

ThinkPad®



Lenovo® ThinkPad W520



Lenovo ThinkPad W520



Lenovo ThinkPad W520



Lenovo ThinkPad W520



Lenovo ThinkPad W520



Lenovo ThinkPad W520

ThinkPad® W520 4282 (Optimus) - withdrawn

Personal Systems Reference (PSREF)

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

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

Positioning Processor	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, 2.50GHz, 8MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox			
Memory	<i>dual-core model:</i> 16GB max ⁷ , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets <i>All:</i> PC3-10600 1333MHz DDR3, non-parity, dual-channel capable										Preloaded applications¹⁴ (only some listed) • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) • huey™PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)			
Optical Ultrabay SATA disk	<i>Some:</i> DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive													
mSATA™ SSD	None													
Widescreen display	<i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) FHD (1920x1080) color , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut													
Color calibration Camera	None HD720p resolution, wider view angle, low light sensitive, fixed focus													
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA Quadro® 1000M or 2000M , PCI Express® x16, 2GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)													
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm													
Weight ²	<i>6-cell:</i> starting at 5.40 lb (2.45kg); <i>9-cell:</i> starting at 5.75 lb (2.61kg)													
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint													
Battery - type Battery - life ¹⁰	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery at bottom <i>6-cell (57Whr):</i> up to 6.6 hr; <i>9-cell (94Whr):</i> up to 10.9 hr; <i>9-cell plus slice battery:</i> up to 21.9 hr													
Chipset ExpressCard Smart Card Reader Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 3.0 (blue), one Powered USB 2.0 (yellow), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)													
PCIe Mini Card WLAN ⁴ WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support Security Security chip Fingerprint reader	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3 Wireless WAN upgradable None 56K V.92 ⁶ modem Bluetooth 3.0 wireless, LED indicator Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip													
Limited warranty ¹²	3-years/1-yr battery - depot repair service / service upgrades²² available										Supports ThinkVantage® technologies 170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			

See footnotes for more detailed information

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

WE model(s) withdrawn effective December 2012

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(G-KN3W-1) February 2013

ThinkPad® W520 4284 (Optimus) - Onsite - withdrawn

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB ⁵ rpm	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Carrier	Modem	Smart Card Reader	Color calib	Battery cells	Intel AMT	Intel vPro	Pre-load
4284-4MG	i7-2860QM	4GBx2	15.6" FHD	2000M	500G 7200	Intel 6300 ²⁸	Ericsson	selectable			X-Rite	9	iAMT	vPro	Pro 64
4284-4LG	i7-2760QM	4GBx1	15.6" HD+	1000M	500G 7200	Intel 6300	Ericsson	selectable		Smart	X-Rite	9	iAMT	vPro	Pro 64
4284-4KG	i7-2670QM	4GBx1	15.6" HD+	1000M	500G 7200	Intel 6300	WWAN upg					9			Pro 64
4284-4AG	i5-2520M	4GBx1	15.6" HD+	1000M	320G 7200	Intel 6300	WWAN upg		Modem			9	iAMT	vPro	Pro 64

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

Positioning Processor	<p><i>Mobile workstation; two spindles</i></p> <p>Intel® Core™ i5-2520M processor (dual-core, 2.50GHz, 3MB Cache). DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.20GHz), HT technology</p> <p>Intel Core i7-2670QM processor (quad-core, 2.20GHz, 6MB Cache). DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.10GHz), HT technology</p> <p>Intel Core i7-2760QM processor (quad-core, 2.40GHz, 6MB Cache). DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology</p> <p>Intel Core i7-2860QM processor (quad-core, 2.50GHz, 8MB Cache). DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology</p>	<p>Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64</p> <p>Ready to install applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Rescue and Recovery™ • Access Connections™ • Fingerprint Software (fingerprint models) • Password Manager (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • ThinkVantage Toolbox <p>Preloaded applications¹⁴ (only some listed)</p> <ul style="list-style-type: none"> • Norton™ Internet Security 2011 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Windows Live™ Essentials • Microsoft Office 2010 preloaded; purchase product key to activate • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) • huey™PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)
Memory	<p><i>dual-core model:</i> 16GB max⁷, two 204-pin SO-DIMM sockets</p> <p><i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets</p> <p><i>All:</i> PC3-10600 1333MHz DDR3, non-parity, dual-channel capable</p>	
Optical Ultrabay SATA disk	<p>DVD burner, 12.7mm Ultrabay Enhanced, removable</p> <p>One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access</p> <p><i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high</p> <p><i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™</p> <p><i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive</p>	
mSATA™ SSD	None	
Widescreen display	<p><i>Some:</i> 15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut</p> <p><i>Some:</i> 15.6" (396mm) FHD (1920x1080) color, anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut</p>	
Color calibration Camera	<p><i>Some:</i> huey™PRO Colorimeter by X-Rite® color calibration sensor in palm rest</p> <p>HD720p resolution, wider view angle, low light sensitive, fixed focus</p>	
Graphics	<p>NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA Quadro® 1000M or 2000M, PCI Express® x16, 2GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays;</p> <p><i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)</p>	
Keyboard TrackPoint® Touchpad ThinkLight™	<p>7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys</p> <p>TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar¹³, magnifying glass</p> <p>UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch</p> <p>Illuminates the keyboard to improve visibility in low-light conditions</p>	
Dimensions (WxDxH) ³	<p><i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm</p> <p><i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm</p>	
Weight ²	<p><i>6-cell:</i> starting at 5.40 lb (2.45kg); <i>9-cell:</i> starting at 5.75 lb (2.61kg)</p>	
Case material	<p><i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid;</p> <p><i>Bottom:</i> Glass-fiber reinforced plastic without paint</p>	
Battery - type	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery at bottom	
Battery - life ¹⁰	<p><i>6-cell (57Whr):</i> up to 6.6 hr; <i>9-cell (94Whr):</i> up to 10.9 hr; <i>9-cell plus slice battery:</i> up to 21.9 hr</p>	
Chipset	Mobile Intel QM67 Express Chipset	
ExpressCard	One slot (ExpressCard/34)	
Smart Card Read	<i>Some:</i> Smart Card reader	
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)	
Ports	<p>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)</p>	
PCIe Mini Card WLAN ⁴ WWAN	<p>Two PCI Express Mini Card slots</p> <p>11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Ultimate-N 6300, 3x3</p> <p><i>Some:</i> Wireless WAN upgradable</p> <p><i>Some:</i> Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCIe Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS</p>	
Carrier	<i>Some:</i> User selectable, contract required with service provider	
Modem	<i>Some:</i> 56K V.92 ⁶ modem	
Bluetooth™	Bluetooth 3.0 wireless, LED indicator	
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1	
Intel AMT	<i>Some:</i> Intel Active Management Technology (iAMT)	
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack	
Security	Power-on password, hard disk password, supervisor password, security keyhole	
Security chip	Trusted Platform Module, TCG 1.2-compliant	
Fingerprint reader	UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited warranty ¹²	<p>3-years/1-year battery, limited onsite service²⁴, 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available</p>	<p>Supports ThinkVantage® technologies</p> <p>170-watt AC adapter</p> <p>ThinkPad Roll Cage (one-piece magnesium frame)</p> <p>EPEAT™ Gold rating</p> <p>ENERGY STAR® 5.0-compliant</p> <p>RoHS-compliant</p> <p>International Warranty Service¹⁷</p> <p>24 hour x 7 day¹⁸ toll-free support during the warranty period¹²</p>

See footnotes for more detailed information

WE model(s) announced March 1 or August 2, 2011

WE model(s) withdrawn effective December 2012

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(G-KN3W-2) February 2013

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

Personal Systems Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB [®] rpm	RAID	SATA optical	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Color calib	Bat-tery cells	Intel vPro	Global (G) GMP (P)	Pre-load
4284-25G	i5-2540M	2GBx2	15.6" HD+	1000M	1x320G 7200		DVD±RW	Intel 6205 ²⁸	WWAN upg		None	9	vPro	G P	Pro 64
4284-4YG	i7-2860QM	4GBx2	15.6" FHD	2000M	1x500G 7200		DVD±RW	Intel 6300 ²⁸	WWAN upg		None	9	vPro	G P	Pro 64
4284-4ZG	i7-2760QM	4GBx1	15.6" FHD	2000M	1x500G 7200		DVD±RW	Intel 6300	WWAN upg		None	9	vPro	G P	Pro 64
4284-5DG	i7-2760QM	4GBx1	15.6" FHD	1000M	2x500G 7200	1		Intel 6205	WWAN upg	Finger	None	9	vPro	G P	Pro 64
4284-5CG	i7-2760QM	4GBx1	15.6" FHD	1000M	2x500G 7200	0		Intel 6205	WWAN upg	Finger	None	9	vPro	G P	Pro 64
<ul style="list-style-type: none">• Part of the Global Models Plus program with limited onsite service²⁴ 3-year limited warranty• Power-packed engineering with Open GL graphics and ISV certifications• Microsoft® Office 2010 Product Key Ready (O10PKR)															
Positioning Processor	<i>Mobile workstation; two spindles</i> Intel® Core™ i5-2540M processor (dual-core, 2.60GHz, 3MB Cache), DDR3 memory controller (up to 1333MHz), Intel Turbo Boost 2.0 (3.30GHz), HT technology Intel Core i7-2760QM processor (quad-core, 2.40GHz, 6MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology Intel Core i7-2860QM processor (quad-core, 2.50GHz, 8MB Cache), DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology										Preloaded operating system²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) <ul style="list-style-type: none">• Rescue and Recovery™• Access Connections™• Fingerprint Software (fingerprint models)• Password Manager (fingerprint models)• ThinkVantage System Update• ThinkVantage Power Manager• ThinkVantage Toolbox Preloaded applications¹⁴ (only some listed) <ul style="list-style-type: none">• Norton™ Internet Security 2011 (30 days of virus definitions)• Adobe® Reader®• Skype™ for Windows• Windows Live™ Essentials• Microsoft Office 2010 preloaded; purchase product key to activate• Corel® WinDVD® (DVD±RW)• Corel Burn.Now™ Lenovo Edition (DVD±RW)• Corel DVD MovieFactory® Lenovo Edition (DVD±RW)• huey™PRO Monitor Color Correction by Pantone®/X-Rite® (color calibration models)				
Memory	<i>dual-core model:</i> 16GB max ⁷ , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets <i>All:</i> PC3-10600 1333MHz DDR3, non-parity, dual-channel capable														
Optical Ultrabay SATA disk	<i>Some:</i> DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high <i>Some:</i> HDD / SATA 3.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™ <i>All:</i> removable, upgradable, supports the second disk, Shock Mounted Hard Drive														
mSATA™ SSD	None														
Widescreen display	<i>Some:</i> 15.6" (396mm) HD+ (1600x900) color , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) FHD (1920x1080) color , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut														
Color calibration Camera	None HD720p resolution, wider view angle, low light sensitive, fixed focus														
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 3000 in processor, and NVIDIA Quadro® 1000M or 2000M , PCI Express® x16, 2GB memory, external analog monitor support via VGA DB-15 connector and digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; <i>Maximum external resolution:</i> 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @85Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable)														
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions														
Dimensions (WxDxH) ³	<i>HD & HD+:</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>FHD:</i> 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm														
Weight ²	<i>6-cell:</i> starting at 5.40 lb (2.45kg); <i>9-cell:</i> starting at 5.75 lb (2.61kg)														
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint														
Battery - type Battery - life ¹⁰	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery at bottom <i>6-cell (57Whr):</i> up to 6.6 hr; <i>9-cell (94Whr):</i> up to 10.9 hr; <i>9-cell plus slice battery:</i> up to 21.9 hr														
Chipset ExpressCard Smart Card Read Multicard Reader Ports	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 3.0 (blue), one Powered USB 2.0 (yellow), one USB 2.0/eSATA combo port, external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)														
PCIe Mini Card WLAN ⁴	Two PCI Express Mini Card slots <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 <i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3														
WWAN Carrier	Wireless WAN upgradable None														
Modem	56K V.92 ⁶ modem														
Bluetooth™	Bluetooth 3.0 wireless, LED indicator														
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1														
Intel AMT	Intel Active Management Technology (iAMT)														
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack														
Security	Power-on password, hard disk password, supervisor password, security keyhole														
Security chip	Trusted Platform Module, TCG 1.2-compliant														
Fingerprint reader	<i>Some:</i> UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip														
Limited warranty ¹²	3-years/1-year battery, limited onsite service²⁴, 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business day for service dispatch / service upgrades available										Supports ThinkVantage® technologies 170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²				

See footnotes for more detailed information

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

WE model(s) withdrawn effective December 2012

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