



Lenovo® ThinkPad W530



Lenovo ThinkPad W530



Lenovo ThinkPad W530



Lenovo ThinkPad W530



Lenovo ThinkPad W530 with four displays



Lenovo ThinkPad W530

# ThinkPad W530 2438 (Optimus) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB <sup>8</sup> rpm	RAID	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN/ mSATA	Smart Card Reader	Color calib	Battery Intel vPro	Ann Date (mm/yy)
2438-2MU	i7-3920XM	4GBx4	15.6" FHD	K2000M	1x500G 7200	No	None	Intel 6205 <sup>28</sup>	WWAN upg	Smart	X-Rite	9 vPro	Pro 64 06/12
2438-2LU	i7-3720QM	4GBx1	15.6" FHD	K2000M	1x500G 7200	No	None	Intel 6205	WWAN upg	None	None	9 vPro	Pro 64 06/12
2438-2KU	i7-3820QM	4GBx2	15.6" FHD	K1000M	1x500G 7200	No	None	Intel 6205	WWAN upg	None	None	9 vPro	Pro 64 06/12
2438-2JU	i7-3720QM	4GBx1	15.6" HD+	K1000M	1x500G 7200	No	None	Intel 6205	WWAN upg	None	None	9 vPro	Pro 64 06/12
2438-2HU	i7-3720QM	4GBx2	15.6" FHD	K1000M	1x500G 7200	No	None	Intel 6205	WWAN upg	None	None	9 vPro	Pro 64 06/12
2438-3AU	i7-3720QM	8GBx1	15.6" FHD	K1000M	1x500G 7200	No	Backlit	Intel 6205	WWAN upg	None	None	9 vPro	Pro 64 07/12
2438-39U	i7-3720QM	8GBx1	15.6" HD+	K1000M	1x500G 7200	No	Backlit	Intel 6205	WWAN upg	None	None	9 vPro	Pro 64 07/12
2438-59U	i7-3840QM	4GBx2	15.6" FHD	K1000M	1x500G 7200	No	None	Intel 6205	WWAN upg	None	None	9 vPro	Pro 64 02/13
2438-58U	i7-3940XM	4GBx4	15.6" FHD	K2000M	1x500G 7200	No	None	Intel 6205	WWAN upg	Smart	X-Rite	9 vPro	Pro 64 02/13
2438-57U	i7-3740QM	4GBx1	15.6" FHD	K2000M	1x500G 7200	No	None	Intel 6205	WWAN upg	None	None	9 vPro	Pro 64 02/13
Positioning Processor	<i>Mobile workstation; two spindles</i> <b>Intel® Core™ i7-3720QM processor (4 cores, 2.60GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology <b>Intel Core i7-3740QM processor (4 cores, 2.70GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology <b>Intel Core i7-3820QM processor (4 cores, 2.70GHz, 8MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology <b>Intel Core i7-3840QM processor (4 cores, 2.80GHz, 8MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.80GHz), HT technology <b>Intel Core i7-3920XM processor (4 cores, 2.90GHz, 8MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.80GHz), HT technology <b>Intel Core i7-3940XM processor (4 cores, 3.0GHz, 8MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.90GHz), HT technology										<b>Preloaded operating system<sup>20</sup></b> Genuine Windows® 7 Professional 64  <b>Ready to install applications<sup>14</sup></b> (only some listed) • Rescue and Recovery™ • Password Manager  <b>Preloaded applications<sup>14</sup></b> (only some listed) • Lenovo® Solution Center • Lenovo Message Center Plus • ThinkVantage Product Recovery • Access Connections™ • Fingerprint Software (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • Lenovo Cloud Storage by SugarSync • Lenovo SimpleTap • Microsoft® Office preloaded; purchase a product key to activate • Norton™ Internet Security 2012 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Evernote® • Intel Small Business Advantage • RapidBoot HDD Accelerator • Symantec™ VIP • Windows Live™ Essentials • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) • X-Rite® Pantone® Color Calibrator (color calibration models)		
Memory	<i>dual-core model:</i> 16GB max <sup>7</sup> , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets <i>All:</i> PC3-12800 1600MHz 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 <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/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) <b>HD+ (1600x900) color</b> , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> 15.6" (396mm) <b>Full HD (1920x1080) color</b> , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut												
Color calibration Camera	<i>Some:</i> Pantone® color calibrator by X-Rite® color calibration sensor in palm rest, LED indicator HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus												
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, <b>Intel HD Graphics 4000</b> in processor, and <b>NVIDIA Quadro® K1000M or K2000M</b> , PCI Express® x16, <b>2GB</b> memory, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports three independent displays; <i>Maximum external resolution:</i> 3840x2160@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@85Hz (VGA)												
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling, multi-touch Illuminates the keyboard to improve visibility in low-light conditions												
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material Battery - type Battery - life <sup>10</sup>	<i>15.6W" (WxDxH):</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>6-cell:</i> starting at 5.76 lb (2.62kg); <i>9-cell:</i> starting at 6.19 lb (2.81kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic w/o paint Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery, HW Authentication <i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus 9-cell Slice battery (94Whr, 0A36304):</i> up to 25.6 hr												
Chipset ExpressCard Smart Card Read Multicard Reader Ports	<b>Mobile Intel QM77 Express Chipset</b> One slot (ExpressCard/34) <i>Some:</i> Smart Card reader 4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 3.0, two USB 2.0 (one powered), VGA DB-15, Mini DisplayPort, ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)										Supports ThinkVantage® technologies		
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable None None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) HD Audio, Realtek® ALC3202 codec, Dolby® Home Theater® v4 / stereo speakers, 1W x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack										170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified RoHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>		
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip										For compatible accessories, please go to O-W530 sheet; For Lenovo service <sup>22</sup> upgrade options, please go to QP-TA sheet; For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a>		
Limited warranty <sup>12</sup>	<b>3-years/1-yr battery - depot repair service / service upgrades<sup>22</sup> available</b>												

See footnotes for more detailed information

# ThinkPad W530 2438 (Optimus) - TopSeller (Windows 8)

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB <sup>7</sup> rpm	RAID	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN/ mSATA	Bat-tery Color calib	Intel AMT	Intel vPro	Preload	Ann Date (mm/yy)
2438-4CU	i7-3720QM	8GBx1	15.6" FHD	K1000M	1x500G 7200	No	Backlit	Intel 6205 <sup>28</sup>	WWAN upg	None	9	iAMT vPro	Win7 Pro64	10/12
2438-4BU	i7-3720QM	8GBx1	15.6" HD+	K1000M	1x500G 7200	No	Backlit	Intel 6205	WWAN upg	None	9	iAMT vPro	Win7 Pro64	10/12
2438-3BU	i7-3720QM	8GBx1	15.6" FHD	K1000M	1x500G 7200	No	Backlit	Intel 6205	WWAN upg	None	9	iAMT vPro	Win8 Pro64	10/12
2438-38U	i7-3720QM	8GBx1	15.6" HD+	K1000M	1x500G 7200	No	Backlit	Intel 6205	WWAN upg	None	9	iAMT vPro	Win8 Pro64	10/12
2438-4LU	i7-3720QM	8GBx1	15.6" FHD	K1000M	1x180G SSD	No	Backlit	Intel 6205	WWAN upg	None	9	iAMT vPro	Win7 Pro64	10/12
2438-4KU	i7-3630QM	8GBx1	15.6" HD+	K1000M	1x500G 7200	No	Backlit	Intel 6205	WWAN upg	None	9	None	Win7 Pro64	10/12
2438-5AU	i7-3740QM	8GBx1	15.6" HD+	K1000M	1x500G 7200	No	Backlit	Intel 6205	WWAN upg	None	9	iAMT vPro	Win7 Pro64	02/13
2438-56U	i7-3740QM	8GBx1	15.6" FHD	K1000M	1x180G SSD	No	Backlit	Intel 6205	WWAN upg	None	9	iAMT vPro	Win7 Pro64	02/13
2438-52U	i7-3740QM	4GBx2	15.6" FHD	K1000M	1x500G 7200	No	Backlit	Intel 6205	WWAN upg	None	9	iAMT vPro	Win7 Pro64	02/13
2438-4ZU	i7-3740QM	4GBx2	15.6" FHD	K1000M	1x180G SSD	No	Backlit	Intel 6205	WWAN upg	None	9	iAMT vPro	Win7 Pro64	02/13

- **Small and medium business (SMB) model(s), part of the US TopSeller™ Program**
- **A depot repair service 3-year limited warranty**
- **Power-packed engineering with Open GL graphics and ISV certifications**

Positioning	<i>Mobile workstation; two spindles</i>	<b>Preloaded operating system<sup>20</sup></b> - Some: Windows <sup>®</sup> 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit - Some: Windows 8 Pro 64-bit <b>Preloaded applications<sup>5</sup></b> (only some listed) - <b>Windows 7 models</b> • Lenovo <sup>®</sup> Message Center Plus • ThinkVantage Product Recovery • Access Connections™ • ThinkVantage Power Manager • Lenovo SimpleTap • Adobe <sup>®</sup> Reader <sup>™</sup> • Corel <sup>®</sup> WinDVD <sup>®</sup> (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory <sup>®</sup> Lenovo Edition (DVD±RW) - <b>Windows 8 models</b> • Lenovo Support • Lenovo Companion • Lenovo QuickLaunch • PC Device Stage • Cyberlink Power2Go (DVD±RW) • Cyberlink PowerProducer (DVD±RW) - <b>All models</b> • Lenovo Solution Center • Password Manager • ThinkVantage System Update • Fingerprint Software (fingerprint models) • Lenovo Cloud Storage by SugarSync • Microsoft <sup>®</sup> Office preloaded; purchase a product key to activate • Skype™
Processor	<b>Intel<sup>®</sup> Core™ i7-3630QM processor (4 cores, 2.40GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology <b>Intel Core i7-3720QM processor (4 cores, 2.60GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology <b>Intel Core i7-3740QM processor (4 cores, 2.70GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology	
Memory	<i>dual-core model:</i> 16GB max <sup>7</sup> , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets <i>All:</i> PC3-12800 1600MHz DDR3, non-parity, dual-channel capable	
Optical	DVD burner, 12.7mm Ultrabay Enhanced, removable	
Ultrabay	One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access	
SATA disk	<i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/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> <b>15.6"</b> (396mm) <b>HD+ (1600x900) color</b> , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> <b>15.6"</b> (396mm) <b>Full HD (1920x1080) color</b> , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut	
Color calibration	None	
Camera	HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus	
Graphics	NVIDIA <sup>®</sup> Optimus™ technology, auto-switch between discrete and integrated graphics, <b>Intel HD Graphics 4000</b> in processor, and <b>NVIDIA Quadro<sup>®</sup> K1000M or K2000M</b> , PCI Express <sup>®</sup> x16, <b>2GB</b> memory, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports three independent displays; <i>Maximum external resolution:</i> 3840x2160@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@85Hz (VGA)	
Keyboard	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight	
TrackPoint <sup>®</sup>	TrackPoint <sup>®</sup> pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass	
Touchpad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling, multi-touch	
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions <sup>3</sup>	<i>15.6W" (WxDxH):</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm	
Weight <sup>2</sup>	<i>6-cell:</i> starting at 5.76 lb (2.62kg); <i>9-cell:</i> starting at 6.19 lb (2.81kg)	
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint	
Battery - type	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery, HW Authentication	
Battery - life <sup>10</sup>	<i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus 9-cell Slice battery (94Whr, 0A36304):</i> up to 25.6 hr	
Chipset	<b>Mobile Intel QM77 Express Chipset</b>	
ExpressCard	One slot (ExpressCard/34)	
Smart Card Read	None	
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)	
Ports	Two USB 3.0, two USB 2.0 (one powered), VGA DB-15, Mini DisplayPort, ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)	
PCIe Mini Card	Two PCI Express Mini Card slots	
PCIe WLAN <sup>4</sup>	11a/b/g/n, PCIe Half Mini Card, Intel Centrino <sup>®</sup> Advanced-N 6205, 2x2	
PCIe WWAN	Wireless WAN upgradable	
Carrier	None	
Modem	None	
Bluetooth™	Bluetooth 4.0 wireless	
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1	
Intel AMT	<i>Some:</i> Intel Active Management Technology (iAMT)	
Audio support	HD Audio, Realtek <sup>®</sup> ALC3202 codec, Dolby <sup>®</sup> Home Theater <sup>®</sup> v4 / stereo speakers, 1W 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	AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	
Limited warranty <sup>12</sup>	<b>3-years/1-yr battery - depot repair service / service upgrades<sup>22</sup> available</b>	
	Supports ThinkVantage <sup>®</sup> technologies	
	170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR <sup>®</sup> 5.0-compliant GREENGUARD <sup>®</sup> certified RoHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>	
	For compatible accessories, please go to O-W530 sheet; For Lenovo service <sup>22</sup> upgrade options, please go to QP-TA sheet; For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a>	

See footnotes for more detailed information

# ThinkPad W530 2438 (Optimus) - TopSeller (Windows 8) - II

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB <sup>3</sup> rpm	RAID	Backlit key-board	Smart Card Reader	Finger print reader	Bat-tery Color calib cells	Power Adapter (watt)	Intel AMT	Intel vPro	Preload	Ann Date (mm/yy)
2438-5JU	i7-3740QM	8GBx1	15.6" FHD	K2000M	1x500G 7200	No	Backlit	Smart	Finger	X-Rite 9	135W	iAMT	vPro	Win8 Pro64	03/13
2438-5HU	i7-3740QM	8GBx1	15.6" FHD	K2000M	1x500G 7200	No	Backlit	Smart	Finger	X-Rite 9	135W	iAMT	vPro	Win7 Pro64	03/13
2438-5GU	i7-3740QM	8GBx1	15.6" HD+	K2000M	1x500G 7200	No	Backlit	Smart	Finger	X-Rite 9	135W	iAMT	vPro	Win7 Pro64	03/13
2438-5FU	i7-3630QM	8GBx1	15.6" HD+	K2000M	1x500G 7200	No	Backlit	Smart	Finger	X-Rite 9	135W	None	No	Win8 Pro64	03/13
2438-5EU	i7-3630QM	8GBx1	15.6" FHD	K2000M	1x500G 7200	No	Backlit	Smart	Finger	X-Rite 9	135W	None	No	Win8 Pro64	03/13
2438-5DU	i7-3630QM	8GBx1	15.6" FHD	K2000M	1x500G 7200	No	Backlit	Smart	Finger	X-Rite 9	135W	None	No	Win7 Pro64	03/13
2438-5CU	i7-3630QM	8GBx1	15.6" HD+	K2000M	1x500G 7200	No	Backlit	Smart	Finger	X-Rite 9	135W	None	No	Win7 Pro64	03/13
2438-62U	i7-3740QM	4GBx2	15.6" FHD	K1000M	1x500G 7200	No	Backlit	None	None	None 9	170W	iAMT	vPro	Win7 Pro64	07/13
2438-5ZU	i7-3740QM	4GBx2	15.6" FHD	K1000M	1x256G SSD OPAL	No	Backlit	None	None	None 9	170W	iAMT	vPro	Win7 Pro64	07/13
2438-5YU	i7-3630QM	4GBx2	15.6" HD+	K1000M	1x256G SSD OPAL	No	Backlit	None	None	None 9	170W	None	No	Win7 Pro64	07/13
2438-5XU	i7-3630QM	4GBx2	15.6" HD+	K1000M	1x500G 7200	No	Backlit	None	None	None 9	170W	None	No	Win7 Pro64	07/13

- Small and medium business (SMB) model(s), part of the US TopSeller™ Program
- A depot repair service 3-year limited warranty
- Power-packed engineering with Open GL graphics and ISV certifications

Positioning Processor	Mobile workstation; two spindles <b>Intel® Core™ i7-3630QM processor (4 cores, 2.40GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.40GHz), HT technology <b>Intel Core i7-3740QM processor (4 cores, 2.70GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology	<b>Preloaded operating system<sup>20</sup></b> - Some: Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit - Some: Windows 8 Pro 64-bit
Memory	<i>dual-core model:</i> 16GB max <sup>7</sup> , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets <i>All:</i> PC3-12800 1600MHz DDR3, non-parity, dual-channel capable	<b>Preloaded applications<sup>5</sup></b> (only some listed)  - <b>Windows 7 models</b> • Lenovo® Message Center Plus • ThinkVantage Product Recovery • Access Connections™ • ThinkVantage Power Manager • Lenovo SimpleTap • Adobe® Reader® • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW)  - <b>Windows 8 models</b> • Lenovo Support • Lenovo Companion • Lenovo QuickLaunch • PC Device Stage • Cyberlink Power2Go (DVD±RW) • Cyberlink PowerProducer (DVD±RW)  - <b>All models</b> • Lenovo Solution Center • Password Manager • ThinkVantage System Update • Fingerprint Software (fingerprint models) • Lenovo Cloud Storage by SugarSync • Microsoft® Office preloaded; purchase a product key to activate • Skype™
Optical Ultrabay SATA disk	DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/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> <b>15.6"</b> (396mm) <b>HD+ (1600x900) color</b> , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> <b>15.6"</b> (396mm) <b>Full HD (1920x1080) color</b> , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut	
Color calibration Camera	<i>Some:</i> Pantone® color calibrator by X-Rite® color calibration sensor in palm rest, LED indicator HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus	
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, <b>Intel HD Graphics 4000</b> in processor, and <b>NVIDIA Quadro® K1000M or K2000M</b> , PCI Express® x16, <b>2GB</b> memory, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports three independent displays; <i>Maximum external resolution:</i> 3840x2160@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@85Hz (VGA)	
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material	<i>15.6W" (WxDxH):</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>6-cell:</i> starting at 5.76 lb (2.62kg); <i>9-cell:</i> starting at 6.19 lb (2.81kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint	
Battery - type Battery - life <sup>10</sup>	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery, HW Authentication <i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus 9-cell Slice battery (94Whr, 0A36304):</i> up to 25.6 hr	
Chipset ExpressCard Smart Card Read Multicard Reader Ports	<b>Mobile Intel QM77 Express Chipset</b> One slot (ExpressCard/34) <i>Some:</i> Smart Card reader 4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 3.0, two USB 2.0 (one powered), VGA DB-15, Mini DisplayPort, ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)	Supports ThinkVantage® technologies
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2 Wireless WAN upgradable None None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 <i>Some:</i> Intel Active Management Technology (iAMT) HD Audio, Realtek® ALC3202 codec, Dolby® Home Theater® v4 / stereo speakers, 1W x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack	135-watt or 170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified RoHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	For compatible accessories, please go to O-W530 sheet; For Lenovo service <sup>22</sup> upgrade options, please go to QP-TA sheet; For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a>
Limited warranty <sup>12</sup> <b>3-years/1-yr battery</b> - depot repair service / service upgrades <sup>22</sup> available		

See footnotes for more detailed information

# ThinkPad W530 2441 (Optimus)

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB <sup>3</sup> rpm	RAID	SATA optical	Backlit key-board	PCIe Mini Card WLAN	PCIe Mini Card WWAN/mSATA	Finger print reader	Bat-tery cells	Global (G) Intel vPro (P)	Ann Date (mm/yy)
2441-3TU	i7-3720QM	4GBx1	15.6" FHD	K1000M	2x500G 7200	1	None	None	Intel 6205 <sup>28</sup>	upg	Finger 9	vPro	G	Pro 64 06/12
2441-3SU	i7-3720QM	4GBx1	15.6" FHD	K1000M	2x500G 7200	0	None	None	Intel 6205	upg	Finger 9	vPro	G	Pro 64 06/12
2441-37U	i7-3720QM	4GBx1	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6300 <sup>28</sup>	upg	None	9	vPro	Pro 64 06/12
2441-36U	i7-3820QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6300	upg	Finger 9	vPro	Pro 64 06/12	
2441-2GU	i7-3720QM	4GBx1	15.6" FHD	K1000M	1x500G 7200	No	DVD±RW	None	Intel 6205	upg	Finger 9	vPro	G	Pro 64 06/12
2441-23U	i7-3820QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205	upg	Finger 9	vPro	G	Pro 64 06/12
2441-22U	i7-3720QM	4GBx1	15.6" HD+	K1000M	1x320G 7200	No	DVD±RW	None	Intel 6205	upg	Finger 9	vPro	G	Pro 64 06/12
2441-5RU	i7-3740QM	4GBx1	15.6" HD+	K1000M	1x320G 7200	No	DVD±RW	None	Intel 6205	upg	Finger 9	vPro	G	Pro 64 02/13
2441-5QU	i7-3840QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205	upg	Finger 9	vPro	G	Pro 64 02/13
2441-5PU	i7-3740QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6300	upg	None	9	vPro	Pro 64 02/13
Positioning Processor	<i>Mobile workstation; two spindles</i> <b>Intel® Core™ i7-3720QM processor (4 cores, 2.60GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology <b>Intel Core i7-3740QM processor (4 cores, 2.70GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology <b>Intel Core i7-3820QM processor (4 cores, 2.70GHz, 8MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology <b>Intel Core i7-3840QM processor (4 cores, 2.80GHz, 8MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.80GHz), HT technology											<b>Preloaded operating system<sup>20</sup></b> Genuine Windows® 7 Professional 64 <b>Ready to install applications<sup>14</sup></b> (only some listed) • Rescue and Recovery™ • Password Manager <b>Preloaded applications<sup>14</sup></b> (only some listed) • Lenovo® Solution Center • Lenovo Message Center Plus • ThinkVantage Product Recovery • Access Connections™ • Fingerprint Software (fingerprint models) • ThinkVantage System Update • ThinkVantage Power Manager • Lenovo Cloud Storage by SugarSync • Lenovo SimpleTap • Microsoft® Office preloaded; purchase a product key to activate • Norton™ Internet Security 2012 (30 days of virus definitions) • Adobe® Reader® • Skype™ for Windows • Evernote® • Intel Small Business Advantage • RapidBoot HDD Accelerator • Symantec™ VIP • Windows Live™ Essentials • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) • X-Rite® Pantone® Color Calibrator (color calibration models)		
Memory	<i>dual-core model:</i> 16GB max <sup>7</sup> , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets <i>All:</i> PC3-12800 1600MHz 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 6.0Gb/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> <b>15.6"</b> (396mm) <b>HD+ (1600x900) color</b> , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> <b>15.6"</b> (396mm) <b>Full HD (1920x1080) color</b> , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut													
Color calibration	None													
Camera	HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus													
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, <b>Intel HD Graphics 4000</b> in processor, and <b>NVIDIA Quadro® K1000M</b> or <b>K2000M</b> , PCI Express® x16, <b>2GB</b> memory, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports three independent displays; <i>Maximum external resolution:</i> 3840x2160@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@85Hz (VGA)													
Keyboard TrackPoint® Touchpad ThinkLight™	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling, multi-touch Illuminates the keyboard to improve visibility in low-light conditions													
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material	<b>15.6W"</b> (WxDxH): 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm <i>6-cell:</i> starting at 5.76 lb (2.62kg); <i>9-cell:</i> starting at 6.19 lb (2.81kg) <i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint													
Battery - type Battery - life <sup>10</sup>	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery, HW Authentication <i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr; <i>9-cell plus 9-cell Slice battery (94Whr, 0A36304):</i> up to 25.6 hr													
Chipset ExpressCard Smart Card Read Multicard Reader Ports	<b>Mobile Intel QM77 Express Chipset</b> One slot (ExpressCard/34) None 4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 3.0, two USB 2.0 (one powered), VGA DB-15, Mini DisplayPort, ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)											Supports ThinkVantage® technologies		
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	Two PCI Express Mini Card slots <i>Some:</i> 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 None Bluetooth 4.0 wireless Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT) HD Audio, Realtek® ALC3202 codec, Dolby® Home Theater® v4 / stereo speakers, 1W x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack											170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant GREENGUARD® certified RoHS-compliant International Warranty Service <sup>17</sup> 24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>		
Security Security chip Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant <i>Some:</i> AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip											For compatible accessories, please go to O-W530 sheet; For Lenovo service <sup>22</sup> upgrade options, please go to QP-TA sheet; For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a>		
Limited warranty <sup>12</sup>	3-years/1-yr battery - depot repair service / service upgrades <sup>22</sup> available													

See footnotes for more detailed information

# ThinkPad W530 2441 (Optimus) - Windows 8

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB <sup>o</sup> rpm	RAID	SATA optical	Backlit key-board	PCIe Mini Card WLAN	Color calib	Bat-tery cells	Global (G) Intel vPro (P)	Ann Date (mm/yy)
2441-45U	i7-3820QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205 <sup>28</sup>	X-Rite	9	vPro G	Win8 Pro64 10/12
2441-46U	i7-3720QM	4GBx1	15.6" HD+	K1000M	1x500G 7200	No	DVD±RW	None	Intel 6205	X-Rite	9	vPro G	Win8 Pro64 10/12
2441-5SU	i7-3740QM	4GBx2	15.6" FHD	K1000M	1x180G SSD	No	DVD±RW	Backlit	Intel 6205	None	9	vPro	Win7 Pro64 02/13
2441-5EU	i7-3740QM	4GBx2	15.6" FHD	K1000M	1x500G 7200	No	DVD±RW	Backlit	Intel 6205	None	9	vPro	Win7 Pro64 02/13
2441-5DU	i7-3840QM	4GBx2	15.6" FHD	K1000M	1x240G FDE SSD	No	DVD±RW	Backlit	Intel 6205	None	9	vPro	Win7 Pro64 02/13
2441-5CU	i7-3740QM	4GBx2	15.6" HD+	K1000M	2x500G 7200	1	None	Backlit	Intel 6205	None	9	vPro	Win7 Pro64 02/13
2441-5BU	i7-3740QM	4GBx2	15.6" HD+	K1000M	2x500G 7200	0	None	Backlit	Intel 6205	None	9	vPro	Win7 Pro64 02/13

- **A depot repair service 3-year limited warranty**
- **Power-packed engineering with Open GL graphics and ISV certifications**

Positioning Processor	<p><i>Mobile workstation; two spindles</i></p> <p><b>Intel® Core™ i7-3720QM processor (4 cores, 2.60GHz, 6MB cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology</b></p> <p><b>Intel Core i7-3740QM processor (4 cores, 2.70GHz, 6MB cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology</b></p> <p><b>Intel Core i7-3820QM processor (4 cores, 2.70GHz, 8MB cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology</b></p> <p><b>Intel Core i7-3840QM processor (4 cores, 2.80GHz, 8MB cache), Intel HD Graphics 4000, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.80GHz), HT technology</b></p>	<p><b>Preloaded operating system<sup>20</sup></b></p> <ul style="list-style-type: none"> <li>- Some: Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit</li> <li>- Some: Windows 8 Pro 64-bit</li> </ul> <p><b>Preloaded applications<sup>5</sup> (only some listed)</b></p> <ul style="list-style-type: none"> <li>- <b>Windows 7 models</b> <ul style="list-style-type: none"> <li>• Lenovo® Message Center Plus</li> <li>• ThinkVantage Product Recovery</li> <li>• Access Connections™</li> <li>• ThinkVantage Power Manager</li> <li>• Lenovo SimpleTap</li> <li>• Adobe® Reader®</li> <li>• Corel® WinDVD® (DVD±RW)</li> <li>• Corel Burn.Now™ Lenovo Edition (DVD±RW)</li> <li>• Corel DVD MovieFactory® Lenovo Edition (DVD±RW)</li> </ul> </li> <li>- <b>Windows 8 models</b> <ul style="list-style-type: none"> <li>• Lenovo Support</li> <li>• Lenovo Companion</li> <li>• Lenovo QuickLaunch</li> <li>• PC Device Stage</li> <li>• Cyberlink Power2Go (DVD±RW)</li> <li>• Cyberlink PowerProducer (DVD±RW)</li> </ul> </li> <li>- <b>All models</b> <ul style="list-style-type: none"> <li>• Lenovo Solution Center</li> <li>• Password Manager</li> <li>• ThinkVantage System Update</li> <li>• Fingerprint Software (fingerprint models)</li> <li>• Lenovo Cloud Storage by SugarSync</li> <li>• Microsoft® Office preloaded; purchase a product key to activate</li> <li>• Norton™ Internet Security (30 days of virus definitions)</li> <li>• Skype™</li> </ul> </li> </ul>
Memory	<p><i>dual-core model:</i> 16GB max<sup>7</sup>, 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> PC3-12800 1600MHz DDR3, non-parity, dual-channel capable</p>	
Optical Ultrabay SATA disk	<p><i>Some:</i> 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 6.0Gb/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> <b>15.6"</b> (396mm) <b>HD+ (1600x900) color</b>, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut</p> <p><i>Some:</i> <b>15.6"</b> (396mm) <b>Full HD (1920x1080) color</b>, anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut</p>	
Color calibration Camera	<p><i>Some:</i> Pantone® color calibrator by X-Rite® color calibration sensor in palm rest, LED indicator</p> <p>HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus</p>	
Graphics	<p>NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, <b>Intel HD Graphics 4000</b> in processor, and <b>NVIDIA Quadro® K1000M</b> or <b>K2000M</b>, PCI Express® x16, <b>2GB</b> memory, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports three independent displays;</p> <p><i>Maximum external resolution:</i> 3840x2160@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@85Hz (VGA)</p>	
Keyboard TrackPoint® Touchpad ThinkLight™	<p>6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight</p> <p>TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar<sup>13</sup>, magnifying glass</p> <p>UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling, multi-touch</p> <p>Illuminates the keyboard to improve visibility in low-light conditions</p>	
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material	<p><i>15.6W" (WxDxH):</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm</p> <p><i>6-cell:</i> starting at 5.76 lb (2.62kg); <i>9-cell:</i> starting at 6.19 lb (2.81kg)</p> <p><i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid;</p> <p><i>Bottom:</i> Glass-fiber reinforced plastic without paint</p>	
Battery - type Battery - life <sup>10</sup>	<p>Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery, HW Authentication</p> <p><i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr;</p> <p><i>9-cell plus 9-cell Slice battery (94Whr, 0A36304):</i> up to 25.6 hr</p>	
Chipset ExpressCard Smart Card Reader Multicard Reader Ports	<p><b>Mobile Intel QM77 Express Chipset</b></p> <p>One slot (ExpressCard/34)</p> <p>None</p> <p>4-in-1 reader (MMC, SD, SDHC, SDXC)</p> <p>Two USB 3.0, two USB 2.0 (one powered), VGA DB-15, Mini DisplayPort, ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)</p>	<p>Supports ThinkVantage® technologies</p>
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<p>Two PCI Express Mini Card slots</p> <p>11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2</p> <p>Wireless WAN upgradable</p> <p>None</p> <p>None</p> <p>Bluetooth 4.0 wireless</p> <p>Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1</p> <p>Intel Active Management Technology (iAMT)</p> <p>HD Audio, Realtek® ALC3202 codec, Dolby® Home Theater® v4 / stereo speakers, 1W x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack</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>GREENGUARD® certified</p> <p>RoHS-compliant</p> <p>International Warranty Service<sup>17</sup></p> <p>24 hour x 7 day<sup>18</sup> toll-free support during the warranty period<sup>12</sup></p>
Security Security chip Fingerprint reader	<p>Power-on password, hard disk password, supervisor password, security keyhole</p> <p>Trusted Platform Module, TCG 1.2-compliant</p> <p>AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip</p>	<p>For compatible accessories, please go to O-W530 sheet;</p> <p>For Lenovo service<sup>22</sup> upgrade options, please go to QP-TA sheet;</p> <p>For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a></p>
Limited warranty <sup>12</sup>	<p><b>3-years/1-yr battery - depot repair service / service upgrades<sup>22</sup> available</b></p>	

See footnotes for more detailed information

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# ThinkPad W530 2447 (Optimus) - Onsite

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB <sup>8</sup> rpm	RAID	SATA optical	Backlit key-board	PCIe Mini Card WLAN	Finger print reader	Color calib	Bat-tery cells	Global (G) Intel vPro (P)	Ann Date (mm/yy)
2447-3TU	i7-3720QM	4GBx1	15.6" FHD	K1000M	2x500G 7200	1	None	None	Intel 6205 <sup>28</sup>	Finger	None	9	vPro G P	Pro 64 06/12
2447-3SU	i7-3720QM	4GBx1	15.6" FHD	K1000M	2x500G 7200	0	None	None	Intel 6205	Finger	None	9	vPro G P	Pro 64 06/12
2447-2TU	i7-3720QM	4GBx1	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6300 <sup>28</sup>	None	X-Rite	9	vPro	Pro 64 06/12
2447-2SU	i7-3820QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6300	Finger	None	9	vPro	Pro 64 06/12
2447-23U	i7-3820QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205	Finger	None	9	vPro G P	Pro 64 06/12
2447-22U	i7-3720QM	4GBx1	15.6" HD+	K1000M	1x320G 7200	No	DVD±RW	None	Intel 6205	Finger	None	9	vPro G P	Pro 64 06/12
2447-52U	i7-3840QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205	Finger	None	9	vPro	Pro 64 02/13

- Some models are part of the **Global Models Plus** program with limited onsite service<sup>24</sup> 3-year limited warranty
- Power-packed engineering with **Open GL graphics** and **ISV certifications**

Positioning Processor	<p><i>Mobile workstation; two spindles</i></p> <p><b>Intel® Core™ i7-3720QM processor (4 cores, 2.60GHz, 6MB cache), Intel HD Graphics 4000</b>, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology</p> <p><b>Intel Core i7-3820QM processor (4 cores, 2.70GHz, 8MB cache), Intel HD Graphics 4000</b>, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology</p> <p><b>Intel Core i7-3840QM processor (4 cores, 2.80GHz, 8MB cache), Intel HD Graphics 4000</b>, DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.80GHz), HT technology</p>	<p><b>Preloaded operating system<sup>20</sup></b> Genuine Windows® 7 Professional 64</p> <p><b>Ready to install applications<sup>14</sup></b> (only some listed)</p> <ul style="list-style-type: none"> <li>• Rescue and Recovery™</li> <li>• Password Manager</li> </ul>
Memory	<p><i>dual-core model:</i> 16GB max<sup>7</sup>, 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> PC3-12800 1600MHz DDR3, non-parity, dual-channel capable</p>	<p><b>Preloaded applications<sup>14</sup></b> (only some listed)</p> <ul style="list-style-type: none"> <li>• Lenovo® Solution Center</li> <li>• Lenovo Message Center Plus</li> <li>• ThinkVantage Product Recovery</li> <li>• Access Connections™</li> <li>• Fingerprint Software (fingerprint models)</li> <li>• ThinkVantage System Update</li> <li>• ThinkVantage Power Manager</li> <li>• Lenovo Cloud Storage by SugarSync</li> <li>• Lenovo SimpleTap</li> <li>• Microsoft® Office preloaded; purchase a product key to activate</li> <li>• Norton™ Internet Security 2012 (30 days of virus definitions)</li> <li>• Adobe® Reader®</li> <li>• Skype™ for Windows</li> <li>• Evernote®</li> <li>• Intel Small Business Advantage</li> <li>• RapidBoot HDD Accelerator</li> <li>• Symantec™ VIP</li> <li>• Windows Live™ Essentials</li> <li>• Corel® WinDVD® (DVD±RW)</li> <li>• Corel Burn.Now™ Lenovo Edition (DVD±RW)</li> <li>• Corel DVD MovieFactory® Lenovo Edition (DVD±RW)</li> <li>• X-Rite® Pantone® Color Calibrator (color calibration models)</li> </ul>
Optical Ultrabay SATA disk	<p><i>Some:</i> DVD burner, 12.7mm Ultrabay Enhanced, removable</p> <p><i>One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access</i></p> <p><i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/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> <b>15.6"</b> (396mm) <b>HD+ (1600x900) color</b>, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut</p> <p><i>Some:</i> <b>15.6"</b> (396mm) <b>Full HD (1920x1080) color</b>, anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut</p>	
Color calibration Camera	<p><i>Some:</i> Pantone® color calibrator by X-Rite® color calibration sensor in palm rest, LED indicator</p> <p>HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus</p>	
Graphics	<p>NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, <b>Intel HD Graphics 4000</b> in processor, and <b>NVIDIA Quadro® K1000M</b> or <b>K2000M</b>, PCI Express® x16, <b>2GB</b> memory, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports three independent displays;</p> <p><i>Maximum external resolution:</i> 3840x2160@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@85Hz (VGA)</p>	
Keyboard TrackPoint® Touchpad ThinkLight™	<p>6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight</p> <p>TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar<sup>13</sup>, magnifying glass</p> <p>UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling, multi-touch</p> <p>Illuminates the keyboard to improve visibility in low-light conditions</p>	
Dimensions <sup>3</sup> Weight <sup>2</sup> Case material	<p><i>15.6W" (WxDxH):</i> 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm</p> <p><i>6-cell:</i> starting at 5.76 lb (2.62kg); <i>9-cell:</i> starting at 6.19 lb (2.81kg)</p> <p><i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid;</p> <p><i>Bottom:</i> Glass-fiber reinforced plastic without paint</p>	
Battery - type Battery - life <sup>10</sup>	<p>Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery, HW Authentication</p> <p><i>6-cell (57Whr):</i> up to 7.7 hr; <i>9-cell (94Whr):</i> up to 12.8 hr;</p> <p><i>9-cell plus 9-cell Slice battery (94Whr, 0A36304):</i> up to 25.6 hr</p>	
Chipset ExpressCard Smart Card Reader Multicard Reader Ports	<p><b>Mobile Intel QM77 Express Chipset</b></p> <p>One slot (ExpressCard/34)</p> <p>None</p> <p>4-in-1 reader (MMC, SD, SDHC, SDXC)</p> <p>Two USB 3.0, two USB 2.0 (one powered), VGA DB-15, Mini DisplayPort, ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)</p>	Supports ThinkVantage® technologies
PCIe Mini Card PCIe WLAN <sup>4</sup> PCIe WWAN Carrier Modem Bluetooth™ Ethernet Intel AMT Audio support	<p>Two PCI Express Mini Card slots</p> <p><i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2</p> <p><i>Some:</i> 11a/b/g/n, PCIe Half Mini Card, Intel Centrino Ultimate-N 6300, 3x3</p> <p>Wireless WAN upgradable</p> <p>None</p> <p>None</p> <p>Bluetooth 4.0 wireless</p> <p>Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1</p> <p>Intel Active Management Technology (iAMT)</p> <p>HD Audio, Realtek® ALC3202 codec, Dolby® Home Theater® v4 / stereo speakers, 1W x 2 / volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack</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>GREENGUARD® certified</p> <p>RoHS-compliant</p> <p>International Warranty Service<sup>17</sup></p> <p>24 hour x 7 day<sup>18</sup> toll-free support during the warranty period<sup>12</sup></p>
Security Security chip Fingerprint reader	<p>Power-on password, hard disk password, supervisor password, security keyhole</p> <p>Trusted Platform Module, TCG 1.2-compliant</p> <p><i>Some:</i> AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip</p>	<p>For compatible accessories, please go to O-W530 sheet;</p> <p>For Lenovo service<sup>22</sup> upgrade options, please go to QP-TA sheet;</p> <p>For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a></p>
Limited warranty <sup>12</sup>	<p><b>3-years/1-year battery, limited onsite service<sup>24</sup></b>, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time / service upgrades<sup>22</sup> available</p>	

See footnotes for more detailed information

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# ThinkPad W530 2447 (Optimus) - Onsite (Windows 8)

Product Specifications Reference (PSREF)

Type-model	Processor	Memory	Wide-screen display	Discrete graphics	Disk SATA GB <sup>2</sup> rpm	RAID	SATA optical	Backlit key-board	PCIe Mini Card WLAN	Color calib	Bat-tery cells	Global (G) Intel vPro	GMP (P)	Preload	Ann Date (mm/yy)
2447-45U	i7-3720QM	4GBx1	15.6" HD+	K1000M	1x500G 7200	No	DVD±RW	None	Intel 6205 <sup>28</sup>	X-Rite	9	vPro	G P	Win8 Pro64	10/12
2447-46U	i7-3820QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205	X-Rite	9	vPro	G P	Win8 Pro64	10/12
2447-4ZU	i7-3740QM	4GBx2	15.6" FHD	K1000M	1x500G 7200	No	DVD±RW	Backlit	Intel 6205	None	9	vPro		Win7 Pro64	02/13
2447-4YU	i7-3840QM	4GBx2	15.6" FHD	K1000M	1x240G FDE SSD	No	DVD±RW	Backlit	Intel 6205	None	9	vPro		Win7 Pro64	02/13
2447-4XU	i7-3740QM	4GBx2	15.6" HD+	K1000M	2x500G 7200	1	None	Backlit	Intel 6205	None	9	vPro		Win7 Pro64	02/13
2447-4WU	i7-3740QM	4GBx2	15.6" HD+	K1000M	2x500G 7200	0	None	Backlit	Intel 6205	None	9	vPro		Win7 Pro64	02/13
2447-5KU	i7-3840QM	4GBx1	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205	X-Rite	9	vPro	G P	Win8 Pro64	05/13
2447-5JU	i7-3840QM	4GBx1	15.6" FHD	K1000M	1x500G 7200	No	DVD±RW	None	Intel 6205	X-Rite	9	vPro	G P	Win8 Pro64	05/13
2447-5HU	i7-3840QM	4GBx2	15.6" FHD	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205	X-Rite	9	vPro	G P	Win8 Pro64	05/13
2447-5GU	i7-3840QM	4GBx2	15.6" HD+	K2000M	1x500G 7200	No	DVD±RW	None	Intel 6205	X-Rite	9	vPro	G P	Win8 Pro64	05/13
2447-5FU	i7-3740QM	4GBx1	15.6" HD+	K1000M	1x500G 7200	No	DVD±RW	None	Intel 6205	X-Rite	9	vPro	G P	Win8 Pro64	05/13
Positioning Processor	<i>Mobile workstation; two spindles</i> <b>Intel® Core™ i7-3720QM processor (4 cores, 2.60GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology <b>Intel Core i7-3740QM processor (4 cores, 2.70GHz, 6MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology <b>Intel Core i7-3820QM processor (4 cores, 2.70GHz, 8MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.70GHz), HT technology <b>Intel Core i7-3840QM processor (4 cores, 2.80GHz, 8MB cache), Intel HD Graphics 4000</b> , DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.80GHz), HT technology											<b>Preloaded operating system<sup>20</sup></b> - Some: Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit - Some: Windows 8 Pro 64-bit <b>Preloaded applications<sup>5</sup></b> (only some listed) - <b>Windows 7 models</b> • Lenovo® Message Center Plus • ThinkVantage Product Recovery • Access Connections™ • ThinkVantage Power Manager • Lenovo SimpleTap • Adobe® Reader® • Corel® WinDVD® (DVD±RW) • Corel Burn.Now™ Lenovo Edition (DVD±RW) • Corel DVD MovieFactory® Lenovo Edition (DVD±RW) - <b>Windows 8 models</b> • Lenovo Support • Lenovo Companion • Lenovo QuickLaunch • PC Device Stage • Cyberlink Power2Go (DVD±RW) • Cyberlink PowerProducer (DVD±RW) - <b>All models</b> • Lenovo Solution Center • Password Manager • ThinkVantage System Update • Fingerprint Software (fingerprint models) • Lenovo Cloud Storage by SugarSync • Microsoft® Office preloaded; purchase a product key to activate • Norton™ Internet Security (30 days of virus definitions) • Skype™			
Memory	<i>dual-core model:</i> 16GB max <sup>7</sup> , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets <i>All:</i> PC3-12800 1600MHz DDR3, non-parity, dual-channel capable														
Optical	<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 6.0Gb/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														
Ultrabay SATA disk															
mSATA™ SSD	None														
Widescreen display	<i>Some:</i> <b>15.6"</b> (396mm) <b>HD+ (1600x900) color</b> , anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut <i>Some:</i> <b>15.6"</b> (396mm) <b>Full HD (1920x1080) color</b> , anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut														
Color calibration	<i>Some:</i> Pantone® color calibrator by X-Rite® color calibration sensor in palm rest, LED indicator														
Camera	HD720p resolution, wide view angle, low light sensitive, face tracking, fixed focus														
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, <b>Intel HD Graphics 4000</b> in processor, and <b>NVIDIA Quadro® K1000M or K2000M</b> , PCI Express® x16, <b>2GB</b> memory, supports external analog monitor via VGA DB-15 and digital monitor via Mini DisplayPort; supports three independent displays; <i>Maximum external resolution:</i> 3840x2160@60Hz (DisplayPort via optional Mini DP cable); 1920x1200@60Hz (single-link DVI-I via optional Mini DP cable); 2048x1536@85Hz (VGA)														
Keyboard	6-row, 84-key, ThinkVantage button, spill-resistant, multimedia Fn keys, optional LED backlight														
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar <sup>13</sup> , magnifying glass														
Touchpad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling, multi-touch														
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions														
Dimensions <sup>3</sup>	15.6W" (WxDxH): 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm														
Weight <sup>2</sup>	6-cell: starting at 5.76 lb (2.62kg); 9-cell: starting at 6.19 lb (2.81kg)														
Case material	<i>Display cover:</i> Carbon-fiber / Glass-fiber hybrid; <i>Bottom:</i> Glass-fiber reinforced plastic without paint														
Battery - type	Lithium Ion 6-cell or 9-cell, supports optional Slice battery as 2nd battery, HW Authentication														
Battery - life <sup>10</sup>	6-cell (57Whr): up to 7.7 hr; 9-cell (94Whr): up to 12.8 hr; 9-cell plus 9-cell Slice battery (94Whr, 0A36304): up to 25.6 hr														
Chipset	<b>Mobile Intel QM77 Express Chipset</b>														
ExpressCard	One slot (ExpressCard/34)														
Smart Card Read	None														
Multicard Reader	4-in-1 reader (MMC, SD, SDHC, SDXC)														
Ports	Two USB 3.0, two USB 2.0 (one powered), VGA DB-15, Mini DisplayPort, ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)											Supports ThinkVantage® technologies			
PCIe Mini Card	Two PCI Express Mini Card slots											170-watt AC adapter			
PCIe WLAN <sup>4</sup>	11a/b/g/n, PCIe Half Mini Card, Intel Centrino® Advanced-N 6205, 2x2											ThinkPad Roll Cage (one-piece magnesium frame)			
PCIe WWAN	Wireless WAN upgradable											EPEAT™ Gold rating			
Carrier	None											ENERGY STAR® 5.0-compliant			
Modem	None											GREENGUARD® certified			
Bluetooth™	Bluetooth 4.0 wireless											RoHS-compliant			
Ethernet	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1											International Warranty Service <sup>17</sup>			
Intel AMT	Intel Active Management Technology (iAMT)											24 hour x 7 day <sup>18</sup> toll-free support during the warranty period <sup>12</sup>			
Audio support	HD Audio, Realtek® ALC3202 codec, Dolby® Home Theater® v4 / stereo speakers, 1W 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											For compatible accessories, please go to O-W530 sheet;			
Security chip	Trusted Platform Module, TCG 1.2-compliant											For Lenovo service <sup>22</sup> upgrade options, please go to QP-TA sheet;			
Fingerprint reader	AuthenTec fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip											For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a>			
Limited warranty <sup>12</sup>	3-years/1-year battery, <b>limited onsite service<sup>24</sup></b> , 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time / service upgrades <sup>22</sup> available														

See footnotes for more detailed information

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## Memory

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

## Ultrabay Enhanced 12.7mm

Serial ATA Hard Drive 12.7mm Bay Adapter III	0A65623	ann 02/28/12
DVD Burner Ultrabay Enhanced Drive III	0A65625	ann 06/05/12

## Storage and removable storage

ThinkPad 16GB mSATA Solid State Cache Drive	0B47309	ann 12/11/12
500GB 5400rpm SATA 3.0Gb/s 7mm 4K HDD <sup>41</sup>	0A65631	ann 06/05/12
500GB 7200rpm SATA 3.0Gb/s 7mm 4K HDD <sup>41</sup>	0A65632	ann 06/05/12
1TB 5400rpm SATA 3.0Gb/s 9.5mm 4K HDD <sup>41</sup>	0A65633	ann 06/05/12
320GB 7200rpm SATA 3.0Gb/s 7mm 4K HDD <sup>41</sup>	0A65635	ann 06/05/12
320GB 7200rpm SATA 3.0Gb/s 7mm Self Encrypting (SED) OPAL Capable HDD <sup>41</sup>	0A65636	ann 08/21/12
128GB SATA 6.0Gb/s 7mm Solid State Drive <sup>41</sup>	0A65629	ann 06/05/12
180GB SATA 6.0Gb/s 7mm Solid State Drive <sup>41</sup>	0A65630	ann 06/05/12
256GB 2.5" SATA 6.0Gb/s OPAL-capable SSD <sup>41</sup>	0A65620	ann 05/15/12

<sup>41</sup> Can be used as the main HDD or with  
Serial ATA Hard Drive 12.7mm Bay Adapter III 0A65623 in the Ultrabay.

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

## Wireless WAN (Mini PCI Express)

Only WWAN upgradable models: ThinkPad Gobi™ 3000 Mobile Broadband	0A36185	ann 04/12/11
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## ThinkPad Expansion

Lenovo® Essential Notebook Stand	45J9292	ann 05/12/09
TP Mini Dock Plus Series 3 w/ USB 3.0 - 170W	433835U	ann 06/05/12

## Keyboard

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

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

## Mouse

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

## Multimedia

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

USB 2.0 Lenovo Modem	43R1814	ann 02/26/08
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## Security

3M 15.6W Privacy Filter from Lenovo	0A61771	ann 04/05/11
Kensington® MicroSaver® Cable Lock	73P2582	ann 12/29/03
Kensington Twin Head Cable Lock	45K1620	ann 09/30/08
Lenovo Security Cable Lock	57Y4303	ann 08/24/10
USB Gemplus GemPC Smart Card Reader	41N3040	ann 02/21/06

## Batteries

ThinkPad Battery 70+ (6-cell)	0A36302	ann 06/05/12
ThinkPad Battery 70++ (9-cell)	0A36303	ann 06/05/12
ThinkPad Battery 28++ (9 cell, slice) <sup>43</sup>	0A36304	ann 06/05/12

<sup>43</sup> To be used along with system battery for all-day computing; attaches under ThinkPad using docking connector (not supported when using ThinkPad Mini Dock Plus Series 3 w/ USB 3.0 - 170W 433835U)

ThinkPad External Battery Charger <sup>44</sup>	40Y7625	ann 09/20/05
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<sup>44</sup> Requires the ThinkPad 90W AC Adapter 40Y7659 or the adapter provided with the system.

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

ThinkPad 170W AC Adapter for W520, W530	0A36227	ann 03/01/11
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More info at [www.lenovo.com/support/poweradapters](http://www.lenovo.com/support/poweradapters)

## Carrying Cases

Up to 15.6" widescreen models:

Lenovo Messenger Max	41U5253	ann 05/01/07
Lenovo Performance BackPack	41U5254	ann 05/01/07
ThinkPad Business Topload Case	43R2476	ann 05/13/08
ThinkPad Business Backpack	43R2482	ann 05/13/08
ThinkPad Deluxe Expander Case	43R2478	ann 05/13/08
ThinkPad Executive Leather Case	43R2480	ann 05/13/08
Lenovo Sport Backpack - Red	0A33896	ann 02/28/12
Lenovo Sport Slimcase - Red	0A33897	ann 02/28/12
Lenovo Sport Messenger - Red	0A33898	ann 02/28/12
Lenovo Sport Backpack - Blue	0B47298	ann 08/28/12
Lenovo Sport Slimcase - Blue	0B47300	ann 08/28/12
Lenovo Sport Messenger - Blue	0B47299	ann 08/28/12
Lenovo Sport Backpack - Grey	0B47301	ann 08/28/12
Lenovo Sport Slimcase - Grey	0B47303	ann 08/28/12
Lenovo Sport Messenger - Grey	0B47302	ann 08/28/12

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

## Monitors

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

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

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

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

## Monitor Accessories<sup>46</sup>

Lenovo USB 3.0 to DVI/VGA Monitor Adapter	0B47072	ann 08/14/12
Lenovo Mini-DisplayPort to VGA Monitor Cable	0A36536	ann 05/17/11
Mini-DisplayPort to Single-link DVI Monitor Cable	0B47090	ann 06/26/12
Mini-DisplayPort to DisplayPort Monitor Cable	0B47091	ann 07/24/12
Lenovo USB Soundbar	0A36190	ann 05/01/12
Kensington MicroSaver Cable Lock	73P2582	ann 12/29/03
Kensington Twin Head Cable Lock	45K1620	ann 09/30/08
Lenovo Security Cable Lock	57Y4303	ann 08/24/10
Lenovo Easy Reach Monitor Stand	55Y9258	ann 09/22/09

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

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

For more information on accessories:

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

Purchase Lenovo accessories

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

Product specifications on Lenovo Support

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

Option Compatibility Matrix (OCM) and accessory brochures

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

An Options Compatibility Configurator for Lenovo systems