Type-model	Processor	Speed	Memory[11]	Screen	Disk GB[8]	Optical	Mini PCI Comm Bay wireless/modem	CDC modem	Ethernet on planar	Security Chip	Preload	Small business software	Workhorse (W) or Global (G) model	Avail date
2656-25U	Celeron™	1.06	128MB	13.3" XGA	20G	CD-ROM	Open	Modem	10/100		XP Home			Feb 2002
2656-A5U	Celeron	1.06	128MB	13.3" XGA	20G	CD-ROM	Open	Modem	10/100		XP Pro			Feb 2002
2656-AFU	Celeron	1.06	128MB	13.3" XGA	20G	CD-ROM	Wi-Fi[32]/mod	None	10/100		XP Pro			Feb 2002
2656-AKU	Celeron	1.06	128MB	13.3" XGA	20G	CD-ROM	Open	Modem	10/100		XP Pro	Office XP SB[18]		Feb 2002
2656-AGU	Celeron	1.06	128MB	14.1" XGA	20G	CD-ROM	Wi-Fi	None	10/100		XP Pro			Aug 2002
2656-HHU	Pentium® III-M	1.00	128MB	14.1" XGA	20G	DVD-ROM	Open	Modem	10/100		XP Pro		G	Mar 2002
2656-3FU	Pentium III-M	1.13	128MB	13.3" XGA	20G	CD-RW	Wi-Fi/mod	None	10/100		XP Home			Feb 2002
2656-BFU	Pentium III-M	1.13	128MB	13.3" XGA	20G	CD-RW	Wi-Fi/mod	None	10/100		XP Pro			Feb 2002
2656-E5U	Pentium III-M	1.13	128MB	14.1" XGA	30G	DVD-ROM	Open	Modem	10/100		XP Pro		W G	Feb 2002
2656-E6U	Pentium III-M	1.13	128MB	14.1" XGA	30G	CD-RW	Open	Modem	10/100	Yes	XP Pro			Feb 2002
2656-EFU	Pentium III-M	1.13	128MB	14.1" XGA	30G	DVD-ROM	Wi-Fi/mod	None	10/100		XP Pro		W G	Feb 2002
2656-HFU	Pentium III-M	1.13	128MB	14.1" XGA	40G	DVD/CD-RW	Wi-Fi/mod	None	10/100	Yes	XP Pro			Feb 2002
2656-EHU	Pentium III-M	1.13	128MB	14.1" XGA	30G	DVD-ROM	Wi-Fi/mod	None	10/100		XP Pro	Office XP SB		Feb 2002
2656-HGU	Pentium III-M	1.13	128MB	14.1" XGA	40G	DVD/CD-RW	Wi-Fi/mod	None	10/100	Yes	XP Pro	Office XP SB		Feb 2002

Positioning	*Best blend of portability and essential features; two-spindle system*
Processor	**Intel® Mobile Celeron™ 1.06GHz with 133MHz frontside bus** or **Intel Mobile Pentium® III-M 1.0 or 1.13GHz** with Speedstep™ technology[1] with 133MHz frontside bus
L2 cache	*Celeron:* **256KB** / at processor speed; *Pentium III:* **512 KB** / at processor speed
Memory	**128MB** standard / **1GB** max[7] / SDRAM / non-parity / 133MHz / PC133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive
CD-ROM	*Some:* CD-ROM / 24X-10X[9] speed / bootable / removable
CD-RW	*Some:* CD-RW / 8X/4X/24X Max[9] / removable
DVD-ROM	*Some:* DVD-ROM / 8X-3.3X[9] speed / removable
DVD-ROM/CD-RW	*Some:* DVD-ROM/CD-RW combo / 8X/8X/24X/8X[21] speed / removable
Ultrabay 2000	One modular bay for interchangeable devices (right side) / **Ultrabay™ Plus**-compatible
Disk	**20, 30,** or **40GB**[8] (4200 rpm) / upgradable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay
Display	*Some:* **13.3"** (337.8mm) **XGA (1024x768) TFT color** / Active Matrix *Some:* **14.1"** (358.1mm) **XGA (1024x768) TFT color** / Active Matrix
Graphics controller	**Intel 830MG Integrated Direct AGP 3D** / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB[11] of system memory for graphics
Graphics - external	External SVGA to various modes such as 16.7 million colors, 85Hz, or 1600x1200
Keyboard	87-key / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar[13] / pitch: 19mm; stroke: 2.7mm
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions / no UltraPort™
Dimensions[3]	12.3" x 10.0" x 1.42" / 313mm x 254mm x 36mm
Approximate weight[2]	w/ battery and: *CD-ROM:* 5.8 lbs; *DVD:* 5.8 lbs; *CD-RW:* 6.1 lbs; *DVD/CD-RW:* 6.1 lbs
Case material	*Color:* Black; *All:* ABS plastic
Battery - type	Lithium Ion 6-cell / intelligent / no second battery in Ultrabay Plus
Battery - life[10]	*Celeron models:* 2.4 to 2.6 hrs; *Pentium III models:* 2.9 to 3.1 hrs
Architecture	**Intel 830MG** chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, USB, Low Pin Count bus, ethernet, AC-Link) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1410A CardBus, Mini PCI) / Firmware Hub / LPC bus 33MHz (NS PC87392VJG Super I/O for parallel, infrared)
Port Replicator	Optional **ThinkPad Port Replicator** (no ThinkPad Dock support)
PC Card Std slots	One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door
Ports	Two USB (Version 1.1) / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port
Video out	S-video out port (TV out) / one industry standard connector
Mini PCI	One Mini PCI type III slot (Communications Bay) / not customer upgradable
Wi-Fi[32]/modem	*Some:* Mini PCI Wi-Fi[32] wireless[4], Intersil® Prism 2.5 chipset, dual antennas (in side of display and in base), Wi-Fi-certified / 56K[6] V.90 (V.92-designed[29]) modem combo, Lucent® chipset
CDC	One Communications Daughter Card (CDC) socket (open or modem) / not accessible
Modem	*Some:* 56K[6] V.90 (V.92-designed[29]) CDC modem card / Lucent® chip set
Ethernet	10/100 ethernet on planar / Intel® 82562ET chipset
Audio support	Soft audio / SoundBlaster-compatible / Analog Devices AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / no internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm)
Security	Power-on password / hard disk password / supervisor password / security keyhole *Some:* **IBM Embedded Security Subsystem**[33] / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security[16]
Limited warranty[12]	**1 year** - EasyServ™,[19] onsite pickup and delivery / service upgrades[22] available

64 MB SO DIMM 133MHz NP SDRAM	19K4650	USB Portable Diskette Drive	05K9276	
128 MB SO DIMM 133MHz NP SDRAM	19K4652	ThinkPad R30/R31 Li-Ion Battery	02K6821	
256 MB SO DIMM 133MHz NP SDRAM	19K4654	ThinkPad 72W AC Adapter	02K6699	
512 MB SO DIMM 133MHz NP SDRAM	19K4656	ThinkPad Port Replicator	02K8667	
SuperDisk (LS-240) UltraBay 2000	08K9616	Portable Drive Bay 2000 (accepts Ultrabay		
Zip 250MB Ultrabay 2000 Drive	00N8253	2000 media and storage devices)	19K4480	
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233	20GB Hard Disk 9.5mm (4200 rpm)	08K9686	
8X/4X/24X Max CD-RW Ultrabay 2000	22P9101	40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816	
Ultralight 8X Max DVD Ultrabay 2000	22P9102	IBM Optical 3-Button Travel Wheel Mouse	31P7410	
CD-RW/DVD Combo III Ultrabay 2000	22P6980	ServicePac®,[22] 1yr IOR 9x5 NBD	30L9188	
Second HDD Adapter for Ultrabay 2000	08K6068	ServicePac 2yr IOR 9x5 NBD	30L9189	
IBM ThinkPad Ultrabay Plus Carrier	22P5737	ServicePac 3yr IOR 9x5 NBD	30L9195	
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738	ServicePac 2yr P&L P/U Depot	30L9191	
ThinkPad Ultrabay Plus Numeric Keypad	22P7330	ServicePac 3yr P&L P/U Depot	30L9192	

SOFTWARE[14]

Windows XP Home models
- Microsoft® Windows® XP Home[20]
◇ Disk-to-Disk Recovery (in hidden Service Partition)

Windows XP Pro models
- Microsoft® Windows® XP Professional[20]
◇ Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE[14] **(all)**

Preloaded
- Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support
- Adobe® Acrobat
- InterVideo WinDVD (DVD models)
- Norton AntiVirus
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™,[15]
- Veritas RecordNOW (CD-RW mod)

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- Veritas RecordNOW (CD-RW mod)

License
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

Microsoft Office XP Small Business[28] **Models**
- Microsoft Office XP Small Business[18] (Word, Excel, Outlook, Publisher, Small Business Tools)
◇ Office XP Small Business CD

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

Other options at **ibm.com**/pc/us/ accessories

Universal 72 watt AC adapter
PC 2001-compliant
CIM and DMI 2.0-compliant
IBM ImageUltra™ Services available
IBM Rapid Restore PC available to protect software image and data
Setup Guide, Service and Trouble-shooting Guide, Windows manual
International Warranty Service[17]
24 hour x 7 day[18] toll-free hardware support during the warranty[12]

See footnotes for important warranty information
US models announced January 22, March 19, or August 13, 2002
US models withdrawn effective July 2002, January 2003, or July 2003

Type-model	Processor	Speed	Memory[11]	Screen	Disk GB[8]	Optical	Mini PCI Comm Bay wireless/modem	CDC modem	Ethernet on planar	Security Chip	Preload	Small business software	Workhorse (W) or Global (G) model	Avail date
2656-F5U	Pentium® III-M	1.13	128MB	14.1" XGA	30G	DVD-ROM	Open	Modem	10/100		XP Pro			Apr 2002
2656-H4U	Pentium III-M	1.13	128MB	14.1" XGA	30G	CD-RW	Open	Modem	10/100	Yes	XP Pro			Apr 2002
2656-H8U	Pentium III-M	1.13	128MB	14.1" XGA	40G	DVD/CD-RW	Wi-Fi[32]/mod	None	10/100	Yes	XP Pro			Apr 2002
2656-FGU	Pentium III-M	1.13	256MB	14.1" XGA	30G	DVD-ROM	Open	Modem	10/100		XP Pro			Apr 2002
2656-M4U	Pentium III-M	1.0	128MB	14.1" XGA	20G	DVD-ROM	Open	Modem	10/100		XP Pro			Apr 2002
2656-H6U	Pentium III-M	1.13	128MB	14.1" XGA	30G	DVD-ROM	Wi-Fi/mod	None	10/100		XP Pro	Office XP SB[18]		Apr 2002
2656-H9U	Pentium III-M	1.13	128MB	14.1" XGA	40G	DVD/CD-RW	Wi-Fi/mod	None	10/100	Yes	XP Pro	Office XP SB		Apr 2002
2656-H5U	Pentium III-M	1.13	128MB	14.1" XGA	30G	CD-RW	Open	Modem	10/100	Yes	Windows 2000			Apr 2002
2656-H7U	Pentium III-M	1.13	128MB	14.1" XGA	40G	DVD/CD-RW	Wi-Fi/mod	None	10/100	Yes	Windows 2000			Apr 2002
2656-F4U	Pentium III-M	1.13	128MB	14.1" XGA	30G	DVD-ROM	Open	Modem	10/100		Windows 2000			Apr 2002
2656-FEU	Pentium III-M	1.13	256MB	14.1" XGA	30G	DVD-ROM	Open	Modem	10/100		Windows 2000			Apr 2002
2656-L4U	Pentium III-M	1.0	128MB	14.1" XGA	20G	DVD-ROM	Open	Modem	10/100		Windows 2000			Apr 2002

Positioning	*Best blend of portability and essential features; two-spindle system*
TAA-compliant	**Trade Act Agreement-compliant**
Processor	**Intel® Mobile Pentium® III-M 1.0 or 1.13GHz** with Speedstep™ technology[1] with 133MHz Front Side Bus
L2 cache	**512 KB** / at processor speed / ECC
Memory	**128** or **256MB** standard / 1GB max[7] / SDRAM / non-parity / 133MHz / PC133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive
CD-RW	*Some:* CD-RW / 8X/4X/24X Max[9] / removable
DVD-ROM	*Some:* DVD-ROM / 8X-3.3X speed / removable
DVD-ROM/CD-RW	*Some:* DVD-ROM/CD-RW combo / 8X/8X/24X/8X[21] speed / removable
Ultrabay 2000	One modular bay for interchangeable devices (right side) / **Ultrabay™ Plus**-compatible
Disk	**20, 30,** or **40GB**[8] (4200 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay
Display	**14.1"** (358.1mm) **XGA (1024x768) TFT color** / Active Matrix
Graphics controller	**Intel 830MG Integrated Direct AGP 3D** / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB[11] of system memory for graphics
Graphics - external	External SVGA to various modes such as 16.7 million colors, 85Hz, or 1600x1200
Keyboard	87-key / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar[13] / pitch: 19mm; stroke: 2.7mm
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions
UltraPort™	None
Dimensions[3]	12.3" x 10.0" x 1.42" / 313mm x 254mm x 36mm
Approximate weight[2]	w/ battery and: *DVD-ROM:* 5.8 lbs; *CD-RW:* 6.1 lbs; *DVD/CD-RW:* 6.1 lbs
Case material	*Color:* black; *All:* ABS plastic
Battery - type	Lithium Ion 6-cell / intelligent / no second battery in Ultrabay Plus
Battery - life[10]	*802.11b models:* 2.9 hrs; *Others:* 3.1 hrs
Architecture	**Intel 830MG** chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, USB, Low Pin Count bus, ethernet, AC-Link) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1410A CardBus, Mini PCI) / Firmware Hub / LPC bus 33MHz (NS PC87392VJG Super I/O for parallel, infrared)
Port Replicator	Optional **ThinkPad Port Replicator** (no ThinkPad Dock support)
PC Card Std slots	One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video
Ports	Two USB (Version 1.1) / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port
Video out	S-video out port (TV out) / one industry standard connector
Mini PCI	One Mini PCI type III slot (Communications Bay) / not customer upgradeable
Wi-Fi[32]/modem	*Some:* Mini PCI Wi-Fi[32] wireless[4], Intersil® Prism 2.5 chipset, dual antennas (in side of display and in base), Wi-Fi-certified / 56K[6] V.90 (V.92-designed[29]) modem combo, Lucent® chipset
CDC	One Communications Daughter Card (CDC) socket (open or modem) / not accessible
Modem	*Some:* 56K[6] V.90 (V.92-designed[29]) CDC modem card / Lucent® chip set
Ethernet	10/100 ethernet on planar / Intel® 82562ET chipset
Audio support	Soft audio / SoundBlaster-compatible / Analog Devices AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / no internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm)
Security	Power-on password / hard disk password / supervisor password / security keyhole *Some:* **IBM Embedded Security Subsystem**[33] / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security[16]
Limited warranty[12]	**1 year** - EasyServ™,[19] onsite pickup and delivery / warranty service upgrades[22]

SOFTWARE[14]

Windows XP Pro models
- Microsoft® Windows® XP Professional[20]
- ✧ Disk-to-Disk Recovery (in hidden Service Partition)

Windows 2000 models
- Microsoft Windows 2000 Professional[20]
- ConfigSafe®
- ✧ Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE[14] **(all)**

Preloaded
- Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support
- Adobe® Acrobat
- InterVideo WinDVD (DVD models)
- Norton AntiVirus
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™,[15]
- Veritas RecordNOW (CD-RW mod)

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- IBM Director Agent
- IBM Client Security Software (for security chip)

License
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

Microsoft Office XP Small Business[18] **Models** (H6U and H9U)
- Microsoft Office XP Small Business[28] (Word, Excel, Outlook, Publisher, Small Business Tools)
- ✧ Office XP Small Business CD

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

Universal 72 watt AC adapter
PC 2001-compliant
CIM and DMI 2.0-compliant
IBM ImageUltra Services available
IBM Rapid Restore PC available to protect software image and data
Personalized Web-based support[31]
Setup Guide, Service and Troubleshooting Guide, Windows manual
International Warranty Service[17]
24 hour x 7 day[18] toll-free hardware support during the warranty[12]

64 MB SO DIMM 133MHz NP SDRAM	19K4650	USB Portable Diskette Drive	05K9276
128 MB SO DIMM 133MHz NP SDRAM	19K4652	ThinkPad R30/R31 Li-Ion Battery	02K6821
256 MB SO DIMM 133MHz NP SDRAM	19K4654	ThinkPad 72W AC Adapter	02K6699
512 MB SO DIMM 133MHz NP SDRAM	19K4656	ThinkPad Port Replicator	02K8667
SuperDisk (LS-240) UltraBay 2000	08K9616	Portable Drive Bay 2000 (accepts Ultrabay	
Zip 250MB Ultrabay 2000 Drive	00N8253	2000 media and storage devices)	19K4480
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233	20GB HDD	08K9686
8X/4X/24X Max CD-RW Ultrabay 2000	22P9101	40GB HDD	08K9687
Ultralight 8X Max DVD Ultrabay 2000	22P9102	60GB HS Hard Disk 9.5mm (5400 rpm)	08K9688
CD-RW/DVD Combo II Ultrabay 2000	08K9701	ServicePac®, [22] 1yr IOR 9x5 NBD	30L9188
Second HDD Adapter for Ultrabay 2000	08K6068	ServicePac 2yr IOR 9x5 NBD	30L9189
IBM ThinkPad Ultrabay Plus Carrier	22P5737	ServicePac 3yr IOR 9x5 NBD	30L9195
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738	ServicePac 2yr P&L P/U Depot	30L9191
ThinkPad Ultrabay Plus Numeric Keypad	22P7330	ServicePac 3yr P&L P/U Depot	30L9192

See footnotes for important warranty information
US models announced April 2, 2002
US models withdrawn effective October 2002

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Type-model	Processor	GHz	Memory[11]	Screen	Disk	Optical	Mini PCI Comm Bay	CDC Modem	Ethernet on planar	Security Chip	Preload	Workhorse (W) or Global (G) model	Avail date
2657-F4U	Pentium® III-M	1.13	128MB	14.1" XGA	30GB[8]	DVD-ROM	Open	Modem	10/100	No	Windows® 2000		Apr 2002
2657-FEU	Pentium III-M	1.13	256MB	14.1" XGA	30GB	DVD-ROM	Open	Modem	10/100	No	Windows 2000		Apr 2002
2657-F5U	Pentium III-M	1.13	128MB	14.1" XGA	30GB	DVD-ROM	Open	Modem	10/100	No	Windows XP Pro		Apr 2002
2657-FGU	Pentium III-M	1.13	256MB	14.1" XGA	30GB	DVD-ROM	Open	Modem	10/100	No	Windows XP Pro		Apr 2002

- *2657 models have a 3 year limited warranty (other 2656 ThinkPad R31 systems have a 1 year limited warranty)*
- *Trade Act Agreement (TAA)-compliant models*

Positioning	*Best blend of portability and essential features; two-spindle system*
TAA-compliant	**Trade Act Agreement-compliant**
Processor	**Intel® Mobile Pentium® III Processor-M 1.13GHz** with Speedstep™ technology[1] with 133MHz Front Side Bus
L2 cache	**512 KB** / at processor speed
Memory	**128MB** or **256MB** standard / 1GB maximum[7] / SDRAM / non-parity / 133MHz / PC133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive
CD-RW	DVD-ROM / 8X-3.3X[9] speed / removable
Ultrabay 2000	One modular bay for interchangeable devices (right side) / **Ultrabay**™ **Plus**-compatible
Disk	**30GB**[8] (4200 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay
Display	**14.1"** (358.1mm) **XGA (1024x768) TFT color** / Active Matrix
Graphics controller	**Intel 830MG Integrated Direct AGP 3D** / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB[11] of system memory for graphics
Graphics - external	External SVGA to various modes such as 16.7 million colors, 85Hz, or 1600x1200
Keyboard	87-key / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar[13] / pitch: 19mm; stroke: 2.7mm
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions
UltraPort™	None
Dimensions[3]	12.3" x 10.0" x 1.42" / 313mm x 254mm x 36mm
Approximate weight[2]	w/ battery and DVD: 5.8 lbs (2.6 kg)
Case material	*Color:* black; *All:* ABS plastic
Battery - type	Lithium Ion 6-cell / intelligent / no second battery in Ultrabay Plus
Battery - life[10]	2.5 to 3.1 hrs
Architecture	**Intel 830MG** chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, USB, Low Pin Count bus, ethernet, AC-Link) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1410A CardBus, Mini PCI) / Firmware Hub / LPC bus 33MHz (NS PC87392VJG Super I/O for parallel, infrared)
Port Replicator	Optional **ThinkPad Port Replicator** (no ThinkPad Dock support)
PC Card Std slots	One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video
Ports	Two USB (Version 1.1) / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port
Video out	S-video out port (TV out) / one industry standard connector
Mini PCI	One Mini PCI type III slot (Communications Bay) / not customer upgradeable
WI-Fi[32] wireless	None
CDC	One Communications Daughter Card (CDC) socket / not accessible
Modem	56K[6] V.90 (V.92-designed[29]) CDC modem card / Lucent® chip set
Bluetooth™	None
Ethernet	10/100 ethernet on planar / Intel® 82562ET chipset
Audio support	Soft audio / SoundBlaster-compatible / Analog Devices AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / no internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm)
Security	Power-on password / hard disk password / supervisor password / security keyhole
Limited warranty[12]	**3 years**/1 year battery - EasyServ™,[19] onsite pickup and delivery / warranty service upgrades[22]

SOFTWARE[14]

Windows XP Pro models
- Microsoft® Windows® XP Professional[20]
◇ Disk-to-Disk Recovery (in hidden Service Partition)

Windows 2000 models
- Microsoft Windows 2000 Professional[20]
- ConfigSafe®
◇ Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE[14] (all)
Preloaded
- Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support
- Adobe® Acrobat
- InterVideo WinDVD (DVD models)
- Norton AntiVirus
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™,[15]

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- IBM Director Agent
- IBM Client Security Software (for security chip)

License
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

Other options at **ibm.com**/pc/us/ accessories

64 MB SO DIMM 133MHz NP SDRAM	19K4650	USB Portable Diskette Drive	05K9276
128 MB SO DIMM 133MHz NP SDRAM	19K4652	ThinkPad Removable Diskette Drive	08K9603
256 MB SO DIMM 133MHz NP SDRAM	19K4654	ThinkPad R30/R31 Li-Ion Battery	02K6821
512 MB SO DIMM 133MHz NP SDRAM	19K4656	ThinkPad 72W AC Adapter	02K6699
IBM 32MB USB Memory Key	22P5296	ThinkPad Port Replicator	02K8667
SuperDisk (LS-240) UltraBay 2000	08K9616	Portable Drive Bay 2000 (accepts Ultrabay	
Zip 250MB Ultrabay 2000 Drive	00N8253	2000 media and storage devices)	19K4480
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233	20GB HDD	08K9686
8X/4X/24X Max CD-RW Ultrabay 2000	22P9101	40GB HDD	08K9687
Ultralight 8X Max DVD Ultrabay 2000	22P9102	60GB HS Hard Disk 9.5mm (5400 rpm)	08K9688
CD-RW/DVD Combo II Ultrabay 2000	08K9701	IBM USB 2.0 Portable CD-RW Driv	22P5297
Second HDD Adapter for Ultrabay 2000	08K6068	ThinkPad Portable 20GB Hard DiskDrive	10K0177
IBM ThinkPad Ultrabay Plus Carrier	22P5737	IBM 1GB Microdrive	07N5574
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738	IBM USB Mobile Mouse	33L3243
ThinkPad Ultrabay Plus Numeric Keypad	22P7330	ServicePac®, [22] 2yr IOR 9x5 NBD	30L9190
Other options at **ibm.com**/pc/us/accessories		ServicePac 3yr IOR 9x5 NBD	30L9197

Universal 72 watt AC adapter
PC 2001-compliant
CIM and DMI 2.0-compliant
IBM ImageUltra Services available
IBM Rapid Restore PC available to protect software image and data
Personalized Web-based support[31]
Setup Guide, Service and Trouble-shooting Guide, Windows manual
International Warranty Service[17]
24 hour x 7 day[18] toll-free hardware support during the warranty[12]

See footnotes for important warranty information
US models announced April 2, 2002
US models withdrawn effective October 2002

Type-model	Processor	GHz	Memory[11]	Screen	Disk	Optical	Mini PCI Comm Bay wireless/modem	CDC Modem	Ethernet on planar	Security Chip	Preload	Workhorse (W) or Global (G) model	Avail date
2656-A4U	Celeron™	1.06	128MB	13.3" XGA	20GB[8]	CD-ROM	Open	Modem	10/100		Windows® 2000		Feb 2002
2656-AEU	Celeron	1.06	128MB	13.3" XGA	20GB	CD-ROM	Wi-Fi[32]/mod	None	10/100		Windows 2000		Feb 2002
2656-FFU	Pentium® III-M	1.00	128MB	14.1" XGA	20GB	DVD-ROM	Open	Modem	10/100		Windows 2000	G	Mar 2002
2656-BEU	Pentium III-M	1.13	128MB	13.3" XGA	20GB	CD-RW	Wi-Fi/modem	None	10/100		Windows 2000		Feb 2002
2656-EEU	Pentium III-M	1.13	128MB	14.1" XGA	30GB	DVD-ROM	Wi-Fi/modem	None	10/100		Windows 2000	W G	Feb 2002
2656-E4U	Pentium III-M	1.13	128MB	14.1" XGA	30GB	DVD-ROM	Open	Modem	10/100		Windows 2000	W G	Feb 2002
2656-E7U	Pentium III-M	1.13	128MB	14.1" XGA	30GB	CD-RW	Open	Modem	10/100	Yes	Windows 2000		Feb 2002
2656-HEU	Pentium III-M	1.13	128MB	14.1" XGA	40GB	DVD/CD-RW	Wi-Fi/modem	None	10/100	Yes	Windows 2000		Feb 2002

Positioning	*Best blend of portability and essential features; two-spindle system*
Processor	**Intel**® **Mobile Celeron**™ **1.06GHz with 133MHz Front Side Bus** or **Intel Mobile Pentium**® **III-M 1.0 or 1.13GHz** with Speedstep™ technology[1] with 133MHz Front Side Bus
L2 cache	*Celeron:* **256KB** / at processor speed; *Pentium III:* **512 KB** / at processor speed
Memory	**128MB**[9] standard / 1GB maximum / SDRAM / non-parity / PC133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive
CD-ROM	*Some:* CD-ROM / 24X-10X[9] speed / bootable / removable
CD-RW	*Some:* CD-RW / 8X/4X/24X Max[9] / removable
DVD-ROM	*Some:* DVD-ROM / 8X-3.3X[9] speed / removable
DVD-ROM/CD-RW	*Some:* DVD-ROM/CD-RW combo / 8X/8X/24X/8X[21] speed / removable
Ultrabay 2000	One modular bay for interchangeable devices (right side) / **Ultrabay**™ **Plus**-compatible
Disk	**20, 30,** or **40GB**[8] (4200 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay
Display	*Some:* **13.3"** (337.8mm) **XGA (1024x768) TFT color** / Active Matrix *Some:* **14.1"** (358.1mm) **XGA (1024x768) TFT color** / Active Matrix
Graphics controller	**Intel 830MG Integrated Direct AGP 3D** / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB[11] of system memory for graphics
Graphics - external	External SVGA to various modes such as 16.7 million colors, 85Hz, or 1600x1200
Keyboard	87-key / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar[13] / pitch: 19mm; stroke: 2.7mm
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions
UltraPort™	None
Dimensions[3]	12.3" x 10.0" x 1.42" / 313mm x 254mm x 36mm
Approximate weight[2]	w/ battery and: *CD-ROM:* 5.8 lbs; *DVD:* 5.8 lbs; *CD-RW with 13.3":* 6.0 lbs; *CD-RW with 14.1:* 6.1 lbs; *DVD/CD-RW:* 6.1 lbs
Case material	*Color:* black; *All:* ABS plastic
Battery - type	Lithium Ion 6-cell / intelligent / no second battery in Ultrabay Plus
Battery - life[10]	*Celeron models:* 2.4 to 2.6 hrs; *Pentium III models:* 2.9 to 3.1 hrs
Architecture	**Intel 830MG** chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, USB, Low Pin Count bus, ethernet, AC-Link) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1410A CardBus, Mini PCI) /Firmware Hub / LPC bus 33MHz (NS PC87392VJG Super I/O for parallel, infrared)
Port Replicator	Optional **ThinkPad Port Replicator** (no ThinkPad Dock support)
PC Card Std slots	One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video
Ports	Two USB (Version 1.1) / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port
Video out	S-video out port (TV out) / one industry standard connector
Mini PCI	One Mini PCI type III slot (Communications Bay) / not customer upgradeable
Wi-Fi[32]/modem	*Some:* Mini PCI Wi-Fi[32] wireless[4], Intersil® Prism 2.5 chipset, dual antennas (in side of display and in base), Wi-Fi-certified / 56K[6] V.90 (V.92-designed[29]) modem combo, Lucent® chipset
CDC	One Communications Daughter Card (CDC) socket (open or modem) / not accessible
Modem	*Some:* 56K[6] V.90 (V.92-designed[29]) CDC modem card / Lucent® chip set
Bluetooth™	None
Ethernet	10/100 ethernet on planar / Intel® 82562ET chipset
Audio support	Soft audio / SoundBlaster-compatible / Analog Devices AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / no internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm)
Security	Power-on password / hard disk password / supervisor password / security keyhole *Some:* **IBM Embedded Security Subsystem**[33] / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security[16]
Limited warranty[12]	**1 year** - EasyServ™[19] onsite pickup and delivery / service upgrades[22] available

64 MB SO DIMM 133MHz NP SDRAM	19K4650	USB Portable Diskette Drive	05K9276
128 MB SO DIMM 133MHz NP SDRAM	19K4652	ThinkPad Removable Diskette Drive	08K9603
256 MB SO DIMM 133MHz NP SDRAM	19K4654	ThinkPad R30/R31 Li-Ion Battery	02K6821
512 MB SO DIMM 133MHz NP SDRAM	19K4656	ThinkPad 72W AC Adapter	02K6699
IBM 32MB USB Memory Key	22P5296	ThinkPad Port Replicator	02K8667
SuperDisk (LS-240) UltraBay 2000	08K9616	Portable Drive Bay 2000 (accepts Ultrabay	
Zip 250MB Ultrabay 2000 Drive	00N8253	2000 media and storage devices)	19K4480
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233	20GB Hard Disk 9.5mm (4200 rpm)	08K9686
8X/4X/24X Max CD-RW Ultrabay 2000	22P9101	40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816
Ultralight 8X Max DVD Ultrabay 2000	22P9102	60GB HS Hard Disk 12.5mm (5400 rpm)	08K9688
CD-RW/DVD Combo III Ultrabay 2000	22P6980	ServicePac®, [21] 1yr IOR 9x5 NBD	30L9188
Second HDD Adapter for Ultrabay 2000	08K6068	ServicePac 2yr IOR 9x5 NBD	30L9189
IBM ThinkPad Ultrabay Plus Carrier	22P5737	ServicePac 3yr IOR 9x5 NBD	30L9190
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738	ServicePac 2yr P&L P/U Depot	30L9191
ThinkPad Ultrabay Plus Numeric Keypad	22P7330	ServicePac 3yr P&L P/U Dmpot	30L9192
Other options at **ibm.com**/pc/us/accessories			

SOFTWARE[14]

Windows 2000 models
- Microsoft Windows 2000 Professional[20]
- ConfigSafe®
◇ Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE[14]
Preloaded
• Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support
• Adobe® Acrobat
• InterVideo WinDVD (DVD models)
• Norton AntiVirus
• PC-Doctor™
• ThinkPad Utilities
• IBM Update Connector™[15]
• Veritas RecordNOW (CD-RW mod)

Downloadable
• IBM Rapid Restore™ PC
• IBM Data Transfer
• Universal Manageability Services™
• IBM Client Security Software (for security chip)

License
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

Universal 72 watt AC adapter
PC 2001-compliant
CIM and DMI 2.0-compliant
IBM ImageUltra Services available
IBM Rapid Restore PC available to protect software image and data
Personalized Web-based support[31]
Setup Guide, Service and Trouble-shooting Guide, Windows manual
International Warranty Service[17]
24 hour x 7 day[18] toll-free hardware support during the warranty[12]

See footnotes for important warranty information
US models announced January 22 or March 19, 2002
US models withdrawn effective July 2002 or January 2003

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Type-model	Processor	Speed	Memory[11]	Screen	Disk	Optical	Mini PCI Comm Bay	CDC	Ethernet on planar	Security Chip	Preload	Limited warranty	Avail date
2656-99U	Pentium® III-M	1.06	128MB	13.3" XGA	20GB[8]	CD-RW	Wi-Fi[32]/modem	None	10/100	No	Windows® XP Pro	1 yr	Apr 2002
2656-88U	Pentium III-M	1.06	128MB	14.1" XGA	30GB	DVD/CD-RW	Wi-Fi/modem	None	10/100	No	Windows XP Pro	1 yr	Apr 2002
2656-77U	Pentium III-M	1.06	128MB	14.1" XGA	20GB	CD-RW	Wi-Fi/modem	None	10/100	No	Windows XP Pro	1 yr	Aug 2002
2657-99U	Pentium III-M	1.06	128MB	13.3" XGA	20GB	CD-RW	Wi-Fi/modem	None	10/100	No	Windows XP Pro	3 yr	Apr 2002
2657-88U	Pentium III-M	1.06	128MB	14.1" XGA	30GB	DVD/CD-RW	Wi-Fi/modem	None	10/100	No	Windows XP Pro	3 yr	Apr 2002
2657-77U	Pentium III-M	1.06	128MB	14.1" XGA	20GB	CD-RW	Wi-Fi/modem	None	10/100	No	Windows XP Pro	3 yr	Aug 2002

These educational models of the ThinkPad R31 notebook must be sold only to qualified education customers.
Qualified institution/customer is a public or private K-12 (or higher) accredited school organized and operated exclusively for educational purposes for use by Qualified Students and/or Qualified Teachers.

This model for education is for sale direct from IBM or through an Authorized Education Reseller.
The model or models for education are not available for resale to any other organization or individual.

Positioning	*Best blend of portability and essential features; two-spindle system*
Processor	**Intel**® **Mobile Pentium**® **III-M 1.06GHz** with Speedstep™ technology[1] with 133MHz frontside bus
L2 cache	**512 KB** / at processor speed / ECC
Memory	**128MB** standard / 1GB max[7] / SDRAM / non-parity / 133MHz / PC133-compliant / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive
CD-RW	*Some:* CD-RW / 8X/4X/24X Max[9] / removable
DVD-ROM/CD-RW	*Some:* DVD-ROM/CD-RW combo / 8X/8X/24X/8X[21] speed / removable
Ultrabay 2000	One modular bay for interchangeable devices (right side) / **Ultrabay**™ **Plus**-compatible
Disk	**20** or **30GB**[8] (4200 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay
Display	*Some:* **13.3"** (337.8mm) **XGA (1024x768) TFT color** / Active Matrix *Some:* **14.1"** (358.1mm) **XGA (1024x768) TFT color** / Active Matrix
Graphics controller	**Intel 830MG Integrated Direct AGP 3D** / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB[11] of system memory for graphics
Graphics - external	External SVGA to various modes such as 16.7 million colors, 85Hz, or 1600x1200
Keyboard	87-key / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar[13] / pitch: 19mm; stroke: 2.7mm
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions
UltraPort™	None
Dimensions[3]	12.3" x 10.0" x 1.42" / 313mm x 254mm x 36mm
Approximate weight[2]	w/ battery and: *13.3" TFT:* 6.0 lbs (2.7kg); *14.1" TFT:* 6.1 lbs (2.7kg)
Case material	*Color:* black; *All:* ABS plastic
Battery - type	Lithium Ion 6-cell / intelligent / no second battery in Ultrabay Plus
Battery - life[10]	2.9 hrs
Architecture	**Intel 830MG** chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, USB, Low Pin Count bus, ethernet, AC-Link) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1410A CardBus, Mini PCI) / Firmware Hub / LPC bus 33MHz (NS PC87392VJG Super I/O for parallel, infrared)
Port Replicator	Optional **ThinkPad Port Replicator** (no ThinkPad Dock support)
PC Card Std slots	One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video
Ports	Two USB (Version 1.1) / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port
Video out	S-video out port (TV out) / one industry standard connector
Mini PCI	One Mini PCI type III slot (Communications Bay) / not customer upgradeable
Wi-Fi[32]/modem	Mini PCI Wi-Fi[32] wireless[4], Intersil® Prism 2.5 chipset, dual antennas (in side of display and in base), Wi-Fi-certified / 56K[6] V.90 (V.92-designed[29])modem combo, Lucent® chipset
CDC	One Communications Daughter Card (CDC) socket / not accessible
Open	One Communications Daughter Card (CDC) socket open
Ethernet	10/100 ethernet on planar / Intel® 82562ET chipset (physical layer)
Audio support	Soft audio / SoundBlaster-compatible / Analog Devices AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / no internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm)
Security	Power-on password / hard disk password / supervisor password / security keyhole
Limited warranty[12]	*2656:* **1 year** - EasyServ™,[19] onsite pickup and delivery / service upgrades[22] available *2657:* **3 years**/1 year battery - EasyServ onsite pickup and delivery / service upgrades available

SOFTWARE[14]

Windows XP Pro models
- Microsoft® Windows® XP Professional[20]
- ✧ Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE[14] **(all)**
Preloaded
- Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support
- Adobe® Acrobat
- InterVideo WinDVD (DVD models)
- Norton AntiVirus
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™,[15]
- Veritas RecordNOW

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- IBM Director Agen

License
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

64 MB SO DIMM 133MHz NP SDRAM	19K4650
128 MB SO DIMM 133MHz NP SDRAM	19K4652
256 MB SO DIMM 133MHz NP SDRAM	19K4654
512 MB SO DIMM 133MHz NP SDRAM	19K4656
SuperDisk (LS-240) UltraBay 2000	08K9616
Zip 250MB Ultrabay 2000 Drive	00N8253
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233
8X/4X/24X Max CD-RW Ultrabay 2000	22P9101
Ultralight 8X Max DVD Ultrabay 2000	22P9102
CD-RW/DVD Combo III Ultrabay 2000	22P6980
Second HDD Adapter for Ultrabay 2000	08K6068
IBM ThinkPad Ultrabay Plus Carrier	22P5737
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738
ThinkPad Ultrabay Plus Numeric Keypad	22P7330
Other options at **ibm.com**/pc/us/accessories	

USB Portable Diskette Drive	05K9276
ThinkPad R30/R31 Li-Ion Battery	02K6821
ThinkPad 72W AC Adapter	02K6699
ThinkPad Port Replicator	02K8667
Portable Drive Bay 2000 (accepts Ultrabay 2000 media and storage devices)	19K4480
20GB Hard Disk 9.5mm (4200 rpm)	08K9686
40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816
60GB HS Hard Disk 12.5mm (5400 rpm)	08K9688
2656: ServicePac®,[22] 1yr IOR 9x5 NBD	30L9188
2656: ServicePac 2yr IOR 9x5 NBD	30L9189
2656: ServicePac 3yr IOR 9x5 NBD	30L9195
2656: ServicePac 2yr P&L P/U Depot	30L9191
2656: ServicePac 3yr P&L P/U Depot	30L9192
2657: ServicePac 2yr IOR 9x5 NBD	30L9190
2657: ServicePac 3yr IOR 9x5 NBD	30L9197

Universal 72 watt AC adapter
PC 2001-compliant
CIM and DMI 2.0-compliant
IBM ImageUltra Services available
IBM Rapid Restore PC available to protect software image and data
Personalized Web-based support[31]
Setup Guide, Service and Trouble-shooting Guide, Windows manual
International Warranty Service[17]
24 hour x 7 day[18] toll-free hardware support during the warranty[12]

See footnotes for important warranty information
US models announced April 30 or August 13, 2002
US models withdrawn from marketing effective October 2002 or January 2003

Type-model	Processor	Speed GHz	Memory[11]	Screen	Disk GB[8]	Optical	Mini PCI Comm Bay wireless/modem	CDC modem	Ethernet on planar	IEEE 1394	Preload	Workhorse (W) or Global (G) model	Avail date
2656-2GU	Celeron®	1.13	128MB	13.3" XGA	20GB	CD-ROM	Open	Modem	10/100		Windows® XP Pro	No	Jun 2002
2656-1CU	Celeron	1.13	128MB	14.1" XGA	20GB	CD-ROM	Open	Modem	10/100		Windows XP Pro	No	Jun 2002
2656-2VU	Celeron	1.13	128MB	13.3" XGA	20GB	CD-ROM	Wi-Fi[32]/modem	Open	10/100	1394	Windows XP Pro	No	Jun 2002
2656-1FU	Celeron	1.13	128MB	14.1" XGA	20GB	CD-RW	Open	Modem	10/100		Windows XP Pro	No	Jun 2002
2656-1GU	Celeron	1.13	128MB	14.1" XGA	20GB	DVD	Open	Modem	10/100		Windows XP Home	No	Jun 2002
2656-2HU	Celeron	1.13	128MB	13.3" XGA	20GB	CD-ROM	Open	Modem	10/100		Windows XP Home	No	Jun 2002
2656-1BU	Celeron	1.13	128MB	14.1" XGA	20GB	CD-ROM	Open	Modem	10/100		Windows XP Home	No	Aug 2002

Positioning	*Best blend of portability and essential features; two-spindle system*
Processor	**Intel**® **Mobile Celeron**® **1.13GHz with 133MHz frontside bus**
L2 cache	**256KB** / at processor speed / ECC
Memory	**128MB** standard / 1GB max[7] / SDRAM / non-parity / 133MHz / PC133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive
CD-ROM	*Some:* CD-ROM / 24X-10X[9] speed / removable from Ultrabay 2000
CD-RW	*Some:* CD-RW / 8X/4X/24X Max[9] / removable from Ultrabay 2000
DVD-ROM	*Some:* DVD-ROM / 8X-3.3X Max[9] / removable from Ultrabay 2000
Ultrabay 2000	One modular bay for interchangeable devices (right side) / **Ultrabay**™ **Plus**-compatible
Disk	**20GB**[8] (4200 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay
Display	*Some:* **13.3"** (337.8mm) **XGA (1024x768) TFT color** / Active Matrix *Some:* **14.1"** (358.1mm) **XGA (1024x768) TFT color** / Active Matrix
Graphics controller	**Intel 830MG Integrated Direct AGP 3D** / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB[11] of system memory for graphics
Graphics - external	External SVGA to various modes such as 16.7 million colors, 85Hz, or 1600x1200
Keyboard	87-key / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar[13] / pitch: 19mm; stroke: 2.7mm
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions
UltraPort™	None
Dimensions[3]	12.3" x 10.0" x 1.42" / 313mm x 254mm x 36mm
Approximate weight[2]	w/ battery and: *CD-ROM:* 5.8lb (2.62kg); *DVD:* 5.75lb (2.61kg); *CD-RW:* 6.05lb(2.73kg)
Case material	*Color:* black; *All:* ABS plastic
Battery - type	Lithium Ion 6-cell / intelligent / no second battery in Ultrabay Plus
Battery - life[10]	*2VU:* 2.4 hrs; *Others:* 2.6 hrs
Architecture	**Intel 830MG** chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, USB, Low Pin Count bus, ethernet, AC-Link) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1410A CardBus, Mini PCI, TI TSB43AB22 IEEE 1394) / Firmware Hub / LPC bus 33MHz (NS PC87392VJG Super I/O for parallel, infrared)
Port Replicator	Optional **ThinkPad Port Replicator** (no ThinkPad Dock support)
PC Card Std slots	One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video
Ports	Two USB (Version 1.1) / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / IEEE 1394 (4-pin) / no keyboard or mouse or serial port
Video out	S-video out port (TV out) / one industry standard connector
IEEE 1394 (FireWire)	*Some:* IEEE 1394 (FireWire) Port (4-pin)
Mini PCI	One Mini PCI type III slot (Communications Bay) / not customer upgradeable
Wi-Fi[32]/modem	*Some:* Mini PCI Wi-Fi[32] wireless[4], Intersil® Prism 2.5 chipset, dual antennas (in side of display and in base), Wi-Fi-certified / 56K[6] V.90 (V.92-designed[29]) modem combo, Lucent® chipset
CDC	One Communications Daughter Card (CDC) socket (open or modem) / not accessible
Modem	*Some:* 56K[6] V.90 (V.92-designed[29]) CDC modem card / Lucent® chip set
Ethernet	10/100 ethernet on planar / Intel® 82562ET chipset
Audio support	Soft audio / SoundBlaster-compatible / Analog Devices AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / no internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm)
Security	Power-on password / hard disk password / supervisor password / security keyhole
Limited warranty[12]	**1 year** - EasyServ™[19] onsite pickup and delivery / service upgrades[22] available

SOFTWARE[14]

Windows XP Home models
- Microsoft® Windows® XP Home[20]
- ◇ Disk-to-Disk Recovery (in hidden Service Partition)

Windows XP Pro models
- Microsoft® Windows® XP Professional[20]
- ◇ Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE[14] (all)

Preloaded
- Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support
- Adobe® Acrobat Reader
- InterVideo WinDVD (DVD models)
- Norton AntiVirus
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™[15]
- Veritas RecordNOW (CD-RW mod)

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- IBM Director Agent

License (CD not included)
- Lotus® SmartSuite® Millennium and Lotus Notes® Stand Alone Client

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

64 MB SO DIMM 133MHz NP SDRAM	19K4650	IBM USB Portable Diskette Drive	05K9276	
128 MB SO DIMM 133MHz NP SDRAM	19K4652	IBM 128MB USB 2.0 Memory Key	22P8998	
256 MB SO DIMM 133MHz NP SDRAM	19K4654	TrackPoint Cap Collection	73P2698	
512 MB SO DIMM 133MHz NP SDRAM	19K4656	IBM USB 2.0 Portable CD-RW Drive	22P5297	
SuperDisk (LS-240) UltraBay 2000	08K9616	IBM ThinkPad USB 2.0 CardBus Adapter	33L3245	
Zip 250MB Ultrabay 2000 Drive	00N8253	IBM USB Serial Parallel Adapter	22P5298	
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233	ThinkPad R30 Series Li-Ion Battery	02K6821	
8X/4X/24X Max CD-RW Ultrabay 2000	22P9101	ThinkPad 72W AC Adapter	02K6699	
Ultralight 8X Max DVD Ultrabay 2000	22P9102	20GB Hard Disk 9.5mm (4200 rpm)	08K9686	
CD-RW/DVD Combo III Ultrabay 2000	22P6980	40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816	
Second HDD Adapter for Ultrabay 2000	08K6068	60GB HS Hard Disk 12.5mm (5400 rpm)	08K9688	
IBM ThinkPad Ultrabay Plus Carrier	22P5737	ServicePac®,[22] 1yr IOR 9x5 NBD	30L9188	
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738	ServicePac 2yr IOR 9x5 NBD	30L9189	
ThinkPad Ultrabay Plus Numeric Keypad	22P7330	ServicePac 3yr IOR 9x5 NBD	30L9195	
Portable Drive Bay 2000 (accepts Ultrabay		ServicePac 2yr P&L P/U Depot	30L9191	
2000 media and storage devices)	19K4480	ServicePac 3yr P&L P/U Depot	30L9192	
ThinkPad Port Replicator	02K8667	Other options at **ibm.com**/pc/us/accessories		

Universal 72 watt AC adapter
PC 2001-compliant
CIM and DMI 2.0-compliant
IBM ImageUltra Services available
IBM Rapid Restore PC available to protect software image and data
Personalized Web-based support[31]
Proactive e-mail updates[31]
Setup Guide, Service and Trouble-shooting Guide, Windows manual
International Warranty Service[17]
24x7[18] toll-free support for warranty-related issues during the warranty period[12]

See footnotes for important warranty information
US models announced June 4 or August 13, 2002
US models withdrawn from marketing effective October 2002 or January 2003

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Type-model	Processor	GHz	Memory[11]	Screen	Disk	Optical	Mini PCI Comm Bay	CDC Modem	Ethernet on planar	Security Chip	Preload	Workhorse (W) or Global (G) model	Avail date
2657-LLU	Pentium® III-M	1.00	128MB	14.1" XGA	20GB[8]	DVD-ROM	Open	Modem	10/100	No	Windows® 2000		Mar 2002
2657-MMU	Pentium III-M	1.00	128MB	14.1" XGA	20GB	DVD-ROM	Open	Modem	10/100	No	Windows XP Pro		Mar 2002
2657-E4U	Pentium III-M	1.13	128MB	14.1" XGA	30GB	DVD-ROM	Open	Modem	10/100	No	Windows 2000	W G	Mar 2002
2657-J1U	Pentium III-M	1.13	256MB	14.1" XGA	30GB	DVD-ROM	Open	Modem	10/100	No	Windows 2000	W G	Mar 2002
2657-E5U	Pentium III-M	1.13	128MB	14.1" XGA	30GB	DVD-ROM	Open	Modem	10/100	No	Windows XP Pro	W G	Mar 2002
2657-J2U	Pentium III-M	1.13	256MB	14.1" XGA	30GB	DVD-ROM	Open	Modem	10/100	No	Windows XP Pro	W G	Mar 2002

2657 models have a 3 year limited warranty (other 2656 ThinkPad R31 systems have a 1 year limited warranty)

Positioning	*Best blend of portability and essential features; two-spindle system*
Processor	**Intel® Mobile Pentium® III Processor-M 1.0 or 1.13GHz** with Speedstep™ technology[1] with 133MHz Front Side Bus
L2 cache	**512 KB** / at processor speed
Memory	**128MB** or **256MB** standard / 1GB maximum[7] / SDRAM / non-parity / 133MHz / PC133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive
DVD-ROM	DVD-ROM / 8X-3.3X[9] speed / removable
Ultrabay 2000	One modular bay for interchangeable devices (right side) / **Ultrabay™ Plus**-compatible
Disk	**20, 30,** or **40GB**[8] (4200 rpm) / upgradable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay
Display	**14.1"** (358.1mm) **XGA (1024x768) TFT color** / Active Matrix
Graphics controller	**Intel 830MG Integrated Direct AGP 3D** / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB[11] of system memory for graphics
Graphics - external	External SVGA to various modes such as 16.7 million colors, 85Hz, or 1600x1200
Keyboard	87-key / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar[13] / pitch: 19mm; stroke: 2.7mm
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions
UltraPort™	None
Dimensions[3]	12.3" x 10.0" x 1.42" / 313mm x 254mm x 36mm
Approximate weight[2]	w/ battery and DVD: 5.8 lbs (2.6 kg)
Case material	*Color:* black; *All:* ABS plastic
Battery - type	Lithium Ion 6-cell / intelligent / no second battery in Ultrabay Plus
Battery - life[10]	3.1 hrs
Architecture	**Intel 830MG** chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, USB, Low Pin Count bus, ethernet, AC-Link) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1410A CardBus, Mini PCI) / Firmware Hub / LPC bus 33MHz (NS PC87392VJG Super I/O for parallel, infrared)
Port Replicator	Optional **ThinkPad Port Replicator** (no ThinkPad Dock support)
PC Card Std slots	One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1
Ports	Two USB (Version 1.1) / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port
Video out	S-video out port (TV out) / one industry standard connector
Mini PCI	One Mini PCI type III slot (Communications Bay) / not customer upgradable
Wi-Fi[32] wireless	None
CDC	One Communications Daughter Card (CDC) socket / not accessible
Modem	56K[6] V.90 (V.92-designed[29]) CDC modem card / Lucent® chip set
Bluetooth™	None
Ethernet	10/100 ethernet on planar / Intel® 82562ET chipset
Audio support	Soft audio / SoundBlaster-compatible / Analog Devices AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / no internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm)
Security	Power-on password / hard disk password / supervisor password / security keyhole
Limited warranty[12]	**3 years**/1 year battery - EasyServ™,[19] onsite pickup and delivery
Service options	Service upgrades[22] provide up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

SOFTWARE[14]

Windows XP Pro models
- Microsoft® Windows® XP Professional[20]
◇ Disk-to-Disk Recovery (in hidden Service Partition)

Windows 2000 models
- Microsoft Windows 2000 Professional[20]
- ConfigSafe®
◇ Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE[14] (all)
Preloaded
• Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support
• Adobe® Acrobat
• InterVideo WinDVD (DVD models)
• Norton AntiVirus
• PC-Doctor™
• ThinkPad Utilities
• IBM Update Connector™,[15]
• Veritas RecordNOW (CD-RW mod)

Downloadable
• IBM Rapid Restore™ PC
• IBM Data Transfer
• IBM Director Agent
• IBM Client Security Software (for security chip)

License
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

64 MB SO DIMM 133MHz NP SDRAM	19K4650	USB Portable Diskette Drive	05K9276	Universal 72 watt AC adapter
128 MB SO DIMM 133MHz NP SDRAM	19K4652	ThinkPad Removable Diskette Drive	08K9603	PC 2001-compliant
256 MB SO DIMM 133MHz NP SDRAM	19K4654	ThinkPad R30/R31 Li-Ion Battery	02K6821	CIM and DMI 2.0-compliant
512 MB SO DIMM 133MHz NP SDRAM	19K4656	ThinkPad 72W AC Adapter	02K6699	IBM ImageUltra™ Services available
IBM 32MB USB Memory Key	22P5296	ThinkPad Port Replicator	02K8667	IBM Rapid Restore PC available to
SuperDisk (LS-240) UltraBay 2000	08K9616	Portable Drive Bay 2000 (accepts Ultrabay		protect software image and data
Zip 250MB Ultrabay 2000 Drive	00N8253	2000 media and storage devices)	19K4480	Personalized Web-based support[31]
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233	20GB Hard Disk 9.5mm (4200 rpm)	08K9686	Setup Guide, Service and Trouble-
8X/4X/24X Max CD-RW Ultrabay 2000	22P9101	40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816	shooting Guide, Windows manual
Ultralight 8X Max DVD Ultrabay 2000	22P9102	60GB HS Hard Disk 12.5mm (5400 rpm)	08K9688	International Warranty Service[17]
CD-RW/DVD Combo III Ultrabay 2000	22P6980	IBM USB 2.0 Portable CD-RW Driv	22P5297	24 hour x 7 day[18] toll-free hardware
Second HDD Adapter for Ultrabay 2000	08K6068	ThinkPad Portable 20GB Hard DiskDrive	10K0177	support during the warranty[12]
IBM ThinkPad Ultrabay Plus Carrier	22P5737	IBM 1GB Microdrive	07N5574	
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738	IBM Optical 3-Button Travel Wheel Mouse	31P7410	
ThinkPad Ultrabay Plus Numeric Keypad	22P7330	ServicePac®,[22] 2yr IOR 9x5 NBD	30L9190	
Other options at **ibm.com**/pc/us/accessories		ServicePac 3yr IOR 9x5 NBD	30L9197	

See footnotes for important warranty information
US models announced March 5 or 19, 2002
US models withdrawn effective January 2003 or April 2003

Type-model	Processor	Speed GHz	Memory[11]	Screen	Disk GB[8]	Optical in Ultrabay 2000	Mini PCI Comm Bay wireless/modem	CDC modem	Ethernet on planar	IEEE 1394	Preload	Workhorse (W) or Global (G) model	Avail date
2656-L2U	Celeron®	1.2	128MB	13.3" XGA	20GB	CD-ROM	Open	Modem	10/100		Windows® XP Pro	No	Sep 2002
2656-L6U	Celeron	1.2	128MB	13.3" XGA	20GB	CD-ROM	Wi-Fi[32]/modem	Open	10/100	1394	Windows XP Pro	No	Sep 2002
2656-M2U	Celeron	1.2	128MB	14.1" XGA	20GB	CD-ROM	Open	Modem	10/100		Windows XP Pro	No	Sep 2002
2656-NYU	Celeron	1.2	128MB	14.1" XGA	20GB	Combo III	Open	Modem	10/100		Windows XP Pro	No	Sep 2002
2656-L1U	Celeron	1.2	128MB	13.3" XGA	20GB	CD-ROM	Open	Modem	10/100		Windows XP Home	No	Sep 2002
2656-LBU	Celeron	1.2	256MB	14.1" XGA	30GB	None (open)	Open	Modem	10/100		Windows XP Home	No	Sep 2002
2656-NAU	Celeron	1.2	128MB	14.1" XGA	20GB	DVD	Open	Modem	10/100		Windows XP Home	No	Sep 2002

Positioning	*Best blend of portability and essential features; two-spindle system*
Processor	**Intel® Mobile Celeron® 1.20GHz with 133MHz frontside bus**
L2 cache	**256KB** / at processor speed / ECC
Memory	**128MB** or **256MB** standard / 1GB max[7] / SDRAM / non-parity / 133MHz / PC133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive
CD-ROM	*Some:* CD-ROM / 24X-10X[9] speed / removable from Ultrabay 2000
Combo	*Some:* DVD-ROM/CD-RW Combo III / 16X/10X/24X/8X[21] / removable from Ultrabay 2000
DVD-ROM	*Some:* DVD-ROM / 8X-3.3X Max[9] / removable from Ultrabay 2000
Ultrabay 2000	One modular bay for interchangeable devices (right side) / **Ultrabay**™ **Plus**-compatible
Disk	**20GB**[8] (4200 rpm) or **30GB** (4200 rpm) / upgradable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay
Display	*Some:* **13.3"** (337.8mm) **XGA (1024x768) TFT color** / Active Matrix *Some:* **14.1"** (358.1mm) **XGA (1024x768) TFT color** / Active Matrix
Graphics controller	**Intel 830MG Integrated Direct AGP 3D** / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB[11] of system memory for graphics
Graphics - external	External SVGA to various modes such as 16.7 million colors, 85Hz, or 1600x1200
Keyboard	87-key / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar[13] / pitch: 19mm; stroke: 2.7mm
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions / no UltraPort™
Dimensions[3]	12.3" x 10.0" x 1.42" / 313mm x 254mm x 36mm
Approximate weight[2]	w/ battery and: *CD-ROM:* 5.8 lb (2.62kg); *DVD:* 5.75 lb (2.61kg); *Combo:* 6.05 lb (2.73kg); *Open LBU:* 5.3 lb (2.41kg)
Case material	*Color:* black; *All:* ABS plastic
Battery - type	Lithium Ion 6-cell / intelligent / no second battery in Ultrabay Plus
Battery - life[10]	*Wireless L6U:* 2.4 hrs; *Others:* 2.6 hrs
Architecture	**Intel 830MG** chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, USB, Low Pin Count bus, ethernet, AC-Link) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1410A CardBus, Mini PCI, TI TSB43AB22 IEEE 1394) / Firmware Hub / LPC bus 33MHz (NS PC87392VJG Super I/O for parallel, infrared)
Port Replicator	Optional **ThinkPad Port Replicator** (no ThinkPad Dock support)
PC Card Std slots	One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1
Ports	Two USB (Version 1.1) / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / IEEE 1394 (4-pin) / no keyboard or mouse or serial port
Video out	S-video out port (TV out) / one industry standard connector
IEEE 1394	*Some:* IEEE 1394 (FireWire) Port (4-pin)
Mini PCI	One Mini PCI type III slot (Communications Bay) / not customer upgradable
Wi-Fi[32]/modem	*Some:* Mini PCI Wi-Fi[32] wireless[4], Intersil® Prism 2.5 chipset, dual antennas (in side of display and in base), Wi-Fi-certified / 56K[6] V.90 (V.92-designed[29]) modem combo, Lucent® chipset
CDC	One Communications Daughter Card (CDC) socket (open or modem) / not accessible
Modem	*Some:* 56K[6] V.90 (V.92-designed[29]) CDC modem card / Lucent® chip set
Ethernet	10/100 ethernet on planar / Intel® 82562ET chipset
Audio support	Soft audio / SoundBlaster-compatible / Analog Devices AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / no internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm)
Security	Power-on password / hard disk password / supervisor password / security keyhole
Limited warranty[12]	**1 year** - EasyServ™,[19] onsite pickup and delivery / service upgrades[22] available

SOFTWARE[14]

Windows XP Home models
- Microsoft® Windows® XP Home[20]
✧ Disk-to-Disk Recovery (in hidden Service Partition)

Windows XP Pro models
- Microsoft® Windows® XP Professional[20]
✧ Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE[14] **(all)**

Preloaded
- Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support
- Adobe® Acrobat Reader
- InterVideo WinDVD (DVD models)
- Norton AntiVirus (OEM Edition)
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™,[15]
- IBM RecordNOW and DLA by Veritas® (combo models)
- IBM Rapid Restore™ PC

Downloadable
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant

License (CD not included)
- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

Option	Part #	Option	Part #
64 MB SO DIMM 133MHz NP SDRAM	19K4650	IBM 128MB USB 2.0 Memory Key	22P8998
128 MB SO DIMM 133MHz NP SDRAM	19K4652	IBM USB 2.0 Portable CD-RW Drive	22P5297
256 MB SO DIMM 133MHz NP SDRAM	19K4654	IBM ThinkPad USB 2.0 CardBus Adapter	33L3245
512 MB SO DIMM 133MHz NP SDRAM	19K4656	IBM USB Serial Parallel Adapter	22P5298
ThinkPad Removable Diskette Drive	08K9603	ThinkPad R30 Series Li-Ion Battery	02K6821
Zip 250MB Ultrabay 2000 Drive	00N8253	ThinkPad 72W AC Adapter	02K6699
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233	20GB Hard Disk Drive	08K9686
Ultralight 8X Max DVD Ultrabay 2000	22P9102	40GB Hard Disk Drive	08K9687
CD-RW/DVD Combo III Ultrabay 2000	22P6980	40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816
Second HDD Adapter for Ultrabay 2000	08K6068	60GB HS Hard Disk 12.5mm (5400 rpm)*	08K9688
IBM ThinkPad Ultrabay Plus Carrier	22P5737	ServicePac®,[22] 1yr IOR 9x5 NBD	30L9188
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738	ServicePac 2yr IOR 9x5 NBD	30L9189
ThinkPad Ultrabay Plus Numeric Keypad	22P7330	ServicePac 3yr IOR 9x5 NBD	30L9195
Portable Drive Bay 2000 (accepts Ultrabay 2000 media and storage devices)	19K4480	ServicePac 4yr IOR 9x5 NBD	69P9194
		ServicePac 5yr IOR 9x5 NBD	69P9196
ThinkPad Port Replicator	02K8667	ServicePac 2yr P&L P/U Depot	30L9191
IBM High Rate Wireless LAN PC Card 128	09N9904	ServicePac 3yr P&L P/U Depot	30L9192
IBM USB Portable Diskette Drive	05K9276	ServicePac 4yr P&L P/U Depot	69P9195
Other options at **ibm.com**/pc/us/accessories		ServicePac 5yr P&L P/U Depot	69P9197

Universal 72 watt AC adapter
PC 2001-compliant
CIM and DMI 2.0-compliant
ACPI 1.0b and 2.0-compliant
IBM ImageUltra™ Services available
IBM Rapid Restore PC available to protect software image and data
Personalized Web-based support[31]
Proactive e-mail updates[31]
Setup Guide, Service and Trouble-shooting Guide, Windows manual
International Warranty Service[17]
24x7[18] toll-free support for warranty-related issues during the warranty period[12]

See footnotes for important warranty information
US models announced September 17, 2002
US models withdrawn effective April 2003