



Product Specifications Reference Lenovo® ThinkPad® Notebooks 2012 - withdrawn

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ThinkPad®



Lenovo® ThinkPad Tablet



Lenovo ThinkPad Tablet



Lenovo ThinkPad Tablet



Lenovo ThinkPad Tablet



Lenovo ThinkPad Tablet

ThinkPad® Tablet (1838) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	ThinkPad Camera Tablet Pen	Front/Rear (MP)	Storage	Keyboard Folio Case	ThinkPad Tablet Dock	Ear Buds	WLAN 802.11	PCIe Mini Card WWAN	Carrier	GPS	Blue-tooth	Preload
1838-2DG	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	64G			Ear Buds	11b/g/n ²⁸	Ericsson	selectable	GPS	Blue	Android 3.1
1838-2CG	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	32G			Ear Buds	11b/g/n	Ericsson	selectable	GPS	Blue	Android 3.1
1838-2BG	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	16G			Ear Buds	11b/g/n	Ericsson	selectable	GPS	Blue	Android 3.1
1838-28G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	64G		Dock		11b/g/n			GPS	Blue	Android 3.1
1838-27G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	64G				11b/g/n			GPS	Blue	Android 3.1
1838-26G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	32G	Keyboard			11b/g/n			GPS	Blue	Android 3.1
1838-25G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	32G				11b/g/n			GPS	Blue	Android 3.1
1838-24G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	16G	Keyboard			11b/g/n			GPS	Blue	Android 3.1
1838-23G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	16G				11b/g/n			GPS	Blue	Android 3.1
1838-22G	Cortex-A9	1GB	10.1" WXGA		2.0/5.0	16G				11b/g/n			GPS	Blue	Android 3.1

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program

Positioning	<i>Touchscreen tablet for on-the-go business</i>											Preloaded operating system²⁰ - Android™ 3.1 (HoneyComb)		
Processor	Dual-core ARM Cortex™-A9 processor (1.0 GHz per core), 1MB L2 cache											Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Lenovo App Shop • Documents To Go® • MyScript Notes Mobile • USB Data Transfer Utility • User Data and SD Card Encryption • Lenovo SocialTouch • PrinterShare™ Mobile Print • McAfee® Mobile Security • Google Voice Search • Google Talk • Google Maps • Adobe® Flash player 10.2 • Amazon MP3 • mSpot Music • Kindle for Android • Zinio Magazine Reader • eBuddy Messenger • PokeTALK Tablet Version • ooVoo™ Video Calls • Angry Birds • ArcSoft® PowerMobia® Gallery • ArcSoft PowerMobia eBook Reader and Bookshelf 		
Memory	1GB / 600MHz LPDDR2, mobile DDR / soldered to systemboard, no sockets													
Storage	16GB, 32GB, or 64GB / eMMC (embedded Multi Media Card) flash memory on board													
Multicard reader	3-in-1 reader (SD, SDHC, MMC), SD card encryption supported													
Graphics	NVIDIA® ULP (Ultra-low power) GeForce GPU , integrated in Tegra™ 2, supports 1080p video out via mini-HDMI connector, HDCP-compliant													
Display	10.1" (256.5mm) WXGA (1280x800) TFT color , anti-glare display with glossy infinity Corning® Gorilla® Glass, LED backlight, 400 nits, 16:10 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing), MultiTouch screen supports pen & six-finger gesture													
Tablet pen	<i>Some:</i> ThinkPad Tablet Pen, supports hover, tip, and pressure modes / a button for "long press" function / user replaceable AAAA battery, up to 18 months													
Camera	<i>Front camera:</i> 2.0-megapixel, fixed focus <i>Rear camera:</i> 5.0-megapixel, auto focus, digital zoom													
Video capture	720p video capture (back camera)													
Audio support	High Definition (HD) Audio, Wolfson WM8903 codec / monaural speaker, 0.5 watt x 1 / analog monaural microphone, combo audio/microphone jack													
Ear buds	<i>Some:</i> ThinkPad In-Ear Headphones with microphone													
Media capable	Audio formats: MP3, AAC, AAC+, eAAC+, WAV, PCM, WMA Video formats: MPEG-4, H.263, H.264, VC-1, WMV9, Xvid													
Control buttons	Power button, volume control button, reset switch, 4 function buttons (Home, Back, Open Browser, Display Lock)													
Keyboard folio case	<i>Some:</i> ThinkPad Tablet Keyboard Folio Case, connects with system via USB 2.0, 6 row, TrackPoint® pointing device, leather cover, magnetic 3-position landscape stand													
ThinkPad tablet dock	<i>Some:</i> ThinkPad Tablet Dock, one USB 2.0, one micro-USB 2.0 (not for power supply), microphone input jack, headphone jack, DC-IN connector (supports 65W AC Adapter, RapidCharge)													
Light sensor	Ambient Light Sensor													
Proximity sensor	Proximity sensor, Azoteq IQS128													
G-sensor	Accelerometer (G) sensor, supports 3-axis accelerometer													
Gyroscope	3-axis gyroscope													
eCompass	3-axis electronic compass, AKM AK8975C													
Platform	NVIDIA Tegra 2 T20													
Ports	One USB 2.0, one micro-USB 2.0 (power supply / charging support), one mini-HDMI, headphone/microphone combo jack, one ThinkPad Tablet Dock connector													
WLAN	11b/g/n wireless ⁴ , Azurewave AW-NH931 module, WiFi + BT combo chip													
WWAN	<i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS													
Carrier	<i>Some:</i> User selectable, contract required with service provider													
GPS	Global Positioning System, Broadcom BCM4751													
Bluetooth™	Bluetooth 2.1+EDR wireless, integrated in Azurewave AW-NH931 combo chip, supports BT 3.0													
Dimensions ³	10.25" x 7.15" x 0.57"; 260.4mm x 181.7mm x 14.5mm													
Weight ²	<i>WiFi model:</i> from 1.64 lb (0.74kg); <i>3G model:</i> from 1.67 lb (0.76kg)													
Case color	Black													
Case material	PolyCarbonate/Acrylonitrile-Butadiene-Styrene (PC/ABS) plastic													
System states	Active, Deep Sleep, Off													
Battery - type	Lithium Polymer 2-cell (24Whr)													
Battery - life ¹⁰	up to 5 days (suspend); up to 10 hr (idle); up to 9 hr (WiFi browsing); up to 8 hr (3G browsing and video playback)													
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available											10W AC Adapter (via micro-USB) <i>Optional:</i> 65W AC Adapter (via Dock) ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²		

See footnotes for more detailed information

WE model(s) announced August 16, 2011

WE model(s) withdrawn effective December 2012

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(G-IDG1-1) February 2013

ThinkPad® Tablet (1839) - withdrawn

Type-model	Processor	Memory	Widescreen display	ThinkPad Tablet Pen	Camera Front/Rear (MP)	Storage	Keyboard Folio Case	ThinkPad Tablet Dock	WLAN 802.11	PCIe Mini Card WWAN	Carrier	GPS	Blue-tooth	Global (G) GMP (P)	Preload
1839-28G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	64G		Dock	11b/g/n ²⁸	None	None	GPS	Blue	G	Android 3.1
1839-27G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	64G			11b/g/n	None	None	GPS	Blue	G	Android 3.1
1839-26G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	32G	Keyboard		11b/g/n	None	None	GPS	Blue	G	Android 3.1
1839-25G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	32G			11b/g/n	None	None	GPS	Blue	G	Android 3.1
1839-24G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	16G	Keyboard		11b/g/n	None	None	GPS	Blue	G	Android 3.1
1839-23G	Cortex-A9	1GB	10.1" WXGA	Pen	2.0/5.0	16G			11b/g/n	None	None	GPS	Blue	G	Android 3.1
1839-22G	Cortex-A9	1GB	10.1" WXGA		2.0/5.0	16G			11b/g/n	None	None	GPS	Blue	G	Android 3.1

Positioning	<i>Touchscreen tablet for on-the-go business</i>											Preloaded operating system ²⁰ - Android™ 3.1 (HoneyComb)		
Processor	Dual-core ARM Cortex™-A9 processor (1.0 GHz per core), 1MB L2 cache											Preloaded applications ¹⁴ (only some listed) <ul style="list-style-type: none"> • Lenovo App Shop • Documents To Go® • MyScript Notes Mobile • USB Data Transfer Utility • User Data and SD Card Encryption • Lenovo SocialTouch • PrinterShare™ Mobile Print • McAfee® Mobile Security • Google Voice Search • Google Talk • Google Maps • Adobe® Flash player 10.2 • Amazon MP3 • mSpot Music • Kindle for Android • Zinio Magazine Reader • eBuddy Messenger • PokeTALK Tablet Version • ooVoo™ Video Calls • Angry Birds • ArcSoft® PowerMobia® Gallery • ArcSoft PowerMobia eBook Reader and Bookshelf 		
Memory	1GB / 600MHz LPDDR2, mobile DDR / soldered to systemboard, no sockets													
Storage	16GB, 32GB, or 64GB / eMMC (embedded Multi Media Card) flash memory on board													
Multicard reader	3-in-1 reader (SD, SDHC, MMC), SD card encryption supported													
Graphics	NVIDIA® ULP (Ultra-low power) GeForce GPU , integrated in Tegra™ 2, supports 1080p video out via mini-HDMI connector, HDCP-compliant													
Display	10.1" (256.5mm) WXGA (1280x800) TFT color , anti-glare display with glossy infinity Corning® Gorilla® Glass, LED backlight, 400 nits, 16:10 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing), MultiTouch screen supports pen & six-finger gesture													
Tablet pen	<i>Some:</i> ThinkPad Tablet Pen, supports hover, tip, and pressure modes / a button for "long press" function / user replaceable AAAA battery, up to 18 months													
Camera	<i>Front camera:</i> 2.0-megapixel, fixed focus <i>Rear camera:</i> 5.0-megapixel, auto focus, digital zoom													
Video capture	720p video capture (back camera)													
Audio support	High Definition (HD) Audio, Wolfson WM8903 codec / monaural speaker, 0.5 watt x 1 / analog monaural microphone, combo audio/microphone jack													
Ear buds	None													
Media capable	Audio formats: MP3, AAC, AAC+, eAAC+, WAV, PCM, WMA Video formats: MPEG-4, H.263, H.264, VC-1, WMV9, Xvid													
Control buttons	Power button, volume control button, reset switch, 4 function buttons (Home, Back, Open Browser, Display Lock)													
Keyboard folio case	<i>Some:</i> ThinkPad Tablet Keyboard Folio Case, connects with system via USB 2.0, 6 row, TrackPoint® pointing device, leather cover, magnetic 3-position landscape stand													
ThinkPad tablet dock	<i>Some:</i> ThinkPad Tablet Dock, one USB 2.0, one micro-USB 2.0 (not for power supply), microphone input jack, headphone jack, DC-IN connector (supports 65W AC Adapter, RapidCharge)													
Light sensor	Ambient Light Sensor													
Proximity sensor	Proximity sensor, Azoteq IQS128													
G-sensor	Accelerometer (G) sensor, supports 3-axis accelerometer													
Gyroscope	3-axis gyroscope													
eCompass	3-axis electronic compass, AKM AK8975C													
Platform	NVIDIA Tegra 2 T20													
Ports	One USB 2.0, one micro-USB 2.0 (power supply / charging support), one mini-HDMI, headphone/microphone combo jack, one ThinkPad Tablet Dock connector													
WLAN	11b/g/n wireless ⁴ , Azurewave AW-NH931 module, WiFi + BT combo chip													
WWAN	None													
Carrier	None													
GPS	Global Positioning System, Broadcom BCM4751													
Bluetooth™	Bluetooth 2.1+EDR wireless, integrated in Azurewave AW-NH931 combo chip, supports BT 3.0													
Dimensions ³	10.25" x 7.15" x 0.57"; 260.4mm x 181.7mm x 14.5mm													
Weight ²	<i>WiFi model:</i> from 1.64 lb (0.74kg); <i>3G model:</i> from 1.67 lb (0.76kg)													
Case color	Black													
Case material	PolyCarbonate/Acrylonitrile-Butadiene-Styrene (PC/ABS) plastic													
System states	Active, Deep Sleep, Off													
Battery - type	Lithium Polymer 2-cell (24Whr)													
Battery - life ¹⁰	up to 5 days (suspend); up to 10 hr (idle); up to 9 hr (WiFi browsing); up to 8 hr (3G browsing and video playback)													
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available											10W AC Adapter (via micro-USB) <i>Optional:</i> 65W AC Adapter (via Dock) ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²		

See footnotes for more detailed information
WE model(s) announced August 16, 2011
WE model(s) withdrawn effective December 2012

ThinkPad®



Lenovo® ThinkPad L420



Lenovo ThinkPad L420



Lenovo ThinkPad L420



Lenovo ThinkPad L420



Lenovo ThinkPad L420



Lenovo ThinkPad L420

ThinkPad® L420 7854 (TopSeller) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ² rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Finger print reader	Blue-tooth	Battery cells	Preload
7854-4UG	i5-2520M	4GBx1	14.0" HD	720p	320G 5400	Intel 6205 ²⁸	Ericsson	selectable	Finger	Blue	6	Pro 64
7854-4VG	i5-2410M	4GBx1	14.0" HD	720p	320G 5400	Intel 1000	WWAN upg		Finger	Blue	6	Pro 64
7854-4LG	i3-2310M	2GBx1	14.0" HD	720p	320G 5400	TP 11b/g/n	WWAN upg		Finger	Blue	6	Pro 64
7854-5CG	i5-2520M	4GBx1	14.0" HD	720p	500G 7200	Intel 6205	Ericsson	selectable	Finger	Blue	6	Pro 64
7854-5DG	i5-2430M	4GBx1	14.0" HD	720p	500G 7200	Intel 1000	WWAN upg		Finger	Blue	6	Pro 64
7854-5EG	i3-2350M	4GBx1	14.0" HD	720p	500G 7200	TP 11b/g/n	WWAN upg		Finger	Blue	6	Pro 64
7854-5HG	i5-2450M	4GBx1	14.0" HD	720p	500G 7200	Intel 6205	Ericsson	selectable	Finger	Blue	6	Pro 64
7854-5JG	i5-2450M	4GBx1	14.0" HD	720p	500G 7200	Intel 1000	WWAN upg		Finger	Blue	6	Pro 64
7854-5KG	i3-2350M	4GBx1	14.0" HD	720p	320G 7200	TP 11b/g/n	WWAN upg		Finger	Blue	6	Pro 64
7854-5LG	i5-2450M	4GBx1	14.0" HD	720p	320G 7200	Intel 6205	Ericsson	selectable	Finger	Blue	6	Pro 64

- **Small and medium business (SMB) model(s), part of the WE TopSeller™ Program**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

Positioning Processor	<p><i>Mainstream business performance; two spindles</i> Intel® Core™ i3-2310M processor (dual-core, 2.10GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology Intel Core i3-2350M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology Intel Core i5-2410M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (2.90GHz), HT technology Intel Core i5-2430M processor (dual-core, 2.40GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.0GHz), HT technology Intel Core i5-2450M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology Intel Core i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology</p>							<p>Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64</p> <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap 				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets							<p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 				
Optical SATA disk	DVD burner, 12.7mm high, fixed, not removable, tray-in <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, removable, upgradable <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, removable, upgradable, Active Protection System™											
mSATA™ SSD	None											
Widescreen display	14.0" (355mm) HD (1366x768) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio											
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus											
Integrated graphics	<p>Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>											
Keyboard	6-row, ThinkVantage button, spill-resistant, multimedia Fn keys											
TrackPoint®	TrackPoint® pointing device, Internet Scroll Bar ¹³ , magnifying glass											
Touch pad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch											
ThinkLight™	None											
Dimensions ³	14.0W" (WxDxH): 13.5" x 9.2" x 1.26–1.42"; 344mm x 233mm x 32–36mm											
Weight ²	4-cell: from 4.94 lb (2.24kg); 6-cell: from 5.14 lb (2.33kg); 9-cell: from 5.47 lb (2.48kg)											
Case material	Acrylonitrile-Butadiene-Styrene (ABS) plastic											
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell											
Battery - life ¹⁰	4-cell (32Whr): up to 3.9 hr; 6-cell (57Whr): up to 6.9 hr; 9-cell (94Whr): up to 11.6 hr											
Chipset	Mobile Intel HM65 Express Chipset											
ExpressCard	One slot (ExpressCard/34, ExpressCard/54)											
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)											
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor ¹¹ (VGA DB-15, DisplayPort), ethernet (RJ-45)											
PCIe Mini Card	Two PCI Express Mini Card slots											
PCIe WLAN ⁴	<p><i>Some:</i> 11b/g/n, PCIe Half Mini Card, ThinkPad 11b/g/n, 1x1 <i>Some:</i> 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Advanced-N 6205, 2x2</p>											
PCIe WWAN	<p><i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS</p>											
Carrier	<i>Some:</i> User selectable, contract required with service provider											
Modem	None											
Bluetooth™	Bluetooth 3.0 wireless, LED indicator											
Ethernet	Realtek® RTL8111DL Gigabit Network Connection											
Intel AMT	None											
Audio support	High Definition (HD) Audio, Realtek ALC269Q codec / stereo speakers, 1.5 watt x 2 / volume up, down, mute buttons / monaural digital mic, mic mute button, combo audio/mic jack							Supports ThinkVantage® technologies				
Security	Power-on password, hard disk password, supervisor password, security keyhole							65-watt AC adapter				
Security chip	Trusted Platform Module, TCG 1.2-compliant							EPEAT™ Gold rating				
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM							ENERGY STAR® 5.0-compliant				
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available							RoHS-compliant				
								International Warranty Service ¹⁷				
								24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				

See footnotes for more detailed information

WE model(s) announced February 22, March 1, or October 4, 2011, or January 17, January 24, or March 13, 2012

WE model(s) withdrawn effective December 2012

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(G-DMD4-1) February 2013

ThinkPad® L420 7827 - withdrawn

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ² rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Blue-tooth	Bat-tery cells	Workhorse (W) Global (G)	Preload
7827-5QG	i5-2540M	2GBx1	14.0" HD		250G 5400	Intel 6205 ²⁸	WWAN upg	Finger	Blue	6		Pro 64
7827-5RG	i5-2520M	4GBx1	14.0" HD	720p	320G 5400	TP 11b/g/n	WWAN upg		Blue	6		Pro 64
7827-5SG	i5-2520M	2GBx1	14.0" HD		250G 5400	TP 11b/g/n				6		Pro 64
7827-34G	i5-2520M	2GBx1	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg	Finger	Blue	6	W G	Pro 64
7827-5CG	i5-2520M	2GBx2	14.0" HD	720p	320G 5400	Intel 6205	WWAN upg	Finger	Blue	6		Pro 64
7827-33G	i5-2540M	4GBx1	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg	Finger	Blue	6	W G	Pro 64
7827-5XG	i3-2310M	4GBx1	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg	Finger	Blue	6		Pro 64

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<p><i>Mainstream business performance; two spindles</i> Intel® Core™ i3-2310M processor (dual-core, 2.10GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology Intel Core i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology</p>										<p>Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64</p> <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										<p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
Optical SATA disk	DVD burner, 12.7mm high, fixed, not removable, tray-in <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, removable, upgradable <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, removable, upgradable, Active Protection System™										
mSATA™ SSD	None										
Widescreen display	14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio										
Camera	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus										
Integrated graphics	<p>Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display;</p> <p><i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>										
Keyboard	6-row, ThinkVantage button, spill-resistant, multimedia Fn keys										
TrackPoint®	TrackPoint® pointing device, Internet Scroll Bar ¹³ , magnifying glass										
Touch pad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch										
ThinkLight™	None										
Dimensions ³	14.0W" (WxDxH): 13.5" x 9.2" x 1.26–1.42"; 344mm x 233mm x 32–36mm										
Weight ²	4-cell: from 4.94 lb (2.24kg); 6-cell: from 5.14 lb (2.33kg); 9-cell: from 5.47 lb (2.48kg)										
Case material	Acrylonitrile-Butadiene-Styrene (ABS) plastic										
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell										
Battery - life ¹⁰	4-cell (32Whr): up to 3.9 hr; 6-cell (57Whr): up to 6.9 hr; 9-cell (94Whr): up to 11.6 hr										
Chipset	Mobile Intel HM65 Express Chipset										
ExpressCard	One slot (ExpressCard/34, ExpressCard/54)										
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)										
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor ¹¹ (VGA DB-15, DisplayPort), ethernet (RJ-45)										
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots <i>Some:</i> 11b/g/n, PCIe Half Mini Card, ThinkPad 11b/g/n, 1x1 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2										
WWAN	<i>Some:</i> Wireless WAN upgradable										
Modem	None										
Bluetooth™	<i>Some:</i> Bluetooth 3.0 wireless, LED indicator										
Ethernet	Realtek® RTL8111DL Gigabit Network Connection										
Intel AMT	None										
Audio support	High Definition (HD) Audio, Realtek ALC269Q codec / stereo speakers, 1.5 watt x 2 / volume up, down, mute buttons / monaural digital mic, mic mute button, 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	<i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM										
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available										

See footnotes for more detailed information
 WE model(s) announced February 22 or April 19, 2011
 WE model(s) withdrawn effective December 2012

ThinkPad® L420 7829 (Onsite) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/msATA	Carrier	Finger print reader	Blue-tooth	Bat-tery cells	Workhorse (W) Global (G) GMP (P)	Pre-load
7829-4WG	i7-2620M	4GBx1	14.0" HD	720p	320G 7200	Intel 6205 ²⁸	Ericsson	selectable	Finger	Blue	6		Pro 64
7829-4XG	i5-2540M	4GBx1	14.0" HD	720p	320G 7200	Intel 6205	Ericsson	selectable	Finger	Blue	6		Pro 64
7829-4YG	i5-2540M	2GBx1	14.0" HD	720p	320G 5400	TP 11b/g/n	WWAN upg		Finger	Blue	6		Pro 64
7829-34G	i5-2520M	2GBx1	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg		Finger	Blue	6	W G P	Pro 64
7829-33G	i5-2540M	4GBx1	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg		Finger	Blue	6	W G P	Pro 64

- Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<p>Mainstream business performance; two spindles</p> <p>Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology</p> <p>Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology</p> <p>Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology</p>								<p>Preloaded operating system²⁰</p> <ul style="list-style-type: none"> - Genuine Windows[®] 7 Professional 64 <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap 	
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets								<p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 	
Optical SATA disk	<p>DVD burner, 12.7mm high, fixed, not removable, tray-in</p> <p><i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, removable, upgradable</p> <p><i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, removable, upgradable, Active Protection System™</p>									
mSATA™ SSD	None								<p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 	
Widescreen display Camera	<p>14.0" (355mm) HD (1366x768) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio</p> <p>HD720p resolution, wider view angle, low light sensitive, fixed focus</p>									
Integrated graphics	<p>Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display;</p> <p><i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>								<p>Supports ThinkVantage® technologies</p>	
Keyboard TrackPoint® Touch pad ThinkLight™	<p>6-row, ThinkVantage button, spill-resistant, multimedia Fn keys</p> <p>TrackPoint® pointing device, Internet Scroll Bar¹³, magnifying glass</p> <p>UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch</p> <p>None</p>									
Dimensions ³ Weight ² Case material Battery - type Battery - life ¹⁰	<p>14.0W" (WxDxH): 13.5" x 9.2" x 1.26–1.42"; 344mm x 233mm x 32–36mm</p> <p><i>4-cell:</i> from 4.94 lb (2.24kg); <i>6-cell:</i> from 5.14 lb (2.33kg); <i>9-cell:</i> from 5.47 lb (2.48kg)</p> <p>Acrylonitrile-Butadiene-Styrene (ABS) plastic</p> <p>Lithium Ion 4-cell, 6-cell, or 9-cell</p> <p><i>4-cell (32Whr):</i> up to 3.9 hr; <i>6-cell (57Whr):</i> up to 6.9 hr; <i>9-cell (94Whr):</i> up to 11.6 hr</p>								<p>65-watt AC adapter</p> <p>EPEAT™ Gold rating</p> <p>ENERGY STAR® 5.0-compliant</p> <p>RoHS-compliant</p> <p>International Warranty Service¹⁷</p> <p>24 hour x 7 day¹⁸ toll-free support during the warranty period¹²</p>	
Chipset ExpressCard Multicard Reader Ports	<p>Mobile Intel HM65 Express Chipset</p> <p>One slot (ExpressCard/34, ExpressCard/54)</p> <p>4-in-1 reader (MMC, SD, SDHC, SDXC)</p> <p>Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor¹¹ (VGA DB-15, DisplayPort), ethernet (RJ-45)</p>									
PCIe Mini Card WLAN ⁴ WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<p>Two PCI Express Mini Card slots</p> <p><i>Some:</i> 11b/g/n, PCIe Half Mini Card, ThinkPad 11b/g/n, 1x1</p> <p><i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2</p> <p><i>Some:</i> Wireless WAN upgradable</p> <p><i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS</p> <p><i>Some:</i> User selectable, contract required with service provider</p> <p>None</p> <p>Bluetooth 3.0 wireless, LED indicator</p> <p>Realtek® RTL8111DL Gigabit Network Connection</p> <p>None</p> <p>High Definition (HD) Audio, Realtek ALC269Q codec / stereo speakers, 1.5 watt x 2 / volume up, down, mute buttons / monaural digital mic, mic mute button, combo audio/mic jack</p>								<p>65-watt AC adapter</p> <p>EPEAT™ Gold rating</p> <p>ENERGY STAR® 5.0-compliant</p> <p>RoHS-compliant</p> <p>International Warranty Service¹⁷</p> <p>24 hour x 7 day¹⁸ toll-free support during the warranty period¹²</p>	
Security Security chip Fingerprint reader Limited warranty ¹²	<p>Power-on password, hard disk password, supervisor password, security keyhole</p> <p>Trusted Platform Module, TCG 1.2-compliant</p> <p>UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM</p> <p>3-years/1-year battery, limited onsite service²⁴, 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available</p>									

See footnotes for more detailed information
 WE model(s) announced February 22, 2011
 WE model(s) withdrawn effective December 2012

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 (G-DMD4-3) February 2013

ThinkPad®



Lenovo® ThinkPad L520



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ThinkPad® L520 7859 (TopSeller) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁸ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Blue-tooth	Battery cells	Preload
7859-52G	i5-2410M	4GBx1	15.6" HD	720p	320G 5400	Intel 1000	WWAN upg	Finger	Blue	6	Pro 64
7859-53G	i3-2310M	2GBx1	15.6" HD	720p	320G 5400	Intel 1000	WWAN upg	Finger	Blue	6	Pro 64
7859-4MG	i5-2410M	2GBx1	15.6" HD+	720p	320G 5400	TP 11b/g/n	WWAN upg	Finger	Blue	6	Pro 64
7859-5BG	i5-2520M	4GBx1	15.6" HD+	720p	500G 7200	Intel 6205 ²⁸	WWAN upg	Finger	Blue	9	Pro 64
7859-5AG	i5-2410M	4GBx1	15.6" HD+	720p	320G 5400	Intel 6205	WWAN upg	Finger	Blue	6	Pro 64
7859-5SG	i5-2430M	4GBx1	15.6" HD+	720p	500G 7200	Intel 6205	WWAN upg	Finger	Blue	6	Pro 64
7859-5TG	i5-2430M	4GBx1	15.6" HD	720p	500G 7200	Intel 1000	WWAN upg	Finger	Blue	6	Pro 64
7859-5UG	i3-2350M	4GBx1	15.6" HD	720p	500G 7200	Intel 1000	WWAN upg	Finger	Blue	6	Pro 64
7859-6BG	i5-2450M	4GBx1	15.6" HD+	720p	500G 7200	Intel 6205	WWAN upg	Finger	Blue	6	Pro 64
7859-6CG	i5-2450M	4GBx1	15.6" HD	720p	500G 7200	Intel 1000	WWAN upg	Finger	Blue	6	Pro 64
7859-6KG	i3-2350M	4GBx1	15.6" HD	720p	320G 7200	Intel 1000	WWAN upg	Finger	Blue	6	Pro 64
7859-6LG	i5-2450M	4GBx1	15.6" HD+	720p	320G 7200	Intel 6205	WWAN upg	Finger	Blue	6	Pro 64

- **Small and medium business (SMB) model(s), part of the WE TopSeller™ Program**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

Positioning	<i>Mainstream business performance; two spindles</i>							Preloaded operating system²⁰				
Processor	Intel® Core™ i3-2310M processor (dual-core, 2.10GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology Intel Core i3-2350M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology Intel Core i5-2410M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (2.90GHz), HT technology Intel Core i5-2430M processor (dual-core, 2.40GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.0GHz), HT technology Intel Core i5-2450M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology Intel Core i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology							- Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap 				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets							Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 				
Optical SATA disk	DVD burner, 12.7mm high, fixed, not removable, tray-in <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, removable, upgradable <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, removable, upgradable, Active Protection System™											
mSATA™ SSD	None											
Widescreen display	<i>Some:</i> 15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio <i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio											
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus											
Integrated graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)											
Keyboard	6-row, ThinkVantage button, spill-resistant, multimedia Fn keys											
TrackPoint®	TrackPoint® pointing device, Internet Scroll Bar ¹³ , magnifying glass											
Touch pad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch											
ThinkLight™	None											
Dimensions ³	15.6W" (WxDxH): 15" x 9.7" x 1.26–1.42"; 380mm x 247mm x 32–36mm											
Weight ²	4-cell: from 5.54 lb (2.51kg); 6-cell: from 5.75 lb (2.61kg); 9-cell: from 6.07 lb (2.75kg)											
Case material	Acrylonitrile-Butadiene-Styrene (ABS) plastic											
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell											
Battery - life ¹⁰	4-cell (32Whr): up to 3.5 hr; 6-cell: (57Whr) up to 6.3 hr; 9-cell (94Whr): up to 10.7 hr											
Chipset	Mobile Intel HM65 Express Chipset											
ExpressCard	One slot (ExpressCard/34, ExpressCard/54)											
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)											
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor ¹¹ (VGA DB-15, DisplayPort), ethernet (RJ-45)											
PCIe Mini Card	Two PCI Express Mini Card slots											
PCIe WLAN ⁴	<i>Some:</i> 11b/g/n, PCIe Half Mini Card, ThinkPad 11b/g/n, 1x1 <i>Some:</i> 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Advanced-N 6205, 2x2											
PCIe WWAN	Wireless WAN upgradable											
Carrier	None											
Modem	None											
Bluetooth™	Bluetooth 3.0 wireless, LED indicator											
Ethernet	Realtek® RTL8111DL Gigabit Network Connection							Supports ThinkVantage® technologies				
Intel AMT	None											
Audio support	High Definition (HD) Audio, Realtek ALC269Q codec / stereo speakers, 1.5 watt x 2 / volume up, down, mute buttons / monaural digital mic, mic mute button, combo audio/mic jack							65-watt AC adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				
Security	Power-on password, hard disk password, supervisor password, security keyhole											
Security chip	Trusted Platform Module, TCG 1.2-compliant											
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM											
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available											

See footnotes for more detailed information

WE model(s) announced February 22, March 1, April 5, or October 4, 2011, or January 17, January 24, or March 13, 2012

WE model(s) withdrawn effective December 2012

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(G-RUB4-1) February 2013

ThinkPad® L520 7859 (TopSeller) - DOS - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁹ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Blue-tooth	Battery cells	Preload
7859-54G	i3-2310M	2GBx1	15.6" HD	720p	320G 5400	Intel 1000	WWAN upg	Finger	Blue	6	DOS-Lic.
7859-5VG	i3-2350M	4GBx1	15.6" HD	720p	500G 7200	Intel 1000	WWAN upg	Finger	Blue	6	DOS-Lic.

- *Small and medium business (SMB) model(s), part of the WE TopSeller™ Program*

Positioning Processor	<i>Mainstream business performance; two spindles</i> Intel® Core™ i3-2310M processor (dual-core, 2.10GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology Intel Core i3-2350M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology	Preloaded operating system²⁰ - DOS-Lic.
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	
Optical SATA disk	DVD burner, 12.7mm high, fixed, not removable, tray-in <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, removable, upgradable <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, removable, upgradable, Active Protection System™	
mSATA™ SSD	None	
Widescreen display	15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio	
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus	
Integrated graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)	
Keyboard	6-row, ThinkVantage button, spill-resistant, multimedia Fn keys	
TrackPoint®	TrackPoint® pointing device, Internet Scroll Bar ¹³ , magnifying glass	
Touch pad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch	
ThinkLight™	None	
Dimensions ³	<i>15.6W"</i> (WxDxH): 15" x 9.7" x 1.26–1.42"; 380mm x 247mm x 32–36mm	
Weight ²	<i>4-cell:</i> from 5.54 lb (2.51kg); <i>6-cell:</i> from 5.75 lb (2.61kg); <i>9-cell:</i> from 6.07 lb (2.75kg)	
Case material	Acrylonitrile-Butadiene-Styrene (ABS) plastic	
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell	
Battery - life ¹⁰	<i>4-cell (32Whr):</i> up to 3.5 hr; <i>6-cell: (57Whr)</i> up to 6.3 hr; <i>9-cell (94Whr):</i> up to 10.7 hr	
Chipset	Mobile Intel HM65 Express Chipset	
ExpressCard	One slot (ExpressCard/34, ExpressCard/54)	
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)	
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor ¹¹ (VGA DB-15, DisplayPort), ethernet (RJ-45)	
PCIe Mini Card	Two PCI Express Mini Card slots	
WLAN ⁴	11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2	
WWAN	Wireless WAN upgradable	
Modem	None	
Bluetooth™	Bluetooth 3.0 wireless, LED indicator	
Ethernet	Realtek® RTL8111DL Gigabit Network Connection	
Intel AMT	None	
Audio support	High Definition (HD) Audio, Realtek ALC269Q codec / stereo speakers, 1.5 watt x 2 / volume up, down, mute buttons / monaural digital mic, mic mute button, combo audio/mic jack	Supports ThinkVantage® technologies
Security	Power-on password, hard disk password, supervisor password, security keyhole	65-watt AC adapter
Security chip	Trusted Platform Module, TCG 1.2-compliant	RoHS-compliant
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM	International Warranty Service ¹⁷
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available	24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²

See footnotes for more detailed information

WE model(s) announced March 1 or October 4, 2011

WE model(s) withdrawn effective December 2012

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(G-RUB4-2) February 2013

ThinkPad® L520 5016 - withdrawn

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Blue-tooth	Bat- tery cells	Workhorse (W) Global (G) Preload
5016-5QG	i5-2540M	2GBx1	15.6" HD	720p	320G 5400	Intel 1000	WWAN upg	Finger	Blue	6	Pro 64
5016-5RG	i5-2540M	2GBx1	15.6" HD		250G 5400	TP 11b/g/n		Finger	Blue	6	Pro 64
5016-5TG	i5-2520M	2GBx1	15.6" HD		250G 5400	TP 11b/g/n				6	Pro 64
5016-33G	i5-2540M	4GBx1	15.6" HD	720p	320G 7200	Intel 6205 ²⁸	WWAN upg	Finger	Blue	6	W G Pro 64

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	Mainstream business performance; two spindles Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology							Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets							Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap				
Optical SATA disk	DVD burner, 12.7mm high, fixed, not removable, tray-in <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, removable, upgradable <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, removable, upgradable, Active Protection System™							Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
mSATA™ SSD	None											
Widescreen display Camera	15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio <i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus							Supports ThinkVantage® technologies				
Integrated graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200@60Hz (single-link DVI-D via optional cable)											
Keyboard TrackPoint® Touch pad ThinkLight™	6-row, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch None							65-watt AC adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				
Dimensions ³ Weight ² Case material Battery - type Battery - life ¹⁰	15.6W" (WxDxH): 15" x 9.7" x 1.26–1.42"; 380mm x 247mm x 32–36mm 4-cell: from 5.54 lb (2.51kg); 6-cell: from 5.75 lb (2.61kg); 9-cell: from 6.07 lb (2.75kg) Acrylonitrile-Butadiene-Styrene (ABS) plastic Lithium Ion 4-cell, 6-cell, or 9-cell 4-cell (32Whr): up to 3.5 hr; 6-cell: (57Whr) up to 6.3 hr; 9-cell (94Whr): up to 10.7 hr											
Chipset ExpressCard Multicard Reader Ports	Mobile Intel HM65 Express Chipset One slot (ExpressCard/34, ExpressCard/54) 4-in-1 reader (MMC, SD, SDHC, SDXC) Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor ¹¹ (VGA DB-15, DisplayPort), ethernet (RJ-45)							65-watt AC adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				
PCIe Mini Card WLAN ⁴ WWAN Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots <i>Some:</i> 11b/g/n, PCIe Half Mini Card, ThinkPad 11b/g/n, 1x1 <i>Some:</i> 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Advanced-N 6205, 2x2 <i>Some:</i> Wireless WAN upgradable None <i>Some:</i> Bluetooth 3.0 wireless, LED indicator Realtek® RTL8111DL Gigabit Network Connection None High Definition (HD) Audio, Realtek ALC269Q codec / stereo speakers, 1.5 watt x 2 / volume up, down, mute buttons / monaural digital mic, mic mute button, 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> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM							65-watt AC adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available											

See footnotes for more detailed information
WE model(s) announced February 22, 2011
WE model(s) withdrawn effective December 2012

ThinkPad® L520 5017 (Onsite) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Finger print reader	Blue-tooth	Bat-tery cells	Workhorse (W) Global (G) GMP (P)	Pre-load
5017-4JG	i7-2620M	4GBx1	15.6" HD+	720p	320G 7200	Intel 6205 ²⁸	WWAN upg		Finger	Blue	6		Pro 64
5017-4LG	i5-2520M	4GBx1	15.6" HD+	720p	320G 5400	Intel 6205	Ericsson	selectable	Finger	Blue	6		Pro 64
5017-4MG	i5-2520M	2GBx1	15.6" HD	720p	320G 5400	Intel 1000	WWAN upg		Finger	Blue	6		Pro 64
5017-33G	i5-2540M	4GBx1	15.6" HD	720p	320G 7200	Intel 6205	WWAN upg		Finger	Blue	6	W G P	Pro 64

- Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<p><i>Mainstream business performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology</p>								<p>Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64</p> <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap <p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets											
Optical SATA disk	DVD burner, 12.7mm high, fixed, not removable, tray-in <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, removable, upgradable <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, removable, upgradable, Active Protection System™											
mSATA™ SSD	None											
Widescreen display	<i>Some:</i> 15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio <i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio											
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus											
Integrated graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)											
Keyboard TrackPoint® Touch pad ThinkLight™	6-row, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch None											
Dimensions ³ Weight ² Case material Battery - type Battery - life ¹⁰	15.6W" (WxDxH): 15" x 9.7" x 1.26–1.42"; 380mm x 247mm x 32–36mm 4-cell: from 5.54 lb (2.51kg); 6-cell: from 5.75 lb (2.61kg); 9-cell: from 6.07 lb (2.75kg) Acrylonitrile-Butadiene-Styrene (ABS) plastic Lithium Ion 4-cell, 6-cell, or 9-cell 4-cell (32Whr): up to 3.5 hr; 6-cell (57Whr) up to 6.3 hr; 9-cell (94Whr): up to 10.7 hr											
Chipset ExpressCard Multicard Reader Ports	Mobile Intel HM65 Express Chipset One slot (ExpressCard/34, ExpressCard/54) 4-in-1 reader (MMC, SD, SDHC, SDXC) Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor ¹¹ (VGA DB-15, DisplayPort), ethernet (RJ-45)											
PCIe Mini Card WLAN ⁴ 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 1000, 1x2 <i>Some:</i> 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, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS <i>Some:</i> User selectable, contract required with service provider None Bluetooth 3.0 wireless, LED indicator Realtek® RTL8111DL Gigabit Network Connection None High Definition (HD) Audio, Realtek ALC269Q codec / stereo speakers, 1.5 watt x 2 / volume up, down, mute buttons / monaural digital mic, mic mute button, combo audio/mic jack								Supports ThinkVantage® technologies			
Security Security chip Fingerprint reader Limited warranty ¹²	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM 3-years/1-year battery, limited onsite service ²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available								65-watt AC adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			

See footnotes for more detailed information
 WE model(s) announced February 22, 2011
 WE model(s) withdrawn effective December 2012

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ThinkPad®



Lenovo® ThinkPad T420



Lenovo ThinkPad T420



Lenovo ThinkPad T420



Lenovo ThinkPad T420



ThinkPad triple external monitor configuration
using NVIDIA's Optimus technology



Lenovo ThinkPad T420

ThinkPad® T420 4177 (TopSeller) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁸ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/ mSATA	Modem	Finger print reader	Blue-tooth	Bat-tery cells	Intel vPro	Preload	Ann Date (mm/yy)
4177-25G	i5-2410M	2GBx1	14.0" HD	720p	320G 5400	TP 11b/g/n	WWAN upg	Modem	None	BT	6	No	Pro 64	02/11

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2410M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (2.90GHz), HT technology										Preloaded operating system ²⁰ Genuine Windows® 7 Professional 64			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications ¹⁴ (only some listed)			
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap 			
mSATA™ SSD	None													
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio										Preloaded applications ¹⁴ (only some listed)			
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus										<ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)													
Keyboard TrackPoint®	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass													
Touchpad UltraNav™	wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch													
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions ³	<i>14.0W" (WxDxH):</i> 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm													
Weight ²	<i>4-cell:</i> from 4.65 lb (2.11kg); <i>6-cell:</i> from 4.84 lb (2.20kg); <i>9-cell:</i> from 5.22 lb (2.37kg)													
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic													
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery													
Battery - life ¹⁰	<i>6-cell (57Whr):</i> up to 9.0 hr; <i>9-cell (94Whr):</i> up to 15.0 hr; <i>9-cell plus Slice battery:</i> up to 30 hr													
Chipset	Mobile Intel QM67 Express Chipset													
ExpressCard	One slot (ExpressCard/34)													
Smart Card read	None													
Multicard reader	4-in-1 reader (MMC, SD, SDHC, SDXC)													
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)													
PCIe Mini Card	Two PCI Express® Mini Card slots													
PCIe WLAN ⁴	11b/g/n, PCIe Half Mini Card, ThinkPad 11b/g/n, 1x1													
PCIe WWAN	Wireless WAN upgradable													
Carrier	None													
Modem	56K V.92 modem													
IEEE 1394	None										Supports ThinkVantage technologies			
Bluetooth™	Bluetooth 3.0 wireless, LED indicator										<i>Integrated model:</i> 65W AC Adapter			
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1										<i>Optimus™ model:</i> 90W AC Adapter			
Intel AMT	None										ThinkPad Roll Cage (one-piece magnesium frame)			
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack										EPEAT™ Gold rating			
Security	Power-on password, hard disk password, supervisor password, security keyhole										ENERGY STAR® 5.0-compliant			
Security chip	Trusted Platform Module, TCG 1.2-compliant										ROHS-compliant			
Fingerprint reader	None										International Warranty Service ¹⁷			
Limited Warranty ¹²	1-year - depot repair service / service upgrades ²² available										24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			

See footnotes for more detailed information

WE model(s) announced February 22, 2011

WE model(s) withdrawn effective December 2012

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(G-NZ3-1) February 2013

ThinkPad® T420 4178 (TopSeller) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/ mSATA	Carrier	Modem	Finger print reader	Blue-tooth	Battery Intel cells vPro	Preload	Ann Date (mm/yy)
4178-B9G	i5-2430M	4GBx1	14.0" HD	720p	500G 7200	Intel 1000	WWAN upg	None	None	Finger	BT	6	No	Pro 64 10/11
4178-83G	i5-2410M	2GBx2	14.0" HD	720p	320G 7200	Intel 1000	WWAN upg	None	Modem	Finger	BT	6	No	Pro 64 03/11
4178-BAG	i3-2350M	4GBx1	14.0" HD	720p	320G 7200	Intel 1000	WWAN upg	None	None	Finger	BT	6	No	Pro 64 10/11
4178-84G	i3-2310M	2GBx2	14.0" HD	720p	320G 7200	Intel 1000	WWAN upg	None	Modem	Finger	BT	6	No	Pro 64 03/11
4178-CJG	i5-2450M	4GBx1	14.0" HD	720p	500G 7200	Intel 1000	WWAN upg	None	None	Finger	BT	6	No	Pro 64 01/12

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning	<i>Premiere performance; two spindles</i>										Preloaded operating system ²⁰			
Processor	Intel® Core™ i3-2310M processor (dual-core, 2.10GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology Intel Core i3-2350M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology Intel Core i5-2410M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (2.90GHz), HT technology Intel Core i5-2430M processor (dual-core, 2.40GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.0GHz), HT technology Intel Core i5-2450M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology										Genuine Windows® 7 Professional 64 Ready to install applications ¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)			
Optical	DVD burner, 12.7mm Ultrabay Enhanced, removable													
Ultrabay	One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access													
Disk	<i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive													
mSATA™ SSD	None													
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio													
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)													
Keyboard	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys													
TrackPoint®	TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass													
Touchpad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch													
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions ³	14.0W" (WxDxH): 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm													
Weight ²	4-cell: from 4.65 lb (2.11kg); 6-cell: from 4.84 lb (2.20kg); 9-cell: from 5.22 lb (2.37kg)													
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic													
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery													
Battery - life ¹⁰	6-cell (57Whr): up to 9.0 hr; 9-cell (94Whr): up to 15.0 hr; 9-cell plus Slice battery: up to 30 hr													
Chipset	Mobile Intel QM67 Express Chipset													
ExpressCard	One slot (ExpressCard/34)													
Smart Card read	None													
Multicard reader	4-in-1 reader (MMC, SD, SDHC, SDXC)													
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)													
PCIe Mini Card	Two PCI Express® Mini Card slots													
PCIe WLAN ⁴	11b/g/n wireless, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2													
PCIe WWAN	Wireless WAN upgradable													
Carrier	None													
Modem	<i>Some:</i> 56K V.92 modem													
IEEE 1394	None													
Bluetooth™	Bluetooth 3.0 wireless, LED indicator										Supports ThinkVantage technologies			
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1										<i>Integrated model:</i> 65W AC Adapter			
Intel AMT	None										<i>Optimus™ model:</i> 90W AC Adapter			
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack										ThinkPad Roll Cage (one-piece magnesium frame)			
Security	Power-on password, hard disk password, supervisor password, security keyhole										EPEAT™ Gold rating			
Security chip	Trusted Platform Module, TCG 1.2-compliant										ENERGY STAR® 5.0-compliant			
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										ROHS-compliant			
Limited Warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available										International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			

See footnotes for more detailed information

WE model(s) announced March 1 or October 4, 2011, or January 17, 2012

WE model(s) withdrawn effective December 2012

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(G-NZ3-2) February 2013

ThinkPad® T420 4178 (Optimus) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Smart Card Reader	Finger print reader	Battery Intel cells vPro	Ann Date Preload (mm/yy)
4178-B8G	i5-2430M	4GBx1	14.0" HD+	720p	500G 7200	Intel 1000	Ericsson	select	None	None	Finger	6 No	Pro 64 10/11
4178-82G	i5-2410M	4GBx1	14.0" HD+	720p	500G 7200	Intel 1000	Ericsson	select	Modem	None	Finger	6 No	Pro 64 03/11
4178-CHG	i5-2450M	4GBx1	14.0" HD+	720p	500G 7200	Intel 1000	Ericsson	select	None	Smart	Finger	6 No	Pro 64 01/12

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2410M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (2.90GHz), HT technology Intel Core i5-2430M processor (dual-core, 2.40GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.0GHz), HT technology Intel Core i5-2450M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology										Preloaded operating system ²⁰ Genuine Windows® 7 Professional 64 Ready to install applications ¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive										
mSATA™ SSD	None										
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio										
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus										
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M , PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports three independent displays; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)										
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										
Dimensions ³ Weight ² Case material	<i>14.0W"</i> (WxDxH): 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm 4-cell: from 4.65 lb (2.11kg); 6-cell: from 4.84 lb (2.20kg); 9-cell: from 5.22 lb (2.37kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic										
Battery - type Battery - life ¹⁰	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery 6-cell (57Whr): up to 8.8 hr; 9-cell (94Whr): up to 14.7 hr; 9-cell plus Slice battery: up to 29.5 hr										
Chipset	Mobile Intel QM67 Express Chipset										
ExpressCard Smart Card read Multicard reader Ports	One slot (ExpressCard/34) <i>Some:</i> Smart Card reader 4-in-1 reader (MMC, SD, SDHC, SDXC) Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)										
PCIe Mini Card PCIe WLAN ⁴ PCIe WWAN	Two PCI Express Mini Card slots 11b/g/n wireless, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 Wireless WAN, Ericsson F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS										
Carrier Modem IEEE 1394 Bluetooth™ Ethernet Intel AMT Audio support	User selectable, contract required with service provider <i>Some:</i> 56K V.92 modem None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 None High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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 UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										
Limited Warranty ¹²	3-years /1-yr battery - depot repair service / service upgrades ²² available										

See footnotes for more detailed information

WE model(s) announced March 1 or October 4, 2011, or January 17, 2012
WE model(s) withdrawn effective December 2012

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ThinkPad® T420 4179 - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/ mSATA	Carrier	IEEE 1394	Finger print reader	Blue-tooth	Bat-tery cells	Intel vPro	Preload	Ann Date (mm/yy)
4179-GEG	i5-2520M	2GBx2	14.0" HD	No	320G 7200	Intel 1000	WWAN upg	None	1394	None	BT	6	No	Pro 64	03/11

- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology										Preloaded operating system ²⁰ Genuine Windows® 7 Professional 64				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications ¹⁴ (only some listed)				
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap 				
mSATA™ SSD	None														
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio										Preloaded applications ¹⁴ (only some listed)				
Camera	None										<ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 				
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)														
Keyboard TrackPoint®	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass														
Touchpad ThinkLight™	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions														
Dimensions ³	<i>14.0W" (WxDxH):</i> 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm														
Weight ²	<i>4-cell:</i> from 4.65 lb (2.11kg); <i>6-cell:</i> from 4.84 lb (2.20kg); <i>9-cell:</i> from 5.22 lb (2.37kg)														
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic														
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery														
Battery - life ¹⁰	<i>6-cell (57Whr):</i> up to 9.0 hr; <i>9-cell (94Whr):</i> up to 15.0 hr; <i>9-cell plus Slice battery:</i> up to 30 hr														
Chipset	Mobile Intel QM67 Express Chipset														
ExpressCard	One slot (ExpressCard/34)														
Smart Card read	None														
Multicard reader	4-in-1 reader (MMC, SD, SDHC, SDXC)														
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)														
PCIe Mini Card	Two PCI Express® Mini Card slots														
PCIe WLAN ⁴	11b/g/n wireless, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2														
PCIe WWAN	Wireless WAN upgradable														
Carrier	None														
Modem	None														
IEEE 1394	IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)										Supports ThinkVantage technologies				
Bluetooth™	Bluetooth 3.0 wireless, LED indicator										<i>Integrated model:</i> 65W AC Adapter <i>Optimus™ model:</i> 90W AC Adapter				
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1										ThinkPad Roll Cage (one-piece magnesium frame)				
Intel AMT	None										EPEAT™ Gold rating				
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack										ENERGY STAR® 5.0-compliant				
Security	Power-on password, hard disk password, supervisor password, security keyhole										ROHS-compliant				
Security chip	Trusted Platform Module, TCG 1.2-compliant										International Warranty Service ¹⁷				
Fingerprint reader	None										24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				
Limited Warranty ¹²	1-year - depot repair service / service upgrades ²² available														

See footnotes for more detailed information

WE model(s) announced March 1, 2011

WE model(s) withdrawn effective December 2012

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(G-NZ3-4) February 2013

ThinkPad® T420 4180 - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/ mSATA	Modem	IEEE 1394	Smart Card Reader	Finger print reader	Bat-tery Intel vPro	Global (G) Pre-load	Ann Date (mm/yy)
4180-PCG	i5-2520M	4GBx1	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg	None	1394	Smart	Finger	BT 6	vPro	Pro 64 04/11
4180-PBG	i5-2520M	4GBx1	14.0" HD	720p	320G 7200	Intel 6205	Ericsson	None	1394	Smart	Finger	BT 6	vPro	Pro 64 04/11
4180-PAG	i5-2520M	4GBx1	14.0" HD	720p	128G SSD	Intel 6205	WWAN upg	None	None	None	Finger	BT 6	vPro	Pro 64 04/11
4180-MNG	i5-2520M	4GBx1	14.0" HD	720p	500G 7200	Intel 6205	WWAN upg	None	1394	None	Finger	BT 6	vPro	Pro 64 02/11
4180-MBG	i5-2540M	4GBx1	14.0" HD+	720p	320G 7200	Intel 6205	WWAN upg	Modem	None	None	Finger	BT 6	vPro	Pro 64 02/11
4180-M9G	i5-2520M	2GBx1	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg	Modem	None	None	None	BT 6	vPro	Pro 64 02/11
4180-63G	i5-2540M	2GBx2	14.0" HD+	720p	320G 7200	Intel 6205	WWAN upg	None	1394	None	Finger	BT 6	vPro	Pro 64 02/11
4180-62G	i5-2520M	2GBx2	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg	None	1394	None	None	BT 6	vPro	Pro 64 02/11
4180-QFG	i5-2520M	4GBx1	14.0" HD	720p	160G SSD	Intel 6205	WWAN upg	None	None	None	Finger	BT 6	vPro	Pro 64 01/12

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology	Preloaded operating system²⁰ Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed)
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive	Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
mSATA™ SSD	None	
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio	
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus	
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)	
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions ³ Weight ² Case material	<i>14.0W" (WxDxH):</i> 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm <i>4-cell:</i> from 4.65 lb (2.11kg); <i>6-cell:</i> from 4.84 lb (2.20kg); <i>9-cell:</i> from 5.22 lb (2.37kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic	
Battery - type Battery - life ¹⁰	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery <i>6-cell (57Whr):</i> up to 9.0 hr; <i>9-cell (94Whr):</i> up to 15.0 hr; <i>9-cell plus Slice battery:</i> up to 30 hr	
Chipset	Mobile Intel QM67 Express Chipset	
ExpressCard Smart Card read Multicard reader Ports	One slot (ExpressCard/34) <i>Some:</i> Smart Card reader 4-in-1 reader (MMC, SD, SDHC, SDXC) Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)	
PCIe Mini Card PCIe WLAN ⁴ PCIe WWAN	Two PCI Express® Mini Card slots 11a/b/g/n ²⁸ , PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS	
Carrier Modem IEEE 1394 Bluetooth™ Ethernet Intel AMT	<i>Some:</i> User selectable, contract required with service provider <i>Some:</i> 56K V.92 modem <i>Some:</i> IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard) Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT)	Supports ThinkVantage technologies
Audio support Security Security chip Fingerprint reader	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	Integrated model: 65W AC Adapter Optimus™ model: 90W AC Adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
Limited Warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available	

See footnotes for more detailed information

WE model(s) announced February 22, April 5, or April 19, 2011, or January 3, 2012
WE model(s) withdrawn effective December 2012

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ThinkPad® T420 4180 (Optimus) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	IEEE 1394	Finger print reader	Blue-tooth	Bat-tery	Global (G) Intel vPro GMP (P)	Pre-load	Ann Date (mm/yy)
4180-65G	i5-2540M	2GBx2	14.0" HD+	720p	500G 7200	Intel 6205	WWAN upg	None	1394	Finger	BT	9	vPro G	Pro 64	02/11
4180-64G	i5-2520M	2GBx2	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg	None	1394	None	BT	6	vPro G	Pro 64	02/11

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology	Preloaded operating system ²⁰ Genuine Windows® 7 Professional 64 Ready to install applications ¹⁴ (only some listed)
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive	Preloaded applications ¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
mSATA™ SSD	None	
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio	
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus	
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M , PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports three independent displays; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)	
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions ³ Weight ² Case material	<i>14.0W" (WxDxH):</i> 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm <i>4-cell:</i> from 4.65 lb (2.11kg); <i>6-cell:</i> from 4.84 lb (2.20kg); <i>9-cell:</i> from 5.22 lb (2.37kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic	
Battery - type Battery - life ¹⁰	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery <i>6-cell (57Whr):</i> up to 8.8 hr; <i>9-cell (94Whr):</i> up to 14.7 hr; <i>9-cell plus Slice battery:</i> up to 29.5 hr	
Chipset	Mobile Intel QM67 Express Chipset	
ExpressCard Smart Card reader Multicard reader Ports	One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)	
PCIe Mini Card PCIe WLAN ⁴ PCIe WWAN Carrier Modem IEEE 1394 Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11a/b/g/n ²⁸ , PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable None None None IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard) Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited Warranty ¹²	3-years /1-yr battery - depot repair service / service upgrades ²² available	Supports ThinkVantage technologies <i>Integrated model:</i> 65W AC Adapter <i>Optimus™ model:</i> 90W AC Adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²

See footnotes for more detailed information
WE model(s) announced February 22, 2011
WE model(s) withdrawn effective December 2012

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(G-NZ3-6) February 2013

ThinkPad® T420 4236 (Onsite) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	IEEE 1394	Smart Card Reader	Finger-print reader	Bat-tery cells	Intel vPro	Global (G) Pre-load	Ann Date (mm/yy)
4236-PAG	i5-2520M	4GBx1	14.0" HD	720p	128G SSD	Intel 6205	upg	None	None	None	None	Finger	6	vPro	G P	Pro 64 04/11
4236-P3G	i5-2520M	2GBx2	14.0" HD	720p	320G 7200	Intel 6205	Ericsson	select	Modem	None	None	Finger	6	vPro	G P	Pro 64 03/11
4236-NUG	i5-2520M	4GBx1	14.0" HD	720p	500G 7200	Intel 6205	upg	None	None	1394	None	Finger	6	vPro	G P	Pro 64 02/11
4236-MBG	i5-2540M	4GBx1	14.0" HD+	720p	320G 7200	Intel 6205	upg	None	Modem	None	None	Finger	6	vPro	G P	Pro 64 02/11
4236-NHG	i5-2540M	4GBx1	14.0" HD+	720p	320G 7200	Intel 6205	upg	None	Modem	None	None	Finger	6	vPro	G P	Pro 64 02/11
4236-63G	i5-2540M	2GBx2	14.0" HD+	720p	320G 7200	Intel 6205	upg	None	None	1394	None	Finger	6	vPro	G P	Pro 64 02/11
4236-62G	i5-2520M	2GBx2	14.0" HD	720p	320G 7200	Intel 6205	upg	None	None	1394	None	None	6	vPro	G P	Pro 64 02/11
4236-N5G	i5-2540M	4GBx1	14.0" HD	720p	250G 5400	Intel 6205	upg	None	Modem	None	None	Finger	6	vPro		Pro 64 02/11
4236-N3G	i5-2520M	4GBx1	14.0" HD	No	320G 7200	Intel 6205	upg	None	Modem	None	Smart	Finger	6	vPro		Pro 64 02/11
4236-N2G	i5-2540M	4GBx1	14.0" HD	720p	320G 5400	Intel 6205	Ericsson	select	Modem	None	None	Finger	6	vPro	G P	Pro 64 02/11
4236-QFG	i5-2520M	4GBx1	14.0" HD	720p	160G SSD	Intel 6205	upg	None	None	None	None	Finger	6	vPro	G P	Pro 64 01/12
4236-PGG	i7-2640M	4GBx1	14.0" HD+	720p	500G 7200	Intel 6300	Ericsson	select	None	None	None	Finger	6	vPro		Pro 64 08/11
Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology											Preloaded operating system²⁰ Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets															
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive															
mSATA™ SSD	None															
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio											Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
Camera	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus															
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)															
Keyboard TrackPoint®	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys															
Touchpad ThinkLight™	TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions															
Dimensions ³	14.0W" (WxDxH): 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm															
Weight ²	4-cell: from 4.65 lb (2.11kg); 6-cell: from 4.84 lb (2.20kg); 9-cell: from 5.22 lb (2.37kg)															
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic															
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery															
Battery - life ¹⁰	6-cell (57Whr): up to 9.0 hr; 9-cell (94Whr): up to 15.0 hr; 9-cell plus Slice battery: up to 30 hr															
Chipset	Mobile Intel QM67 Express Chipset															
ExpressCard	One slot (ExpressCard/34)															
Smart Card read	<i>Some:</i> Smart Card reader															
Multicard reader	4-in-1 reader (MMC, SD, SDHC, SDXC)															
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)															
PCIe Mini Card	Two PCI Express® Mini Card slots															
PCIe WLAN ⁴	<i>Some:</i> 11a/b/g/n ²⁸ , PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3															
PCIe WWAN	<i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS															
Carrier	<i>Some:</i> User selectable, contract required with service provider															
Modem	<i>Some:</i> 56K V.92 modem															
IEEE 1394	<i>Some:</i> IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)															
Bluetooth™	Bluetooth 3.0 wireless, LED indicator															
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1															
Intel AMT	Intel Active Management Technology (iAMT)											Supports ThinkVantage technologies				
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack											<i>Integrated model:</i> 65W AC Adapter <i>Optimus™ model:</i> 90W AC Adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant				
Security	Power-on password, hard disk password, supervisor password, security keyhole											International Warranty Service ¹⁷				
Security chip	Trusted Platform Module, TCG 1.2-compliant											24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				
Fingerprint reader	<i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip															
Limited Warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades ²² available															

See footnotes for more detailed information

WE model(s) announced February 22, March 1, April 5 or August 2, 2011, or January 3, 2012
 WE model(s) withdrawn effective December 2012

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 (G-NZ3-7) February 2013

ThinkPad® T420 4236 (Onsite) - November 2012 - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/ mSATA	Carrier	Modem	IEEE 1394	Finger print reader	Bat-tery cells	Intel vPro	Preload(mm/yy)	Ann Date
4236-QPG	i7-2640M	4GBx1	14.0" HD+	None	500G 7200	Intel 6205	Ericsson	select	None	1394	Finger	6	vPro	Pro 64	11/12
4236-QNG	i5-2540M	4GBx1	14.0" HD+	None	500G 7200	Intel 6205	WWAN upg	None	None	1394	Finger	6	vPro	Pro 64	11/12
4236-QMG	i5-2520M	4GBx1	14.0" HD+	None	500G 7200	Intel 6205	WWAN upg	None	None	1394	Finger	6	vPro	Pro 64	11/12

• Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology										Preloaded operating system²⁰ Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										• Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive														
mSATA™ SSD	None										• Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio														
Camera	None										• Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)														
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										• Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
Dimensions ³ Weight ² Case material	<i>14.0W"</i> (WxDxH): 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm <i>4-cell:</i> from 4.65 lb (2.11kg); <i>6-cell:</i> from 4.84 lb (2.20kg); <i>9-cell:</i> from 5.22 lb (2.37kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic														
Battery - type Battery - life ¹⁰	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery <i>6-cell (57Whr):</i> up to 9.0 hr; <i>9-cell (94Whr):</i> up to 15.0 hr; <i>9-cell plus Slice battery:</i> up to 30 hr										• Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
Chipset	Mobile Intel QM67 Express Chipset														
ExpressCard Smart Card read Multicard reader Ports	One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)										• Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
PCIe Mini Card PCIe WLAN ⁴ PCIe WWAN	Two PCI Express® Mini Card slots 11a/b/g/n ²⁸ , PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS														
Carrier Modem IEEE 1394 Bluetooth™ Ethernet Intel AMT Audio support	<i>Some:</i> User selectable, contract required with service provider None IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard) Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack										• Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip														
Limited Warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades ²² available										Supports ThinkVantage technologies <i>Integrated model:</i> 65W AC Adapter <i>Optimus™ model:</i> 90W AC Adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				

See footnotes for more detailed information
WE model(s) announced November 20, 2012
WE model(s) withdrawn effective December 2012

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ThinkPad® T420 4236 (Optimus) - Onsite - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/ mSATA	Carrier	IEEE 1394	Finger print reader	Bat- tery Intel vPro	Global (G) GMP (P)	Pre-load	Ann Date (mm/yy)
4236-PRG	i7-2640M	4GBx1	14.0" HD+	720p	500G 7200	Intel 6205	WWAN upg	None	1394	Finger	BT 9 vPro	G P	Pro 64	11/11
4236-65G	i5-2540M	2GBx2	14.0" HD+	720p	500G 7200	Intel 6205	WWAN upg	None	1394	None	BT 9 vPro	G P	Pro 64	02/11
4236-64G	i5-2520M	2GBx2	14.0" HD	720p	320G 7200	Intel 6205	WWAN upg	None	1394	None	BT 6 vPro	G P	Pro 64	02/11
4236-PFG	i7-2640M	4GBx1	14.0" HD+	720p	500G 7200	Intel 6300	Ericsson	select	None	Finger	BT 9 vPro		Pro 64	08/11

- Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology	Preloaded operating system²⁰ Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive	
mSATA™ SSD	None	
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio	Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus	
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M , PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports three independent displays; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)	
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions ³ Weight ² Case material	<i>14.0W" (WxDxH):</i> 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm <i>4-cell:</i> from 4.65 lb (2.11kg); <i>6-cell:</i> from 4.84 lb (2.20kg); <i>9-cell:</i> from 5.22 lb (2.37kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic	
Battery - type Battery - life ¹⁰	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery <i>6-cell (57Whr):</i> up to 8.8 hr; <i>9-cell (94Whr):</i> up to 14.7 hr; <i>9-cell plus Slice battery:</i> up to 29.5 hr	
Chipset	Mobile Intel QM67 Express Chipset	
ExpressCard Smart Card read Multicard reader Ports	One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)	
PCIe Mini Card PCIe WLAN ⁴ PCIe WWAN	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n ²⁸ , PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3 <i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS	
Carrier Modem IEEE 1394 Bluetooth™ Ethernet Intel AMT Audio support	<i>Some:</i> User selectable, contract required with service provider None <i>Some:</i> IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard) Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack	Supports ThinkVantage technologies
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> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	<i>Integrated model:</i> 65W AC Adapter <i>Optimus™ model:</i> 90W AC Adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
Limited Warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades ²² available	

See footnotes for more detailed information

WE model(s) announced February 22, August 2, or November 1, 2011

WE model(s) withdrawn effective December 2012

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(G-NZ3-8) February 2013

ThinkPad® T420i 4178 (TopSeller) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁵ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Finger print reader	Blue-tooth	Battery Intel vPro	Ann Date (mm/yy)
4178-D6G	i3-2350M	4GBx1	14.0" HD	720p	500G 7200	Intel 1000	WWAN upg	None	None	Finger	BT	6 No	Pro 64 12/11

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i3-2350M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology										Preloaded operating system ²⁰ Genuine Windows® 7 Professional 64
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications ¹⁴ (only some listed)
Optical Ultrabay Disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap
mSATA™ SSD	None										
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768) color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> 14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio										
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus										Preloaded applications ¹⁴ (only some listed)
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)										<ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
Keyboard TrackPoint®	7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys										
Touchpad ThinkLight™	TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										
Dimensions ³	<i>14.0W" (WxDxH):</i> 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm										
Weight ²	<i>4-cell:</i> from 4.65 lb (2.11kg); <i>6-cell:</i> from 4.84 lb (2.20kg); <i>9-cell:</i> from 5.22 lb (2.37kg)										
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Carbon-Fiber Reinforced Plastic										
Battery - type	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery										
Battery - life ¹⁰	<i>6-cell (57Whr):</i> up to 9.0 hr; <i>9-cell (94Whr):</i> up to 15.0 hr; <i>9-cell plus Slice battery:</i> up to 30 hr										
Chipset	Mobile Intel QM67 Express Chipset										
ExpressCard	One slot (ExpressCard/34)										
Smart Card read	None										
Multicard reader	4-in-1 reader (MMC, SD, SDHC, SDXC)										
Ports	Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)										
PCIe Mini Card	Two PCI Express® Mini Card slots										
PCIe WLAN ⁴	11b/g/n wireless, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2										
PCIe WWAN	Wireless WAN upgradable										
Carrier	None										
Modem	None										
IEEE 1394	None										
Bluetooth™	Bluetooth 3.0 wireless, LED indicator										Supports ThinkVantage technologies
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1										<i>Integrated model:</i> 65W AC Adapter
Intel AMT	None										<i>Optimus™ model:</i> 90W AC Adapter
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack										ThinkPad Roll Cage (one-piece magnesium frame)
Security	Power-on password, hard disk password, supervisor password, security keyhole										EPEAT™ Gold rating
Security chip	Trusted Platform Module, TCG 1.2-compliant										ENERGY STAR® 5.0-compliant
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										ROHS-compliant
Limited Warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades²² available										International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²

See footnotes for more detailed information

WE model(s) announced December 20, 2011

WE model(s) withdrawn effective December 2012

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ThinkPad®



Lenovo® ThinkPad T420s



Lenovo ThinkPad T420s



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Lenovo ThinkPad T420s



ThinkPad triple external monitor configuration using NVIDIA's Optimus technology



Lenovo ThinkPad T420s

ThinkPad® T420s 4170 (TopSeller) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	Optical or battery	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Blue-tooth	Intel AMT	Intel vPro	Preload
4170-35G	i5-2540M	4GBx1	14.0" HD+	720p	128G SSD	DVD±RW	Intel 6205 ²⁸	WWAN upg	Finger	Blue	iAMT	vPro	Pro 64
4170-34G	i5-2520M	2GBx1	14.0" HD+	720p	128G SSD	DVD±RW	Intel 6205	WWAN upg	Finger	Blue	iAMT	vPro	Pro 64

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance and ultraportability; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology								Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed)				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets								<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox 				
Optical Bay battery Ultrabay SATA disk	DVD burner, 9.5mm Ultrabay slim, removable None One modular bay for interchangeable devices (right side), 9.5mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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, supports the second disk, Shock Mounted Hard Drive								Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 				
mSATA™ SSD	None												
Widescreen display Camera	14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio HD720p resolution, wider view angle, low light sensitive, fixed focus								<ul style="list-style-type: none"> • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 				
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)												
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions								<ul style="list-style-type: none"> • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 				
Dimensions ³ Weight ² Case material Battery - type Battery - life ¹⁰	<i>14.0W"</i> (WxDxH): 13.5" x 9.1" x 0.83–1.02"; 343mm x 230.1mm x 21.2–26.0mm <i>6-cell:</i> starting at 3.68 lb (1.67kg) <i>Display cover:</i> Hybrid Carbon-fiber reinforced plastic; <i>Bottom:</i> Magnesium alloy Lithium Ion 6-cell, supports unique 2nd battery in Ultrabay Slim <i>6-cell (43.2Whr):</i> up to 5.5 hr; <i>6-cell plus Ultrabay battery:</i> up to 9.3 hr												
Chipset ExpressCard Smart Card Read Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 2.0 (one powered), one USB 3.0, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)								Supports ThinkVantage® technologies 65-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				
PCIe Mini Card WLAN ⁴ WWAN 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 Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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 UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip												
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available												

See footnotes for more detailed information
WE model(s) announced February 22, 2011
WE model(s) withdrawn effective December 2012

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ThinkPad® T420s 4173 - withdrawn

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	Optical or battery	PCIe Mini Card WLAN	PCIe Mini Card WWAN/msSATA	Carrier	Smart Card Reader	Finger print reader	Blue-tooth	Global (G) Intel vPro (P)	GMP (P)	Preload
4173-L8G	i5-2520M	4GBx1	14.0" HD+	720p	128G SSD	DVD±RW	Intel 6205 ²⁸	WWAN upg			Finger	Blue	vPro	G	Pro 64
4173-L7G	i5-2540M	4GBx1	14.0" HD+	720p	160G SSD	DVD±RW	Intel 6205	Ericsson	selectable	Smart	Finger	Blue	vPro		Pro 64
4173-KKG	i5-2540M	2GBx2	14.0" HD+	720p	128G SSD	Blank bezel	Intel 6205	WWAN upg			Finger	Blue	vPro		Pro 64
4173-KJG	i5-2520M	2GBx1	14.0" HD+	720p	128G SSD	Blank bezel	Intel 6205	WWAN upg			Finger	Blue	vPro		Pro 64
4173-29G	i5-2520M	4GBx1	14.0" HD+		320G 7200	DVD±RW	Intel 6205	WWAN upg			Finger	Blue	vPro	G	Pro 64
4173-2AG	i5-2520M	4GBx1	14.0" HD+	720p	128G SSD	DVD±RW	Intel 6205	WWAN upg				Blue	vPro	G	Pro 64
4173-2BG	i5-2520M	4GBx1	14.0" HD+	720p	320G 7200	DVD±RW	Intel 6205	WWAN upg				Blue	vPro	G	Pro 64
4173-LVG	i5-2520M	4GBx1	14.0" HD+	720p	160G SSD	DVD±RW	Intel 6205	WWAN upg			Finger	Blue	vPro	G	Pro 64

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance and ultraportability; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology	Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed)
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	• Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox
Optical Bay battery Ultrabay SATA disk	<i>Some:</i> DVD burner, 9.5mm Ultrabay slim, removable None One modular bay for interchangeable devices (right side), 9.5mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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, supports the second disk, Shock Mounted Hard Drive	
mSATA™ SSD	None	
Widescreen display Camera	14.0" (355mm) HD+ (1600x900) color, anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus	Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)	
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions ³ Weight ² Case material Battery - type Battery - life ¹⁰	14.0W" (WxDxH): 13.5" x 9.1" x 0.83–1.02"; 343 x 230.1mm x 21.2–26.0mm <i>6-cell:</i> starting at 3.68 lb (1.67kg) <i>Display cover:</i> Hybrid Carbon-fiber reinforced plastic; <i>Bottom:</i> Magnesium alloy Lithium Ion 6-cell, supports unique 2nd battery in Ultrabay Slim <i>6-cell (43.2Whr):</i> up to 5.5 hr; <i>6-cell plus Ultrabay battery:</i> up to 9.3 hr	
Chipset ExpressCard Smart Card Read Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) <i>Some:</i> Smart Card reader 4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 2.0 (one powered), one USB 3.0, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)	
PCIe Mini Card WLAN ⁴ 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, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS	
Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<i>Some:</i> User selectable, contract required with service provider None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack	Supports ThinkVantage® technologies 65-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
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> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available	

See footnotes for more detailed information
WE model(s) announced February 22, April 19, or May 3, 2011, or January 3, 2012
WE model(s) withdrawn effective December 2012

ThinkPad® T420s 4173 (Optimus) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁵ rpm	Optical or battery	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Smart Card Reader	Finger print reader	Blue-tooth	Intel vPro	Global (G) GMP (P)	Pre-load
4173-LUG	i7-2640M	4GBx1	14.0" HD+	720p	320G 7200	DVD±RW	Intel 6205 ²⁸	WWAN upg	None	None	Blue	vPro	G	Pro 64

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance and ultraportability; two spindles</i> Intel® Core™ i7-2640M processor (dual-core, 2.80GHz, 4MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications¹⁴ (only some listed)			
Optical Bay battery	DVD burner, 9.5mm Ultrabay slim, removable None										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox 			
Ultrabay SATA disk	One modular bay for interchangeable devices (right side), 9.5mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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, supports the second disk, Shock Mounted Hard Drive													
mSATA™ SSD	None													
Widescreen display	14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio										Preloaded applications¹⁴ (only some listed)			
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M , PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)													
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										<ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Dimensions ³ Weight ²	<i>14.0W" (WxDxH):</i> 13.5" x 9.1" x 0.83–1.02"; 343 x 230.1mm x 21.2–26.0mm <i>6-cell:</i> starting at 3.68 lb (1.67kg)													
Case material	<i>Display cover:</i> Hybrid Carbon-fiber reinforced plastic; <i>Bottom:</i> Magnesium alloy													
Battery - type	Lithium Ion 6-cell, supports unique 2nd battery in Ultrabay Slim													
Battery - life ¹⁰	<i>6-cell (43.2Whr):</i> up to 6.1 hr; <i>6-cell plus Ultrabay battery:</i> up to 10.3 hr													
Chipset ExpressCard Smart Card Read Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 2.0 (one powered), one USB 3.0, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)										Supports ThinkVantage® technologies			
PCIe Mini Card WLAN ⁴ WWAN	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable													
Modem Bluetooth™ Ethernet Intel AMT Audio support	None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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 None													
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available													

See footnotes for more detailed information
WE model(s) announced November 1, 2011
WE model(s) withdrawn effective December 2012

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ThinkPad® T420s 4174 (Onsite) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁹ rpm	Optical or battery	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Smart Card Reader	Finger print reader	Blue-tooth	Global (G) Intel vPro (P)	GMP (P)	Preload
4174-L8G	i5-2520M	4GBx1	14.0" HD+	720p	128G SSD	DVD±RW	Intel 6205 ²⁸	WWAN upg			Finger	Blue	vPro	G P	Pro 64
4174-P5G	i5-2520M	4GBx1	14.0" HD+	720p	320G 7200	DVD±RW	Intel 6205	Ericsson	selectable		Finger	Blue	vPro		Pro 64
4174-NGG	i5-2520M	2GBx2	14.0" HD+	720p	250G 5400	DVD±RW	Intel 6205	Ericsson	selectable	Smart	Finger	Blue	vPro		Pro 64
4174-NFG	i5-2520M	2GBx2	14.0" HD+	720p	250G 5400	DVD±RW	Intel 6205	WWAN upg		Smart	Finger	Blue	vPro		Pro 64
4174-NEG	i5-2540M	4GBx1	14.0" HD+	720p	128G SSD	DVD±RW	Intel 6300 ²⁸	Ericsson	selectable	Smart	Finger	Blue	vPro		Pro 64
4174-29G	i5-2520M	4GBx1	14.0" HD+		320G 7200	DVD±RW	Intel 6205	WWAN upg			Finger	Blue	vPro	G P	Pro 64
4174-2AG	i5-2520M	4GBx1	14.0" HD+	720p	128G SSD	DVD±RW	Intel 6205	WWAN upg				Blue	vPro	G P	Pro 64
4174-2BG	i5-2520M	4GBx1	14.0" HD+	720p	320G 7200	DVD±RW	Intel 6205	WWAN upg				Blue	vPro	G P	Pro 64
4174-LVG	i5-2520M	4GBx1	14.0" HD+	720p	160G SSD	DVD±RW	Intel 6205	WWAN upg			Finger	Blue	vPro	G P	Pro 64

- Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance and ultraportability; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology	Preloaded operating system²⁰ - Genuine Windows [®] 7 Professional 64 Ready to install applications¹⁴ (only some listed)
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox
Optical Bay battery	DVD burner, 9.5mm Ultrabay slim, removable None	Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
Ultrabay SATA disk	One modular bay for interchangeable devices (right side), 9.5mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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, supports the second disk, Shock Mounted Hard Drive	
mSATA™ SSD	None	
Widescreen display	14.0" (355mm) HD+ (1600x900) color, anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus	
Camera		
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)	
Keyboard	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys	
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass	
Touchpad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch	
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions ³	14.0W" (WxDxH): 13.5" x 9.1" x 0.83–1.02"; 343 x 230.1mm x 21.2–26.0mm	
Weight ²	6-cell: starting at 3.68 lb (1.67kg)	
Case material	<i>Display cover:</i> Hybrid Carbon-fiber reinforced plastic; <i>Bottom:</i> Magnesium alloy	
Battery - type	Lithium Ion 6-cell, supports unique 2nd battery in Ultrabay Slim	
Battery - life ¹⁰	6-cell (43.2Whr): up to 5.5 hr; 6-cell plus Ultrabay battery: up to 9.3 hr	
Chipset	Mobile Intel QM67 Express Chipset	
ExpressCard	One slot (ExpressCard/34)	
Smart Card Read	<i>Some:</i> Smart Card reader	
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)	
Ports	Two USB 2.0 (one powered), one USB 3.0, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)	
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3	
WWAN	<i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS	
Carrier	<i>Some:</i> User selectable, contract required with service provider	
Modem	None	
Bluetooth™	Bluetooth 3.0 wireless, LED indicator	
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1	
Intel AMT	Intel Active Management Technology (iAMT)	Supports ThinkVantage® technologies
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack	65-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
Security	Power-on password, hard disk password, supervisor password, security keyhole	
Security chip	Trusted Platform Module, TCG 1.2-compliant	
Fingerprint reader	<i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited warranty ¹²	3-years /1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available	

See footnotes for more detailed information

WE model(s) announced February 22, March 1, or May 3, 2011, or January 3, 2012

WE model(s) withdrawn effective December 2012

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(G-SN3-3) February 2013

ThinkPad® T420s 4174 (Optimus) - Onsite - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁵ rpm	Optical or battery	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Finger print reader	Blue-tooth	Global (G) Intel vPro (P)	GMP (P)	Pre-load
4174-PEG	i7-2640M	4GBx1	14.0" HD+	720p	160G SSD	DVD±RW	Intel 6300 ²⁸	Ericsson	selectable	Finger	Blue	vPro		Pro 64
4174-PPG	i7-2640M	4GBx1	14.0" HD+	720p	320G 7200	DVD±RW	Intel 6205 ²⁸	WWAN upg			Blue	vPro	G	Pro 64

- A limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance and ultraportability; two spindles</i> Intel® Core™ i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications¹⁴ (only some listed)			
Optical Bay battery	DVD burner, 9.5mm Ultrabay slim, removable None										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox 			
Ultrabay SATA disk	One modular bay for interchangeable devices (right side), 9.5mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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, supports the second disk, Shock Mounted Hard Drive													
mSATA™ SSD	None													
Widescreen display	14.0" (355mm) HD+ (1600x900) color , anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio										Preloaded applications¹⁴ (only some listed)			
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M , PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)										<ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Keyboard TrackPoint®	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys										Supports ThinkVantage® technologies			
Touchpad	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass													
ThinkLight™	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions ³	14.0W" (WxDxH): 13.5" x 9.1" x 0.83–1.02"; 343 x 230.1mm x 21.2–26.0mm													
Weight ²	6-cell: starting at 3.68 lb (1.67kg)													
Case material	<i>Display cover:</i> Hybrid Carbon-fiber reinforced plastic; <i>Bottom:</i> Magnesium alloy													
Battery - type	Lithium Ion 6-cell, supports unique 2nd battery in Ultrabay Slim													
Battery - life ¹⁰	6-cell (43.2Whr): up to 6.1 hr; 6-cell plus Ultrabay battery: up to 10.3 hr													
Chipset	Mobile Intel QM67 Express Chipset													
ExpressCard	One slot (ExpressCard/34)													
Smart Card Read	None													
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)													
Ports	Two USB 2.0 (one powered), one USB 3.0, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)													
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3										90-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			
WWAN	<i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS													
Carrier Modem	<i>Some:</i> User selectable, contract required with service provider None													
Bluetooth™	Bluetooth 3.0 wireless, LED indicator													
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1													
Intel AMT	Intel Active Management Technology (iAMT)													
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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	<i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip													
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴, 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available													

See footnotes for more detailed information
WE model(s) announced August 2 or November 1, 2011
WE model(s) withdrawn effective December 2012

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(G-SN3-4) February 2013



Lenovo® ThinkPad T520



Lenovo ThinkPad T520



Lenovo ThinkPad T520



ThinkPad triple external monitor configuration
using NVIDIA's Optimus technology



Lenovo ThinkPad T520

ThinkPad® T520 4240 (TopSeller) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ² rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Modem	Finger print reader	Blue-tooth	Battery cells	Intel AMT	Intel vPro	Preload
4240-5CG	i5-2430M	4GBx1	15.6" HD	720p	500G 7200	Intel 1000	WWAN upg	None	Finger	Blue	6	None	No	Pro 64
4240-6BG	i5-2450M	4GBx1	15.6" HD	720p	500G 7200	Intel 1000	WWAN upg	None	Finger	Blue	6	None	No	Pro 64

- **Small and medium business (SMB) model(s), part of the WE TopSeller™ Program**
- **A depot repair service 3-year limited warranty**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

Positioning Processor	<p><i>Premiere performance; two spindles</i> Intel® Core™ i5-2430M processor (dual-core, 2.40GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.0GHz), HT technology Intel Core i5-2450M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology</p>										<p>Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64</p> <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap <p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets													
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive													
mSATA™ SSD	None													
Widescreen display Camera	<p>15.6" (396mm) HD (1366x768) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut HD720p resolution, wider view angle, low light sensitive, fixed focus</p>													
Graphics	<p>Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>													
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions (WxDxH) ³ Weight ² Case material	<p><i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm <i>6-cell:</i> starting at 5.54 lb (2.51kg); <i>9-cell:</i> starting at 5.89 lb (2.67kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint</p>													
Battery - type Battery - life ¹⁰	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom <i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus slice battery:</i> up to 25.6 hr													
Chipset ExpressCard Smart Card Read Multicard Reader Ports	<p>Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) <i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)</p>													
PCIe Mini Card WLAN ⁴ WWAN Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 Wireless WAN upgradable None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 None High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack										Supports ThinkVantage® technologies			
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										65-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades²² available													

See footnotes for more detailed information
 WE model(s) announced October 4, 2011 or January 17, 2012
 WE model(s) withdrawn effective December 2012

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 (G-KN3-6) February 2013

ThinkPad® T520 4240 (Optimus) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁵ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Smart Card Reader	Finger print reader	Blue-tooth	Bat-tery cells	Intel vPro	Preload
4240-5BG	i5-2430M	4GBx1	15.6" HD+	720p	500G 7200	Intel 1000	Ericsson	selectable	None	Smart	Finger	Blue	6	No	Pro 64
4240-6AG	i5-2450M	4GBx1	15.6" HD+	720p	500G 7200	Intel 1000	Ericsson	selectable	None	Smart	Finger	Blue	6	No	Pro 64

- **Small and medium business (SMB) model(s), part of the WE TopSeller™ Program**
- **A depot repair service 3-year limited warranty**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

Positioning Processor	<p><i>Premiere performance; two spindles</i> Intel® Core™ i5-2430M processor (dual-core, 2.40GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.0GHz), HT technology Intel Core i5-2450M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology</p>										<p>Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64</p> <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap <p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets														
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive														
mSATA™ SSD	None														
Widescreen display Camera	<p>15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut HD720p resolution, wider view angle, low light sensitive, fixed focus</p>														
Graphics	<p>NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M, PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>														
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions														
Dimensions (WxDxH) ³ Weight ² Case material	<p><i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm <i>6-cell:</i> starting at 5.67 lb (2.57kg); <i>9-cell:</i> starting at 6.02 lb (2.73kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint</p>														
Battery - type Battery - life ¹⁰	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom <i>6-cell (57Whr):</i> up to 7.6 hr; <i>9-cell (94Whr):</i> up to 12.6 hr; <i>9-cell plus slice battery:</i> up to 25.3 hr														
Chipset ExpressCard Smart Card Read Multicard Reader Ports	<p>Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) <i>Some:</i> Smart Card reader 4-in-1 reader (MMC, SD, SDHC, SDXC) <i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)</p>														
PCIe Mini Card WLAN ⁴ WWAN	Two PCI Express Mini Card slots 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS														
Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<p>User selectable, contract required with service provider None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 None High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack</p>										Supports ThinkVantage® technologies				
Security Security chip Fingerprint reader	<p>Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip</p>										<p>90-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service¹⁷ 24 hour x 7 day¹⁸ toll-free support during the warranty period¹²</p>				
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available														

See footnotes for more detailed information
 WE model(s) announced October 4, 2011 or January 17, 2012
 WE model(s) withdrawn effective December 2012

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ThinkPad® T520 4241 - withdrawn

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Modem	Finger print reader	Blue-tooth	Battery cells	Intel vPro	Preload
4241-48G	i5-2520M	2GBx2	15.6" HD	None	320G 7200	Intel 1000	WWAN upg	Modem	None	Blue	6	None	Pro 64

• Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64					
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications¹⁴ (only some listed)					
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap 					
mSATA™ SSD	None															
Widescreen display Camera	15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut None															
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)													Preloaded applications¹⁴ (only some listed)		
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										<ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 					
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm															
Weight ²	<i>6-cell:</i> starting at 5.54 lb (2.51kg); <i>9-cell:</i> starting at 5.89 lb (2.67kg)															
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint															
Battery - type Battery - life ¹⁰	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom <i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus slice battery:</i> up to 25.6 hr															
Chipset ExpressCard Smart Card Read Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) <i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)															
PCIe Mini Card WLAN ⁴ WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 Wireless WAN upgradable None 56K V.92 ⁶ modem Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 None High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack													Supports ThinkVantage® technologies		
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant None													65-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²		
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available															

See footnotes for more detailed information
WE model(s) announced March 1, 2011
WE model(s) withdrawn effective December 2012

ThinkPad® T520 4242 - withdrawn

Type-model	Processor	Memory	Wide-screen display	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Smart Card Reader	Finger print reader	Bat-tery cells	Global (G) Intel vPro GMP (P) load	Pre-load
4242-5AG	i5-2520M	4GBx1	15.6" HD+	320G 7200	Intel 6205 ²⁸	Ericsson	selectable	Modem	Smart	Finger	6	vPro	Pro 64
4242-4WG	i5-2520M	4GBx1	15.6" HD	500G 7200	Intel 6205	WWAN upg		Modem		Finger	6	vPro	Pro 64
4242-3MG	i5-2520M	2GBx1	15.6" HD	320G 7200	Intel 6205	WWAN upg		Modem			6	vPro	Pro 64
4242-29G	i5-2520M	2GBx2	15.6" HD	320G 7200	Intel 6205	WWAN upg					6	vPro	Pro 64
4242-5ZG	i5-2520M	4GBx1	15.6" HD	160G SSD	Intel 6205	WWAN upg				Finger	6	vPro	Pro 64

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology									Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets									Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap			
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive												
mSATA™ SSD	None												
Widescreen display	<i>Some:</i> 15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut									Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)			
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus												
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)									Supports ThinkVantage® technologies 65-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions												
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm												
Weight ²	<i>6-cell:</i> starting at 5.54 lb (2.51kg); <i>9-cell:</i> starting at 5.89 lb (2.67kg)												
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint												
Battery - type	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom												
Battery - life ¹⁰	<i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus slice battery:</i> up to 25.6 hr												
Chipset	Mobile Intel QM67 Express Chipset												
ExpressCard	One slot (ExpressCard/34)												
Smart Card Read	<i>Some:</i> Smart Card reader												
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)												
Ports	<i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)												
PCIe Mini Card WLAN ⁴ 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, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS												
Carrier	<i>Some:</i> User selectable, contract required with service provider												
Modem	<i>Some:</i> 56K V.92 ⁶ modem												
Bluetooth™	Bluetooth 3.0 wireless, LED indicator												
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1												
Intel AMT	Intel Active Management Technology (iAMT)												
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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	<i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip												
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available												

See footnotes for more detailed information
WE model(s) announced February 22 or April 19, 2011, or January 3, 2012
WE model(s) withdrawn effective December 2012

ThinkPad® T520 4242 (Optimus) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Modem	Finger print reader	Blue-tooth	Battery cells	Intel vPro	Global (G) GMP (P)	Pre-load
4242-4VG	i5-2520M	4GBx1	15.6" HD	720p	500G 7200	Intel 6205 ²⁸	WWAN upg	Modem	Finger	Blue	9	vPro	G	Pro 64
4242-27G	i5-2520M	2GBx1	15.6" HD	720p	320G 7200	Intel 6205	WWAN upg				9	vPro	G	Pro 64
4242-28G	i5-2540M	2GBx2	15.6" HD+	720p	500G 7200	Intel 6205	WWAN upg		Finger	Blue	9	vPro	G	Pro 64
4242-5UG	i7-2640M	4GBx1	15.6" HD+	720p	500G 7200	Intel 6205	WWAN upg	Modem	Finger	Blue	9	vPro	G	Pro 64

- Depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<p><i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology</p>										<p>Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64</p> <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive										
mSATA™ SSD	None										
Widescreen display	<p><i>Some:</i> 15.6" (396mm) HD (1366x768) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut</p> <p><i>Some:</i> 15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut</p>										<p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus										
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M , PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)										
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										
Dimensions (WxDxH) ³	<p><i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm</p> <p><i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm</p>										
Weight ²	6-cell: starting at 5.67 lb (2.57kg); 9-cell: starting at 6.02 lb (2.73kg)										
Case material	<p><i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid;</p> <p><i>Bottom:</i> Glass-fiber reinforced plastic without paint</p>										
Battery - type	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom										
Battery - life ¹⁰	6-cell (57Whr): up to 7.6 hr; 9-cell (94Whr): up to 12.6 hr; 9-cell plus slice battery: up to 25.3 hr										
Chipset	Mobile Intel QM67 Express Chipset										
ExpressCard	One slot (ExpressCard/34)										
Smart Card Read	None										
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)										
Ports	<p><i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)</p>										
PCIe Mini Card WLAN ⁴ WWAN Carrier	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable None										
Modem	<i>Some:</i> 56K V.92 ⁶ modem										
Bluetooth™	<i>Some:</i> Bluetooth 3.0 wireless, LED indicator										Supports ThinkVantage® technologies
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1										
Intel AMT	Intel Active Management Technology (iAMT)										
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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	<p><i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip</p>										90-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available										

See footnotes for more detailed information
 WE model(s) announced February 22 or October 11, 2011
 WE model(s) withdrawn effective December 2012

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 (G-KN3-3) February 2013

ThinkPad® T520 4243 (Onsite) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁹ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Smart Card Reader	Finger print reader	Bat-tery Adapter (watt)	Power Intel vPro	Global (G) GMP (P)	Pre-load
4243-4YG	i5-2520M	2GBx2	15.6" HD	720p	320G 7200	Intel 6205 ²⁸	Ericsson	selectable	Modem		Finger	6	65W	vPro	Pro 64
4243-3WG	i5-2520M	4GBx1	15.6" FHD		320G 7200	Intel 6205	upg		Modem	Smart	Finger	6	65W	vPro	Pro 64
4243-3RG	i5-2540M	4GBx1	15.6" HD	720p	250G 5400	Intel 6205	Ericsson	selectable	Modem		Finger	6	65W	vPro	Pro 64
4243-4WG	i5-2520M	4GBx1	15.6" HD	720p	500G 7200	Intel 6205	upg		Modem		Finger	6	65W	vPro	G P Pro 64
4243-29G	i5-2520M	2GBx2	15.6" HD	720p	320G 7200	Intel 6205	upg				Finger	6	65W	vPro	G P Pro 64
4243-5JG	i7-2640M	4GBx1	15.6" HD+	720p	500G 7200	Intel 6300 ²⁸	Ericsson	selectable			Finger	6	90W	vPro	Pro 64
4243-5ZG	i5-2520M	4GBx1	15.6" HD	720p	160G SSD	Intel 6205	upg				Finger	6	65W	vPro	G P Pro 64
<ul style="list-style-type: none"> • Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty • Microsoft® Office 2010 Product Key Ready (O10PKR) 															
Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets														
Optical	DVD burner, 12.7mm Ultrabay Enhanced, removable														
Ultrabay	One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access														
SATA disk	<i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive														
mSATA™ SSD	None														
Widescreen display	<i>Some:</i> 15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) FHD (1920x1080) color , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut										Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)				
Camera	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus														
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)														
Keyboard	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys														
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass														
Touchpad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch														
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions														
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm														
Weight ²	<i>6-cell:</i> starting at 5.54 lb (2.51kg); <i>9-cell:</i> starting at 5.89 lb (2.67kg)														
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint														
Battery - type	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom														
Battery - life ¹⁰	<i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus slice battery:</i> up to 25.6 hr														
Chipset	Mobile Intel QM67 Express Chipset														
ExpressCard	One slot (ExpressCard/34)														
Smart Card Read	<i>Some:</i> Smart Card reader														
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)														
Ports	<i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)														
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3														
WWAN	<i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS														
Carrier	<i>Some:</i> User selectable, contract required with service provider														
Modem	<i>Some:</i> 56K V.92 ⁶ modem														
Bluetooth™	Bluetooth 3.0 wireless, LED indicator														
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1														
Intel AMT	Intel Active Management Technology (iAMT)														
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack										Supports ThinkVantage® technologies				
Security	Power-on password, hard disk password, supervisor password, security keyhole										65-watt or 90-watt AC adapter				
Security chip	Trusted Platform Module, TCG 1.2-compliant										ThinkPad Roll Cage (one-piece magnesium frame)				
Fingerprint reader	<i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										EPEAT™ Gold rating				
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴, 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available										ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				

See footnotes for more detailed information

WE model(s) announced February 22, March 1, or August 2, 2011, or January 3, 2012

WE model(s) withdrawn effective December 2012

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(G-KN3-4) February 2013

ThinkPad® T520 4243 (Optimus) - Onsite - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Disk SATA GB ⁹ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Finger print reader	Blue-tooth	Bat-tery Adapter (watt)	Power vPro	Global (G) GMP (P)	Pre-load
4243-4VG	i5-2520M	4GBx1	15.6" HD	500G 7200	Intel 6205 ²⁸	WWAN upg		Modem	Finger	Blue	9 90W	vPro	G P	Pro 64
4243-28G	i5-2540M	2GBx2	15.6" HD+	500G 7200	Intel 6205	WWAN upg				Blue	9 90W	vPro	G P	Pro 64
4243-27G	i5-2520M	2GBx1	15.6" HD	320G 7200	Intel 6205	WWAN upg					9 90W	vPro	G P	Pro 64
4243-3UG	i7-2720QM	4GBx1	15.6" FHD	500G 7200	Intel 6300 ²⁸	Ericsson	selectable	Modem	Finger	Blue	9 135W	vPro		Pro 64
<ul style="list-style-type: none"> • Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty • Microsoft® Office 2010 Product Key Ready (O10PKR) 														
Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2720QM processor (quad-core, 2.20GHz, 6MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap 			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets													
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive													
mSATA™ SSD	None													
Widescreen display	<i>Some:</i> 15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) FHD (1920x1080) color , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M , PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)													
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm													
Weight ²	6-cell: starting at 5.67 lb (2.57kg); 9-cell: starting at 6.02 lb (2.73kg)													
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint													
Battery - type	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom													
Battery - life ¹⁰	6-cell (57Whr): up to 7.6 hr; 9-cell (94Whr): up to 12.6 hr; 9-cell plus slice battery: up to 25.3 hr													
Chipset ExpressCard Smart Card Reader Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) <i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)													
PCIe Mini Card WLAN ⁴ WWAN	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3 <i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS													
Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<i>Some:</i> User selectable, contract required with service provider <i>Some:</i> 56K V.92 ⁶ modem <i>Some:</i> Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT)										Supports ThinkVantage® technologies			
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> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										90-watt or 135-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴, 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available													

See footnotes for more detailed information
 WE model(s) announced February 22, 2011
 WE model(s) withdrawn effective December 2012

ThinkPad® T520 4243 (Optimus) - Onsite (October 2011) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Disk SATA GB ² rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Finger print reader	Bat-tery Adapter (watt)	Power Intel AMT	Intel vPro	Global (G) GMP (P)	Pre-load
4243-5UG	i7-2640M	4GBx1	15.6" HD+	500G 7200	Intel 6205 ²⁸	WWAN upg		Modem	Finger	9 90W	iAMT	vPro	G P	Pro 64
4243-5HG	i7-2670QM	4GBx1	15.6" HD+	500G 7200	Intel 6300 ²⁸	Ericsson	selectable		Finger	9 135W				Pro 64
4243-5GG	i7-2670QM	4GBx1	15.6" FHD	160G SSD	Intel 6300	Ericsson	selectable		Finger	9 135W				Pro 64

- Some models are part of the **Global Models Plus** program with limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology Intel Core i7-2670QM processor (quad-core, 2.20GHz, 6MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed)			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap 			
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
mSATA™ SSD	None													
Widescreen display	<i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) FHD (1920x1080) color , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA NVS™ 4200M , PCI Express® x16, 1GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Weight ²	<i>6-cell:</i> starting at 5.67 lb (2.57kg); <i>9-cell:</i> starting at 6.02 lb (2.73kg)													
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Battery - type	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom													
Battery - life ¹⁰	<i>6-cell (57Whr):</i> up to 7.6 hr; <i>9-cell (94Whr):</i> up to 12.6 hr; <i>9-cell plus slice battery:</i> up to 25.3 hr										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Chipset	Mobile Intel QM67 Express Chipset													
ExpressCard	One slot (ExpressCard/34)										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Smart Card Read	None													
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Ports	<i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)													
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
WWAN	<i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS													
Carrier	<i>Some:</i> User selectable, contract required with service provider										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Modem	<i>Some:</i> 56K V.92 ⁶ modem													
Bluetooth™	Bluetooth 3.0 wireless, LED indicator										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1													
Intel AMT	<i>Some:</i> Intel Active Management Technology (iAMT)										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack													
Security	Power-on password, hard disk password, supervisor password, security keyhole										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Security chip	Trusted Platform Module, TCG 1.2-compliant													
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Limited warranty ¹²	3-years /1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available													

See footnotes for more detailed information
WE model(s) announced August 2 or October 11, 2011
WE model(s) withdrawn effective December 2012

ThinkPad® T520i 4240 (TopSeller) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ² rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Blue-tooth	Battery cells	Intel AMT	Intel vPro	Preload (mm/yy)	Ann Date
4240-5FG	i3-2350M	4GBx1	15.6" HD	720p	320G 7200	Intel 1000	WWAN upg	Finger	Blue	6	None	No	Pro 64	10/11
4240-6QG	i3-2350M	4GBx1	15.6" HD	720p	500G 7200	Intel 1000	WWAN upg	Finger	Blue	6	None	No	Pro 64	12/11

- **Small and medium business (SMB) model(s), part of the WE TopSeller™ Program**
- **A depot repair service 3-year limited warranty**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

Positioning Processor	<i>Premiere performance; two spindles</i> Intel® Core™ i3-2350M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications¹⁴ (only some listed)			
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap 			
mSATA™ SSD	None										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 			
Widescreen display Camera	15.6" (396mm) HD (1366x768) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)										Supports ThinkVantage® technologies 65-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm													
Weight ²	<i>6-cell:</i> starting at 5.54 lb (2.51kg); <i>9-cell:</i> starting at 5.89 lb (2.67kg)													
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint													
Battery - type Battery - life ¹⁰	Lithium Ion 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom <i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus slice battery:</i> up to 25.6 hr													
Chipset ExpressCard Smart Card Reader Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) <i>Integrated model:</i> Four USB 2.0 (one powered), <i>Optimus model:</i> Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)													
PCIe Mini Card WLAN ⁴ WWAN Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 Wireless WAN upgradable None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 None High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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 UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip													
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades²² available													

See footnotes for more detailed information
 WE model(s) announced October 4 or December 20, 2011
 WE model(s) withdrawn effective December 2012

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Lenovo® ThinkPad W520



Lenovo ThinkPad W520



Lenovo ThinkPad W520



Lenovo ThinkPad W520



Lenovo ThinkPad W520



Lenovo ThinkPad W520

ThinkPad® W520 4282 (Optimus) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB ⁹ rpm	RAID	SATA optical	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Battery cells	Intel vPro	Global (G) GMP (P)	Pre-load
4282-25G	i5-2540M	2GBx2	15.6" HD+	1000M	1x320G 7200		DVD±RW	Intel 6205 ²⁸	WWAN upg		9	vPro	G	Pro 64
4282-3CG	i5-2540M	2GBx2	15.6" HD+	1000M	1x320G 7200		DVD±RW	Intel 6205	WWAN upg	Finger	6	vPro	G	Pro 64
4282-4ZG	i7-2760QM	4GBx1	15.6" FHD	2000M	1x500G 7200		DVD±RW	Intel 6300 ²⁸	WWAN upg		9	vPro	G	Pro 64
4282-4YG	i7-2860QM	4GBx2	15.6" FHD	2000M	1x500G 7200		DVD±RW	Intel 6300	WWAN upg	Finger	9	vPro	G	Pro 64
4282-5CG	i7-2760QM	4GBx1	15.6" FHD	1000M	2x500G 7200	1		Intel 6205	WWAN upg	Finger	9	vPro	G	Pro 64
4282-5BG	i7-2760QM	4GBx1	15.6" FHD	1000M	2x500G 7200	0		Intel 6205	WWAN upg	Finger	9	vPro	G	Pro 64

• **Power-packed engineering with Open GL graphics and ISV certifications**

Positioning	<i>Mobile workstation; two spindles</i>										Preloaded operating system²⁰ - Genuine Windows [®] 7 Professional 64			
Processor	Intel® Core™ i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2760QM processor (quad-core, 2.40GHz, 6MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology Intel Core i7-2860QM processor (quad-core, 2.50GHz, 8MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology										Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox			
Memory	<i>dual-core model:</i> 16GB max ⁷ , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets All: PC3-10600 1333MHz DDR3, non-parity, dual-channel capable													
Optical	<i>Some:</i> DVD burner, 12.7mm Ultrabay Enhanced, removable													
Ultrabay	<i>One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access</i>													
SATA disk	<i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high													
	<i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™													
mSATA™ SSD	All: removable, upgradable, supports the second disk, Shock Mounted Hard Drive													
None											Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) • huey™PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)			
Widescreen display	<i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) FHD (1920x1080) color , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut													
Color calibration	None													
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA Quadro® 1000M or 2000M , PCI Express® x16, 2GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)													
Keyboard	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys													
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass													
Touchpad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch													
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm													
Weight ²	<i>6-cell:</i> starting at 5.40 lb (2.45kg); <i>9-cell:</i> starting at 5.75 lb (2.61kg)													
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint													
Battery - type	Lithium Ion 6-cell or 9-cell, supports optional Slice battery at bottom													
Battery - life ¹⁰	<i>6-cell (57Whr):</i> up to 6.6 hr; <i>9-cell (94Whr):</i> up to 10.9 hr; <i>9-cell plus slice battery:</i> up to 21.9 hr													
Chipset	Mobile Intel QM67 Express Chipset													
ExpressCard	One slot (ExpressCard/34)													
Smart Card Read	None													
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)													
Ports	Two USB 3.0 (blue), one Powered USB 2.0 (yellow), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)													
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3													
WWAN Carrier	Wireless WAN upgradable													
Modem	None													
Bluetooth™	56K V.92 ⁶ modem													
Ethernet	Bluetooth 3.0 wireless, LED indicator													
Intel AMT	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1													
Audio support	Intel Active Management Technology (iAMT)													
Security	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack													
Security chip	Power-on password, hard disk password, supervisor password, security keyhole													
Fingerprint reader	Trusted Platform Module, TCG 1.2-compliant													
	<i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip													
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available										Supports ThinkVantage® technologies 170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			

See footnotes for more detailed information

WE model(s) announced February 22 or November 1, 2011, or May 1, 2012

WE model(s) withdrawn effective December 2012

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(G-KN3W-1) February 2013

ThinkPad® W520 4284 (Optimus) - Onsite - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB ³ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Smart Card Reader	Color calib	Battery cells	Intel AMT	Intel vPro	Pre-load
4284-4MG	i7-2860QM	4GBx2	15.6" FHD	2000M	500G 7200	Intel 6300 ²⁸	Ericsson	selectable			X-Rite	9	iAMT	vPro	Pro 64
4284-4LG	i7-2760QM	4GBx1	15.6" HD+	1000M	500G 7200	Intel 6300	Ericsson	selectable		Smart	X-Rite	9	iAMT	vPro	Pro 64
4284-4KG	i7-2670QM	4GBx1	15.6" HD+	1000M	500G 7200	Intel 6300	WWAN upg					9			Pro 64
4284-4AG	i5-2520M	4GBx1	15.6" HD+	1000M	320G 7200	Intel 6300	WWAN upg		Modem			9	iAMT	vPro	Pro 64

- **Power-packed engineering with Open GL graphics and ISV certifications**

Positioning Processor	<p><i>Mobile workstation; two spindles</i></p> <p>Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology</p> <p>Intel Core i7-2670QM processor (quad-core, 2.20GHz, 6MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology</p> <p>Intel Core i7-2760QM processor (quad-core, 2.40GHz, 6MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology</p> <p>Intel Core i7-2860QM processor (quad-core, 2.50GHz, 8MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology</p>	<p>Preloaded operating system²⁰</p> <ul style="list-style-type: none"> - Genuine Windows® 7 Professional 64 <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox <p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) • huey™PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)
Memory	<p><i>dual-core model:</i> 16GB max⁷, two 204-pin SO-DIMM sockets</p> <p><i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets</p> <p><i>All:</i> PC3-10600 1333MHz DDR3, non-parity, dual-channel capable</p>	
Optical Ultrabay SATA disk	<p>DVD burner, 12.7mm Ultrabay Enhanced, removable</p> <p>One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access</p> <p><i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high</p> <p><i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™</p> <p><i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive</p>	
mSATA™ SSD	None	
Widescreen display	<p><i>Some:</i> 15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut</p> <p><i>Some:</i> 15.6" (396mm) FHD (1920x1080) color, anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut</p>	
Color calibration Camera	<p><i>Some:</i> huey™PRO Colorimeter by X-Rite® color calibration sensor in palm rest</p> <p>HD720p resolution, wider view angle, low light sensitive, fixed focus</p>	
Graphics	<p>NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA Quadro® 1000M or 2000M, PCI Express® x16, 2GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays;</p> <p><i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>	
Keyboard TrackPoint® Touchpad ThinkLight™	<p>7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys</p> <p>TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar¹³, magnifying glass</p> <p>UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch</p> <p>Illuminates the keyboard to improve visibility in low-light conditions</p>	
Dimensions (WxDxH) ³	<p><i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm</p> <p><i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm</p>	
Weight ²	<p><i>6-cell:</i> starting at 5.40 lb (2.45kg); <i>9-cell:</i> starting at 5.75 lb (2.61kg)</p>	
Case material	<p><i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid;</p> <p><i>Bottom:</i> Glass-fiber reinforced plastic without paint</p>	
Battery - type	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery at bottom	
Battery - life ¹⁰	<i>6-cell (57Whr):</i> up to 6.6 hr; <i>9-cell (94Whr):</i> up to 10.9 hr; <i>9-cell plus slice battery:</i> up to 21.9 hr	
Chipset	Mobile Intel QM67 Express Chipset	
ExpressCard	One slot (ExpressCard/34)	
Smart Card Read	<i>Some:</i> Smart Card reader	
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)	
Ports	Two USB 3.0 (blue), one Powered USB 2.0 (yellow), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)	
PCIe Mini Card WLAN ⁴ WWAN	<p>Two PCI Express Mini Card slots</p> <p>11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Ultimate-N 6300, 3x3</p> <p><i>Some:</i> Wireless WAN upgradable</p> <p><i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS</p>	
Carrier	<i>Some:</i> User selectable, contract required with service provider	
Modem	<i>Some:</i> 56K V.92 ⁶ modem	
Bluetooth™	Bluetooth 3.0 wireless, LED indicator	
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1	
Intel AMT	<i>Some:</i> Intel Active Management Technology (iAMT)	
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, 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	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available	<p>Supports ThinkVantage® technologies</p> <p>170-watt AC adapter</p> <p>ThinkPad Roll Cage (one-piece magnesium frame)</p> <p>EPEAT™ Gold rating</p> <p>ENERGY STAR® 5.0-compliant</p> <p>RoHS-compliant</p> <p>International Warranty Service¹⁷</p> <p>24 hour x 7 day¹⁸ toll-free support during the warranty period¹²</p>

See footnotes for more detailed information
 WE model(s) announced March 1 or August 2, 2011
 WE model(s) withdrawn effective December 2012

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 (G-KN3W-2) February 2013

ThinkPad® W520 4284 (Optimus) - Onsite (September 2011) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB ³ rpm	RAID	SATA optical	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Color calib	Bat-tery Intel vPro	Global (G) GMP (P)	Pre-load
4284-25G	i5-2540M	2GBx2	15.6" HD+	1000M	1x320G 7200		DVD±RW	Intel 6205 ²⁸	WWAN upg		None	9 vPro	G P	Pro 64
4284-4YG	i7-2860QM	4GBx2	15.6" FHD	2000M	1x500G 7200		DVD±RW	Intel 6300 ²⁸	WWAN upg		None	9 vPro	G P	Pro 64
4284-4ZG	i7-2760QM	4GBx1	15.6" FHD	2000M	1x500G 7200		DVD±RW	Intel 6300	WWAN upg		None	9 vPro	G P	Pro 64
4284-5DG	i7-2760QM	4GBx1	15.6" FHD	1000M	2x500G 7200	1		Intel 6205	WWAN upg	Finger	None	9 vPro	G P	Pro 64
4284-5CG	i7-2760QM	4GBx1	15.6" FHD	1000M	2x500G 7200	0		Intel 6205	WWAN upg	Finger	None	9 vPro	G P	Pro 64
<ul style="list-style-type: none"> • Part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty • Power-packed engineering with Open GL graphics and ISV certifications • Microsoft® Office 2010 Product Key Ready (O10PKR) 														
Positioning Processor	<i>Mobile workstation; two spindles</i> Intel® Core™ i5-2540M processor (dual-core, 2.60GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2760QM processor (quad-core, 2.40GHz, 6MB Cache) , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology Intel Core i7-2860QM processor (quad-core, 2.50GHz, 8MB Cache) , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows [®] 7 Professional 64 Ready to install applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox 			
Memory	<i>dual-core model:</i> 16GB max ⁷ , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets All: PC3-10600 1333MHz DDR3, non-parity, dual-channel capable										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) • huey™PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models) 			
Optical Ultrabay SATA disk	<i>Some:</i> DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ All: removable, upgradable, supports the second disk, Shock Mounted Hard Drive													
mSATA™ SSD	None													
Widescreen display	<i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) FHD (1920x1080) color , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut													
Color calibration Camera	None													
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA Quadro® 1000M or 2000M , PCI Express® x16, 2GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@85Hz; 1920x1200@60Hz (single-link DVI-D via optional cable)													
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm													
Weight ²	<i>6-cell:</i> starting at 5.40 lb (2.45kg); <i>9-cell:</i> starting at 5.75 lb (2.61kg)													
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint													
Battery - type Battery - life ¹⁰	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery at bottom <i>6-cell (57Whr):</i> up to 6.6 hr; <i>9-cell (94Whr):</i> up to 10.9 hr; <i>9-cell plus slice battery:</i> up to 21.9 hr													
Chipset ExpressCard Smart Card Read Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC)													
PCIe Mini Card WLAN ⁴ WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3 Wireless WAN upgradable None 56K V.92 ⁶ modem Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT)										Supports ThinkVantage® technologies			
Security Security chip Fingerprint reader	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			
Limited warranty ¹²	3-years 1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available													

See footnotes for more detailed information
 WE model(s) announced February 22 or November 1, 2011, or May 1, 2012
 WE model(s) withdrawn effective December 2012

ThinkPad®



Lenovo® ThinkPad X121e



Lenovo ThinkPad X121e



Lenovo ThinkPad X121e



Lenovo ThinkPad X121e



Lenovo ThinkPad X121e



Lenovo ThinkPad X121e

ThinkPad® X121e 3045 (Intel) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	GHz	Memory	Wide-screen display	Camera	Disk SATA GB ⁹ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Top color	Finger print reader	Bat- Blue- tery tooth cells	Preload
3045-6XG	i3-2357M	1.30	4GBx1	11.6" HD	0.3M	320G 5400	TP 11a/b/g/n	WWAN upg		Matte black	None	Blue 6	Pro 64
3045-6WG	i3-2357M	1.30	4GBx1	11.6" HD	0.3M	320G 5400	TP 11a/b/g/n	WWAN upg		Matte black	None	Blue 6	Prem 64
3045-6UG	i3-2357M	1.30	4GBx1	11.6" HD	0.3M	320G 7200	Intel 1000	Ericsson	selectable	Matte black	None	Blue 6	Pro 64
3045-6TG	i3-2357M	1.30	2GBx1	11.6" HD	0.3M	320G 7200	Intel 1000	WWAN upg		Matte black	None	Blue 6	Pro 64
3045-6SG	i3-2357M	1.30	2GBx1	11.6" HD	0.3M	320G 7200	Intel 1000	WWAN upg		Matte black	None	Blue 6	Prem 64
3045-7AG	i3-2367M	1.40	4GBx1	11.6" HD	0.3M	320G 7200	Intel 1000	WWAN upg		Matte black	None	Blue 6	Pro 64
3045-79G	i3-2367M	1.40	4GBx1	11.6" HD	0.3M	320G 7200	Intel 1000	Ericsson	selectable	Matte black	None	Blue 6	Pro 64
3045-7KG	i3-2367M	1.40	4GBx1	11.6" HD	0.3M	320G 5400	TP 11a/b/g/n	WWAN upg		Matte black	None	Blue 6	Pro 64
3045-7JG	i3-2367M	1.40	4GBx1	11.6" HD	0.3M	320G 5400	Intel 1000	Ericsson	selectable	Matte black	None	Blue 6	Pro 64

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	Entry ultraportable for excellent usability and reliability; one spindle Intel® Core™ i3-2357M processor (dual-core, 1.30GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Hyper-Threading technology Intel Core i3-2367M processor (dual-core, 1.40GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Hyper-Threading technology	Preloaded operating system²⁰ - Some: Genuine Windows® 7 Home Premium 64 - Some: Genuine Windows 7 Professional 64
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Norton™ Internet Security 2011 (30 days of virus definitions)
Optical SATA disk	None (use optional USB-based optical drive) Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm, upgradable Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm, upgradable, Active Protection System™	Preloaded applications¹⁴ (only some listed) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate
Widescreen display	11.6" (295mm) HD (1366x768) TFT color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio	
Camera	Camera on top of screen, 0.3-megapixel, fixed focus, low light sensitive, LED indicator	
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via HDMI™ (supporting HDCP to output protected content); supports dual independent display; <i>Maximum external resolution: 2048x1536 (VGA) @75Hz; 2560x1600 (HDMI port) @60Hz</i>	
Keyboard TrackPoint®	Full-size, 6-row, spill-resistant, multimedia Fn keys TrackPoint pointing device, Internet Scroll Bar ¹³	
Touch pad ThinkLight™	UltraNav™, buttonless touchpad below keyboard, multi-touch None	
Dimensions ³ Weight ²	<i>11.6W" (WxDxH): 11.4" x 8.2" x 0.93"; 289.6mm x 208mm x 23.5mm</i> <i>3-cell: from 3.09 lb (1.4kg); 6-cell: from 3.42 lb (1.55kg)</i>	
Case color	Matte black (top)	
Case material	<i>Top: PolyCarbonate/Acrylonitrile-Butadiene-Styrene (PC/ABS) plastic;</i> <i>Bottom: Magnesium alloy</i>	
Battery - type	Lithium Ion 3-cell or 6-cell	
Battery - life ¹⁰	<i>3-cell (31.2Whr): up to 4.7 hr; 6-cell (62.4Whr): up to 9.3 hr</i>	
Chipset	Mobile Intel HM65 Express Chipset	
Multicard reader ExpressCard	4-in-1 reader (MMC, SD, SDHC, SDXC) None	
Ports	Three USB 2.0 (one powered), external monitor (VGA DB-15, HDMI), ethernet (RJ-45)	
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots Some: 11a/b/g/n, PCIe Half Mini Card, ThinkPad a/b/g/n, 2x2 Some: 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2	
WWAN	Some: Wireless WAN upgradable Some: Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS	
Carrier Modem	Some: User selectable, contract required with service provider None	
Bluetooth™	Bluetooth 3.0 wireless (requires Bluetooth 3.0 driver support)	
Ethernet	Realtek RTL8111DL Gigabit Network Connection, PHY, PCIe x1	Supports ThinkVantage® technologies
Intel AMT	None	
Audio support	High Definition (HD) Audio, Conexant CX20582 codec / stereo speakers, 2 watt x 2 / digital mono microphone, combo audio/mic jack	65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant	
Fingerprint reader	None	
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available	

See footnotes for more detailed information

WE model(s) announced July 5, October 4, or December 13, 2011

WE model(s) withdrawn effective November 2012

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(G-MV1-1) February 2013

ThinkPad® X121e 3045 (Intel) - TopSeller (DOS) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	GHz	Memory	Wide-screen display	Camera	Disk SATA GB ⁵ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Top color	Finger print reader	Blue-tooth	Bat-tery cells	Preload
3045-6RG	i3-2357M	1.30	4GBx1	11.6" HD	0.3M	320G 7200	Intel 1000	WWAN upg	None	Matte black	None	Blue	6	DOS-Lic.
3045-7BG	i3-2367M	1.40	4GBx1	11.6" HD	0.3M	320G 7200	Intel 1000	WWAN upg	None	Matte black	None	Blue	6	DOS-Lic.

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program

Positioning Processor	<i>Entry ultraportable for excellent usability and reliability; one spindle</i> Intel® Core™ i3-2357M processor (dual-core, 1.30GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Hyper-Threading technology Intel Core i3-2367M processor (dual-core, 1.40GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Hyper-Threading technology										Preloaded operating system ²⁰ - DOS-Lic.
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										
Optical SATA disk	None (use optional USB-based optical drive) <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm, upgradable <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm, upgradable, Active Protection System™										
Widescreen display	11.6" (295mm) HD (1366x768) TFT color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio										
Camera	Camera on top of screen, 0.3-megapixel, fixed focus, low light sensitive, LED indicator										
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via HDMI™ (supporting HDCP to output protected content); supports dual independent display; <i>Maximum external resolution: 2048x1536 (VGA) @75Hz; 2560x1600 (HDMI port) @60Hz</i>										
Keyboard	Full-size, 6-row, spill-resistant, multimedia Fn keys										
TrackPoint®	TrackPoint pointing device, Internet Scroll Bar ¹³										
Touch pad	UltraNav™, buttonless touchpad below keyboard, multi-touch										
ThinkLight™	None										
Dimensions ³	<i>11.6W"</i> (WxDxH): 11.4" x 8.2" x 0.93"; 289.6mm x 208mm x 23.5mm										
Weight ²	<i>3-cell:</i> from 3.09 lb (1.4kg); <i>6-cell:</i> from 3.42 lb (1.55kg)										
Case color	Matte black (top)										
Case material	<i>Top:</i> PolyCarbonate/Acrylonitrile-Butadiene-Styrene (PC/ABS) plastic; <i>Bottom:</i> Magnesium alloy										
Battery - type	Lithium Ion 3-cell or 6-cell										
Battery - life ¹⁰	<i>3-cell (31.2Whr):</i> up to 4.7 hr; <i>6-cell (62.4Whr):</i> up to 9.3 hr										
Chipset	Mobile Intel HM65 Express Chipset										
Multicard reader	4-in-1 reader (MMC, SD, SDHC, SDXC)										
ExpressCard	None										
Ports	Three USB 2.0 (one powered), external monitor (VGA DB-15, HDMI), ethernet (RJ-45)										
PCIe Mini Card	Two PCI Express Mini Card slots										
WLAN ⁴	11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2										
WWAN	Wireless WAN upgradable										
Carrier	None										
Modem	None										
Bluetooth™	Bluetooth 3.0 wireless (requires Bluetooth 3.0 driver support)										
Ethernet	Realtek RTL8111DL Gigabit Network Connection, PHY, PCIe x1										
Intel AMT	None										
Audio support	High Definition (HD) Audio, Conexant CX20582 codec / stereo speakers, 2 watt x 2 / digital mono microphone, combo audio/mic jack										Supports ThinkVantage® technologies
Security	Power-on password, hard disk password, supervisor password, security keyhole										65-watt AC Adapter
Security chip	Trusted Platform Module, TCG 1.2-compliant										ROHS-compliant
Fingerprint reader	None										International Warranty Service ¹⁷
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available										24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²

See footnotes for more detailed information
WE model(s) announced July 5 or October 4, 2011
WE model(s) withdrawn effective November 2012

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(G-MV1-2) February 2013

ThinkPad® X121e 3051 (AMD) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	GHz	Memory	Wide-screen display	Camera	Integrated graphics	Disk SATA GB ⁹ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Top color	Blue-tooth	Battery cells	Preload
3051-5RG	E-350	1.60	4GBx1	11.6" HD	0.3M	HD 6310	320G 5400	TP 11b/g/n	WWAN upg	None	Matte red	Blue	6	Prem 64
3051-5PG	C-50	1.00	4GBx1	11.6" HD	0.3M	HD 6250	320G 5400	TP 11a/b/g/n	WWAN upg	None	Matte black	Blue	6	Pro 64
3051-5NG	C-50	1.00	2GBx1	11.6" HD	0.3M	HD 6250	320G 5400	TP 11b/g/n	WWAN upg	None	Matte black	Blue	6	Prem 64
3051-62G	E-300	1.30	4GBx1	11.6" HD	0.3M	HD 6310	320G 7200	TP 11a/b/g/n	WWAN upg	None	Matte black	Blue	6	Pro 64
3051-5XG	E-450	1.65	4GBx1	11.6" HD	0.3M	HD 6320	320G 7200	TP 11b/g/n	WWAN upg	None	Matte red	Blue	6	Prem 64
3051-66G	E-450	1.65	4GBx1	11.6" HD	0.3M	HD 6320	320G 5400	TP 11b/g/n	WWAN upg	None	Matte red	Blue	6	Prem 64
3051-65G	E-300	1.30	4GBx1	11.6" HD	0.3M	HD 6310	320G 5400	TP 11a/b/g/n	WWAN upg	None	Matte black	Blue	6	Pro 64

- Small and medium business (SMB) model(s), part of the WE TopSeller™ Program
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<p><i>Entry ultraportable for excellent usability and reliability; one spindle</i></p> <p>AMD Accelerated Processor C-50 with dual-core, virtualization technology, integrated 1066MHz DDR3 memory controller, and 1MB L2 cache</p> <p>AMD Accelerated Processor E-300 with dual-core, virtualization technology, integrated 1066MHz DDR3 memory controller, and 1MB L2 cache</p> <p>AMD Accelerated Processor E-350 with dual-core, virtualization technology, integrated 1066MHz DDR3 memory controller, and 1MB L2 cache</p> <p>AMD Accelerated Processor E-450 with dual-core, virtualization technology, integrated 1333MHz DDR3 memory controller, and 1MB L2 cache</p>	<p>Preloaded operating system²⁰</p> <ul style="list-style-type: none"> - Some: Genuine Windows® 7 Home Premium 64 - Some: Genuine Windows 7 Professional 64 <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Norton™ Internet Security 2011 (30 days of virus definitions) <p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, two 204-pin SO-DIMM sockets * System automatically clocks down for processors with 1066MHz DDR3 memory controller	
Optical SATA disk	None (use optional USB-based optical drive) Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, upgradable Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, upgradable, Active Protection System™	
Widescreen display	11.6" (295mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio	
Camera	Camera on top of screen, 0.3-megapixel, fixed focus, low light sensitive, LED indicator	
Graphics	<p>Some: AMD Radeon™ HD 6250 graphics in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via HDMI™ (supporting HDCP to output protected content); supports dual independent display; <i>Maximum external resolution: 1920x1200 (VGA); 1920x1200 (HDMI)</i></p> <p>Some: AMD Radeon HD 6310 or 6320 graphics in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via HDMI (supporting HDCP to output protected content); supports dual independent display; <i>Maximum external resolution: 2048x1536 (VGA); 1920x1200 (HDMI)</i></p>	
Keyboard	Full-size, 6-row, spill-resistant, multimedia Fn keys	
TrackPoint®	TrackPoint pointing device, Internet Scroll Bar ¹³	
Touch pad	UltraNav™, buttonless touchpad below keyboard, multi-touch	
ThinkLight™	None	
Dimensions ³	11.6W" (WxDxH): 11.4" x 8.2" x 0.93"; 289.6mm x 208mm x 23.5mm	
Weight ²	3-cell: from 3.09 lb (1.4kg); 6-cell: from 3.42 lb (1.55kg)	
Case color	Matte black or Matte red (top)	
Case material	Top: PolyCarbonate/Acrylonitrile-Butadiene-Styrene (PC/ABS) plastic; Bottom: Magnesium alloy	
Battery - type	Lithium Ion 3-cell or 6-cell	
Battery - life ¹⁰	3-cell (31.2Whr): up to 4.3 hr; 6-cell (62.4Whr): up to 9.4 hr	
Chipset	AMD A50M FCH Chipset	
Multicard reader	4-in-1 reader (MMC, SD, SDHC, SDXC)	
ExpressCard	None	
Ports	Three USB 2.0 (one powered), external monitor (VGA DB-15, HDMI), ethernet (RJ-45)	
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots Some: 11b/g/n, PCIe Half Mini Card, ThinkPad b/g/n, 1x1 Some: 11a/b/g/n, PCIe Half Mini Card, ThinkPad a/b/g/n, 2x2	
WWAN	Wireless WAN upgradable	
Carrier	None	
Modem	None	
Bluetooth™	Bluetooth 3.0 wireless (requires Bluetooth 3.0 driver support)	Supports ThinkVantage® technologies
Ethernet	Realtek RTL8111DL Gigabit Network Connection, PHY, PCIe x1	
Audio support	High Definition (HD) Audio, Conexant CX20582 codec / stereo speakers, 2 watt x 2 / digital mono microphone, combo audio/mic jack	65-watt AC Adapter EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant
Security	Power-on password, hard disk password, supervisor password, security keyhole	International Warranty Service ¹⁷
Security chip	None	24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
Fingerprint reader	None	

Limited warranty¹² **1-year** - depot repair service / service upgrades²² available

See footnotes for more detailed information

WE model(s) announced July 5, October 4, or December 13, 2011

WE model(s) withdrawn effective December 2012

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(G-MV1-3) February 2013

ThinkPad® X121e 3051 (AMD) - TopSeller (DOS) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	GHz	Memory	Wide-screen display	Camera	Integrated graphics	Disk SATA GB ⁵ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Top color	Blue-tooth	Battery cells	Preload
3051-5QG	E-350	1.60	4GBx1	11.6" HD	0.3M	HD 6310	320G 7200	TP 11b/g/n	WWAN upg	None	Matte black	Blue	6	DOS-Lic.
3051-5YG	E-450	1.65	4GBx1	11.6" HD	0.3M	HD 6320	320G 7200	TP 11b/g/n	WWAN upg	None	Matte black	Blue	6	DOS-Lic.
3051-67G	E-450	1.65	4GBx1	11.6" HD	0.3M	HD 6320	320G 5400	TP 11b/g/n	WWAN upg	None	Matte black	Blue	6	DOS-Lic.

• Small and medium business (SMB) model(s), part of the WE TopSeller™ Program

Positioning Processor	Entry ultraportable for excellent usability and reliability; one spindle AMD Accelerated Processor E-350 with dual-core, virtualization technology, integrated 1066MHz DDR3 memory controller, and 1MB L2 cache AMD Accelerated Processor E-450 with dual-core, virtualization technology, integrated 1333MHz DDR3 memory controller, and 1MB L2 cache											Preloaded operating system ²⁰ - DOS-Lic.
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, two 204-pin SO-DIMM sockets * System automatically clocks down for processors with 1066MHz DDR3 memory controller											
Optical SATA disk	None (use optional USB-based optical drive) Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, upgradable Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, upgradable, Active Protection System™											
Widescreen display	11.6" (295mm) HD (1366x768) TFT color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio											
Camera	Camera on top of screen, 0.3-megapixel, fixed focus, low light sensitive, LED indicator											
Graphics	AMD Radeon™ HD 6310 or 6320 graphics in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via HDMI™ (supporting HDCP to output protected content); supports dual independent display; Maximum external resolution: 2048x1536 (VGA); 1920x1200 (HDMI)											
Keyboard	Full-size, 6-row, spill-resistant, multimedia Fn keys											
TrackPoint®	TrackPoint pointing device, Internet Scroll Bar ¹³											
Touch pad	UltraNav™, buttonless touchpad below keyboard, multi-touch											
ThinkLight™	None											
Dimensions ³	11.6W" (WxDxH): 11.4" x 8.2" x 0.93"; 289.6mm x 208mm x 23.5mm											
Weight ²	3-cell: from 3.09 lb (1.4kg); 6-cell: from 3.42 lb (1.55kg)											
Case color	Matte black (top)											
Case material	Top: PolyCarbonate/Acrylonitrile-Butadiene-Styrene (PC/ABS) plastic; Bottom: Magnesium alloy											
Battery - type	Lithium Ion 3-cell or 6-cell											
Battery - life ¹⁰	3-cell (31.2Whr): up to 4.3 hr; 6-cell (62.4Whr): up to 9.4 hr											
Chipset	AMD A50M FCH Chipset											
Multicard reader	4-in-1 reader (MMC, SD, SDHC, SDXC)											
ExpressCard	None											
Ports	Three USB 2.0 (one powered), external monitor (VGA DB-15, HDMI), ethernet (RJ-45)											
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots 11b/g/n, PCIe Half Mini Card, ThinkPad b/g/n, 1x1											
WWAN	Wireless WAN upgradable											
Carrier	None											
Modem	None											
Bluetooth™	Bluetooth 3.0 wireless (requires Bluetooth 3.0 driver support)											
Ethernet	Realtek RTL8111DL Gigabit Network Connection, PHY, PCIe x1											
Audio support	High Definition (HD) Audio, Conexant CX20582 codec / stereo speakers, 2 watt x 2 / digital mono microphone, combo audio/mic jack											Supports ThinkVantage® technologies
Security	Power-on password, hard disk password, supervisor password, security keyhole											65-watt AC Adapter
Security chip	None											ROHS-compliant
Fingerprint reader	None											International Warranty Service ¹⁷
Limited warranty ¹²	1-year - depot repair service / service upgrades ²² available											24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²

See footnotes for more detailed information

WE model(s) announced July 5 or October 4, 2011, or January 3, 2012

WE model(s) withdrawn effective December 2012

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(G-MV1-4) February 2013

ThinkPad®



Lenovo® ThinkPad X220



Lenovo ThinkPad X220



Lenovo® ThinkPad X220



Lenovo ThinkPad X220



Lenovo ThinkPad X220



Lenovo ThinkPad X220

ThinkPad® X220 (4290) - November 2011 - I - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ⁹ rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Finger-print reader	Bat-tery cells	Global (G) Intel vPro (P)	GMP (P)	Pre-load
4290-4XG	i7-2640M	4GBx1	12.5" HD Prem	720p	320G 7200	Optional	Opt	Intel 6205 ²⁸	WWAN upg		Fing 9	vPro	G	Pro 64	
4290-48G	i7-2620M	4GBx1	12.5" HD Prem		160G SSD	Optional	Opt	Intel 6300 ²⁸	WWAN upg		Fing 9	vPro	G	Pro 64	
4290-47G	i7-2620M	4GBx1	12.5" HD Prem		320G 7200	Optional	Opt	Intel 6300	WWAN upg		Fing 6	vPro	G	Pro 64	
4290-46G	i5-2520M	4GBx1	12.5" HD		320G 7200	Optional	Opt	Intel 6300	WWAN upg		Fing 6	vPro	G	Pro 64	
4290-45G	i7-2620M	4GBx1	12.5" HD		320G 7200	Optional	Opt	Intel 6300	WWAN upg		Fing 9	vPro	G	Pro 64	
4290-44G	i5-2520M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	Intel 6205	WWAN upg		Fing 6	vPro	G	Pro 64	
4290-43G	i5-2520M	4GBx1	12.5" HD	720p	128G SSD	Optional	Opt	Intel 6205	WWAN upg		Fing 6	vPro	G	Pro 64	
4290-42G	i5-2540M	4GBx1	12.5" HD Prem		128G SSD	Optional	Opt	Intel 6300	WWAN upg		Fing 6	vPro	G	Pro 64	
4290-3WG	i5-2520M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	Intel 6205	Ericsson	select	Fing 6	vPro		Pro 64	
4290-3SG	i5-2540M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	Intel 6205	Ericsson	select	Fing 6	vPro		Pro 64	
Positioning Processor	<p><i>An ultraportable for the executive on the move; one spindle</i></p> <p>Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology</p> <p>Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology</p> <p>Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology</p> <p>Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology</p>										<p>Preloaded operating system²⁰</p> <ul style="list-style-type: none"> Genuine Windows[®] 7 Professional 64 <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> Rescue and Recovery™ Access Connections™ Fingerprint Software (fingerprint models) Password Manager (fingerprint models) ThinkVantage System Update ThinkVantage Power Manager ThinkVantage Toolbox <p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> Norton™ Internet Security 2011 (30 days of virus definitions) Adobe® Reader® Skype™ for Windows Microsoft Office 2010 preloaded; purchase product key to activate Corel® WinDVD® (DVD±RW) Corel Burn.Now™ Lenovo Edition (DVD±RW) Corel DVD MovieFactory® Lenovo Edition (DVD±RW) 				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets														
Optical Ultrabay SATA disk	<p>Option for ThinkPad Ultrabase Series 3</p> <p>Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3</p> <p><i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high</p> <p><i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™</p> <p><i>All:</i> removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3</p>														
mSATA™ SSD	None														
Widescreen display	<p><i>Some:</i> 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio</p> <p><i>Some:</i> (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)</p>														
Camera	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus														
Graphics	<p>Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display;</p> <p><i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>														
Keyboard	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys														
TrackPoint®	TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass														
Touchpad	UltraNav™, buttonless touchpad below keyboard, multi-touch														
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions														
Dimensions ³	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.36"; 305mm x 206.5mm x 19.0-34.6mm														
Weight ²	<i>4-cell:</i> from 2.97 lb (1.35kg); <i>6-cell:</i> from 3.31 lb (1.50kg); <i>9-cell:</i> from 3.67 lb (1.67kg)														
Case material	<i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy														
Standard Battery	Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery														
External Battery	None														
Battery - life ¹⁰	<p><i>4-cell (28Whr):</i> up to 4.1 hr; <i>6-cell (62.4Whr):</i> up to 9.2 hr; <i>9-cell (99.9Whr):</i> up to 13.8 hr;</p> <p><i>external battery (64Whr):</i> up to 9.4 hr; <i>9-cell plus external battery:</i> up to 23.2 hr</p>										Supports ThinkVantage® technologies				
Chipset	Mobile Intel QM67 Express Chipset														
Ultrabase Multicard reader	<p><i>Option:</i> ThinkPad Ultrabase Series 3 (see right side)</p> <p>4-in-1 reader (SD, SDHC, SDXC, MMC)</p> <p>One slot (ExpressCard/34, ExpressCard/54)</p>														
ExpressCard Ports	<p><i>i7 model:</i> One USB 3.0, two USB 2.0 (one powered)</p> <p><i>other model:</i> Three USB 2.0 (one powered)</p> <p>external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)</p>														
PCIe Mini Card WLAN ⁴	<p>Two PCI Express Mini Card slots</p> <p><i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2</p> <p><i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3</p>														
WWAN	<p><i>Some:</i> Wireless WAN upgradable</p> <p><i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS</p>														
Carrier Modem	<i>Some:</i> User selectable, contract required with service provider														
Bluetooth™	None														
Ethernet	Bluetooth 3.0 wireless, LED indicator														
Intel AMT	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1														
Audio support	Intel Active Management Technology (iAMT)														
Security	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack														
Security chip	Power-on password, hard disk password, supervisor password, security keyhole														
Fingerprint reader	Trusted Platform Module, TCG 1.2-compliant														
	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip														
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available										<p>65-watt AC Adapter</p> <p>ENERGY STAR® 5.0-compliant</p> <p>ROHS-compliant</p> <p>International Warranty Service¹⁷</p> <p>24 hour x 7 day¹⁸ toll-free support during the warranty period¹²</p>				

See footnotes for more detailed information
 WE model(s) announced April 19, May 3, or October 4, 2011
 WE model(s) withdrawn effective December 2012

ThinkPad® X220 (4290) - November 2011 - II - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ⁹ rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Finger print reader	Blue-tooth	Bat-tery cells	Ext Battery cells	Global (G) Intel vPro	GMP (P)	Pre-load
4290-2WG	i5-2540M	4GBx1	12.5" HD Prem	720p	320G 7200	DVD±RW	UltraB	Intel 6205 ²⁸	upg		Fing	BT	9		vPro	G	Pro 64
4290-2XG	i5-2540M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	Intel 6205	upg				6		vPro	G	Pro 64
4290-2BG	i7-2620M	4GBx1	12.5" HD	720p	160G SSD	DVD±RW	UltraB	Intel 6205	Ericsson select		Fing	BT	9		vPro		Pro 64
4290-2AG	i5-2540M	4GBx1	12.5" HD	720p	320G 7200	Optional	Opt	Intel 6205	Ericsson select		Fing	BT	6	6	vPro		Pro 64
4290-29G	i5-2520M	2GBx2	12.5" HD	720p	320G 7200	Optional	Opt	Intel 6205	upg		Fing	BT	6		vPro		Pro 64
4290-28G	i5-2520M	2GBx1	12.5" HD	720p	250G 5400	Optional	Opt	Intel 6205	upg				6		vPro		Pro 64
4290-27G	i7-2620M	2GBx2	12.5" HD		320G 7200	Optional	Opt	Intel 6205	upg		Fing	BT	9	6	vPro	G	Pro 64
4290-26G	i5-2520M	2GBx1	12.5" HD		250G 5400	Optional	Opt	Intel 6205	upg		Fing	BT	6	6	vPro	G	Pro 64

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	An ultraportable for the executive on the move; one spindle Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology	Preloaded operating system ²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications ¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	Preloaded applications ¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
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 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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> 12.5" (317.5mm) HD (1366x768) TFT color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> (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	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus	
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)	
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions ³ Weight ² Case material Standard Battery External Battery Battery - life ¹⁰	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.36"; 305mm x 206.5mm x 19.0-34.6mm <i>4-cell:</i> from 2.97 lb (1.35kg); <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 Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery <i>Some:</i> Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+) <i>4-cell (28Whr):</i> up to 4.1 hr; <i>6-cell (62.4Whr):</i> up to 9.2 hr; <i>9-cell (99.9Whr):</i> up to 13.8 hr; <i>external battery (64Whr):</i> up to 9.4 hr; <i>9-cell plus external battery:</i> up to 23.2 hr	Supports ThinkVantage® technologies
Chipset	Mobile Intel QM67 Express Chipset	ThinkPad Ultrabase Series 3 • Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side
Ultrabase Multicard reader ExpressCard Ports	<i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) <i>i7 model:</i> One USB 3.0, two USB 2.0 (one powered) <i>other model:</i> Three USB 2.0 (one powered) external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)	
PCIe Mini Card WLAN ⁴ 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, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS	Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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
Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<i>Some:</i> User selectable, contract required with service provider None <i>Some:</i> Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 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> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	65-watt AC Adapter ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available	

See footnotes for more detailed information
WE model(s) announced March 1, May 3, or July 19, 2011
WE model(s) withdrawn effective December 2012

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(G-DSH1-2) February 2013

ThinkPad® X220 (4291) - Onsite (November 2011) - I - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ⁹ rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Battery Carrier	Intel AMT	Intel vPro	Global (G) GMP (P)	Pre-load
4291-4XG	i7-2640M	4GBx1	12.5" HD Prem	720p	320G 7200			Intel 6205 ²⁸	WWAN upg	9	iAMT	vPro	G P	Pro 64
4291-4CG	i7-2640M	4GBx1	12.5" HD Prem	720p	320G 7200	DVD±RW	UltraB	Intel 6205	Ericsson	select	9	iAMT	vPro	Pro 64
4291-4BG	i7-2640M	4GBx1	12.5" HD Prem	720p	160G SSD			Intel 6205	Ericsson	select	9	iAMT	vPro	Pro 64
4291-49G	i7-2620M	4GBx1	12.5" HD Prem	720p	160G SSD			Intel 6205	Ericsson	select	9	iAMT	vPro	Pro 64
4291-48G	i7-2620M	4GBx1	12.5" HD Prem		160G SSD			Intel 6300 ²⁸	WWAN upg	9	iAMT	vPro	G P	Pro 64
4291-47G	i7-2620M	4GBx1	12.5" HD Prem		320G 7200			Intel 6300	WWAN upg	6	iAMT	vPro	G P	Pro 64
4291-46G	i5-2520M	4GBx1	12.5" HD		320G 7200			Intel 6300	WWAN upg	6	iAMT	vPro	G P	Pro 64
4291-5DG	i5-2450M	4GBx1	12.5" HD	720p	320G 5400	DVD±RW	UltraB	Intel 6205	Ericsson	select	6			Pro 64
4291-53G	i5-2450M	4GBx1	12.5" HD	720p	320G 7200	DVD±RW	UltraB	Intel 6205	Ericsson	select	6			Pro 64
Positioning Processor	<p><i>An ultraportable for the executive on the move; one spindle</i> Intel® Core™ i5-2450M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology Intel Core i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology</p>										<p>Preloaded operating system²⁰ - Genuine Windows[®] 7 Professional 64</p> <p>Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox</p> <p>Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)</p>			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets													
Optical Ultrabay SATA disk	<p><i>Some:</i> DVD burner, removable from ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ All: removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3</p>													
mSATA™ SSD	None													
Widescreen display	<p><i>Some:</i> 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> (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)</p>													
Camera	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	<p>Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; Maximum external resolution: 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>													
Keyboard TrackPoint® Touchpad ThinkLight™	<p>7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar¹³, magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions</p>													
Dimensions ³ Weight ² Case material Standard Battery External Battery Battery - life ¹⁰	<p><i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.36"; 305mm x 206.5mm x 19.0-34.6mm <i>4-cell:</i> from 2.97 lb (1.35kg); <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 Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery None <i>4-cell (28Whr):</i> up to 4.1 hr; <i>6-cell (62.4Whr):</i> up to 9.2 hr; <i>9-cell (99.9Whr):</i> up to 13.8 hr; external battery (64Whr): up to 9.4 hr; <i>9-cell plus external battery:</i> up to 23.2 hr</p>													
Chipset	Mobile Intel QM67 Express Chipset										Supports ThinkVantage® technologies			
Ultrabase Multicard reader ExpressCard Ports	<p><i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) <i>17 model:</i> One USB 3.0, two USB 2.0 (one powered) <i>other model:</i> Three USB 2.0 (one powered) external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)</p>										<p>ThinkPad Ultrabase Series 3</p> <ul style="list-style-type: none"> • Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side <p>Other features:</p> <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 WLAN ⁴ WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support Security Security chip Fingerprint reader	<p>Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3 <i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS <i>Some:</i> User selectable, contract required with service provider None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 <i>Some:</i> Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 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 UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip</p>													
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available										<p>65-watt AC Adapter ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service¹⁷ 24 hour x 7 day¹⁸ toll-free support during the warranty period¹²</p>			

See footnotes for more detailed information

WE model(s) announced May 3, May 31, October 4, or December 13, 2011, or January 17, 2012
 WE model(s) withdrawn effective December 2012

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 (G-DSH1-3) February 2013

ThinkPad® X220 (4291) - Onsite (November 2011) - II - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ³ rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Finger-print reader	Bat-tery cells	Global Intel (G) vPro GMP (P)	Pre-load
4291-45G	i7-2620M	4GBx1	12.5" HD		320G 7200			Intel 6300 ²⁸	WWAN upg	Fing 9	vPro	G P	Pro 64
4291-43G	i5-2520M	4GBx1	12.5" HD	720p	128G SSD			Intel 6205 ²⁸	WWAN upg	Fing 6	vPro	G P	Pro 64
4291-44G	i5-2520M	4GBx1	12.5" HD	720p	320G 7200			Intel 6205	WWAN upg	Fing 6	vPro	G P	Pro 64
4291-42G	i5-2540M	4GBx1	12.5" HD Prem		128G SSD			Intel 6300	WWAN upg	Fing 6	vPro	G P	Pro 64
4291-37G	i5-2520M	4GBx1	12.5" HD	720p	320G 7200			Intel 6205	Ericsson	select	Fing 6	vPro	Pro 64
4291-36G	i7-2620M	4GBx1	12.5" HD	720p	320G 7200	DVD±RW	UltraB	Intel 6205	Ericsson	select	Fing 9	vPro	Pro 64
4291-35G	i7-2620M	4GBx1	12.5" HD	720p	160G SSD			Intel 6205	Ericsson	select	Fing 9	vPro	Pro 64

- Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	An ultraportable for the executive on the move; one spindle Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)		
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Supports ThinkVantage® technologies ThinkPad Ultrabase Series 3 • Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service¹⁷ 24 hour x 7 day¹⁸ toll-free support during the warranty period¹²		
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 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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> 12.5" (317.5mm) HD (1366x768) TFT color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> (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	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus												
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)												
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions												
Dimensions ³ Weight ² Case material Standard Battery External Battery Battery - life ¹⁰	<i>without UltraBase:</i> 4/6-cell: 12.0" x 8.13" x 0.75-1.36"; 305mm x 206.5mm x 19.0-34.6mm 4-cell: from 2.97 lb (1.35kg); 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 Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery None 4-cell (28Whr): up to 4.1 hr; 6-cell (62.4Whr): up to 9.2 hr; 9-cell (99.9Whr): up to 13.8 hr; <i>external battery (64Whr):</i> up to 9.4 hr; 9-cell <i>plus external battery:</i> up to 23.2 hr												
Chipset	Mobile Intel QM67 Express Chipset												
Ultrabase Multicard reader ExpressCard Ports	<i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) <i>i7 model:</i> One USB 3.0, two USB 2.0 (one powered) <i>other model:</i> Three USB 2.0 (one powered) external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)												
PCIe Mini Card WLAN ⁴ WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support Security Security chip Fingerprint reader	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3 <i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS <i>Some:</i> User selectable, contract required with service provider None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 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 UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip												
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available												

See footnotes for more detailed information
WE model(s) announced April 5 or May 3, 2011
WE model(s) withdrawn effective December 2012

ThinkPad® X220 (4291) - Onsite (November 2011) - III - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ^o rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Finger print reader	Bat- tery cells	Ext Battery cells	Global (G) Intel vPro (P)	GMP (P)	Pre-load	
4291-2XG	i5-2540M	4GBx1	12.5" HD	720p	320G 7200			Intel 6205 ²⁸	upg			6	vPro	G P	Pro	64	
4291-2WG	i5-2540M	4GBx1	12.5" HD Prem	720p	320G 7200	DVD±RW	UltraB	Intel 6205	upg		Fing BT	9	vPro	G P	Pro	64	
4291-2BG	i7-2620M	4GBx1	12.5" HD	720p	160G SSD	DVD±RW	UltraB	Intel 6205	Ericsson select		Fing BT	9	vPro		Pro	64	
4291-2AG	i5-2540M	4GBx1	12.5" HD	720p	320G 5400			Intel 6205	Ericsson select		Fing BT	6	6	vPro		Pro	64
4291-29G	i5-2520M	2GBx2	12.5" HD	720p	320G 7200			Intel 6205	upg		Fing BT	6		vPro		Pro	64
4291-28G	i5-2520M	2GBx1	12.5" HD	720p	250G 5400			Intel 6205	upg		BT	6		vPro		Pro	64
4291-26G	i5-2520M	2GBx1	12.5" HD		250G 5400			Intel 6205	upg		Fing BT	6	6	vPro	G P	Pro	64
4291-27G	i7-2620M	2GBx2	12.5" HD		320G 7200			Intel 6205	upg		Fing BT	9	6	vPro	G P	Pro	64
4291-5CG	i5-2520M	4GBx1	12.5" HD	720p	320G 5400			Intel 6205	Ericsson select		Fing BT	6		vPro		Pro	64

- Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	An ultraportable for the executive on the move; one spindle Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology	Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
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 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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> 12.5" (317.5mm) HD (1366x768) TFT color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio <i>Some:</i> (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	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus	
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)	
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions ³ Weight ² Case material Standard Battery External Battery Battery - life ¹⁰	<i>without UltraBase; 4/6-cell:</i> 12.0" x 8.13" x 0.75-1.36"; 305mm x 206.5mm x 19.0-34.6mm <i>4-cell:</i> from 2.97 lb (1.35kg); <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 Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery <i>Some:</i> Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+) <i>4-cell (28Whr):</i> up to 4.1 hr; <i>6-cell (62.4Whr):</i> up to 9.2 hr; <i>9-cell (99.9Whr):</i> up to 13.8 hr; <i>external battery (64Whr):</i> up to 9.4 hr; <i>9-cell plus external battery:</i> up to 23.2 hr	Supports ThinkVantage® technologies
Chipset	Mobile Intel QM67 Express Chipset	ThinkPad Ultrabase Series 3
Ultrabase Multicard reader ExpressCard Ports	<i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) <i>i7 model:</i> One USB 3.0, two USB 2.0 (one powered) <i>other model:</i> Three USB 2.0 (one powered) external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)	• Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side
PCIe Mini Card WLAN ⁴ 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, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS	Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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
Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<i>Some:</i> User selectable, contract required with service provider None <i>Some:</i> Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 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> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	65-watt AC Adapter ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service¹⁷ 24 hour x 7 day¹⁸ toll-free support during the warranty period¹²
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available	

See footnotes for more detailed information

WE model(s) announced March 1, May 3, July 19, or December 13, 2011

WE model(s) withdrawn effective December 2012

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ThinkPad® X220i (4287) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Camera	Disk SATA GB ⁹ rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Finger print reader	Bat-tery Intel vPro	Pre-load	Ann Date (mm/yy)
4287-3YG	i3-2350M	4GBx1	12.5" HD	720p	320G 7200	Optional	Optional	Intel 6205 ²⁸	WWAN upg	Fing	Blue	6 No	Pro 64 04/11
4287-37G	i3-2310M	4GBx1	12.5" HD	720p	320G 5400	Optional	Optional	Intel 6205	WWAN upg	Fing	Blue	6 No	Pro 64 10/11
4287-66G	i3-2350M	4GBx1	12.5" HD	720p	320G 5400	Optional	Optional	Intel 6205	WWAN upg	Fing	Blue	6 No	Pro 64 12/11

- **Small and medium business (SMB) model(s), part of the WE TopSeller™ Program**
- **A depot repair service 3-year limited warranty**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

Positioning Processor	An ultraportable for the executive on the move; one spindle Intel® Core™ i3-2310M processor (dual-core, 2.10GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), HT technology Intel Core i3-2350M processor (dual-core, 2.30GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64		
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox		
Optical Ultrabay SATA disk	Option for ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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	12.5" (317.5mm) HD (1366x768) TFT color , anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio HD720p resolution, wider view angle, low light sensitive, fixed focus												
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)												
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch Illuminates the keyboard to improve visibility in low-light conditions										Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Skype™ for Windows		
Dimensions ³ Weight ² Case material Standard Battery External Battery Battery - life ¹⁰	<i>without UltraBase:</i> 4/6-cell: 12.0" x 8.13" x 0.75-1.36"; 305mm x 206.5mm x 19.0-34.6mm 4-cell: from 2.97 lb (1.35kg); 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 Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery None 4-cell (28Whr): up to 4.1 hr; 6-cell (62.4Whr): up to 9.2 hr; 9-cell (99.9Whr): up to 13.8 hr; <i>external battery (64Whr): up to 9.4 hr; 9-cell plus external battery: up to 23.2 hr</i>												
Chipset	Mobile Intel QM67 Express Chipset										ThinkPad Ultrabase Series 3 • Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side Other features: • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²		
Ultrabase Multicard reader ExpressCard Ports	Option: ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) <i>other model:</i> Three USB 2.0 (one powered) external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)												
PCIe Mini Card WLAN ⁴ WWAN 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 Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 None High Definition (HD) Audio, Conexant 20672 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 UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip												
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available												

See footnotes for more detailed information
WE model(s) announced April 5, October 4, or December 13, 2011
WE model(s) withdrawn effective December 2012

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ThinkPad®



Lenovo® ThinkPad X220 Tablet



Lenovo ThinkPad X220 Tablet



Lenovo ThinkPad X220 Tablet



Lenovo ThinkPad X220 Tablet



Lenovo ThinkPad X220 Tablet



Lenovo ThinkPad X220 Tablet

ThinkPad® X220 Tablet (4298) - November 2011 - I - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ³ rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Finger print reader	Bat- tery Blue- tooth cells	Ext Battery cells	Global Intel (G) vPro GMP (P)	Pre- load
4298-4TG	i7-2640M	4GBx1	12.5" HD <i>Multi</i>	720p	128G SSD			Intel 6205 ²⁸	upg	Fing	Blue	6	vPro G	Pro 64
4298-4CG	i5-2520M	4GBx1	12.5" HD <i>Outdoor</i>	720p	128G SSD			Intel 6205	upg	Fing	Blue	6	vPro G	Pro 64
4298-4BG	i5-2520M	4GBx1	12.5" HD <i>Multi</i>	720p	128G SSD			Intel 6205	upg	Fing	Blue	6	vPro G	Pro 64
4298-42G	i5-2520M	4GBx1	12.5" HD <i>Multi</i>	720p	320G 7200	DVD±RW	UltraB	Intel 6205	upg	Fing	Blue	6	vPro G	Pro 64
4298-3ZG	i5-2520M	4GBx1	12.5" HD <i>Outdoor</i>	720p	320G 7200	DVD±RW	UltraB	Intel 6205	upg	Fing	Blue	6	vPro G	Pro 64
4298-3YG	i7-2620M	4GBx1	12.5" HD <i>Multi</i>	720p	128G SSD			Intel 6205	upg	Fing	Blue	6	vPro G	Pro 64
4298-3XG	i7-2620M	4GBx1	12.5" HD <i>Outdoor</i>	720p	128G SSD			Intel 6205	upg	Fing	Blue	6	vPro G	Pro 64
4298-3UG	i7-2620M	4GBx1	12.5" HD <i>Multi</i>	720p	320G 7200			Intel 6205	upg	Fing	Blue	6	6 vPro G	Pro 64
4298-3TG	i7-2620M	4GBx1	12.5" HD <i>Outdoor</i>	720p	320G 7200			Intel 6205	upg	Fing	Blue	6	6 vPro G	Pro 64
4298-56G	i5-2520M	4GBx1	12.5" HD <i>Multi</i>	720p	160G SSD			Intel 6205	upg	Fing	Blue	6	vPro G	Pro 64

- **A depot repair service 3-year limited warranty**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

Positioning Processor	<i>Convertible tablet ultraportable; one spindle</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache) , DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows [®] 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Skype™ for Windows • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW)			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets													
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 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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>Outdoor:</i> 12.5" (317.5mm) HD (1366x768) TFT color , anti-glare display with scratch resistant Corning® Gorilla® Glass, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, 1.2% reflectivity, multiple anti-reflectivity layers, IPS <i>MultiTouch:</i> 12.5" (317.5mm) HD (1366x768) TFT color , anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, MultiTouch screen supports pen & five-finger gesture <i>All:</i> WideView (170° viewing), anti-reflective and anti-glare protective coatings, write on screen with standard digitizer pen , pen holder in side base (right), rotate and swivel hinge , power, reset, and rotation buttons on display bottom													
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)													
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch None													
Dimensions ³ Weight ² Case material Battery - type Extended Battery Battery - life ¹⁰	<i>without UltraBase; 3-cell:</i> 12.0" x 9" x 1.1-1.23"; 305mm x 228.7mm x 27-31.3mm <i>3-cell:</i> from 3.67 lb (1.66kg); <i>6-cell:</i> from 3.97 lb (1.80kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Lithium Ion 3-cell or 6-cell, supports optional external battery as 2nd battery <i>Some:</i> Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+) <i>3-cell (30Whr):</i> up to 4.0 hr; <i>6-cell (66Whr):</i> up to 8.8 hr; <i>external battery (64Whr):</i> up to 9.0 hr; <i>6-cell plus external battery:</i> up to 17.8 hr													
Chipset	Mobile Intel QM67 Express Chipset													
Ultrabase Multicard Reader ExpressCard Ports	<i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) Three USB 2.0 (one powered), external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)													
PCIe Mini Card WLAN ⁴ 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 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 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 UPEK Fingerprint reader (right base of display), used in tablet/notebook mode, LED indicator, Power On Authentication, supports the security chip													
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available													
See footnotes for more detailed information WE model(s) announced May 3, May 10, August 2, or October 4, 2011, or January 3, 2012 WE model(s) withdrawn effective December 2012														

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(G-CMT1-1) February 2013

ThinkPad® X220 Tablet (4298) - November 2011 - II - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ⁵ rpm	Optical in UltraBase Series 3	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Bat-tery cells	Ext Battery cells	Global Intel vPro	(G) GMP (P)load	Pre-load
4298-32G	i7-2620M	2GBx2	12.5" HD <i>Outdoor</i>	720p	160G SSD	Optional	Opt	Intel 6205 ²⁸	Ericsson	selectable	6		vPro	Pro 64	
4298-2ZG	i5-2520M	2GBx2	12.5" HD <i>Outdoor</i>	720p	320G 7200	Optional	Opt	Intel 6205	WWAN upg		6	6	vPro	Pro 64	
4298-2YG	i7-2620M	2GBx2	12.5" HD <i>Multi</i>	720p	320G 7200	Optional	Opt	Intel 6205	WWAN upg		6		vPro	Pro 64	
4298-2XG	i5-2520M	2GBx1	12.5" HD <i>Multi</i>	720p	250G 5400	Optional	Opt	Intel 6205	WWAN upg		6		vPro	Pro 64	
4298-26G	i7-2620M	2GBx2	12.5" HD <i>Multi</i>		320G 7200	Optional	Opt	Intel 6300 ²⁸	WWAN upg		6	6	vPro	G Pro 64	
4298-27G	i5-2520M	2GBx1	12.5" HD <i>Outdoor</i>		320G 7200	Optional	Opt	Intel 6205	WWAN upg		6		vPro	G Pro 64	
<ul style="list-style-type: none"> • A depot repair service 3-year limited warranty • Microsoft® Office 2010 Product Key Ready (O10PKR) 															
Positioning	<i>Convertible tablet ultraportable; one spindle</i>										Preloaded operating system²⁰				
Processor	Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology										- Genuine Windows® 7 Professional 64				
	Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology										Ready to install applications¹⁴ (only some listed)				
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap 				
Optical Ultrabay SATA disk	Option for ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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										Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Skype™ for Windows • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) 				
mSATA™ SSD	None														
Widescreen display	<i>Outdoor:</i> 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare display with scratch resistant Corning® Gorilla® Glass, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, 1.2% reflectivity, multiple anti-reflectivity layers, IPS <i>MultiTouch:</i> 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, MultiTouch screen supports pen & five-finger gesture <i>All:</i> WideView (170° viewing), anti-reflective and anti-glare protective coatings, write on screen with standard digitizer pen , pen holder in side base (right), rotate and swivel hinge , power, reset, and rotation buttons on display bottom														
Camera	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus														
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)										Supports ThinkVantage® technologies				
Keyboard	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys										ThinkPad Ultrabase Series 3 <ul style="list-style-type: none"> • Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side 				
TrackPoint®	TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass														
Touchpad	UltraNav™, buttonless touchpad below keyboard, multi-touch										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 				
ThinkLight™	None														
Dimensions ³	<i>without UltraBase; 3-cell:</i> 12.0" x 9" x 1.1-1.23"; 305mm x 228.7mm x 27-31.3mm										65-watt AC Adapter ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				
Weight ²	<i>3-cell:</i> from 3.67 lb (1.66kg); <i>6-cell:</i> from 3.97 lb (1.80kg)														
Case material	<i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy										Supports ThinkVantage® technologies				
Battery - type	Lithium Ion 3-cell or 6-cell, supports optional external battery as 2nd battery														
Extended Battery	<i>Some:</i> Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+)										ThinkPad Ultrabase Series 3 <ul style="list-style-type: none"> • Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side 				
Battery - life ¹⁰	<i>3-cell (30Whr):</i> up to 4.0 hr; <i>6-cell (66Whr):</i> up to 8.8 hr; <i>external battery (64Whr):</i> up to 9.0 hr; <i>6-cell plus external battery:</i> up to 17.8 hr														
Chipset	Mobile Intel QM67 Express Chipset										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 				
Ultrabase	<i>Option:</i> ThinkPad Ultrabase Series 3 (see right side)														
Multicard Reader	4-in-1 reader (SD, SDHC, SDXC, MMC)										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 				
ExpressCard	One slot (ExpressCard/34, ExpressCard/54)														
Ports	Three USB 2.0 (one powered), external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 WLAN ⁴	<i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3														
WWAN	<i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 				
Carrier	<i>Some:</i> User selectable, contract required with service provider														
Modem	None										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 				
Bluetooth™	Bluetooth 3.0 wireless, LED indicator														
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 				
Intel AMT	Intel Active Management Technology (iAMT)														
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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	Power-on password, hard disk password, supervisor password, security keyhole														
Security chip	Trusted Platform Module, TCG 1.2-compliant										Other features: <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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 				
Fingerprint reader	UPEK Fingerprint reader (right base of display), used in tablet/notebook mode, LED indicator, Power On Authentication, supports the security chip														
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available														

See footnotes for more detailed information
 WE model(s) announced March 22, April 5, or July 12, 2011
 WE model(s) withdrawn effective December 2012

ThinkPad® X220 Tablet (4299) - Onsite (November 2011) - I - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Disk SATA GB ⁵ rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Finger-print reader	Bat-tery cells	Ext Battery cells	Global Intel vPro GMP (P)	Pre-load
4299-36G	i5-2520M	4GBx1	12.5" HD <i>Outdoor</i>	320G 7200	DVD±RW	UltraB	Intel 6205 ²⁸	upg		Fing	6	vPro	G P	Pro 64
4299-35G	i5-2520M	4GBx1	12.5" HD <i>Multi</i>	320G 7200	DVD±RW	UltraB	Intel 6205	upg		Fing	6	vPro	G P	Pro 64
4299-32G	i7-2620M	4GBx1	12.5" HD <i>Outdoor</i>	128G SSD			Intel 6205	upg		Fing	6	vPro	G P	Pro 64
4299-2ZG	i7-2620M	4GBx1	12.5" HD <i>Multi</i>	128G SSD			Intel 6205	upg		Fing	6	vPro	G P	Pro 64
4299-2SG	i7-2620M	4GBx1	12.5" HD <i>Outdoor</i>	320G 7200			Intel 6205	upg		Fing	6	6 vPro	G P	Pro 64
4299-2RG	i7-2620M	4GBx1	12.5" HD <i>Multi</i>	320G 7200			Intel 6205	upg		Fing	6	6 vPro	G P	Pro 64
4299-2QG	i5-2520M	4GBx1	12.5" HD <i>Multi</i>	320G 7200			Intel 6205	Ericsson	select	Fing	6	vPro		Pro 64
4299-2PG	i5-2520M	4GBx1	12.5" HD <i>Multi</i>	160G SSD			Intel 6205	Ericsson	select	Fing	6	vPro		Pro 64
4299-2BG	i7-2620M	2GBx2	12.5" HD <i>Outdoor</i>	160G SSD			Intel 6205	Ericsson	select	Fing	6	vPro		Pro 64
4299-2AG	i5-2520M	2GBx2	12.5" HD <i>Outdoor</i>	320G 7200			Intel 6205	upg		Fing	6	6 vPro		Pro 64
Positioning Processor	<i>Convertible tablet ultraportable; one spindle</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows [®] 7 Professional 64			
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets										Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap			
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 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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										Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Skype™ for Windows • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW)			
Widescreen display	<i>Outdoor:</i> 12.5" (317.5mm) HD (1366x768) TFT color , anti-glare display with scratch resistant Corning® Gorilla® Glass, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, 1.2% reflectivity, multiple anti-reflectivity layers, IPS <i>MultiTouch:</i> 12.5" (317.5mm) HD (1366x768) TFT color , anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, MultiTouch screen supports pen & five-finger gesture <i>All:</i> WideView (170° viewing), anti-reflective and anti-glare protective coatings, write on screen with standard digitizer pen , pen holder in side base (right), rotate and swivel hinge , power, reset, and rotation buttons on display bottom													
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via optional cable)													
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch None													
Dimensions ³ Weight ² Case material Battery - type Extended Battery Battery - life ¹⁰	<i>without UltraBase; 3-cell:</i> 12.0" x 9" x 1.1-1.23"; 305mm x 228.7mm x 27-31.3mm <i>3-cell:</i> from 3.67 lb (1.66kg); <i>6-cell:</i> from 3.97 lb (1.80kg) <i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy Lithium Ion 3-cell or 6-cell, supports optional external battery as 2nd battery <i>Some:</i> Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+) <i>3-cell (30Whr):</i> up to 4.0 hr; <i>6-cell (66Whr):</i> up to 8.8 hr; <i>external battery (64Whr):</i> up to 9.0 hr; <i>6-cell plus external battery:</i> up to 17.8 hr										Supports ThinkVantage® technologies			
Chipset	Mobile Intel QM67 Express Chipset										ThinkPad Ultrabase Series 3 • Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side			
Ultrabase Multicard Reader ExpressCard Ports	<i>Some:</i> ThinkPad Ultrabase Series 3 (see right side) 4-in-1 reader (SD, SDHC, SDXC, MMC) One slot (ExpressCard/34, ExpressCard/54) Three USB 2.0 (one powered), external monitor (VGA DB-15, 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 optional cable) • 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 WLAN ⁴ 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, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS													
Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<i>Some:</i> User selectable, contract required with service provider None Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 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 UPEK Fingerprint reader (right base of display), used in tablet/notebook mode, LED indicator, Power On Authentication, supports the security chip										65-watt AC Adapter ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available													

See footnotes for more detailed information

WE model(s) announced March 22, April 5, May 3, or May 10, 2011

WE model(s) withdrawn effective December 2012

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(G-CMT1-3) February 2013

ThinkPad® X220 Tablet (4299) - Onsite (November 2011) - II - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ³ rpm	Optical in UltraBase	ThinkPad Ultrabase Series 3	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Battery cells	Ext Battery cells	Intel vPro	Global (G) GMP (P)	Pre-load
4299-4TG	i7-2640M	4GBx1	12.5" HD <i>Multi</i>	720p	128G SSD	Optional	Opt	Intel 6205 ²⁸	WWAN upg	6		vPro	G P	Pro 64
4299-4CG	i5-2520M	4GBx1	12.5" HD <i>Outdoor</i>	720p	128G SSD	Optional	Opt	Intel 6205	WWAN upg	6		vPro	G P	Pro 64
4299-4BG	i5-2520M	4GBx1	12.5" HD <i>Multi</i>	720p	128G SSD	Optional	Opt	Intel 6205	WWAN upg	6		vPro	G P	Pro 64
4299-29G	i7-2620M	2GBx2	12.5" HD <i>Multi</i>	720p	320G 7200	Optional	Opt	Intel 6205	WWAN upg	6		vPro		Pro 64
4299-28G	i5-2520M	2GBx1	12.5" HD <i>Multi</i>	720p	250G 5400	Optional	Opt	Intel 6205	WWAN upg	6		vPro		Pro 64
4299-26G	i7-2620M	2GBx2	12.5" HD <i>Multi</i>		320G 7200	Optional	Opt	Intel 6300 ²⁸	WWAN upg	6	6	vPro	G P	Pro 64
4299-27G	i5-2520M	2GBx1	12.5" HD <i>Outdoor</i>		320G 7200	Optional	Opt	Intel 6205	WWAN upg	6		vPro	G P	Pro 64

- **Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

Positioning Processor	<p><i>Convertible tablet ultraportable; one spindle</i></p> <p>Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology</p> <p>Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology</p> <p>Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology</p>	<p>Preloaded operating system²⁰</p> <ul style="list-style-type: none"> • Genuine Windows® 7 Professional 64 <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo SimpleTap <p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Skype™ for Windows • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW)
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets	
Optical Ultrabay SATA disk	Option for ThinkPad Ultrabase Series 3 Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3 <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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	<p><i>Outdoor:</i> 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare display with scratch resistant Corning® Gorilla® Glass, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, 1.2% reflectivity, multiple anti-reflectivity layers, IPS</p> <p><i>MultiTouch:</i> 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, MultiTouch screen supports pen & five-finger gesture</p> <p><i>All:</i> WideView (170° viewing), anti-reflective and anti-glare protective coatings, write on screen with standard digitizer pen, pen holder in side base (right), rotate and swivel hinge, power, reset, and rotation buttons on display bottom</p>	
Camera	<i>Some:</i> HD720p resolution, wider view angle, low light sensitive, fixed focus	
Graphics	Intel HD Graphics 3000 in processor, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports dual independent display; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)	
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, buttonless touchpad below keyboard, multi-touch None	
Dimensions ³ Weight ² Case material Battery - type Extended Battery Battery - life ¹⁰	<p><i>without UltraBase; 3-cell:</i> 12.0" x 9" x 1.1-1.23"; 305mm x 228.7mm x 27-31.3mm</p> <p><i>3-cell:</i> from 3.67 lb (1.66kg); <i>6-cell:</i> from 3.97 lb (1.80kg)</p> <p><i>Display cover:</i> Magnesium + PCABS; <i>Bottom:</i> Magnesium alloy</p> <p>Lithium Ion 3-cell or 6-cell, supports optional external battery as 2nd battery</p> <p><i>Some:</i> Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+)</p> <p><i>3-cell (30Whr):</i> up to 4.0 hr; <i>6-cell (66Whr):</i> up to 8.8 hr;</p> <p><i>external battery (64Whr):</i> up to 9.0 hr; <i>6-cell plus external battery:</i> up to 17.8 hr</p>	
Chipset	Mobile Intel QM67 Express Chipset	Supports ThinkVantage® technologies
Ultrabase Multicard Reader ExpressCard Ports	<p><i>Option:</i> ThinkPad Ultrabase Series 3 (see right side)</p> <p>4-in-1 reader (SD, SDHC, SDXC, MMC)</p> <p>One slot (ExpressCard/34, ExpressCard/54)</p> <p>Three USB 2.0 (one powered), external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)</p>	<p>ThinkPad Ultrabase Series 3</p> <ul style="list-style-type: none"> • Provides desktop expansion and cable management for X220 and X220 Tablet • Easily connects to the bottom of the X220 or X220 Tablet for traveling • Converts ThinkPad to a two-spindle system with optional Ultrabay Slim accessories in right side
PCIe Mini Card WLAN ⁴ WWAN Modem Bluetooth™ Ethernet Intel AMT Audio support	<p>Two PCI Express Mini Card slots</p> <p><i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2</p> <p><i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3</p> <p>Wireless WAN upgradable</p> <p>None</p> <p>Bluetooth 3.0 wireless, LED indicator</p> <p>Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1</p> <p>Intel Active Management Technology (iAMT)</p> <p>High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array microphone, combo audio/mic jack</p>	<p>Other features:</p> <ul style="list-style-type: none"> • Power button (front) • Security key lock, security keyhole • Analog VGA DB-15 monitor port • DisplayPort (supports single-link DVI-D via optional cable) • 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	<p>Power-on password, hard disk password, supervisor password, security keyhole</p> <p>Trusted Platform Module, TCG 1.2-compliant</p> <p>UPEK Fingerprint reader (right base of display), used in tablet/notebook mode, LED indicator, Power On Authentication, supports the security chip</p>	<p>65-watt AC Adapter</p> <p>ENERGY STAR® 5.0-compliant</p> <p>ROHS-compliant</p> <p>International Warranty Service¹⁷</p> <p>24 hour x 7 day¹⁸ toll-free support during the warranty period¹²</p>
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴, 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available	

See footnotes for more detailed information

WE model(s) announced March 22, May 3, May 10, July 12, or October 4, 2011

WE model(s) withdrawn effective December 2012

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(G-CMT1-4) February 2013

ThinkPad®



Lenovo® ThinkPad X1 with
ThinkPad Battery 39+ (6-cell slice)
0A36279



Lenovo ThinkPad X1



Lenovo ThinkPad X1



Lenovo ThinkPad X1



Lenovo ThinkPad X1



Lenovo ThinkPad X1

ThinkPad® X1 1293 - withdrawn

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ^a rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Finger print reader	Blue-tooth	Ext Battery cells	Global (G) Intel vPro	Global (G) GMP (P)	Ann Date
1293-3DG	i5-2520M	4GBx1	13.3" HD Prem	720p	160G SSD	Intel 6300	WWAN upg	None	Finger	BT	No	vPro	G	Pro 64 05/11
1293-2CG	i5-2520M	4GBx1	13.3" HD Prem	720p	320G 7200	Intel 6205	WWAN upg	None	Finger	BT	No	vPro	G	Pro 64 05/11
1293-2BG	i5-2520M	4GBx1	13.3" HD Prem	720p	128G SSD	Intel 6205	WWAN upg	None	Finger	BT	No	vPro	G	Pro 64 05/11
1293-23G	i5-2520M	4GBx1	13.3" HD Prem	720p	320G 7200	Intel 6205	WWAN upg	None	Finger	BT	6	vPro	G	Pro 64 05/11
1293-22G	i5-2520M	8GBx1	13.3" HD Prem	720p	128G SSD	Intel 6205	WWAN upg	None	Finger	BT	6	vPro	G	Pro 64 05/11

- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning	<i>Premiere mobility, performance, and style; one spindle</i>											Preloaded operating system ²⁰
Processor	Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology											Genuine Windows® 7 Professional 64
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, one 204-pin SO-DIMM socket (8GB is maximum memory for Lenovo® installed only, and 4GB is maximum memory when customer installed using 4GB PC3-10600 DDR3 L-H SODIMM 55Y3711)											Ready to install applications ¹⁴ (only some listed)
Optical Disk	None											<ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models)
mSATA™ SSD	None											<ul style="list-style-type: none"> • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap
Display	(Premium) 13.3" (338mm) HD (1366x768) TFT color, anti-glare display with glossy infinity Corning® Gorilla® Glass LED backlight, 350 nits, 16:9 aspect ratio, 300:1 contrast ratio											Preloaded applications ¹⁴ (only some listed)
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus											
Graphics	Intel HD Graphics 3000 in processor, external digital monitor support via HDMI™ or Mini DisplayPort™ (supports VGA analog monitor via Mini DisplayPort to VGA Monitor Cable 0A36536); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (Mini-DisplayPort)@60Hz; 1920x1200 (HDMI)@60Hz											<ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate
Keyboard	6 row, ThinkVantage® button, LED backlit, spill-resistant, multimedia Fn keys											Supports ThinkVantage technologies
TrackPoint®	TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³											
Touchpad	UltraNav™, buttonless touchpad below keyboard, multi-touch											
ThinkLight™	None											
Dimensions ³	13.3W" (WxDxH): 13.26" x 9.1" x 0.65-0.84"; 337mm x 231.1mm x 16.5-21.3mm											
Weight ²	<i>Integrated battery:</i> from 3.73 lb (1.69kg); <i>integrated plus slice battery:</i> from 4.52 lb (2.05kg)											
Case material	<i>Display cover:</i> Magnesium/Aluminum + PC/ABS; <i>Bottom:</i> Magnesium/Aluminum											
Standard Battery	Integrated Lithium Ion 4-cell RapidCharge battery, 1000 cycle, supports standard or optional external 6-cell slice battery (0A36279) as 2nd battery											
Extended Battery	<i>Some:</i> Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+, 0A36280)											
Battery - life ¹⁰	<i>Integrated battery (38.4Whr):</i> up to 5.2 hr; <i>integrated plus slice battery (35.5Whr):</i> up to 10 hr											
Chipset	Mobile Intel QM67 Express Chipset											
Multicard reader	4-in-1 reader (SD, SDHC, SDXC, MMC)											
ExpressCard	None											
Ports	One USB 3.0, one USB 2.0, one powered USB 2.0/eSATA combo port, external monitor (Mini DisplayPort, HDMI), ethernet (RJ-45)											
PCIe Mini Card	Two PCI Express® Mini Card slots											
PCIe WLAN ⁴	<i>Some:</i> 11a/b/g/n ²⁸ , PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2											
PCIe WWAN	<i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3											
Carrier	Wireless WAN upgradable											
Modem	None											
Bluetooth™	Bluetooth 3.0 wireless, LED indicator											
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1											
Intel AMT	Intel Active Management Technology (iAMT)											
Audio support	HD Audio, Conexant 20672 codec, Dolby® Home Theater® v4 / stereo speaker, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack											
Security	Power-on password, hard disk password, supervisor password, security keyhole, reset switch											
Security chip	Trusted Platform Module, TCG 1.2-compliant											
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip											
Limited Warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades ²² available											90-watt AC Adapter (RapidCharge) ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²

See footnotes for more detailed information

WE model(s) announced May 17 or May 24, 2011

WE model(s) withdrawn effective December 2012

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(G-NGNT1-1) February 2013

ThinkPad® X1 1294 (Onsite) - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Widescreen display	Camera	Disk SATA GB ⁵ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN	Carrier	Finger print reader	Blue-tooth	Ext Battery cells	Intel vPro	Global (G) GMP (P)	Pre-load	Ann Date (mm/yy)
1294-3QG	i7-2640M	8GBx1	13.3" HD Prem	720p	160G SSD	Intel 6300	Ericsson	select	Finger	BT	No	vPro		Pro 64	10/11
1294-3LG	i7-2620M	8GBx1	13.3" HD Prem	720p	160G SSD	Intel 6300	Ericsson	select	Finger	BT	No	vPro		Pro 64	07/11
1294-2PG	i5-2520M	4GBx1	13.3" HD Prem	720p	320G 7200	Intel 6300	Ericsson	select	Finger	BT	No	vPro		Pro 64	05/11
1294-2NG	i5-2520M	8GBx1	13.3" HD Prem	720p	160G SSD	Intel 6300	Ericsson	select	Finger	BT	No	vPro		Pro 64	05/11
1294-3DG	i5-2520M	4GBx1	13.3" HD Prem	720p	160G SSD	Intel 6300	WWAN upg	None	Finger	BT	No	vPro	G P	Pro 64	05/11
1294-2CG	i5-2520M	4GBx1	13.3" HD Prem	720p	320G 7200	Intel 6205	WWAN upg	None	Finger	BT	No	vPro	G P	Pro 64	05/11
1294-2BG	i5-2520M	4GBx1	13.3" HD Prem	720p	128G SSD	Intel 6205	WWAN upg	None	Finger	BT	No	vPro	G P	Pro 64	05/11
1294-23G	i5-2520M	4GBx1	13.3" HD Prem	720p	320G 7200	Intel 6205	WWAN upg	None	Finger	BT	6	vPro	G P	Pro 64	05/11
1294-22G	i5-2520M	8GBx1	13.3" HD Prem	720p	128G SSD	Intel 6205	WWAN upg	None	Finger	BT	6	vPro	G P	Pro 64	05/11

- Some models are part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor	<i>Premiere mobility, performance, and style; one spindle</i> Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology Intel Core i7-2620M processor (dual-core, 2.70GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology Intel Core i7-2640M processor (dual-core, 2.80GHz, 4MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology	Preloaded operating system²⁰ Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage® System Update • ThinkVantage Power Manager • ThinkVantage Toolbox • Lenovo® SimpleTap
Memory	8GB max ⁷ / PC3-10600 1333MHz DDR3, non-parity, one 204-pin SO-DIMM socket (8GB is maximum memory for Lenovo® installed only, and 4GB is maximum memory when customer installed using 4GB PC3-10600 DDR3 L-H SODIMM 55Y3711)	
Optical Disk	None <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/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	
mSATA™ SSD	None	
Display	(Premium) 13.3" (338mm) HD (1366x768) TFT color, anti-glare display with glossy infinity Corning® Gorilla® Glass LED backlight, 350 nits, 16:9 aspect ratio, 300:1 contrast ratio	Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft® Office 2010 preloaded; purchase product key to activate
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus	
Graphics	Intel HD Graphics 3000 in processor, external digital monitor support via HDMI™ or Mini DisplayPort™ (supports VGA analog monitor via Mini DisplayPort to VGA Monitor Cable 0A36536); supports dual independent display; <i>Max external resolution:</i> 2560x1600 (Mini-DisplayPort) @60Hz; 1920x1200 (HDMI) @60Hz	
Keyboard TrackPoint®	6 row, ThinkVantage® button, LED backlit, spill-resistant, multimedia Fn keys TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar ¹³	
Touchpad ThinkLight™	UltraNav™, buttonless touchpad below keyboard, multi-touch None	
Dimensions ³ Weight ²	<i>13.3W" (WxDxH):</i> 13.26" x 9.1" x 0.65-0.84"; 337mm x 231.1mm x 16.5-21.3mm <i>Integrated battery:</i> from 3.73 lb (1.69kg); <i>integrated plus slice battery:</i> from 4.52 lb (2.05kg)	
Case material	<i>Display cover:</i> Magnesium/Aluminum + PC/ABS; <i>Bottom:</i> Magnesium/Aluminum	
Standard Battery	Integrated Lithium Ion 4-cell RapidCharge battery, 1000 cycle, supports standard or optional external 6-cell slice battery (0A36279) as 2nd battery	
Extended Battery Battery - life ¹⁰	<i>Some:</i> Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+, 0A36280) <i>Integrated battery (38.4Whr):</i> up to 5.2 hr; <i>integrated plus slice battery (35.5Whr):</i> up to 10 hr	
Chipset	Mobile Intel QM67 Express Chipset	
Multicard reader ExpressCard	4-in-1 reader (SD, SDHC, SDXC, MMC) None	
Ports	One USB 3.0, one USB 2.0, one powered USB 2.0/eSATA combo port, external monitor (Mini DisplayPort, HDMI), ethernet (RJ-45)	
PCIe Mini Card PCIe WLAN ⁴	Two PCI Express® Mini Card slots <i>Some:</i> 11a/b/g/n ²⁸ , PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3	
PCIe WWAN	<i>Some:</i> Wireless WAN upgradable <i>Some:</i> Wireless WAN, Ericsson F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS	
Carrier Modem	<i>Some:</i> User selectable, contract required with service provider None	
Bluetooth™	Bluetooth 3.0 wireless, LED indicator	
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1	
Intel AMT	Intel Active Management Technology (iAMT)	
Audio support	HD Audio, Conexant 20672 codec, Dolby® Home Theater® v4 / stereo speaker, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack	Supports ThinkVantage technologies 90-watt AC Adapter (RapidCharge) ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant ROHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²
Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole, reset switch Trusted Platform Module, TCG 1.2-compliant	
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited Warranty ¹²	3-years/1-year battery, limited onsite service²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades ²² available	

See footnotes for more detailed information

WE model(s) announced May 17, May 24, July 5, or October 4, 2011

WE model(s) withdrawn effective December 2012

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Availability: All offers subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time, without notice. Lenovo is not responsible for photographic or typographic errors.

Warranty: For a copy of applicable product warranties, go to http://support.lenovo.com/en_US/product-service/warranty-status/WarrantyPolicies.page. Lenovo makes no representation or warranty regarding third party products or services.

Footnotes:

- ¹ Power management, including Intel® SpeedStep® Technology, reduces processor speed when in battery mode.
- ² **Weight** includes battery and standard optical drive; weight may vary due to vendor components, manufacturing process and options.
- ³ **Thinness** may vary at certain points on the system.
- ⁴ **Wireless capability:** Requires compatible wireless-enabled options sold separately.
- ⁵ **TAA:** ThinkPad notebook is compliant with the U.S. Federal Government's country-of-origin requirements prescribed in 48 C.F.R. Subpart 25.4; Trade Act Agreement (TAA) model.
- ⁶ **Public network download modem speeds** are limited to 53Kbps. Upload speeds are limited to 48Kbps for V.92 modems. Actual speeds depend on many factors and are often less than the maximum possible. V.92 functions and speeds require compatible phone line and server equipment. Check with your telephone and ISP service providers for availability.
- ⁷ **Maximum memory capacity** may require the replacement of standard component with largest supported component available. On ThinkPad systems, even though it is possible to physically install 4GB of memory, the actual amount of memory addressable by a 32-bit operating system will be limited to 3GB. This limitation does not exist with 64-bit operating systems.
- ⁸ **Hard drive:** GB = billion bytes, TB = trillion bytes. Accessible capacity is less; up to 4GB is service partition.
- ⁹ **CD/DVD drive speeds** list maximum rates; rates are variable and are often less than the maximum.
- ¹⁰ **Battery:** These model numbers achieved the battery life based on MobileMark® 2007 during testing. For the ThinkPad X300, battery life is based on Business Winstone Battery Mark 2002. Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.
- ¹¹ **External monitor:** This system supports a maximum of two external monitors. The integrated display(s) must be disabled to support two external monitors.
- ¹² **Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges.
- ¹³ **Internet access not included.**
- ¹⁴ **Included software** may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.
- ¹⁶ **Activating Verizon Wireless Service:** Lenovo customers will be contacted after purchase to activate service; requires separate agreement with Verizon Wireless and is subject to the Customer Agreement, Calling Plan, and credit approval. Service, airtime, and early termination charges may apply. Verizon Wireless, not Lenovo, is solely responsible for service. Service not available in all areas; purchaser is responsible for verifying that service is available for the intended location before purchasing a computer equipped with WAN card. Network details, coverage limitations, and maps at www.verizonwireless.com.
- ¹⁷ **International Warranty Service** is available in any country in which this product is sold and serviced. Service delivery methods and parts availability vary by country, may be different from that in the country of purchase, and are subject to change without notice. Fees and restrictions may apply in some countries.
- ¹⁸ **Telephone support** may be subject to additional charges, even during the limited warranty period. Response times may vary. May exclude some holidays. If a machine is listed as having "On-site service for select repairs", this means that onsite service is available only for the replacement of select parts. For all other warranty repairs, Lenovo will provide the customer a replacement part for customer installation. The parts for which onsite service is available varies by machine, but may include the processor, power supply, heat sink, system board, or base cover. For ThinkPad notebooks with Depot or Courier service, Lenovo will attempt to diagnose and resolve the problem remotely before sending a courier.
- ¹⁹ **Depot repair service:** The customer may be asked certain diagnostic questions before a courier is sent. Your ThinkPad purchase includes this depot repair service, available in the U.S. during the limited warranty period.
- ²⁰ **Operating System:** Level of support varies by operating system. Operating systems not preloaded on the system may not provide full feature functionality. Refer to lenovo.com/pc/support and enter your machine type and model number for more information.
- ²¹ **For combination drives,** maximum possible speeds only are given in the following order: CD write, CD rewrite, CD read, DVD read.

²² **Lenovo Services:** These services are available for machines normally used for business, professional, or trade purposes, rather than personal, family, or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), a part will be express shipped to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, Lenovo may choose to perform service at the depot repair center. Calls must be received by 5 pm local time in order to qualify for Next Business Day service. P&L means parts and labor. P/U means pick-up. See Lenovo Warranty Services terms and conditions for complete details and restrictions.

²³ **Activating AT&T Wireless Service:** Requires separate agreement with AT&T, subject to service agreement, rate plan and coverage maps. AT&T, not Lenovo, is solely responsible for service. Coverage not available in all areas; AT&T BroadbandConnect available in select metropolitan markets. Special credit and tenure restrictions and additional charges may apply to international roaming. A network connection, third-party software, additional hardware, and/or subscription to a third-party service may be required for certain solutions/applications. Additional restrictions apply, including early termination fee; see www.wireless.att.com for details. To activate call Lenovo Wireless Activation Hot Line at 1-877-299-4710.

²⁴ **Limited onsite service systems** are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by Lenovo. Lenovo will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by Lenovo for onsite replacement. For a list of onsite replaceable parts, contact Lenovo. Support unrelated to a warranty issue may be subject to additional charges. Lenovo onsite repair (LOR), 8 am to 5 pm, Monday through Friday coverage excluding holidays, next business day (NBD) response time.

²⁶ **Full-size keyboard:** As defined by ISO/IEC 15412.

²⁷ **Based on IEEE 802.11a and 802.11b.** A customer can not upgrade to a different wireless Mini PCI adapter due to FCC regulations. Security screws prevent removal of this adapter. This wireless LAN product has been designed to permit legal operation world-wide in regions which it is approved. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi logo.

²⁸ **The IEEE 802.11n specification (MIMO)** has been finalized and is currently in IEEE 802.11n-2009 release. The maximum speed depends on the access point device and the number of integrated antenna used for connection. An adapter with 11a/b, 11a/b/g, 11b/g/n, or 11a/b/g/n can communicate on any of its supported formats.

³⁰ **Measures only maximum** data transfer rate, not application performance. Many factors affect application performance.

³² **Wireless:** Based on IEEE 802.11a, 802.11b, and 802.11g respectively. An adapter with 11a/b, 11b/g, or 11a/b/g can communicate on either/any of these listed formats respectively, the actual connection will be based on the access point to which it connects.

³⁶ **Wireless upgradable** allows the system to be wireless-enabled with an optional wireless Mini PCI or Mini PCI Express card. Designed to operate only with Lenovo options.

³⁷ **Optimus graphics** Optimus only switches in Windows 7 environment. It performs as discrete graphics in Windows Vista or Windows XP Professional environment.

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