



Lenovo® ThinkPad W520



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ThinkPad® W520 4282 (Optimus) - withdrawn

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	Bat- tery 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		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

	Tower-packed engineering with open at graphics and lov 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 system ²⁰ - Genuine Windows® 7 Professional 64 Ready to install applications¹⁴ (only some listed) • Rescue and Recovery™			
Memory	dual-core model: quad-core model: 32GB max, four 204-pin SO-DIMM sockets 32GB max, four 204-pin SO-DIMM sockets PC3-10600 1333MHz DDR3, non-parity, dual-channel capable	 Access Connections™ Fingerprint Software (fingerprint models) Password Manager (fingerprint 			
Optical Ultrabay SATA disk mSATA™ SSD	Some: 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™ All: removable, upgradable, supports the second disk, Shock Mounted Hard Drive None	models) ThinkVantage System Update ThinkVantage Power Manager ThinkVantage Toolbox Preloaded applications ¹⁴ (only some			
Widescreen display	Some: 15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut Some: 15.6" (396mm) FHD (1920x1080) color, anti-glare, LED backlight, 270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut	Ilisted) Norton™ Internet Security 2011 (30 days of virus definitions) Adobe® Reader® Skype™ for Windows			
Color calibration Camera	None HD720p resolution, wider view angle, low light sensitive, fixed focus	 Windows Live™ Essentials Microsoft Office 2010 preloaded; 			
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)	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)			
Keyboard TrackPoint® Touchpad ThinkLight™	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar¹³, magnifying glass UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions	(color calibration models)			
Dimensions (WxDxH) ³ Weight ² Case material Battery - type Battery - life ¹⁰	HD & HD+: 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 32.8-36.6mm 6-cell: starting at 5.40 lb (2.45kg); 9-cell: starting at 5.75 lb (2.61kg) Display cover: Bottom: Glass-fiber reinforced plastic without paint Lithium lon 6-cell or 9-cell, supports optional Slice battery as 2nd battery at bottom 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 ExpressCard	Mobile Intel QM67 Express Chipset One slot (ExpressCard/34)				
Smart Card Read Multicard Reader Ports	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	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 Wireless WAN upgradable None				
Modem	56K V.92 ⁶ modem	Supports ThinkVantage® technologies			
Bluetooth™ Ethernet Intel AMT Audio support Security Security chip Fingerprint reader	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 Some: UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator,	170-watt AC adapter ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant			
	Power On Authentication, supports the security chip 3-years/1-yr battery - depot repair service / service upgrades ²² available	International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free support during the warranty period ¹²			

ThinkPad® W520 4284 (Optimus) - Onsite - withdrawn

Power-packed engineering with Open GL graphics and ISV certifications **Power-packed engineering with Open GL graphics and ISV certifications** **Processor** **Processor** **Mobile workstation; 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 i7-2760QM 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 i7-2786QM processor (quad-core, 2.50GHz, 8MB 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 Access Connections™ **Access Connections™** **Fingerprint Software (fingerprint models)* **DR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology Access Connections™ **Fingerprint Software (fingerprint models)* **Password Manager (fingerprint models)* **DR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.60GHz), HT technology Access Connections™ **Processor* **Professional 64* **Ready to install applications¹⁴ (only some listed)* **Ready to install applications¹⁴ (o	Type-model Proce	ssor Memory	Wide- screen display	Discrete graphics	Disk SATA GB [®] rpm	PCIe Mini Card WLAN	PCle Mini Card WWAN/mSATA	Carrier	Modem	Smart Card Reader	Color	Bat- tery cells	Intel AMT	Intel vPro	Pre- load
Peatleaning Intelligence of the processor of the process	4284-4LG i7-276 4284-4KG i7-267	0QM 4GBx1 0QM 4GBx1	15.6" HD+ 15.6" HD+	1000M 1000M	500G 7200 500G 7200	Intel 6300 Intel 6300	Ericsson WWAN upg			Smart	X-Rite	9 9 9	iAMT iAMT	vPro	Pro 64 Pro 64
Processor Intel® Core®* 15-2820M processor (dual-core, 2.50GHz, 3MB Cache). DDR3 memory controller (up to 153SMHz), Intel Turbo Boos 20 (3.10GHz), HT technology intel Core 17-2760M processor (qual-core, 2.60GHz, 6MB Cache). DDR3 memory controller (up to 160MHz), Intel Turbo Boos 20 (3.10GHz), HT technology intel Core 17-2760M processor (qual-core, 2.60GHz, 6MB Cache). DDR3 memory controller (up to 160MHz), Intel Turbo Boos 20 (3.50GHz), HT technology intel Core 17-2760M processor (qual-core) and controller (up to 160MHz), Intel Turbo Boos 20 (3.50GHz), HT technology of the core intel 20 (2.60 ms.) (up to 160MHz), Intel Turbo Boos 20 (3.50GHz), HT technology of the core intel 20 (2.60 ms.) (up to 160MHz), Intel Turbo Boos 20 (3.50GHz), HT technology of the core intel 20 (2.60 ms.) (up to 160MHz), Intel Turbo Boos 20 (3.50GHz), HT technology of the core intel 20 (2.60 ms.) (up to 2.60 ms.) (u	4204-4AG 15-252							fications	Modern			9	IAWI I	VEIO	F10 04
Memory Audi-core model: 166B max'; two 204-pin SO-DIMM sockets 23CB max, two		Intel® Core™ DDR3 memor Intel Core i7-	i5-2520M property controller controller cy	rocessor (up to 133 ocessor ((up to 133 ocessor ((up to 160 ocessor (33MHz), Intél quad-core, 2 33MHz), Intel quad-core, 2 00MHz), Intel quad-core, 2	Turbo Bóos 2.20GHz, 6N Turbo Boos 2.40GHz, 6N Turbo Boos 2.50GHz, 8N	t 2.0 (3.20GHz) IB Cache) , t 2.0 (3.10GHz) IB Cache) , t 2.0 (3.50GHz) IB Cache) ,), HT techr), HT techr	nology	- Ger Pro Read some • Res • Acc	nuine Wofessiona y to ins listed) scue an cess Co gerprint	indoval 64 tall a d Red nnect	vs® 7 pplica covery¹ ions™	ntions	¹⁴ (only
Ultrabay SATA disk SATA disk SATA disk SATA disk SATA disk Some Solit State Drive (SSD) / SATA 3.0(Gb/s, 2.5 'wide, 7mm bigh Some Solit State Drive (SSD) / SATA 3.0(Gb/s, 2.5 'wide, 7mm bigh Some Solit State Drive (SSD) / SATA 3.0(Gb/s, 2.5 'wide, 7mm bigh Active Protection System* All: Midescreen display Widescreen display Some: 15.6° (396mm) HD₄ (1800x800) color, anti-djare, LED backlight, 270 nits, 16.9 aspect ratio, 5001 to contrast atio, 50% Gennul Some: 15.6° (396mm) FHD (1920x1080) color, anti-djare, LED backlight, 270 nits, 16.9 aspect ratio, 5001 to contrast atio, 50% Gennul Some: 15.6° (396mm) FHD (1920x1080) color, anti-djare, LED backlight, 270 nits, 16.9 aspect ratio, 5001 to contrast atio, 50% Gennul Some: 15.6° (396mm) FHD (1920x1080) color, anti-djare, LED backlight, 270 nits, 16.9 aspect ratio, 5001 to contrast atio, 50% Gennul Some: husy**PRO Colorimeter by X-Rite* color calibration sensor in paim rest HD720p resolution, wider view angle, low leight sensitive, fixed focus MNDIA Quadro** 1000k apport to lisplaye for (supports shift behave discrete and integrated graphics, mitel HD Graphics 3000 in processor, and wide digital monitor support via blappybor (supports single-link DVI-D via optional cable): supports three independent displays; Maximum external resolution: 2560x1600 (DisplayPort) @60Hz; 2048x1536 (VGA) @65Hz; 1920x1200 @60Hz (single-link DVI-D via optional cable): wide processor and processor	Memory	quad-core mo	odel: 32GB	max, four	204-pin SO-	DIMM socke	ets	apable		Pas mo	sswórd ľ dels)		•	•	
Widescreen display Some: 15.6" (395mm) HD+ (1500x900) color, anti-glare, LED backlight, 220 hits, 16/3 aspect ratio, 500x1 contrast ratio, 6/9; Gamut Some: 14,6" (395mm) FHD (1920x1080) color, anti-glare, LED backlight, 200x1 Some: hugy"PRO Colorimeter by X-Ritie* color calibration of the HD/20p resolution, wider view angle, low light sensitive, fixed focus NIDIDA* Optimus** technology, auto-switch between discrete and integrated graphics, intel HD graphics 300 in processor, and NVIDIA* Optimus** technology, auto-switch between discrete and integrated graphics, intel HD graphics 300 in processor, and NVIDIA* Quadro** 1000M or 2000M. PCI Express* x16, 2GB memory, external analog monitor support via VRD b8-15 connector and NVIDIA* Quadro** 1000M or 2000M. PCI Express* x16, 2GB memory, external analog monitor support via VRD b8-15 connector and NVIDIA* Quadro** 1000M or 2000M. PCI Express* x16, 2GB memory, external analog monitor support via VRD b8-15 connector and NVIDIA* Quadro** 1000M or 2000M. PCI Express* x16, 2GB memory, external analog monitor support via VRD b8-15 connector and NVIDIA* Quadro** 1000M or 2000M. PCI Express* x16, 2GB memory, external analog monitor support via VRD b8-15 connector and NVIDIA* Quadro** 1000M or 2000M. PCI Express* x16, 2GB memory, external monitor via VRD via Quitonal cable); water and via VRD via Quitonal cable); water and via VRD via Quitonal cable). TrackPoint** 1000M or 2000M. PCI Express* Coloridate Part 1000M or 2000M or	Uİtrabay SATA disk	One bay for re Some: Solid Some: HDD All: remove	emovable de State Drive (/ SATA 3.0G	vices, Ultı (SSD) / S. b/s, 2.5" v	rabay Slim-co ATA 3.0Gb/s, vide, 7mm or	ompatible, 12 2.5" wide, 7 9.5mm high	mm high n, Active Protect	tion System	ı™	ThinkVantage Power Manager ThinkVantage Toolbox Preloaded applications ¹⁴ (only some listed)					er y some
NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, intel HID Graphics 3000 in processor, and NVIDIA Quadro® 1000M or 2000M. PCI Express® x16, 2GB memory, external analog monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays; Maximum external resolution: 2560x1600 (DisplayPort) @ 60Hz; 2048x1536 (VGA) @ 3812t; 1920x1200 @ 60Hz (single-link DVI-D via optional cable) Keyboard TrackPoints of Voice (Press-to-Select,* Internet Scroll Bars*), magnifying glass UltraNav®, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in love-light conditions Illuminates the keyboard to improve visibility in love-light conditions (WxDVH)³ Dimensions (WxDVH)³ Weight³ Case material Battery - type Battery - lifte® Battery - lifte® Graph (SWW) (SWW)³ Smart Card Read Fabres (SWW) (SWW)³ Smart Card Read WLAN* WLAN* Mobile Intel QM67 Express Chipset Onside (ExpressCard34) Mobile Intel QM67 Express Mini Card slobe Nobile Intel QM67 Express Mini Card slobe Some: 56K V.92® modem Bluetooth* Ethernet Intel AMT Audio support in leader (Pick Alpha) (Pi	Widescreen display	Some: 15.6" 220 n Some: 15.6" 270 n Some: huey ^T	its, 16:9 asp (396mm) FI its, 16:9 asp MPRO Colori	ect ratio, the contraction of th	500:1 contras (1080) color 500:1 contras X-Rite® color	st ratio, 60% , anti-glare, st ratio, 95% r calibration :	Gamut LED backlight, Gamut sensor in palm	rest		Add Sky Wir Mic	obe® Re /pe™ foi ndows L crosoft C chase p	ader Wind ive™ Office rodu	dows Essen 2010 p	tials oreloa to acti	
TrackPoint* Dinting device, "Press-to-Select," Internet Scroll Bar*a, magnifying glass Touchpad Touchpad Touchpad Ultraky**, wide touchpad below keyboard; Tap Zones, scrolling regions label, multi-touch Illuminates the keyboard to improve visibility in low-light conditions Dimensions (WXDXH)** Weight** HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & Case material HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & Case material HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & Case material HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & Case material HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & Case material HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & Case material HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD+: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD-: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD-: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD-: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD-: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-36.6mm HD & HD-: 14.68* x 9.65* x 1.29-1.44*; 372.8mm x 245.1mm x 32.8-3		NVIDIA® Opti Intel HD Grap NVIDIA Quad external analodigital monito supports thre Maximum ext	mus™ technophics 3000 i lro® 1000M of the support via e independe ternal resoluti	ology, auton process or 2000M, upport via DisplayP nt display tion: 2560	o-switch betwoor, and PCI Express VGA DB-15 ort (supports;)x1600 (Disp	veen discretors x16, 2GB connector as single-link I	e and integrate memory, nd DVI-D via option DHz;	nal cable);	,	Corel Burn.Now™ Lenovo Edition (DVD±RW) Corel DVD MovieFactory® Lenovo Edition (DVD±RW) huey™PRO Monitor Color Correction by Pantone®/X-Rite®					
(WxDxH)³ (Hz)² (H	TrackPoint® Touchpad	TrackPoint® po UltraNav™, w	ointing device ide touchpac	e, "Press- d below ke	to-Select," In eyboard, Tap	ternet Scrol Zones, scro	l Bar ¹³ , magnify Iling regions lal	ving glass pel, multi-to	ouch						
Chipset ExpressCard One slot (ExpressCard/34) Some: Smart Card Reader Multicard Reader 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 WLAN⁴ WLAN⁴ WWAN Some: Wireless WAN upgradable Some: Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCle Mini Card, GPRS/WCDMA/HSPA/HSPA+, GPS Carrier Modem Bluetooth™ Bluetooth™ Ethernet Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCle x1 Intel AMT 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 Power-on password, hard disk password, supervisor password, security keyhole Fingerprint reader UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip Fingerprint reader Limited warranty¹² 2-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 Mobile Intel Agdr Acinc (MMC, SD, SDMC, SDMC) Some: Wireless WAN, Ericsson® F552.0 (yellow), one USB 2.0/eSATA combo port, external monitor (VGA Desatra Comb	(WxDxH) ³ Weight ² Case material Battery - type	FHD: 6-cell: starting Display cover Bottom: Lithium Ion 6-	14.68") g at 5.40 lb (2 Carbon- Glass-fi cell or 9-cell	x 9.65" x 1 2.45kg); -fiber / Gla ber reinfo , supports	.29-1.44"; 37 9-cell: starti ass-fiber hybrored plastic v s optional Slice	72.8mm x 24 ng at 5.75 lb rid; vithout paint ce battery as	15.1mm x 32.8- (2.61kg) s 2nd battery at	36.6mm	o 21 9 h	r					
WLAN ⁴ User seeds with service provider Some: Wireless WAN, Ericsson® F5521gw Mobile Broadband Module, PCle Mini Card, GPRS/WCDMA/HSPA+, GPS Carrier Some: User selectable, contract required with service provider Some: 56K V.926 modem Bluetooth™ Bluetooth 3.0 wireless, LED indicator Ethernet Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCle x1 Intel AMT Some: 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 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 warranty¹² 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	Chipset ExpressCard Smart Card Read Multicard Reader	Mobile Intel of One slot (Exp Some: Smar 4-in-1 reader Two USB 3.0 external moni	QM67 ExpreseressCard/34 t Card reade (MMC, SD, S) (blue), one Ftor (VGA DE	ess Chips er SDHC, SE Powered U 3-15, Disp	et DXC) JSB 2.0 (yellolayPort), ethe	ow), one US ernet (RJ-45	B 2.0/eSATA co		0 21.0 11						
Modem Bluetooth™ Bluetooth 3.0 wireless, LED indicator Ethernet Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCle x1 Some: Intel AMT 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 Chip Fingerprint reader UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip Limited warranty¹² 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 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 Service¹² 24 hour x 7 day¹8 toll-free support	WLAN⁴ WWAN	11a/b/g/n, PC Some: Wirele Some: Wirele GPRS	le Half Mini ess WAN upg ess WAN, Er S/WCDMA/H	Card, Inte gradable icsson® F ISPA/HSP	5521gw Mob A+, GPS	ile Broadbar	nd Module, PCI	e Mini Card	d,						
volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack Security Security chip Fingerprint reader UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip Limited warranty¹² 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 ThinkPad Roll Cage (one-piece magnesium frame) EPEAT™ Gold rating ENERGY STAR® 5.0-compliant RoHS-compliant International Warranty Service¹² 24 hour x 7 day¹8 toll-free support	Modem Bluetooth™ Ethernet Intel AMT	Some: 56K N Bluetooth 3.0 Intel 82579LN Some: Intel A	1.926 modem wireless, LE I Gigabit Ne Active Manag	ED indicate twork Cor gement Te	or Inection (Levechnology (iA	visville), PH\ MT)	/, PCle x1			Supp	orts Thii	nkVar	ntage®	techn	ologies
Limited warranty ¹² 3-years/1-year battery, limited onsite service ²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding public and national holidays. Calls received after 3 pm will require an additional next business	Security Security chip	volume up, do Power-on pas Trusted Platfo UPEK Finger	own, mute bussword, hard orm Module, print reader	uttons / du disk pass TCG 1.2-c on palm re	al array mic, word, superv compliant est, swipe se	mic mute bu visor passwo nsor, LED in	utton, combo au ord, security key	udio/mic ja	ck	Think ma EPEA ENEF	Pad Rol gnesiun T™ Gol RGY ST	II Cág n fram d ratii AR® 5	je (one ne) ng		
	Limited warranty ¹²	3-years/1-yea	ar battery, lin tional holida	nited ons ys. Calls r	ite service ²⁴ eceived after	, 8 am - 5 pr 3 pm will re	m, Mon - Fri co quire an addtic	verage exc onal next bu	luding	Intern 24 ho	ational ur x 7 d	Warra ay ¹⁸ t	oll-free	supp	ort

Type-model Proce 4284-25G i5-254		Finger print reader
	60QM 4GBx2 15.6" FHD 2000M 1x500G 7200 DVD±RW Intel 6300 ²⁸ WWAN upg	None 9 vPro GP Pro 64
	60QM 4GBx1 15.6" FHD 2000M 1x500G 7200 DVD±RW Intel 6300 WWAN upg	None 9 vPro GP Pro 64
		Finger None 9 vPro G P Pro 64 Finger None 9 vPro G P Pro 64
	Part of the Global Models Plus program with limited onsite service ²⁴ 3-year limited warr	9
	 Power-packed engineering with Open GL graphics and ISV certifications Microsoft® Office 2010 Product Key Ready (O10PKR) 	
Positioning Processor	Mobile workstation; two spindles Intel® Core™ i5-2540M processor (dual-core, 2.60GHz, 3MB Cache),	Preloaded operating system ²⁰ - Genuine Windows® 7
	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),	Professional 64
	DDR3 memory controller (up to 1600MHz), Intel Turbo Boost 2.0 (3.50GHz), HT technology	Ready to install applications ¹⁴ (only some listed)
	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	 Rescue and Recovery™
Memory	dual-core model: 16GB max ⁷ , two 204-pin SO-DIMM sockets	 Access Connections[™] Fingerprint Software (fingerprint
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	quad-core model: 32GB max, four 204-pin SO-DIMM sockets	models)
Ontinal	All: PC3-10600 1333MHz DDR3, non-parity, dual-channel capable	Password Manager (fingerprint models)
Optical Ultrabay	Some: DVD burner, 12.7mm Ultrabay Enhanced, removable One bay for removable devices, Ultrabay Slim-compatible, 12.7mm high, bottom access	ThinkVantage System Update
SATA dísk	Some: Solid State Drive (SSD) / SATA 3.0Gb/s, 2.5" wide, 7mm high	ThinkVantage Power ManagerThinkVantage Toolbox
	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	Preloaded applications ¹⁴ (only some
mSATA™ SSD	None	listed)
Widescreen display	Some: 15.6" (396mm) HD+ (1600x900) color, anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio, 60% Gamut	 Norton™ Internet Security 2011 (30 days of virus definitions)
display	Some: 15.6" (396mm) FHD (1920x1080) color, anti-glare, LED backlight,	Àdobe® Reader®
Color calibration	270 nits, 16:9 aspect ratio, 500:1 contrast ratio, 95% Gamut None	 Skype[™] for Windows Windows Live[™] Essentials
Camera	HD720p resolution, wider view angle, low light sensitive, fixed focus	Microsoft Office 2010 preloaded;
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics,	purchase product key to activate • Corel® WinDVD® (DVD±RW)
	Intel HD Graphics 3000 in processor, and NVIDIA Quadro® 1000M or 2000M, PCI Express® x16, 2GB memory,	Corel Burn.Now™ Lenovo Edition
	external analog monitor support via VGA DB-15 connector and	(DVD±RW) • Corel DVD MovieFactory® Lenovo
	digital monitor support via DisplayPort (supports single-link DVI-D via optional cable); supports three independent displays;	Edition (DVD±RW)
	Maximum external resolution: 2560x1600 (DisplayPort) @ 60Hz;	 huey™PRO Monitor Color Correction by Pantone®/X-Rite®
	2048x1536 (VGA)@85Hz; 1920x1200@60Hz (single-link DVI-D via optional cable)	(color calibration models)
Keyboard TrackPoint®	7 row, 89-key, ThinkVantage button, spill-resistant, multimedia Fn keys TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar¹³, magnifying glass	
Touchpad	UltraNav™, wide touchpad below keyboard, Tap Zones, scrolling regions label, multi-touch	
ThinkLight™ Dimensions	Illuminates the keyboard to improve visibility in low-light conditions HD & HD+: 14.68" x 9.65" x 1.25-1.40"; 372.8mm x 245.1mm x 31.8-35.6mm	
(WxDxH) ³	FHD: 14.68" x 9.65" x 1.29-1.44"; 372.8mm x 245.1mm x 32.8-36.6mm	
Weight ² Case material	6-cell: starting at 5.40 lb (2.45kg); 9-cell: starting at 5.75 lb (2.61kg) Display cover: Carbon-fiber / Glass-fiber hybrid;	
Case material	Bottom: 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 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 Multicard Reader	None 4-in-1 reader (MMC, SD, SDHC, SDXC)	
Ports	Two USB 3.0 (blue), one Powered USB 2.0 (yellow), one USB 2.0/eSATA combo port,	
	external monitor (VGA DB-15, DisplayPort), ethernet (RJ-45), IEEE 1394 FireWire 400 (4-pin connector; 1394a-2000 standard)	
PCIe Mini Card	Two PCI Express Mini Card slots	
WLAN ⁴	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	
Carrier Modem	None 56K V.92 ⁶ modem	
Bluetooth™	Bluetooth 3.0 wireless, LED indicator	
Ethernet Intel AMT	Intel 82579LM Gigabit Network Connection (Lewisville), PHY, PCIe x1 Intel Active Management Technology (iAMT)	Supports ThinkVantage® technologies
Audio support	High Definition (HD) Audio, Conexant 20672 codec / stereo speakers, 1 watt x 2 /	170-watt AC adapter
Security	volume up, down, mute buttons / dual array mic, mic mute button, combo audio/mic jack	ThinkPad Roll Cage (one-piece
Security chip	Power-on password, hard disk password, supervisor password, security keyhole Trusted Platform Module, TCG 1.2-compliant	magnesium frame) EPEAT™ Gold rating
Fingerprint reader	Some: UPEK Fingerprint reader on palm rest, swipe sensor, LED indicator, Power On Authentication, supports the security chip	ENERGY STAR® 5.0-compliant
Limited warrantv ¹²	3-years/1-year battery, limited onsite service ²⁴ , 8 am - 5 pm, Mon - Fri coverage excluding	RoHS-compliant International Warranty Service ¹⁷
	public and national holidays. Calls received after 3 pm will require an additional next business	24 hour x 7 day18 toll-free support
	day for service dispatch / service upgrades available	during the warranty period ¹²
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