1
	DC Power	1
	RJ-11 (modem)	1
	RJ-45 (NIC)	1
	Infrared Port – select models	1 (4 Mb/s support) (IrDA 4 MB compliant. IR performance will vary depending on performance of IR peripherals and application used.)
	USB 2.0	3
	LED status indicators	8

### Standard Features

- System power
- Battery charging
- Hard drive activity
- Caps lock
- Num lock
- Keypad
- Wireless
- Mute Lock

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**Graphics** UMA architecture – ATI Mobility™ Radeon™, AGP 4x and 3D Architecture, MPEG2 and DVD playback, standard 16MB shared w/128MB main memory, 64MB shared w/256MB or more main memory, configurable up to 64MB.

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**Software** Intervideo WinDVD Playback Software  
Roxio Easy CD Creator (on CDRW, DVD/CDRW)  
Safety and Comfort Guide  
Acrobat Reader  
Reference Guide  
One touch button software  
Symantec Norton Anti-virus  
HP Help and Support  
Microsoft Office on select models  
**NOTE:** [Symantec Norton Antivirus 2003 \(Complimentary 60 days Live Update\)](#).

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**System Recovery** Each unit is shipped with a recovery CD kit containing a system restore and Operating System CD. These CDs allow users to either recover or repair the notebook operating system without losing personal data. The Operating System CD also provides the option of reinstalling the operating system software provided with the notebook. (erases hard disk and restores the manufacturer installed image).

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**Security** Power-on Password  
Kensington MicroSave security slot; accepts 3rd party security lock devices

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**Power Supply** External 90-Watt AC adapter, power cord included.

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### Standard Features

**Battery** The HP Compaq Business Notebook nx9010 provides up to 2 hours of battery life using the standard 8-cell Lithium-Ion battery, 4.4Ahr and Smart Battery Technology (provides accurate, instantaneous battery status).

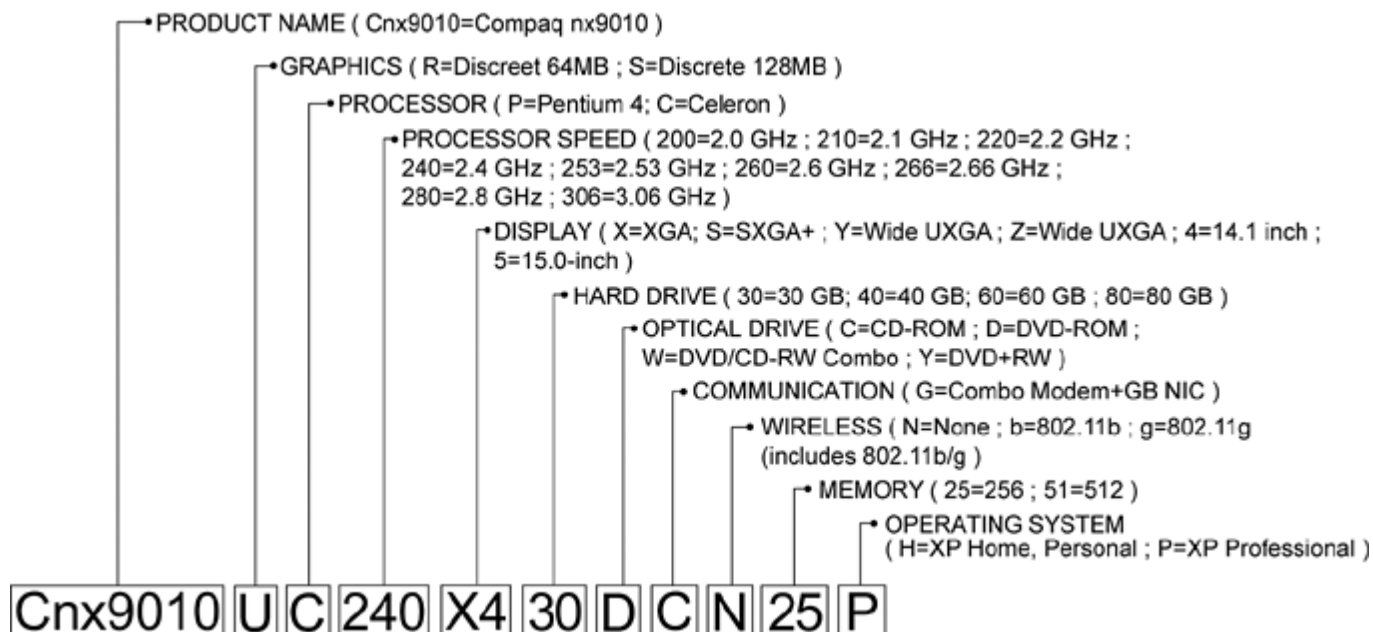
**NOTE:** Actual results may vary with product model, configuration, and individual usage. Hewlett-Packard testing of a HP Compaq nx9010 with an Intel Celeron 2.0 GHz + CPU, Windows XP Pro, 15.0-inch XGA LCD, 256 MB RAM, 20-GB HDD, DVD, Lithium-Ion battery, and NIC/modem, achieved an overall Business Winstone 2002 BatteryMark score of **2h 20m** Business Winstone® 2002 BatteryMark™ Version 1.0 units. Winstone® is a registered trademark and BatteryMark™ is a trademark of Ziff Davis Publishing Holdings Inc. in the U.S. and other countries. Copyright 2002 Ziff Davis Media Inc. All Rights Reserved. System parameters followed test recommendations: panel brightness 50%, power management scheme - Laptop/Portable, hard drive, standby and video timers set to never.

**NOTE:** This test was performed without independent verification by eTesting Labs Inc. eTesting Labs Inc. makes no representations or warranties as to the result of the test. BatteryMark is a trademark of Ziff Davis Publishing Holdings Inc., and affiliate of eTesting Labs Inc., in the U.S. and other countries.

**Power Conservation** Hibernation  
 Instant-on via Standby  
 One custom level of power conservation  
 Energy Star Compliant

**Service and Support** HP Services includes a one-year, Worldwide Limited Warranty, pick-up or carry-in; upgraded warranty and toll-free 7 x 24 hardware technical phone support available.

**NOTE:** Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.



### Standard Features

#### Models

Cnx9010UP280X540WCg25P  
P/N DV134U#ABA

<b>Processor</b>	Intel Pentium 4 2.8GHz
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Display</b>	15-inch color TFT XGA
<b>Cache Memory</b>	512 KB, L2 Cache
<b>Standard Memory</b>	256 MB (1 DIMM) 266 MHz DDR
<b>Maximum Memory</b>	1024 MB (266 MHz) DDR
<b>Hard Drive</b>	40 GB
<b>Optical Drive</b>	DVD/CD-RW Drive
<b>Diskette Drive</b>	1.44MB Diskette Drive
<b>Communications</b>	Type III Mini PCI high speed 56K modem, (LOM) integrated 10/100 NIC, Integrated 802.11g WLAN
<b>Graphics</b>	ATI Radeon IGP 345M Integrated UMA architecture ATI 4X AGP 3D accelerator
<b>Audio</b>	16-bit stereo sound integrated speakers
<b>Warranty</b>	One Year

Cnx9010UP306X540WCg51P  
P/N DV135U#ABA

<b>Processor</b>	Intel Pentium 4 3.06GHz
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Display</b>	15-inch color TFT XGA
<b>Cache Memory</b>	512 KB, L2 Cache
<b>Standard Memory</b>	512 MB (2 DIMM) 266 MHz DDR
<b>Maximum Memory</b>	1024 MB (266 MHz) DDR
<b>Hard Drive</b>	40 GB
<b>Optical Drive</b>	DVD/CD-RW Drive
<b>Diskette Drive</b>	1.44MB Diskette Drive
<b>Communications</b>	Type III Mini PCI high speed 56K modem, (LOM) integrated 10/100 NIC, Integrated 802.11g WLAN
<b>Graphics</b>	ATI Radeon IGP 345M Integrated UMA architecture ATI 4X AGP 3D accelerator
<b>Audio</b>	16-bit stereo sound integrated speakers
<b>Warranty</b>	One Year

### Standard Features

Cnx9010UP306X560YCg51P  
P/N DH939U#ABA

<b>Processor</b>	3.06GHz Mobile Intel Pentium 4
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Display</b>	15-inch color TFT XGA
<b>Cache Memory</b>	512 KB, L2 Cache
<b>Standard Memory</b>	512 MB (2 DIMM) 266 MHz DDR
<b>Maximum Memory</b>	1024 MB (266 MHz) DDR
<b>Hard Drive</b>	60 GB
<b>Optical Drive</b>	DVD+RW Drive
<b>Diskette Drive</b>	1.44MB Diskette Drive
<b>Communications</b>	Type III Mini PCI high speed 56K modem, (LOM) integrated 10/100 NIC, Integrated 802.11g WLAN
<b>Graphics</b>	ATI Radeon IGP 345M Integrated UMA architecture ATI 4X AGP 3D accelerator
<b>Audio</b>	16-bit stereo sound integrated speakers
<b>Warranty</b>	One Year

Cnx9010UP280X530WCg25P  
P/N PG475UA#ABA

<b>Processor</b>	Intel Pentium 4 2.8GHz
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Display</b>	15-inch color TFT XGA
<b>Cache Memory</b>	512 KB, L2 Cache
<b>Standard Memory</b>	256 MB (1 DIMM) 266 MHz DDR
<b>Maximum Memory</b>	1024 MB (266 MHz) DDR
<b>Hard Drive</b>	30 GB
<b>Optical Drive</b>	DVD/CD-RW Drive
<b>Diskette Drive</b>	None
<b>Communications</b>	Type III Mini PCI high speed 56K modem, (LOM) integrated 10/100 NIC, Integrated 802.11g WLAN
<b>Graphics</b>	ATI Radeon IGP 345M Integrated UMA architecture ATI 4X AGP 3D accelerator
<b>Audio</b>	16-bit stereo sound integrated speakers
<b>Warranty</b>	One Year

### Options

<b>Storage</b>	HP USB Digital Drive	DL702B
<b>Memory</b>	256MB (333 MHz) DDR RAM Memory Upgrade	DC389B
	512MB (333 MHz) DDR RAM Memory Upgrade	DC390B
	1024MB (333MHz) DDR Memory Upgrade	DC890B
<b>Expansion</b>	Simple Port Replicator (USB 2.0)	F4808B
<b>Power</b>	Primary Battery Pack	F4809A
	AC Adapter 90W	F4813A#ABA
	Auto/Truck Adapter 90W	DC303B
<b>Carrying Cases</b>	HP Executive Nylon Case	DC916A
	HP Top Load Nylon Carrying Case	DC915A
	HP Top Load Leather Carrying Case	DC917A
<b>Security</b>	Security Cable Lock	294316-B21
<b>Input/Output Devices</b>	External 10-Key Numeric Keypad (PS/2)	294317-B21
	USB/PS2 Keyboard	118003-009
	USB/PS2 Mouse	103180-B22
	USB Travel Mouse	F2100A

### Memory

#### HP Compaq nx9010 Business Notebook

#### Standard Memory Plus Optional Memory

Support for up to 1024 MB total of DDR SDRAM memory is available with the installation of optional DDR SDRAM Memory Kits.

Memory	Slot 1	Slot 2
256 MB	256 MB	-
384 MB	256 MB	128 MB
512 MB	512 MB	-
768 MB	512 MB	256 MB
1024 MB	512 MB	512 MB

**NOTE:** This chart does not represent all possible memory configurations. Due to the non-industry standard nature of some third-party memory modules, we strongly recommend using only Compaq branded memory modules to ensure compatibility.

Following are memory options available from Compaq:

- 1024-MB (333 MHz) Memory Upgrade DC890B
- 512-MB (333 MHz) Memory Upgrade DC390B
- 256-MB (333 MHz) Memory Upgrade DC389B

## Storage

### Drive Support

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System Drive Support	Quantity Supported	Drive Supported
1.44-MB Diskette Drive	1	Dedicated diskette drive
DVD/CD-RW Combo Drive	1	Dedicated optical drive
DVD+RW Drive	1	Dedicated optical drive
DVD-ROM Drive	1	Dedicated optical drive
Max CD-ROM Drive	1	Dedicated optical drive

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### Hard Drives

80-GB Hard Drive	1	Dedicated hard drive bay
60-GB Hard Drive	1	Dedicated hard drive bay
40-GB Hard Drive	1	Dedicated hard drive bay
30-GB Hard Drive	1	Dedicated hard drive bay

### Technical Specifications

<b>System Unit</b>	<b>Dimensions (HxWxD)</b>	14.1-inch TFT panel displays	1.73 x 12.96 x 10.72 in (4.39 x 32.92 x 27.23 cm)
		15-inch TFT panel displays	1.93 x 12.96 x 10.72 in (4.90 x 32.92 x 27.23 cm)
<b>Weight</b>		14.1-inch TFT panel displays	7.07 lb (3.2 kg)
		15-inch TFT panel displays	7.69 lb (3.49 kg)
<b>NOTE: * = Weight varies by configuration.</b>			
<b>Stand-Alone Power Requirements</b>		Nominal Operating Voltage (Li-Ion)	14.4 V (8-cell)
		Average Operating Power	29.7 W Desktop
		Peak Operating Power	82 W on AC 55 W on DC
		Power in suspend mode	< 1000 mW
<b>Power Supply</b>		Power in hibernation mode	< 100 mW
		Rated Input Voltage	100 to 240 VAC
		Rated Input Current	4.74 A
<b>Temperature</b>		Rated Frequency	50 to 60 Hz
		Operating	50° to 95° F (10° to 35° C)
<b>Relative Humidity</b>		Non-operating	14° to 140° F (-10° to 60° C)
		Operating	10% to 90% relative humidity, non-condensing
<b>Shock</b>		Non-operating	5% to 90% relative humidity, 101.6° F (38.7° C) Maximum wetbulb temperature
		Operating	10 G, 11 ms, half-sine
<b>Vibration</b>		Non-operating	60 G, 11 ms, half-sine
		Operating	0.5 G zero-to-peak, 10 to 500 Hz, 0.25 oct/min sweep rate
<b>Maximum Altitude (unpressurized)</b>		Non-operating	1.0 G, zero-to-peak, 10 to 500 Hz, 0.5 oct/min sweep rate
		Operating	0 to 10,000 ft (0 to 3,048 m)
		Non-operating	0 to 30,000 ft (0 to 9,144 m)

### Technical Specifications

15-Inch Color TFT XGA Display	Dimensions (H x W)	11.8 x 9 in (30.4 x 22.8 cm)		
	Diagonal Size	15 in (38 cm)		
	Mounting	Internal Panel Supports, Side Mounted		
	Number of Colors	Up to 16.8M		
	Contrast Ratio	150:1		
	Brightness	150nt typ		
	Pixel Resolution	Pitch	0.297 x 0.297 mm	
		Format	1024 x 768	
		Configuration	RGB stripe	
	Backlight	Edge Lit		
	Character Display	80 x 25		
	Total Power Consumption	5.0W		
	Viewing Angle	±35° degrees Horizontal, +15°/-35° Vertical (typical)		

### Hard Drives

80-GB (4200 rpm)	Drive Weight	0.22 lb (99 g)		
	Capacity	80 GB		
	Height	0.374 in (9.5 mm)		
	Width	70 mm		
	Interface	ATA-5		
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)	
		Security	ATA Security	
	Seek Time (typical reads, including settling)	Single Track	3 ms	
		Average	13 ms	
		Maximum	24 ms	
	Rotational Speed	4200 rpm		
	Logical Blocks	156,301,488		
	Operating Temperature	41° to 131° F (5° to 55° C)		
Features	Security	ATA Security		

## Technical Specifications

60-GB (4200 rpm)	<b>Drive Weight</b>	0.34 lb (155 g)	
	<b>Capacity</b>	60 GB	
	<b>Height</b>	0.374 in (9.5 mm)	
	<b>Width</b>	70 mm	
	<b>Interface</b>	ATA-5	
	<b>Transfer Rate</b>	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	<b>Seek Time</b>	Single Track	3 ms
	(typical reads, including settling)	Average	13 ms
		Maximum	25 ms
	<b>Rotational Speed</b>	4200 rpm	
	<b>Logical Blocks</b>	117,210,240	
	<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)	

**Features** Security ATA Security

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40-GB (4200 rpm)	<b>Drive Weight</b>	0.21 lb (95 g)	
	<b>Capacity</b>	40 GB	
	<b>Height</b>	0.374 in (9.5 mm)	
	<b>Width</b>	2.75 in (70 mm)	
	<b>Interface</b>	ATA-5	
	<b>Transfer Rate</b>	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	<b>Seek Time</b>	Single Track	3.0 ms
	(typical reads, including settling)	Average	13 ms
		Maximum	25 ms
	<b>Rotational Speed</b>	4200 rpm	
	<b>Logical Blocks</b>	78,140,160	
	<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)	

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## Technical Specifications

30-GB (4200 rpm)	Drive Weight	0.22 lb (99 g)	
	Capacity	30 GB	
	Height	0.374 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time	Single Track	2.5 ms
	(typical reads, including settling)	Average	12 ms
		Maximum	23 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	58,605,120	
	Operating Temperature	41° to 131° F (5° to 55° C)	

Audio	Hardware	Implementation	Connexant SmartAMC CX20468-21 AC97 CODEC	
		Audio Signal Link to CPU	Audio CODEC (AC) link	
		Full Duplex	Full duplex audio recording and playback	
		Stereo Inputs	Line In - 10K Impedance (min.)	
		Mono Inputs	Microphone - 10K Impedance (min), with Port Replicator only.	
		Stereo Outputs	Headphone jack, internal speaker, S/PDIF for Port Replicator only	
		Analog Frequency Response	20 Hz - 20 kHz	
		Audio Output Quality	Frequency Response	300 Hz - 20 kHz
			Signal to Noise Ratio	>94dB
			Total Harmonic Distortion	-50 dBFS (PC2001(Mobile PC) protocol)
	Noise Floor			
	Play/Record Sampling Rate(s)		7 kHz to 48 kHz	
	Stereo Speaker	AD/DA Resolution	Stereo full-duplex audio codec with 18-bit resolution	
		Amplifier Power	2-Watts (Normal), 2.5Watts (Maximum)	
		Speaker Impedance	4-Ohms ± 15% at 1KHz	
		Frequency Response	530 Hz - 20 kHz	

## Technical Specifications

Diskette Drive	Diskette Size	3.5 in		
	Height	0.5 in (12.7 mm)		
	Bytes per Sector	512		
	Sectors per track	High density	18 (1.44 MB)/15 (1.2 MB)	
		Low density	9	
	Tracks per side	High density	80 (1.44 MB)/80 (1.2 MB)	
		Low density	80	
	Read/Write heads	2		
	Access Times	Track-to track (high/low)	3 ms/6 ms	
		Average (high/low)	94 ms/174 ms	
Settling time		15 ms		
Latency average		100 ms		

External AC Adapter without Power Factor Correction	Weight	0.67 lb (0.304 kg)	
	Power Supply (Input)	Operating Voltage	100 to 240 VAC RMS
		Operating Current	1.7 A RMS
		Operating Frequency Range	47 to 63 Hz AC

Lithium-Ion Battery Pack (8-cell)	Dimensions (L x W x D)	5.25 x 3.63 x 0.75 in (13.4 x 9.2 x 1.9 cm)		
	Weight	0.96 lb (0.43 kg)		
	Energy	Voltage	14.8 V	
		Amp-hour capacity	Typical 4.4 Ah	
		Watt-hour capacity	Typical 64 Wh	
	Temperature	Operating	32° to 140° F (0° to 60° C)	
Non-operating		-4° to 140° F (-20° to 60° C)		

DVD/CD-RW Drive	Center Hole Diameter	15 mm		
	Disk Diameter	12 cm, 8 cm		
	Disk Thickness	1.2 mm		
	Track Pitch	1.6 $\mu$ m		
	Access Times (typical reads, including settling)	Random CD	< 110 ms	
		Full-Stroke CD	< 210 ms	
		Random DVD	< 130 ms	
		Full-Stroke DVD	< 225 ms	
	Audio Output Level	0.7 – 0.9 Vrms		
	Cache Buffer	2 Mbytes (minimum)		

### Technical Specifications

<b>Data Transfer Rate</b> (typical, including settling)	CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)
	CD-RW (10X)	1200 KB/s (150 KB/s at 1X CD rate)
	CD-ROM (24X)	3600 KB/s (150 KB/s at 1X CD rate)
	DVD (8X)	10,800 KB/s (1352 KB/s at 1X DVD rate)
	Normal PIO Mode 4 (single burst)	16.6 MB/s
<b>Start-up Time</b>	Single	< 9 seconds (typical)
	Multi-Session	< 30 seconds (typical)
<b>Stop Time</b>	< 6 seconds (typical)	

<b>DVD-ROM Drive</b>	<b>Center Hole Diameter</b>	0.59 in (1.5 cm)		
	<b>Disk Diameter</b>	12 cm/8 cm		
	<b>Disk Thickness</b>	1.2 mm		
	<b>Track Pitch</b>	0.74 $\mu$ m (DVD)/1.6 $\mu$ m(CD)		
	<b>Access Times</b> (typical reads, including settling)	Random (typical)	< 125 ms DVD Media	
		Full-Stroke (typical)	< 225 ms DVD Media	
		Random (typical)	< 100 ms CD Media	
		Full-Stroke (typical)	< 175 ms CD Media	
	<b>Cache Buffer</b>	512 KB/s (minimum)		
	<b>Data Transfer Rate</b> (typical, including settling)	Max 24X CD	3600 KB/s (150 KB/s at 1X CD rate)	
Max 8X DVD		10,800 KB/s (1352 KB/s at 1X DVD rate)		
<b>Start-up Time</b>	< 12 seconds Typical			
<b>Stop Time</b>	< 3 seconds Typical			

<b>DVD+RW Drive</b>	<b>MultiBay Drive</b>	Dimensions (H x W x D)	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)	
		Weight	0.55 lb (0.25 kg)	
	<b>Center Hole Diameter</b>	15 mm		
	<b>Disk Diameter</b>	12 cm/8 cm		
	<b>Disk Thickness</b>	1.2 mm		
	<b>Track Pitch</b>	0.74 $\mu$ m		
	<b>Access Times</b> (typical reads, including settling)	Random CD	< 175 ms	
		Full-Stroke CD	< 285 ms	
	<b>Audio Output Level</b>	Line-out	0.7 Vrms	
	<b>Cache Buffer</b>	128 KB/s (minimum)		

### Technical Specifications

<b>Data Transfer Rate</b> (typical, including settling)	DVD+R (2X max write)	2700 KB/s
	DVD+RW (2X max write)	2700 KB/s
	CD-R (16X max write)	2400 KB/s (150 KB/s at 1X CD rate)
	CD-RW (8X max write)	1200 KB/s (150 KB/s at 1X CD rate)
	CD-ROM (24X max read)	3600 KB/s (150 KB/s at 1X CD rate)
	DVD (8X max read)	10,800 KB/s (1352 KB/s at 1X DVD rate)
	Normal PIO Mode 4 (single burst)	16.6 MB/s
<b>Start-up Time</b>	< 15 seconds	
<b>Stop Time</b>	< 6 seconds	

<b>24X CD-ROM Drive</b>	<b>Applicable Disk</b>	CD-ROM (Mode 1, 2 and 3), CD-XA ready (Mode 2, Form 1 and 2), CD-I ready (Mode 2, Form 1 and 2), CD-R (read only), CD Plus, Photo CD (Single and Multi-session), CD-Extra, Video CD, CD-WO (fixed packets only), CD-Bridge	
	<b>Center Hole Diameter</b>	0.59 in (15 mm)	
	<b>Disk Diameter</b>	12 cm, 8 cm	
	<b>Disk Thickness</b>	0.047 in (1.2 mm)	
	<b>Track Pitch</b>	1.6 $\mu$ m	
	<b>Access Times</b> (typical reads, including settling)	Random	< 110 ms
		Full-Stroke	< 220 ms
	<b>Audio Output Level</b>	Line-out	0.7-0.9 Vrms
	<b>Cache Buffer</b>	128 KB	
	<b>Data Transfer Rate</b> (typical, including settling)	CD-ROM	3600 KB/s Maximum
	<b>Start-up Time</b>	< 10 seconds	
	<b>Stop Time</b>	< 5 seconds	

<b>Integrated Conexant 56K ALink Modem</b>	<b>Form Factor</b>	Integrated on motherboard
	<b>Power Management Support</b>	APM Revision 1.2, ACPI
	<b>Approvals/Certifications</b>	UL, CSA, NEMKO, CCIB, Industry Canada, FCC Part 68, CTR21, FCC Part 15 Class B, Canadian ICES-003 Class B, C.I.S.P.R.22, Australian ACA, CE Mark, Other Countries

## Technical Specifications

<b>Data Mode Capabilities</b>	High speed 56K modem (a-law, mu-law) K56flex (a-law, mu-law) V.8bis V.80 V44.bis, MNP5 (Compression) V42.bis, MNP5 (Compression) V.42 (LAPM, MNP2-4) (Error Correction) V.34 (file date: 10/96) <b>Optional symbol rates:</b> 2800, 3429 Asymmetric Symbol rates <b>Synchronous primary channel data signaling rates:</b> 3600, 31200 Automatic rate re-negotiation V.32bis V.32 V.23 V.22bis V.22 V.21 Bell 212A Bell 103J
<b>Fax Mode Capabilities</b>	TIA-578-S (Class 1) T.30, T.4 (Group 3) V.17 V.29 V.27ter V.21 Channel 2
<b>Command Set</b>	V.250 (Partial) TIA-602 Identification: +GMI, +GMM, +GMR Port control: +IPR, +ICF, +IFC, +ILRR Modulation: +MS, +MR, +MA Error control: +ES, +ER, +EB, +ESR, +ETBM Data compression: +DS, +DR V.251

### Technical Specifications

<b>Integrated 10/100 NIC</b>	<b>NIC Device Driver Name</b>	National Semiconductor Corp. DP83815/816 10/100 MacPhyter PCI Adapter
	<b>Data Link Layers</b>	IEEE 802.2 LLC SNAP
	<b>Ethernet Features</b>	10 Mbps Ethernet: IEEE 802.3 standard 10BASE-T 100 Mbps Ethernet: IEEE 802.3u standard 100BASE-TX Full Duplex at 10 and 100Mbps Auto-Negotiation Wake on LAN from Standby (S3) Lower Power State on Link Loss
	<b>Software support</b>	IBM LAN Server Version 1.2, 1.3, 2.0, 4.0 Microsoft NT 3.51, NT 4.0. Microsoft Windows 2000 Novell Netware 3.1x, 4.x, 5.x
	<b>Protocol support</b>	TCP/IP Novell IPX/SPX and Microsoft compatible Novel IPX ODI Microsoft NetBEUI IBM DLC

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<b>HP 802.11b WLAN</b>	<b>WLAN Standard</b>	802.11b
	<b>Frequency band</b>	2.4 GHz
	<b>Data rates</b>	1, 2, 5.5, and 11 Mbps
	<b>O/S Support</b>	Microsoft Windows XP Professional Microsoft Windows XP Home Microsoft Windows 2000
	<b>WiFi-certified</b>	Yes (802.11b; WPA pending)
	<b>Interface</b>	MiniPCI Type III
	<b>Chipset</b>	Intersil Prism 2.5
	<b>Security</b>	Support for 802.1x authentication types EAP-TLS, PEAP, EAP-MD5, EAP-TTLS; support for up to 128 bit WEP encryption

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### Technical Specifications

HP 802.11b WLAN	WLAN Standard	802.11b
	Frequency band	2.4 GHz
	Data rates	1, 2, 5.5, and 11 Mbps
	O/S Support	Microsoft Windows XP Professional Microsoft Windows XP Home Microsoft Windows 2000*
	WiFi-certified	Yes
	Interface	MiniPCI Type III
	Chipset	Broadcom 4301/2050
	Security	Support for 802.1x authentication types EAP-TLS, PEAP, EAP-TTLS, Cisco LEAP** ; support for up to 128-bit WEP encryption, WPA

\*Driver upgrade may be required for ratified IEEE 802.11g standard compliance. Visit [www.hp.com/support/](http://www.hp.com/support/) to obtain driver updates for your notebook.

\*\*Requires the use of a software supplicant: Broadcom 802.11b and 802.11g Network Adapters User Interface (provided by HP)

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HP 54g WLAN W450	WLAN standard	IEEE 802.11b, 802.11g
	Frequency	2.4 GHz
	Data rates	802.11b: 1, 2, 5.5, and 11 Mbps 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps
	O/S Support	Microsoft Windows XP Professional Microsoft Windows XP Home Microsoft Windows 2000
	WiFi-certified	Yes (802.11b, WPA; 802.11g pending)
	Interface	MiniPCI Type III
	Chipset	Broadcom 4306B0/2050 chipset
	Security	Support for 802.1x authentication types EAP-TLS, PEAP, EAP-MD5, EAP-TTLS; support for up to 128-bit WEP encryption, WPA

**NOTE:** Driver upgrade may be required for ratified IEEE 802.11g standard compliance. Visit [www.hp.com/support/](http://www.hp.com/support/) to obtain driver updates for your notebook.

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