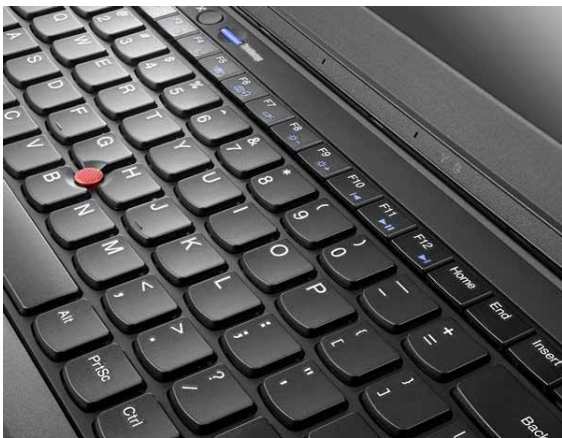




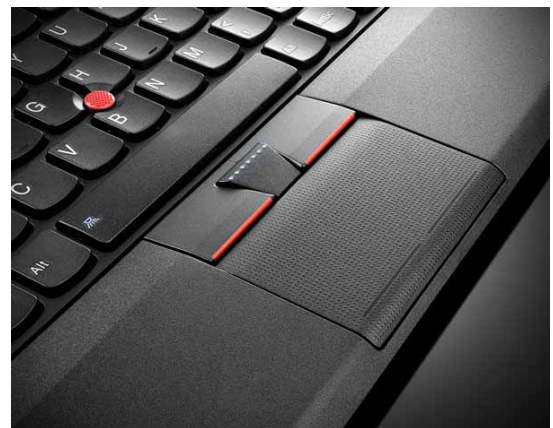
Lenovo® ThinkPad X230



Lenovo ThinkPad X230



Lenovo ThinkPad X230



Lenovo ThinkPad X230



Lenovo ThinkPad X230



Lenovo ThinkPad X230

# ThinkPad X230 (2320) - TopSeller

Type-model	Processor	Memory	Wide-screen display	Disk SATA GB <sup>B</sup> rpm	Optical in UltraBase Series 3	ThinkPad Ultrabase Series 3	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Finger-print reader	Bat-tery cells	Intel AMT	Intel vPro	Preload (mm/yy)	Ann date
2320-8VU	i5-3210M	4GBx1	12.5" HD	128G SSD	Optional	Opt	None	Intel 2200 <sup>28</sup>	WWAN upg	Fing	6	No	No	Pro 64	06/12
2320-33U	i5-3210M	4GBx1	12.5" HD	180G SSD	Optional	Opt	None	Intel 2200	WWAN upg	Fing	6	No	No	Pro 64	06/12
2320-32U	i5-3210M	4GBx1	12.5" HD	500G 7200	Optional	Opt	None	Intel 2200	WWAN upg	Fing	6	No	No	Pro 64	06/12
2320-2ZU	i5-3210M	4GBx1	12.5" HD	320G 7200	Optional	Opt	None	Intel 2200	WWAN upg	Fing	6	No	No	Pro 64	06/12
2320-A9U	i7-3520M	4GBx1	12.5" HD	180G SSD	DVD±RW	UltraB	Backlit	Intel 6205 <sup>28</sup>	WWAN upg	Fing	6	iAMT	vPro	Pro 64	07/12
2320-A7U	i5-3320M	4GBx1	12.5" HD	500G 7200	DVD±RW	UltraB	Backlit	Intel 6205	WWAN upg	Fing	6	iAMT	vPro	Pro 64	07/12
2320-A5U	i5-3320M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 6205	WWAN upg	Fing	6	iAMT	vPro	Pro 64	07/12
2320-A3U	i5-3210M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 2200	WWAN upg	Fing	6	No	No	Pro 64	07/12

- **Small and medium business (SMB) model(s), part of the US TopSeller™ Program**
- **A depot repair service 3-year limited warranty**

Positioning Processor	<i>An ultraportable for the executive on the move; one spindle</i> <b>Intel® Core™ i5-3210M processor (2 cores, 2.50GHz, 3MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology <b>Intel Core i5-3320M processor (2 cores, 2.60GHz, 3MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology <b>Intel Core i7-3520M processor (2 cores, 2.90GHz, 4MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology	<b>Preloaded operating system<sup>20</sup></b> - Genuine Windows® 7 Professional 64  <b>Ready to install applications<sup>14</sup></b> (only some listed) • Rescue and Recovery™ • Password Manager
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	<b>Preloaded applications<sup>14</sup></b> (only some listed) • Access Connections™ • ThinkVantage Power Manager • Fingerprint Software (fingerprint models) • ThinkVantage System Update • Microsoft® Office preloaded; purchase a product key to activate
Optical Ultrabay SATA disk	<i>Some:</i> DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3	Supports ThinkVantage® technologies
mSATA™ SSD	None	
Widescreen display Camera	<b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus	<b>ThinkPad Ultrabase Series 3</b> • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: – Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)	
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via cable 45J7915) • Four USB 2.0 ports • Gigabit ethernet (RJ-45) port • Microphone in and headphone out • Requires 65W or 90W AC adapter • 1.39 lb; 630g
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm <i>4-cell:</i> from 2.96 lb (1.34kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None <i>4-cell (28.8Whr):</i> up to 4.6 hr; <i>6-cell (62.4Whr):</i> up to 10.3 hr; <i>9-cell (93.6Whr):</i> up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; <i>9-cell plus external battery:</i> up to 26.1 hr	
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0 external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)	65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots <i>Some:</i> 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 2200, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Advanced-N 6205, 2x2 Wireless WAN upgradable None None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 <i>Some:</i> Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack Power-on password, hard disk password, supervisor password, security keyhole	
Security Security chip Fingerprint reader	Trusted Platform Module, TCG 1.2-compliant AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited warranty <sup>12</sup> <b>3-years/1-yr battery</b> - depot repair service / service upgrades <sup>22</sup> available		

See footnotes for more detailed information

# ThinkPad X230 (2320) - TopSeller - II

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB <sup>3</sup> rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Battery Carrier	Intel vPro	Pre-load	Ann date (mm/yy)
2320-8UU	i5-3320M	4GBx1	12.5" HD	720p	128G SSD	DVD±RW	UltraB	None	Intel 6205 <sup>28</sup>	WWAN upg	None	6	vPro	Pro 64 06/12
2320-8TU	i7-3520M	4GBx1	12.5" HD	720p	128G SSD	DVD±RW	UltraB	None	Intel 6205	WWAN upg	None	6	vPro	Pro 64 06/12
2320-3BU	i5-3320M	4GBx1	12.5" HD	None	320G 7200	Optional	Opt	None	Intel 6205	Gobi 3000	select	6	vPro	Pro 64 06/12
2320-3AU	i7-3520M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	None	Intel 6205	Gobi 3000	select	6	vPro	Pro 64 06/12
2320-39U	i7-3520M	4GBx1	12.5" HD	720p	500G 7200	DVD±RW	UltraB	None	Intel 6205	WWAN upg	None	6	vPro	Pro 64 06/12
2320-38U	i7-3520M	4GBx1	12.5" HD	720p	180G SSD	DVD±RW	UltraB	None	Intel 6205	WWAN upg	None	6	vPro	Pro 64 06/12
2320-37U	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	DVD±RW	UltraB	None	Intel 6205	WWAN upg	None	6	vPro	Pro 64 06/12
2320-36U	i5-3320M	4GBx1	12.5" HD	720p	500G 7200	DVD±RW	UltraB	None	Intel 6205	WWAN upg	None	6	vPro	Pro 64 06/12
2320-35U	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	DVD±RW	UltraB	None	Intel 6205	WWAN upg	None	6	vPro	Pro 64 06/12
2320-34U	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	Intel 6205	WWAN upg	None	6	vPro	Pro 64 06/12

- **Small and medium business (SMB) model(s), part of the US TopSeller™ Program**
- **A depot repair service 3-year limited warranty**

Positioning Processor	<i>An ultraportable for the executive on the move; one spindle</i> <b>Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology</b> <b>Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology</b>	<b>Preloaded operating system<sup>20</sup></b> - Genuine Windows® 7 Professional 64
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	<b>Ready to install applications<sup>14</sup></b> (only some listed) • Rescue and Recovery™ • Password Manager
Optical Ultrabay SATA disk	<i>Some:</i> DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3	<b>Preloaded applications<sup>14</sup></b> (only some listed) • Access Connections™ • ThinkVantage Power Manager • ThinkVantage Tools • FingerPrint Software (fingerprint models) • ThinkVantage System Update • Microsoft® Office preloaded; purchase a product key to activate
mSATA™ SSD	None	
Widescreen display Camera	<b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus	
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)	
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	Supports ThinkVantage® technologies  <b>ThinkPad Ultrabase Series 3</b> • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-slim system with optional Ultrabay Slim accessories in right side: – Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase:</i> 4/6-cell: 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm 4-cell: from 2.96 lb (1.34kg); 6-cell: from 3.31 lb (1.50kg); 9-cell: from 3.67 lb (1.67kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None 4-cell (28.8Whr): up to 4.6 hr; 6-cell (62.4Whr): up to 10.3 hr; 9-cell (93.6Whr): up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; 9-cell <i>plus external battery:</i> up to 26.1 hr	
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0 external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)	
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Qualcomm® Gobi™ 3000 chipset, PCIe Mini Card, EV-DO Rev. A, GPRS/WCDMA/HSPA, GPS <i>Some:</i> User selectable, AT&T®, Verizon®, or Sprint®, contract required with service provider	
Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack	<b>Other features:</b> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via cable 45J7915) • Four USB 2.0 ports • Gigabit ethernet (RJ-45) port • Microphone in and headphone out • Requires 65W or 90W AC adapter • 1.39 lb; 630g
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
Limited warranty <sup>12</sup>	<b>3-years/1-yr battery</b> - depot repair service / service upgrades <sup>22</sup> available	

See footnotes for more detailed information

© Lenovo  
(DSH2-2) July 2012



# ThinkPad X230 (2320) - TopSeller (Windows 8)

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Disk SATA GB <sup>2</sup> rpm	Optical in UltraBase Series 3	ThinkPad Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN /mSATA	Battery cells	Intel AMT	Intel vPro	Preload	Ann date (mm/yy)
2320-HQU	i7-3520M	4GBx1	12.5" HD	180G SSD	DVD±RW	UltraB	Backlit	Intel 6205 <sup>28</sup>	WWAN upg	6	iAMT vPro	Win7 Pro64	10/12
2320-HPU	i5-3320M	4GBx1	12.5" HD	500G 7200	DVD±RW	UltraB	Backlit	Intel 6205	WWAN upg	6	iAMT vPro	Win7 Pro64	10/12
2320-HNU	i5-3320M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 6205	WWAN upg	6	iAMT vPro	Win7 Pro64	10/12
2320-HMU	i5-3210M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 2200	WWAN upg	6	No	Win7 Pro64	10/12
2320-AAU	i7-3520M	4GBx1	12.5" HD	180G SSD	DVD±RW	UltraB	Backlit	Intel 6205	WWAN upg	6	iAMT vPro	Win8 Pro64	10/12
2320-A8U	i5-3320M	4GBx1	12.5" HD	500G 7200	DVD±RW	UltraB	Backlit	Intel 6205	WWAN upg	6	iAMT vPro	Win8 Pro64	10/12
2320-A6U	i5-3320M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 6205	WWAN upg	6	iAMT vPro	Win8 Pro64	10/12
2320-A4U	i5-3210M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 2200	WWAN upg	6	No	Win8 Pro64	10/12
2320-JCU	i7-3520M	4GBx1	12.5" HD Prem	180G SSD	DVD±RW	UltraB	Backlit	Intel 6205	WWAN upg	6	iAMT vPro	Win7 Pro64	10/12
2320-JBU	i5-3320M	4GBx1	12.5" HD Prem	500G 7200	DVD±RW	UltraB	Backlit	Intel 6205	WWAN upg	6	iAMT vPro	Win7 Pro64	10/12
2320-JAU	i5-3320M	4GBx1	12.5" HD Prem	500G 7200	Optional	Opt	Backlit	Intel 6205	WWAN upg	6	iAMT vPro	Win7 Pro64	10/12
2320-J9U	i5-3210M	4GBx1	12.5" HD Prem	500G 7200	Optional	Opt	Backlit	Intel 2200	WWAN upg	6	No	Win7 Pro64	10/12

- **Small and medium business (SMB) model(s), part of the US TopSeller™ Program**
- **A depot repair service 3-year limited warranty**

Positioning Processor	<i>An ultraportable for the executive on the move; one spindle</i> <b>Intel® Core™ i5-3210M processor (2 cores, 2.50GHz, 3MB cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology</b> <b>Intel Core i5-3320M processor (2 cores, 2.60GHz, 3MB cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology</b> <b>Intel Core i7-3520M processor (2 cores, 2.90GHz, 4MB cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology</b>	<b>Preloaded operating system<sup>20</sup></b> - <i>Some:</i> Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit - <i>Some:</i> Windows 8 Pro 64-bit
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	<b>Preloaded applications<sup>5</sup></b> (only some listed)
Optical Ultrabay SATA disk	<i>Some:</i> DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3	<ul style="list-style-type: none"> <li>- <b>Windows 7 models</b></li> <li>• Lenovo® Message Center Plus</li> <li>• ThinkVantage Product Recovery</li> <li>• ThinkVantage Power Manager</li> <li>• Lenovo SimpleTap</li> <li>- <b>Windows 8 models</b></li> <li>• Lenovo Support</li> <li>• Lenovo Companion</li> <li>• Lenovo QuickLaunch</li> <li>- <b>All models</b></li> <li>• Lenovo Solution Center</li> <li>• Password Manager</li> <li>• Microsoft® Office preloaded; purchase a product key to activate</li> </ul>
mSATA™ SSD	None	
Widescreen display	<i>Some:</i> <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> (Premium) <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)	
Camera	HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus	
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)	<b>Supports ThinkVantage® technologies</b>
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	<b>ThinkPad Ultrabase Series 3</b>
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm <i>4-cell:</i> from 2.96 lb (1.34kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg) Display cover: Magnesium + PCABS; Bottom: Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None <i>4-cell (28.8Whr):</i> up to 4.6 hr; <i>6-cell (62.4Whr):</i> up to 10.3 hr; <i>9-cell (93.6Whr):</i> up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; <i>9-cell plus external battery:</i> up to 26.1 hr	<ul style="list-style-type: none"> <li>• Provides desktop expansion and cable management for X230 and X230 Tablet</li> <li>• Easily connects to the bottom of the X230 or X230 Tablet for traveling</li> <li>• Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: <ul style="list-style-type: none"> <li>- Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412</li> <li>Disks supported (some): <ul style="list-style-type: none"> <li>• 128GB SSD 6.0Gb/s 0A65629</li> <li>• 180GB SSD 6.0Gb/s 0A65630</li> <li>• 500GB Disk 7200 rpm 0A65632</li> </ul> </li> </ul> </li> </ul>
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0 external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)	<b>Other features:</b> <ul style="list-style-type: none"> <li>• Power button (front)</li> <li>• Security key lock, security keyhole</li> <li>• Analog VGA DB-15 monitor port</li> <li>• DisplayPort (supports single-link DVI-D via cable 45J7915)</li> <li>• Four USB 2.0 ports</li> <li>• Gigabit ethernet (RJ-45) port</li> <li>• Microphone in and headphone out</li> <li>• Requires 65W or 90W AC adapter</li> <li>• 1.39 lb; 630g</li> </ul>
PCIe Mini Card PCIe WLAN <sup>4</sup>	Two PCI Express Mini Card slots <i>Some:</i> 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 2200, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Advanced-N 6205, 2x2	
PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Wireless WAN upgradable None None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 <i>Some:</i> Intel Active Management Technology (iAMT)	
Security Security chip Fingerprint reader	High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
Limited warranty <sup>12</sup>	<b>3-years/1-yr battery</b> - depot repair service / service upgrades <sup>22</sup> available	

See footnotes for more detailed information

© Lenovo (DSH2-7) November 2012

# ThinkPad X230 (2320) - TopSeller (Windows 8) - II

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Disk SATA GB <sup>a</sup> rpm	Optical in UltraBase Series 3	ThinkPad Ultrabase Series 3	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card /mSATA	Bat-tery cells	Intel AMT	Intel vPro	Preload	Ann date (mm/yy)
2320-JPU	i5-3230M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 2200	Finger	6	None	No	Win7 Pro64	02/13
2320-KMU	i5-3360M	4GBx1	12.5" HD	240G FDE SSD	Optional	Opt	Backlit	Intel 6205 <sup>28</sup>	Finger	6	iAMT	vPro	Win8 Pro64	02/13
2320-KLU	i5-3320M	4GBx1	12.5" HD	180G SSD	Optional	Opt	Backlit	Intel 6205	Finger	6	iAMT	vPro	Win8 Pro64	02/13
2320-KKU	i5-3230M	4GBx1	12.5" HD	180G SSD	Optional	Opt	Backlit	Intel 2200	Finger	6	None	No	Win7 Pro64	02/13
2320-KJU	i5-3230M	4GBx1	12.5" HD	180G SSD	Optional	Opt	Backlit	Intel 2200	Finger	6	None	No	Win8 Pro64	02/13
2320-KHU	i5-3320M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 2200	Finger	6	None	No	Win8 Pro64	02/13
2320-L9U	i7-3520M	4GBx1	12.5" HD	320G 7200 OPAL	Optional	Opt	Backlit	Intel 6205	Finger	6	iAMT	vPro	Win7 Pro64	04/13
2320-L8U	i7-3520M	4GBx1	12.5" HD	256G SSD	Optional	Opt	Backlit	Intel 6205	Finger	6	iAMT	vPro	Win7 Pro64	04/13
2320-L7U	i5-3320M	4GBx1	12.5" HD	256G SSD	Optional	Opt	Backlit	Intel 6205	Finger	6	iAMT	vPro	Win7 Pro64	04/13
2320-L6U	i5-3320M	4GBx1	12.5" HD	320G 7200 OPAL	Optional	Opt	Backlit	Intel 6205	Finger	6	iAMT	vPro	Win7 Pro64	04/13
2320-LVU	i7-3520M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 6205	None	6	iAMT	vPro	Win7 Pro64	07/13
2320-LUU	i7-3520M	4GBx1	12.5" HD	256G SSD	Optional	Opt	Backlit	Intel 6205	None	6	iAMT	vPro	Win7 Pro64	07/13
2320-LTU	i5-3320M	4GBx1	12.5" HD	500G 7200	Optional	Opt	Backlit	Intel 6205	None	6	iAMT	vPro	Win7 Pro64	07/13
2320-LSU	i5-3320M	4GBx1	12.5" HD	128G SSD	Optional	Opt	Backlit	Intel 6205	None	6	iAMT	vPro	Win7 Pro64	07/13
Positioning Processor	An ultraportable for the executive on the move; one spindle <b>Intel® Core™ i5-3230M processor (2 cores, 2.60GHz, 3MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology <b>Intel Core i5-3320M processor (2 cores, 2.60GHz, 3MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology <b>Intel Core i5-3360M processor (2 cores, 2.80GHz, 3MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology <b>Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology										Preloaded operating system <sup>20</sup> - Some: Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit - Some: Windows 8 Pro 64-bit			
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Preloaded applications <sup>5</sup> (only some listed) - <b>Windows 7 models</b> • Lenovo® Message Center Plus • ThinkVantage Product Recovery • ThinkVantage Power Manager • Lenovo SimpleTap - <b>Windows 8 models</b> • Lenovo Support • Lenovo Companion • Lenovo QuickLaunch - <b>All models</b> • Lenovo Solution Center • Password Manager • Microsoft® Office preloaded; purchase a product key to activate			
Optical Ultrabay SATA disk	Option for ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3													
mSATA™ SSD	None													
Widescreen display Camera	<b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus													
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)										Supports ThinkVantage® technologies			
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										<b>ThinkPad Ultrabase Series 3</b> • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: – Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632			
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase:</i> 4/6-cell: 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm <i>4-cell:</i> from 2.96 lb (1.34kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None <i>4-cell (28.8Whr):</i> up to 4.6 hr; <i>6-cell (62.4Whr):</i> up to 10.3 hr; <i>9-cell (93.6Whr):</i> up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; <i>9-cell plus external battery:</i> up to 26.1 hr													
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Option:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0 external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)													
PCIe Mini Card PCIe WLAN <sup>4</sup>	Two PCI Express Mini Card slots <i>Some:</i> 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 2200, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Advanced-N 6205, 2x2													
PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Wireless WAN upgradable None None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 <i>Some:</i> Intel Active Management Technology (iAMT)													
Security Security chip Fingerprint reader	High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>			
Limited warranty <sup>12</sup>	<b>3-years/1-yr battery</b> - depot repair service / service upgrades <sup>22</sup> available													

See footnotes for more detailed information



# ThinkPad X230 (2324)

Type-model	Processor	Memory	Widescreen display	Disk SATA GB <sup>3</sup> rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Finger print reader	Bat- tery tooth cells	Global (G) Intel vPro	GMP (P)	Pre-load	Ann date (mm/yy)
2324-4TU	i5-3320M	4GBx1	12.5" HD	180G SSD	Optional	Opt	None	Intel 6205 <sup>28</sup>	upg	Fing	BT	6	vPro	Pro 64	06/12
2324-3YU	i7-3520M	4GBx1	12.5" HD Prem	180G SSD	Optional	Opt	None	Intel 6205	upg	Fing	BT	9	vPro	Pro 64	06/12
2324-3XU	i7-3520M	4GBx1	12.5" HD	500G 7200	Optional	Opt	None	Intel 6205	upg	Fing	BT	9	vPro	Pro 64	06/12
2324-3WU	i5-3320M	4GBx1	12.5" HD Prem	500G 7200	Optional	Opt	None	Intel 6205	upg	Fing	BT	6	vPro	G Pro 64	06/12
2324-3VU	i5-3320M	4GBx1	12.5" HD Prem	500G 7200	DVD±RW	UltraB	None	Intel 6205	upg	Fing	BT	6	vPro	G Pro 64	06/12
2324-3UU	i7-3520M	4GBx1	12.5" HD Prem	320G 7200	Optional	Opt	None	Intel 6205	upg	Fing	BT	9	vPro	Pro 64	06/12
2324-3TU	i5-3360M	4GBx1	12.5" HD	320G 7200	Optional	Opt	None	Intel 6205	upg	Fing	BT	9	vPro	Pro 64	06/12
2324-3SU	i5-3360M	4GBx1	12.5" HD	320G 7200	Optional	Opt	None	Intel 6205	upg	No	No	6	vPro	Pro 64	06/12
2324-3RU	i5-3360M	4GBx1	12.5" HD Prem	320G 7200	Optional	Opt	None	Intel 6205	upg	Fing	BT	9	vPro	Pro 64	06/12
2324-3QU	i5-3320M	4GBx1	12.5" HD Prem	320G 7200	Optional	Opt	None	Intel 6205	upg	Fing	BT	6	vPro	G Pro 64	06/12
2324-3PU	i5-3320M	4GBx1	12.5" HD	320G 7200	DVD±RW	UltraB	None	Intel 6205	upg	Fing	BT	6	vPro	G Pro 64	06/12
2324-5XU	i7-3520M	4GBx1	12.5" HD	500G 7200	DVD±RW	UltraB	Backlit	Intel 6205	upg	Fing	BT	6	vPro	Pro 64	07/12
2324-5VU	i5-3320M	4GBx1	12.5" HD	180G SSD	DVD±RW	UltraB	Backlit	Intel 6205	upg	Fing	BT	6	vPro	Pro 64	07/12

• A depot repair service 3-year limited warranty

Positioning Processor	An ultraportable for the executive on the move; one spindle <b>Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology <b>Intel Core i5-3360M processor (dual-core, 2.80GHz, 3MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology <b>Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology	<b>Preloaded operating system<sup>20</sup></b> - Genuine Windows <sup>®</sup> 7 Professional 64 <b>Ready to install applications<sup>14</sup></b> (only some listed) • Rescue and Recovery™ • Password Manager
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	<b>Preloaded applications<sup>14</sup></b> (only some listed) • Norton™ Internet Security 2012 (30 days of virus definitions) • Access Connections™ • ThinkVantage Power Manager • ThinkVantage Tools • Fingerprint Software (fingerprint models) • ThinkVantage System Update • Adobe® Reader® • Microsoft® Office preloaded; purchase a product key to activate • Skype™ for Windows
Optical Ultrabay SATA disk	<i>Some:</i> DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3	
mSATA™ SSD	None	
Widescreen display	<i>Some:</i> <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> (Premium) <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)	
Camera	HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus	
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)	Supports ThinkVantage® technologies
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	<b>ThinkPad Ultrabase Series 3</b> • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: – Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm <i>4-cell:</i> from 2.96 lb (1.34kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None <i>4-cell (28.8Whr):</i> up to 4.6 hr; <i>6-cell (62.4Whr):</i> up to 10.3 hr; <i>9-cell (93.6Whr):</i> up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; <i>9-cell plus external battery:</i> up to 26.1 hr	Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via cable 45J7915) • Four USB 2.0 ports • Gigabit ethernet (RJ-45) port • Microphone in and headphone out • Requires 65W or 90W AC adapter • 1.39 lb; 630g
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0 external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)	
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable None None <i>Some:</i> Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack	
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
Limited warranty <sup>12</sup>	<b>3-years/1-yr battery - depot repair service / service upgrades<sup>22</sup> available</b>	

See footnotes for more detailed information

# ThinkPad X230 (2324) - II

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB <sup>3</sup> rpm	Optical in UltraBase Series 3	ThinkPad Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Finger print reader	Bat- tery cells	Global (G) Intel vPro (P)	Ann date (mm/yy)
2324-3NU	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	Intel 6205 <sup>28</sup>	Gobi select	Fing BT	6 vPro	Pro 64 06/12
2324-3MU	i5-3320M	4GBx1	12.5" HD	No	320G 7200	Optional	Opt	None	Intel 6205	upg None	No	6 vPro	Pro 64 06/12
2324-2LU	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	Intel 6205	upg None	Fing BT	6 vPro	Pro 64 06/12
2324-25U	i5-3360M	4GBx1	12.5" HD Prem	720p	320G 7200	Optional	Opt	None	Intel 6205	upg None	Fing BT	6 vPro	Pro 64 06/12
2324-23U	i7-3520M	4GBx1	12.5" HD Prem	No	180G SSD	Optional	Opt	None	Intel 6300 <sup>28</sup>	upg None	Fing BT	9 vPro	Pro 64 06/12
2324-22U	i5-3360M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	Intel 6205	upg None	No	6 vPro	Pro 64 06/12
2324-5SU	i5-3320M	4GBx1	12.5" HD Prem	720p	320G 7200	Optional	Opt	None	Intel 6205	upg None	Fing BT	6 vPro	Pro 64 07/12
2324-5RU	i5-3320M	4GBx1	12.5" HD	720p	500G 7200	DVD±RW	UltraB	None	Intel 6205	upg None	Fing BT	6 vPro	Pro 64 07/12
2324-5QU	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	None	Intel 6205	upg None	Fing BT	6 vPro	Pro 64 07/12
2324-5NU	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	Intel 6205	upg None	No	6 vPro	Pro 64 07/12
2324-5PU	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	DVD±RW	UltraB	None	Intel 6205	upg None	Fing BT	6 vPro	Pro 64 07/12

• A depot repair service 3-year limited warranty

Positioning Processor	An ultraportable for the executive on the move; one spindle <b>Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology <b>Intel Core i5-3360M processor (dual-core, 2.80GHz, 3MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology <b>Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology										Preloaded operating system <sup>20</sup> - Genuine Windows® 7 Professional 64
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications <sup>14</sup> (only some listed) • Rescue and Recovery™ • Password Manager
Optical Ultrabay SATA disk	Some: DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) Some: Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ All: removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3										Preloaded applications <sup>14</sup> (only some listed) • Norton™ Internet Security 2012 (30 days of virus definitions) • Access Connections™ • ThinkVantage Power Manager • ThinkVantage Tools • FingerPrint Software (fingerprint models) • ThinkVantage System Update • Adobe® Reader® • Microsoft® Office preloaded; purchase a product key to activate • Skype™ for Windows
mSATA™ SSD	None										
Widescreen display	Some: 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio Some: (Premium) 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)										
Camera	Some: HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus										
Graphics	Intel HD Graphics 4000 in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; Maximum external resolution: 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)										
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										Supports ThinkVantage® technologies
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	without UltraBase; 4/6-cell: 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm 4-cell: from 2.96 lb (1.34kg); 6-cell: from 3.31 lb (1.50kg); 9-cell: from 3.67 lb (1.67kg) Display cover: Magnesium + PCABS; Bottom: Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None 4-cell (28.8Whr): up to 4.6 hr; 6-cell (62.4Whr): up to 10.3 hr; 9-cell (93.6Whr): up to 15.5 hr; external battery (64Whr, 0A36280): up to 10.6 hr; 9-cell plus external battery: up to 26.1 hr										ThinkPad Ultrabase Series 3 • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: - Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	Mobile Intel QM77 Express Chipset Some: ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) 2324-5PU model: Gemplus Smart Card Reader in ExpressCard slot Two USB 3.0, one powered USB 2.0 external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)										Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via cable 45J7915) • Four USB 2.0 ports • Gigabit ethernet (RJ-45) port • Microphone in and headphone out • Requires 65W or 90W AC adapter • 1.39 lb; 630g
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN	Two PCI Express Mini Card slots Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3 Some: Wireless WAN upgradable Some: Wireless WAN, Qualcomm® Gobi™ 3000 chipset, PCIe Mini Card, EV-DO Rev. A, GPRS/WCDMA/HSPA, GPS										
Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Some: User selectable, AT&T®, Verizon®, or Sprint®, contract required with service provider None Some: Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack										
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant Some: AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
Limited warranty <sup>12</sup>	3-years/1-yr battery - depot repair service / service upgrades <sup>22</sup> available										

See footnotes for more detailed information



# ThinkPad X230 (2324) - Windows 8

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB <sup>3</sup> rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	Backlit key-board	PCIe Mini Card WLAN	Finger print reader	Bat-tery Blue-tooth	Global (G) Intel AMT vPro (P)	Intel GMP (P)	Preload	Ann date (mm/yy)	
2324-67U	i5-3320M	4GBx1	12.5" HD	No	320G 7200	Optional	Opt	None	Intel 2200	No	No	6	No	No	G Win8 Pro64	10/12
2324-66U	i7-3520M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	None	Intel 6205 <sup>28</sup>	Fing	BT	6	iAMT vPro	G	Win8 Pro64	10/12
2324-65U	i7-3520M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	None	Intel 6205	Fing	BT	6	iAMT vPro	G	Win8 Pro64	10/12
2324-64U	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	None	Intel 6205	Fing	BT	6	iAMT vPro	G	Win8 Pro64	10/12
2324-63U	i5-3320M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	None	Intel 6205	Fing	BT	6	iAMT vPro	G	Win8 Pro64	10/12
2324-62U	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	Intel 6205	Fing	BT	6	iAMT vPro	G	Win8 Pro64	10/12
2324-5YU	i7-3520M	4GBx1	12.5" HD	720p	500G 7200	DVD±RW	UltraB	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win8 Pro64	10/12
2324-5WU	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	DVD±RW	UltraB	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win8 Pro64	10/12
2324-8AU	i7-3520M	4GBx1	12.5" HD Prem	720p	256G SSD	Optional	Opt	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win7 Pro64	12/12
2324-89U	i7-3520M	4GBx1	12.5" HD Prem	720p	240G FDE SSD	Optional	Opt	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win8 Pro64	12/12
2324-88U	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win7 Pro64	12/12
2324-87U	i5-3320M	4GBx1	12.5" HD	720p	256G SSD	Optional	Opt	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win7 Pro64	12/12
2324-86U	i5-3320M	4GBx1	12.5" HD	720p	128G SSD	Optional	Opt	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win7 Pro64	12/12
2324-85U	i5-3320M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win7 Pro64	12/12
2324-84U	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win7 Pro64	12/12
2324-93U	i5-3320M	4GBx1	12.5" HD	720p	240G FDE SSD	Optional	Opt	Backlit	Intel 6205	Fing	BT	6	iAMT vPro		Win8 Pro64	02/13
Positioning Processor	An ultraportable for the executive on the move; one spindle Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology											Preloaded operating system <sup>20</sup> - Some: Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit - Some: Windows 8 Pro 64-bit				
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets											Preloaded applications <sup>5</sup> (only some listed)				
Optical Ultrabay SATA disk	Some: DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) Some: Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ All: removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3											- Windows 7 models • Lenovo® Message Center Plus • ThinkVantage Product Recovery • ThinkVantage Power Manager  - Windows 8 models • Lenovo Support • Lenovo Companion  - All models • Lenovo Solution Center • Password Manager • Microsoft® Office preloaded; purchase a product key to activate				
mSATA™ SSD	None											Supports ThinkVantage® technologies				
Widescreen display	Some: 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio Some: (Premium) 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)															
Camera	Some: HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus															
Graphics	Intel HD Graphics 4000 in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; Maximum external resolution: 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)															
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions											ThinkPad Ultrabase Series 3 • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: - Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632				
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	without UltraBase; 4/6-cell: 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm 4-cell: from 2.96 lb (1.34kg); 6-cell: from 3.31 lb (1.50kg); 9-cell: from 3.67 lb (1.67kg) Display cover: Magnesium + PCABS; Bottom: Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None 4-cell (28.8Whr): up to 4.6 hr; 6-cell (62.4Whr): up to 10.3 hr; 9-cell (93.6Whr): up to 15.5 hr; external battery (64Whr, 0A36280): up to 10.6 hr; 9-cell plus external battery: up to 26.1 hr															
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	Mobile Intel QM77 Express Chipset Some: ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0 external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)											Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via cable 45J7915) • Four USB 2.0 ports • Gigabit ethernet (RJ-45) port • Microphone in and headphone out • Requires 65W or 90W AC adapter • 1.39 lb; 630g				
PCIe Mini Card PCIe WLAN <sup>4</sup>	Two PCI Express Mini Card slots Some: 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 2200, 2x2 Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Advanced-N 6205, 2x2											65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>				
PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Wireless WAN upgradable None None Some: Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Some: Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack															
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant Some: AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip															
Limited warranty <sup>12</sup>	3-years/1-yr battery - depot repair service / service upgrades <sup>22</sup> available															

See footnotes for more detailed information



# ThinkPad X230 (2324) - Windows 8 - II

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Disk SATA GB <sup>3</sup> rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN /mSATA	Finger print reader	Bat-tery Intel vPro	Preload	Ann date (mm/yy)
2324-9CU	i7-3520M	4GBx1	12.5" HD	320G 7200 OPAL	Optional	Optional	Backlit	Intel 6205 <sup>28</sup>	WWAN upg	Finger	6 vPro	Win7 Pro64	04/13
2324-9BU	i7-3520M	4GBx1	12.5" HD	256G SSD	Optional	Optional	Backlit	Intel 6205	WWAN upg	Finger	6 vPro	Win7 Pro64	04/13
2324-9AU	i5-3320M	4GBx1	12.5" HD	320G 7200 OPAL	Optional	Optional	Backlit	Intel 6205	WWAN upg	Finger	6 vPro	Win7 Pro64	04/13
2324-9YU	i7-3520M	4GBx1	12.5" HD	256G SSD	Optional	Optional	Backlit	Intel 6205	WWAN upg	None	6 vPro	Win7 Pro64	07/13
2324-9XU	i7-3520M	4GBx1	12.5" HD	500G 7200	Optional	Optional	Backlit	Intel 6205	WWAN upg	None	6 vPro	Win7 Pro64	07/13
2324-9WU	i7-3520M	4GBx1	12.5" HD	128G SSD	Optional	Optional	Backlit	Intel 6205	WWAN upg	None	6 vPro	Win7 Pro64	07/13
2324-9VU	i5-3320M	4GBx1	12.5" HD	500G 7200	Optional	Optional	Backlit	Intel 6205	WWAN upg	None	6 vPro	Win7 Pro64	07/13
2324-9UU	i5-3320M	4GBx1	12.5" HD	128G SSD	Optional	Optional	Backlit	Intel 6205	WWAN upg	None	6 vPro	Win7 Pro64	07/13

• A depot repair service 3-year limited warranty

Positioning Processor	An ultraportable for the executive on the move; one spindle <b>Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology <b>Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology										Preloaded operating system <sup>20</sup> - Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Preloaded applications <sup>5</sup> (only some listed)
Optical Ultrabay SATA disk	Option for ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3										- <b>Windows 7 models</b> • Lenovo® Message Center Plus • ThinkVantage Power Manager  - <b>Windows 8 models</b> • Lenovo Support  - <b>All models</b> • Lenovo Solution Center • Password Manager • Microsoft® Office preloaded; purchase a product key to activate
mSATA™ SSD	None										
Widescreen display Camera	<b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus										
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)										Supports ThinkVantage® technologies
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										<b>ThinkPad Ultrabase Series 3</b> • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: – Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase:</i> 4/6-cell: 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm <i>4-cell:</i> from 2.96 lb (1.34kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None <i>4-cell (28.8Whr):</i> up to 4.6 hr; <i>6-cell (62.4Whr):</i> up to 10.3 hr; <i>9-cell (93.6Whr):</i> up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; <i>9-cell plus external battery:</i> up to 26.1 hr										Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via cable 45J7915) • Four USB 2.0 ports • Gigabit ethernet (RJ-45) port • Microphone in and headphone out • Requires 65W or 90W AC adapter • 1.39 lb; 630g
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Option:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0 external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)										
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable None None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack										
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
Limited warranty <sup>12</sup>	<b>3-years/1-yr battery</b> - depot repair service / service upgrades <sup>22</sup> available										

See footnotes for more detailed information

© Lenovo (DSH2-11) July 2013

# ThinkPad X230 (2325) - Onsite

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB <sup>3</sup> rpm	Optical in UltraBase Series 3	ThinkPad Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Smart Card Reader	Finger print reader	Bat- tery cells	Global (G) Intel vPro (P)	Ann Date (mm/yy)	
2325-5JU	i7-3520M	4GBx1	12.5" HD	720p	128G SSD	Optional	Opt	None	6205 <sup>28</sup>	upg	None	None	Fing BT	6 vPro	06/12
2325-2VU	i7-3520M	4GBx1	12.5" HD Prem	720p	180G SSD	Optional	Opt	None	6205	upg	None	None	Fing BT	9 vPro	06/12
2325-2UU	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	None	6205	upg	None	None	Fing BT	6 vPro	G P 06/12
2325-2TU	i7-3520M	4GBx1	12.5" HD Prem	720p	500G 7200	Optional	Opt	None	6205	upg	None	None	Fing BT	9 vPro	06/12
2325-2SU	i5-3320M	4GBx1	12.5" HD	720p	500G 7200	DVD±RW	UltraB	None	6205	upg	None	None	Fing BT	6 vPro	G P 06/12
2325-2RU	i5-3360M	4GBx1	12.5" HD Prem	720p	320G 7200	Optional	Opt	None	6205	upg	None	None	Fing BT	9 vPro	06/12
2325-2QU	i5-3320M	4GBx1	12.5" HD Prem	720p	320G 7200	Optional	Opt	None	6205	upg	None	None	Fing BT	6 vPro	G P 06/12
2325-2PU	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	6205	Gobi select	None	None	Fing BT	6 vPro	06/12
2325-2NU	i5-3320M	4GBx1	12.5" HD	No	320G 7200	Optional	Opt	None	6205	upg	None	None	No No	6 vPro	06/12
2325-23U	i7-3520M	4GBx1	12.5" HD Prem	No	180G SSD	Optional	Opt	None	6300 <sup>28</sup>	upg	None	None	Fing BT	9 vPro	G P 06/12
2325-22U	i5-3360M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	6205	upg	None	None	No No	6 vPro	G P 06/12
2325-5PU	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	DVD±RW	UltraB	None	6205	upg	None	Gemplus	Fing BT	6 vPro	G P 07/12
2325-5NU	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	6205	upg	None	None	No BT	6 vPro	G P 07/12
Positioning Processor	An ultraportable for the executive on the move; one spindle <b>Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology <b>Intel Core i5-3360M processor (dual-core, 2.80GHz, 3MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology <b>Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000,</b> DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology											<b>Preloaded operating system<sup>20</sup></b> - Genuine Windows <sup>®</sup> 7 Professional 64 <b>Ready to install applications<sup>14</sup></b> (only some listed) • Rescue and Recovery™ • Password Manager			
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets											<b>Preloaded applications<sup>14</sup></b> (only some listed) • Norton™ Internet Security 2012 (30 days of virus definitions) • Access Connections™ • ThinkVantage Power Manager • ThinkVantage Tools • Fingerprint Software (fingerprint models) • ThinkVantage System Update • Adobe® Reader® • Microsoft® Office preloaded; purchase a product key to activate • Skype™ for Windows			
Optical Ultrabay SATA disk	Some: DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) Some: Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ All: removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3														
mSATA™ SSD	None														
Widescreen display	Some: <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio Some: (Premium) <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)														
Camera	Some: HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus														
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; Maximum external resolution: 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)														
Keyboard TrackPoint®	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight														
Touchpad UltraNav™	TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass														
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions											Supports ThinkVantage® technologies			
Dimensions <sup>3</sup>	without UltraBase; 4/6-cell: 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm											<b>ThinkPad Ultrabase Series 3</b>			
Weight <sup>2</sup>	4-cell: from 2.96 lb (1.34kg); 6-cell: from 3.31 lb (1.50kg); 9-cell: from 3.67 lb (1.67kg)											• Provides desktop expansion and cable management for X230 and X230 Tablet			
Case material	Display cover: Magnesium + PCABS; Bottom: Magnesium alloy											• Easily connects to the bottom of the X230 or X230 Tablet for traveling			
Standard Battery	Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery											• Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side:			
External Battery	None											- Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412			
Battery - life <sup>10</sup>	4-cell (28.8Whr): up to 4.6 hr; 6-cell (62.4Whr): up to 10.3 hr; 9-cell (93.6Whr): up to 15.5 hr; external battery (64Whr, 0A36280): up to 10.6 hr; 9-cell plus external battery: up to 26.1 hr											Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632			
Chipset	<b>Mobile Intel QM77 Express Chipset</b>											Other features:			
Ultrabase	Some: ThinkPad Ultrabase Series 3 (see right side)											• Power button (front)			
Multicard reader	4-in-1 reader (SD, SDHC, SDXC, MMC)											• Security key lock, security keyhole			
ExpressCard	One slot (ExpressCard/34, ExpressCard/54)											• Analog VGA DB-15 monitor port			
Smart Card Read	Some: Gemplus Smart Card Reader in ExpressCard slot											• DisplayPort (supports single-link DVI-D via cable 45J7915)			
Ports	Two USB 3.0, one powered USB 2.0, external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)											• Four USB 2.0 ports			
PCIe Mini Card	Two PCI Express Mini Card slots											• Gigabit ethernet (RJ-45) port			
PCIe WLAN <sup>4</sup>	Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3											• Microphone in and headphone out			
PCIe WWAN	Some: Wireless WAN upgradable Some: Wireless WAN, Qualcomm® Gobi™ 3000 chipset, PCIe Mini Card, EV-DO Rev. A, GPRS/WCDMA/HSPA, GPS											• Requires 65W or 90W AC adapter • 1.39 lb; 630g			
Carrier Modem	Some: User selectable, AT&T®, Verizon®, or Sprint®, contract required with service provider														
Bluetooth™	None														
Ethernet	Some: Bluetooth 4.0 wireless														
Intel AMT	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1														
Audio support	Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack														
Security	Power-on password, hard disk password, supervisor password, security keyhole														
Security chip	Trusted Platform Module, TCG 1.2-compliant														
Fingerprint reader	Some: AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip														
Limited warranty <sup>12</sup>	<b>3-years</b> <sup>12</sup> 1-year battery, <b>limited onsite service</b> <sup>24</sup> , 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time / service upgrades <sup>22</sup> available											24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>			

See footnotes for more detailed information

# ThinkPad X230 (2325) - Onsite - II

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB <sup>a</sup> rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Finger print reader	Bat-tery cells	Global (G) Intel vPro	GMP (P)	Pre-load	Ann Date (mm/yy)
2325-5TU	i5-3320M	4GBx1	12.5" HD Prem	720p	320G 7200	DVD±RW	UltraB	None	Intel 6205 <sup>28</sup>	upg	Finger	6	vPro	G P	Pro 64	07/12
2325-3QU	i5-3320M	4GBx1	12.5" HD Prem	720p	320G 7200	Optional	Opt	None	Intel 6205	upg	Finger	6	vPro	G P	Pro 64	07/12
2325-5SU	i5-3320M	4GBx1	12.5" HD Prem	720p	500G 7200	DVD±RW	UltraB	None	Intel 6205	upg	Finger	6	vPro	G P	Pro 64	07/12
2325-5RU	i5-3320M	4GBx1	12.5" HD Prem	720p	500G 7200	Optional	Opt	None	Intel 6205	upg	Finger	6	vPro	G P	Pro 64	07/12

- Part of the Global Models Plus program with limited onsite service<sup>24</sup> 3-year limited warranty

Positioning Processor	An ultraportable for the executive on the move; one spindle <b>Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology</b>											<b>Preloaded operating system<sup>20</sup></b> - Genuine Windows® 7 Professional 64				
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets											<b>Ready to install applications<sup>14</sup></b> (only some listed) • Rescue and Recovery™ • Password Manager				
Optical Ultrabay SATA disk	<i>Some:</i> DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3											<b>Preloaded applications<sup>14</sup></b> (only some listed) • Access Connections™ • ThinkVantage Power Manager • ThinkVantage Tools • Fingerprint Software (fingerprint models) • ThinkVantage System Update • Adobe® Reader® • Microsoft® Office preloaded; purchase a product key to activate • Skype™ for Windows				
mSATA™ SSD	None											Supports ThinkVantage® technologies				
Widescreen display Camera	(Premium) <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing) HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus											<b>ThinkPad Ultrabase Series 3</b> • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: – Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632  Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via cable 45J7915) • Four USB 2.0 ports • Gigabit ethernet (RJ-45) port • Microphone in and headphone out • Requires 65W or 90W AC adapter • 1.39 lb; 630g  65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>				
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)															
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions															
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm <i>4-cell:</i> from 2.96 lb (1.34kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None <i>4-cell (28.8Whr):</i> up to 4.6 hr; <i>6-cell (62.4Whr):</i> up to 10.3 hr; <i>9-cell (93.6Whr):</i> up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; <i>9-cell plus external battery:</i> up to 26.1 hr															
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0, external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)															
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable None None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack															
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip															
Limited warranty <sup>12</sup>	<b>3-years/1-year battery, limited onsite service<sup>24</sup>, 8 am - 5 pm, Mon - Fri coverage</b> excluding holidays, next business day response time / service upgrades <sup>22</sup> available															

See footnotes for more detailed information

© Lenovo (DSH2-6) August 2012



# ThinkPad X230 (2325) - Onsite (Windows 8)

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB <sup>3</sup> rpm	Optical in UltraBase Series	ThinkPad Backlit in Series 3	Key-board	PCIe Mini Card WLAN	Finger print reader	Blue-tooth	Bat-tery Intel AMT vPro	Global (G) Intel vPro GMP (P)	Preload	Ann Date (mm/yy)
2325-67U	i5-3320M	4GBx1	12.5" HD	No	320G 7200	Optional	Opt	None	Intel 2200	None	No	6 No	No	G P Win8 Pro64	10/12
2325-66U	i7-3520M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	None	Intel 6205 <sup>28</sup>	Finger BT	6	iAMT vPro	G P Win8 Pro64	10/12	
2325-65U	i7-3520M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	None	Intel 6205	Finger BT	6	iAMT vPro	G P Win8 Pro64	10/12	
2325-64U	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	None	Intel 6205	Finger BT	6	iAMT vPro	G P Win8 Pro64	10/12	
2325-63U	i5-3320M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	None	Intel 6205	Finger BT	6	iAMT vPro	G P Win8 Pro64	10/12	
2325-62U	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	None	Intel 6205	Finger BT	6	iAMT vPro	G P Win8 Pro64	10/12	
2325-8AU	i5-3320M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	Backlit	Intel 6205	Finger BT	6	iAMT vPro	Win7 Pro64	12/12	
2325-89U	i7-3520M	4GBx1	12.5" HD	720p	256G SSD	Optional	Opt	Backlit	Intel 6205	Finger BT	6	iAMT vPro	Win7 Pro64	12/12	
2325-88U	i7-3520M	4GBx1	12.5" HD Prem	720p	240G FDE SSD	Optional	Opt	Backlit	Intel 6205	Finger BT	6	iAMT vPro	Win7 Pro64	12/12	
2325-87U	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	Backlit	Intel 6205	Finger BT	6	iAMT vPro	Win7 Pro64	12/12	
2325-86U	i5-3320M	4GBx1	12.5" HD	720p	128G SSD	Optional	Opt	Backlit	Intel 6205	Finger BT	6	iAMT vPro	Win7 Pro64	12/12	
2325-85U	i5-3320M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	Backlit	Intel 6205	Finger BT	6	iAMT vPro	Win7 Pro64	12/12	
2325-AAU	i5-3320M	4GBx1	12.5" HD	720p	180G SSD	Optional	Opt	Backlit	Intel 6205	Finger BT	6	iAMT vPro	Win8 Pro64	02/13	
2325-A7U	i5-3320M	4GBx1	12.5" HD	720p	240G FDE SSD	Optional	Opt	Backlit	Intel 6205	Finger BT	6	iAMT vPro	Win8 Pro64	02/13	

• Some models are part of the Global Models Plus program with limited onsite service<sup>24</sup> 3-year limited warranty

Positioning Processor	An ultraportable for the executive on the move; one spindle <b>Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology</b> <b>Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology</b>	<b>Preloaded operating system<sup>20</sup></b> - Some: Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit - Some: Windows 8 Pro 64-bit
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	<b>Preloaded applications<sup>5</sup></b> (only some listed)
Optical Ultrabay SATA disk	Option for ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3	- <b>Windows 7 models</b> • Lenovo® Message Center Plus • ThinkVantage Product Recovery • ThinkVantage Power Manager  - <b>Windows 8 models</b> • Lenovo Support • Lenovo Companion • Lenovo QuickLaunch  - <b>All models</b> • Lenovo Solution Center • Password Manager • Microsoft® Office preloaded; purchase a product key to activate
mSATA™ SSD	None	Supports ThinkVantage® technologies
Widescreen display	<i>Some:</i> <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> (Premium) <b>12.5"</b> (317.5mm) <b>HD (1366x768) TFT color</b> , anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)	<b>ThinkPad Ultrabase Series 3</b> • Provides desktop expansion and cable management for X230 and X230 Tablet • Easily connects to the bottom of the X230 or X230 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side: – Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 Disks supported (some): • 128GB SSD 6.0Gb/s 0A65629 • 180GB SSD 6.0Gb/s 0A65630 • 500GB Disk 7200 rpm 0A65632
Camera	<i>Some:</i> HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus	<b>Other features:</b> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via cable 45J7915) • Four USB 2.0 ports • Gigabit ethernet (RJ-45) port • Microphone in and headphone out • Requires 65W or 90W AC adapter • 1.39 lb; 630g
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)	<b>65-watt AC Adapter</b> EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm <i>4-cell:</i> from 2.96 lb (1.34kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None <i>4-cell (28.8Whr):</i> up to 4.6 hr; <i>6-cell (62.4Whr):</i> up to 10.3 hr; <i>9-cell (93.6Whr):</i> up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; <i>9-cell plus external battery:</i> up to 26.1 hr	
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Option:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0, external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)	
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots <i>Some:</i> 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 2200, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Advanced-N 6205, 2x2 Wireless WAN upgradable None None <i>Some:</i> Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 <i>Some:</i> Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited warranty <sup>12</sup>	<b>3-years/1-year battery, limited onsite service<sup>24</sup>, 8 am - 5 pm, Mon - Fri coverage</b> excluding holidays, next business day response time/ service upgrades <sup>22</sup> available	

See footnotes for more detailed information

# ThinkPad X230 (2325) - Onsite (Windows 8) - II

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB <sup>2</sup> rpm	Optical in UltraBase Series 3	ThinkPad Ultrabase Series 3	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Bat-tery Intel vPro	Preload	Ann Date (mm/yy)
2325-BNU	i7-3520M	4GBx1	12.5" HD	720p	256G SSD	Optional	Opt	Backlit	Intel 6205 <sup>28</sup>	WWAN upg	BT 6 vPro	Win7 Pro64	07/13
2325-BMU	i7-3520M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	Backlit	Intel 6205	WWAN upg	BT 6 vPro	Win7 Pro64	07/13
2325-BKU	i5-3320M	4GBx1	12.5" HD	720p	128G SSD	Optional	Opt	Backlit	Intel 6205	WWAN upg	BT 6 vPro	Win7 Pro64	07/13
2325-BJU	i5-3320M	4GBx1	12.5" HD	720p	500G 7200	Optional	Opt	Backlit	Intel 6205	WWAN upg	BT 6 vPro	Win7 Pro64	07/13

Positioning Processor	An ultraportable for the executive on the move; one spindle <b>Intel® Core™ i5-3320M processor (dual-core, 2.60GHz, 3MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology</b> <b>Intel Core i7-3520M processor (dual-core, 2.90GHz, 4MB Cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology</b>											Preloaded operating system <sup>20</sup> - Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit
Memory	16GB max <sup>7</sup> / PC3-12800 1600MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets											Preloaded applications <sup>5</sup> (only some listed)
Optical Ultrabay SATA disk	Option for ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 (0A33932) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3											<ul style="list-style-type: none"> <li>- <b>Windows 7 models</b></li> <li>• Lenovo® Message Center Plus</li> <li>• ThinkVantage Power Manager</li> <li>- <b>Windows 8 models</b></li> <li>• Lenovo Support</li> <li>• Lenovo Companion</li> <li>- <b>All models</b></li> <li>• Lenovo Solution Center</li> <li>• Password Manager</li> <li>• Microsoft® Office preloaded; purchase a product key to activate</li> </ul>
mSATA™ SSD	None											Supports ThinkVantage® technologies  <b>ThinkPad Ultrabase Series 3</b>
Widescreen display Camera	<b>12.5" (317.5mm) HD (1366x768) TFT color</b> , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <b>HD720p</b> resolution, wide view angle, low light sensitive, face tracking, fixed focus											
Graphics	<b>Intel HD Graphics 4000</b> in processor, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports dual independent display; <i>Maximum external resolution:</i> 2560x1600@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@75Hz (VGA)											<ul style="list-style-type: none"> <li>• Provides desktop expansion and cable management for X230 and X230 Tablet</li> <li>• Easily connects to the bottom of the X230 or X230 Tablet for traveling</li> <li>• Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side:             <ul style="list-style-type: none"> <li>- Serial ATA Hard Drive</li> <li>- 9.5mm Bay Adapter III 43N3412</li> </ul> </li> <li>• Disks supported (some):             <ul style="list-style-type: none"> <li>• 128GB SSD 6.0Gb/s 0A65629</li> <li>• 180GB SSD 6.0Gb/s 0A65630</li> <li>• 500GB Disk 7200 rpm 0A65632</li> </ul> </li> </ul>
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions											
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Standard Battery External Battery Battery - life <sup>10</sup>	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.05"; 305mm x 206.5mm x 19.0-26.6mm <i>4-cell:</i> from 2.96 lb (1.34kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Li-Ion 4-cell, 6-cell, or 9-cell, HW Authentication; optional external battery as 2nd battery None <i>4-cell (28.8Whr):</i> up to 4.6 hr; <i>6-cell (62.4Whr):</i> up to 10.3 hr; <i>9-cell (93.6Whr):</i> up to 15.5 hr; <i>external battery (64Whr, 0A36280):</i> up to 10.6 hr; <i>9-cell plus external battery:</i> up to 26.1 hr											Other features: <ul style="list-style-type: none"> <li>• Power button (front)</li> <li>• Security key lock, security keyhole</li> <li>• Analog VGA DB-15 monitor port</li> <li>• DisplayPort (supports single-link DVI-D via cable 45J7915)</li> <li>• Four USB 2.0 ports</li> <li>• Gigabit ethernet (RJ-45) port</li> <li>• Microphone in and headphone out</li> <li>• Requires 65W or 90W AC adapter</li> <li>• 1.39 lb; 630g</li> </ul>
Chipset Ultrabase Multicard reader ExpressCard Smart Card Read Ports	<b>Mobile Intel QM77 Express Chipset</b> <i>Option:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) None Two USB 3.0, one powered USB 2.0, external monitor (VGA DB-15, Mini DisplayPort), ethernet (RJ-45)											
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable None None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Realtek® ALC3202 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack											65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified ROHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant None											
Limited warranty <sup>12</sup>	<b>3-years/1-year battery, limited onsite service<sup>24</sup>, 8 am - 5 pm, Mon - Fri coverage</b> excluding holidays, next business day response time / service upgrades <sup>22</sup> available											

See footnotes for more detailed information

© Lenovo (DSH2-12) July 2013

**Memory**

2GB PC3-12800 DDR3 SODIMM	0A65722	ann 06/05/12
4GB PC3-12800 DDR3 SODIMM	0A65723	ann 06/05/12
8GB PC3-12800 DDR3 SODIMM	0A65724	ann 06/05/12

**Ultrabay Slim 9.5mm**

*Most Ultrabay Slim accessories supported in ThinkPad Ultrabase Series 3*

Serial ATA Hard Drive 9.5mm Bay Adapter III	43N3412	ann 06/23/09
DVD ROM Ultrabay Slim Drive III	0A65628	ann 06/05/12
DVD Burner Ultrabay Slim Drive III	0A65626	ann 06/05/12

**Storage and removable storage**

ThinkPad 16GB mSATA Solid State Cache Drive	0B47309	ann 12/11/12
500GB 5400rpm SATA 3.0Gb/s 7mm 4K HDD <sup>41</sup>	0A65631	ann 06/05/12
500GB 7200rpm SATA 3.0Gb/s 7mm 4K HDD <sup>41</sup>	0A65632	ann 06/05/12
320GB 7200rpm SATA 3.0Gb/s 7mm 4K HDD <sup>41</sup>	0A65635	ann 06/05/12
320GB 7200rpm SATA 3.0Gb/s 7mm Self Encrypting (SED) OPAL Capable HDD <sup>41</sup>	0A65636	ann 08/21/12
128GB SATA 6.0Gb/s 7mm Solid State Drive <sup>41</sup>	0A65629	ann 06/05/12
180GB SATA 6.0Gb/s 7mm Solid State Drive <sup>41</sup>	0A65630	ann 06/05/12
256GB 2.5" SATA 6.0Gb/s OPAL-capable SSD <sup>41</sup>	0A65620	ann 05/15/12

<sup>41</sup> Can be used as the main HDD or with Serial ATA Hard Drive 9.5mm Bay Adapter III 43N3412 in ThinkPad Ultrabase Series 3

USB 2.0 Portable 500GB Hard Disk	45K1690	ann 05/26/09
USB 3.0 Secure 500GB Hard Drive	0A65619	ann 11/29/11
USB 3.0 Secure 750GB Hard Drive	0A65616	ann 11/29/11
USB 3.0 Secure 1TB Hard Drive	0A65621	ann 08/28/12
Lenovo Slim USB Portable DVD Burner	0A33988	ann 06/14/11

**Wireless WAN (Mini PCI Express)**

*Only WWAN upgradable models:*

ThinkPad Gobi™ Mobile Broadband Option	0A36185	ann 04/12/11
ThinkPad Gobi 4000 Mobile Broadband - AT&T®	0A36320	ann 06/05/12
ThinkPad Gobi 4000 Mobile Broadband - Verizon®	0A36318	ann 06/26/12

**ThinkPad Expansion**

Lenovo® Essential Notebook Stand	45J9292	ann 05/12/09
ThinkPad Ultrabase Series 3	0A33932	ann 03/01/11
ThinkPad Port Replicator Series 3 with USB 3.0	433615W	ann 06/05/12
ThinkPad Mini Dock Series 3 w/ USB 3.0 - 90W	433715U	ann 06/05/12
TP Mini Dock Plus Series 3 w/ USB 3.0 - 90W	433815U	ann 06/05/12
TP Mini Dock Plus Series 3 w/ USB 3.0 - 170W	433835U	ann 06/05/12

**Keyboard**

TrackPoint Cap Collection	73P2698	ann 12/16/03
UltralSlim Plus Wireless Keyboard and Mouse <sup>52</sup>	0A34032	ann 04/05/11
USB Numeric Keypad	33L3225	ann 05/01/00
Preferred Pro USB Keyboard	73P5220	ann 06/21/05
Enhanced Performance USB Keyboard	73P2620	ann 03/23/04
ThinkPad USB Keyboard with TrackPoint	55Y9003	ann 08/18/09
Lenovo® USB Fingerprint Keyboard	73P4730	ann 02/22/05
Lenovo USB Smartcard Keyboard	51J0155	ann 03/24/09

<sup>52</sup> Wireless via 2.4GHz technology using a micro-size USB receiver.

**Mouse**

Lenovo Optical Mouse (USB)	06P4069	ann 05/21/03
Lenovo Laser Mouse (USB)	41U3074	ann 01/23/07
ThinkPad USB Laser Mouse	57Y4635	ann 12/15/09
Lenovo ScrollPoint® Mouse (USB, Optical)	31P7405	ann 08/27/02
ThinkPad Travel Mouse (USB, Optical)	31P7410	ann 06/04/02
ThinkPad Bluetooth Laser Mouse	0A36407	ann 06/26/12
Lenovo Wireless Laser Mouse <sup>52</sup>	0A36188	ann 12/20/11

**Multimedia**

ThinkPad In-Ear Headphones with microphone	57Y4488	ann 01/07/10
--	---------	--------------

**Security**

3M 12.5W Privacy Filter from Lenovo	0A61770	ann 04/05/11
Kensington® MicroSaver® Cable Lock	73P2582	ann 12/29/03
Kensington Twin Head Cable Lock	45K1620	ann 09/30/08
Lenovo Security Cable Lock	57Y4303	ann 08/24/10
USB Gemplus GemPC Smart Card Reader	41N3040	ann 02/21/06

**Batteries**

ThinkPad Battery 44 (4-cell)	0A36305	ann 06/05/12
ThinkPad Battery 44+ (6-cell)	0A36306	ann 06/05/12
ThinkPad Battery 44++ (9-cell)	0A36307	ann 06/05/12
ThinkPad Battery 19+ (6-cell, Slim External) <sup>43</sup>	0A36280	ann 03/01/11

<sup>43</sup> To be used along with system battery for all-day computing; attaches under ThinkPad using docking connector (not supported when using Series 3 Port Replicator, Ultrabase, or Docks)

More information at [www.lenovo.com/alldaycomputing](http://www.lenovo.com/alldaycomputing)

ThinkPad 65W AC Adapter	40Y7696	ann 01/05/06
ThinkPad 90W AC Adapter	40Y7659	ann 09/20/05
90W UltralSlim AC/DC Combo Adapter	41R4493	ann 09/22/09

More info at [www.lenovo.com/support/poweradapters](http://www.lenovo.com/support/poweradapters)

*Charging tips for 90W UltralSlim AC/DC Combo Adapter 41R4493*

• iPod and iPhone Charge Tip (L10a)	41R4481	ann 12/18/07
• Generic Micro USB charge tip (L18)	41R4490	ann 01/06/09

More information at [www.lenovopowertips.com](http://www.lenovopowertips.com)

**Carrying Cases**

*Up to 12.5" widescreen models:*

ThinkPad 12.5" Ultrabook Topload <sup>72</sup>	0B47416	ann 12/04/12
--	---------	--------------

<sup>72</sup> Not compatible when using ThinkPad Battery 44++ (9-cell) 0A36307

*Up to 15.6" widescreen models:*

Lenovo Messenger Max	41U5253	ann 05/01/07
Lenovo Performance Backpack	41U5254	ann 05/01/07
ThinkPad Business Topload Case	43R2476	ann 05/13/08
ThinkPad Business Backpack	43R2482	ann 05/13/08
ThinkPad Deluxe Expander Case	43R2478	ann 05/13/08
ThinkPad Executive Leather Case	43R2480	ann 05/13/08
Lenovo Sport Backpack - Red	0A33896	ann 02/28/12
Lenovo Sport Slimcase - Red	0A33897	ann 02/28/12
Lenovo Sport Messenger - Red	0A33898	ann 02/28/12

More information at [www.lenovo.com/support/cases](http://www.lenovo.com/support/cases)  
Lenovo luxury cases at [www.lenovoluxurycases.com](http://www.lenovoluxurycases.com)

**Monitors**

ThinkVision LT1952p Wide 19" (VGA, DP, DVI-D) <sup>69</sup>	2448MB6	ann 09/13/11
ThinkVision L2251x Wide 22" (VGA, DP)	2578HB6	ann 10/20/09

<sup>69</sup> DisplayPort cable is not included.

ThinkVision LT1421 Wide 14" Mobile Monitor with Protective Screen Cover (USB 2.0)	1452DS6	ann 08/16/11
ThinkVision LT1421 Wide 14" Mobile Monitor with Protective Case (USB 2.0)	1452DB6	ann 08/16/11

More information at [www.lenovo.com/support/monitors](http://www.lenovo.com/support/monitors)

**Monitor Accessories<sup>46</sup>**

Lenovo USB 3.0 to DVI/VGA Monitor Adapter	0B47072	ann 08/14/12
Lenovo USB Soundbar	0A36190	ann 05/01/12
Mini-DisplayPort to DisplayPort Monitor Cable	0B47091	ann 07/24/12
Kensington MicroSaver Cable Lock	73P2582	ann 12/29/03
Kensington Twin Head Cable Lock	45K1620	ann 09/30/08
Lenovo Security Cable Lock	57Y4303	ann 08/24/10
Lenovo Easy Reach Monitor Stand	55Y9258	ann 09/22/09

<sup>46</sup> Compatible on selected Lenovo and ThinkVision monitors.

More information at [www.lenovo.com/support/monitoraccessories](http://www.lenovo.com/support/monitoraccessories)

For more information on accessories:

[www.lenovo.com/accessories](http://www.lenovo.com/accessories)

Purchase Lenovo accessories

[www.lenovo.com/support/accessories](http://www.lenovo.com/support/accessories)

Product specifications on Lenovo Support

[www.lenovo.com/accessoriesguide](http://www.lenovo.com/accessoriesguide)

Option Compatibility Matrix (OCM) and accessory brochures

[www.lenovoquickpick.com](http://www.lenovoquickpick.com)

An Options Compatibility Configurator for Lenovo systems