### ThinkPad Tablet (1838) - TopSeller - withdrawn

**Positioning**
- Touchscreen tablet for on-the-go business

**Processor**
- Dual-core ARM Cortex™-A9 processor (1.0 GHz per core), 1MB L2 cache

**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 output via mini-HDMI connector, HDCP-compliant

**Display**
- WXGA (1280x800) TFT color, supports 1080p video out via mini-HDMI connector, HDCP-compliant

**Tablet pen**
- Some: ThinkPad Tablet PEN, supports hover, tip, and pressure modes / a button for "long press" function / user replaceable AAAA battery, up to 18 months

**Camera**
- Front camera: 2.0-megapixel, fixed focus
- Rear camera: 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**
- Some: 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**
- Some: 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**
- Some: 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**
- WWAN
- Some: Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS

**Carrier**
- Global Positioning System, Broadcom BCM4751
- Bluetooth® 2.1+EDR wireless, integrated in AzureWave AW-NH931 combo chip, supports BT 3.0

**Dimensions**
- 10.25" x 7.15" x 0.57"; 260.4mm x 181.7mm x 14.5mm

**Weight**
- WiFi model: from 1.64 lb (0.74kg);
- 3G model: 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**
- 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**
- 1-year - depot repair service / service upgrades available

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

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**Preloaded operating system**
- Android™ 3.1 (HoneyComb)

**Preloaded applications**
- 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

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See footnotes for more detailed information

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WE model(s) announced August 16, 2011

WE model(s) withdrawn effective December 2012
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<th>ThinkPad Tablet Pen</th>
<th>Camera Front/Rear (MP)</th>
<th>Storage</th>
<th>Keyboard Folio Case</th>
<th>ThinkPad Tablet Dock</th>
<th>WLAN 802.11</th>
<th>PCIe Mini Card WWAN</th>
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Positioning: Touchscreen tablet for on-the-go business

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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: Some: ThinkPad Tablet Pen, supports hover, tip, and pressure modes / a button for "long press" function / user replaceable AAA battery, up to 18 months

Camera: Front camera: 2.0-megapixel, fixed focus

Video capture: Rear camera: 5.0-megapixel, auto focus, digital zoom 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 / None

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: Some: ThinkPad Tablet Keyboard Folio Case, connects with system via USB 2.0, 6 row, TrackPoint® pointing device, leather cover, magnetic 3-position landscape stand

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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 2T0

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 WWAN Carrier GPS Bluetooth

11b/g/n wireless, Azurewave AW-NH931 module, WiFi + BT combo chip
None
None
None
Bluetooth 2.1+EDR wireless, integrated in Azurewave AW-NH931 combo chip, supports BT 3.0

Dimensions: 10.25" x 7.15" x 0.57"; 260.4mm x 181.7mm x 14.5mm

Weight: 2.0.5" x 0.57"; 260.4mm x 181.7mm x 14.5mm

WiFi model: from 1.64 lb (0.74kg); 3G model: 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: 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: 1-year - depot repair service / service upgrades available

Preloaded operating system: - Android™ 3.1 (HoneyComb)

Preloaded applications: (only some listed)

- 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

See footnotes for more detailed information

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We model(s) announced August 16, 2011

WE model(s) withdrawn effective December 2012

(G-IDG1-2) February 2013
ThinkPad® L420 7854 (TopSeller) - withdrawn

Preloaded operating system10
- 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

Preloaded applications14 (only some listed)
- Norton™ Internet Security 2011
- Microsoft Office 2010 preloaded; purchase product key to activate
- Corel® WinDVD® (DVD±RW)
- Corel DVD MovieFactory® Lenovo Edition (DVD±RW)

See footnotes for more detailed information

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</table>

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

**Positioning**

Processor: Mainstream business performance; two spindles

- **Intel® Core™ i3-2310M processor (dual-core, 2.10GHz, 3MB Cache)**
- **DDR3 memory controller (up to 1333MHz), HT technology**
- **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)**
- **Intel Core i5-2520M processor (dual-core, 2.50GHz, 3MB Cache)**

**Memory**

- 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, some 204-pin SO-DIMM sockets
- **Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache)**
- **DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology**

**Optical SATA disk**

- DVD burner, 12.7mm high, fixed, not removable, tray-in
- **Some:** Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5” wide, 7mm high, removable, upgradable
- **Some:** Hard Disk Drive / SATA 3.0Gb/s, 2.5” wide, 7mm or 9.5mm high, removable, upgradable, Active Protection System™

**mSATA™ SSD**

- None

**Wide-screen display**

- 14.0” (355mm) HD (1366x768) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio
- Some: 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;
- Maximum external resolution: 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
- UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch

**TrackPoint™**

- Pointing device, Internet Scroll Bar™, magnifying glass

**Touchpad**

- ThinkLight™

- 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® (VGA DB-15, DisplayPort), ethernet (RJ-45)

**PCIe Mini Card**

- Two PCIe Express Mini Card slots
- Some: 11b/g/n, PCIe Half Mini Card, ThinkPad 11b/g/n, 1x1
- Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2
- Some: Wireless WAN upgradable
- Modem
- None
- Bluetooth™
- Some: 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
- Some: UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM

**Battery**

- Li-ion 4-cell, 6-cell, or 9-cell
- Lithium ion 4-cell, 6-cell, or 9-cell
- 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
- 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® (VGA DB-15, DisplayPort), ethernet (RJ-45)

**Ports**

- Supports ThinkVantage® technologies
- 65-watt AC adapter
- EPEAT® Gold rating
- ENERGY STAR® 5.0-compliant
- RoHS-compliant
- International Warranty Service®
- 24 hour x 7 day® toll-free support during the warranty period®

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See footnotes for more detailed information

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**WE model(s) announced February 22 or April 19, 2011**

**WE model(s) withdrawn effective December 2012**

(G-DMD4-2) February 2013
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- Some models are part of the Global Models Plus program with limited onsite 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
- 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).

Memory
8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204pin SO-DIMM sockets

Optical SATA disk
- DVD burner, 12.7mm high, fixed, not removable, tray-in
- Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5” wide, 7mm high, removable, upgradable
- Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5” wide, 7mm high, removable, upgradeable, 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
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 / DVI via optional cable); supports dual independent display; supports dual independent display; Maximum external resolution: 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D / DVI via optional cable)

Keyboard
6-row, ThinkVantage button, spill-resistant, multimedia Fn keys

Touchpad
ThinkPad™

Dimensions³
14.0”W (WXDxH): 13.5” x 9.2” x 1.26–1.42” ; 344mm x 233mm x 32–36mm

Weight³
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 Life²
Lithium Ion 4-cell, 6-cell, or 9-cell

Battery - life²
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 Multicard Reader
One slot (ExpressCard/34, ExpressCard/54) 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 15, DisplayPort), ethernet (RJ-45)

PCle Mini Card WAN4
Two PCI Express Mini Card slots
Some: 11a/b/g/n, PCle Half Mini Card, ThinkPad 11b/g/n, 1x1
Some: Wireless WAN upgradable
Some: Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCle Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS

Carrier
Some: 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

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 warranty¹² 3-years / 1-year battery, limited onsite service¹⁴, 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

Preloaded operating system²⁰
- Genuine Windows® 7 Professional 64

Ready to install 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 DVD MovieFactory™ Lenovo Edition (DVD:RW)

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 DVD MovieFactory™ Lenovo Edition (DVD:RW)

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

(G-DMD4-3) February 2013
## ThinkPad® L520 7859 (TopSeller) - withdrawn

### Positioning
- **Processor:** Mainstream business performance; two spindles Intel® Core™ i3-2310M processor (dual-core, 2.10GHz, 3MB Cache).
- **DRAM 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 i5-2430M processor (dual-core, 2.40GHz, 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 (2.90GHz), HT technology**
- **Intel Core i5-2410M processor (dual-core, 2.40GHz, 3MB Cache).**
- **DDR3 memory controller (up to 1333MHz), 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**

### Memory
- **8GB max / 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**
- **Some:** Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5” wide, 7mm high, removable, upgradable
- **Some:** 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
- **Some:** 15.6" (396mm) HD (1366x768) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio
- **Some:** 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,**
- **extended 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 DB-15, DisplayPort), ethernet (RJ-45)

### Keyboard
- **6-row, ThinkVantage button, spill-resistant, multimedia Fn keys**
- **TrackPoint® pointing device, Internet Scroll Bar™, magnifying glass**
- **Touchpad**
- **ThinkLight™**

### Dimensions
- **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 7.55 lb (3.43kg)**
- **Cell:** from 6.07 lb (2.75kg)
- **6-cell:** from 6.07 lb (2.75kg)
- **9-cell:** from 6.07 lb (2.75kg)

### Chipset
- **Mobile Intel HM65 Express Chipset**
- **Preloaded operating system**
  - Genuine Windows® 7 Professional 64
  - Ready to install applications™ (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)

### Batteries
- **9-cell:** (94Whr):
  - up to 6.3 hr;
- **6-cell:** (57Whr):
  - up to 6.3 hr;
- **2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA DB-15, DisplayPort), ethernet (RJ-45)

### Preloaded applications
- **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)**

### Standard Warranty
- **Small and medium business (SMB) model(s), part of the WE TopSeller™ Program**
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**
- **Preloaded operating system**
  - Genuine Windows® 7 Professional 64
  - Ready to install applications™ (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)

### Ports
- **Three USB 2.0 (one powered), one USB 2.0/eSATA combo port,**
- **external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)**

### Preloaded applications
- **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)**

### Preloaded operating system
- **Genuine Windows® 7 Professional 64**
- **Ready to install applications™ (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)

### Limited warranty
- **1-year - depot repair service / service upgrades available**
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk SATA GB</th>
<th>rpm</th>
<th>PCIe Mini Card WLAN</th>
<th>PCIe Mini Card WWAN/mSATA</th>
<th>Finger print reader</th>
<th>Touchpad</th>
<th>Bluetooth</th>
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<tbody>
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<td></td>
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</tbody>
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* **Small and medium business (SMB) model(s), part of the WE TopSeller™ Program**

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**Positioning**

**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

**Memory**

8GB max7 / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, 204-pin SO-DIMM sockets

**Optical SATA disk**

DVD burner, 12.7mm high, fixed, not removable, tray-in

Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high, removable, upgradable

Some: 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;

Maximum external resolution: 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®**

pointing device, Internet Scroll Bar, magnifying glass

**Touchpad**

UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch

**Dimensions³**

15.6"x9.7"x1.26-1.42"; 380mm x 247mm x 32-36mm

**Weight²**

4-cell: 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 - life¹⁰**

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 (VGA DB-15, DisplayPort), ethernet (RJ-45)

**PCIe Mini Card Slot**

Two PCI Express Mini Card slots

**WLAN⁴**

11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2 Wireless WAN upgradable

**Modem**

None

**Bluetooth⁴**

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**

UEPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, supports the TPM

**Limited warranty¹²**

1-year depot repair service / service upgrades⁴ available

---

**Preloaded operating system¹⁰**

- DOS-Lic.
## ThinkPad® L520 5016 - withdrawn

**Personal Systems Reference (PSREF)**

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<th>Type-model</th>
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<th>Memory</th>
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<th>Workhorse Edition (G-RUB4-3)</th>
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<td>W G</td>
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</table>

### Specifications

- **Dimensions**
  - 5016-50G: 15.6" x 9.7" x 1.26–1.42"; 380mm x 247mm x 32–36mm
  - 5016-55G: 15.6" x 9.7" x 1.26–1.42"; 380mm x 247mm x 32–36mm
  - 5016-25G: 15.6" x 9.7" x 1.26–1.42"; 380mm x 247mm x 32–36mm
  - 5016-33G: 15.6" x 9.7" x 1.26–1.42"; 380mm x 247mm x 32–36mm

- **Processor**
  - Intel® Core™ i5-2520M processor (dual-core, 2.50GHz)

- **Memory**
  - 8GB max / PC3-10600

- **Battery**
  - Lithium Ion 4-cell, 6-cell, or 9-cell

- **Display**
  - HD (1366x768) color

- **Operating System**
  - Windows 7 Professional

### Additional Features

- **Security**
  - ThinkPad Security Chip
  - Trusted Platform Module, TCG 1.2-compliant

- **Connectivity**
  - Wi-Fi 11a/b/g/n
  - WWAN upgradable

- **Power**
  - 65-watt AC adapter
  - EPEAT® Gold rating

- **Energy Star**
  - ENERGY STAR® 5.0-compliant

- **RoHS-compliant**
  - RoHS-compliant

- **Warranty**
  - 3-years
  - 1-yr battery - depot repair service / service upgrades available

See footnotes for more detailed information © Lenovo

WE model(s) announced February 22, 2011
WE model(s) withdrawn effective December 2012
<table>
<thead>
<tr>
<th>Type-model</th>
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</table>

- Some models are part of the Global Models Plus program with limited onsite service 3-year limited warranty
- Microsoft Office 2010 Product Key Ready (O10PKR)
ThinkPad triple external monitor configuration using NVIDIA’s Optimus technology
ThinkPad® T420 4177 (TopSeller) - withdrawn

<table>
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<th>Type-model</th>
<th>Processor</th>
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<th>Camera</th>
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<th>PCIe Mini Card WWAN/ sMATA</th>
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</table>

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

Positioning
Premiere performance; two spindles

Processor
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

Memory
8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

Optical
DVD burner, 12.7mm, SATA Slim-compliant, 12.7mm high, bottom access

Disk
One bay for removable devices, Ultrabay Slim-compatible, 13.5mm high, bottom access

mSATA SSD
None

Display
Some: 14.0" (355mm) HD (1366x768) color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio
Some: 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;

Keyboard
7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys

Touchpad
UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch

Battery - type
Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery

Coating
Carbon-fiber Reinforced Plastic

Battery - life
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 GM67 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)

PCle Mini Card
Two PCI Express® Mini Card slots

PCle WLAN
11b/g/n, PCle Half Mini Card, ThinkPad 11b/g/n, 1x1

PCle WWAN
Wireless WAN upgradable

Carrier
None

Modem
56K V.92 modem

IEEE 1394
None

Bluetooth™
Bluetooth 3.0 wireless, LED indicator

Ethernet
Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCle x1

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
None

Limited Warranty
1-year - depot repair service / service upgrades available

See footnotes for more detailed information

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(G-NZ3-1) February 2013
Preloaded operating system
Genuine Windows 7 Professional 64

Ready to install applications (only some listed)
- Rescue and Recovery™
- Access Connections™
- Fingerprint Software (fingerprint models)
- Password Manager (fingerprint models)

Preloaded applications (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)

See footnotes for more detailed information
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WE model(s) announced March 1 or October 4, 2011, or January 17, 2012

WE model(s) withdrawn effective December 2012

(G-NZ3-2) February 2013
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk SATA GB rpm</th>
<th>PCIe Mini Card WLAN</th>
<th>PCIe Mini Card WWAN/ mSATA</th>
<th>Carrier</th>
<th>Modem</th>
<th>Smart Card Reader</th>
<th>Finger print reader</th>
<th>Battery cells</th>
<th>Intel vPro</th>
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<td>i5-2430M</td>
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<td>None</td>
<td>6</td>
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<td>Pro 64</td>
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</table>

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

**Positioning**
- Premiere performance; two spindles
- **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**

**Memory**
- 8GB max / 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
- Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
- **Some:** Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™
- All: removable, upgradable, supports the second disk, Shock Mounted Hard Drive
- **mSATA SSD** None

**Display**
- Some: 14.0" (355mm) HD (1366x768) color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio
- **Some:** 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**

**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;
- **Max external resolution:** 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,™ magnifying glass
- **UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch**
- ThinkLight™ Illuminates the keyboard to improve visibility in low-light conditions

**Dimensions**
- 14.0W" (Wx DxH): 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm
- **Weight** 4-cell: from 4.65 lb (2.1kg); 6-cell: from 4.84 lb (2.20kg); 9-cell: from 5.22 lb (2.37kg)

**Battery**
- Li-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 GM67 Express Chipset

**ExpressCard**
- One slot (ExpressCard/34)

**Smart Card read**
- **Some:** Smart Card reader

**Multicard reader**
- 4-in-1 reader (MMC, SD, SDHC, SDXC)

**PCiLe Mini Card Ports**
- Three USB 2.0 (one powered), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)

**PCiLe Mini Card**
- Two PCI Express Mini Card slots

**PCiLe WLAN**
- 11b/g/n wireless, PCiLe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2

**PCiLe WWAN**
- Wireless WAN, Ericsson F5521gw Mobile Broadband Module, PCiLe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS

**Carrier**
- User selectable, contract required with service provider

**Modem**
- **Some:** 56K V.92 modem

**IEEE 1394**
- None

**Bluetooth™**
- Bluetooth 3.0 wireless, LED indicator

**Ethernet**
- Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCiLe x1

**Intel AMT**
- None

**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**
- 3-years / 1-year battery - depot repair service / service upgrades™ available

- Preloaded operating system™
- Genuine Windows® 7
- Professional 64
- **Ready to install applications™** (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

- Preloaded applications™ (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™ (DVDzRW)
  - Corel Burn.Now™ Lenovo Edition (DVDzRW)
  - Corel DVD MovieFactory™ Lenovo Edition (DVDzRW)

See footnotes for more detailed information

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

G-NZ3-3) February 2013
Preloaded operating system
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

Preloaded applications14 (only some listed)
• Norton™ Internet Security 2011
• 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 GM67 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)

PCle Mini Card
Two PCI Express® Mini Card slots

PCle WLAN
11b/g/n wireless, PCle Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2

PCle WWAN
Wireless WAN upgradable

Carrier
None

Modern
None

IEEE 1394
IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)

Bluetooh™
Bluetooth 3.0 wireless, LED indicator

Ethernet
Intel 82579LM Gigabit Network Connection (Louisville), PHY, PCIe x1

Intel AMT
None

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
None

Limited Warranty17 1-year - depot repair service / service upgrades” available
The document contains detailed specifications and features of the ThinkPad® T420 4180 model. Key features include:

- 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
- Memory: 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 2-pin SO-DIMM sockets
- Optical Drive: DVD burner, 12.7mm TruBay Enhanced, removable
- Ultrabay: One bay for removable devices, TruBay Slim-compatible, 12.7mm high, bottom access
- Disk: Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
- Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™
- mSATA™ SSD: removable, upgradeable, supports the second disk, Shock Mounted Hard Drive
- Display: 14.0" (355mm) HD (1366x768) color, anti-glare, LED backlight, 200 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, supports dual independent display; Max external resolution: 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via cable 45J7915)
- Dimensions: 14.0W (WxDxH): 13.4" x 9.17" x 1.18 - 1.20"; 340.5 x 233.0mm x 30.1 - 30.5mm
- Weight: 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: Display cover: Carbon-fiber / Glass-fiber hybrid; Bottom: Carbon-Fiber Reinforced Plastic
- Battery: 4-cell, 6-cell, or 9-cell, supports optional Slick battery as 2nd battery
- Battery - life: 6-cell (57Whr): up to 9.9 hr; 9-cell (94Whr): up to 15.0 hr; 9-cell plus Slick battery: up to 30 hr
- Chipset: Mobile Intel QM67 Express Chipset
- Preloaded operating system: Genuine Windows® 7 Professional 64
- Preloaded applications: 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® (DVDs/RW), Corel® Burn Now™ Lenovo Edition (DVDs/RW)
- Corel® DVD MovieFactory™ Lenovo Edition (DVDs/RW)

The document also provides information on memory capacities, processor details, optical drive specifications, and various other hardware components, along with compatibility notes and warranty details. It is withdrawn effective December 2012.
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk SATA GB/ rpm</th>
<th>PCIe Mini Card WLAN</th>
<th>PCIe Mini Card WWAN/ mSATA</th>
<th>Carrier</th>
<th>IEEE 1394</th>
<th>Finger print reader</th>
<th>Battery tooth cells</th>
<th>Intel vPro GMP (P)</th>
<th>Preload</th>
<th>Ann Date (mm/yy)</th>
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<tbody>
<tr>
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<td>14.0” HD+ 720p 500G 12000</td>
<td>Intel 6205 WWAN upg</td>
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</table>

- **Positioning**: Premiere performance; two spindles
- **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
- **Fingerprint reader**: 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
- **Memory**: 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets
- **Optical Ultrabay**: DVD burner, 12.7mm Ultrabay Enhanced, removable
- **Disk**: One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access
- **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; Max external resolution: 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)
- **Display**: 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; Max external resolution: 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200@60Hz (single-link DVI-D via cable 45J7915)
- **Battery**: Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional Slice battery as 2nd battery
- **Chipset**: Mobile Intel GM67 Express Chipset

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**Preloaded operating system**
- Genuine Windows® 7 Professional 64

**Ready to install applications**
- Rescue and Recovery™
- Access Connections™
- Fingerprint Software (fingerprint models)
- Password Manager (fingerprint models)
- ThinkVantage® System Update
- ThinkVantage Power Manager
- ThinkVantage Toolbox
- Lenovo® SimpleTap

**Preloaded applications**
- 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)

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**See footnotes for more detailed information**

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WE model(s) announced February 22, 2011
WE model(s) withdrawn effective December 2012

(G-NZ3-6) February 2013
#### ThinkPad T420 4236 (Onsite) - withdrawn

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<thead>
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<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk</th>
<th>PCle Mini Card</th>
<th>PCle Mini Card WAN/WWAN</th>
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<td>Pro 6</td>
<td>1/12</td>
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</table>
| 4236-PAG   | i7-2640M  | 4GBx1  | 14.0" HD+           | 720p   | 500G SSD | Intel 6205 | upg | None | None | None | None | None | Pro 6       | 0/11    

#### Preloaded operating system10
- 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

#### Preloaded applications11 (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® DVD MovieFactory® Lenovo Edition (DVD+RW)

#### Limited Warranty
- 3-years/1-year battery, limited onsite service15, 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 upgrades16 available
## ThinkPad T420 4236 (Onsite) - November 2012 - withdrawn

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

### Positioning
- **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
- **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

### Memory
- 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

### Optical
- **UltraBay**: None

### Display
- **Dimensions**: 14.0” (355mm) HD (1366x768) color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio
- **Case material**: Carbon-fiber / Glass-fiber hybrid

### Chipset
- **Mobile Intel GM69 Express Chipset**

### Preloaded operating system
- **Genuine Windows® 7 Professional 64**

### Ready to install applications
- **Microsoft® Office 2010 Product Key Ready (O10PKR)**

### Preloaded applications
- **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® (DVD2RW)**
- **Corel Burn.Now™ Lenovo Edition (DVD2RW)**
- **Corel DVD MovieFactory® Lenovo Edition (DVD2RW)**

### See footnotes for more detailed information

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**WE model(s) announced November 20, 2012**
**WE model(s) withdrawn effective December 2012**
TrackPoint

Some:

Touchpad UltraNav

Processor

Intel
Premiere performance; two spindles

Positioning

4236-65G i5-2520M 2GBx2 14.0" HD 720p 320G 7200 Intel 6205 WWAN upg None 1394 Finger BT 9 vPro G P Pro 64 02/11

4236-64G i5-2520M 2GBx2 14.0" HD+ 720p 500G 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 G P Pro 64 08/11

Limited Warranty

Some models are part of the Global Models Plus program with limited onsite service3-year limited warranty

Microsoft Office 2010 Product Key Ready (O10PKR)

Positioning

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

Display

Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 9.5mm high, Active Protection System™

All:
removable, upgradable, supports the second disk, Shock Mounted Hard Drive

mSATA™ SSD None

Display

Some: 14.0" (355mm) HD (1366x768) color, anti-glare, LED backlight, 200 nits, 16-9 aspect ratio, 300:1 contrast ratio

Some: 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® OptiMs technology, auto-switch between discrete and integrated graphics, NVIDIA® GPUs in processor, and NVIDIA® NVS™ 4200M, PCIe Express x16, 1GB memory, external analog monitor support via VBA DB-15 connector and digital monitor support via DisplayPort™ (supports single-link DVI-D via cable 45J7915); supports three independent displays;

Max external resolution:
2560x1600 (DisplayPort)@60Hz;

2048x1536 (VGA)@75Hz;

1920x1200@60Hz (single-link DVI-D via cable 45J7915)

Keyboad

7 row, 89-key, ThinkVantage® button, spill-resistant, multimedia Fn keys

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

14.0W" (WxDxH): 13.4" x 9.17" x 1.18–1.20"; 340.5 x 233.0mm x 30.1–30.5mm

Weight

4-cell: from 2.36 lb (1.07kg)

6-cell: from 2.91 lb (1.32kg)

9-cell: from 3.46 lb (1.57kg)

Battery - life

6-cell (57Whr): up to 8.8 hr;

9-cell (94Whr): up to 14.1 hr;

10-cell (126Whr): up to 29.5 hr

Chipset

Mobile Intel QM67 Express Chipset

See footnotes for more detailed information

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

WE model(s) withdrawn effective December 2012

Preloaded operating system
Genuine Windows® 7 Professional 64

Ready to install applications (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

Preloaded applications (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

Core® WinDVD® (DVD+RW)

Core Burn.Now™ Lenovo Edition (DVD+RW)

Core DVD MovieFactory® Lenovo Edition (DVD+RW)

ENERGY STAR®

EPEAT® Gold rating

International Warranty Service

17 24 hour x 7 day toll-free support during the warranty period

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

19 WE model(s) withdrawn effective December 2012

20 All models)

21 Some models)

22 Some

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

**Microsoft® Office 2010 Product Key Ready (O10PKR)**

---

**Preloaded operating system**
- Genuine Windows® 7 Professional 64

**Ready to install applications** (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

**Preloaded applications** (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)

---

**Limited Warranty**
- 3-years: 1-year battery - depot repair service / service upgrades available

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See footnotes for more detailed information

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WE model(s) announced December 20, 2011
WE model(s) withdrawn effective December 2012

(G-NZ3i-1) February 2013
ThinkPad triple external monitor configuration using NVIDIA's Optimus technology
ThinkPad® T420s 4170 (TopSeller) - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk SATA GB rpm</th>
<th>Optical or battery</th>
<th>PCIe Mini Card</th>
<th>PCIe Mini Card</th>
<th>Finger print reader</th>
<th>Bluetooth</th>
<th>Intel AMT</th>
<th>Intel vPro</th>
<th>Preload</th>
</tr>
</thead>
<tbody>
<tr>
<td>4170-35G</td>
<td>i5-2540M</td>
<td>4GBx1</td>
<td>14.0&quot; HD+ 720p</td>
<td>128G SSD</td>
<td>DVD±RW</td>
<td>Intel 6205®</td>
<td>Finger</td>
<td>White</td>
<td>± Edition (DVD RW)</td>
<td>Blue</td>
<td>vPro</td>
<td>Pro 64</td>
<td></td>
</tr>
<tr>
<td>4170-34G</td>
<td>i5-2520M</td>
<td>2GBx1</td>
<td>14.0&quot; HD+ 720p</td>
<td>128G SSD</td>
<td>DVD±RW</td>
<td>Intel 6205®</td>
<td>Finger</td>
<td>White</td>
<td>± Edition (DVD RW)</td>
<td>Blue</td>
<td>vPro</td>
<td>Pro 64</td>
<td></td>
</tr>
</tbody>
</table>

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

Positioning

Processor: Premiere performance and ultraportability; two spinners; Dual Core: Intel® Core™ i5-2520M processor (dual-core, 2.70GHz, 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

Memory: 8GB max² / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

Optical Bay battery: DVD burner, 9.5mm UltraBay slim, removable

Ultrabay: One modular bay for interchangeable devices (right side), 9.5mm high, bottom access

SATA disk: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high

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

Camera: 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)

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; supports dual independent display; Maximum external resolution: 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®: 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys

Touchpad: None

ThinkLight™: UltraNav®, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch illuminates the keyboard to improve visibility in low-light conditions

Dimensions³: 14.0"W (WxDxH): 13.5" x 9.1" x 0.83–1.02"; 343mm x 230.1mm x 21.2–26.0mm

Weight²: 6-cell: starting at 3.68 lb (1.67kg)

Case material: Hybrid Carbon-fiber reinforced plastic; Bottom: Magnesium alloy

Battery - type: Lithium ion 6-cell, supports unique 2nd battery in Ultrabay Slim

Battery - life: 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 Reader: 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)

WLAN⁴: 11a/b/g/n, PCi Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2

WWAN: 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: 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: 1-year - depot repair service / service upgrades² available

Preloaded operating system: Genuine Windows® 7 Professional 64

Ready to install applications: (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 applications: (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 DVD MovieFactory® Lenovo Edition (DVD+RW)

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 during the warranty period

See footnotes for more detailed information

WE model(s) announced February 22, 2011

WE model(s) withdrawn effective December 2012
### Preloaded operating system
- Genuine Windows® 7
- Professional 64
- Ready to install applications
  - (only some listed)
  - Norton™ Internet Security 2011
  - Windows Live™ Essentials
  - Microsoft Office 2010 preloaded; purchase product key to activate
  - Corel® WinDVD™ (DVD:RW)
  - Corel® DVD MovieFactory® Lenovo Edition (DVD:RW)

### Preloaded applications
- (only some listed)
- Adobe® Reader®
- Skype™ for Windows
- Windows Live™ Essentials
- Microsoft Office 2010 preloaded; purchase product key to activate
- Corel® WinDVD™ (DVD:RW)
- Corel® DVD MovieFactory® Lenovo Edition (DVD:RW)

### Limited warranty
- 3-years/1-yr battery - depot repair service / service upgrades available

See footnotes for more detailed information.

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

(G-SN3-2) February 2013
ThinkingPad T420s 4173 (Optimus) - withdrawn

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel® Core™ i7-2640M processor (dual-core, 2.80GHz, 4MB Cache)</td>
</tr>
<tr>
<td>Memory</td>
<td>8GB max* / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets</td>
</tr>
<tr>
<td>Optical drive</td>
<td>Blaze burner, 9.5mm Ultrabay slim, removable</td>
</tr>
<tr>
<td>Ultrabay</td>
<td>None</td>
</tr>
<tr>
<td>SATA disk</td>
<td>Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5” wide, 7mm high</td>
</tr>
<tr>
<td>mSATA™ SSD</td>
<td>Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5” wide, 7mm high, Active Protection System™</td>
</tr>
<tr>
<td>Widescreen display</td>
<td>14.0” (355mm) HD+ (1600x900) color, anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 300:1 contrast ratio</td>
</tr>
<tr>
<td>Camera</td>
<td>HD720P resolution, wider view angle, low light sensitive, fixed focus</td>
</tr>
<tr>
<td>Graphics</td>
<td>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; Maximum external resolution: 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via optional cable)</td>
</tr>
<tr>
<td>Keyboard</td>
<td>7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys</td>
</tr>
<tr>
<td>TrackPoint™</td>
<td>TrackPoint™ pointing device, “Press-to-Select,” Internet Scroll Bar®, magnifying glass</td>
</tr>
<tr>
<td>TouchPad</td>
<td>UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch</td>
</tr>
<tr>
<td>ThinkLight™</td>
<td>Illuminates the keyboard to improve visibility in low-light conditions</td>
</tr>
<tr>
<td>Dimensions²</td>
<td>14.0W² (WxHxD): 13.5” x 9.1” x 0.83–1.02”; 343 x 230.1mm x 21.2–26.0mm</td>
</tr>
<tr>
<td>Weight²</td>
<td>6-cell: starting at 3.68 lb (1.67kg)</td>
</tr>
<tr>
<td>Battery - type</td>
<td>Lithium Ion 6-cell, supports unique 2nd battery in Ultrabay Slim</td>
</tr>
<tr>
<td>Battery - life¹º</td>
<td>6-cell (43.2Whr): up to 6.1 hr; 6-cell plus Ultrabay battery: up to 10.3 hr</td>
</tr>
<tr>
<td>Chipset</td>
<td>Mobile Intel QM67 Express Chipset</td>
</tr>
<tr>
<td>ExpressCard</td>
<td>One slot (ExpressCard/34)</td>
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<tr>
<td>Smart Card Reader</td>
<td>None</td>
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<tr>
<td>Multicard Reader</td>
<td>4-in-1 reader (MMC, SD, SDHC, SDXC)</td>
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<tr>
<td>Ports</td>
<td>Two USB 2.0 (one powered), one USB 3.0, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)</td>
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<tr>
<td>PCle Mini Card WLAN⁴</td>
<td>Two PCI Express Mini Card slots</td>
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<tr>
<td>PCle Mini Card WWAN⁵</td>
<td>11a/b/g/n, PCle Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2</td>
</tr>
<tr>
<td>Modem</td>
<td>None</td>
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<tr>
<td>Bluetooth™</td>
<td>Bluetooth 3.0 wireless, LED indicator</td>
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<tr>
<td>Ethernet</td>
<td>Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCle x1</td>
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<tr>
<td>Intel AMT</td>
<td>Intel Active Management Technology (iAMT)</td>
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<tr>
<td>Audio support</td>
<td>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</td>
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<tr>
<td>Security</td>
<td>Power-on password, hard disk password, supervisor password, security keyhole</td>
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<tr>
<td>Security chip</td>
<td>Trusted Platform Module, TCG 1.2-compliant</td>
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<tr>
<td>Finger Print reader</td>
<td>None</td>
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<tr>
<td>Preloaded operating system¹⁶</td>
<td>- Genuine Windows® 7 Professional 64</td>
</tr>
<tr>
<td>Ready to install applications¹⁴</td>
<td>(only some listed)</td>
</tr>
<tr>
<td>Preloaded applications¹⁴</td>
<td>(only some listed)</td>
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<td>(only some listed)</td>
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<tr>
<td>Preloaded applications¹⁴</td>
<td>(only some listed)</td>
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See notes for more detailed information

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(G-SN3-5) February 2013
<table>
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<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Widescreen display</th>
<th>Camera</th>
<th>Disk SATA or batter</th>
<th>Optical or battery</th>
<th>PCle Mini Card WL AN</th>
<th>PCle Mini Card W ANN/mSATA</th>
<th>Carrier</th>
<th>Smart Card Reader</th>
<th>Finger print reader</th>
<th>Blue</th>
<th>Intel G M P</th>
<th>Preload</th>
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</thead>
<tbody>
<tr>
<td>4174-L8G</td>
<td>i5-2520M</td>
<td>4GBx1</td>
<td>14.0” HD+</td>
<td>720p</td>
<td>128GB SSD</td>
<td>DVD±RW</td>
<td>Intel 6205™</td>
<td>WWAN upg</td>
<td>Finger</td>
<td>Blue</td>
<td>vPro G P Pro 64</td>
<td></td>
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<tr>
<td>4174-P5G</td>
<td>i5-2520M</td>
<td>4GBx1</td>
<td>14.0” HD+</td>
<td>720p</td>
<td>320GB SSD</td>
<td>DVD±RW</td>
<td>Intel 6205™</td>
<td>Ericsson selectable</td>
<td>Finger</td>
<td>Blue</td>
<td>vPro G P Pro 64</td>
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<tr>
<td>4174-N8G</td>
<td>i5-2520M</td>
<td>2GBx2</td>
<td>14.0” HD+</td>
<td>720p</td>
<td>250GB SSD</td>
<td>DVD±RW</td>
<td>Intel 6205™</td>
<td>Ericsson selectable</td>
<td>Finger</td>
<td>Blue</td>
<td>vPro G P Pro 64</td>
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<td>vPro G P Pro 64</td>
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<td>4174-2BG</td>
<td>i5-2520M</td>
<td>4GBx1</td>
<td>14.0” HD+</td>
<td>720p</td>
<td>128GB SSD</td>
<td>DVD±RW</td>
<td>Intel 6300™</td>
<td>Ericsson selectable</td>
<td>Finger</td>
<td>Blue</td>
<td>vPro G P Pro 64</td>
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<tr>
<td>4174-29G</td>
<td>i5-2520M</td>
<td>4GBx1</td>
<td>14.0” HD+</td>
<td>720p</td>
<td>320GB SSD</td>
<td>DVD±RW</td>
<td>Intel 6205™</td>
<td>WWAN upg</td>
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<td>vPro G P Pro 64</td>
<td></td>
<td></td>
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</tbody>
</table>

- Some models are part of the Global Models Plus program with limited onsite service²ⁱ 3-year limited warranty
- Microsoft Office 2010 Product Key Ready (O10PKR)

Positioning

Processor

Preemore performance and ultra portability: 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).

Memory

8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

Optical Bay

DVD burner, 9.5mm Ultrabay slim, removable

Ultrasound

One modular bay for interchangeable devices (right side), 9.5mm high, bottom access

SATA Disk

Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5” wide, 7mm high

Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5” wide, 7mm high, Active Protection System™ All:

removable, upgradable, 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

Camera

Some: 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;

Maximum external resolution: 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

Touchpad

UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch

ThinkLight™

Illuminates the keyboard to improve visibility in low-light conditions

Dimensions³

14.0”W (WxDxH): 13.5” x 9.1” x 0.83-1.02”; 343 x 230.1mm x 21.2–26.0mm

Weight⁴

6-cell: starting at 3.68 lb (1.67kg)

Case material

Display cover: Hybrid Carbon-fiber reinforced plastic; Bottom: Magnesium alloy

Battery - type

Lithium Ion 6-cell, supports unique 2nd battery in Ultrabay Slim

Battery - life¹⁰

6-cell (43.2Whr): up to 5.5 hr; 6-cell plus Ultrabay battery: up to 9.3 hr

Chipset

Mobile Intel GM67 Express Chipset

ExpressCard

One slot (ExpressCard/34)

Smart Card Reader

Some: 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)

PCle Mini Card W LAN⁴

Two PCI Express Mini Card slots

Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2

Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3

WWAN

Some: Wireless WAN upgradable

Some: Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCle Mini Card, GPRS/WDMA/HSPA/HSPA+/GPS

Carrier

Some: 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 (IATM)

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, security keyhole

Security chip

Trusted Platform Module, TCG 1.2-compliant

Fingerprint reader

Some: UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip

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 Service¹⁷ 24 hour x 7 day toll-free support during the warranty period¹⁸

Limited warranty¹⁸ 3-years/1-year battery, limited onsite service²⁰, 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

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

WE model(s) withdrawn effective December 2012
**ThinkPad® T420s 4174 (Optimus) - Onsite - withdrawn**

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

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

### Positioning and Processor

| Processor | Premiere performance and ultra-portability; two spindles Intel® Core™ (i7-2640M processor (dual-core, 2.8GHz, 4MB Cache). DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology |
---|---
Memory | 8GB max7 / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets |
Optical Bay battery | DVD burner, 9.5mm Ultrabay slim, removable |
SATA disk | One modular bay for interchangeable devices (right side), 9.5mm high, bottom access |
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 |
Camera | HD720p resolution, wider view angle, low light sensitive, fixed focus |

### Graphics

| 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; Maximum external resolution: 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA) @ 75Hz; 1920x1200@60Hz (single-link DVI-D via optional cable) |
---|---

### Keybaord

| Keyboard | 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys |
| TrackPoint® | TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar13, magnifying glass |
| Touchpad | UltraNav®, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch illuminates the keyboard to improve visibility in low-light conditions |
| Dimensions³ | Weight² | 14.0"W (WxDxH): 13.5" x 9.1" x 0.83–1.02"; 343 x 230.1mm x 21.2–26.0mm |
| Battery - type | 6-cell: starting at 3.68 lb (1.67kg) |
| Battery - life (hours) | 6-cell: up to 6.1 hr; 6-cell plus Ultrabay battery: up to 10.3 hr |

### Chipset

| Chipset | Mobile Intel QM67 Express Chipset |
| ExpressCard | One slot (ExpressCard/34) |
| Smart Card Reader | None |
| Multicard Reader Ports | 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) |

### PCle Mini Card WLAN

<table>
<thead>
<tr>
<th>PCle Mini Card</th>
<th>Two PCI Express Mini Card slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLAN</td>
<td>Some: 11a/b/g/n, PCle Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2</td>
</tr>
<tr>
<td>WWAN</td>
<td>Some: 11a/b/g/n, PCle Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3</td>
</tr>
</tbody>
</table>

### Carrier

<table>
<thead>
<tr>
<th>Carrier</th>
<th>Some: Wireless WAN upgradeable</th>
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</thead>
<tbody>
<tr>
<td>Modem</td>
<td>Some: Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCle Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS</td>
</tr>
<tr>
<td>Bluetooth™</td>
<td>Some: User selectable, contract required with service provider</td>
</tr>
</tbody>
</table>

### Ethernet

<table>
<thead>
<tr>
<th>Ethernet</th>
<th>Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCle x1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel AMT</td>
<td>Intel Active Management Technology (iAMT)</td>
</tr>
</tbody>
</table>

### Audio support

| 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

| Security | Power-on password, hard disk password, supervisor password, security keyhole |
| Security chip | Trusted Platform Module, TCG 1.2-compliant |
| Fingerprint reader | Some: UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip |

### Limited warranty

- **3-years/1-year battery, limited onsite service**: 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

---

**Preloaded operating system**: - Genuine Windows® 7 Professional 64

**Ready to install applications**

- Rescue and Recovery™
- Access Connections™
- Fingerprint Software (fingerprint models)
- Password Manager (fingerprint models)
- ThinkVantage System Update
- ThinkVantage Power Manager
- ThinkVantage Toolbox

**Preloaded applications**

- 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 DVD MovieFactory® Lenovo Edition (DVD±RW)

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

(G-SN3-4) February 2013
Lenovo ThinkPad T520

ThinkPad triple external monitor configuration using NVIDIA’s Optimus technology

Lenovo ThinkPad T520
### ThinkPad® T520 4240 (TopSeller) - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk SATA GB rpm</th>
<th>PCIe Mini Card</th>
<th>PCIe Mini Card WWAN/MiniSATA</th>
<th>Modem</th>
<th>Finger reader</th>
<th>Bluetooth cells</th>
<th>Intel AMT</th>
<th>Intel vPro</th>
<th>Preload</th>
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</thead>
<tbody>
<tr>
<td>4240-5CG</td>
<td>i5-2430M</td>
<td>4GBx1</td>
<td>15.6&quot; HD</td>
<td>720p</td>
<td>500G 7200</td>
<td>Intel 1000</td>
<td>None</td>
<td>Finger</td>
<td>Finger</td>
<td>Blue</td>
<td>6</td>
<td>None</td>
<td>No Pro</td>
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<tr>
<td>4240-6BG</td>
<td>i5-2450M</td>
<td>4GBx1</td>
<td>15.6&quot; HD</td>
<td>720p</td>
<td>500G 7200</td>
<td>Intel 1000</td>
<td>None</td>
<td>Finger</td>
<td>Finger</td>
<td>Blue</td>
<td>6</td>
<td>None</td>
<td>No Pro</td>
</tr>
</tbody>
</table>

- **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

- **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

### Memory

- 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

### Optical Ultrabay

- DVD burner, 12.7mm Ultrabay Enhanced, removable
- One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access

### SATA disk

- Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
- Some: 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 Camera

- 15.6" (396mm) HD (1366x768) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut HDR
- 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; Maximum external resolution: 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® Touchpad

- UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch

### Dimensions (WxDxH)³

- HD & HD+: 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 32.8-36.6mm
- FHĐ: 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm

### Weight⁴

- 6-cell: starting at 5.54 lb (2.51kg); 9-cell: starting at 5.89 lb (2.67kg)

### Case material

- **Display cover:** Carbon-fiber / Glass-fiber hybrid
- **Bottom:** 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 7.7 hr; 9-cell (94Whr): up to 12.8 hr; 9-cell plus slice battery: up to 25.6 hr

### Chipset

- Mobile Intel GM67 Express Chipset

### ExpressCard Smart Card Read

- One slot (ExpressCard/34)
- None

### Multicard Reader Ports

- 4-in-1 reader (MMC, SD, SDHC, SDXC)

### PCIe Mini Card W/LAN⁵

- Two PCI Express Mini Card slots
- 11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2
- Wireless WAN upgradable

### Modem

- None

### Bluetooth™

- None

### Ethernet

- Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1

### Intel AMT

- None

### 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
- UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip

### Limited warranty¹²

- 3-years/1-yr battery - depot repair service / service upgrades²² available

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**See footnotes for more detailed information**

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

WE model(s) withdrawn effective December 2012
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk Sata</th>
<th>Pcie Mini Card WALN</th>
<th>Pcie Mini Card WWAN/mSATA</th>
<th>Carrier</th>
<th>Modem</th>
<th>Smart Card Reader</th>
<th>Finger print reader</th>
<th>Battery cells</th>
<th>Intel vPro Preload</th>
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<tr>
<td>4240-5BG</td>
<td>i5-2430M</td>
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<td>Intel 1000</td>
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<td>None</td>
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<td>Ericsson selectable</td>
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<td>None</td>
<td>Smart</td>
<td>Finger Blue</td>
<td>6</td>
<td>No Pro 64</td>
</tr>
</tbody>
</table>

- 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)

Preloaded operating system10: Genuine Windows® 7 Professional 64
Ready to install applications14 (only some listed):
- Norton™ Internet Security 2011
- Microsoft Office 2010 preloaded; purchase product key to activate
- Corel® WinDVD® (DVD+RW)
- Corel® DVD MovieFactory® Lenovo Edition (DVD+RW)

| Processor | Premiere performance: two spindles Intel® Core™ i5-2430M processor (dual-core, 2.40GHz, 3MB Cache)
D3RD 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)
D3RD memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology

| Memory | 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

| Optical Ultrabay | DVD burner, 12.7mm Ultrabay Enhanced, removable
One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access
Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
Some: HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™
Active, removable, upgradable, supports the second disk, Shock Mounted Hard Drive
mSATA™ SSD | None

| Widescree display | 15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut

| 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;
Maximum external resolution: 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® pointing device, "Press-to-Select," Internet Scroll Bar13, magnifying glass
Touchpad | UltraNav16, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch

| Dimensions (WxHxD)³ | HD & HD+: 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm
FHD: 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm
fewer; low, thin, high

| Weight² | 6-cell: starting at 5.67 lb (2.57kg); 9-cell: starting at 6.02 lb (2.73kg)

| Case material | Display cover: Carbon-fiber hybrid;
Bottom: 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 - life³ | 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 GM965 Express Chipset
ExpressCard | One slot (ExpressCard34)
Smart Card Read | Some: Smart Card reader
Multicard Reader Ports | 4-in-1 reader (MMC, SD, SDHC, SDXC)

| Pcie Mini Card | Two PCI Express Mini Card slots
WLAN⁴ | 11b/g/n, Pcie Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2
WWAN | Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, Pcie Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPRS
Carrier | 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 | None
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 warranty¹³ 3-years/1-yr battery - depot repair service / service upgrades²² available

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

(G-KN3-7) February 2013
ThinkPad® T520 4241 - withdrawn

See footnotes for more detailed information

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(G-KN3-1) February 2013

Preloaded operating system
- Genuine Windows 7 Professional 64

Ready to install applications (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)

Preloaded applications (only some listed)
- Microsoft Edge™
- Skype™
- 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 - 1-year - depot repair service / service upgrades available
ThinkPad T520 4242 - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Disk SATA/GB rom</th>
<th>PCle Mini Card WLAN</th>
<th>PCle Mini Card WWAN/SmartCard Carrier</th>
<th>Modem</th>
<th>Smart Card Reader</th>
<th>Finger print reader</th>
<th>Battery cells</th>
<th>Intel GMP (P) Pre-load</th>
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<tbody>
<tr>
<td>4242-5AG</td>
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</tbody>
</table>

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

**Preloaded operating system**
- Genuine Windows® 7 Professional 64

**Ready to install applications** (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

**Preloaded applications** (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® CardNow™ Lenovo Edition (DVD±RW)
- Corel® DVD MovieFactory® Lenovo Edition (DVD±RW)

**Dimensions (WxDxH)**
- **HD & HD+:** 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm
- **FHD:** 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm

**Battery - type**
- Lithium Ion 6-cell or 9-cell, support optional Slic battery as 2nd battery at bottom

**Chipset**
- Mobile Intel GM45 Express Chipset

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**

<table>
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<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk Sata GB</th>
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- Depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

**Preloaded operating system**
- Genuine Windows® 7 Professional 64

**Ready to install applications**
- 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® Digital Factory™ Lenovo Edition (DVD:RW)

See footnotes for more detailed information © Lenovo

WE model(s) announced February 22 or October 11, 2011
WE model(s) withdrawn effective December 2012

(G-KN3-3) February 2013
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</table>

- **Positioning**
  - **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
    - Intel Core i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), 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

- **Memory**
  - 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

- **Video**
  - 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-I via optional cable); supports dual independent display; Maximum external resolution: 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-I via optional cable)

- **Keyboard**
  - 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys

- **Multicard Reader**
  - One slot (ExpressCard/34)

- **Ports**
  - Two PCI Express Mini Card slots
  - One (ExpressCard/34)

- **Supports**
  - ThinkVantage technologies
  - 65-watt or 90-watt AC adapter
  - ThinkPad Roll Cage (one-piece magnesium frame)
  - EPEAT™ Gold ranking
  - ENERGY STAR® 5.0-compliant
  - RoHS-compliant
  - International Warranty Service

See footnotes for more detailed information.
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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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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
Premiere 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

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

Memory
8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

Optical Ultrabay
DVD burner, 12.7mm Ultrabay Enhanced, removable

SATA disk
One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access

mSATA™ SSD
None

Widescreen display
Some: 15.6" (396mm) HD (1366x768) color, anti-glare, LED backlight, 220 nits, 16.9 aspect ratio, 50:1 contrast ratio, 60% Gamut

Some: 15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16.9 aspect ratio, 50:1 contrast ratio, 60% Gamut

Some: 15.6" (396mm) FHD (1920x1080) color, anti-glare, LED backlight, 270 nits, 16.9 aspect ratio, 50:1 contrast ratio, 95% Gamut

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;

Maximum external resolution: 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 Fk keys

Touchpad
TrackPoint® pointing device, *Press-to-Select,* Internet Scroll Bar¹³, magnifying glass

ThinkLight™
UltraNav¹, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch illuminates the keyboard to improve visibility in low-light conditions

Dimensions (WxDxH)³
HD & HD+: 14.68" x 9.65" x 1.25-1.40", 372.8mm x 245.1mm x 31.8-35.6mm

FHD: 14.68" x 9.65" x 1.29-1.44", 372.8mm x 245.1mm x 32.8-36.6mm

Weight² Case material
6-cell: starting at 5.67 lb (2.57kg); 9-cell: starting at 6.02 lb (2.73kg)

Display cover: Carbon-fiber / Glass-fiber hybrid;

Bottom: Glass-fiber reinforced plastic without paint

Battery - type 5600mAh lithium-ion battery, 6-cell or 9-cell, support optional Slice battery as 2nd battery at bottom

Battery - life¹⁰ 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 GM67 Express Chipset

ExpressCard One slot (ExpressCard/34)

Smart Card Reader Four (up to four)

Multicard Reader Supports four cards; 4-in-1 reader (MMC, SD, SDHC, SDXC)

Ports
Integrated model: Four USB 2.0 (one powered), Optimus model: 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)

PCle Mini Card Two PCI Express Mini Card slots

WLAN Some: 11a/b/g/n, PCle Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2

Some: 11a/b/g/n, PCle Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3

WWAN Some: Wireless WAN upgradeable

Some: Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCle Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS

Carrier Modern Some: User selectable, contract required with service provider

Bluetooth¹² Some: 56K V.92 modem

Some: Bluetooth 3.0 wireless, LED indicator

Ethernet Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCle x1

Intel AMT Intel Active Management Technology (IATM)

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 Some: IPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip

Limited warranty³ 3-years/1-year battery, limited onsite service³¹, 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

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WE model(s) announced February 22, 2011

WE model(s) withdrawn effective December 2012

(G-KN3-5) February 2013

Preloaded operating system²⁰
- Genuine Windows” 7 Professional 64

Ready to install applications²¹ (only some listed)
- Rescue and Recovery™
- Access Connections²²
- FingerPrint Software (fingerprint models)
- Power-on password (fingerprint models)
- ThinkVantage System Update
- ThinkVantage Power Manager
- ThinkVantage Toolbox
- Lenovo SimpleTap

Preloaded applications²¹ (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 DVD MovieFactory® Lenovo Edition (DVD:RW)
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<tr>
<th>Type-model</th>
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<th>PCle Mini Card WWAN/mSATa</th>
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<th>Modem</th>
<th>Finger print reader</th>
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</table>

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

Positioning Processor: Premier performance; two spindles
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

Limited warranty 12
Fingerprint reader
Security
Intel AMT
Ethernet
Carrier
WWAN
WLAN 4
PCIe Mini Card
Ports
Smart Card Reader
ExpressCard
Multicard Reader

- 3-years/1-year battery, limited onsite service 8, am & 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

Preloaded operating system 10
- 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

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 DVD MovieFactory® Lenovo Edition (DVD±RW)

 parachuting display screen

Software
Microsoft Windows 7 Professional 64
Microsoft Office Professional 2010:
- 30 days of virus definitions
- ThinkPad Roll Cage (one-piece magnesium frame)
- EPEAT Gold rating
- ENERGY STAR 5.0-compliant
- Pre-ML.com

See footnotes for more detailed information
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EPEAT Gold rating
ENERGY STAR 5.0-compliant
RoHS-compliant
International Warranty Service 17
24 hour x 7 day/8 toll-free support during the warranty period 11

We model(s) announced August 2 or October 11, 2011
We model(s) withdrawn effective December 2012
(G-KN3-8) February 2013
**ThinkPad® T520i 4240 (TopSeller) - withdrawn**

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- **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
- **Premiere performance: two spindles**
  - Intel® Core™ i3-2350M processor (dual-core, 2.30GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), HT technology

### Memory
- 8GB max / 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

### 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, 60% Gamut

### 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; Maximum external resolution: 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @75Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)

### Keyboard TrackPoint® Touchpad
- 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys
- UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch pointing device, "Press-to-Select," Internet Scroll Bar™, magnifying glass

### Dimensions (WxDxH)(3)
- HD & HD+: 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm
- FHD: 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm

### Weight(4)
- 6-cell: starting at 5.54 lb (2.51kg); 9-cell: starting at 5.89 lb (2.67kg)
- 15.6" (396mm) display
- 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm

### Battery - life(10)
- Lithium Ion 6-cell or 9-cell, support optional Slic battery as 2nd battery at bottom
- 6-cell (37Whr): up to 7.7 hr; 9-cell (94Whr): up to 12.8 hr; 8-cell plus slice battery: up to 25.6 hr

### Chipset Mobile Intel QM67 Express Chipset

**Preloaded operating system(12)**
- Genuine Windows® 7 Professional 64

**Ready to install applications(14) (only some listed)**
- Norton™ Internet Security 2011 (30 days of virus definitions)
- Adobe® Reader®
- Microsoft Office 2010 preloaded; purchase product key to activate
- Corel® WinDVD® (DVD±RW)
- Corel®win Now™ Lenovo Edition (DVD±RW)
- Corel® DVD MovieFactory® Lenovo Edition (DVD±RW)

**Preloaded applications(14) (only some listed)**
- ThinkVantage System Update
- ThinkVantage Power Manager
- ThinkVantage Toolbox
- Lenovo SimpleTap

**See footnotes for more detailed information**

WE model(s) announced October 4 or December 20, 2011

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(1) February 2013
ThinkPad® W520 4282 (Optimus) - withdrawn

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<td>9 vPro G Pro 64</td>
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- **Power-packed engineering with Open GL graphics and ISV certifications**

**Positioning**
- Mobile workstation; two spindle feet

**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
- IntelCore™ 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

**Memory**
- dual-core model: 16GB max, two 204-pin SO-DIMM sockets
- quad-core model: 32GB max, four 204-pin SO-DIMM sockets
- All: PC3-10600 1333MHz DR3, non-parity, dual-channel capable

**Optical Ultrabay SATA disk**
- Some: DVD burner, 12.7mm Ultrabay Enhanced, removable
- One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access

**mSATA™ SSD**
- Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
- Some: HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™
- All: removable, upgradeable, supports the second disk, Shock Mounted Hard Drive

**Widescreen display**
- Some: 15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 50:1 contrast ratio, 60% Gamut
- Some: 15.6" (396mm) FHD (1920x1080) color, anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 50:1 contrast ratio, 95% Gamut

**Color calibration 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 by way of VGA DB-15 connector and digital monitor support by DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays;
- Maximum external resolution: 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@85Hz; 1920x1200@60Hz (single-link DVI via optional cable)

**Keyboard Trackpad**
- 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys
- TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar®, magnifying glass

**ThinkLight™**
- Illuminates the keyboard to improve visibility in low-light conditions

**Dimensions (WxDxH)™**
- 14.68” x 9.65” x 1.25-1.40”, 372.8mm x 245.1mm x 31.8-35.6mm
- 14.68” x 9.65” x 1.29-1.44", 372.8mm x 245.1mm x 32.9-36.8mm

**Weight (case)**
- 6-cell: starting at 5.40 lb (2.45kg)
- 9-cell: starting at 5.95 lb (2.70kg)

**Display cover**
- Carbon-fiber / Glass-fiber hybrid;
- Glass-fiber reinforced plastic without paint

**Battery - type**
- Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery at bottom

**Battery - life (mAh)**
- 6-cell (57WHr): up to 6.6 hr; 9-cell (94WHr): up to 10.9 hr; 9-cell plus slice battery: 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)

**PCle Mini Card**
- PCle Express Mini Card slots
- WLAn®
- Some: 11a/b/g/n, PCle Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2
- Some: 11a/b/g/n, PCle Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3
- WWAN
- Wireless WAN upgradable
- Carrier
- None
- Modern
- 56K V.92 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, mute button, combo audio/mic jack

**Security**
- Power-on password, hard disk password, supervisor password, security keyhole

**Fingerprint reader**
- Some: UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip

**Limited warranty**
- 3-years/1-year battery - depot repair service / service upgrades available

Preloaded operating system™
- Genuine Windows® 7 Professional 64

Ready to install applications™ (only some listed)
- Norton™ Internet Security 2011
- Rescue and Recovery™
- Access Connections™
- Fingerprint Software (fingerprint models)
- Password Manager (fingerprint models)
- ThinkVantage System Update
- ThinkVantage Power Manager
- ThinkVantage Toolbox

Preloaded applications™ (only some listed)
- Adobe® Reader
- Skype® for Windows
- Windows Live™ Essentials
- Microsoft Office 2010 preloaded; purchase product key to activate
- Corel® WinDVD® (DVD±RW)
- Corel DVD MovieFactory® Lenovo Edition (DVD±RW)
- hewlettPRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)

See footnotes for more detailed information

Lenovo® Personal Systems Reference (PSREF)

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

WE model(s) withdrawn effective December 2012

(G-KN3W-1) February 2013
## ThinkPad W520 4284 (Optimus) - Onsite - withdrawn

### Preloaded operating system
- Genuine Windows® 7 Professional 64

### Ready to install applications (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 applications (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)
- huey® PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)

## Positioning Processor
- Mobile workstation; two spindles
- Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache)
- DDR3 memory controller (up to 1233MHz), Intel Turbo Boost 2.0 (3.20GHz), 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
- 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

### Memory
- dual-core model: 16GB max*, two 204-pin SO-DIMM sockets
- quad-core model: 32GB max, four 204-pin SO-DIMM sockets
- All: PC3-10600 1333MHz DDR3, non-parity, dual-channel capable

### Optical Ultrabay SATA disk
- DVD burner, 12.7mm Ultrabay Enhanced, removable
- One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access
- Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
- Some: HHD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™
- All: removable, upgradeable, supports the second disk, Shock Mounted Hard Drive

### 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;
- Maximum external resolution: 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@85Hz; 1920x1200@60Hz (single-link DVI-D via optional cable)

### Keyboard TrackPoint®
- Touchpad
- 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys
- TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar®, magnifying glass
- UltraNav™, wide touchpad below keyboard, Tap zones, scrolling regions label, multi-touch

### Dimensions
- HD & HD+:
  - 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm
- FHD:
  - 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm

### Weight
- 6-cell: starting at 5.40 lb (2.45kg)
- 9-cell: starting at 5.75 lb (2.61kg)

### Battery
- Battery: type
- 6-cell: up to 6.6 hr; 9-cell: up to 10.9 hr; 9-cell plus slice battery: up to 21.9 hr

### Chipset
- Mobile Intel QM67 Express Chipset

### 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)

### Carrying Case
- Mobile Express Case
- One slot (ExpressCard/34)

### Preloaded applications
- Windows Live™ Mail
- Microsoft Office 2010 Professional 64
- 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)
- huey® PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)
- ThinkVantage System Update
- ThinkVantage Power Manager
- ThinkVantage Toolbox

### Limited warranty
- 3-years/1-year battery, limited onsite service17, 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

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See footnotes for more detailed information

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WE model(s) announced March 1 or August 2, 2011
WE model(s) withdrawn effective December 2012

(KN3W-2) February 2013

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### Footnotes

1. **Preloaded operating system**:
   - Genuine Windows® 7 Professional 64

2. **Ready to install applications**: (only some listed)
   - Rescue and Recovery™
   - Access Connections™
   - Fingerprint Software (fingerprint models)
   - Password Manager (fingerprint models)
   - ThinkVantage System Update
   - ThinkVantage Power Manager
   - ThinkVantage Toolbox

3. **Preloaded applications**: (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)
   - huey® PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)

4. **Limited warranty**: 3-years/1-year battery, limited onsite service17, 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

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<td>9 vPro</td>
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</table>

**Positioning**
- Mobile workstation; two spindles
- 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, 2.40GHz, 8MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology

**Memory**
- dual-core model: 16GB max, two 204-pin SO-DIMM sockets
- quad-core model: 32GB max, four 204-pin SO-DIMM sockets

**Optical Ultrabay 54 SATA disk sATA mSATA SSD**
- Some: DVD burner, 12.7mm Ultrabay Enhanced, removable
- One bay for removable drives, Ultrabay Slim-compatible, 12.7mm high, bottom access
- Solid State Drive (SSD) / Sata 3.0Gb/s, 2.5" wide, 7mm high
- Some: SSD / SATA 3.0Gb/s, 2.5" wide, 7mm high
- Some: 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

**Widescreen display**
- Some: 15.6" (396mm) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut
- Some: 15.6" (396mm) color, anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut

**Color calibration**
- 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; Maximum external resolution: 2560x1600 (DisplayPort)@60Hz; 2048x1536 (VGA)@85Hz; 1920x1200@60Hz (single-link DVI-D via optional cable)

**Keyboard TrackPoint®**
- 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys
- TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar®, magnifying glass
- UltraNav®, wide touchpad below keyboard, Tap Zone, scrolling region label, multi-touch
- Illuminates the keyboard to improve visibility in low-light conditions

**Dimensions (WxDxH)³**
- 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm
- 14.68" x 9.85" x 1.12-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm

**Weight²**
- 6-cell starting at 5.40 lb (2.45kg)
- 2GB (2.61kg)

**Battery type**
- 6-cell (57Whr): up to 6.6 hr; 9-cell (94Whr): up to 10.9 hr; 9-cell plus slice battery: up to 21.9 hr

**Chipset**
- Mobile Intel QM67 Express Chipset
- Intel 6300™ or 6265™
- Windows 7 Ultimate (64-bit) or Windows 7 Professional (64-bit)
- Windows 7 Starter (32-bit) or Windows 7 Home Basic (32-bit)

**PCle Mini Card**
- Two PCI Express Mini Card slots
- Some: 11a/b/g/n, Pcle Half Mini Card, Intel Centri® Advanced-N 6205, 2x2
- Some: 11a/b/g/n, Pcle Half Mini Card, Intel Centri® Ultimate-N 6300, 3x3
- 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
- 24 hour x 7 day² toll-free support during the warranty period

**Electrical**
- 4-in-1 reader (MMC, SD, SDHC, SDXC)
- Supports the security chip
- Supports the security chip
- Power On Authentication, supports the security chip

**Limited warranty² (1-year battery, limited onsite service²)
- 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 dispatch service / dispatch service available

---

See footnotes for more detailed information

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

WE model(s) withdrawn effective December 2012

(G-KN3W-3) February 2013

---

**Notes:**
- Part of the Global Models Plus program with limited onsite service - 3-year limited warranty
- Power-packed engineering with Open GL graphics and ISV certifications
- Microsoft® Office 2010 Product Key Ready (O10PKR)
- Preloaded operating system - Genuine Windows® 7 Professional 64
- Ready to install applications (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 applications (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
- Core™ WinDVD® (DVD-RW)
- Corel DVD MovieFactory® Lenovo Edition (DVD-RW)
- huey™PRO Monitor Color Calibration by Pantone®/X-Rite® (color calibration models)
### ThinkPad® X121e 3045 (Intel) - TopSeller - withdrawn

**Personal Systems Reference (PSREF)**

### Model Information

- **Type-model**: 3045-6XG
- **Processor**: i3-2357M 1.30 GHz
- **Memory**: 4GBx1
- **Screen**: 11.6" HD
- **Storage**: 320G 5400 rpm
- **Processor**: Intel AMT
- **Bluetooth**: None
- **Modem**: None
- **Carrier**: Ericsson selectable
- **WWAN**: WWAN upgradable
- **Camera**: 0.3-megapixel, fixed focus, low light sensitive, LED indicator
- **Processor**: Intel HD Graphics 3000
- **Display**: 200 nits, 16:9 aspect ratio, 300:1 contrast ratio
- **Camera**: HD (1366x768) TFT color, anti-glare, LED backlight
- **Weight**: 2.95 lb (1.34kg)
- **Battery**: up to 9.3 hr

### Preloaded Operating System

- **Operating System**: Genuine Windows 7
- **Preloaded Applications**:
  - ThinkVantage System Update
  - ThinkVantage Toolbox
  - Norton™ Internet Security 2011
  - Rescue and Recovery™
  - Access Connections™
  - ThinkVantage Power Manager
  - Fingerprint Software (fingerprint models)

### Preloaded Applications

- **Adobe® Reader®
- Norton™ Antivirus (30 days of virus definitions)
- Microsoft Office 2010 preloaded; purchase product key to activate

### Limited Warranty

- **1-year** depot repair service / service upgrades available

---

### Specifications

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>GHz</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk</th>
<th>SATA GB</th>
<th>rpm</th>
<th>PCIe Mini Card WWAN</th>
<th>Carrier</th>
<th>Top color</th>
<th>Finger print reader</th>
<th>Blue-tooth cells</th>
<th>Preload</th>
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<tbody>
<tr>
<td>3045-6XG</td>
<td>i3-2357M</td>
<td>1.30</td>
<td>4GBx1</td>
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*See footnotes for more detailed information*
Entry ultraportable for excellent usability and reliability; one spindle

<table>
<thead>
<tr>
<th>Processor</th>
<th>GHz</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk SATA GB</th>
<th>PCle Mini Card WLAN</th>
<th>PCle Mini Card WWAN</th>
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<td>Matte black</td>
<td>Blue</td>
<td>6</td>
<td>DOS-Lic.</td>
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<td></td>
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</tbody>
</table>

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

Preloaded operating system® - DOS-Lic.

Positioning

Processor

<table>
<thead>
<tr>
<th>Processor</th>
<th>GHz</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Disk SATA GB</th>
<th>PCle Mini Card WLAN</th>
<th>PCle Mini Card WWAN</th>
<th>Carrier</th>
<th>Top color</th>
<th>Finger print reader</th>
<th>Bluetooth</th>
<th>Battery cells</th>
<th>Preload</th>
</tr>
</thead>
</table>
| 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

Memory

8GB max / 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)

SATA disk

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™

Widescreen display

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;

Maximum external resolution: 2048x1536 (VGA)@75Hz; 2560x1600 (HDMI port)@60Hz

Keyboard

Full-size, 6-row, spill-resistant, multimedia Fn keys

TrackPoint®

TrackPoint pointing device, Internet Scroll Bar®

Touch pad

UltraNav™, buttonless touchpad below keyboard, multi-touch

ThinkLight™

None

Dimensions³

11.6” (295mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio

Weight³

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 - life¹⁰

3-cell (31.2Whr): up to 4.7 hr; 6-cell (62.4Whr): up to 9.3 hr

Chipset

Mobile Intel HM65 Express Chipset

Multicard reader

4-in-1 reader (MMC, SD, SDHC, SDXC)

ExpressCard Ports

Three USB 2.0 (one powered), external monitor (VGA DB-15, HDMI), ethernet (RJ-45)

PCle Mini Card WLAn⁴

Two PCI Express Mini Card slots

11b/g/n, PCIe Half Mini Card, Intel Centrino® Wireless-N 1000, 1x2

WWAN 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

Security

Power-on password, hard disk password, supervisor password, security keyhole

Security chip

Trusted Platform Module, TCG 1.2-compliant

Fingerprint reader

None

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

Supports ThinkVantage® technologies

65-watt AC Adapter

ROHS-compliant

International Warranty Service¹⁷

24 hour x 7 day¹⁸ toll-free support during the warranty period¹²

See footnotes for more detailed information

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

WE model(s) withdrawn effective November 2012
### ThinkPad X121e 3051 (AMD) - TopSeller - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor GHz</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Integrated graphics</th>
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<th>PCIe Mini Card WLAN</th>
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<td>TP 11a/b/g/n</td>
<td>WWAN upg</td>
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<td>320G 5400</td>
<td>TP 11a/b/g/n</td>
<td>WWAN upg</td>
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<td>Matte black</td>
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<td>6 Prem</td>
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</table>

- **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
- AMD Accelerated Processor C-50 with dual-core, virtualization technology, integrated 1066MHz DDR3 memory controller, and 1MB L2 cache
- AMD Accelerated Processor E-300 with dual-core, virtualization technology, integrated 1066MHz DDR3 memory controller, and 1MB L2 cache
- 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

**Memory**
- 8GB max / PC3-10600 1333MHz DDR3, non-parity, two 204-pin SO-DIMM sockets
  - * System automatically clocks down for processors with 1066MHz DDR3 memory controller

**Widescreen display**
- 11.6" (295mm) HD (1366x768) TFT color, anti- glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio, good light sensitive, LED indicator

**Optical Sata disk**
- None (use optional USB-based optical drive)
- Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, upgradable
- Some: Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, upgradeable, Active Protection System™

**Battery - life**
- 3-cell: up to 4.3 hr; 6-cell: (22.4Whr): up to 9.4 hr

**Cisco Mini Card WLAN**
- 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
- Wireless WAN upgradeable

**Supports ThinkVantage® technologies**
- 65-watt AC Adapter
- EPEAT® Gold rating
- ENERGY STAR® 5.0-compliant
- ROHS-compliant
- International Warranty Service 17
- 24 hour x 7 day toll-free support during the warranty period 14

**Preloaded operating system**
- Some: Genuine Windows® 7 Home Premium 64
- Some: Genuine Windows 7 Professional 64

**Ready to install applications**
- Some listed
- Access Connections™
- ThinkVantage System Update
- ThinkVantage Power Manager
- ThinkVantage Toolbox
- Norton™ Internet Security 2011 (30 days of virus definitions)

**Preloaded applications**
- Adobe® Reader®
- Skype™ for Windows
- Windows Live™ Essentials
- Microsoft Office 2010 preloaded; purchase product key to activate

---

**See footnotes for more detailed information**

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

WE model(s) withdrawn effective December 2012
**ThinkPad® X121e 3051 (AMD) - TopSeller (DOS) - withdrawn**

<table>
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<tr>
<th>Type-model</th>
<th>Processor GHz</th>
<th>Memory</th>
<th>Wide-screen display</th>
<th>Camera</th>
<th>Integrated graphics</th>
<th>Disk SATA GB rpm</th>
<th>PCIe Mini Card WLAN</th>
<th>PCIe Mini Card WWAN</th>
<th>Carrier</th>
<th>Top color</th>
<th>Bluetooth cells</th>
<th>Battery type</th>
<th>Battery - life</th>
<th>Chipset</th>
<th>Multicard reader</th>
<th>ExpressCard Ports</th>
<th>PCLE Mini Card</th>
<th>WLAN4</th>
<th>WWAN Carrier</th>
<th>Modern</th>
<th>Bluetooth™</th>
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<td>Blue 6</td>
<td>Lithium Ion</td>
<td>3-cell (31.2Whr): up to 4.3 hr; 6-cell (62.4Whr): up to 9.4 hr</td>
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</tr>
</tbody>
</table>

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

**Preloaded operating system**
- DOS-Lic.

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See footnotes for more detailed information

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

WE model(s) withdrawn effective December 2012

(G-MV1-4) February 2013
**ThinkPad X220 (4290) - November 2011 - I - withdrawn**

Personal Systems Reference (PSREF)

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<th>Widescreen Display</th>
<th>Camera</th>
<th>Disk</th>
<th>Optical in UltraBase</th>
<th>ThinkPad Ultrabase Series 3</th>
<th>PCl e Mini Card WLAN</th>
<th>PCl e Mini Card WWAN</th>
<th>Finger Battery reader cells</th>
<th>Global (G)</th>
<th>Preload</th>
</tr>
</thead>
<tbody>
<tr>
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<td>I7-2640M</td>
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**Positioning**

Processor: **Intel® Core™ i5-2520M processor (dual-core, 2.5GHz, 3MB Cache).**

**DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.2GHz), HT technology**

**Intel Core i5-2540M processor (dual-core, 2.6GHz, 3MB Cache).**

**DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.2GHz), HT technology**

**Intel Core i7-2620M processor (dual-core, 2.7GHz, 6MB Cache).**

**DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.4GHz), HT technology**

**Intel Core i7-2640M processor (dual-core, 2.8GHz, 6MB Cache).**

**DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.5GHz), HT technology**

**Memory**

8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

**Optical Drive**

Option for ThinkPad Ultrabase Series 3

Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3

**SATA disk**

Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high

Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™

All: removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3

**mSATA™ SSD**

None

**Widescreen display**

Some: 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 500:1 contrast ratio

Some: [Premium] 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)

**Camera**

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;
Maximum external resolution: 2560x1600 (DisplayPort)@60Hz;
2048x1536 (VGA)@75Hz; 1920x1200@60Hz (single-link DVI-D via optional cable)

**Keyboard**

7 row, 99-key, ThinkVantage button, spill-resistant, multimedia F keys

Trackpoint pointing device, “Press-to-Select,” Internet Scroll Bar™, magnifying glass

Touchpad: **UltraNav™,** buttonless touchpad below keyboard, multi-touch

ThinkLight™

Illuminates the keyboard to improve visibility in low-light conditions

**Dimensions³**

Weight: **1.39 lb; 630g**

Case material: **Magnesium alloy**

Standard Battery: **Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery**

External Battery: **Battery - life 12**

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;
external battery (64Whr): up to 9.4 hr;
9-cell plus external battery: up to 23.2 hr

**Chipset**

Mobile Intel GM45 Express Chipset

**UltraBase**

Multicard reader

ExpressCard

Ports

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

24 hour x 7 day x 365 day toll-free support during the warranty period

---

Preloaded operating system:

- **Genuine Windows 7 Professional 64**

Ready to install applications (only some listed):

- **Recovery**
- **Access Connections™**
- **Fingerprint Software (fingerprint models)**
- **Password Manager (fingerprint models)**
- **ThinkVantage System Update**
- **ThinkVantage Power Manager**
- **ThinkVantage Toolbox**

Preloaded applications (only some listed):

- **Noton™ Internet Security 2011**
- **Adobe® Reader**
- **SkyDrive 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)**

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

---

See footnotes for more detailed information

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WE model(s) announced April 19, May 3, or October 4, 2011

WE model(s) withdrawn effective December 2012

(G-DSH1-1) February 2013
Positioning
Processor An upportable 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 (3.30GHz), HT technology

Memory

8GB max / PC3-10600 1333MHz DDR3, non-paritry, dual-channel capable, two 204-pin SO-DIMM sockets

Optical Ultrabay

SATA disk

Some: DVD burner, removable, from ThinkPad Ultrabase Series 3
Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3

Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high

Widescreen display

Some: 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 500:1 contrast ratio

Some: (Premium) 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)

Camera

Some: HD720p resolution, 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; Maximum external resolution: 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 Bar13, magnifying glass

Touchpad

UltraNav®, buttonless touchpad below keyboard, multi-touch

ThinkLight™

Illuminates the keyboard to improve visibility in low-light conditions

Dimensions

with UltraBase; 4/6-cell: 12.0" x 8.13" x 0.75-1.36"; 305mm x 206.5mm x 19.8-34.6mm

4-cell: from 2.87 lb (1.35kg); 6-cell: from 3.31 lb (1.49kg); 8-cell: from 3.67 lb (1.67kg)

Display cover: Magnesium + PCABS;

Battery

Standard Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery

External Battery

Some: UltraBase; 4/6-cell: up to 23.2 hr; 8-cell (64W/hr): up to 13.8 hr; 9-cell (99W/hr): up to 9.4 hr; 9-cell plus external battery: up to 23.2 hr

Chipset

Mobile Intel GM67 Express Chipset

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)
- Gigabit Ethernet (RJ-45) port
- Microphone in and headphone out
- Requires 65W or 90W AC adapter
- 1.39 lb: 650g

65-watt AC Adapter

ENERGY STAR® 5.0-compliant

ROHS-compliant

International Warranty Service17

24 hour x 7 day 16 toll-free support during the warranty period12

See footnotes for more detailed information

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

WE model(s) withdrawn effective December 2012
## ThinkPad X220 (4291) - Onsite (November 2011) - I - withdrawn

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<th>Camera</th>
<th>Disk</th>
<th>Optical in UltraBase</th>
<th>ThinkPad Ultrabase Series</th>
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<th>Intel AMT</th>
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### Preloaded operating system

- **Genuine Windows 7 Professional 64**

### Ready to install applications

- **(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 applications

- **(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® (DVI-D:RW)
  - Corel DVD MovieFactory® Lenovo Edition (DVI-D:RW)

### Other features:

- Power button (front)
- Security key lock, security keyhole
- Analog Video Control 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

---

**Note:**

- **Drivers:**
  - ThinkPad Ultrabase Series 3 (30 days of virus definitions)
- **Software:**
  - Norton™ Internet Security 2011 (30 days of virus definitions)
- **VPN:**
  - Requires 65W or 90W AC adapter
- **Security:**
  - Power button (front)
  - Security key lock, security keyhole
  - Analog Video Control 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

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

Preloaded operating system™
- Genuine Windows® 7 Professional 64

Ready to install applications™ (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 DVD MovieFactory® Lenovo Edition (DVD±RW)

Preloaded applications™ (only some listed)

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

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

Type-model Processor Memory Widescreen display Camera DiskATA RPM Opticalin UltraBase ThinkPad Ultrabase Series 3 PCIe Mini Card WLAN PCIe Mini Card WWAN FingerBattery reader Global (GMP (P) Preload

4291-45G i7-2620M 4GBx1 12.5" HD 320G 7200 Intel 6300 32WAN upg Fing 9 vPro G P Pro 64

4291-43G i5-2520M 4GBx1 12.5" HD 720p 128G SSD Intel 6205 WWAN upg Fing 6 vPro G P Pro 64

4291-44G i5-2520M 4GBx1 12.5" HD 320G 7200 Intel 6205 WWAN upg Fing 6 vPro G P Pro 64

4291-42G i5-2540M 4GBx1 12.5" HD 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 WWAN upg Fing 6 vPro G P Pro 64

4291-36G i7-2620M 4GBx1 12.5" HD 128G SSD Intel 6300 WWAN upg Fing 6 vPro G P Pro 64

4291-35G i7-2620M 4GBx1 12.5" HD 720p 160G SSD Intel 6205 WWAN upg Fing 6 vPro G P Pro 64

**Some models are part of the Global Models Plus program with limited onsite 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 (3.20GHz), 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

Memory

8GB max™ / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

**Some:** Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high

**Some:** Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™

**All:** removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3

**mSATA SSD**: None

Optical Ultrabay SATALDisk

Some: DVD burner, removable from ThinkPad Ultrabase Series 3

Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3

Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high

Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™

**All:** removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3

Widescreen display

Some: 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 nits, 16:9 aspect ratio, 300:1 contrast ratio

Some: (Premium) 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, WideView (170° viewing)

Camera

Some: HD720p resolution, 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;

**Maximum external resolution:** 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™, magnifying glass

UltraNav™, buttonless touchpad below keyboard, multi-touch

Illuminates the keyboard to improve visibility in low-light conditions

Dimensions™

**Weight**:

Case material battery

Standard Battery

External Battery

Battery - life™

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;

external battery (64Whr): up to 9.4 hr;

9-cell plus external battery: up to 23.2 hr

Chipset

Mobile Intel® QM67 Express Chipset

Ultrabase

ThinkPad Ultrabase Series 3 (see right side)

Multicard readers

4-in-1 reader (SD, SDHC, SDXC, MMC)

ExpressCard

One slot (ExpressCard/34, ExpressCard/54)

Ports

i7 model: One USB 3.0, two USB 2.0 (one powered)

other model: Two USB 2.0 (one powered)

external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)

PCIe Mini Card

WLAN™

Two PCI Express Mini Card slots

Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2

Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® UltraBase 6300, 3x3

WWAN

Some: Wireless WAN upgradeable

Some: Wireless WAN, Ericsson™ F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA+/HSPA+, GPS

Carrier

Some: User selectable, contract required with service provider

Modern

None

Bluetooth™

Bluetooth 3.0 wireless, LED indicator

Ethernet

Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1

Intel AMT

InteliActive 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

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™

3-years/1-year battery, limited onsite service™

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

Pre-load

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® 6.0-compliant

ROHS-compliant

International Warranty Service®

24 hour x 7 days toll-free support during the warranty period™
Preloaded operating system\textsuperscript{10} - Genuine Windows\textsuperscript{7} 7 Professional 64

Ready to install applications\textsuperscript{14} (only some listed)
• Rescue and Recovery\textsuperscript{TM}
• Access Connections\textsuperscript{15}
• Fingerprint Software (fingerprint models)
• Password Manager (fingerprint models)
• ThinkVantage System Update
• ThinkVantage Power Manager
• ThinkVantage Toolbox

Preloaded applications\textsuperscript{14} (only some listed)
• Norton\textsuperscript{TM} Internet Security 2011 (30 days of virus definitions)
• Adobe\textsuperscript{®} Reader\textsuperscript{®}
• Skype\textsuperscript{TM} for Windows
• Windows Live\textsuperscript{®} Essentials
• Microsoft Office 2010 preloaded; purchase product key to activate
• Corel\textsuperscript{®} WinDVD\textsuperscript{®} (DVD:RW)
• Corel Burn.Now\textsuperscript{®} Lenovo Edition (DVD:RW)

supports ThinkVantage\textsuperscript{®} 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 Ultrabase Slim accessories in right side

Other features:
• Power button (front)
• Security key lock, security keyhole
• Analog VGA DP 15-pin 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

WWAN

WLAN

802.11b/g/n, PCle Half Mini Card, Intel Centrino\textsuperscript{®} Advanced-N 6205, 2x2
Some: Wireless WAN, upgradeable
Some: Wireless WAN, Ericsson\textsuperscript{®} F521gg Mobile Broadband Module, PCle Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS

Some: User selectable, contract required for provider service

Some: 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 microphone, combo audio/mic jack

Security

Power-on password, hard disk password, supervisor password, security keyhole

Security chip

Trusted Platform Module, TCG 1.2-compliant

Fingerprint reader

Some: UPEK fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip

Limited warranty\textsuperscript{12} - 3-years/1-year battery, limited onsite service\textsuperscript{14}. 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

© Lenovo

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

WE model(s) withdrawn effective December 2012
ThinkPad® X220i (4287) - TopSeller - withdrawn

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

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<td>Pro 64</td>
<td>12/11</td>
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</tbody>
</table>

- 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 (010PKR)

Positioning
An ultraportable for the executive on the move; one spindle

Processor
- Intel® Core™ i3-2310M processor (dual-core, 2.20GHz, 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

Memory
- 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

Optical Ultrabay
- Option for ThinkPad Ultrabase Series 3
- Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3

SATA disk
- Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
- Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™
- All: removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3

mSATA SSD
- None

Widescreen display
- 12.5" (317.5mm) HD (1366x768) TFT color, anti-glare, LED backlight, 200 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 optional cable); supports dual independent display;
- Maximum external resolution: 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

Trackpad
- TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar™, magnifying glass

Touchpad
- UltrNav™, buttonless touchpad below keyboard, multi-touch

ThinkLight™
- Illuminates the keyboard to improve visibility in low-light conditions

Dimensions
- without UltraBase: 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)
- Display cover: Magnesium + PCABS; Bottom: Magnesium alloy
- Lithium Ion 4-cell, 6-cell, or 9-cell, supports optional external battery as 2nd battery

Battery - life (hr)
- 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;
- external battery (64Whr): up to 9.4 hr; 9-cell plus external battery: up to 23.2 hr

Chipset
- Mobile Intel QM67 Express Chipset

Ultrabase
- Option: ThinkPad Ultrabase Series 3 (see right side)

Modem
- 4-in-1 reader (SD, SDHC, SDXC, MMC)

ExpressCard
- One slot (ExpressCard/34, ExpressCard/54)

Ports
- other model: Three USB 2.0 (one powered);
- external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)

PCIe Mini Card
- Two PCI Express Mini Card slots

WLAN
- 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2
- Wireless WAN upgradable

Ethernet
- Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1

Audio support
- High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual microphone, combo audio/mic jack

Security
- Power-on password, hard disk password, supervisor password, security keyhole

Security chip
- Trusted Platform Module, TCG 1.2-compliant

Fingerprint reader
- UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip

Limited warranty
- 3-years /1-yr battery - depot repair service / service upgrades available

Preloaded operating system
- Genuine Windows® 7 Professional 64

Ready to install applications
- Rescue and Recovery™
- Access Connections™
- Fingerprint Software (fingerprint models)
- Password Manager (fingerprint models)
- ThinkVantage System Update
- ThinkVantage Power Manager
- ThinkVantage Toolbox

Preloaded applications
- Norton™ Internet Security 2011 (30 days of virus definitions)
- Skype® for Windows

Supports ThinkVantage® technologies

ThinkPad Ultrabase Series 3
- Provides desktop expansion and cable management for X220 and X220 Tablet
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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
24 hour x 7 day toll-free support during the warranty period
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</table>

### Preloaded operating system
- Genuine Windows® 7 Professional 64

### Ready to install applications
- Rescue and Recovery™
- Access Connections™
- Fingerprint Software (fingerprint models)
- Password Manager (fingerprint models)
- ThinkVantage Power Manager
- ThinkVantage Toolbox
- Lenovo SimpleTap

### Preloaded applications
- Norton™ Internet Security 2011 (30 days of virus definitions)
- Skype™
- Windows 7 Professional 64 Edition
- Lenovo Bynow™ Lenovo Edition (DVD:RW)

- Energy Star® 6.0
- 500GB hard disk drive (SATA 3.0Gb/s, 2.5"
- 2GB*2 RAM (1600MHz DDR3)
- Intel HD Graphics 3000
- Three USB 2.0 (one powered)
- One slot (ExpressCard/34, ExpressCard/54)
- Some: Mobile Intel QM67 Express Chipset
- Two PCI Express Mini Card slots
- 3-cell (30Whr): Lithium Ion 3-cell or 6-cell, supports optional external battery as 2nd battery
- 3-cell: Mobile Intel QM65 Express Chipset
- 3-cell (30Whr): from 3.67 lb (1.66kg);
- 6-cell plus external battery: from 3.97 lb (1.80kg)
- 6-cell plus external battery: up to 9.0 hr;
- 6-cell plus external battery: up to 17.8 hr
- Advanced-N 6205, 2x2
- Gigabit ethernet (RJ-45) port
- DisplayPort (supports single-link DVI-D via optional cable)
- Requires 65W or 90W AC adapter
- 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
- 24 hour x 7 day toll-free support during the warranty period

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**Limited warranty**
- 3-years/1-year battery - depot repair service / service upgrades 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

(G-CMT1-1) February 2013
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- A depot repair service 3-year limited warranty
- Microsoft® Office 2010 Product Key Ready (O10PKR)

Positioning Processor
- Intel® Core™ i5-2620M processor (dual-core, 2.80GHz, 3MB Cache).
- DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.80GHz), HT technology.
- Intel Core i7-2620M processor (dual-core, 3.80GHz, 7MB Cache).
- DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.80GHz), HT technology.

Memory
- 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets.

Optical Ultrabay
- Option for ThinkPad Ultrabase Series 3
- Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3
- Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
- Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™
- All: removable, upgradable, Shock Mounted Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3

mSATA SSD
- None

Widescreen display
- 12.5" (317.7mm) 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, MultiTouch: 12.5" (317.7mm) HD (1366x768) TFT color, anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio, IPS, Multi-Touch supports pen & five-finger gesture
- All: 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 sensitivity, 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;
- Maximum external resolution: 2560x1600 (DisplayPort) @ 60Hz; 2048x1536 (VGA) @ 75Hz; 1920x1200 @ 60Hz (single-link DVI-D via optional cable)

Keyboard
- TrackPoint®: 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys
- TrackPoint®: TrackPoint pointing device, “Press-to-Select,” Internet Scroll Bar®3, magnifying glass
- Touchpad
- Touchpad: UltrNav®3, buttonless touchpad below keyboard, multi-touch
- ThinkLight™: None

Dimensions³
- without UltraBase: 3-cell: 12.0” x 9” x 1.1-1.23”; 305mm x 228.7mm x 27-31.3mm
- 3-cell: from 3.67 lb (1.66kg);
- 6-cell: from 3.97 lb (1.80kg)

Case material
- Display Cover: Magnesium + PCABS; Bottom: Magnesium alloy
- Battery - type: Lithium Ion 3-cell or 6-cell, supports optional external battery as 2nd battery
- Extended Battery: Some: Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+)
- Battery - life: 3-cell (30Whr): up to 4.0 hr; 6-cell (66Whr): up to 8.8 hr; external battery (64Whr): up to 9.0 hr; 6-cell plus external battery: up to 17.8 hr

Chipset
- Mobile Intel GM67 Express Chipset
- 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 Ultrabase 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® 6.0-compliant
- ROHS-compliant

International Warranty Service¹⁷
- 24 hour x 7 day¹⁸ toll-free support during the warranty period¹²
## ThinkPad X220 Tablet (4299) - Onsite (November 2011) - I - withdrawn

**Personal Systems Reference (PSREF)**

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Widescreen display</th>
<th>Disk SATA</th>
<th>Optical in Ultrabase</th>
<th>ThinkPad Ultrabase Series 3</th>
<th>PCIe Mini Card</th>
<th>PCIe Mini Card WWAN</th>
<th>Finger print reader</th>
<th>Battery</th>
<th>Ext Battery</th>
<th>Global (G) Preload</th>
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</table>

### Preloaded operating system
- Genuine Windows® 7 Professional 64

### Ready to install applications
- Rescue and Recovery™
- Access Connections™
- Fingerprint Software (fingerprint models)
- Password Manager (fingerprint models)
- ThinkVantage Power Manager
- ThinkVantage Toolbox
- Lenovo SimpleTap

### Preloaded applications
- 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)

### 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 of 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 (1 year)
- 24 hour x 7 day* toll-free support during the warranty period

---

### See footnotes for more detailed information

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WE model(s) announced March 22, April 5, May 3, or May 10, 2011
WE model(s) withdrawn effective December 2012

*March 22, April 5, May 3, or May 10, 2011

**Global (G) Preload**
- G: General
- P: Preinstalled
- P: Professional

---

### Limitations
- 3-years/1-year battery, limited onsite service**: 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
### ThinkPad® X220 Tablet (4299) - Onsite (November 2011) - II - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Widescreen display</th>
<th>Camera</th>
<th>Disk SATA GB rpm</th>
<th>Optical in UltraBase</th>
<th>ThinkPad Ultrabase Series 3</th>
<th>PCIe Mini Card WLAN</th>
<th>PCIe Mini Card WWAN</th>
<th>Battery cells</th>
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</tbody>
</table>

**Positioning Processor** Convertible tablet ultraportable; one spindle Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache).

**Memory**
- 8GB max / PC3-10600 1333MHz DDR3, non-parity, dual-channel capable, two 204-pin SO-DIMM sockets

**Optical Ultrabay SATA disk**
- Supports Ultrabay Slim devices in optional or standard ThinkPad Ultrabase Series 3
- Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high
- Some: Hard Disk Drive / SATA 3.0Gb/s, 2.5" wide, 7mm high, Active Protection System™
- All: removable, upgradable, Shock Mounted, Hard Drive, supports the second disk in optional or standard ThinkPad Ultrabase Series 3

**mSATA™ SSD** None

**Widescreen display**
- Outdoor: 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
- MultiTouch: 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
- All: 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

**Graphics**
- Intel HD Graphics 3000 in processor, external analog monitor connector 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)

**Keyboard**
- TrackPoint® 7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys
- TrackPoint pointing device, “Press-to-Select,” Internet Scroll Bar®, magnifying glass

**Touchpad**
- UltrNav®, buttonless touchpad below keyboard, multi-touch
- ThinkLight™ None

**Dimensions³**
- without UltraBase: 3-cell: 12.0" x 9" x 1.1-1.23"; 305mm x 228.7mm x 27-31.3mm
- 3-cell: from 3.67 lb (1.66kg); 6-cell: from 3.97 lb (1.80kg)

**Weight³**
- Display cover: Magnesium + PCABS; Bottom: Magnesium alloy

**Battery - type** Lithium Ion 3-cell or 6-cell, supports optional external battery as 2nd battery

**Extended Battery**
- Some: Slim external Lithium Ion 6-cell battery (ThinkPad Battery 19+)
- 3-cell (40Whr): up to 4.0 hr; 6-cell (66Whr): up to 8.8 hr; external battery (64Whr): up to 9.0 hr; 6-cell plus external battery: up to 17.8 hr

**Chipset**
- Mobile Intel GM67 Express Chipset

**Ultrasound**
- Option: ThinkPad Ultrabase Series 3 (see right side)
- Multicard Reader 4-in-1 reader (SD, SDHC, SDXC, MMC)
- ExpressCard One slot (ExpressCard34, ExpressCard54)
- Ports Three USB 2.0 (one powered), external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45)

**PCIe Mini Card WLAN⁴**
- Two PCI Express Mini Card slots
- Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2
- Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3

**WWAN**
- Wireless WAN upgradable

**Modem**
- None

**Bluetooth™**
- Bluetooth 3.0 wireless, LED indicator

**Ethernet**
- Intel 82579LM Gigabit Network Connection (Lewissville), PHY, PCIe x1

**Intel AMT**
- Intel Active Management Technology (AMT)

**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

**Security**
- Power-on password, hard disk password, supervisor password, security keyhole
- Trusted Platform Module, TCG 1.2-compliant

**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**³
- 3-years/1-year battery, limited onsite service², 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

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**Preloaded operating system**³
- Genuine Windows® 7 Professional 64

**Ready to install applications**³
- Rescue and Recovery™
- Access Connections¹³
- Fingerprint Software (fingerprint models)
- Password Manager (fingerprint models)
- ThinkVantage Power Manager
- ThinkVantage Toolbox
- Lenovo SimpleTap

**Preloaded applications**³ (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® (D/V:R/W)
- Corel Burn.Now™ Lenovo Edition (D/V:R/W)

**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-spinable 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

**ENERGY STAR® 5.0-compliant**
- 65-watt AC Adapter
- ROHS-compliant

International Warranty Service¹⁷
- 24 hour x 7 day¹⁸ toll-free support

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See footnotes for more detailed information

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WE model(s) announced March 22, May 3, May 10, July 12, or October 4, 2011
WE model(s) withdrawn effective December 2012
Lenovo® ThinkPad X1 with ThinkPad Battery 39+ (6-cell slice) 0A36279
## ThinkPad® X1 1293 - withdrawn

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<th>Memory</th>
<th>Widescreen display</th>
<th>Camera</th>
<th>Disk SATA GB</th>
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- A depot repair service 3-year limited warranty
- Microsoft Office 2010 Product Key Ready (O10PKR)

### Positioning
- **Premiere mobility, performance, and style; one spindle**

### 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**

### Memory
- **6GB max / 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**

### Display
- **(Premium) 13.3" (338mm) HD (1366x768) TFT color; anti-glare display with glossy infinity Coming™ Gorilla™ Glass LED backlight, 350 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 digital monitor monitor via HDMI™ or Mini DisplayPort™ (supports VGA analog monitor via Mini DisplayPort to VGA Monitor Cable 0A36536); supports dual independent display; Max external resolution: 2560x1600 (Mini-DisplayPort)@60Hz; 1920x1200 (HDMI)@60Hz**

### Keyboard
- **6 row, ThinkVantage® button, LED backlight, spill-resistant, multimedia Fn keys**

### TrackPoint
- **TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar"**

### Touchpad
- **UltraNav™, buttonless touchpad below keyboard, multi-touch**

### ThinkLight™
- **None**

### Dimensions
- **13.3W” (WxDxH): 13.26” x 9.1” x 0.65-0.84”; 337mm x 231.1mm x 16.5-21.3mm**

### Case material
- **Integrated Lithium Ion 4-cell RapidCharge battery, 1000 cycle, supports standard or optional external 6-cell battery (GA36279) as 2nd battery**

### Standard Battery
- **Integrated external Lithium Ion 6-cell battery (ThinkPad Battery 19+, 0A36280)**

### Extended Battery
- **Battery - life: Integrated battery (38.4Whr): up to 5.2 hr; integrated plus slice battery (35.5Whr): 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
- **Some: 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2**

### PCIe WWAN
- **Wireless WAN upgradable**

### Carrier
- **None**

### Modern
- **None**

### Bluetooth™
- **Bluetooth 3.0 wireless, LED indicator**

### Ethernet
- **Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1**

### Intel AMT
- **Intel Active Management Technology (IcAMT)**

### 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
- **UEP6 Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip**

### Limited Warranty
- **3-years/1-yr battery - depot repair service / service upgrades available**

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**Preloaded operating system**
- Genuine Windows® 7 Professional 64

**Ready to install applications**
- (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

**Preloaded applications**
- (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

---

See footnotes for more detailed information

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

WE model(s) withdrawn effective December 2012

(G-NGNT1-1) February 2013

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™

24 hour x 7 day® toll-free support during the warranty period®

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Some listed)
## ThinkPad X1 1294 (Onsite) - withdrawn

### Personal Systems Reference (PSREF)

#### Type-model  Processor  Memory  Widescreen display  Camera  Disk SATA  GB rpm  PCIe Mini Card  LAN  PCIe Mini Card  WWAN  Carrier  Finger print reader  Blue- tooth  Ext Battery  Intel  Global (G) QM (P) Pre- load  Ann Date (mm/yyy)

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Widescreen display</th>
<th>Camera</th>
<th>Disk SATA  GB rpm</th>
<th>PCIe Mini Card  LAN</th>
<th>PCIe Mini Card  WWAN</th>
<th>Carrier</th>
<th>Finger print reader</th>
<th>Blue- tooth</th>
<th>Ext Battery</th>
<th>Intel</th>
<th>Global (G) QM (P) Pre- load</th>
<th>Ann Date (mm/yyy)</th>
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<td>8GBx1</td>
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</tbody>
</table>

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

### Preloaded operating system
- Genuine Windows® 7
- Professional 64

### Ready to install applications
- Rescue and Recovery™
- Access Connections™
- Fingerprint Software (fingerprint models)
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See footnotes for more detailed information ©Lenovo
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.


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 Thinnest 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 V92 modems. Actual speeds depend on many factors and are often less than the maximum possible. V92 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.
15 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 is solely responsible for 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.
16 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.
17 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.
18 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.
19 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.
20 For combination drives, maximum possible speeds only are given in the following order: CD write, CD rewrite, CD read, DVD read.
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.

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.

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.

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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