

Type-model	Processor	Speed GHz	Memory	Screen	Disk GB <sup>8</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	Security chip	Preload	Workhorse (W) or Global (G) or Entry (E)	Avail date
2684-H6U	Celeron®	2.0	128MB	14.1" XGA	20GB	CD	None	Modem	10/100	No	Windows XP Pro	No	Oct 2003
2684-H8U	Celeron	2.0	128MB	14.1" XGA	20GB	CD	None	Modem	10/100	No	Windows XP Home	Entry	Oct 2003
2684-H4U	Celeron	2.0	128MB	14.1" XGA	30GB	Combo	None	Modem	10/100	No	Windows XP Home	No	Oct 2003

Positioning Processor L2 cache Memory	Mainstream performance and features; two-spindle system <b>Mobile Intel® Celeron 2.0GHz</b> with 400MHz system bus <b>256KB</b> / on die (at processor speed) / ECC <b>128MB</b> std / 1GB max <sup>7</sup> / <b>PC2100</b> 266MHz DDR-SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available			SOFTWARE <sup>14</sup> <b>Windows XP Home models</b> - Microsoft® Windows® XP Home Edition <sup>20</sup> ✧ Disk-to-Disk Recovery (in hidden protected area) <b>Windows XP Pro models</b> - Microsoft Windows XP Professional <sup>20</sup> ✧ Disk-to-Disk Recovery (in hidden protected area) <b>Preloaded (all)</b> • Access IBM • Access Connections • Adobe Acrobat Reader • IBM Rapid Restore™ PC • IBM RecordNOW and DLA by Veritas® (combo model) • InterVideo WinDVD (combo model) • Norton® AntiVirus (OEM edition) • PC-Doctor™ • ThinkPad Utilities • IBM Update Connector™ <sup>15</sup> <b>Downloadable</b> • IBM Director Agent • Software Delivery Assistant • System Migration Assistant <b>License</b> (CD not included) - Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client			
Diskette drive CD Combo Ultrabay™ 2000 Disk	None standard / use optional USB-based diskette drive <i>Some:</i> CD-ROM / 24X-10X <sup>9</sup> speed / fixed, not removable <i>Some:</i> Combo / 24X/10X/24X/8X <sup>21</sup> speed / fixed, not removable None <b>20 or 30GB<sup>8</sup></b> , 4200 rpm, 9.5mm, S.M.A.R.T. / removable and upgradable / 9.5mm high bay						
Display	<b>14.1"</b> (358.1mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits / easy-open cover to unlatch and open with one hand (two latches)						
Graphics controller Graphics - external	<b>ATI® RADEON™ IGP 330M</b> / integrated in northbridge / 16MB DDR-SDRAM External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B						
Keyboard TrackPoint®	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys) TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass / soft dome TrackPoint cap / ships with classic dome and soft rim TrackPoint cap						
Touch pad ThinkLight™	No UltraNav™ multi-pointing system None						
Dimensions <sup>3</sup> Approximate weight <sup>2</sup>	12.3 x 10.0 x 1.53" / 313mm x 254mm x 38.9mm with optical drive and battery: <i>H6U/H8U</i> : 5.9 lb (2.67kg); <i>H4U</i> : 6.0 lb (2.72kg)						
Case material Battery - type Battery - life <sup>10</sup>	<i>Color:</i> black; <i>All:</i> Acrylonitrile-Butadiene-Styrene (ABS) plastic Lithium Ion 6-cell / intelligent Up to 2.1 hrs						
Architecture	<b>ATI RADEON IGP 330M chipset</b> / <b>IGP 330M</b> northbridge (memory controller, graphics controller, PCI bus) / <b>ALi® M1535+</b> southbridge (ATA-100 EIDE, Low Pin Count [LPC] interface, USB, parallel, audio) / PCI 2.1, 32-bit 33MHz (TI® PCI1510 CardBus controller) / LPC bus 33MHz (PC87392 Super I/O for parallel)						
Port replicator Docking station PC Card Std slots Ports	No port replicator support No docking station support One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door Two USB (Version 1.1) / parallel / external monitor (DB-15) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial or infrared port						
Video out IEEE 1394 Wireless antenna Mini PCI CDC Modem Ethernet Audio support	None None None / can upgrade to wireless via optional PC Cards No Mini PCI slot (Communications Bay) One Communications Daughter Card (CDC) socket (used by modem) / not accessible 56K <sup>6</sup> V.90 (V.92-designed <sup>23</sup> ) modem in CDC / Agere® chipset 10/100 ethernet on planar / Broadcom® BCM5901 (PHY/MAC) / PXE / Wake on LAN® Soft audio / ICH AC97 controller / DirectSound® support / AD1981B AC97 codec / mono speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm; mono) / headphone jack (3.5 mm; stereo) / no line-in jack Power-on password / hard disk password / supervisor password / security keyhole						Universal 72 watt AC adapter PC 2001 and PXE 2.0-compliant ACPI 1.0b and 2.0-compliant CIM and DMI 2.0-compliant IBM Rapid Restore PC available to protect software image and data International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free hardware support during the warranty <sup>12</sup>
Security Security chip	None			ServicePac®. <sup>22</sup> 1yr IOR 9x5 NBD 30L9188			
Limited warranty <sup>12</sup> Service options	<b>1 year</b> - EasyServ™. <sup>19</sup> onsite pickup and delivery courier service Service upgrades <sup>22</sup> provide up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)			ServicePac 2 yr IOR 9x5 NBD 30L9189 ServicePac 3 yr IOR 9x5 NBD 30L9195 ServicePac 4 yr IOR 9x5 NBD 30L9194 ServicePac 5 yr IOR 9x5 NBD 30L9196 ServicePac 2 yr P&L P/U Depot 30L9191 ServicePac 3 yr P&L P/U Depot 30L9192 ServicePac 4 yr P&L P/U Depot 69P9195 ServicePac 5 yr P&L P/U Depot 69P9197			
128MB PC2100 DDR-SDRAM CL2.5 SOD 256MB PC2100 DDR-SDRAM CL2.5 SOD 512MB PC2100 DDR-SDRAM CL2.5 SOD 30GB Hard Disk 9.5mm (4200 rpm) 40GB HS Hard Disk 9.5mm (5400 rpm) IBM 4GB Microdrive™ with PC Card IBM 128MB USB 2.0 Memory Key IBM 256MB USB 2.0 Memory Key IBM USB Portable Diskette Drive IBM USB Portable CD-ROM IBM USB 2.0 Portable CD-RW Drive IBM USB Serial Parallel Adapter GemPC400 Smart Card Reader/Writer IBM Turbo 16/4 Token-Ring PC Card 2 Ericsson® GC82 EDGE PC Card Wireless	10K0028 10K0030 10K0032 09N4268 08K9816 09N4280 22P9229 22P9025 05K9276 33L5151 22P5297 22P5298 31P8901 34L1401 58P8782	ThinkPad R40e Li-Ion Battery (6-cell) Multiple Multiple Battery Charger II ThinkPad 72W AC Adapter ThinkPad 72W AC/DC Combo Adapter IBM USB Keyboard with UltraNav ThinkPad Monitor Stand 2001 IBM 11a/b/g Wireless CardBus Adapter IBM H Rate Wireless LAN PC Card 128 IBM iLV200 Value Data/Video Projector IBM iLC300 Conference Room Projector IBM Optical 3-Button Travel Wheel Mouse IBM Optical 3-Button ScrollPoint® Mouse Nylon Carrying Case Leather Carrying Case Other options at <b>ibm.com/pc/us/accessories</b>	08K8218 22P9040 02K6699 22P9010 31P8950 22P5265 31P9101 09N9904 0038A03 0039A03 31P7410 31P7405 10K0207 10K0209	Other ServicePac options at <b>ibm.com/services/its/us/source/wamomxeu.pdf</b> Post-warranty annual maintenance agreements at <b>ibm.com/services/its/us/source/maspspleu.pdf</b>			

See footnotes for important warranty information  
 US models announced October 7, 2003  
 US models withdrawn effective April 2004

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Type-model	Processor	Speed GHz	Memory	Screen	Disk GB <sup>8</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	Security chip	Preload	Workhorse (W) or Global (G) or Entry (E)	Avail date
2684-KJU	Celeron®	2.2	128MB	14.1" XGA	20GB	CD	None	Modem	10/100	No	Windows XP Home	Entry	Apr 2004
2684-KAU	Celeron	2.2	256MB	14.1" XGA	30GB	Combo	None	Modem	10/100	No	Windows XP Pro	No	Apr 2004
2684-KNU	Celeron	2.2	256MB	14.1" XGA	20GB	CD	None	Modem	10/100	No	Windows XP Pro	No	Apr 2004

Positioning Processor L2 cache Memory	Mainstream performance and features; two-spindle system <b>Mobile Intel® Celeron 2.2GHz</b> with 400MHz system bus <b>256KB</b> / on die (at processor speed) / ECC <b>128MB</b> or <b>256MB</b> std / 1GB max <sup>7</sup> / <b>PC2100</b> 266MHz DDR1 / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket avail			<b>SOFTWARE<sup>14</sup></b> <b>Windows XP Home models</b> - Microsoft® Windows® XP Home Edition <sup>20</sup> ✧ Disk-to-Disk Recovery (in hidden protected area) <b>Windows XP Pro models</b> - Microsoft Windows XP Professional <sup>20</sup> ✧ Disk-to-Disk Recovery (in hidden protected area) <b>Preloaded (all)</b> • Access IBM • Access Connections • Adobe Acrobat Reader • IBM Rapid Restore™ PC • IBM RecordNOW and Drive Letter Access powered by Sonic products (combo model) • InterVideo WinDVD (combo model) • Norton® AntiVirus (OEM edition) • PC-Doctor™ • ThinkPad Utilities • IBM Update Connector™. <sup>15</sup> <b>Downloadable</b> • IBM Director Agent • Software Delivery Assistant • System Migration Assistant <b>License</b> (CD not included) - Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client		
Diskette drive CD Combo Ultrabay™ 2000 Disk	None standard / use optional USB-based diskette drive <i>Some:</i> CD-ROM / 24X-10X <sup>9</sup> speed / fixed, not removable <i>Some:</i> Combo / 24X/10X/24X/8X <sup>21</sup> speed / fixed, not removable None <b>20</b> or <b>30GB<sup>8</sup></b> , 4200 rpm, 9.5mm, S.M.A.R.T. / removable and upgradable / 9.5mm high bay			Universal 72 watt AC adapter PC 2001 and PXE 2.0-compliant ACPI 1.0b and 2.0-compliant CIM and DMI 2.0-compliant IBM Rapid Restore PC available to protect software image and data International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free warranty support during the warranty <sup>12</sup>  ServicePac®. <sup>22</sup> 1yr IOR 9x5 NBD 30L9188 ServicePac 2 yr IOR 9x5 NBD 30L9189 ServicePac 3 yr IOR 9x5 NBD 30L9195 ServicePac 4 yr IOR 9x5 NBD 30L9194 ServicePac 5 yr IOR 9x5 NBD 30L9196 ServicePac 2 yr P&L P/U Depot 30L9191 ServicePac 3 yr P&L P/U Depot 30L9192 ServicePac 4 yr P&L P/U Depot 69P9195 ServicePac 5 yr P&L P/U Depot 69P9197  Other ServicePac options at <b>ibm.com/services/its/us/source/wamomxeu.pdf</b> Post-warranty annual maintenance agreements at <b>ibm.com/services/its/us/source/maspspleu.pdf</b>		
Display	<b>14.1"</b> (358.1mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits / easy-open cover to unlatch and open with one hand (two latches)					
Graphics controller Graphics - external	<b>ATI® RADEON™ IGP 330M</b> / integrated in northbridge / 16MB DDR1 (DDR-SDRAM) External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B					
Keyboard TrackPoint®	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys) TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass / soft dome TrackPoint cap / ships with classic dome and soft rim TrackPoint cap					
Touch pad ThinkLight™	No UltraNav™ multi-pointing system None					
Dimensions <sup>3</sup> Approximate weight <sup>2</sup>	12.3 x 10.0 x 1.53" / 313mm x 254mm x 38.9mm with optical drive and battery: <i>KJU/KNU:</i> 5.9 lb (2.67kg); <i>KAU:</i> 6.0 lb (2.72kg)					
Case material Battery - type Battery - life <sup>10</sup>	<i>Color:</i> black; <i>All:</i> Acrylonitrile-Butadiene-Styrene (ABS) plastic Lithium Ion 6-cell / intelligent Up to 2.1 hrs					
Architecture	<b>ATI RADEON IGP 330M chipset / IGP 330M</b> northbridge (memory controller, graphics controller, PCI bus) / <b>ALi® M1535+</b> southbridge (ATA-100 EIDE, Low Pin Count [LPC] interface, USB, parallel, audio) / PCI 2.1, 32-bit 33MHz (TI® PCI1510 CardBus controller) / LPC bus 33MHz (PC87392 Super I/O for parallel)					
Port replicator Docking station PC Card Std slots Ports	No port replicator support No docking station support One Type II or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door Two USB (Version 1.1) / parallel / external monitor (DB-15) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial or infrared port					
Video out IEEE 1394 Wireless antenna Mini PCI CDC Modem Ethernet Audio support	None None None / can upgrade to wireless via optional PC Cards No Mini PCI slot (Communications Bay) One Communications Daughter Card (CDC) socket (used by modem) / not accessible 56K <sup>6</sup> V.90 (V.92-designed <sup>29</sup> ) modem in CDC / Agere® chipset 10/100 ethernet on planar / Broadcom® BCM5901 (PHY/MAC) / PXE / Wake on LAN® Soft audio / ICH AC97 controller / DirectSound® support / AD1981B AC97 codec / mono speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm; mono) / headphone jack (3.5 mm; stereo) / no line-in jack					
Security Security chip	Power-on password / hard disk password / supervisor password / security keyhole None					
Limited warranty <sup>12</sup> Service options	<b>1 year</b> - EasyServ™. <sup>19</sup> onsite pickup and delivery courier service Service upgrades <sup>22</sup> provide up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)					
128 MB PC2100 DDR-SDRAM CL2.5 SOD 256 MB PC2100 DDR-SDRAM CL2.5 SOD 512 MB PC2100 DDR-SDRAM CL2.5 SOD 30GB Hard Disk 9.5mm (4200 rpm) 40GB HS Hard Disk 9.5mm (5400 rpm) IBM 4GB Microdrive™ with PC Card IBM 128MB USB 2.0 Memory Key IBM 256MB USB 2.0 Memory Key IBM USB Portable Diskette Drive IBM USB Portable CD-ROM IBM USB 2.0 Portable Combo Drive IBM USB Serial Parallel Adapter GemPC400 Smart Card Reader/Writer Kensington® Microsaver® Security Cable Ericsson® GC82 EDGE PC Card Wireless	10K0028 10K0030 10K0032 09N4268 08K9816 09N4280 22P9229 22P9025 05K9276 33L5151 22P9194 22P5298 31P8901 73P2582 58P8782	ThinkPad R40e Li-Ion Battery (6-cell) Multiple Multiple Battery Charger II ThinkPad 72W AC Adapter ThinkPad 72W AC/DC Combo Adapter IBM USB Keyboard with UltraNav ThinkPad Monitor Stand 2001 IBM 11a/b/g Wireless CardBus Adapter IBM M400 Projector IBM E400 Projector IBM C400 Projector IBM Optical 3-Button Travel Wheel Mouse IBM Optical 3-Button ScrollPoint® Mouse Nylon Carrying Case Leather Carrying Case Other options at <b>ibm.com/pc/us/accessories</b>	08K8218 22P9040 02K6699 22P9010 31P8950 22P5265 31P9101 0037A04 0038A04 0039A04 31P7410 31P7405 10K0207 10K0209			

See footnotes for important warranty information  
 US models announced April 6, 2004  
 US models withdrawn effective October 2004

See footnotes for important warranty information (R40EE) © IBM Corp. April 2004  
US model announced October 7, 2003; previous model on March 25, 2003  
US models withdrawn effective October 2003 or April 2004



Type-model	Processor	Speed GHz	Memory	Screen	Graphics memory	Disk GB <sup>5</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	IEEE 1394 port	Security Chip	Workhorse (W) or Global (G) Avail Preload or Entry (E) date
2681-1AU	Celeron®	1.6	128MB	13.3" XGA	16MB	20G	CD	11a/b Wi-Fi <sup>27</sup>	Modem	10/100			XP Pro Jan 2003
2681-28U	Celeron	1.6	128MB	14.1" XGA	16MB	20G	Combo	Open; wireless upg <sup>36</sup>	Modem	10/100	1394		XP Pro Jan 2003
2681-37U	Celeron	1.6	128MB	15.0" XGA	16MB	20G	CD	Open; wireless upg	Modem	10/100	1394		XP Pro Jan 2003
2681-C8U	Pentium® 4-M	1.9	128MB	14.1" XGA	16MB	20G	CD	Open; wireless upg	Modem	10/100	1394		XP Pro E Jan 2003
2681-DBU	Pentium 4-M	1.9	256MB	15.0" XGA	16MB	20G	DVD	11a/b Wi-Fi	Modem	10/100			XP Pro Jan 2003
2681-DCU	Pentium 4-M	1.9	256MB	15.0" XGA	16MB	20G	DVD	Open; wireless upg	Modem	10/100	1394		XP Pro Jan 2003
2681-F9U	Pentium 4-M	2.0	256MB	14.1" XGA	16MB	20G	DVD	Open; wireless upg	Modem	10/100		Yes	XP Pro W Jan 2003
2681-FFU	Pentium 4-M	2.0	256MB	14.1" XGA	16MB	40G	Combo	Open; wireless upg	Modem	10/100	1394		XP Pro Jan 2003
2681-FCU	Pentium 4-M	2.0	256MB	14.1" XGA	16MB	40G	DVD	11b Wi-Fi <sup>32</sup>	Modem	10/100		Yes	XP Pro Jan 2003
2681-GMU	Pentium 4-M	2.0	256MB	15.0" XGA	32MB	40G	Combo	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro Jan 2003
2681-GHU	Pentium 4-M	2.0	256MB	15.0" XGA	32MB	40G	DVD	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro W Jan 2003
2681-K3U	Pentium 4-M	2.2	256MB	15.0" XGA	32MB	40G	DVD	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro W Jan 2003
2681-L7U	Pentium 4-M	2.2	256MB	15.0" SXGA+	32M	60G	Combo	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro Jan 2003
Positioning Processor	Best blend of portability and essential features; two-spindle system Mobile Intel® Celeron 1.6GHz with 400MHz frontside bus or Mobile Intel Pentium 4 Processor-M 1.9, 2.0, or 2.2GHz with enhanced Intel SpeedStep™ technology <sup>1</sup> and 400MHz frontside bus Celeron: 256KB; Pentium 4-M: 512KB; All: on die (at processor speed) / ECC 128 or 256MB std / 1GB max <sup>7</sup> / PC2100 266MHz DDR-SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available										SOFTWARE <sup>14</sup> Windows XP Pro models - Microsoft® Windows® XP Professional <sup>20</sup> ♦ Disk-to-Disk Recovery (in hidden protected area)		
L2 cache													
Memory													
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive										Preloaded		
CD	Some: CD-ROM / 24X-10X <sup>9</sup> speed / bootable / removable from Ultrabay 2000										• Access IBM		
DVD	Some: DVD-ROM / 8X-3.3X <sup>9</sup> speed / bootable / removable from Ultrabay 2000										• Adobe Acrobat Reader		
Combo	Some: DVD-ROM/CD-RW / 24X/10X/24X/8X <sup>21</sup> speed / removable from Ultrabay 2000										• IBM Rapid Restore™ PC		
Ultrabay 2000	One modular bay for interchangeable devices / Ultrabay Plus-compatible / 12.7 mm high										• IBM RecordNOW and DLA by Veritas (combo models)		
Disk	20GB <sup>8</sup> , 40GB, or 60GB, 4200 rpm, 9.5mm, S.M.A.R.T. / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional HDD Adapter in Ultrabay 2000										• InterVideo WinDVD (DVD models)		
Display	Some: 13.3" (337.8mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / Some: 15.0" (381mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / Some: 15.0" (381mm) SXGA+ (1400x1050) TFT color / Active Matrix / 150 nits / All: Easy-open cover to unlatch and open with one hand (two latches)										• Norton AntiVirus (OEM edition)		
Graphics controller	Some: ATI® Mobility™ RADEON™ / AGP 4X / 16MB DDR-SDRAM Some: ATI Mobility RADEON 7500 / AGP 4X / 32MB DDR-SDRAM										• PC-Doctor™		
Graphics - external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B										• ThinkPad Utilities		
Keyboard	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)										• IBM Update Connector™.15		
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass										Downloadable		
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones										• IBM Director Agent		
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions										• Software Delivery Assistant		
Dimensions <sup>3</sup>	13.3/14.1" models: 12.3" x 10" x 1.5"; 15.0" models: 13" x 10.5" x 1.6"										• System Migration Assistant		
Approximate weight <sup>2</sup>	with optical drive and battery: 13.3" models: 6.2 lb; 14.1" models: 6.0 lb; 15.0": 6.7 lb										• Client Security Software (models with security chip)		
Case material	Color: Black; All: ABS plastic										License (CD not included)		
Battery - type	Lithium Ion 8-cell / intelligent / supports unique 2nd battery in Ultrabay 2000										- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client		
Battery - life <sup>10</sup>	13.3" models: 3.8 hrs; 14.1" models: 3.8 to 4.0 hrs; 15.0" models: 3.4 to 3.6 hrs												
Architecture	Intel 845MP chipset / 82845MP Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1510 CardBus controller, TSB43AB21 1394 (some), Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for diskette, parallel, infrared)										Universal 72 watt AC adapter		
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door										Asset ID (system-specific info in chip accessed over network)		
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port										PC 2001 and PXE 2.0-compliant		
Video out	S-video out port (TV out) / one industry standard connector										ACPI 1.0b and 2.0-compliant		
IEEE 1394	Some: IEEE 1394 (FireWire) port / 4-pin connector										CIM and DMI 2.0-compliant		
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable										IBM Rapid Restore PC available to protect software image and data		
11a/b Wi-Fi <sup>27</sup>	Some: 11a/b Wi-Fi <sup>27</sup> wireless <sup>4</sup> , Mini PCI, Atheros™ AR5001X chipset, UltraConnect™ antenna built in both sides of display, Wi-Fi-certified										International Warranty Service <sup>17</sup>		
Wireless upg <sup>36</sup>	Some: UltraConnect™ antenna built in both sides of display for wireless Mini PCI options										24 hour x 7 day <sup>18</sup> toll-free hardware support during the warranty <sup>12</sup>		
11b Wi-Fi <sup>32</sup>	Some: 11b Wi-Fi <sup>32</sup> wireless <sup>4</sup> , Mini PCI, Intersil® Prism 2.5 chipset, UltraConnect™ antenna built in both sides of display, Wi-Fi-certified										ServicePac®, <sup>22</sup> 1yr IOR 9x5 NBD 30L9188		
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible										ServicePac 3 yr IOR 9x5 NBD 30L9195		
Modem	All: 56K <sup>6</sup> V.90 (V.92-designed <sup>29</sup> ) modem in CDC / Agere® chipset										ServicePac 3yr P&L P/U Depot 30L9192		
Ethernet	10/100 ethernet on motherboard / Intel 82562EZ chip (physical layer)										ServicePac 5yr P&L P/U Depot 69P9197		
Audio support	Soft audio / ICH AC97 controller / DirectSound™ support / AD1891A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack										Other ServicePac options at <a href="http://ibm.com/services/its/us/source/wamomxeu.pdf">ibm.com/services/its/us/source/wamomxeu.pdf</a>		
Security	Power-on password / hard disk password / supervisor password / security keyhole Some: IBM Embedded Security Subsystem 2.0 <sup>33</sup> / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security <sup>16</sup> / TCG-compliant										IBM 1GB Microdrive™ 07N5574		
Limited warranty <sup>12</sup>	1 year - EasyServ™ <sup>19</sup> onsite pickup and delivery / service upgrades <sup>22</sup> available										Cisco Aironet Wireless 802.11b Mini PCI 31P8301		
128MB PC2100 DDR-SDRAM CL2.5 SOD	10K0028										IBM 11a/b/g Wireless Mini PCI Adapter 31P9701		
256MB PC2100 DDR-SDRAM CL2.5 SOD	10K0030										IBM 11a/b/g Wireless CardBus Adapter 31P9101		
512MB PC2100 DDR-SDRAM CL2.5 SOD	10K0032										ThinkPad 72W AC Adapter 02K6699		
Ultralight 8X Max DVD Ultrabay 2000	22P9102										ThinkPad Port Replicator II 74P6733		
CD-RW/DVD Combo IV Ultrabay 2000	22P6991										ThinkPad Mini Dock 287810U		
Second HDD Adapter for Ultrabay 2000	08K6068										Optical 3-Button Travel Wheel Mouse 31P7410		
ThinkPad Removable Diskette Drive	08K9603										Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>		
IBM USB Portable Diskette Drive	05K9276												
40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816												
Optical 3-Button Travel Wheel Mouse	31P7410												
ThinkPad R32/R40 Series Li-Ion Battery	02K7052												
Ultrabay 2000 Li-Ion battery	02K6646												
ThinkPad Multiple Battery Charger II	22P9040												
IBM USB Keyboard with UltraNav	31P8950												
IBM USB 2.0 Portable CD-RW Drive	22P5297												
ThinkPad 72W AC Adapter	02K6699												

# IBM® ThinkPad® R40 (May 2003) - Celeron - withdrawn

Created by IBM PC Institute  
Personal Systems Reference (PSREF)

Type-model	Processor	Speed GHz	Memory	Screen	Graphics memory	Disk GB <sup>5</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	IEEE 1394 port	Security chip	Workhorse (W) or Global (G) Avail Preload or Entry (E) date
2681-4GU	Celeron®	1.8	128MB	14.1" XGA	16MB	20G	Combo	Open; wireless upg <sup>36</sup>	Modem	10/100	1394	No	XP Pro No May 2003
2681-5AU	Celeron	1.8	256MB	15.0" XGA	16MB	30G	Combo	Open; wireless upg	Modem	10/100	1394	No	XP Pro No May 2003
2681-59U	Celeron	1.8	128MB	15.0" XGA	16MB	30G	DVD	Open; wireless upg	Modem	10/100	1394	No	XP Pro No May 2003
2681-69U	Celeron	2.0	128MB	14.1" XGA	16MB	30G	Combo	Open; wireless upg	Modem	10/100	1394	No	XP Pro No Oct 2003
2681-7FU	Celeron	2.0	128MB	15.0" XGA	16MB	30G	CD	Open; wireless upg	Modem	10/100	1394	No	XP Pro No Oct 2003
Positioning Processor	Mainstream performance and features; two-spindle system										SOFTWARE <sup>14</sup>		
L2 cache	Mobile Intel® Celeron 1.8 or 2.0GHz with 400MHz system bus										Windows XP Pro models		
Memory	256KB / on die (at processor speed) / ECC										- Microsoft® Windows® XP Professional <sup>20</sup>		
	128 or 256MB std / 1GB max <sup>7</sup> / PC2100 266MHz DDR-SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available										◆ Disk-to-Disk Recovery (in hidden protected area)		
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive										Preloaded		
CD	Some: CD-ROM / 24X-10X <sup>9</sup> speed / bootable / removable from Ultrabay 2000										• Access IBM		
DVD	Some: DVD-ROM / 8X-3.3X <sup>9</sup> speed / bootable / removable from Ultrabay 2000										• Access Connections		
Combo	Some: DVD-ROM/CD-RW / 24X/10X/24X/8X <sup>21</sup> speed / removable from Ultrabay 2000										• Adobe Acrobat Reader		
Ultrabay 2000	One modular bay for interchangeable devices / Ultrabay Plus-compatible / 12.7 mm high										• IBM Rapid Restore™ PC		
Disk	20 or 30GB <sup>8</sup> , 4200 rpm, 9.5mm, S.M.A.R.T. / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional HDD Adapter in Ultrabay 2000										• IBM RecordNOW and DLA by Veritas (combo models)		
Display	Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits										• InterVideo WinDVD (DVD models)		
	Some: 15.0" (381mm) XGA (1024x768) TFT color / Active Matrix / 150 nits										• Norton AntiVirus (OEM edition)		
	All: easy-open cover to unlatch and open with one hand (two latches)										• PC-Doctor™		
Graphics controller	ATI® Mobility™ RADEON™ / AGP 4X / 16MB DDR-SDRAM										• ThinkPad Utilities		
Graphics - external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B										• IBM Update Connector™ <sup>15</sup>		
Keyboard	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)										Downloadable		
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass										• IBM Director Agent		
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones										• Software Delivery Assistant		
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions										• System Migration Assistant		
Dimensions <sup>3</sup>	14.1" models: 12.3" x 10" x 1.5"; 313mm x 254mm x 38.9mm										• Client Security Software (models with security chip)		
	15.0" models: 13" x 10.5" x 1.6"; 329mm x 267.5mm x 40.5mm										License (CD not included)		
Approximate weight <sup>2</sup>	with optical drive and battery: 14.1" models: 6.1 lb (2.77kg);										- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client		
	15.0" models: 6.6 to 6.7 lb (2.99 to 3.04kg)												
Case material	Color: black; All: Acrylonitrile-Butadiene-Styrene (ABS) plastic												
Battery - type	Lithium Ion 8-cell / intelligent / supports unique 2nd battery in Ultrabay 2000												
Battery - life <sup>10</sup>	3.95 hrs												
Architecture	Intel 845MP chipset / 82845MP Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1510 CardBus controller, TSB43AB21 1394 (some), Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for diskette, parallel, infrared)												
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door												
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port												
Video out	S-video out port (TV out) / one 4-pin industry standard connector										Universal 72 watt AC adapter		
IEEE 1394	IEEE 1394 (FireWire) port / 4-pin connector										Asset ID (system-specific info in chip accessed over network)		
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception										PC 2001 and PXE 2.0-compliant		
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable										ACPI 1.0b and 2.0-compliant		
Wireless upg <sup>36</sup>	Wireless upgradable with wireless Mini PCI options										CIM and DMI 2.0-compliant		
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible										IBM Rapid Restore PC available to protect software image and data		
Modem	56K <sup>6</sup> V.90 (V.92-designed <sup>29</sup> ) modem in CDC / Agere® chipset										International Warranty Service <sup>17</sup>		
Ethernet	10/100 ethernet on motherboard / Intel 82562EZ chip (physical layer)										24 hour x 7 day <sup>18</sup> toll-free hardware support during the warranty <sup>12</sup>		
Audio support	Soft audio / ICH AC97 controller / DirectSound® support / AD1891A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack												
Security	Power-on password / hard disk password / supervisor password / security keyhole										ServicePac®, <sup>22</sup> 1yr IOR 9x5 NBD		
Security chip	None										30L9188		
Limited warranty <sup>12</sup>	1 year - EasyServ™ <sup>19</sup> onsite pickup and delivery / service upgrades <sup>22</sup> available										ServicePac 2 yr IOR 9x5 NBD		
											30L9189		
											ServicePac 3 yr IOR 9x5 NBD		
											30L9195		
128MB PC2100 DDR-SDRAM CL2.5 SOD	10K0028		ThinkPad R32/R40 Series Li-Ion Battery		02K7052		ServicePac 4 yr IOR 9x5 NBD						
256MB PC2100 DDR-SDRAM CL2.5 SOD	10K0030		Ultrabay 2000 Li-Ion battery		02K6646		30L9194						
512MB PC2100 DDR-SDRAM CL2.5 SOD	10K0032		ThinkPad Multiple Battery Charger II		22P9040		ServicePac 5 yr IOR 9x5 NBD						
CD-RW/DVD Combo IV Ultrabay 2000	22P6991		30GB Hard Disk 9.5mm (4200rpm)		09N4268		30L9196						
Ultralight 8X Max DVD Ultrabay 2000	22P9102		40GB HS Hard Disk 9.5mm (5400 rpm)		08K9816		ServicePac 2 yr P&L P/U Depot						
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233		80GB Hard Disk 9.5mm (4200 rpm)		08K9869		30L9191						
Second HDD Adapter for Ultrabay 2000	08K6068		IBM 1GB Microdrive™ with PC Card		07N5574		ServicePac 3 yr P&L P/U Depot						
ThinkPad Multi-Burner Ultrabay 2000 Drive	22P7015		IBM 64MB USB 2.0 Memory Key		22P9024		30L9192						
ThinkPad Slim Drive Adpr for Ultrabay 2000	62P4557		IBM 256MB USB 2.0 Memory Key		22P9025		ServicePac 4 yr P&L P/U Depot						
ThinkPad Removable Diskette Drive	08K9603		Cisco Aironet Wireless 802.11b Mini PCI		31P8301		69P9195						
IBM USB Portable Diskette Drive	05K9276		IBM 11a/b/g Wireless Mini PCI Adapter		31P9701		ServicePac 5 yr P&L P/U Depot						
IBM USB 2.0 Portable CD-RW Drive	22P5297		IBM 11a/b/g Wireless CardBus Adapter		31P9101		69P9197						
IBM USB 2.0 Portable 40GB Hard Disk	09N4255		ThinkPad 72W AC Adapter		02K6699		Other ServicePac options at						
IBM USB Serial Parallel Adapter	22P5298		ThinkPad 72W AC/DC Combo Adapter		22P9010		ibm.com/services/its/us/source/wamomxeu.pdf						
IBM Optical 3-Button Travel Wheel Mouse	31P7410		GemPC400 Smart Card Reader/Writer		31P8901		Post-warranty annual maintenance agreements at						
IBM Optical 3-Button ScrollPoint® Mouse	31P7405		IBM USB Keyboard with UltraNav		31P8950		ibm.com/services/its/us/source/maspspleu.pdf						
IBM iLM300 MicroPortable Projector	0037A03		ThinkPad Ultrabay Plus Numeric Keypad		22P7330								
IBM iLV200 Value Data/Video Projector	0038A03		ThinkPad Port Replicator II		74P6733								
IBM iLC300 Conference Room Projector	0039A03		ThinkPad Mini Dock		287810U								
ThinkPad Monitor Stand 2001	22P5265		Other options at ibm.com/pc/us/accessories										

See footnotes for important warranty information

US models announced October 7, 2003; previous models on May 21, 2003

US models withdrawn effective January 2004 or April 2004

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Type-model	Processor	Speed GHz	Memory	Screen	Graphics memory	Disk GB <sup>5</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	IEEE 1394 port	Security Chip	Workhorse (W) or Global (G) Avail Preload or Entry (E) date	
2681-J7U	Pentium® 4-M	2.2	128MB	14.1" XGA	16MB	30G	CD	Open; wireless upg <sup>36</sup>	Modem	10/100	1394	XP Pro	E May 2003	
2681-J8U	Pentium 4-M	2.2	256MB	14.1" XGA	16MB	40G	Combo	Open; wireless upg	Modem	10/100	1394	XP Pro	No May 2003	
2681-JCU	Pentium 4-M	2.2	256MB	14.1" XGA	16MB	30G	DVD	Open; wireless upg	Modem	10/100		Yes XP Pro	No May 2003	
2681-J9U	Pentium 4-M	2.2	256MB	14.1" XGA	16MB	30G	DVD	Cisco® 802.11b	Modem	10/100		Yes XP Pro	No May 2003	
2681-JQU	Pentium 4-M	2.2	256MB	14.1" XGA	16MB	40G	DVD	11b Wi-Fi <sup>32</sup>	Modem	10/100		Yes XP Pro	No May 2003	
2681-JDU	Pentium 4-M	2.2	256MB	14.1" XGA	16MB	40G	Combo	11a/b Wi-Fi <sup>27</sup>	Modem	10/100		Yes XP Pro	No May 2003	
2681-JEU	Pentium 4-M	2.2	256MB	14.1" XGA	16MB	40G	DVD	11a/b Wi-Fi	Modem	10/100		Yes XP Pro	No May 2003	
2681-KAU	Pentium 4-M	2.2	256MB	15.0" XGA	32MB	40G	Combo	11a/b Wi-Fi	Modem	10/100	1394	Yes XP Pro	No May 2003	
2681-KMU	Pentium 4-M	2.2	256MB	15.0" XGA	32MB	40G	DVD	Cisco 802.11b	Modem	10/100	1394	Yes XP Pro	No May 2003	
2681-JHU	Pentium 4-M	2.2	256MB	14.1" XGA	32MB	60G	Combo	Open; wireless upg	Modem	10/100	1394	Yes XP Pro	No May 2003	
2681-QCU	Pentium 4-M	2.4	256MB	15.0" SXGA+	32M	60G	Combo	Open; wireless upg	Modem	10/100	1394	Yes XP Pro	No May 2003	
2681-KLU	Pentium 4-M	2.2	256MB	15.0" XGA	32MB	40G	Combo	Open; wireless upg	Modem	10/100	1394	Yes XP Pro	No May 2003	
2681-KPU	Pentium 4-M	2.2	256MB	15.0" XGA	16MB	20G	DVD	Open; wireless upg	Modem	10/100	1394	XP Pro	No May 2003	
2681-KQU	Pentium 4-M	2.2	256MB	15.0" XGA	16MB	30G	DVD	11a/b Wi-Fi	Modem	10/100		Yes XP Pro	No May 2003	
2681-Q5U	Pentium 4-M	2.4	256MB	15.0" SXGA+	32M	40G	DVD	Open; wireless upg	Modem	10/100	1394	Yes XP Pro	No May 2003	
2681-Q6U	Pentium 4-M	2.4	256MB	15.0" SXGA+	32M	60G	Combo	11a/b Wi-Fi	Modem	10/100	1394	Yes XP Pro	No May 2003	
Positioning Processor	Best blend of portability and essential features; two-spindle system											SOFTWARE <sup>14</sup>		
L2 cache	Mobile Intel® Pentium 4 Processor-M 2.2 or 2.4GHz with enhanced Intel SpeedStep™ technology <sup>1</sup> and 400MHz frontside bus											Windows XP Pro models		
Memory	512KB; All: on die (at processor speed) / ECC											- Microsoft® Windows® XP Professional <sup>20</sup>		
	128 or 256MB std / 1GB max <sup>7</sup> / PC2100 266MHz DDR-SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available											✦ Disk-to-Disk Recovery (in hidden protected area)		
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive											Preloaded		
CD	Some: CD-ROM / 24X-10X <sup>9</sup> speed / bootable / removable from Ultrabay 2000											• Access IBM		
DVD	Some: DVD-ROM / 8X-3.3X <sup>9</sup> speed / bootable / removable from Ultrabay 2000											• Adobe Acrobat Reader		
Combo	Some: DVD-ROM/CD-RW / 24X/10X/24X/8X <sup>21</sup> speed / removable from Ultrabay 2000											• IBM Rapid Restore™ PC		
Ultrabay 2000	One modular bay for interchangeable devices / Ultrabay Plus-compatible / 12.7 mm high											• IBM RecordNOW and DLA by Veritas (combo models)		
Disk	20, 30, 40, or 60GB <sup>8</sup> , 4200 rpm, 9.5mm, S.M.A.R.T. / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional HDD Adapter in Ultrabay 2000											• InterVideo WinDVD (DVD models)		
Display	Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits											• Norton AntiVirus (OEM edition)		
	Some: 15.0" (381mm) XGA (1024x768) TFT color / Active Matrix / 150 nits											• PC-Doctor™		
	Some: 15.0" (381mm) SXGA+ (1400x1050) TFT color / Active Matrix / 150 nits											• ThinkPad Utilities		
	All: Easy-open cover to unlatch and open with one hand (two latches)											• IBM Update Connector™.15		
Graphics controller	Some: ATI® Mobility™ RADEON™ / AGP 4X / 16MB DDR-SDRAM											Downloadable		
	Some: ATI Mobility RADEON 7500 / AGP 4X / 32MB DDR-SDRAM											• IBM Director Agent		
Graphics - external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B											• Software Delivery Assistant		
Keyboard	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)											• System Migration Assistant		
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass											• Client Security Software (models with security chip)		
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones											License (CD not included)		
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions											- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client		
Dimensions <sup>3</sup>	14.1" models: 12.3" x 10" x 1.5"; 15.0" models: 13" x 10.5" x 1.6"											Universal 72 watt AC adapter		
Approximate weight <sup>2</sup>	with optical drive and battery: 14.1" models: 6.0 lb; 15.0": 6.7 lb											Asset ID (system-specific info in chip accessed over network)		
Case material	Color: Black; All: Acrylonitrile-Butadiene-Styrene (ABS) plastic											PC 2001 and PXE 2.0-compliant		
Battery - type	Lithium Ion 8-cell / intelligent / supports unique 2nd battery in Ultrabay 2000											ACPI 1.0b and 2.0-compliant		
Battery - life <sup>10</sup>	14.1" models: 3.8 to 4.0 hrs; 15.0" models: 3.4 to 3.6 hrs											CIM and DMI 2.0-compliant		
Architecture	Intel 845MP chipset / 82845MP Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1510 CardBus controller, TSB43AB21 1394 (some), Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for diskette, parallel, infrared)												IBM Rapid Restore PC available to protect software image and data	
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door												International Warranty Service <sup>17</sup>	
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port												24 hour x 7 day <sup>18</sup> toll-free hardware support during the warranty <sup>12</sup>	
Video out	S-video out port (TV out) / one industry standard connector												ServicePac®.22 1yr IOR 9x5 NBD	
IEEE 1394	Some: IEEE 1394 (FireWire) port / 4-pin connector												30L9188	
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception												ServicePac 3 yr IOR 9x5 NBD	
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable												30L9195	
Wireless upg <sup>36</sup>	Some: Wireless upgradable with wireless Mini PCI options												ServicePac 3yr P&L P/U Depot	
11a/b Wi-Fi <sup>27</sup>	Some: 11a/b Wi-Fi <sup>27</sup> wireless <sup>4</sup> , Mini PCI, Atheros™ AR5001X chipset, UltraConnect™ antenna built in both sides of display, Wi-Fi-certified												30L9192	
11b Wi-Fi <sup>32</sup>	Some: 11b Wi-Fi <sup>32</sup> wireless <sup>4</sup> , Mini PCI, Intersil® Prism 2.5 chipset, UltraConnect™ antenna built in both sides of display, Wi-Fi-certified												ServicePac 5yr P&L P/U Depot	
Cisco 802.11b	Some: 802.11b wireless <sup>4</sup> , Mini PCI, Cisco® Aironet® Wireless 802.11b, Prism 2.0 chipset, UltraConnect™ antenna built in both sides of display, Wi-Fi-certified												69P9197	
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible												Other ServicePac options at	
Modem	All: 56K <sup>6</sup> V.90 (V.92-designed <sup>29</sup> ) modem in CDC / Agere® chipset												ibm.com/services/its/us/source/wamomxeu.pdf	
Ethernet	10/100 ethernet on motherboard / Intel 82562EZ chip (physical layer)												Cisco Aironet Wireless 802.11b Mini PCI	
Audio support	Soft audio / ICH AC97 controller / DirectSound® support / AD1891A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack												31P8301	
Security	Power-on password / hard disk password / supervisor password / security keyhole												IBM 11a/b/g Wireless Mini PCI Adapter	
	Some: IBM Embedded Security Subsystem 2.0 <sup>33</sup> / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security <sup>16</sup> / TCG-compliant												31P9701	
Limited warranty <sup>12</sup>	1 year - EasyServ™.19 onsite pickup and delivery / service upgrades <sup>22</sup> available												IBM 11a/b/g Wireless CardBus Adapter	
	128MB PC2100 DDR-SDRAM CL2.5 SOD 10K0028												31P9101	
	256MB PC2100 DDR-SDRAM CL2.5 SOD 10K0030												ThinkPad 72W AC Adapter	
	512MB PC2100 DDR-SDRAM CL2.5 SOD 10K0032												02K6699	
	CD-RW/DVD Combo IV Ultrabay 2000 22P6991												ThinkPad Port Replicator II	
	40GB HS Hard Disk 9.5mm (5400 rpm)												74P6733	
	ThinkPad Multiple Battery Charger II 22P9040												ThinkPad Mini Dock	
	ThinkPad R32/R40 Series Li-Ion Battery 02K7052												287810U	
	Ultrabay 2000 Li-Ion battery 02K6646												Second HDD Adapter for Ultrabay 2000	
	Other options at ibm.com/pc/us/accessories												08K6068	

See footnotes for important warranty information  
US models announced May 21, 2003  
US models withdrawn effective January 2004

Type-model	Processor	Speed GHz	Memory	Screen	Graphics memory	Disk GB <sup>5</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	IEEE 1394 port	Security Chip	Workhorse (W) or Global (G) Avail date
2682-FAU	Pentium® 4-M	2.0	256MB	14.1" XGA	16MB	20G	DVD	Open; wireless upg <sup>36</sup>	Modem	10/100			XP Pro W G Jan 2003
2682-F9U	Pentium 4-M	2.0	256MB	14.1" XGA	16MB	20G	DVD	Open; wireless upg	Modem	10/100		Yes	XP Pro W Jan 2003
2682-FEU	Pentium 4-M	2.0	256MB	14.1" XGA	16MB	20G	DVD	Cisco® 802.11b	Modem	10/100		Yes	XP Pro W Jan 2003
2682-K2U	Pentium 4-M	2.2	256MB	15.0" XGA	16MB	40G	DVD	Open; wireless upg	Modem	10/100			XP Pro W G Jan 2003
2682-K4U	Pentium 4-M	2.2	256MB	15.0" XGA	16MB	40G	DVD	Cisco 802.11b	Modem	10/100		Yes	XP Pro W G Jan 2003
2682-GHU	Pentium 4-M	2.0	256MB	15.0" XGA	32MB	40G	DVD	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro W Jan 2003
2682-GLU	Pentium 4-M	2.0	256MB	15.0" XGA	32MB	40G	DVD	Cisco 802.11b	Modem	10/100	1394	Yes	XP Pro W Jan 2003
2682-K3U	Pentium 4-M	2.2	256MB	15.0" XGA	32MB	40G	DVD	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro W Jan 2003
2682-J8U	Pentium 4-M	2.2	256MB	14.1" XGA	16MB	40G	Combo	Open; wireless upg	Modem	10/100	1394		XP Pro May 2003
2682-JAU	Pentium 4-M	2.2	256MB	14.1" XGA	16MB	40G	Combo	Cisco 802.11b	Modem	10/100	1394		XP Pro May 2003
<b>2682 models have a 3 year limited warranty (other 2681 ThinkPad R40 systems have a 1 year limited warranty)</b>													
Positioning Processor	<i>Best blend of portability and essential features; two-spindle system</i> <b>Mobile Intel® Pentium 4 Processor-M 2.0, or 2.2GHz</b> with enhanced Intel SpeedStep™ technology <sup>1</sup> and 400MHz frontside bus										<b>SOFTWARE<sup>14</sup></b>		
L2 cache	<b>512KB</b> / on die (at processor speed) / ECC										<b>Windows XP Pro models</b>		
Memory	<b>256MB</b> std / 1GB max <sup>7</sup> / <b>PC2100</b> 266MHz DDR-SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available										- Microsoft® Windows® XP Professional <sup>20</sup> ♦ Disk-to-Disk Recovery (in hidden protected area)		
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive										<b>Preloaded</b>		
DVD	<i>Some:</i> DVD-ROM / 8X-3.3X <sup>9</sup> speed / bootable / removable from Ultrabay 2000										• Access IBM		
Combo	<i>Some:</i> DVD-ROM/CD-RW / 24X/10X/24X/8X <sup>21</sup> speed / removable from Ultrabay 2000										- Access Connections		
Ultrabay 2000	One modular bay for interchangeable devices / <b>Ultrabay Plus</b> -compatible / 12.7 mm high										- Access Help		
Disk	<b>20GB<sup>8</sup> or 40GB</b> , 4200 rpm, 9.5mm high, S.M.A.R.T. / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional HDD Adapter in Ultrabay 2000										- Access Support		
Display	<i>Some:</i> <b>14.1"</b> (358.1mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits / <i>Some:</i> <b>15.0"</b> (381mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits / <i>All:</i> Easy-open cover to unlatch and open with one hand (two latches)										• Adobe Acrobat Reader		
Graphics controller	<i>Some:</i> <b>ATI® Mobility™ RADEON™ / AGP 4X / 16MB</b> DDR-SDRAM <i>Some:</i> <b>ATI Mobility RADEON 7500 / AGP 4X / 32MB</b> DDR-SDRAM										• IBM Rapid Restore™ PC		
Graphics - external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B										• IBM RecordNOW and DLA by Veritas (combo models)		
Keyboard	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)										• InterVideo WinDVD (DVD models)		
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass										• Norton AntiVirus (OEM edition)		
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones										• PC-Doctor™		
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions										• ThinkPad Utilities		
Dimensions <sup>3</sup>	<b>14.1" models:</b> 12.3" x 10" x 1.5"; <b>15.0" models:</b> 13" x 10.5" x 1.6"										• IBM Update Connector™ <sup>15</sup>		
Approximate weight <sup>2</sup>	with optical drive and battery: <b>14.1" models:</b> 6.0 lb; <b>15.0" models:</b> 6.7 lb										<b>Downloadable</b>		
Case material	<i>Color:</i> Black; <i>All:</i> Acrylonitrile-Butadiene-Styrene (ABS) plastic										• IBM Director Agent		
Battery - type	Lithium Ion 8-cell / intelligent / supports unique 2nd battery in Ultrabay 2000										• Software Delivery Assistant		
Battery - life <sup>10</sup>	<b>14.1" wireless models:</b> 3.8 hrs; <b>14.1" non-wireless models:</b> 4.0 hrs; <b>15" wireless models:</b> 3.4 hrs; <b>15" non-wireless models:</b> 3.6 hrs										• System Migration Assistant		
Architecture	<b>Intel 845MP</b> chipset / 82845MP Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1510 CardBus controller, TSB43AB21 1394 (some), Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for diskette, parallel, infrared)										• Client Security Software (models with security chip)		
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door										<b>License</b> (CD not included)		
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port										- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client		
Video out	S-video out port (TV out) / one industry standard connector										Universal 72 watt AC adapter		
IEEE 1394	<i>Some:</i> IEEE 1394 (FireWire) port / 4-pin connector										Asset ID (system-specific info in chip accessed over network)		
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception										PC 2001 and PXE 2.0-compliant		
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable										ACPI 1.0b and 2.0-compliant		
Wireless upg <sup>36</sup>	<i>Some:</i> Wireless upgradable with wireless Mini PCI options										CIM and DMI 2.0-compliant		
Cisco 802.11b	<i>Some:</i> 802.11b wireless <sup>4</sup> , Mini PCI, Cisco® Aironet® Wireless 802.11b, Prism 2.0 chipset, UltraConnect™ antenna built in both sides of display, Wi-Fi-certified										IBM ImageUltra™ Services available		
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible										IBM Rapid Restore PC available to protect software image and data		
Modem	<i>All:</i> 56K <sup>6</sup> V.90 (V.92-designed <sup>29</sup> ) modem in CDC / Agere® chipset										International Warranty Service <sup>17</sup>		
Ethernet	10/100 ethernet on motherboard / Intel 82562EZ chipset (physical layer)										24 hour x 7 day <sup>18</sup> toll-free hardware support during the warranty <sup>12</sup>		
Audio support	Soft audio / ICH AC97 controller / DirectSound® support / AD1891A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack										ServicePac® <sup>22</sup> 2 yr IOR 9x5 NBD		
Security	Power-on password / hard disk password / supervisor password / security keyhole <i>Some:</i> <b>IBM Embedded Security Subsystem 2.0<sup>33</sup></b> / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security <sup>16</sup> / TCG-compliant										30L9190		
Limited warranty <sup>12</sup>	<b>3 years/1 year battery</b> - EasyServ™ <sup>19</sup> onsite pickup and delivery										ServicePac 3 yr IOR 9x5 NBD		
128MB PC2100 DDR-SDRAM CL2.5 SOD	10K0028										30L9197		
256MB PC2100 DDR-SDRAM CL2.5 SOD	10K0030										ServicePac 4 yr IOR 9x5 NBD		
512MB PC2100 DDR-SDRAM CL2.5 SOD	10K0032										69P9198		
CD-RW/DVD Combo IV Ultrabay 2000	22P6991										69P9200		
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233										ServicePac 4 yr P&L P/U Depot		
Second HDD Adapter for Ultrabay 2000	08K6068										69P9199		
ThinkPad Multi-Burner Ultrabay 2000 Drive	22P7015										ServicePac 5 yr P&L P/U Depot		
ThinkPad Removable Diskette Drive	08K9603										69P9201		
IBM USB Portable Diskette Drive	05K9276										Other ServicePac options at		
IBM USB 2.0 Portable CD-RW Drive	22P5297										<b>ibm.com/services/its/us/source/wamomxeu.pdf</b>		
IBM USB Serial Parallel Adapter	22P5298										Post-warranty annual maintenance agreements at		
IBM iLV200 Value Data/Video Projector	0038A03										<b>ibm.com/services/its/us/source/maspspleu.pdf</b>		
IBM Optical 3-Button Travel Wheel Mouse	31P7410										ThinkPad R32/R40 Series Li-Ion Battery 02K7052		
											Ultrabay 2000 Li-Ion battery 02K6646		
											ThinkPad Multiple Battery Charger II 22P9040		
											40GB HS Hard Disk 9.5mm (5400 rpm) 08K9816		
											GemPC400 Smart Card Reader/Writer 31P8901		
											Cisco Aironet Wireless 802.11b Mini PCI 31P8301		
											IBM 11a/b/g Wireless Mini PCI Adapter 31P9701		
											IBM 11a/b/g Wireless CardBus Adapter 31P9101		
											ThinkPad 72W AC Adapter 02K6699		
											ThinkPad 72W AC/DC Combo Adapter 22P9010		
											ThinkPad Port Replicator II 74P6733		
											ThinkPad Mini Dock 287810U		
											Other options at <b>ibm.com/pc/us/accessories</b>		

See footnotes for important warranty information  
US models announced on January 28 or May 21, 2003  
US models withdrawn effective January 2004



Type-model	Processor	Speed GHz	Memory	Screen	Graphics memory	Disk GB <sup>5</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	IEEE 1394 port	Security Chip	Small and medium business	Avail date
2896-4WU	Celeron®	1.8	256MB	14.1" XGA	16MB	20GB	DVD	Open; wireless upg <sup>36</sup>	Modem	10/100		Yes	XP Pro	Yes May 2003
2896-5WU	Celeron	1.8	256MB	15.0" XGA	16MB	20GB	DVD	Open; wireless upg	Modem	10/100		Yes	XP Pro	Yes May 2003
2896-FZU	Pentium® 4-M	2.0	256MB	14.1" XGA	16MB	20GB	DVD	Open; wireless upg	Modem	10/100		Yes	XP Pro	Yes May 2003
2896-GZU	Pentium 4-M	2.0	256MB	15.0" XGA	32MB	20GB	DVD	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Yes May 2003

*These small and medium business (SMB) models are part of the IBM US ThinkPad Express Program*

Positioning Processor	Best blend of portability and essential features; two-spindle system <b>Mobile Intel® Celeron 1.8GHz</b> with 400MHz frontside bus or <b>Mobile Intel Pentium 4 Processor-M 2.0GHz</b> with enhanced Intel SpeedStep™ technology <sup>1</sup> and 400MHz frontside bus <i>Celeron: 256KB; Pentium 4-M: 512KB; All: on die (at processor speed) / ECC</i> <b>256MB</b> std / 1GB max <sup>7</sup> / <b>PC2100</b> 266MHz DDR-SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available			<b>SOFTWARE<sup>14</sup></b>  <b>Windows XP Pro models</b> - Microsoft® Windows® XP Professional <sup>20</sup> ✧ Disk-to-Disk Recovery (in hidden protected area)  <b>Preloaded</b> • Access IBM • Adobe Acrobat Reader • IBM Rapid Restore™ PC • InterVideo WinDVD (DVD models) • Norton AntiVirus (OEM edition) • PC-Doctor™ • ThinkPad Utilities • IBM Update Connector™. <sup>15</sup>  <b>Downloadable</b> • IBM Director Agent • Software Delivery Assistant • System Migration Assistant • Client Security Software (for security chip)  <b>License</b> (CD not included) - Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client		
L2 cache Memory						
Diskette drive DVD Ultrabay 2000 Disk	None standard / use optional Ultrabay™-based or USB-based diskette drive DVD-ROM / 8X-3.3X <sup>9</sup> speed / bootable / removable from Ultrabay 2000 One modular bay for interchangeable devices / <b>Ultrabay Plus</b> -compatible / 12.7 mm high <b>20GB<sup>8</sup></b> , 4200 rpm, 9.5mm, S.M.A.R.T. / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional HDD Adapter in Ultrabay 2000					
Display	<i>Some: 14.1"</i> (358.1mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits <i>Some: 15.0"</i> (381mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits <i>All: Easy-open cover to unlatch and open with one hand (two latches)</i>					
Graphics controller	<i>Some: ATI® Mobility™ RADEON™ / AGP 4X / 16MB</i> DDR-SDRAM <i>Some: ATI Mobility RADEON 7500 / AGP 4X / 32MB</i> DDR-SDRAM					
Graphics - external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B					
Keyboard TrackPoint® Touch pad ThinkLight™	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys) TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones Illuminates the keyboard to improve visibility in low-light conditions					
Dimensions <sup>3</sup>	<i>14.1" models (WxDxH):</i> 12.3" x 10" x 1.5"; 313mm x 254mm x 38.9mm <i>15.0" models (WxDxH):</i> 13" x 10.5" x 1.6"; 329mm x 267.5mm x 40.5mm with optical drive and battery: <i>14.1" models:</i> 6.0 lb (2.8kg); <i>15.0":</i> 6.7 lb (3.1kg)					
Approximate weight <sup>2</sup> Case material Battery - type Battery - life <sup>10</sup>	<i>Color:</i> Black; <i>All:</i> Acrylonitrile-Butadiene-Styrene (ABS) plastic Lithium Ion 8-cell / intelligent / supports unique 2nd battery in Ultrabay 2000 <i>14.1" models:</i> 3.8 to 4.0 hrs; <i>15.0" models:</i> 3.4 to 3.6 hrs					
Architecture	<b>Intel 845MP</b> chipset / 82845MP Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1510 CardBus controller, TSB43AB21 1394 (some), Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for diskette, parallel, infrared) One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port					
PC Card Std slots Ports				Universal 72 watt AC adapter Asset ID (system-specific info in chip accessed over network) PC 2001 and PXE 2.0-compliant ACPI 1.0b and 2.0-compliant CIM and DMI 2.0-compliant IBM Rapid Restore PC available to protect software image and data International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free hardware support during the warranty <sup>12</sup>		
Video out IEEE 1394 Wireless antenna Mini PCI Wireless upg <sup>36</sup> CDC Modem Ethernet Audio support	S-video out port (TV out) / one industry standard connector <i>Some:</i> IEEE 1394 (FireWire) port / 4-pin connector UltraConnect™ Antenna built into the display cover for optimal wireless signal reception One Mini PCI type III slot (Communications Bay) / customer upgradable Wireless upgradable with wireless Mini PCI options One Communications Daughter Card (CDC) socket (used by modem) / not accessible 56K <sup>6</sup> V.90 (V.92-designed <sup>29</sup> ) modem in CDC / Agere® chipset 10/100 ethernet on motherboard / Intel 82562EZ chip (physical layer) Soft audio / ICH AC97 controller / DirectSound® support / AD1891A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack					
Security	Power-on password / hard disk password / supervisor password / security keyhole <b>IBM Embedded Security Subsystem 2.0<sup>33</sup></b> / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security <sup>16</sup> / TCG-compliant			ServicePac®. <sup>22</sup> 1yr IOR 9x5 NBD 30L9188 ServicePac 2 yr IOR 9x5 NBD 30L9189 ServicePac 3 yr IOR 9x5 NBD 30L9195 ServicePac 4 yr IOR 9x5 NBD 30L9194 ServicePac 5 yr IOR 9x5 NBD 30L9196 ServicePac 2 yr P&L P/U Depot 30L9191 ServicePac 3 yr P&L P/U Depot 30L9192 ServicePac 4 yr P&L P/U Depot 69P9195 ServicePac 5 yr P&L P/U Depot 69P9197 Other ServicePac options at <b>ibm.com/services/its/us/source/wamomxeu.pdf</b> Post-warranty annual maintenance agreements at <b>ibm.com/services/its/us/source/maspspleu.pdf</b>		
Limited warranty <sup>12</sup>	<b>1 year</b> - EasyServ™. <sup>19</sup> onsite pickup and delivery / service upgrades <sup>22</sup> available					
128MB PC2100 DDR-SDRAM CL2.5 SOD	10K0028	ThinkPad R32/R40 Series Li-Ion Battery		02K7052		
256MB PC2100 DDR-SDRAM CL2.5 SOD	10K0030	Ultrabay 2000 Li-Ion battery		02K6646		
512MB PC2100 DDR-SDRAM CL2.5 SOD	10K0032	ThinkPad Multiple Battery Charger II		22P9040		
Ultralight 8X Max DVD Ultrabay 2000	22P9102	IBM USB Keyboard with UltraNav		31P8950		
CD-RW/DVD Combo IV Ultrabay 2000	22P6991	40GB HS Hard Disk 9.5mm (5400 rpm)		08K9816		
24X-10X CD-ROM Ultrabay 2000 Drive	05K9233	GemPC400 Smart Card Reader/Writer		31P8901		
Second HDD Adapter for Ultrabay 2000	08K6068	ThinkPad Monitor Stand 2001		22P5265		
ThinkPad Multi-Burner Ultrabay 2000 Drive	22P7015	Cisco Aironet Wireless 802.11b Mini PCI		31P8301		
ThinkPad Removable Diskette Drive	08K9603	IBM 11a/b/g Wireless Mini PCI Adapter		31P9701		
IBM USB Portable Diskette Drive	05K9276	IBM 11a/b/g Wireless CardBus Adapter		31P9101		
IBM USB 2.0 Portable CD-RW Drive	22P5297	ThinkPad 72W AC Adapter		02K6699		
IBM USB Serial Parallel Adapter	22P5298	ThinkPad 72W AC/DC Combo Adapter		22P9010		
Optical 3-Button Travel Wheel Mouse	31P7410	ThinkPad Port Replicator II		74P6733		
IBM iLV200 Value Data/Video Projector	0038A03	ThinkPad Mini Dock		287810U		
IBM ThinkPad Ultrabay Plus Carrier	22P5737	IBM 1GB Microdrive™ with PC Card		07N5574		
IBM ThinkPad Ultrabay Plus c500 Cradle	22P5738	IBM Optical 3-Button Travel Wheel Mouse		31P7410		
ThinkPad Ultrabay Plus Numeric Keypad	22P7330	Other options at <b>ibm.com/pc/us/accessories</b>				

See footnotes for important warranty information  
 US models announced April 22, 2003  
 US models withdrawn effective October 2003



# IBM® ThinkPad® R40 (2896) - Express (October 2003) - withdrawn

Created by IBM PC Institute  
Personal Systems Reference (PSREF)

Type-model	Processor	Speed GHz	Memory	Screen	Graphics memory	Disk GB <sup>8</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	IEEE 1394 port	Security chip	Preload	Avail date
2896-72U	Celeron®	2.0	256MB	15.0" XGA	16MB	30GB	Combo	Open; wireless upg <sup>36</sup>	Modem	10/100	1394		XP Pro	Oct 2003
2896-J2U	Pentium® 4-M	2.2	256MB	14.1" XGA	32MB	30GB	CD	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-J3U	Pentium 4-M	2.2	256MB	14.1" XGA	32MB	40GB	Combo	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-J4U	Pentium 4-M	2.2	256MB	14.1" XGA	32MB	60GB	Combo	11a/b Wi-Fi <sup>27</sup>	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-N2U	Pentium 4-M	2.4	256MB	14.1" XGA	32MB	30GB	CD	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-N3U	Pentium 4-M	2.4	256MB	14.1" XGA	32MB	40GB	Combo	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-N4U	Pentium 4-M	2.4	256MB	14.1" XGA	32MB	60GB	Combo	11a/b Wi-Fi <sup>27</sup>	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-Q3U	Pentium 4-M	2.4	256MB	15.0" SXGA+	32MB	40GB	Combo	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-Q4U	Pentium 4-M	2.4	256MB	15.0" SXGA+	32MB	60GB	Combo	11a/b Wi-Fi <sup>27</sup>	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-P2U	Pentium 4-M	2.4	256MB	15.0" XGA	32MB	30GB	CD	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Oct 2003
2896-P3U	Pentium 4-M	2.4	256MB	15.0" XGA	32MB	40GB	Combo	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Oct 2003
These small and medium business (SMB) models are part of the IBM US Think Express Program														
Positioning Processor	Mainstream performance and features; two-spindle system Mobile Intel® Celeron 2.0GHz with 400MHz system bus or Mobile Intel Pentium 4 Processor-M 2.2 or 2.4GHz with enhanced Intel SpeedStep™ technology <sup>1</sup> and 400MHz system bus L2 cache Memory 256MB std / 1GB max <sup>7</sup> / PC2100 266MHz DDR1 (DDR-SDRAM) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available										SOFTWARE <sup>14</sup> Windows XP Pro models - Microsoft® Windows® XP Professional <sup>20</sup> ♦ Disk-to-Disk Recovery (in hidden protected area)			
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive CD Some: CD-ROM / 24X-10X <sup>9</sup> speed / bootable / removable from Ultrabay 2000 Combo Some: DVD-ROM/CD-RW / 24X/10X/24X/8X <sup>21</sup> speed / removable from Ultrabay 2000 Ultrabay 2000 One modular bay for interchangeable devices / Ultrabay Plus-compatible / 12.7 mm high Disk 30GB <sup>8</sup> , 40GB, or 60GB / 4200 rpm, 9.5mm, S.M.A.R.T. / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional HDD Adapter in Ultrabay 2000										Preloaded • Access IBM • Access Connections • Adobe Acrobat Reader • IBM Rapid Restore™ PC • InterVideo WinDVD (combo models) • IBM RecordNOW and DLA by Veritas (combo models) • Norton AntiVirus (OEM edition) • PC-Doctor™ • ThinkPad Utilities • IBM Update Connector™.15			
Display	Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits Some: 15.0" (381.0mm) XGA (1024x768) TFT color / Active Matrix / 150 nits Some: 15.0" (381.0mm) SXGA+ (1450x1050) TFT color / Active Matrix / 150 nits										Downloadable • IBM Director Agent • Software Delivery Assistant • System Migration Assistant • Client Security Software (for security chip) License (CD not included) - Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client			
Graphics controller	Some: ATI® Mobility™ RADEON™ / AGP 4X / 16MB DDR1 (DDR-SDRAM) Some: ATI Mobility RADEON 7500 / AGP 4X / 32MB DDR1 (DDR-SDRAM)										Universal 72 watt AC adapter Asset ID (system-specific info in chip accessed over network) PC 2001 and PXE 2.0-compliant ACPI 1.0b and 2.0-compliant CIM and DMI 2.0-compliant IBM Rapid Restore PC available to protect software image and data International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free warranty support during the warranty <sup>12</sup> via 800-IBM-SERV (426-7378)			
Graphics - external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B										ServicePac®.22 1yr IOR 9x5 NBD 30L9188			
Keyboard	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys) TrackPoint® TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass Touch pad UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones ThinkLight™ Illuminates the keyboard to improve visibility in low-light conditions										ServicePac 2 yr IOR 9x5 NBD 30L9189			
Dimensions <sup>3</sup>	14.1" models (WxDxH): 12.3" x 10" x 1.5"; 313mm x 254mm x 38.9mm 15.0" models (WxDxH): 13" x 10.5" x 1.6"; 329mm x 267.5mm x 40.5mm with optical drive and batt: 14.1" models: 6.0 to 6.1 lb (2.7kg); 15.0": 6.6 to 6.7 lb (3.0kg)										ServicePac 3 yr IOR 9x5 NBD 30L9195			
Approximate weight <sup>2</sup>	with optical drive and batt: 14.1" models: 6.0 to 6.1 lb (2.7kg); 15.0": 6.6 to 6.7 lb (3.0kg)										ServicePac 4 yr IOR 9x5 NBD 30L9194			
Case material	Color: black; All: Acrylonitrile-Butadiene-Styrene (ABS) plastic										ServicePac 5 yr IOR 9x5 NBD 30L9196			
Battery - type	Lithium Ion 8-cell / intelligent / supports unique 2nd battery in Ultrabay 2000										ServicePac 2 yr P&L P/U Depot 30L9191			
Battery - life <sup>10</sup>	14.1" and 15" XGA models: 3.8 to 4.0 hrs; 15.0" SXGA+ models: 3.4 to 3.6 hrs										ServicePac 3 yr P&L P/U Depot 30L9192			
Architecture	Intel 845MP chipset / 82845MP Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1510 CardBus controller, TSB43AB21 1394 (some), Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for diskette, parallel, infrared)										ServicePac 4 yr P&L P/U Depot 69P9195			
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door										ServicePac 5 yr P&L P/U Depot 69P9197			
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port										Other ServicePac options at ibm.com/services/its/us/source/wamomxeu.pdf Post-warranty annual maintenance agreements at ibm.com/services/its/us/source/maspspleu.pdf			
Video out	S-video out port (TV out) / one 4-pin industry standard connector													
IEEE 1394	IEEE 1394 (FireWire) port / 4-pin connector													
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception													
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable													
Wireless upg <sup>36</sup>	Some: wireless upgradable with wireless Mini PCI options													
11a/b Wi-Fi <sup>27</sup>	Some: 11a/b Wi-Fi <sup>27</sup> wireless <sup>4</sup> , Mini PCI, Atheros™ AR5001X chipset													
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible													
Modem	56K <sup>6</sup> V.90 (V.92-designed <sup>29</sup> ) modem in CDC / Agere® chipset													
Ethernet	10/100 ethernet on motherboard / Intel 82562EZ chip (physical layer)													
Audio support	Soft audio / ICH AC97 controller / DirectSound® support / AD1891A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack													
Security	Power-on password / hard disk password / supervisor password / security keyhole Some: IBM Embedded Security Subsystem 2.0 <sup>33</sup> / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security <sup>16</sup> / TCG-compliant													
Limited warranty <sup>12</sup>	1 year - EasyServ™.19 onsite pickup and delivery / service upgrades <sup>22</sup> available													
128MB PC2100 DDR-SDRAM CL2.5 SOD	10K0028										ThinkPad R32/R40 Series Li-Ion Battery 02K7052			
256MB PC2100 DDR-SDRAM CL2.5 SOD	10K0030										Ultrabay 2000 Li-Ion battery 02K6646			
512MB PC2100 DDR-SDRAM CL2.5 SOD	10K0032										ThinkPad Multiple Battery Charger II 22P9040			
CD-RW/DVD Combo IV Ultrabay 2000	22P6991										40GB HS Hard Disk 9.5mm (5400 rpm) 08K9816			
Ultralight 8X Max DVD Ultrabay 2000	22P9102										80GB HS Hard Disk 9.5mm (5400 rpm) 09N4273			
Second HDD Adapter for Ultrabay 2000	08K6068										Cisco Aironet Wireless 802.11b Mini PCI 31P8301			
Multi-Burner Plus Ultrabay Enhanced Drive	73P3312										IBM 11a/b/g Wireless Mini PCI Adapter 31P9701			
ThinkPad Slim Drive Adpr for Ultrabay 2000	62P4557										IBM 11a/b/g Wireless CardBus Adapter 31P9101			
ThinkPad Removable Diskette Drive	08K9603										ThinkPad 72W AC/DC Combo Adapter 22P9010			
IBM USB Portable Diskette Drive	05K9276										ThinkPad Port Replicator II 74P6733			
IBM USB 2.0 Portable Multi-Burner Drive	22P9163										ThinkPad Mini Dock 287810U			
ThinkPad 72W AC Adapter	02K6699										Other options at ibm.com/pc/us/accessories			

Type-model	Processor	Speed GHz	Memory	Screen	Graphics memory	Disk GB <sup>8</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem/ Bluetooth™	Ethernet on planar	IEEE 1394 port	Security Chip	Small and medium business	Avail date
2897-22U	Pentium® M1.3	256MB	14.1" XGA	16MB	20G	DVD	Open; wireless upg <sup>36</sup>	Modem	10/100	1394	Yes	XP Pro	Yes	May 2003
2897-23U	Pentium M 1.3	256MB	14.1" XGA	16MB	20G	Combo	*Intel 11b Wi-Fi <sup>32</sup>	Modem	10/100	1394	Yes	XP Pro	Yes	May 2003
2897-34U	Pentium M 1.3	256MB	14.1" XGA	32MB	40G	Combo	*Intel 11b Wi-Fi	Modem	10/100	1394	Yes	XP Pro	Yes	May 2003
2897-55U	Pentium M 1.3	256MB	15.0" XGA	32MB	40G	Combo	Open; wireless upg	Modem	10/100	1394	Yes	XP Pro	Yes	May 2003
2897-54U	Pentium M 1.3	256MB	15.0" XGA	32MB	40G	Combo	*Intel 11b Wi-Fi	Modem	10/100	1394	Yes	XP Pro	Yes	May 2003
2897-GWU	Pentium M 1.5	256MB	15.0" SXGA+	32MB	60G	Combo	11a/b Wi-Fi <sup>27</sup>	Modem	10/100	1394	Yes	XP Pro	Yes	May 2003
2897-93U	Pentium M 1.4	256MB	14.1" XGA	16MB	20G	Combo	*Intel 11b Wi-Fi	Modem	10/100	1394	Yes	XP Pro	Yes	Oct 2003
2897-B4U	Pentium M 1.3	256MB	15.0" XGA	32MB	40G	Combo	*Intel 11b Wi-Fi	Modem	10/100	1394	Yes	XP Pro	Yes	Oct 2003
2897-GAU	Pentium M 1.5	256MB	15.0" SXGA+	32MB	60G	Combo	*Intel 11b Wi-Fi	Modem	10/100	1394	Yes	XP Pro	Yes	Oct 2003
2897-83U	Pentium M 1.4	256MB	15.0" XGA	16MB	20G	Combo	*Intel 11b Wi-Fi	Modem	10/100	1394	Yes	XP Pro	Yes	Nov 2003

These small and medium business (SMB) models are part of the IBM US Think Express Program

Positioning Processor	Mainstream performance and features; two-spindle system <b>Intel® Pentium® M Processor 1.3, 1.4, or 1.5GHz</b> with enhanced Intel SpeedStep™ technology <sup>1</sup> and 400MHz system bus			<b>SOFTWARE<sup>14</sup></b>		
L2 cache	<b>1MB</b> / on die (at processor speed) / ECC			<b>Windows XP Pro models</b>		
Memory	<b>256MB</b> std / 2GB max <sup>7</sup> / <b>PC2100</b> 266MHz DDR1 (DDR-SDRAM) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available			- Microsoft® Windows® XP Professional <sup>20</sup> ♦ Disk-to-Disk Recovery (in hidden protected area)		
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive			<b>Preloaded</b>		
DVD	Some: DVD-ROM / 8X-3.3X <sup>9</sup> speed / bootable / removable from Ultrabay 2000			• Access IBM		
Combo	Some: DVD-ROM/CD-RW / 24X/10X/24X/8X <sup>21</sup> speed / removable from Ultrabay 2000			- Access Connections		
Ultrabay 2000	One modular bay for interchangeable devices / <b>Ultrabay Plus</b> -compatible / 12.7 mm high			• Adobe Acrobat Reader		
Disk	<b>20GB<sup>8</sup></b> , <b>40GB</b> , or <b>60GB</b> , 4200 rpm, 9.5mm / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional HDD Adapter in Ultrabay 2000			• IBM Rapid Restore™ PC		
Display	Some: <b>14.1"</b> (358.1mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits Some: <b>15.0"</b> (381.0mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits Some: <b>15.0"</b> (381.0mm) <b>SXGA+ (1400x1050) TFT color</b> / Active Matrix / 150 nits			• IBM RecordNOW and DLA by Veritas (combo models)		
Graphics controller	Some: <b>ATI® Mobility™ RADEON™ / AGP 4X / 16MB</b> DDR1 (DDR-SDRAM) Some: <b>ATI Mobility RADEON 7500 / AGP 4X / 32MB</b> DDR1 (DDR-SDRAM)			• InterVideo WinDVD (Combo, DVD)		
Graphics - external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B			• Norton AntiVirus (OEM edition)		
Keyboard	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)			• PC-Doctor™		
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass			• ThinkPad Utilities		
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones			• IBM Update Connector™ <sup>15</sup>		
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions			<b>Downloadable</b>		
Dimensions <sup>3</sup>	14.1" models: 12.3" x 10.0" x 1.53"; 15.0" models: 13.0" x 10.5" x 1.59"			• IBM Director Agent		
Approximate weight <sup>2</sup>	with optical drive and battery: 14.1" models: 6.1 to 6.7 lb; 15.0": 6.6 to 6.7 lb (3.0 to 3.4kg)			• Software Delivery Assistant		
Case material	Color: Black; All: Acrylonitrile-Butadiene-Styrene (ABS) plastic			• System Migration Assistant		
Battery - type	Lithium Ion 8-cell / intelligent / supports unique 2nd battery in Ultrabay 2000			• Client Security Software (for security chip)		
Battery - life <sup>10</sup>	6.1 to 6.2 hr			<b>License</b> (CD not included)		
Architecture	<b>Intel 855PM</b> chipset / 82855PM Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1510 CardBus controller, TSB43AB21 1394 (some), Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for diskette, parallel, infrared)			- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client		
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door			Universal 72 watt AC adapter Asset ID™ <sup>34</sup> (system-specific info in chip accessed over network) PC 2001 and PXE 2.0-compliant ACPI 1.0b and 2.0-compliant CIM and DMI 2.0-compliant IBM Rapid Restore PC available to protect software image and data International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free warranty support during the warranty <sup>12</sup> via 800-IBM-SERV (426-7378)		
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port					
Video out	S-video out port (TV out) / one 4-pin industry standard connector					
IEEE 1394	IEEE 1394 (FireWire) port / 4-pin connector					
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception					
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable					
Wireless upg <sup>36</sup>	Some: Wireless upgradable with wireless Mini PCI options					
11b Wi-Fi <sup>32</sup>	Some: 11b Wi-Fi <sup>32</sup> wireless <sup>4</sup> , Mini PCI, Intel PRO/Wireless 2100 Network Connection 802.11b, Intel 82531 chipset					
11a/b Wi-Fi <sup>27</sup>	Some: 11a/b Wi-Fi <sup>27</sup> wireless <sup>4</sup> , Mini PCI, Atheros™ AR5001X chipset					
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible			ServicePac®. <sup>22</sup> 1yr IOR 9x5 NBD 30L9188		
Modem	56K <sup>6</sup> V.90 (V.92-designed <sup>25</sup> ) modem in CDC / Agere® chipset			ServicePac 2 yr IOR 9x5 NBD 30L9189		
Bluetooth™	None			ServicePac 3 yr IOR 9x5 NBD 30L9195		
Ethernet	10/100 ethernet on motherboard / Intel 82562EZ chip (physical layer) / PXE			ServicePac 4 yr IOR 9x5 NBD 30L9194		
Audio support	Soft audio / ICH AC97 controller / DirectSound® support / AD1891A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack			ServicePac 5 yr IOR 9x5 NBD 30L9196		
Security	Power-on password / hard disk password / supervisor password / security keyhole			ServicePac 2 yr P&L P/U Depot 30L9191		
Security chip	<b>IBM Embedded Security Subsystem 2.0<sup>33</sup></b> / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security <sup>16</sup> / TCG-compliant			ServicePac 3 yr P&L P/U Depot 30L9192		
Limited warranty <sup>12</sup>	<b>1 year</b> - EasyServ™ <sup>19</sup> onsite pickup and delivery / service upgrades <sup>22</sup> available			ServicePac 4 yr P&L P/U Depot 69P9195		
128 MB PC2100 DDR-SDRAM CL2.5 SOD	10K0028	ThinkPad Port Replicator II	74P6733	ServicePac 5 yr P&L P/U Depot 69P9197		
256 MB PC2100 DDR-SDRAM CL2.5 SOD	10K0030	ThinkPad Mini Dock	287810U	Other ServicePac options at <a href="http://ibm.com/services/its/us/source/wamomxeu.pdf">ibm.com/services/its/us/source/wamomxeu.pdf</a>		
512 MB PC2100 DDR-SDRAM CL2.5 SOD	10K0032	40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816	Post-warranty annual maintenance agreements at <a href="http://ibm.com/services/its/us/source/maspspleu.pdf">ibm.com/services/its/us/source/maspspleu.pdf</a>		
1GB PC2100 DDR-SDRAM CL2.5 SOD	10K0034	80GB HS Hard Disk 9.5mm (5400 rpm)	09N4273			
CD-RW/DVD Combo IV Ultrabay 2000	22P6991	ThinkPad R32/R40 Series Li-Ion Battery	02K7052			
Second HDD Adapter for Ultrabay 2000	08K6068	Ultrabay 2000 Li-Ion battery	02K6646			
ThinkPad Removable Diskette Drive	08K9603	ThinkPad Multiple Battery Charger II	22P9040			
IBM USB Portable Diskette Drive	05K9276	IBM 11a/b/g Wireless CardBus Adapter	31P9101			
IBM 4GB Microdrive™ with PC Card	09N4280	IBM 11a/b/g Wireless Mini PCI Adapter	31P9701			
IBM 256MB USB 2.0 Memory Key	22P9025	Cisco Aironet Wireless 802.11b Mini PCI	31P8301			
ThinkPad 72W AC Adapter	02K6699	Ericsson® GC82 EDGE PC Card Wireless	58P8782			
ThinkPad 72W AC/DC Combo Adapter	22P9010	Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>				

See footnotes for important warranty information

\* Powered by Intel Centrino™ mobile technology

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US models announced April 22, October 21, or November 11, 2003

US models withdrawn effective October 2003 or January 2004 or October 2004



# IBM® ThinkPad® R40 (2723) - Education - withdrawn

Created by IBM PC Institute  
Personal Systems Reference (PSREF)

Type-model	Processor	Speed GHz	Memory	Screen	Graphics memory	Disk GB <sup>5</sup>	Optical	Mini PCI Comm Bay wireless	CDC modem	Ethernet on planar	IEEE 1394 port	Security Chip	Workhorse (W) Global (G) Avail Preload Entry (E) date
2723-3XU	Pentium® M	1.3	256MB	14.1" XGA	32MB	40GB	Combo	*Intel 11b Wi-Fi <sup>32</sup>	Modem	10/100	1394	Yes	XP Pro W Mar 2003
2723-3PU	Pentium M	1.3	256MB	14.1" XGA	32MB	40GB	Combo	11a/b Wi-Fi <sup>27</sup>	Modem	10/100	1394	Yes	XP Pro W Mar 2003
2723-6XU	Pentium M	1.3	256MB	15.0" SXGA+	32MB	40GB	Combo	*Intel 11b Wi-Fi	Modem	10/100	1394	Yes	XP Pro W Mar 2003
2723-6PU	Pentium M	1.3	256MB	15.0" SXGA+	32MB	40GB	Combo	11a/b Wi-Fi	Modem	10/100	1394	Yes	XP Pro W Mar 2003
2723-BDU	Pentium M	1.4	256MB	15.0" XGA	32MB	40GB	Combo	*Intel 11b Wi-Fi	Modem	10/100	1394	Yes	XP Pro Nov2003

These educational models of the ThinkPad R40 notebook are available only to public or private K-12 (or higher) accredited schools organized and operated exclusively for educational purposes for use by qualified students and/or 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.  
**2723 models have a 3 year limited warranty (other 2722 ThinkPad R40 systems have a 1 year limited warranty)**

Positioning Processor	<b>Mainstream performance and features; two-spindle system</b> <b>Mobile Intel® Pentium® M Processor 1.3 or 1.4GHz</b> with enhanced Intel SpeedStep™ technology <sup>1</sup> and 400MHz frontside bus										<b>SOFTWARE<sup>14</sup></b>		
L2 cache	<b>1MB</b> / on die (at processor speed) / ECC										<b>Windows XP Pro models</b>		
Memory	<b>256MB</b> std / 2GB max <sup>7</sup> / <b>PC2100</b> 266MHz DDR1 (DDR-SDRAM) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available										- Microsoft® Windows® XP Professional <sup>20</sup> ◆ Disk-to-Disk Recovery (in hidden protected area)		
Diskette drive	None standard / use optional Ultrabay™-based or USB-based diskette drive										<b>Preloaded</b>		
Combo	DVD-ROM/CD-RW / 24X/10X/24X/8X <sup>21</sup> speed / removable from Ultrabay 2000										• Access IBM		
Ultrabay 2000	One modular bay for interchangeable devices / <b>Ultrabay Plus</b> -compatible / 12.7 mm high										• Access Connections		
Disk	<b>40GB<sup>8</sup></b> , 4200 rpm, 9.5mm high / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional HDD Adapter in Ultrabay 2000										• Adobe Acrobat Reader		
Display	<i>Some:</i> <b>14.1"</b> (358.1mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits <i>Some:</i> <b>15.0"</b> (381mm) <b>XGA (1024x768) TFT color</b> / Active Matrix / 150 nits <i>Some:</i> <b>15.0"</b> (381.0mm) <b>SXGA+ (1400x1050) TFT color</b> / Active Matrix / 150 nits <i>All:</i> Easy-open cover to unlatch and open with one hand (two latches)										• IBM Rapid Restore™ PC		
Graphics controller	<b>ATI® Mobility RADEON® 7500 / AGP 4X / 32MB</b> DDR1 (DDR-SDRAM)										• IBM RecordNow and DLA		
Graphics - external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B										• InterVideo WinDVD		
Keyboard	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)										• Norton AntiVirus (OEM edition)		
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass										• PC-Doctor™		
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones										• ThinkPad Utilities		
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions										• IBM Update Connector™ <sup>15</sup>		
Dimensions <sup>3</sup>	<i>14.1" models:</i> 12.3" x 10.0" x 1.53"; <i>15.0" models:</i> 13.0" x 10.5" x 1.59"										<b>Downloadable</b>		
Approximate weight <sup>2</sup>	with optical drive and battery: <i>14.1" models:</i> 6.0 to 6.1 lb; <i>15.0":</i> 6.6 to 6.7 lb (3.0 to 3.4kg)										• IBM Director Agent		
Case material	<i>Color:</i> Black; <i>All:</i> Acrylonitrile-Butadiene-Styrene (ABS) plastic										• Software Delivery Assistant		
Battery - type	Lithium Ion 8-cell / intelligent / supports unique 2nd battery in Ultrabay 2000										• System Migration Assistant		
Battery - life <sup>10</sup>	6.2 hr; <i>BDU:</i> 6.1 hr										• Client Security Software (for security chip)		
Architecture	<b>Intel 855PM</b> chipset / 82855PM Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (TI® PCI1510 CardBus controller, TSB43AB21 1394 (some), Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for diskette, parallel, infrared)										<b>License</b> (CD not included)		
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door										- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client		
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port										Universal 72 watt AC adapter		
Video out	S-video out port (TV out) / one 4-pin industry standard connector										Asset ID™ <sup>34</sup> (system-specific info in chip accessed over network)		
IEEE 1394	IEEE 1394 (FireWire) port / 4-pin connector										PC 2001 and PXE 2.0-compliant		
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception										ACPI 1.0b and 2.0-compliant		
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable										CIM and DMI 2.0-compliant		
11b Wi-Fi <sup>32</sup>	<i>Some:</i> 11b Wi-Fi <sup>32</sup> wireless <sup>4</sup> , Mini PCI, Intel PRO/Wireless 2100, Intel 82531 chipset										IBM ImageUltra™ Services available		
11a/b Wi-Fi <sup>27</sup>	<i>Some:</i> 11a/b Wi-Fi <sup>27</sup> wireless <sup>4</sup> , Mini PCI, Atheros™ AR5001X chipset										IBM Rapid Restore PC available to protect software image and data		
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible										International Warranty Service <sup>17</sup>		
Modem	56K <sup>6</sup> V.90 (V.92-designed <sup>23</sup> ) modem in CDC / Agere® chipset										24 hour x 7 day <sup>18</sup> toll-free warranty support during the warranty <sup>12</sup>		
Bluetooth	None										<b>Ultrabay Plus</b> 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		
Ethernet	10/100 ethernet on motherboard / Intel 82562EZ chipset (physical layer) / PXE										ServicePac®, <sup>22</sup> 2 yr IOR 9x5 NBD		
Audio support	Soft audio / ICH AC97 controller / DirectSound® support / AD1891A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack										30L9190		
Security	Power-on password / hard disk password / supervisor password / security keyhole										ServicePac 3 yr IOR 9x5 NBD		
Security chip	<b>IBM Embedded Security Subsystem 2.0<sup>33</sup></b> / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security <sup>16</sup> / TCG-compliant										30L9197		
Limited warranty <sup>12</sup>	<b>3 years/1 year battery</b> - EasyServ™ <sup>19</sup> onsite pickup and delivery / serv upgrades <sup>22</sup> avail										ServicePac 4 yr IOR 9x5 NBD		
128MB PC2100 DDR-SDRAM CL2.5 SOD	10K0028				ThinkPad Port Replicator II				74P6733				ServicePac 5 yr IOR 9x5 NBD
256MB PC2100 DDR-SDRAM CL2.5 SOD	10K0030				ThinkPad Mini Dock				287810U				
512MB PC2100 DDR-SDRAM CL2.5 SOD	10K0032				40GB HS Hard Disk 9.5mm (5400 rpm)				08K9816				ServicePac 4 yr P&L P/U Depot
1GB PC2100 DDR-SDRAM CL2.5 SOD	10K0034				80GB HS Hard Disk 9.5mm (5400 rpm)				09N4273				
CD-RW/DVD Combo IV Ultrabay 2000	22P6991				GemPC400 Smart Card Reader/Writer				31P8901				ServicePac 5 yr P&L P/U Depot
Second HDD Adapter for Ultrabay 2000	08K6068				ThinkPad R32/R40 Series Li-Ion Battery				02K7052				
ThinkPad Removable Diskette Drive	08K9603				Ultrabay 2000 Li-Ion battery				02K6646				ServicePac 4 yr P&L P/U Depot
IBM USB Portable Diskette Drive	05K9276				ThinkPad Multiple Battery Charger II				22P9040				
IBM Portable USB 2.0 Multi-Burner Drive	22P9163				IBM 11a/b/g Wireless CardBus Adapter				31P9101				ServicePac 5 yr P&L P/U Depot
Optical 3-Button Travel Wheel Mouse	31P7410				IBM 11a/b/g Wireless Mini PCI Adapter				31P9701				
IBM 4GB Microdrive™ with PC Card	09N4280				Cisco Aironet Wireless 802.11b Mini PCI				31P8301				Other ServicePac options at <b>ibm.com/services/its/us/source/wamomxeu.pdf</b>
IBM 128MB USB 2.0 Memory Key	22P9229				IBM M400 Projector				0037A04				
IBM 256MB USB 2.0 Memory Key	22P9025				IBM E400 Projector				0038A04				Post-warranty annual maintenance agreements at <b>ibm.com/services/its/us/source/maspspleu.pdf</b>
ThinkPad 72W AC Adapter	02K6699				ThinkPad Monitor Stand 2001				22P5265				
ThinkPad 72W AC/DC Combo Adapter	22P9010				Other options at <b>ibm.com/pc/us/accessories</b>								

See footnotes for important warranty information

US models announced March 25 or November 20, 2003

US models withdrawn effective January 2004 or October 2004

\* Powered by the Intel Centrino™ mobile technology

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