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# **Summary of Changes**

This section describes the technical changes made in this edition.

This edition might also include minor corrections and editorial changes which are not identified.

#### March 25, 2020 - Version 557

#### Additions in this update

#### ► New product(s)

ThinkPad 11e Yoga Gen 6

#### ► Others

ThinkPad E15 - spec updated ThinkPad T480s - spec updated ThinkPad T490 - spec updated ThinkPad T495 - spec updated ThinkPad T590 - spec updated ThinkPad X1 Extreme (2nd Gen) - spec updated

#### Withdrawals in this update

Withdrawn product(s) None



(intel)

inside"

### ThinkPad 11e (5<sup>th</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel Pentium®				ocessor, I	Intel Ce	leron <sup>®</sup> process	or, or	Dimensions Weight	<i>WxDxH:</i> 11.81" x 8.27" x 0.86"; 300mm x 210mm x 21.9mm Starting at 2.99 lb / 1.36 kg
		# of Cores	# of Threads	Base Frequency	<u> </u>	су	e Memory Types	Graphics	Case color Case material	Black <i>Display cover:</i> PC/ABS+GF; <i>Bottom:</i> PC/ABS plastic
	m3-7Y30 i5-7Y54	2		1.0 GHz 1.2 GHz	2.6 GH 3.2 GH			Intel HD Graphics 61	5 Smart card reade	erNone MicroSD card reader
	Celeron N4100			1.1 GHz	2.4 GH		_	Intel UHD	Ports	Two USB 3.1 Gen 1, one USB 3.1 Type-C Gen 1 (with the function of Power
	Celeron N4120 Pentium Silver N5000	4	4	1.1 GHz 1.1 GHz	2.6 GH		-	Graphics 60		Delivery and DisplayPort), HDMI 1.4b, Ethernet (RJ-45), headphone / microphone combo jack, microSD card reader, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed
	Pentium Silver N5030			1.1 GHz	3.1 GH	z 4MB		Graphics 60	5 Camera Audio support	HD720p camera, fixed focus HD Audio, Realtek® ALC3287 codec, stereo speakers, 2W x 2, Dolby® Audio™,
Graphics	Intel HD Graph supports extern supports dual i Max resolution	nal dig indepe	gital more	hitor via Hİ lisplav:	DMI or U	ISB Type	e-C;	Hz (HDMI)	Keyboard Touchpad Security	mono digital microphone, combo audio/microphone jack 6-row, spill-resistant, multimedia Fn keys Buttonless Mylar surface touchpad below keyboard, multi-touch Power-on password, supervisor password, security keyhole
Chipset Memory	Intel SoC (Syst 4GB or 8GB / 1 soldered to syst	tem oi 1866N	n Chip) 1Hz LPE	platform DR3 or 24					Security chip System Mgt Fingerprint reade	Discrete TPM 2.0, TCG Certified (may be disabled in some region) None
Display	Size Resolution	ı	Type S	urface Bri	ghtness	Aspect Ratio	Contrast Ratio	Color Viewii Gamut Angl		Integrated Li-ion 42Wh battery
	11.6" HD (1366x		TN An		50 nits		400:1 or 500:1	45% 90°	Max battery life	MobileMark® 2014: 13.9 hr * Battery life varies significantly with settings, usage, & other factors
	11.6" HD (1366x	/		<u> </u>	50 nits	16:9	800:1	45% 170	AC adapter	45W USB-C AC adapter
Multi-touch (opt)	Capacitive-type NOT available	e mult in EM	i-touch, EA)	supports ·	10-finger	gesture	e (HD IPS only	,		<ul> <li>45W slim tip AC adapter</li> <li>65W USB-C AC adapter</li> <li>65W USB-C AC adapter</li> </ul>
Storage	eMMC flash m M.2 2242 SSD	emory	on boa	rd or PCIe 3.0	) x 2				Operating system	65W slim tip AC adapter     One of the following, configurable by model:
Optical	None	/ 1 01	0 111110	, 1 010 0.0	/				(optional)	Windows <sup>®</sup> 10 Home 64
Ethernet	Realtek RTL81	Realtek RTL8111GUS Gigabit Network Connection								Windows 10 Pro 64     Windows 10 Pro in S mode
WLAN + Bluetooth™	One of the following, configurable by model: • Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card (US only								Limited warranty	
WWAN SIM card	None								Mil-Spec test	MIL-STD-810G military testing
	NULLE	None							Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant

Note: The specifications above may not be available in all regions.



## ThinkPad 11e Yoga Gen 6 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Ge	eneration Intel	<sup>®</sup> Core™	™ m / i5 P	rocessor					Smart card reade	
	Proces Numbe m3-81 i5-820	er Cores	# of Threads 4	Base s Frequent 1.1 GH 1.3 GH		y 4MB	Memory Typ LPDDR3-18	GI	ocessor raphics el UHD ohics 615	Media reader Ports	MicroSD card reader Two USB 3.1 Gen 1, one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), HDMI1.4, headphone / microphone combo jack, microSD card reader, security keyhole
Graphics	suppo suppo Max re	IHD Graphics rts external dig rts three indep esolution: 384	gital mo bendent 10x2160	onitor via displays 0@60Hz	HDMI or US			80Hz (H	DMI)	Camera Audio support	<ul> <li>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</li> <li>HD720p resolution, low light sensitive, fixed focus</li> <li>Optional World facing camera, 5MP resolution, auto focus</li> <li>HD Audio, Realtek® ALC3287 codec Dolby® Advanced Audio / stereo speakers, 2W x 2 / monaural microphone,</li> </ul>
Chipset Memory	4GB c solder	SoC (System o or 8GB / 1866M red to systemb or clocks down	/IHz or 2 oard, n	2133MHz o sockets	;		ller			Keyboard Touchpad	headphone / microphone combo jack 6-row, spill-resistant, multimedia Fn keys Buttonless Mylar surface multi-touch touchpad below keyboard
Display	Size	Resolution HD (1366x768)	1 1		Brightness 250 nits	Aspect Ratio 16:9	Contrast Ratio 800:1	Color Gamut 45%	Viewing Angle 170°	Security chip	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified None
MultiTouch Hinge Convertible mode Pen <i>(Optional)</i>	Capac Yoga I Laptoj • Pen	citive-type mult	ti-touch, gree and table vith a pe	, supports et en garage	s 10 fingers	, Cornin	ng® Gorilla®	Glass		Fingerprint reade NFC Battery Max battery life	r None None Integrated Li-Ion 46Wh battery <i>MobileMark® 2014:</i> 15.69 hrs <i>MobileMark 2018:</i> 11.05 hrs * <i>Battery life varies significantly with settings, usage, &amp; other factors</i>
Storage Optical	M.2 22 None	242 SSD / PCI	e NVM	e, PCle 3	.0 x 2					AC adapter	45W or 65W USB-C AC adapter
Ethernet WLAN +	None	(support MAC Dual Band Wi			Wi-Fi 2x2 8	302.11a	c + Bluetoo	th 4.2. N	M.2 card	<ul> <li>Light sensor</li> <li>G-sensor</li> <li>Gyroscope</li> </ul>	None Yes None
Bluetooth™	<ul> <li>Intel</li> </ul>	Wireless-AC 9 Wi-Fi 6 AX200	9260, W	/i-Fi 2x2 8	302.11ac +	Bluetoot	th 5.0, M.2	card		1 0 7	<ul> <li>Optional: Windows<sup>®</sup> 10 Home 64 or Windows 10 Pro 64</li> <li>1-year depot repair service</li> </ul>
WWAN SIM card	None None	one									1-year depot with 2-year system board repair service
Dimensions		<i>H:</i> 11.54" x 8	.15" x 0	).78"; 2	293mm x 20	)7mm x	19.9mm			Mil-Spec test	MIL-STD-810G military testing
Weight Case color Case material	From S Black	3.1 lb / 1.41 kg ay cover: PC/	)	astic;			-			Environment	EPEAT™ Silver; ENERGY STAR® 8.0; RoHS-compliant









# ThinkPad Yoga 11e (5<sup>th</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Image: Control buttom       4       4       1.1 GHz       2.6 GHz       4MB       Control buttom       4       1.1 GHz       2.7 GHz       4MB       Max         Biller NS030       Silver NS030       1.1 GHz       2.7 GHz       4MB       Max       Max       Control buttom       "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Depending on many factors, actual data transfer speed may be lower than theoretical "Dependin	Processor	7th Generation				sor, Inte	el Celeron® process	sor, or	Dimensions Weight	<i>WxDxH:</i> 11.81" x 8.27" x 0.89"; 300mm x 210mm x 22.5mm From 3.4 lb / 1.54kg
Biter Nood         2         12 Git 2 2 Oit 2 Oit 1 2							Cache Memory Types		Case material	Display cover: PC/ABS+GF; Bottom: PC/ABS plastic
Bits         Chieron N4100 Celeron N4100 Pentium Silver N5030         4 4         11 GHz 11 GHz 2.6 GHz 4MB 1.1 GHz 2.7 GHz 4MB 0DPR4-2400 The IUHD Graphics 605         Intel UHD Graphics 605         One of the following, configurable by model: Control buttons         Control buttons         Control buttons         Control buttons         Control buttons           Graphics         Intel SOC (System on Chip) platform 4GB or 8GB / 1866MHz LPDDR3 or 2400MHz DDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR3 or 2400MHz DDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR3 or 2400MHz DDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR3 or 2400MHz DDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR3 or 2400MHz DDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR4 / Soldered to systemboard, no sockets 4GB or 8GB / 1866MHz LPDDR4 / Soldered to			2						Media reader	MicroSD card reader
Silver Ns000     T     Int Gitz     Int Gitz     Multi Silver Ns000       Pentium     1.1 GHz     3.1 GHz     4MB     Ont Event     Intel UHD     Graphics 605       Graphics     Intel HD Graphics 615, Intel UHD Graphics 600 or 605 in processor, supports dual independent display;     Max resolution: 3840x2160@60Hz (USB Type-C);     Max resolution: 3840x2160@60Hz (USB Type-C);     May resolution: 3840x2160@		Celeron N4120		4						one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), HDMI1.4, Ethernet (RJ-45), headphone / microphone combo jack,
Silver N5030     1.1 GHz     3.1 GHz     MB     Camera       Graphics     Intel HD Graphics 615, Intel UHD Graphics 600 or 605 in processor, supports dual independent display; Max resolution: 3840x2160 @ 60Hz (USB Type-C); 4096x2160 @ 30Hz (HDMI)     Camera     One of the following, configurable by model: 720p:     HD720p resolution, uity first encoder of the following, configurable by model: World facing: Rear camera, SMP resolution, auto focus World facing: Rear camera, SMP resolution, auto focus Buttenges for SMP resolution, auto focus Security Camera Sorage       MultTouch Hinge Yoga hinge, 360 degree Convertible mode Laptop, lent, stand and tablet Pen (Optional)     Pon upgradable (with a pen garage ready) ThinkPad Pen Pro, hatteries required, on-board garage     None       Storage     eMMC flash memory on board or M.2 224 SSD / PCIe NVMe, PCIe 3.0 x 2 Optical None     None     Ad adpter + 6SW USB- CAC adapter + 6SW USB- CAC adapter       WLAN     One of the following, configurable by model: + Intel Wireless-AC 9260, Wi-F1 zx2 802: 11ac + Bluetooth 5.0, M.2 card + Intel Wireless-AC 9260, Wi-F1 zx2 802: 11ac + Bluetooth 5.0, M.2 card + NEC		Silver N5000	4		1.1 GHz 2.7	7 GHz	4MB DDR4-2400		Control buttons	* Depending on many factors, actual data transfer speed may be lower than theoretical speed
Graphics       Intel HD Graphics 615, Intel UHD Graphics 600 or 605 in processor, supports external digital monitor via HDM or USB Type-C; supports external digital monitor via HDM or USB Type-C; MAX resolution: 3840x2160@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)       Audio support         Chipset       Intel HD Graphics 615, Intel UHD Graphics 600 or 605 in processor, supports external digital monitor via HDM or USB Type-C; 4096x2160@30Hz (HDMI)       Audio support         Chipset       Intel KDC (System on Chip) platform       Audio support       Audio support         Memory       4GB or 8GB / 1866MHz (LPDDR3 or 2400MHz DDR4 / soldered to systemboard, no sockets       Security Power-on password, hard disk password, supervisor password, security keyl Security chip Discrete TPM 2.0, TCG Certified (may be disabled in some region)         Display       11.6" (295mm) HD (1366x768), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170" viewing angle, Corning® Gorilla® Glass       Security chip       Discrete TPM 2.0, TCG Certified (may be disabled in some region)         MultiTouch       Capacitive-type multi-touch, supports 10 fingers       None       None       None         Storage       eMMC flash memory on board or M 224 SSD / PCle NVMe, PCle 3.0 x 2       Acdapter       45W USB-C AC adapter       45W USB-C AC adapter         VLAN       One of the following, configurable by model:       • Intel Wireless-AC 2660, Wi-F1 22 802 11a c + Bluetooth 5.0, M.2 card       • Windows 10 Pro 64       • Windows 10 Pro 64       • Windows 10 Pro 64					1.1 GHz 3.1	1 GHz	4MB	Graphics 605		
Memory       4CB or 6GB / 1866MHz LPDDR3 or 2400MHz DDR4 / soldered to systemboard, no sockets       Toúchpad       Buttonless Mylar surfacé touchpad below keyboard, multi-touch         Display       11.6" (295mm) HD (1366x768), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle, Corning® Gorilla® Glass       Security vchp       Security vchp         Storage       Yeadable (with a pen garage ready)       • ThinkPad Pen Pro, batteries required, on-board garage       • Intergrave aspect ratio, 800:1 contrast ratio, on-board garage       • Intergrave aspect ratio, 800:1 contrast ratio, on-board garage         Storage       eMMC flash memory on board or M.2 2242 SSD / PCle NVMe, PCle 3.0 x 2       • Mach ablework Connection       • Acce adapter       • Asset regrave aspect reader significantly with settings, usage, & other factors         WLAN       One of the following, configurable by model: • Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Windows 10 Pro 64 • Windows 10 Pro 15 mode	Graphics	supports exter supports dual	rnal dig indep	gital mor endent d	nitor via HDMI lisplay;	or USB	Type-C;	Hz (HDMI)		720p: HD720p resolution, low light sensitive, fixed focus World facing: Rear camera, 5MP resolution, auto focus HD Audio, Realtek® ALC3287 codec Dolby Audio™ / stereo speakers, 2W x 2 /
Display       11.6° (295mm) HD (1366x768), anti-glare, LED backlight, IPS, 250 nits, 16.9 aspect ratio, 800:1 contrast ratio, 170° viewing angle, Corning® Gorilla® Glass       Security chip       Discrete TPM 2:0, TCG Certified (may be disabled in some region)         MultiTouch       Capacitive-type multi-touch, supports 10 fingers       None       None         Pen (Optional)       Pen upgradable (with a pen garage ready)       Integrated Li-lon 42Wh battery       None         Pen (Optional)       Pen upgradable (with a pen garage ready)       Integrated Li-lon 42Wh battery       Mone         Storage       eMMC flash memory on board or       * 2242 SSD / PCle NVMe, PCle 3.0 x 2       None         Optical       None       - 1ntel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       + Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       - United warranty       One of the following, configurable by model:         WWWNN       None       Sim card       None       - 3year/1-yrbattery dept repair service         SiM card       None       - 3year/1-yrbattery dept repair service       - 3year/1-yrbattery dept repair service		4GB or 8GB /	1866	ИHz ĽÝĆ	DR3 or 2400	MHz DD	)R4 /		Touchpad	Buttonless Mylar surface touchpad below keyboard, multi-touch
Convertible modeLaptop, tent, stand and tabletBatteryIntegrated Li-Ion 42Wh batteryPen (Optional)• Pen upgradable (with a pen garage ready) • ThinkPad Pen Pro, batteries required, on-board garageBatteryMax battery lifeMax battery lifeStorageeMMC flash memory on board or M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2AC adapter • 65W silm tip AC adapter • 45W silm tip AC adapter • 65W USB-C AC adapter • 65W USB-C AC adapter • 65W USB-C AC adapter • 65W USB-C AC adapter • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel Wireless, integrated in Wi-Fi + Bluetooth combo adapterPreloadOne of the following, configurable by model: • Windows 10 Pro 64 • Windows 10 Pro in S modeWWAN SIM cardNoneOneIntegrated in Wi-Fi + Bluetooth combo adapterLimited warrantyOne of the following, configurable by model: • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery depot repair service	MultiTouch	11.6" (295mm 16:9 aspect ra Capacitive-typ	i) HD ( atio, 80 be mult	1366x76 0:1 cont ti-touch,	68), anti-glare, rast ratio, 170	° viewin			Security chip System Mgt Fingerprint reade	Discrete TPM 2.0, TCG Certified (may be disabled in some region) None er None
StorageeMMC flash memory on board or M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2AC adapter45W slim tip AC adapterOpticalNone65W slim tip AC adapter65W slim tip AC adapterEthernetRealtek RTL8111GUS-CG Gigabit Network Connection0ne of the following, configurable by model: • Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel Wireless, integrated in Wi-Fi + Bluetooth combo adapterPreloadOne of the following, configurable by model: • Windows 10 Pro 64 • Windows 10 Pro in S modeWWAN SIM cardNoneNoneItel of the following, configurable by model: • Intel Wireless, integrated in Wi-Fi + Bluetooth combo adapterOne of the following, configurable by model: • Windows 10 Pro in S modeWWAN SIM cardNoneNoneItel of the following, configurable by model: • Intel Wireless, integrated in Wi-Fi + Bluetooth combo adapterItel wireless, integrated in Wi-Fi + Bluetooth combo adapterWWAN SIM cardNoneNoneMil-Spec testMIL-STD-810G military testing	Convertible mode	<ul> <li>Laptop, tent, s</li> <li>Pen upgrada</li> </ul>	stand a able (w	and table ith a per	n garage read	y) -board g	garage			MobileMark® 2014: 12 hrs
Optical       None         Ethernet       Realtek RTL8111GUS-CG Gigabit Network Connection         WLAN       One of the following, configurable by model:         • Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         Bluetooth™       Bluetooth wireless, integrated in Wi-Fi + Bluetooth combo adapter         WWAN       None         SIM card       None	-	M.2 2242 SSE							AC adapter	<ul> <li>45W slim tip AC adapter</li> <li>65W slim tip AC adapter</li> </ul>
WLAN       One of the following, configurable by model:       • Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Windows® 10 Home 64         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Windows 10 Pro 64         • Intel Wireless, AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Windows 10 Pro in S mode         Bluetooth™       Bluetooth wireless, integrated in Wi-Fi + Bluetooth combo adapter       One of the following, configurable by model:         WWAN       None       • None       • Uimited warranty       One of the following, configurable by model:         SIM card       None       • Jage and the following, configurable by model:       • Windows 10 Pro in S mode         Mil-Spec test       MIL-STD-810G military testing			1110	10.00.0	N'		4'		_	
WWAN       None         SIM card       None	WLAN	One of the follow • Intel Wireless • Intel Wireless	wing, co s-AC 9 s-AC 9	onfigurabl 9260, Wi 9560, Wi	<i>e by model:</i> -Fi 2x2 802.11 -Fi 2x2 802.11	lac + Bl lac + Bl	uetooth 5.0, M.2 ca uetooth 5.0, M.2 ca		Preload	<ul> <li>Windows® 10 Home 64</li> <li>Windows 10 Pro 64</li> </ul>
Mil-Spec test MIL-STD-810G military testing	WWAN	None	eless, I	megrate	u iii vvi-ri + Bl	luetooth	compo adapter		Limited warranty	1-year depot repair service
Environment EPEAT™ Gold; ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant									Mil-Spec test	
									Environment	EPEAT™ Gold; ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant









### ThinkPad A285 Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryzer	ז™ PRC	) Mobile	Processors	with Rade	on <sup>™</sup> Vega	Graphics			r Optional: Smart card reader
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader Ports	MicroSD card reader, in the combo slot with nano-SIM card One USB 3.1 Gen 1 (Always On), one USB 3.1 Gen 2,
	Ryzen 3 PRO 2300U		4	2.0 GHz	3.4 GHz			Radeon Vega 6 Graphics		two USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort), HDMI 2.0, Ethernet extension connector, combo slot of nano-SIM card (WWAN models) and microSD card reader,
	Ryzen 5 PRO 2500U	4	8	2.0 GHz	3.6 GHz	2MB L2 / 4MB L3	DDR4-2400	Radeon Vega 8 Graphics		headphone / microphone combo jack, optional smart card reader, side docking connector, security keyhole
	Ryzen 7 PRO 2700U		8	2.2 GHz	3.8 GHz			Radeon Vega 10 Graphics	Monitor cable	* Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter
Graphics	AMD Radeo supports ex supports for	ternal ur inde	digital me	onitor via H displays;	IDMI or ÜS	B Type-C	;		(optional) Bundled Accy Camera (optional	USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter Optional: ThinkPad Ethernet Extension Adapter Gen 2 One of the following, configurable by model:
Chipset Memory	Max resolut AMD SoC ( 8GB or 160	Syster	n on Chip	) platform	,,	,,		( <i>'</i>		<ul> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>IR camera and HD720p camera, fixed focus</li> </ul>
Display	Some: 12.5 220	5" (317 ) nits. 1	7.5mm) H 6:9 aspe	D (1366x7	68), anti-gl	are, LED	backlight,		Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio™ Premium / optional dual array microphone, headphone / microphone combo jack
Multi-touch <i>(opt)</i>		) nits, 1	6:9 aspe	ect ratio, 80	0:1 contras	st ratio, 17	D backlight 0° viewing a	, IPS, angle	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Storage	One of the fo • M.2 SSD • M.2 SSD	llowing, / SATA	<i>configura</i> 6.0Gb/s	ble by mode	l:	Jiliy)			Security Security chip System Mgt	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified DASH Management r <i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest
Optical	None				., 020.0,0				NFC	None
Ethernet	Gigabit Ethe				ernet Exten	sion Adap	oter Gen 2		Battery	Integrated Li-ion 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
WLAN + Bluetooth™	<ul> <li>Realtek<sup>®</sup></li> <li>Intel Wirel</li> </ul>	ess-A0	C 9260, V	Vi-Fi 2x2 8					Max battery life AC adapter	MobileMark <sup>®</sup> 2014: 10.55 hr * Battery life varies significantly with settings, usage, & other factors 45W or 65W USB Type-C AC adapter
WWAN (optional)	<ul> <li>Wireless \</li> <li>Integrated</li> </ul>				Έ-Δ					Windows® 10 Home 64 or Windows 10 Pro 64
SIM card (opt)	Intel XMM * For non-WW Nano-SIM o optional Ver	I™ 736 VAN me card sle rizon L	0 (Fiboco odel, it mea ot, in the TE (US) \$	om L850-G ans the mod combo slo SIM card	L), M.2 car lel is NOT W	WAN upgra				One of the following, configurable by model: • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
Dimensions	WxDxH (HL	D&FH	ID multi-t	ouch): 69": 307 7:	mm x 209.8	8mm v 17	4mm		Mil-Spec test	MIL-STD-810G military testing
	WxDxH (FF 12.	<i>HD nor</i> 11" x 8	n <i>-touch):</i> 3.26" x 0.	70"; 307.7	mm x 209.8				Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant
Weight	FHD non-to HD non-tou FHD multi-t	ıch mo	del: 2.	78 lb / 1.26	6 kg;					
Case color Case material	Black Display cover: Carbon Fiber (FHD non-touch model) or PPS (HD & FHD multi-touch model); Bottom: Magnesium/Aluminum									
Nata: The specific			0						1	

Note: The specifications above may not be available in all regions.









### ThinkPad A485 Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryzer	າ <sup>™</sup> PRC	O Mobile I	Processors	with Rade	on <sup>™</sup> Vega	Graphics			r Optional: Smart card reader		
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader Ports	4-in-1 reader (MMC, SD, SDHC, SDXC), supports SD 3.0, UHS-I One USB 3.1 Gen 1 (Always On), one USB 3.1 Gen 2,		
	Ryzen 3 PRO 2300U		4	2.0 GHz	3.4 GHz			Radeon Vega 6 Graphics		two USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort), HDMI 2.0, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader,		
	Ryzen 5 PRO 2500U	4	8	2.0 GHz	3.6 GHz	2MB L2 / 4MB L3	DDR4-2400	Radeon Vega 8 Graphics		4-in-1 media reader (MMC, SD, SDHC, SDXC), side docking connector, security keyhole		
	Ryzen 7 PRO 2700U		8	2.2 GHz	3.8 GHz			Radeon Vega 10 Graphics	Monitor cable(opt	* Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter		
Graphics	AMD Radeo supports ex	ternaľ	digital mo	onitor via H					Bundled Accy	USB-C to DP: Lenovo USB-C to DisplayPort Adapter None		
	supports four independent displays; Max resolution: 5120x2880@60Hz (USB Type-C); 4096x2160@60Hz (HDMI)							z (HDMI)		) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus		
Chipset Memory	AMD SoC ( 32GB max * Installed DI	/ 2400	MHz DDİ	Ŕ4, dual-ch				IMM sockets	Audio support	<ul> <li>IR camera and HD720p camera, fixed focus HD Audio, Realtek<sup>®</sup> ALC3287 codec / stereo speakers, 2W x 2, Dolby<sup>®</sup> Audio<sup>™</sup> Premium / optional dual array microphone, headphone / microphone combo jack</li> </ul>		
Display	Some: 14.0	) nits, 1 )" (355	16:9 ́aspe 5mm) FHI	ct ratio, 40 D (1920x10	0:1 contras 080), anti-g	t ratio lare, LED	backlight, I	PS,	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad		
Multi-touch (opt)	250 On-cell touc	nits, 1	6:9 aspe	ct ratio, 70	0:1 contras	st ratio, 17	0° viewing a	angle	Security Power-on password, hard disk password, supervisor password, security Discrete TPM 2.0, TCG Certified			
Storage	System has o Some: HD Some: SSI	D/SA	TA 6.0Gb	/s, 2.5" wid	de, 7mm hid	gh, Active		System™	System Mgt Fingerprint reader NFC	DASH Management r <i>Optional:</i> Touch style match on chip fingerprint reader on the keyboard bezel None		
	Some: M.2 Some: 128	2 SSD 3GB M	/ PCIe N .2 SSD /	VMe, PCIe PCIe NVM	3.0 x 4 e, PCle 3.0	) x 2,		1	Battery Max battery life	Integrated Li-ion 24Wh battery and external Li-ion 24Wh, 48Wh, or 72Wh battery		
Optical	* Installed M. None	2 SSD	is PCle 3.0	0 x 4 but run	at PCIe 3.0	x 2 due to	M.2 SSD ada	l pter limitation	(MobileMark® 2014)	Models         24Wh         48Wh         72Wh         24Wh + 24Wh         24Wh + 48Wh         24Wh + 72Wh           Max battery life         5.37 hr         10.76 hr         16.4 hr         10.76 hr         16.4 hr         22.15 hr		
Ethernet	Realtek® R	TL811 <sup>-</sup>	1GUL Gig	gabit Ether	net connect	tion			AC adapter	* Battery life varies significantly with settings, usage, & other factors 45W or 65W USB Type-C AC adapter		
WLAN + Bluetooth™	Realtek® I								Operating system	Windows® 10 Home 64 or Windows 10 Pro 64		
	<ul> <li>Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card</li> <li>Wireless WAN upgradable</li> <li>Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card</li> <li>* For non-WWAN model, it means the model is NOT WWAN upgradable</li> </ul>									One of the following, configurable by model: • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service		
SIM card (opt)	Nano-SIM c						uable		Mil-Spec test	MIL-STD-810G military testing		
Dimensions Weight	WxDxH: Models Magnesium PPS	Models         24Wh or 24Wh + 24Wh         48Wh, 72Wh, or 24Wh + 48Wh / 72Wh           Magnesium         3.49 lb / 1.58 kg         3.92 lb / 1.78 kg								EPEAT <sup>™</sup> Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant		
Case color Case material	Black Display cov Bottom:		agnesium ass-Fiber	Hybrid or Reinforce	d Plastic							

Note: The specifications above may not be available in all regions.



### ThinkPad E14 Platform Specifications

Processor	10th Generation Intel <sup>®</sup> Core <sup>™</sup> i3 / i5 / i7 Processor	Dimensions	Case Material	Dimensions (WxDxH)	
	* i7-10710U is NOT available in EMEA		Case Material Aluminum	12.80" x 9.13" x 0.70"; 325mm x 232mm x 17.9mm	
	Processor # of # of Base Max Turbo Cache Memory Processor	]	PC/ABS	12.80° x 9.13° x 0.70°, 325mm x 232mm x 77.9mm	
	Number         Cores         Inreads         Frequency         Frequency         Types         Graphics           i3-10110U         2         4         2.1 GHz         4.1 GHz         4MB	-	Aluminum Display cover + PC/ABS Bottom	12.80" x 9.13" x 0.74"; 325mm x 232mm x 18.9mm	
	i5-10210U 4 8 1.6 GHz 4.2 GHz 6MB DDR4-2666 Intel UHD Graphics	Weight	Case Material	Weight	
	i7-10710U 6 12 1.1 GHz 4.7 GHz 12MB		Aluminum	starting at 3.81 lb / 1.73 kg	
Graphics	Integrated Graphics Discrete Graphics (Memory)	=	PC/ABS	starting at 3.90 lb / 1.77 kg	
Chapmoo	Intel UHD Graphics - Intel UHD Graphics AMD Radeon 625 (2GB GDDR5)		Aluminum Display cover + PC/ABS Bottom	starting at 3.74 lb / 1.69 kg	
	Intel UHD Graphics AMD Radeon RX 640 Graphics (2GB GDDR5)	Case color	Black or silver		
	supports external digital monitor via HDMI or USB Type-C; supports three independent displays:	Case material		n or PC/ABS plastic; n or PC/ABS plastic	
	Max resolution: 3840x2160@60Hz (USB Type-C); 3840x2160@30Hz (HDMI)	- Media reader	None		
Chipset Memory	Intel SoC (System on Chip) platform 16GB max / 2666MHz DDR4, one DDR4 SO-DIMM socket	Ports	One USB 2.0, two USB 3 one USB 3.1 Type-C Gen	<ul> <li>1 Gen 1 (one Always On),</li> <li>1 (with the function of Power Delivery and DisplayPort),</li> </ul>	
Display	Size Resolution Type Surface Brightness Aspect Ratio Contrast Angle		security keyhole	-45), headphone / microphone combo jack, s, actual data transfer speed may be lower than theoretical speed	
	14.0"         FHD (1920x1080)         TN         Anti-glare         220 nits         16:9         400:1         90°           14.0"         FHD (1920x1080)         IPS         Anti-glare         250 nits         16:9         700:1         170°	Monitor cable Bundled Accy	None None		
Multi-touch	None	Camera	HD720p camera, fixed f	focus	
Storage	Up to two drives (one M.2 SSD and one HDD) • HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System <sup>™</sup> • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 or PCIe 3.0 x 4 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4	Audio support	• HD720p camera with Th HD Audio, Synaptic® CX1 stereo speakers, 2W x 2, dual array microphone, h	, Dolby® Advanced Audio / neadphone / microphone combo jack	
	<ul> <li>Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4</li> </ul>	Keyboard UltraNav™	6-row, spill-resistant, mult TrackPoint® pointing device	timedia Fn keys, optional LED backlight e and buttonless Mylar surface multi-touch touchpad	
Optane™ memory <i>(optional)</i> Optical	<ul> <li>Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2</li> <li>Intel Optane™ Memory integrated with SSD, PCIe NVMe 3.0 x 4 None</li> </ul>	Security Security chip	Power-on password, hard disk password, supervisor password, security Integrated model: discrete TPM 2.0, TCG Certified Discrete model: firmware TPM 2.0 integrated in chipset		
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS	System Mgt	None r Ontional: Touch style find	gerprint reader on power button	
WLAN +	One of the following, configurable by model:	NFC	None	Jerphint reader on power button	
Bluetooth™	<ul> <li>Realtek<sup>®</sup> RTL8822CE, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card</li> <li>Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card</li> <li>Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0, M.2 card</li> </ul>	Battery	Integrated Li-ion 45Wh ba with 65W AC adapter MobileMark® 2014: 12.8	attery, supports Rapid Charge (charge up to 80% in 1hr)	
WWAN	None	Max battery life		nr ntly with settings, usage, & other factors	
SIM card	None	AC adapter	45W or 65W USB-C AC a		
		Operating system (optional)	One of the following, configu. • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro in S m • No OS		
		Limited warranty (optional)	<ul> <li>1-year limited onsite se</li> </ul>	vice ar system board repair service rvice	
		Mil-Spec test	MIL-STD-810G military te	esting	
		Environment	EPEAT™ Silver; ENERG	Y STAR® 7.1; RoHS-compliant	
Noto: The epocifier	ations above may not be available in all regions			Lenov	

Note: The specifications above may not be available in all regions.





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### ThinkPad E15 Platform Specifications

Product Specifications Reference (PSREF)

Intel UHD Graphics       AMD Radeon R25 (2GB GDDR5)         Intel UHD Graphics       AMD Radeon RX 540 Graphics (2GB GDDR5)         supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 3840x2160 @60142 (USB Type-C); 3840x2160 @ 30Hz (HDMI)         Chipset       Intel SoC (System on Chip) platform Memory       16GB max / 2666MHz DDR4, one DDR4 SO-DIMM socket         Display       Size Resolution: 3840x2160 @ 6012 (USB Type-C); 3840x2160 @ 30Hz (HDMI)         Multi-touch       None         Multi-touch       Type Surface Brightness Resett Contrast Name       Aspect Contrast Name         Viewing       Aster Resolution: 3840x2160 @ 600x; S25" wide, 7mm high, Active Protection System™         Multi-touch       None         Storage       Up to two drives (one M2 SSD and one HDD) + HDD / SATA 6.0Gb/s; 2.5" wide, 7mm high, Active Protection System™         • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 2 or PCIe 3.0 x 4 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 2       Prote Storage, M2 2280, PCIe NVMe, PCIe 3.0 x 2         Optiane <sup>11</sup> memory*       Intel Optane <sup>11</sup> Memory H10 with Solid State Storage, M2 2280, PCIe NVMe, PCIe 3.0 x 2         Optiane <sup>11</sup> Memory +11 duptane <sup>11</sup> Memory H10 with SSD, PCIe NVMe, PCIe 3.0 x 2         Optiane <sup>11</sup> Memory +11 duptane <sup>11</sup> Memory H10 with SSD, PCIe NVMe, PCIe 3.0 x 2         Optiane <sup>11</sup> Memory +11 duptane <sup>11</sup> Memory H10 with SSD, PCIe NVMe, PCIe 3.0 x 2         Optiane <sup>11</sup> Memory +11 duptane <sup>11</sup> Memory H	Processor	10th Generation Intel® Core™ i3 / i5 / i7 Processor * i7-10710U is NOT available in EMEA	Dimensions Weight	<i>WxDxH:</i> 14.49" x 9.65" x 0.74"; 368mm x 245mm x 18.9mm Starting at 4.3 lb / 1.9 kg
Intel UHD Graphics         Intel UHD Graphics         Smart card reader None           Graphics         Intel Graphics         Intel UHD Graphics         Media reader None           Intel UHD Graphics         Discrete Graphics (GB GDDR5)         Intel UHD Graphics         Media reader None           Supports three independent displays:         Monitor cable         None           Supports three independent displays:         Monitor cable         None           Supports three independent displays:         Monitor cable         None           Supports three independent displays:         Markaten 025 (GB GDDR5)         Monitor cable           Media reader Mone         Supports three independent displays:         Monitor cable           Supports three independent displays:         Markaten 025 (GB GDDR5)         Monitor cable           Media reader Mone         Supports three independent displays:         Monitor cable           Supports three independent displays:         Monitor cable         None           Chipset         Markaten 100 (Strate Cable		Number Cores Threads Frequency Frequency Cache Types Graphics	Case material	Display cover: Aluminum;
Chapman       Intel UHD Graphics       AMD Radeon 625 (2GB GDDR5)         Intel UHD Graphics       AMD Radeon 825 (2GB GDDR5)         Supports external digital monitor via HDMI or USB Type-C;       Supports external digital monitor via HDMI or USB Type-C;         Supports external digital monitor via HDMI or USB Type-C;       Statution: 3840x2160@60Hz (USB Type-C);         Mar resolution: 3840x2160@60Hz (USB Type-C);       3840x2160@30Hz (USB Type-C);         Memory       Intel UHD for Monore       Monitor Caster         Display       Size Resolution       Type Surface       Bightness         To Serie Filt       Size Resolution       Type Surface       Contrast Viewing         Multi-touch       None       Size Resolution       Type Surface       Contrast Viewing         Multi-touch       None       Size Resolution       Type Surface multi-ouch touchpad         Storage       U to two drives (one M 2 SSD and one HDD)       Filt (SS) FILT (SS) Contrast Viewing       Filt (SS) FILT (SS) Contrast Viewing         Multi-touch       None       Size Resolution       Type Surface Size Contrast Viewing       None         Storage       U to two drives (one M 2 SSD and one HDD)       Filt (SS) FILT (SS) Contrast Viewing       None         Viewing       Size Resolution       Size Resolution       Size Resolution       Size Resolution      <		i5-10210U         4         8         1.6 GHz         4.2 GHz         6MB         DDR4-2666         Intel UHD Graphics           i7-10510U         4         8         1.8 GHz         4.9 GHz         8MB         DDR4-2666         Intel UHD Graphics	Media reader Ports	None One USB 2.0, two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),
<ul> <li>supports three independent displays: Max resolution: 3840x2160 @60Hz (USB Type-C); 3840x2160 @30Hz (HDMi)</li> <li>Chipset Memory</li> <li>Intel Soc (System on Chip) platform Memory</li> <li>Intel Soc (System on Chip) platform 16:6° FHU (1920x1080) TN Anti-glare 220 nits 16:9 FHD (1920x1080) TN Anti-glare 220 nits 16:9 TO: 1 TO<sup>o</sup></li> <li>Multi-touch</li> <li>None</li> <li>Storage</li> <li>Up to two drives (one M.2 SSD and one HDD) + HDD (1920x1080) TN Anti-glare 220 nits 16:9 TO: 1 TO<sup>o</sup></li> <li>None</li> <li>Storage</li> <li>Up to two drives (one M.2 SSD and one HDD) + HDD (1920x1080) TN Anti-glare 220 nits 16:9 TO: 1 TO<sup>o</sup></li> <li>None</li> <li>Storage</li> <li>Up to two drives (one M.2 SSD and one HDD) + HDD (1920x1080) TN Anti-glare 220 nits 16:9 TO: 1 TO<sup>o</sup></li> <li>Multi-touch</li> <li>None</li> <li>Storage</li> <li>Up to two drives (one M.2 SSD and one HDD) + HDD (1920x1080) TN Anti-glare 220 or TCle 3.0 x 4 + M.2 2280 SSD / SATA 6.0Gb/s M.2 2280 SSD / PCle NVMe, PCle 3.0 x 2 or PCle 3.0 x 4 - Intel Optane™ Memory H01 with Solid State Storage, M.2 2280, PCle NVMe, PCle 3.0 x 2 or PCle 3.0 x 2 (optional)</li> <li>Intel Optane™ Memory, PCle NVMe, PCle 3.0 x 2 (optional)</li> <li>Intel Optane™ Memory H01 with Solid State Storage, M.2 2280, PCle NVMe, PCle 3.0 x 2 (optional)</li> <li>Intel Optane™ Memory H01 with Solid State Storage, M.2 2280, PCle NVMe, PCle 3.0 x 2 (optional)</li> <li>Intel Wireliess-AC 56560, Wi-F1 2x2 802.11ac + Bluetooth 5.0, M.2 card Intel Wireliess-AC 56560, Wi-F1 2x2 802.11ac + Bluetooth 5.0, M.2 card Intel Wireliess-AC 5650, Wi-F1 2x2 802.11ac + Bluetooth 5.0, M.2 card Intel Wireliess-AC 5650, Wi-F1 2x2 802.11ac + Bluetooth 5.0, M.2 card Intel Wireliess-AC 5650, Wi-F1 2x2 802.11ac + Bluetooth 5.0, M.2 card Intel Wi</li></ul>	Graphics	Intel UHD Graphics - Intel UHD Graphics AMD Radeon 625 (2GB GDDR5)	Monitor cable	security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed None
Memory       16GB max / 2666MHz DDR4, one DDR4 SO-DIMM socket         Display       Size Resolution       Type Surface       Bightness       Aspect       Contrast       Viewing         15.6° FHD (1920x1080)       TN       Ant-glare       220 nits       16.9       400:1       90°         Multi-touch       None       Is.6° FHD (1920x1080)       IPS Anti-glare       220 nits       16.9       400:1       90°         Storage       Up to two drives (one M.2 SSD and one HDD)       • HDD / SATA 6.0Gb/s, 2.5° wide, 7mm high, Active Protection System™       Multi-touch       None         Storage       Up to two drives (one M.2 SSD and one HDD)       • M.2 2240 SD / SATA 6.0Gb/s, 2.5° wide, 7mm high, Active Protection System™       None         • M.2 2240 SD / PCle NVMe, PCle 3.0 x 4       • M.2 2240, PCle NVMe, PCle 3.0 x 4       • Intel Optane memory. H10 with Solid State Storage, M 2280, PCle NVMe, PCle 3.0 x 4       • Intel Optane memory. PCle NVMe, PCle 3.0 x 4         • Intel Optane memory.       • Intel Optane memory. PCle NVMe, PCle 3.0 x 4       • Intel Optane Memory integrated with SSD, PCle NVMe 3.0 x 4         Optical       None       • Intel Optane Memory integrated with SSD, PCle NVMe 3.0 x 4       • Windows 10 Pro 64         Optical       None       • Intel Optane Memory integrated with SSD, PCle NVMe 3.0 x 4       • Windows 10 Pro 64         Optical       None	Chinset	supports three independent displays; Max resolution: 3840x2160@60Hz (USB Type-C); 3840x2160@30Hz (HDMI)	Audio support	HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio /
Display       Size       Resolution       Type       Surface       Brightness       Aspect Ratio       Contrast Angle       Viewing Hait       TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad         Multi-touch       15.6° FHD (1920x1080)       TN       Anti-glare       220 nits       16:9       400:1       90°         None       None       Viewing 15.6° FHD (1920x1080)       TN       Anti-glare       220 nits       16:9       700:1       170°         Storage       Up to two drives (one M.2 SSD and one HDD) • HDD / SATA 6.0Gb/s       SSD and one HDD) • M.2 2280 SSD / PCie NVMe, PCie 3.0 x 2 or PCie 3.0 x 4 • M.2 2280 SSD / PCie NVMe, PCie 3.0 x 2 or PCie 3.0 x 4 • Intel Optane™ memory       None       Finagerprint reader Optional:       Touch style fingerprint reader on power button         VFC       None       None       None       None       None       None         Optane™ memory       Intel Optane™ Memory Hitel Optane memory, PCie NVMe, PCie 3.0 x 2       Optane™ memory       None       None       None         WLAN +       One of the following, configurable by model: Intel WiFieless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel WiFieless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel WiFieless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel WiFieless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel WiFieless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel Wi-Fi	Memory	16GB max / 2666MHz DDR4, one DDR4 SO-DIMM socket		
Multi-touch       None       Security       Power-on password, hard disk password, security keyhole         Storage       Up to two drives (one M.2 SSD and one HDD)       • HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™       System Mgt       None         Storage       Up to two drives (one M.2 SSD and one HDD)       • HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™       System Mgt       None         Mutti-touch       • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 2 or PCIe 3.0 x 4       • Intel Optane™ Memory HI0 with Solid State Storage, M.2 2280, PCIe NVMe, PCIe 3.0 x 4       • Intel Optane™ Memory HI0 with Solid State Storage, M.2 2280, PCIe NVMe, PCIe 3.0 x 2       Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)         Vintle Optane™ memory       • Intel Optane™ Memory Intel Optane™ Memory Intel Optane™ Memory integrated with SSD, PCIe NVMe, PCIe 3.0 x 2       • Optane™ Memory integrated with SSD, PCIe NVMe 3.0 x 4       • Windows 10 Pro 64         VLAN +       One of the following, configurable by model:       • United Wirreless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         WWAN       None       • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Inveroment       • Inveroment       • Inveroment       • Inveroment         WWAN       None       • Intel Wireless AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Inveroment       • I	Display	Size Resolution Type Surface Brightness Aspect Contrast Viewing		
Multi-touch       None         Storage       Up to two drives (one M.2 SSD and one HDD)       + HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™       Fingerprint reader Optional: Touch style fingerprint reader on power button         MULT-touch       M.2 2280 SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™       NPC         MULT-touch       M.2 2280 SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™       Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter         M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4       Max battery life varies significantly with settings, usage, & other factors MobileMark 2014: 12.2 hr         N.2 2280, PCIe NVMe 3.0 x 4       MobileMark 2014: 12.2 hr         Optional™ memory       Intel Optane™ Memory PCIe NVMe, PCIe 3.0 x 4         Optional       Intel Optane™ Memory PCIe NVMe, PCIe 3.0 x 4         None       *Battery life varies significantly with settings, usage, & other factors Max battery life varies significantly with settings, usage, & other factors MobileMark 2014: 12.2 hr         *Intel Optane™ Memory integrated with SSD, PCIe NVMe 3.0 x 4       Operating system         Optical       None         WLAN +       One of the following, configurable by model:         Ethernet       Gigabit Ethernet Connection, Realtek R8111GUS         WLAN +       One of the following, configurable by model:         Intel Wireless-AC 9560, Wi-Fi 2x2 802.1		15.6" FHD (1920x1080) TN Anti-glare 220 nits 16:9 400:1 90°	Security Security chip	Integrated model: discrete TPM 2.0, TCG Certified
HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™         M.2 2280 SSD / SATA 6.0Gb/s         M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 2 or PCIe 3.0 x 4         M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4         Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe, PCIe 3.0 x 4         Optane™ Memory Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe, PCIe 3.0 x 4         Optane™ Memory Intel Optane™ Memory H10 with SOL, PCIe NVMe, PCIe 3.0 x 2         (optional)         Intel Optane™ Memory Intel Optane™ Memory integrated with SSD, PCIe NVMe 3.0 x 4         Optical         None         Ethernet         Gigabit Ethernet Connection, Realtek R8111GUS         WLAN +         Bluetooth™         • Realtek® RTL8822CE, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11	Multi-touch	None		None
<ul> <li>M.2 2280 SSD / SATA 6.0Gb/s</li> <li>M.2 2280 SSD / PCle NVMe, PCle 3.0 x 2 or PCle 3.0 x 4</li> <li>M.2 2280 SSD / PCle NVMe, PCle 3.0 x 4</li> <li>M.2 2280 SSD / PCle NVMe, PCle 3.0 x 4</li> <li>Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCle NVMe 3.0 x 4</li> <li>Optane™ memory Intel Optane memory, PCle NVMe, PCle 3.0 x 2</li> <li>Intel Optane™ Memory integrated with SSD, PCle NVMe 3.0 x 4</li> <li>Intel Optane™ Memory integrated with SSD, PCle NVMe 3.0 x 4</li> <li>Intel Optane™ Memory integrated with SSD, PCle NVMe 3.0 x 4</li> <li>Intel Optane™ Memory integrated with SSD, PCle NVMe 3.0 x 4</li> <li>Intel Optane™ Memory integrated with SSD, PCle NVMe 3.0 x 4</li> <li>Optical None</li> <li>Ethernet Gigabit Ethernet Connection, Realtek R8111GUS</li> <li>WLAN +</li> <li>Bluetooth™</li> <li>Realtek* RTL8822CE, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card</li> <li>Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card</li> <li>Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0, M.2 card</li> <li>WWAN None</li> </ul>	Storage			
(optional) Optical       • Intel Optane™ Memóry integrated with SSD, PCIe NVMe 3.0 x 4 None       • Windows 10 Pro 64 • United warranty         Ethernet       Gigabit Ethernet Connection, Realtek R8111GUS       • Intel Optical       • Unidows 10 Pro 64 • Windows 10 Pro 64 • Unidows		<ul> <li>M.2 2280 SSD / SATA 6.0Gb/s</li> <li>M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 or PCIe 3.0 x 4</li> <li>M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4</li> <li>Intel Optane<sup>™</sup> Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4</li> </ul>	Max battery life	with 65W AC adapter MobileMark® 2014: 12.2 hr * Battery life varies significantly with settings, usage, & other factors
Ethernet       Gigabit Ethernet Connection, Realtek R8111GUS       Limited warranty       1-year mail-in repair service         WLAN +       One of the following, configurable by model:       • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card         WWAN       None       Environment       EPEAT™ Silver: ENERGY STAB® 7.1: BoHS-compliant	(optional)	<ul> <li>Intel Optane<sup>™</sup> Memory integrated with SSD, PCIe NVMe 3.0 x 4</li> </ul>	(optional)	Windows 10 Pro 64
WLAN +       One of the following, configurable by model:       • 1-year depot repair service         Bluetooth™       • Realtek® RTL8822CE, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • 1-year depot with 2-year system board repair service         • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card       • 1-year limited onsite service         • Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0, M.2 card       Mil-Spec test         WWAN       None	Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS		
WWAN None Environment EPEATM Silver: ENERGY STAR® 7.1: BoHS-compliant	WLAN + Bluetooth™	<ul> <li>Realtek<sup>®</sup> RTL8822CE, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card</li> <li>Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card</li> </ul>	(optional)	<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> </ul>
			1'	, , , , , , , , , , , , , , , , , , , ,
			Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant

Note: The specifications above may not be available in all regions.













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## ThinkPad E480 Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation I (i3-7130U is NO				or			Dimensions	Aluminum (WxDxH): 12.96" x 9.53" x 0.78"; 329mm x 242mm x 19.9mm PC/ABS (WxDxH): 12.96" x 9.53" x 0.83"; 329mm x 242mm x 21.9mm
	Processor # of	# of Threads	Base	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight Case color Case material	Starting at 3.87 lb / 1.75kg Black or silver <i>Display cover:</i> Aluminum or PC/ABS plastic:
	i3-7020U i3-7130U 2	4	2.3 GHz 2.7 GHz	-	3MB 3MB	DDR4-2133	Intel HD Graphics		Bottom: PC/ABS plastic
	i5-7200U		2.5 GHz	3.1 GHz	3MB		620	Smart card reade Media reader	rNone MicroSD card reader
		Generation Intel Core i3 / i5 / i7 Processor						Ports	One USB 2.0, two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort).
	Processor # of Number Cores	1		Max Turbo Frequency	Cache	Memory Types	Processor Graphics		HDMI 1.4b, Ethernet (RJ-45), headphone / microphone combo jack, microSD card reader, security keyhole
	i3-8130U 2 i5-8250U 4	4	2.2 GHz 1.6 GHz	3.4 GHz 3.4 GHz	4MB 6MB	DDR4-2400	Intel UHD Graphics 620	0.0000	* Depending on many factors, actual data transfer speed may be lower than theoretical speed
	i7-8550U		1.8 GHz	4.0 GHz	8MB			Camera Audio support	HD720p camera, fixed focus HD Audio, Synaptic® CX11852 codec /
Graphics	Intel HD Graphic Intel HD Graphic	s 620 or	Intel UHD	Graphics 6	20 in p	rocessor ar	ily or id		stereo speakers, 1.5W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack
	supports externa	MD Radeon RX 550 Graphics, 2GB GDDR5 memory; upports external digital monitor via HDMI or USB Type-C;							6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint®pointing device and buttonless Mylar surface multi-touch touchpad
	Max resolution:	al independent display; on: 1920x1080 (HDMI)@60Hz							Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified
Chipset Memory	32GB max / 240	Intel SoC (System on Chip) platform 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM socke * System clocks down for processors with lower memory controller							(may be disabled in some region) None r <i>Optional:</i> Touch style fingerprint reader on the palm rest
Display	Some: 14.0" (35							NFC	None
	Some: 14.0" (38	55mm) Fİ	bect ratio, 4 HD (1920x bect ratio, 4	1080), anti-	glare, L	_ED backlig	ht, IPS,	Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
Multi-touch	None 250 mis,	10.5 45			151 1410	)		Max battery life	MobileMark <sup>®</sup> 2014: 13.51 hr * Battery life varies significantly with settings, usage, & other factors
Storage	Up to 2 drives (one							AC adapter	45W or 65W USB Type-C AC adapter
	Some: HDD / S Active Pi		ib/s, 2.5" w Svstem™	ide, remova	able, up	ogradable,			n <i>Optional:</i> Windows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64
<b>O</b> 1 <b>TH</b>	Some: M.2 SSE	) / PCle I	√VMe					Limited warranty	One of the following, configurable by model: <ul> <li>1-year mail-in repair service</li> </ul>
Optical memor	y Optional: Intel C None	ptane m	emory, PCI	e NVMe, P	Cle 3.0	) x 2			<ul> <li>1-year depot repair service</li> </ul>
Ethernet	Gigabit Ethernet	gabit Ethernet Connection, Realtek R8111GUS							MIL-STD-810G military testing
WLAN + Bluetooth™		821CE, V 22BE, W d Wireles	Ni-Fi 1x1 8 /i-Fi 2x2 80 s-AC 3165	02.11ac + I 2.11ac + B , Wi-Fi 1x1	luetootł 802.11	h 4.1, M.2 c ac + Bluetc	card ard oth 4.1, M.2 card oth 4.1, M.2 card	Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant
WWAN SIM card	None None ations above may r								l enovo

Note: The specifications above may not be available in all regions.





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### ThinkPad E490 Platform Specifications

Processor	8th Generation In	itel® Core	e™ i3 / i5 / i	7 Processo	r				Dimensions	Aluminum (WxDxH): 12.96" x 9.53" x 0.78"; 329mm x 242mm x 19.9mm
	Processor # of Number Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types		Processor Graphics	Weight	<i>PC/ABS (ŴxDxH):</i> 12.96" x 9.53" x 0.83"; 329mm x 242mm x 21.9mm Starting at 3.87 lb / 1.75 kg
	i3-8145U 2 i5-8265U	4	2.1 GHz 1.6 GHz	3.9 GHz 3.9 GHz	4MB 6MB	DDR4-240	DO Intel U	UHD Graphics	Case color Case material	Black or silver <i>Display cover:</i> Aluminum or PC/ABS plastic; <i>Bottom:</i> PC/ABS plastic
	i5-8365U 4 i7-8565U	8	1.6 GHz 1.8 GHz	4.1 GHz 4.6 GHz	6MB 8MB			620	Smart card reade Media reader	MicroSD card reader
	* i5-8365U is for spe		,						Ports	One USB 2.0, two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort).
Graphics	Intel UHD Graphi Intel UHD Graphi AMD Radeon RX supports external supports dual ind Max resolution: 4	cs 620 ir 550X G digital n epender	n processor raphics, 20 nonitor via l nt display;	and B GDDR5 HDMI or US	SB Тур	e-C;	@24Hz	(HDMI)	Monitor cable Bundled Accy	HDMI 1.4b, Ethernet (RJ-45), headphone / microphone combo jack, microSD card reader, security keyhole * <i>Depending on many factors, actual data transfer speed may be lower than theoretical speed</i> None None
Chipset Memory	Intel SoC (System on Chip) platform 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM soc * Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation								Camera Audio support	HD720p camera, fixed focus HD Audio, Synaptic <sup>®</sup> CX11880 codec / stereo speakers, 1.5W x 2, Dolby <sup>®</sup> Advanced Audio / dual array microphone, headphone / microphone combo jack
Display	Size / Resolution	Тур		Brightness	Ratio		Angle		Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
	14.0" HD (1366x76	/			16:9	400:1	90°	Non-touch	Security	Power-on password, hard disk password, supervisor password, security keyhole
	14.0" FHD (1920x1 14.0" FHD (1920x1		Anti-glare		16:9 16:9	400:1 600:1	90° 170°	Non-touch Non-touch	Security chip	Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified
Multi-touch	None	080)  1P3	anu-giare	250 hits	10.9	600:1	170*	Non-touch	System Mat	(may be disabled in some region)
	Up to two drives (or	M 2 66	D and ana L	וחסו						or Optional: Touch style fingerprint reader on the palm rest
Storage	• HDD / SATA 6.0				ctive Pr	otection S	Svstem™	м	NFČ	None
	• M.2 2280 SSD	/ SATÁ 6	.0Gb/s	0,			,		Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
	<ul> <li>M.2 2242 SSD</li> <li>M.2 2280 SSD</li> <li>Installed M.2 2280</li> </ul>	/ PCle N SSD is F	VMe, PCIe Cle 3x4 but	3.0 x 4 run at PCIe 3			SD adapte	er limitation	Max battery life	with 65W AC adapter MobileMark <sup>®</sup> 2014: 13 hr * Battery life varies significantly with settings, usage, & other factors
Optane <sup>™</sup> memory Optical	ry <i>Optional:</i> Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2								AC adapter	45W or 65W USB-C AC adapter
	None	0		01110					Operating system	n <i>Optional:</i> Windows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64
Ethernet	Gigabit Ethernet		,		15				Limited warranty	
WLAN + Bluetooth™	<ul> <li>One of the follow</li> <li>Realtek<sup>®</sup> RTL88</li> <li>Intel Wireless-A</li> </ul>	322BE, V	/i-Fi 2x2 80	2.11ac + B	luetoo Blueto	th 4.2, M. oth 5.0, N	2 card 1.2 card	l		<ul> <li>1-year mail-in repair service</li> <li>1-year depot repair service</li> <li>1-year limited onsite service</li> </ul>
WWAN	None								Mil-Spec test	MIL-STD-810G military testing
SIM card	None								Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant

Note: The specifications above may not be available in all regions.









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### ThinkPad E490s Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel®	Core™	15 / i7 Pro	cessor					Dimensions	<i>WxDxH:</i> 12.96" x 9.13" x 0.70"; 329mm x 232mm x 17.9mm
	Processor # of # of Number Cores Three	eads Fr	requency F	requency	Cache	Memory Types		Processor Graphics	Weight Case color Case material	Starting at 3.68 lb / 1.67 kg Black or silver Aluminum
	i5-8265U i7-8565U 4 8	Q —		3.9 GHz 4.5 GHz	6MB 8MB	DDR4-24	00 Intel	UHD Graphics 620	Smart card reade Media reader	
Graphics	Intel UHD Graphics 6 Intel UHD Graphics 6 AMD Radeon RX 540 supports external digi supports three indepe Max resolution: 4096	520 in p 0X Grap jital more endent 5x2304	processor a phics, 2GE nitor via H display; @60Hz (U	and 3 GDDR5 DMI or US	SB Тур	e-C;	@24Hz	(HDMI)	Monitor cable Bundled Accy	One USB 2.0, two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet (RJ-45), headphone / microphone combo jack, microSD card reader, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed None None
Chipset Memory	Intel SoC (System on 32GB max / 2400MH * Installed memory is ac	lz DDŔ	4, dual-ch	annel cap t <i>run at 240</i>	able, tv <i>0MHz c</i>	vo DDR4 lue to Intel	SO-DI	MM sockets	Camera Audio support	HD720p camera, fixed focus HD Audio, Synaptic® CX11880 codec /
Display	Size / Resolution	Туре	Type Surface Brightness Aspect Contrast Viewing Multi-touch							stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio™ Premium / dual array microphone, headphone / microphone combo jack
	14.0" FHD (1920x1080)	<u> </u>	Anti-glare	220 nits	16:9	400:1	90°	Non-touch	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Multi-touch	14.0" FHD (1920x1080) None	)  IPS	Anti-glare	250 nits	16:9	600:1	170°	Non-touch	Security	Power-on password, hard disk password, supervisor password, security keyhole
Storage	One of the following, cor • M.2 2280 SSD / SA • M.2 2242 SSD / PC • M.2 2280 SSD / PC	ATĂ 6.00 Cle NVN Cle NVN	Gb/s Me, PCIe 3 Me, PCIe 3	3.0 x 2 3.0 x 4					Security chip System Mgt Fingerprint reader NFC	Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region) None Touch style fingerprint reader on the palm rest None
Optical	* Installed M.2 2280 SSI None	D is PCI	le 3x4 but ru	in at PCle	3x2 due	to M.2 SS	SD adapt	ter limitation	Battery	Integrated Li-ion 42Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
Ethernet	Gigabit Ethernet Con	nectior	n, Realtek	R8111GL	IS				Max battery life	<i>MobileMark</i> <sup>®</sup> 2014: 11.5 hr
WLAN + Bluetooth™	One of the following, cor • Realtek <sup>®</sup> RTL8822B	3Ĕ, Wi-	Fi 2x2 802	2.11ac + B					AC adapter	* Battery life varies significantly with settings, usage, & other factors 45W or 65W USB-C AC adapter
	Intel Wireless-AC 92	260, W	I-FI 2x2 80	)2.11ac +	Blueto	oth 5.0, N	1.2 card	1		Optional: Windows® 10 Home 64 or Windows 10 Pro 64
WWAN SIM card	None None								Limited warranty	One of the following, configurable by model: <ul> <li>1-year mail-in repair service</li> <li>1-year depot repair service</li> </ul>
									Mil-Spec test	MIL-STD-810G military testing
									Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant

Note: The specifications above may not be available in all regions.











### ThinkPad E495 Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryz	en <sup>™</sup> Mo	obile Pro	cessors wi	th Radeon	' Vega G	iraphics			Dimensions	Aluminum (WxDxH): 12.96" x 9.53" x 0.78"; 329mm x 242mm x 19.9mm	
	Processor Number		# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memo Control		Processor Graphics	Weight	<i>PC/ABS (WxDxH):</i> 12.96" x 9.53" x 0.83"; 329mm x 242mm x 21.9mm Starting at 3.87 lb / 1.75 kg	
	Ryzen 3 3200U	2	4	2.6 GHz	3.5 GHz	1MB L2 4MB L3	/		adeon Vega 3 Graphics	Case color Case material	Black Display cover: Aluminum or PC/ABS plastic; Bottom: PC/ABS plastic	
	Ryzen 5 3500U	4	8	2.1 GHz	3.7 GHz	2MB L2 / 4MB L3	DDR4-2	400 <sup>Ra</sup>	adeon Vega 8 Graphics	Smart card reade	rNone	
	Ryzen 7 3700U	-	0	2.3 GHz	4.0 GHz	2MB L2 / 4MB L3		Ra	ideon RX Vega 10 Graphics	Media reader Ports	MicroSD card reader One USB 2.0, two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort).	
Graphics	supports of supports of Max resol	externa dual in ution:	al digital depende 3840x2	ega 8, or R monitor via ent display; 160@60Hz	a HDMI or l (USB Type	JSB Typ	e-C;		z (HDMI)	Monitor cable Bundled Accv	HDMI 1.4b, Ethernet (RJ-45), headphone / microphone combo jack, microSD card reader, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical spe or cable None	
Chipset Memory	AMD SoC (System on Chip) platform 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * Installed memory is actually 2666MHz but run at 2400MHz due to AMD limitation									Camera Audio support	HD720p camera, fixed focus HD Audio, Synaptic® CX11880 codec / stereo speakers, 1.5W x 2, Dolby® Advanced Audio /	
Display	Size / Reso	olution	Ту	pe Surface	Brightnes	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch		dual array microphone, headphone / microphone combo jack	
	14.0" HD (		/	N Anti-gla		16:9	400:1	90°	Non-touch	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad	
Multi-touch	14.0" FHD None	(1920x	1080)  IF	S Anti-gla	e 250 nits	16:9	600:1	170°	Non-touch	Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified	
Storage	<ul> <li>HDD / S</li> </ul>	ATA 6.	.0Gb/s, 2	SD and one 2.5" wide, 7	mm high, A			System	ТМ	Fingerprint reader	rNone	
Optical	<ul> <li>M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 or PCIe 3.0 x 4</li> <li>M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4</li> <li>None</li> </ul>									Battery Max battery life	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter MobileMark® 2014: 11 hr	
Ethernet	Gigabit Et	thernet	t Conneo	ction, Realt	ek R8111G	US				] '	* Battery life varies significantly with settings, usage, & other factors	
WLAN +				nfigurable b						AC adapter	45W or 65W USB-Č AC adapter	
Bluetooth™	Houlder Hiebbeebe, Will Exe ober Hub Politicoti He, Mie bard									Operating system Optional: Windows® 10 Home 64 or Windows 10 Pro 64		
WWAN SIM card	Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card None None								u		<ul> <li>1-year mail-in repair service</li> <li>1-year depot repair service</li> <li>1-year limited onsite service</li> </ul>	
										Mil-Spec test	MIL-STD-810G military testing	
										Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant	

Note: The specifications above may not be available in all regions.









### ThinkPad E580 Platform Specifications

Product Specifications Reference (PSREF)

Processor	ntel <sup>®</sup> Cor	e™ i3 / i5 P	rocessor o	r		Dimensions						
	Processor # of Number Cores	# of Threads		Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight Case color	Starting at 4.7 lb / 2.1kg Black or silver			
	i3-7020U i3-7130U 2	2.3 GHz - 3MB 2.4 2.7 GHz - 3MB DDB4.2133 Intel HD Graphics			Bottom:							
	i5-7200U		2.5 GHz	3.1 GHz	3MB		620	Smart card reade Media reader	rNone MicroSD card	1 reader		
	8th Generation Ir	ntel Core	i3 / i5 / i7 F	Processor				Ports	One USB 2.0,	), two USB 3.1 Gen 1 (one Always On),		
									HDMI 1.4b, Et	Type-C Gen 2 (with the function of Power Delivery and DisplayPort) thernet (RJ-45), headphone / microphone combo jack,		
	i3-8130U 2 i5-8250U 4	4	2.2 GHz 1.6 GHz	3.4 GHz 3.4 GHz	4MB 6MB	DDR4-2400	Intel UHD Graphics 620		* Depending on	d reader, security keyhole n many factors, actual data transfer speed may be lower than theoretical spee		
	i7-8550U		1.8 GHz	4.0 GHz	8MB		020	Camera Audio support	HD Audio, Syr	iera, fixed focus /naptic® CX11852 codec /		
Graphics	* <i>i3-7130U is NOT available in US and EMEA</i> Intel HD Graphics 620 or Intel UHD Graphics 620 in processor only or								stereo speakers, 2W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack			
	Intel HD Graphic AMD Radeon RX	s 620 or ( 550 Gra	Intel UHD ( aphics, 2GE	Graphics 6 3 GDDR5 r	20 in pi nemory	rocessor an /;	d	Keyboard UltraNav™		esistant, multimedia Fn keys, numeric keypad, optional LED backligh ointing device and buttonless Mylar surface multi-touch touchpad		
	supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 1920x1080 (HDMI)@60Hz							Security Security chip	Firmware TPN	ssword, hard disk password, supervisor password, security keyhole M 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified blad in came region		
Chipset Memory	Intel SoC (Syster 32GB max / 2400 * System clocks do	OMHz DE	DŔ4. dual-c	hannel car	able, to bry conti	wo DDR4 S roller	O-DIMM sockets	System Mgt Fingerprint reade	(may be disabled in some region) t None reader <i>Optional:</i> Touch style fingerprint reader on the palm rest None			
Display	Some: 15.6" (39 220 nits.	96mm) H 16:9 asi	D (1366x76 bect ratio, 4	8), anti-gla	are, LE ast ratio	D backlight,		Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1 with 65W AC adapter			
	Some: 15.6" (39	96mm) F	HD (1920x1	1080), anti-	glare, I	LED backlig	ht, IPS,	Max battery life	MobileMark® 2014: 12.23 hr			
Multi-touch	250 nits, 16:9 aspect ratio, 600:1 contrast ratio							AC adapter	* Battery life varies significantly with settings, usage, & other factors 45W or 65W USB-C AC adapter			
Storage	Up to 2 drives (one									ndows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64		
	Some: HDD / SA Active Pr			de, remova	abie, up	gradable,		Limited warranty		owing, configurable by model:		
Ontana <sup>TM</sup> mamar	Some: M.2 SSD y Optional: Intel O									-in repair service ot repair service		
Optical	None	plane m	emory, PCI	e invivie, P	Cie 3.0	) X Z		Mil-Spec test	, , ,	DG military testing		
Ethernet	Gigabit Ethernet	Connect	ion, Realte	k R8111G	JS			Environment		d (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant		
WLAN + Bluetooth™	One of the following • Realtek® RTL88 • Realtek RTL88 • Intel Dual Banc • Intel Dual Banc	821CE, V 22BE, W d Wireles	Vi-Fi 1x1 80 /i-Fi 2x2 802 s-AC 3165,	02.11ac + E 2.11ac + B Wi-Fi 1x1	luetooti 802.11	n 4.1, M.2 c ac + Blueto	ard oth 4.1, M.2 card					
WWAN SIM card	None None ations above may n		9-61- 5 9							Lenc		

Note: The specifications above may not be available in all regions.

Lenovo August 2019





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### ThinkPad E590 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel	® Core	™ i3 / i5 / i	7 Processo	or				Dimensions	WxDxH: 14.53" x 9.94" x 0.78"; 369mm x 252.5mm x 19.9mm			
	Number Cores Th		Frequency	Max Turbo Frequency	Cache	Memory Types		Processor Graphics	Weight Case color Case material	Starting at 4.68 lb / 2.12 kg Black or silver <i>Display cover:</i> Aluminum;			
	i3-8145U 2 i5-8265U i7-8565U 4	8	2.1 GHz 1.6 GHz 1.8 GHz	3.9 GHz 3.9 GHz 4.6 GHz	4MB 6MB 8MB	DDR4-24(	00 Intel	UHD Graphics 620	Smart card reade Media reader	Bottom: PC/ABS plastic			
Graphics	Intel UHD Graphics 620 in processor only or Intel UHD Graphics 620 in processor and AMD Radeon RX 550X Graphics, 2GB GDDR5 memory; supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@24Hz (HDMI) None								One USB 2.0, two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet (RJ-45), headphone / microphone combo jack, microSD card reader, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed				
Chipset Memory	Intel SoC (System o 32GB max / 2400MI * Installed memory is a	Hz DDI	Ŕ4. dual-cł	nannel cap <i>it run at 240</i>	able, tv <i>0MHz d</i>	vo DDR4 lue to Intel	SO-DI limitatio	MM sockets	Camera Audio support	HD720p camera, fixed focus HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio /			
Display	Size / Resolution	Туре	Surface	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch		dual array microphone, headphone / microphone combo jack			
	15.6" HD (1366x768)	TN	Anti-glare		16:9	400:1	90°	Non-touch	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad			
	15.6" FHD (1920x1080	0)  IPS	Anti-glare	250 nits	16:9	600:1	170°	Non-touch	Security	Power-on password, hard disk password, supervisor password, security keyhole			
Multi-touch Storage	None <i>Up to two drives (one I</i> • HDD / SATA 6.0Gt • M.2 2280 SSD / S • M.2 2242 SSD / P	b/s, 2.5 ATA 6.0 Cle N\	i" wide, 7m 0Gb/s /Me, PCIe	m high, Ac 3.0 x 2	tive Pr	otection S	System⊺	м	Security chip System Mgt Fingerprint reade NFC	Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region) None er <i>Optional:</i> Touch style fingerprint reader on the palm rest None			
Optical	• M.2 2280 SSD / P * Installed M.2 2280 SS / Optional: Intel Opta None	SD is Po ine me	Cle 3x4 but i mory, PCle	e NVMe, P	Cle 3.0		SD adapt	ter limitation	Battery Max battery life	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter MobileMark® 2014: 11 hr * Battery life varies significantly with settings, usage, & other factors			
Ethernet WLAN +	Gigabit Ethernet Co One of the following, co		,		JS				AC adapter	45W or 65W USB-C AC adapter Optional: Windows® 10 Home 64 or Windows 10 Pro 64			
WLAN + Bluetooth™	Realtek <sup>®</sup> RTL8822     Intel Wireless-AC S	2BĚ, W	i-Fi 2x2 80	2.11ac + E				1	Limited warranty	One of the following, configurable by model: • 1-year mail-in repair service			
WWAN SIM card	None None								]	<ul> <li>1-year depot repair service</li> <li>1-year limited onsite service</li> </ul>			
									Mil-Spec test	MIL-STD-810G military testing			
	ations above may not h								Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant			

Note: The specifications above may not be available in all regions.









### ThinkPad E595 Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryzen <sup>™</sup> Mo	obile Pro	cessors wit	h Radeon"	Vega G	raphics			Dimensions	<i>WxDxH:</i> 14.53" x 9.92" x 0.78"; 369mm x 252mm x 19.9mm Starting at 4.7 lb / 2.1 kg Black			
	Processor # of Number Cores	# of Threads		Max Turbo Frequency	Cache	Memory		Processor Graphics	Weight Case color				
	Ryzen 3 3200U 2	4	2.6 GHz	25.047	1MB L2 4MB L3	/	-	Radeon Vega 3 Graphics	Case material	Display cover:       Aluminum;         Bottom:       PC/ABS plastic			
	Ryzen 5 3500U 4	8	2.1 GHz		2MB L2 / 4MB L3	DDR4-24	00 R	adeon Vega 8 Graphics		MicroSD card reader			
	Ryzen 7 4 3700U	0	2.3 GHz		2MB L2 / 4MB L3			adeon RX Vega 10 Graphics	Ports	One USB 2.0, two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet (RJ-45), headphone / microphone combo jack,			
Graphics	AMD Radeon Ve supports externa supports dual in Max resolution:	al digital depende	monitor via ent display;	HDMI or L	ISB Typ	e-C;		z (HDMI)	Monitor cable Bundled Accy	microSD card reader, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed None None			
Chipset Memory	AMD SoC (Syste 32GB max / 240 * Installed memory	0MHz D	DR4, dual-	channel ca	00MHz a	ue to AMD	limitat	tion		HD720p camera, fixed focus HD Audio, Synaptic <sup>®</sup> CX11880 codec / stereo speakers, 2W x 2, Dolby <sup>®</sup> Advanced Audio / dual array microphone, headphone / microphone combo jack			
Display	Size / Resolution		•	Brightness	'Ratio		Angle	Wiuiti-touch		6-row, spill-resistant, multimedia Fn keys TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad			
	15.6" HD (1366x70		N Anti-glar		16:9 16:9	400:1 600:1	90° 170°	Non-touch	Security	Power-on password, hard disk password, supervisor password, security keyhole			
Multi-touch	15.6" FHD (1920x None	1080)  IF	'S   Anti-gian	e 250 nits	10:9	600.1	170*	Non-touch	Security chip	Security chip Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified Fingerprint reader None			
Storage	Up to two drives (c									None			
-	<ul> <li>HDD / SATA 6.</li> <li>M.2 2242 SSD</li> </ul>	.0Gb/s, 2	2.5" wide, 7	nm high, A	ctive Pr	otection S	ystem	™	Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)			
Optical	• M.2 2280 SSD • M.2 2280 SSD None					.0 . 4				with 65W AC adapter MobileMark® 2014: 10.3 hr * Battery life varies significantly with settings, usage, & other factors			
Ethernet	Gigabit Ethernet	t Conneo	tion, Realte	k R8111G	US					45W or 65W USB-C AC adapter			
WLAN +	One of the follow								Operating system	Optional: Windows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64			
Bluetooth™	<ul> <li>Realtek<sup>®</sup> RTL8</li> <li>Intel Wireless-/</li> </ul>								,	One of the following, configurable by model: • 1-year mail-in repair service			
WWAN SIM card	None None									<ul> <li>1-year depot repair service</li> <li>1-year limited onsite service</li> </ul>			
									Mil-Spec test	MIL-STD-810G military testing			
									Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant			

Note: The specifications above may not be available in all regions.



### ThinkPad L13 Platform Specifications

Processor	10th (	Generation In	itel® Co	re™ i3 / i5 /	i7 Processo	r				Smart card reader Optional: Smart card reader			
	Proces Numb i3-101 i5-102 i7-105	er Cores T 10U 2 10U 4	# of hreads 4 8	FrequencyI2.1 GHzI1.6 GHz	4.1 GHz 4 4.2 GHz 6	MB	Memory Types DR4-2666 I	Proce Grap Intel UHD	hics	Ports	MicroSD card reader Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole		
Graphics	suppo suppo	JHD Graphics orts external contribution of the sector of t	digital n epende	nonitor via H nt displays;				0Hz (HD	MI)	* Depending on many factors, actual data transfer speed may be lower than theoretical s Monitor cable (optional) Lenovo USB-C to VGA Adapter Lenovo USB-C to HDMI Adapter Lenovo USB-C to DisplayPort Adapter Lenovo HDMI to VGA Monitor Adapter			
Chipset Memory	Intel S 4GB,	SoC (System 8GB, or 16GI	on Chi B / 266	p) platform 6MHz DDR4	4 / soldered	to syste	emboard, r	no socke	ets	Accessories	Lenovo USB-C to USB-A Adapter     Lenovo USB-C to USB-C Cable 2m		
Display	Size	Resolution	Ту	be Surface	Brightness	Aspect Ratio	t Contras	t Ratio	Viewing Angle		Lenovo USB-C to Ethernet Adapter     ThinkPad Ethernet Extension Adapter Gen 2		
	13.3"         HD (1366x768)         TN         Anti-glare         250 nits         16:9         500:1         90°           13.3"         FHD (1920x1080)         IPS         Anti-glare         250 nits (non-touch) 300 nits (multi-touch)         16:9         500:1         90°           13.3"         FHD (1920x1080)         IPS         Anti-glare         250 nits (non-touch) 300 nits (multi-touch)         16:9         800:1 (non-touch) 700:1 (multi-touch)         170°							on-touch)		Audio support	<ul> <li>One of the following, configurable by model:</li> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Synaptic<sup>®</sup> CX11880 codec / stereo speakers, 2W x 2, Dolby<sup>®</sup> Audio<sup>™</sup> Premium /</li> </ul>		
Multi-touch (opt)			-			ıly)					dual array microphone, headphone / microphone combo jack 6-row, spill-resistant, multimedia Fn keys, optional LED backlight		
	<ul><li>M.2</li><li>M.2</li><li>Inte</li></ul>	f the following, 2242 SSD / 2280 SSD / I Optane™ M 2280, PCIe I	PCIe N PCIe N emory	VMe, PCIe VMe, PCIe H10 with Sc	3.0 x 2 3.0 x 4	orage,				UltraNav™ Security	TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)		
Optical	None	2200, FOIE I		5.0 X 4						System Mgt (opt)	tom Mat (ant) Intol vBro Toohnology		
Ethernet	RJ45	e Intel Ethern connector via	a optior	al ThinkPac					or		r Optional: Touch style fingerprint reader on the palm rest None		
WLAN + Bluetooth™	Lenovo USB-C to Ethernet Adapter One of the following, configurable by model: • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card • Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0, M.2 card (NOT available until May 2020) None									Max battery life AC adapter	Integrated Li-ion 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter <i>MobileMark® 2014:</i> 14.1 hr * <i>Battery life varies significantly with settings, usage, &amp; other factors</i> • 45W USB-C AC adapter • 65W USB-C AC adapter • 65W slim USB-C AC adapter		
SIM card Dimensions Weight		(H: 12.26" ; ng at 3.06 lb ;			.5mm x 219	mm x 1	17.6mm			(optional)	Windows® 10 Home 64     Windows 10 Pro 64     Windows 10 Pro in S mode		
Case color Case material	Black	or Silver av cover: Alu		0						(optional)	<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>1-year + 2-year depot repair service</li> <li>1-year limited onsite service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>		
										Mil-Spec test	MIL-STD-810G military testing		
										Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant		

Note: The specifications above may not be available in all regions.



### ThinkPad L13 Yoga Platform Specifications

Processor	10th Generation Intel <sup>®</sup> Core™ i3 / i5 / i7 Processor	Smart card reader Optional: Smart card reader
	Processor Number         # of Cores         # of Threads         Base Frequency         Max Turbo Frequency         Cache         Memory Types         Processor Graphics           i3-10110U         2         4         2.1 GHz         4.1 GHz         4MB	Media reader Ports MicroSD card reader Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),
	i5-10210U         4         8         1.6 GHz         4.2 GHz         6MB         DDR4-2666         Intel UHD Graph           i7-10510U         4         8         1.8 GHz         4.9 GHz         8MB         DDR4-2666         Intel UHD Graph	security keyhole
Graphics	Intel UHD Graphics in processor; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)	* Depending on many factors, actual data transfer speed may be lower than theoretical speed (optional) Lenovo USB-C to VGA Adapter Lenovo USB-C to DisplayPort Adapter Lenovo USB-C to DisplayPort Adapter Lenovo HDMI to VGA Monitor Adapter
Chipset Memory	Intel SoC (System on Chip) platform 4GB, 8GB, or 16GB / 2666MHz DDR4 / soldered to systemboard, no sockets	Bundled       • Lenovo USB-C to USB-A Adapter         Accessories       • Lenovo USB-C to USB-C Cable 2m
Display	Size Resolution Type Surface Brightness Aspect Contrast Color Viewi Ratio Gamut Ang	ThinkPad Ethemet Extension Adapter Gen 2
	13.3"         FHD (1920x1080)         IPS         Anti- reflection         300 nits         16:9         800:1         72%         170	Camera • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus
Multi-touch Hinge Convert-mode Pen <i>(optional)</i>	Capacitive-type multi-touch, supports 10-finger gesture, anti-reflection (AR), could reduce the brightness by up to 10% Yoga hinge, 360 degree Laptop, tent, stand and tablet ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable	<ul> <li>World facing camera, 5MP resolution, auto focus (selectable for fingerprint model only)</li> <li>HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack</li> </ul>
Storage	One of the following, configurable by model:	Keyboard 6-row, spill-resistant, multimedia Fn keys, optional LED backlight UltraNav™ TrackPoint®pointing device and buttonless Mylar surface touchpad, multi-touch
	<ul> <li>M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2</li> <li>M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4</li> <li>Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4</li> </ul>	Security Security chip Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)
Optical	None	System Mgt <i>(opt)</i> Intel vPro Technology Fingerprint reader <i>Optional:</i> Touch style fingerprint reader on the palm rest
Ethernet	Native Intel Ethernet Connection I219-V ( <i>Non-vPro</i> ) or I219-LM ( <i>vPro</i> ), RJ45 connector via optional ThinkPad Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter	NFC         None           Battery         Integrated Li-ion 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
WLAN + Bluetooth™	<ul> <li>One of the following, configurable by model:</li> <li>Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card</li> <li>Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0, M.2 card (NOT available until May 2020)</li> </ul>	<ul> <li>with 65W AC adapter</li> <li>Max battery life</li> <li>AC adapter</li> <li>AC adapter</li> <li>Wush adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> <li>AC adapter</li> </ul>
WWAN SIM card	None None	65W slim tip AC adapter     Light sensor     None
Dimensions Weight	<i>WxDxH:</i> 12.26" x 8.62" x 0.69"; 311.5mm x 219mm x 17.6mm Starting at 3.17lb / 1.43kg	G-sensor Yes Gyroscope None
Case color Case material	Black or Silver Display cover: Magnesium / Aluminum Bottom: GFRP	Operating system • Windows® 10 Home 64 (optional) • Windows 10 Pro 64 • Windows 10 Pro in S mode
		Limited warranty • 1-year depot repair service (optional) • 1-year depot with 2-year system board repair service • 1-year + 2-year depot repair service • 1-year limited onsite service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
		Mil-Spec test MIL-STD-810G military testing
	ations above may not be available in all variance	Environment EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant

Note: The specifications above may not be available in all regions.













### ThinkPad L380 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Cele	ron® P	rocesso	r, 7th Gene	ration Intel	Core™	i3 / i5 Proc	essor or	Dimensions	<i>WxDxH:</i> 12.67" x 8.83" x 0.74"; 321.8mm x 224.2mm x 18.8mm				
	Processor Number	# of	# of	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight Case color	Starting at 3.22 lb / 1.46 kg Black or Silver				
	Cel 3965U	00163	2	2.2 GHz	-	2MB	Types	Intel HD Graphics 610	Case material	Display cover: Aluminum Bottom: GFRP				
	i3-7020U	2		2.3 GHz	-	3MB	DDR4-2133		Smart card reade					
	i3-7130U	_	4	2.7 GHz	-	3MB		Intel HD Graphics 620	Media reader Ports	MicroSD card reader Two USB 3.1 Gen 1 (one Always On),				
	i5-7200U			2.5 GHz	3.1 GHz	3MB				two USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),				
				i5 / i7 Proc			Manager	Dessesse		HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, microSD card reader, security keyhole				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Manitar appla	* Depending on many factors, actual data transfer speed may be lower than theoretical speed				
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB			Monitor cable (optional)	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter				
	i5-8250U	4		1.6 GHz	3.4 GHz	6MB 6MB	DDR4-2400	Intel UHD Graphics 620		USB-C to DP: Lenovo USB-C to DisplayPort Adapter				
	i5-8350U i7-8550U	4	8	1.7 GHz 1.8 GHz	3.6 GHz 4.0 GHz	8MB		620	Bundled Accy	Optional: ThinkPad Ethernet Extension Cable HD720p camera, fixed focus				
Graphics		ranhic	s 610 6			ics 62(	) in process	or:	Audio support	HD Audio, Realtek ALC3287 codec /				
Chapmoo	supports e	externa	l digital r	monitor via	HDMI or U			01,		stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio™ / dual array microphone, headphone / microphone combo jack				
				ent displays		C)· 40	96x2160@3	30Hz (HDMI)	Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight				
Chipset				ip) platform		0), 10	00.2.0000		UltraNav™	TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch				
Memory	32GB max	c/2400	OMHz DE		hannel cap			O-DIMM sockets	Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified (may be disabled in some region)				
Display				ID (1366x7 pect ratio, 5			D backlight,		vPro <i>(optional)</i> Fingerprint reade	Intel vPro Technology r Optional: Touch style fingerprint reader on the keyboard bezel,				
	Some: 13	3.3" (3	38mm) F	HD (1920x	1080), anti	-glare,	LED backlig	ıht, IPS,		anti-spoofing technology				
Multi-touch (opt)	25 on-cell tou	50 nits,	, 16:9 as	pect ratio, 7	00:1 contra	ast rati	o, 170° view	ring angle	NFC (optional)	Near Field Communication				
Storage				rable by moo					Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter				
Otorage	<ul> <li>M.2 SSE</li> </ul>	) / SAT	A 6.0Gb	/s (e.g. xxx	GB SSD M	.2)			Max battery life	MobileMark <sup>®</sup> 2014: 16.1 hr * Battery life varies significantly with settings, usage, & other factors				
Optical	M.2 SSE     None	D / PCI	e NVMe,	, PCle 3.0 >	4, 32Gb/s	(e.g. x	xxGB SSD	M.2 PCIe NVMe)	AC adapter	45W or 65W USB-C AC adapter				
Ethernet	Native Inte	el Ethe	rnet Con	nection I21	9-V ( <i>Non-v</i>	<i>Pro</i> ) o	<sup>·</sup> I219-LM (v	Pro)		o Optional: Windows® 10 Home 64 or Windows 10 Pro 64				
		-		ernet Exter			•		Limited warranty	<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> </ul>				
WLAN + Bluetooth™	<ul> <li>Intel Dua</li> </ul>	I Band	Wireles	ac + Blueto s-AC 8265, <i>BT4.2 but is</i>	Wi-Fi 2x2	802.11		oth 4.1, M.2 card	(optional)	<ul> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> </ul>				
WWAN	None								]	<ul> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>				
SIM card	None								Mil-Spec test	MIL-STD-810G military testing				
									Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant				
Noto: The specific	a Maria a la acces			المعنا واوادا										

Note: The specifications above may not be available in all regions.

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# ThinkPad L380 Yoga Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation	ation I	ntel <sup>®</sup> Cor	e™ i3 / i5 P	rocessor				Dimensions	WxDxH: 12.67" x 8.82" x 0.74"; 322mm x 224.2mm x 18.8mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight Case color Case material	Starting at 3.44 lb / 1.56 kg Black or Silver <i>Display cover:</i> Aluminum
	i3-7020U			2.3 GHz	-	3MB		Intel HD Graphics	Case material	Bottom: GFRP
	i3-7130U i5-7200U	2	4	2.7 GHz 2.5 GHz	- 3.1 GHz	3MB 3MB	DDR4-2133	620	Smart card reade	PrNone
		ation li	ntel Core	i3 / i5 / i7 l		DIVID		<u> </u>	Media reader Ports	MicroSD card reader Two USB 3.1 Gen 1 (one Always On),
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		two USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack,
	i3-8130U i5-8250U i5-8350U i7-8550U	2	4	2.2 GHz 1.6 GHz 1.7 GHz 1.8 GHz	3.4 GHz 3.4 GHz 3.6 GHz 4.0 GHz	4MB 6MB 6MB 8MB		Intel UHD Graphics 620		microSD card reader, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter
<u> </u>						-			Bundled Accy	Optional: ThinkPad Ethernet Extension Cable
Graphics	supports e supports ti Max resolu	externa hree in ution:	al digital r 1depende 4096x23	nonitor via ent displays 04@60Hz (	USB Type-	SB Тур	e-C;	30Hz (HDMI)	Camera Audio support	720p: HD720p resolution, low light sensitive, fixed focus <i>IR &amp; 720p</i> : IR camera and HD720p camera, fixed focus <i>World facing</i> : Rear camera, 5MP resolution, auto focus HD Audio, Realtek ALC3287 codec, Dolby® Advance / stereo speakers, 2W x 2 / dual array microphone, headphone / microphone combo jack
Chipset Memory	Up to 32G two DDR4	B max SO-D	( / 2400M IMM soc	kets	dual-chann		able, ory controlle	r	Keyboard UltraNav™	6-row, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch
Display Multi-touch <i>(opt)</i> Hinge Convert-mode	13.3" (338 16:9 aspective Capacitive Yoga hinge Laptop, ter	omm) F ct ratio e-type i e, 360 nt, stai	HD (192 , 800:1 c multi-touc degree nd, yoga	0x1080), L ontrast ratio ch, AR (ant and tablet	ED backligh o, 170° viev i-reflection)	nt, IPS, ving an , suppo	300 nits, igle, AR (an orts 10-finge	ti-reflection) er gesture	Security Security chip System Mgt <i>(opt)</i> Fingerprint reade NFC <i>(optional)</i>	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified (may be disabled in some region) Intel vPro Technology r <i>Optional:</i> Touch style fingerprint reader on the keyboard bezel, anti-spoofing technology Near Field Communication
Pen ( <i>optional</i> ) Storage	One of the i	followin	g, configui	rable by moo		1 2/	on-board ga	rage	Battery Max battery life	Integrated Li-Ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter MobileMark® 2014: 12.85 hrs
Optical							xxGB SSD	M.2 PCIe NVMe)	AC adapter	* Battery life varies significantly with settings, usage, & other factors 45W or 65W USB-C AC adapter
Ethernet	Native Inte	el Ethe	rnet Con	nection I21	9-V ( <i>Non-v</i> nsion Cable	<i>Pro</i> ) or	<sup>.</sup> I219-LM ( <i>v</i>	(Pro))	Preload	Optional: Windows® 10 Home 64 or Windows 10 Pro 64
WLAN + Bluetooth™	<ul> <li>11ac, Wi</li> <li>Intel Dua</li> </ul>	i-Fi 1x <sup>.</sup> al Banc	1 802.11a d Wireless	ac + Blueto s-AC 8265,	oth 4.1, M.2	2 card 302.11		oth 4.1, M.2 card	Limited warranty	<ul> <li>One of the following, configurable by model:</li> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board service</li> <li>1-year + 2-year depot repair service</li> </ul>
WWAN SIM card	None None									<ul> <li>1-year + 2-year limited onsite service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>
									Mil-Spec test	MIL-STD-810G military testing
									Environment	EPEAT™ Gold; ENERGY STAR® 6.1; RoHS-compliant Lenovo

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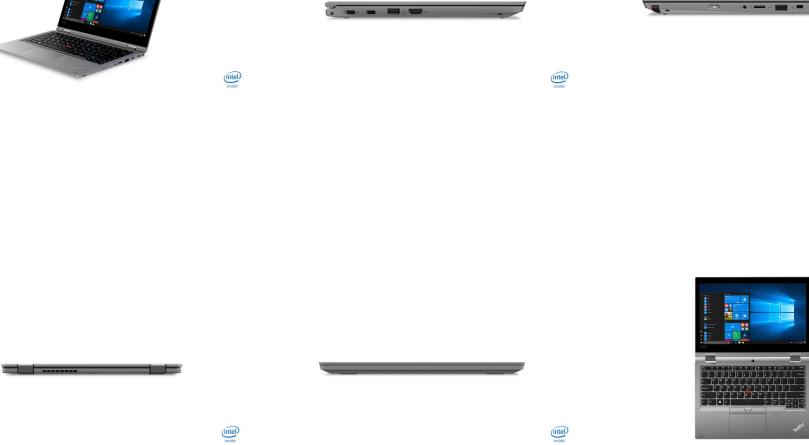
### ThinkPad L390 Platform Specifications

Processor	Intel® C	Celeron® I	rocesso	r or 8th Ger	eration Int	el Core	i3 / i5 / i7™	Processor	Smart card read		
	Process		_ # of	Base	Max Turbo	Cache	Memory	Processor	Media reader Ports	MicroSD card reader Two USB 3.1 Gen 1 (one Always On).	
	Numbe				Frequency		Types	Graphics Intel UHD Grap		two USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),	
	Cel 430		2	2.2 GHz	-	2MB	DDR4-2133	610		HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, microSD card reader, security keyhole	
	i3-8145 i5-8265		4 8	2.1 GHz 1.6 GHz	3.9 GHz 3.9 GHz	4MB 6MB			nics Monitor cable	* Depending on many factors, actual data transfer speed may be lower than theoretical speed • Lenovo USB-C to VGA Adapter	
	i5-8365	-	8	1.6 GHz	4.1 GHz	6MB	DDR4-2400	620	(optional)	Lenovo USB-C to VGA plus Power Adapter	
	i7-8565	U 4	8	1.8 GHz	4.6 GHz	8MB				Lenovo USB-C to HDMİ Adapter     Lenovo USB-C to HDMI plus Power Adapter	
Graphics	suppor	ts externation ts three in	al digital r	or 620 in pro nonitor via ent displays 04@60Hz (	HDMI or U	• •		30Hz (HDMI)	Bundled Accessories (optional)	<ul> <li>Lenovo USB-C to DisplayPort Adapter</li> <li>Lenovo USB-C to Ethernet Adapter</li> <li>Lenovo USB-C to USB-A Adapter</li> <li>Lenovo USB-C to USB-C Cable 2m</li> </ul>	
Chipset Memory	32GB 1	nax / 240	OMHz D	p) platform DR4, dual-c / 2666MHz b	hannel cap ut run at 240	able, tv 00MHz d	wo DDR4 S lue to Intel lin	O-DIMM sock	ets Camera Audio support	ThinkPad Ethernet Extension Cable     HD720p camera, fixed focus     HD Audio, Realtek ALC3287 codec /	
Display	Size F	Resolution	Ту	pe Surface	Brightness	Aspec Ratio		st Ratio View	le	stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio™ Premium / dual array microphone, headphone / microphone combo jack	
	13.3" H	ID (1366x7	768) T	N Anti-glar	e 250 nits	16:9			Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch	
	13.3" F	HD (1920)	x1080) IF	'S Anti-glar	e 250 nits	16:9	700:1 (no 800:1 (mu		° Security	Power-on password, hard disk password, supervisor password, security keyhole	
Multi-touch (opt)	On-cel	l touch, si	upports 1	0-finger ges	sture (FHD	only)	_, ``	· · ·	Security chip	Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)	
Storage	• M.2 2	2280 SSE 2242 SSE	) / SATA 6 ) / PCle N	IVMe, PCIe	3.0 x 2				System Mgt (opt Fingerprint reade NFC (optional)	t) Intel vPro Technology er <i>Optional:</i> Touch style fingerprint reader on the palm rest Near Field Communication	
Optical	<ul> <li>Intel</li> </ul>		Memory	IVMe, PCIe H10 with S 3.0 x 4		Storage	),		Battery Max battery life	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter MobileMark® 2014: 14.61 hr * Battery life varies significantly with settings, usage, & other factors	
Ethernet	Native via opt	ional Thin	kPad Eth	nection I21 ernet Exter et Adapter	9-V ( <i>Non-v</i> ision Cable	<i>Pro</i> ) or e or	1219-LM (v	(Pro)	AC adapter	<ul> <li>45W USB-C AC adapter</li> <li>65W USB-C AC adapter</li> <li>65W slim tip AC adapter</li> </ul>	
WLAN + Bluetooth™							oth 5.0, M.2 oth 5.0, M.2			m <i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64	
WWAN SIM card	None None								Limited warranty (optional)	<ul> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> </ul>	
Dimensions Weight Case color Case material	Starting Black of	H: 12.6 g at 3.22 or Silver / cover: 1	lb / 1.46 l	kg	1.8mm x 2	24.2mr	n x 18.8mm	1		<ul> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>	
	Bottom	n: (	GFRP	-					Mil-Spec test		
									Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant	

Note: The specifications above may not be available in all regions.

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### ThinkPad L390 Yoga Platform Specifications

Processor	8th Generation Intel <sup>®</sup> Core™ i3 / i5 / i7 Processor	Smart card reader	None				
	Processor         # of Cores         # of Threads         # of Frequency         Base Frequency         Max Turbo Frequency         Cache         Memory Types         Processo Graphics           i3-8145U         2         4         2.1 GHz         3.9 GHz         4MB           i5-8265U         4         8         1.6 GHz         3.9 GHz         6MB           i5-8365U         4         8         1.6 GHz         4.1 GHz         6MB           i7-8565U         4         8         1.8 GHz         4.6 GHz         8MB	Media reader Ports	MicroSD card reader Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, microSD card reader, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed • Lenovo USB-C to VGA Adapter				
Graphics	Intel UHD Graphics 620 in processor; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)	(optional) Bundled	<ul> <li>Lenovo USB-C to VGA plus Power Adapter</li> <li>Lenovo USB-C to HDMI Adapter</li> <li>Lenovo USB-C to HDMI plus Power Adapter</li> <li>Lenovo USB-C to DisplayPort Adapter</li> <li>Lenovo USB-C to Ethernet Adapter</li> </ul>				
Chipset Memory	Intel SoC (System on Chip) platform 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM soc * Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation	ets (optional)	<ul> <li>Lenovo USB-C to USB-A Adapter</li> <li>Lenovo USB-C to USB-C Cable 2m</li> <li>ThinkPad Ethernet Extension Cable</li> </ul>				
Display			One of the following, configurable by model: • HD720p camera, fixed focus				
Multi-touch Hinge	Anti	0° Audio support	<ul> <li>IR camera and HD720p camera, fixed focus (black model only)</li> <li>World facing camera, 5MP resolution, auto focus (mutually exclusive with fingerprint reader)</li> <li>HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby<sup>®</sup> Audio<sup>™</sup> Premium / dual array microphone, headphone / microphone combo jack</li> </ul>				
Multi-mode Pen <i>(optional)</i>	Laptop, tent, stand and tablet ThinkPad Pen Pro, active pen for multi-touch display, on-board garage	Keyboard 6	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint®pointing device and buttonless Mylar surface touchpad, multi-touch				
Storage	<ul> <li>One of the following, configurable by model:</li> <li>M.2 2280 SSD / SATA 6.0Gb/s</li> <li>M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2</li> <li>M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4</li> <li>Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4</li> </ul>	Security F Security chip f System Mat (opt)	Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region) Intel vPro Technology <i>Optional:</i> Touch style fingerprint reader on the palm rest (mutually exclusive with World facing camera)				
Optical Ethernet	None Native Intel Ethernet Connection I219-V ( <i>Non-vPro</i> ) or I219-LM ( <i>vPro</i> ) via optional ThinkPad Ethernet Extension Cable or	Battery	Near Field Communication Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)				
WLAN + Bluetooth™ WWAN	Lenovo USB-C to Ethernet Adapter • Intel Wireless-AC 9462, Wi-Fi 1x1 802.11ac + Bluetooth 5.0, M.2 card • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card None	AC adapter	with 65W AC adapter MobileMark® 2014: 12.17 hr * Battery life varies significantly with settings, usage, & other factors • 45W USB-C AC adapter • 65W USB-C AC adapter				
SIM card	None		65W slim tip AC adapter				
Dimensions Weight Case color Case material	WxDxH: 12.67" x 8.83" x 0.74"; 321.8mm x 224.2mm x 18.8mm Starting at 3.44 lbs / 1.56 kg Black or Silver <i>Display cover:</i> Magnesium / Aluminum <i>Bottom:</i> GFRP	Limited warranty (optional)	Optional: Windows® 10 Home 64 or Windows 10 Pro 64         • 1-year depot repair service         • 1-year depot with 2-year system board repair service         • 1-year limited onsite service         • 1-year + 2-year depot repair service         • 1-year + 2-year limited onsite service         • 3-year/1-yr battery depot repair service         • 3-year/1-yr battery limited onsite service				
			MIL-STD-810G military testing				
	pations above may not be available in all regions	Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant				

Note: The specifications above may not be available in all regions.

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### ThinkPad L480 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Cele	eron® F	rocesso	r, 7th Gene	ration Intel	Core™	i3 / i5 Proc	essor or	WWAN (optional)	One of the following, configurable by model:					
	Processor Number	# of	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		<ul> <li>Wireless WAN upgradable</li> <li>Integrated Mobile Broadband 4G LTE,</li> </ul>					
	Cel 3965U	00163	2	2.2 GHz	-	2MB	турез	Intel HD Graphics		Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only) • Integrated Mobile Broadband 4G LTE-A,					
	i3-7020U			2.3 GHz	-	3MB		610		Intel XMM™ 7360 (Fibocom L850-GL), M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable					
	i3-7130U	2	4	2.7 GHz	-	3MB	DDR4-2133	Intel HD Graphics	SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card					
	i5-7200U i5-7300U			2.5 GHz 2.6 GHz	3.1 GHz 3.5 GHz	3MB 3MB		620	Dimensions Weight	<i>WxDxH:</i> 13.19" x 9.25" x 0.89"; 335mm x 235mm x 22.5mm Starting at 3.71 lb / 1.68 kg					
	8th Gener	ation I	ntel Core	i3 / i5 / i7 I	Processor				Case color Case material	Black PC/ABS plastic					
	Processor Number	# of	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		r <i>Optional:</i> Smart card reader					
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB	Types	Graphics	Media reader Ports	MicroSD card reader Two USB 3.1 Gen 1 (one Always On).					
	i5-8250U i5-8350U	4	8	1.6 GHz 1.7 GHz	3.4 GHz 3.6 GHz	6MB 6MB	DDR4-2400	Intel UHD Graphics 620	FOILS	two USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort).					
	i7-8550U	4	0	1.8 GHz	4.0 GHz	8MB		020		HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader,					
				n US and EN					-	microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed					
Graphics	Intel HD G	iraphic	s 620 or	Intel UHD	Graphics 6	11CS 62 20 in p	0 in process rocessor an	or only or d	Monitor cable (optional)	HDMI to VGA: Lénovo HDMI to VGA Monitor Adaptér USB-C to VGA: Lenovo USB-C to VGA Adapter					
	AMD Rade (discrete n			DDR5 me available i					<u>. , , , , , , , , , , , , , , , , , , ,</u>	)One of the following, configurable by model:					
	supports e supports t	externa	ıl digital n	nonitor via	HDMI or U	SB Тур	e-C;			<ul> <li>HD720p camera, fixed focus</li> <li>IR camera and HD720p camera, fixed focus</li> </ul>					
	Max resolu	ution:	4096x23	04@60Hź	USB Type-	C); 40	96x2160@3	0Hz (HDMI)	Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ /					
Chipset Memory				p) platform		able, t	wo DDB4 S	O-DIMM sockets		dual array microphone, headphone / microphone combo jack					
	* System cl	ocks do	wn for pro	cessors with	lower memo	ory cont	roller		Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad					
Display	22	20 nits,	16:9 asp	ect ratio, 5	00:1 contra	st ratio			Security	Power-on password, hard disk password, supervisor password, security keyhole					
	Some: 14 25	.0" (35 60 nits.	55mm) FH 16:9 asp	HD (1920x <sup>-</sup> ect ratio. 8	1080), anti- 00:1 contra	glare, l st ratio	ED backlig , 170° viewi	nt, IPS, na anale	Security chip vPro <i>(optional)</i>	Discrete TPM 2.0, TCG Certified (may be disabled in some region) Intel vPro Technology					
Multi-touch (opt)	On-cell tou	uch, si	ipports 1	0-finger ge	sture (FHD	only)		3 4 3 4	Fingerprint reade	r Optional: Touch style match on chip fingerprint reader on the keyboard bezel, anti-spoofing technology					
Storage	Some: H	DD/S	ATA 6.0G	ab/s, 2.5" w		igh, Ao	tive Protecti	on System™	NFC (optional)	Near Field Communication					
					ide, 7mm h e 3.0 x 2, 1		g. xxxGB SS	SD)	Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter					
	Some: 12	28GB I	M.2 SSD	/ PCIé NVI	Me, PCIe 3	0 x 2,	16Gb/s, sive with WV		Max battery life	MobileMark <sup>®</sup> 2014: 12.2 hr * Battery life varies significantly with settings, usage, & other factors					
Optical	None		N 5101 a5		je, mutuany	exclus			AC adapter	45W or 65W USB-Č AC adapter					
Ethernet	Non-vPro vPro mode				nection I21 nection I21		cksonville) Jacksonville	)	<u> </u>	Optional: Windows® 10 Home 64 or Windows 10 Pro 64     • 1-year depot repair service					
WLAN +	One of the	followin	g, configui	rable by moo	lel:				(optional)	<ul> <li>1-year depot repair service</li> <li>1-year 4 2-year depot repair service</li> </ul>					
Bluetooth™ <i>(optional)</i>								card (US only) oth 4.1, M.2 card		<ul> <li>1-year + 2-year limited onsite service</li> </ul>					
					limited to B1			,		<ul> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>					
									Mil-Spec test	MIL-STD-810G military testing					
Note: The energia				ilahla in all i					Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant					

Note: The specifications above may not be available in all regions.

Lenovo February 2020





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### ThinkPad L490 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Cele	ron® P	rocessor	r or 8th Ger	neration Inte	el Core	e™ i3 / i5 / i7	Process	or	Dimensions	<i>WxDxH:</i> 13.19" x 9.25" x 0.89"; 335mm x 235mm x 22.5mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Proce Grap	hics	Weight Case color Case material	Starting at 3.72 lb / 1.69 kg Black PC/ABS plastic
	Cel 4305U	2	2	2.2 GHz	-	2MB	DDR4-2133	Intel UHD 61		Smart card reade	r <i>Optional:</i> Smart card reader
	i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB				Media reader Ports	MicroSD card reader Two USB 3.1 Gen 1 (one Always On),
	i5-8265U i5-8365U	4	8 8	1.6 GHz 1.6 GHz	3.9 GHz 4.1 GHz	6MB 6MB	DDR4-2400	Intel UHD			one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort).
	i7-8565U	4	8	1.8 GHz	4.6 GHz	8MB	00114-2400	62	20		one USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models),
	i7-8665U	4	8	1.9 GHz	4.8 GHz	8MB					headphone / microphone combo jack. optional smart card reader.
Chipset	Intel UHD (discrete n supports e supports t Max resolu	Graph nodels externa hree in ution: 4	ics 620 ir are NOT I digital n Idepende 4096x230 m on Chi	n processo available i nonitor via ent displays 04@60Hz ( p) platform	n EMEA); HDMI or US ; USB Type-	Ŕadec SB Typ C); 40		4Hz (HDI	MI)	Monitor cable <i>(optional)</i> Bundled Accy Camera <i>(optional)</i>	microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter None )One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus
Display	* Installed n	nemory	is actually	2666MHz b	ut run at 213	3MHz (	or 2400MHz du	ue to Intel	<i>limitation</i> Viewing	Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio /
	Size Reso	lution		pe Surface	Ŭ	<sup>s</sup> Rati	io Ratio	Gamut 45%	Angle 90°		dual array microphone (optional for special bid model), headphone / microphone combo jack
	14.0" FHD	(1920x	1080) IP	S Anti-glar	e 250 nits	16:		45%	170°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Storage	<ul> <li>HDD / S</li> <li>SSD / S</li> <li>M.2 228</li> <li>M.2 224</li> <li><i>Installed M</i></li> </ul>	ATA 6.0 ATA 6.0 0 SSD 2 SSD <i>1.2 228</i> 0	0Gb/s, 2. 0Gb/s, 2. / PCIe N / PCIe N 0 SSD is F	5" wide, 7r 5" wide, 7n IVMe, PCIe IVMe, PCIe <i>IVMe, PCIe</i> <i>2Cle 3x4 but</i>	nm high e 3.0 x 4 e 3.0 x 2 <i>run at PCle</i> :	ctive P	rotection Sys		nitation	Fingerprint reader NFC (optional)	Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region) Intel vPro Technology r <i>Optional:</i> Touch style fingerprint reader on the palm rest Near Field Communication
Optical	None		·				acksonville)			Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
WLAN + Bluetooth™ <i>(optional)</i>	vPro mode One of the r • Realtek® (NOT av	el: following RTL88 ailable	Intel Eth g, configur 822BE, V in EMEA	ernet Coni rable by mod Vi-Fi 2x2 80	nection I219 el:	9-LÀ (+ Bluetoo	Jacksonvilĺe) hth 4.2, M.2 c				MobileMark® 2014: 12 hr * Battery life varies significantly with settings, usage, & other factors • 45W USB-C AC adapter • 65W USB-C AC adapter • 65W usb-C AC adapter • 65W slim tip AC adapter
	<ul> <li>Intel Wi-I</li> </ul>	=i 6 AX	(200, Wi-	Fi 2x2 802	11ax + Blu	etooth	5.0				Optional: Windows® 10 Home 64 or Windows 10 Pro 64
	<ul> <li>Wireless</li> <li>Integrate</li> <li>Integrate</li> </ul>	WAN d Mob	upgradat ile Broad ile Broad	ble (special Iband 4G L Iband 4G L	bid only in TE, Fibocor	m L830 com I 8	D-EB, M.2 ca	rd (EME) card	A only)		One of the following, configurable by model: 1 -year depot repair service 1 -year depot with 2-year system board repair service 1 -year limited onsite service 1 -year + 2-year depot repair service 1 -year + 2-year limited onsite service 3 -year/1-yr battery depot repair service 3 -year/1-yr battery limited onsite service
										Mil-Spec test	MIL-STD-810G military testing
										Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant

Note: The specifications above may not be available in all regions.

Lenovo February 2020









### ThinkPad L580 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Cele	eron® F	Processor	, 7th Gene	ration Intel	Core™	i3 / i5 Proc	essor or	WWAN (optional)	One of the following, configurable by model:		
	Processor	# of	# of	Base	Max Turbo	Cache	Memory	Processor		<ul> <li>Wireless WAN upgradable (special bid only)</li> <li>Integrated Mobile Broadband 4G LTE,</li> </ul>		
	Number	Cores	Threads	. ,	Frequency		Types	Graphics Intel HD Graphics	-	Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only)		
	Cel 3965U		2	2.2 GHz	-	2MB		610		<ul> <li>Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card</li> </ul>		
	i3-7020U	2		2.3 GHz	-	3MB	DDR4-2133		CIM cord (ant)	* For non-WWAN model, it means the model is NOT WWAN upgradable		
	i3-7130U i5-7200U	-	4	2.7 GHz 2.5 GHz	- 3.1 GHz	3MB 3MB		Intel HD Graphics 620	SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card		
	i5-72000			2.5 GHz	3.1 GHz 3.5 GHz	3MB		020	Dimensions Weight	<i>WxDxH:</i> 14.82" x 10.02" x 0.90"; 376.5mm x 254.5mm x 22.95mm Starting at 4.46 lb / 2.0 kg		
	8th Gener	ation I	ntel Core			•=		1	Case color	Black		
	Processor	# of	# of	Base	Max Turbo	Casha	Memory	Processor	Case material	PC/ABS plastic		
	Number	Cores	1		Frequency	Cache	Types	Graphics	ExpressCard	None r <i>Optional:</i> Smart card reader		
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB			Media reader	MicroSD card reader		
	i5-8250U i5-8350U	4	8	1.6 GHz 1.7 GHz	3.4 GHz 3.6 GHz	6MB 6MB	DDR4-2400	Intel UHD Graphics 620	Ports	Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),		
	i7-8550U			1.8 GHz	4.0 GHz	8MB		020		HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models),		
	* i3-7130U	is NOT	available i	n US and EN	ЛЕА					headphone / microphone combo jack, optional smart card reader,		
Graphics							) in process		1	microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed		
	AMD Rade	iraphic eon 53	s 620 or 30. 2GB 6	DDR5 me	Graphics 6 morv	20 in p	rocessor an	d	Monitor cable (optional)	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter		
	(discrete r	nodels	are NOT	available i	in EMEA);		-		<u>, , , , , , , , , , , , , , , , , , , </u>	HD720p camera, fixed focus		
	supports e supports t					SB Тур	e-C;		Audio support	HD Audio, Realtek ALC3287 codec /		
	Max resolu	ution:	4096x23	04@60Hz (	, (USB Type-	C); 40	96x2160@3	30Hz (HDMI)		stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio™ / dual array microphone, headphone / microphone combo jack		
Chipset	Intel SoC	(Syste	m on Chi	p) platform					Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight		
Memory	32GB max * System cl	< / 240 ocks do	0MHz DE wn for pro	OR4, dual-c cessors with	hannel cap	able, t bry cont	wo DDR4 S roller	O-DIMM sockets	UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad		
Display							D backlight,		Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified (may be disabled in some region)		
	22 Some: 15	20 nits, 5.6" (39	16:9 asp 96mm) FH	HD (1920x <sup>-</sup>	00:1 contra 1080), anti-	st ratio dare. I	ED backlig	ht. IPS.	vPro (optional)	Intel vPro Technology		
	25	60 nits,	16:9 asp	ect ratio, 8	00:1 contra	st ratio	, 170° viewi	ng angle	Fingerprint reader	r Optional: Touch style match on chip fingerprint reader on the palm rest, anti-spoofing technology		
Multi-touch	None						- 4		NFC (optional)	Near Field Communication		
Storage					30 slot exclus vide, 7mm h			ion System™	Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)		
	Some: SS	SD/S	ATA 6.0G	b/s, 2.5" w	ide, 7mm h	igh (e.	g. xxxGB SS		Max battery life	with 65W AC adapter MobileMark® 2014: 11 hr		
					e 3.0 x 2, 1 Me, PCIe 3		16Gh/s		· ·	* Battery life varies significantly with settings, usage, & other factors		
	in						sive with WV	VAN	AC adapter	45W or 65W USB-Č AC adapter		
Optical	None									Optional: Windows® 10 Home 64 or Windows 10 Pro 64		
Ethernet	Non-vPro vPro mode				nection I21 nection I21		cksonville) Jacksonville	)	Limited warranty	<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> </ul>		
WLAN +				able by moo						<ul> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> </ul>		
Bluetooth™ <i>(optional)</i>	<ul> <li>Realtek<sup>®</sup></li> <li>Intel Dus</li> </ul>	' HTL8 al Banc	822BE, V Wireless	VI-FI 2x2 80 S-AC 8265	U2.11ac + E Wi-Fi 2x2	Siluetoo	th 4.1, M.2 ( ac + Bluetor	card (US only) oth 4.1, M.2 card		<ul> <li>3-year/1-yr battery depot repair service</li> </ul>		
(cptional)					limited to BT					3-ýear/1-ýr batterý limited onsite service		
									Mil-Spec test	MIL-STD-810G military testing		
									Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant		

Note: The specifications above may not be available in all regions.

Lenovo March 2020



(intel)





inside"

### ThinkPad L590 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Cele	eron® P	rocessor	r or 8th Ger	neration Int	el Core	e™ i3 / i5 / i7	7 Proce	essor	Dimensions	<i>WxDxH:</i> 14.82" x 10.02" x 0.90"; 376.5mm x 254.5mm x 22.95mm				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	G	rocessor Graphics	Case color	Starting at 4.48 lb / 2.03 kg Black PC/ABS plastic				
	Cel 4305U	2	2	2.2 GHz	-	2MB	DDR4-2133	Intel U	HD Graphics 610	Smart card reader	r Optional: Smart card reader				
	i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB				Media reader Ports	MicroSD card reader Two USB 3.1 Gen 1 (one Always On),				
	i5-8265U i5-8365U	4	8	1.6 GHz 1.6 GHz	3.9 GHz 4.1 GHz	6MB 6MB	DDR4-2400	Intel U	HD Graphics		one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),				
	i7-8565U	4	8	1.8 GHz	4.6 GHz	8MB	DD114 2400		620		one USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models),				
	i7-8665U	4	8	1.9 GHz	4.8 GHz	8MB					headphone / microphone combo jack, optional smart card reader,				
	Intel UHD (discrete r supports e supports t	Graph nodels externa hree in	ics 620 in are NOT al digital n depende	n processo available i nonitor via ent displays	n EMEA); HDMI or U: ;	Ŕadec SB Typ			-	Monitor cable <i>(optional)</i> Bundled Accy	microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter None				
Chipset	Intel SoC	(Syster	m on Chi	p) platform	hannel can	able t	NO DDB4 S		IM sockets		) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Realtek ALC3287 codec /				
Display	Size Reso	olution		pe Surface N Anti-glar	0	Aspe Rati	o Ratio	Colo Gam	nut Angle		stereo speakers, 2W x 2, Dolby <sup>®</sup> Advanced Audio / optional dual array microphone (optional for special bid model), headphone / microphone combo jack				
Multi-touch <i>(opt)</i>	15.6" FHD	(1920x	1080) IP	PS Anti-glar		16:		45%		Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad				
Storage	• HDD/S	ATA 6.	.0Gb/s, 2.	.5" wide, 7r	nm high, A	.,	rotection Sys	stem™	1	Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified				
	<ul> <li>M.2 228</li> <li>M.2 224</li> </ul>	0 SSD 2 SSD	/ PCle N / PCle N	5" wide, 7n IVMe, PCIe IVMe, PCIe	e 3.0 x 4 e 3.0 x 2					System Mgt (opt)	(may be disabled in some region) Intel vPro Technology v Optional: Touch style fingerprint reader on the palm rest				
Optane <sup>™</sup> memory	Optional:						e to <i>M.2 SSD a</i> ) x 2	adaptei	r limitation	NFČ (optional)	Near Field Communication				
	None Non-vPro	model	· Intel Eth	ernet Con	nection I21	)-V (.la	cksonville)			Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter				
	vPro mode	əl:	Intel Eth	nernet Con	nection I219		Jacksonville)	e)		Max battery life	MobileMark® 2014: 12 hr * Battery life varies significantly with settings, usage, & other factors				
Bluetooth™ (optional)	<ul> <li>Realtek<sup>®</sup> (NOT av)</li> </ul>	RTL8	822BE, V in EMEA	A)	)2.11ac + E		th 4.2, M.2 c	card			<ul> <li>45W USB-C AC adapter</li> <li>65W USB-C AC adapter</li> <li>65W slim tip AC adapter</li> </ul>				
	<ul> <li>Intel Wire</li> <li>Intel Wi-I</li> </ul>	eless-A Fi 6 AX	AC 9260, (200. Wi-	Wi-Fi 2x2 8 Fi 2x2 802	302.11ac + .11ax + Blu	Blueto etooth	oth 5.0 5.0			Operating system	Optional: Windows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64				
WWAN (optional)	One of the • Wireless • Integrate	following WAN ed Mob	<i>g, configui</i> upgradat bile Broac	<i>rable by mod</i> ble (special Iband 4G L	<i>el:</i> bid only in TE, Fiboco	EMEA n L830		ard (EN ? card	MEA only)		<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>				
										Mil-Spec test	MIL-STD-810G military testing				
										Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant				

Note: The specifications above may not be available in all regions.

Lenovo February 2020









### ThinkPad P1 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Inte	el® Core	<sup>™</sup> i5 / i7 Pro	cessor or Intel X	eon® E Pro	ocessor		er Optional: Smart card reader				
	Processor # of Number Cores T	# of hreads		Max Turbo Frequency	Memory Types	Processor Graphics	ExpressCard Media reader Ports	None SD Card reader (SD, SDHC, SDXC), supports UHS-II SD card Two USB 3.1 Gen 1 (one Always On),				
	i5-8400H 4 i7-8750H i7-8850H	8	2.2 GHz	4.2 GHz         8MB           4.1 GHz         9MB           4.3 GHz         9MB	DDR4-2666	Intel UHD Graphics 630	FOIIS	two USB 5.1 Gen 1 (one Always On), two USB Type-C / Thunderbolt 3 (with the function of Power Delivery and DP), HDMI 2.0, Ethernet extension connector, headphone / microphone combo jack, optional smart card reader, SD card reader, security keyhole				
	E-2176M 6	12		4.4 GHz 12MB		Intel UHD Graphics P630	Monitor cable	* Power Delivery only supports power-out for charging peripherals * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter				
Graphics	Intel UHD Graphics NVIDIA <sup>®</sup> Quadro <sup>®</sup> F supports external of	P1000 c	or P2000, 40	GB GDDR5 men			(optional) Bundled Accy	USB-C to DP: Lenovo USB-C to DisplayPort Adapter Optional: ThinkPad Ethernet Extension Cable				
	supports four indep Max resolution: 5K	oendent (@60Hz	t displays; z (Thunderb		·			<ul> <li>I) One of the following, configurable by model:</li> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>IR camera and HD720p camera, fixed focus</li> </ul>				
Chipset Memory	Mobile Intel CM246 64GB max / 2666M Xeon processor), d	ИHz DD	R4, ECC or				Audio support	HD Audio, Realtek® ALC3286 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack, Dolby Atmos® headphone				
Display		6:9 ́aspe	ect ratio, 70	0:1 contrast ratio		ght, IPS,	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless glass surface multi-touch touchpad				
		mm) U⊢ 6:9 aspe	ID (3840x2 <sup>-</sup> ect ratio, 12		ion, LED ba io,	acklight, IPS,	Security Security chip vPro <i>(optional)</i> Eingerprint reade	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified Intel vPro Technology r Touch style match on chip fingerprint reader on the keyboard bezel				
Multi-touch <i>(opt)</i> Pen <i>(optional)</i>	Capacitive-type mu Lenovo Pen Pro			0 0	,		Color calibration					
Storage RAID <i>(optional)</i> Optical	Up to two M.2 SSD, s M.2 SSD / PCIe NV RAID 0/1 support None	wpports : VMe, PO	single sided l Cle 3.0 x 4,	<i>M.2 2280 drives on</i> 32Gb/s	ly		Battery Max battery life (MobileMark 2014) AC adapter	Integrated Li-ion 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr) <i>Discrete mode:</i> 7.36 hr; <i>Hybrid mode:</i> 13.87 hr * <i>Battery life varies significantly with settings, usage, &amp; other factors</i> 135W slim tip AC adapter				
Ethernet	Native Intel Etherne via bundled or optic	et Conn onal Thi	ection I219 inkPad Ethe	-V ( <i>Non-vPro</i> ) or ernet Extension (	r I219-LM ( Cable	vPro))		One of the following, configurable by model:     Windows® 10 Home 64				
WLAN Bluetooth™	Intel Wireless-AC 9 Bluetooth 5.0 wirele							<ul> <li>Windows 10 Pro 64</li> <li>Windows 10 Pro 64 for Workstations</li> </ul>				
WWAN SIM card	None None						Limited warranty	One of the following, configurable by model: • 1-year depot repair service				
Dimensions Weight	WxDxH (non-touch WxDxH (multi-touc Non-touch model:	<i>:ĥ):</i> 14.		x 0.74"; 361.8		7mm x 18.4mm 7mm x 18.7mm		<ul> <li>1-year depot with 2-year system board repair service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>				
0	Multi-touch model:						Mil-Spec test	MIL-STD-810G military testing				
Case color Case material	Display cover: CF	RP/GFI					Environment	EPEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant				
	Black Display cover: CF	RP/GFI	RP hybrid; alloy	0				, ,				

Note: The specifications above may not be available in all regions.













### ThinkPad P1 (2nd Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	9th G	eneration	Intel <sup>®</sup> Co	ore <sup>™</sup> i5	/ i7 / i9 P	rocessor or	Intel X	eon® E F	rocesso	r	Dimensions	<i>WxDxH (non-touch):</i> 14.24" x 9.67" x 0.72"; 361.8mm x 245.7mm x 18.4mm					
	Proce Numb					ax Turbo equency Cad		emory vpes	Proce: Graph		Weight	<i>WxDxH (multi-touch):</i> 14.24" x 9.67" x 0.74"; 361.8mm x 245.7mm x 18.7mm <i>Non-touch model:</i> starting at 3.75 lb / 1.7 kg;					
	i5-940		8	_		.3 GHz 8N		ypoo	Giupi	100	Case color	Multi-touch model: starting at 4.0 lb / 1.81 kg Black paint (FHD model) or black weave (UHD model)					
	i7-975	50H 6	12	2.6	GHz 4	.5 GHz 12		h	ntel UHD	Graphics	Case material	Display cover: CFRP/GFRP hybrid;					
	i7-985		12	_		.6 GHz 12		34-2666	630	0		Bottom: Aluminum alloy					
	i9-988	80H 8	16	2.3	GHz 4	.8 GHz 16	ЛB		Intel UHD Graphics			r Optional: Smart card reader					
	E-227	'6M 6	12	2.8	GHz 4	.7 GHz 12	ИВ		P63		Media reader Ports	SD Card reader (SD, SDHC, SDXC), supports UHS-II SD card Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3					
Graphics	Intel U NVID suppo suppo	IA <sup>®</sup> Quadr orts exterr orts four in	hics 630 o® T1000 al digital depende	or P63 or T2 monite ent disp	30 in prod 000, 4GE or via HE olays;	nly or cessor and 3 GDDR5 m MI or Thun lt); 4K@60	derboĺť	,			Monitor cable (optional)	(with the function of Power Delivery and DisplayPort), HDMI 2.0, Ethernet extension connector, headphone / microphone combo jack, optional smart card reader, SD card reader, security keyhole * Power Delivery only supports power-out for charging peripherals * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter					
Chipset		e Intel CN										USB-C to DP: Lenovo USB-C to DisplayPort Adapter					
Memory	64GE	8 max / 26	66MHz D	DR4,	ECC or r	on-ECC (E	CC fun	ction sup	ported o	only on	Bundled Accy	Optional: ThinkPad Ethernet Extension Cable					
Display		processo	r), uual-c								Camera ( <i>optional</i>	<ul> <li>I) One of the following, configurable by model:</li> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> </ul>					
Display	Size Resolution Type Sunace Brightness Ratio Ratio Ga									Viewing Angle		• IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus					
	15.6"	FHD (1920							NTSC	170°	Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium /					
	15.6"	FHD (1920 Dolby Visio	x1080) n™ HDR	IPS	Anti-glare	500 nits	16:9	1200:1	72% NTSC	170°		optional dual array far-field microphone, headphone / microphone combo jack, Dolby Atmos® sound system					
		UHD (3840 Dolby Visio		IPS	Anti-glare	500 nits	16:9	1200:1	100% Adobe	170°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless glass surface multi-touch touchpad					
		UHD (3840 Dolby Visio Multi-touch	n HDŔ,	OLED	Anti- reflection / Anti- smudge	SDR 400nit HDR 500ni (peak)		100000:	100% DCI-P3	170°	Security Security chip System Mgt <i>(opt)</i>	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified Intel vPro Technology					
	AR (a	inti-reflect	ion) / AS	(anti-s	mudge)	0-finger ges	sture (U	HD OLE	D only),		Color calibration	r Touch style match on chip fingerprint reader on the keyboard bezel <i>Optional:</i> X-Rite Pantone factory color calibration (UHD model only) None					
Pen (optional)		vo Pen Pro									Battery	Integrated Li-ion 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr)					
Storage	Up to	<i>two M.2 SS</i> 280 SSD	D, suppor	ts single	e sided M.	2 2280 drives	s only				Max battery life	MobileMark® 2014: 13.8 hr					
RAID (optional)	RAID	0/1 suppo		VIVIC O	.0 \ +						AC adapter	* Battery life varies significantly with settings, usage, & other factors 135W slim tip AC adapter					
Optical	None				10101						Operating system	One of the following, configurable by model:					
Ethernet						/ ( <i>Non-vPro</i> net Extensio			-ro))			Windows® 10 Home 64					
WLAN (optional)	via bundled or optional ThinkPad Ethernet Extension Cable ) Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.1										-	<ul> <li>Windows 10 Pro 64</li> <li>Windows 10 Pro 64 for Workstations</li> </ul>					
Bluetooth <sup>™</sup> (opt)	Bluet	ooth 5.1 w	vireless, ii	ntegra	ted in Wi	-Fi + Blueto	oth con	nbo adap	ter		Limited warranty	One of the following, configurable by model:					
WWAN SIM card	None None											<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>					
											Mil-Spec test	MIL-STD-810G military testing					
											Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant					

Note: The specifications above may not be available in all regions.









## ThinkPad P43s Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Gen	eration Ir	ntel <sup>®</sup> Co	re™ i	7 Proce	ssor					Dimensions	WxDxH:		.70"; 329mm x 227	· · · · · · · · · · · · · · · · · · ·		
	Processo Number		# of Threads			Max Turbo Frequency	ache	Memory Types	Proce: Graph		Weight	Models	FHD	FHD Low Power	WQHD		
	i5-8365U		Theaus		GHz		6MB				Case color	Weight Black	3.43 lb / 1.55 kg	3.28 lb / 1.49 kg	3.24 lb / 1.47 kg		
	i7-8565U	4	8	1.8	3 GHz		8MB I	DDR4-2400	ntel UHD ( 620		Case material	Display cover: PPS / 50% GF;					
	i7-8665U			1.9	GHz	4.8 GHz 8	8MB				0	Bottom: PA / 50% GF er Optional: Smart card reader					
Graphics		D Graphi									Media reader		Smart card reader				
						memory; IDMI or USI	В Туре	-C;			Ports	one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and Display one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP) HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter					
	supports	s three in	depend	lent d	isplays;	ISB-C): 38	40x21	60@30Hz (F	HDMI)								
Chipset	Intel So				-	<u>, 00-0), 00-</u>		0080012 (1			-						
Memory	48GB m	ax / 2400	DMHz D	DŔ4,	, dual-ch	nannel capa											
	* Installed	d memory	is actual	ly 266	60 to sy 600 bu	it run at 2400	MHz du	DR4 SO-DII le to Intel limit	tation	el	Monitor cable						
Display	Size Res	solution	-	Туре	Surface	Brightness	Aspec	t Contrast		Viewing	(optional)	USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to HDMI: Lenovo USB-C to HDMI Adapter					
				.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		250 nits	Ratio	Ratio	Gamut	Angle	Duralla d Annu	USB-C to	DP: Lenovo USE	B-C to DisplayPort Ac	dapter		
	14.0" FH	D (1920x1	080)	IPS A	Anti-glare	(non tough)	16:9	700:1	45%	170°	Bundled Accy	None	following, configurable	by modely			
						(multi-touch)					Camera (optional)	• HD720p	camera with Think	Shutter camera priva	cy, fixed focus		
	14.0" FH	D (1920x1 v Power	080)	IPS A	Anti-glare	400 nits	16:9	800:1	72%	170°	Audio support	<ul> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>IR camera and HD720p camera with ThinkShutter camera privac</li> <li>HD Audio, Realtek® ALC3287 codec /</li> </ul>					
	FH	D (1920x1	080)			100 11						stereo spe	eakers, 2W x 2, Dol	by® Audio™ Premium			
	14.0" Thi Gu	nkPad Priv ard	vacy	IPS /	Anti-glare	400 nits	16:9	1000:1	72%	170°			,	· · ·	ne / microphone comb	o jack	
	14.0" WC	QHD (2560 Iby Vision⊺	)x1440) м нов	IPS	Glossy	500 nits	16:9	1500:1	100% Adobe	170°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpa				uchpad	
Multi-touch (opt)				10-fin	aer aes	ture (FHD o	nlv)	1	710000		Security				sor password, security	/ keyhole	
Pen	None	,			0 0	`	,				Security chip System Mgt (opt)		PM 2.0, TCG Certi Technology	lied			
Storage	Supports • M.2 22	single sid 280 SSD	ed M.2 2 / SATA	280 d 6 0G	lrives only h/s	V							Touch style match	on chip fingerprint re	ader on the palm rest		
	• M.2 22	280 SSD	/ PCle I	NVM	e, PCle						Battery			v supports Banid Ch	narge (charge up to 80	0% in 1hr)	
	<ul> <li>M.2 22</li> <li>Intel O</li> </ul>					3.0 x 2 olid State St	orage.				Max battery life	MobileMa	<i>rk</i> <sup>®</sup> 2014: 14.7 hr			o /o iii iiii)	
Ontinal	M.2 22	280, PCIe	e NVMe	3.0	x 4		- <b>J</b> ,				AC adapter		5W slim USB Type-	<i>vith settings, usage, &amp; o</i> C AC adapter	other factors		
Optical Ethernet	None	o model	Intol Et	thorp	ot Conn	ection I219-		koopyillo)					10 Home 64 or Wi				
Ellieniel	vPro mo					ection 1219-					Limited warranty		following, configurable	by model:			
WLAN	Intel Wir	eless-AC	9560, N	Wi-Fi	2x2 802	2.11ac + Blu	etooth	1 5.0			1		lepot repair service -yr battery depot re	nair service			
Bluetooth™				-			tooth c	combo adapt	er				-yr battery limited of				
(		ss WAN i	upgrada	able (	special	bid only in E					Mil-Spec test		810G military testin	<u> </u>			
	<ul> <li>Integra</li> </ul>	ated Mob	ile Broa	ldban	d 4G LT	E, Fibócom	L830-	EB, M.2 car		only)	Environment	EPEAT™	Silver; ENERGY ST	AR <sup>®</sup> 7.1; RoHS-com	pliant		
	* For non-	-WWAN m	nodel, it n	neans	s the moa	lel is NOT WV	VAN up		aru								
SIM card (opt) Note: The specifica			,			LTE (US) SI	IM car	d								Lenov	

November 2019









#### ThinkPad P51 Platform Specifications

Product Specifications Reference (PSREF)

Processor	6th or 7th Ge Intel Xeon® I					or			Dimensions	WxDxH: WxDxH(Touch			52.3mm x 24.5-29.4mm 52.3mm x 25.8-30.7mm	
	Processor	# of	# of	Base	Max Turbo	Cache	Memory	Processor	Weight	Models	4-cell	6-cell		
	Number	Cores	Threads	Frequency	Frequency	Cacillo	Types	Graphics		Non-touch	5.6 lb / 2.55kg	5.9 lb / 2.67kg	_	
	i7-6820HQ			2.7 GHz	3.6 GHz			Intel HD Graphics 530	Case color	Multi-touch Black	6.2 lb / 2.82kg	6.4 lb / 2.90kg		
	E3-1505M v5			2.8 GHz	3.7 GHz	81/18	DDR4-2133	Intel HD Graphics P530		Display cover:	Glass-Fiber Reinforced Magnesium/Aluminum	Plastic;		
	i7-7700HQ	4	8	2.8 GHz	3.8 GHz	6MB		Intel HD Graphics	Smart card reade					
	i7-7820HQ	-		2.9 GHz	3.9 GHz		DDR4-2400	630	ExpressCard	One slot (Expr			<b>_</b>	
	E3-1505M v6	-		3.0 GHz	4.0 GHz	8MB		Intel HD Graphics	Media reader Ports	4-in-1 reader (I	MMC, SD, ŚDHC, SDX0 Gen 1 (USB 3.0, one Al	C), supports UHS-II S	D card	
	E3-1535M v6			3.1 GHz	4.2 GHz			P630	FUIIS		rt 1.2a, HDMI 1.4b, Eth			
Graphics	Intel HD Gra	phics 5	530, 630	, P530, or I	P630 in pro	cesso	or and			* Depending on I	nany factors, actual data tr	ansfer speed may be low	ver than theoretical speed	
	NVIDIA Quadro® M1200 or M2200, 4GB memory; supports external digital monitor via HDMI, Mini DisplayPort, or Thunderbolt™; supports four independent displays;								Camera (optional) Audio support	HD Audio, Rea	ition, fixed focus Itek® ALC3268 codec / ophone, combo audio/n	stereo speakers, 2W nicrophone jack	x 2 /	
	Max resolution: 3840x2160@60Hz (DisplayPort via Mini DisplayPort cable); 3840x2160@60Hz (Thunderbolt); 4096x2160@24Hz (HDMI)								Keyboard UltraNav™					
Chipset Memory	Mobile Intel	CM238		t 24 ECC or	non ECC (		unation our	ported only on		3-button Mylar surface multi-touch touchpad				
Memory	Xeon proces	24001v ssor). d	lual-char	nel capabl	e. four DDF	R4 SO	-DIMM soc	kets	Security	Power-on pass	word, hard disk passwo	rd, supervisor passw	ord, security keyhole	
	Xeon processor), dual-channel capable, four DDR4 SO-DIMM sockets * System clocks down for processors with lower memory controller Some: 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio. 700:1 contrast ratio. 160° viewing angle								Security chip					
Display									vPro <i>(optional)</i>		nology Itch on chip fingerprint r	eader on the nalm re	et	
	Some: 15.6	" (396r	nm) 4K (	3840x2160	0), anti-glar	e, LED	D backlight,	IPS, 300 nits, viewing angle	Color calibration				ion sensor in palm rest	
Multi-touch (opt)	Capacitive-ty	ype mu	Ilti-touch	, supports	10-finger g	esture			Battery	Lithium Polyme	er 4-cell (66Wh) or 6-cel	ll (90Wh)		
Pen (optional)	ThinkPad Pe	,				,			Max battery life <sup>10</sup>	Model	4-cell	6-cell		
Storage	Up to 3 drives								(MobileMark® 2014)	Discrete Graphic		6.1 hr		
	Some: HDE Some: M.2						ve Protectio	on System™		Hybrid Graphics		8.9 hr		
RAID <i>(optional)</i> Optical	RAID 0/1 su None			ivie, r cie c	5.0 x 4, 520	30/5			AC adapter	170W ślim tip /	I		3	
Ethernet	Non-vPro m vPro model:						ksonville) acksonville)		Operating system One of the following, configurable by model:         • Windows® 7 Professional 64         preinstalled through downgrade rights in Windows 10 Pro 64					
WLAN	One of the foll	lowing, d	configural	ole by model.	:	,	,		1	Windows <sup>®</sup> 10				
	<ul> <li>Intel Dual Band Wireless-AC 8260, Wi-Fi 2x2 802.11ac + BT4.1, M.2 card</li> </ul>									Windows 10 Pro 64				
Pluotooth™	Intel Dual I	Band W	Vireless-	AC 8265, V	Vi-Fi 2x2 80	)2.11a	c + BT4.1, I	M.2 card		Windows 10 Pro 64 for Workstations				
Bluetooth™	Bluetooth 4.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter * Intel 8260ac / 8265ac card support BT4.2 but is limited to BT4.1 by Windows OS							ws OS	Limited warranty	One of the following, configurable by model: • 1-year depot repair service				
WWAN (optional)	tional) One of the following, configurable by model: • Wireless WAN upgradable								1	• 3-year/1-yr b	attery depot repair servi attery limited onsite ser			
	<ul> <li>Integrated</li> <li>Qualcomm</li> </ul>					liroloco	EM7455)	M 2 card	MIL-STD-810G military testing					
SIM card (opt)	Qualcomm <sup>®</sup> Snapdragon™ X7 LTE-A (Sierra Wireless EM7455), M.2 card Micro-SIM card slot, opt Verizon LTE (US) or Lenovo <sup>®</sup> Connect (EMEA) SIM card								Environment	EPEAT™ Gold	(US only); ENERGY ST	AR® 6.1; RoHS-comp	oliant	

Note: The specifications above may not be available in all regions.









## ThinkPad P52 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Genera	ation I	ntel <sup>®</sup> Core	e <sup>™</sup> i7 / i9 Pr	ocessor or	Intel X	eon® E Pro	ocessor	Dimensions	<i>WxDxH:</i> 14.86" x 9.93" x 0.96-1.16"; 377.4mm x 252.3mm x 24.5-29.4mm			
	Processor Number	# of Cores	# of Threads		Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	<i>WxDxH(Touch):</i> 14.86" x 9.93" x 1.02-1.21"; 377.4mm x 252.3mm x 25.8-30.7m <i>Non-touch model:</i> starting at 5.4 lb / 2.45kg; <i>Multi-touch model:</i> starting at 6.4 lb / 2.9kg			
	i7-8750H i7-8850H i9-8950HK	6	12	2.2 GHz 2.6 GHz 2.9 GHz	4.1 GHz 4.3 GHz 4.8 GHz	9MB 9MB 12MB	DDR4-2400		Case color Case material	Black Display cover: Glass-Fiber Reinforced Plastic; Bottom: Magnesium/Aluminum			
	E-2176M			2.7 GHz	4.4 GHz	12MB		Intel UHD Graphics P630	ExpressCard	r <i>Optional:</i> Smart card reader None			
	supports for Max resolu	uadro® B mei externa our inc ution:	P1000 (4 mory, VR al digital n lependen 3840X21 5120X28	4GB memo ready); nonitor via t displays; 60@60Hz 80@30Hz	ry), P2000 HDMI, Min (DisplayPo	(4GB ı i Displa rt via N	yPort, or T lini Display	or 'hunderbolt <sup>™</sup> ; 'Port cable); 60Hz (HDMI)	Media reader Ports	4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card Three USB 3.1 Gen 1 (one Always On), two USB Type-C / Thunderbolt 3 (with the function of Power Delivery and DP), Mini DisplayPort 1.4, HDMI 2.0, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, 4-in-1 reader (MMC, SD, SDHC, SDXC), security keyhole * Power Delivery only supports power-out for charging peripherals			
Memory	Mobile Intel CM246 Chipset 128GB non-ECC or 64GB ECC max / 2400MHz DDR4 (ECC function supported only on Xeon processor), dual-channel capable, four DDR4 SO-DIMM sockets * Installed DIMMs are actually 2666MHz but run at 2400MHz due to Intel limitation * 128GB non-ECC memory for special bid only								Camera <i>(optional)</i> Audio support	<ul> <li>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</li> <li>One of the following, configurable by model:</li> <li>• HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>• IR camera and HD720p camera, fixed focus</li> <li>HD Audio, Realtek® ALC3286 codec /</li> </ul>			
	Some: 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 160° viewing angle									stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual array microphone, headphone / microphone combo jack, Dolby Atmos® headphone			
Multi-touch <i>(opt)</i>	Some: 15.6" (396mm) UHD (3840x2160), anti-glare, LED backlight, IPS, 400 nits, 16:9 aspect ratio, 1000:1 contrast ratio, 100% gamut, 170° viewing angle, multi-touch Capacitive-type multi-touch, supports 10-finger gesture (4K only)								Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, numeric keypad, LED backlight 3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad			
	Some: Some:	<i>es (two</i> HDD / M.2 S	<i>M.2 SSD</i> SATA 6.0 SD / PCIe	and one HD )Gb/s, 2.5" e NVMe, P0	<i>D), supports</i> wide, 7mm Cle 3.0 x 4	<i>single s</i> h high, , 32Gb/	<i>ided M.2 22</i> Active Prote s	for details 80 drives only ection System™		Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified Intel vPro Technology Touch style match on chip fingerprint reader on the palm rest None			
RAID (optional)	RAID 0/1 s	suppor	rt	eniory, POI	e invivie, r	Cie 3.0	1 X Z			Near Field Communication Swappable Li-ion 90Wh battery			
Ethernet	Non-vPro vPro mode	əl:	Intel Eth	ernet Conr	nection I21	9-LŇ (、	Jacksonville	e)	Max batterv life	Discrete mode: 6.1 hr; Hybrid mode: 8.9 hr * Battery life varies significantly with settings, usage, & other factors 170W slim tip AC adapter			
	Intel Wirele Bluetooth									One of the following, configurable by model:			
()	AN (optional) One of the following, configurable by model: • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE-A,								]	<ul> <li>Windows<sup>®</sup> 10 Home 64</li> <li>Windows 10 Pro 64</li> <li>Windows 10 Pro 64 for Workstations</li> </ul>			
		M™ 73	60 (Fiboo	om L850-0	GL), M.2 ca		rd		Limited warranty (optional)	<ul> <li>One of the following, configurable by model:</li> <li>1-year depot repair service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>			
									Mil-Spec test	MIL-STD-810G military testing			
Noto: The aposition									Environment	EPEAT™ Silver; ENERGY STAR® 6.1; RoHS-compliant			

Note: The specifications above may not be available in all regions.









### ThinkPad P52s Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation	n Intel® Co	re™ i5 / i7 P	rocessor				Dimensions	<i>WxDxH:</i> 14.40" x 9.95" x 0.79-0.80"; 365.8mm x 252.8mm x 19.95-20.2mm			
	Processor         # c           Number         Corr           i5-8350U         4           i7-8550U         4	es Threads	Base Frequency 1.7 GHz 1.8 GHz 1.9 GHz	Max Turbo Frequency 3.6 GHz 4.0 GHz 4.2 GHz	Cache 6MB 8MB 8MB	Memory Types DDR4-2400	Processor Graphics Intel UHD Graphics 620	Weight Case color Case material Smart card reade	starting at 4.39 lb / 1.99 kg Black <i>Display cover:</i> GFRP + PPS; <i>Bottom:</i> GFRP er <i>Optional:</i> Smart card reader			
Chipset	Intel UHD Gra NVIDIA Quadr supports exter supports three Max resolution Intel SoC (Sys	o <sup>®</sup> P500, 2 nal digital independe : 4096x23 tem on Ch	n processo GB GDDR monitor via ent displays 04@60Hz ip) platform	r and 5 memory; HDMI or U: ;; (USB Type-	SB Typ C); 40	96x2160@:	. ,	Ports	4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, 4-in-1 reader (MMC, SD, SDHC, SDXC), side docking connector, security keyhole			
Memory Display	* System clocks	down for pro	ocessors with	lower memo	ory contr	roller	O-DIMM sockets		* Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter			
	16:9 as Some: 15.6" (	spect ratio, 396mm) U spect ratio,	700:1 cont HD (3840x2 1000:1 cor	rast ratio, 4 2160), anti- ntrast ratio,	5% gar glare, L 72% ga	mut, 170° v ED backlig	iewing angle ht, IPS, 300 nits, viewing angle	,	<ul> <li>I) One of the following, configurable by model:</li> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>IR camera and HD720p camera, fixed focus</li> <li>HD Audio, Realtek<sup>®</sup> ALC3287 codec /</li> </ul>			
Storage	System has one HDD slot or one M.2 2280 slot exclusively for storage, and supports single sided M.2 2280 drives only Some: HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ Some: SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high (e.g. xxxGB SSD)							Keyboard UltraNav™	stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio <sup>™</sup> Premium / optional dual array microphone, headphone / microphone combo jack 6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight TrackPoint <sup>®</sup> pointing device and buttonless Mylar surface multi-touch touchpad			
Optane™ memory Optical Ethernet	Some: M.2 S Some: 128GE in WW	SD / PCIe 3 M.2 SSD /AN slot as Optane m	NVMe, PCI / PCIe NVI 2nd Storac emory, PCI	e 3.0 x 2, 1 Me, PCIe 3. je, mutually e NVMe, P	6Gb/s 0 x 2, exclus Cle 3.0	16Gb/s, sive with WV x 2	,	Security         Power-on password, hard disk password, supervisor password, security keyhol           Security chip         Discrete TPM 2.0, TCG Certified           vPro (optional)         Intel vPro Technology           Fingerprint reader Optional:         Touch style match on chip fingerprint reader on the palm rest anti-spoofing technology           NFC (optional)         Near Field Communication				
WLAN + Bluetooth™	vPro model: Intel Dual Band * Intel 8265ac ca	Intel Et d Wireless- ard supports	AC 8265, V BT4.2 but is	nection I219 Vi-Fi 2x2 80 <i>limited to BT</i>	9-LM (J )2.11ac	lacksonville : + Bluetoot	) h 4.1, M.2 card	Battery Max battery life ( <i>MobileMark</i> <sup>®</sup> 2014)	Optional integrated Li-ion 32Wh battery and swappable Li-ion 24Wh, 48Wh, or 72Wh batteryModels48Wh72Wh32Wh + 24Wh32Wh + 48Wh32Wh + 72WhMax battery life12.2 hr18.5 hr13.5 hr20.1 hr26.3 hr			
	WWAN (optional) One of the following, configurable by model: • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE,							AC adapter	* Battery life varies significantly with settings, usage, & other factors 65W USB Type-C AC adapter			
SIM card (opt)	Intel XMM™ • Integrated M Intel XMM™ * For non-WWAI Nano-SIM care	obile Broa 7360 (Fibo V <i>model, it n</i>	dband 4G L com L850-0 neans the mo	.TÉ-A, GL), M.2 ca <i>idel is NOT V</i>	rd /WAN u	pgradable		Operating system Windows® 10 Home 64 or Windows 10 Pro 64         Limited warranty       One of the following, configurable by model:         • 1-year depot repair service         • 1-year depot with 2-year system board repair service         • 3-year/1-yr battery limited onsite service         • 3-year (including battery) limited onsite service				
								Mil-Spec test	MIL-STD-810G military testing			
								Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant			

Note: The specifications above may not be available in all regions.









## ThinkPad P53 Platform Specifications

Product Specifications Reference (PSREF)

Processor	9th Generation	ation Ir	ntel® Co	ore™ i5	5 / i7 / i9	Processor	or Int	el Xeo	on® E P	rocessor		Dimensions	WxDxH (non-touch): 14.86" x 9.93" x 0.96-1.16";		
	Processor Number		# of Thread	ls Fre	quency	-requency	Cache	Mem Type		Proces Graph			377.4mm x 252.3mm x 24.5-29.4mm WxDxH (multi-touch): 14.86" x 9.93" x 1.02-1.21"; 377.4mm x 252.3mm x 25.8-30.7mm		
	i5-9400H i7-9750H	4	8 12	_	5 GHz 6 GHz		8MB 12MB		In	ntel UHD (	Franhics	Weight	Non-touch model: starting at 5.51 lb / 2.5 kg;		
	i7-9850H	6	12	_	6 GHz		12MB	DDR4-		630		Case color	<i>Multi-touch model:</i> starting at 6.4 lb / 2.9 kg Black		
	i9-9880H	8	16	2.3	3 GHz	4.8 GHz	16MB	DDIT				Case material	Display cover: Glass-Fiber Reinforced Plastic; Bottom: Magnesium/Aluminum		
	E-2276M	6	12	2.8	3 GHz	4.7 GHz	12MB		In	ntel UHD ( P63			r Optional: Smart card reader		
·	Intel UHD Graphics 630 or P630 in processor and NVIDIA® Quadro® T1000 (4GB GDDR5), T2000 (4GB GDDR5), RTX 3000 (6GB GDDR6, VR ready), RTX 4000 (8GB GDDR6, VR ready), or RTX 5000 (16GB GDDR6, VR ready); supports external digital monitor via HDMI or Thunderbolt <sup>™</sup> ; supports five independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (USB-C or HDMI)										pr	ExpressCard Media reader Ports	None 4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card Two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), HDMI 2.0, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, 4-in-1 reader (MMC, SD, SDHC, SDXC), security keyhole		
Memory	Mobile Inte 128GB ma dual-chani	ax / 266	66MHz	DDR₄	4 (ECC) DR4 SO	unction su DIMM soc	pporte kets	ed only	y on Xe	on proce	essor),	- Monitor cable	* Power Delivery only supports power-out for charging peripherals * USB-C Dock is not supported in right-side USB-C port * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter		
Display								pect C	Contrast Ratio	Color Gamut	Viewing Angle		USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter		
	15.6" FHD	(1920x1	1080)	IPS	Anti-gla	re 300 nit			700:1	72%	160°	Bundled Accy	None		
	15.6" FHD Dolby	(1920x1 / Vision™	1080) ™ HDR	IPS	Anti-gla	re 500 nit	s 1	6:9 ·	1200:1	72%	160°	Camera (optional)	) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus		
	15.6" UHD Dolby	(3840x2 / Vision	2160) HDR	IPS	Anti-gla	re 500 nit	s 1	6:9 ·	1200:1	100%	170°	Audio support	• IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2 /		
	15.6" UHD Multi-	(3840x2 / Vision touch	2160) HDR,	OLED	Anti- reflectio / Anti- smudg	(peak	Dnit 1	6:9 10	00000:1	100% DCI-P3	170°	Keyboard	optional dual array far-field microphone, headphone / microphone combo jack, Dolby Atmos® sound system 6-row, spill-resistant, multimedia Fn keys, numeric keypad, LED backlight		
	Capacitive				upports	10-finger	gestur	e (UHI	D only)	,		UltraNav™	3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad		
	anti-reflect Lenovo Pe					coating						Security	Power-on password, hard disk password, supervisor password, security keyhole		
	Up to 3 driv supports sir • HDD / S • M.2 228 * HDD is on	nglè side ATA 6.0 0 SSD aly availa	<i>ed M.2 2</i> 0Gb/s, / PCIe able for	2280 di 2.5" v NVM T1000	rives only vide, 7m e, PCIe and T200	m high, Ac 3.0 x 4 <i>0 graphics i</i>	nodel		on Syst	em™		Security chip vPro <i>(optional)</i> Fingerprint reader Color calibration NFC <i>(optional)</i>	Discrete TPM 2.0, TCG Certified Intel vPro Technology r Touch style match on chip fingerprint reader on the palm rest <i>Optional:</i> X-Rite Pantone factory color calibration (UHD model only) Near Field Communication		
	RAID 0/1/5	Intel O 5 supp	ptane r ort	nemo	ry, PCIe	NVMe, PC	Cle 3.0	) x 2				Battery Max battery life ( <i>MobileMark</i> <sup>®</sup> 2014)			
	Non-vPro vPro mode					ection I219 ection I219						AC adapter	170W or 230W slim tip AC adapter One of the following, configurable by model:		
WLAN <i>(optional)</i> Bluetooth™ <i>(opt)</i>	Intel Wi-Fi Bluetooth	6 AX2 5.1 wir	00, Wi- eless, i	Fi 2x2 integra	2 802.11 ated in V	ax + Bluete Vi-Fi + Blue	ooth 5	.1	,	ter			<ul> <li>Windows® 10 Home 64</li> <li>Windows 10 Pro 64</li> <li>Windows 10 Pro 64 for Workstations</li> </ul>		
	One of the following, configurable by model: • Wireless WAN upgradable (special bid only in EMEA) • Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable Nano-SIM card slot, optional Verizon LTE (US) SIM card											Limited warranty	Windows to Pro 64 for Workstations     One of the following, configurable by model:     1-year depot repair service     3-year/1-yr battery depot repair service     3-year/1-yr battery limited onsite service		
	· · ·											Mil-Spec test MIL-STD-810G military testing			
												Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant		

Note: The specifications above may not be available in all regions.









### ThinkPad P53s Platform Specifications

Product Specifications Reference (PSREF)

Processor         Fraction         Total         Bases         Memory         Processor         Case         Weight         Starting at 3.87 lb / 1.75 kg           Graphics         18.6 Hz         4.8 G Hz         8 MB         DOR4-2400         Intel UHG Graphics         Back         Display (cover: PF2 / 50%, GF.           Graphics         Intel UHD Graphics 620 in processor and WUDA Cauder PS20, 2GB CDDPS memory: supports there independent displays: Max resolution:         Starting at 3.87 lb / 1.75 kg         Smart card reader Optional         Smart card reader Optional           Frightes         Intel SoC (System on Chip) platform         Norther Soc (System on Chip) platform         Norther Soc (System on Chip) platform         Norther Soc (System on Chip) platform         Norther Soc (System on Chip) platform         Norther Soc (System on Chip) platform           Display         Sime freeduction         Type kastem at sart freeduction         Starting at 3.87 lb / 1.75 kg         Smart card reader Optional         Norther Soc (System on Chip) platform         Norther Soc (System And Aspter           Display         Sime freeduction         System Soc (Start (Start (Start (Start (Start (Start (Start (Start (Start (Start (Start (Start (Start	Processor	8th G	eneration Int	tel® Co	re™ i	7 Proces	sor					Dimensions		( 0.75"; 365.8mm x 248mm x 19.1mm			
Bit         Bit         1.9 Urbl         4.9 Urbl         4.9 Urbl         4.9 Urbl         4.9 Urbl         Bit         Display         Bit         Bit <th< td=""><td></td><td>Numb</td><td>er Cores</td><td></td><td>s Free</td><td>quency F</td><td>requency</td><td></td><td></td><td></td><td></td><td></td><td colspan="3">Black</td></th<>		Numb	er Cores		s Free	quency F	requency						Black				
Graphics       Intel UHD Graphics 620 in processor and WUDIA Quadro <sup>®</sup> P520, 256 GDPR5 memory; supports external digital monitor via HDMI or USB Type-C; Max resolution: 3840x2160@60Hz (USB-C); 3840x2160@30Hz (HDMI)       Two USB 3.1 Spe-C Gen 1 (with the function of PD and DP), HDMI 1.4b, Ethernet (RI-45), nano-SIM card side (WAN models), headphone / microphone combo jack, optical assard: a card reader, microSD card reader.         Chipset Memory       Intel SoC (System on Chip) platform 46GB or 16GB memory slocedred to systemboard, one DDR4 SO-DIMM socket * Instaled memory is actually 2866Miz due to Intel Minitation       Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to VGA: Lenovo USB-C to UsplayPort, Monitor Adapter USB-C to VGA: Lenovo USB-C to UsplayPort, Monitor Adapter USB-C to VGA: Lenovo USB-C to UsplayPort, Matheward and theoretical speed HDM in VGA. Lenovo USB-C to UsplayPort, Matheward and theoretical speed HDM in VGA. Lenovo USB-C to UsplayPort, Matheward and theoretical speed HDM in VGA. Lenovo USB-C to UsplayPort, Matheward HD 2400, Realtek* ALC3287 codec / steres opsekers, 2W S2, Dolly* Adu/of "Premium / optional dual array far-field microphone, headphone / microphone combo jack HD 2400, Realtek* ALC3287 codec / steres opsekers, 2W S2, Dolly* Adu/of "Premium / optional dual array far-field microphone, headphone / microphone combo jack HD 2400, Realtek* ALC3287 codec / steres opsekers, 2W S2, Dolly* Adu/of WMW, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x 4 Max 2280 D/ PCIe NVMe, PCIe 3.0 x				8					DDR4-2400			5	ttom: PA / 50% G	F			
Memory       AlgGB most 7/2400MHz DDFA, dual-bannel capable, SdB or 16GB memory is actually 2666MHz but run at 2400MHz due to Intel limitation       microsD card reader, side docking confractor, security keyhole         Display       Size       Resolution       Type       Surface       Birghtness       Asspect       Contrast       Contra		NVID	IA Quadro® Forts external	P520, 2 digital	2GB ( moni	GDDR5 r itor via H	nemory; DMI or US	В Туре 40х21	e-C; 60@30Hz (	(HDMI)		Media reader	MicroSD card reader Two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort) one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models),				
Display       Size       Resolution       Type       Surgers       Apped       Contrast       Contrest       Contrast       Contrest </td <td></td> <td>48GB</td> <td>8 max / 2400 or 16GB mer</td> <td>MHz D mory s</td> <td>DŔ4, older</td> <td>, dual-cha ed to sys</td> <td>temboard,</td> <td>one D</td> <td>DR4 SO-D ue to Intel lim</td> <td>IMM soc</td> <td>ket</td> <td></td> <td>croSD card reader, side ( epending on many factors, a DMI to VGA: Lenovo HE</td> <td>docking connector, security keyhole actual data transfer speed may be lower than theoretical speed DMI to VGA Monitor Adapter</td>		48GB	8 max / 2400 or 16GB mer	MHz D mory s	DŔ4, older	, dual-cha ed to sys	temboard,	one D	DR4 SO-D ue to Intel lim	IMM soc	ket		croSD card reader, side ( epending on many factors, a DMI to VGA: Lenovo HE	docking connector, security keyhole actual data transfer speed may be lower than theoretical speed DMI to VGA Monitor Adapter			
15.6*       UHD (3840x2160) Doby Vision** HDR       IPS       Anti-glare       500 nits       16:9       1200:1       100% Adobe       170* Adobe         Multi-touch (opt) Pen       On-cell touch, supports 10-finger gesture (FHD only) None       IP camera and HD720p camera with ThinkShutter camera privacy, fixed focus         Storage       Supports single sided M.2.2280 drives only • M.2.2280 SSD / SATA 6.0Gb/s • M.2.2280 SSD / PCle NVMe, PCle 3.0 x 4 • M.2.2280 SSD / PCle NVMe, PCle 3.0 x 4 • M.2.2280, PCle NVMe, PCle 3.0 x 4 • M.2.2280, PCle NVMe, PCle 3.0 x 4 • M.2.2280, PCle NVMe, PCle 3.0 x 4 • M.2.2280, PCle NVMe, PCle 3.0 x 4 • M.2.2280, PCle NVMe, PCle 3.0 x 4 • M.2.2280, PCle NVMe 3.0 x 4 • Mon-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)	Display	Size	Resolution		Туре	Surface	Brightness						USB-C to DP: Lenovo USB-C to DisplayPort Adapter				
15.6° [JohD Jgad022] 600       IPS [Anti-glare]       500 nits       16:9       1200:1       100%       170°         Multi-touch (opt)       On-cell touch, supports 10-finger gesture (FHD only)       Addobe       In Camera and HD720p camera with ThinkShutter camera privacy, fixed focus         Storage       Supports single sided M.2 2280 drives only       Intel Quantary far-field microphone, headphone / microphone combo jack         Keyboard       M.2 2280 SSD / STA 6.06b/s       Keyboard       FrackPoint* pointing device and buttonless Mylar surface multi-louch touchpad         Multi-touch (apt)       None       M.2 2280, PCle NVMe, PCle 3.0 x 4       Power-on password, hard disk password, supervisor password, security keyhole         Optical       None       None       Power-on password, hard disk password, supervisor password, security keyhole         Ethernet       Non-VPro model: Intel Ethernet Connection I219-V (Jacksonville)       Machaver       Near Field Communication         WLAN       Intel Wireless-AC 9560, Wi-Fi 2x2 802, 112 - H Bluetooth 5.0       HD Audios upport       Near Field Communication         Bluetooth 5.0 wireless, integrated in Wi-Fi 1 Bluetooth 5.0       Nore (HEPA Mobile Broadband 4G LTE-, Filocom L830-EB, M.2 card (EMEA only integrated Mobile Broadband 4G LTE-, Filocom L830-EB, M.2 card (EMEA only integrated Mobile Broadband 4G LTE-, Filocom L830-EB, M.2 card (EMEA only integrated Mobile Broadband 4G LTE-, Filocom L830-EB, M.2 card (EMEA only integrated Mobile Broadband 4G LTE-, Filocom L830-EB, M.2 card (EME		15.6"	FHD (1920x10	080)	IPS	Anti-glare	250 nits	16:9	700:1	45%	170°	Camera (optional)	e of the following, configural	ble by model:			
Multi-touch (opt)       On-cell touch, supports 10-finger gesture (FHD only)       stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio <sup>™</sup> Premium / optional dual array far-field microphone, headphone / microphone combo jack         Storage       Supports single sided M.2 2280 drives only		15.6"	UHD (3840x2 <sup>-</sup> Dolby Vision™	160) ' HDR	IPS	Anti-glare	500 nits	16:9	1200:1	100% Adobe	170°	Audio support	• IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus				
<ul> <li>M.2 2280 SSD / SATA 6.0Gb/s</li> <li>M.2 2280 SSD / PCle NVMe, PCle 3.0 x 4</li> <li>M.2 2280 SSD / PCle NVMe, PCle 3.0 x 4</li> <li>M.2 2280, PCle NVMe, PCle 3.0 x 2</li> <li>Intel Optane<sup>™</sup> Memory H10 with Solid State Storage, M.2 2280, PCle NVMe 3.0 x 4</li> <li>Optical None</li> <li>Ethernet Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-V (Jacksonville)</li> <li>WLAN Intel Wireless-AC 9560, Wi-Fi 222 802, 11ac + Bluetooth 5.0</li> <li>Bluetooth<sup>™</sup> Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth 5.0</li> <li>Bluetooth<sup>™</sup> Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth 5.0</li> <li>SIM card (opt)</li> <li>SIM card (opt)</li> </ul>				ports	10-fin	iger gesti	ure (FHD c	only)					stereo speakers, 2W x 2, Dolby® Audio™ Premium /				
<ul> <li>M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2</li> <li>Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4</li> <li>Optical None</li> <li>Ethernet Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-V (Jacksonville)</li> <li>WLAN Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 Bluetooth™ Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter</li> <li>WWAN (optional) One of the following, configurable by model:</li> <li>• Integrated Mobile Broadband 4G LTE - A, Fibocom L850-GL, M.2 card (EMEA only)</li> <li>• Integrated Mobile Broadband 4G LTE - A, Fibocom L850-GL, M.2 card (EMEA only)</li> <li>• Integrated Mobile Broadband 4G LTE - A, Fibocom L850-GL, M.2 card (* For non-WWAN model, it means the model is NOT WWAN upgradable</li> <li>SIM card (opt)</li> <li>SIM card (opt)</li> </ul>	Storage	• M.2	2 2280 SSD /	' SATA	6.0G	b/s											
Ethernet       Non-vPro model:       Intel Ethernet Connection I219-V (Jacksonville)       NEC (optional)       Near Field Communication         WLAN       Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0       Bluetooth™       Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth combo adapter       Near Field Communication         WWAN (optional)       One of the following, configurable by model:       • Wireless WAN upgradable (special bid only in EMEA)       Integrated Mobile Broadband 4G LTE, A, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, A, Fibocom L830-EB, M.2 card (EMEA only)       One of the following, configurable by model:       • 1-year depot repair service         SIM card (opt)       SIM card (opt)       Nano-SIM card slot, optional Verizon LTE (US) SIM card       SIM card Slot, optional Verizon LTE (US) SIM card       Mil-Spec test       MIL-STD-810G military testing         Environment       EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant	Ontical	<ul> <li>M.2</li> <li>Inte M.2</li> </ul>	2 2242 SSD / I Optane™ M 2280, PCIe	PCIe lemory	NVM / H10	e, PCIe 3 with Sol	3.0 x 2	orage,				Security chip System Mgt (opt)	screte TPM 2.0, TCG Cer el vPro Technology	rtified			
vPro model:       Intel Ethernet Connection I219-LM (Jacksonville)       Battery       Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr)         WLAN       Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0       Bluetooth™       Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter       Max battery life       Aries significantly with settings, usage, & other factors         WWAN (optional)       One of the following, configurable by model:       • Wireless WAN upgradable (special bid only in EMEA)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Inwidel, it means the model is NOT WWAN upgradable       One of the following, configurable by model:       • 1-year depot repair service       • 3-year/1-yr battery depot repair service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       • 3-year/1-yr battery limited onsite service       •				Intel E	thern	et Conne	ction I219-	V (Jac	cksonville)								
Bluetooth™       Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter       AC adapter       65W USB Type-C AC adapter         WWAN (optional)       One of the following, configurable by model:       • Wireless WAN upgradable (special bid only in EMEA)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)       • Integrated Mobile	WLAN	vPro	model: I	Intel E	thern	et Conne	ction I219-	LM (J	acksonvilĺe)	)			<i>bileMark® 2014:</i> 15 hi	r (FHD model) / 10 hr (UHD model)			
<ul> <li>Wireless WAN upgradable (special bid only in EMEA)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M</li></ul>	Bluetooth™									oter			W USB Type-C AC adap	ter			
Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)     Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card     * For non-WWAN model, it means the model is NOT WWAN upgradable     Nano-SIM card slot, optional Verizon LTE (US) SIM card     Mil-Spec test     Mil-Spec test     Mil-STD-810G military testing     Environment     EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant	WWAN (optional)											Operating system	ndows <sup>®</sup> 10 Home 64 or V	Nindows 10 Pro 64			
Environment EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant	SIM card (opt)	<ul> <li>Inte</li> <li>Inte</li> <li><i>* For i</i></li> </ul>	grated Mobile grated Mobile non-WWAN mo	e Broa le Broa odel, it i	idban idban <i>means</i>	id 4G LTE id 4G LTE s the mode	E, Fibocom E-A, Fiboco I is NOT W	L830 0m L85 1/2010 up	-EB, M.2 ca 50-GL, M.2 ogradable		A only)		-year depot repair servic 3-year/1-yr battery depot 3-year/1-yr battery limited	ce repair service d onsite service			
							. ,					Mil-Spec test	,	5			
												Environment	'EAT™ Silver; ENERGY S	STAR® 7.1; RoHS-compliant			

Note: The specifications above may not be available in all regions.









### ThinkPad P72 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation In	ntel® Cor	e <sup>™</sup> i7 Proces	sor or Int	el Xeor	® E Proces	ssor	Dimensions	<i>WxDxH:</i> 16.38" x 11.06" x 0.96-1.16"; 416mm x 281mm x 24.5-29.4mm		
	Number Cores Threads Frequency Frequency Cacne Types Gr		Processor Graphics	Weight Case color Case material	Starting at 7.5 lb / 3.4kg Black <i>Display cover:</i> GFRP + PPS;						
	i7-8850H	10		4.1 GHZ 4.3 GHz			Intel UHD Graphics 630	Smart card reader ExpressCard M Media reader 4 Ports f	Bottom: Magnesium/Aluminum		
	E-2176M E-2186M	12	-	4.4 GHz 4.8 GHz	12MB 12MB	DDR4-2400	Intel UHD Graphics P630		er <i>Optional:</i> Smart card reader None 4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card		
Graphics	Intel UHD Graph NVIDIA Quadro® P3200 (6GB mer supports externa supports four ind Max resolution:	P600 (40 mory), P4 Il digital n lependen 3840X21	GB memory) 1200 (8GB n nonitor via H t displays; 60@60Hz (I	r), P2000 nemory), HDMI, Mir DisplavPo	(4GB m or P520 ni Displa	00 (16ĠB r ayPort, or T ⁄lini Displav	hunderbolt™;		Four USB 3.1 Gen 1 (one Always On), two USB Type-C / Thunderbolt 3 (with the function of Power Delivery and DP), Mini DisplayPort 1.4, HDMI 2.0, Ethernet (RJ-45), headphone / microphone combo jack, optional smart card reader, 4-in-1 reader (MMC, SD, SDHC, SDXC), security keyhole * Power Delivery only supports power-out for charging peripherals * Depending on many factors, actual data transfer speed may be lower than theoretical spee Optional: Lenovo Mini-DisplayPort to DisplayPort Monitor Cable		
Chipset Memory	Mobile Intel CM2 128GB non-ECC only on Xeon pro * Installed DIMMs a	or 64GE cessor), are actuall	BECC max / dual-channe y 2666MHz bu	el capable ut run at 24	e, four [ <i>400MHz</i>	DDR4 SO-I	DIMM sockets		(J) IR camera and HD720p camera, fixed focus HD Audio, Realtek <sup>®</sup> ALC3286 codec / stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio <sup>™</sup> Premium / optional dual array micro- phone, headphone / microphone combo jack, Dolby Atmos <sup>®</sup> headphone		
Display	<ul> <li>Some: 17.3" (439mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 300 nits 16:9 aspect ratio, 800:1 contrast ratio, 72% gamut, 170° viewing angle</li> <li>Some: 17.3" (439mm) UHD (3840x2160), anti-glare, LED backlight, IPS, 400 nits 16:9 aspect ratio, 1000:1 contrast ratio, 100% Adobe gamut,</li> </ul>							Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, numeric keypad, LED backlight 3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad		
Multi-touch Pen	170° viev None None	ving angl	e					Security chip vPro <i>(optional)</i>	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified Intel vPro Technology		
Storage	Up to 3 drives (two M.2 SSD and one HDD), supports single sided M.2 2280 drives only Some: HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s							Fingerprint reade Color calibration NFC (optional)	r Touch style match on chip fingerprint reader on the palm rest None Near Field Communication		
Optane <sup>™</sup> memory RAID <i>(optional)</i> Optical		ptane me						Battery Max battery life	Li-ion 99Wh battery, supports Rapid Charge (charge up to 80% in 1hr) MobileMark <sup>®</sup> 2014: 16 hr * Battery life varies significantly with settings, usage, & other factors		
Ethernet	Non-vPro model		ernet Connernet					AC adapter	230W slim tip AC adapter One of the following, configurable by model:		
WLAN Bluetooth™	Intel Wireless-AC Bluetooth 5.0 wir	9560, W	/i-Fi 2x2 802	2.11ac + E	Sluetoo	th 5.0, M.2	card	(optional)	<ul> <li>Windows<sup>®</sup> 10 Home 64</li> <li>Windows 10 Pro 64</li> <li>Windows 10 Pro 64 for Workstations</li> </ul>		
WWAN SIM card	None None							Limited warranty	One of the following, configurable by model: • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service		
								Mil-Spec test	MIL-STD-810G military testing		
Note: The specifica								Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 7.0; RoHS-compliant Lenov		

Note: The specifications above may not be available in all regions.





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#### ThinkPad P73 Platform Specifications

Product Specifications Reference (PSREF)

Processor	9th Generation In	itel <sup>®</sup> Core	e™ i5 / i7 / i	Processor	or Intel Xe	eon® E P	rocessor		Dimensions	<i>WxDxH:</i> 16.38" x 11.06" x 1.02-1.22"; 416mm x 281mm x 25.9-31mm
	Processor# of CoresNumberCoresi5-9400H4	# of Threads 8		4.3 GHz 8	achei	emory ypes	Proces Graph		Weight Case color Case material	Starting at 7.5 lb (3.4kg) Black <i>Display cover:</i> GFRP + PPS; <i>Bottom:</i> Magnesium/Aluminum
	i7-9750H 6 i7-9850H 6 i9-9880H 8	12 12 16	2.6 GHz 2.6 GHz 2.3 GHz	4.6 GHz 1	2MB 2MB 6MB	14-2666	ntel UHD 6 630		ExpressCard	<i>r Optional:</i> Smart card reader None 4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card
	E-2276M 6	12	2.8 GHz	4.7 GHz 1	2MB	Ir	ntel UHD 0 P63		Ports	Three USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),
Graphics	Intel UHD Graphics 630 or P630 in processor and NVIDIA Quadro <sup>®</sup> P620 (4GB GDDR5), T2000 (4GB GDDR5), RTX 3000 (6GB GDDR6, VR ready), RTX 4000 Max-Q (8GB GDDR6, VI or RTX 5000 Max-Q (16GB GDDR6, VR ready); supports external digital monitor via HDMI or Thunderbolt <sup>™</sup> ; supports five independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (USB-C or HDMI) Mobile Intel CM246 Chipset								Monitor cable	two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), HDMI 2.0, Ethernet (RJ-45), headphone / microphone combo jack, optional smart card reader, 4-in-1 reader (MMC, SD, SDHC, SDXC), security keyhole * Power Delivery only supports power-out for charging peripherals * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter
Chipset Memory	128GB max / 266	6MHz'D	DR4 (ECC			nly on Xe	eon proce	essor),	Bundled Accy	USB-C to DP: Lenovo USB-C to DisplayPort Adapter None JIR camera and HD720p camera with ThinkShutter camera privacy, fixed focus
Display	dual-channel capable, four DDR4 SO-DIMM sockets       Size     Resolution     Type     Surface     Brightness     Aspect Ratio     Contrast Ratio     Contrast G       17.01     FUD (1000::d000)     UD0.     Asticutes     200.:item     200.:item     200.:item								Audio support	HD Audio, Synaptic <sup>®</sup> CX11880 codec / stereo speakers, 2W x 2 / dual array far-field microphone, headphone / microphone combo jack, Dolby Atmos <sup>®</sup> sound system
	17.3"         FHD (1920x10           17.3"         UHD (3840x2           Dolby Vision™	2160)	PS Anti-gla PS Anti-gla			700:1 1000:1	72% 100%	160° 170°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, numeric keypad, LED backlight 3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad
	None None Up to 3 drives (two I • HDD / SATA 6.0 • M.2 2280 SSD / (Optional: Intel O RAID 0/1 support	)Gb/s, 2. / PCle N ptane m	.5" wide, 7r IVMe, PCIe	nm high, Acti 3.0 x 4	ve Protec	tion Sys		nly	Security Security chip vPro <i>(optional)</i> Fingerprint reader Color calibration	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified Intel vPro Technology r Touch style match on chip fingerprint reader on the palm rest <i>Optional:</i> X-Rite Pantone factory color calibration (UHD model only) Near Field Communication
Optical É	None Non-vPro model: vPro model:	Intel Eth Intel Eth	ernet Conr	ection I219-	LŴ (Jack				Max battery life	Integrated Li-ion 99Wh battery, supports Rapid Charge (charge up to 80% in 1hr) <i>MobileMark</i> <sup>®</sup> 2014: 17.2 hr * <i>Battery life varies significantly with settings, usage, &amp; other factors</i> 170W or 230W slim tip AC adapter
	<ul> <li>Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.1</li> <li>Bluetooth 5.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter</li> <li>None</li> <li>None</li> </ul>								Operating system	<ul> <li>One of the following, configurable by model:</li> <li>Windows<sup>®</sup> 10 Home 64</li> <li>Windows 10 Pro 64</li> <li>Windows 10 Pro 64 for Workstations</li> </ul>
										One of the following, configurable by model: • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
										MIL-STD-810G military testing
	tiona abova may na								Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant

Note: The specifications above may not be available in all regions.

Lenovo November 2019









#### ThinkPad T470 Platform Specifications

Product Specifications Reference (PSREF)

Processor	6th Generatio	on Intel® (	Core™ i5 /	/ i7 Prc	cessor or			WWAN (optional)	One of the following, configurable by model (WWAN can coexist with WiGig):
	Number Co	f of # o ores Threa	ads Freque	ency F	Max Turbo requency Cache	Memory Types	Processor Graphics		<ul> <li>Wireless WAN upgradable</li> <li>Integrated Mobile Broadband 4G LTE-A, Qualcomm<sup>®</sup> Snapdragon<sup>™</sup> X7 LTE-A (Sierra Wireless EM7455), M.2 card</li> </ul>
	i5-6200U i5-6300U i7-6500U i7-6600U	2 4	2.3 G 2.4 G 2.5 G 2.6 G	GHz GHz	2.8 GHz         3MB           3.0 GHz         3MB           3.1 GHz         4MB           3.4 GHz         4MB	DDR4-2133	Intel HD Graphics 520	SIM card (opt)	<ul> <li>Integrated Mobile Broadband 4G LTE, Intel XMM<sup>™</sup> 7160 (Fibocom L831-EAU), M.2 card (EMEA only) Micro-SIM card slot, opt Verizon LTE (US) or Lenovo<sup>®</sup> Connect (EMEA) SIM card</li> </ul>
	7th Generatio	on Intel C					<u> </u>	Dimensions Weight	WxDxH:         13.25" x 9.15" x 0.79";         336.6mm x 232.5mm x 19.95mm           Models         3-cell or 3 + 3-cell         6-cell or 3 + 6-cell
	Processor #	f of # o ores Threa	f Bas	se 🛛 🛚	Max Turbo Frequency Cache	Memory Types	Processor Graphics		Models         3-cell of 3 + 3-cell         6-cell of 3 + 5-cell           Magnesium         3.49 lb / 1.58 kg         3.92 lb / 1.78 kg           PPS         3.63 lb / 1.65 kg         4.35 lb / 1.85 kg
	i3-7100U i5-7200U i5-7300U	2 4	2.4 G 2.5 G 2.6 G	GHz GHz GHz	- 3MB 3.1 GHz 3MB 3.5 GHz 3MB	DDR4-2133	Intel HD Graphics 620	Case color Case material	Black Display cover: Magnesium Hybrid or PPS; Bottom: Glass-Fiber Reinforced Plastic
	i7-7500U i7-7600U		2.7 G 2.8 G		3.5 GHz         4MB           3.9 GHz         4MB	_		Media reader	r <i>Optional:</i> Smart card reader 4-in-1 reader (MMC, SD, SDHC, SDXC), supports SD 3.0, UHS-I
	* i7-6500U is N	VOT availal	ble in EME	A				Ports	Three USB 3.1 Gen 1 (USB 3.0, one Always On), USB 3.1 Type-C Gen 2 / Thunderbolt 3 (w/ the function of Power Delivery and DP).
Graphics	2GB 2.5GHz supports exter supports three	phics 620 GDDR5 ernal digit ee indepe	in proces memory ( al monito ndent disp	ssor an (discret r via H plays;	ssor only, or nd NVIDIA GeFo te models are N DMI or USB Typ ISB Type-C); 40	OT available be-C;	e in EMEA);	WiGig dock <i>(opt)</i> Monitor cable <i>(optional)</i>	HDMI 1.4b, Ethernet (RJ-45), Dock connector * Depending on many factors, actual data transfer speed may be lower than theoretical speed ThinkPad WiGig dock HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter
Chipset Memory	Intel SoC (Sy 32GB max /	ystem on 2400MHz	Chip) plat DDR4, d	tform lual-cha	<b>31</b> //	wo DDR4 S	O-DIMM sockets	Camera <i>(optional)</i> Audio support	<i>IR &amp; 720p</i> : IR camera and HD720p camera (mutually exclusive with WiGig) HD Audio, Realtek ALC3268 codec / stereo speakers, 2W x 2 /
Display	Some: 14.0' 220 r	" (355mm nits, 16:9	) HD (136 aspect rat	66x768 tio, 400	), anti-glare, LE	D backlight,		Keyboard UltraNav™	dual array microphone, combo audio/microphone jack 6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Multi-touch <i>(opt)</i>	220 r Some: 14.0' 250 r	nits, 16:9 " (355mm nits. 16:9	aspect rat ) FHD (19 aspect rat	tio, 400 920x10 tio, 700	80), anti-glare, I D:1 or 500:1 con 80), anti-glare, I D:1 contrast ratic ure (FHD IPS pa	trast ratio LED backlig b. 170° view	ht, IPS, ing angle	Security Security chip vPro (optional) Fingerprint readed NFC (optional)	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 1.2 or 2.0, TCG Certified Intel vPro Technology <i>r Optional</i> : Touch style match on chip fingerprint reader on the keyboard bezel Near Field Communication
Storage	Some: HDD	) / SATA 6	.0Gb/s, 2.	.5" wid	<i>slot exclusively for</i> le, 7mm high, Ac e, 7mm high (e.	ctive Protect		Internal battery External battery	Optional: Integrated Li-Polymer 3-cell (24Wh) Li-Polymer 3-cell (24Wh) or Li-ion 6-cell (48Wh or 72Wh)
	Some: M.2	SSD / PC	le NVMe,	, PCle	3.0 x 2, 16Gb/s	-	,	Max battery life (MobileMark® 2014)	Models 3-cell 3+3-cell 6-cell 48Wh 6-cell 72Wh 3+6-cell 48Wh 3+6-cell 72Wh
					b/s, in WWAN sl I and WiGig	lot as 2nd S	torage,		
Optical	None				r and rrrong				Discrete         6.9 hr         13.9 hr         14.3 hr         21.6 hr         21.2 hr         28.6 hr           * Battery life varies significantly with settings, usage, & other factors
Ethernet	Non-vPro mo vPro model:				ection I219-V (Ja ection I219-LM (		)	AC adapter	45W or 65W slim tip AC adapter, 45W or 65W USB Type-C AC adapter One of the following, configurable by model:
WLAN	One of the follo • Realtek® R • Intel Dual E • Intel Dual E	owing, coni TL8822BI Band Wire Band Wire	figurable by E, Wi-Fi 2 less-AC 8 less-AC 8	y <i>model</i> 2x2 802 3260, V 3265, V	<i>(WiGig can coexis</i> 2.11ac + BT4.1, Vi-Fi 2x2 802.11 Vi-Fi 2x2 802.11	<i>st with WWAN</i> M.2 card ac + BT4.1, ac + BT4.1,	M.2 card M.2 card	Operating system	<ul> <li>Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64</li> <li>Windows 10 Home 64</li> <li>Windows 10 Pro 64</li> </ul>
Bluetooth™	<ul> <li>Intel Tri-Bar M.2 card Bluetooth 4.1</li> </ul>	nd Wireles 1 wireless	ss-AC 182 , integrate	265, Wi ed in W	iGig 802.11ad + /i-Fi + Bluetooth 2 but is limited to E	Wi-Fi 2x2 8 combo ada	302.11ac + BT4.1, pter	Limited warranty	One of the following, configurable by model: • 1-year depot repair service • 1-year depot with 2-year system board repair service • 1-year limited onsite service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
								Mil-Spec test	MIL-STD-810G military testing
								Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant

Note: The specifications above may not be available in all regions.









# ThinkPad T470s Platform Specifications

Product Specifications Reference (PSREF)

Processor	6th Generation Intel <sup>®</sup> Core™ i5 / i7 Processor	Dimensions WxDxH: 13.03" x 8.93" x 0.67-0.74"; 331mm x 226.8mm x 16.9-18.8mm
	Processor # of # of Base Max Turbo Cache Memory Processor Number Cores Threads Frequency Frequency Cache Types Graphics	Weight Starting at 2.9 lb / 1.32 kg Case color Black or Silver
	Information         Constant of the second seco	Case material Display cover: CFRP Hybrid; Bottom: Magnesium
	13-03000         2         4         2.4 GHz         3.0 GHz         300B         DDH4-2133         520           i7-6600U         2.6 GHz         3.4 GHz         4MB         520         520	Smart card reader <i>Optional:</i> Smart card reader Media reader 4-in-1 reader (MMC, SD, SDHC, SDXC)
	or 7th Generation Intel Core i5 / i7 Processor	Ports Three USB 3.1 Gen 1 (ÚSB 3.0, one Always On),
	Processor         # of         # of         Base         Max Turbo         Cache         Memory         Processor           Number         Cores         Threads         Frequency         Frequency         Cache         Memory         Types         Graphics	USB 3.1 Type-C Gen 2 / Thunderbolt 3 (w/ the function of Power Delivery and DP), HDMI 1.4b, Ethernet (RJ-45), Dock connector * Depending on many factors, actual data transfer speed may be lower than theoretical speed
	i5-7200U         2         4         2.5 GHz         3.1 GHz         3MB         3MB <t< td=""><td>WiGig dock (opt)       ThinkPad WiGig dock, mutually exclusive with WWAN         Monitor cable       HDMI to VGA:       Lenovo HDMI to VGA Monitor Adapter         (optional)       USB-C to VGA:       Lenovo USB-C to VGA Adapter</td></t<>	WiGig dock (opt)       ThinkPad WiGig dock, mutually exclusive with WWAN         Monitor cable       HDMI to VGA:       Lenovo HDMI to VGA Monitor Adapter         (optional)       USB-C to VGA:       Lenovo USB-C to VGA Adapter
Orenhine		Camera (optional)HD720p resolution, fixed focus (models without camera are NOT available in EMEA)
Graphics	Intel HD Graphics 520 or 620 in processor; supports external digital monitor via HDMI or USB Type-C; supports three independent displays;	Audio support HD Audio, Realtek® ALC3268 codec / stereo speakers, 1W x 2 / dual array microphone, combo audio/microphone jack
Chipset	Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@24Hz (HDMI) Intel SoC (System on Chip) platform	Keyboard         6-row, spill-resistant, multimedia Fn keys, optional LED backlight           UltraNav™         TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Memory	20GB or 24GB max <sup>7</sup> / 2400MHz DDR4, dual-channel capable, 4GB or 8GB memory soldered to systemboard, one DDR4 SO-DIMM socket * System clocks down for processors with lower memory controller	Security Power-on password, hard disk password, supervisor password, security keyhole Security chip Discrete TPM 2.0, TCG Certified vPro (optional) Intel vPro Technology
Display	Some: 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 160° viewing angle	Fingerprint reader <i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest NFC <i>(optional)</i> Near Field Communication
Multi-touch <i>(opt)</i>	Some: 14.0" (355mm) WQHD (2560x1440), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 160° viewing angle On-cell touch, supports 10-finger gesture, 250 nits (FHD only)	Internal battery Max battery life Front Li-Polymer 3-cell ( <i>23Wh</i> ) and rear Li-ion 3-cell ( <i>26Wh</i> ), both Integrated <i>MobileMark® 2014:</i> up to 10.5 hr * <i>Battery life varies significantly with settings, usage, &amp; other factors</i>
Storage	One of the following, configurable by model:	AC adapter 45W slim tip AC adapter, 45W or 65W USB Type-C AC adapter
Optical	<ul> <li>M.2 SSD / SATA 6.0Gb/s (e.g. xxxGB SSD M.2)</li> <li>M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s (e.g. xxxGB SSD M.2 PCIe NVMe) None</li> </ul>	Operating system One of the following, configurable by model: • Windows <sup>®</sup> 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64
Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)	Windows 10 Pro 64     Windows 10 Pro 64
WLAN	One of the following, configurable by model (WiGig is mutually exclusive with WWAN): Intel Dual Band Wireless-AC 8260, Wi-Fi 2x2 802.11ac + BT4.1, M.2 card Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + BT4.1, M.2 card Intel Tri-Band Wireless-AC 18265, WiGig 802.11ad + Wi-Fi 2x2 802.11ac + BT4.1	Limited warranty One of the following, configurable by model: <ul> <li>1-year depot repair service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>
	M.2 card	Mil-Spec test MIL-STD-810G military testing
Bluetooth™	Bluetooth 4.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter * Intel 8265ac / 18265ac card support BT4.2 but is limited to BT4.1 by Windows OS	Environment EPEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant
	<ul> <li>One of the following, configurable by model (mutually exclusive with WiGig):</li> <li>Wireless WAN upgradable</li> <li>Integrated Mobile Broadband 4G LTE-A, Qualcomm<sup>®</sup> Snapdragon<sup>™</sup> X7 LTE-A (Sierra Wireless EM7455), M.2 card</li> </ul>	
SIM card (opt)	Micro-SIM card slot, opt Verizon LTE (ÙS) or Lenovo® Connect (EMEA) SIM card	









#### ThinkPad T480 Platform Specifications

Processor	7th Gener	ration Ir	ntel <sup>®</sup> Cor	e™ i5 Proc	essor				Dimensions	WxDxH:	13.25" x 9	9.15" x 0.79"; 33	6.6mm x 232	2.5mm x 19.95m	m	
	Processor	# of	# of	Base	Max Turbo		Memory	Processor	Weight	Models		24Wh or 24Wh + .				
	Number	Cores		Frequency	Frequency	Cache	Types	Graphics		Integrated N	Magnesium	3.49 lb / 1.58 k	a	3.92 lb / 1.7	3 kg	
	i5-7200U		4	2.5 GHz	3.1 GHz	3MB	DDR4-2133	Intel HD Graphics	1	Integrated F		3.63 lb / 1.65 l	g	4.08 lb / 1.8		
	i5-7300U	2	4	2.6 GHz	3.5 GHz	3MB	DDR4-2133	620		Discrete Ma	ignesium	3.53 lb / 1.60 l	g	3.97 lb / 1.8	) kg	
	or 8th Ge	neratio	n Intel Co	ore i3 / i5 /	i7 Processo	or		·	1	Discrete PP	PS	3.68 lb / 1.67 l	g	4.12 lb / 1.8	7 kg	
	Processor	# of	# of	Base	Max Turbo	1	Memory	Processor	Case color	Black			<u> </u>			
	Number i3-8130U	Cores	-		Frequency 3.4 GHz	Cache 4MB	Types	Graphics	Case material	Display co Bottom:		esium Hybrid or P -Fiber Reinforced				
	i5-8250U	2	4	1.6 GHz	3.4 GHz	6MB			Smart card reade	rOptional:	Smart card	reader				
	i5-8250U	-		1.7 GHz	3.6 GHz	6MB	DDR4-2400	Intel UHD Graphics	Media reader			SD, SDHC, SDXC	)			
	i7-8550U	4	8	1.8 GHz	4.0 GHz	8MB		620	Ports			one Always On),				
	i7-8650U	1		1.9 GHz	4.0 GHz	8MB				one USB 3	3.1 Type-C	Gen 1 (with the fu Gen 2 / Thunderb	olt 3 (with th	e function of PD		
Graphics	Intel HD ( NVIDIA® ( <i>(discrete g</i> supports )	Graphic GeForc <i>graphic</i> externa three in	s 620 or e <sup>®</sup> MX15 s <i>is avail</i> I digital r idepende	Intel UHD 50, 2GB GE <i>lable only c</i> monitor via ent displays	Graphics 6 DR5 mem <i>i7 model</i> : HDMI or U s;	20 in p ory s <i>in EN</i> SB Typ	e-Ć;	ly or d 30Hz (HDMI)	Monitor cable (optional)	headphone 4-in-1 med side dockir * Depending HDMI to V USB-C to 1	e / microph lia reader ( ng connect g on many fa GA: Leno DP: Leno	(RJ-45), nano-SIN one combo jack, o MMC, SD, SDHC, or, security keyhol ctors, actual data tra vo HDMI to VGA N vo USB-C to Disp	ptional smà SDXC), e n <i>sfer speed n</i> Ionitor Adap	rt card reader, <i>hay be lower than t</i> oter	heoretical speed	
Chipset Memory	32GB mat	x / 240	OMHz DD	ip) platform DR4, dual-c pcessors with		bable, t	wo DDR4 S roller	O-DIMM sockets	Camera (optional) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus HD Audio, Realtek® ALC3287 codec /							
Display	Some:						ED backligh	t,				x 2, Dolby <sup>®</sup> Audio <sup>1</sup>	<sup>™</sup> Premium	,		
	Some:	14.0" (3	355mm) l	FHD (1920	, 400:1 con x1080), and	ti-glare	LED backl	ght, IPS, wing angle		dual array	microphon	e (optional for spe one combo jack	cial bid mod	el),		
	Some:	14.0" (3 300 nits	355mm) \ s, 16:9 as	WQHD (25 spect ratio,	60x1440), a	anti-gla	re, LED bac io, 72% gar	cklight, IPS,	Keyboard 6-row, spill-resistant, multimedia Fn keys, optional LED backlight UltraNav™ TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad Security Power-on password, bard disk password, supervisor password, security keybol							
Multi-touch (opt)	On-cell to	uch, su	ewing an Ipports 1	gle 0-finger ge	sture (FHD	only)			Security Power-on password, hard disk password, supervisor password, security k Security chip Discrete TPM 2.0, TCG Certified (may be disabled in some region)							
Storage	Some: H Some: S	DD / S SD / S/	ata 6.00 Ata 6.00	3b/s, 2.5" w	ide, 7mm h	nigh, Ao		ion System™ SD)	vPro <i>(optional)</i> Fingerprint reade NFC <i>(optional)</i>		Touch style anti-spoofi	e match on chip fin ng technology	gerprint rea	der on the keybo	oard bezel,	
	Some: 12 in	28GB N WWAI	M.2 SSD N slot as	/ PCIé NVI 2nd Storad	Me, PCIe 3 ge, mutually	.0 x 2, / exclus	sive with WV	VAN	Battery			i-ion 24Wh battery 48Wh, or 72Wh b				
<b>O I I I I</b>	* Installed I	M.2 SSL	) is PCIe (	3.0 x 4 but ru	in at PCIe 3.	0 x 2 du	e to M.2 SSD	adapter limitation	Max battery life	Models	240	· · · · · · · · · · · · · · · · · · ·		Wh 24Wh + 48W	h 24Wh + 72Wh	
Optane <sup>™</sup> memory		ne mer	mory, PC	ie NVMe, I	-Cle 3.0 x 2	2			(MobileMark® 2014)	Integrated n				21.8 hr	29.0 hr	
Optical	None					<u> </u>			4	Discrete mo				19.8 hr	26.4 hr	
Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)								AC adapter	* Battery life	e varies sign	ificantly with settings				
WLAN + Bluetooth™ <i>(opt)</i>					Ni-Fi 2x2 80 limited to B1			h 4.1, M.2 card								
WWAN (optional)	<ul> <li>Wireless</li> <li>Integrate Intel XM</li> <li>Integrate Intel XM</li> <li>* For non-W</li> </ul>	s WAN ed Mob IM™ 72 ed Mob IM™ 73 WWAN n	upgradal bile Broad 62 (Fibod bile Broad 60 (Fibod nodel, it m	ble bband 4G L com L830-I bband 4G L com L850-0 beans the mo	_TE, EB), M.2 ca	ird (EM ird WWAN ເ	EA only) Ipgradable	ptane memory):	Limited warranty (optional)	<ul> <li>1-year de</li> <li>1-year de</li> <li>1-year +</li> <li>1-year +</li> <li>3-year/1-</li> <li>3-year/3-</li> <li>3-year/1-</li> </ul>	epot repair epot with 2 2-year der 2-year limi yr battery yr battery yr battery	depot repair service service -year system boar oot repair service ted onsite service depot repair servic depot repair servic limited onsite serv limited onsite serv	d repair ser e e ice	rice		
									Mil-Spec test MIL-STD-810G military testing							
									Environment	EPEAT™ G	Gold (US o	nly); ENERGY ST	R® 6.1: Rol	S-compliant		
												,,, <u>=</u>				

Note: The specifications above may not be available in all regions.









#### ThinkPad T480s Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel <sup>®</sup> Core™ i5 Processor	Dimensions WxDxH: 13.03" x 8.93" x 0.73"; 331mm x 226.8mm x 18.45mm
	Processor         # of         # of         Base         Max Turbo         Cache         Memory         Processor           Number         Cores         Threads         Frequency         Frequency         Cache         Memory         Types         Graphics	Weight     Starting at 2.9 lb / 1.32 kg       Case color     Black or Silver       Case material     Display cover: CFRP Hybrid;
	i5-7200U         2         4         2.5 GHz         3.1 GHz         3MB         DDR4-2133         Intel HD Graphics           i5-7300U         2         4         2.6 GHz         3.5 GHz         3MB         DDR4-2133         Intel HD Graphics	Bottom: Magnesium
	or 8th Generation Intel Core i5 / i7 Processor	Smart card reader <i>Optional:</i> Smart card reader Media reader 4-in-1 reader (MMC, SD, SDHC, SDXC)
	Processor Number         # of Cores         # of Threads         Base Frequency         Max Turbo Frequency         Cache         Memory Types         Processor Graphics	Ports Two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),
	i5-8250U         4         8         1.6 GHz         3.4 GHz         6MB         1.6 GHz         1.6 GHz         1.6 GHz         6MB         1.7 GHz         1.6 GHz         1.7 GHz         1.6 GHz         6MB         1.0 GHz         1.0 GHz         8MB         1.0 GHz         8MB         1.9 GHz         4.2 GHz         8MB         1.0 GHz         620	4-in-1 reader (MMC, SD, SDHC, SDXC), side docking connector, security keyhole
Graphics	Intel HD Graphics 620 or Intel UHD Graphics 620 in processor only or Intel UHD Graphics 620 in processor and NVIDIA® GeForce® MX150, 2GB GDDR5 memory (discrete models are NOT available in EMEA);	* Depending on many factors, actual data transfer speed may be lower than theoretical speed Monitor cable USB-C to VGA: Lenovo USB-C to VGA Adapter (optional) USB-C to DP: Lenovo USB-C to DisplayPort Adapter
	supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)	Camera (optional) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus
Chipset Memory	Intel SoC (System on Chip) platform 20GB or 24GB max / 2400MHz DDR4, dual-channel capable, 4GB or 8GB memory soldered to systemboard, one DDR4 SO-DIMM socket	Audio support HD Audio, Realtek® ALC3287 codec / stereo speakers, 1W x 2, Dolby® Audio™ Premium / optional dual array microphone, headphone / microphone combo jack
Display	* System clocks down for processors with lower memory controller Some: 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS,	Keyboard 6-row, spill-resistant, multimedia Fn keys, optional LED backlight UltraNav™ TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
ырнау	250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 170° viewing angle, supports ThinkPad Privacy Guard on some models Some: 14.0" (355mm) WQHD (2560x1440), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 170° viewing angle	Security         Power-on password, hard disk password, supervisor password, security keyhole           Security chip         Discrete TPM 2.0, TCG Certified (may be disabled in some region)           vPro (optional)         Intel vPro Technology           Fingerprint reader Optional:         Touch style match on chip fingerprint reader on the palm rest, anti-spoofing technology
Multi-touch (opt)	On-cell touch, supports 10-finger gesture, 250 nits (FHD only)	NFC (optional) Near Field Communication
Storage	One of the following, configurable by model: • M.2 SSD / SATA 6.0Gb/s • M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s	Battery Integrated Li-ion 57Wh battery, supports Rapid Charge (0-80% in 60 mins) with 65W USB Type-C AC adapter
Optical	None	Max battery life MobileMark <sup>®</sup> 2014: 15.6 hr * Battery life varies significantly with settings, usage, & other factors
Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville)	AC adapter 45W or 65W USB-C AC adapter
	vPro model: Intel Ethernet Connection I219-LM (Jacksonville)	Operating system <i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64
WLAN + Bluetooth™ <i>(opt)</i>	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card * Intel 8265ac card supports BT4.2 but is limited to BT4.1 by Windows OS	Limited warranty • 1-year depot repair service • 1-year depot with 2-year system board repair service
WWAN	<ul> <li>One of the following, configurable by model:</li> <li>Wireless WAN upgradable</li> <li>Integrated Mobile Broadband 4G LTE, Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only)</li> </ul>	<ul> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>
	<ul> <li>Integrated Mobile Broadband 4G LTE-A,</li> </ul>	Mil-Spec test MIL-STD-810G military testing
SIM card (opt)	Intel XMM™ 7360 (Fibocom L850-GL), M.2 card Nano-SIM card slot, optional Verizon LTE (US) SIM card	Environment EPEAT™ Silver; ENERGY STAR® 6.1; RoHS-compliant
Note: The energifier	ations above may not be available in all regions	

Note: The specifications above may not be available in all regions.



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#### ThinkPad T490 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th C	Generation I	Intel® Co	ore™	/ i5 / i7 Pro	ocessor					Dimensions	<i>WxDxH:</i> 12.95" x 8.94" x 0.70"; 329mm x 227mm x 17.9mm							
	Proc	essor # of	# of		Base I	Max Turbo	ache	Memory	Proces	ssor	Weight	Models HD FHD FHD Low Power / WQHD Privacy Guard							
	Num		Thread	_		-requency		Types	Graph	nics		Weight 3.37 lb / 1.53 kg 3.41 lb / 1.55 kg 3.23 lb / 1.46 kg 3.56 lb / 1.61 kg							
	i5-82						6MB				Case color	Black							
	i5-83		8			i i	6MB	DDR4-2400	Intel UHD ( 620		Case material	Display cover: PPS / 50% GF; Bottom: PA / 50% GF							
	i7-85						8MB 8MB		020	)	Smart card reade	er Optional: Smart card reader							
	L		ion Intel	_		rocessor (N	-	ailable in l	EMEA)		Media reader	MicroSD card reader							
	_	essor # of	# of				ſ	Memory	Proce	ssor	Ports	Two USB 3.1 Gen 1 (one Always On),							
	Num		Thread	ls Fi		Frequency C	ache	Types	Graph			one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP),							
		210U 4	8	-	1.6 GHz	4.2 GHz 6	6MB					HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models),							
		510U ·		_				DDR4-2400	Intel UHD	Graphics		headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical spee							
	i7-10	710U 6	12	-	1.1 GHz	4.7 GHz 1	2MB				_								
Graphics	Intel	UHD Graph	nics 620	) or l	ntel UHD	Graphics in	proce	essor only	or		Monitor cable	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter							
	Intel UHD Graphics 620 or Intel UHD Graphics in processor and (4 NVIDIA® GeForce® MX250, 2GB GDDR5 memory;										(optional)	USB-C to VGA: Lenovo USB-C to VGA Adapter							
	NVIDIA® GEForce® MX250, 2GB GDDR5 memory; supports external digital monitor via HDMI or Thunderbolt; USB-C to DP: Lenovo USB-C to DisplayPort Adapter																		
	supports three independent displays; Max resolution: 4096x2304@60Hz (Thunderbolt); 4096x2160@24										Bundled Accy	None							
	Max	resolution:	4096x2	2304	@60Hz (T	hunderbolt)	); 409	6x2160@2	24Hz (HDI	VII)	Camera (optional	I) One of the following, configurable by model:							
Chipset	Intel	SoC (Syste	em on C	hip)	platform							HD720p camera with ThinkShutter camera privacy, fixed focus							
Memory	40GI	3 or 48GB r or 16GB m	max / 24	1001 Solda	/IHZ DDR4	I, dual-chan stemboard,		apable, NDB4 SO-I		ot	Audio support	• IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Realtek® ALC3287 codec /							
						t run at 2400l						stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio™ Premium /							
Display	0:	Deschutter		- -	Ourface	Duinhturana	Aspe	ct Contras	st Color	Viewing	1	dual array far-field microphone (optional for special bid model), headphone / microphone combo jack							
		Resolution	200	Туре		Brightness	Ratio			Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight								
	14.0	HD (1366x7	68)	IN	Anti-glare	220 nits 250 nits	16:9	400:1	45%	90°	UltraNav™	TrackPoint <sup>®</sup> pointing device and buttonless Mylar surface multi-touch touchpad							
	14.0'	FHD (1920x	(1080)	IPS	Anti-glare	(non-touch) 300 nits (multi-touch)	16:9	700:1	45%	170°	Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)							
	14.0	FHD (1920x Low Power		IPS	Anti-glare	400 nits	16:9	800:1	72%	170°	Fingerprint reade	Intel vPro Technology or Optional: Touch style match on chip fingerprint reader on the palm rest							
	14.0	FHD (1920x ThinkPad Pi Guard		IPS	Anti-glare	400 nits	16:9	1000:1	1 72%	170°	NFC (optional) Battery	Near Field Communication Integrated Li-ion 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr)							
	1.0	WQHD (256	0x1440)	100	0	500 1	100	4500.4	100%	1700	Max battany life	with 65W AC adapter							
	14.0'	HDR, Dolby			Glossy	500 nits	16:9	1500:1	Adobe	170°	Max battery life	MobileMark <sup>®</sup> 2014: 16.11 hr * Battery life varies significantly with settings, usage, & other factors							
Multi-touch (opt)	On-c	ell touch, s	upports	10-f	inger gest	ture (FHD o	nly)				AC adapter	<ul> <li>45W USB-C AC adapter</li> <li>65W USB-C AC adapter</li> </ul>							
Storage	• M.	2 2280 SSE	) / SATA	6.0	Gb/s (NO	T available i	in EM	EA)				65W Slim tip AC adapter							
		2 2280 SSE 2 2242 SSE									Operating system	n • Windows® 10 Home 64							
	• Int	el Optane™	Memor	γH	10 with So	lid State St	orage	,			(optional)	Windows 10 Pro 64							
Ontinal	М.	2 2280, PC	le NVM	é 3.0	) x 4		0					Windows 10 Pro in S mode							
Optical	None	-									Limited warranty								
Ethernet		vPro mode model:				ection I219- ection I219-					(optional)	<ul> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> </ul>							
WLAN +	-	of the followir							5)		-	• 3-year/1-yr battery depot repair service							
Bluetooth™						02.11ac + B	lueto	oth 5.0				<ul> <li>1-year + 2-year depot repair service</li> </ul>							
(optional)	<ul> <li>Interview</li> </ul>	el Wi-Fi 6 A (201 for 10t	X201, V	Vi-Fi	2x2 802.1	1ax + Bluet	tooth	5.0				<ul> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>							
WWAN (optional)					,	,					Mil-Spec test	MIL-STD-810G military testing							
	<ul> <li>Wireless WAN upgradable (special bid only in EMEA)</li> <li>Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EM</li> <li>Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card</li> <li>Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4,</li> <li><i>For non-WWAN model, it means the model is NOT WWAN upgradable</i></li> <li>Nano-SIM card slot, optional Verizon LTE (US) SIM card</li> </ul>										Environment	EPEAT™ Gold; ENERGY STAR® 7.1; RoHS-compliant							
SIM card (opt)																			
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Note: The specifications above may not be available in all regions.



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#### ThinkPad T490 Secure Access / Healthcare Edition Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th G	enera	ation In	tel® Co	re™ i5	5 / i7 Pr	ocessor					Dimensions	WxDxH:	12.95" x 8.94" x 0.70";	329mm x 227mm x 1	7.9mm		
	Proce		# of	# of			Max Turbo	Cache	Memory	Proces		Weight	Models	FHD	Privacy Guard			
	Numb		Cores	Threads	· · ·	· · · · ·	Frequency		Types	Graph	lics		Weight	3.41 lb / 1.55 kg	3.56 lb / 1.61 kg			
	i5-826					GHz		6MB				Case color Case material	Black <i>Display c</i>	over: PPS / 50% GF;				
	i5-836		4	8		GHz GHz		6MB 8MB	DDR4-2400	ntel UHD ( 620		Case material		<i>cover:</i> PC/ABS + Magn	esium allov			
	i7-866				_	GHz		8MB		020	,		,	(with ISO 22196	compliant anti-microbia	I surface treatment);		
Craphica			Cronhi	aa 600		-		0.0.2				<u>⊣</u>	Bottom:	PA / 50% GF				
Graphics	Intel l	JHD (	Graphic	cs 620 cs 620 i	in pro	cessor	only or and					Smart card reade	PEID room	der supporting RFID / NI	-0			
	NVID	IA® G	ieForce	e® MX2	50, 20	GB GDI	DR5 memo					Media reader	MicroSD	card reader				
							IDMI or The	underb	olt;			Ports	Two USB	3.1 Gen 1 (one Always )	On),			
				depend 096x23				t): 409	6x2160@24	Hz (HDN	<i>A</i> I)		one USB	3.1 Type-C Gen 1 (with 1 3.1 Type-C Gen 2 / Thur	the function of Power De	elivery and DisplayPort),		
Chipset				n on Ch		,		.,,		(	,	-	HDMI 1.4	b, Ethernet (RJ-45), nan	o-SIM card slot (WWAN	I model).		
Memory	48GB	max	/2400	MHz D	DŔ4,	dual-ch	nannel capa						headphor	ne / microphone combo j	ack, microSD card read	er,		
-									DR4 SO-DI		et		side dock	king connector, security k	eyhole	lower than theoretical speed		
Disalari	* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limita											Monitor cable	HDMI to	VGA: Lenovo HDMI to	VGA Monitor Adapter	ower man meorencal speed		
Display	Size Resolution Type Surface Brightness Aspect Contrast Ratio Ratio										Viewing Angle	(optional)	USB-C to	VGA: Lenovo USB-C to	o VGA Adapter			
							250 nits	Tian		Gamar	Angle	-		DB: Lenovo USB-C to				
	14.0" FHD (1920x1080) IPS Anti-glare 300 nits (non-touch) 16:9 700:1									45%	170°	Bundled Accy	USB-C to DP: Lenovo USB-C to DisplayPort Adapter ed Accy None					
		``		,		5	(multi-touch	)				Camera (optional	nera (optional) One of the following, configurable by model:					
			1920x1	080)				1					• HD720	p camera with ThinkShut	ter camera privacy, fixe			
		Thinkl Guard	Pad Priv	/acy	IPS A	nti-glare	e 400 nits	16:9	1000:1	72%	170°	Audio support		era and HD720p camera b, Realtek® ALC3287 cod		era privacy, fixed focus		
Multi-touch (opt)				oporte 1		aor aoc								eakers, 2W x 2, Dolby <sup>®</sup> A				
						0 0		Jiliy)					optional c	dual array far-field microp	hone, headphone / mic	rophone combo jack		
Storage				/ SATA / PCIe I			3.0 x 4					Keyboard	6-row, spi	ill-resistant, multimedia F	n keys, optional LED ba	acklight		
	• M.2	2242	2 SSD /	/ PCle I	VVMe	, PCle	3.0 x 2					UltraNav™		nt®pointing device and bu	,			
				Memory NVMe			olid State S	torage	,			Security Security chip		password, hard disk pas TPM 2.0 integrated in cl				
Optical	None	2200	J, FUIE		3.0 X	. 4						, , ,	(may be o	disabled in some region)				
Ethernet		/Pro I	model <sup>.</sup>	Intel Et	herne	et Conr	nection I219	-V (.la	cksonville)			System Mgt (opt)	Intel vPro	Technology				
Ethomot	vPro								acksonville)			IFingerprint reade ↓NFC	NEC SUD	fingerprint reader on pa port via RFID reader	lm rest			
WLAN (optional)	Intel V	Virele	ss-AC	9560, V	Ni-Fi	2x2 802	2.11ac + Bl	uetootl	า 5.0			Battery		d Li-ion 50Wh battery, su	Innorte Banid Charge (c	harge up to 80% in 1hr)		
								etooth	combo adapt	ter		Max battery life	MobileMa	a <i>rk</i> ® 2014: 16.11 hr				
WWAN (optional)														life varies significantly with s	ettings, usage, & other fact	ors		
	<ul> <li>Wire</li> <li>Into</li> </ul>	eless	WAN u d Mobi	Ipgrada Broa	ble (s dhanc		bid only)	om I 8	50-GL, M.2 c	ard		AC adapter	<ul> <li>45W U3</li> <li>65W U3</li> </ul>	SB-C AC adapter SB-C AC adapter				
	* For r	ion-W	WAN m	odel, it n	neans	the mod	del is NOT W	WAN u	ogradable	aru			<ul> <li>65W sli</li> </ul>	im tip AC adapter				
SIM card (opt)	None											Operating system		Windows® 10 Pro 64				
												Limited warranty	• 1-year d	lepot repair service				
												(optional)	<ul> <li>1-year d</li> </ul>	lepot with 2-year system	board repair service			
														imited onsite service	ervice			
														- 2-year/1-yr battery depo				
													• 1-year +	⊦ 2-year/1-yr battery limit	ed onsite service			
														I-yr battery limited onsite	service			
												Mil-Spec test		-810G military testing				
												Environment	EPEAT™	Silver; ENERGY STAR®	7.1; RoHS-compliant			
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Note: The specifications above may not be available in all regions.





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#### ThinkPad T490s Platform Specifications

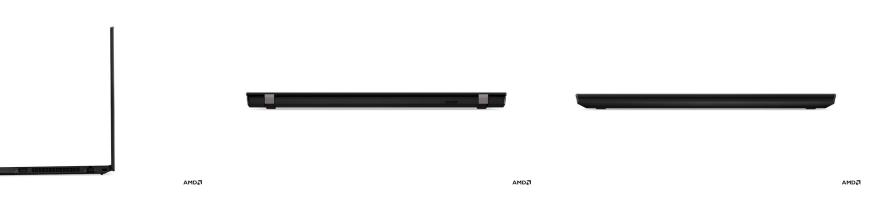
Product Specifications Reference (PSREF)

		L		:7 D						Dimensions							
Processor	8th Generation									Dimensions	WxDxH (black with FHD / Privacy Guard): 12.95" x 8.90" x 0.66"; 329.0mm x 226.15mm x 16.7mm						
	Processor # of Number Core	# of s Thread	Bas Freque				emory ypes	Proce Grap			WxDxH (black with FHD Low Power / WQHD):						
	i5-8265U		1.6 G				ypee	Grap	11100	-	12.94" x 8.89" x 0.63"; 328.8mm x 225.8mm x 16.1mm WxDxH (silver): 12.96" x 8.92" x 0.68"; 329.15mm x 226.45mm x 17.2mm						
	i5-8365U 4	8	1.6 G	Hz 4.1 G	Hz 6M	В	14-2400 In	tel UHD	Graphics	Weight	Plack with EHD Law Power						
	i7-8565U	°	1.8 G		-	В	14-2400	62			Models Black with FHD / WQHD / Privacy Guard Silver						
	i7-8665U		1.9 G	Hz 4.8 G	Hz 8M	В					Weight 2.98 lb / 1.35 kg 2.81 lb / 1.27 kg 3.29 lb / 1.49 kg						
Graphics	Intel UHD Grap									Case color	Black or Silver						
	supports extern supports three				or Thund	lerbolt;				Case material	Display cover: CFRP Hybrid (black) or Aluminum (silver); Bottom: Magnesium						
	Max resolution:				erbolt);	4096x2	160@24	Hz (HD	MI)	Smart card reade	er Optional: Smart card reader						
Chipset	Intel SoC (Syste	em on Cl	hip) plat	orm						Media reader	MicroSD card reader						
Memory	8GB, 16GB or 3 * Installed memor	32GB / 24	400MHz	DDR4 / so	Idered to	syster	nboard, r	o socke	ets	Ports	Two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),						
Display		y is actual	liy 2000iv		1 2400101					1	one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP),						
Display	Size Resolution		Type S	urface Brig	ghtness	Aspect Ratio	Contrast Ratio	Gamut	Viewing Angle		HDMI 1.4b, Ethernet extension connector, nano-SIM card slot (WWAN models),						
					50 nits				<u> </u>		headphone / microphone combo jack, optional smart card reader.						
	14.0" FHD (1920)	x1080)	IPS An		n-touch)	16:9	700:1	45%	170°	Monitor cable HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter (optional) USB-C to VGA: Lenovo USB-C to VGA Adapter 0° USB-C to DP: Lenovo USB-C to DisplayPort Adapter							
					lti-touch)												
	14.0" FHD (1920) Low Power		IPS An	ti-glare 40	00 nits	16:9	800:1	72%	170°								
	FHD (1920)			-						Bundled Accy	Optional: ThinkPad Ethernet Extension Adapter Gen 2						
	14.0" Think Pad P		IPS An	ti-glare 40	00 nits	16:9	1000:1	72%	170°	Camera (optional	I)• HD720p camera with ThinkShutter camera privacy, fixed focus						
	Guard	60v1440)						100%		Audio support	• IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio. Realtek® ALC3287 codec /						
	14.0" HDR, Dolby		IPS G	ilossy 50	00 nits	16:9	1500:1	Adobe	170°		stereo speakers, 1W x 2, Dolby <sup>®</sup> Audio <sup>™</sup> Premium /						
Multi-touch (opt)	On-cell touch, s	supports	10-finge	r gesture (I	FHD only	/)					dual array far-field microphone (optional for special bid model), headphone / microphone combo jack						
Storage	• M.2 2280 SS					-				Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight						
	<ul> <li>M.2 2280 SSI</li> <li>M.2 2242 SSI</li> </ul>									UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad						
	<ul> <li>Intel Optane<sup>™</sup></li> </ul>					age.				Security	Power-on password, hard disk password, supervisor password, security keyhole						
o	M.2 2280, PC	le NVMe	é 3.0 x 4			<b>J</b> - <i>j</i>				Security chip	Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)						
Optical	None					10.1				System Mat (opt)	) Intel vPro Technology						
Ethernet	Native Intel Eth via bundled or o	ernet Co optional T	nnectior	l I219-V (/V I Ethernet I	<i>on-vProj</i> Extensio	n Adap	9-LINI ( <i>VPI</i> ter Gen 2	ro)		Fingerprint reade	er Optional: Touch style match on chip fingerprint reader on the palm rest						
WLAN +	One of the followi	-								NFC (optional)	Near Field Communication						
Bluetooth™	<ul> <li>Intel Wireless</li> </ul>	-AC 9560	), Wi-Fi 2	2x2 802.11a			5.0			Battery	Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter						
(optional)	<ul> <li>Intel Wi-Fi 6 A</li> </ul>				- Bluetoc	oth 5.0				Max battery life	<i>MobileMark</i> ® <i>2014:</i> 20 hr						
WWAN (optional)	<ul> <li>One of the followi</li> <li>Wireless WAN</li> </ul>	ng, config	urable by	model:						AC adapter	<ul> <li>* Battery life varies significantly with settings, usage, &amp; other factors</li> <li>• 45W USB-C AC adapter</li> </ul>						
	<ul> <li>Integrated Mo</li> </ul>	bile Broa	able adband 4	IG LTE. Fib	bocom L8	330-EB	. M.2 card	I (EME	A only)		65W USB-C AC adapter						
	<ul> <li>Integrated Mo</li> </ul>	bile Broa	adband 4	IG LTE-A, I	Fibocom	L850-0	GL, M.2 ca	ard	, <b>,</b> ,		65W slim tip AC adapter						
SIM card (opt)	* For non-WWAN Nano-SIM card						dable			Operating system	n <i>Optional:</i> Windows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64						
		olot, opt			00) 0111	ouru				Limited warranty							
										(optional)	<ul> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> </ul>						
											<ul> <li>3-year/1-yr battery depot repair service</li> </ul>						
											<ul> <li>1-year + 2-year/1-yr battery depot repair service</li> <li>1-year + 2-year/1-yr battery limited onsite service</li> </ul>						
											• 3-year/1-yr battery limited onsite service						
										Mil-Spec test	MIL-STD-810G military testing						
										Environment	EPEAT™ Gold; ENERGY STAR® 7.1; RoHS-compliant						
Note: The specifica	ations above may	not he av	ailahle ir	all regions							Lenow						

Note: The specifications above may not be available in all regions.







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#### ThinkPad T495 Platform Specifications

Processor	AMD Ryzen <sup>™</sup> PF	RO Mobi	le Processo	rs with Rad	leon™ Ve	ga Graphics	\$		Dimensions	<i>WxDxH:</i> 12.95" x 8.94" x 0.70"; 329mm x 227mm x 17.9mm					
	Processor # of	_ # of		Max Turbo	Cache	Memory	Proce		Weight	Models HD FHD FHD Low Power					
	Number Cores Ryzen 3	Threads	Frequency		2MB L2 /	Controller	Grap Radeon			Weight         3.46 lb / 1.57 kg         3.46 lb / 1.57 kg         3.39 lb / 1.54 kg					
	Pro 3300U 4	4	2.1 GHz	3.5 GHz	4MB L3		Grap	hics	Case color Case material	Black <i>Display cover:</i> PPS / 50% GF;					
	Ryzen 5 Pro 3500U 4	8	2.1 GHz	3.7 GHz	2MB L2 / 4MB L3	DDR4-2400	Radeon Grap		Smart card roado	Bottom: PA / 50% GF r Optional: Smart card reader					
	Ryzen 7 Pro 3700U 4	8	2.3 GHz	4.0 GHz	2MB L2 / 4MB L3		Radeon Grap	Vega 10 hics	Media reader Ports	MicroSD card reader One USB 3.1 Gen 1 (Always On), one USB 3.1 Gen 2,					
·	AMD Radeon Ve supports externa supports four inc Max resolution:	al digital depende	monitor via	USB-C or	HDMI; ˈ	,	HDMI)		]	two USB 3.1 Type-C Gen 2 (w/ the function of Power Delivery and DisplayPort 1.4 HDMI 2.0, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed					
Memory	AMD SoC (Syste 32GB max / 240 8GB or 16GB m	00MHz D emory s	DR4, dual- oldered to s	hannel cap ystemboar	d, one D			ket	Monitor cable HDMI to VGA: Lénovo HDMI to VGA Monitor Adapter (optional) USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter Bundled Accy None Camera (optional) One of the following, configurable by model:						
	* Installed memory	y is actual	ly 2666MHz I	out run at 24	00MHz di	·		1							
Display	Size Resolution		Type Surface	Brightnes	s Aspec	t Contrast Ratio		Viewing Angle	Camera (optional)	HD720p camera with ThinkShutter camera privacy, fixed focus					
	14.0" HD (1366x7	(68)	TN Anti-gla	e 220 nits 250 nits		400:1	45%	90°	Audio support	<ul> <li>IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Realtek® ALC3287 codec /</li> </ul>					
	14.0" FHD (1920x	(1080)	IPS Anti-gla	(non tour	<sup>h)</sup> 16:9	700:1	45%	170°		stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio™ Premium / dual array far-field microphone (optional for special bid model), headphone / microphone combo jack					
	14.0" FHD (1920x Low Power		IPS Anti-gla			800:1	72%	170°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad					
	On-cell touch, si		<u> </u>	sture (FHD	only)				Security	Power-on password, hard disk password, supervisor password, security keyhole					
	<ul> <li>M.2 2280 SSE</li> <li>M.2 2280 SSE</li> </ul>	) / PCle	NVMe, PCI						Security chip	Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)					
Optical	<ul> <li>M.2 2242 SSE None</li> </ul>	) / PCle	NVMe, PCI	e 3.0 x 2					System Mgt	DASH Management r Optional: Touch style match on chip fingerprint reader on the palm rest					
<u> </u>	Realtek® RTL81	11 Giga	bit Ethernet	connectior	1				NFC	None					
WLAN	One of the followin • Realtek <sup>®</sup> RTL8 • Intel Wireless-	ng, configi 3822BE,	urable by moo Wi-Fi 2x2 8	<i>lel:</i> 02.11ac +	Bluetoot		ard		Battery Max battery life	Integrated Li-ion 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter MobileMark® 2014: 13.4 hr					
	Bluetooth 4.2 or						adapte	r	AC adapter	* Battery life varies significantly with settings, usage, & other factors 45W or 65W USB-C AC adapter					
	<ul><li>One of the following</li><li>Wireless WAN</li></ul>			lel:						Optional: Windows® 10 Home 64 or Windows 10 Pro 64					
	Integrated Mot     For non-WWAN     Nano-SIM card	bile Broa model, it i	dband 4G L	del is NOT l	VWAN up	gradable	ard		Limited warranty (optional)	<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> <li>1-year + 2-year limited onsite service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>					
									Mil-Spec test	MIL-STD-810G military testing					
Noto: The specifics									Environment	EPEAT™ Gold; ENERGY STAR® 7.1; RoHS-compliant					

Note: The specifications above may not be available in all regions.

Lenovo March 2020





#### ThinkPad T495s Platform Specifications

Broossor		Duzor		Mahil			o with Dod	oop™Va	an Cranhia	<u></u>		Dimensions		HD / Privacy Gu	ard):				
Processor	Proce			# of			Max Turbo		ega Graphics Memory	Proce	ccor				8.90" x 0.66"; 329.0m	1m x 226.15r	nm x 16.7mm		
	Numb		Cores TI	-			Frequency	Cache	Controller	Grap			WxDxH (Lo	ow Power):	,				
	Ryzer		4	8	2.1	GHz		2MBL2/		Radeon		Weight	Models	12.94" x	8.89" x 0.63"; 328.8m FHD Low Power		m x 16.1mm Privacy Guard		
	Pro 35 Ryzer							4MB L3 2MB L2 /	DDR4-2400	Grap Radeon				2.92 lb / 1.33 kg	2.76 lb / 1.25 kg		9 lb / 1.31 kg		
	Pro 37		4	8	2.3	GHz		4MB L3		Grap	hics	Case color	Black	Ť	0				
Graphics	AMD	Rade	on Veg	a 8 or '	Vega	10 Gra	phics in pr	ocesso	r;			Case material	Display cov Bottom:	ver: CFRP Hybi Magnesium					
·	suppo	orts ex	ternal	digital	mŏn	itor via I	ÚSB-C or I	HDMI;	,			Smart card reade		<u> </u>					
						lisplays; 60Hz (		096x21	60@24Hz (I	HDMI)		Media reader	MicroSD ca	ard reader					
Chipset	AMD	SoC (	Systen	n on C	hip)	olatform	1			,		Ports	One USB 3	3.1 Gen 1 (Alway	/s On), one USB 3.1 C (w/ the function of Po	aen 2, war Dalivary	and DisplayPort 1 (1)		
Memory	8GB o	or 16Ò	βB / 240	00MHz	z DD	R4 / sol	dered to sy	/stembo	oard, no soc	kets			HDMI 2.0, E	Ethernet extens	on connector, nano-S	IM card slot	(WWAN models),		
Display			· ·	s actual	iy 266	DOIVINZ D	ut run at 240		ue to AMD lim										
Display	Size Resolution Type Surface Brightness Ratio Ratio Gar											or       Viewing nut       headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theorem HDMI to VGA.         Monitor cable       (optional)       USB-C to VGA.         Lenovo       USB-C to DP:       Lenovo USB-C to DisplayPort Adapter							
							250 nits												
	14.0"         FHD (1920x1080)         IPS         Anti-glare         Contouch (non-touch) 300 nits         16:9         700:1         45%										170°		USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter						
			000 10				(multi-touc	:h)				Bundled Accy	Optional:			dapter Gen 2	2		
		Low Pc	920x10 wer	(080	IPS	Anti-glare	e 400 nits	16:9	800:1	72%	170°	Camera		ollowing, configura	<i>ble by model:</i> hkShutter camera priv	acy fixed for	110		
			1920x10	080)			400 1	10.0	1000.1	700/	1700	1	<ul> <li>IR camera</li> </ul>	a and HD720p o	amera with ThinkShut	tter camera p	privacy, fixed focus		
		Guard	ad Priva	acy	IPS	Anti-glare	e 400 nits	16:9	1000:1	72%	170°	Audio support	HD Audio, F	Realtek® ALC32	87 codec / olby® Audio™ Premiur	m /			
Multi-touch (opt)	On-ce	ell tour	ch, sup	ports -	10-fir	iger ges	sture (FHD	only)				-			microphone, headpho		ione combo jack		
Storage			SD / P	Cle N	/Me,	PCle 3	.0 x 4					Keyboard	6-row, spill-	resistant, multir	nedia Fn keys, optiona	al LED backli	ght		
Optical	None				<u>.                                    </u>							2	JltraNav™ TrackPoint® pointing device and buttonless Mylar surface multi-touch t						
Ethernet							net conne		0			Security Security chip			ed in chipset or discre				
WLAN <i>(optional)</i> Bluetooth™							2.11ac + B Wi-Fi + Blu		combo adap	ter			(may be dis	sabled in some r					
WWAN (optional)	One o	f the fo	llowing,	configu	irable	by mode	el:					System Mgt	DASH Man r Optional: T		h on chip fingerprint re	eader on the	palm rest		
	<ul> <li>Wire</li> </ul>	eless \	WAN u	pgrada	able							NFC	None		in en emp in gerprint i		paintiest		
	* For r	ion-WV	NAN ma	odel, it r	nean	s the mod	del is NOT V	VWAN up		ard		Battery			tery, supports Rapid C	harge (charg	ge up to 80% in 1hr)		
SIM card (opt)	Nano	-SIM c	card slo	ot, opti	onal	Verizon	LTE (US)	SIM car	ď			Max battery life	with 65W A MobileMark	k® <i>2014:</i> 16.4 h	ır				
												,	* Battery life	e varies significanti	y with settings, usage, &	other factors			
												AC adapter		WUSB-CACad	me 64 or Windows 10	Bro 64			
												Limited warranty		pot repair service		F10 04			
												(optional)	<ul> <li>1-year de</li> </ul>	epot with 2-year	system board repair s	ervice			
													<ul> <li>1-year lim</li> </ul>	nited onsite serv 2-year depot rep	rice				
														2-year limited or					
													<ul> <li>3-year/1-y</li> </ul>	yr battery depot	repair service				
												Mil Chac test		yr battery limited					
												Mil-Spec test		10G military tes	<u> </u>				
												Environment	EPEAI <sup>III</sup> SI	liver; ENERGY	STAR <sup>®</sup> 7.1; RoHS-com	ipiiant			

Note: The specifications above may not be available in all regions.









#### ThinkPad T580 Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Genera	ation Ir	ntel <sup>®</sup> Core	e™ i5 Proc	essor				Dimensions	<i>WxDxH:</i> 14.40" x 9.95" x 0.79-0.80"; 365.8mm x 252.8mm x 19.95-20.2mm				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Integrated model: starting at 4.29 lb / 1.95 kg; Discrete model: starting at 4.39 lb / 1.99 kg				
	i5-7200U i5-7300U	2	4	2.5 GHz 2.6 GHz	3.1 GHz 3.5 GHz	3MB 3MB	DDR4-2133	Intel HD Graphics 620	Case color Case material	Black Display cover: GFRP + PPS; Bottom: GFRP				
	or 8th Gen	eratior	n Intel Co	ore i5 / i7 P	rocessor				Smart card reade	r Optional: Smart card reader				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader Ports	4-in-1 reader (MMC, SD, SDHC, SDXC) Two USB 3.1 Gen 1 (one Always On),				
	i5-8250U i5-8350U i7-8550U i7-8650U	4	8	1.6 GHz 1.7 GHz 1.8 GHz 1.9 GHz	3.4 GHz 3.6 GHz 4.0 GHz 4.2 GHz	6MB 6MB 8MB 8MB	DDR4-2400	Intel UHD Graphics 620		one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, 4-in-1 reader (MMC, SD, SDHC, SDXC), side docking connector, security keyhole				
Graphics	Intel HD G	raphic	s 620 or	Intel UHD		20 in p	rocessor on rocessor an		Monitor cable <i>(optional)</i>	* Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter				
	supports e supports the Max resolution	externa hree in ution: 4	l digital n depende 1096x230	nonitor via nt displays 04@60Hz (	HDMI or U ; (USB Type-	SÉ́Тур	-	80Hz (HDMI)	Camera (optional) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus HD Audio, Realtek® ALC3287 codec /					
Chipset Memory	* System clo	c / 2400 ocks do	MHz DE	Ŕ4, dual-c	hannel cap	ory cont	roller	O-DIMM sockets		HD Audio, Healtek <sup>∞</sup> ALC3287 codec / stereo speakers, 2W x 2, Dolby <sup>∞</sup> Audio <sup>™</sup> Premium / dual array microphone (optional for special bid model), headphone / microphone combo jack				
Display	250 Some: 15.	0 nits, .6" (39)	16:9 ́asp 6mm) U <del>l</del>	ect ratio, 7 ID (3840x2	00:1 contra 2160), anti-	st ratio glare, L		ng angle ht, IPS, 300 nits,	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad				
Multi-touch (opt)	16: On-cell tou	:9 aspe uch, su	ect ratio, pports 10	1000:1 cor D-finger ge	ntrast ratio, sture (FHD	72% g only)	amut, 170° v	viewing angle	Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified				
Storage	Some: HI Some: SS	DD / SA SD / SA	ata 6.0G Ata 6.0G	ib/s, 2.5" w b/s, 2.5" w		igh, Ao igh (e.g		on System™ SD)	VPro ( <i>optional</i> ) Fingerprint reader NFC ( <i>optional</i> )	Intel vPro Technology r <i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest, anti-spoofing technology Near Field Communication				
	Some: 12	28GB N	1.2 SSD	/ PClé NVI	Me, PCIe 3.	0 x 2,	16Gb/s, sive with WV	VAN	Battery	Optional integrated Li-ion 32Wh battery and external Li-ion 24Wh, 48Wh, or 72Wh battery				
Optane™ memory Optical	<i>Optional:</i> None	Intel O	ptane me	emory, PCľ	e NVMe, P	Cle 3.0	) x 2		Max battery life ( <i>MobileMark® 2014</i> )	Models 24Wh 48Wh 72Wh 32Wh + 24Wh 32Wh + 48Wh 32Wh + 72Wh				
Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)								AC adapter	* Battery life varies significantly with settings, usage, & other factors 45W or 65W USB-C AC adapter				
WLAN + Bluetooth™					Vi-Fi 2x2 80 limited to BT			h 4.1, M.2 card		Optional: Windows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64				
WWAN (optional)	One of the f • Wireless • Integrate	WAN d Mob	<i>g, configur</i> upgradat ile Broad	<i>able by mod</i> ble (special lband 4G L	<i>el:</i> bid only)				Limited warranty (optional)	<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>				
	<ul> <li>Integrate</li> </ul>	d Mob	ile Broad	lband 4G L	TÉ-A,	`			Mil-Spec test	MIL-STD-810G military testing				
SIM card (opt)	* For non-W	/WAN m	nodèl, it m	eans the mo	GL), M.2 ca del is NOT M LTE (US) \$	/WAN L			Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant				
Nata: The exection					( )				1					

Note: The specifications above may not be available in all regions.

Lenovo December 2019





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#### ThinkPad T590 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generat	tion Int	el® Core	e™ i5 / i7 P	rocessor					Dimensions	<i>WxDxH:</i> 14.40" x 9.76" x 0.75"; 365.8mm x 248mm x 19.1mm
		# of	# of	Base	Max Turbo	Cache	Memory	Proce		Weight Case color	<i>FHD model:</i> 3.87 lb / 1.75 kg; <i>UHD model:</i> 3.86 lb / 1.75 kg Black
	Number C	Cores 1	Threads		Frequency 3.9 GHz	6MB	Types	Grap	hics		Display cover: PPS / 50% GF;
	i5-8265U		-	1.6 GHz 1.6 GHz	4.1 GHz	6MB		Intel UHD	Graphics		Bottom: PA / 50% GF
	i7-8565U	4	8	1.8 GHz	4.6 GHz	8MB	DDR4-2400	62		Smart card reade	r Optional: Smart card reader
	i7-8665U		ĺ	1.9 GHz	4.8 GHz	8MB				Media reader	MicroSD card reader Two USB 3.1 Gen 1 (one Always On),
	Intel UHD G Intel UHD G NVIDIA® Ge supports ext supports thr Max resoluti	Force Force ternal ree ind ion: 40	s 620 ir <sup>®</sup> MX25 digital n lepende 096x230	n processon 0, 2GB GD nonitor via nt displays 04@60Hz (	<sup>r</sup> and DR5 memo HDMI or Th ;	undert	-	4Hz (HDI	VI)		one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter
Chipset	Intel SoC (S									(optional)	USB-C to VGA: Lenovo USB-C to VGA Adapter (NOT available in EMEA)
Memory	48GB max / 8GB or 16G							MM sock	ot	Rundlad Acov	USB-C to DP: Lenovo USB-C to DisplayPort Adapter (NOT available in EMEA) None
	* Installed me									Bundled Accy	) One of the following, configurable by model:
Display			-		D. LL	Aspe	ct Contrast	Color	Viewing	Camera ( <i>opiionai)</i>	HD720p camera with ThinkShutter camera privacy, fixed focus
	Size Resolu	ltion	13	ype Surface	e Brightnes	<sup>s</sup> Ratio		Gamut	Angle		<ul> <li>IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus</li> </ul>
	15.6" FHD (1	920x10	080) II	PS Anti-gla	e 250 nits	16:9	700:1	45%	170°	Audio support	HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium /
	15.6" UHD (3	3840x2 <sup>-</sup> Dolby Vi	160) ision™ II	PS Anti-gla	re 500 nits	16:9	1200:1	100% Adobe	170°		dual array far-field microphone (optional for special bid model), headphone / microphone combo jack
Multi-touch (opt)	On-cell touc	ch, sup	ports 1	0-finger ge	sture (FHD	only)				Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight
Storage	• M.2 2280									UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
	<ul> <li>M.2 2280</li> <li>M.2 2242</li> <li>Intel Opta</li> </ul>	SSD / ne™ N	PCIe N lemory	IVMe, PCIe H10 with S	3.0 x 2	Storage	۰,				Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)
Optical	M.2 2280, None	, PCie	IN VIVIE .	3.0 X 4						Fingerprint reader	Intel vPro Technology r Optional: Touch style match on chip fingerprint reader on the palm rest
Ethernet	Non-vPro m	nodel:	Intel Eth	nernet Con	nection I21	9-V (Ja	cksonville)				Near Field Communication
	vPro model:	: 1	Intel Eth	nernet Con	nection I21	9-LM (、	Jacksonville	)			Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
	Intel Wireles										with 65W AC adapter <i>MobileMark</i> <sup>®</sup> 2014: 14.98 hr (9.5 hr for UHD model with discrete graphics)
Bluetooth™	Bluetooth 5.		,	0		etooth	combo adap	oter			* Battery life varies significantly with settings, usage, & other factors
WWAN (optional)	Wireless V					FMFA	)			AC adapter	<ul> <li>45W USB-C AC adapter</li> <li>65W USB-C AC adapter</li> </ul>
	<ul> <li>Integrated</li> </ul>	Mobil	e Broad	lband 4G L	TE. Fibócoi	n L830	́-ЕВ. М.2 са	rd (EMEA	A only)		65W slim tip AC adapter
	<ul> <li>Integrated</li> <li>* For non-WM</li> </ul>		e Broad	lband 4G L	TE-A, Fiboo	com L8	50-GL, M.2	card		Operating system	Optional: Windows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64
SIM card (opt)	Nano-SIM c									Limited warranty	1-year depot repair service
											<ul> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> <li>1-year + 2-year depot repair service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>
										Mil-Spec test	MIL-STD-810G military testing
										Environment	EPEAT™ Gold; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant
Note: The specifica	tions above n	may no	t ha ava	ilahla in all r	onione						Lenovo

Note: The specifications above may not be available in all regions.

Lenovo March 2020









### ThinkPad X1 Carbon (6<sup>th</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Number C i5-7300U or 8th Gene Processor Number C	# of     # of       Cores     Threads       2     4       eration Intel (	Base Frequency 2.6 GHz	Max Turbo Frequency	Cache		Duranaa	Weight	Starting at 2.49 lb / 1.13 kg			
i5-7300U or 8th Gene Processor Number	2 4 eration Intel (	· · · ·	Frequency		Memory lynes	Processor	Weight Case color	Black or Silver (silver case is NOT available in EMEA)			
or 8th Gene Processor Number	eration Intel (	2.6 GHz			, ,,	Graphics Intel HD Graphics	Case material	Display cover: CFRP/GFRP hybrid;			
Processor Number C	1		3.5 GHz	3MB	LPDDR3-1866	620		Bottom: magnesium alloy / PPS hybrid			
Number C	<b>дот</b> и от	Core i5 / i7	Processor				Smart card reade Media reader	rNone MicroSD card reader, supports UHS-II			
	# of # of Cores Threads		1 1		Memory Types	Processor Graphics	Ports	Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of Power Delivery and DisplayPort), HDMI 1.4b,			
i5-8250U i5-8350U i7-8550U i7-8650U	4 8	1.6 GHz 1.7 GHz 1.8 GHz 1.9 GHz	3.4 GHz 3.6 GHz 4.0 GHz 4.2 GHz	6MB 6MB 8MB 8MB	LPDDR3-2133	Intel UHD Graphics 620	Monitor cable	Ethernet extension connector, nano-SIM card slot (WWAN models), headphone / microphone combo jack, microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter			
supports ex	aphics 620 c tternal digita ree independ	monitor v	ia HDMI or				<i>(optional)</i> Bundled Accy	USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter Optional: ThinkPad Ethernet Extension Adapter Gen 2			
Max resolut	tion: 5120x2	880@60H	ys, z (USB Type	e-C); 4	1096x2160@3	30Hz (HDMI)		) One of the following, configurable by model:			
Memory 8GB or 16G * System cloc	cks down for p	z ĹPDDR3 rocessors w	3 / soldered ith lower mer		temboard, no <i>ntroller</i>	sockets	Audio support	<ul> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>IR camera and HD720p camera, fixed focus</li> </ul>			
Display One of the for • 14.0" (355	One of the following, configurable by model: • 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS,							headphone / microphone combo jack, Dolby® Atmos™ via headphones			
300 nits, 1 • 14.0" (355	16:9 aspect i 5mm) WQHE	atio, 700:1 0 (2560x14	contrast ra 40), anti-gla	tio, 72° are, LE	% gamut, 170 D backlight, I	)° viewing angle PS,	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless glass surface multi-touch touchpad			
• 14.0" (355	5mm) HDR V light, IPS, 50	VQHD (256	50x1440) w	ith Doll	by Vision™, g	<sup>o</sup> viewing angle lossy, atio, 100% gamut,	Security Power-on password, hard disk password, supervisor password, security key Discrete TPM 2.0, TCG Certified (may be disabled in some region) (Pro (optional) Intel vPro Technology Fingerprint reader Touch style match on chip fingerprint reader on the palm rest,				
Multi-touch (opt) On-cell touc	· • • •	0 (		D only	)			anti-spoofing technology			
	llowing, config / SATA 6.0G			(1 2)			NFC (optional) Near Field Communication				
• M.2 SSD /	/ PCIe NVM	e, PCle 3.0	) x 4, 32Gb/	/s (e.g.	xxxGB SSD I	M.2 PCIe NVMe)		Battery Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 11 with 65W AC adapter Max battery life Mark® 2014: 19.3 hr * Battery life varies significantly with settings, usage, & other factors			
Optical None						·D++=)	Max battery life				
					or I219-LM (v Adapter Ger		AC adapter	45W USB-C AC adapter			
	llowing, config							<ul> <li>45W Low Halogen USB-C AC adapter</li> <li>65W USB-C AC adapter</li> <li>65W Low Halogen USB-C AC adapter</li> </ul>			
					1ac + Blueto tooth 5.0, M.2	oth 4.1, M.2 card					
(special bi	id only)	,			,	Julia	Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64			
WWAN (optional) Integrated N Intel XMM™ * For non-WV	<ul> <li>* Intel 8265ac card supports BT4.2 but is limited to BT4.1 by Windows OS</li> <li>) Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card</li> <li>* For non-WWAN model, it means the model is NOT WWAN upgradable Nano-SIM card slot, optional Verizon LTE (US) SIM card</li> </ul>							One of the following, configurable by model: • 1-year depot repair service • 1-year depot with 2-year system board repair service • 1-year/3-yr battery depot repair service • 1-year + 2-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/3-yr battery depot repair service • 3-year/3-yr battery limited onsite service • 3-year/1-yr battery limited onsite service • 3-year/3-yr battery limited onsite service			
							Mil-Spec test	MIL-STD-810G military testing			
							Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant Lenovo			





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# ThinkPad X1 Carbon (7<sup>th</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor											Dimensions WxDxH (Privacy Guard): 12.72" x 8.54" x 0.61"; 323mm x 217mm x 15.4mm			
	Number Cores Inreads Frequency Frequency					Memory Types		essor ohics	Weight	<i>WxDxH (other model):</i> 12.72" x 8.54" x 0.59"; 323mm x 217mm x 14.95mm <i>Privacy Guard model:</i> starting at 2.66 lb / 1.21 kg;				
	i5-826 i5-836 i7-856	65U 4	8	1	.6 GHz .8 GHz	4.1 GHz 6 4.6 GHz 8	IVID	_PDDR3-2133		UHD ics 620	Case color Case material	Other model:       starting at 2.4 lb / 1.09 kg         Black paint or black weave       Display cover:         Carbon Fiber;       Bottom:         magnesium alloy		
	i7-8665U         1.9 GHz         4.8 GHz         8MB										Smart card reader	rNone None		
	Proce Numb	er Cor	of # of es Threa	ds Fr	equency I	requency	quency Cache Memory Types Graphics			Ports	Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet extension connector, nano-SIM card slot (WWAN models),			
	i5-102 i7-105 i7-107	510U <sup>4</sup>	-	1	.6 GHz .8 GHz .1 GHz	4.9 GHz 8	SMB SMB 2MB	LPDDR3-2133		UHD phics	Monitor cable	headphone / microphone combo jack, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed Optional: Lenovo HDMI to VGA Monitor Adapter Optional: ThinkPad Ethernet Extension Adapter Gen 2		
Graphics	supp	orts exter	nal digita	al mo	nitor via H	Graphics in IDMI or USE	proce 3 Type	essor; e-C / Thunder	rbolt;			) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus		
Chipset Memory	supports three independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@24Hz (HDMI) Intel SoC (System on Chip) platform 8GB or 16GB / 2133MHz LPDDR3 / soldered to systemboard, no sockets								ockets		- Audio support	<ul> <li>IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Realtek® ALC3286 codec / Dolby® Atmos™ speaker system, 2W x 2, 0.8 x 2 / four 360° far-field microphones, headphone / microphone combo jack</li> </ul>		
Display	Size	Resolutio	ı	Туре	Surface	Brightness	Aspec Ratio	ct Contrast Ratio	Color Gamut	Viewing Angle	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless glass surface multi-touch touchpad		
	14.0"	FHD (192 Multi-touc	0x1080) h	IPS	Anti- reflection Anti- smudge	300 nits	16:9	700:1	72%	170°		Power-on password, hard disk password, supervisor password, security keyhole • Firmware TPM 2.0 integrated in chipset • Discrete TPM 2.0 TCG Certified		
	14.0"	FHD (192 Low Powe	0x1080) r	IPS	Anti-glare	400 nits	16:9	800:1	72%	170°		Discrete TPM 2.0 with L3 Security Support (special bid only)     * May be disabled in some region		
	14.0"	FHD (192 ThinkPad Guard	0x1080) Privacy	IPS	Anti-glare	400 nits	16:9	1000:1	72%	170°	Fingerprint reader	Intel vPro Technology rTouch style match on chip fingerprint reader on the palm rest Near Field Communication		
	14.0"	WQHD (2 UHD (384		) IPS	Anti-glare	300 nits	16:9	700:1	72%	170°	Battery	Integrated Li-ion 51Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter		
	14.0"	HDR 400, Dolby Visi	,	IPS	Glossy	500 nits	16:9	1400:1	90%	170°	Max battery life	MobileMark <sup>®</sup> 2014: 18.3 hr * Battery life varies significantly with settings, usage, & other factors		
Multi-touch (opt)	anti-r	eflection	(AR) / a	anti-si	nudge (A	S) coating	esture	(FHD only),				<ul> <li>45W USB-C AC adapter</li> <li>65W USB-C AC adapter</li> <li>65W slim tip AC adapter</li> </ul>		
Storage		f the follov 2280 SS			<i>le by mode</i> Gb/s	1:						Optional: Windows® 10 Home 64 or Windows 10 Pro 64		
	<ul> <li>Inte</li> </ul>		Memory	H10	Vie 3.0 x 4 with Solic x 4	l I State Stora	age,					<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> </ul>		
Optical	None											<ul> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> </ul>		
Ethernet	Native Intel Ethernet Connection I219-V ( <i>Non-vPro</i> ) or I219-LM ( <i>vPro</i> ) via optional ThinkPad Ethernet Extension Adapter Gen 2											<ul> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>		
WLAN + Bluetooth™	<ul> <li>One of the following, configurable by model:</li> <li>Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0</li> <li>Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0 (AX201 for 10th Gen processor only and NOT available in AP)</li> </ul>										Mil-Spec test Environment	MIL-STD-810G military testing EPEAT™ Gold; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant		
WWAN (optional) SIM card (opt) Note: The specifica	<ul> <li>Inte</li> <li>Inte</li> <li>* For it</li> <li>Nano</li> </ul>	grated M grated M non-WWA -SIM car	obile Bro obile Bro V <i>model, i</i> d slot, op	badba badba <i>t meal</i> btiona	nd 4G LT nd 4G LT <i>ns the mod</i> I Verizon	E-A, Fiboco E-A, Fiboco el is NOT WM LTE (US) SI	m L86 /AN ut	50-GL, M.2 ca 60-GL, MIMO ogradable d	ard ) 2x2, M	I.2 card		Lenovc		

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#### ThinkPad X1 Extreme Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel <sup>®</sup> Core <sup>™</sup> i5 / i7 Processor	Smart card reader Optional: Smart card reader			
	Processor         # of         # of         Base         Max Turbo         Cache         Memory         Processor           Number         Cores         Threads         Frequency         Frequency         Cache         Memory         Graphics	Media reader SD Card reader (SD, SDHC, SDXC), supports UHS-II SD card Ports Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of Power Delivery			
	i5-8300H         4         8         2.3 GHz         4.0 GHz         8MB           i5-8400H         2.5 GHz         4.2 GHz         8MB         Intel UHD Graphics           i7-8750H         6         12         2.2 GHz         4.1 GHz         9MB           i7-8850H         6         12         2.6 GHz         4.3 GHz         9MB	and DisplayPort), HDMI 2.0, Ethernet extension connector, headphone / microphone combo jack, optional smart card reader, SD card reader, security keyhole * Power Delivery only supports power-out for charging peripherals			
Graphics	Intel UHD Graphics 630 in processor and NVIDIA® GeForce® GTX 1050 Ti Max-Q, 4GB GDDR5 memory; supports external digital monitor via HDMI or Thunderbolt"; supports four independent displays;	* Depending on many factors, actual data transfer speed may be lower than theoretical speed Monitor cable HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter (optional) USB-C to DP: Lenovo USB-C to DisplayPort Adapter Bundled Accy Optional: ThinkPad Ethernet Extension Cable			
	Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (HDMI)	Camera (optional) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus			
Chipset Memory	Mobile Intel CM246 Chipset 64GB max / 2666MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets	<ul> <li>IR camera and HD720p camera, fixed focus</li> </ul>			
Display	Some: 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 170° viewing angle	stereo speakers, 2W x 2, Dolby <sup>®</sup> Audio <sup>™</sup> Premium / dual array microphone (optional for special bid model), headphone / microphone combo jack, Dolby Atmos <sup>®</sup> headphone			
	Some: 15.6" (396mm) HDR UHĎ (3840x2160) with Dolby Vision™, LED backlight, IPS, 400 nits, 16:9 aspect ratio, 1200:1 contrast ratio,	Keyboard 6-row, spill-resistant, multimedia Fn keys, LED backlight UltraNav™ TrackPoint® pointing device and buttonless glass surface multi-touch touchpad			
Multi-touch <i>(opt)</i> Pen <i>(optional)</i>	100% gamut, 170° viewing angle, multi-touch, anti-reflection (AR) Capacitive-type multi-touch, supports 10-finger gesture (4K only) Lenovo Pen Pro (special bid only)	Security Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified (may be disabled in some region) vPro (optional) Intel vPro Technology			
Storage	Up to 2 drives (two M.2 SSD) • M.2 SSD / SATA 6.0Gb/s (e.g. xxxGB SSD M.2) • M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s (e.g. xxxGB SSD M.2 PCIe NVMe)	Fingerprint reader Touch style match on chip fingerprint reader on the keyboard bezel Color calibration None NFC None			
RAID <i>(optional)</i> Optical	RAID 0/1 support None	Battery Integrated Li-ion 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr)			
Ethernet	Native Intel Ethernet Connection I219-V ( <i>Non-vPro</i> ) or I219-LM ( <i>vPro</i> )) via bundled or optional ThinkPad Ethernet Extension Cable	Max battery life       Discrete mode: 9.5 hr;       Hybrid mode: 14.9 hr         (MobileMark 2014)       * Battery life varies significantly with settings, usage, & other factors         AC adapter       135W slim tip AC adapter			
WLAN (optional) Bluetooth™ (opt)		Operating system Optional: Windows® 10 Home 64 or Windows 10 Pro 64			
WWAN SIM card	None None	Limited warranty (optional) One of the following, configurable by model: • 1-year depot repair service • 1-year depot with 2-year system board repair service			
Dimensions	WxDxH (non-touch): 14.24" x 9.67" x 0.72"; 361.8mm x 245.7mm x 18.4mm WxDxH (multi-ouch): 14.24" x 9.67" x 0.74"; 361.8mm x 245.7mm x 18.7mm	<ul> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>			
Weight	Non-touch model: ´ starting at 3.76 lb / 1.7 kg;	Mil-Spec test MIL-STD-810G military testing			
Case color Case material	Multi-touch model: starting at 4.06 lb / 1.8 kg Black Display cover: CFRP/GFRP hybrid; Bottom: Aluminum alloy	Environment EPEAT <sup>™</sup> Gold (US only); ENERGY STAR <sup>®</sup> 7.0; RoHS-compliant			
Note: The specific:	ations above may not be available in all regions.	Leno			

Note: The specifications above may not be available in all regions.



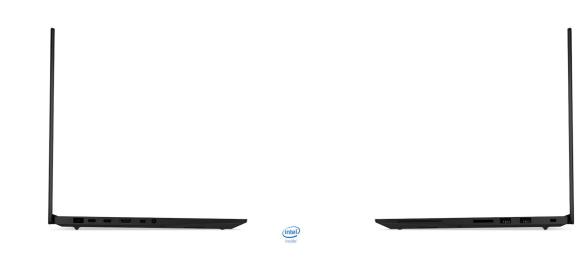
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#### ThinkPad X1 Extreme (2nd Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	9th Generation Intel® Co	ore <sup>™</sup> i5	/ i7 / i9 Pr	ocessor					Dimensions	WxDxH (non-touch): 14.24" x 9.67" x 0.72"; 361.8mm x 245.7mm x 18.4mm
	Processor         # of Cores         # of Thread           i5-9300H         4         8           i5-9400H         4         8           i7-9750H         6         12	s Frec 2.4 2.5	GHz Free GHz 4. GHz 4.3		<sup>le</sup> Ty 3 3 B DDR	mory pes 4-2666	Proces Graph Itel UHD ( 630	nics Graphics	Weight Case color Case material	WxDxH (multi-touch): 14.24" x 9.67" x 0.74"; 361.8mm x 245.7mm x 18.7mm Non-touch model: starting at 3.75 lb / 1.7 kg; Multi-touch model: starting at 4.0 lb / 1.81 kg Black paint (FHD model) or black weave (UHD model) Display cover: CFRP/GFRP hybrid; Bottom: Aluminum alloy
	i7-9850H 6 12 i9-9880H 8 16	_		6 GHz 12M 8 GHz 16M	_		000		Media reader	r <i>Optional:</i> Smart card reader SD Card reader (SD, SDHC, SDXC), supports UHS-II SD card
Graphics	Intel UHD Graphics 630 in processor and NVIDIA® GeForce® GTX 1650 Max-Q, 4GB GDDR5 memory; supports external digital monitor via HDMI or Thunderbolt"; supports four independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (HDMI)								Ports	Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of Power Delivery and DisplayPort), HDMI 2.0, Ethernet extension connector, headphone / microphone combo jack, optional smart card reader, SD card reader, security keyhole, slim tip AC adapter * Power Delivery only supports power-out for charging peripherals * Depending on many factors, actual data transfer speed may be lower than theoretical spee
Chipset Memory	Mobile Intel CM246 Chip 64GB max / 2666MHz D	oset DR4,	dual-chan					sockets	Monitor cable (optional)	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter
Display	Size Resolution	Туре	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Bundled Accy	Optional: ThinkPad Ethernet Extension Cable
	15.6" FHD (1920x1080)	IPS	Anti-glare	300 nits	16:9	700:1	72% NTSC	170°	Camera (optional,	) One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus
	15.6" FHD (1920x1080) Dolby Vision™ HDR	IPS	Anti-glare	500 nits	16:9	1200:1	72% NTSC	170°	Audio support	• IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Synaptic® CX11880 codec /
	15.6" UHD (3840x2160) Dolby Vision HDR	IPS	Anti-glare	500 nits	16:9	1200:1	100% Adobe	170°		stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual 360° far-field microphone, headphone / microphone combo jack, Dolby Atmos® sound system
	UHD (3840x2160) 15.6" Dolby Vision HDR, Multi-touch	OLED	Anti- reflection Anti- smudge	SDR 400nit, HDR 500nit (peak)	16:9	100000:1	100% DCI-P3	170°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless glass surface multi-touch touchpad
Multi-touch <i>(opt)</i> Pen <i>(optional)</i>	Capacitive-type multi-tor anti-reflection (AR), anti- Lenovo Pen Pro (specia	-smud	upports 10 ge (AS) co		ure (UI	HD OLEI	D only),		Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)
Storage RAID (optional)	Up to two M.2 SSD M.2 2280 SSD / PCIe N RAID 0/1 support		,						Fingerprint reade	Intel vPro Technology rTouch style match on chip fingerprint reader on the keyboard bezel <i>Optional:</i> X-Rite Pantone factory color calibration (UHD model only) None
Optical Ethernet	None Native Intel Ethernet Co via bundled or optional	ThinkP	ad Ethern	èt Extensiór	n Cable		Pro))		Battery Max battery life AC adapter	Integrated Li-ion 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr) <i>MobileMark® 2014:</i> 14 hr <i>* Battery life varies significantly with settings, usage, &amp; other factors</i> 135W slim tip AC adapter
	Intel Wi-Fi 6 AX200, Wi- Bluetooth 5.0 wireless, i					bo adapt	ter			Optional: Windows® 10 Home 64 or Windows 10 Pro 64
WWAN SIM card	None None								Limited warranty	<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>
									Mil-Spec test	MIL-STD-810G military testing
N	ations above may not be av								Environment	EPEAT™ Gold; ENERGY STAR® 7.1; RoHS-compliant

Note: The specifications above may not be available in all regions.

Lenovo March 2020









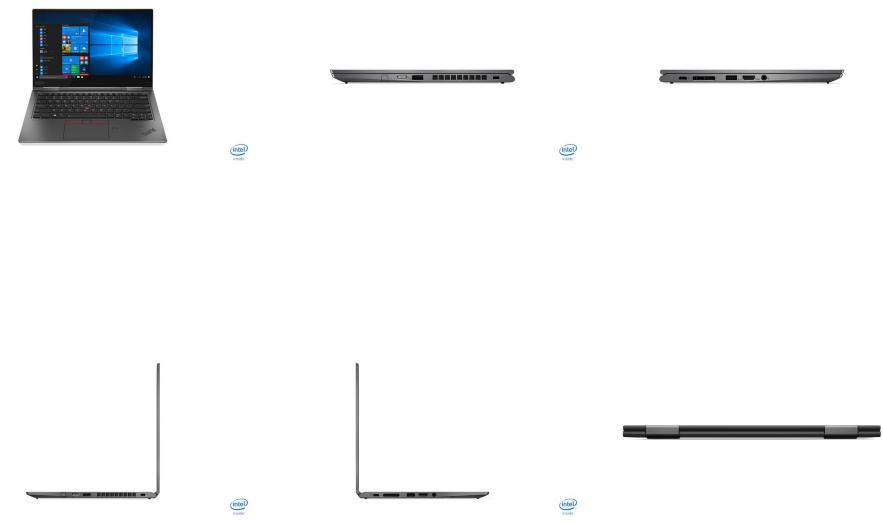


# ThinkPad X1 Yoga (3<sup>rd</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel <sup>®</sup> Core™ i5 Processor	Smart card reade	rNone		
	Processor Number# of Cores# of ThreadsBase FrequencyMax Turbo FrequencyCacheMemory TypesProcessor Graphicsi5-7300U242.6 GHz3.5 GHz3MBLPDDR3-1866Intel HD Graphics 620	Media reader Ports	MicroSD card reader, supports UHS-II Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (Power Delivery, DisplayPort, Data transfer), HDMI 1.4, Ethernet extension connector, nano-SIM card slot (WWAN models),		
	8th Generation Intel Core i5 / i7 Processor         Processor       # of       Base       Max Turbo       Cache       Memory Types       Processor         I5-8250U       I.6 GHz       3.4 GHz       6MB       Intel UHD         I5-8350U       I.8 GHz       4.0 GHz       8MB       LPDDR3-2133       Intel UHD         Graphics 620       I.8 GHz       4.0 GHz       8MB       Intel UHD	WiGig dock Monitor cable <i>(optional)</i> Bundled Accy	headphone / microphone combo jack, microSD card reader * Depending on many factors, actual data transfer speed may be lower than theoretical speed None HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter Optional: ThinkPad Ethernet Extension Cable		
	i7.8650U         1.9 GHz         4.2 GHz         8MB         August 200	Camera (optional)	One of the following, configurable by model: 720p: HD720p camera with ThinkShutter camera privacy, fixed focus		
Graphics	Intel HD Graphics 620 or Intel UHD Graphics 620 in processor; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 5120x2880@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)		<i>IR &amp; 720p:</i> IR camera and HD720p camera, fixed focus * <i>WWAN models and HDR panel models can not support IR camera</i> HD Audio, Realtek <sup>®</sup> ALC3286 codec, Dolby <sup>®</sup> Audio <sup>™</sup> Premium / stereo speakers, 1W x 2 /, 360° Noise-cancelling Dual Array Far Field, headphone / microphone combo jack		
Chipset Memory	Intel SoC (System on Chip) platform 8GB or 16GB / 2133MHz LPDDR3 / soldered to systemboard, no sockets	Keyboard UltraNav™	6-row wave keyboard (rise & fall), spill-resistant, multimedia Fn keys, LED backlit TrackPoint® pointing device and 3+2 buttons multi-touch clickpad		
Display	<ul> <li>Some: 14.0" (355mm) FHD (1920x1080), LED backlight, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 170° viewing angle, IPS, AR (anti-reflection)</li> <li>Some: 14.0" (355mm) WQHD (2560x1440), LED backlight, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 170° viewing angle, IPS, AR (anti-reflection)</li> </ul>	Security Security chip System Mgt <i>(opt)</i> Fingerprint reader	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0 TCG Certified Intel vPro Technology Touch style match on chip fingerprint reader on the palm rest Near Field Communication		
Multi-touch	Some: 14.0" (355mm) HDR WQHD (2560x1440) with Dolby Vision <sup>™</sup> , LED backlight, 500 nits, 16:9 aspect ratio, 1500:1 contrast ratio, 100% gamut, 170° viewing angle, IPS, AR (anti-reflection) Capacitive-type multi-touch, AR (anti-reflection), AS (anti-smudge), supports 10-finger gesture, reduces overall display brightness by 10%	Battery Max battery life	Integrated Li-Ion 54Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter MobileMark® 2014: 15.4 hrs * Battery life varies significantly with settings, usage, & other factors 45W or 65W USB Type-C AC adapter		
Hinge Convert-mode Pen <i>(optional)</i>	Yoga hinge, 360 degree Laptop, tent, stand, and tablet ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable	Light sensor G-sensor Gyroscope GPS	Ambient Light Sensor 3D accelerometer 3D gyrometer		
Storage	Some: M.2 SSD / SATA 6.0Gb/s (e.g. xxxG SSD) Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s (e.g. xxxG SSD PCIe NVMe)		GPS function is integrated into WWAN module		
Optical	None	Preload	Windows® 10 Pro 64		
Ethernet	Native Intel Ethernet Connection WGI219-LM ( <i>vPro</i> ) via optional ThinkPad Ethernet Extension Cable	(optional)	One of the following, configurable by model: • 1-year depot repair service • 1-year depot with 2-year system board service		
WLAN	One of the following, configurable by model: Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card		<ul> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>		
Bluetooth™	Bluetooth 4.2 wireless, integrated in Wi-Fi + Bluetooth combo adapter	Mil-Spec test	MIL-STD-810G military testing		
WWAN (optional) SIM card (opt)	Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card Nano-SIM card slot, optional Verizon LTE (US) SIM card	Environment	EPEAT™ Silver; ENERGY STAR®; RoHS-compliant		
Dimensions Weight Case color Case material	WxDxH:13.11" x 9.02" x 0.67";333mm x 229mm x 17.05mmStarting at 3.08 lb / 1.4kgBlack or silverDisplay cover:Carbon-Fiber and Glass-Fiber hybrid;Bottom:magnesium-PPS hybrid				

December 2019



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### ThinkPad X1 Yoga (4<sup>th</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel <sup>®</sup> Core™ i5 / i7 Processor										WWAN (optional) One of the following, configurable by model:			
	Proce Numb	er Cores	# of Threads	Frequency Fre	quency		nory Types		essor phics		<ul> <li>Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card</li> <li>Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card</li> <li><i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i></li> </ul>			
	i5-826 i5-836 i7-856	55U 4	8	1.6 GHz 4.	9 GHz 6ME 1 GHz 6ME 6 GHz 8ME		DR3-2133		UHD ics 620	SIM card <i>(opt)</i> Dimensions	Nano-SIM card slot, optional Verizon LTE (US) SIM card WxDxH (Privacy Guard): 12.71" x 8.58" x 0.63"; 323mm x 218mm x 15.95mm			
	i7-866	35U	ion Intel (		8 GHz 8M	3	ble in FM			Weight	WxDxH (other model): 12.71" x 8.58" x 0.61"; 323mm x 218mm x 15.5mm Privacy Guard model: starting at 3.24 lb / 1.47 kg; Other model: starting at 2.99 lb / 1.36 kg			
	Proce	essor # of	# of	Base Ma			nory Types	Proc	essor phics	Case color Case material	Iron Grey Display cover: Aluminium; Bottom: Magnesium			
	i5-102 i7-105	510U <sup>4</sup>	8	1.8 GHz 4	.2 GHz 6M .9 GHz 8M	B LPD	DR3-2133		UHD phics	Smart card reade Media reader	srNone None			
Graphics	i7-10710U       6       12       1.1 GHz       4.7 GHz       12MB       0.00000000000000000000000000000000000									Ports Monitor cable	Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet extension connector, nano-SIM card slot (WWAN models), headphone / microphone combo jack, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed Optional: Lenovo HDMI to VGA Monitor Adapter			
Chipset Memory	Intel 3 8GB	or 16GB / 2	em on Chi 2133MHz	p) platform LPDDR3 / sol	dered to sys	temboa	ard, no so	ockets		Bundled Accy	Optional: ThinkPad Ethernet Extension Adapter Gen 2 I) One of the following, configurable by model:			
Display	Size	Resolution	Тур	e Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle		<ul> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus</li> </ul>			
	14.0"	FHD (1920) Low Power FHD (1920)		Anti-reflection Anti-smudge	400 nits	16:9	800:1	72%	170°	Audio support	HD Audio, Realtek <sup>®</sup> ALC3286 codec / Dolby <sup>®</sup> Atmos <sup>™</sup> speaker system, 2W x 2, 0.8 x 2 / four 360° far-field microphones, headphone / microphone combo jack			
		ThinkPad P Guard		Anti-smudge	400 11115	16:9	1000:1	72%	170°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless glass surface multi-touch touchpad			
	14.0"	WQHD (2560x1440 UHD (3840)	/	Anti-smudge		16:9	800:1	72%	170°	Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified			
		HDR 400, Dolby Visior	์ IP: า™	Anti-smuage	500 1115	16:9	1400:1	90%	170°	System Mgt (opt)	(may be disabled in some region) Intel vPro Technology r Touch style match on chip fingerprint reader on the palm rest			
Multi-touch				h, supports 1 anti-smudge) (		ure,				NFC (optional)	Near Field Communication			
Hinge Convert-mode Pen	Yoga Lapto	hinge, 360 p, tent, sta	) degree and and ta	ss by up to 10 blet pen for multi-1		/. on-bc	pard rech	argeabl	e	Battery Max battery life	Integrated Li-ion 51Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter MobileMark® 2014: 18.1 hr * Battery life varies significantly with settings, usage, & other factors			
Storage	• M.2	2280 SSI	) / SATĂ 6	able by model: 0.0Gb/s 1VMe 3.0 x 4						AC adapter	<ul> <li>45W USB-C AC adapter</li> <li>65W USB-C AC adapter</li> <li>65W slim tip AC adapter</li> </ul>			
Optical	<ul> <li>Intel Optane<sup>™</sup> SSD / PCIe NVMe 3.0 x 2</li> <li>Intel Optane Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 None</li> </ul>									Operating system Limited warranty (optional)	<ul> <li>Optional: Windows® 10 Home 64 or Windows 10 Pro 64</li> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> </ul>			
Ethernet	Nativ via oj	e Intel Ethe otional Thir	ernet Con hkPad Eth	nection I219-V ernet Extensio	/ ( <i>Non-vPro</i> ) on Adapter G	or I219 Gen 2	9-LM ( <i>vP</i>	ro)			<ul> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> </ul>			
WLAN Bluetooth™				/i-Fi 2x2 802.1 egrated in Wi				er			3-year/1-yr battery depot repair service     3-year/1-yr battery limited onsite service			
										Mil-Spec test	MIL-STD-810G military testing			
										Environment	EPEAT™ Gold; ENERGY STAR® 7.1; RoHS-compliant			

Note: The specifications above may not be available in all regions.









### ThinkPad X270 Platform Specifications

Product Specifications Reference (PSREF)

Processor	6th Gener	ation Ir	ntel <sup>®</sup> Cor	e™ i3 / i5 /	i7 Processo	or			Dimensions	WxDxH: 12.03	3" x 8.21" x 0	.80"; 305.5m	m x 208.5m	m x 20.3mm	
	Processor	# of	# of	Base	Max Turbo	Cache	Memory	Processor	Weight	Models	No + 3-cell		ll + 3-cell	3 + 6-cel	
	Number	Cores	Threads	Frequency	Frequency		Types	Graphics		<b>U</b>	2.79 lb / 1.27 k	g 2.98 lb	o / 1.36 kg	3.33 lb / 1.52	2 kg
	i3-6006U i3-6100U			2.0 GHz 2.3 GHz	-	3MB 3MB	1		Case color Case material	Black	Glass Eibor	Doinforced [	Plactic		
	i5-6200U			2.3 GHz 2.3 GHz	- 2.8 GHz	3MB	-	Intel HD Graphics		Display cover: Glass-Fiber Reinforced Plastic; Bottom: Glass-Fiber Reinforced Plastic					
	i5-6300U	2	4	2.4 GHz	3.0 GHz	3MB	DDR4-2133	Intel HD Graphics 520	Smart card reade	er <i>Optional:</i> Smart card reader 4-in-1 reader (MMC, SD, SDHC, SDXC)					
	i7-6500U	1		2.5 GHz	3.1 GHz	4MB	]		Media reader						
	i7-6600U			2.6 GHz	3.4 GHz	4MB			Ports	Two USB 3.1 Gen 1 (USB 3.0, one Always On), USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort),					
					i7 Processo	or				HDMI 1.4b, Ethe	ernet (RJ-45	), Dock conn	ector		
	Processor	# of	# of	Base	Max Turbo	Cache	Memory	Processor		* Depending on m ThinkPad WiGig					theoretical speed
	Number i3-7100U	Cores	Threads	Frequency 2.4 GHz	Frequency	3MB	Types	Graphics		HDMI to VGA:	Lenovo HD	MÍ to VGA M	Ionitor Adap		
	i5-7200U			2.5 GHz	3.1 GHz	3MB			(optional)	USB-C to VGA:	Lenovo US	B-C to VGA	Adapter	1	
	i5-7300U	2	4	2.6 GHz	3.5 GHz	3MB	DDR4-2133	Intel HD Graphics 620		USB-C to DP:			ayPort Adap	ter	
	i7-7500U			2.7 GHz	3.5 GHz	4MB		020	Camera (optional Audio support	HD/20p resolut HD Audio, Realt			en sneakers	15Wx2/	
	i7-7600U			2.8 GHz	3.9 GHz	4MB				optional dual ar					
Graphics				620 in pro		0 D T	•		Keyboard	6-row, spill-resis					
	supports e supports t				HDMI or U	SB Typ	e-C;		UltraNav™	TrackPoint® poin	-		-		-
						C); 40	96x2160@2	24Hz (HDMI)	Security Security chip	Power-on passy	word, hard di	sk password	, supervisor	password, se	curity keyhole
Chipset	Intel SoC	(Syster	m on Chi	p) platform					vPro <i>(optional)</i>	Discrete TPM 1.2 or TPM 2.0, TCG Certified (may be disabled in some region) Intel vPro Technology ler <i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest Near Field Communication					ome region)
Memory	16GB max	( / 240)	OMHz DE	0R4, one D	DR4 SO-D	IMM so	ocket		Fingerprint reade						n rest
Disalari									NFČ (optional)						
Display	Some: 12	.5 (31 0 nits	7.5mm) 16:9 asr	HD (1366x	00:1 contra	st ratio	ED backligh	11,	Internal battery External battery	Optional: Integ Li-ion 3-cell (23				Vh)	
	Some: 12	2.5" (31	7.5mm)	HD (1366x	768), anti-g	lare, L	ED backligh		Max battery life	Madala	No 2 coll	1	· · · ·	ll 48Wh 3-cell	+ 6-cell 72Wh
							o, 170° view , LED backl		(MobileMark <sup>®</sup> 2014)	Max battery life	6.52 hr	13.04 hr	20.1 h		26.9 hr
	30 <i>me</i> . 12		16:9 asp	ect ratio, 7	00:1 contra	st ratio	o, 170° viewi	ing angle		* Battery life varie	es significantly	with settings,	usage, & othe	r factors	
Multi-touch (opt)	On-cell tou	uch, su	pports 1	0-finger ge	sture (FHD	only)		0 0	AC adapter	<ul> <li>45W USB-C AC adapter</li> <li>45W slim tip AC adapter</li> <li>65W USB-C AC adapter</li> </ul>					
Storage	System has	one Hl	DD slot or	one M.2 228	30 slot exclus	ively fo	r storage								
	Some: HI	DD / S. SD / S.	AIA 6.00 ATA 6.00	ib/s, 2.5" w b/s 2.5" w	ide, 7mm h ide 7mm h	igh, Ao	ctive Protect g. xxxGB SS	ion System™ כחצ		65W slim tip AC adapter g system One of the following, configurable by model:					
	Some: M	.2 SSE	) / PCle I	VMe, PCI	e 3.0 x 2, 1	6Ğb∕s	0	,	Operating system						
							ot as 2nd S	torage,		<ul> <li>Windows<sup>®</sup> 7 F through down</li> </ul>					
Optical	None	utually	exclusiv	e with www	AN and WiG	alg				<ul> <li>Windows 10 I</li> </ul>	Home 64		1011004		
Ethernet		model	Intel Eth	ernet Con	nection 121	9-V (.la	cksonville)			<ul> <li>Windows 10 F</li> </ul>					
Eulomot	vPro mode						Jacksonville	e)	Limited warranty	One of the followin					
WLAN (optional)	One of the	following	g, configui	able by mod	lel (WiGig is l	mutuall	y exclusive wi	th WWAN):		<ul> <li>1-year depot r</li> <li>1-year depot v</li> </ul>			repair servi	ce	
	Realtek	RTL8	822BE, V	Vi-Fi 2x2 8	02.11ac + E	3T4.1				<ul> <li>1-year/3-yr ba</li> </ul>	attery depot r	épair service			
					Wi-Fi 2x2 Wi-Fi 2x2					<ul> <li>1-year limited</li> <li>3-year/1-yr ba</li> </ul>					
	<ul> <li>Intel Tri-E</li> </ul>	3and W						302.11ac + BT4.1							
Bluetooth™ <i>(opt)</i>	(US only		alaaa in	arotod in		otooth	aamba ada	ntor		<ul> <li>3-year/3-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>					
Biueloolii ( <i>opl)</i>	* Intel 8265	4. 1 Wil iac / 182	265ac card	d support BT	4.2 but is lim	ited to E	combo ada 3T4.1 by Wind	dows OS		• 3-year/3-yr ba	,		e		
WWAN (optional)					lel (mutually	exclusiv	e with WiGig)	:	Mil-Spec test	MIL-STD-810G	,	0			
	<ul> <li>Wireless</li> </ul>	WAN	upgradal	ble	<b>TC</b> A				Environment	EPEAT™ Gold (	(US only); EN	IERGY STAF	R® 6.1; RoHS	S-compliant	
	<ul> <li>Integrate</li> <li>Qualcorr</li> </ul>	nu iviob 1m® Sn	ile Broad	ibano 4G L n™ X7 I TF	d 4G LTE-A, K7 LTE-A (Sierra Wireless EM7455)										
	Qualcomm <sup>®</sup> Snapdragon™ X7 LTE-A (Sierra Wireless EM7455) • Integrated Mobile Broadband 4G LTE,														
SIM card (opt)	Intel XM	M™ 71	60 (Fibo	com L831-l	EAU) (EME	A only)	Connect /F	MEA) SIM card							
Givi Card ( <i>Opt)</i>	WICO-51W	caru s	sot, opt v		(US) OF LE	1000	Connect (E	WILA) SIN Card							Lenovo









### ThinkPad X280 Platform Specifications

Product Specifications Reference (PSREF)

Processor			e™ i3 / i5 Processor in US and EMEA; i5-7200U is NC	)T available ir		Dimensions Weight	<i>WxDxH:</i> 12.11" x 8.26" x 0.69-0.70"; 307.7mm x 209.8mm x 17.4-17.8mm <i>FHD non-touch model:</i> 2.49 lb / 1.13 kg;
	Processor # o Number Core	f # of	Base Max Turbo Cache	Memory Types	Processor Graphics		HD non-touch model: 2.78 lb / 1.26 kg; FHD multi-touch model: 2.79 lb / 1.27 kg
	i3-7020U i3-7130U i5-7200U 2	4	2.3 GHz         -         3MB           2.7 GHz         -         3MB           2.5 GHz         3.1 GHz         3MB	DDR4-2133	Intel HD Graphics 620	Case color Case material	Black Display cover: Carbon Fiber (FHD non-touch model) or Glass Fiber (HD & FHD multi-touch model); Bottom: Magnesium/Aluminum
	i5-7300U		2.6 GHz 3.5 GHz 3MB				er Optional: Smart card reader
			ore i3 / i5 / i7 Processor		_	Media reader Ports	MicroSD card reader, in the combo slot with nano-SIM card Two USB 3.1 Gen 1 (one Always On),
	Processor # o Number Core i3-8130U 2	es Threads	Base Max Turbo Frequency Frequency Cache 2.2 GHz 3.4 GHz 4MB	Frequency Types Graphics			one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP),
	i5-8250U i5-8350U i7-8550U i7-8650U	8	1.6 GHz         3.4 GHz         6MB           1.7 GHz         3.6 GHz         6MB           1.8 GHz         4.0 GHz         8MB           1.9 GHz         4.2 GHz         8MB	DDR4-2400	Intel UHD Graphics 620	Manitar apple	HDMI 1.4b, Ethernet extension connector, combo slot of nano-SIM card (WWAN models) and microSD card reader, headphone / microphone combo jack, optional smart card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter
Graphics	supports extern	nal digital i independe	Intel UHD Graphics 620 in p nonitor via HDMI or USB Typ ent displays; 04@60Hz (USB Type-C); 40	e-C;		Monitor cable (optional) Bundled Accy	USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter Optional: ThinkPad Ethernet Extension Adapter Gen 2
Chipset Memory	Intel SoC (Syst 4GB, 8GB, or 1 * 4GB memory is	tem on Ch I6GB / 240 S NOT availa	,	vstemboard,	, ,	Camera <i>(optional)</i> Audio support	<ul> <li>I) One of the following, configurable by model:</li> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> <li>IR camera and HD720p camera, fixed focus</li> <li>HD Audio, Realtek<sup>®</sup> ALC3287 codec / stereo speakers, 2W x 2, Dolby<sup>®</sup> Audio<sup>™</sup> Premium /</li> </ul>
Display	220 nit	s, 16:9 aśp	HD (1366x768), anti-glare, L bect ratio, 400:1 contrast ratio	)		]	dual array microphone (optional for special bid model), headphone / microphone combo jack
Multi-touch (opt)	300 nit	s. 16:9 aś	FHD (1920x1080), anti-glare bect ratio, 700:1 contrast ratio 0-finger gesture (FHD only)			Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Storage	* FHD non-touch One of the follow		0-finger gesture (FHD only) OT available in US rable by model:			Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified (may be disabled in some region)
Ū	• M.2 SSD / SA • M.2 SSD / PO	ATA 6.0Gb	's (e.g. xxxGB SSD M.2) PCIe 3.0 x 4, 32Gb/s (e.g. x	xxGB SSD I	M.2 PCIe NVMe)		Intel vPro Technology r <i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest, anti-spoofing technology
Optical	None					NFC (optional)	Near Field Communication
Ethernet	via bundled or	optional TI	nection I219-V ( <i>Non-vPro</i> ) of ninkPad Ethernet Extension /	Adapter Ger	12	Battery	Integrated Li-ion 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
Bluetooth™ <i>(opť)</i>	Bluetooth 4.1 v	vireless, in	AC 8265, Wi-Fi 2x2 802.11ad tegrated in Wi-Fi + Bluetooth	c + Bluetoot combo ada	h 4.1, M.2 card pter	Max battery life AC adapter	MobileMark <sup>®</sup> 2014: 16.6 hr * Battery life varies significantly with settings, usage, & other factors 45W or 65W USB-C AC adapter
WWAN (optional)	<ul> <li>Wireless WAI</li> <li>Integrated Me</li> </ul>	N upgrada	ble (special bid only)			· · · · · · · · · · · · · · · · · · ·	<i>Optional:</i> Windows <sup>®</sup> 10 Home 64 or Windows 10 Pro 64
SIM card <i>(opt)</i>	Intel XMM™ Integrated Mo Intel XMM™ * For non-WWAN	7262 (Fibo obile Broad 7360 (Fibo <i>I model, it n</i> I slot, in th	com L830-EB), M.2 card (EM Jband 4G LTE-A, com L850-GL), M.2 card <i>teans the model is NOT WWAN ι</i> e combo slot with microSD c	ıpgradable		Limited warranty	One of the following, configurable by model:     1-year depot repair service     1-year depot with 2-year system board repair service     1-year/3-yr battery depot repair service     1-year + 2-year depot repair service     3-year/1-yr battery depot repair service     3-year/3-yr battery depot repair service     3-year/3-yr battery depot repair service     3-year/3-yr battery limited onsite service     3-year/3-yr battery limited onsite service     3-year/3-yr battery limited onsite service
						Mil-Spec test	MIL-STD-810G military testing
			ilable in all regions			Environment	EPEAT™ Gold (US only); ENERGY STAR <sup>®</sup> 6.1; RoHS-compliant

Note: The specifications above may not be available in all regions.

Lenovo February 2020



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# ThinkPad X380 Yoga Platform Specifications

Processor	7th Generation Intel <sup>®</sup> Core™ i5 Processor	Smart card readerO	Optional: Smart card reader (mutually exclusive with NFC)			
	Processor Number         # of Cores         # of Threads         # of Frequency         Base Frequency         Max Turbo Frequency         Cache         Memory Types         Processor Graphics           i5-7200U         2         4         2.5 GHz         3.1 GHz         3MB         DDR4-2133         Intel HD Graphics         620	Media reader O Ports Tv or tra	ne microSD card slot (microSD, microSDHC, microSDXĆ), UHS-I wo USB 3.1 Gen 1 (one Always On), Ethernet extension connector, ne USB 3.1 Type-C Gen 2 / Thunderbolt 3 (Power Delivery, DisplayPort, Data ansfer), HDMI 1.4b, microSD card reader, nano-SIM card slot (WWAN models),			
	or 8th Generation Intel Core i3 / i5 / i7 Processor	he * L	headphone / microphone combo jack, optional smart card reader * Depending on many factors, actual data transfer speed may be lower than theoretical speed			
	Processor         # of         Base         Max Turbo         Cache         Memory         Processor           Number         Cores         Threads         Frequency         Frequency         Cache         Memory         Types         Graphics	WiGig dock No Monitor cable U	Ione ISB-C to VGA: Lenovo USB-C to VGA Plus Power Adapter ISB-C to DP: Lenovo USB-C to DisplayPort Adapter			
	i3-8130U         2         4         2.2 GHz         3.4 GHz         4MB           i5-8250U         1.6 GHz         3.4 GHz         6MB           i5-8350U         1.7 GHz         3.6 GHz         6MB         DDR4-2400	Bundled Accy O	IDMI to VGA: Lenovo HDMI to VGA Monitor Adapter Optional: ThinkPad Ethernet Extension Cable			
	17-8550U         4         8         1.7 GHz         5.0 GHz         600         620         620           i7-8650U         1.9 GHz         4.2 GHz         8MB         620	72	Due of the following, configurable by model: 20p: HD720p camera, fixed focus R & 720p: IR camera and HD720p camera, fixed focus			
Graphics	Intel UHD Graphics 620 in processor only; supports external digital monitor via HDMI or USB Type-C;	Audio support HI	ID Audió, Conexant® CX11771 codec / stereo speakers, 2W x 2 / ptional dual array microphone, headphone / microphone combo jack			
	supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)	Keyboard 6- UltraNav™ Tr	-row, spill-resistant, multimedia Fn keys, LED backlight rackPoint® pointing device and 3+2 buttons Mylar surface multi-touch click pad			
Chipset Memory	Intel SoC (System on Chip) platform 8GB or 16GB / 2400MHz DDR4 / soldered to systemboard, no sockets * System clocks down for processors with lower memory controller	Security chip Di System Mgt (opt) In	ower-on password, hard disk password, supervisor password, security keyhole biscrete TPM 2.0 TCG Certified (may be disabled in some region) tel vPro Technology			
Display	13.3" (337.8mm) FHD (1920x1080), LED backlight, IPS 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle,	NFČ (optional) N	Deptional: Touch style match on chip fingerprint reader on the palm rest lear Field Communication (mutually exclusive with smart card reader)			
Multi-touch Hinge	AR (anti-reflection) Capacitive-type multi-touch, AR (anti-reflection), AS (anti-smudge), supports 10-finger gesture Yoga hinge, 360 degree	Max battery life M AC adapter	i-Ion 51Wh battery <i>IobileMark<sup>®</sup> 2014:</i> 13.6 hrs <i>Battery life varies significantly with settings, usage, &amp; other factors</i> 45W USB-C AC adapter			
Convert-mode Pen	Laptop, tent, stand, yoga and tablet ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable	•	<ul> <li>45W slim tip AC adapter</li> <li>65W USB-C AC adapter</li> <li>65W slim tip AC adapter</li> </ul>			
Storage Optical	Some: M.2 SSD / SATA 6.0Gb/s (e.g. xxxG SSD) Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s (e.g. xxxG SSD PCIe NVMe) None	Light sensor Ar G-sensor/ 30	mbient Light Sensor D accelerometer and 3D magnetometer			
Ethernet	Native Intel Ethernet Connection I219-V ( <i>Non-vPro</i> ) or I219-LM ( <i>vPro</i> ) via optional ThinkPad Ethernet Extension Cable	Gyroscope 31	D compass D gyrometer			
WLAN Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card Bluetooth 4.2 wireless, integrated in Wi-Fi + Bluetooth combo adapter	Limited warranty Or	Optional: Windows® 10 Home 64 or Windows 10 Pro 64         One of the following, configurable by model:			
WWAN (optional)	One of the following, configurable by model: • Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only) • Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card None	•	1-year depot repair service 1-year depot with 2-year system board service 1-year + 2-year depot repair service 1-year + 2-year limited onsite service 3-year/1-yr battery depot repair service			
Dimensions Weight	WxDxH: 12.34" x 8.75" x 0.72"; 313.5mm x 222.2mm x 18.2mm Starting at 3.17 lb / 1.43kg	•	3-year/1-yr battery limited onsite service			
Case color Case Material	Black or silver Carbon-Fiber Hybrid		IIL-STD-810G military testing PEAT™ Gold; ENERGY STAR <sup>⊕</sup> ; RoHS-compliant			
cuse material						

Lenovo

December 2019







(intel)

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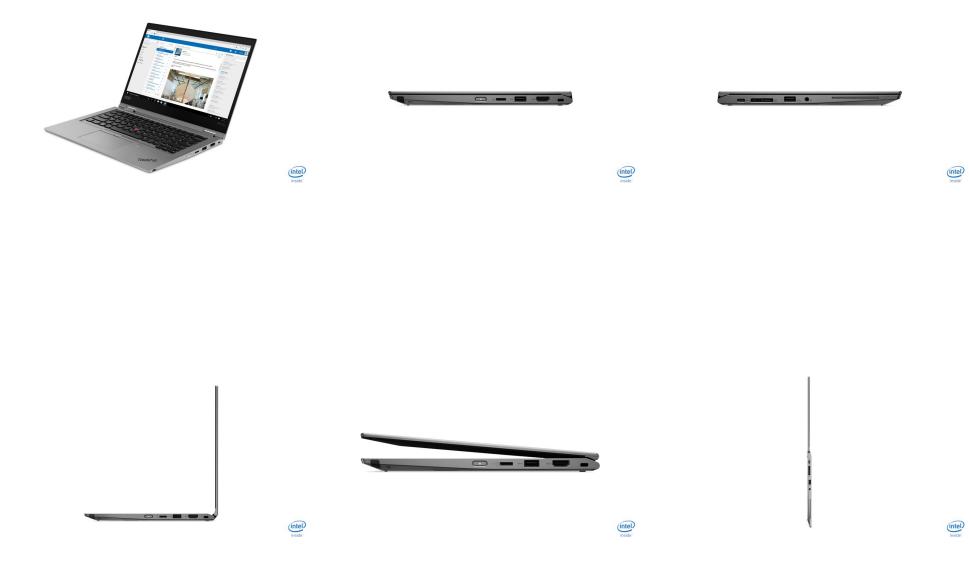
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### ThinkPad X390 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th G	eneration Ir	ntel® Co	re™	i3 / i5 / i7	Processor					Dimensions	Models	FHD Non-toud	ch	HD/	FHD Multi-touch	
	Proce		_ # of			Max Turbo	ache	Memory		essor	1	Carbon Fiber	311.9mm x 217.0mm	x 16.5mm		_	
	Numt		Threads 4	_		requency	1MB	Types	Grap	ohics	-		12.28" x 8.54" x 0 312.0mm x 217.2mm		010mm	x 217.2mm x 16.9mm	
	i5-814		4	_			5MB					PPS	12.28" x 8.55" x 0			8" x 8.55" x 0.67"	
	i5-836	3511		-				DDR4-2400		Graphics	Weight	Models	FHD Non-touch	Н	D	FHD Multi-touch	
	i7-856	4 65U 4	8	1.	.8 GHz		3MB		020			Carbon Fiber	2.70 lb / 1.22 kg			-	
	i7-866			_			3MB				_	PPS	2.85 lb / 1.29 kg	2.93 lb /	′ 1.33 kg	2.84 lb / 1.28 kg	
						`	OT av	ailable in El	/		Case color Case material	Black Display cover: Carbon Fiber (FHD non-touch only) or PPS; Bottom: Magnesium/Aluminum					
	Proce Numb		# of Threads			Max Turbo Frequency	ache	Memory Types	Proce Grap								
	i5-102		8				5MB			<b>.</b>	Smart card reade Media reader		art card reader reader, in the combo s	lot with nar	o-SIM card	4	
	i7-10		12	_			2MB	DDR4-2400 II	ntel UHD	Graphics	Ports	Two USB 3.1 (	Gen 1 (one Alwavs On	).			
Overshine								I			-	one USB 3.1 T	ype-C Gen 1 (with the ype-C Gen 2 / Thunde	function of	Power Deli	very and DisplayPort),	
Graphics		UHD Graphi orts externa										HDMI 1.4b. Et	hernet extension conn	ector.		, ·	
	supp	orts three in	depend	ent o	displays;							combo slot of	nano-SIM card (WWAI	V models) a	and microSI	D card reader,	
					`	hunderbolt	; 409	6x2160@24	4Hz (HD	MI)	_		nicrophone combo jack onnector, security keyl		smart card r	reader,	
Chipset Memory	Intel :	SoC (Syster	m on Ch	nip) p B / 2	olatform	DDB4 / so	dorod	l to systemb	oard no	sockate	Monitor cable	* Depending on	many factors, actual data	transfer spee	ed may be lo	wer than theoretical speed	
Memory	^ 32G	в memory is i	NOT ava	iiadie	e tor moael	s with 10th G	ien pro	ocessor		5 300KCK	Monitor cable (optional)	HDMI to VGA:	Lenovo HDMI to VO Lenovo USB-C to V	A Monitor A GA Adapte	Adapter		
	* Insta	alled memory	is actual	ly 26	66MHz but	t run at 2400	MHz di	ue to Intel limi	itation			USB-C to DP:	Lenovo USB-C to E	DisplayPort A	Adapter		
Display	Size	Resolution	-	Гуре	Surface	Brightness	Aspec Ratio		Color Gamut		Bundled Accy	-	kPad Ethernet Extens				
	13.3"	HD (1366x76	58)	TN	Anti-glare	-	16:9	500:1	45%	90°	Camera (optional)		nera with ThinkShutter nd HD720p camera wi				
					gine gine			800:1			Audio support	HD Audio, Rea	altek® ALC3287 codec	/		a privacy, ince locus	
	13.3"	FHD (1920x1	1080)	IPS	Anti-glare	300 nits	16:9	(non-touch) 700:1	72%	170°			rs, 1W x 2, Dolby <sup>®</sup> Auc field microphone (optic				
								(multi-touch	)				nicrophone combo jack			jei),	
	13.3"	FHD (1920x1 ThinkPad Pri Guard		IPS	Anti-glare	400 nits	16:9	1000:1	72%	178°	Keyboard UltraNav™		sistant, multimedia Fn I inting device and butto				
Multi-touch (opt)	On-c	ell touch, su	pports	10-fi	nger gest	ure (FHD o	nly)	·		·	Security	Power-on password, hard disk password, supervisor password, security keyho Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)					
Storage		2280 SSD									Security chip						
		2 2242 SSD 2 2280 SSD									(may be disabled in some region) System Mgt (opt) Intel vPro Technology						
	<ul> <li>Interview</li> </ul>	el Optane™ I	Memory	/ H1	0 with Sol		orage	,			Fingerprint reader	r <i>Optional:</i> Touc Near Field Co	ch style match on chip	fingerprint	reader on t	he palm rest	
Optical	M.2 None	2 2280, PCI	e NVMe	3.0	x 4						Battery			orte Ranid (	Charge (ch	arge up to 80% in 1hr)	
Ethernet			rnet Co	noc	tion 1210	V (Non-vP	ra) or	1219-LM ( <i>vF</i>	2ro)		- '	with 65W AC a	adapter		onarge (en		
Luiemer								dapter Gen			Max battery life	MobileMark® 2	2014: 17.6 hr ries significantly with settil	nae usaaa 8	2 other factor	· ·	
WLAN (optional)		I Wireless-A									AC adapter	<ul> <li>45W USB-C</li> </ul>	AC adapter	193, usaye, o	a other lactor	0	
Bluetooth™ (opt)		l Wi-Fi 6 AX ooth 5.0 wir							ter			<ul> <li>65W USB-C</li> <li>65W slim tip</li> </ul>					
WWAN (optional)	• Wir	eless WAN	upgrada	able	(special b	id only in E	MEA)				Operating system	Optional: Win	dows <sup>®</sup> 10 Home 64 or	Windows 1	0 Pro 64		
	<ul> <li>Inte</li> </ul>	grated Mob	ile Broa	dbai dbai	nd 4G LTE	E, Fibocom	L830	-EB, M.2 cai 50-GL, M.2 d	rd (EME	A only)	Limited warranty	• 1-year depot	repair service				
	* For I	า้on-WWAN m	nodel, it r	nean	is the mode	el is NOT WV	VAN up	ogradable	Jaiu		(optional)		t with 2-year system bo d onsite service	pard repair s	service		
SIM card (opt)		-SIM card s				with micro	SD ca	rd reader,				<ul> <li>1-year + 2-year</li> </ul>	ear depot repair servic				
	υριιοι	ional Verizon LTE (US) SIM card										<ul> <li>1-year + 2-year</li> </ul>	ear limited onsite servi	се			
													pattery depot repair ser pattery limited onsite se				
											Mil-Spec test						
											Environment		; ENERGY STAR® 7.1	RoHS-com	npliant		
Note: The specifica	tions	above may n	ot be av	ailah	lo in all ro	aione					1	0.010	,			Lenovo	



### ThinkPad X390 Yoga Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation I	Intel <sup>®</sup> Core	e™ i5 / i7 P	rocessor				Dimensions	WxDxH: 12.22" x 8.62" x 0.63"; 310.4mm x 219mm x 15.95mm		
	Processor # of	_ # of	Base	Max Turbo	Cache	Memory	Processor	Weight Case color	Starting at 2.85 lb /1.29 kg Black or silver (silver is NOT available in EMEA)		
	Number Cores	Threads	Frequency 1.6 GHz	Frequency 3.9 GHz	6MB	Types	Graphics	Case material	Display cover. CF Hybrid PA + 50% GF		
	i5-8365U		1.6 GHz	4.1 GHz	6MB		Intel UHD Graphics		Bottom: CF Hybrid PA + 50% GF		
	i7-8565U 4	8	1.8 GHz	4.6 GHz	8MB	DDR4-2400	620	Media reader	r <i>Optional:</i> Smart card reader MicroSD card reader		
	i7-8665U		1.9 GHz	4.8 GHz	8MB			Ports	Two USB 3.1 Gen 1 (one Always On),		
Graphics	Intel UHD Graph					• C·			one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP),		
	supports external digital monitor via HDMI or USB Type-C; supports three independent displays;								HDMI 1.4b. Ethernet extension connector, nano-SIM card slot (WWAN models).		
	Max resolution: 4096x2304@60Hz (Thunderbolt); 4096x2160@24Hz (HDMI)							-	headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed		
Chipset Memory	Intel SoC (System on Chip) platform 8GB or 16GB / 2400MHz DDR4 / soldered to systemboard, no sockets							Monitor cable	* Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter		
	* Installed memory	y is actually	2666MHz b	ut run at 240	OMHz c	lue to Intel lim	itation	(optional)	USB-C to VGA: Lenovo USB-C to VGA Adapter		
Display	Size Resolution	Т	pe Surface	Brightnes	Aspec	ct Contrast	Color Viewing	Bundled Accy	Optional: ThinkPad Ethernet Extension Adapter Gen 2		
					nauc		Gamut Angle	Camera (optional)	<ul> <li>One of the following, configurable by model:</li> <li>HD720p camera with ThinkShutter camera privacy, fixed focus</li> </ul>		
	13.3" FHD (1920x	,	reflectio		16:9		72% 170°	Audio support	<ul> <li>IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus</li> </ul>		
Multi-touch		Capacitive-type multi-touch, supports 10-finger gesture, anti-reflection (AR), S (anti-smudge), could reduce the brightness by up to 10%							HD Audio, Realtek <sup>®</sup> ALC3287 codec / stereo speakers, 1W x 2, Dolby <sup>®</sup> Audio™ Premium /		
Hinge	Yoga hinge, 360	degree		brightiness	սյսիւ	0 10 /8			dual array far-field microphone, headphone / microphone combo jack		
Convert-mode Pen	Laptop, tent, sta ThinkPad Pen P			lti-touch dis	splay, c	on-board rec	hargeable	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad		
Storage	<ul> <li>M.2 2280 SSE</li> </ul>		•		, p.a., e			Security	Power-on password, hard disk password, supervisor password, security keyhole		
-	<ul> <li>M.2 2242 SSE</li> <li>M.2 2280 SSE</li> </ul>							Security chip	Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified (may be disabled in some region)		
	<ul> <li>Intel Optane™</li> </ul>	<sup>1</sup> Memory	H10 with S		Storage	Э,			Intel vPro Technology		
Optical	M.2 2280, PC None	le NVMe :	3.0 x 4					Fingerprint reade NFC (optional)	r Touch style match on chip fingerprint reader on the palm rest Near Field Communication		
Ethernet	Native Intel Ethe	ernet Con	nection I21	9-V (Non-v	Pro) or	· I219-LM (v	Pro)	Battery	Integrated Li-ion 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr)		
	via bundled or o	ptional Th	inkPad Eth	ernet Exte	nsión A	Adapter Gèn	2		with 65W AC adapter		
WLAN (optional)	<ul> <li>One of the followin</li> <li>Intel Wireless-</li> </ul>				Blueto	oth 5 0		Max battery life	MobileMark® 2014: 14.5 hr * Battery life varies significantly with settings, usage, & other factors		
	Intel Wi-Fi 6 A	X200, Wi-	Fi 2x2 802	.11ax + Blu	etooth	5.0		AC adapter	<ul> <li>45W USB-C AC adapter</li> <li>65W USB-C AC adapter</li> </ul>		
	Bluetooth 5.0 wi		-		etooth	combo adap	oter	-	65W slim tip AC adapter		
WWAN (optional)	<ul> <li>One of the followir</li> <li>Integrated Mol</li> </ul>	<i>ng, configur</i> bile Broad	able by mod Iband 4G I	<i>el:</i> TE Fiboco	m I 830	)-FBM2ca	rd (EMEA only)	Light sensor	None		
	<ul> <li>Integrated Mol</li> </ul>	bile Broad	lband 4G L	TE-A. Fibo	com L8	50-GL. M.2	card	G-sensor Gyroscope	3D accelerometer 3D gyrometer		
SIM card (opt)	* For non-WWAN Nano-SIM card	<i>modei, it m</i> slot, optio	<i>eans the mo</i> nal Verizon	LTE (US)	SIM ca	<i>pgradable</i> rd for specia	al bid only		Optional: Windows® 10 Home 64 or Windows 10 Pro 64		
		<i>i</i> 1		( )		•	,	Limited warranty	1-year depot repair service		
								(optional)	<ul> <li>1-year depot with 2-year system board repair service</li> <li>1-year/3-yr battery depot repair service</li> </ul>		
									1-year limited onsite service		
									<ul> <li>1-year + 2-year depot repair service</li> <li>1-year + 2-year limited onsite service</li> </ul>		
									<ul> <li>3-year/1-yr battery depot repair service</li> </ul>		
									<ul> <li>3-year/3-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>		
									3-year/3-yr battery limited onsite service		
								Mil-Spec test MIL-STD-810G military testing			
								Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant		

Note: The specifications above may not be available in all regions.

Lenovo January 2020







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AMD

### ThinkPad X395 Platform Specifications

Processor	AMD	Ryzen <sup>™</sup> PR	RO Mobi	ile Pr	ocessor	s with Rad	leon™ Ve	ga Graphics			Dimensions	<i>WxDxH:</i> 12.28" x 8.55" x 0.67"; 311.9mm x 217.2mm x 16.9mm			
	Proce Numb		# of		Base M quency F	Aax Turbo	Cache	Memory Controller		essor ohics	Weight	Models HD / FHD multi-touch FHD non-touch FHD Privacy Guard			
	Ryzer	13 🔒	4	1		35 GHz	2MB L2 /	Controller	Radeor	vega 6	Case color	Weight 2.91 lb / 1.32 kg 2.82 lb / 1.28 kg 3.01 lb / 1.37 kg Black			
	Pro 33 Ryzer	3000					4MB L3 2MB L2 /			ohics Vega 8	Case material	Display cover: PPS/GF; Bottom: Magnesium/Aluminum			
	Pro 35	500U <sup>4</sup>	8	2.1	1 GHz	3.7 GHz	4MB L3	DDR4-2400	Gra	ohics	Smart card reade	er Optional: Smart card reader			
	Ryzer Pro 37		8	2.3	3 GHz		2MB L2 / 4MB L3		Radeon Grap	Vega 10 phics	Media reader Ports	MicroSD card reader, in the combo slot with nano-SIM card One USB 3.1 Gen 1 (Always On), one USB 3.1 Gen 2,			
	suppo suppo Max r		al digital ndepend 4096x2	l mor dent ( 304 (	hitor via l displays; @60Hz (l	JSB-C or I JSB-C); 4	HDMI;	orocessor; 60@24Hz (H	IDMI)			two USB 3.1 Type-C Gen 2 (w/ the function of Power Delivery and DisplayPort 1.4) HDMI 2.0, Ethernet extension connector, combo slot of nano-SIM card (WWAN models) and microSD card reader, headphone / microphone combo jack, optional smart card reader, side docking connector, security keyhole			
Chipset Memory	8GB d	SoC (Syste or 16GB / 2 Illed memory	400MH	z DD	R4 / solo	dered to sy	ystembo 20MHz du	ard, no sock ue to AMD limi	ets tation		Monitor cable	* Depending on many factors, actual data transfer speed may be lower than theoretical speed HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter			
Display	Size	Resolution		Туре	Surface	Brightnes	s Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Bundled Accy	Optional: ThinkPad Ethernet Extension Adapter Gen 2 I) One of the following, configurable by model:			
	13.3"	HD (1366x70	68)	ΤN	Anti-glare	e 250 nits	_	300:1	45%	90°		HD720p camera with ThinkShutter camera privacy, fixed focus			
	13.3"	FHD (1920x	1080)	IPS	Anti-glare	e 300 nits	16:9	800:1 (non-touch) 700:1 (multi-touch)	72%	170°	Audio support	<ul> <li>IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Realtek ALC3287 codec / stereo speakers, 1W x 2, Dolby<sup>®</sup> Audio<sup>™</sup> Premium / optional dual array far-field microphone, headphone / microphone combo jack</li> </ul>			
	13.3"	FHD (1920x ThinkPad Pr Guard	1080) ivacy	IPS	Anti-glare	400 nits	16:9	1000:1	72%	178°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad			
		ell touch, su			0 0	ture (FHD	only)	•			Security	Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified			
Storage		2280 SSD				30x4						(may be disabled in some region) DASH Management			
Optical	None				,						System Mgt Fingerprint reade	er Optional: Touch style match on chip fingerprint reader on the palm rest			
Ethernet	Native via bu	e Realtek® I undled or or	RTL815	53 Gių Think	gabit Eth Pad Ethe	ernet coni ernet Exte	nection	dapter Gen 2	<b>,</b>		NFČ	None			
		Vireless-AC						•			Battery	Integrated Li-ion 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter			
Bluetooth™							etooth o	combo adapt	er		Max battery life	MobileMark <sup>®</sup> 2014: 14.5 hr * Battery life varies significantly with settings, usage, & other factors			
WWAN (optional)	<ul> <li>Wire</li> </ul>	eless WAN	upgrad	able							AC adapter	45W or 65W USB-C AC adapter			
	• Inte	grated Mob	oile Broa	adbai	nd 4G LT	E-A, Fibo		50-GL, M.2 c	ard			n Optional: Windows® 10 Home 64 or Windows 10 Pro 64			
SIM card <i>(opt)</i>		For non-WWAN model, it means the model is NOT WWAN upgradable ano-SIM card slot, optional Verizon LTE (US) SIM card									Limited warranty (optional)	<ul> <li>1-year depot repair service</li> <li>1-year depot with 2-year system board repair service</li> <li>1-year limited onsite service</li> <li>1-year + 2-year depot repair service</li> <li>3-year/1-yr battery depot repair service</li> <li>3-year/1-yr battery limited onsite service</li> </ul>			
											Mil-Spec test MIL-STD-810G military testing				
											Environment	EPEAT™ Silver; ENERGY STAR <sup>®</sup> 7.1; RoHS-compliant			

Note: The specifications above may not be available in all regions.

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**Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges.

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*Carry-in or Mail-in Service:* Parts and labor repair coverage where the customer is responsible for shipping (including packaging) or delivery to authorized warranty provider or repair center. *Depot or Courier Service:* Parts and labor repair coverage where

shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

*Expedited Depot:* Parts and labor coverage with expedited turnaround. Shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

**Onsite / In-home Service:** Parts and labor repair coverage where labor is provided onsite at your place of business. If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive onsite, typically the next day. **International Warranty Service (IWS):** PC repair coverage for customers who require a critical warranty repair while travelling internationally. Visit www.lenovo.com/internationalwarranty for details. Visit www.lenovo.com/warranty for Lenovo Warranty Services terms and conditions for complete details and restrictions.

**Included software:** may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

**Battery life:** Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

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# **Summary of Changes**

This section describes the technical changes made in this edition. This edition might also include minor corrections and editorial changes which are not identified.

#### October 30, 2019 - Version 550

#### Additions in this update

- New product(s) None
- ► New model(s) None

► Others ThinkPad X1 Tablet (3rd Gen) - Spec updated

#### Withdrawals in this update

Withdrawn product(s) None





# ThinkPad X1 Tablet (3<sup>rd</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor         Processor       # of       # of       Base       Max Turbo       Cache       Memory Types       Processor         Number       Cores       Threads       Frequency       Cache       Memory Types       Graphics	Control buttons Dock ( <i>Optional</i> )	Power button, volume control button, reset switch <ul> <li>Thin Keyboard (Magnetic Detachable)</li> </ul>
	NumberCoresThreadsFrequencyFrequencyCacheMemory TypesGraphicsi5-8250U1.6 GHz3.4 GHz6MB1.7 GHz3.6 GHz6MB1.7 GHz1.6 GHz1.0 GHzi7-8550U1.8 GHz4.0 GHz8MB1.9 GHz4.2 GHz8MB1.0 GHz8MB	Monitor cable Bundled Accy (optional)	USB-C Dock Gen 2 None USB-C to RJ45: Lenovo USB-C to Ethernet Adapter USB-C to VGA: Lenovo USB C to VGA Plus Power Adapter USB-C to HDMI: Lenovo USB C to HDMI Plus Power Adapter
Graphics	Intel UHD Graphics 620 in processor, supports external digital monitor via USB Type-C	Camera IR Camera	Front camera: 2.0-megapixel, fixed focus Rear camera: 8.0-megapixel, auto focus Optional: IR camera, fixed focus (mutually exclusive with NFC) Perilba 10 CO20 perilogic (atomic proclement 1W + 0.0)
Chipset Memory	Intel SoC (System on Chip) platform 8GB or 16GB / 2133MHz LPDDR3, soldered to systemboard, no sockets	Audio support	Realtek® ALC3278 codec / stereo speakers, 1W x 2 / dual array microphones, combo audio/microphone jack
Display	13.0" (330mm) QHD+ (3000x2000), glossy, LED backlight, IPS, anti-figerprint display with Corning® Gorilla® Glass, WideView (160° viewing),	Pogo keyboard	Magnetic attached thin keyboard, with TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch, backlit
Multi-touch Pen <i>(optional)</i> Kick stand	400 nits, 3:2 aspect ratio, 1200:1 contrast ratio Capacitive touch panel, supports ten-finger gesture Lenovo Pen Pro or Lenovo Active Pen (ThinkPad Pen Pro) Opening angle up to 170 degrees		Black Kensington lock slot Discrete TPM 2.0 TCG Certified Intel vPro Technology r <i>Optional:</i> Touch style Fingerprint reader
Storage	One of the following, configurable by model: • M.2 2280 SSD / SATA 6.0Gb/s	NFČ (optional)	Near Field Communication (mutually exclusive with IR camera)
Optical Storage extensior	M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s None One MicroSD card reader, in the combo slot with nano-SIM card, support USH-I, microSDHC, microSDXC	Battery Max battery life AC adapter	Integrated Li-Ion 42Wh battery <i>MobileMark</i> <sup>®</sup> 2014: 9.5 hrs * <i>Battery life varies significantly with settings, usage, &amp; other factors</i> 45W or 65W USB Type-C AC adapter
Ethernet	None	Light sensor G-sensor	Ambient Light Sensor 3D accelerometer
WLAN Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card Bluetooth 4.2 wireless, integrated in Wi-Fi + Bluetooth combo adapter	Gyroscope GPS (optional)	3D gyrometer GPS function is integrated into WWAN module
WWAN (optional) SIM card (opt)	Integrated Mobile Broadband 4G LTE-A, Qualcomm <sup>®</sup> Snapdragon <sup>™</sup> X7 LTE-A (Sierra Wireless EM7455) Nano-SIM card slot, in the combo slot with microSD card reader	Preload	One of the following, configurable by model: • Windows® 10 Pro 64 • Windows 10 Home 64
Dimensions Weight Case color	Tablet only:       11.97" x 8.9" x 0.35";       304.1mm x 226mm x 8.9mm         Tablet + keyboard:       11.97" x 8.9" x 0.57";       304.1mm x 226mm x 14.4mm         Tablet only:       starting at 1.96 lb / 0.89kg         Tablet+ keyboard:       starting at 2.8 lb / 1.27kg         Black       More regiment (Alumination)	Limited warranty	One of the following, configurable by model: • 1-year depot repair service • 1-year depot with 2-year system board service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
Case material Ports	Magnesium/Aluminum Two USB 3.1 Type-C Gen 1 ((with the function of Power Delivery and DisplayPort),	Mil-Spec test	MIL-STD-810G military testing
1 0113	one Pogo keyboard connector, one Pen holder slot, headphone / microphone combo jack, combo slot of nano-SIM card (WWAN models) and microSD card reader * Depending on many factors, actual data transfer speed may be lower than theoretical speed	Environment	EPEAT™ Silver, GREENGUARD, Low Halogen, RoHS
			Lenovo

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**Onsite / In-home Service:** Parts and labor repair coverage where labor is provided onsite at your place of business. If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive onsite, typically the next day. **International Warranty Service (IWS):** PC repair coverage for customers who require a critical warranty repair while travelling internationally. Visit www.lenovo.com/internationalwarranty for details. Visit www.lenovo.com/warranty for Lenovo Warranty Services terms and conditions for complete details and restrictions.

**Included software:** may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

**Battery life:** Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

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# **Summary of Changes**

This section describes the technical changes made in this edition. This edition might also include minor corrections and editorial changes which are not identified.

#### March 2020 - Version 556

#### Additions in this update

- New product(s) None
- ► New model(s) None
- ► Others

ThinkCntre M630e Tiny update Mil-Spec information ThinkCntre M90n-1 Nano update Storage information ThinkCntre M90n-1 Nano IoT update Processor / Storage / Ethernet / etc. information ThinkCntre M725 SFF update Graphics information

#### Withdrawals in this update

Withdrawn product(s) None

► Withdrawn model(s)

None







inside"





(intel)

(intel)

#### ThinkCentre M820z Platform Specifications

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Intel			n Intel Co			WLAN			rd, Realtek RTL8821CE	(dual band),	
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics		Some: 11ac wirele	ss, M.2 Ca	combo adapter, 1x1 rd, Realtek RTL8822BE	(dual band),	
	Celeron G4900	2/2	3.1G	2 MB	DDR4-2400	UHD 610				combo adapter, 2x2 Ird, Intel Dual Band Wirel	ess-AC 3165	
	Celeron G4920	2/2	3.2G	2 MB	DDR4-2400	UHD 610				combo adapter, 1x1	c33 A0 0103,	
	Celeron G4930	2/2	3.2G	2 MB	DDR4-2400	UHD 610		Some: 11ac wirele	ss, M.2 Ca	rd, Intel Dual Band Wirel	ess-AC 8265,	
	Celeron G4950	2/2	3.3G	2 MB	DDR4-2400	UHD 610	Divete eth	Wi-Fi + Blue	etooth 4.2	combo adapter, 2x2		
	Pentium Gold G5400	2/4	3.7G	4 MB	DDR4-2400	UHD 610	Bluetooth™ Ethernet			s, integrated in Wi-Fi + B1 8111G, Wake on LAN®	compo adapter	
	Pentium Gold G5420	2/4	3.8G	4 MB	DDR4-2400	UHD 610	Manageability	None		OTTIC, WARE OT LAN		
	Pentium Gold G5500	2/4	3.8G	4 MB	DDR4-2400	UHD 630	Security chip	Discrete TPM 2.0, 1	TCG Certifi	ed		
	Pentium Gold G5600	2/4	3.9G	4 MB	DDR4-2400	UHD 630		Security slot (in rear for attachment of Power-on, admin, hard disk pase				
	Pentium Gold G5620	2/4	4.0G	4 MB	DDR4-2400	UHD 630		optional Kensingt	on <sup>®</sup> MicroS	Saver <sup>®</sup> cable; • Boot segi	lence control	
	Core i3-8100	4/4	3.6G	6 MB	DDR4-2400	UHD 630		Kensington lock a	also locks c	hassis) 💿 🔴 Boot with	out keyboard and mouse	
	Core i3-8300	4/4	3.7G	8 MB	DDR4-2400	UHD 630		<ul> <li>Smart USB prote</li> </ul>	ction, allow	vs keyboard/ • Individual	USB port disablement	
	Core i5-8400	6/6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630		<b>,</b>		ge devices • Optional		
	Core i5-8500	6/6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	Keyboard	Some: Lenovo Cal	liope Keyb	oard (USB connector), bl	ack	
	Core i5-8600	6/6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630		Some: Lenovo Irac	lliona Wirel	/board (USB connector), ess Keyboard (2.4GHz v	DIACK ia LISB receiver) black	
	Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Mouse	Some: Lenovo Cal	liope Mous	se (USB connector), blac	K	
	Core i3-9100	4/4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	_	Some: Lenovo Fing	gerprint Mo	ouse (USB connector), W	/indows Hello support, black	
	Core i3-9300	4/4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630		Some: Lenovo Cal	liope Wirel	ess Mouse (2.4GHz via l	JSB receiver), black	
	Core i5-9400	6/6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Mechanical	Business black co				
	Core i5-9500	6/6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630	_	<ul> <li>Toolless back cov</li> </ul>				
	Core i5-9600	6/6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	-	Support VESA me	ount (100n	nm)		
	Core i7-9700	8/8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630	-	Dimensions (W	,	Max weight (lb / kg)	Adjustments	
	Core i9-9900	8/16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630	_	10.0 × 1.0 × 10		Vithout stand (No camera):	1	
Memory	32GB max (16GB SC	-DIMM o	nly available via	special b	oid models), DDR	4-2666*,		19.3 X 1.9 X 12. 491 X 49 X 321		(Touch) 11.6 / 5.25 (Non-touch) 11.1 / 5.05	N/A	
-	two 260-pin SO-DIMN	/I sockets	, dual-channel c	apable				401 / 40 / 021		unction Monitor stand (No	camera):	
	* System clocks dowr	for the p	processors with l	ower me	mory controller			19.3 X 9.9 X 14.8 to		I ,	Tilt: 45° back, -5° forward;	
Storage	Some: Hard Drive / S	SATA 6.00	Gb/s. 2.5". 5400	rpm or 7	200 rpm		-	491 X 252 X 377 to		(Non-touch) 15.8 / 7.18	Lift: 110mm;	
0	Some: Solid State D	rive (SSD	) / SATA 6.0Gb/	s, 2.5"		_			. ,	Iltro Elov III atomal (No. com	Swivel: +/-45°	
	Some: M.2 SSD (224 Some: Intel Optane™								vviuri	JItraFlex III stand (No cam	Tilt: 70° back, -5° forward;	
Optical	Some: DVD-ROM S	ATA 1.5G	his Drive slim (9	aleron / F	rendum Processo	r), IVI.∠		19.3 X 9.9 X 13.2 to	16.4 (inch)	(Touch) 17.3 / 7.85	Lift: up to 136mm (flat mode) /	
optiour	Some: DVD Burner (	DVD±RV	V), SATA 1.5Gb/s	s Drive, s	slim (9.0mm)						up to 82mm (vertical mode);	
Media reader	Optional 3-in-1 media				( <i>,</i>						Swivel: +/-45°	
Graphics	Intel HD Graphics 61	1 <b>0/630</b> in	processor, uses	main m	emory, DirectX <sup>®</sup> 1	2,			Note: Car	mera adds 22mm in height (	Vertical)	
	external monitor supp	ort via D	isplayPort™;	4000 /5			Power supply	150 watts, autosens	sing, 90%	PSU		
Display	Max resolution: 4096: 21.5" (546.1mm) Full	108	P)@60HZ, 1920 0n (1920×1080)	X1080 (F	anel)@60HZ	eian	Limited warranty <sup>3</sup>	Some: 1-vear or 3	3-vear. der	oot repair service / servi	ce upgrades available	
Display	TFT-LCD, In-Plane Sv							Some: 1-year or 3	B-year, lim	ited onsite service / ser	vice upgrades available	
	PLS, ADS, AHVA, and	d AA). wi	de viewing angle	e (+/- 89°	). I FD backlight.	250 nits	Preload	Preloaded operati	ng system	1		
Martin Arresto	16:9 aspect ratio, 100 Optional multi-touch,	0:1 contr	ast ratio, anti-gla	are, supp	ort Low Blue Ligh	t Mode		Some: Windows 1	0 Pro 64-b	bit		
Multi-touch Camera	Optional multi-touch, Optional 1080p came	supports	10-point, AIT (A	dvanced	In-cell Ioucn) tec licator, physical s	vitch on/		Some: Windows 1				
Camera	off, supports multi-de	aree rota	tion (horizontal C	° to 180	°. vertical -25° to 2	25°)		<ul> <li>Preloaded applica</li> <li>Lenovo Vantage</li> </ul>	itions (oni	y some listed)		
Controls	Physical buttons on s	de for mi	icrophone mute a	and pow	er on/off	- /			oreloaded:	purchase a product kev t	o activate	
Chipset	Intel B360 Chipset						-	<ul> <li>Microsoft Office preloaded; purchase a product key to activate</li> <li>Cyberlink PowerDVD (only for models with DVD / DVD±RW)</li> <li>Cyberlink Power2GO (only for models with DVD±RW)</li> </ul>				
Rear ports*	Four USB 3.1 Gen1 (		orts Smart Powe	ar On) o	na atharnat (B I-4	5)	-					
near poirts	one DisplayPort, one	optional	serial (9-pin).	51 OH), 0		.5),		LinkedIn	** === +=			
Side ports*	one USB 3.1 Gen2 (o	ne is Alw	ays On and fast				Environment	nvironment ENERGY STAR® 7.0*, E		■ Silver rating* (*not for	non-OS models), ErP Lot 3,	
	one optional card rea							TCO AIO Computer certified, GREENGUARD <sup>®</sup> certified, TUV Eye comfort certified (for Full Function Monitor Stand only), TUV Low Blue Light certified, TUV Ultra Low Noise certified (on some models), RoHS-compliant L-SPEC test MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus)				
M.2 card slot	* Depending on many fac Two M.2 Card slots (c	ctors, actu	al data transfer spe	ed may b	e lower than theore	tical speed						
Audio support	High Definition (HD)						MIL-SPEC test					
							1					
	Dolby <sup>®</sup> Audio™ Premi	um					Accessories					





#### ThinkCentre M920z Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Intel			n Intel Co	1		Audio support	High Definition (HD) Audio, Realtek ALC233 / two internal speakers (3W x 2),
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	WLAN	Dolby <sup>®</sup> Audio <sup>™</sup> Premium Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8821CE (dual band), 1x1
	Celeron G4900	2/2	3.1G	2 MB	DDR4-2400	UHD 610		Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8822BE (dual band), 2x2
	Celeron G4920	2/2	3.2G	2 MB	DDR4-2400	UHD 610		Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 3165, 1x1
	Celeron G4930	2/2	3.2G	2 MB	DDR4-2400	UHD 610		Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 8265,, 2x2
	Celeron G4950	2/2	3.3G	2 MB	DDR4-2400	UHD 610		Some: 11ac Wi-Fi + BT 5.0, M.2 Card, Intel Wireless-AC 9560 (dual band), Intel vPro technology support, 2x2
	Pentium Gold G5400	2/4	3.7G	4 MB	DDR4-2400	UHD 610	Bluetooth™	Some: Bluetooth 4.2/5.0 wireless, integrated in Wi-Fi + BT combo adapter
	Pentium Gold G5420	2/4	3.8G	4 MB	DDR4-2400	UHD 610	Ethernet	Gigabit ethernet, Intel Ethernet Connection I219-LM (Jacksonville), Wake on LAN
	Pentium Gold G5500	2/4	3.8G	4 MB	DDR4-2400	UHD 630	Manageability	Intel Active Management Technology 12.0 (Intel AMT 12.0);
	Pentium Gold G5600	2/4	3.9G	4 MB	DDR4-2400	UHD 630		Intel vPro technology on some models (require choosing a vPro-support Wi-Fi
	Pentium Gold G5620	2/4	4.0G	4 MB	DDR4-2400	UHD 630		adapter to enable vPro function through wireless connection)
	Core i3-8100	4/4	3.6G	6 MB	DDR4-2400	UHD 630	Security chip	Discrete TPM 2.0, TCG Certified
	Core i3-8300	4/4	3.7G	8 MB	DDR4-2400	UHD 630	Security features	<ul> <li>Security slot (in rear for attachment of optional Kensington<sup>®</sup> MicroSaver<sup>®</sup> cable;</li> <li>Boot sequence control</li> </ul>
	Core i5-8400	6/6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630		Kensington lock also locks chassis) • Boot sequence control
	Core i5-8500	6/6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630		• Smart USB protection, allows keyboard/ • Individual USB port disablement
	Core i5-8600	6/6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630		mouse only, blocks all storage devices <ul> <li>Optional Chassis intrusion switch</li> </ul>
	Core i7-8700	6/12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black
	Core i3-9100	4/4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	4	Some: Lenovo Traditional Keyboard (USB connector), black
	Core i3-9300	4/4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	Mouse	Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black Some: Lenovo Calliope Mouse (USB connector), black
	Core i5-9400	6/6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Widdse	Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, bla
	Core i5-9500	6/6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630	_	Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
	Core i5-9600	6/6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Mechanical	Business black color
	Core i7-9700	8/8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630	Weenaniear	Toolless back cover, stand, disk, memory removal
	Core i9-9900	8/16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630	-	Support VESA mount (100mm)
Memory Storage	32GB max (16GB SC two 260-pin SO-DIMI * System clocks down fo Some: Hard Drive / * HDDs (2nd H available via Some: Solid State D Some: M.2 SSD (22	M sockets or the proce SATA 6.00 IDD occu special bi rive (SSE	a, dual-channel c assors with lower n Gb/s, 2.5", 5400 pies ODD bay), l d model) ) / SATA 6.0Gb/s	apable nemory co rpm or 72 RAID0/1 s, 2.5"	ntroller 200 rpm, support support (RAID pr	s up to two eset only		Dimensions (WxDxH)         Max weight (lb / kg)         Adjustments           Without stand (No camera)           21.3 X 1.8 X 13.7 (inch)         (Touch) 14.0 / 6.34         N/A           542 X 46 X 349 (mm)         (Non-touch) 13.5 / 6.13         N/A           With Full Function Monitor stand (No camera):           21.3 X 9.9 X 15.9 to 20.2 (inch)         (Non-touch) 18.2 / 8.26         Tilt: 45° back, -5° forward;           542 X 252 X 405 to 514 (mm)         (Non-touch) 18.2 / 8.26         Lift: 110mm; Swivel: +/-45°           With UltraFlex III stand (No camera):
Optical Vedia reader	Some: Intel Optane <sup>T</sup> Some: DVD-ROM S Some: DVD Burner Optional 3-in-1 media	<sup>M</sup> Memory ATA 1.5G (DVD±RV	/ (not support Ce b/s Drive, slim (§ V), SATA 1.5Gb/s	eleron / P 9.0mm)	Pentium Processo	r), M.2		21.3 X 9.9 X 14.3 to 17.5 (inch)         (Touch) 19.7 / 8.94         Tilt: 70° back, -5° forward;           542 X 252 X 363 to 444 (mm)         (Non-touch) 19.2 / 8.73         Lift: up to 136mm (flat mode) / up 81mm (vertical mode);           Swivel: +/-45°         Swivel: +/-45°
Graphics	Intel HD Graphics 6			main me	emory, DirectX <sup>®</sup> 1	2,		Note: Camera adds 22mm in height (Vertical)
	external monitor supp				N O AALL		Power supply	150 watts, autosensing, 90% PSU
Display	Max resolution: 4096 23.8" (604.5mm) Ful In-Plane Switching te	I HD 108	0p (1920x1080)	TFT cold	or, Borderless des	sign,		
Multi-touch Camera	AHVA, and AA), wide ratio, 1000:1 contrast alone monitor via Dis Optional multi-touch, Some: 1080p camer supports mul Some: RGBIR came supports mul Windows Hel	viewing ratio, ant playPort supports a, with du ti-degree ra, 1080p ti-degree lo suppor	angle (+/- 89°), L i-glare, support I (DP in / out comi 10-point, AIT (A ial microphone, I rotation (horizor , with dual micro rotation (horizor t, only available	ED back _ow Blue bo) dvanced _ED indic tal 0° to phone, p tal 0° to via speci	light, 250 nits, 16 Light Mode, worl In-cell Touch) tec cator, physical sw 180°, vertical -25' hysical switch on 180°, vertical -25' al bid models	:9 aspect c as stand- hnology itch on/off, off.		Preloaded operating system Some: Windows 10 Pro 64-bit Some: Windows 10 Home 64-bit Preloaded applications (only some listed) • Lenovo Vantage • Microsoft Office preloaded;purchase a product key to activate • Cyberlink PowerDVD (only for models with DVD / DVD±RW) • Cyberlink Power2GO (only for models with DVD±RW) • LinkedIn
Controls	Physical buttons on s	side for m	cropnone mute	and powe	er on/ott		Environment	ENERGY STAR <sup>®</sup> 7.0*, EPEAT <sup>™</sup> Silver rating* (*not for non-OS models), ErP Lot
Chipset	Intel Q370 Chipset							TCO AIO Computer certified, GREENGUARD® certified,
Rear ports*	Four USB 3.1 Gen1 ( one DisplayPort in/ou					5),		TUV Eye comfort certified, TUV Low Blue Light certified, TUV Ultra Low Noise certified (on some models), RoHS-compliant
Side ports*	one USB 3.1 Gen2 ( USB 3.1 Type-C Gen combo jack (3.5mm)	one is Alw 1, one op	ays On and fast ptional card read	charge), er, one h	one ÚSB 3.1 Ge eadphone / micro	phone	MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus For compatible accessories, please go to http://smartfind.lenovo.com
V.2 card slot	* Depending on many fa Two M.2 Card slots (	ctors, actu	al data transfer spe I AN one for SS	ed may b	e lower than theoret	ical speed	700000000000	r or companyie accessories, picase yo to http://sinartiniu.ieitovo.com

Note: The specifications above may not be available in all regions.



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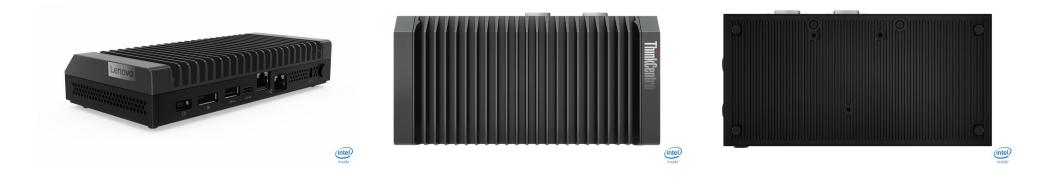
### ThinkCentre M90n-1 Nano Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® 8th Generation	Intel Core	e™ i3 / i5 / i7 Pro	cessor			Manageability	Intel vPro technology on some models (require choosing a vPro-support Wi-Fi			
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Security chip	adapter to enable vPro function through wireless connection) Discrete TPM 2.0, TCG Certified			
	Core i3-8145U	2/4	2.1G / 3.9G	4 MB	DDR4-2400	UHD 620	Security features	Security slot (in rear for optional     Boot sequence control			
	Core i5-8265U	4/8	1.6G / 3.9G	6 MB	DDR4-2400	UHD 620		Kensington <sup>®</sup> MicroSaver <sup>®</sup> cable)  • Boot without keyboard and mouse			
	Core i5-8365U	4/8	1.6G / 4.1G	6 MB	DDR4-2400	UHD 620		<ul> <li>Chassis intrusion switch</li> <li>Power-on password</li> <li>Individual USB port disablement</li> <li>Smart USB protection, allows keyboard</li> </ul>			
	Core i7-8665U	4/8	1.9G / 4.8G	8 MB	DDR4-2400	UHD 620		Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password     Administrator password			
Memory	8GB or 16GB / DDR4 * System automatical						r Keyboard	Hard disk password     Some: Lenovo Calliope Keyboard (USB connector), black			
Storage	Support up to two M. Some: M.2 2280 SS Some: M.2 2242 SS Some: Intel Optane <sup>T</sup> PCIe NVMe 3	D / PCle N D / PCle N Memory 3.0 x 4 (no	VVMe, PCIe 3.0 H10 with Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Notes and the solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid So	x 2** State St n)	0		Mouse	Some: Lenovo Traditional Keyboard (USB connector), black Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black Some: Lenovo Calliope Mouse (USB connector), black Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black			
RAID Optical	* <i>M.2 SSD / Optane with</i> ** 128G <i>M.2 2242 SSD</i> RAID 0/1 support (RA None	n SSD in`PC not support	Cle 3.0 x 2 M.2 slot ed on Machine Typ	cán only e 11AM	/11AS/11AK/11A		Mechanical	Nano (0.35L), black color; metal case Three M.2 slots: two for M.2 SSD (one PCIe 3.0 x4 and one PCIe 3.0 x2) and one for WLAN			
		600 in nr		in mon	orig DirectV <sup>®</sup> 10		-	Dimensions (WxDxH) Weight (Approx.)			
•	Intel UHD Graphics DisplayPort <sup>™</sup> , one US displays;							M90n-1 Nano         7.05" X 3.46" X 0.87"         1.11 lb (0.505 kg), (with fan, 0.35L)           179mm X 88mm X 22mm         vary by config			
Monitor cable	Max resolution: 4096 Optional DP to VGA of HDMI dongle, Type-C	dongle,`DF	o to HDMI dongle			, Type-C to	Mounting	Some: VESA mount bracket kit, supports VESA 75mm Some: VESA mount bracket kit with adaper holder, supports VESA 75mm Some: DIN rail mount bracket kit			
Chipset	Intel SoC (System o	n Chip) p	latform				Floor Stand	None			
Front ports (Std.)*	2x USB 3.1 Gen2, 1x	USB 3.1	Type-C Gen 2, o	ne head	dphone / microph	one combo	Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (Not for TIO models)			
Rear ports (Std.)*	jack (3.5mm) 2x USB 3.1 Gen2, 1x power-in [20V and >4					oort	Limited warranty	Some: 1-year, limited onsite service / service upgrades available Some: 3-year, limited onsite service / service upgrades available			
	* Depending on many fa					etical speed	Preload	Preloaded operating system			
Audio support	Realtek ALC233VB /	internal s	peaker (1watt)					Some: Windows® 10 Pro 64-bit Some: Windows 10 Home 64-bit			
WLAN	Some: 11ac wireless Wi-Fi + Bluet Some: 11ac wireless	ooth 5.0 c	ombo adapter, 1	x1	, , , , , , , , , , , , , , , , , , ,		Environment	ENERGY STAR <sup>®</sup> 7.1, EPEAT <sup>™</sup> Silver rating (North America), ErP Lot 3, TCO 8.0, TUV ultra low noise verified (on some models), RoHS, WEEE, REACH			
	Wi-Fi + Bluet Some: 11ac wireless Wi-Fi + Bluet	ooth 5.0 c s, M.2 Car ooth 5.0 c	ombo adapter, 2 d, Intel Wireless ombo adapter, 1	x2 -AC 946 x1	62 (dual band),		MIL-SPEC test	MIL-STD-810H (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)			
Bluetooth	Some:       11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2         Some:       11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, Intel vPro technology support, 2x2         th       Some:       Bluetooth 5.0 wireless, integrated in Wi-Fi + BT combo adapter		port, 2x2	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com						
Ethernet	Gigabit ethernet, Inte	I Ethernet	Connection I219	9-LM(Ja	icksonville), Wake	e on LAN®		Lapava March 200			

Note: The specifications above may not be available in all regions.

Lenovo, March 2020





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## ThinkCentre M90n-1 Nano IoT Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> or 8th	Generati		/ i5 Pr	ocessor		Manageability	Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection) s Discrete TPM 2.0, TCG Certified • Security slot (in rear for optional • Boot sequence control				
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Security chip Security features					
	Celeron 4205U	2/2	1.8G	2 MB	DDR4-2133	UHD 610	-					
	Core i3-8145U	Core i3-8145U 2 / 4 2.1G / 3.9G 4 MB DDR4-2400 UHD 620						Kensington® Micro		out keyboard and mouse		
	Core i3-8145UE	2/4	2.1G / 3.9G	4 MB	DDR4-2400	UHD 620		<ul> <li>Chassis intrusion s</li> <li>Power-on passwor</li> </ul>		I USB port disablement		
	Core i5-8365U	4/8	1.6G / 4.1G	6 MB	DDR4-2400	UHD 620		Administrator password				
Memory	4GB / DDR4-2666* / * System automatically of					ler	Keyboard	<ul> <li>Hard disk password</li> <li>Some: Lenovo Calliope Keyboard (USB connector), black</li> <li>Some: Lenovo Traditional Keyboard (USB connector), black</li> <li>Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black</li> <li>Some: Lenovo Calliope Mouse (USB connector), black</li> <li>Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black</li> <li>Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black</li> </ul>				
Storage	Support up to two M. Some: M.2 2280 SS Some: M.2 2242 SS Some: Intel Optane <sup>TP</sup> PCIe NVMe 3	D / PCle I D / PCle I ™ Memory	VMe, PCIe 3.0 >	< 2** State St	orage, M.2 2280	,	Mouse					
RAID Optical	* M.2 SSD / Optane with ** 128G M.2 2242 SSD RAID 0/1 support (RA None	n SSD in PC not suppor	Cle 3.0 x 2 M.2 slot ted on Machine Typ	can only be 11AN	1/11AS/11AK/11		Mechanical	chanical Nano (fanless 0.55L), black color; metal case Four M.2 slots: two for M.2 SSD (one PCIe 3.0 x4 and one PCIe 3.0 x2 WLAN, and one for WWAN				
Graphics		610/620 i	a processor uso	main	momory Direct	<sup>®</sup> 12 ono	-		Dimensions (WxDxH)	Weight (Approx.)		
Graphics	Intel UHD Graphics 610/620 in processor, uses main memory, DirectX <sup>®</sup> 12, one DisplayPort <sup>™</sup> , one USB 3.1 Type-C Gen2 with display function, up to 2 independen displays;							M90n-1 Nano IoT (fanless, 0.55L)	7.05" X 3.46" X 1.36" 179mm X 88mm X 34.5m	m 1.58 lb (0.72 kg), vary by config		
Monitor cable	Max resolution: 4096 Optional DP to VGA of	dongle, DI	o to HDMI dongle			, Type-C to		With I/O box	7.05" X 3.46" X 2.41" 179mm X 88mm X 61.3m	m 2.65 lb (1.2 kg), 2.65 lb (1.2 kg),		
01.1	HDMI dongle, Type-C		•				Mounting	Some: VESA mount bracket kit, supports VESA 75mm Some: VESA mount bracket kit with adaper holder, supports VESA 75mm Some: DIN rail mount bracket kit				
Chipset	Intel SoC (System o	.,.					-					
,	* 2x USB 3.1 Gen2, 1x USB 3.1 Type-C Gen 2, one headphone / microphone combo jack (3.5mm), 2x serial						Floor Stand	None				
	<ul> <li>With Celeron: 1x USB 2.0, 1x USB 3.1 Type-C Gen 2 (with display function, support power-in [20V, &gt; 45W]), 1x ethernet (RJ-45), 1x DisplayPort</li> <li>With Core i3: 1x USB 3.1 Gen2, 1x USB 3.1 Type-C Gen 2 (with display function, support power-in [20V, &gt; 45W]), 2x ethernet (RJ-45), 1x DisplayPort</li> </ul>						Power supply	Some: 65 watts AC/DC adapter*, autosensing, 88% PSU Some: 65 watts AC/DC adapter (wide temperature)*, autosensing, 88% PSU (on for Machine Type 11AS) * Not for the models with I/O box				
I/O box*	Optional I/O box, connect to the USB 3.1 Type-C Gen 2 port of M90n-1 Nano, extends 2x serial, 2x ethernet (RJ-45, I/O box is equipped with Realtek RTL8153B, gigabit ethernet), 1x DI (Digital Input) connector, 1x DO (Digital Output) connector					RTL8153B,	Limited warranty	ed warranty <i>Some:</i> <b>1-year</b> , <b>limited onsite service</b> / service upgrades available <i>Some:</i> <b>3-year</b> , <b>limited onsite service</b> / service upgrades available				
	* Depending on many fa						Preload	Preloaded operatin				
Audio support	Realtek ALC233VB /	internal s	peaker (1watt)					Some: Windows® 10 Pro 64-bit Some: Windows 10 Home 64-bit				
WLAN		Some: 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band),						Some: Windows 10 Home of bit				
	Wi-Fi + Bluetooth 5.0 combo adapter, 1x1 Some: 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 Some: 11ac wireless, M.2 Card, Intel Wireless-AC 9462 (dual band),						Environment	ENERGY STAR® 7.1*, EPEAT™ Silver rating (North America)*, ErP Lot 3, TCO 8.0*, TUV ultra low noise verified (on some models), RoHS, WEEE, REACI * Not for the models with I/O box				
	Wi-Fi + Bluete Some: 11ac wireless	ooth 5.0 c s, M.2 Car	ombo adapter, 1:	k1 AC 956	( , , , , , , , , , , , , , , , , , , ,		MIL-SPEC test	MIL-STD-810H* (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar				
	Some: 11ac wireless Wi-Fi + Bluet	s, M.2 Car ooth 5.0 c	d, Intel Wireless- ombo adapter, In	AC 956 Itel vPr	o tèchnology sup	port, 2x2	Accessories	Radiation) * Not for the models with I/O box For compatible accessories, please go to http://smartfind.lenovo.com				
Bluetooth Ethernet	Some: Bluetooth 5.0 With Celeron: Gigab With Core i3: Two gi	wireless, it etherne	integrated in Wi- , Realtek RTL81	Fi + BT 11K, 1>	combo adapter RJ-45, Wake or	LAN®						
	With Core i5: Two gig	gabit ethe	rnet, Intel Ethern _8111H, 2x RJ-4			Jacksonville)						

Note: The specifications above may not be available in all regions.

Lenovo, March 2020









#### ThinkCentre M710e SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®. Int	el Pentiur	n®. or 6/7th Gen	eration In	tel Core™ i3 / i5	/ i7 Processor	Security features	Security slot (in rear for optional     Power-on password		
		Cores /	Frequency		Memory Support		,	Kensington® MicroSaver® cable) <ul> <li>Administrator password</li> </ul>		
			Base/Max(GHz)	Cache	(Up to)	Graphics		Padlock loop     Hard disk password		
	Celeron G3900	2/2	2.8G	2 MB	DDR4-2133	HD 510		<ul> <li>Smart USB protection, allows keyboard/</li> <li>Boot sequence control</li> <li>Boot without keyboard and mouse</li> </ul>		
	Celeron G3930	2/2	2.9G	3 MB	DDR4-2133	HD 610		Optional smart cable clip to physically     Individual USB port disablement		
	Pentium G4400	2/2	3.3G	3 MB	DDR4-2133	HD 510		lock both keyboard and mouse		
	Pentium G4500	2/2	3.5G	3 MB	DDR4-2133	HD 530	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black		
	Pentium G4560	2/4	3.5G	3 MB	DDR4-2400	HD 610		Some: Lenovo Traditional Keyboard (USB connector), black		
	Pentium G4600	2/4	3.6G	3 MB	DDR4-2400	HD 630	Mouse	Some: Lenovo Calliope Mouse (USB connector), black		
	Core i3-6100	2/4	3.7G	3 MB	DDR4-2133	HD 530		Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black		
	Core i5-6400	4/4	2.7G / 3.3G	6 MB	DDR4-2133	HD 530	Mechanical	• SFF (7.4L), black color, metal case		
	Core i5-6500	4/4	3.2G / 3.6G	6 MB	DDR4-2133	HD 530		<ul> <li>(WxDxH) 3.9" X 11.9" X 10.8"; 100mm X 303.5mm X 273.5mm</li> <li>Approx. 9.37 lb (4.25 kg), weight may vary by configuration</li> </ul>		
	Core i7-6700	4/8	3.4G / 4.0G	8 MB	DDR4-2133	HD 530		Bay 1: Slim external ODD bay		
	Core i3-7100	2/4	3.9G	3 MB	DDR4-2400	HD 630		Bay 2: 3.5", 1" high, internal, supports 2.5" or 3.5" HDD/SSD (2.5 to 3.5 bracket		
	Core i3-7300	2/4	4.0G	4 MB	DDR4-2400	HD 630		comes with disk)		
	Core i5-7400	4/4	3.0G / 3.5G	6 MB	DDR4-2400	HD 630		Slot 1: low-profile (length < 152mm, height < 64mm), PCIe 3.0 x16*		
	Core i5-7500	4/4	3.4G / 3.8G	6 MB	DDR4-2400	HD 630		Slot 2: low-profile (length < 152mm, height < 64mm), PCIe 3.0 x1* M.2 card slots: one for SSD		
	Core i5-7600	4/4	3.5G / 4.1G	6 MB	DDR4-2400	HD 630		*Optional rear 2x USB2.0 / parallel occupies one expansion slot		
	Core i7-7700	4/8	3.6G / 4.2G	8 MB	DDR4-2400	HD 630	Floor Stand	Optional system floor stand for vertical orientation		
Memory	dual-channel capal	32GB max, UDIMM, DDR4-2400*, two 288-pin DIMM sockets, non-ECC, dual-channel capable						<ul> <li>(WxDxH) 7.7" X 15.4" X 19.7"; 195mm X 390mm X 500mm</li> <li>Cross weight (approx.) 14.22 lb (6.45 kg)</li> </ul>		
	*System automatic					,	Power supply	Some: 180 watts, autosensing, 85% PSU		
Storage	Some: Hard Drive Some: Solid State Some: M.2 Solid S	Drive (SS	SD) / SATA 6.0G	b/s. 2.5"			Limited warranty <sup>3</sup>	<sup>3</sup> Some: 1-year or 3-year, depot service / service upgrades available Some: 1-year or 3-year, limited onsite service / service upgrades available		
Optical	Some: DVD-ROM	SATA 1.5	Gb/s Drive, slim	(9.0mm)		/5	Preload	Preloaded operating system Some: Windows® 10 Pro 64-bit		
Onboard SATA	Some: DVD Burne Two onboard SATA	6.0Gb/s	connectors	D/S DIIVE	Siini (9.0inini)			Some: Windows 10 Fio 64-bit		
Media reader	Optional 7-in-1 me	dia reade	r					<i>Some:</i> Windows 7 Professional 32/64 preinstalled through downgrade rights		
Graphics	Intel HD Graphics	510/530	610/630 in proc	essor, us	es main memory.	DirectX® 12,		in Windows 10 Pro 64-bit(not available with 7th Gen Intel processor)		
	one VGA, one Disp	olayPort™	, supports 2 inde	ependent	displays, works a	along with		Preloaded applications (only some listed)		
	discrete graphics to support more displays; Max resolution: 4096x2160 (DP)@60Hz; 1920x1200 (VGA)@60Hz Some: NVIDIA Geforce <sup>®</sup> GT 730, DirectX 12, 2GB, PCIe 2.0 x8 adapter, two DisplayPort, 35 watts;							<ul> <li>Microsoft Office preloaded; purchase a product key to activate</li> <li>Cyberlink PowerDVD (DVD, DVD±RW)</li> <li>Cyberlink PowerDVD Create (DVD±RW)</li> </ul>		
						or				
	Max resolu	<i>tion:</i> 3840	x2160 (DisplayF	ort)@60I	Ηz;			- Only for Window 10		
Monitor cable	Optional DP to VG	A, DP to I	DVI-D (single link	(), DP to	dual DP, or DP to	HDMI 1.4		Lenovo Companion     Only for Window 7		
Chipset	Intel B250 Chipse	t						Lenovo Solution Center		
Front ports*	Two USB 3.1 Gen1	, microph	one (3.5mm), or	he headp	hone / microphor	ne combo jacł	d d	Lenovo System Update		
	(3.5mm)							Create Recovery Media		
Rear ports*	Two USB 3.1 Gen1	, two USI	B 2.0, optional tv	vo USB 2	.0, serial (9-pin),	optional 2nd		Adobe® Reader®		
	serial (9-pin), optio optional external U	SB to PS	ei (25-pin), etner /2 ports cable (fr	net (RJ-4 vr PS/2 kr	i5), one vGA, on whoard / mouse	e DisplayPort	Environment	ENERGY STAR <sup>®</sup> 6.1, EPEAT <sup>™</sup> Silver rating (North America), ErP Lot 3,		
	additional DisplayF	Port on on	tional graphics of	n some r	nodels	,		RoHS-compliant, WEEE		
Rear audio ports*	Line-out jack (3.5m						Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com		
IEEE 1394*	None	,								
	* Depending on many						_			
Audio support	High Definition (HD	)) Audio, I	Realtek ALC233	/ internal	speaker (1.5 wa	tt )				
WLAN <sup>13</sup>	None									
Bluetooth™	None				Ð					
Ethernet Modem	Gigabit ethernet, R None	iealtek RI	LOTITHN, Wake	e on LAN	<u>~</u>					
							-			
Manageability Security chip	None TPM (Trusted Platf * Downgrade to TP				G Win7 32 OS					
	tions above may not							Longvo, January 201		













### ThinkCentre M720 SFF Platform Specifications

Processor         Trease         Processor         Trease         Processor         Proc	Brococc	Intol® Coloron® Intol I	Dontium®	or 9th / 0th Con	Intol Co	roTM 12 / 15 / 17 / 10	Brooccor		Same: 11ag wirelage M.2 Card, Beeltek PTI 8822PE (duel hand)		
Processor         Threads BaseNaux[ship]         Cale and 400 (10 pc)         Some: This writes. M. 2 Cal. Intel Dial Band Writes-AC 3165.           Celetron G4800         2/2         3.20         2 MB         DD14-3200 UHD 500           Partiam Cold G5000         2/4         3.20         4 MB         DD14-3200 UHD 500           Partiam Cold G5000         2/4         3.20         4 MB         DD14-3200 UHD 500           Come: 14-000 G4500         2/4         3.20         4 MB         DD14-3200 UHD 500           Come: 14-000 G4500         2/4         3.20         4 MB         DD14-3200 UHD 500           Come: 14-000 G470         6 MB         DD14-3200 UHD 500         Come: 14-000 G4100 WHS 180         Come: 14-000 G4100 WHS 180           Come: 14-000 G47         6 G MB         DD14-3200 UHD 500         Come: 14-000 G4100 WHS 180         Come: 14-0	Processor				Intel Co		1 1		Some: 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2		
<ul> <li>Additional status and the second status and the secon</li></ul>		Processor			Cache				Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165,		
Celetion 64/20         2/4         3/2         2/48         DDPH-2600         UH0 610           Purthin Gold (2600         2/4         3/86         4 MB         DDPH-2600         UH0 630           Purthin Gold (2600         2/4         3/86         4 MB         DDPH-2600         UH0 630           Core (3-800         4/4         3/86         6 MB         DDPH-2600         UH0 630           Core (3-800         4/4         3/86         6 MB         DDPH-2600         UH0 630           Core (3-800         6/6         3/66         4/4         3/76         9 MB         DDPH-2600         UH0 630           Core (3-800         6/6         3/66         4/4         3/76         9 MB         DDPH-2606         UH0 630           Core (3-800         6/6         3/66         4/4         3/76         9 MB         DDPH-2606         UH0 630           Core (3-800         4/4         3/76         9 MB         DDPH-2606         UH0 630         • Excurt/ set (1 mar, 1 or optical)					2 MB	DDR4-2400					
Perturn Guid CSS00         2/4         3.83         4.MB         DDR4.400         UHD ES3           Core 54000         2/4         3.86         4.MB         DDR4.400         UHD ES3           Core 54000         4/4         3.66         6.MB         DDR4.200         UHD ES3           Core 54000         6/4         2.86/4.06         MMB         DDR4.200         UHD ES3           Core 54000         6/4         2.86/4.06         MMB         DDR4.200         UHD ES3           Core 54000         6/4         2.86/4.00         MMB         DDR4.200         UHD ES3           Core 54000         6/4         2.86/4.20         MMB         DDR4.200         UHD ES3           Core 54000         6/4         3.67/4.30         MMB         DDR4.200         UHD ES3           Core 54000         6/4         3.67/4.43         MB         DDR4.200         UHD ES3           Core 54000         6/4         3.67/4.43         MB         DDR4.200         UHD ES3           Core 54000         6/4         3.67/4.43         MB         DDR4.266         UHD ES3           Core 54000         6/4         3.67/4.43         MB         DDR4.266         UHD ES3           Core 54000 <td< td=""><td></td><td></td><td></td><td></td><td></td><td><u>i</u></td><td></td><td></td><td>Wi-Fi + Bluetooth 4.2 combo adapter, 2x2</td></td<>						<u>i</u>			Wi-Fi + Bluetooth 4.2 combo adapter, 2x2		
Pentium Gold George 2/4         3.93         4.MB         DDH4-2400         UHD ESO         Some: That Ethernet Sorver Adapter ISO-14; sight ethernet, 4/k FL/S, PCIe x           Core I6-800         6/4         3.06         6.MB         DDH4-2400         UHD ESO         Some: Ethernet (3/k FL/S), PCIe x         Some: Ethernet General Medity           Core I6-8400         6/4         3.06         6.MB         DDH4-2660         UHD ESO           Core I6-8400         6/4         3.06         4.MB         DDH4-2660         UHD ESO           Core I6-8400         6/4         3.06         4.MB         DDH4-2660         UHD ESO           Core I6-8400         6/4         3.06         4.44         3.70         BMB         DDH4-2660         UHD ESO           Core I6-9400         6/4         3.06         4.44         3.70         AMB         DDH4-2660         UHD ESO           Core I6-9400         6/4         3.70         4.40         DDH4-2660         UHD ESO         DDH4-2660         UHD ESO           Core I6-9400         6/4         3.00         A.44         BDH4-2660         UHD ESO         DDH4-2660         UHD ESO           Core I6-9400         6/4         3.00         A.44         BDH4-2660         UHD ESO         DDH4-2660 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Some: Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter</td>									Some: Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter		
Example         Core is 3-100         4 / 4         3.63         EVEN DDR-2400         UHD 630           Core is 5-300         6 / 6         2.63 / 1.06         9.MB         DDR-2400         UHD 630           Core is 5-300         6 / 6         2.63 / 1.06         9.MB         DDR-2400         UHD 630           Core is 5-300         6 / 6         3.63 / 1.46         9.MB         DDR-2400         UHD 630           Core is 5-300         6 / 6         3.63 / 1.46         9.MB         DDR-2400         UHD 630           Core is 5-300         6 / 12         3.26 / 1.46         1.48         DDR-2400         UHD 630           Core is 5-300         6 / 12         3.61 / 1.46         0.48         DDR-2400         UHD 630           Core is 5-300         6 / 1.4         3.61 / 1.46         0.48         DDR-2400         UHD 630           Core is 5-300         6 / 1.6         3.16 / 1.46         0.48         DDR-2400         UHD 630           Core is 5-300         6 / 6         3.16 / 1.46         0.48         DDR-2400         UHD 630           Core is 5-300         8 / 6         3.16 / 1.46         0.48         DDR-2400         UHD 630           Core is 5-300         8 / 6         3.16 / 1.46         0.48 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Gigabit ethernet, Intel Ethernet Connection I219-V (Jacksonville), Wake on LAN®</td>									Gigabit ethernet, Intel Ethernet Connection I219-V (Jacksonville), Wake on LAN®		
Verticity         Choose either (150-74 of BNREBS)         Choose either (150-74 of BNREBS)           Core (15-900         6/.6         3.067 (4.13         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         3.067 (4.13         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         3.067 (4.13         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         3.067 (4.13         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         3.067 (4.13         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         2.067 (4.13         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         2.067 (4.14         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         3.067 (4.43         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         3.067 (4.43         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         3.067 (4.43         9.MB         DDR4-2006         HUP 630           Core (15-900         6/.6         3.067 (4.30         9.MB         DDR4-2006         HUP 630								Ethernet (Opt.)			
<ul> <li>Core 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 9400</li> <li>Grad 5 94000</li> <li>Grad 5 9400</li> <li>Grad 5</li></ul>							1				
<ul> <li> <ul> <li></li></ul></li></ul>								Manageability			
Loss statu         Formula         Description         Security isot (in rear for optional by comparison)         Power-on password           Core 8-8600         6/6         3.10/1.43         9.00         DPR-2660         UPD 630         Particle View         Power-on password         Hard lisk password           Core 8-8600         6/6         3.10/1.43         9.00         PR-2600         UPD 8200         UPD 82000         UPD 82000         UPD 82000         UPD 82000								Security chip			
<ul> <li>Administrator password</li> <li>Administrator password</li> <li>Administrator password</li> <li>Administrator password</li> <li>Administrator password</li> <li>Core 6-9300</li> <li>Af / A</li> <li>Additional and the processor</li> <li>Core 6-9300</li> <li>Af / A</li> <li>Additional and the processor</li> <li>Core 6-9300</li> <li>Af / A</li> <li>Additional and the processor</li> <li>Core 6-9300</li> <li>Af / A</li> <li>Additional Chassis</li> <li>Core 6-9300</li> <li>Af / A</li> <li>Additional and the processor</li> <li>Core 6-9300</li> <li>Af / A</li> <li>Additional Chassis</li> <li>Core 6-9300</li> <li>Af / B</li> <li>Additional Chassis</li> <li>Core 6-9300</li> <li>Additional Chassin Chassis</li> <li>Cor</li></ul>								Security features	• Security slot (in rear for optional • Power-on password		
<ul> <li>Core 6-9100</li> <li>Core 6-9200</li> <li>Core 6-9</li></ul>									Kensington <sup>®</sup> MicroSaver <sup>®</sup> cable) • Administrator password		
<ul> <li>              Core 39-9300             4/4             3.76 / 4.36             8/8             DDP4-9400             HPI 650               Core 39-930             4/4             3.76 / 4.36             8/8             DDP4-266             HPI 650               Core 39-930             4/4             3.76 / 4.36             8/8             DDP4-266             HPI 650                bit httpstoad             and mouse             - Individual type of the set of</li></ul>											
<ul> <li>Encreises encoded in the processors with lower memory controller states in trusted and the processors with lower memory controller states in the processors with lower memory controller states in the processors with lower memory controller states in the processors with lower memory controller states and the processors with lower memory processors with lower memory controller states and the processors with lower memory controller states and the processors with lower memory controller states and the processors with lower memory controller states and the processors with low encode states and the processors with lower memory controller states and the processor with lower memory controller states and the processors with lower memory controller states and the proce</li></ul>									Optional cable lock to physically lock     Boot sequence control     Boot without keyboard and mouse		
<ul> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/36/20</li> <li>Core 15/</li></ul>						1			Optional chassis intrusion switch     Individual USB port disablement		
Core is 9900         6 / 6         306 / 4.46         9 MB         DDR4-2666         UHD 630           Core is 9900         6 / 6         316 / 4.60         9 MB         DDR4-2666         UHD 630           Core is 9900         8 / 6         316 / 4.60         9 MB         DDR4-2666         UHD 630           Core is 9900         8 / 6         316 / 4.60         16 MB         DDR4-2666         UHD 630           Core is 9900         8 / 6         316 / 4.60         16 MB         DDR4-2666         UHD 630           Core is 9900         8 / 6         16 MB         DDR4-2666         UHD 630         Some: Lenovo Callope Wineless Kupbard (USB connector), black (some core), black           Some: Margo Ministry (STA 0.60 kp, 25 or 35, 500 or pm or 7200 rpm									Optional chassis E-Lock (special bid)      Smart USB protection, allows keyboard/		
End         End         End         DBA+286E         UHD 880           Core is-9600         87.16         3.10.7.4.66         9.MB         DDA+286E         UHD 880           Core is-9600         87.16         3.10.7.5.06         112 MB         DDA+286E         UHD 880           Core is-9600         87.16         3.10.7.5.06         16 MB         DDA+286E         UHD 680           Memory         64.0B max, UDIMM, DDR+2666, four 288-pin DIMM sockets, non-ECC, dual-channel capable         Some: Lenovo Relippe Windless Koyboard (PS/2 connector), black (only available via special bid)           Some: More Valias More Valias									mouse only, blocks all storage devices		
Dome         B/B         B/G / 4.7         I MB         DDR4-2666         UHD 630           Memory         64GB max, UDIM, DDR4-2666, four 288-pin DIMM sockets, non-ECC, dual-channel capable         Mouse         Some: Lerow C allope Mouse (USB connector), black (ny available via special bid)           Storage         Some: Hard Drive / SATA 6.0Gb/s, 2.5 or 3.5', 5400 rpm or 7200 rpm         Mouse         Some: Lerow C allope Mouse (USB connector), black (ny available via special bid)           Storage         Some: I and Drive / SATA 6.0Gb/s, 2.5 or 3.5', 5400 rpm or 7200 rpm         Mouse         Some: I chrow C allope Mouse (USB connector), black (ny available via special bid)           Some: I and Drive / SATA 6.0Gb/s, 2.5 or 3.5', 5400 rpm or 7200 rpm         Some: I chrow C finderprint Mouse (USB connector), Windows Hello support, black Some: Lerow C finderprint Mouse (USB connector), black (ny available via special bid)           Optical         Some: I there on board SATA 6.0Gb/s connectors         Wolka cold; right may vary by configuration           Optical         Three on board SATA 6.0Gb/s connectors         Wolka cold; right may vary by configuration           Some: Intel UHD Graphics         Three on board SATA 6.0Gb/s connectors         Wolka cold; right may vary by configuration           None VGA (up to 20 stx) SSG 60 + 20 sty, sis mit memory, DirectX*12, supports 3 independent displays, more displays support via discrete graphics, nee VGA (up to 20 stx), SGG 60 + 20 sty, sis wats, two DisplayPort (up to 360.02 + 10 + 60 + 20 + 10 + 20 + 70 + 60 + 10 + 20 + 20 + 70 + 60 + 10 + 20 +								Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black		
One IP-9900         8/16         31.6 / 5.02         Is MB         DDPA-2666         UHD 630           Memory         64GB max. UDIMM. DDR4-2666, four 288-pin DIMM sockets, non-ECC, dual-channel, capable         Mouse         Mouse         USB connector). Windows Hello support, black           System automatically clocks down for the processors with lower memory controler         Some: Lenovo Calloge Wireless Mouse (USB connector). Mack (only available via special bid)           Some: Mouse (USB Connector). Some: MIC Sol State Drive / SATA 6.005/s, 2.5 ° r 3.5 ', 5400 rpm or 7200 rpm         Mouse         SFE (4.1), black color, restal case           Some: Solid State Drive / SATA 6.005/s, 2.5 ° r 3.5 ', 5400 rpm or 7200 rpm         Mouse (USB connector). Mack (only available via special bid)           Some: Mouse (USB) / SATA 6.005/s, 2.5 ° r 3.5 ', 5400 rpm or 7200 rpm         SFE (4.1), black color, restal case         Some: Lenovo Calloge (J, Wigtor). Was protes J 2.0 x 4 ', 320b/s           Some: DVD Burner (DVD-FW), SATA 1.50b/s Drive, sim (9.0mm)         Some: DVD Burner (DVD-FW), SATA 1.50b/s Drive, sim (9.0mm)         Some: Lenovo Calloge Call											
Memory         Genes         Construction         Mouse         Some:         Lenvox         Calledpe Muses (USB connector), black           Some:         System automatically clocks down for the processors with lower memory controller         Some:         Lenvox Calliope Muses (USB connector), black (US							i i		Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black		
Memory         64GB max, UDIMM, DDR4-2666, four 288-pin DIMM sockets, non-ECC, dual-channel capable*         Some: Earova Fingerprint Mouse (USB connector), Windows Hello support, black Some: Solid State Drive (SATA 6.0GMs, 25 or 35, 5400 pm or 7200 rpm or 7200 rpm or 35, 5400 pm or 7200 rpm or 7200 rpm or 35, 5400 pm or 7200 rpm or 7200 rpm or 35, 5400 pm or 7200 rpm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 35, 5400 pm or 7200 rpm or 30 pm or 35, 5400 pm or 7200 rpm or 30 pm or 35, 5400 pm or 7200 rpm or 30 pm or 35, 5400 pm or 2600 rpm or 30 pm or 7200 rpm or 30 pm or 35, 5400 pm or 2600 rpm or 30 pm or 7200 rpm or 30 pm or 35, 5400 pm or 2600 rpm or 30 pm or 7200 rpm or 30 pm or 320 rpm o							UHD 630	Mouse			
Some:         Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5"         Number of the state of the	Memory	dual-channel capable	*				y controlle	r	<i>Some:</i> Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black <i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black		
Optical       Some: DVD-FMM SATA 1.5Gb/s Drive, slim (9.0mm)         Some:       DVD Burner (VDD+RW), SATA 1.5Gb/s prive, slim (9.0mm)         Onboard SATA       Three onboard SATA 6.0Gb/s connectors         Graphics       Intel UHD Graphics 610/630 in processor, uses main memory, DirectX® 12, one VGA (up to 2048x1536 850Hz), two DisplayPort™ (up to 4096x2304 @60Hz), supports in independent displays, more displays support via duscrete graphics         Some:       NVIDIA Geforce* GT 730 (End Of Life), DirectX 12, 2GB GDDR5, PCI = 3.0 x4, 30 watts, two Some: NVIDIA Geforce* GT 730 (End Of Life), DirectX 12, 2GB GDDR5, PCI = 3.0 x4, 30 watts, two DisplayPort (up to 3490x2160@60Hz)         Some:       AMD Radeon** 520, DirectX 12, 2GB GDDR5, PCI = 3.0 x8, 30 watts, two DisplayPort (up to 3490x2160@60Hz)         Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle (for Collage Display with intel integrated graphics), or DP to HDMI 1.4 dongle         Chipset       Intel B360 Chipset         Front ports* (Opt). Optional: 1x media reader         Rear ports* (Opt). Optional: 1x media reader         Rear ports* (Opt). Optional: 2x USB 3.1 Gen1 via PCI2 x1**, 2x USB 3.1 Type-C Gen2         Rear ports* (Opt). Optional: 1x media reader         Rear ports* (Opt). Optional: 1x media reader <td>Storage</td> <td>Some: Solid State Dr Some: M.2 Solid State * M.2 SSD (2242) PC</td> <td>rive (SSD te Drive ( Ie NVMe</td> <td>) / SATA 6.0Gb/s SSD) / PCIe NVI only supports P0</td> <td>, 2.5" Me, PCle Cle 3.0 x</td> <td>3.0 x 4*, 32Gb/s 2, 16Gb/s</td> <td></td> <td>Mechanical</td> <td><ul> <li>(WxDxH) 3.64" X 11.44" X 13.52"; 92.5mm X 290.5mm X 343.5mm</li> <li>Approx. 13.24 lb (6.0 kg), weight may vary by configuration</li> <li>Toolless cover, disk, optical, and extension card removal</li> </ul></td>	Storage	Some: Solid State Dr Some: M.2 Solid State * M.2 SSD (2242) PC	rive (SSD te Drive ( Ie NVMe	) / SATA 6.0Gb/s SSD) / PCIe NVI only supports P0	, 2.5" Me, PCle Cle 3.0 x	3.0 x 4*, 32Gb/s 2, 16Gb/s		Mechanical	<ul> <li>(WxDxH) 3.64" X 11.44" X 13.52"; 92.5mm X 290.5mm X 343.5mm</li> <li>Approx. 13.24 lb (6.0 kg), weight may vary by configuration</li> <li>Toolless cover, disk, optical, and extension card removal</li> </ul>		
Onboard SATA       Three onboard SATA 6.06b/s connectors         Wedia reader       Optional 7-in-1 media reader         Optional 7-in-1 media reader       Optional 7-in-1 media reader         Graphics       Intel UHD Graphics 610/630 in processor, uses main memory, DirectX® 12, one VGA (up to 2048x1536 @50H2), two DisplayPort* (up to 4096x2304@60H2), supports 3 independent displays, more displays support via discrete graphics, some: NVIDIA Geforce® GT 730 (End Of Life), DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, wo DisplayPort (up to 348x2160@60H2)         Some: AMD Radeon™ 520, DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, wo DisplayPort (up to 348x2160@60H2)         Some: AMD Radeon™ 520, DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, wo DisplayPort (up to 348x2160@60H2)         Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle (for Collage Display with intel integrated graphics), or DP to HDMI 1.4 dongle         Chipset       Intel B30 Chipset         Front ports* (Std.) 2x USB 3.1 Gen1, 1x USB 3.1 Type-C Gen1 (15W charging), 1x microphone (3.5mm), 1x headphone / microphone combo jack (3.5mm)         rear ports* (Opt.) Optional: 1x media reader         Rear ports* (Opt.) Optional: 2x USB 3.1 Gen1 or 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2 via PCle x1*         Rear ports* (NpL)       Kilch outors, karders, acud data transfer speed may be lower than theoretical speed*         * Depending on many technic acrd*       * Depending on many technic acrd*         * Depending on many technic acrd*       * Depending on many technic acrd*	Optical	Some: DVD-ROM SA	ata 1.5Gi	b/s Drive, slim (9	.0mm)		r), ₩.2		Bay 1: Slim external ODD bay		
Graphics       Intel UHD Graphics 610/630 in processor, uses main memory, DirectX* 12, one VGA (up to 2048x1536@50H2), two DisplayPort™ (up to 4068x2304@60H2), supports 3 independent displays, smore display Support™ (up to 4068x2304@60H2), Some: NVIDIA Geforce® CT 730 (End Of Life), DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, bro DisplayPort (up to 40840x2160@60H2)       Stot 4: low-profile (length < 147mm, height < 68.9mm), PCIe 3.0 x1         Some: NVIDIA Geforce® CT 730 (End Of Life), DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, bro DisplayPort (up to 4096x2160@60H2)       Some: MMD Radeon™ 520, DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, two DisplayPort (up to 4096x2160@60H2)       Some: 180 watts, autosensing, 85% PSU         Monitor cable       Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle (for Collage Display with intel integrated graphics), or DP to HDMI 1.4 dongle       Floor Stand       Power supply       Some: 14/year or 3-year, depot service / service upgrades available some: 1-year or 3-year, limited onsite service / service upgrades available         Chipset       Intel B360 Chipset       Limited warranty <sup>3</sup> Some: 1-year or 3-year, limited onsite service / service upgrades available         Front ports* (Opt.) Optional: 1x media reader       Rear ports* (Std.) 4x USB 3.0 Gen1 via PCI2 x1**, 2x USB 3.1 Type-C Gen2 via PCIe x4**       Some: 1-year or 3-year, limited onsite service / service upgrades available on optional graphics or ethernet card         * Depending on many factors, actual data transfer speed may be lower than theoretical speed ** Choose either 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2 via PCIe x4**       Some: 1-year or 3-year, depot service with DVD / DVD±RW)       Linike	Onboard SATA	Three onboard SATA	6.0Gb/s c		-, -	()			Bay 3: 2.5", internal, HDD/SSD (optional bay)		
<ul> <li>one VGA (up to 2048xt536@50Hz), two DisplayPort™ (up to 4096x2304@60Hz), supports 3 independent displays, more displays support via discrete graphics Some: NVIDIA Geforce* GT 730 (End OT Life), DirectX 12, 2GB GDDR5, PCIe 2.0 x16, 35 watts, two DisplayPort (up to 3840x2160@60Hz), Some: AMD Radeom* 520, DisplayPort (up to 4096x2160@60Hz), Optional DP to VGA dongle, DP to VHJ ondigle, DP to dual DP dongle (for Collage Display with intel integrated graphics), or DP to HDMI 1.4 dongle</li> <li>Chipset</li> <li>Intel B360 Chipset</li> <li>Controphone (S.Smm), 1x headphone / microphone combo jack (3.Smm) Yu incrophone (3.Smm), PCIe 2.0 x13, 32 watts, autosensing, 85% PSU Some: 210 watts, autosensing, 85% PSU Some: 210 watts, autosensing, 85% PSU Some: 210 watts, autosensing, 85% PSU Some: 210 watts, autosensing, 85% PSU Some: 210 watts, autosensing, 85% PSU Some: 210 watts, autosensing, 85% PSU Some: 1-year or 3-year, limited onsite service / service upgrades available Some: 1-year or 3-year, limited onsite service / service upgrades available Some: Windows* 10 Pro 64-bit Some: Win</li></ul>								_	Slot 1: low-profile (length < 147mm, height < 68.9mm), PCIe 3.0 x16		
PCIe 2.0 x16, 35 watts, two DisplayPorf (up to 3840x2160@60Hz)       Floor Stand       Optional system floor stand for vertical orientation         Some: AMD Radeon™ 520, DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, two DisplayPort (up to 4096x2160@60Hz)       Some: 1100 watts, autosensing, 85% PSU         Monitor cable       Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle (for Collage Display with intel integrated graphics), or DP to HDMI 1.4 dongle       Fower supply       Some: 1400 watts, autosensing, 85% PSU         Chipset       Intel B360 Chipset       Intel B360 Chipset       Limited warranty <sup>3</sup> Some: 1-year or 3-year, depot service / service upgrades available         Front ports* (Std.) 2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x USB 3.1 Type-C Gen1 (15W charging), 1x microphone (3.5mm), 1x headphone / microphone combo jack (3.5mm)       Freload       Preloaded operating system         Some: Vindows* (0pt.) Optional: 2x USB 3.1 Gen1 via PCI2 x1**, 2x USB 3.1 Type-C Gen2 via PCIe x4** (special bid only), 1x 2nd serial (9-pin), 1x serial (9-pin), 4x serial (9-pin), via PCIe x1, 1x parallel (25-pin), 2x P5/2 ports (keyboard/mouse), additional RJ-45 and video ports available or optional graphics or ethernet card       • Lenovo Vantage       • Microsoft Office preloaded; purchase a product key to activate       • Cyberlink PowerDVD (only for models with DVD / DVD±RW)       • Cyberlink PowerDVD (only for models with DVD / DVD±RW)       • Cyberlink PowerDVD (only for models with DVD / DVD±RW)       • Cyberlink PowerDVD (only for models with DVD / DVD±RW)       • Cyberlink PowerDVD (only for models with DVD / DVD±RW)       • Cyberlink PowerDVD (only for models with DVD	Graphics	one VGA (up to 2048) supports 3 independe	x1536@5 ent display	0Hz), two Displa /s, more displays	yPort™ ( s support	up to 4096x2304 via discrete grap	@60Hz), phics		Slot 3: low-profile (length < 147mm, height < 68.9mm), PCIe 3.0 x1 Slot 4: no slot, only bracket for optional port extension		
Some: AMD Radeon™ 520, DirectX 12, 2GB GDbR5, PCIe 3.0 x8, 30 watts, two DisplayPort (up to 4096x2160@60Hz)       Power supply       Some:       180 watts, autosensing, 85% PSU         Monitor cable       Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle (for Collage Display with intel integrated graphics), or DP to HDMI 1.4 dongle       Power supply       Some:       180 watts, autosensing, 85% PSU         Chipset       Intel B360 Chipset       Some:       1-year or 3-year, depot service / service upgrades available         Front ports* (Std.) 2x USB 3.1 Gen1, 1x USB 3.1 Type-C Gen1 (15W charging), 1x microphone (3.5mm), 1x headphone / microphone combo jack (3.5mm)       Preloaded operating system         Front ports* (Opt.) Optional: 1x wedia reader       Some:       1-year or 3-year, limited onsite service / service upgrades available         Rear ports* (Opt.) Optional: 2x USB 3.1 Gen1 via PCI2 x1**, 2x USB 3.1 Type-C Gen2 via PCIe x4** (special bid only), 1x 2nd serial (9-pin), 4x serial (9-pin) via PCIe x1, 1x parallel (25- pin), 2x PS/2 ports (keyboard/mouse), additional RJ-45 and video ports available on optional graphics or ethernet card       • Lenovo Vantage         Audio support       High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )       Environment       ENERGY STAR® 6.1, EPEAT™ Silver rating (North America), ErP Lot 3, TCO, TUV low noise verified (coming soon, on some models), RoHS-compliant		Some: NVIDIA Geforce® GT 730 (End Of Life), DirectX 12, 2GB GDDR5,		),	Floor Stand	M.2 card slots: Two (one for WLAN, one for SSD/Optane)					
two DisplayPort (up to 4096x2160@60Hz)       Some:       100 watts, autosensing, 85% PSU         Monitor cable       Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle (for Collage Display with intel integrated graphics), or DP to HDMI 1.4 dongle       Some:       210 watts, autosensing, 85% PSU         Chipset       Intel B360 Chipset       Intel B360 Chipset       Imited asatosensing, 92% PSU (only available via special bid)         Front ports* (Std.) 2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x USB 3.1 Type-C Gen1 (15W charging), 1x microphone (3.5mm), 1x headphone / microphone combo jack (3.5mm)       Froloaded operating system         Front ports* (Std.) 4x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort, 1x line-out (3.5mm)       Preloaded operating system         Rear ports* (Opt)       Optional: 2x USB 3.1 Gen1 via PCl2 x1**, 2x USB 3.1 Type-C Gen2 via PCle x4** (special bid only), 1x 2nd serial (9-pin), 4x serial (9-pin), 4x serial (9-pin), 4x serial (9-pin), via PCle x1, 1x parallel (25- pin), 2x PS/2 ports (keyboard/mouse), additional RJ-45 and video ports available on optional graphics or ethernet card       Pieloaded applications (only some listed)         * Depending on many factors, actual data transfer speed may be lower than theoretical speed ** Choose either 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2       Pieloade operating with PVD / DVD±RW)         • Cyberlink PowerDVD (only for models with DVD / DVD±RW)       • Cyberlink PowerDVD (only for models with DVD / DVD±RW)         • Cyberlink Power2GO (only for models with DVD ±RW)       • Cyberlink Power2GO (only for models with DVD ±RW)											
Wording Cable       Optional DP to VGA dongle, DP to DVi-D dongle, DP to DVi-D dongle (for Collage Display with intel integrated graphics), or DP to HDMI 1.4 dongle       Some: 260 watts, autosensing, 92% PSU (only available via special bid)         Chipset       Intel B360 Chipset       Intel B360 Chipset       I-year or 3-year, depot service / service upgrades available Some: 1-year or 3-year, limited onsite service / service upgrades available         Front ports* (Std.) 2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x USB 3.1 Type-C Gen1 (15W charging), 1x microphone (3.5mm), 1x headphone / microphone combo jack (3.5mm)       Theleaded operating system         Front ports* (Opt.) Optional: 1x media reader       Some: Windows* 10 Pro 64-bit         Rear ports* (Opt.) Optional: 2x USB 3.1 Gen1 via PCI2 x1**, 2x USB 3.1 Type-C Gen2 via PCIe x4** (special bid only), 1x 2nd serial (9-pin), 4x serial (9-pin) via PCIe x1, 1x parallel (25- pin), 2x PS/2 ports (keyboard/mouse), additional RJ-45 and video ports available * Choose either 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2       Preloaded operating system         Audio support       High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )       Nicrosoft Office preloaded; purchase a product key to activate         WLAN       Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),       Accessories       Environment       Environment		two DisplayPo	rt (up to 4	1096x2160@60H	lz)			,			
Display with their integrated graphics), of DP to HDMT 1.4 donge         Display with their integrated graphics), of DP to HDMT 1.4 donge         Chipset       Intel B360 Chipset         Intel B360 Chipset       Limited warranty <sup>3</sup> Some: 1-year or 3-year, depot service / service upgrades available         Front ports* (Std.) 2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x USB 3.1 Type-C Gen1 (15W charging), 1x microphone (3.5mm), 1x headphone / microphone combo jack (3.5mm)       Preloaded operating system         Front ports* (Opt.) Optional: 1x media reader       Some: Windows® 10 Pro 64-bit       Preloaded applications (only some listed)         Rear ports* (Std.) 4x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort, 1x line-out (3.5mm)       Intel B360 Chipset       Preloaded operating system         Rear ports* (Opt.) Optional: 2x USB 3.1 Gen1 via PCl2 x1**, 2x USB 3.1 Type-C Gen2 via PCle x4** (special bid only), 1x 2nd serial (9-pin), 4x serial (9-pin) via PCle x1, 1x parallel (25- pin), 2x PS/2 ports (keyboard/mouse), additional RJ-45 and video ports available on optional graphics or ethernet card * Choose either 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2       Environment       Environment       Environment         Mudio support       High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )       Environment       ENERGY STAR® 6.1, EPEAT™ Silver rating (North America), ErP Lot 3, TCO, TUV low noise verified (coming soon, on some models), RoHS-compliant	Monitor cable						for Collage				
Some:       1-year or 3-year, limited onsite service / service upgrades available         Front ports*       Some:       1-year or 3-year, limited onsite service / service upgrades available         Front ports*       Some:       1-year or 3-year, limited onsite service / service upgrades available         Front ports*       Optional:       1x media reader         Rear ports*       St. J. 4x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort, 1x line-out (3.5mm)       Preloaded applications (only some listed)         Rear ports*       (Optional: 2x USB 3.1 Gen1 via PCl2 x1**, 2x USB 3.1 Type-C Gen2 via PCle x4** (special bid only), 1x 2nd serial (9-pin), 4x serial (9-pin) via PCle x1, 1x parallel (25-pin), 2x PS/2 ports (keyboard/mouse), additional RJ-45 and video ports available on optional graphics or ethernet card * Depending on many factors, actual data transfer speed may be lower than theoretical speed ** Choose either 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2       Environment       Environment         Audio support       High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )       Environment       Environment       Environment       Environment         WLAN       Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),       Accessories       Eor compatible accessories       Eor compatible accessories       Eor compatible accessories	<u></u>		grated gra	aphics), or DP to	HDMI 1.	4 dongle		Limited warranty			
1x microphone (3.5mm), 1x headphone / microphone combo jack (3.5mm)       11 foldad       11 fol	· ·	· · ·		<u> </u>				-			
<ul> <li>Front ports* (Opt.) Optional: 1x media reader</li> <li>Rear ports* (Std.) 4x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort, 1x line-out (3.5mm)</li> <li>Rear ports* (Opt.) Optional: 2x USB 3.1 Gen1 via PCI2 x1**, 2x USB 3.1 Type-C Gen2 via PCIe x4** (special bid only), 1x 2nd serial (9-pin), 4x serial (9-pin) via PCIe x1, 1x parallel (25- pin), 2x PS/2 ports (keyboard/mouse), additional RJ-45 and video ports available on optional graphics or ethernet card * Depending on many factors, actual data transfer speed may be lower than theoretical speed ** Choose either 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2</li> <li>Audio support</li> <li>High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )</li> <li>WLAN</li> <li>Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),</li> </ul>	⊢ront ports* (Std.							Preload			
1x line-out (3.5mm)         Rear ports* (Opt.) Optional: 2x USB 3.1 Gen1 via PCI2 x1**, 2x USB 3.1 Type-C Gen2 via PCIe x4** (special bid only), 1x 2nd serial (9-pin), 4x serial (9-pin) via PCIe x1, 1x parallel (25- pin), 2x PS/2 ports (keyboard/mouse), additional RJ-45 and video ports available on optional graphics or ethernet card * Depending on many factors, actual data transfer speed may be lower than theoretical speed ** Choose either 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2       ● Lenovo Vantage         Audio support       High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )       ● Lenovo Vantage         WLAN       Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),       Accessories	Front ports* (Opt.) <i>Optional:</i> 1x media reader Rear ports* (Std.) 4x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort,								Some: Windows 10 Home 64-bit		
** Choose either 2x USB 3.1 Gen1 or 2x USB 3.1 Type-C Gen2         Audio support       High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )         WLAN       Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),		1x line-out (3.5mm) ) Optional: 2x USB 3.1 (special bid only), 1x 2 pin), 2x PS/2 ports (ke optional graphics or e	Gen1 via 2nd seria eyboard/r thernet ca	PCI2 x1**, 2x U I (9-pin), 4x seria nouse), additiona ard	SB 3.1 Ty II (9-pin) al RJ-45 (	ype-C Gen2 via F via PCIe x1, 1x p and video ports a	PCIe x4** barallel (25- available or		<ul> <li>Lenovo Vantage</li> <li>Microsoft Office preloaded; purchase a product key to activate</li> <li>Cyberlink PowerDVD (only for models with DVD / DVD±RW)</li> <li>Cyberlink Power2GO (only for models with DVD±RW)</li> </ul>		
Audio support High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt ) WLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), WLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), WLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), WLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), WLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), WLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), WLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), MLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), MLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), MLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), MLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), MLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), MLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),							ical speed				
WLAN Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),	Audio support			11			tt)	Environment			
	WLAN					dual band),		Accessories			

Note: The specifications above may not be available in all regions.













## ThinkCentre M720e SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Intel	Pentium®	or 8th / 9th Gen	Intel Co	re™ i3 / i5 / i7 / i9	Processor	Manageability	None		
		Cores /	Frequency		Memory Support		Security chip	Discrete TPM 2.0, TCG Certified		
	Processor		Base/Max(GHz)	Cache	(Up to)	Graphics	Security features	Security slot (in rear for optional     Power-on password		
	Celeron G4900	2/2	3.1G	2 MB	DDR4-2400	UHD 610		Kensington® MicroSaver® cable)  • Administrator password		
	Celeron G4920	2/2	3.2G	2 MB	DDR4-2400	UHD 610		<ul> <li>Padlock loop</li> <li>Smart USB protection, allows keyboard/</li> <li>Boot sequence control</li> </ul>		
	Celeron G4930	2/2	3.2G	2 MB	DDR4-2400	UHD 610		mouse only, blocks all storage devices • Boot without keyboard and mouse		
	Celeron G4950	2/2	3.3G	2 MB	DDR4-2400	UHD 610		<ul> <li>Optional smart cable clip to physically</li> <li>Individual USB port disablement</li> </ul>		
	Pentium Gold G5500	2/4	3.8G	4 MB	DDR4-2400	UHD 630		lock both keyboard and mouse • Optional chassis intrusion switch		
	Pentium Gold G5600	2/4	3.9G	4 MB	DDR4-2400	UHD 630	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black		
	Pentium Gold G5420	2/4	3.8G	4 MB	DDR4-2400	UHD 610	Mouse	Some: Lenovo Traditional Keyboard (USB connector), black Some: Lenovo Calliope Mouse (USB connector), black		
	Pentium Gold G5620	2/4	4.0G	4 MB	DDR4-2400	UHD 630	INIOU3E	Some: Lenovo Calilope Mouse (USB connector), black Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, bla		
	Core i3-8100	4/4	3.6G	6 MB	DDR4-2400	UHD 630	Maahaniaal			
	Core i5-8400	6/6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	Mechanical	<ul> <li>SFF (7.4L), black color, metal case</li> <li>(WxDxH) 3.9" X 11.9" X 10.8"; 100mm X 303.5mm X 274.8mm</li> </ul>		
	Core i5-8500	6/6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630		• Approx. 9.37 lb (4.25 kg), weight may vary by configuration		
	Core i7-8700	6/12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630		Bay 1: Slim ODD bay		
	Core i3-9100	4/4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630		Bay 2: 3.5" disk bay, supports 2.5" HDD (2.5 to 3.5 bracket comes with 2.5" disk)		
	Core i3-9300	4/4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630		Slot 1: low-profile (length < 152mm, height < 64mm), PCIe 3.0 x16* Slot 2: low-profile (length < 152mm, height < 64mm), PCIe 3.0 x1*		
	Core i5-9400	6/6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630		M.2 card slot: one for SSD		
	Core i5-9500	6/6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630		*Optional rear 2x USB2.0 / parallel occupies one expansion slot		
	Core i5-9600	6/6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Floor Stand	Optional system floor stand for vertical orientation		
	Core i7-9700	8/8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630	Packaging	• (WxDxH) 7.7" X 15.4" X 19.7"; 195mm X 390mm X 500mm		
	Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630		Cross weight (approx.) 14.48 lb (6.57 kg)		
Memory	32GB max, UDIMM,		66*, two 288-pin	DIMM so	ockets, non-ECC,		Power supply	180 watts, autosensing, 85% PSU		
	<ul> <li>dual-channel capable</li> <li>* Memory may be une processor</li> </ul>		d to DDR4-2400	for the lo	ower memory cor	ntroller in	Limited warranty	<sup>3</sup> Some: 1-year or 3-year, depot service / service upgrades available Some: 1-year or 3-year, limited onsite service / service upgrades available		
Storage	Some: Hard Drive / S	SATA 6.00	Sh/s 25" or 35"	5400 rn	m or 7200 rpm		Preload	Preloaded operating system		
otorago	Some: M.2 Solid Sta	te Drive (	SSD) / PCIe NVI	Me, PCle	e 3.0 x2 or PCIe 3	3.0 x4		Some: Windows <sup>®</sup> 10 Pro 64-bit Some: Windows 10 Home 64-bit		
Optane memory	Some: Intel Optane™	Memory	, M.2 2280, PCIe	NVMe,	PCle 3.0 x 2			Some: Linux Ubuntu		
Optical	Some: DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) Some: DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)						Fue dae and and			
Onboard SATA Media reader	Two onboard SATA 6. Optional 7-in-1 media	.0Gb/s co		Drive, Si	iiiii (9.0iiiii)		Environment	ENERGY STAR <sup>®</sup> 7, EPEAT <sup>™</sup> Silver rating (North America), ErP Lot 3, RoHS-compliant, WEEE		
Graphics	Intel HD Graphics 610/630 in processor, uses main memory, DirectX <sup>®</sup> 12,						Accessories For compatible accessories, please go to http://www.lenovoquic	For compatible accessories, please go to http://www.lenovoquickpick.com		
arapinoo	one VGA, one Displa									
	discrete graphics to s	upport m	ore displays:			0				
	Max resolution: 4096x2304 (DP)@60Hz; 2048x1536 (VGA)@50Hz Some: AMD Radeon™ 520, DirectX 12, 2GB GDDR5, PCle 3.0 x8 adapter,									
	one VGA, one			וטטחט, ר	Cie S.0 Xo auap	lei,				
	Max resolution	n: 3840x2	160 (HDMI)@30		8x1536 (VGA)@8					
Monitor cable	Optional DP to VGA,	DP to DV	I-D (single link), I	DP to du	al DP, or DP to H	DMI 1.4				
Chipset	Intel B365 Chipset									
Front ports* (Std.	) Two USB 3.1 Gen1, r	nicrophor	e (3.5mm), one	headpho	ne / microphone	combo jacl	4			
	(3.5mm)				,	,				
Front ports* (Opt.						24				
Rear ports^ (Std.	Two USB 3.1 Gen1, t DisplayPort, Line-out	iack (3 5r	2.0, serial (9-pin) nm)	, etnerne	t (HJ-45), one vu	A, one				
Rear ports* (Opt.	) optional two USB 2.0	, optional	2nd serial (9-pin	), optiona	al parallel (25-pir	), optional				
	external USB to PS/2	ports cal	ole (for PS/2 keyl	board / m	nouse);					
	additional video ports		1 0 1				5			
A 12	* Depending on many factors, actual data transfer speed may be lower than theoretical speed									
Audio support	High Definition (HD) Audio, Realtek ALC623 / internal speaker (2 watt )									
	None									
Bluetooth™ Ethernet	None Gigabit ethernet, Realtek RTL8111HN, Wake on LAN®									
Ethernet (Opt.)	Some: Bitland BN8E									
Modem	None	, , , , , , , , , , , , , , , , , , , ,								

Note: The specifications above may not be available in all regions.













# ThinkCentre M725 SFF Platform Specifications

Product Specifications Reference (PSREF)

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Processor	AMD A6 / A8 / A10			1	processor Memory		Ethernet Ethernet (Opt.)	Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN <sup>®</sup> Some: Bitland BN8E88, gigabit ethernet, 1x RJ-45, PCIe x1 (special bid only)			
	Processor	Cores / Threads	Frequency (Base/Max)	L2 / L3 Cache	Support (Up to)	Integrated Graphics	Manageability Security chip	DASH 10/1.1 Discrete TPM 2.0, TCG Certified			
	PRO A6-9500	2/2	3.5 / 3.8	1MB / -	DDR4-2400	Radeon R5	Security features	Security slot (in rear for optional     Power-on password			
	PRO A8-9600	4/4	3.1 / 3.4	2MB / -	DDR4-2400	Radeon R7		Kensington® MicroSaver® cable) • Administrator password			
	PRO A10-9700	4/4	3.5 / 3.8	2MB / -	DDR4-2400	Radeon R7		Padlock loop     Hard disk password			
	PRO A12-9800	4/4	3.8 / 4.2	2MB / -	DDR4-2400	Radeon R7		<ul> <li>Smart USB protection, allows keyboard/</li> <li>Boot sequence control</li> </ul>			
	Ryzen 3 2300X	4/4	3.5 / 4.0	2MB / 8MB	DDR4-2933	None		mouse only, blocks all storage devices			
	Ryzen 5 2500X	4/8	3.6 / 4.0	2MB / 8MB	DDR4-2933	None		Optional cable lock to physically lock     Individual USB port disablement			
	Ryzen 3 PRO 2200G	4/4	3.5 / 3.6	2MB/4MB	DDR4-2933	Radeon Vega 8		• Optional chassis intrusion switch			
	Ryzen 5 PRO 2400G	4/8	3.6 / 3.8	2MB / 4MB	DDR4-2933	Radeon RX Vega 11	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black			
	Ryzen 5 PRO 2600	6/12	3.4 / 3.9	3MB / 16MB		None		Some: Lenovo Traditional Keyboard (USB connector), black			
	Ryzen 7 PRO 2700	8/16	3.2 / 4.1	4MB / 16MB	DDR4-2933	None		<i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black <i>Some:</i> Lenovo Keyboard (PS/2 connector), black (only available via special bid)			
Memory	64GB max, UDIMM dual-channel capab * Systemboard supp clocks down for the	le ports up t lower ca	o DDR4-26 pability of m	66, memory emory contr	frequency r roller in proc	nay automatically essor	Mouse	Some: Lenovo Calliope Mouse (USB connector), black Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black Some: Lenovo Mouse (PS/2 connector), black (only available via special bid)			
Storage Optical	Some: Hard Drive / Some: Solid State Some: M.2 SSD / F * 128GB SSD M.2 ( supports PCIe 3.0 x Some: DVD-ROM 3	Drive (SS PCIe NVN 2242) PC ( 2, 16Gb	SD) / SATA 6 Me, PCle 3.0 Cle NVMe a /s	6.0Gb/s, 2.5 ) x 4*, 32Gb nd AMD A6	" /s / A8 / A10 /		Mechanical	<ul> <li>SFF (8.4L), black color; metal case</li> <li>(WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm</li> <li>Approx. 13.2 lb (6.0 kg), weight may vary by configuration</li> <li>Toolless cover, disk, optical removal</li> <li>Optional dust filter</li> <li>Bay 1: Slim external ODD bay</li> </ul>			
Onboard SATA	Some: DVD Burne Three onboard SAT	r (DVD±F	RW), SATA 1	.5Gb/s Driv	e, slim (9.0n			Bay 2: 3.5", internal, HDD/SSD Bay 3: 2.5", internal, HDD/SSD (bay only comes with 2.5" 2nd disk)			
Media reader	available via special Optional 7-in-1 med	l bid mod	lel)	o, <b>.</b>	cappert (i ii			Slot 1: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x16 Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1			
Graphics	AMD Radeon <sup>™</sup> Gra memory, DirectX <sup>®</sup> 1 4096x2160@60Hz, with integrated grap discrete graphics to	2, one V( onboard hics), suj support	GA (up to 19 VGA and D pports 3 ind more displa	20x1200@ P ports are ependent di ys;	60Hz), two [ only availab splays, work	DisplayPort™ (up to le on the models s along with AMD	Floor Stand Power supply	Slot 3: low-profile (length < 150mm, height < 68mm), PCle 2.0 x1 Slot 4: low-profile (length < 150mm, height < 68mm), PCl 3.0 M.2 card slots: two (one for WLAN, one for SSD) Optional system floor stand for vertical orientation Some: 180 watts, autosensing, 85% PSU			
	Some: NVIDIA Gef adapter, 35 Some: AMD Radeo	watts, two	o DisplayPo	rt (up to 384	0x2160@60	)Hz) `´´		Some:210 watts, autosensing, 85% PSUSome:260 watts, autosensing, 92% PSU (only available via special bid)			
Manitanaahla	two DisplayF	Port (up to	o 4096x216	0@60Hz)			Limited warranty	1-year or 3-year, limited onsite service / service upgrades available			
Monitor cable	Optional DP to VGA or DP to HDMI 1.4 c	dongle, dongle	DP to DVI-E	) dongle, DF	P to dual DP	dongle,	Preload	Preloaded operating system Some: Windows 10 Pro 64-bit			
Chipset	AMD B450 Chipset	t						Some: Windows 10 Home 64-bit			
Front ports* (Std.	) 2x USB 3.1 Gen2, 2	2x USB 3	.1 Gen1. 1x	microphone	e (3.5mm). 1	x headphone	1	Preloaded applications (only some listed)			
	(3.5mm)		,		(,,,			<ul> <li>Lenovo Vantage</li> <li>Microsoft Office preloaded;</li> </ul>			
	) Optional: 1x media i						)	<ul> <li>wicrosoft Office preloaded, purchase a product key to activate</li> </ul>			
Rear ports* (Std.)	) 2x USB 3.1 Gen1, 2	2x USB 2	.0, 1x serial	(9-pin), 1x e	ethernet (RJ	-45), 1x VGA**,		• Cyberlink PowerDVD (only for models with DVD / DVD±RW)			
	2x DisplayPort**, 2x			rd / mouse);	1x line-in (3	5.5mm), 1x line-out		• Cyberlink Power2GO (only for models with DVD±RW)			
Poor porte* (Opt	(3.5mm), 1x microp			in) 1 v noro	llol (25 pip)	additional P I 45		• LinkedIn			
neai ports (Opt.	) Optional: 2x USB 2 and video ports ava	ilable on	optional gra	phics or eth	ernet card		Environment	ENERGY STAR <sup>®</sup> 7.0*, EPEAT™ Silver rating* (*not for non-OS models); ErP Lot 3; RoHS-compliant			
	* Depending on many ** only available on the	models w	ith integrated	graphics	ay be lower th	an meorendal speed	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com			
Audio support	High Definition (HD)							i or companyor accorded, product go to map a sind and an accord and			
WLAN	Some: 11ac wireles Wi-Fi + Blue Some: 11ac wireles Wi-Fi + Blue Some: 11ac wireles Wi-Fi + Blue Some: 11ac wireles	ss, M.2 C etooth 4.2 ss, M.2 C etooth 4.2 ss, M.2 C etooth 4.2 ss, M.2 C	ard, Realtel 2 combo ada 2ard, Qualco 2* combo ac 2ard, Realte 2* combo ac 2ard, Qualco	k RTL8821C apter, 1x1 mm Atheros lapter, 1x1 k RTL8822E lapter, 2x2 mm Atheros	E (dual ban s QCA9377/ BE (dual ban	d), A (dual band), d),	-				
Bluetooth™	Wi-Fi + Blue Some: Bluetooth 4. * Hardware support	2* wirele	ss, integrate	ed in Ŵi-Fi ⊣							

Note: The specifications above may not be available in all regions.













# ThinkCentre M75s-1 SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Athlon PRO a	nd Rvzer	3/5/7 PF	O series pr	ocessor		Ethernet	Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN®																																		
		Cores /	Frequency	L2/L3	Memory	Integrated	Ethernet (Opt.)																																			
	Processor	Threads		Cache	Support (Up to)	Graphics	Manageability	DASH 10/1.1																																		
	Athlon PRO 300GE	2/4	3.4 / 3.4	1MB / 4MB	DDR4-2666	Radeon Vega 3	Security chip Security features	Discrete TPM 2.0, TCG Certified         • Security slot (in rear for optional         • Power-on password																																		
	Ryzen 3 PRO 3200G		3.6 / 4.0		DDR4-2933	Radeon Vega 8		Kensington® MicroSaver® cable) • Administrator password																																		
	Ryzen 5 PRO 3400G		3.7 / 4.2		DDR4-2933	Radeon Vega 11		Padlock loop     Hard disk password																																		
	Ryzen 5 PRO 3600	6 / 12	3.6 / 4.2		DDR4-3200	None		<ul> <li>Smart USB protection, allows keyboard/</li> <li>Boot sequence control</li> <li>Boot without keyboard and mouse</li> </ul>																																		
	Ryzen 7 PRO 3700	8/16	3.6 / 4.4	4MB / 32MB		None		Optional smart cable clip to physically     Individual USB port disablement																																		
	Ryzen 9 PRO 3900	12/24	3.1 / 4.3	6MB / 64MB		None		lock both keyboard and mouse																																		
Memory	64GB max, UDIMM dual-channel capab * System board suppo	le		•	,	,	Keyboard	Some: Lenovo Traditional Keyboard (USB connector), black Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black																																		
	DDR4-1866, DDR4-21	33 or DDF	R-2400 for low	er capacity of	memory cont	roller in processor	Mouse	Some: Lenovo Keyboard (PS/2 connector), black (only available via special bid) Some: Lenovo Calliope Mouse (USB connector), black																																		
Storage	Some: Hard Drive Some: M.2 SSD (2	242 / 228	30) / PCIe N	VMe, PCIe 3	3.0 x2 or PC	00 rpm le 3.0 x4		Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black																																		
Optical	Some: DVD-ROM Some: DVD Burne					am)		Some: Lenovo Mouse (PS/2 connector), black (only available via special bid)																																		
Onboard SATA	Three onboard SAT	A 6.0Gb/	s connectors	s, RAID 0/1	support (RA	ID preset only	Mechanical	<ul> <li>SFF (8.4L), black color; metal case</li> <li>(WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm</li> </ul>																																		
Media reader	available via special Optional 7-in-1 med	l bid mod	el)					<ul> <li>Approx. 13.2 lb (6.0 kg), weight may vary by configuration</li> </ul>																																		
Graphics		-ın-1 media reader eon™ Graphics in processor (only for some processors), uses main						<ul> <li>Toolless cover, disk, optical, and extension card removal</li> <li>Optional dust filter</li> </ul>																																		
Graphics	memory, DirectX <sup>®</sup> 1	2, one V	GA, two Disp	olayPort™ (C	Inboard VG	A and DP ports		Bay 1: Slim external ODD bay																																		
	are only available of	n the mo	dels with inte	egrated grap	hics), suppo	orts 3 independent		Bay 2: 3.5", internal, HDD/SSD																																		
	displays, works alor Max resolution: 409			graphics to	support mo	re displays;		Bay 3: 2.5", internal, HDD/SSD (bay only comes with 2.5" 2nd disk) Slot 1: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x16																																		
	Some: AMD Radeo	on™ 520,`	DirectX 12,	2GB GDDF	5, PCIe 3.0 x8 adapter,			Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1																																		
	two DisplayF	Port, 30 w	atts (Max);	acol 1-				Slot 3: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1																																		
Monitor cable	Max resoluti				dual DP. or	DP to HDMI 1.4		Slot 4: low-profile (length < 150mm, height < 68mm), PCI 3.0 M.2 card slots: two (one for WLAN, one for SSD)																																		
Chipset	AMD PRO 560 FCH																																tional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4					Floor Stand	Optional system floor stand for vertical orientation			
· ·	2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x microphone (3.5mm), 1x headphone						Power supply	Some: 180 watts, autosensing, 85% PSU																																		
	(3.5mm)				(0.0), 1			Some: 210 watts, autosensing, 85% PSU Some: 260 watts, autosensing, 92% PSU (only available via special bid)																																		
	.) <i>Òptionál</i> : 1x media reader ) 2x USB 3.1 Gen1 (one support Smart Power-On), 2x USB 2.0, 1x serial (9-pin												ot.) <i>Optionál:</i> 1x media reader						Limited warranty																							
near ports (Stu.													Limited warranty Preload																													
	line-in (3.5mm), 1x line-out (3.5mm), 1x microphone (3.5mm)				line-in (3.5mm), 1x line-out (3.5mm), 1x microphone (3.5mm) t.) <i>Optional:</i> 2x USB 2.0, 1x parallel (25-pin), additional video ports available or					line-in (3.5mm), 1x line-out (3.5mm), 1x microphone (3.5mm) t.) Optional: 2x USB 2.0, 1x parallel (25-pin), additional video ports available o						Preioad	Preloaded operating system Some: Windows 10 Pro 64-bit																									
Rear ports* (Opt	optional graphics card * Depending on many factors, actual data transfer speed may be lower than theoretical sp														available on		Some: Windows 10 Home 64-bit																									
						* Depending on many factors, actual data transfer speed may be lower than theoretical						* Depending on many factors, actual data transfer speed may be lower than theoretical							Some: Windows 10 IoT Enterprise																							
	** only available on the models with integrated graphics						For incoment	Some: Linux Ubuntu																																		
Audio support	High Definition (HD)	) Audio, F	Realtek ALC	662 / option	al internal s	peaker (1 watt)	Environment	ENERGY STAR <sup>®</sup> 7.0*, EPEAT™ Silver rating* (*not for non-OS models); ErP Lot 3; RoHS-compliant, WEEE																																		
WLAN	Some: 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2						Accessories	For compatible accessories, please go to http://smartfind.lenovo.com																																		
	Some: 11ac wireles				QCA6174	(dual band),																																				
	Wi-Fi + Blue	etooth 4.2	2 combo ada	apter, 2x2		( ),																																				
	Some: 11ac wireles Wi-Fi + Blue				260 (dual b	and),																																				
Bluetooth™	Some: Bluetooth 4				·Fi + BT con	nbo adapter																																				
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Note: The specifications above may not be available in all regions.

Lenovo, March 2020

(intel)









(intel)

# ThinkCentre M920 SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Intel	Pentium®	or 8th / 9th Ger	Intel Co	re™ i3 / i5 / i7 / i9	Processor	Audio support	High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )			
	Processor	Cores /	Frequency	Cache	Memory Support		WLAN	Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),			
		Threads	Base/Max(GHz)		(Up to)	Graphics		Wi-Fi + Bluetooth 4.2 combo adapter, 1x1			
	Celeron G4900	2/2	3.1G	2 MB	DDR4-2400	UHD 610		Some: 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band),			
	Celeron G4920	2/2	3.2G	2 MB	DDR4-2400	UHD 610		Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165,			
	Celeron G4930	2/2	3.2G	2 MB	DDR4-2400	UHD 610		Wi-Fi + Bluetooth 4.2 combo adapter, 1x1			
	Celeron G4950	2/2 2/4	3.3G 3.7G	2 MB	DDR4-2400	UHD 610		Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265,			
	Pentium Gold G5400 Pentium Gold G5500	2/4	3.7G 3.8G	4 MB 4 MB	DDR4-2400 DDR4-2400	UHD 610 UHD 630		Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 Some: 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band),			
	Pentium Gold G5600	2/4	3.9G	4 MB	DDR4-2400	UHD 630		Wi-Fi + Bluetooth 5.0 combo adapter, Intel vPro technology support, 2x2			
	Pentium Gold G5420	2/4	3.8G	4 MB	DDR4-2400	UHD 610	Bluetooth	Some: Bluetooth 4.2/5.0 wireless, integrated in Wi-Fi + BT combo adapter			
	Pentium Gold G5620	2/4	4.0G	4 MB	DDR4-2400	UHD 630	Ethernet Ethernet (Opt.)	Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN® Some: Intel Ethernet Server Adapter I350-T4, gigabit ethernet, 4x RJ-45, PCIe x4			
	Core i3-8100	4/4	3.6G	6 MB	DDR4-2400	UHD 630	Linemer (Opr.)	Some: Bitland BN8E88, gigabit ethernet, 1x RJ-45, PCIe x1 (special bid only)			
	Core i3-8300	4/4	3.7G	8 MB	DDR4-2400	UHD 630	Manageability	Intel Active Management Technology 12 (Intel AMT 12);			
	Core i5-8400	6/6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	manageability	Intel vPro technology on some models (require choosing a vPro-support Wi-Fi			
	Core i5-8500	6/6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630		adapter to enable vPro function through wireless connection)			
	Core i5-8600	6/6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630	Security chip	Discrete TPM 2.0, TCG Certified			
	Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Security features	<ul> <li>Security slot (in rear for optional Kensington<sup>®</sup> MicroSaver<sup>®</sup> cable)</li> <li>Power-on password</li> <li>Administrator password</li> </ul>			
	Core i3-9100	4/4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630		<ul> <li>Kensington<sup>®</sup> MicroSaver<sup>®</sup> cable)</li> <li>Padlock loop</li> <li>Administrator password</li> <li>Hard disk password</li> </ul>			
	Core i3-9300	4/4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630		<ul> <li>Optional cable lock to physically lock</li> <li>Boot sequence control</li> </ul>			
	Core i3-9320	4/4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630		both keyboard and mouse • Boot without keyboard and mouse			
	Core i5-9400	6/6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630		<ul> <li>Optional chassis intrusion switch</li> <li>Individual USB port disablement</li> <li>Optional chassis E-Lock (special bid)</li> <li>Smart USB protection, allows keyboard/</li> </ul>			
	Core i5-9500	6/6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630		mouse only, blocks all storage devices			
	Core i5-9600	6/6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black			
	Core i7-9700	8/8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630	- <b>,</b>	Some: Lenovo Traditional Keyboard (USB connector), black			
	Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630		Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black Some: Lenovo Keyboard (PS/2 connector), black (only available via special bi Some: Lenovo Calliope Mouse (USB connector), black Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, b			
Memory	64GB max, DDR4-26 * System automatical	ly clocks	down for the pro	cessors \	with lower memo		Mouse				
Storage	Some: Hard Drive / Some: Solid State D Some: M.2 Solid State	rive (SSD	) / ŚATA 6.0Gb/s	, 2.5"				Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black Some: Lenovo Mouse (PS/2 connector), black (only available via special bid)			
	* 128GB SSD M.2 (2)						Mechanical	SFF (8.4L), black color, metal case			
	Some: Intel Optane	Mémory	(not support Ce	leron / P				• (WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm			
Optical	<i>Some:</i> DVD-ROM, S <i>Some:</i> DVD Burner		b/s Drive, slim (	9.0mm)	$\lim_{n \to \infty} (0.0 \text{mm})$			<ul> <li>Approx. 13.23 lb (6 kg), weight may vary by configuration</li> <li>Toolless cover, disk, optical, extension card removal</li> </ul>			
Onboard SATA	Four onboard SATA 6					only		Optional dust filter			
	available via special b	oid model			(	,		Bay 1: Slim external ODD bay			
Media reader	Optional 7-in-1 media							Bay 2: 3.5", 1" high, internal, HDD/SSD Bay 3: 2.5", internal, HDD/SSD (optional bay)			
Graphics	Intel UHD Graphics							Slot 1: low-profile (length < 150mm, height < 68mm), PCle 3.0 x16			
	one VGA (up to 2048 supports 3 independe							Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x1			
	Some: NVIDIA Gefor							Slot 3: low-profile (length < 150mm, height < 68mm), PCle 3.0 x16 (x4 signal) Slot 4: no slot, only bracket for optional port extension			
	PCIe 2.0 x16,	35 watts,	two DisplayPort	(up to 38	340x2160@60Hz	<u>z</u> )		M.2 card slots: Two (one for WLAN, one for SSD/Optane)			
	Some: AMD Radeon		rectX 12, 2GB 0 096x2160@60		PCIe 3.0 x8, 30 v	vatts,	Floor Stand	Optional system floor stand for vertical orientation			
Monitor cable	Optional DP to VGA of Display with intel inte	dongle, D	P to DVI-D dongl	e, DP to		(for Collage	Power supply	Some:180 watts, autosensing, 85% PSUSome:210 watts, autosensing, 85% PSU			
Chipset	Intel Q370 Chipset				-		1	Some: 260 watts, autosensing, 92% PSU (only available via special bid)			
Front ports* (Std.	) 2x USB 3.1 Gen2, 2x 1x microphone (3.5m	USB 3.1 m). 1x he	Gen1, 1x USB 3 adphone / micro	8.1 Type-0	C Gen1 (15W ch mbo jack (3.5mr	arging), n)	Limited warranty	<i>Some:</i> <b>1-year</b> or <b>3-year</b> , <b>depot service</b> / service upgrades available <i>Some:</i> <b>1-year</b> or <b>3-year</b> , <b>limited onsite service</b> / service upgrades available			
Front ports* (Opt Rear ports* (Std.	) <i>Optional:</i> 1x media re ) 4x USB 3.1 Gen1, 1x	ader					Preload	Some: Windows® 10 Pro 64-bit Some: Windows 10 Home 64-bit			
	1x line-out (3.5mm) ) Optional: 2x USB 2.0 via PCIe x4 (special b	. 2x USB	3.1 Gen1 via PC	le x1. 2x	USB 3.1 Type-C	Gen2	Environment	ENERGY STAR <sup>®</sup> 6.1, EPEAT <sup>™</sup> Silver rating (North America), ErP Lot 3, TCO, TUV low noise verified (coming soon, on some models), RoHS-compliant			
	Via PCIe X4 (special f 1x parallel (25-pin), 2 USB3.1 Type-C Gen additional RJ-45 and * Depending on many fa	x PS/2 pc 2 / Displa video por	vrts (keyboard/m vPort) via PCIe > ts available on o	ouse), 1> 4 (availa ptional g	Thunderbolt 3 ( ble on 09/30/201 raphics or ethern	combo 8), iet card	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com			
		,		Su may De		iicai speeu					
Note: The specific:	ations above mav not be	aldelieve	in all regions					Lenovo. December 20			



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# ThinkCentre M625 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD A9 series A	APU					Keyboard	Some: Fullsize USB Keyboard (USB connector), black, Lenovo logo			
		0	Frequency	L2	Memory	Integrated	Mouse	Some: USB Optical Wheel Mouse, black, Lenovo logo			
	APU	Cores		Cache	Support (Up to)	Graphics	Mechanical	Tiny (1L), black color; metal case • Toolless chassis open (for models with optional toolless chassis screw)			
	A9-9420e	2	1.8 / 2.7 GHz	1 MB	DDR4-1866	Radeon R5 Series		• Toolless HDD, SSD, memory, Wi-Fi removal			
Memory	8GB max, DDR4 * System frequent controller in proce	ncy auto	ne 260-pin SO-I matically clocks	DIMM so down fo	ocket r the lower cap	pability of memory		<ul> <li>Optional dust filter</li> <li>M625 Tiny only:</li> <li>7.05" W X 7.20" D X 1.36" H</li> <li>179mm W X 182.9mm D X 34.5mm H</li> </ul>			
Disk	Some: SATA 6.0 Some: 128GB N Some: 256GB N	1.2 Sólid	State Drive (SS	D) / PC	le NVMe interf		VESA mount Floor Stand	2.9 lb (1.3 kg), weight may vary by configuration Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation			
Optical Onboard SATA	None one SATA 6.0Gb/	/s conne	ctor on planar				Power supply 65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIC				
Media reader	None						Limited warranty <sup>3</sup>	Some: 1-year, depot service / service upgrades available Some: 1-year, limited onsite service / service upgrades available			
Graphics	Mode), supports Max resolution: 3	e option up to 2 i 840x210	al port (VGA or I ndependent disp	USB 2.0 plays; 2048x1;	) Type-C with [ 280 (VGA)@6	DisplayPort Alternate	Preload	Preloaded operating system         Preloaded applications (only some           Some:         Windows® 10 Pro 64-bit         listed)           Some:         Windows 7 Professional 64 preinstalled through downgrade         - Windows 10 only			
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), or DP to HDMI 1.4 dongle							rights in Windows 10 Pro 64-bit ● LinkedIn			
Chipset	AMD SoC platfo	rm						<ul> <li>Microsoft Office preloaded; purchase a product key to activate</li> </ul>			
Front ports* Rear ports*	one headphone / One USB 3.1 Ge two optional ports Alternate Mode),	' microph n1, three s (Port 1 Port 2 fe	none combo jack e USB 2.0, ether for VGA / serial pr serial)	(3.5mr rnet (RJ / USB 2	n) -45), two Displ 2.0 Type-C (wit			<ul> <li>Windows 7 only</li> <li>Lenovo Solution Center</li> <li>Lenovo System Update</li> <li>Factory Recovery</li> <li>User Guide Viewer</li> <li>Microsoft Office preloaded;</li> </ul>			
I/O box	None							purchase a product key to activate <ul> <li>Adobe<sup>®</sup> Reader<sup>®</sup></li> </ul>			
Audio support	High Definition (HD) Audio, Realtek ALC233-VB2-CG/ internal speaker (1.5 w Some: 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band).										
WLAN <sup>13</sup>	Wi-Fi + B	Bluetooth	4.2* combo ada	apter, 2>	(2)	,,	Environment	ENERGY STAR <sup>®</sup> 6.1*, EPEAT <sup>™</sup> Silver rating* (*Not for non-OS models), ErP Lot 3, RoHS-compliant, WEEE, TCO			
Bluetooth™	Some: 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2 Some: Bluetooth 4.2* wireless, integrated in Wi-Fi + BT combo adapter					adapter	MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)			
Ethernet Modem	* Win 10 RS3 and Win10 earlier version only support Bluetooth 4.1 Gigabit ethernet, Realtek RTL8111HN, Wake on LAN® None				LAN®		Accessories	For compatible accessories, please go to http://smartfind.lenovo.com			
Manageability Security chip Security features	None Discrete TPM 2.0, TCG Certified S Security slot (in rear for optional Kensington® MicroSaver® cable) Smart USB protection, allows keyboard/ mouse only, blocks all storage devices Power-on password • Administrator password • Boot sequence control • Boot without keyboard and mouse • Individual USB port disablement • Chassis intrusion switch				d disk passwo ot sequence co ot without keyb ividual USB po	ord ontrol oard and mouse ort disablement					

Lenovo, May 2018





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# ThinkCentre M625 Tiny Thin Client Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD E2 series A	APU					Keyboard	Some: Fullsize USB Keyboard (USB connector), black, Lenovo logo		
			Frequency	L2	Memory	Integrated	Mouse	Some: USB Optical Wheel Mouse, black, Lenovo logo		
	APU	Cores	Base/Max	Cache	Support (Up to)	Graphics	Mechanical	Tiny (1L), fan-less design, black color, metal case • Toolless chassis open (for models with optional toolless chassis screw)		
	E2-9000e	2	1.5 / 2.0 GHz	1 MB	DDR4-1866	Radeon R2 Series	_	Toolless SSD, memory, Wi-Fi removal		
Memory	8GB max, DDR4 * System frequer controller in proc	ncy autoi	ne 260-pin SO- matically clocks	-DIMM so down fo	ocket r the lower ca	pability of memory		M625 Tiny Thin Client only: 7.05" W X 7.20" D X 1.36" H 179mm W X 182.9mm D X 34.5mm H 2.9 lb (1.3 kg), weight may vary by configuration		
Disk	Some: 32GB M. Some: 128GB M					face	VESA mount Floor Stand	Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation		
Optical Onboard SATA	None one SATA 6.0Gb	le conne	ctor on planar				Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models)		
Media reader	None						Limited warranty <sup>3</sup>			
Graphics	Mode), supports Max resolution: 3	ne option up to 2 i 3840x216	al port (VGA or ndependent dis	USB 2.0 splays; ; 2048x12	) Type-C with I 280 (VGA)@6	DisplayPort Alternate	Preload	Some:       1-year, limited onsite service / service upgrades available         Preloaded operating system         Some:       Windows Embedded Standard 7 V2 (WES 7 V2)         Some:       Windows 10 IoT Enterprise         Some:       LeTOS V2 (Lenovo Terminal Operating System, Linux-based)		
Monitor cable	Optional DP to V	/GA, DP	to DVI-D (single	e link), or	DP to HDMI	1.4 dongle	Environment	ENERGY STAR <sup>®</sup> 6.1*, EPEAT <sup>™</sup> Silver rating* (*Not for non-OS models),		
Chipset	AMD SoC platfo	orm						ErP Lot 3, RoHS-compliant, WEEE, TCO		
Front ports*	one headphone	/ micropł	none combo iac	k (3.5mr	n)	icrophone (3.5mm),	MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)		
Rear ports*	One USB 3.1 Ge two optional port Alternate Mode),	ts (Port 1	for VGA / seria	al / USB 2	-45), two Disp 2.0 Type-C (wi	layPort, th DisplayPort	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com		
I/O box				sfer speed	d may be lower t	han theoretical speed				
Audio support	High Definition (I	HD) Audi	o, Realtek ALC	233-VB2	-CG / internal	speaker (1.5 watt)				
WLAN <sup>13</sup>	Some: 11ac win Wi-Fi + E Some: 11ac win Wi-Fi + E Some: 11ac win Wi-Fi + E Some: 11ac win	Bluetooth eless, M. Bluetooth eless, M. Bluetooth eless, M. Bluetooth eless, M.	4.2* combo ac 2 Card, Qualco 4.2* combo ac 2 Card, Realte 4.2* combo ac 2 Card, Qualco 2 Card, Qualco 4.2* combo ac	Japter, 1> omm Athe Japter, 1> k RTL882 Japter, 2> omm Athe Japter, 2> Vireless-A	(1 eros QCA9377 (1 22BE (dual ba (2 eros QCA6174 (2 (2 (2 9260 (dual	7 (dual band), ind), 4A (dual band),				
Bluetooth™	Some: Bluetootl * Win 10 RS3 an	h 4.2/5.0	* wireless. inter	prated in	Wi-Fi + BT co	mbo adapter 1 4.1				
Ethernet Modem	Gigabit ethernet, None									
Manageability Security chip Security features	None Discrete TPM 2.0 • Security slot (in Kensington® M • Smart USB pro mouse only, blo • Power-on pass	n rear for licroSave otection, ocks all s	r optional er® cable) allows keyboar	<ul> <li>Har</li> <li>Boo</li> <li>Boo</li> <li>Indi</li> </ul>		ord ontrol board and mouse ort disablement				
								Lenovo, May 2018		

Lenovo, May 2018







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# ThinkCentre M630e Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Pentium®, or 8th	Generat	ion Intel Core™ i	3 / i5 Pi	rocessor		Manageability	None			
	Processor	Cores /	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Security chip	Firmware TPM 2.0,	integrated in chipse		to - l
	Pentium Gold 5405U	2/4	2.3G	2 MB	DDR4-2133	UHD 610		<ul> <li>es escurity slot (in rear for optional Kensington® MicroSaver® cable)</li> <li>Boot sequence control</li> <li>Boot without keyboard and n</li> </ul>			
	Core i3-8145U	2/4	2.1G / 3.9G	4 MB	DDR4-2400	UHD 620		Chassis intrusion	switch	<ul> <li>Individual USB</li> </ul>	port disablement
	Core i5-8265U	4/8	1.6G / 3.9G	6 MB	DDR4-2400	UHD 620		<ul> <li>Power-on passwo</li> <li>Administrator pass</li> </ul>			tection, allows keyboard/ cks all storage devices
Memory	16GB max, DDR4-260 * System automaticall	66*, one 2 v clocks c	260-pin SO-DIMN	/ socke	ets, non-ECC with lower memo	orv controller	Keyboard	Hard disk password			
Storage	Some: Hard Drive / S						Mouse	Some: Lenovo Call	liope Mouse (USB of	connector), black	N
Ŭ	Some: Solid State Dr Some: M.2 SSD (228 Some: M.2 SSD (224 One onboard SATA 6.	ive (SSD) 30) / PCIe 12) / PCIe	) / SATA 6.0Gb/s NVMe, PCIe 3.0 NVMe, PCIe 3.0	, 2.5" ) x 4, 32	2Gb/s		Mechanical	Tiny (1L), black color; metal case • Optional dust filter • One 2.5" bay for HDD/SSD, two M.2 slots (one for WLAN, one for M.2 SSE			N, one for M.2 SSD)
Graphics	Intel HD Graphics 61	0/620 in	processor, uses	main m	emory. DirectX®	12. one	-		Dimension	ns (WxDxH)	Weight (Approx.)
	DisplayPort <sup>™</sup> , one HD Max resolution: 4096x	MI, up to 2304 (DF	2 independent c @60Hz; 4096x	lisplays 2304 (⊢	;	,		Tiny only	7.05" X 7.20" X 1.36" 2.91 lb (1.32 kg), 179mm X 182.9mm X 34.5mm vary by config		
	Optional DP to VGA d	<u> </u>		dongle			VESA mount	Optional VESA mou	unt bracket kit. supp	orts VESA 75mm a	and 100mm
Chipset	Intel SoC (System or	n Chip) p	latform				Floor Stand	Optional system floor stand for vertical orientation			
	One USB 3.1 Gen1, c				nicrophone (3.5m	ım),	Power supply	Some: 65 watts adapter, autosensing, 88% PSU			
Rear ports* (Std.) Rear ports* (Opt.)	one headphone / micr Two USB 3.1 Gen1, tw None	wo USB 2	.0, one ethernet	(RJ-45)	), one DisplayPor	t, one HDMI	Limited warranty	Some: 1-year, dep Some: 1-year, lim			
	* Depending on many fac	ctors, actua	l data transfer spee	ed may b	be lower than theore	etical speed	Preload	Preloaded operatin	ng system		
Audio support	Realtek ALC233VB / i	internal sp	beaker (1.5 watt)					Some: Windows <sup>®</sup> Some: Windows 10			
WLAN	Some: 11ac wireless,				(dual band),			Preloaded applicat		isted)	
	Some: 11ac wireless Wi-Fi + Blueto	, M.2 Car ooth 4.2 c	ombo adapter, 2	322BE x2	· · · ·			<ul> <li>Lenovo Vantage</li> <li>Microsoft Office p purchase a produ</li> </ul>			
	Some: 11ac wireless				ess-AC 3165,			<ul> <li>LinkedIn</li> </ul>	ior noy to activate		
	Some: 11ac wireless	, M.2 Car	ombo adapter, 1: d, Intel Dual Ban ombo adapter, 2:	d Wirel	ess-AC 8265,		Environment	ENERGY STAR <sup>®</sup> 7.0, EPEAT <sup>™</sup> Silver rating, ErP Lot 3, TCO, RoHS-compliant, WEEE, REACH			CO, RoHS-compliant,
Bluetooth	Some: Bluetooth 4.2	wireless,	integrated in Wi-	Fi + BT	combo adapter		MIL-SPEC test	Coming soon			
	Gigabit ethernet, Real None						Accessories	For compatible acce	essories, please go	to http://smartfine	d.lenovo.com

Note: The specifications above may not be available in all regions.

Lenovo, October 2019













# ThinkCentre M710 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Int	el Pentiur	n®, or 6/7th Gen	eration In	tel Core™ i3 / i5	/ i7 Processo	Security features	• Security slot (in rea	ar for optional • Adminis	trator password												
	Drassar	Cores /	Frequency	Casha	Memory Support	Integrated		Kensington® MicroSaver® cable) <ul> <li>Hard disk password</li> </ul>														
	Processor	Threads	Base/Max(GHz)	Cache	(Up to)	Graphics				quence control hout keyboard and mouse												
	Pentium G4400T	2/2	2.9G	3 MB	DDR4-2133	HD 510		<ul> <li>Power-on passwor</li> </ul>		al USB port disablement												
	Pentium G4560T	2/4	2.9G	3 MB	DDR4-2400	HD 610				intrusion switch												
	Pentium G4600T	2/4	3.0G	3 MB	DDR4-2400	HD 630	Keyboard	Some: Lenovo Calli	ope Keyboard (USB connector), t	black												
	Core i3-6100T	2/4	3.2G	3 MB	DDR4-2133	HD 530		Some: Lenovo Tradi	tional Keyboard (USB connector)	, black												
	Core i5-6500T	4/4	2.5G / 3.1G	6 MB	DDR4-2133	HD 530	Marrian	Some: Lenovo Calli	ope Wireless Keyboard (2.4GHz	via USB receiver), black												
	Core i7-6700T	4/8	2.8G / 3.6G	8 MB	DDR4-2133	HD 530	Mouse		ope Mouse (USB connector), blac ope Wireless Mouse (2.4GHz via													
	Core i3-7100T	2/4	3.4G	3 MB	DDR4-2400	HD 630			1	USD receiver), black												
	Core i5-7400T	4/4	2.4G / 3.0G	6 MB	DDR4-2400	HD 630	Mechanical	Tiny (1L), black color														
	Core i5-7500T	4/4	2.7G / 3.3G	6 MB	DDR4-2400	HD 630		<ul> <li>Toolless chassis op</li> <li>Toolless HDD, SSE</li> </ul>														
	Core i5-7600T	4/4	2.8G / 3.7G	6 MB	DDR4-2400	HD 630		<ul> <li>Optional toolless c</li> </ul>														
	Core i7-7700T	4/8	2.9G / 3.8G	8 MB	DDR4-2400	HD 630		<ul> <li>Optional dust filter</li> </ul>														
Memory	32GB max, DDR4	-2400*. tw	o 260-pin SO-D	IMM sock	ets. non-ECC.		1		Dimensions (WxDxH)	Weight (Approx.)												
moniory	dual-channel capa		10 200 pill 00 Di		1010, 11011 E00,			M710 Tiny only	7.05" X 7.20" X 1.36"	2.91 lb (1.32 kg),												
	* System automati	cally clock	ks down for the p	rocessor	s with lower men	nory controlle	r	WIT TO TILLY ONLY	179mm X 182.9mm X 34.5mr													
Storage	Some: Hard Drive				7200 rpm			With VESA mount &		3.66 lb (1.66 kg),												
-	Some: Solid State	Drive (S	SD) / SATA 6.0G	b/s, 2.5"		,		ODD box	188.4mm X 185.38mm X 63m													
	Some: M.2 Solid S	State Driv	e (SSD) / PCIe N	VVMe, PC	Coro processor)	)/S		With VESA mount &		3.66 lb (1.66 kg),												
Optical	Some: Intel Optar Some: DVD-ROM	slim (9 0	)mm) via USB e	xternal O	DD box	101.2		I/O box	188.4mm X 185.38mm X 66.6n													
optiour	Some: DVD Burne	er (DVD±F	RW), slim (9.0mr	n), via US	SB external ODD	box		0		,,, ,												
Onboard SATA	One onboard SATA			,.			VESA mount Floor Stand		nt bracket kit, supports VESA 75n r stand for vertical orientation	nm and 100mm												
Media reader	None							1 ,														
Graphics	Intel HD Graphics	s 510/530	/610/630 in proc	essor, us	es main memory	, DirectX <sup>®</sup> 12,	Power supply		pter, autosensing, 88% PSU (not													
	two DisplayPort™,					B 3.1 Type-C			pter, autosensing, 88% PSU (only	, ,												
	with DisplayPort A Max resolution: 40						Limited warranty		year, depot service / service up													
	40	96x2160	(HDMI)@24Hz: 1	1920x120	0 (VGA)@60Hz				year, limited onsite service / se	rvice upgrades available												
Monitor cable	Optional DP to VG					HDMI 1.4	Preload	Some: Windows® 7														
Chipset	Intel B250 Chipse	et						preinstalled through downgrade rights in Windows 10 Pro 64-bit (ret aviilable with 7th Cen Intel														
Front ports*	Two USB 3.1 Gen	1 (one is A	Always On and fa	ast charge	e), one micropho	ne (3.5mm),		(not availabl	e with 7th Gen Intel													
	one headphone / r	nicrophon	e combo jack (3	.5mm)				processor) Some: Windows 10	Pro 64-bit													
Rear ports*	Four USB 3.1 Gen	1 (optiona	al external optica	l box or e	external I/O box o	ccupies one		Some: Windows 10														
	or two specific USI two optional ports							Preloaded applicati														
	(with DisplayPort A					pe-o den i		listed)														
I/O box*	Optional external I	/O box, ex	tends two USB	2.0, two l	JSB 3.1 Gen1, a	nd one serial		Microsoft Office pr														
	on rear, two USB 2	2.0 on fror	nt, via USB cable	e (occupy	two specific USE	3 3.1 Gen1 of		- Only for Window 10														
	Tiny)	fastara a	atual data transfer		, ha lower than the	watical append		<ul> <li>Lenovo Companio</li> </ul>														
A self a second a set	* Depending on many						-	- Only for Window 7														
Audio support	High Definition (HE	, .				( ,	_	Lenovo Solution C														
WLAN <sup>13</sup>	Some: 11ac wirel	ess, M.2 (	Lard, Qualcomm	Atheros	QCA9377A (dua	I band),		<ul> <li>Lenovo ThinkVanta</li> <li>Create Recovery M</li> </ul>														
											Some: 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band),				Ni-Fi + Bluetooth 4.1 combo adapter, 1x1				vicula			
	Wi-Fi + Bluetooth 4.1 combo adapter. 2x2						Wi-Fi + Bluetooth 4.1 combo adapter. 2x2						Wi-Fi + Bluetooth 4.1 combo adapter, 2x2					i bana),		<ul> <li>Adobe<sup>®</sup> Reader<sup>®</sup></li> <li>Cyberlink PowerD<sup>1</sup></li> </ul>	VD Create	
	Some: 11ac wirele				eless-AC 3165,			(ĎVD±RW)														
	Wi-Fi + Blu	letooth 4.	1 combo adapte	r, 1x1			Environment	ENERGY STAR® 6.1	, EPEAT™ Gold rating (North Am	erica),												
	Some: 11ac wirel				eless-AC 8265,				ÚARD <sup>®</sup> , RoHS-compliant,													
Bluetooth™	Some: Bluetooth		1 combo adapter		T combo adapte	r		TUV low noise verifie	· · · · · ·													
Ethernet	Gigabit ethernet, li						MIL-SPEC test		ary certification (Low Pressure [A													
Modem	None			(	- / /				mperature Shock, Humidity, Sand	and Dust, Vibration, Shoc												
Manageability	None						A	Fungus, Solar Radia	ssories, please go to http://www.	lan ava avalalas tata a as												
manageability				a set of the set			Accessories	For compatible acces	econiae niases an to http://www.	Innovogujeknick com												
Security chip	TPM (Trusted Plate * Downgrade to TF						1000000000000	i oi oompatible acces	somes, please go to mp.//www.	lenovoquickpick.com												









# ThinkCentre M715 Tiny (2<sup>nd</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Athlon, A6, A1	0, A12,	or Ryzen pro	cessor			Security features	curity features • Security slot (in rear for optional • Administrator pa			
	Processor	Cores / Threads	Frequency Base/Max	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics		<ul> <li>Padlock loop</li> <li>Smart USB protection, allows keyboard/</li> </ul>			
	Athlon 200GE	2/4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3			<ul> <li>Individual USB port disablement</li> <li>Chassis intrusion switch</li> </ul>		
	Athlon PRO 200GE	2/4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3	Keyboard	Some: Lenovo Calliope Keyboard (USB co			
	PRO A6-8570E PRO A10-8770E	2/2	3.0 / 3.4 GHz 2.8 / 3.5 GHz	1 MB / - 2 MB / -	DDR4-2400 DDR4-2400	Radeon R5 Radeon R7	Reyboard	Some: Lenovo Traditional Keyboard (USB)	connector), black		
	PRO A6-9500E	2/2	3.0 / 3.4 GHz	2 MB/-	DDR4-2400 DDR4-2400	Radeon R7 Radeon R5	Name	Some: Lenovo Calliope Wireless Keyboard	d (2.4GHz via USB receiver), black		
	PRO A10-9700E	4/4	3.0 / 3.4 GHz	2 MB / -	DDR4-2400	Radeon R7	Mouse	Some: Lenovo Calliope Mouse (USB conn Some: Lenovo Fingerprint Mouse (USB co	ector), black Nanostar), Windows Hollo support, black		
	PRO A12-9800E	4/4	3.1 / 3.8 GHz	2 MB / -	DDR4-2400	Radeon R7		Some: Lenovo Calliope Wireless Mouse (2	2.4GHz via USB receiver), black		
	Ryzen 3 2200GE	4/4	3.2 / 3.6 GHz		DDR4-2933	Radeon Vega 8	Mechanical	Tiny (1L), black color; metal case			
	Ryzen 3 PRO 2200GE	4/4	3.2 / 3.6 GHz	-	DDR4-2933	Radeon Vega 8	Intechanical	<ul> <li>Toolless chassis open (need optional tool</li> </ul>	lless chassis screw)		
	Ryzen 5 2400GE	4/8	3.2 / 3.8 GHz		DDR4-2933	Radeon RX Vega 11		Optional dust filter			
	Ryzen 5 PRO 2400GE	4/8	3.2 / 3.8 GHz	2 MB / 4MB	DDR4-2933	Radeon RX Vega 11		M715 Gen2 Tiny only:			
Memory Disk	32GB max, DDR4 2 * System automatic: Some: Hard Drive / Some: Solid State Some: M.2 SSD / F * 128GB SSD M.2 (	ally clock SATA 6 Drive (S PCle NV	ks down for tl .0Gb/s, 2.5", SD) / SATA 6 Me. PCIe 3.0	5400 rpm c .0Gb/s, 2.5 x 4*. 32Gb	emory contro or 7200 rpm /s	bller	VESA mount	7.05" W X 7.20" D X 1.36" H 179mm W X 182.9mm D X 34.5mm H 2.91 lb (1.32 kg), weight may vary by config With VESA mount & ODD box: 7.42" W X 7.30" D X 2.48" H 188.4mm W X 185.38mm D X 63mm H 3.66 lb (1.66 kg), weight may vary by config Optione/UCCA mount by config	guration		
Optical	Some: DVD-ROM, Some: DVD±RW, 9	8GB SSD M.2 (2242) PCIe NVMe only supports PCIe 3.0 x 2, 16Gb/s ne: DVD-ROM, 9.0mm high, via USB external ODD box ne: DVD±RW, 9.0mm high, via USB external ODD box						Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation 65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models)			
Onboard SATA	One SATA cable (1-	drop to o	device), one s	SATA 6.0Gb	s connecto	r on planar	Power supply	65 watts AC/DC adapter, autosensing, 88%	S PSU (not included for TIO models)		
Graphics	AMD Radeon™ Gra						Limited warranty	1-year or 3-year, limited onsite service / ser	rvice upgrades available		
Monitor cable	DisplayPort <sup>™</sup> , one c displays (supports r port or DP to DVI/HI <i>Max resolution:</i> 409 192 Optional DP to VGA	naximun DMI don 6x2160 0x1200	n of 2 concur Igles, and Ath (DP)@60Hz; (VGA)@60Hz	rent HDMI/I nlon / Athlor 4096x2160 z	DVI displays PRO only (HDMI)@3	when using HDMI support 2 displays); 0Hz;	Preload	Some:Windows® 10 Pro 64-bitIisted)Some:Windows 10 Home 64-bit- Windows 10 onlySome:Windows 7 Professional 64• Lenovo Vantagepreinstalled through downgrade• Microsoft Office provided			
Chipset	AMD B300 Chipset	-		<b>J J J J</b>			-		purchase a product key to activate Cyberlink PowerDVD (only for models		
Front ports* (Std.	) Two USB 3.1 Gen1 3.5mm), one headp ) One USB 3.1 Gen1 one headphoneone	hone / m and thre	nicrophone co	ombo jack (	stéreo, 3.5m	nm)	-	•	with DVD / DVD±RW) Cyberlink Power2GO (only for models with DVD±RW) LinkedIn		
	) One optional port (\ * Depending on many ** Not support VGA, 3r	/GA**, 3 factors, a d DP, HD	ctual data trans MI for the mod	sfer speed ma els with Athlo	ay be lower th n / Athlon PR	an theoretical speed O		•	Windows 7 only Lenovo Solution Center ThinkVantage System Update Create Recovery Media		
Audio support	High Definition (HD)	, ,			1	( )	-	•	Microsoft Office preloaded;		
WLAN		etooth 4.	2* combo ad	apter, 1x1				•	purchase a product key to activate Adobe® Reader®		
	Some: 11ac wireles Wi-Fi + Blue Some: 11ac wireles	etooth 4.	2* combo ad	apter. 1x1			Environment	ENERGY STAR <sup>®</sup> 7.0*, EPEAT <sup>™</sup> Silver ratin ErP Lot 3; ; RoHS-compliant			
	Wi-Fi + Blue	etooth 4.	2* combo ad	apter, 2x2			MIL-SPEC test	MIL-STD-810G military certification (Low P Low Temperature, Temperature Shock, Hun	ressure [Altitude], High Temperature, nidity, Sand and Dust, Vibration, Shock)		
Bluetooth Ethernet	<ul> <li>Some: 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2</li> <li>Some: Bluetooth 4.2* wireless, integrated in Wi-Fi + BT combo adapter</li> <li>* Hardware supports BT 4.2, but Win10 RS3 and earlier only supports BT 4.1</li> <li>Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN<sup>®</sup></li> </ul>					adapter	Accessories	For compatible accessories, please go to h	ttp://smartfind.lenovo.com		
Manageability Security chip	DASH 1.0/1.1 Discrete TPM 2.0, T	CG Cer	à Certified								
							-				

Note: The specifications above may not be available in all regions.









# ThinkCentre M715 Tiny Thin Client (2<sup>nd</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Athlon, A6, A10	0, or Ryz	en processor				Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black			
	APU Athlon PRO 200GE	Cores / Threads	areads Base/Max Cache (Up to) Graphics				Mouse	Some: Lenovo Traditional Keyboard (USB connector), black Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black Some: Lenovo Calliope Mouse (USB connector), black Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black			
	PRO A6-8570E	2/2	3.0 / 3.4 GHz	1 MB / -	DDR4-2400	Radeon R5		Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black			
	PRO A10-8770E	4/4	2.8 / 3.5 GHz	2 MB / -	DDR4-2400	Radeon R7	Mechanical	Tiny (1L), black color; metal case			
	Ryzen 3 PRO 2200GE	4/4	3.2 / 3.6 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8		<ul> <li>Toolless chassis open (need optional toolless chassis screw)</li> <li>Optional dust filter</li> </ul>			
Memory	8GB max, DDR4 266 * System automatica							M715 Gen2 Tiny only: 7.05" W X 7.20" D X 1.36" H			
Disk Optical Onboard SATA	Some: 32GB M.2 So Some: 128GB M.2 So None One SATA cable (1-d	Solid Sta	te Drive (SSÉ	D) / PCIe N	/Me, PCIe 3		VESA mount Floor Stand	179mm W X 182.9mm D X 34.5mm H 2.91 lb (1.32 kg), weight may vary by configuration Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation			
Graphics	AMD Radeon™ Gra		<i>,,</i>			1	Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models)			
	DisplayPort™, one of	otional po	ort (HDMI, VC	GA, or 3rd D	P), supports	s 3 independent	Limited warranty	1-year or 3-year, limited onsite service / service upgrades available			
Monitor cable		)MI dong 5x2160 ([ )x1200 (\	les, and Athle DP)@60Hz; 4 /GA)@60Hz	on / Athlon I 096x2160 (	PRO only su (HDMI)@30I	ipport 2 displays); Hz;	Preload	Preloaded operating system Some: Windows Embedded Standard 7 V2 (WES 7 V2) Some: Windows 10 IoT Enterprise Some: LeTOS V2 (Lenovo Terminal Operating System, Linux-based)			
Chipset	Optional DP to VGA AMD B300 Chipset	dongle, I		bongle, or D		1.4 dongle	Environment	ENERGY STAR <sup>®</sup> 6.1*, EPEAT <sup>™</sup> Silver rating* (*not for non-OS models);			
	) Two USB 3.1 Gen1 (	ono is Al	wave On and	l fact charge	a) one micro	nhone (stereo		ErP Lot 3; RoHS-compliant			
	3.5mm), one headph One USB 3.1 Gen1 a	ione / mi	crophone cor	nbo jack (st	ereo, 3.5mm	n)	MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock)			
· · · /	one headphoneone ) One optional port (V0 * Depending on many fa ** Not support VGA, 3rd	GA**, 3ro actors, act	d DP**, HDM ual data transfe	I**, or serial er speed may	on some me	odels) h theoretical speed	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com			
Audio support	High Definition (HD)	Audio, R	ealtek ALC2	33-VB2 / int	ernal speake	er (1.5 watt)	-				
WLAN Bluetooth Ethernet	Some: 11ac wireless Wi-Fi + Bluet Some: 11ac wireless Wi-Fi + Bluet Some: 11ac wireless Wi-Fi + Bluet Some: 11ac wireless Wi-Fi + Bluet Some: Bluetooth 4.2 * Hardware supports Gigabit ethernet, Rea	tooth 4.2 s, M.2 Ca tooth 4.2 s, M.2 Ca tooth 4.2 s, M.2 Ca tooth 4.2 2* wireles BT 4.2,	* combo ada ard, Qualcom * combo ada ard, Realtek * combo ada so, Integrated but Win10 R	pter, 1x1 nm Atheros pter, 1x1 RTL8822BE pter, 2x2 nm Atheros pter, 2x2 l in Wi-Fi + H S3 and earli	QCA9377 (c E (dual band) QCA6174A BT combo ad ier only supp	dual band), ), (dual band), dapter					
Manageability Security chip	DASH 1.0/1.1 Discrete TPM 2.0, TC	CG Certif	fied								
Security features	<ul> <li>Security slot (in rea Kensington® Micros</li> <li>Padlock loop</li> <li>Smart USB protect mouse only, blocks</li> <li>Power-on passwor</li> </ul>	Saver®'ca tion, allov all stora	able) ws keyboard/	<ul> <li>Hard dis</li> <li>Boot see</li> <li>Boot wit</li> <li>Individual</li> </ul>	trator passw sk password quence cont hout keyboa al USB port intrusion sw	rol Ird and mouse disablement					

Note: The specifications above may not be available in all regions.

Lenovo, July 2018













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#### ThinkCentre M720 Tiny Platform Specifications

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Intel I	Pentium®.	or 8th / 9th Gen	Intel C	ore™ i3 / i5 / i7 / i	9 Processor	Manageability	None			
	Processor	Cores /	Frequency	Cache	Memory Support	Integrated	Security chip	Discrete TPM 2.0, TO	CG Certified		
	Celeron G4900T	Threads 2/2	Base/Max(GHz) 2.9G	2 MB	(Up to) DDR4-2400	Graphics UHD 610	Security leatures	<ul> <li>Security slot (in real Kensington<sup>®</sup> Micros</li> </ul>	ar for optional Saver® cable)	<ul> <li>Boot sequence</li> <li>Boot without key</li> </ul>	control yboard and mouse
	Pentium Gold G5400T	2/2	3.1G	4 MB	DDR4-2400	UHD 610		Chassis intrusion s		<ul> <li>Individual USB</li> </ul>	
	Pentium Gold G5500T	2/4	3.2G	4 MB	DDR4-2400	UHD 630		<ul> <li>Power-on passwore</li> </ul>	d	<ul> <li>Smart USB prot</li> </ul>	ection, allows keyboard/
	Core i3-8100T	4/4	3.1G	6 MB	DDR4-2400	UHD 630		<ul> <li>Administrator pass</li> </ul>		mouse only, blo	cks all storage devices
	Core i3-8300T	4/4	3.2G	8 MB	DDR4-2400	UHD 630		<ul> <li>Hard disk passwor</li> </ul>			
	Core i5-8400T	6/6	1.7G / 3.3G	9 MB	DDR4-2400	UHD 630	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black Some: Lenovo Traditional Keyboard (USB connector), black			
	Core i5-8500T	6/6	2.1G / 3.5G	9 MB	DDR4-2666	UHD 630		Some: Lenovo Tradi	ICK ISB receiver) black		
	Core i5-8600T	6/6	2.3G / 3.7G	9 MB	DDR4-2666	UHD 630	Mouse	Some: Lenovo Callio	ope Mouse (USB o	connector), black	
	Core i7-8700T	6/12	2.4G / 4.0G	12 MB	DDR4-2666	UHD 630		Some: Lenovo Finge	erprint Mouse (US	B connector), Wind	lows Hello support, black
	Core i3-9100T	4/4	3.1G / 3.7G	6 MB	DDR4-2400	UHD 630		Some: Lenovo Callio	ope Wireless Mou	se (2.4GHz via USE	B receiver), black
	Core i3-9300T	4/4	3.2G / 3.8G	8 MB	DDR4-2400	UHD 630	Mechanical	Tiny (1L), black color			
	Core i5-9400T	6/6	1.8G / 3.4G	9 MB	DDR4-2666	UHD 630		Toolless chassis op	pen (need optional	l toolless chassis so	crew)
	Core i5-9500T	6/6	2.2G / 3.7G	9 MB	DDR4-2666	UHD 630		<ul> <li>Toolless HDD, SSE</li> <li>Optional dust filter</li> </ul>	o, memory remova	l	
	Core i5-9600T	6/6	2.3G / 3.9G	9 MB	DDR4-2666	UHD 630			)/SSD. one PCIe 3	3.0 x8 slot (low-prof	ile), two M.2 slots (one
	Core i7-9700T	8/8	2.0G / 4.3G	12 MB	DDR4-2666	UHD 630					rd are mutually exclusive
	Core i9-9900T	8 / 16	2.1G / 4.4G	16 MB	DDR4-2666	UHD 630			Dimensior	ns (WxDxH)	Weight (Approx.)
Memory	32GB max, DDR4-26 dual-channel capable		260-pin SO-DIM	/I socke	ets, non-ECC,			Tiny only	7.0" X 7	.2" X 1.5" 3mm X 37mm	2.91 lb (1.32 kg), vary by config
	* System automaticall		down for the proc	essors	with lower memo	ory controller	-	With VESA mount &	7.42" X 7.5	30" X 2.48"	3.66 lb (1.66 kg),
Storage	Some: Hard Drive / S	SATA 6.00	Gb/s, 2.5", 5400 r	pm or 7	7200 rpm			ODD box		5.38mm X 63mm	vary by config
Ū	Some: Solid State Dr Some: M.2 SSD / PC * 128GB SSD M.2 (22	rive (SSD Cle NVMe 242) PCle	) / SATA 6.0Gb/s , PCIe 3.0 x 4*, 3 NVMe only sup	, 2.5" 82Gb/s ports P	Cle 3.0 x 2, 16Gt	o/s	VESA mount Floor Stand	Optional VESA mour Optional system floor	nt bracket kit, supp r stand for vertical	oorts VESA 75mm a orientation	and 100mm
Optical	Some: Intel Optane™ Some: DVD-ROM, sli Some: DVD Burner (	im (9.0mí	n), via USB exte	rnal OE	D box	,.	Power supply	Some: 65 watts AC/DC adapter, autosensing, 88% PSU Some: 90 watts AC/DC adapter, autosensing, 88% PSU Some: 135 watts AC/DC adapter, autosensing, 88% PSU			
Onboard SATA	One onboard SATA 6.	.0Gb/s co	nnector						•	0.	
Graphics	Intel HD Graphics 61 DisplayPort™, one HD						Limited warranty	Some: 1-year or 3-year, limited onsite service / service upgrades available			
	or USB 3.1 Type-C Ge Max resolution: 4096x	en1 with I	DisplayPort funct	ion), up	to 3 independen	t displays;	Preload	Preloaded operating Some: Windows <sup>®</sup> 1			
		k2160 (on	board HDMI)@2	4Hz; 20	048x1536 (VGA)@			Some: Windows 10 Home 64-bit Preloaded applications (only some listed)			
Monitor cable	Display with intel integ	grated gra	aphics), or DP to	HDMI -	1.4 dongle	(ior conage		Lenovo Vantage		,	
Chipset	Intel B360 Chipset		. ,		-			<ul> <li>Microsoft Office pr</li> </ul>			
· · · · · · · · · · · · · · · · · · ·	) one USB 3.1 Gen1 (A one microphone (3.5n						-	<ul> <li>purchase a product</li> <li>Cyberlink PowerD\</li> <li>Cyberlink Power20</li> </ul>	/D (only for model		RW)
Rear ports* (Std.)	) 2x USB 3.1 Gen2, 2x	USB 3.1	Gen1, 1x ethern	et (RJ-4	45), 1x DisplayPo	rt, 1x HDMI		LinkedIn			
Rear ports* (Opt.	) Two optional ports (m 2nd HDMI / serial / US	utually ex SB 3.1 Ty	clusive with PCI pe-C Gen 1 with	e card): DP fun	Port 1 for VGA / ction); Port 2 for s	2nd DP / serial;	Environment	ENERGY STAR® 7.0 TUV ultra low noise v			
	Optional ports via PC PCIe x1 * Depending on many fac					• /	MIL-SPEC test	MIL-STD-810G milita	ary certification (Lo	ow Pressure [Altitud	de], High Temperature, d Dust, Vibration, Shock,
Audio support	Realtek ALC233VB2	-				suodi speeu		Fungus, Solar Radia			, , ,
WLAN	Some: 11ac wireless,			`	,		Accessories	For compatible acces	ssories, please go	to http://smartfind	d.lenovo.com
	Wi-Fi + Blueto Some: 11ac wireless	ooth 4.2 c s, M.2 Car	ombo adapter, 1 d, Realtek RTL8	x1 822BE							
	Wi-Fi + Blueto Some: 11ac wireless	ooth 4.2 c , M.2 Car	ombo adapter, 2 d, Intel Dual Bar	x2 d Wirel							
	Some: 11ac wireless	s, M.2 Car		d Wirel	ess-AC 8265,						
Bluetooth	Wi-Fi + Blueto Some: Bluetooth 4.2	ooth 4.2 c	ombo adapter, 2	х2 .Fi <sub>+</sub> вт	combo adapter						
Ethernet (Opt.)	Gigabit ethernet, Intel Some: Intel Ethernet	I Ethernet	Connection I219	9-V (Ja	cksonville), Wake						
( <b>O</b> p)		20.10171		. g		-,	1				













# ThinkCentre M75q-1 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Athlon PRO or	r Ryzen	3 / 5 PRO se	ries proces	sor		Security features	Security slot (in rear for optional     Hard disk password				
	Processor	Cores / Threads	Frequency Base/Max	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics		<ul> <li>Smart USB protection, allows keyboard/ mouse only, blocks all storage devices</li> </ul>	<ul> <li>Boot sequence control</li> <li>Boot without keyboard and mouse</li> <li>Individual USB port disablement</li> </ul>			
	Athlon PRO 200GE	2/4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3		<ul> <li>Power-on password</li> </ul>	<ul> <li>Chassis intrusion switch</li> </ul>			
	Athlon PRO 300GE	2/4	3.4 GHz	1 MB / 4MB		Radeon Vega 3		Administrator password				
	Ryzen 3 PRO 2200GE	4/4	3.2 / 3.6 GHz	2 MB / 4MB		Radeon Vega 8	Keyboard	Some: Lenovo Traditional Keyboard (USB				
	Ryzen 5 PRO 2400GE	4/8	3.2 / 3.8 GHz		DDR4-2933	Radeon Vega 11	Mouse	Some: Lenovo Calliope Wireless Keyboard Some: Lenovo Calliope Mouse (USB conn	D (2.4GHZ VIA USB receiver), black			
	Ryzen 3 PRO 3200GE		3.3 / 3.8 GHz		DDR4-2933	Radeon Vega 8		Some: Lenovo Fingerprint Mouse (USB co	onnector), Windows Hello support, black			
	Ryzen 5 PRO 3400GE	4/8	3.3 / 4.0 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 11		(only available via special bid mode				
Memory	32GB max, DDR4-2 * System board suppo DDR4-1866, DDR4-21	rts up to	DDR4-2666 m	emory, and m	emory may cl	ocks down to	Mechanical	<ul> <li>Toolless chassis open (need optional toolless chassis screw)</li> </ul>				
Disk	Some: Hard Drive /							<ul> <li>Toolless HDD, SSD, memory removal</li> <li>Optional dust filter</li> </ul>				
Optical	Some: M.2 SSD (2242 / 2280) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4 Some: DVD-ROM, 9.0mm high, via USB external ODD box Some: DVD±RW, 9.0mm high, via USB external ODD box							M75q Tiny only: 7.0" W X 7.2" D X 1.5" H				
Onboard SATA		TA 6.0Gb/s connector on system board						179mm W X 183mm D X 37mm H 2.91 lb (1.32 kg), weight may vary by config	nuration			
Graphics	AMD Radeon <sup>™</sup> Gra DisplayPort <sup>™</sup> , one H 3 independent displ when using HDMI p support 2 displays); Max resolution: 409 192	HDMI, oi ays (sup ort or D 6x2160	ne optional poports maxim P to DVI/HDN	ort (VGA, 2r um of 2 con /I dongles, 3 4096x2160	nd DP, or 2n current HDI and Athlon /	d HDMI), supports MI/DVI displays Athlon PRO only	VESA mount Floor Stand	With VESA mount & ODD box: 7.42" W X 7.30" D X 2.48" H 188.4mm W X 185.38mm D X 63mm H 3.66 lb (1.66 kg), weight may vary by configuration Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation Some 65 wetto adapter outcompany 88% (PSLL (not included for TIO models)				
Monitor cable	Optional DP to VGA HDMI 1.4 dongle				to dual DP	dongle, or DP to	Power supply	Some: 65 watts adapter, autosensing, 88% PSU (not included for TIO models) Some: 135 watts adapter, autosensing, 88% PSU (not included for TIO models)				
Chipset	AMD B300 Chipset	t					Limited warranty	1-year or 3-year, limited onsite service / ser	rvice upgrades available			
Rear ports* (Std.	.) one USB 3.1 Gen1 one microphone (3.1 ) 1x USB 3.1 Gen1, 3 .) Two optional ports: 1 * Depending on many	Šmm), o 8x USB 2 Port 1 fo	one headphor 2.0, 1x etherr or VGA / 2nd	ne / microph net (RJ-45), DP / 2nd HE	one combo 1x DisplayF )MI / serial;	jack (3.5mm) ort, 1x HDMI Port 2 for serial;	Preload	Preloaded operating system Some: Windows® 10 Pro 64-bit Some: Windows 10 Home 64-bit Some: Windows 10 IoT Enterprise Some: Linux Ubuntu				
Audio support	High Definition (HD)	,				( )	Environment	ng* (*Not for non-OS models); verified				
WLAN	Some: 11ac wireles	etooth 5. ss, M.2	.0 combo ada	apter, 2x2 mm Atheros		,,	MIL-SPEC test	MIL-STD-810H military certification (Low P Low Temperature, Temperature Shock, Hur Fungus, Solar Radiation)	ressure [Altitude], High Temperature, nidity, Sand and Dust, Vibration, Shock,			
Bluetooth Ethernet	<ul> <li>Some: 11ac wireless, M.2 Card, Intel Wireless-AC 9260 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2</li> <li>Some: Bluetooth 4.2 / 5.0 wireless, integrated in Wi-Fi + BT combo adapter Gigabit ethernet, Realtek RTL8111EPV-CG, Wake on LAN<sup>®</sup></li> </ul>						Accessories	For compatible accessories, please go to h	ttp://smartfind.lenovo.com			
Manageability Security chip	DASH 1.0/1.1 Discrete TPM 2.0, TCG Certified											

Note: The specifications above may not be available in all regions.

Lenovo, March 2020













# ThinkCentre M910 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 6/7th Generation Intel Core™ i3 / i5 / i7 Process		S • Security slot (in rear for optional Kappington® MigroSpage® apple)     Administrator password				
	Processor         Cores / Threads         Frequency Base/Max(GHz)         Cache         Memory Support (Up to)         Integrated Graphics		<ul> <li>Kensington® MicroSaver® cable)</li> <li>Smart USB protection, allows keyboard/ mouse only, blocks all storage devices</li> <li>Hard disk password</li> <li>Boot sequence control</li> <li>Boot without keyboard and mouse</li> </ul>				
	Core i5-6500T         4 / 4         2.5G / 3.1G         6 MB         DDR4-2133         HD 530		Power-on password     Individual USB port disablement				
	Core i7-6700T         4 / 8         2.8G / 3.6G         8 MB         DDR4-2133         HD 530		Chassis intrusion switch				
	Core i5-7500T         4 / 4         2.7G / 3.3G         6 MB         DDR4-2400         HD 630	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black				
	Core i5-7600T         4 / 4         2.8G / 3.7G         6 MB         DDR4-2400         HD 630		Some: Lenovo Traditional Keyboard (USB connector), black				
	Core i7-7700T         4 / 8         2.9G / 3.8G         8 MB         DDR4-2400         HD 630	Mouse	Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black				
Memory	32GB max, DDR4-2400*, two 260-pin SO-DIMM sockets, non-ECC, dual-channel capable * System automatically clocks down for the processors with lower memory control		Some: Lenovo Calliope Mouse (USB connector), black Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black Tiny (1L), black color; metal case				
Storage	Some: Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm, APS Some: Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" Some: M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s Some: Intel Optane™ Memory (models with 7th gen Core processor), M.2		<ul> <li>Toolless chassis open</li> <li>Toolless HDD, SSD, memory removal</li> <li>Optional toolless chassis screw</li> <li>Optional dust filter</li> </ul>				
Optical	Some: DVD-ROM, slim (9.0mm), via USB external ODD box		Dimensions (WxDxH) Weight (Approx.)				
Onboard SATA Media reader	Some: DVD Burner (DVD±RW), slim (9.0mm), via USB external ODD box One onboard SATA 6.0Gb/s connector None		M910 Tiny only 7.05" X 7.20" X 1.36" 2.91 lb (1.32 kg), 179mm X 182.9mm X 34.5mm vary by config				
Graphics	Intel HD Graphics 510/530/610/630 in processor, uses main memory, DirectX <sup>®</sup> 1 two DisplayPort™, one optional video port (HDMI, VGA, 3rd DP, or USB 3.1 Type-0		With VESA mount &         7.42" X 7.30" X 2.48"         3.66 lb (1.66 kg), vary by config           ODD box         188.4mm X 185.38mm X 63mm         vary by config				
	with DisplayPort Alternate Mode), up to 3 independent displays; Max resolution: 4096x2304 (DP)@60Hz: 4096x2304 (Tvpe-C)@60Hz:		With VESA mount &         7.42" X 7.30" X 2.62"         3.66 lb (1.66 kg), vary by config           I/O box         188.4mm X 185.38mm X 66.6mm         vary by config				
Monitor cable	4096x2160 (HDMI)@24Hz; 1920x1200 (VGA)@60Hz Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4	VII 1.4 VESA mount Floor Stand Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation					
Chipset	Intel Q270 Chipset	Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models)				
Front ports*	Two USB 3.1 Gen1 (one is Always On and fast charge), one microphone (3.5mm)		90 watts AC/DC adapter, autosensing, 88% PSU (only for models with I/O box)				
Rear ports*	one headphone / microphone combo jack (3.5mm) Four USB 3.1 Gen1 (optional external optical box or external I/O box occupies one or two specific USB 3.1 Gen1 on some models), ethernet (RJ-45), two DisplayPor	, , , , , , , , , , , , , , , , , , ,	<ul> <li><sup>3</sup> Some: 1-year or 3-year, depot service / service upgrades available</li> <li>Some: 1-year or 3-year, limited onsite service / service upgrades available</li> </ul>				
I/O box*	two optional ports (Port 1 for VGA / 3rd DP / HDMI / serial / USB 3.1 Type-C Gen (with DisplayPort Alternate Mode), Port 2 for serial) Optional external I/O box, extends two USB 2.0, two USB 3.1 Gen1, and one seria on rear, two USB 2.0 on front, via USB cable (occupy two specific USB 3.1 Gen1 Tiny) * Depending on many factors, actual data transfer speed may be lower than theoretical speed	l Preload al of	Some:Windows® 7 Professional 32/64Preloaded applications (only somepreinstalled through downgradelisted)rights in Windows 10 Pro 64-bit processor)• Microsoft Office preloaded; purchase a product key to activate Only for Windows 10 Pro 64-bitSome:Windows 10 Pro 64-bit undows 10 Pro 64-bit				
Audio support	High Definition (HD) Audio, Realtek ALC294 / optional internal speaker (1w or 2w)		Some: Windows 10 Home 64-bit   Intel Unite download link				
WLAN <sup>13</sup>	<ul> <li>Some: 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377A (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 1x1</li> <li>Some: 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2</li> <li>Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.2 combo adapter, 1x1</li> <li>Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2</li> <li>Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2</li> <li>Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265,</li> </ul>		<ul> <li>(vPro models only)</li> <li>Only for Window 7</li> <li>Lenovo Solution Center</li> <li>Lenovo ThinkVantage Tools</li> <li>Create Recovery Media</li> <li>Adobe<sup>®</sup> Reader<sup>®</sup></li> <li>Cyberlink PowerDVD Create (DVD±RW)</li> <li>Intel Unite (vPro models only)</li> </ul>				
	Wi-Fi + Bluetooth 4.2 combo adapter, Intel vPro technology support, 2x2	Environment	ENERGY STAR <sup>®</sup> 6.1, EPEAT <sup>™</sup> Gold rating (North America),				
Bluetooth™	Some: Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter		ErP Lot 3, GREENGUARD <sup>®</sup> , RoHS-compliant, TUV low noise verified (on some models)				
Ethernet	* Hardware supports BT 4.2, but Win10 RS3 and earlier only supports BT 4.1 Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN®						
Manageability	Intel Active Management Technology 11.0 (Intel AMT 11.0); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi	MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)				
Security chip	adapter to enable vPro function through wireless connection) TPM (Trusted Platform Module) 2.0*, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS	Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com				
Cas fastratas far	Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS						

See footnotes for more detailed information

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#### ThinkCentre M920 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel F	Pentium®,	or 8th / 9th Gen	Intel Co	ore™ i3 / i5 / i7 / i	i9 Processor	Bluetooth	Some: Bluetooth 4.2/5.0 wireless, integrated in Wi-Fi + BT combo adapter Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN® Some: Intel Ethernet Server Adapter I350-T4, gigabit ethernet, 4x RJ-45, PCIe x4				
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Ethernet Ethernet (Opt.)					
	Celeron G4900T	2/2	2.9G	2 MB	DDR4-2400	UHD 610	Manageability	Intel Active Management Technology 12 (Intel AMT 12);				
	Celeron G4930T	2/2	3.0G	2 MB	DDR4-2400	UHD 610		Intel vPro technology on some models (require choosing a vPro-support Wi-Fi				
	Pentium Gold G5400T	2/4	3.1G	4 MB	DDR4-2400	UHD 610	Security chip	adapter to enable vPro function through wireless connection) Discrete TPM 2.0, TCG Certified				
	Pentium Gold G5500T	2/4	3.2G	4 MB	DDR4-2400	UHD 630	Security features	Security slot (in rear for optional     Boot sequence control				
	Pentium Gold G5600T	2/4	3.3G	4 MB	DDR4-2400	UHD 630	,	Kensington® MicroSaver® cable) • Boot without keyboard and mouse				
	Pentium Gold G5420T	2/4	3.2G	4 MB	DDR4-2400	UHD 610		Chassis intrusion switch     Individual USB port disablement				
	Core i3-8100T	4 / 4	3.1G	6 MB	DDR4-2400	UHD 630		Power-on password     Smart USB protection, allows keyboard/				
	Core i3-8300T	4 / 4	3.2G	8 MB	DDR4-2400	UHD 630		Administrator password mouse only, blocks all storage devices				
	Core i5-8400T	6/6	1.7G / 3.3G	9 MB	DDR4-2666	UHD 630		Hard disk password				
	Core i5-8500T	6/6	2.1G / 3.5G	9 MB	DDR4-2666	UHD 630	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black Some: Lenovo Traditional Keyboard (USB connector), black				
	Core i5-8600T	6/6	2.3G / 3.7G	9 MB	DDR4-2666	UHD 630		Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black				
	Core i7-8700T	6 / 12	2.4G / 4.0G	12 MB	DDR4-2666	UHD 630	Mouse	Some: Lenovo Calliope Mouse (USB connector), black				
	Core i3-9100T	4/4	3.1G / 3.7G	6 MB	DDR4-2400	UHD 630		Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black				
	Core i3-9300T	4/4	3.2G / 3.8G	8 MB	DDR4-2400	UHD 630		Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black				
	Core i5-9400T	6/6	1.8G / 3.4G	9 MB	DDR4-2666	UHD 630	Mechanical	Tiny (1L), black color; metal case				
	Core i5-9500T	6/6	2.2G / 3.7G	9 MB	DDR4-2666	UHD 630		Toolless chassis open (need optional toolless chassis screw)				
	Core i5-9600T	6/6	2.3G / 3.9G	9 MB	DDR4-2666	UHD 630		<ul> <li>Toolless HDD, SSD, memory removal</li> <li>Optional dust filter</li> </ul>				
	Core i7-9700T	8/8	2.0G / 4.3G	12 MB	DDR4-2666	UHD 630		one 2.5" bay for HDD/SSD, one PCIe 3.0 x8 slot (low-profile), two M.2 slots (one				
	Core i9-9900T	8/16	2.1G / 4.4G	16 MB	DDR4-2666	UHD 630		for WLAN, one for M.2 SSD), 2.5" HDD/SSD and PCIe card are mutually exclusive				
Memory	32GB max, DDR4-2666*, two 260-pin SO-DIMM sockets, dual-channel capable * System automatically clocks down for the processors with lower memory controlle						r	Dimensions (WxDxH)         Weight (Approx.)           Tiny only         7.0" X 7.2" X 1.5"         2.91 lb (1.32 kg),				
Storage	Some: Hard Drive / S				200 rpm			179mm X 183mm X 37mm vary by config				
	Some: Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 4*, 32Gb/s * 128GB SSD M.2 (2242) PCIe NVMe only supports PCIe 3.0 x 2, 16Gb/s Some: Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2						With VESA mount &         7.42" X 7.30" X 2.48"         3.66 lb (1.66 kg), vary by config           ODD box         188.4mm X 185.38mm X 63mm         vary by config					
Optical						or), M.2	VESA mount Floor Stand	Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation				
Onboard SATA	One onboard SATA 6.	0Gb/s co	nnector	114 000		, on	Power supply	Some: 65 watts AC/DC adapter, autosensing, 88% PSU				
Graphics	Intel HD Graphics 61 DisplayPort™, one HD	MI, one o	ptional video po	rt (2nd I	HDMÍ, VGA, 2nd	I DP,		Some: 90 watts AC/DC adapter, autosensing, 88% PSU Some: 135 watts AC/DC adapter, autosensing, 88% PSU				
	or USB 3.1 Type-C Ge Max resolution: 4096x	2304 (DF	9)@60Hz; 4096x	2304 (Ty			Limited warranty	Some: 1-year or 3-year, limited onsite service / service upgrades available				
Monitor cable	Optional DP to VGA d Display with intel integ	ongle, DF	o to DVI-D dongle	e, DP to	dual DP dongle		Preload	Preloaded operating system Some: Windows® 10 Pro 64-bit				
Chipset	Intel Q370 Chipset	,					-	Some: Windows 10 Home 64-bit Preloaded applications (only some listed)				
· · · · · · · · · · · · · · · · · · ·	one USB 3.1 Gen1 (A		and fact charge			Con 1	-	Lenovo Vantage				
FIONE POLIS (Sid.)	one microphone (3.5n							Microsoft Office preloaded;				
	2x USB 3.1 Gen2, 2x	UŚB 3.1	Gen1, 1x ethern	et (RJ-4	5), 1x DisplayPo	ort, 1x HDMI		purchase a product key to activate				
Rear ports (Opt.)	Two optional ports (m	utually ex	clusive with PCI	e càrd):	Port 1 for VGA /	2nd DP /		<ul> <li>Cyberlink PowerDVD (only for models with DVD / DVD±RW)</li> <li>Cyberlink Power2GO (only for models with DVD±RW)</li> </ul>				
	2nd HDMI / serial / US							LinkedIn				
	Optional ports via PCI PCIe x1, 1x Thunderb							<ul> <li>Intel Unite (Machine Type 10V8 models only)</li> </ul>				
	* Depending on many fac						Environment	ENERGY STAR <sup>®</sup> 7.0, EPEAT <sup>™</sup> Gold rating (with 135W adapter) or EPEAT <sup>™</sup> Silver				
Audio support	Realtek ALC233VB2 /		•					rating (with 65W/90W adapter), ErP Lot 3, TCO, TUV ultra low noise verified (on				
WLAN	Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),				dual band),		MIL-SPEC test	some models), RoHS-compliant				
	Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 Some: 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2						MIL-SPEC lesi	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)				
	Some: 11ac wireless	, M.2 Car	d, Intel Dual Bar	nd Wirele	ess-AC 3165,		Accessories	For compatible accessories, please go to http://smartfind.lenovo.com				
	Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 Some: 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, Intel vPro technology support, 2x2											
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#### ThinkCentre M920x Tiny Platform Specifications

Processor
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Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Intel Pen	itium®, or 8	th / 9th Gen Intel C	ore™ i3 /	i5 / i7 / i9 Process	or		4x Mini DisplayPort, up to 4 independent displays, works along with				
	Processor	Cores /		Cache	Memory Support	Integrated		onboard DP and HDMI to support up to 6 independent displays; Max resolution: 5120x2880@60Hz ((up to 2 Mini DisplayPort);				
		Threads	Base/Max(GHz)		(Up to)	Graphics		4096x2160@60Hz ((up to 4 Mini DisplayPort)				
	Celeron G4900	2/2	3.1G	2 MB	DDR4-2400	UHD 610	Manitar aphla	Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle (for Collage Display				
	Celeron G4920	2/2	3.2G	2 MB	DDR4-2400	UHD 610	Monitor cable	with intel integrated graphics), or DP to HDMI 1.4 dongle, Mini DP to DP				
	Celeron G4930	2/2 2/2	3.2G 3.3G	2 MB 2 MB	DDR4-2400	UHD 610	Chipset	Intel Q370 Chipset				
	Celeron G4950		3.3G 3.7G		DDR4-2400	UHD 610 UHD 610	Front ports (Std.)*	one USB 3.1 Gen1 (Always On and fast charge), one USB 3.1 Type-C Gen 1,				
	Pentium Gold G5400 Pentium Gold G5500	2/4 2/4	3.7G	4 MB 4 MB	DDR4-2400 DDR4-2400	UHD 630	Rear ports (Std.)*	one microphone (3.5mm), one headphone / microphone combo jack (3.5mm) 2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x ethernet (RJ-45), 1x DP, 1x HDMI				
	Pentium Gold G5600	2/4	3.9G	4 MB	DDR4-2400 DDR4-2400	UHD 630	Rear ports (Opt.)*	Two optional ports (mutually exclusive with PCIe card): Port 1 for VGA / 2nd DP / 2nd HDM				
		2/4	3.8G	4 MB	DDR4-2400 DDR4-2400	UHD 610		serial / USB 3.1 Type-C Gen 1 with DP function); Port 2 for serial; Optional ports via PCIe card: 2x USB 3.1 Gen1 via PCIe x1, 4x serial (9-pin) via PCIe x1, 1:				
	Pentium Gold G5420 Pentium Gold G5620	2/4	4.0G	4 MB	DDR4-2400 DDR4-2400	UHD 630		Thunderbolt 3 (combo USB3.1 Type-C Gen 2 / DP) via PCle x4				
	Core i3-8100	4/4	3.6G	6 MB	DDR4-2400	UHD 630		* Depending on many factors, actual data transfer speed may be lower than theoretical spee				
	Core i3-8300	4/4	3.7G	8 MB	DDR4-2400	UHD 630	Audio support	Realtek ALC233VB2 / optional internal speaker (1.5 watt or 2 watt)				
	Core i5-8400	6/6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	WLAN	Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8821CE (dual band), 1x1				
	Core i5-8500	6/6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630		Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8822BE (dual band), 2x2				
	Core i5-8600	6/6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630		Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 3165, 1x1 Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 8265, 2x2				
	Core i7-8700	6/12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630		Some: 11ac Wi-Fi + BT 5.0, M.2 Card, Intel Wireless-AC 9560 (dual band),				
	Core i3-9100	4/4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	Bluetooth	Intel vPro technology support, 2x2 Some: Bluetooth 4.2/5.0 wireless, integrated in Wi-Fi + BT combo adapter				
	Core i3-9300	4/4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	Ethernet	Gigabit ethernet. Intel Ethernet Connection I219-LM(Jacksonville). Wake on LAN®				
	Core i3-9320	4/4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630	Ethernet (Opt.)	Some: Intel Ethernet Server Adapter I350-T4, gigabit ethernet, 4x RJ-45, PCIe x4				
	Core i5-9400	6/6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Manageability	Intel Active Management Technology 12 (Intel AMT 12);				
	Core i5-9500	6/6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630		Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection)				
	Core i5-9600	6/6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Security chip	Discrete TPM 2.0, TCG Certified				
	Celeron G4900T	2/2	2.9G	2 MB	DDR4-2400	UHD 610	Security features	Security slot (in rear for optional     Boot sequence control				
	Celeron G4930T	2/2	3.0G	2 MB	DDR4-2400	UHD 610		Kensington® MicroSaver® cable)     Boot without keyboard and mouse				
	Pentium Gold G5400T	2/4	3.1G	4 MB	DDR4-2400	UHD 610		Chassis intrusion switch     Power-on password     Smart USB protection, allows keyboard/				
	Pentium Gold G5500T	2/4	3.2G	4 MB	DDR4-2400	UHD 630		Administrator password     mouse only, blocks all storage devices				
	Pentium Gold G5600T	2/4	3.3G	4 MB	DDR4-2400	UHD 630		Hard disk password				
	Pentium Gold G5420T	2/4	3.2G	4 MB	DDR4-2400	UHD 610	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black				
	Core i3-8100T	4/4	3.1G	6 MB	DDR4-2400	UHD 630		Some: Lenovo Traditional Keyboard (USB connector), black Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black				
	Core i3-8300T	4/4	3.2G	8 MB	DDR4-2400	UHD 630	Mouse	Some: Lenovo Calliope Mouse (USB connector), black				
	Core i5-8400T	6/6	1.7G / 3.3G	9 MB	DDR4-2666	UHD 630		Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black				
	Core i5-8500T	6/6	2.1G / 3.5G	9 MB	DDR4-2666	UHD 630						
	Core i5-8600T	6/6	2.3G / 3.7G	9 MB	DDR4-2666	UHD 630	Mechanical	Tiny (1L), black color; metal case • Toolless chassis open (need optional toolless chassis screw)				
	Core i7-8700T	6/12	2.4G / 4.0G	12 MB	DDR4-2666	UHD 630		Toolless HDD, SSD, memory removal				
	Core i3-9100T	4/4	3.1G / 3.7G	6 MB	DDR4-2400	UHD 630		• Optional dust filter				
	Core i3-9300T	4/4	3.2G / 3.8G	8 MB	DDR4-2400	UHD 630		one 2.5" bay for HDD/SSD, one PCIe 3.0 x8 slot (low-profile), three M.2 slots (one for WLAN two for M.2 SSD), 2.5" HDD/SSD and PCIe card are mutually exclusive				
	Core i5-9400T	6/6	1.8G / 3.4G	9 MB	DDR4-2666	UHD 630						
	Core i5-9500T	6/6	2.2G / 3.7G	9 MB	DDR4-2666	UHD 630		Dimensions (WxDxH) Weight (Approx.)				
	Core i5-9600T	6/6	2.3G / 3.9G	9 MB	DDR4-2666	UHD 630		Tiny only         7.0" X 7.2" X 1.5"         2.91 lb (1.32 kg), 179mm X 183mm X 37mm				
	Core i7-9700T	8/8	2.0G / 4.3G	12 MB	DDR4-2666	UHD 630		With VESA mount &         7.42" X 7.30" X 2.48"         3.66 lb (1.66 kg),				
	Core i9-9900T	8/16	2.1G / 4.4G	16 MB	DDR4-2666	UHD 630	J	ODD box 188.4mm X 185.38mm X 63mm vary by config				
Memory	32GB max, DDR4-2666* * System automatically cl					er	VESA mount Floor Stand	Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation				
Storage			, 2.5", 5400 rpm or	7200 rpi	n		-	135 watts AC/DC adapter, autosensing, 88% PSU				
	Some: Solid State Drive Some: M.2 SSD (support	e (SSD) / S ort up to tw	SATA 6.0Gb/s, 2.5" to M.2 SSD) / PCle	NVMe, F	PCle 3.0 x 4*, 32Gl	o/s,	Power supply Limited warranty					
	RAID 0/1 suppo	rt (RAID p	reset only available	via spec	ial bid model)			Some: 1-year or 3-year, depot service / service upgrades available Some: 1-year or 3-year, limited onsite service / service upgrades available				
	* 128GB SSD M.2 (2242) Some: Intel Ontane™ M	) PCIe NVI Jemory (no	Vie only supports P	Cle 3.0 x / Pentium	2, 16Gb/s Processor) M 2		Preload					
Optical	Some: DVD-ROM, slim	* 128GB SSD M.2 (2242) PCIe NVMe only supports PCIe 3.0 x 2, 16Gb/s Some: Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2 Some: DVD-ROM, slim (9.0mm), via USB external ODD box					- Tolouu	Some: Windows® 10 Pro 64-bit Some: Windows 10 Home 64-bit				
Onboard SATA	Some: DVD Burner (DV One onboard SATA 6.0G	/D±RW), s b/s connec	lim (9.0mm), via US tor	SB exterr	nal ODD box		Environment	ENERGY STAR <sup>®</sup> 7.0, EPEAT <sup>™</sup> Gold rating (North America), ErP Lot 3, TCO, TUV ultra low noise verified (coming soon, on some models), RoHS-compliant				
Graphics	Intel HD Graphics 610/6 one HDMI, one optional or USB 3.1 Type-C Gen1 Max resolution:c4096x23	video port with Displ	(2nd HDMI, VGA, 2 ayPort function), up 60Hz: 4096x2304 (	nd DP, to 3 ind Type-C)	ependent displays; ୭୦୦୫୦		MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)				
	4096x2 Some: AMD Radeon™	2160 (onbo	ard HDMI)@24Hz	2048x15	536 (VGA)@50Hz		Accessories	For compatible accessories, please go to http://smartfind.lenovo.com				



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#### ThinkSmart Edition Tiny M920q for Zoom Rooms Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel <sup>®</sup> 9th Gen Core™	<sup>™</sup> i7 Proces	sor				Keyboard	Lenovo Traditional Keyboard (USB connector), black				
	Processor	Cores /	Frequency	Cache	Memory Support	Integrated	Mouse	Lenovo Calliope Mouse (USB connector), black				
	Core i7-9700T	Threads 8 / 8	Base/Max(GHz) 2.0G / 4.3G	12 MB	(Up to) DDR4-2666	Graphics UHD 630	Mechanical	Tiny (1L), black cold	or; metal case			
							]		Dimensions (WxDxH)	Weight (Approx.)		
Memory	16GB (8GB x 2) DDF	,			,		_	Tiny only	7.05" X 7.20" X 1.36"	2.91 lb (1.32 kg),		
Storage Optical	128GB SSD M.2 (22 None	42) PCIe N	IVMe only supp	orts PC	e 3.0 x 2, 16Gb/s	S			179mm X 182.9mm X 34.5mm	vary by config		
Onboard SATA	One onboard SATA 6	6.0Gb/s cor	nnector				VESA mount	VESA mount bracke	et kit, supports VESA 75mm and 100r	nm		
Graphics	Intel HD Graphics 6						Floor Stand	, ,	or stand for vertical orientation			
	DisplayPort <sup>™</sup> , one H up to 3 independent		ard), one 2nd H	DMI (int	ernal DP to HDN	ll dongle),	Power supply	135 watts AC/DC ac	dapter, autosensing, 88% PSU			
	Max resolution: 4096		)@60Hz·4096x	2160 (0	nboard HDMI)@	24Hz	Limited warranty	3-year, limited ons	ite service with premier support / s	service upgrades availabl		
Monitor cable	None	M2001 (B1	, , , , , , , , , , , , , , , , , , , ,	2100 (0			Preload	Preloaded operating				
Chipset	Intel Q370 Chipset						Environment	Windows® 10 IoT Enterprise with Zoom Rooms preload				
Front ports (Std.)	* one USB 3.1 Gen1 (	one USB 3.1 Gen1 (Always On and fast charge), one USB 3.1 Type-C Gen 1,						ENERGY STAR <sup>®</sup> 7.0, EPEAT <sup>™</sup> Silver rating, ErP Lot 3, TCO, TUV ultra low noise verified (on some models), RoHS-compliant				
Rear ports (Std.)	one microphone (3.5mm), one headphone / microphone combo jack (3.5mm) 2 x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x ethernet (RJ-45), 1x DisplayPort, 2x HDM * Depending on many factors, actual data transfer speed may be lower than theoretical speed						MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Sho				
Audio support	Realtek ALC233VB2	2 / optional i	internal speaker	<sup>.</sup> (1.5 wa	tt or 2 watt)		1	Fungus, Solar Radiation)				
WLAN	11ac wireless, M.2 C combo adapter, Intel				band), Wi-Fi + Bl	uetooth 5.0	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com				
Bluetooth Ethernet	Bluetooth 5.0 wireles Gigabit ethernet, Inte					e on LAN®						
Manageability Security chip	Intel Active Manager Intel vPro technology adapter to enable vP Discrete TPM 2.0, TC	y on some r Pro function	models (require through wireles	choosir	g a vPro-suppor	t Wi-Fi						
Securitý features												

Note: The specifications above may not be available in all regions.

Lenovo, January 2020













# ThinkCentre Tiny-in-One (TIO) 22 Gen3

Product Specifications Reference (PSREF)

Model	Non-touch model: Touch model:	10R1PAR1++/10R1PA 10R0PAR1++/10R0PA		Мо	ounting features	Wall or desk mounting using the extend arm or third-party accessories meeting the VESA FPMPMI® (100mm mount)					
Form factor			ence when optional Tiny slots into	Ad	justable stand	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.3" (110mm);					
Compatible Tiny:	the back of TIO, clean cabling and effortless setup P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e /					<i>swivel:</i> +/-45°;					
Compatible Titly.	M625 / M600 / M75	5a / M715 / M93/p* / M	83 / M73* / M53 /Chromebox Tinv	-		Pivot: clockwise 0° to 90°					
	* Non-TIO models	can't be turned on by p	ressing power button of TIO		wer supply wer consumption	90 watts AC/DC adapter, 88% PSU, univ 19 watts typical, 32 watts maximum, <0.5		suspend			
Panel	TFT-LCD, In-Plane	Switching technology*	*, White LED backlight A, PLS, and IPS panels	Limited warranty <b>3-years</b> , Customer Carry-In or Mail-In via Rapid Replacement Service							
Viewable image size	21.5" (546.1mm) di	iagonal		VE	SA-compliant						
Max view area (W x H) Bezel Width	18.74" x 10.54" / 47 Top / Side: 2mm, B	76.1mm x 267.8mm			gonomics hission standards	d					
Native resolution	1920x1080	0110111. 22. 111111			vironmental	FCC Class B TCO 7.0, TCO Edge 2.0, WEEE, RoHS,	ENERGY STAR	® 7.0,			
Multi-touch		nulti-touch, supports W	ake on Touch	1.0/1	ndowo portificationa	EPEAT™ Silver rating, ULE Gold, TUV, V	OC				
Aspect ratio Pixel pitch (mm)	16:9 0.24795mm				ndows certifications						
Dot/Pixel pèr Inch	102.4 dpi			Sn	ip group	TIO (Monitor), detachable stand, AC/DC guide and driver CD, guick start and safe		bower cord, user's			
Brightness Contrast ratio	250 nits or cd/m <sup>2</sup> (t 1000:1 (typical)	ypicai)		Ac	cessories	For compatible accessories, please go to	5 1	oquickpick.com			
Pixel response time	14ms (default), ove	er drive to 4ms, 6ms									
Color gamut Anti-reflective	72% Anti-glare			r		ThinkCentre Tiny-in-One 22 Gen3 Comp	atible list				
Viewing angle at 10:1 CF		ontal, 178° (+/- 89°) ve	ertical		Model	P330 / P320 / M920(x) / M720 / M910(x) /	M93/p Tiny,	Chromebox			
Preset resolutions	640x350 @ 70Hz				Widder	M710 / M900(x) / M700 / M630e / M625 /	M73 Tiny	Childhicbox			
	640x480 @ 60Hz, 720x400 @ 70Hz	66Hz, 72Hz, 75Hz				M600 / M75q / M715 / M83 / M53 Tiny					
	800x600 @ 60Hz,					M90n Nano (with TIO kit)					
	1024x768 @ 60Hz	, 70Hz, 75Hz			Turn on TIO and			Notourport			
	1152x864 @75Hz 1280x800 @ 60Hz				Tiny together via Alt + P on USB KB	All models	All models	Not support			
	1280x1024 @ 60H				Turn on TIO and						
	1366x768 @ 60Hz 1440x900 @ 60Hz, 75Hz				Tiny together via	All models	TIO models	All models			
	1600x1200 @ 60H	z, 70Hz, 75Hz			TIO Power Button						
	1680x1050 @ 60H 1920x1080 @ 60H										
Presets / user settings	Presets: 25; user se										
On screen display		with digital user contro									
Control features	Ftont: Exit buttor Bight / Bri	n, Left / Mode-switchin ahtness button. Enter	g button (TIO / monitor mode), / Menu button, Power button								
	Bottom: Volume up	o button, Volume down	button								
Tiny-in-One Power On	Pressing Alt + P or	keyboard or pressing O and Tiny (only some	Power button positioned on TIO								
Side ports (TIO)	One USB 3.1 Gen1	I / USB 2.0 (when M73	Tiny support, see compatible list) or M53 installed or USB 2.0								
	connected via USB	B upstream port)	en a Tiny is istalled or a PC is								
	connected	via USB upstream por									
Side ports (Tiny) Rear ports	Side ports offered I	by installed Tiny (option	nal) am port, one power connector								
3-in-1 Cable	Undetachable 3-in-	1 cable (Power connect	ter, USB [supports USB 3.1 Gen1								
0	/ USB 2.0], Display	Port), only for connect	ng to Tiny installed (optional)								
Camera Internal Speaker	2 watt x2	dual microphone for VC	JIP, LED Indicator								
Security	Security keyhole fo	r attachment of option	al cable lock (Kensington® lock	1							
	compatible), locks offered by Tiny inst		ogether, more security features								
Mechanical	, ,										
	Dimensions	TIO without stand	TIO with stand								
	W x D x H (inch)	19.26 x 2.85 x 13.35	19.26 x 10.76 x 14.59 - 18.93								
	W x D x H (mm)	489.3 x 72.5 x 339	489.3 x 273.3 x 370.7 - 480.7								
	Weight (Approx.)	7.01 lb / 3.19 kg	11.77 lb / 5.34 kg								
								novo October 2010			









# ThinkCentre Tiny-in-One (TIO) 24 Gen3

Model	Non-touch model: Touch model:	10QYPAR1++/10QYPA 10QXPAR1++/10QXPA		Mounting features	Wall or desk mounting using the exter meeting the VESA FPMPMI® (100mm	Wall or desk mounting using the extend arm or third-party accessories meeting the VESA FPMPMI® (100mm mount)					
Form factor			ence when optional Tiny slots into	Adjustable stand	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.3" (110mm);						
Compatible Tiny:	the back of TIO, clean cabling and effortless setup P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e /			swivel: +/-45°;							
	M625 / M600 / M75	5a / M715 / M93/p* / M8	3 / M73* / M53 /Chromebox Tinv			Pivot: clockwise 0° to 90°					
			essing power button of TIO	Power supply Power consumption	90 watts AC/DC adapter, 88% PSU, u 19 watts typical, 32 watts maximum, <		/ suspend				
Panel	TFT-LCD, In-Plane	Switching technology**, vitching may refer to VA,	, White LED backlight	Limited warranty							
Viewable image size Max view area (W x H) Bezel Width Native resolution Multi-touch Aspect ratio	23.8" (604.7mm) di 21.06" x 12.32" / 53 Top / Side: 2mm, B <b>1920x1080</b>	iagonal 35.0mm x 313.0mm		VESA-compliant Ergonomics Emission standards Environmental Windows certificatio	rgonomics ISO 9241-307, TUV Eye Comfort certified mission standards nvironmental TCO 7.0, TCO Edge 2.0, WEEE, RoHS, ENERGY S EPEAT™ Silver rating, ULE Gold, TUV, VOC						
Pixel pitch (mm) Dot/Pixel per Inch	0.2745mm 92.6 dpi			Ship group	TIO 24 (Monitor), detachable stand, A user's guide and driver CD, guick star						
Brightness Contrast ratio	250 nits or cd/m <sup>2</sup> (t 1000:1 (typical)	ypical)		Accessories	For compatible accessories, please g						
Pixel response time	14ms (default), ove	er drive to 4ms, 6ms					ovoquickpick.com				
Color gamut Anti-reflective	72% Anti-glare				ThinkCentre Tiny-in-One 24 Gen3 Co	mnatible list					
Viewing angle at 10:1 Cl		ontal, 178° (+/- 89°) ver	tical	Model	P330 / P320 / M920(x) / M720 / M910(x)	· ·	Chromebox				
Preset resolutions	640x350 @ 70Hz 640x480 @ 60Hz, 720x400 @ 70Hz 800x600 @ 60Hz,				/ M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M83 / M53 Tiny M90n Nano (with TIO kit)						
	1024x768 @ 60Hz	, 70Hz, 75Hz		Turn on TIO and Tiny together via Alt + P on USB KB							
	1152x864 @75Hz 1280x800 @ 60Hz				All models	All models	Not support				
	1280x800 @ 60Hz 1280x1024 @ 60Hz, 72Hz, 75Hz 1366x768 @ 60Hz 1440x900 @ 60Hz, 75Hz 1600x1200 @ 60Hz, 70Hz, 75Hz				В						
					All models	TIO models	All models				
Presets / user settings	1680x1050 @ 60H 1920x1080 @ 60H Presets: 25; user se	z ettings: 25		_		~					
On screen display Control features	Ftont: Exit butto Right / Bi	rightness button, Enter /	y button (TIO / monitor mode), Menu button, Power button								
Tiny-in-One Power On	Pressing Alt + P or	p button, Volume down keyboard or pressing F	Power button positioned on TIO								
	can turn on both TI	O and Tiny (only some ]	Tiny support, see compatible list) or M53 installed or USB 2.0								
Side ports (TIO)	connected via USE Notes: The USB p	3 upstream port)	n a Tiny is istalled or a PC is								
Side ports (Tiny) Rear ports 3-in-1 Cable	Side ports offered I One DisplayPort in Undetachable 3-in-	by installed Tiny (optiona port, one USB upstrear 1 cable (Power connect	al) n port, one power connector er, USB [supports USB 3.1 Gen1 ig to Tiny installed (optional)								
Camera Internal Speaker	1080p camera with 2 watt x2	dual microphone for VC	DIP, LED indicator								
Security	Security keyhole fo compatible), locks offered by Tiny inst	optional Tiny with TIO to	cable lock (Kensington <sup>®</sup> lock ogether, more security features								
Mechanical	Dimensions	TIO without stand	TIO with stand								
	W x D x H (inch)	21.25 x 2.85 x 14.47	21.25 x 11.11 x 15.72 - 20.06								
	W x D x H (mm)	539.8 x 72.5 x 367.6	539.8 x 282.3 x 399.4 - 509.4								
	Weight (Approx.)	7.96 lb /3.61 kg	12.92 lb /5.86 kg								
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# ThinkCentre Tiny-in-One (TIO) 27

Product Specifications Reference (PSREF)

Form factor	Tiny-in-One, offers a full All-In-One experience when optional Tiny slots into the back of TIO, clean cabling and effortless setup	Mechanical		TIO without stand	TIO	with stand		
Compatible Tiny:	ThinkCentre Tiny, ThinkCentre Nano, and ThinkStaion Tiny		Dimensions (W x D x H	614.0 x 73.89 x 413.1		) x 444.25 - 554.25		
Panel	TFT-LCD, In-Plane Switching technology**, White LED backlight ** <i>Notes:</i> In-Plane Switching may refer to IPS, PLS, ADS, AHVA, and AA		mm / inch)	/ 24.17 x 2.91 x 16.26	6 / 24.17 x 12.	95 x 17.49 - 21.82		
Viewable image size Max view area (W x H)	27" (685.8mm) diagonal 23.49" x 13.22" / 596.7mm x 335.7mm		Weight (Approx.)	4.91 kg / 10.82 lb	7.95 k	g / 17.53 lb		
Bezel Width Native resolution Multi-touch Aspect ratio Pixel pitch (mm)	Top / Side: 2mm, Bottom: 23.3mm <b>2560x1440</b> None 16:9 0.2331mm	Mounting features Adjustable stand	meeting the VESA <i>Tilt:</i> 35° back,	<i>lift:</i> 4.3" (110mm);				
Dot/Pixel per Inch	109 dpi		<i>Pivot:</i> clockwise	-5° to 90°				
Brightness Contrast ratio Pixel response time	350 nits or cd/m² (typical) 1000:1 (typical) 14ms (default), over drive to 4ms, 6ms	Power supply Power consumption		, 88% PSU, universal 7 watts maximum, <0.5	5 watts standby	/ suspend		
Color gamut Anti-glare	99% sRGB Yes (25%)	Limited warranty	<b>3-years</b> , Product B Service (EMEA)	Exchange Service (US	and EMEA) or	Customer Carry-In		
Viewing angle at 10:1 Cl Preset resolutions	R178° (+/- 89°) horizontal, 178° (+/- 89°) vertical 640x350 @ 70Hz 640x480 @ 60Hz, 66Hz, 72Hz, 75Hz 720x400 @ 70Hz 800x600 @ 60Hz, 72Hz, 75Hz 1024x768 @ 60Hz, 70Hz, 75Hz 1152x864 @ 75Hz 1280x768 @ 60Hz	VESA-compliant Ergonomics Emission standards Environmental Windows certification Ship group	ISO 9241-307, TU FCC Class B TCO 8.0, TCO Ed EPEAT™ Silver rai	ESA DPMS-compliant V Eye Comfort certifie ge 2.0, WEEE, RoHS, ing, ULE Gold, TUV, V indows 10 certified detachable stand, pow	ENERGY STAF OC			
	1280x708 @ 60Hz		and driver CD					
	1280x1024 @ 60Hz, 72Hz, 75Hz 1366x768 @ 60Hz	Accessories	For compatible ac	cessories, please go to	http://smartfind	.lenovo.com		
	1440x900 @ 60Hz, 75Hz							
	1600x1200 @ 60Hz, 70Hz, 75Hz 1680x1050 @ 60Hz	Madal	,	/-in-One 27 Compatible		Ohmensham		
Presets / user settings	1920x1080 @ 60Hz 2560x1440 @ 60Hz Presets: 27; user settings: 25	Model	P330 / P320 / M920(x) M710 / M900(x) / M70 M600 / M75g / M715	0 / M630e / M625 /	M93/p Tiny, M73 Tiny	Chromebox		
On screen display	On screen display with digital user controls (8 languages)		M90n Nano (w	, , , , , , , , , , , , , , , , , , , ,				
Control features	Ftont: Exit button, Left / Mode-switching button (TIO / monitor mode), Right / Brightness button, Enter / Menu button, Power button Bottom: Volume up button, Volume down button	Turn on TIO and Tiny together via	All mod	dels	All models	Not support		
Tiny-in-One Power On	Pressing Alt + P on keyboard or pressing Power button positioned on TIO	Alt + P on USB KB Turn on TIO and						
Side ports (TIO)	can turn on both TIO and Tiny (only some support, see Compatible Matrix) Two USB 3.1 Gen1 (downgrade to USB 2.0 when installing M73 or M53 or connecting USB 2.0 via USB upstream port), one headphone / microphone	Tiny together via TIO Power Button	All mod	dels	TIO models	All models		
Side ports (Tiny) Rear ports 3-in-1 Cable Camera Internal Speaker Security	combo jačk Notes: The USB ports are enabled by installing a Tiny or connecting USB upstream port; the audio port is enabled by installing a Tiny or connecting USB upstream, DisplayPort(in), or HDMI(in) port Side ports offered by the installed Tiny (optional) One DisplayPort(in) port, one HDMI(in) port, one USB (Type-B) upstream port, one power connector Undetachable 3-in-1 cable, connecting to the power connecter, one USB, and one DisplayPort of the installed Tiny (optional) RGBIR camera with dual microphone, supports Window Hello and Facial Recognition, Think Shutter for Privacy Security, LED indicator 2 watt x2 Security keyhole for attachment of optional cable lock (Kensington® lock							
Security	compatible), locks optional Tiny with TIO together, more security features offered by Tiny installed (optional)							

Lenovo, October 2019













# ThinkCentre M720 Tower Platform Specifications

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Intel	Pentium®	or 8th / 9th Ger	Intel Co	re™ i3 / i5 / i7 / i0	Processor	WI AN <sup>13</sup>	Some.	11ac wireless, M.2 Card, Realtek RTL8821CE (dual band),				
110003301		Cores /	Frequency		Memory Support			Some.	Wi-Fi + Bluetooth 4.2 combo adapter, 1x1				
	Processor		Base/Max(GHz)	Cache	(Up to)	Graphics		Some:	11ac wireless, M.2 Card, Realtek RTL8822BE (dual band),				
	Celeron G4900	2/2	3.1G	2 MB	DDR4-2400	UHD 610			Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165,				
	Celeron G4920	2/2	3.2G	2 MB	DDR4-2400	UHD 610			Wi-Fi + Bluetooth 4.2 combo adapter, 1x1				
	Pentium Gold G5400	2/4	3.7G	4 MB	DDR4-2400	UHD 610			11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265,				
	Pentium Gold G5500	2/4	3.8G	4 MB	DDR4-2400	UHD 630			Wi-Fi + Bluetooth 4.2 combo adapter, 2x2				
	Pentium Gold G5600	2/4	3.9G	4 MB	DDR4-2400		Bluetooth™		Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter				
	Core i3-8100	4/4	3.6G	6 MB	DDR4-2400	UHD 630	Ethernet		ethernet, Intel Ethernet Connection I219-V (Jacksonville), Wake on LAN®				
	Core i3-8300	4/4	3.7G	8 MB	DDR4-2400	UHD 630	Ethernet (Opt.)	Some:	Intel Ethernet Server Adapter I350-T4*, gigabit ethernet, 4x RJ-45, PCIe x4 Bitland BN8E88*, gigabit ethernet, 1x RJ-45, PCIe x1 (special bid only)				
	Core i5-8400	6/6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630			e either 1350-T4 or BN8E88				
	Core i5-8500	6/6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	Manageability	None					
	Core i5-8600	6/6	3.1G / 4.3G 3.2G / 4.6G	9 MB 12 MB	DDR4-2666	UHD 630 UHD 630	Security chip	Discrete	e TPM 2.0, TCG Certified				
	Core i7-8700 Core i3-9100	6/12 4/4	3.6G / 4.6G	6 MB	DDR4-2666 DDR4-2400	UHD 630 UHD 630	Security features	<ul> <li>Secur</li> </ul>	ity slot (in rear for optional    Power-on password				
	Core i3-9300	4/4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630		Kensii	ngton <sup>®</sup> MicroSaver <sup>®</sup> cable) • Administrator password				
	Core i3-9320	4/4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630		Padlo					
	Core i5-9400	6/6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630			<ul> <li>nal cable lock to physically lock</li> <li>Boot sequence control</li> <li>Boot without keyboard and mouse</li> </ul>				
	Core i5-9500	6/6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630			• Individual USB port disablement				
	Core i5-9600	6/6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630			nal chassis E-Lock (special bid) • Smart USB protection, allows keyboard/				
	Core i7-9700	8/8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630			mouse only, blocks all storage devices				
	Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630	Keyboard	Some:	Lenovo Calliope Keyboard (USB connector), black				
Memory	64GB max, UDIMM, I	DDB4-26	66* four 288-pin	DIMM se	ockets non-ECC	:		Some:	Lenovo Traditional Keyboard (USB connector), black Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black				
	dual-channel capable	oo , .ou. 200 p	2	200	,			E Lenovo Keyboard (PS/2 connector), black (only available via special bi					
	<ul> <li>System automatical</li> </ul>	ly clocks	down for the pro	cessors v	vith lower memo	ry controller	Mouse	Some:	Lenovo Calliope Mouse (USB connector), black				
Storage	age Some: Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm							Some:	Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black				
	Some: Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5"					4		Some:	Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black Lenovo Mouse (PS/2 connector), black (only available via special bid)				
	Some: M.2 SSD (2242 / 2280) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4 Some: Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2												
Optical	Some: DVD-ROM S					<i>n)</i> , w.z	Mechanical		(15L), black color, metal case xH) 5.91" X 10.65" X 14.17"; 150mm X 270.5mm X 360mm				
•	Some: DVD Burner (	(DVD±RV	V), SATA 1.5Gb/s		im (9.0mm)				rox. 15.21 lb (6.9 kg), weight may vary by configuration				
	Three onboard SATA		connectors					<ul> <li>Option</li> </ul>	nal dust filter				
	Optional 7-in-1 media							Bay 1: 5	Slim external ODD bay				
Graphics	Intel UHD Graphics one VGA (up to 2048)	610/630 I √1526@5	n processor, use	s main m	iemory, DirectX <sup>®</sup>	12, @604->		Bay 2: 3.5", 1" high, internal, HDD/SSD Bay 3: 3.5", 1" high, internal, HDD/SSD (optional bay)					
	supports 3 independe	ent display	vs. more displays	s support	via discrete ora	blics			alf-length full-height (length < 189mm, height < 104mm), PCIe 3.0 x16				
	Some: NVIDIA Gefor	rce® GT 7	30 (End Of Life)	, DirectX	12, 2GB, PCIe 2			Slot 2: h	half-length full-height (length < 189mm, height < 104mm), PCIe 3.0 x1				
	35 watts, two	DisplayPo	ort (up to 3840x2	160@60	Hz)			Slot 3: half-length full-height (length < 189mm, height < 104mm), PCIe 3.0 Slot 4: no slot, only bracket for optional port extension M.2 card slots: Two (one for WLAN, one for SSD/Optane)					
	Some: AMD Radeon		12, 2GB 04096x2160@60H		Cle 3.0 x8, 30 v	vatts,							
	Some: AMD Radeon				5. PCle 3.0 x8. §	50 watts.	Description						
	one DisplayPo	ort (up to :	3840x2160@60H	Hz), one l	HDMI (up to	· · · · · ,	Power supply	Some: Some:	180 watts, autosensing, 85% PSU 210 watts, autosensing, 85% PSU				
Monitor Cable	4096x2160@6	60Hz), on	e VGA (up to 20	48x1536	@85Hz)			Some:	260 watts, autosensing, 92% PSU (only available via special bid)				
	Optional DP to VGA of Display with intel inter	arated ar	P to DVI-D dongi aphics) or DP to	HDMI 1	dual DP dongle 4 dongle	(for Collage	Limited warrantv <sup>3</sup>	Some:	1-year or 3-year, depot service / service upgrades available				
-	Intel B360 Chipset	gialou git		HEIMI I.	4 doligio				<b>1-year</b> or <b>3-year</b> , <b>limited onsite service</b> / service upgrades available				
	•		0				Preload		led operating system				
ront ports* (Std.)	2x USB 3.1 Gen2, 2x 1x microphone (3.5m	USB 3.1	Gen1, 1x USB 3	s.1 Type-(	Gen1 (15W ch	arging), m)		Some:	Windows® 10 Pro 64-bit				
Front ports* (Opt.)	Optional: 1x media re	ader			indo jack (3.3mi			Some:	Windows 10 Home 64-bit				
Rear ports* (Std.)	4x USB 2.0, 1x serial	(9-pin), 1	x ethernet (RJ-4	5), 1x VG	A, 2x DisplayPo	rt.		Preioac	led applications (only some listed)				
	1x line-out (3.5mm)	,.	· ·						/o Vantage soft Office preloaded:				
	Optional: 2x USB 3.1					PCle x4**			ase a product key to activate				
	(special bid only), 1x 1x parallel (25-pin), 2	2nd seria	i (9-pin), 4x seria	ai (9-pin) ouse) ac	VIa PCIe X1, Iditional B I-45 a	nd video		<ul> <li>Cyberlink PowerDVD (only for models with DVD / DVD±RW)</li> <li>Cyberlink Power2GO (only for models with DVD±RW)</li> </ul>					
	ports available on opt												
	* Depending on many fa	ctors, actu	al data transfer spe	ed may be	e lower than theore	tical speed		Linke					
	** Choose either 2x USE		,,				Environment	ENERG	Y STAR <sup>®</sup> 6.1, EPEAT™ Silver rating (North America), ErP Lot 3, TCO, v noise verified (coming soon, on some models), RoHS-compliant				
Audio support	High Definition (HD)	Audio Re	altek ALC233VE	2 / Intern	al speaker 12 wa	111 )							





inside"







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# ThinkCentre M920 Tower Platform Specifications

Processor	Intel <sup>®</sup> Celeron <sup>®</sup> , Intel	Pentium®	. or 8th /9th Gen	Intel Cor	e™ i3 / i5 / i7 / i9	Processor		USB3.1 Type-C Gen 2 / DisplayPort) via PCIe x4 (available on 09/30/2018),			
		Cores /	Frequency	Cache	Memory Support		1	additional RJ-45 and video ports available on optional graphics or ethernet card			
	Processor	Threads	Base/Max(GHz)	Cache	(Up to)	Graphics		* Depending on many factors, actual data transfer speed may be lower than theoretical speed			
	Celeron G4900	2/2	3.1G	2 MB	DDR4-2400	UHD 610	Audio support	High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt )			
	Celeron G4920	2/2	3.2G	2 MB	DDR4-2400	UHD 610	WLAN	Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8821CE (dual band), 1x1			
	Celeron G4930	2/2	3.2G	2 MB	DDR4-2400	UHD 610		Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8822BE (dual band), 2x2			
	Celeron G4950	2/2	3.3G	2 MB	DDR4-2400	UHD 610		Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 3165, 1x1 Some: 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 8265, 2x2			
	Pentium Gold G5400	2/4	3.7G	4 MB	DDR4-2400	UHD 610		Some: 11ac Wi-Fi + BT 5.0, M.2 Card, Intel Wireless-AC 9560 (dual band),			
	Pentium Gold G5500	2/4	3.8G	4 MB	DDR4-2400	UHD 630		Intel vPro technology support, 2x2			
	Pentium Gold G5600	2/4	3.9G	4 MB	DDR4-2400	UHD 630	Bluetooth™	Some: Bluetooth 4.2/5.0 wireless, integrated in Wi-Fi + BT combo adapter			
	Pentium Gold G5420	2/4 2/4	3.8G 4.0G	4 MB 4 MB	DDR4-2400	UHD 610	Ethernet	Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN®			
	Pentium Gold G5620 Core i3-8100	4/4	3.6G	6 MB	DDR4-2400 DDR4-2400	UHD 630 UHD 630	Ethernet (Opt.)	Some: Intel Ethernet Server Adapter I350-T4, gigabit ethernet, 4x RJ-45, PCIe x4 Some: Bitland BN8E88, gigabit ethernet, 1x RJ-45, PCIe x1 (special bid only)			
	Core i3-8300	4/4	3.7G	8 MB	DDR4-2400	UHD 630	Manageability				
	Core i5-8400	6/6	2.8G / 4.0G	9 MB	DDR4-2466	UHD 630	Invianageability	Intel Active Management Technology 12 (Intel AMT 12); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi			
	Core i5-8500	6/6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630		adapter to enable vPro function through wireless connection)			
	Core i5-8600	6/6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630	Security chip	Discrete TPM 2.0, TCG Certified			
	Core i7-8700	6/12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Security features	s			
	Core i3-9100	4/4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630		Kensington <sup>®</sup> MicroSaver <sup>®</sup> cable)  • Administrator password			
	Core i3-9300	4/4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630		Padlock loop     Hard disk password			
	Core i3-9320	4/4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630		<ul> <li>Optional cable lock to physically lock</li> <li>Boot sequence control</li> <li>Boot without keyboard and mouse</li> </ul>			
	Core i5-9400	6/6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630		Optional chassis intrusion switch     Individual USB port disablement			
	Core i5-9500	6/6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630		Optional chassis E-Lock (special bid)      Smart USB protection, allows keyboard			
	Core i5-9600	6/6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630		mouse only, blocks all storage devices			
	Core i7-9700	8/8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black			
	Core i9-9900	8/16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630		Some: Lenovo Traditional Keyboard (USB connector), black			
Memory	64GB max, DDR4-26 * System automatical	66*, four	288-pin DIMM s down for the pro	ockets, dı cessors v	ual-channel capa vith lower memo	able bry controlle	r Mouse	Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black Some: Lenovo Keyboard (PS/2 connector), black (only available via special bid) Some: Lenovo Calliope Mouse (USB connector), black			
Storage	Some: Hard Drive / Some: Solid State D Some: M.2 SSD (22)	rive (SSD 42 / 2280	) / SATA 6.0Gb/: ) / PCIe NVMe, I	s, 2.5" PCle 3.0	x2 or PCle 3.0 x			Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, blac Some: Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black Some: Lenovo Mouse (PS/2 connector), black (only available via special bid)			
Optical Onboard SATA	Some: Intel Optane <sup>T</sup> Optional DVD-ROM of Four onboard SATA 6 available via special b	or DVD Bi 3.0Gb/s co pid model	urner (DVD±RW) onnectors, RAID	, SATA 1.	5Gb/s Drive, sli	m (9.0mm)	Mechanical	<ul> <li>Tower (18L), black color, metal case</li> <li>(<i>WxDxH</i>) 6.5" X 12.65" X 16.15"; 165mm X 321.35mm X 410.25mm</li> <li>Approx. 15.45 lb (7 kg), weight may vary by configuration</li> <li>Toolless cover, disk, optical, extension card removal</li> </ul>			
Media reader	Optional 7-in-1 media	a reader					4	<ul> <li>Optional carry handle, dust filter</li> </ul>			
Graphics	Some: AMD Radeon two DisplayPo Some: AMD Radeon one DisplayPo 4096x2160@ Some: NVIDIA Gefo PCle 3.0 x16, to 4096x2160	x1536@5 ent displat rce <sup>®</sup> GT 7 35 watts, ™ 520, D ort (up to 4 a RX 550) ort (up to 4 cont2, on rce GTX 120 watta @60Hz).	50Hz), two Display ys, more display 730 (End Of Life), two DisplayPor irectX 12, 2GB ( 4095x2160@601 (, DirectX 12, 40 3840x2160@60 e VGA (up to 20 1060 (special bio s, 1x DVI-D (up to 3x DP (up to 51	ayPort™ (i s support i, DirectX t (up to 38 GDDR5, F Hz) GB GDDR Hz), one I 48*1536(i 1 only), Di to 2560x1 20x3200(i	up to 4096x2304 via discrete gra 12, 2GB GDDR 340x2160@60H PCIe 3.0 x8, 30 v (5, PCIe 3.0 x8, HDMI (up to @85Hz) irectX 12, 6GB ( 600@60Hz), 1x @60Hz), occupie	4@60Hz), phics 5, z) watts, 50 watts, 50 watts, GDDR5, t HDMI (up es two slots	Power supply	<ul> <li>Bay 1: Slim external ODD bay</li> <li>Bay 2: 5.25", 1.6" high, external, ODD / optional front access HDD</li> <li>Bay 3: 3.5", 1" high, internal, HDD/SSD</li> <li>Bay 4: 3.5", 1" high, internal, HDD/SSD (optional bay, bay comes with disk)</li> <li>Bay 5: 2.5", internal, HDD/SSD (optional bay)</li> <li>Notes: M920 Tower supports up to 3 SATA devices (ODD/HDD/SSD) and 1 eSATA device (front access HDD)</li> <li>Slot 1: full-length (&lt; 268mm) full-height (&lt; 112mm), PCle 3.0 x16</li> <li>Slot 2: full-length (&lt; 268mm) full-height (&lt; 112mm), PCle 3.0 x16 (x4 signal)</li> <li>Slot 4: no slot, only bracket for optional port extension</li> <li>M.2 card slots: Two (one for WLAN, one for SSD/Optane)</li> </ul>			
Monitor Cable	Display with intel inte	longle, D	P to DVI-D dong	ie, DP to	dual DP dongle	(for Collage		Some:250 watts, autosensing, 85% PSUSome:400 watts, autosensing, 92% PSU (only available via special bid)			
Chipset	Intel Q370 Chipset		Cont 14 UCD	1 1	- Cont (1514/ -	orging)	Limited warranty	<ul> <li>Some: 1-year or 3-year, depot service / service upgrades available</li> <li>Some: 1-year or 3-year, limited onsite service / service upgrades available</li> </ul>			
• •	) 2x USB 3.1 Gen2, 2x 1x microphone (3.5m	m), 1x he					Preload				
Front ports <sup>*</sup> (Opt. Rear ports <sup>*</sup> (Std.)	) <i>Optional:</i> 1x media re ) 4x USB 3.1 Gen1, 1x	ader serial (9.	nin) 1x etherne	t (R.I-45)		nlavPort		Some: Windows® 10 Pro 64-bit Some: Windows 10 Home 64-bit			
	1x line-out (3.5mm) ) <i>Optional:</i> 2x USB 2.0	, 2x USB	3.1 Gen1 via PC	Cle x1, 2x	USB 3.1 Type-0	C Gen2 via	Environment	ENERGY STAR <sup>®</sup> 6.1, EPEAT™ Silver rating (North America), ErP Lot 3, TCO, TUV low noise verified (coming soon, on some models), RoHS-compliant			
	PCIe x4 (special bid of 1x parallel (25-pin), 2	only), 1x 2 x PS/2 pc	2nd serial (9-pin) orts (keyboard/m	), 4x seria ouse), 1x	ti (9-pin) via PCI Thunderbolt 3 (	ie x1, (combo	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com			

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**Included software:** may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

**Battery life:** Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

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# Summary of Changes

This section describes the changes made in this version of ThinkStation PSREF and in previous version. This edition might also include minor corrections and editorial changes which are not identified.

#### March 25, 2020 - Version 557

Add Core i5-8700K, Geforce GTX 1660 Ti, RTX 2070, RTX 2080 on ThinkStation P330 Tower Gen 2

#### March 4, 2020 - Version 556

Add Core i5-9400F on ThinkStation P330 Tower Gen 2 and ThinkStation P330 SFF Gen 2

#### December 31, 2019 - Version 553

► Add Xeon W-2200 series Processor and DDR4-2933 memory on ThinkStation P520c and P520

#### December 11, 2019 - Version 552

Add Xeon Gold 6226 and 6244 on ThinkStation P920 and P720

#### August 7, 2019 - Version 546

Update processor information on Thinktation P330 Tiny

#### July 17, 2019 - Version 545

Update EPEAT rating to Silver on most ThinkStation

#### June 26, 2019 - Version 544

Add ThinkStation P330 Tower Gen 2/P330 SFF Gen 2 CPU Async update

#### May 15, 2019 - Version 542

- New ThinkStation P330 Tower Gen 2/P330 SFF Gen 2 announced on April 2019
- ► Update ThinkStation P920/P720/P520 specifications, add Quadro RTX 8000, DDR4-2933, Xeon Scalable Gen 2

#### March 13, 2019 - Version 539

Add Intel vPro information on ThinkStation P330 Tower/P330 SFF/P520c/P520/P720/P920

### February 20, 2019 - Version 538

- New ThinkStation P330 Tower models announced on February 2019
- ▶ Update ThinkStation P920/P720/P520/P520c specifications, add Quadro RTX4000/5000/6000

### August 22, 2018 - Version 529

- New ThinkStation P330 Tower/SFF/Tiny models announced on August 2018
- ► Update ThinkStation P920/P720 specifications, update flex bay and graphics adapter section

#### August 1, 2018 - Version 528

- New product ThinkStation P330 Tower/SFF/Tiny announced on July 2018
- ► Update ThinkStation P920/P720/P520/P520c, add Refresh 2.0 information
- Remove all MTM PNs from PDF version

#### June 20, 2018 - Version 526

- New ThinkStation P320 Tower models announced on June 2018
- ▶ Update ThinkStation P720 and P920 models, remove EOL models for US
- ▶ Update Windows 10 Pro 64 for Workstations for some ThinkStation P720/P920 models

### May 30, 2018 - Version 525

Added ThinkStation P720/P920 EMEA May 2018 models

#### April 18, 2018 - Version 523

▶ New ThinkStation P320 Tower/ P320 SFF/P520c/P520/P720/P920 models announced on April 2018

#### March 28, 2018 - Version 522

New ThinkStation P320 Tower/ P320 SFF/P520c/P520/P920 announced on March 2018

#### March 7, 2018 - Version 521

▶ New ThinkStation P320 Tower/ P320 SFF/P720/P920 announced on February 2018

#### January 30, 2018 - Version 519

- New ThinkStation P520c and P520 announced on January 2018
- ▶ New ThinkStation P320 Tower/P320 SFF announced on January 2018

#### December 20, 2017 - Version 517

- ▶ New ThinkStation P920 models announced on December 2017
- Add Optional Ports on ThinkStation P320 Tiny

#### September 29, 2017 - Version 513

- New ThinkStation P920 and P720 announced on September 2017
- New ThinkStation P320 Tower/P320 SFF/P410/P510/P710/P910 announced on September 2017

#### September 12, 2017 - Version 512

▶ New ThinkStation P320 Tower and P320 SFF models announced on August 2017

#### August 23, 2017 - Version 511

▶ New ThinkStation P320 Tiny models announced on August 2017

#### August 2, 2017 - Version 510

New ThinkStation P320 Tiny/P320 Tower/ P320 SFF/P410/P510 models announced on July 2017

#### June 21, 2017 - Version 508

▶ New ThinkStation P320 Tiny announced on June 2017

#### May 26, 2017 - Version 507

Add ThinkStation P410/P510/P710/P910 Refresh 3.0 Wave 1 models and update platform specifications

#### April 19, 2017 - Version 505

- ▶ New ThinkStation P320 Tower announced on April 2017
- ▶ New ThinkStation P320 SFF announced on April 2017

#### March 29, 2017 - Version 504

- ► Added ThinkStation P310 Tower and SFF models announced on March 2017
- Added ThinkStation P410 models announced on March 2017

#### January 25, 2017 - Version 501

▶ Update quantity of PCIe SSD adapter in ThinkStation P510/P910

#### January 4, 2017 - Version 500

Added ThinkStation P310 models announced on December 2016

#### December 14, 2016 - Version 499

- ► Added ThinkStation P410/P510/P710/P910 EMEA models
- Added 1TB M.2 PCIe SSD, Quadro P5000, Quadro P6000 support on ThinkStation P510/P710/P910
- ► Added Quadro P5000 support on ThinkStation P410
- Added 6TB 7.2K SATA6Gbs HDD support on ThinkStation P410/P510/P710/P910
- Added ThinkStation P410/P510/P710/P910 models announced on December 2016

#### November 23, 2016 - Version 498

- ▶ Removed ThinkStation P500/P900 due to EOL
- Added ThinkStation P310 Tower and SFF models announced on November 2016

#### October 12, 2016 - Version 496

- ▶ Removed flash option on ThinkStation P510/P710/P910
- Added ThinkStation P310/P410/P510/P710/P910 models announced on September 2016

#### August 3, 2016 - Version 493

- Removed ThinkStation P500/P700/P900 Windows 7 DG from Win8.1 U.S. models
- Added keyboard and mouse features on all ThinkStation

#### July 13, 2016 - Version 492

- Added ThinkStation P500, P700, and P900 Windows 10 downgrade to Windows 7 models
- ► Updated Maximum configuration weight of ThinkStation P410
- Added ThinkStation P710 and P910 models announced on on July 2016
- Added "Maximum drives in 3.5" bay" feature on ThinkStation P500/P510/P700/P710/P900/P910

#### June 22, 2016 - Version 491

- ► Added new product ThinkStation P410/P510
- Added NVIDIA Quadro M2000 on ThinkStation P310 Tower
- Added keyboard and mouse information on ThinkStation P710/P910
- Added internal USB information on ThinkStation P710/P910

#### June 2, 2016 - Version 490

- Added ThinkStation P710/P910 US models
- ► Updated ThinkStation P710/P910 processor information

#### May 19, 2016 - Version 489

- Added NVIDIA Quadro M2000 on compatible product
- ► Updated maximum weight on ThinkStation P710
- ► Removed 30AT000BUS

#### April 27, 2016 - Version 488

- Added ThinkStation P710 and P910 models for EMEA, announced on April 2016
- ► Updated Energy star information on ThinkStation P500/P700/P710/P900/P910

#### April 6, 2016 - Version 487

▶ New ThinkStation P710 and P910, announced April 5, 2016 (specification only)

#### March 23, 2016 - Version 486

Added processors specifications for P310/P500/P700/P900

#### February 24, 2016 - Version 485

- Added ThinkStation P310 and P700 models for US, announced on February 2016
- Added ThinkStation P700 and P900 models for EMEA, announced on February 2016

#### December 9, 2015 - Version 482

New ThinkStation P310 Tower and SFF, announced November 24, 2015

#### November 18, 2015 - Version 481

- Combines ThinkStation PSREF United States version and Western Europe version.
- Extends the supported GEO into Europe, Middle East and Africa.
- ► Covers all TopSeller and Relationship models for US and all focus models for EMEA











# ThinkStation P330 SFF Gen 2 (30D1 and 30D2) Platform Specifications

Product Specifications Reference (PSREF)

Components	Specification		Components	Specification
Form factor	8.4L mini-tower			Up to 3 bays with two disk bays and one slim optical bay:
Dimensions	Height: 343.5 mm (13	3.5 in). Width: 92.5 mm (3.6 in). Depth: 305.6 mm (12 in)		Bay 1 Primary 3.5" SATA bay
Weight	Maximum configuration	on: 13.23 lb (6.0kg)	Storage bay	Bay 2 2.5" SATA bay (Optional)
	Supports one of the f		Storage bay	Bay 3 9mm Slim ODD bay
	Xeon E-2278G	8C/16T/3.4GHz/16MB/80W/DDR4-2666 (260W PSU needed)		M.2 3x M.2 SSD (1 onboard. 2 via PCIe to M.2 adapter) Notes: Support 1x M.2 SSD at present, 3x M.2 SSD support is pending availability
	Xeon E-2276G	6C/12T/3.8GHz/12MB/80W/DDR4-2666		Notes: Support 1x M.2 SSD at present, 3x M.2 SSD support is pending availability
	Xeon E-2274G	4C/8T/4.0GHz/8MB/83W/DDR4-2666	M.2 slot for Wi-Fi	One dedicated onboard M.2 slot for optional Intel Wireless-AC 9560, 2x2,
	Xeon E-2246G	6C/12T/3.6GHz/12MB/80W/DDR4-2666	and Bluetooth	2.4GHz/5GHz (160MHz channels), 802.11ac, Bluetooth 5, up to 1.73Gbps
	Xeon E-2244G	4C/8T/3.8GHz/8MB/71W/DDR4-2666	Media reader	Optional 7-in-1 card reader on most models
	Xeon E-2236 Xeon E-2234	6C/12T/3.4GHz/12MB/80W/DDR4-2666 4C/8T/3.6GHz/8MB/71W/DDR4-2666	Network interfaces	One onboard GbE port via integrated gigabit ethernet Intel i219LM, supports Wake-on-LAN. Optional PCIe ethernet adapters are available
	Xeon E-2234	6C/6T/3.4GHz/12MB/80W/DDR4-2666		Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant.
	Xeon E-2224G	4C/4T/3.5GHz/8MB/71W/DDR4-2666	Security features	Optional chassis intrusion switch, E-lock, cable lock, Kensington lock, and pac
	Xeon E-2224	4C/4T/3.4GHz/8MB/71W/DDR4-2666	,	lock
Durana	Xeon E-2174G	4C/8T/3.8GHz/8MB/71W/DDR4-2666	Intel vPro	Supports Intel vPro on Xeon models.
Processor	Core i9-9900	8C/16T/3.1GHz/16MB/65W/DDR4-2666		vPro also requires Wireless-AC 9560 if Wi-Fi is needed
	Core i7-9700 Core i7-8700	8C/8T/3.0GHz/12MB/65W/DDR4-2666 6C/12T/3.2GHz/12MB/65W/DDR4-2666	Intel AMT	Intel Active Management Technology 12 on Xeon models,
	Core i5-9600	6C/6T/3.1GHz/9MB/65W/DDR4-2666		Intel Standard Manageability on other models
	Core i5-9500	6C/6T/3.0GHz/9MB/65W/DDR4-2666	Base warranty	US models comes with 3-year limited onsite service with 9x5/NBD. 1 or 3-year limited onsite service with 9x5/NBD in EMEA or other GEOs
	Core i5-9400F	6C/6T/2.9GHz/9MB/65W/DDR4-2666	HD Audio	Intel HD Audio interface with Realtek ALC233 Codec
	Core i5-9400	6C/6T/2.9GHz/9MB/65W/DDR4-2666		2x USB 3.1 Gen 1 Type A. 2x USB 3.1 Gen 2 Type A. 1x USB 3.1 Gen 1
	Core i5-8500	6C/6T/3.0GHz/9MB/65W/DDR4-2666	Front ports	Type-C. 1x Mic-in. 1x Combo jack
	Core i3-9300 Core i3-9100	4C/4T/3.7GHz/8MB/62W/DDR4-2400 4C/4T/3.6GHz/6MB/65W/DDR4-2400		2x USB 3.1 Gen 1 Type A. 2x USB 2.0 Type-A. 1x RJ-45. 1x COM. 2x DP.
	Core i3-8300	4C/4T/3.7GHz/8MB/62W/DDR4-2400	Rear ports	1x Audio line-out Notes: DP needs Core, Pentium, or -G suffix Xeon processor
	Core i3-8100	4C/4T/3.6GHz/6MB/65W/DDR4-2400		Supports the following via cable:
	Pentium Gold G5620	2C/4T/4.0GHz/4MB/54W/DDR4-2400		1x COM. 1x Parallel. 2x PS/2. 1x DP or 1x HDMI. 2x USB 2.0
Chipset	Intel C246 Chipset		Optional rear ports	Supports the following via PCIe adapter:
Memory Sockets	4 DIMM sockets with 2	channels		Supports the following via PCIe adapter: 4x COM. 2x USB 3.1 Type-C. 2x USB 3.1 Gen 1. 1x Thunderbolt. Notes: DP or HDMI needs Core, Pentium, or -G suffix Xeon processor
Memory Types	8GB/16GB DDR4-266			Operating: 50 ° F to 95 ° F (10 ° C to 35 ° C)
		DDR4-2666 UDIMM non-ECC	Temperature	Non operating (no package): 14 °F to 140 °F (-10 °C to 60 °C)
Memory Capacity		or UDIMM ECC or 128GB with 4 x 32GB UDIMM non-ECC	-	Non operating (with package): -40 °F to 140 °F (-40 °C to 60 °C)
Memory Protection	ECC on models with U Three PCIe 3.0 slots		Altitude	Operating: -15.2 m (-50 ft) to 3048 m (10 000 ft).
				Storage: -15.2 m (-50 ft) to 10, 668 m (35 000 ft)
Expansion slots		low profile, links to CPU	Humidity	Operating: 30%~90%, non-condensing Storage (with package): 20%~90%, non-condensing
		w profile, links to PCH	Environmental	RoHS-compliant. GREENGUARD. EPEAT Silver rating and ENERGY STAR 7
		negotiable link width x4), low profile, links to PCH	certification	qualified
	Integrated Intel UHD	Graphics P630 in -G suffix Xeon processors, or Intel UHD		Supports one 210W or 260W power supply.
Processor graphics	Graphics 630 in Core	crete graphics to support multi-display, enables three rear		210W is 100V - 240V, 85% PSU, Climate Savers Computing Bronze and 80
	display connectors (2	P DP standard, 1 DP or HDMI optional)	Power supply	PLUS Bronze qualified. 260W is 100V - 240V, 92% PSU, Climate Savers Computing Platinum and 80
	Up to two PCIe 3.0 x	16 slots for discrete graphics adapter (Slot 1 and 3). Supports		PLUS Platinum gualified
	the following graphics	s adapters:	ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/
Discrete graphics	Adapter Core		Note:	
card	Quadro P400 256		1. Depending on many fact	tors, actual data transfer speed mentioned on this page may be lower than theoretical speed. on ThinkStation PSREF, please contact ThinkStation PSREF developer
		2         2GB GDDR5         40W         4x miniDP         2           0         4GB GDDR5         47W         4x miniDP         2		on minicialion of El, picace contact minicialion of El actoropor
			В	ay 2
	Storage Controller Onboard Intel RST SA	Type         Interface         Disk Type         RAID           TA RAID         Std         SATA 6Gb/s         HDD or SSD         0/1		
Storage Controller	Onboard Intel RST PC			
		imited, please see Storage bay section for more information		
		erface RPM Offering Max Qty		SD card (optional)
	3.5" SATA HDD SATA		Slot 1-3 (Top-down)	Bay 3
Storage Support	2.5" SATA HDD SATA	A 6Gb/s 7.2K 500GB FIPS 2		
Storage Support	2.5" SATA SSD SATA	A 6Gb/s 256GB/512GB/1TB 2		
	Optane Memory PCIe			Onboard M.2 slot for M.2 SSD
	M.2 PCIe SSD PCIe	NVMe 256GB/512GB/1TB 3	Bay	A designed and the second seco
			Вау	/ 1













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Components	Specification								Components	Specification					
Form factor	1L. Optional VE Optional floor s Optional tool-le Optional dust fi	tand fo ss cha	or vertical	orientation		ESA 75	mm and <sup>-</sup>	100mm.	Expansion slots	One PCIe slot via specific riser card: PCIe 3.0 x16 (negotiable link width x8) and low profile for discrete graphics card; PCIe 3.0 x4 and low profile for i350-T4 adapter and quad COM ports adapt					
Dimensions	Height: 179 mm	ו (7.0 i	in). Width	: 37 mm (1	.5 in). D	epth: 18	3 mm (7	.2 in)		65W or 62W processor models supports processor graphics only.					
Veight	Maximum confi	guratio	, on: 2.9 lb	(1.3kg)	,	•		,	Graphics	35W processor models come with processor graphics plus a discrete graph					
Recommended	Lenovo recomn	nends			s monito	ors for b	est displa	ay performance	Graphics Brocosso	adapter Integrated Intel UHD Graphics 630. Works along with discrete graphics to					
nonitors	and productivity		مالميرنمور						graphics	support multi-display					
	Supports one o Processor			Base	г г	N	lomony	Processor		One of the following discrete graphics cards on 35W processor models:					
	Number	Cores	Threads	Frequency	Cache		lemory Types	Graphics	Graphics - Discrete	Adapter Cores Memory Pow- Connectors					
	Core i9-9900T	8	16	2.1GHz	16MB	35WDD	R4-2666	Intel UHD Graphics 630	graphics card	er           Quadro P620         512         2GB GDDR5         40W         4x miniDP					
	Core i7-9700T	8	8	2.0GHz	12MB	35\WDD	R4-2666	Intel UHD		Quadro P1000         640         4GB GDDR5         47W         4x miniDP					
		-	-					Graphics 630	Storage controllers	Integrated Intel SATA AHCI controller in chipset, 6Gbps SATA, one onboard					
	Core i7-9700	8	8	3.0GHz	12MB	55WDL	R4-2666	Graphics 630	Internal storage bay	SATĂ port for 2.5" HDD Up to one 2.5" HDD on models without discrete graphics card					
	Core i5-9600T	6	6	2.3GHz	9MB	35WDD	R4-2666	Intel UHD Graphics 630	Disks	2.5" HDD supports up to 2TB, SATA 6Gbps, 5.4K; or 1TB SATA 6Gbps, 7.2					
	Core i5-9600	6	6	3.1GHz	9MB	65WDD	R4-2666	Intal LIHD	M.2 slot for SSD	Two onboard M.2 slots for M.2 SSD, one for M.2 2280 SSD, one for M.2 228					
	Core i5-9500T	6	6	2.2GHz	9MB	35WDD	R4-2666	Intel UHD		or 2242 SSD M.2 2280 SSD supports up to 1TB each, optional Opal.					
		-	-						M.2 SSD	M.2 2242 SSD supports up to 512GB each					
	Core i5-9500	6	6	3.0GHz	9MB	35WDL	R4-2666	Graphics 630	Optane memory	Up to one 16GB Optane memory per system. Optane memory must work w a 2.5" HDD					
	Core i5-9400T	6	6	1.8GHz	9MB	35WDD	R4-2666	Intel UHD Graphics 630		One dedicated M.2 2230 slot for optional Wi-Fi card, supports one of the					
	Core i5-9400	6	6	2.9GHz	9MB	65WDD	R4-2666	Intel UHD		following: Intel Wireless-AC 9560, 2x2, 2.4GHz/5GHz (160MHz channels), 802.11ac,					
C	Core i3-9320	4	4	3.7GHz	8MB	20/0/00	R4-2400	Graphics 630 Intel UHD	M.2 slot for Wi-Fi and Bluetooth	Bluetooth 5, up to 1.73Gbps.					
		4						Graphics 630 Intel UHD		Intel Wireless-AC 8265, 2x2, 2.4GHz/5GHz, 802.11ac, Bluetooth 4.2, up to 867Mbps.					
	Core i3-9300T	4	4	3.2GHz	8MB	35WDD	R4-2400	Graphics 630		Note: Wi-Fi card, or specific functions of Wi-Fi- card may not be supported in some countries					
	Core i3-9300	4	4	3.7GHz	8MB	62WDD	R4-2400	Intel UHD Graphics 630	Wi-Fi antenna	Optional Tiny 2.4GHz/5GHz SMA antenna kit Optional one 9.0mm optical drive via optical drive kit, DVD-ROM or DVD±R					
Processor	Core i3-9100T	4	4	3.1GHz	6MB	35WDD	R4-2400	Intel UHD	Optical	VESA mount is required					
	Core i3-9100	4	4	3.6GHz	6MB	35WDD	R4-2400	Graphics 630 Intel UHD	Media reader	None. Using USB adapter					
	Core i7-8700T	6	12	2.4GHz			R4-2666	Intel UHD	Network interfaces	One onboard GbE port via integrated gigabit ethernet Intel i219LM, support Wake-on-LAN. Optional Intel i350-T4 for 4x GbE ports, using PCIe slot					
	Core i7-8700	6	12	3.2GHz			R4-2666	Intel UHD	Security features	Power-on and admin password. Trusted Platform Module, TCG 2.0 complian Chassis intrusion switch. Optional Kensington lock					
		-							Intel vPro	Supports vPro on models with the following processors: Core i7-8700T, Core					
	Core i5-8600T	6	6	2.3GHz	9MB	35WDD	R4-2666	Graphics 630 Intel UHD	Technology	i7-8700, Core i5-8600T, Core i5-8600, Core i5-8500T, Core i5-8500. vPro also requires Wireless-AC 9560 if Wi-Fi is needed					
	Core i5-8600	6	6	3.1GHz	9MB	65WDD	R4-2666	Graphics 630	Systems	Intel Active Management Technology 12 on vPro models,					
	Core i5-8500T	6	6	2.1GHz	9MB	35WDD	R4-2666	Intel UHD Graphics 630	management	Intel Standard Manageability on other models US models comes with 3-year limited onsite service with 9x5/NBD.					
	Core i5-8500	6	6	3.0GHz	9MB	65WDD	R4-2666	Intal LIHD	Base warranty	1 or 3-year limited onsite service with 9x5/NBD in EMEA or other GEOs					
	Core i5-8400T	6	6	1.7GHz	9MB	35WDD	R4-2666		HD Audio	Intel HD Audio interface with Realtek ALC233 Codec 1x USB 3.1 Gen 1 Type A (charging). 1x USB 3.1 Gen 1 Type-C. 1x Mic-in.					
	Core i5-8400	6	6	2.8GHz	9MB	55WDD	R4-2666			Combo jack 2x USB 3.1 Gen 2 Type A. 2x USB 3.1 Gen 1 Type-A. 1x RJ-45. 1x DP.					
	Core i3-8300T	4	4	3.2GHz	8MB	35WDD	R4-2400		Rear standard ports	1x HDMI					
	Core i3-8300	4	4	3.7GHz	8MB	52WDD	R4-2400			Up to two optional rear ports via punch out cable. Port 1 supports one of the following:					
	Core i3-8100T	4	4	3.1GHz	6MB	35WDD	R4-2400		Optional rear ports -	1x USB 3.1 Gen 1 Type-C, also supports DP function. 1x COM.					
	Core i3-8100	4	4	3.6GHz	6MB	65WDD	R4-2400		via punch out cable	1x VGA. 1x DP.					
hipset	Intel Q370 Chip	oset			. 1	I			1	1x HDMI. Port 2 supports one COM					
lemory	2 DIMM socket	s DDF	34-2666	SoDIMM. N	Ion-ECC	2			7∟						

# ThinkStation P330 Tiny Platform Specifications - II of II

Components	Specification
Optional rear ports - via PCIe adapter	Supports one of the following: 4x miniDP with Quadro P620 or P1000, 35W processor models only 2x USB 3.1 Gen 1. 4x RJ-45 GbE with Intel I350-T4. 4x COM Note: Punch out cable and PCIe adapter are mutually exclusive
Temperature	Operating: 50 °F to 95 °F (10 °C to 35 °C) Non operating (with package): -40 °F to 140 °F (-40 °C to 60 °C)
Altitude	Operating: -15.2 m (-50 ft) to 3048 m (10 000 ft). Storage: -15.2 m (-50 ft) to 10, 668 m (35 000 ft)
Humidity	Operating: 20%~80%, non-condensing Storage (with package): 20%~90%, non-condensing
MIL-SPEC	Certified
Environmental certification	RoHS-compliant. GREENGUARD. EPEAT Silver rating and ENERGY STAR 7 gualified
Power supply	Supports one 135W power adaper, 100V - 240V, 88% PSU
ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/













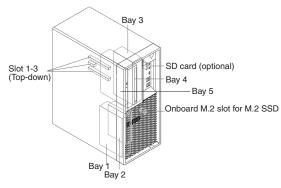
### ThinkStation P330 Tower Gen 2 (30CY and 30D0) Platform Specifications - I of II

Components	Specification		Components	Specification
Form factor	18L Tower			Up to two PCIe 3.0 x16 slots for discrete graphics card (Slot 1 and 3).
Dimensions	Height: 376 mm (1	4.8 in). Width: 165 mm (6.5 in). Depth: 328 mm (12.9 in)		Supports the following graphics adapters:
Veight	0	ation: 28.22 lb (12.8kg)		Graphics Memory Power Connector Max C
veigin	0	1 0/		Quadro P400 2GB wGDDR5 30W 3x miniDP 2
		e following processors:	_	Quadro P6202GB GDDR540W4x miniDP2
	Xeon E-2286G	6C/12T/4.0GHz/12MB/95W/DDR4-2666 400W PSU needed		Quadro P1000     4GB GDDR5     50W     4x miniDP     2
	Xeon E-2278G	8C/16T/3.4GHz/16MB/80W/DDR4-2666 400W PSU needed	_	Quadro P2000         5GB GDDR5         75W         4x DP         2
	Xeon E-2276G	6C/12T/3.8GHz/12MB/80W/DDR4-2666	Discrete Graphics	Quadro P2200         5GB GDDR5X         75W         4x DP         2
	Xeon E-2274G	4C/8T/4.0GHz/8MB/83W/DDR4-2666	Offering	Quadro P4000         8GB GDDR5         105W         4x DP         1
	Xeon E-2246G	6C/12T/3.6GHz/12MB/80W/DDR4-2666		Quadro P5000 16GB GDDR5X 180W DVI-D DL + 4x DP 1
	Xeon E-2244G	4C/8T/3.8GHz/8MB/71W/DDR4-2666		Quadro RTX 4000 8GB GDDR6 160W 3x DP, 1x VirtualLink 1
	Xeon E-2236	6C/12T/3.4GHz/12MB/80W/DDR4-2666		Gefroce GTX 1660 Ti 6GB GDDR6 120W 1x DP, 1x HDMI, 1x DVI-D DL 1
	Xeon E-2234 Xeon E-2226G	4C/8T/3.6GHz/8MB/71W/DDR4-2666 6C/6T/3.4GHz/12MB/80W/DDR4-2666		Gefroce GTX 2070 8GB GDDR6 175W 3x DP, 1x HDMI, 1x VirtualLink 1
	Xeon E-2224G	4C/4T/3.5GHz/8MB/71W/DDR4-2666		Gefroce GTX 2080   8GB GDDR6   215W   3x DP, 1x HDMI, 1x VirtualLink   1
	Xeon E-2224G	4C/4T/3.4GHz/8MB/71W/DDR4-2666		Note: 2x Quadro P2000, Quadro P4000, Quadro P5000, Quadro RTX 4000, Gefroce cards needs 400W
	Xeon E-2186G	6C/12T/3.8GHz/12MB/95W/DDR4-2666 400W PSU needed	-	PSU
	Xeon E-2174G	4C/8T/3.8GHz/8MB/71W/DDR4-2666		Storage Controller Type Interface Disk Type RAID
	Core i9-9900K	8C/16T/3.6GHz/16MB/95W/DDR4-2666 400W PSU needed	Storage Controller	Onboard Intel RST SATA RAID Std SATA 6Gb/s HDD or SSD 0/1/10/5
Processor	Core i9-9900	8C/16T/3.1GHz/16MB/65W/DDR4-2666	╡║	Onboard Intel RST PCIe RAID Std PCIe NVMe M.2 PCIe SSD 0/1
	Core i7-9700K	8C/8T/3.6GHz/12MB/95W/DDR4-2666 400W PSU needed		Disk Type Interface RPM Offering Max Qty
	Core i7-9700	8C/8T/3.0GHz/12MB/65W/DDR4-2666		3.5" SATA HDD SATA 6Gb/s 7.2K 1TB/2TB/4TB 3
	Core i7-8700K	6C/12T/3.7GHz/12MB/95W/DDR4-2666		2.5" SATA HDD SATA 6Gb/s 7.2K 500GB FIPS 4
	Core i7-8700	6C/12T/3.2GHz/12MB/65W/DDR4-2666	Storage Support	2.5" SATA SSD SATA 6Gb/s 256GB/512GB/1TB 4
	Core i5-9600K	6C/6T/3.7GHz/9MB/95W/DDR4-2666 400W PSU needed		Optane Memory PCIe NVMe 32GB 1,
	Core i5-9600	6C/6T/3.1GHz/9MB/65W/DDR4-2666		used with hDD/33D
	Core i5-9500	6C/6T/3.0GHz/9MB/65W/DDR4-2666		M.2 PCIe SSD PCIe NVMe 256GB/512GB/1TB 3
	Core i5-9400F	6C/6T/2.9GHz/9MB/65W/DDR4-2666		Up to five bays with four disk bays plus one slim optical bay, supports up to 3x
	Core i5-9400	6C/6T/2.9GHz/9MB/65W/DDR4-2666	_	3.5" HDD plus 1x 2.5" SSD, or 4x 2.5" HDD/SSD
	Core i5-8500	6C/6T/3.0GHz/9MB/65W/DDR4-2666	_	Bay 1 Primary disk bay, 3.5" or 2.5"
	Core i3-9300	4C/4T/3.7GHz/8MB/62W/DDR4-2400		Bay 2 2.5" SATA bay, cannot be available when 2nd Quadro P2000 is used
	Core i3-9100	4C/4T/3.6GHz/6MB/65W/DDR4-2400		Bay 3 Secondary disk bay, 3.5" or 2.5"
	Core i3-8300	4C/4T/3.7GHz/8MB/62W/DDR4-2400		
	Core i3-8100	4C/4T/3.6GHz/6MB/65W/DDR4-2400	Storage Bays	Bay 4 5.25" Flex bay, supports one of the following:
Chipset	Intel C246 Chipse			<ul> <li>Flex module for optional front eSATA/Thunderbolt/IEEE1394</li> </ul>
Memory Sockets	4 DIMM sockets wit	h 2 channels 666 UDIMM ECC or		<ul> <li>3rd disk bay, 3.5" or 2.5", removable, via Front Access Storage Enclosure, using SATA 4 connector as eSATA mode</li> </ul>
lemory Types		GB DDR4-2666 UDIMM non-ECC		3rd disk bay, 3.5" or 2.5", via 5.25" to 3.5" HDD Kit
Memory Capacity		3 for UDIMM ECC or 128GB with 4 x 32GB UDIMM non-ECC		
, , ,		n UDIMM ECC memeory		Bay 5 9mm Slim ODD bay
lemory r rotection	Three PCIe 3.0 slo			M.2 3x M.2 SSD (1 onboard. 2 via PCIe to M.2 adapter)
		5	Media reader	Optional 7-in-1 card reader on most models
Expansion slots		6, full height, half length, links to CPU	Network	One onboard GbE port via integrated gigabit ethernet Intel i219LM, supports
-xpansion siots	Slot 2 PCIe 3.0 x1	, full height, full length, links to PCH	interfaces	Wake-on-LAN. Optional PCIe ethernet adapters are available
	Slot 3 PCle 3.0 x1	6 (negotiable link width x4), full height, half length, links to PCI	WLAN + Bluetooth	One dedicated onboard M.2 slot for optional Intel Wireless-AC 9560, 2x2, 2.4GHz/5GHz (160MHz channels), 802.11ac, Bluetooth 5, up to 1.73Gbps
	Integrated Intel UH	D Graphics P630 in -G suffix Xeon processors, or Intel UHD		2.4GHZ/5GHZ (160MHZ channels), 802.11ac, Bluetooth 5, up to 1.73Gbps Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant.
Processor graphics	Graphics 630 in C	ore i7, i5, i3, or Pentium processors. discrete graphics to support multi-display, enables three rear	Security features	Optional chassis intrusion switch, E-lock, cable lock, Kensington lock, and pad
	display connectors	(2 DP standard, 1 DP or HDMI optional)		lock
	_uispiay connectors		Intel vPro	Supports Intel vPro on Xeon models.
				vPro also requires Wireless-AC 9560 if Wi-Fi is needed Intel Active Management Technology 12 on Xeon models,
			Intel AMT	Intel Standard Manageability on other models
			Base warranty	US models comes with 3-year limited onsite service with 9x5/NBD. 1 or 3-year limited onsite service with 9x5/NBD in EMEA or other GEOs

### ThinkStation P330 Tower Gen 2 (30CY and 30D0) Platform Specifications - II of II

Components	Specification
Front ports	2x USB 3.1 Gen 1 Type A. 2x USB 3.1 Gen 2 Type A. 1x USB 3.1 Gen 1 Type-C. 1x Mic-in. 1x Combo jack
Rear ports	2x USB 3.1 Gen 1 Type A. 2x USB 2.0 Type-A. 1x RJ-45. 1x COM. 2x DP. 1x Audio line-out Notes: DP needs Core, Pentium, or -G suffix Xeon processor
Optional front ports (on flex module)	2x Thunderbolt (USB Type-C), one of two ports supports video-out. 1x eSATA. 1x IEEE1394
Optional rear ports	Supports the following via cable: 1x COM. 1x Parallel. 2x PS/2. 1x DP or 1x HDMI. 2x USB 2.0 Supports the following via PCIe adapter: 4x COM. 2x USB 3.1 Type-C. 2x USB 3.1 Gen 1. 1x Thunderbolt. Notes: DP or HDMI needs Core, Pentium, or -G suffix Xeon processor
Temperature	Operating: 50 °F to 95 °F (10 °C to 35 °C) Non operating (no package): 14 °F to 140 °F (-10 °C to 60 °C) Non operating (with package): -40 °F to 140 °F (-40 °C to 60 °C)
Altitude	Operating: -15.2 m (-50 ft) to 3048 m (10 000 ft). Storage: -15.2 m (-50 ft) to 10, 668 m (35 000 ft)
Humidity	Operating: 30%~90%, non-condensing Storage (with package): 20%~90%, non-condensing
Environmental certification	RoHS-compliant. GREENGUARD. EPEAT Silver rating and ENERGY STAR 7 qualified
Power supply	Supports one 250W or 400W power supply, 100V - 240V, 92% PSU. Climate Savers Computing Platinum and 80 PLUS Platinum qualified. 400W PSU supports one 6+2-pin aux power connector.
ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/

Note: 1. Depending on many factors, actual data transfer speed mentioned on this page may be lower than theoretical speed. 2. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer





# ThinkStation P520 Platform Specifications - I of II

Product Specifications Reference (PSREF)

Form factor	33L Tower							Disk Type	Interface	RPM	Offering	Max Qty			
Dimensions	165mm/6.5" W	x 460mm/18.1" D :	x 440mm/ <sup>-</sup>	17.3" H (with feet)	)			3.5" SATA	SATA	7.2K	-	6			
Weight		guration: 52.91 lb (						HDD	6Gb/s	1.21	110/210/410/010	0			
	Processor	# of # of Cores Threads	Base Frequen	icy Cache	IDP	Memory Types	Storage Sup-	2.5" SATA HDD 2.5" SATA	SATA 6Gb/s	7.2K	500GB/500GB FIPS	6			
	Xeon W-2295 Xeon W-2275	18 <u>36</u> 14 28	3.0GH 3.3GH			DR4-2933 DR4-2933	port	SSD	SATA 6Gb/s		256GB/512GB/1TB/2TB	6			
	Xeon W-2265 Xeon W-2255	12 24 10 20	3.5GH 3.7GH	z 19.25MB	165W D 165W D	DR4-2933 DR4-2933		M.2 PCIe SSD	PCIe NVMe		256GB/512GB/1TB/2TB	9			
	Xeon W-2235 Xeon W-2235	8 16 6 12	3.9GH 3.8GH	z 16.5MB	155W D	DR4-2933 DR4-2933		PCIe AIC SSD	PCIe NVMe		480GB	2 (1 when quad M.2 adapter used)			
	Xeon W-2225	4 8	4.1GH	z 8.25MB	105W D	DR4-2933		Bay Maximum Drives Qty							
Processor Support	Xeon W-2223 Xeon W-2195	4 8 18 36	<u>3.6GH</u> 2.3GH		120W D 140W D			Type	SSD (2 on	board	I, 7 via PCIe to M.2 adapt	er)			
	Xeon W-2175	14 28	2.5GH	z 19MB	140W D			2 flex l	bays. Suppo	orts th	e following:				
	Xeon W-2155	10 20	3.3GH		140W D			• 2x h	alf-height o	ptical	drives				
	Xeon W-2145 Xeon W-2135	8 16 6 12	<u>3.7GH</u> 3.7GH		140W D			• 2X 5	.25" 9.0mm	optic	al drives al drive + 2x 3.5"/2.5" SA				
	Xeon W-2133	6 12	3.6GH		140W D		Otomo no Douro	• 1x 3	.5"/2.5" SA	TA SS	D/HDD with Front Access	Storage Enclosure			
	Xeon W-2125	4 8	4.0GH		120W D		Storage Bays	Flex Bay • 1x fl	ex module f	or the	e following options:				
	Xeon W-2123	4 8	3.6GH	z 8.25MB	120W D			Tray							
	Xeon W-2104	4 4	3.2GH		120W D					JSB 3	3.1 Gen 1 reader, 2x Thun	derbolt, or 4-digit diag-			
	Xeon W-2102	4 4	2.9GH	z 8.25MB	120W   D	DR4-2400	_		display	ont I	SB 3 1 Gen 1 Type-C or e	SATA			
Processor Sockets							_	Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA • 2x M.2 SSD with 2x Front Removable Drive Enclosures							
Chipset	Intel C422 Chip						_								
		s with 4 channels					_	Disk bay Up to a	al)						
Memory Types		MM or DDR4-293						Supports up to 9	9x M.2 SSD	+ 6x	3.5" HDD/6x 2.5" SATA d	isks/4x 2.5" SAS HDD +			
		64GB DDR4-2933					Max Storage	1x PCle AIC SS	D.		_				
Memory Protection							-	All HDD: 36TB L	using 6x 3.5	" HDI					
S		PCIe 3.0 x8, full h									SATA SSD, 9x M.2 SSD, a	na TX PCIE AIC SSD			
		PCIe 3.0 x16, full					Bower eupply	Supports one of			0.09/ 90 PLUS Platinum a	walified			
		PCIe 3.0 x4, full h					Power supply	<ul> <li>One fixed 690</li> <li>One fixed 900</li> </ul>	W autosens	sing, s	92%, 80 PLUS Platinum o 92%, 80 PLUS Platinum o	ualified			
<b>1</b>		PCIe 3.0 x16, full			uble-width							G-II 15-in-1 USB 3.1 Gen 1			
		PCI, full height, fu					Media reader	reader on flex m		01111	ost modelo. Optional of le				
	. ,	PCIe 3.0 x4, full h					Network Integrated one gigabit ethernet (Intel i219LM), supports Wake-on-LAN. Optic					ake-on-LAN. Optional PCIe			
	Graphics	Memory	Pow- er	Connector	SLI / NV-	Max Qty	interfaces WLAN +	ethernet or wire				11ac Bluetooth 4.2 up to			
	NVS 810	4GB DDR3		8xmini DP		2	Bluetooth								
	Quadro P400	2GB GDDR5	<u>30W</u>	3xminiDP		2	Security		dmin passw	ord.	Frusted Platform Module.	CG 2.0 compliant, switch			
	Quadro P600 Quadro P620	2GB GDDR5 2GB GDDR5		4xminiDP 4xminiDP		2	features	to 1.2 via UEFI	setting. Opt	onal	access panel lock, Kensin	gton lock, and pad lock			
	Quadro P1000	4GB GDDR5		4xminiDP 4xminiDP		2	Intel vPro					C 8265 if Wi-Fi is needed			
	Quadro P2000	5GB GDDR5		4xDP		2	Intel AMT	Intel Active Man	agement Te	chno	logy 11				
									LED T	hinks	tation Diagnostics for Win	dows. Photo-audio transfer			
Discrete Graphics	Quadro P4000	8GB GDDR5	120W	4xDP		2		Front panel war	NING LED. I	i ili ili ili c					
Offering	Quadro P4000 Quadro P5000	8GB GDDR5 16GB GDDR5	X180W	DVI-D DL+4xDP	SLI	2	Diagnostic	with Lenovo PC	Diag-nostic	s for	Android and iOS. Optiona	I front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000	8GB GDDR5 16GB GDDR5 24GB GDDR5	X180W X250W	DVI-D DL+4xDP DVI-D DL+4xDP		2		with Lenovo PC display on flex n	Diag-nostic nodule	s for	Android and iOS. Optiona	I front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40	8GB GDDR5 16GB GDDR5 24GB GDDR5 000 8GB GDDR6	X 180W X 250W 160W 3>	DVI-D DL+4xDP DVI-D DL+4xDP <dp, 1xvirtuallink<="" td=""><td>&lt;</td><td>2</td><td>Base warranty</td><td>with Lenovo PC display on flex n 1 or 3-year limite</td><td>Diag-nostion nodule ed onsite se</td><td>s for</td><td>Android and iOS. Optiona</td><td>I front 4-digit diagnostic</td></dp,>	<	2	Base warranty	with Lenovo PC display on flex n 1 or 3-year limite	Diag-nostion nodule ed onsite se	s for	Android and iOS. Optiona	I front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50	8GB GDDR5 16GB GDDR5 24GB GDDR5 000 8GB GDDR6 000 16GB GDDR6	X 180W X 250W 160W 3x 6 265W 4x	DVI-D DL+4xDP DVI-D DL+4xDP <dp, 1xvirtuallink<br=""><dp, 1xvirtuallink<="" td=""><td></td><td>2 1 2 1</td><td></td><td>with Lenovo PC display on flex n 1 or 3-year limite Realtek ALC662</td><td>Diag-nostic nodule ed onsite se 2 codec</td><td>ervice</td><td>Android and iOS. Optiona with 9x5/NBD</td><td>I front 4-digit diagnostic</td></dp,></dp,>		2 1 2 1		with Lenovo PC display on flex n 1 or 3-year limite Realtek ALC662	Diag-nostic nodule ed onsite se 2 codec	ervice	Android and iOS. Optiona with 9x5/NBD	I front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 60	8GB GDDR5 16GB GDDR5 24GB GDDR5 000 8GB GDDR6 000 16GB GDDR6 000 24GB GDDR6	X 180W X 250W 160W 3> 6 265W 4> 6 295W 4>	DVI-D DL+4xDP DVI-D DL+4xDP xDP, 1xVirtualLink xDP, 1xVirtualLink xDP, 1xVirtualLink		2 1 2 1 1	Base warranty HD Audio	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger	Diag-nostic nodule ed onsite se 2 codec	ervice	Android and iOS. Optiona	I front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 60 Quadro RTX 80	8GB GDDR5 16GB GDDR5 24GB GDDR5 000 8GB GDDR6 000 16GB GDDR 000 24GB GDDR 000 48GB GDDR	X 180W X 250W 160W 3x 6 265W 4x 6 295W 4x 6 295W 4x	DVI-D DL+4xDP DVI-D DL+4xDP (DP, 1xVirtualLink (DP, 1xVirtualLink (DP, 1xVirtualLink (DP, 1xVirtualLink		2 1 2 1 1 1 1	Base warranty	with Lenovo PC display on flex n 1 or 3-year limite Realtek ALC662 4x USB 3.1 Ger (3.5mm)	Diag-nostic nodule ed onsite se codec 1 (includes	ervice	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo	l front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 60 Quadro RTX 60 Quadro RTX 80 Quadro GP100	8GB GDDR5 16GB GDDR5 24GB GDDR5 000 8GB GDDR6 000 16GB GDDR 000 24GB GDDR 000 24GB GDDR 000 48GB GDDR 16GB HBM2	X 180W X 250W 160W 3> 6 265W 4> 6 295W 4> 6 295W 4> 6 295W 4> 235W 1	DVI-D DL+4xDP DVI-D DL+4xDP (DP, 1xVirtualLink (DP, 1xVirtualLink (DP, 1xVirtualLink (DP, 1xVirtualLink (XDP, 1xVirtualLink (XDVI-D DL, 4xDP)		2 1 2 1 1	Base warranty HD Audio Front ports	with Lenovo PC display on flex n 1 or 3-year limite Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x	Diag-nostic nodule ed onsite se codec 1 1 (includes USB 3.1 Ge	ervice	Android and iOS. Optiona with 9x5/NBD	l front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 60 Quadro RTX 80 Quadro RTX 80 Quadro GP100 Quadro GV100	8GB GDDR5 16GB GDDR5 24GB GDDR5 000 8GB GDDR6 000 16GB GDDR 000 24GB GDDR 000 24GB GDDR 16GB HBM2 32GB HBM2	X 180W X 250W 5 160W 3y 6 265W 4y 6 295W 4y 6 295W 4y 235W 1 250W	DVI-D DL+4xDP DVI-D DL+4xDP KDP, 1xVirtualLink KDP, 1xVirtualLink KDP, 1xVirtualLink KDP, 1xVirtualLink XDVI-D DL, 4xDP 4xDP	NVLink	2 1 2 1 1 1 2 1 2 1	Base warranty HD Audio Front ports	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x mic-in), 2x PS/2	Diag-nostic nodule ed onsite se codec 1 1 (includes USB 3.1 Ge	ervice	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo	l front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 60 Quadro RTX 60 Quadro RTX 80 Quadro GP100 Quadro GV100 Storage Contro	8GB GDDR5 16GB GDDR5 24GB GDDR5 000 8GB GDDR6 000 16GB GDDR6 000 24GB GDDR6 000 48GB GDDR6 16GB HBM2 32GB HBM2 32GB HBM2	X 180W X 250W 3 160W 3> 6 265W 4> 6 295W 4> 6 295W 4> 6 295W 4> 235W 12 250W Interface	DVI-D DL+4xDP DVI-D DL+4xDP kDP, 1xVirtualLink kDP, 1xVirtualLink kDP, 1xVirtualLink kDP, 1xVirtualLink xDVI-D DL, 4xDP 4xDP RAID	NVLink	2 1 2 1 1 1 1	Base warranty HD Audio Front ports	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x mic-in), 2x PS/2 Front:	Diag-nostic nodule ed onsite se codec 1 1 (includes USB 3.1 Ge	ervice one one	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo 1x RJ-45, 3x analog audic	l front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 60 Quadro RTX 80 Quadro RTX 80 Quadro GP100 Quadro GV100 Storage Contro Onboard Intel F	8GB GDDR5           16GB GDDR5           24GB GDDR5           000         8GB GDDR5           000         16GB GDDR5           000         24GB GDDR6           16GB HBM2         32GB HBM2           33GB HBM2         32GB HBM2           Iller         Type           RSTE         Std	X 180W X 250W 5 160W 3y 6 265W 4y 6 295W 4y 6 295W 4y 235W 1 250W	DVI-D DL+4xDP DVI-D DL+4xDP KDP, 1xVirtualLink KDP, 1xVirtualLink KDP, 1xVirtualLink KDP, 1xVirtualLink KDP, 1xVirtualLink XDVI-D DL, 4xDP 4xDP RAID 0/1/10/5	NVLink	2 1 2 1 1 1 2 1 2 1	Base warranty HD Audio Front ports	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x mic-in), 2x PS/2 Front:	Diag-nostic nodule ed onsite se codec 1 1 (includes USB 3.1 Ge	ervice one one	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo	l front 4-digit diagnostic			
Offering	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 60 Quadro RTX 60 Quadro RTX 80 Quadro GP100 Quadro GV100 Storage Contro	8GB GDDR5           16GB GDDR5           24GB GDDR5           000         8GB GDDR5           000         16GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB HBM2           32GB HBM2         32GB HBM2           Iller         Type           RSTe         Std           Opt         SAS	X 180W X 250W 160W3x 6 265W4x 6 295W4x 6 295W4x 235W 1 250W 1250W interface ATA 66b/s 12Gb/s, S, 6Gb/s	DVI-D DL+4xDP DVI-D DL+4xDP (OP, 1xVirtualLink (DP, 1xVirtualLink (OP,	NVLink	2 1 2 1 1 1 2 1 2 1	Base warranty HD Audio Front ports Rear ports	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x mic-in), 2x PS/2 Front: • 2x Thunderbo supports video • 1x eSATA on f	Diag-nostic nodule ed onsite se 2 codec 1 1 (includes USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge	s for ervice one en 1, <sup></sup> B Typ	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo Ix RJ-45, 3x analog audio e-C) on flex module, one	l front 4-digit diagnostic			
	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 80 Quadro RTX 80 Quadro GP100 Quadro GV100 Storage Contro Onboard Intel F 9440-8i PCle	8GB GDDR5           16GB GDDR5           24GB GDDR5           000         8GB GDDR6           000         16GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           32GB HBM2         32GB HBM2           Iller         Type           3STe <std< td="">         SAS           Opt         SAS</std<>	X 180W X 250W 6 265W 4) 6 295W 4) 2 255W 4) 2 255W 4) 2 255W 1 2 250W Interface ATA 6Gb/s 12Gb/s, S/ 6Gb/s	DVI-D DL+4xDP DVI-D DL+4xDP (DP, 1xVirtualLink (DP,	NVLink	2 1 2 1 1 1 2 1 2 1 2 2 1 2 ache	Base warranty HD Audio Front ports Rear ports	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x mic-in), 2x PS/2 Front: • 2x Thunderbo supports video • 1x USB Type-1	Diag-nostic nodule ed onsite se 2 codec 1 1 (includes USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge	s for ervice one en 1, <sup></sup> B Typ	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo Ix RJ-45, 3x analog audio e-C) on flex module, one	l front 4-digit diagnostic			
Offering	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 50 Quadro RTX 60 Quadro RTX 80 Quadro RTX 80 Quadro GP100 Quadro GV100 Storage Contro Onboard Intel F 9440-8i PCle 9460-16i PCle	8GB GDDR5           16GB GDDR5           24GB GDDR5           000         8GB GDDR6           000         16GB GDDR1           000         24GB GDDR1           000         24GB GDDR1           000         24GB GDDR1           000         24GB GDDR1           000         24GB GDDR1           16GB HBM2         32GB HBM2           32GB HBM2         32GB HSM2           Nopt         SAS           Opt         SAS	X 180W X 250W 160W33 6 265W49 6 295W49 6 295W49 235W 12 250W Interface ATA 6Gb/s 12Gb/s, SJ 6Gb/s	DVI-D DL+4xDP DVI-D DL+4xDP KOP, 1xVirtualLink KOP, 1xVirtualLink KOP, 1xVirtualLink KOP, 1xVirtualLink KOP, 1xVirtualLink XDVI-D DL, 4xDP 4xDP RAID 0/1/10/5 ATA 0/1/10/5/6	NVLink	2 1 2 1 1 1 2 1 2 1	Base warranty HD Audio Front ports Rear ports	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x mic-in), 2x PS/2 Front: • 2x Thunderbo supports vider • 1x eSATA on f • 1x USB Type- Rear:	Diag-nostic nodule ed onsite se 2 codec 1 1 (includes USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge USB 3.1 Ge	s for ervice one en 1, <sup></sup> B Typ	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo Ix RJ-45, 3x analog audio e-C) on flex module, one	l front 4-digit diagnostic			
Offering	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 40 Quadro RTX 50 Quadro RTX 80 Quadro RTX 80 Quadro GP100 Quadro GP100 Quadro GV100 Storage Contro Onboard Intel F 9440-8i PCle 9460-16i PCle NVMe Basic	8GB GDDR5       16GB GDDR5       24GB GDDR5       000     8GB GDDR6       000     16GB GDDR1       000     24GB GDDR1       000     24GB GDDR1       000     24GB GDDR1       000     24GB GDDR1       000     24GB GDDR1       16GB HBM2     32GB HBM2       32GB HBM2     32GB HBM2       Iller     Type       3STe     Std       Opt     SAS       Opt     Qpt	X 180W X250W 6 265W4y 6 295W4y 6 295W4y 235W 1 250W interface ATA 6Gb/s 12Gb/s, Sy 6Gb/s Cle NVMe	DVI-D DL+4xDP DVI-D DL+4xDP (OP, 1xVirtualLink (OP,	NVLink	2 1 2 1 1 1 2 1 2 1 2 2 1 2 ache	Base warranty HD Audio Front ports Rear ports Optional ports	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x mic-in), 2x PS/2 Front: • 2x Thunderbo supports video • 1x eSATA on f • 1x USB Type-I Rear: • 1x COM port	Diag-nostic nodule ed onsite se 2 codec 1 (includes USB 3.1 Ge USB 3.1 Ge	s for ervice one en 1, <sup>-</sup> B Typ odule	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo Ix RJ-45, 3x analog audic e-C) on flex module, one , USB 3.1 Gen 1	I front 4-digit diagnostic			
Offering	Quadro P4000 Quadro P5000 Quadro P6000 Quadro RTX 50 Quadro RTX 60 Quadro RTX 80 Quadro RTX 80 Quadro GP100 Quadro GV100 Storage Contro Onboard Intel F 9440-8i PCle 9460-16i PCle	8GB GDDR5           16GB GDDR5           24GB GDDR5           000         8GB GDDR6           000         16GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           000         24GB GDDR6           16GB HBM2         32GB HBM2           32GB HBM2         32GB HBM2           Iller         Type           RSTe         Std           Opt         SAS           Opt         SAS           Opt         Pf	X 180W X 250W 160W33 6 265W49 6 295W49 6 295W49 235W 12 250W Interface ATA 6Gb/s 12Gb/s, SJ 6Gb/s	DVI-D DL+4xDP           DVI-D DL+4xDP           QP, 1xVirtualLink           XDP, 1xVirtualLink           XDP, 1xVirtualLink           XDP, 1xVirtualLink           XDP           4xDP           AXDP           ATA           0/1/10/5           ATA           0/1/10/5/6           0/1/10/5	NVLink	2 1 2 1 1 1 2 1 2 1 2 2 1 2 ache	Base warranty HD Audio Front ports Rear ports Optional ports	with Lenovo PC display on flex n 1 or 3-year limit Realtek ALC662 4x USB 3.1 Ger (3.5mm) 2x USB 2.0, 4x mic-in), 2x PS/2 Front: • 2x Thunderbo supports video • 1x eSATA on f • 1x USB Type-I Rear: • 1x COM port	Diag-nostic nodule ed onsite se 2 codec 1 (includes USB 3.1 Ge USB 3.1 Ge	s for ervice one en 1, <sup>-</sup> B Typ odule	Android and iOS. Optiona with 9x5/NBD 11W charging), 1x combo Ix RJ-45, 3x analog audio e-C) on flex module, one	I front 4-digit diagnostic			

### ThinkStation P520 Platform Specifications - II of II

	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)
	Temperature - storage (no package)	14 °F to 140 °F (-10 °C to 60 °C)
Environmental	Temperature - storage (with package)	-40 °F to 140 °F (-40 °C to 60 °C)
specification	Altitude - operating	(Unpressurized): -50ft-10000ft (-15.2m-3048m)
	Humidity - operating	10%~80%, non-condensing
	Humidity - storage (with package)	10%~90%, non-condensing
	RoHS-compliant. GREENGUARD. E qualified on model 30BE0008US an	PEAT Silver rating. ENERGY STAR 6.1 d 30BE0009US
ISV certifications	Please visit www.thinkworkstations.c	com/isv-certifications/

Note: 1. Depending on many factors, actual data transfer speed mentioned on this page may be lower than theoretical speed. 2. To support the maximum expandability, 900W power supply may be needed. 3. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer



### ThinkStation P520c Platform Specifications

Product Specifications Reference (PSREF)

Form factor	25L Tower		-						Supports up to 5x M.2 SSD + 4x 3.	5" HDD/4x 2.5" SSD/4x 2.5" HDD			
	175mm/6.89" V	V x 426n	nm/16.77"	D x 376mm/	14.8" H (with	feet)		Max Storage	All HDD: 24TB using 4x 3.5" HDD				
	Maximum confi							-	All SSD: 18TB using 4x 2.5" SATA				
0		# of	# of	Base		TOD	Memory	Power supply	One fixed 500W, autosensing, 92%				
	Processor Xeon W-2245		Threads 16	Frequency 3.9GHz	Cache 16.5MB	TDP 155W	Types DDR4-2933	Media reader	USB 2.0 9-in-1 card reader on mos 1 reader on flex module	t models. Optional UHS-II 15-in-1 USB 3.1 Ger			
	Xeon W-2235 Xeon W-2225	6 4	12 8	3.8GHz 4.1GHz	8.25MB 8.25MB	130W 105W	DDR4-2933	Network interfaces	Integrated one gigabit ethernet (Integrated one gigabit ethernet (Integrated one gigabit ethernet or wireless adapters)	el i219LM), supports Wake-on-LAN. Optional			
	Xeon W-2223	4	8	3.6GHz	8.25MB	120W	DDR4-2666	WLAN + Bluetooth		x2, 2.4GHz/5GHz, 802.11ac, Bluetooth 4.2, up			
Processor Support	Xeon W-2195 Xeon W-2175 Xeon W-2155	18 14 10	36 28 20	2.3GHz 2.5GHz 3.3GHz	24.75MB 19MB 13.75MB	140W 140W 140W	DDR4-2666		Power-on and admin password. Tru	sted Platform Module, TCG 2.0 compliant, onal access panel lock, Kensington lock, and			
	Xeon W-2145 Xeon W-2135	6	16 12	3.7GHz 3.7GHz	11MB 8.25MB	140W 140W	DDR4-2666	Intel vPro	pad lock Intel vPro technology supported. vF	Pro requires Wireless-AC 8265 if Wi-Fi is			
	Xeon W-2133 Xeon W-2125		12 8	3.6GHz 4.0GHz	8.25MB 8.25MB	140W	DDR4-2666 DDR4-2666	Intel AMT	needed Intel Active Management Technology 11				
	Xeon W-2123 Xeon W-2104	4	8 4	3.6GHz 3.2GHz	8.25MB 8.25MB	120W 120W	DDR4-2666 DDR4-2400	Diagnostic		ws. Optional front 4-digit diagnostic display on			
	Xeon W-2102		4	2.9GHz	8.25MB	120W	DDR4-2400	Base warranty	1 or 3-year limited onsite service w	ith 9x5/NBD			
Processor Sockets									Realtek ALC662 codec				
	Intel C422 Chip								2x USB 3.1 Gen 1, microphone (3.5	5mm), headphone (3.5mm)			
	4 DIMM socket DDR4-2666 RI			33 RDIMM					2x USB 2.0, 4x USB 3.1 Gen 1, 1x RJ-45, 3x analog audio ports (line-in, line-o mic-in), 2x PS/2				
	256GB with 4 >	( 64GB F	RDIMMs						Supports the following optional port	ts:			
Memory Protection	ECC								Front:				
Expansion slots	Slot 1 (CPU)PCle 3.0 x16, full height, full length, 75W,Slot 2 (CPU)PCle 3.0 x8, full height, full length, 25W, open endedSlot 3 (CPU)PCle 3.0 x16, full height, full length, 75WSlot 4 (PCH)PCle 3.0 x4, full height, half length, 25W, open ended							Optional ports	<ul> <li>2x Thunderbolt ports (USB Type-f supports video-out</li> <li>1x eSATA on flex module</li> <li>1x USB Type-C on flex module, U Rear:</li> <li>1x COM port</li> </ul>	C) on flex module, one of two ports ISB 3.1 Gen 1			
	Graphics NVS 810	4(	Memory		Connector 8xmini DP	SLI / lin	k 1		<ul> <li>2x USB Type-C ports via PCIe ad Internal:</li> <li>1x internal USB 3.1 Gen 1 port</li> </ul>	lapter, USB 3.1 gen 2. One 15W, one 5W			
	Quadro P400 Quadro P600	Quadro P400         2GB GDDR5         30W         3xminiDP         2           Quadro P600         2GB GDDR5         45W         4xminiDP         2							Temperature - operating	50 ° F to 95 ° F (10 ° C to 35 ° C)			
Discrete Graphics Offering	Quadro P620 Quadro P1000	2G	B GDDR5	5 40W	4x miniDP 4xminiDP	_	2		Temperature - storage (no pack- age)	14 ° F to 140 ° F (-10 ° C to 60 ° C)			
	Quadro P2000 Quadro P4000	5G	B GDDR5	5 75W	4xDP 4xDP		2	Environmental	Temperature - storage (with pack- age)	-40 °F to 140 °F (-40 °C to 60 °C)			
	Quadro P4000 Quadro P5000 Quadro RTX 4	16G	B GDDR5	5X 180W D\	/I-D DL+4xD	P	1	specification	Altitude - operating	(Unpressurized): -50ft-10000ft (-15.2m- 3048m)			
	Storage Contro	oller	Туре	Inter	face	RA	ID Cache		Humidity - operating Humidity - storage (with package)	10%~80%, non-condensing 10%~90%, non-condensing			
Storage Controller	NVMe Basic		Opt	SATA SAS 12Gb/s, PCle I	SATA 6Gb/s NVMe	0/1/	0/5 - 10 -	Environmental Certifications		EPEAT Silver rating. ENERGY STAR 6.1			
	NVMe for Intel	SSD	Opt	PCle	VVMe	0/1/1	0/5 -	ISV certifications	Please visit www.thinkworkstations	.com/isv-certifications/			
	Disk Type 3.5" SATA HDI	) S	Interface ATA 6Gb/s		Offering B/2TB/4TB/6		Max Qty 4			Maximum Drives Qty			
• • • •	2.5" SATA HDI 2.5" SATA SSI M.2 PCIe SSD	) S	ATA 6Gb/s ATA 6Gb/s Cle NVM	s 256G	)GB/500GB	B/2TB	<u>4</u> <u>4</u> 5	-	Type M.2 slot 5x M.2 SSD (2 onboard, 3 via PCIe to M.2 adapter) 2 flex bays. Supports the following:				
	µ							I Storage Bays	<ul> <li>1x 3.5"/2.5" SATA SSD/</li> <li>Flex Bay</li> <li>1x flex module for the for Tray 1: 9.0mm optical Tray 2: 15-in-1 USB 3.1</li> <li>nostic display</li> <li>Port 1 and 2: Front USE</li> </ul>	drives drive + 2x 3.5"/2.5" SATA SSD/HDD /HDD with Front Access Storage Enclosure			
								Note:	Disk bay Up to 2x 3.5"/2.5" disks w	ith 2 disk bays			

Note: 1. Depending on many factors, actual data transfer speed mentioned on this page may be lower than theoretical speed. 2. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer

#### ThinkStation P720 Photography

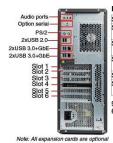












Expansion slots

Slot 1 (CPU2)	PCle 3.0 x16, full height, full length, 75W
Slot 2 (CPU1)	PCIe 3.0 x16, full height, full length, 75W, double-width
Slot 3 (CPU1)	PCIe 3.0 x8, full height, full length, 25W, open ended
Slot 4 (CPU1)	PCIe 3.0 x16, full height, full length, 75W, double-width
Slot 5	PCI, full height, full length, 25W
Slot 6 (PCH)	PCIe 3.0 x4, full height, half length, 25W, open ended

# ThinkStation P720 Platform Specifications

Product Specifications Reference (PSREF)

	36L Tower								Graphics	Memor		- Connector		Max
	175mm/6.89" W x 485				" H (with fe	eet)		_	Quadro RTX 4000			V2xDD 1xVirtuo	NVlink	Qty 2
	Maximum configuratio	n: 52.25	lb (23.7	kg)				Discrete Graphics			DR6 265V	V 3XDF, 1XVIIIua	ILIIIK	1
Processor Sockets								Offering	Quadro RTX 6000	24GB GDI	DR6 295V	V4xDP 1xVirtua	II ink	1
Processor Support	Up to two 165 W Gen	1 or Ger	n 2 Intel	Xeon Scal	able family	process	ors, Bronze, Sil-	l chiến thế	Quadro RTX 8000					1
	ver, Gold, or Platinum			-				-1	Quadro GP100	16GB HB	M2 235V	V 1xDVI-D DL, 4	xDP	1
	Processor	# of	# of	Base	Cache	TDP Memory Types			Quadro GV100	32GB HB	M2 250V	V 4xDP		1
	Xeon Gold 6246	12	24	Frequency	24.75MB	165W	DDR4-2933		Storage Controller		nterface	RAID	Cac	ne
	Xeon Gold 6244	8	16	3.6GHz	25MB	150W	DDR4-2933		Onboard Intel		TA 6Gb/s	0/1/10/5		
	Xeon Gold 6242	16	32	2.8GHz	22MB	150W	DDR4-2933		RSTe			0/1/10/5		
	Xeon Gold 6238T	22	44	1.9GHz	30MB	125W	DDR4-2933		9440-8i PCIe		S 12Gb/s,	0/1/10/5		
	Xeon Gold 6234	8	16	3.3GHz	25MB	130W	DDR4-2933	Charles Combralles		- ' SP	TA 6Gb/s			
	Xeon Gold 6230	20	40	2.1GHz	28MB	125W	DDR4-2933	Storage Controller	9460-16i PCle	Opt SA	S 12Gb/s, TA 6Gb/s	0/1/10/5/6	4GB DDR4,	SuperCap
	Xeon Gold 6226	12	24	2.7GHz	19MB	125W	DDR4-2933		NVMe Basic	37	le NVMe	0/1/10		
	Xeon Gold 5222	4	8		16.5MB		DDR4-2933		NVMe Premium		le NVMe	0/1/10/5		
	Xeon Gold 5218	16	32	2.3GHz	22MB	125W	DDR4-2666		NVMe for Intel					
	Xeon Gold 5217 Xeon Gold 5215	8	16 20	3.0GHz	11MB 13.75MB	<u>115W</u> 85W	DDR4-2666 DDR4-2666		SSD	Opt PC	le NVMe	0/1/10/5		
	Xeon Silver 4216	16	32	2.1GHz	22MB	100W	DDR4-2400		Disk Type Ir	nterface R	PM	Offering	Ma	x Qty
	Xeon Silver 4215	8	16	2.5GHz		85W	DDR4-2400					Olicing		onnection
	Xeon Silver 4214	12	24	2.2GHz	17MB	85W	DDR4-2400						+ 946	0 used)
	Xeon Silver 4210	10	20	2.2GHz	14MB	85W	DDR4-2400						6 (Also	supports
	Xeon Silver 4209T	8	16	2.2GHz		70W	DDR4-2400		3.5" SATA HDD SA	TA 6Gh/s 7	2K 1T	B/2TB/4TB/6TB		itional
Processor Offering	Xeon Silver 4208	8	16	2.1GHz	11MB	85W	DDR4-2400		0.5 OAIA HEE OA			0/210/410/010		5" SATA
	Xeon Bronze 3204	6	6	1.9GHz	8.25MB	85W	DDR4-2133	Storage Support	2.5" SATA HDD SA	TA COb/o 7	01/ 500			<u>/HDD)</u> 10
	Xeon Platinum 8160T Xeon Gold 6146	24	48 24	2.1GHz	33MB 24.75MB	<u>150W</u> 165W	DDR4-2666 DDR4-2666		2.5" SATA HDD SA 2.5" SAS HDD SA			GB/500GB FIPS 300GB/600GB	>	8
	Xeon Gold 6142	12	32	2.6GHz		150W	DDR4-2666		2.5" SASTIDD SA 2.5" SATA SSD SA	TA 6Gb/s		B/512GB/1TB/2	TB	10
	Xeon Gold 6136	12	24		24.75MB		DDR4-2666		2.5" PCIe SSD PC		2000	1.5TB		2
	Xeon Gold 6134	8	16		24.75MB		DDR4-2666		M.2 PCIe SSD PC	Cle NVMe	256G	B/512GB/1TB/2	ГВ	9
X X X X	Xeon Gold 6128	6	12		19.25MB		DDR4-2666		PCIe AIC SSD PC	Cle NVMe		480GB		2
	Xeon Gold 5122	4	8	3.6GHz	16.5MB	105W	DDR4-2666		Bay		Maxir	num Drives Qty		
	Xeon Gold 5120T	14	28		19.25MB		DDR4-2400		Type		Maxii	num Driveo Qty		
	Xeon Gold 5118	12	24		16.5MB	105W	DDR4-2400		M.2 slot 9x M.2 SS	SD (2 onboa	rd, 7 via F	Cle to M.2 adap	oter)	
	Xeon Gold 5115	10	20		13.75MB	85W	DDR4-2400		2 flex bay	s. Supports	the follow	ing:		
	Xeon Silver 4116 Xeon Silver 4114T	12	24 20	2.1GHz	13.75MB	85W 85W	DDR4-2400 DDR4-2400		<ul> <li>2x half-</li> </ul>	-height optic	al drives			
	Xeon Silver 4114	10	20	2.2GHz	13.75MB	85W	DDR4-2400		• 2x 5.25	5" 9.0mm op	tical drives			<b>D</b>
	Xeon Silver 4112	4	8	2.6GHz		85W	DDR4-2400			0 9.0mm op	tical drive	+ 1x 3.5"/2.5" S	AIA SSD/HL	D
	Xeon Silver 4110	8	16	2.1GHz		85W	DDR4-2400		Flex Bay • 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure 1x flex module for the following options: Tray 1: 9.0mm optical					
	Xeon Silver 4109T	8	16	2.0GHz		70W	DDR4-2400							
	Xeon Silver 4108	8	16	1.8GHz	11MB	85W	DDR4-2400	Storage Bays	Tray 1: 9.0mm optical Tray 2: 15-in-1 USB 3.1 Gen 1 reader or 2x Thunderbolt Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA					
Chipset	Intel C621 Chipset													
	12 DIMM sockets with	12 chan	nels. 6 [	DIMM sock	ets with 6	channels	s per processor					movable Drive E		
Memory Types	DDR4-2666 RDIMM								4 disk bays (2 bays standard, 2 bays optional). Supports one of the fo lowing configurations:					e of the fol-
Memory Capacity	768GB (DDR4-2933 F	RDIMM) (	or 384G	B (DDR4-2	2666 RDIM	M)			• 4x 3 5" 9	SATA HDD				
Memory Protection	ECC										- 4x 2 5" S	ATA SSD/HDD	Blind conne	ction
	Slot 1 (CPU2) PCIe 3	3.0 x16, t	full heigl	ht, full leng	th, 75W				Disk bay needed)				(2	
	Slot 2 (CPU1) PCIe 3					ouble-wi	dth			SATA SSD/H	IDD or 8x	2.5" SAS HDD (	Blind conne	ction
	Slot 3 (CPU1) PCIe 3	3.0 x8, fu	ull height	t, full length	n, 25W, op	en ende	d		needed)		~ ~ ~ " /~			
	Slot 4 (CPU1) PCIe 3											5" disks (Blind c		,
	Slot 5 PCI, fu	ull height	t, full len	igth, 25W					Supports up to 9x I	M.2 SSD + 6	6x 3.5" HE	D/10x 2.5" SSD	/10x 2.5" HE	D + 2x
	Slot 6 (PCH) PCIe 3	3.0 x4, fu	Il height	t, half lengt	h, 25W, or	en ende	ed	Max Storage	PCIe AIC SSD.					
	Graphics	Memor			nnector	SLI		-  Ŭ	All HDD: 36TB using 6x 3.5" HDD All SSD: 38.96TB using 10x 2.5" SATA SSD, 9x M.2 SSD, and 2x PCIe AIC SSI					
	Chapmes	Wiemon	-	er		NVlin			All 33D. 30.901 D L	using tox 2.	5 SAIA S	5D, 9X IVI.2 55D	, anu 2x FCI	e AIC 33D
	NVS 810	4GB DDI	R3 68		mini DP		2							
	Quadro P400 2	GB GDD	DR5 30	)W 3x	miniDP		3							
Discrete Graphics	Quadro P600 2	GB GDD	DR5 45	5W 4x	miniDP		3							
Offering		GB GDD			miniDP	_	3							
0		GB GDD			miniDP	_	3							
		GB GDD			4xDP		3							
		GB GDD					2							
				0W DVI-D 0W DVI-D			2							
	24		110/20									Le	enovo, Septe	mber 2019

### ThinkStation P720 Platform Specifications

Power supply	Supports one of the following: • One fixed 690W, autosensing, 92%, 80 PLUS Platinum qualified • One fixed 900W, autosensing, 92%, 80 PLUS Platinum qualified					
Media reader	USB 2.0 9-in-1 card reader on most models. Optional UHS-II 15-in-1 USB 3.1 Gen 1 reader on flex module					
Network interfaces	Integrated two-port gigabit ethernet (Intel i219LM and i210AT), supports Wake-on- LAN on both two ports. Optional PCIe ethernet are available					
WLAN + Bluetooth	Optional Intel Wireless-AC 8265, 2x2, 2.4GHz/5GHz, 802.11ac, Bluetooth 4.2, up to 867Mbps					
Security features	Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant, switch to 1.2 via UEFI setting. Chassis intrusion switch. Optional access panel lock, Kensington lock, and pad lock					
Intel vPro	Intel vPro technology supported. vPro r needed	requires Wireless-AC 8265 if Wi-Fi is				
Intel AMT	Intel Active Management Technology 1					
Diagnostic	Front panel warning LED. ThinkSta-tion Diagnostics for Windows. Photo-audio transfer with Lenovo PC Diag-nostics for Android and iOS. Optional front 4-digit diagnostic display on flex module					
Base warranty	1 or 3-year limited onsite service with 9x5/NBD					
HD Audio	Realtek ALC662 codec					
Front ports	4x USB 3.1 Gen 1 (includes one 11W charging), 1x combo audio/microphone jack (3.5mm)					
Rear ports	2x USB 2.0, 4x USB 3.1 Gen 1, 2x RJ-45, 3x analog audio ports (line-in, line-out, mic-in), 2x PS/2					
Optional ports	<ul> <li>Supports the following optional ports: Front:</li> <li>2x Thunderbolt ports (USB Type-C) on flex module, one of two ports supports video-out</li> <li>1x eSATA on flex module</li> <li>1x USB Type-C on flex module, USB 3.1 Gen 1</li> <li>Rear:</li> <li>1x COM port</li> <li>2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W Internal:</li> <li>1x internal USB 3.1 Gen 1 port</li> </ul>					
Environmental specification	Temperature - storage (no package)         Temperature - storage (with package)         Altitude - operating         Humidity - operating	50 ° F to 95 ° F (10 ° C to 35 ° C)         14 ° F to 140 ° F (-10 ° C to 60 ° C)         -40 ° F to 140 ° F (-40 ° C to 60 ° C)         'Unpressurized): 0-10000ft (0-3048m)         10%~80%, non-condensing         10%~90%, non-condensing				
Environmental Certifications	RoHS-compliant. GREENGUARD. EPEAT Silver rating. ENERGY STAR 6.1 quali- fied on model 30BA0007US and 30BA0008US					
ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/					

Note: 1. Depending on many factors, actual data transfer speed mentioned on this page may be lower than theoretical speed. 2. To support the maximum expandability, 900W power supply may be needed. 3. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer



### ThinkStation P920 Platform Specifications

Product	Specifications	Reference	(PSREE
1 100000	opecilications	1101010100	(I OLILI )

	55L Tower								Graphics	N	lemory	Power	Conn	ector	SLI /	Max
200mm/7	m/7.87" W x 6	620mm/24.	4" D x 44	6mm/17.56"	H (with feet	t)			1.11/2.010						NVlink	Qty
Maximum configuration: 71.3 lb (32.3kg)							NVS 810	4G	B DDR3	68W	8xmir			2		
Sockets 2x FCLGA3647 Support Up to two 205 W Gen 1 or Gen 2 Intel Xeon Scalable family processors, Bronze, Sil-							Quadro P400	2GE	3 GDDR5 3 GDDR5		3xmii 4xmii			5		
bort Up to two	two 205 W G	ien 1 or Ge	n 2 Intel )	Keon Scalable	e family pro	ocessors,	Bronze, Sil-		Quadro P600 Quadro P620		3 GDDR5		4xmii 4xmii			4
ver, Gold	old, or Platinu	um							Quadro P1000		3 GDDR5		4xmii			4
Dr	Processor	# of	# of	Base	Cache	TDP	Memory		Oundre DOOOO		3 GDDR5		4x[			4
		Cores					Types	Discrete Graphics	Quadro P4000		3 GDDR5					4
	Platinum 828		56	2.7GHz	39MB	205W	DDR4-2933	Offering	Quadro P5000				DVI-D D		SLI	3
	Gold 6254	18	36	3.1GHz	25MB	200W	DDR4-2933		Quadro P6000				DVI-D D		SLI	3
	Gold 6244 Gold 6242	8	<u>16</u> 32	3.6GHz 2.8GHz	25MB 22MB		DDR4-2933 DDR4-2933		Quadro RTX 400		3 GDDR6		3xDP, 1xV			3
	Gold 6238T	22	44	1.9GHz	30MB	125W	DDR4-2933		Quadro RTX 500				4xDP, 1xV		NVLink	3
	Gold 6234	8	16	3.3GHz	25MB	130W	DDR4-2933		Quadro RTX 600				4xDP, 1xV		NVLink	2
	Gold 6230	20	40	2.1GHz	28MB	125W	DDR4-2933	1	Quadro RTX 800 Quadro GP100				4xDP, 1xV 1xDVI-D [			2
	Gold 6226	12	24	2.7GHz	19MB	125W	DDR4-2933	1	Quadro GV100	320	B HBM2	250W	4x[		NVLink	
Xeon Gc	Gold 5222	4	8	3.8GHz	16.5MB	105W	DDR4-2933	]								
	Gold 5218	16	32	2.3GHz	22MB	125W		]	Storage Controll Onboard Intel R			Interfac SATA 6G		RAID 0/1/10/5	Ca	iche
	Gold 5217	8	16	3.0GHz	11MB	115W	DDR4-2666		9440-8i PCIe				ATA 6Gb/s			
	Gold 5215	10	20	2.5GHz	13.75MB	85W	DDR4-2666								400	
Xeon Silv	Silver 4216	16	32	2.1GHz	22MB	100W	DDR4-2400	Controller	9460-16i PCle	Opt	t SAS 12	2Gb/s, S/	ATA 6Gb/s	0/1/10/5/6	Supe	
	Silver 4215 Silver 4214	8	16	2.5GHz 2.2GHz	11MB 17MB	85W 85W	DDR4-2400 DDR4-2400	-	NVMe Basic	Opt	t	PCIe NV	Ме	0/1/10		<u></u>
	Silver 4210	12	24	2.2GHz	14MB	85W	DDR4-2400	-	NVMe Premium			PCIe NV		0/1/10/5		
Veen Cil	Silver 4209T	8	16	2.2GHz	11MB	70W	DDR4-2400		NVMe for Intel S	SD Op	t	PCIe NV	Me	0/1/10/5		
	Silver 4208	8	16	2.1GHz	11MB	85W	DDR4-2400		Disk Type II	nterface F	RPM	Offeri	ina		Max Qty	
	Bronze 3204		6	1.9GHz	8.25MB	85W	DDR4-2133	1	Block type	intorna oo i		Olion	ing		460 used	0
Xeon Pla	Platinum 816		48	2.1GHz	33MB	150W	DDR4-2666		3.5" SATA	SATA -				6 (Also su	pports a	dditio
	Gold 6154	18	36	3.0GHz	24.75MB	200W	DDR4-2666			6GD/S	7.2K 1	ГВ/2ТВ/4	ID/01D	4x 2.5" S	<u>SATA SSE</u>	)/HD
	Gold 6142	16	32	2.6GHz	22MB				2.5" SATA	SATA -	7.2K 50	0GB/500	GB FIPS		10	
	Gold 6136	12	24	3.0GHz	24.75MB	150W	DDR4-2666		HDD	6GD/S	.211 50	000/000			10	
	Gold 6134	8	16	3.2GHz	24.75MB	130W			2.5" SAS HDD	SAS .	10K	300GB/6	600GB		8	
	Gold 6128	6	<u>12</u> 8	3.4GHz	19.25MB	115W	DDR4-2666	Storage Support	2.5" SATA	12Gb/s SATA						
	Gold 5122 Gold 5120T	4	28	3.6GHz 2.2GHz	16.5MB 19.25MB		DDR4-2666 DDR4-2400	-	SSD	6Gb/s	2560	GB/512G	B/1TB/2TB		10	
	Gold 51201	12	20	2.3GHz	16.5MB	105W	DDR4-2400			PCle			-			
	Gold 5115	10	20	2.4GHz	13.75MB	85W	DDR4-2400		2.5" PCIe SSD	NVMe		1.5T	В		4	
	Silver 4116	12	24	2.1GHz	16.5MB	85W	DDR4-2400	1	M.2 PCIe SSD	PCle	2560		B/1TB/2TB		9	
	Silver 4114T	10	20	2.2GHz	13.75MB	85W	DDR4-2400		M.2 PCIe 55D	NVMe	2560	2D/312G	D/11D/21D		9	
	Silver 4114	10	20	2.2GHz	13.75MB	85W	DDR4-2400		PCIe AIC SSD	PCle		4800	3B		2	
	Silver 4112	4	8	2.6GHz	8.25MB	85W	DDR4-2400		1 010 / 10 000	NVMe		1000			-	
	Silver 4110	8	16	2.1GHz	11MB	85W	DDR4-2400		Bay			Maximur	n Drives Q	ty		
	Silver 4109T	8	16	2.0GHz 1.8GHz	11MB 11MB	70W 85W	DDR4-2400 DDR4-2400		Туре		· · · -					
	Silver 4108 621 Chipset		10	1.00112		0577	10004-2400		M.2 slot 9x M.2	SSD (2 0	nboard, 7	via PCIe	e to M.2 ad	apter)		
			nnolo O D		with C aba	nnolo no			2x 3.5" or 2.5" disks. Supports the following: • 3x half-height optical drives							
	MM sockets w						rprocessor		• 3X 112	25" 9 0m	m ontical	drives				
ory Types DDR4-2666 RDIMM, DDR4-2666 LRDIMM, or DDR4-2933 RDIMM							<ul> <li>2x 5.25" 9.0mm optical drives</li> <li>1x 5.25" 9.0mm optical drive + 1x 3.5"/2.5" SATA SSD/HDD</li> </ul>									
Memory Capacity 1TB (DDR4-2666 LRDIMM or DDR4-2933 RDIMM) or 512GB (DDR4-2666 RDIMM)					_	<ul> <li>1x 5.25" 9.0mm optical drive + 1x 3.5"/2.5" SATA SSD/HDD</li> <li>1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure</li> <li>1x flex module for the following options:</li> </ul>										
Memory Protection ECC					Storage Boye											
Slot 1 (CF Slot 2 (CF Slot 3 (CF Slot 4 (CF Slot 5 (PC Slot 6 (CF Slot 6 (CF Slot 7 (CF Slot 8 (CF	(CPU1) PC (CPU1) PC (CPU1) PC (CPU1) PC (PCH) PC (CPU2) PC (CPU2) PC (CPU2) PC (CPU2) PC	le 3.0 x16, le 3.0 x4, f le 3.0 x16, le 3.0 x4, f le 3.0 x4, f le 3.0 x4, f le 3.0 x16, le 3.0 x16, le 3.0 x16,	full heigh ull height, full heigh ull height, ull height, full heigh full heigh full heigh	t, full length, full length, 2 t, full length, full length, 2 half length, t, half length, t, full length, t, full length,	75W, doub 5W, open e 75W, doub 5W, open e 25W, open , 75W 75W, doub 75W	le-width ended le-width ended ended le-width		Tray 1: 9.0mm optical Tray 2: 15-in-1 USB 3.1 Gen 1 reader or 2x Thunderbolt Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA 3x M.2 SSD with 3x Front Removable Drive Enclosures 8 disk drives with 4 bays (2 bays standard, 2 bays optional) one of the following configurations: Disk bay • 4x 3.5" SATA HDD				es	ports			
Slot 3 (CF Slot 4 (CF Slot 5 (PC Slot 6 (CF Slot 7 (CF	(CPU1) PC (CPU1) PC (CPU1) PC (CPU1) PC (CPU2) PC (CPU2) PC (CPU2) PC (CPU2) PC	le 3.0 x16, ile 3.0 x16, ile 3.0 x16, ile 3.0 x4, f ile 3.0 x4, f ile 3.0 x16, ile 3.0 x16, ile 3.0 x16,	full height, full height, ull height, ull height, full height full heigh full heigh	t, full length, full length, 2 t, full length, 2 half length, 2 t, half length, 2 t, full length, t, full length, t, full length,	5W, open e 75W, doub 5W, open e 25W, open 75W 75W, doub 75W	le-width ended ended ended			Tray Port 3x M 8 disk c one of f Disk bay • 4x 3.5 • 4x 3.5	2: 15-in-1 1 and 2: I <u>.2 SSD w</u> drives with the follow 5" SATA H 5" SATA H	USB 3.1 Front USE ith <u>3x Fro</u> 1 4 bays ( ing config IDD IDD + 4x 2	3 3.1 Ger <u>nt Remo</u> 2 bays st jurations: 2.5" SATA	n 1 Type-C <u>vable Drive</u> tandard, 2 I	or e <u>e Er</u> bay	eSATA	eSATA nclosures

### ThinkStation P920 Platform Specifications

	•					
Max Storage	Supports up to 9x M.2 SSD + 6x 3.5" HDD/10x 2.5" SSD/10x 2.5" HDD + 2x PCIe AIC SSD. All HDD: 36TB using 6x 3.5" HDD					
	All SSD: 38.96TB using 10x 2.5" SATA SSD, 9x M.2 SSD, and 2x PCIe AIC SSD					
Power supply	One fixed 1400 watts, autosensing, 92% PSU, 80 PLUS Platinum qualified. Countries with input voltage under 115V, output power limited to 1125 watts					
Media reader	USB 2.0 9-in-1 card reader on most models. Optional UHS-II 15-in-1 USB 3.1 Gen 1 reader on flex module					
Network interfaces	Integrated two-port gigabit ethernet (Intel i219LM and i210AT), supports Wake-on- LAN on both two ports. Optional PCIe ethernet are available					
WLAN + Bluetooth	Optional Intel Wireless-AC 8265, 2x2, 2.4GHz/5GHz, 802.11ac, Bluetooth 4.2, up to 867Mbps					
Security features	Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant, switch to 1.2 via UEFI setting. Chassis intrusion switch. Optional access panel lock, Kensington lock, and pad lock					
Intel vPro	Intel vPro technology supported. vPro requires Wireless-AC 8265 if Wi-Fi is needed					
Intel AMT	Intel Active Management Technology 11					
Diagnostic	Front 4-digit diagnostic display. ThinkStation Diagnostics for Windows. Photo-audio transfer with Lenovo PC Diagnostics for Android and iOS					
Base warranty	1 or 3-year limited onsite service with 9x5/NBD					
HD Audio	Realtek ALC662 codec					
Front ports	4x USB 3.1 Gen 1 (includes one 11W charging), 1x combo audio/microphone jack (3.5mm)					
Rear ports	2x USB 2.0, 4x USB 3.1 Gen 1, 2x RJ-45, 3x analog audio ports (line-in, line-out, mic-in), 2x PS/2					
Optional ports	Supports the following optional ports: Front: • 2x Thunderbolt ports (USB Type-C) on flex module, one of two ports supports video-out • 1x eSATA on flex module • 1x USB Type-C on flex module, USB 3.1 Gen 1					
	Rear: • 1x COM port • 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W Internal: • 1x internal USB 3.1 Gen 1 port					
Environmental specification	Temperature - operating50 ° F to 95 ° F (10 ° C to 35 ° C)Temperature - storage (no package)14 ° F to 140 ° F (-10 ° C to 60 ° C)Temperature - storage (with package)-40 ° F to 140 ° F (-40 ° C to 60 ° C)Altitude - operating(Unpressurized): 0-10000ft (0-3048m)Humidity - operating10%~80%, non-condensingHumidity - storage (with package)10%~90%, non-condensing					
Environmental Certifications	RoHS-compliant. GREENGUARD. EPEAT Silver rating. ENERGY STAR 6.1 quali- fied on model 30BC0008US and 30BC0009US					
ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/					
Noto:						

Note: 1. Depending on many factors, actual data transfer speed mentioned on this page may be lower than theoretical speed. 2. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer (houyf@lenovo.com)

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**Included software:** may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

**Battery life:** Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

Visit http://psref.lenovo.com/ for the latest version of Product Specifications Reference.

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# **Summary of Changes**

This section describes the technical changes made in this edition. This edition might also include minor corrections and editorial changes which are not identified.

## March, 2020 - Version 556

### Additions in this update

New product(s)

ThinkVision P27h-20 ThinkVision P24h-20

New model(s)
None

Others None

Withdrawals in this update

Withdrawn product(s) None









# ThinkVision, M14 USB-C MOBILE MONITOR

# PORTABLE USB-C MONITOR CRAFTED FOR IMPROVED PRODUCTIVITY

The ThinkVision M14 is an ultraslim and ultralight mobile monitor. Its 14-inch screen helps you extend your workspace comfortably no matter where work takes you. Compatible with notebooks of any screen size that come with an advanced USB Type-C port\*, the ThinkVision M14 can either extend or duplicate your notebook display with one plug. The USB Type-C ports on either side allow both left- and right-handed users to work efficiently, and the ergonomic design enhances user experience. Packed with impressive portability, connectivity, and flexibility features, the ThinkVision M14 is ideal for mobile productivity.







Remarkable

Portability

Connectivity

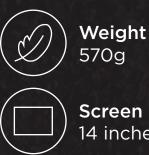
ThinkVisio

Flexibility

# ACHIEVE TARGETS ON THE GO

hinkVisio

The ThinkVision M14 boosts productivity with its thin and light form factor. Weighing 570g, this 4.4mm sleek mobile monitor enables easy portability. The stylish design with a Full HD, IPS display provides vivid lifelike visuals, ensuring you never miss out on any detail. With a brightness of 300 nits, the ThinkVision M14 offers a stunning visual experience while consuming content online.



570g

**Screen Size** 14 inches

**Brightness** 300 nits (Typical)



4.4mm sleek: approximately as thin as two USD \$1 coins



# **EXPERIENCE ADVANCED** CONNECTIVITY

Two innovative USB Type-C ports on either side of the monitor make connectivity effortless. These ports support both power and video delivery simultaneously from a single port. The ThinkVision M14 also offers a 'power pass through' design that powers the mobile monitor by an adapter and charges the notebook at the same time. This feature is suitable for smartphones or notebooks with one USB Type-C port\*. The ambidextrous design of this monitor enhances user comfort.



**USB** Ports 2 x USB Type-C

Cable USB Type-C to C



Ambidextrous design: built to enable both left- and-right handed users to work with ease

# WORK THE WAY YOU LIKE

The ThinkVision M14 with its admirable flexibility is built for varied job roles. With a tilt angle of -5°~90°, you can position your monitor in a way that suits your style. Compare content with ease even as you use laptops of different screen sizes with the ergonomic height adjustable foot. Also, you can wall mount your monitor effortlessly with mounting support for a hands-free viewing experience. The advanced low blue light technology minimizes eye strain, making extended working hours easy.



Height Adjustable Foot Tilt O°~90°

**Monitor Stand** Tilt -5°~90°

**Eye-care Technology** Low blue light

\*For charging usage, a Lenovo branded 65W adapter (Part No.: SA10E75874) is recommended



Height Adjustable Foot Tilt angle: 0°~90°

90° ₹

Monitor Stand Tilt angle: -5~90°

Remarkable flexibility: position the monitor in the way that suits your style

**Panel Size** 14-inch

Screen Dimensions (W x H, mm) 309.31 x 173.99 mm

Panel Type **In-Plane Switching** 

Backlight WLED

**Aspect Ratio** 16:9

**Power Consumption Switch-Off Mode** < 0.3 W

USB Type-C/Power Delivery Up to 65 W

**Power Supply** External (no adapter bundle)

**Voltage Required** DC 5 V to 20 V

Tilt Angle (front/back) -5° / 90°

**Temperature - Operating** 0° to 40°C

**Temperature - Non-operating** -20° to 60°C

Humidity - Operating 30 to 80%

Humidity - Non-operating 30 to 90%

Altitude - Operating 0 to 5000 m

Resolution 1920 x 1080

Pixel Pitch (H x V, mm) 0.1611 x 0.1611 mm

Dot/Pixel Per Inch (DPI/PPI) 157

Viewing angle (H x V @ CR 10:1) 178° / 178°

**Response Time (typical)** 6ms with OD

**Refresh Rate** 60 Hz

**Brightness (typical)** 300 cd/m<sup>2</sup>

**Contrast Ratio (typical)** 700:1

**Dynamic Contrast Ratio (typical)** 3M:1

Colour Gamut NTSC (CIE 1931) 72%

**Color Support (typical)** 16.7 Million

Color Depth 8bit (6bit + FRC)

Anti-Glare Yes

**Video Input Signals** 2 x USB 3.1 Type-C (DP1.2 Alt Mode)

Power Consumption (Typ./Max) 6 W / 7.5 W (Without USB Type-C output)

**ENERGY STAR®** Power Consumption (Pon) 4.88 W

**ENERGY STAR®** Power Consumption (E<sub>TEC</sub>) 15.53 kWh

**Power Consumption Sleep/Off** Mode < 0.3 W

**Mounting Support** Yes (100 mm)

Kensington<sup>™</sup> Lock Slot Yes

**Cable Management** Yes

**Bezel Color** Raven Black

Bezel Width (Side) 5.48mm

Bezel Width (top / bottom) 5.47 mm / 23.87 mm

Size Packed (D x H x W) (mm / inch) 276 x 61 x 402 mm / 10.87 x 2.40 x 15.83 inches

Size Unpacked w/stand (D x H x W) (mm / inch)(Lowest position) 96.54 x 209.03 x 323.37 mm / 3.8 x 8.23 x 12.73 inches

Size Unpacked w/stand (D x H x W) (mm / inch)(Highest position) 96.54 x 220.03 x 323.37 mm / 3.8 x 8.66 x 12.73 inches

Stand base footprint area (mm<sup>2</sup>) 260.87 x 69.55 mm / 10.27 x 2.74 inches

Weight Packed (kg / lbs.) 1.67 kg / 3.67 lbs.

Weight Unpacked (kg / lbs.) 0.57 kg / 1.26 lbs.

1 x Monitor with stand 1 x ThinkVision M14 sleeve 1 x USB Type-C cable (1 m) 1 x QSG 1 x Pair of clips

Altitude - Non-operating 0 to 40,000 ft

**Arsenic-free Glass** Yes

**PVC** free Yes

Mercury free Yes

PCC % of plastic resins 85%

**Geography Availability** WW

Warranty 3 Years

**ENERGY STAR®** Rating 7.1

CCC Yes

**EPEAT** Bronze

RoHS (EU 2002/95/EC) Yes (Arsenic free / Pb free / Mercury free)

Windows Certification Windows 7 / 10

**Image Quality Capability** ISO 9241-307

**China Energy Efficiency Standard** Tier 2

Low Blue Light / Eye Comfort Yes (Low Bluelight)



Windows

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### Lenovo ThinkVision E1922s Wide

Product Specifications Reference (PSREF)

		_
Name Case color	E1922s Wide Flat Panel Monitor Black	Features
Type-model	60G2AAR6US / 60G2AAT6EU	Widescreen 18.5-inch monitor
Panel	TFT-LCD, twisted nematic (TN), White LED backlight	<ul> <li>Supports HD 1366x768 resolution</li> <li>Supports VESA mount (100mm)</li> </ul>
Viewable image size	<b>18.5</b> " ( <b>470mm</b> ) diagonal	Mercury free panel and arsenic free glass
Max view area (W x H) Native resolution	16.1" x 9.1" / 409.8mm x 230.4mm 1366x768	Kensington lock slot ready for enhanced security
Aspect ratio	16:9	<ul> <li>Support Lenovo Tiny PC via VESA mount</li> <li>Supports optional soundbar</li> </ul>
Pixel pitch (mm)	0.3mm	Microsoft® Windows® 7 certified
Dot/Pixel per Inch Brightness	85 dpi 200 nits or cd/m <sup>2</sup> (typical)	<ul> <li>Microsoft Windows 8 / Windows 8.1 certified</li> </ul>
Contrast ratio	600:1 (typical)	
Pixel response time	5ms (typical)	
Color gamut	72%	
Stand	180° (+/- 90°) horizontal, 100° (+/- 50°) vertical Tilt adjustable stand	
Bezel width	<i>Sides:</i> 0.73" (18.5mm)	
Dimensions (HxWxD)	13.44" H x 17.65" W x 6.58" D;	
Bower oupply	341.5mm H x 448.4mm W x 167.2mm D	
Power supply	13.7 watts typical, 17 watts maximum, <0.5 watts standby/suspend, universal,	
	integrated (no external brick-like power supply)	
Weight	6.03 lb; 2.74 kg	
Limited warranty <sup>4</sup> Available date	<b>3 year</b> (includes backlight) March 2014	
Available date	March 2014	
VESA-compliant <sup>2</sup>	VESA DPMS-compliant	
Power management	ENERGY STAR® 7.0	
Ergonomics Emission standards	ISO 9241-307 FCC Class B	
Environmental	TCO (TCO Displays 7.0), WEEE, RoHS,	
	EPEAT <sup>™</sup> Silver rating	Lenovo
Preset resolutions	VGA: 640x350. 640x480. 720x400	0.0
Fresetresolutions	VGA: 640x350, 640x480, 720x400 SVGA: 800x600, 832x624	
	XGA: 1024x768, 1152x864	
	SXGA: 1280x1024	
	WXGA: 1366x768	
Presets / user settings	Standard presets: 15	
-	user settings: 16	ThinkVision E1922s Wide Monitor
<u></u>	<b>T</b> '' 000       50 /	
Viewing adjustments Rotating screen	<i>Tilt:</i> 20° backward, -5° forward None	
On screen display	On screen display with digital user controls (8 language	aes)
Control features	Direct access (control buttons on front) for automatic i	mage setup and adjustment for brightness
Multiple input Monitor connectors	None	
Signal cables	VGA 15-pin D-shell, analog, blue detachable, VGA 15-pin D-shell at each end, analog, 1	8 meter
Mounting features	Wall or desk mounting using the Extend Arm or third-r	party accessories meeting the VESA FPMPMI® (100mm mount)
Security	Security keyhole for attachment of optional cable lock	(Kensington® lock-compatible)
Ship group	Monitor with stand, 1.8 meter analog signal cable, 1.8	mater block power cord
Ship group	Monitor with stand, 1.6 meter analog signal cable, 1.6	Theter black power cord
	Limited Warranty	Accessories
See details at http://sup	port.lenovo.com/en_US/guides-and-manuals/de-	
tail.page?DocID=UM00	8281	Kensington MicroSaver Cable Lock73P2582Kensington Twin Head Cable Lock45K1620
		Kensington Twin Head Cable Lock 45K1620
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision
		l .
		Lenovo

Lenovo February 2014



## Lenovo ThinkVision E2054 Wide

Product Specifications Reference (PSREF)

Name	E2054 Wide Flat Panel Monitor	Features
Case color	Raven black	Widescreen 19.5-inch monitor
Type-model Panel	60DFAAR1US / 60DFAAT1EU TFT-LCD, In-Plane Switching (IPS), LED backlight	<ul> <li>Supports HD 1440x900 resolution</li> </ul>
Viewable image size	<b>19.5</b> " ( <b>494mm</b> ) diagonal	Supports VESA mount (100mm)
Max view area (W x H)	16.48"`x 10.33" / 418.6mm x 262.4mm	Mercury free panel and arsenic free glass     Konsington look slot roady for onbanged security
Native resolution	1440x900	<ul> <li>Kensington lock slot ready for enhanced security</li> <li>Support Lenovo Tiny PC via VESA mount</li> </ul>
Aspect ratio	16:10 0.007	Microsoft <sup>®</sup> Windows <sup>®</sup> 7 certified
Pixel pitch (mm) Dot/Pixel per Inch	0.097mm x 0.292mm 87 dpi	<ul> <li>Microsoft Windows 8 / Windows 8.1 certified</li> </ul>
Brightness	250 nits or cd/m <sup>2</sup> (typical)	Microsoft Windows 10 certified
Contrast ratio	1000:1 (typical)	
Pixel response time	7ms (typical)	
Color gamut	72%	
Stand	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Tilt adjustable stand	
Bezel width		
Bozon maan	<i>Top:</i> 0.71" (18.0mm) <i>Bottom:</i> 0.70" (17.9mm)	
	Sides: 1.02" (26.0mm)	
Dimensions (HxWxD)	14.65" H x 17.95" W x 7.41" D;	
Power oupply	372.0mm H x 456.0mm W x 188.3mm D	
Power supply	16 watts typical, 20 watts maximum, <0.5 watts standby/suspend, universal,	
	integrated (no external brick-like power supply)	
Weight	6.17 lb; 2.8 kg	
Limited warranty	3 year (includes backlight)	
Available date	November 2015	
VESA-compliant Power management	VESA DPMS-compliant	
Ergonomics	ENERGY STAR® 6.0 ISO 9241-307	
Emission standards	FCC Class B	
Environmental	TCO (TCO Displays 6.0), WEEE, RoHS,	Lenovo
	EPEAT™ Silver rating	
Preset resolutions	VGA: 640x480, 720x400	
Treset resolutions	SVGA: 800x600	
	XGA: 1024x768	
	SXGA: 1280x768, 1280x1024	
	WXGA: 1366x768	
	WXGA+: 1440x900	
Presets / user settings	Standard presets: 18	Think/Joien E0054 Wide Menitor
	user settings: 10	ThinkVision E2054 Wide Monitor
Viewing adjustments	<i>Tilt:</i> 22° backward, -5° forward	•
Rotating screen	None	
On screen display	On screen display with digital user controls (8 language	
Control features Multiple input	Direct access (control buttons on front) for automatic	mage setup and adjustment for brightness
Monitor connectors	None VGA 15-pin D-shell, analog, blue	
Signal cables	detachable, VGA 15-pin D-shell at each end, analog,	1.8 meter
Mounting features	Wall or desk mounting using the Extend Arm or third-	party accessories meeting the VESA FPMPMI® (100mm mount)
Security	Security keyhole for attachment of optional cable lock	(Kensington <sup>®</sup> lock-compatible)
Ship group	Monitor with stand, 1.8 meter analog signal cable, 1.8	mater black power cord
omp group	Mornton with stand, 1.6 meter analog signal cable, 1.6	
	Limited Warranty	Accessories
See details at http://sup	port.lenovo.com/en_US/guides-and-manuals/de-	
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
		Kensington Twin Head Cable Lock 45K1620
		See details at www.lenovo.com/support/monitoraccessories
		1
		See all monitors at www.lenovo.com/thinkvision
		See all monitors at www.lenovo.com/thinkvision

Lenovo November 2015













# Lenovo ThinkVision LT1913p Square

Product Specifications Reference (PSREF)

		1
Name	LT1913p Square Flat Panel Monitor	Features
Case color	Black	19-inch Square IPS LED backlit panel
Type-model	60FBHAR1US / 60FBHAT1EU	Supports 1280x1024 resolution
Panel	TFT-LCD, In-Plane Switching (IPS),	Supports ThinkCentre Tiny Clamp Bracket
Viewable image size	White LED backlight 19.0" (480.0mm) diagonal	Mercury and arsenic free glass
Max view area (W x H)	14.76" x 11.80" (374.7mm x 299.8mm)	Low Halogen
Optimum resolution	1280x1024	<ul> <li>Recycled content in plastic material</li> <li>Supports optional soundbar</li> </ul>
Max pixel rate	205MHz (VGA), 165MHz (DVI)	Microsoft <sup>®</sup> Windows <sup>®</sup> 7 certified
Aspect ratio	5:4	Microsoft Windows 8 / Windows 8.1 certified
Pixel pitch (mm)	0.0976 (H) x 0.2928 (V) mm	Microsoft Windows 10 certified
Dot/Pixel per Inch Brightness	86.8 dpi 250 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio	1000:1 (typical)	
Pixel response time	7ms (typical)	
Color gamut	72%	
	178° horizontal, 178° vertical	
Stand Bezel width	Tilt, swivel, pivot, and height adjustable stand	Man and a second second second second second second second second second second second second second second se
Bezer width	Sides: 0.68" (17.4mm); top: 0.68" (17.4mm); bottom: 0.68" (17.4mm)	
Dimensions (HxWxD)	14.63" H x 16.18" W x 10.40" D;	
( )	371.5mm H x 411.0mm W x 264.2mm D	
Power supply	24 watts typical, 27 watts maximum,	
	<0.5 watts standby/suspend, universal,	
Weight	integrated (no external brick-like power supply) 10.69 lb; 4.85kg	
Limited warranty <sup>4</sup>	<b>3 year</b> (includes backlight)	
Available date	April 2015	
VESA-compliant <sup>2</sup>	VESA DDC2B/CI, EDID 1.3	
Power management	ENERGY STAR® 7.0	
Ergonomics	ISO 9241-307	
Emission standards	FCC Class B	
Environmental	TCO Displays 7.0, TCO Certified Edge 1.1,	
	WEEE, RoHS, <b>EPEAT™ Silver rating</b> , ULE Gold	Lenovo
Preset resolutions	VGA: 640x350, 640x480, 720x400	
	SVGA: 800x600, 823x624	
	XGA: 1024x768, 1152x864, 1152x900 SXGA: 1280x1024	
Presets / user settings	Standard presets: 20;	
6	user settings: 20	
		ThinkVision LT1913p Square Monitor
Viewing adjustments	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.3" (110mm); <i>swivel:</i> +	/- 45°
Rotating screen On screen display	Screen pivots 90 degrees from landscape to portrait On screen display with digital user controls (8 language	
Control features	Direct access (buttons on front) for automatic image s	etun innut switch, and brightness
Multiple input	Dual input (two different PCs attach to two different co	onnectors: one PC shows image: select via button)
Monitor connectors	(1) VGA 15-pin D-shell, analog, blue	-
	(2) Digital Visual Interface (DVI-D), digital, white, HDCF	P-compliant
Signal cables	(1) detachable, VGA 15-pin D-shell at each end, analo	g, 1.8 meter
Mounting features	(2) detachable, DVI-D at each end, digital, 1.8 meter Wall or desk mounting using the Extend Arm or third-	party accessories meeting the VESA FPMPMI® (100mm mount)
Security	Security keyhole for attachment of optional cable lock	
Ship group	Monitor, attached stand, Setup poster, Safety and Wa	rranty Information, 1.8 meter analog signal cable.
5.0p 3.00p	1.8 meter DVI-D cable, 1.8 meter black power cord	
	Limited Warranty	Accessories
See details at http://cup	port.lenovo.com/en_US/guides-and-manuals/de-	Kensington MicroSaver Cable Lock 73P2582
tail.page?DocID=UM00		Kensington Twin Head Cable Lock 45K1620
tanipage i booib-ciiioo		Lenovo Security Cable Lock 57Y4303
		Lenovo Easy Reach Monitor Stand 55Y9258
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision

Lenovo April 2015













## Lenovo ThinkVision T1714

Nama	T1714 Squara Elet Danal Manitar	Factures
Name Case color	T1714 Square Flat Panel Monitor Black	Features
	60FDHAR1US / 60FDHAT1EU	17-inch Square LCD monitor
	TFT-LCD, twisted nematic (TN), White LED backlight	<ul> <li>Supports SXGA 1280x1024 resolution</li> <li>Includes dual input connection for attachment to two</li> </ul>
	17.0" (432mm) diagonal	systems concurrently (analog and digital)
	13.3" x 10.6" (337.9mm x 270.3mm)	Mercury Arsenic free glass
	1280x1024	Supports optional soundbar
	5:4	Microsoft <sup>®</sup> Windows <sup>®</sup> 7 certified
	0.264mm	Microsoft Windows 8 certified
Dot/Pixel per Inch Brightness	96 dpi 250 nits or cd/m <sup>2</sup> (typical)	Microsoft Windows 8.1 certified
Contrast ratio	1000:1 (typical)	Microsoft Windows 10 certified
Pixel response time	5ms (typical)	
Color gamut	72%	
Viewing angle at 10:1 CR	170° (+/- 85°) horizontal, 160° (+/- 80°) vertical	
Stand	Tilt stand	
Bezel width	Sides: 0.69" (17.5mm)	
	14.72" H x 14.74" W x 7.87" D;	
	373.9mm H x 374.5mm W x 200mm D	
Power supply	14.0 watts typical, 18.0 watts maximum, <0.5 watts standby/suspend, universal,	
	integrated (no external brick-like power supply)	
Neight	5.75 lb; 2.61kg	
	<b>3 year</b> (includes backlight)	
Available date	September 2015	
VESA-compliant	VESA DDC2B/CI	
Power management	ENERGY STAR® 7.0	
	ISO 9241-307	
	FCC Class B	Large
	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE,	
	RoHS, EPEAT™ Silver rating	
Preset resolutions	VGA: 640x350, 640x480, 720x400	
	SVGA: 800x600	
	XGA: 1024x768, 1152x864,	
	SXGA: 1280x800, 1280x1024	
Presets / user settings	Standard presets: 17;	ThinkVision T1714 Monitor
	user settings: 17	
Viewing adjustments	<i>Tilt:</i> 22° back, -5° forward	
Rotating screen	None	
On screen display Control features	On screen display with digital user controls (8 language Direct access (buttons on front) for automatic image s	
Aultiple input	Dual input (two different PCs attach to two different co	onnectors: one PC shows image: select via button)
Monitor connectors	(1) VGA 15-pin D-shell, analog, blue	sincetors, one r o snows image, select via battony
	(2) Digital Visual Interface (DVI-D), digital, white, HDCI	P-compliant
Signal cables	(1) detachable, VGA 15-pin D-shell at each end, analo	og, 1.8 meter
-	(2) detachable, DVI-D at each end, digital, 1.8 meter	
		party accessories meeting the VESA FPMPMI® (100mm mount)
Security	Security keyhole for attachment of optional cable lock	(Kensington <sup>®</sup> lock-compatible)
Ship group	Monitor and stand, Setup poster, Safety and Warranty 1.8 meter DVI-D cable, 1.8 meter black power cord	r Information, 1.8 meter analog signal cable,
	T.o meter DVI-D cable, T.o meter black power cord	
	Limited Warranty	Accessories
See details at http://sun	port.lenovo.com/en_US/guides-and-manuals/de-	Kensington MicroSaver Cable Lock 73P2582
tail.page?DocID=UM008		Kensington Twin Head Cable Lock 45K1620
		Lenovo Easy Reach Monitor Stand 55Y9258
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision

September 2015









# Lenovo ThinkVision T1714p

Product Specifications Reference (PSREF)

Name	T1714p Square Flat Panel Monitor	Features
Case color	Black 60FELAR1US / 60FELAT1EU	17-inch Square LCD monitor
Type-model Panel	TFT-LCD, twisted nematic (TN), White LED backlight	Supports SXGA 1280x1024 resolution
Viewable image size	17.0" (432mm) diagonal	<ul> <li>Includes dual input connection for attachment to two systems concurrently (analog and digital)</li> </ul>
Max view area (W x H)	13.3" x 10.6" (337.9mm x 270.3mm)	Mercury Arsenic free glass
Optimum resolution	1280x1024	Supports Lenovo Tiny PC and 3rd party thin client via
Aspect ratio Pixel pitch (mm)	5:4 0.264mm	optional Lenovo bracket
Dot/Pixel per Inch	96 dpi	Supports optional soundbar
Brightness	250 nits or cd/m <sup>2</sup> (typical)	Microsoft® Windows® 7 certified     Microsoft Windows 8 certified
Contrast ratio	1000:1 (typical)	Microsoft Windows 8 certified     Microsoft Windows 8.1 certified
Pixel response time	5ms (typical)	Microsoft Windows 10 certified
Color gamut	72%	
Stand	170° (+/- 85°) horizontal, 160° (+/- 80°) vertical Tilt height adjustable stand	
Bezel width	<i>Sides:</i> 0.69" (17.5mm)	
Dimensions	17.63" H x 14.74" W x 9.61" D;	
	447.9mm H x 374.5mm W x 244.2mm D	
Power supply	14.0 watts typical, 18.0 watts maximum,	
	<0.5 watts standby/suspend, universal, integrated (no external brick-like power supply)	
Weight	8.71 lb; 3.95kg	
Limited warranty	3 year (includes backlight)	
Available date	September 2015	
VESA-compliant	VESA DDC2B/CI	
Power management	ENERGY STAR® 7.0	
Ergonomics Emission standards	ISO 9241-307 FCC Class B	
Environmental	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE,	
	RoHS, EPEAT™ Silver rating	
		Lenovo
Preset resolutions	VGA: 640x350, 640x480, 720x400	
	SVGA: 800x600	
	XGA: 1024x768, 1152x864,	
Propoto / upor potting-	SXGA: 1280x800, 1280x1024	
Presets / user settings	Standard presets: 22; user settings: 22	
	uoor oottiingo. Zz	ThinkVision T1714p Monitor
Viewing adjustments	<i>Tilt:</i> 22° back, -5° forward; <i>lift:</i> 4.3" (110mm)	1
Rotating screen	None	
On screen display	On screen display with digital user controls (8 language	
Control features	Direct access (buttons on front) for automatic image s	
Multiple input	Dual input (two different PCs attach to two different co	nnectors; one PC shows image; select via button)
Monitor connectors	<ul><li>(1) VGA 15-pin D-shell, analog, blue</li><li>(2) Digital Visual Interface (DVI-D), digital, white, HDCF</li></ul>	P-compliant
	(3) DisplayPort, digital, black, HDCP-compliant	-vompnant
Signal cables	(1) detachable, VGA 15-pin D-shell at each end, analo	g, 1.8 meter
	(2) detachable. DVI-D at each end. digital. 1.8 meter	
Mounting features	Wall or desk mounting using the Extend Arm or third-	party accessories meeting the VESA FPMPMI® (100mm mount)
Security	Security keyhole for attachment of optional cable lock	
Ship group	Monitor and stand, Setup poster, Safety and Warranty 1.8 meter DVI-D cable, 1.8 meter black power cord	Information, 1.8 meter analog signal cable,
	To meter Durb cable, To meter black power cord	1
	Limited Warranty	Accessories
See details at http://sur	port.lenovo.com/en_US/guides-and-manuals/de-	Kensington MicroSaver Cable Lock 73P2582
tail.page?DocID=UM00	8281	Kensington Twin Head Cable Lock 45K1620
		Lenovo Easy Reach Monitor Stand 55Y9258
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision

September 2015













# Lenovo<sup>™</sup> ThinkVision<sup>®</sup> T2054p Monitor

19.45"

IPS WLED 19.45" 262.35 x 418.61 1440 x 900 16:10 178° / 178° 250 cd/m<sup>2</sup> 1000.1 0.0969 x 0.2915

87.3 72% 16.7 M 7 ms Yes

VGA

1.8 m

No

No

14.5 W

21 W

N/A

0.3 W

0.3 W

49.45 Btu/h

71.61 Btu/h

47 - 63 Hz

Internal

VGA, HDMI<sup>™</sup>, DisplayPort<sup>™</sup>

# **SPECIFICATIONS**

#### DISPLAY

Panel Size
Panel Type
Backlit
Viewable Area (Diagonal)
Screen Dimensions (W x H) (mm)
Resolution
Aspect Ratio
Viewing Angle (H/V at CR 10:1)
Maximum Brightness (Typical)
Contrast Ratio (Typical)
Pixel Pitch (W x H) (mm)
Dot/Pixel Per Inch (DP / PPI)
Color Gamut (CIE 1931)
Number of Colors
Response Time
Anti-Glare

#### SIGNAL INPUT

Video Input Signals Video Cables Supplied Video Cable Length USB Hub USB Cable Supplied

#### POWER CONSUMPTION

Power Consumption Typical Max. without USB Hub Max. with USB Hub Sleep-Mode Off-Mode Heat Dissipation Typical Max. Power Supply Power Voltage Voltage Dynamic Frequency

#### DIMENSIONS (W X D X H)

Size Packed (mm) (inches) Size Unpacked with Stand (mm) (inches) Size Unpacked without Stand (Head Only) (mm)(inches) Distance from Table to Panel Lowest Pixel at Bottom of Screen Highest Pixel at Top of Screen Stand Base Footprint Area (mm / inches) Weight Packed

Unpacked Monitor Head 509 x 176 x 368 20.04" x 6.93" x 14.49"

90 - 264 VAC, 1.5 A

454.2 x 242.6 x 345.9 ~ 455.9 17.88" x 9.55" x 13.62" ~ 17.95'

454.2 x 53 x 297.9 17.88" x 2.09" x 11.73"

(mm / inches) 65.8 / 2.59" 328.2 / 12.92"

Diameter 240 / 9.45"

Starting at 10.8 lbs (4.9 kg) Starting at 8.15 lbs (3.7 kg) Starting at 4.85 lbs (2.2 kg)

#### MECHANICAL

Tilt Angle (Front / Back)	-5° ~ 22°
Swivel Angle (Left / Right)	-45° - 45°
Lift (mm)	110
Pivot	No
VESA <sup>®</sup> Mount (mm)	100 x 100
Kensington" Lock Slot	Yes
Cable Management	Yes
Ambient Light Sensor	No
Control Buttons	Yes
Bezel Color	Raven Black
Bezel Width (Side) (mm / inches)	17 / 0.67"
Bezel Width (Top / Bottom) (mm / inches)	17 / 0.67"

#### SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency Vertical Frequency Native Resolution Maximum Pixel Clock Speed / Bandwidth

Default Color Temperature Preset Display Modes User-defined Display Modes **OSD** Buttons **OSD** Languages

#### VGA : 150 MHz HDMI<sup>®</sup> : 150 MHz DisplayPort<sup>™</sup>: 150 MHz 7200K 22 16 5 8

30 kHz - 81 kHz

50 Hz - 75 Hz

1440 x 900

#### COMPLIANCE

**FPFAT**<sup>®</sup> ENERGY STAR<sup>®</sup> Rating ULE TCO\* TCO<sup>®</sup> Edge TUV GREENGUARD RoHS (EU 2002/95/EC) Windows Certification

Silver 6.0 Gold 6.0 2.0 Yes No Yes Windows 7, Windows 8, Windows 8.1, Windows 10 Tier 1

China Energy Efficiency Standard

#### **ENVIRONMENTAL**

Temperature Operating Non-operating	0 °C - 45 °C -20 °C - 60 °C (non-condensing)
Humidity	zo e oo e (non condensing)
Operating	10% - 80%
Non-operating	5% - 95% (non-condensing)
Altitude	
Operating	8,000 ft
Non-operating	40,000 ft
Arsenic-free Glass	Yes
PVC Free	Yes
Mercury Free	Yes
PCC % of Plastic Resins	85%
Low Halogen	No

#### WARRANTY AND AVAILABILITY

Warranty Geography Availability ThinkVision<sup>®</sup> Logo Global Model

3 Years World Wide Yes Yes

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## Lenovo ThinkVision E21

Product Specifications Reference (PSREF)

Name Bezel color Type-model Panel Viewable image size Max view area (W x H) Native resolution Aspect ratio Pixel pitch (mm) Dot/Pixel per Inch Brightness Contrast ratio	E21 Wide Flat Panel Monitor Black 61B9JAR1US / 61B9JAT1EU TFT-LCD, twisted nematic (TN), White LED backlight 20.7" (525.78mm) diagonal 18.03" x 10.14" (457.92mm x 257.58mm) 1920x1080 16:9 0.2385 x 0.2385 mm 106 dpi 250 nits or cd/m <sup>2</sup> (typical) 1000:1 (typical)	Features • Widescreen 20.7-inch monitor • Supports 1920x1080 resolution • Supports ThinkCentre Tiny Clamp Bracket • Supports optional soundbar • EPEAT Gold certified • Low Blue Light certification • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified
Pixel response time Color gamut Viewing angle at 10:1 CR Stand Bezel width Dimensions (HxWxD) Power supply Weight Limited warranty Available date VESA-compliant Power management Ergonomics Emission standards Environmental	5ms (typical) 72% 170° (+/- 85°) horizontal, 160° (+/- 80°) vertical Tilt adjustable stand <i>Sides:</i> 0.6" (15.3mm) 14.6" H x 19.31" W x 8.07" D; 370.9mm H x 490.5mm W x 204.9mm D 18 watts typical, 23 watts maximum, <0.3 watts standby/suspend, universal, integrated (no external brick-like power supply) 5.82 lb; 2.64 kg <b>3 year</b> (includes backlight) August 2017 VESA DDC2B/CI ENERGY STAR® qualified ISO 9241-307 FCC Class B TCO Displays 7.0, TCO Certified Edge 2.0, WEEE, RoHS, <b>EPEAT™ Silver rating</b>	LINONO CONTRACTOR OF THE REAL
Preset resolutions Presets display modes	VGA: 640x350, 640x480, 720x400 SVGA: 800x600, 832x624 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA+: 1440x900 WSXGA+: 1680x1050 Full HD: 1920x1080 Standard presets: 22	ThinkVision E21 Wide Monitor
Viewing adjustments Rotating screen On screen display Control features USB hub Multiple input Monitor connectors Signal cables Mounting features Security	<ul> <li><i>Tilt:</i> 22° back, -5° forward None</li> <li>On screen display with digital user controls (8 languages)</li> <li>Direct access (buttons on front) for power, menu, input source select and brightness None</li> <li>Dual input (two different PCs attach to two different connectors; one PC shows image; select via button)</li> <li>(1) VGA 15-pin D-shell, analog, blue</li> <li>(2) DisplayPort (1.2), digital, black, <b>HDCP-compliant</b></li> <li>(1) detachable, VGA 15-pin D-shell at each end, analog, 1.8 meter</li> <li>Wall or desk mounting using the Extend Arm or third-party accessories, 100mm x 100mm mount Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</li> </ul>	
Ship group	Monitor with stand, Safety and Warranty Information,	1.8 meter analog signal cable, 1.8 meter black power cord
	Limited Wewenty	Accession
Limited Warranty See details at http://support.lenovo.com/en_US/guides-and-manuals/de- tail.page?DocID=UM008281		Accessories Kensington MicroSaver Cable Lock 73P2582 Kensington Twin Head Cable Lock 45K1620

See details at www.lenovo.com/support/monitoraccessories

See all monitors at www.lenovo.com/thinkvision













## Lenovo ThinkVision E24

Name	E24 Wide Flat Panel Monitor	Features
Bezel color		Widescreen 23.8-inch monitor
Type-model Panel	61B7JAR6US / 61B7JAT6EU TFT-LCD, In-Plane Switching (IPS),	Supports 1920x1080 resolution
1 anoi	White LED backlight	<ul> <li>Supports ThinkCentre Tiny VESA mount</li> <li>Supports optional soundbar</li> </ul>
Viewable image size	23.8" (604.7mm) diagonal	<ul> <li>Includes dual input connection for attachment to two</li> </ul>
Max view area (W x H)	20.75" x 11.67" (527.04mm x 296.46mm) 1920x1080	systems concurrently
Native resolution Aspect ratio	16:9	• ÉPEAT Gold certified
Pixel pitch (mm)	0.2745 x 0.2745 mm	Microsoft® Windows® 7 certified     Microsoft Windows 10 certified
Dot/Pixel per Inch	92.5 dpi	
Brightness Contrast ratio	250 nits or cd/m <sup>2</sup> (typical) 1000:1 (typical)	
Pixel response time	6ms (typical)	
Color gamut	72%	
Viewing angle at 10:1 CR Stand	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Tilt adjustable stand	
Bezel width	Sides: 0.51" (13mm)	
Dimensions (HxWxD)	15.9" H x 21.81" W x 8.07" D;	
Devenue	403.8mm H x 554mm W x 204.9mm D	
Power supply	18 watts typical, 23 watts maximum,	
	<0.3 watts standby/suspend, universal,	
	integrated (no external brick-like power supply)	
Weight Limited warranty	8.2 lb; 3.7 kg <b>3 year</b> (includes backlight)	
Available date	August 2017	
VESA-compliant	VESA DDC2B/CI	
Power management	ENERGY STAR® qualified	
Ergonomics	ISO 9241-307	
Emission standards Environmental	FCC Class B TCO Displays 7.0, TCO Certified Edge 2.0, WEEE,	the second second second second second second second second second second second second second second second se
Environmental	RoHS, EPEAT <sup>™</sup> Silver rating	
Preset resolutions	VGA: 640x350, 640x480, 720x400	
	SVGA: 800x600, 832x624	
	XGA: 1024x768, 1152x864	
	SXGA: 1280x1024 WXGA: 1366x768	
	WXGA+: 1440x900, 1600x900	
	WSXGA+: 1680x1050	
	Full HD: 1920x1080	ThinkVision E24 Wide Monitor
Presets display modes	Standard presets: 24; user settings: 20	
Viewing adjustments	<i>Tilt:</i> 22° back, -5° forward	
Rotating screen On screen display	None On screen display with digital user controls (8 language	
Control features	Direct access (buttons on front) for power, menu, input	t source select and brightness
USB hub	None	
Multiple input	Dual input (two different PCs attach to two different cc (1) VGA 15-pin D-shell, analog, blue	nnectors; one PC shows image; select via button)
Monitor connectors	(1) VGA 15-pin D-shell, analog, blue (2) DisplayPort, digital, black, <b>HDCP-compliant</b>	
Signal cables	(1) detachable, VGA 15-pin D-shell at each end, analo	g, 1.8 meter
Mounting features	(2) detachable, DisplayPort at each end, digital, 1.8 m	
Security	Wall or desk mounting using the Extend Arm or third- Security keyhole for attachment of optional cable lock	
		(
Ship group	Monitor with stand, Safety and Warranty Information, 1.8 meter black power cord	1.8 meter analog signal cable, 1.8 meter DP signal cable,
	Limited Warranty	Accessories
See details at http://eup	port.lenovo.com/en_US/guides-and-manuals/de-	A0003301103
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
		Kensington Twin Head Cable Lock 45K1620
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision













## Lenovo ThinkVision P24h

Name Bezel color	P24h Wide Flat Panel Monitor Black	Features
Type-model	61AEGAR3US / 61AEGAT3EU	Widescreen 23.8-inch monitor
Panel	TFT-LCD, In-Plane Switching (IPS),	Supports 2560x1440 resolution
	White LED backlight	Supports optional soundbar
Viewable image size	23.8" (604.7mm) diagonal	Supports ThinkCentre Tiny Clamp Bracket
Max view area (W x H)	20.74" x 11.67" (526.9mm x 296.4mm)	Includes dual input connection for attachment to two
Native resolution	2560x1440	systems concurrently     EPEAT Gold certified
Aspect ratio	16:9	Microsoft® Windows® 7 certified
Pixel pitch (mm)	0.2058x 0.2058 mm	Microsoft Windows 7 Certified
Dot/Pixel per Inch	124 dpi	
Brightness	300 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio	1000:1 (typical)	
Pixel response time	4ms (extreme) / 6ms (typical)	
Color gamut	99% sRGB	
Viewing angle at 10:1 CR	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical	
Stand	Tilt, swivel, pivot, and height adjustable stand	
Bezel width	<i>Sides:</i> 0.08" (2.0mm) 14.7" H x 21.26" W x 10.3" D;	
Dimensions (HxWxD)	373.4mm H x 540.2mm W x 261.75mm D	
Power supply	24 watts typical,	
i ower suppry	120 watts maximum (with USB 3.0 hub),	
	<0.5 watts standby/suspend, universal,	
	integrated (no external brick-like power supply)	
Weight	12.54 lb; 5.69 kg	
Limited warranty	3 year (includes backlight)	
Available date	April 2017	
VESA-compliant	VESA DDC2B/CI	
Power management	ENERGY STAR <sup>®</sup> gualified	
Ergonomics	ISO 9241-307	Tatles
Emission standards	FCC Class B	
Environmental	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE,	
	RoHS, EPEAT <sup>™</sup> Silver rating	
Preset resolutions	VGA: 640x480, 720x400	
	SVGA: 800x600	
	XGA: 1024x768	
	SXGA: 1280x1024	
	WXGA: 1366x768	
	WXGA+: 1440x900, 1680x900	
	WSXGA+: 1680x1050	
	Full HD: 1920x1080, 1920x1200	ThinkVision P24h Wide Monitor
Presets display modes	QHD: 2560x1440	
Tresets display modes	HDMI: 22; DP: 14	
Viewing adjustments	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.3" (110mm); <i>swivel:</i> +,	/-45°: detachable stand
Rotating screen	Screen pivots 90 degrees from landscape to portrait	
On screen display	On screen display with digital user controls (8 language	ges)
Control features	Direct access (buttons on front) for power, menu, input	t source select and brightness
USB hub	USB Hub: one USB 3.1 Type-C upstream port, four US	SB 3.0 Type-A downstream ports
Multimedia	Audio-out, optional sound bar supported	
Camera	None	
Multiple input	Support HDMI, DisplayPort, USB 3.1 Type-C, DisplayI	Port-out
Monitor connectors	(1) 2*HDMI (1.4), digital, HDCP-compliant	
	(2) DisplayPort (1.2), digital, <b>HDCP-compliant</b>	
	<ul><li>(3) DisplayPort-out, digital</li><li>(4) USB 3.1 Type-C</li></ul>	
Signal cables	(1) USB 3.1 Type-C cable, 1.8 meter	
Mounting features		party accessories 100mm x 100mm mount
Security	Wall or desk mounting using the Extend Arm or third-party accessories, 100mm x 100mm mount Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)	
Ship group	Monitor with stand, Safety and Warranty Information, 1.8 meter USB 3.1 Type-C cable, 1.8 meter black power cord	
	Limited Warranty	Accessories
See details at http://our	port.lenovo.com/en_US/guides-and-manuals/de-	
tell perce 2 DeciD LIMOO		Kansington MigroSover Cable Lock 7202592

Limited Warranty	Accessories
	Kensington MicroSaver Cable Lock73P2582Kensington Twin Head Cable Lock45K1620
	See details at www.lenovo.com/support/monitoraccessories
	See all monitors at www.lenovo.com/thinkvision
	Longy

Lenovo July 2017













## Lenovo ThinkVision P24q

Name	P24q Wide Flat Panel Monitor	Features
Case color Type-model Panel	Black 61A5GAR3US / 61A5GAT3EU TFT-LCD, IPS (In-Plane Switching), White LED backlight	<ul> <li>23.8-inch IPS LED backlit monitor</li> <li>Supports 2560x1440 resolution</li> <li>5-Ports USB hub, support USB 3.0</li> <li>Support ThinkCentre Tiny</li> </ul>
Viewable image size Max view area (W x H)	<b>23.8</b> " ( <b>604.5mm</b> ) diagonal 20.74" x 11.67" (526.85mm x 296.35mm)	Supports optional soundbar
Optimum resolution	2560x1440	<ul> <li>Microsoft<sup>®</sup> Windows<sup>®</sup> 7 certified</li> <li>Microsoft Windows 10 certified</li> </ul>
Max pixel rate Aspect ratio	300MHz 16:9	
Pixel pitch (mm)	0.2058 x 0.2058mm	
Dot/Pixel per Inch Brightness	123 dpi 300 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio	1000:1 (typical)	
Pixel response time Color gamut	4ms 99% sRGB	
Viewing angle at 10:1 CR	178° horizontal, 178° vertical	
Stand Bezel width	Tilt, swivel, pivot, and height adjustable stand <i>Sides:</i> 0.08" (2mm)	
Dimensions	14.7" H x 21.26" W x 10.3" D;	
(HxWxD, including stand) Power supply	373.4mm H x 540.2mm W x 261.75mm D 24 watts typical,	
r ower supply	67 watts maximum (with USB),	
	<0.5 watts sleep/off; <0.5 watts switch off	
	integrated (no external brick-like power supply)	
Weight Limited warranty	12.35 lb; 5.6kg (including stand) <b>3 year</b>	
Available date	January 2017	
		halos -
VESA-compliant Power management	VESA DDC2B/CI ENERGY STAR® 7.0	
Ergonomics	ISO 9241-307	
Emission standards Environmental	FCC Class B TCO Displays 7.0, RoHS, <b>EPEAT™ Silver rating</b> ,	
	ULE Gold	
Preset resolutions	VGA: 640x480, 720x400 SVGA: 800x600	
	SVGA: 800x600 XGA: 1024x768	
	SXGA: 1280x1024 WXGA: 1366x768	
	WXGA: 1300x708 WXGA+: 1440x900, 1600x900	
	WSXGA+: 1680x1050 Full HD: 1920x1080, 1920x1200	ThinkVision P24g Monitor
	QHD: 2560x1440	
Presets / user settings	Standard presets: 20; user settings: 24	
Viewing adjustments	Tilt: 30° back, -5° forward; lift: 4.33" (110mm); swivel:	
Rotating screen On screen display	Screen pivots 90 degrees from landscape to portr On screen display with digital user controls (8 language	
Control features	Direct access for menu, source switch, and brightness	3
USB hub Multimedia	USB Hub: one USB 3.0 upstream port, four USB 3.0 downstream ports Audio-out, optional sound bar supported	
Camera	None	David aud
Multiple input Monitor connectors	Support HDMI, DisplayPort, mini DisplayPort, Display (1) 2*HDMI (1.4), digital, HDCP-compliant	Port-out
	(2) DisplayPort (1.2), digital, HDCP-compliant	
Signal cables	<ul> <li>(3) Mini DisplayPort, digital, HDCP-compliant</li> <li>(1) detachable, mini DisplayPort to DisplayPort, digital</li> </ul>	, 1.8 meter
Mounting features	Wall or desk mounting using the Extend Arm or third-	oarty accessories meeting the VESA FPMPMI® (100mm mount)
Security	Security keyhole for attachment of optional cable lock	
Ship group	Monitor, detachable stand, Quick start and safety pos	tar 1.8 mater LISB 3.0 coblo
Ship group	1.8 meter mini DP to DP cable, 1.8 meter black power	
	Limited Warrenty	٨
See details at http://sun	Limited Warranty port.lenovo.com/en_US/guides-and-manuals/de-	Accessories
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
		Kensington Twin Head Cable Lock45K1620Lenovo Security Cable Lock57Y4303
		See details at www.lenovo.com/support/monitoraccessories See all monitors at www.lenovo.com/thinkvision
		See an monitors at www.ienovo.com/thinkvision

# ThinkVision P24q-20

#### DISPLAY

Panel Size 23.8-inch

Screen Dimensions 526.85 mm x 296.35 mm

Panel Type 3-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio 16:9

**Resolution** 2560 × 1440

**Pixel Pitch** 0.2058 x 0.2058 mm

Dot/Pixel Per Inch (DPI/PPI) 123

Viewing Angle (H x V @ CR 10:1) 178° / 178°

**Response Time** 4ms (extreme mode) 6ms (normal mode)

Refresh Rate 60 Hz

Brightness (typical) 300 cd/m<sup>2</sup>

Contrast Ratio (typical) 1000:1

Dynamic Contrast Ratio (typical) 3M:1

Color Gamut 99% sRGB, 99% BT.709,

84 % DCI-P3

Color Support (typical) 16.7 Million

**Anti-glare** Yes CONNECTIVITY

Video Signal 1 x HDMI 1.4 1 x DP 1.2 1 x DP 1.2 (out)

**Audio Signal** 1 x Audio Out (3.5 mm)

**USB Hub** Yes

USB Upstream 1 x USB3.1 Gen1 Type-B

USB Downstream 4 x USB3.1 Gen1 (1 x BC1.2)

#### SPECIAL FEATURES

Factory Calibration Yes (Avg. Delta E<2)

#### POWER

Power Consumption (typical/max) 20W / 61W

Power Consumption Sleep/Off Mode  $\leq 0.5W$ 

Power Consumption Switch-off Mode ≤ 0.3W

ENERGY STAR Power Consumption (P<sub>or</sub>/E<sub>rec</sub>) 16.04W / 51.61kWh

Power Supply Internal

Voltage Required AC 100 to 240 V (47-63 Hz)

#### MECHANICAL

Tilt Angle (front/back) -5° / 35°

Swivel Angle (left/right) +45° / -45°

Lift (Max range) 150 mm **Pivot** -90° / 90°

VESA Mount Capability Yes (100 X 100 mm)

Kensington Lock Slot Yes

Cable Management Yes

**Bezel Color** Raven Black

Bezel Width (side) 2.0 mm

Bezel Width (top/bottom) 2.0 / 21.4 mm

#### DIMENSION

**Size Packed (D x H x W, mm/inch)** 620 x 149 x 423 mm / 24.4 x 5.9 x 16.7 inches

**Size Unpacked w/ Stand** (**D x H x W, mm/inch) (lowest position)** 205 x 420 x 539.8 mm / 8.07 x 16.5 x 21.3 inches

**Size Unpacked w/ Stand** (**D x H x W, mm/inch) (highest position)** 205 x 570 x 539.8 mm / 8.07 x 22.4 x 21.3 inches

**Size Unpacked w/o Stand** (head only) (D x H x W, mm/inch) 44.6 x 325.7 x 539.8 mm / 1.8 x 12.8 x 21.3 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 117.9 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 415 mm

Weight Packed (kg/lbs.) 8.1 kg / 17.86 lbs. Weight Unpacked (kg/lbs.) 6.18 kg / 13.6 lbs. Weight (monitor head only) (kg/lbs.) 3.85 kg / 7.89 lbs.

Full Container Load (40' STD / 20' STD) 1395 / 645 units

#### WHAT'S IN THE BOX

MONITOR WITH STAND 1 X POWER CABLE (1.8 M) 1 X DP CABLE (1.8 M) 1 X USB TYPE-A TO TYPE-B CABLE (1.8 M) FACTORY CALIBRATION REPORT QUICK SETUP GUIDE

#### CERTIFICATION

ENERGY STAR Rating 8.0

CCC Yes

**TCO** 8.0

**TCO Edge** 2.0

EPEAT Silver

**RoHS (EU 2002/95/EC)** Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 1

**TÜV Rheinland Eye Comfort** Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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## ThinkVision® S22e-19

#### DISPLAY

Panel Size 21.5 inch

**Screen Dimensions (H x V) (mm)** 476.06 (H) × 267.79 (V)

Panel Type

Backlight WLED

Aspect Ratio

**Resolution** 1920 x 1080

**Pixel Pitch (H x V) (mm)** 0.2480 × 0.2480

**Viewing Angle (H x V)** 178°/178°

**Response Time (gray to gray)** 4 ms (extreme mode) 6 ms (normal mode)

**Contrast Ratio (typical)** 3000:1

**Dynamic Contrast Ratio (typical)** 3M:1

Color Gamut NTSC (CIE 1931) 72%

**Color Support (typical)** 16.7M

#### CONNECTIVITY

Video Input Signals VGA + HDMI1.4

**Video Cable Length** 1.8 m

Audio Out Yes (3.5 mm)

#### MULTI-MEDIA

Optional Soundbar Support  $\gamma_{PS}$ 

#### DIMENSIONS

**Size Packed (D x H x W) (mm/inch)** 120 x 350 x 582 mm / 4.7 x 13.7 x 22.9 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest Position) 200.0 x 373.8 x 489.3 mm / 7.87 x 14.71 x 19.26 inch

**Size Unpacked w/stand (D x H x W) (mm/inch)** (**Highest Position**) 200.0 x 373.8 x 489.3 mm / 7.87 x 14.71 x 19.26 inch

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only) 41.5 x 296.8 x 489.3 mm / 1.63 x 11.68 x 19.26 inch

Weight Packed (kg/lbs.) 4.07kg / 8.97 lbs.

Weight Unpacked (kg/lbs.) 2.75kg / 6.06 lbs.

Weight (Monitor Head Only) (kg/lbs.) 2.46kg / 5.42 lbs.

#### SPECIAL FEATURES

**Anti-Glare** Yes

Thin Client Support (Tiny) Yes (by VESA mount PN:4XF0N03161)

#### MECHANICAL

Tilt Angle (front / back) -5°/22°

VESA Mount Yes (100 mm)

Kensington<sup>™</sup> Lock Slot Yes

Cable Management Yes

**Bezel Color** Raven Black

Bezel Width (side) 2.0 mm Bezel Width (top / bottom) 2.0 mm / 21.2 mm

#### WHAT'S IN THE BOX

Monitor with stand 1 x HDMI Cable 1 x Power Cable Quick setup guide

#### CERTIFICATIONS

**ENERGY STAR Rating** 7.0

CCC Yes

> TCO TCO 7.0/TCO Edge 2.0

**EPEAT**™ Gold

**RoHS** Yes

Windows Certification Windows 7. Windows 10

China Energy Efficiency Standard Tier 2

Ambient Operating Temperature  $0^{\circ}C$  to  $40^{\circ}C$ 

Low Blue Light Yes



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## ThinkVision<sup>®</sup> S24e-10

#### DISPLAY

Panel Size 23.8-inch

Screen Dimensions (H x V) 527.04 x 296.46 mm

Panel Type 3-side NearEdgelss, VA

Backlight WLED

Aspect Ratio 16:9

Resolution 1920 x 1080

Pixel Pitch (H x V) 0.2745 x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI) 92

Viewing Angle (H x V @ CR 10:1) 178°/178°

Response Time (gray to gray) 4 ms (Extreme Mode) 6 ms (Normal Mode)

**Refresh Rate** 60 Hz

Brightness (typical) 250 cd/m<sup>2</sup>

Contrast Ratio (typical) 3000:1

Dynamic Contrast Ratio (typical) 3M:1

Color Gamut NTSC (CIE 1931) 72% NTSC

Color Support 16.7 Million

#### Anti-glare

## CONNECTIVITY

Video Signal 1 x VGA 1 x HDMI 1.4

Video Cable Length 18 m

Audio Signal 1 x Audio Out (3.5 mm)

#### MULTI-MEDIA

**Optional Speakers Support** Yes

#### SPECIAL FEATURES

Sync Technology FreeSync™

Thin Client Support (Tiny) Yes (by VESA mount PN:4XF0N03161)

#### POWER

Power Consumption (Typ./Max) 24W / 31W

Power Consumption Sleep/Off Mode < 0.3W

Power Consumption Switch-Off Mode < 0.3W

**Power Supply** Internal

Voltage Required AC 100 to 240 V (47/63 Hz)

#### MECHANICAL

Tilt Angle (front/back) -5º / 22º

**VESA Mount** Yes (100 mm)

Kensington<sup>™</sup> Lock Slot Yes

**Cable Management** Yes

Bezel Color Raven Black

Bezel Width (Side) 2.0 mm

Bezel Width (top / bottom) 2.0 mm / 22 mm

#### DIMENSION

Size Packed (D x H x W) (mm/inch) 122 x 405 x 639 mm / 4.80 x 15.94 x 25.16 inches

Size Unpacked w/stand ( $D \times H \times W$ ) (mm/inch) (Lowest Position) 200.0 x 402.7 x 539.5 mm / 7.87 x 15.85 x 21.24 inches

Size Unpacked w/stand (D x H x W) (mm/inch) (Highest Position) 200.0 x 402.7 x 539.5 mm / 7.87 x 15.85 x 21.24 inches

Size Unpacked w/o stand ( $D \times H \times W$ ) (mm/inch) (Head Only) 41.5 x 325.7 x 539.5 mm / 1.63 x 12.82 x 21.24 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 99.0 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 399.9 mm

Weight Packed (kg/lbs.) 4.84kg / 10.67 lbs.

Weight Unpacked (kg/lbs.) 3.36kg / 7.41 lbs.

Weight (Monitor Head Only) (kg/lbs.) 3.07kg / 6.77 lbs.

Full Container Load (40' STD / 20' STD) 1660 / 800 Units

#### WHAT'S IN THE BOX

Monitor with stand 1 x HDMI Cable 1 x Power Cable (1.8m) Quick setup guide

#### CERTIFICATIONS

**ENERGY STAR Rating** 7.1

CCC Yes

EPEAT™ Silver

ULE Gold

RoHS (EU 2002/95/EC) Yes( 2011/65/EU)

Windows Certification Windows 7, Windows 10

**China Energy Efficiency Standard** Tier 2

Low Blue Light Yes





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Yes









# ThinkVision S24q-10

#### DISPLAY

Panel Size 23.8-inch

Screen Dimensions 526.85 mm x 296.35 mm

Panel Type 3-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio 16:9

**Resolution** 2560 x 1440

**Pixel Pitch** 0.2058 x 0.2058 mm

**Dot/Pixel Per Inch (DPI/PPI)** 124

Viewing Angle (H x V @ CR 10:1) 178° / 178°

**Response Time** 4ms (extreme mode)

Refresh Rate 60 Hz

Brightness (typical) 240 cd/m<sup>2</sup>

Brightness (peak) 300 cd/m<sup>2</sup>

Contrast Ratio (typical) 1000:1

**Dynamic Contrast Ratio (typical)** 3M:1

**Color Gamut** > 99% sRGB **Color Support (typical)** 16.7 Million

**Anti-glare** Yes

#### CONNECTIVITY

Video Signal 1 x HDMI 1.4 1 x DP 1.2

> **Audio Signal** 1 x Audio Out (3.5 mm)

#### SPECIAL FEATURES

**Tiny Support** Yes

#### POWER

Power Consumption (typical/max) 20W / 31W

Power Consumption Sleep/Off Mode < 0.5W

Power Consumption Switch-off Mode < 0.3W

Power Supply Internal

Energystar Power Consumption (P<sub>on</sub>/E<sub>TEC</sub>) 16.76 W / 52.75 kWh

**Voltage Required** AC 100 to 240 V (47/63 Hz)

#### MECHANICAL

Tilt Angle (front/back) -5° / 22°

**VESA Mount Capability** Yes (100 x 100 mm) Kensington<sup>™</sup> Lock Slot Yes

**Cable Management** Yes

**Bezel Color** Raven Black

Bezel Width (side) 2 mm

**Bezel Width (top/bottom)** 2 / 21.4 mm

#### DIMENSION

**Size Packed (D x H x W, mm/inch)** 122 x 405 x 639 mm / 4.80 x 15.94 x 25.16 inches

**Size Unpacked w/stand (D x H x W, mm/inch) (lowest position)** 200 x 402.7 x 539.8 mm / 7.87 x 15.85 x 21.25 inches

Size Unpacked w/stand (D x H x W, mm/inch) (highest position) 200 x 402.7 x 539.8 mm / 7.87 x 15.85 x 21.25 inches

**Size Unpacked w/o Stand (D x H x W, mm/inch) (head only)** 42 x 325.7 x 539.8 mm / 1.65 x 12.82 x 21.25 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 98.4 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 399.9 mm

**Weight Packed (kg/lb)** 5.10 kg / 11.24 lbs.

Weight Unpacked (kg/lb) 3.50 kg / 7.72 lbs. Weight (monitor head only) (kg/lb) 3.21 kg / 7.08 lbs.

**Full Container Load (40' STD / 20' STD)** 1660 / 800 units

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m) 1 x HDMI cable (1.8 m) Quick setup guide

#### CERTIFICATION

**ENERGY STAR® Rating** 8.0

ссс

Yes **TCO** 8.0

TCO Edge

**EPEAT™** Silver

**RoHS (EU 2002/95/EC)** Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 1

**TÜV Eye Comfort** Yes





Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.2.

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# ThinkVision T2224d MONITOR

# SPECIFICATIONS

DISPLAY		MECHANICAL	
Panel Size Panel Type Backlight Screen Dimensions (W x H) (mm) Resolution Aspect Ratio Viewing Angle (H/V at CR 10:1) Maximum Brightness (Typical) Contrast Ratio (Typical) Dynamic Contrast Ratio Pixel Pitch (mm) Dot/Pixel Per Inch (DP/PPI) Color Gamut (CIE 1931) NTSC Number of Colors Response Time Anti-Glare	21.5" IPS WLED 476.064 (H) x 267.786 (V) 1920 x 1080 16:9 (Wide) 178°/178° 250 cd/m² 1000:1 3000000:1 0.248 102 72% 16.7 Million 4 ms (extreme mode) Yes	Tilt Angle (Front / Back) Swivel Angle (Left / Right) Lift Range Pivot VESA* Mount (mm) Kensington* Lock Slot Cable Management Ambient Light Sensor Control Buttons Bezel Color Bezel Width Bottom (mm / inches) Top (mm / inches) Sides (mm / inches)	-5° / 22° No No No 100 x 100 Yes Raven Black 25.6 / 1.01″ 17.6 / 0.69″
SIGNAL INPUT		POWER CONSUMPTION	
Video Input Signals Video Cables Supplied Video Cable Length USB Hub USB Cable Supplied	VGA + DisplayPort™ VGA + DisplayPort™ 1.8 m No No	Typical Maximum Sleep-Mode Switch-Off Mode Power Supply Power Voltage Voltage Dynamic Frequency	20 W 25 W <0.5 W <0.5 W Internal 90 VAC - 264 VAC 47 Hz - 63 Hz
SIGNAL INTERFACE / PERFOR	MANCE	DIMENSIONS (W x D x H)	
Horizontal Frequency Vertical Frequency Native Resolution Maximum Pixel Clock Speed Bandwidth VGA DisplayPort <sup>™</sup> Default Color Temperature Plug 'n' Play Preset Display Modes User-defined Display Modes OSD Buttons OSD Languages Lockable Controls	30 kHz ~ 83 kHz 50 Hz ~ 75 Hz 1920 x 1080 205 MHz 165 MHz 7200K Yes 22 22 5 8 No	Size Unpacked with Stand (mm) (inches) Size Unpacked without Stand (Head Only) (mm) (inches) Distance from Table to Panel (mm / inches) Lowest Pixel at Bottom of Screen Highest Pixel at Top of Screen Stand Base Footprint Area (mm / inches) Weight Packed Unpacked Monitor Head Only	512.9 x 204.9 x 381.4 20.19" x 8.07" x 15.01" 512.9 x 51 x 312.6 20.19" x 2.01" x 12.31" 94.4 / 3.72" 363.9 / 14.33" 180 x 180 / 7.09" x 7.09" Starting at 9.19 lbs (4.17 kg) Starting at 6.48 lbs (2.94 kg) Starting at 5.93 lbs (2.69 kg)
ENVIRONMENTAL		COMPLIANCE	
Temperature Operating Non-operating Humidity Operating Non-operating Altitude Operating Non-operating	0°C - 45°C -20°C - 60°C 10% - 80% 5% - 95% 5000 m 0 ft - 40,000 ft	EPEAT <sup>™</sup> ENERGY STAR® Rating TCO RoHS (EU 2002/95/EC) Windows Certification Image Quality Capability China Energy Efficiency Standard	Silver 7.0 Display 7.0 / Edge 2.0 Yes Windows 7, Windows 10 ISO 9241-307 Tier 1
Arsenic-free Glass PVC-free	Yes Yes	WARRANTY AND AVAILABILIT	ſY
Mercury-free PCC % of Plastic Resins Low Halogen	Yes >85% No	Warranty Geography Availability Global Model	3 Years World Wide Yes



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### Lenovo ThinkVision T2254 Wide

Product Specifications Reference (PSREF)

Name Bezel color Type-model Panel Viewable image size Max view area (W x H) Native resolution Aspect ratio Pixel pitch (mm) Dot/Pixel per Inch Brightness Contrast ratio	T2254 Wide Flat Panel Monitor Raven black 60F6HAR1EU TFT-LCD, twisted nematic (TN), White LED backlight 22.0" (559mm) diagonal 18.70" x 11.70" (473.8mm x 296.1mm) 1680x1050 16:10 0.282 x 0.282 mm 90 dpi 250 nits or cd/m² (typical) 1000:1 (typical)	Features • Widescreen 22.0-inch monitor • Supports 1680x1050 resolution • Supports ThinkCentre Tiny Clamp Bracket • Includes dual input connection for attachment to two systems concurrently (analog and digital) • EPEAT Gold certified • Supports optional soundbar • Microsoft Windows * 7 certified • Microsoft Windows 8 / Windows 8.1 certified • Microsoft Windows 10 certified			
Pixel response time Color gamut	5ms (typical) 72% 170° (+/- 85°) horizontal, 160° (+/- 80°) vertical Tilt and height adjustable stand <i>Sides</i> : 0.67" (17mm) 14.97" H x 20.05" W x 9.61" D; 380.2mm H x 509.3mm W x 244.2mm D 16 watts typical, 22 watts maximum, <0.5 watts standby/suspend, universal, integrated (no external brick-like power supply) 10.38 lb; 4.71 kg <b>3 year</b> (includes backlight) March 2015				
VESA-compliant Power management Ergonomics Emission standards Environmental	VESA DDC2B/CI ENERGY STAR <sup>®</sup> qualified ISO 9241-307 None TCO Displays 7.0, TCO Certified Edge 2.0, WEEE, RoHS, <b>EPEAT™ Gold rating</b>				
Preset resolutions Presets / user settings	VGA: 640x350, 640x480, 720x400 SVGA: 800x600 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA: 1280x768, 1280x800, 1366x768 WXGA+: 1440x900 WSXGA+: 1600x900, 1680x1050 Standard presets: 26; user settings: 20	ThinkVision T2254 Wide Monitor			
Viewing adjustments Rotating screen On screen display Control features USB hub Multiple input Monitor connectors Signal cables Mounting features Security	<ul> <li>None</li> <li>On screen display with digital user controls (8 languages)</li> <li>Direct access (buttons on front) for automatic image setup, dual input and brightness</li> <li>None</li> <li>Dual input (two different PCs attach to two different connectors; one PC shows image; select via button)</li> <li>(1) VGA 15-pin D-shell, analog, blue</li> <li>(2) Digital Visual Interface (DVI-D), digital, white, HDCP-compliant</li> <li>(1) detachable, VGA 15-pin D-shell at each end, analog, 1.8 meter</li> <li>(2) detachable, DVI-D at each end, digital, 1.8 meter</li> </ul>				
Ship group	Monitor with stand, Safety and Warranty Information,				
	1.8 meter black power cord Limited Warranty	Accessories			
See details at http://support.lenovo.com/en_US/guides-and-manuals/de- tail.page?DocID=UM008281		Kensington MicroSaver Cable Lock73P2582Kensington Twin Head Cable Lock45K1620			
		See details at www.lenovo.com/support/monitoraccessories			
		See all monitors at www.lenovo.com/thinkvision			
		© Lenovo			

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# Lenovo ThinkVision T2254p Wide

Product Specifications Reference (PSREF)

Name	T2254p Wide Flat Panel Monitor	Features
Bezel color	Raven black	Widescreen 22.0-inch monitor
Type-model	61BAMAR2US / 60E1MAR2US / 60CCMAR2US / 60CCMAT2EU / 61BAMAT2EU	Supports 1680x1050 resolution
Panel	TFT-LCD, twisted nematic (TN), White LED backlight	Supports ThinkCentre Tiny Clamp Bracket
Viewable image size	22.0" (559mm) diagonal	<ul> <li>Supports optional soundbar</li> <li>Includes dual input connection for attachment to two</li> </ul>
Max view area (W x H)	18.70" x 11.70 <sup>4</sup> (473.8mm x 296.1mm)	systems concurrently (analog and digital)
Native resolution Aspect ratio	<b>1680x1050</b> 16:10	EPEAT Gold certified
Pixel pitch (mm)	0.282 x 0.282 mm	<ul> <li>Microsoft<sup>®</sup> Windows<sup>®</sup> 7 certified</li> <li>Microsoft Windows 8 / Windows 8.1 certified</li> </ul>
Dot/Pixel per Inch	90 dpi	Microsoft Windows 87 Windows 8.1 Certified
Brightness	250 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio Pixel response time	1000:1 (typical) 5ms (typical)	
Color gamut	72%	
	170° (+/- 85°) horizontal, 160° (+/- 80°) vertical	
Stand Bezel width	Tilt, swivel, pivot, and height adjustable stand <i>Sides:</i> 0.67" (17.1mm)	
Dimensions (HxWxD)	14.63" H x 20.01" W x 9.55" D;	
	371.7mm H x 509.3mm W x 242.7mm D	
Power supply	20 watts typical, 25 watts maximum,	and the second se
	<0.5 watts standby/suspend, universal,	and the second se
	integrated (no external brick-like power supply)	and the second se
Weight	10.14 lb; 4.60 kg <b>3 year</b> (includes backlight)	
Limited warranty Available date	March 2015	
VESA-compliant	VESA DDC2B/CI	
Power management	ENERGY STAR® gualified	
Ergonomics	ISO 9241-307	
Emission standards	FCC Class B	and the second se
Environmental	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE, RoHS, <b>EPEAT™ Gold rating</b>	lenovo
Preset resolutions		
Fiesel iesolulions	VGA: 640x350, 640x480, 720x400 SVGA: 800x600	
	XGA: 1024x768, 1152x864	
	SXGA: 1280x1024	
	WXGA: 1280x768, 1280x800, 1366x768 WXGA+: 1440x900	
	WSXGA+: 1600x900, 1680x1050	
Presets / user settings	Standard presets: 28;	ThinkVision T2254p Wide Monitor
	user settings: 20	······································
Viewing adjustments Rotating screen	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.3" (110mm); <i>swivel:</i> +/ Screen pivots 90 degrees from landscape to portrait	-45°; detachable stand
On screen display	On screen display with digital user controls (8 languag	ues)
Control features	Direct access (buttons on front) for automatic image s	etup, dual input and brightness
USB hub	None	na stars and DO shows increase select is hutten)
Multiple input Monitor connectors	Dual input (two different PCs attach to two different co (1) VGA 15-pin D-shell, analog, blue	nnectors; one PC snows image; select via button)
	(2) HDMI (1.4), digital, HDCP-compliant	
O'an al cable	(3) DisplayPort, digital, black, HDCP-compliant	
Signal cables	(1) detachable, VGA 15-pin D-shell at each end, analo (2) detachable, DisplayPort at each end, digital, 1.8 m	g, 1.8 meter
Mounting features	Wall or desk mounting using the Extend Arm or third-r	party accessories, 100mm x 100mm mount
Security	Security keyhole for attachment of optional cable lock	(Kensington® lock-compatible)
Ship group		1.8 meter analog signal cable, 1.8 meter DP signal cable,
	1.8 meter black power cord	
o	Limited Warranty	Accessories
	port.lenovo.com/en_US/guides-and-manuals/de-	Kansington MicroSover Cable Lock 7200500
tail.page?DocID=UM00	0201	Kensington MicroSaver Cable Lock73P2582Kensington Twin Head Cable Lock45K1620
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision
		Lenovo

November 2016











# Think Vision T221-10 MONITOR



# SPECIFICATIONS

#### DISPLAY

Panel Size Panel Type Backlight Resolution (H x V) Aspect Ratio Anti-Glare Borderless Screen Screen Dimensions (W x H) (mm) (inches) Maximum Brightness (Typical) Viewing Angle (H/V at CR 10:1) Contrast Ratio (Typical) Dynamic Contrast Ratio Pixel Pitch (mm) Color Gamut NTSC (CIE 1931) Color Support (Typical) **Response Time** 

#### CONNECTIVITY

Video Input Signals Video Cables Supplied (Length)

Audio OSD Languages

#### MECHANICAL

Tilt Angle (Front / Back) Swivel Angle (Left / Right) Lift (mm / inches) Pivot Cable Management Kensington® Lock VESA® Mounting Bezel Color Bezel Width Top (mm / inches) Bottom (mm / inches) Sides (mm / inches)

21.5" Wide IPS WLED 1920 x 1080 16:9 Yes Yes 476.064 x 267.786 18.74" x 10.54" 250 cd/m<sup>2</sup> 178°/178° 1000:1 3M:1 0.248 x 0.248 72% 16.7 Million 4/6/14 ms

VGA + HDMI<sup>™</sup> 1.4 + DisplayPort<sup>™</sup> 1.2 1.8 m Audio-Out English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian

-5°/ 30° +/-45° 110 / 4.33″ -90° / 90° Yes Yes Yes (100 mm) Raven Black

2 / 0.08" 21.4 / 0.84" 2 / 0.08"

#### DIMENSIONS (W x D x H)

Size Packed (mm) (inches) Size Unpacked with Stand (mm) (inches) Size Monitor Head Only (mm) (inches) Stand Base Footprint Area (mm) (inches) Weight Packed Unpacked Monitor Head Only

#### POWER CONSUMPTION

Typical Maximum Sleep-Mode Switch Off-Mode Power Supply Power Voltage

#### COMPLIANCE

Arsenic-Free Glass PVC-Free Mercury-Free EPEAT™ ENERGY STAR® Rating TCO® TCO Edge RoHS (EU 2002/95/EC) China Energy Efficiency Standard Windows Certification Yes Yes; Without Cable Yes Silver 7.0 7.0 2.0 Yes Tier 2 Windows 7 / Windows 10

577 x 378 x 191 22.7" x 14.9" x 7.5"

489.7 x 251.9 x 357.6 19.28" x 9.92" x 14.08"

489.7 x 43.5 x 297 19.28" x 1.71" x 11.69"

240 x 240 9.45" x 9.45"

Starting at 16.36 lbs (7.42 kg) Starting at 10.85 lbs (4.92 kg) Starting at 6.94 lbs (3.15 kg)

20 W 55 W <0.5 W <0.5 W Internal

<0.5 W Internal 100 VAC - 240 VAC

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# Think Vision T22V-10 MONITOR

# SPECIFICATIONS

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DISPLAY		ENVIRONMENTAL	
	21 5 "		
Panel Size Panel Type Backlight Resolution Aspect Ratio Anti-Glare Screen Dimensions (W x H) (mm) Maximum Brightness (Typical) Viewing Angle (H/V at CR 10:1) Contrast Ratio (Typical) Dynamic Contrast Ratio Pixel Pitch (W x H) (mm) Dot/Pixel Per Inch (DP/PPI) Color Gamut (CIE 1931) Response Time (Extreme/Typical/Off)	21.5" In-Plane Switching WLED 1920 x 1080 16:9 Yes 476.06 x 267.79 250 cd/m <sup>2</sup> 178°/178° 1000:1 3M:1 0.25 x 0.25 102 72% sRGB 4/6/14 ms (G-to-G)	Temperature Operating Non-Operating Humidity Operating Non-Operating Altitude Operating Non-Operating Arsenic-Free Glass PVC-Free Mercury-Free PCC % of Plastic Resins	0°C - 40°C -20°C - 60°C 10% - 80% 5% - 95% 0 m - 8000 m 0 ft - 40,000 ft Yes Yes Yes Yes >85%
POWER CONSUMPTION		DIMENSIONS (W x D x H)	
Typical Maximum Sleep-Mode Switch Off-Mode Power Supply Power Voltage Voltage Dynamic Frequency	18 W 43 W <0.5 W <0.3 W Internal 90 VAC - 264 VAC 47 Hz - 63 Hz	Size Packed (mm) (inches) Size Unpacked with Stand Lowest Position (mm)	554 x 365 x 187 21.81" x 14.37" x 7.36" 489.7 x 251.9 x 375.8
SIGNAL INPUT		(inches) Highest Position	19.28" x 9.92" x 14.79"
Video Input Signals	HDMI™ 1.4 + DisplayPort™ 1.2 + VGA	(mm) (inches)	489.7 x 251.9 x 485.8 19.28" x 9.92" x 19.13"
Video Cables Supplied Video Cable Length USB Hub USB Cable Supplied Audio-Out	HDMI™ (ROW) + DisplayPort™ + VGA + USB 3.0' 1.8 m Yes Yes Yes (3.5 mm)	Size Unpacked without Stand (Monitor Head Only) (mm) (inches) Distance from Table to Panel	489.7 x 43.5 x 315.1 19.28" x 1.71" x 12.41"
SIGNAL INTERFACE / PERFORMANCE		Lowest Pixel at Bottom of Screen	001 / 7 07"
Horizontal Frequency Vertical Frequency Native Resolution Maximum Pixel Clock Speed/ Bandwidth Default Color Temperature Preset/User Modes OSD Buttons OSD Languages	30  kHz - 81  kHz 50  Hz - 75  Hz $1920 \times 1080$ VGA : 205 MHz HDMI <sup>™</sup> : 165 MHz DisplayPort <sup>™</sup> : 165 MHz 6500K 24/20 5+2 Buttons English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian	(mm / inches) Highest Pixel at Top of Screen (mm / inches) Stand Base Footprint Area (mm / inches) Weight Packed Unpacked Monitor Head Only	82.1 / 3.23" 192.1 / 7.56" 232 x 203.6 / 9.13" x 8.02" Starting at 14.46 lbs (6.56 kg) Starting at 10.16 lbs (4.61 kg) Starting at 6.48 lbs (2.94 kg)
MECHANICAL		COMPLIANCE	
Tilt Angle (Front / Back) Swivel Angle (Left / Right) Lift (mm) Pivot VESA <sup>®</sup> Mount (mm) Kensington <sup>®</sup> Lock Slot Cable Management Bezel Color	-5° / 30° +/-45° Yes (110) +/-90° Yes (100 x 100) Yes Yes Raven Black	EPEAT™ ENERGY STAR® Rating ULE TCO RoHS (EU 2002/95/EC) Windows Certification China Energy Efficiency Standard TÜV Eye Comfort	Silver 7.0 Gold TCO Display 7.0 / TCO Edge 2.0 Yes Windows 7 / Windows 10 Grade 2 Yes
Bezel Width		WARRANTY AND AVAILABILITY	
Top (mm / inches) Bottom (mm / inches) Sides (mm / inches)	2 / 0.08" 21.4 / 0.84" 2 / 0.08"	Warranty ROW PRC Geography Availability	3 Years 18 Months WW

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.

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Geography Availability













## Lenovo ThinkVision T2324d Wide

Product Specifications Reference (PSREF)

Nome	T2324d Wide Flat Panel Monitor	Factures
Name Bezel color	Black	Features
Type-model	60F3JAR2US / 60F3JAT2EU	Widescreen 23.0-inch monitor     Supports 1020v1080 resolution
Panel	TFT-LCD, twisted nematic (TN), White LED backlight	<ul> <li>Supports 1920x1080 resolution</li> <li>Supports optional soundbar</li> </ul>
Viewable image size	23.0" (584mm) diagonal	Supports ThinkCentre Tiny via VESA back mount
Max view area (W x H)	20.07" x 11.29" (509.8mm x 286.7mm) 1920x1080	<ul> <li>Includes dual input connection for attachment to two</li> </ul>
Native resolution Aspect ratio	16:9	systems concurrently (analog and digital)
Pixel pitch (mm)	0.2655 x 0.2655 mm	• ÉPEAT Gold certified
Dot/Pixel per Inch	96 dpi	Microsoft® Windows® 7 certified     Microsoft Windows 10 certified
Brightness	250 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio	1000:1 (typical)	
Pixel response time	5ms (typical)	
Color gamut	72% 170° (+/- 85°) horizontal, 160° (+/- 80°) vertical	
Stand		
Bezel width	Sides: 0.68" (17.3mm)	
Dimensions (HxWxD)	15.75" H x 21.48" W x 8.06" D;	
_	400.3mm H x 545.8mm W x 204.9mm D	the second second second second second second second second second second second second second second second s
Power supply	20 watts typical,	
	27 watts maximum <0.3 watts standby/suspend, universal,	
	integrated (no external brick-like power supply)	
Weight	7.06 lb; 3.20 kg	and the second s
Limited warranty	3 year (includes backlight)	and and a family of a state of the state of
Available date	June 2016	and the second s
		and the second sec
VESA-compliant	VESA DDC2B/CI	A DESCRIPTION OF A DESC
Power management	ENERGY STAR <sup>®</sup> qualified	
Ergonomics	ISO 9241-307	
Emission standards Environmental	FCC Class B TCO Displays 7.0, TCO Certified Edge 2.0, WEEE,	Lawer
Environmental	RoHS, EPEAT™ Gold rating	
	Hono, II Im Gold laing	
Preset resolutions	VGA: 640x350, 640x480, 720x400	-
	SVGA: 800x600	
	XGA: 1024x768, 1152x864	
	SXGA: 1280x1024	
	WXGA: 1280x768, 1280x800, 1366x768	
	WXGA+: 1440x900 WSXGA+: 1680x1050	
	Full HD: 1920x1080	ThinkVision T2324d Wide Monitor
Presets / user settings	Standard presets: 26; user settings: 16	
Viewing adjustments	Tilt: 22° back E°	
Viewing adjustments Rotating screen	<i>Tilt:</i> 22° back, -5° None	
On screen display	On screen display with digital user controls (8 language	res)
Control features	Direct access (buttons on front) for automatic image s	etup, dual input and brightness
USB hub	None	
Multiple input	Dual input (two different PCs attach to two different co	onnectors; one PC shows image; select via button)
Monitor connectors	(1) VGA 15-pin D-shell, analog, blue	
Signal cables	(2) DisplayPort, digital, black, <b>HDCP-compliant</b> (1) detachable, VGA 15-pin D-shell at each end, analo	g, 1.8 meter
Mounting features	(2) detachable, DisplayPort at each end, digital, 1.8 m Wall or desk mounting using the Extend Arm or third-	eter party accessories, 100mm y 100mm mount
Security	Security keyhole for attachment of optional cable lock	(Kensington <sup>®</sup> lock-compatible)
Ship group		1.8 meter analog signal cable, 1.8 meter DP signal cable,
9. ook	1.8 meter black power cord	
	Limited Warranty	Accessories
See details at http://sun	port.lenovo.com/en US/guides-and-manuals/de-	
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
		Kensington Twin Head Cable Lock 45K1620
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision
		Lenovo









## Lenovo ThinkVision T23d-10

Name Bezel color	T23d-10 Wide Flat Panel Monitor Black	Features
Type-model	61C3MAR6US / 61C3MAT6EU	Widescreen 22.5-inch monitor     Supports 1920x1200 resolution
Panel	TFT-LCD, In-Plane Switching (IPS), White LED backlight	<ul> <li>Supports ThinkCentre Tiny Clamp Bracket</li> <li>Supports optional soundbar</li> </ul>
Viewable image size	22.5" (571.5mm) diagonal	<ul> <li>Includes dual input connection for attachment to two</li> </ul>
Max view area (W x H) Native resolution	19.5" x 12.4" (496.2mm x 313.9mm) 1920x1200	systems concurrently
Aspect ratio	16:10	EPEAT Gold certified     Microsoft® Windows® 7 certified
Pixel pitch (mm) Dot/Pixel per Inch	0.25 x 0.25 mm 100.6 dpi	Microsoft Windows 10 certified
Brightness	250 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio Pixel response time	1000:1 (typical) 6ms (typical)	
Color gamut	72%	
Stand	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Tilt, swivel, pivot, and height adjustable stand	
Bezel width	Sides: 0.09" (2.3mm)	
Dimensions (HxWxD)	19.37" H x 19.73" W x 9.9" D; 491.9mm H x 501.2mm W x 251.9mm D	
Power supply	15 watts typical,	
	18 watts maximum, <0.3 watts standby/suspend, universal,	
Maight	integrated (no external brick-like power supply)	
Weight Limited warranty	10.67 lb; 4.85 kg 3 year (includes backlight)	
Available date	June 2018	
VESA-compliant	VESA DDC2B/CI	
Power management Ergonomics	ENERGY STAR® qualified ISO 9241-307	
Emission standards	FCC Class B	
Environmental	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE, RoHS, <b>EPEAT</b> <sup>™</sup> <b>Silver rating</b>	
Preset resolutions	VGA: 640x480, 720x400	
	SVGA: 800x600 XGA: 1024x768	
	SXGA: 1280x1024	
	WXGA: 1366x768 WXGA+: 1440x900	
	WSXGA+: 1680x1050	
	Full HD: 1920x1080 WUXGA: 1920x1200	ThinkVision T23d-10 Wide Monitor
Presets display modes	Standard presets: 27; user settings: 20	
Viewing adjustments	Tilt: 30° back, -5° forward; lift: 4.3" (110mm); swivel: +/	/-45°; detachable stand
Rotating screen On screen display	Screen pivots 90 degrees from landscape to portrait On screen display with digital user controls (8 language	les)
Control features	Direct access (buttons on front) for power, menu, inpu	t source select and brightness
Multiple input	None Dual input (two different PCs attach to two different co	nnectors; one PC shows image; select via button)
Monitor connectors	(1) VGA 15-pin D-shell, analog, blue	<b>.</b> ,
	<ul> <li>(2) HDMI (1.4), digital, HDCP-compliant</li> <li>(3) DisplayPort, digital, black, HDCP-compliant</li> </ul>	
Signal cables	(1) detachable, VGA 15-pin D-shell at each end, analo (2) detachable, DisplayPort at each end, digital, 1.8 m	g, 1.8 meter
Mounting features	Wall or desk mounting using the Extend Arm or third-r	party accessories, 100mm x 100mm mount
Security	Security keyhole for attachment of optional cable lock	(Kensington® lock-compatible)
Ship group	ip group Monitor with stand, Safety and Warranty Information, 1.8 meter analog signal cable, 1.8 meter DP signal cable, 1.8 meter black power cord, 1.8 meter HDMI signal cable (NA only)	
	Limited Warranty	Accessories
	port.lenovo.com/en_US/guides-and-manuals/de-	
tail.page?DocID=UM00	8281	Kensington MicroSaver Cable Lock73P2582Kensington Twin Head Cable Lock45K1620
		The home with the autoable LOCK 45K 1020
		See details at www.lenovo.com/support/monitoraccessories
		Coo oll monitore et ununu lemeure com Attictudictore
		See all monitors at <b>www.lenovo.com/thinkvision</b>
Note: The specifications abo	ove may not be available in all regions	Lenovo

Note: The specifications above may not be available in all regions.













## Lenovo ThinkVision T23i

		1
Name Bezel color	T23i Wide Flat Panel Monitor Black	Features
Type-model	61ABMAR1US / 61ABMAT1EU	Widescreen 23-inch monitor
Panel	TFT-LCD, In-Plane Switching (IPS),	<ul> <li>Supports 1920x1080 resolution</li> <li>Supports ThinkCentre Tiny Clamp Bracket</li> </ul>
Viewable image size	White LED backlight 23" (584.2mm) diagonal	<ul> <li>Includes dual input connection for attachment to two</li> </ul>
Max view area (W x H)	20.36" x 11.92" (517.2mm x 302.8mm)	systems concurrently     EPEAT Silver certified
Native resolution	1920x1080	EPEAT Silver certified     Microsoft® Windows® 7 certified
Aspect ratio Pixel pitch (mm)	16:9 0.2652 x 0.2652 mm	Microsoft Windows 10 certified
Dot/Pixel per Inch	95.8 dpi	
Brightness	250 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio Pixel response time	1000:1 (typical) 6ms (typical)	
Color gamut	72%	
Viewing angle at 10:1 CR Stand	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical	
Bezel width	Tilt, swivel, pívot, and height adjustablé stand Sides: 0.08" (2.0mm)	
Dimensions (HxWxD)	13.3" H x 20.56" W x 10.4" D;	
Power supply	337.7mm H x 522.2mm W x 264.2mm D 16 watts typical,	
Fower suppry	45 watts maximum (with USB 3.0 hub),	- ANTE
	<0.5 watts standby/suspend, universal,	
Weight	integrated (no external brick-like power supply) 10.85 lb; 4.92 kg	
Limited warranty	<b>3 year</b> (includes backlight)	
Available date	April 2017	
VESA-compliant Power management	VESA DDC2B/CI ENERGY STAR® gualified	
Ergonomics	ISO 9241-307	
Emission standards Environmental	FCC Class B	
Livionnenai	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE, RoHS, <b>EPEAT™ SILVER rating</b>	
Preset resolutions	VGA: 640x480, 720x400	
	SVGA: 800x600	
	XGA: 1024x768, 1152x864 SXGA: 1280x1024	
	WXGA+: 1440x900	
	WSXGA+: 1680x1050	
	Full HD: 1920x1080	ThinkVision T23i Wide Monitor
Presets display modes	HDMI: 18; DP: 18	
Viewing adjustments	Tilt: 30° back, -5° forward; lift: 4.3" (110mm); swivel: +,	/-45°; detachable stand
Rotating screen On screen display	Screen pivots 90 degrees from landscape to portrait On screen display with digital user controls (8 language	
Control features	Direct access (buttons on front) for power, menu, input	t source select and brightness and automatic image setup
USB hub	USB 3.0 Hub: 1 port into PC (USB 3.0); 4 ports for ac	cessories (4 USB 3.0)
Multiple input Monitor connectors	Dual input (two different PCs attach to two different cc (1) VGA 15-pin D-shell, analog, blue	onnectors; one PC shows image; select via button)
	(2) HDMI (1.4), digital, HDCP-compliant	
Signal cables	<ul> <li>(3) DisplayPort, digital, black, HDCP-compliant</li> <li>(1) detachable, VGA 15-pin D-shell at each end, analo</li> </ul>	a 1.9 motor
Olgilal cables	(2) detachable, DisplayPort at each end, digital, 1.8 m	
Manuation for a true of	(3) detachable, HDMI at each end, digital, 1.8 meter (I	
Mounting features Security	Wall or desk mounting using the Extend Arm or third- Security keyhole for attachment of optional cable lock	(Kensington <sup>®</sup> lock-compatible)
Ship group	Monitor with stand, Safety and Warranty Information, 1.8 meter analog signal cable, 1.8 meter DP signal cable,	
	1.8 meter HDMI signal cable(NA), 1.8 meter USB sign	hal cable, 1.8 meter black power cord
	Limited Warranty	Accessories
See details at http://sup tail.page?DocID=UM00	port.lenovo.com/en_US/guides-and-manuals/de-	
an.page:DociD=01000	0201	Kensington MicroSaver Cable Lock73P2582Kensington Twin Head Cable Lock45K1620
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision
		Lenov













## Lenovo ThinkVision T2454p Wide

Product Specifications Reference (PSREF)

Name	T2454p Wide Flat Panel Monitor	Features
Bezel color	Raven black	Widescreen 24.0-inch monitor
Type-model Panel	60F9MAR1US / 60F9MAT1EU TFT-LCD, In-Plane Switching (IPS),	Supports 1920x1200 resolution
	White LED backlight	<ul> <li>Supports ThinkCentre Tiny Clamp Bracket</li> <li>Supports optional soundbar</li> </ul>
Viewable image size	<b>24.0"</b> ( <b>609.6mm</b> ) diagonal	Includes dual input connection for attachment to two
Max view area (W x H) Native resolution	20.41" x 12.76" (518.4mm x 324.0mm) 1920x1200	systems concurrently (analog and digital)
Aspect ratio	16:10	EPEAT Gold certified     Microsoft® Windows® 7 certified
Pixel pitch (mm)	0.270 x 0.270 mm	Microsoft Windows 8 / Windows 8.1 certified
Dot/Pixel per Inch Brightness	94 dpi 300 nits or cd/m <sup>2</sup> (typical)	Microsoft Windows 10 certified
Contrast ratio	1000:1 (typical)	
Pixel response time	7ms (typical)	
Color gamut Viewing angle at 10:1 CB	77.4% 178° (+/- 89°) horizontal, 178° (+/- 89°) vertical	
Stand	Tilt, swivel, pivot, and height adjustable stand	
Bezel width	Sides: 0.74" (18.8mm)	
Dimensions (HxWxD)	15.85" H x 21.94" W x 10.39" D; 402.5mm H x 557.4mm W x 264.2mm D	and the second se
Power supply	24 watts typical,	the second second second second second second second second second second second second second second second se
	27 watts maximum (without USB 3.0 hub),	
	54 watts maximum (with USB 3.0 hub), <pre>&lt;0.5 watts standby/suspend, universal,</pre>	
	integrated (no external brick-like power supply)	
Weight	13.60 lb; 6.15 kg	
Limited warranty	3 year (includes backlight)	
Available date	March 2015	
VESA-compliant Power management	VESA DDC2B/CI ENERGY STAR® qualified	
Ergonomics	ISO 9241-307	
Emission standards	FCC Class B	Leves
Environmental	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE, RoHS, <b>EPEAT™ Gold rating</b>	
Propot recolutions		
Preset resolutions	VGA: 640x350, 640x480, 720x400 SVGA: 800x600	
	XGA: 1024x768	
	SXGA: 1280x1024	
	WXGA: 1280x720, 1280x768, 1280x800 WXGA+: 1440x900	
	WSXGA+: 1680x1050, 1600x1200	ThinkVision T2454p Wide Monitor
Presets / user settings	Full HD: 1920x1080, 1920x1200 Standard presets: 21; user settings: 20	
Viewing adjustments	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.3" (110mm); <i>swivel:</i> +,	/-45°; detachable stand
Rotating screen On screen display	Screen pivots 90 degrees from landscape to portrait On screen display with digital user controls (8 languag	nes)
Control features	Direct access (buttons on front) for automatic image s	etup, dual input and brightness
USB hub	USB 3.0 Hub: 1 port into PC (USB 3.0); 4 ports for ac	cessories (4 USB 3.0)
Multiple input Monitor connectors	Dual input (two different PCs attach to two different cc (1) VGA 15-pin D-shell, analog, blue	onnectors; one PC snows image; select via button)
	(2) HDMI (1.4), digital, HDCP-compliant	
Signal cables	<ul> <li>(3) DisplayPort, digital, black, HDCP-compliant</li> <li>(1) detachable, VGA 15-pin D-shell at each end, analog</li> </ul>	a 19 motor
Signal cables	(2) detachable, VGA 13-pin D-shell at each end, digital, 1.8 m	eter
Mounting features	Wall or desk mounting using the Extend Arm or third-	
Security	Security keyhole for attachment of optional cable lock	
Ship group	1.8 meter USB signal cable, 1.8 meter black power co	1.8 meter analog signal cable, 1.8 meter DisplayPort cable, rd
	Limited Warranty	Accessories
See details at http://sun	port.lenovo.com/en_US/guides-and-manuals/de-	
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
		Kensington Twin Head Cable Lock 45K1620
		See details at www.lenovo.com/support/monitoraccessories
		See details at www.ienovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision

Lenovo November 2016













# ThinkVision T24d-10 MONITOR

## SPECIFICATIONS

DISPLAY		DIMENSIONS (W x D x H)	
DISPLAY Panel Size Panel Type Resolution Backlight Aspect Ratio Pixel Pitch (W x H) (mm) Dot/Pixel Per Inch (DPI/PPI) Anti-Glare Screen Dimensions (W x H) (mm) (inches) Maximum Brightness (Typical) Viewing Angle (H/V at CR 10:1) Contrast Ratio (Typical) Dynamic Contrast Ratio Color Gamut (CIE 1931) Display Colors (Typical) Response Time Extreme Typical Off	24" In-Plane Switching 1920 x 1200 WLED 16:10 0.27 x 0.27 94 PPI Yes 518.4 x 324 20.41" x 12.75" 300 cd/m <sup>2</sup> 178°/178° 1000:1 3M:1 99% sRGB 16.7 Million 4 ms 7 ms 15 ms	DIMENSIONS (W x D x H) Size Packed (mm) (inches) Size Unpacked with Stand (mm) (inches) Size Monitor Head Only (mm) (inches) Distance from Table to Panel Lowest Pixel at Bottom of Screen (mm / inches) Highest Pixel at Top of Screen (mm / inches) Stand Base Footprint Area (mm) (inches) Weight Packed Unpacked Monitor Head Only	160 x 655 x 422 6.3" x 25.79" x 16.61" 533.2 x 260.4 x 497.4 20.99" x 10.25" x 19.58" 533.2 x 42.3 x 355.1 20.99" x 1.67" x 13.98" 56 / 2.2" 490 / 19.29" 250 x 250 9.84" x 9.84" Starting at 19.18 lbs (8.7 kg) Starting at 12.41 lbs (5.63 kg) Starting at 8.77 lbs (3.98 kg)
SIGNAL INPUT	15 115	POWER CONSUMPTION	
Video Input Signals Video Cables Supplied Video Cable Length USB Hub USB Cable Supplied Audio-Out SIGNAL INTERFACE / PERFO Horizontal Frequency Vertical Frequency Native Resolution Maximum Pixel Clock Speed/ Bandwidth VGA HDMI <sup>™</sup> DisplayPort <sup>™</sup> Default Color Temperature Preset Display Modes OSD Buttons OSD Languages	VGA + DisplayPort <sup>™</sup> 1.2 + HDMI <sup>™</sup> 1.4 VGA + DisplayPort <sup>™</sup> + HDMI <sup>™</sup> 1.4 NGA + DisplayPort <sup>™</sup> + HDMI <sup>™</sup> 1.8 m USB 3.0 <sup>1</sup> Yes Yes (3.5 mm) <b>DRMANCE</b> 30 kHz - 83 KHz 50 Hz - 75 Hz 1920 x 1200 205 MHz 165 MHz 165 MHz 165 MHz 6500 K 20 5 English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian	Typical Maximum Sleep-Mode Switch Off-Mode Power Supply Power Voltage Voltage Dynamic Frequency <b>ENVIRONMENTAL</b> Temperature Operating Non-Operating Humidity Operating Non-Operating Altitude Operating Non-Operating Altitude Operating Non-Operating Altitude Operating Non-Operating Altitude Operating Non-Operating Arsenic-Free Glass PVC-Free Mercury-Free PCC % of Plastic Resins	22 W 64 W <0.3 W <0.3 W Internal 100 VAC - 240 VAC 50 Hz - 60 Hz 0°C - 40°C -20°C - 60°C 10% - 80% 5% - 95% 0 m - 5000 m 0 ft - 40,000 ft Yes Yes Yes Yes >85%
MECHANICAL		COMPLIANCE	
Tilt Angle (Front / Back) Swivel Angle (Left / Right) Lift (mm) Pivot VESA* Mount (mm x mm) Cable Management Kensington* Lock Bezel Color Bezel Width Top (mm / inches) Bottom (mm / inches) Sides (mm / inches)	-5°/ 30° +/-45° 110 +/-90° 100 x 100 Yes Yes Business Black 2 / 0.08″ 22.7 / 0.89″ 2 / 0.08″	EPEAT <sup>™</sup> ENERGY STAR® Rating ULE TCO® RoHS (EU 2002/95/EC) China Energy Efficiency Standard Windows Certification WARRANTY AND AVAILAB Warranty Geography Availability	Silver 7.0 Gold TCO Display 7.0 / TCO Edge 2.0 Yes Tier 2 Windows 7 / Windows 10 ILITY 3 Years WW

\* NA only.

NA only.
Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



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## ThinkVision T24h-20

#### DISPLAY

Panel Size 23.8-inch

Screen Dimensions 526.85 mm x 296.35 mm

Panel Type 3-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio

**Resolution** 2560 × 1440

**Pixel Pitch** 0.2058 x 0.2058 mm

**Dot/Pixel Per Inch (DPI/PPI)** 123

Viewing Angle (H x V @ CR 10:1) 178° / 178°

**Response Time** 4ms (extreme mode) 6ms (normal mode)

Refresh Rate 60 Hz

Brightness (typical) 300 cd/m<sup>2</sup>

**Contrast Ratio (typical)** 1000:1

Dynamic Contrast Ratio (typical) 3M:1 **Color Gamut** 99% sRGB

**Color Support (typical)** 16.7 Million

Anti-glare Yes

#### CONNECTIVITY

Video Signal 1 x USB Type-C Gen1 (DP 1.2 Alt Mode) 1 x HDMI 1.4 1 x DP 1.2

Audio Signal 1 x Audio Out (3.5 mm)

**USB Hub** Yes

USB Upstream 1 x USB 3.1 Gen1 (by USB Type-C)

USB Downstream 4 x USB 3.1 Gen1 (1 BC)

### POWER

Power Consumption (typical/max) 23W / 120W

Power Consumption Sleep/Off Mode ≤ 0.5₩

Power Consumption Switch-off Mode ≤ 0.3W

Energystar Power Consumption (Pon/ETEC) 16.36W / 53.37kWh Power Supply Internal

USB Type-C Power Delivery (W) up to 75W\*

Smart Power Yes

Voltage Required AC 100 to 240 V (47-63 Hz)

#### MECHANICAL

**Tilt Angle (front/back)** -5° / 35°

Swivel Angle (left/right) +45°/ -45°

Lift (max range) 150 mm

**Pivot** -90° / 90°

VESA Mount Capability Yes (100 x 100 mm)

Kensington Lock Slot Yes

**Cable Management** Yes

**Bezel Color** Raven Black

Bezel Width (side) 2.0 mm

Bezel Width (top/bottom) 2.0 / 24.1 mm

#### DIMENSIONS

**Size Packed** (D x H x W, mm/inch) 620 x 149 x 423 mm 24.4 x 5.9 x 16.7 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position) 205 x 420 x 539.8 mm 8.07 x 16.5 x 21.3 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position) 205 x 570 x 539.8 mm 8.07 x 22.4 x 21.3 inches

**Size Unpacked w/o Stand** (head only) (D x H x W, mm/inch) 44.6 x 325.7 x 539.8 mm 1.8 x 12.8 x 21.3 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 117.9 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 415 mm

**Weight Packed (kg/lbs.)** 8.1 kg / 17.86 lbs.

Weight Unpacked (kg/lbs.) 6.18 kg / 13.6 lbs.

Weight (monitor head only) (kg/lbs.) 3.85 kg / 7.89 lbs.

**Full Container Load** (40' STD / 20' STD) 1395 / 645 units

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m) 1 x DP cable (1.8 m) (NA & LA only) 1 x USB Type-C to Type-C cable (1.8 m) 1 x USB Type-C to Type-A cable (1.8 m) (NA & LA only) Quick setup guide

#### CERTIFICATIONS

ENERGY STAR Rating

**ccc** Yes

**TCO** 8.0

**TCO Edge** 2.0

EPEAT Silver

RoHS (EU 2002/95/EC) Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 1

**TÜV Rheinland Eye Comfort** Yes







\*Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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# Think Vision T241-10 MONITOR



## **SPECIFICATIONS**

#### DISPLAY

Panel Size Panel Type Backlight Resolution (H x V) Aspect Ratio Anti-Glare Near Edgeless Screen Screen Dimensions (W x H) (mm) (inches) Maximum Brightness (Typical) Viewing Angle (H/V at CR 10:1) Contrast Ratio (Typical) Dynamic Contrast Ratio Pixel Pitch (mm) Color Gamut (CIE 1931) Color Support (Typical) Response Time (gray to gray) OSD Controls Buttons Languages

### CONNECTIVITY

Video Input Signals

Video Cables Supplied (Length) USB Hub

Audio Out

### MECHANICAL

Tilt Angle (Front / Back) Swivel Angle (Left / Right) Lift Range (mm) Pivot Cable Management Kensington® Lock VESA® Mount (mm x mm) Bezel Color Bezel Width Top (mm / inches) Sides (mm / inches)

VGA + HDMI<sup>™</sup> 1.4 + DisplayPort™ 1.2 1.8 m 1 x USB 3.0<sup>1</sup> (Upstream) 4 x USB 3.01 (Downstream, Incl. 1 BC) Yes (3.5 mm)

-5°/ 30° +/-45° 110 +/-90° Yes Yes Yes (100 X 100) Raven Black 2 / 0.08"

23.8" Wide

1920 x 1080

WIFD

16:9

Yes

Yes

In-Plane Switchng

527.04 x 296.46

0.2745 x 0.2745

4 ms (Extreme mode)

English, French, German,

Spanish, Italian, Japanese,

Simplified Chinese, Russian

6 ms (Normal mode)

20 75" x 11 67

250 cd/m<sup>2</sup>

72% NTSC

16.7 Million

178°/178°

1000:1

3M:1

5

2 / 0.08"

<sup>1</sup> Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



#### DIMENSIONS (W x D x H)

Size Packed (mm) (inches) Size Unpacked with Stand Lowest Position (mm) (inches) **Highest Position** (mm)(inches) Size Unpacked without Stand (Monitor Head Only) (mm) (inches) Stand Base Footprint Area (mm) (inches) Weight Packed Unpacked Monitor Head Only Full Container Load (40' STD / 20' STD)

### POWER CONSUMPTION

Typical Maximum Sleep-Mode Switch Off-Mode Power Supply Power Voltage

## WHAT'S IN THE BOX

Monitor with Stand 1 x Power Cable 1 x VGA Cable 1 x DisplayPort<sup>™</sup> - DisplayPort<sup>™</sup> Cable 1 x HDMI<sup>™</sup> Cable (NA Only) Quick Setup Guide

### CERTIFICATIONS

EPEAT™ ENERGY STAR® Rating TCO<sup>®</sup> TCO Edge RoHS (EU 2002/95/EC) China Energy Efficiency Standard Windows Certification TüV Eye Comfort Certification

7.1 7.0 2.0 Yes Tier 2 Windows 7 / Windows 10 Yes

<u>enovo</u>

422 x 622 x 190 16 61" x 24 48" x 7 48"

540.2 x 261.75 x 373.4 21.26" x 10.3" x 14.7"

540.2 x 261.75 x 483.4 21.26" x 10.3" x 19"

540 2 x 46 45 x 325 98 21.26" x 1.82" x 12.83"

250 x 250 9.84" x 9.84"

16.5 W

<0.3 W

Internal

Silver

90 VAC - 264 VAC

55 W/ <0.5 W

Starting at 16.39 lbs (7.45 kg) Starting at 11.33 lbs (5.15 kg) Starting at 7.26 lbs (3.3 kg) 1140 / 540 Units



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# ThinkVision T241-19 MONITOR



## SPECIFICATIONS

## DISPLAY

Panel Size Panel Type Backlight Resolution Aspect Ratio Anti-Glare Near Edgeless Screen Screen Dimensions (W x H) (mm) (inches) Brightness Viewing Angle (H/V at CR 10:1) Contrast Ratio (Typical) Dynamic Contrast Ratio Speakers Pixel Pitch (mm) Color Gamut (CIE 1931) Color Depth Color Support (Typical) Response Time (GtG) Extreme / Normal **OSD** Controls Buttons Languages

#### CONNECTIVITY

Video Input Signals

Video Cables Supplied

USB Hub Audio Out Power Soundbar Support\*

#### MECHANICAL

Tilt Angle (Front / Back) Swivel Angle (Left / Right) Lift Range (mm) Pivot Stand Cable Management Kensington<sup>®</sup> Lock VESA® Mount (mm x mm) Bezel Color Bezel Width Top (mm / inches) Sides (mm / inches)

FHD (1920 x 1080) 16:9 Yes Yes 527.04 x 296.46 20.75" x 11.67" 250 nits 178°/178° 1000:1 3M:1 2 x 2W 0.2745 x 0.2745 72% NTSC 8 bit 16.7 Million 4 ms / 6 ms 5 English, French, German,

23.8" Wide

WLED

In-Plane-Switching

# Spanish, Italian, Japanese, Simplified Chinese, Russian

VGA + HDMI™ + DisplayPort™ VGA, DisplayPort<sup>™</sup>, USB, Power, HDMI<sup>™</sup> (for NA only) USB  $3.0^1$  (4 x down, 1 x BC) Yes (3.5 mm) Internal Yes

-5°/ 30°

+/-45°

+/-90°

Yes (100 X 100)

Raven Black

2 / 0.08"

2 / 0.08"

LTPS

Yes

Yes

110

### Size Packed (mm)

DIMENSIONS (W x D

(inches) Size Unpacked with Stand Lowest Position (mm) (inches) **Highest Position** (mm) (inches) Size Unpacked without Stand (Monitor Head Only) (mm) (inches) Stand Base Footprint Area (mm) (inches) Weight Packed Unpacked Monitor Head Only Full Container Load (40' STD / 20' STD)

#### POWER CONSUMPTION

Typical Maximum Sleep-Mode Switch Off-Mode Power Supply Power Voltage ENERGY STAR<sup>®</sup> (Pon) ENERGY STAR<sup>®</sup> (E<sub>TEC</sub>)

## WHAT'S IN THE BOX

Monitor with Stand 1 x Power Cable 1 x VGA Cable 1 x DisplayPort<sup>™</sup> - DisplayPort<sup>™</sup> Cable 1 x HDMI<sup>™</sup> Cable (NA Only) Quick Setup Guide

## CERTIFICATIONS

Silver
7.1
7.0
2.0
Yes
Yes
Tier 2
Windows
Yes
Yes

7 / Windows 10



21.26" x 1.82" x 12.83" 250 x 250 9.84" x 9.84"

422 x 622 x 190

16.61" x 24.48" x 7.48"

540.2 x 261.75 x 373.4

540.2 x 261.75 x 483.4

540 2 x 46 45 x 325 98

21.26" x 10.3" x 14.7"

21.26" x 10.3" x 19"

Starting at 16.39 lbs (7.45 kg) Starting at 11.33 lbs (5.15 kg) Starting at 7.26 lbs (3.3 kg) 1140 / 540 Units

16.5 W 59 W <0.5 W <0.3 W Internal 90 VAC - 264 VAC 13.67 W 43.51 kWh

#### Optional.

Depending on many factors such as the processing capability of peripheral devices, file attributes and other factors related to system configuration and operating environments, the actual transfe rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



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## Lenovo ThinkVision T24m

Name	T24m Wide Flat Panel Monitor	Features
Bezel color	Black	Widescreen 23.8-inch monitor
Type-model Panel	61B8RAR3US / 61B8RAT3EU TFT-LCD, In-Plane Switching (IPS),	<ul> <li>Supports 1920x1080 resolution</li> </ul>
T and	White LED backlight	<ul> <li>Supports ThinkCentre Tiny Clamp Bracket</li> <li>Supports optional soundbar</li> </ul>
Viewable image size	23.8" (604.7mm) diagonal	EPEAT Gold certified
Max view area (W x H)	20.75" x 11.67" (527.04mm x 296.46mm)	Microsoft <sup>®</sup> Windows <sup>®</sup> 7 certified
Native resolution Aspect ratio	<b>1920x1080</b> 16:9	Microsoft Windows 10 certified
Pixel pitch (mm)	0.2745 x 0.2745 mm	
Dot/Pixel per Inch	92 dpi	
Brightness	250 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio Pixel response time	1000:1 (typical) 6ms (typical)	
Color gamut	99% sRGB	
Viewing angle at 10:1 CR	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical	
Stand Bezel width	Tilt, swivel, pivot, and height adjustable stand	
Dimensions (HxWxD)	<i>Sides:</i> 0.08" (2.0mm) 19.03" H x 21.26" W x 10.3" D;	
	483.4mm H x 540.2mm W x 261.75mm D	
Power supply	17 watts typical,	
	110 watts maximum (with USB 3.0 hub), <0.5 watts standby/suspend, universal,	
	integrated (no external brick-like power supply)	
Weight	12.34 lb; 5.6 kg	
Limited warranty	3 year (includes backlight)	
Available date	August 2017	
VESA-compliant Power management	VESA DDC2B/CI ENERGY STAR® qualified	
Ergonomics	ISO 9241-307	
Emission standards	FCC Class B	
Environmental	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE,	Testion
Description of the second	RoHS, EPEAT™ Silver rating	-
Preset resolutions	VGA: 640x480 SVGA: 800x600	
	XGA: 1024x768	
	SXGA: 1280x1024	
	WXGA: 1366x768 WXGA+: 1440x900, 1600x900	
	WSXGA+: 1680x1050	Think/isian TOAn Mide Manitan
	Full HD: 1920x1080,1920x1200	ThinkVision T24m Wide Monitor
Presets display modes	HDMI: 19; DP: 11	
Viewing adjustments	Tilt: 30° back, -5° forward; lift: 4.3" (110mm); swivel: +	/-45°; detachable stand
Rotating screen	Screen pivots 90 degrees from landscape to portrait	
On screen display	On screen display with digital user controls (8 language	ges)
Control features USB hub	Direct access (buttons on front) for power, menu, inpu USB 3.0 Hub: 1 port into PC (USB 3.0); 4 ports for ac	
Multimedia	Audio-out, optional sound bar supported	
Multiple input	Support HDMI, DisplayPort, USB 3.1 Type-C	
Monitor connectors	<ul> <li>(1) HDMI (1.4), digital, HDCP-compliant</li> <li>(2) DisplayPort (1.2), digital, HDCP-compliant</li> </ul>	
	(3) USB 3.1 Type-C	
Signal cables	(1) 1.8 meter USB Type-C to USB Type-C cable	
Mounting features	Wall or desk mounting using the Extend Arm or third-	
Security	Security keyhole for attachment of optional cable lock	
Ship group	Monitor with stand, Safety and Warranty Information, 1.8 meter black power cord	1.8 meter USB Type-C to USB Type-C cable,
	·	
	Limited Warranty	Accessories
	port.lenovo.com/en_US/guides-and-manuals/de-	Kensington Misso Course Cable Lask
tail.page?DocID=UM00	8281	Kensington MicroSaver Cable Lock73P2582Kensington Twin Head Cable Lock45K1620
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision









# Think Vision T24V-10 MONITOR

## SPECIFICATIONS

E

WWW.LENOVO.COM

DISPLAY		ENVIRONMENTAL	
	27.0"		
Panel Size Panel Type Backlight Resolution Aspect Ratio Anti-Glare Screen Dimensions (W x H) (mm) Maximum Brightness (Typical) Viewing Angle (H/V at CR 10:1) Contrast Ratio (Typical)	23.8" In-Plane Switching WLED 1920 x 1080 16:9 Yes 527.04 x 296.46 250 cd/m <sup>2</sup> 178°/178° 1000:1	Temperature Operating Non-Operating Humidity Operating Non-Operating Altitude Operating Non-Operating	0°C - 40°C -20°C - 60°C 10% - 80% 5% - 95% 0 m - 8000 m 0 ft - 40,000 ft
Dynamic Contrast Ratio Pixel Pitch (W x H) (mm) Dot/Pixel Per Inch (DP/PPI) Color Gamut (CIE 1931) Response Time (Extreme/Typical/Off)	3M:1 0.25 x 0.25 102 72% sRGB 4/6/14 ms (G-to-G)	Arsenic-Free Glass PVC-Free Mercury-Free PCC % of Plastic Resins	Yes Yes Yes >85%
POWER CONSUMPTION		DIMENSIONS (W x D x H)	
Typical Maximum Sleep-Mode Switch Off-Mode Power Supply Power Voltage Voltage Dynamic Frequency	20 W 45 W <0.5 W <0.3 W Internal 90 VAC - 264 VAC 47 Hz - 63 Hz	Size Packed (mm) (inches) Size Unpacked with Stand Lowest Position (mm)	608 x 395 x 187 23.94" x 15.55" x 7.36" 540.2 x 261.9 x 390.5
SIGNAL INPUT		(inches) Highest Position	21.28" x 10.32" x 15.39"
Video Input Signals	HDMI™ 1.4 + DisplayPort™ 1.2 + VGA	(mm) (inches)	540.2 x 261.9 x 500.5 21.28" x 10.32" x 19.72"
Video Cables Supplied	HDMI™ (ROW) + DisplayPort™ + VGA + USB 3.0¹	Size Unpacked without Stand (Monitor Head Only)	
Video Cable Length USB Hub USB Cable Supplied Audio-Out	1.8 m Yes Yes Yes (3.5 mm)	(mm) (inches) Distance from Table to Panel	540.2 x 43.8 x 343.7 21.27" x 1.72" x 13.53"
SIGNAL INTERFACE / PERFO		Lowest Pixel at Bottom of Screen	co c / o 74"
Horizontal Frequency Vertical Frequency Native Resolution	30 kHz - 81 kHz 50 Hz - 75 Hz 1920 x 1080	(mm / inches) Highest Pixel at Top of Screen (mm / inches) Stand Base Footprint Area	69.6 / 2.74" 69.6 / 2.74"
Maximum Pixel Clock Speed/ Bandwidth	VGA : 205 MHz HDMI™ : 165 MHz DisplayPort™ : 165 MHz	(mm / inches) Weight	242.5 x 212.8 / 9.55" x 8.38"
Default Color Temperature Preset/User Modes OSD Buttons OSD Languages	6500K 27/21 5+2 Buttons English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian	Packed Unpacked Monitor Head Only	Starting at 15.78 lbs (7.16 kg) Starting at 11.18 lbs (5.07 kg) Starting at 7.3 lbs (3.31 kg)
MECHANICAL		COMPLIANCE	
Tilt Angle (Front / Back) Swivel Angle (Left / Right) Lift (mm) Pivot VESA* Mount (mm) Kensington* Lock Slot Cable Management	-5° / 30° +/-45° Yes (110) +/-90° Yes (100 x 100) Yes Yes	EPEAT™ ENERGY STAR® Rating ULE TCO® RoHS (EU 2002/95/EC) Windows Certification China Energy Efficiency Standard TÜV Eye Comfort	Silver 7.0 Gold TCO Display 7.0 / TCO Edge 2.0 Yes Windows 7 / Windows 10 Grade 2 Yes
Bezel Color Bezel Width	Raven Black	WARRANTY AND AVAILAB	ILITY
Top (mm / inches) Bottom (mm / inches) Sides (mm / inches)	2 / 0.08" 22 / 0.87" 2 / 0.08"	Warranty ROW PRC Geography Availability	3 Years 18 Months WW

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.

ww

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Geography Availability





## Lenovo ThinkVision X24 Pro Wide

Product Specifications Reference (PSREF)

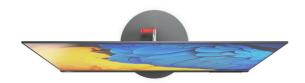
Neme	VOA Dre Wide Flat Danal Manitar	<b>F</b>
Name Bezel color	X24 Pro Wide Flat Panel Monitor Black	Features
Type-model	60E4ECR1US / 60E4ECT1US / 60E4ECT1EU	Widescreen 23.8-inch monitor
Panel	TFT-LCD, AH-IPS (In-Plane Switching),	Supports 1920x1080 resolution
	White LED backlight	<ul> <li>Includes dual input connection for attachment to two systems concurrently</li> </ul>
Viewable image size	23.8" (604.5mm) diagonal	EPEAT Silver certified
Max view area (W x H)	20.75" x 11.67" (527.0mm x 296.5mm)	Intel RealSense 3D camera
Native resolution	1920x1080	Stereo speakers 3 watts x 2
Aspect ratio	16:9	<ul> <li>One cable docking through USB 3.1 Type C</li> </ul>
Pixel pitch (mm) Dot/Pixel per Inch	0.2745 x 0.2745 mm 92 dpi	with power delivery
Brightness	250 nits or cd/m <sup>2</sup> (typical)	Windows Hello certified
Contrast ratio	1000:1 (typical)	Microsoft® Windows® 10 certified
Pixel response time	7ms (typical)	
Color gamut	72%	
Viewing angle at 10:1 CR	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical	
Stand	Tilt stand	
Bezel width	Sides: 0.09" (2.3mm)	
Dimensions (HxWxD)	17.61" H x 21.30" W x 9.39" D; 447.4mm H x 540.9mm W x 238.4mm D	
Power supply	20 watts typical,	
Fower suppry	90 watts maximum,	
	<0.5 watts standby/suspend, universal,	
	external power supply	
Weight	9.26 lb; 4.20 kg	
Limited warranty	1 year (includes backlight)	
Available date	July 2016	
Power management	ENERGY STAR <sup>®</sup> qualified	
Ergonomics	ISO 9241-307	a material of the second second second second second second second second second second second second second se
Emission standards	FCC Class B	and the second se
Environmental	TCO Displays 6.0, WEEE, RoHS,	
	EPEAT <sup>™</sup> Silver rating	Lenovo
Preset resolutions	VGA: 640x350, 640x480, 720x400	
	SVGA: 800x600	
	XGA: 1024x768	
	SXGA: 1280x1024	
	WXGA: 1366x768	
	WXGA+: 1440x900, 1600x900 WSXGA+: 1680x1050	
	Full HD: 1920x1080	
Presets / user settings	Standard presets: 16;	Think/Joinn X04 Dro Wide Menitor
5	user settings: 20	ThinkVision X24 Pro Wide Monitor
Viewing adjustments	<i>Tilt:</i> 22° back, -5° forward	1
Rotating screen	None	
On screen display	On screen display with digital user controls	
Control features	Direct access (buttons on side bezel) for dual input an	nd brightness
USB hub	USB Hub: two USB 3.1 Type-C and one micro USB 3.	0 ports
Multimedia	Integrated stereo speakers (3 watts x 2), bulit-in micro	phone
Camera Multiple input	RealSense 3D camera SR300	annastara, ana DC ahawa imagay aslast via huttan)
Multiple input Monitor connectors	Dual input (two different PCs attach to two different co (1) mDP, Mini DisplayPort, digital, <b>HDCP-compliant</b>	sinectors, one PC shows image, select via button)
	(2) USB Type-C, digital	
Signal cables	(1) detachable, mDP to DP, digital, 2.0 meter	
0	(2) DP to mDP adapter	
	(3) Micro USB 3.0 cable	
Mounting features	None	
Security	Security keyhole for attachment of optional cable lock	
Ship group	Monitor with stand, Safety and Warranty Information,	ThinkPad 90W Square tip power adaptor,
	2.0 meter Mini DisplayPort to DisplayPort signal cable	(with DP to mDP adapter),
	Micro USB 3.0 cable (for using camera)	
	Limited Warranty	Accessories
See details at http://cup	port.lenovo.com/en US/guides-and-manuals/de-	
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
tan.paye : DUCID=01000201		Kensington Twin Head Cable Lock 45K1620
		See details at www.lenovo.com/support/monitoraccessories
		Coo oll monitoro et unum longuro e em (ltriminio)
		See all monitors at www.lenovo.com/thinkvision
		1

Lenovo July 2017









## Lenovo ThinkVision X24-20

		1
Name	X24-20 Flat Panel Monitor	Features
Bezel color	Raven black 61BDGAR3US / 61BDGAT3EU	Widescreen 23.8-inch monitor
Type-model Panel	TFT-LCD, IPS (In-Plane Switching),	Supports 1920x1080 resolution
	White LED backlight	<ul> <li>Includes dual input connection for attachment to two systems concurrently</li> </ul>
Viewable image size	23.8" (604.5mm) diagonal	EPEAT Silver certified
Max view area (W x H)	20.75" x 11.67" (527.0mm x 296.5mm)	Microsoft <sup>®</sup> Windows <sup>®</sup> 7 certified
Native resolution	<b>1920x1080</b> 16:9	<ul> <li>Microsoft Windows 10 certified</li> </ul>
Aspect ratio Pixel pitch (mm)	0.2745 x 0.2745 mm	
Dot/Pixel per Inch	92 dpi	
Brightness	250 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio	1000:1 (typical)	
Pixel response time Color gamut	6ms (typical) 72% (NTSC)	
Viewing angle at 10:1 CR	$178^{\circ}$ (+/- 89°) horizontal, 178° (+/- 89°) vertical	
Stand	Tilt stand	
Bezel width	Sides: 0.04" (1.1mm)	
Dimensions (HxWxD)	12.85" H x 21.16" W x 8.66" D; 326.4mm H x 537.4mm W x 220mm D	
Power supply	20 watts typical,	
i ower supply	25 watts maximum,	
	<0.5 watts standby/suspend, universal,	
	external power supply	
Weight Limited warranty	7.3 lb; 3.3 kg <b>3 year</b> (includes backlight)	
Available date	December 2017	
Power management	ENERGY STAR® qualified	
Ergonomics	ISO 9241-307	
Emission standards	FCC Class B	
Environmental	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE,	Taktie
	RoHS, EPEAT™ Silver rating	
Preset resolutions	VGA: 640x350, 640x480, 720x400	
	SVGA: 800x600	
	XGA: 1024x768 SXGA: 1280x1024	
	WXGA: 1366x768	
	WXGA+: 1440x900, 1600x900	
	WSXGA+: 1680x1050	
Presets / user settings	Full HD: 1920x1080 Standard presets: 18;	
r resets / user settings	user settings: 0	ThinkVision X24-20 Monitor
	Ŭ	
Viewing adjustments	<i>Tilt:</i> 30° back, -5° forward	
Rotating screen	None	
On screen display	On screen display with digital user controls (8 language	
Control features	Direct access (buttons on side bezel) for power, dual	input and brightness
USB hub Multiple input	None Dual input (two different PCs attach to two different co	oppectore: one PC shows image: select via button)
Monitor connectors	(1) HDMI (1.4a), digital, <b>HDCP-compliant</b>	Sincerois, one r o shows image, select via batton)
	(2) DisplayPort, digital, black, HDCP-compliant	
Signal cables	(1) detachable, HDMI at each end, digital, 1.8 meter	
Mounting features Security	Security keyhole for attachment of optional cable lock	(Kapsington <sup>®</sup> lock-compatible)
Occurry	Security Reynole for allachment of optional cable lock	(Rensington lock-compatible)
Ship group	Monitor with stand, Safety and Warranty Information,	1.8 meter HDMI signal cable,
	1.8 meter black power cord	
	Limited Warrenty	Accessories
	Limited Warranty	
See details at http://sup	port.lenovo.com/en_US/guides-and-manuals/de-	Kensington MicroSaver Cable Lock 73P2582
tail.page?DocID=UM00	0201	Kensington Twin Head Cable Lock 45K1620
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision
		l enovo

Lenovo December 2017













## Lenovo ThinkVision P27h

Name	P27h Wide Flat Panel Monitor	Features
Case color	Black	27-inch IPS LED backlit monitor
Type-model	61AFGAR1US / 61AFGAT1EU	Supports 2560x1440 resolution
Panel	TFT-LCD, IPS (In-Plane Switching), White LED	• 5-Ports USB hub, support USB 3.0
Viewable image size	backlight 27" (685.8mm) diagonal	Supports optional soundbar
Max view area (W x H)	23.49" x 13.21" (596.7mm x 335.7mm)	Support ThinkCentre Tiny
Optimum resolution	2560x1440	Microsoft <sup>®</sup> Windows <sup>®</sup> 7 certified     Microsoft Windows 10 certified
Max pixel rate	300MHz	• Microsoft Windows To certified
Aspect ratio	16:9	
Pixel pitch (mm)	0.2331 x 0.2331mm	
Dot/Pixel per Inch Brightness	109 dpi 350 nits or cd/m² (typical)	
Contrast ratio	1000:1 (typical)	
Pixel response time	4ms (extreme) / 6ms (typical)	
Color gamut	99% sRGB	
	178° horizontal, 178° vertical	
Stand Bezel width	Tilt, swivel, pivot, and height adjustable stand <i>Sides:</i> 0.08" (2mm)	
Dimensions	20.21" H x 24.08" W x 10.62" D;	
	513mm H x 611.6mm W x 269.8mm D	
Power supply	38 watts typical,	
	140 watts maximum (with USB),	
	<0.5 watts sleep/off; <0.5 watts switch off	
	integrated (no external brick-like power supply)	and the second second second second second second second second second second second second second second second
Weight	15.43 lb; 7.0kg (including stand)	*
Limited warranty	3 year	
Available date	April 2017	Best and a state of the second state of the se
		And the second s
VESA-compliant	VESA DDC2B/CI	and the second se
Power management	ENERGY STAR® 7.0	and the second se
Ergonomics	ISO 9241-307	
Emission standards Environmental	FCC Class B TCO Displays 7.0, RoHS, <b>EPEAT™ Silver rating</b> ,	
Environmental	ULE Gold	
Preset resolutions	VGA: 640x480, 720x400	
	SVGA: 800x600	
	XGA: 1024x768	
	SXGA: 1280x1024 WXGA: 1366x768	
	WXGA: 1300x700 WXGA+: 1440x900, 1680x900	
	WSXGA+: 1680x1050	
	Full HD: 1920x1080, 1920x1200	ThinkVision P27h Monitor
	QHD: 2560x1440	
Presets display modes	HDMI: 22; DP: 14	
Viewing adjustments	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.33" (110mm); <i>swivel:</i> -	+/-45°
Rotating screen	Screen pivots 90 degrees from landscape to portra	ait
On screen display	On screen display with digital user controls (8 languag	les)
Control features	Direct access (buttons on front) for power, menu, input	t source select and brightness
USB hub	USB Hub: one USB 3.1 Type-C upstream port, four US	SB 3.0 Type-A downstream ports
Multimedia Camera	Audio-out, optional sound bar supported	
Multiple input	Support HDMI, DisplayPort, USB 3.1 Type-C, DisplayF	Port-out
Monitor connectors	(1) 2*HDMI (1.4), digital, HDCP-compliant	
	(2) DisplayPort (1.2), digital, HDCP-compliant	
	(3) DisplayPort-out, digital	
Circul cohier	(4) USB 3.1 Type-C	
Signal cables Mounting features	(1) USB 3.1 Type-C cable, 1.8 meter	party accessories meeting the VESA FPMPMI® (100mm mount)
Security	Security keyhole for attachment of optional cable lock	
Coounty	coounty reynole for attachment of optional cable lock	(renoing on look compatible)
Ship group	Monitor, detachable stand, Quick start and safety post	er 1.8 meter USB 3.1 Type-C cable
Ship group	1.8 meter black power cord	er, 1.0 meter 000 3.1 Type-0 cable,
	·	
	Limited Warranty	Accessories
See details at http://sun	port.lenovo.com/en_US/guides-and-manuals/de-	
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
		Kensington Twin Head Cable Lock 45K1620
		Lenovo Security Cable Lock 57Y4303
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision













## Lenovo ThinkVision P27q

Name Case color	P27q Wide Flat Panel Monitor Black	Features
Type-model	61A8GAT1EU	<ul> <li>27-inch IPS LED backlit monitor</li> <li>Supports 2560x1440 resolution</li> </ul>
Panel	TFT-LCD, IPS (In-Plane Switching), White LED	• 5-Ports USB hub, support USB 3.0
Viewable image size	backlight <b>27</b> " ( <b>685.8mm</b> ) diagonal	Support ThinkCentre Tiny
Max view area (W x H)	23.49" x 13.21" (596.7mm x 335.7mm)	<ul> <li>Supports optional soundbar</li> <li>Microsoft<sup>®</sup> Windows<sup>®</sup> 7 certified</li> </ul>
Optimum resolution	2560x1440	Microsoft Windows 7 certified     Microsoft Windows 10 certified
Max pixel rate	300MHz	
Aspect ratio Pixel pitch (mm)	16:9 0.2331 x 0.2331mm	
Dot/Pixel per Inch	109 dpi	
Brightness	350 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio	1000:1 (typical)	
Pixel response time	4ms 99% sRGB	
Color gamut Viewing angle at 10:1 CR	178° horizontal, 178° vertical	
Stand	Tilt, swivel, pivot, and height adjustable stand	
Bezel width	<i>Sides:</i> 0.08" (2mm)	
	20.21" H x 24.17" W x 10.62" D;	
Power supply	513mm H x 614mm W x 269.8mm D 38 watts typical,	
i ener eapply	75 watts maximum (with USB),	
	<0.5 watts sleep/off;	
	<0.3 watts switch off integrated (no external brick-like power supply)	
Weight	15.43 lb; 7.0kg (including stand)	
Limited warranty	3 year	
Available date	January 2017	
VESA-compliant	VESA DDC2B/CI	
Power management	ENERGY STAR® 7.0	
Ergonomics Emission standards	ISO 9241-307 FCC Class B	
Environmental	TCO Displays 7.0, RoHS, <b>EPEAT™ Silver rating</b> ,	
	ULE Gold	
		and the second sec
Dreast vasalutions	NOA 040-400 700-400	_
Preset resolutions	VGA: 640x480, 720x400 SVGA: 800x600	
	XGA: 1024x768	
	SXGA: 1280x1024	
	WXGA: 1366x768	
	WXGA+: 1440x900, 1600x900 WSXGA+: 1680x1050	
	Full HD: 1920x1080, 1920x1200	ThinkVision P27q Monitor
	QHD: 2560x1440	
Presets / user settings	Standard propoto: 20: uppr pattings: 24	
Tresets / user settings	Standard presets: 20; user settings: 24	
Viewing adjustments	Tilt: 30° back, -5° forward; lift: 4.33" (110mm); swivel:	+/-45°
Rotating screen	Screen pivots 90 degrees from landscape to portra	ait
On screen display	On screen display with digital user controls (8 languag	jes)
Control features USB hub	Direct access for menu, source switch, and brightness USB Hub: one USB 3.0 upstream port, four USB 3.0 c	lownstream ports
Multimedia	Audio-out, optional sound bar supported	
Camera	None	<b>-</b>
Multiple input Monitor connectors	Support HDMI, DisplayPort, mini DisplayPort, Display	Port-out
WORRON CONNECTORS	<ul> <li>(1) 2*HDMI (1.4), digital, HDCP-compliant</li> <li>(2) DisplayPort (1.2), digital, HDCP-compliant</li> </ul>	
	(3) Mini DisplayPort, digital, HDCP-compliant	
Signal cables	(1) detachable, mini DisplayPort to DisplayPort, digital	, 1.8 meter
Mounting features	Wall or desk mounting using the Extend Arm or third- security keyhole for attachment of optional cable lock	party accessories meeting the VESA FPMPMI® (100mm mount)
Security		(nensington lock-compatible)
Ship group	Monitor, detachable stand, Quick start and safety post	
	1.8 meter mini DP to DP cable, 1.8 meter black power	cord
	Limited Warranty	Accessories
See details at http://sup	port.lenovo.com/en_US/guides-and-manuals/de-	
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
		Kensington Twin Head Cable Lock 45K1620
		Lenovo Security Cable Lock 57Y4303
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision









## Lenovo P27q-20

#### DISPLAY

Panel Size 27-inch

Screen Dimensions 596.74 mm x 335.66 mm

Panel Type 4-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio

**Resolution** 2560 x 1440

**Pixel Pitch** 0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI) 109

Viewing Angle (H x V @ CR 10:1) 178° / 178°

**Response Time** 4ms (extreme mode) 6ms (normal mode)

Refresh Rate 60 Hz

Brightness (typical) 350 cd/m<sup>2</sup>

Contrast Ratio (typical) 1000:1

Dynamic Contrast Ratio (typical) 3M:1

Color Gamut 99% sRGB

**Color Support (typical)** 16.7 Million

Anti-glare Yes

#### CONNECTIVITY

Video Signal 1 x HDMI 1.4 1 x DP 1.2 1 x DP 1.2 (out)

**Audio Signal** 1 x Audio Out (3.5 mm)

**USB Hub** Yes

USB Upstream 1 x USB3.1 Gen1 (by USB Type-B)

USB Downstream 4 x USB3.1 Gen1 (1 BC)

#### POWER

Power Consumption (typical/max) 22W / 57W

Power Consumption Sleep/Off Mode < 0.5W Power Consumption Switch-off Mode

< 0.3W ENERGY STAR Power Consumption

(Р<sub>оп</sub>/Е<sub>тес</sub>) 18W / 57kWh

Power Supply Internal

Voltage Required AC 100 to 240 V (50-60 Hz)

#### MECHANICAL

**Tilt Angle (front/back)** -5° / 35°

Swivel Angle (left/right) +45° / -45°

Lift (Max range) 135 mm

**Pivot** -90° / 90° VESA Mount Capability Yes (100 X 100 mm)

Kensington Lock Slot Yes

Cable Management Yes

**Bezel Color** Raven Black

Bezel Width (side) 2.0 mm

Bezel Width (top/bottom) 2.0 / 2.0 mm

#### DIMENSION

**Size Packed (D x H x W, mm/inch)** 182.0 x 463.0 x 722.0 mm / 7.17 x 18.23 x 28.43 inches

**Size Unpacked w/ Stand** (D x H x W, mm/inch) (lowest position) 208.0 x 441.5 x 613.8 mm / 8.19 x 17.38 x 27.17 inches

**Size Unpacked w/ Stand** (**D x H x W, mm/inch) (highest position)** 208.0 x 576.5 x 613.8 mm / 8.19 x 22.70 x 27.17 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch) 46.9 x 353.8 x 613.8 mm / 1.85 x 13.92 x 27.17 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 97.3 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 567.9 mm

Weight Packed (kg/lbs.) 9.26 kg / 20.37 lbs.

Weight Unpacked (kg/lbs.) 7.12 kg / 15.7 lbs. Weight (monitor head only) (kg/lbs.) 4.64 kg / 10.23 lbs.

Full Container Load (40' STD / 20' STD) 792 / 352 units

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m) 1 x DP cable (1.8 m) 1 x USB Type-B to Type-A cable (1.8 m) Quick setup guide

#### CERTIFICATION

ENERGY STAR Rating 8.0

CCC Yes TCO 8.0

**TCO Edge** 2.0

EPEAT Silver

**RoHS (EU 2002/95/EC)** Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 1

TÜV Rheinland Eye Comfort Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Genl; 10 Gbit/s for USB 3.1 Genl; 20 Gbit/s f

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## Lenovo ThinkVision P27u

Name Case color	P27u Wide Flat Panel Monitor Black	Features
Type-model	61CBGAR1US / 61CBGAT1EU / 61CBGAR1EU /	<ul> <li>27-inch IPS LED backlit monitor</li> <li>Supports 3840x2160 resolution</li> </ul>
Devid	61B0GAR1US / 61B0GAT1EU	• 5-Ports USB hub, support USB 3.0
Panel	TFT-LCD, IPS (In-Plane Switching), White LED backlight	Support ThinkCentre Tiny
Viewable image size	27" (684.7mm) diagonal	<ul> <li>Supports optional soundbar</li> <li>Microsoft<sup>®</sup> Windows<sup>®</sup> 7 certified</li> </ul>
Max view area (W x H)	23.49" x 13.21" (596.74mm x 335.66mm)	Microsoft Windows 7 certified
Optimum resolution Max pixel rate	<b>3840x2160</b> 600MHz	
Aspect ratio	16:9	
Pixel pitch (mm)	0.1554 x 0.1554mm	
Dot/Pixel per Inch	163 dpi	
Brightness Contrast ratio	350 nits or cd/m <sup>2</sup> (typical) 1000:1 (typical)	
Pixel response time	6ms (typical)	
Color gamut	1.457 sRGB	
Stand	178° horizontal, 178° vertical Tilt, swivel, pivot, and height adjustable stand	
Bezel width	Sides: 0.08" (2mm)	
Dimensions	20.21" H x 24.08" Ŵ x 10.62" D;	
(HxWxD, including stand) Power supply	513.3mm H x 611.6mm W x 269.8mm D 50 watts typical,	
Fower suppry	160 watts maximum (with USB),	
	<0.5 watts sleep/off;	
	<0.3 watts switch off	
Weight	integrated (no external brick-like power supply) 15.32 lb; 6.95kg (including stand)	
Limited warranty	3 year	
Available date	August 2017	
VESA-compliant Power management	VESA DDC2B/CI ENERGY STAR® 7.0	
Ergonomics	ISO 9241-307	
Emission standards	FCC Class B	
Environmental	TCO Displays 7.0, TCO Certified Edge 2.0, WEEE, RoHS, <b>EPEAT™ Silver rating</b> , ULE Gold	
	ROHS, EPEAT ···· Silver lating, OLE Gold	
Preset resolutions	VGA: 640x480, 720x400, 720x480, 720x576	
	SVGA: 800x600	
	XGA: 1024x768	
	SXGA: 1280x720, 1280x800, 1280x1024 WXGA+: 1440x900, 1600x900	
	WSXGA+: 1680x1050	
	Full HD: 1920x1080, 1920x1200	
	QHD: 2560x1440 UHD: 3840x2160	ThinkVision P27u Monitor
Presets / user settings	Standard presets: 27;	
Manufactor allocation and a	user settings: 20	
Viewing adjustments Rotating screen	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.33" (110mm); <i>swivel:</i> Screen pivots 90 degrees from landscape to portr	
On screen display	On screen display with digital user controls (8 language	ges)
Control features	Direct access (buttons on front) for power, menu, inpu	t source select and brightness
USB hub Multimedia	USB Hub: one USB 3.1 Type-C port, four USB 3.0 Type-A downstream ports Audio-out, optional sound bar supported	
Camera	None	
Multiple input	Support HDMI, DisplayPort, USB 3.1 Type-C	
Monitor connectors	<ul> <li>(1) 2*HDMI (2.0), digital, HDCP-compliant</li> <li>(2) DisplayPort (1.2), digital, HDCP-compliant</li> </ul>	
	(3) USB 3.1 Type-C	
Signal cables	(1) detachable, DisplayPort to DisplayPort, digital, 1.8	
Mounting features Security	Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPMI® (100mm mount) Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)	
ocounty	Coounty Reynold for allachment of optional cable lock	
Ship group	Monitor, detachable stand, Quick start and safety pos 1.8 meter DP to DP cable, 1.8 meter HDMI to HDMI of	ter, 1.8 meter USB Type-C to USB Type-C cable,
1.8 meter USB Type-C to USB Type-A cable		able (INA only), 1.8 meter black power cord,
Limited Warranty Accessories		
See details at http://support.lenovo.com/en_US/guides-and-manuals/de-		
tail.page?DocID=UM00		Kensington MicroSaver Cable Lock 73P2582
		Kensington Twin Head Cable Lock45K1620Lenovo Security Cable Lock57Y4303
		See details at www.lenovo.com/support/monitoraccessories
		See all monitors at www.lenovo.com/thinkvision
		1











# ThinkVision<sup>®</sup> P32u-10 SPECIFICATIONS

## DISPLAY

Panel Size 32 inches

Screen Dimensions (H x V) 708.48 x 398.52mm

Panel Type In-Plane Switching

Backlight WLED

Aspect Ratio 16:9

Resolution 3840 x 2160 pixels

Pixel Pitch (H x V) 0.1845 x 0.1845mm

Viewing Angle (H x V) 178°/178°

Response Time (gray to gray) 4ms (extreme mode) 6ms (normal mode)

**Contrast Ratio (typical)** 1000:1

**Dynamic Contrast Ratio (typical)** 3M:1

Color Gamut 99.5% Adobe RGB, 100% sRGB, 100% BT.709, 98.2% DCI-P3, 79.3% BT.2020

**Color Support** 1.07 Billion

# CONNECTIVITY

Video Input Signals 2 HDMI 2.0 + DP 1.2 + Thunderbolt<sup>™</sup> 3 In + Thunderbolt<sup>™</sup> 3 Out

Video Cable Length 2m for Thunderbolt™ 1.8m for HDMI & DP

Audio Out Yes (3.5mm)

# DIMENSIONS

Size Packed (D x H x W) 844 x 228 x 528mm / 33.23 x 8.98 x 20.79 inches

Size Unpacked w/stand (D x H x W) (Lowest Position) 350.0 x 497.85 x 726.7mm/13.78 x 19.6 x 28.61 inches

Size Unpacked w/stand ( $D \times H \times W$ ) (Highest Position) 350.0 x 607.85 x 726.7mm/13.78 x 23.93 x 28.61 inches

Size Unpacked w/o stand ( $D \times H \times W$ ) (Head Only) 58.95 x 431.5 x 726.7mm/2.32 x 16.99 x 28.61 inches

## WEIGHT

Weight Packed 14.30kg/31.32lbs.

Weight Unpacked 10.97kg/24.18lbs.

Weight (Monitor Head Only) 6.97kg/15.37lbs.

# SPECIAL FEATURES

**Factory Calibration** Yes

Anti-Glare Yes

PIP/PBP Yes

**KVM** switch Yes

Software Yes (ThinkColor)

# MECHANICAL

Tilt Angle (front/back)

Kensington<sup>™</sup> Lock Slot Yes

**Cable Management** Yes

**Bezel Color Raven Black** 

Bezel Width (side) 2mm

Bezel Width (top/bottom) 2.0/23.8mm

# WHAT'S IN THE BOX

## Monitor with stand

1 x Power cable 1 x DP-DP cable 1 x HDMI cable 1 x USB 3.0 cable 1 x Thunderbolt<sup>™</sup> 3 cable (20Gbps) 1 x CD (ThinkColor) Factory calibration report Quick setup guide

# CERTIFICATIONS

**ENERGY STAR® Rating** 7.1

**EPEAT**<sup>™</sup> Silver

CCC Yes

RoHS Yes

ULE Gold

тсо 7.0

Windows Certification Windows 7, Windows 10

**China Energy Efficiency Standard** Tier 2

**TÜV Eye Comfort** 

## **USB Hub**

Yes 2 x USB 3.0 (Upstream, 1 by Thunderbolt<sup>™</sup> 3) 4 x USB 3.0 (Downstream, incl. 1BC)

## **Power Consumption**

<57W (Typical) / <190W (Max) at On mode <0.5W at Sleep mode <0.3W at Switch off mode

-5°/22°

Swivel Angle (left/right) -45°/+45°

Lift (Max range) 110mm

Pivot -90°/90°

**VESA Mount Capability** Yes (100 x 100mm)

Yes













## ThinkVision P44w-10

# **Specifications**

## DISPLAY

Panel Size 43.4 inches

**Screen Dimensions (H x V)** 1052.3 x 328.8mm 41.4 x 12.9 inches

**Panel Type** VA NearEdgeless, anti-glare

Curvature 1800R

Backlight WLED

Aspect Ratio 32:10

**Resolution** 3840 × 1200

HDR VESA Certified DisplayHDR™ 400

**Pixel Pitch (H x V)** 0.2740 x 0.2740mm

Viewing Angle (H x V) 178°/178°

Response Time (gray to gray) 4/6ms (extreme/typical)

**Refresh Rate** Max. 144Hz

Contrast Ratio (typical) 3000:1

**Dynamic Contrast Ratio (typical)** 3M:1

**Color Support (typical)** 1.07B

**Color Gamut** sRGB: 99.5% BT.709: 99.5% DCI-P3: 90%

Brightness 380 nits (typical) 450 nits (peak)

## CONNECTIVITY

Video Input Signals 2 x HDMI 2.0 1 x DP1.4 1 x USB Type-C Gen1 (DP1.2 Alt Mode) 1 x USB Type-C Gen2 (DP1.4 Alt Mode) 1 x USB Type-C Gen2) USB Downstream 4 x USB 3.1 Gen1 (1 BC)

Power Internal

**Power Consumption** Typical/Max: 70W/250W Switch-off Mode: <0.5W Sleep/Off Mode: <0.5W

## DIMENSIONS

**Size Packed (D x H x W)** 1219 x 500 x 376mm 47.99 x 19.68 x 14.80 inches

**Size Unpacked w/stand** (D x H x W) (Lowest Position) 269.8 x 461.1 x 1058.3mm 10.62 x 18.15 x 41.67 inches

Size Unpacked w/stand (D x H x W) (Highest Position) 269.8 x 591.1 x 1058.3mm 10.62 x 23.27 x 41.67 inches

Size Unpacked w/o stand (D x H x W) (Head Only) 137.2 x 366.1 x 1058.3mm 5.40 x 14.21 x 41.67 inches

Weight Packed 18.59kg/40.98lbs.

Weight Unpacked 13.45kg/29.65lbs.

Weight (Monitor Head Only) 9.35kg/20.61lbs.

## SPECIAL FEATURES

Anti-Glare Yes

**PIP/PBP** Yes

**Software** Yes (ThinkColor)

**Speaker** Supports optional Harman Kardon certified speaker

## MECHANICAL

Tilt Angle (front/back) -5°/22° Cable Management Yes

**Bezel Color** Raven Black

**Bezel Width (side)** 2.4mm

Bezel Width (top/bottom) 2.4/25.6mm

## WHAT'S IN THE BOX

Monitor with stand 1 x Power cable 1 x HDMI cable 1 x DP cable 1 x USB Type-C Gen2 cable 1 x USB Type-C to Type-A cable Quick setup guide

## CERTIFICATIONS

ENERGY STAR<sup>®</sup> Rating 7.1

CCC Yes

**RoHS** Yes

**ULE** Gold

**TCO** 8.0

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 2

Ambient Operating Temperature 0°C to 45°C

TÜV Eye Comfort Yes



Video Cable Length 1.5m for USB Type-C Gen2 1.8m for others

Audio Out

Yes (3.5mm)

**USB Hub** Yes

USB Upstream 2 x USB 3.1 (1 x USB Type-C Gen1, Swivel Angle (left/right) ±30°

Lift (Max. range) Yes (130mm)

VESA Mount Capability Yes (100 x 100mm)

Kensington<sup>™</sup> Lock Slot Yes

\*with FreeSync support graphic cards

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# ThinkVision® S27i-10

#### DISPLAY

Panel Size 27 inch

**Screen Dimensions (H x V) (mm)** 597.89 (H) x 336.31 (V)

Panel Type In-Plane Switching

Backlight WLED

Aspect Ratio

**Resolution** 1920 × 1080

**Pixel Pitch (H x V) (mm)** 0.3110 × 0.3110

**Viewing angle (H x V)** 178°/ 178°

Response Time (gray to gray) 4 ms (extreme mode) 6 ms (normal mode)

Contrast Ratio (typical)

**Dynamic Contrast Ratio (typical)** 3M:1

Color Gamut NTSC (CIE 1931) 72%

**Color Support** 16.7M

#### CONNECTIVITY

Video Input Signals VGA + HDMI 1.4

**Video Cable Length** 1.8 m

Audio Out Yes (3.5 mm)

#### MULTI-MEDIA

**Optional Soundbar Support** Yes

#### DIMENSIONS

Size Packed (D x H x W) (mm/inch) 132 x 455 x 715 mm / 5.20 x 17.91 x 28.15 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest Position) 220.0 x 443.5 x 611.9 mm / 8.66 x 17.46 x 24.10 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Highest Position) 220.0 x 443.5 x 611.9 mm / 8.66 x 17.46 x 24.10 inch

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only) 46.2 x 366.5 x 611.9 mm / 1.82 x 14.43 x 24.10 inch

Weight Packed (kg/lbs.) 6.80kg / 14.99 lbs.

Weight Unpacked (kg/lbs.) 4.76kg / 10.49 lbs.

Weight (Monitor Head Only) (kg/lbs.) 4.22kg / 9.30 lbs.

#### SPECIAL FEATURES

Anti-Glare

Yes **Thin Client Support (Tiny)** Yes (by VESA mount PN:4XF0N03161)

#### MECHANICAL

Tilt Angle (front/back) -5° / 22°

VESA Mount Yes (100 mm)

Kensington™ Lock Slot Yes

Cable Management Yes

Bezel Color Raven Black

Bezel Width (Side) 2.0 mm

Bezel Width (top / bottom) 2.0 mm / 21.68 mm

#### WHAT'S IN THE BOX

Monitor with stand 1 x HDMI Cable 1 x VGA Cable (AP, EMEA only) 1 x Power Cable Quick setup guide

#### CERTIFICATIONS

ENERGY STAR® Rating

7.0 **TCO** 

7.0

EPEAT™

Silver

ULE

Gold RoHS

Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 2

Ambient Operating Temperature  $0^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ 

**TÜV Eye Confort Certification** Yes





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ENERGY STAR









# ThinkVision S27q-10

#### DISPLAY

Panel Size 27-inch

Screen Dimensions 596.74 mm x 335.66 mm

Panel Type 3-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio 16:9

**Resolution** 2560 x 1440

**Pixel Pitch** 0.2331 x 0.2331 mm

**Dot/Pixel Per Inch (DPI/PPI)** 109

**Viewing Angle (H x V @ CR 10:1)** 178° / 178°

**Response Time** 4ms (extreme mode)

Refresh Rate 60 Hz

Brightness (typical) 280 cd/m<sup>2</sup>

Brightness (peak) 350 cd/m<sup>2</sup>

Contrast Ratio (typical) 1000:1

**Dynamic Contrast Ratio (typical)** 3M:1

**Color Gamut** > 99% sRGB

**Color Support (typical)** 1.07 Billion

**Anti-glare** Yes

### CONNECTIVITY

Video Signal 1 x HDMI 1.4 1 x DP 1.2

**Audio Signal** 1 x Audio Port (3.5 mm)

#### SPECIAL FEATURES

**Tiny Support** Yes

#### POWER

Power Consumption (typical/max) 35W / 45W

Power Consumption Sleep/Off Mode < 0.5W

Power Consumption Switch-off Mode < 0.3W

Power Supply Internal

Energystar Power Consumption (P<sub>on</sub>/E<sub>TEC</sub>) 19 W / 59.6 kWh

Voltage Required AC 100 to 240 VAC (50/60 Hz)

#### MECHANICAL

**Tilt Angle (front/back)** -5° / 22°

**VESA Mount Capability** Yes (100 x 100 mm) Kensington<sup>™</sup> Lock Slot Yes

**Cable Management** Yes

**Bezel Color** Raven Black

Bezel Width (side) 2 mm

Bezel Width (top/bottom) 2 / 22 mm

#### DIMENSION

**Size Packed (D x H x W, mm/inch)** 132 x 455 x 715 mm / 5.20 x 17.91 x 28.15 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position) 220 x 444.6 x 613.6 mm / 8.66 x 17.50 x 24.15 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position) 220 x 444.6 x 613.6 mm / 8.66 x 17.50 x 24.15 inches

**Size Unpacked w/o Stand (D x H x W, mm/inch) (head only)** 42 x 367.6 x 613.6 mm / 1.65 x 14.47 x 24.15 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 99 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 442.2 mm

Weight Packed (kg/lb) 6.36 kg / 14.02 lbs. **Weight Unpacked (kg/lb)** 4.65 kg / 10.25 lbs.

Weight (monitor head only) (kg/lb) 4.10 kg / 9.04 lbs.

**Full Container Load (40' STD / 20' STD)** 1088 / 544 units

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m) 1 x HDMI cable (1.8 m) Quick setup guide

#### CERTIFICATION

**ENERGY STAR® Rating** 8.0

CCC Yes

тсо

8.0

**EPEAT™** Silver

# RoHS (EU 2002/95/EC)

Windows Certification Window 7, Window 10

China Energy Efficiency Standard Tier 1

**TÜV Eye Comfort** Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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# ThinkVision S28u-10

#### DISPLAY

Panel Size 28-inch

Screen Dimensions 631.928 mm x 359.78 mm

Panel Type 3-side NearEdgeless, In-Plane Switching

Backlight WLED

Aspect Ratio 16:9

**Resolution** 3840 x 2160

Refresh Rate 60 Hz

**Pixel Pitch (H x V)** 0.1617 × 0.1580

**Dot/Pixel Per Inch (DPI/PPI)** 157.35

**Viewing Angle (H x V @ CR 10:1)** 178° / 178°

**Response Time** 4ms (Extreme Mode) 6ms (Normal Mode)

Brightness (typical) 300 cd/m<sup>2</sup>

**Contrast Ratio (typical)** 1000:1

**Dynamic Contrast Ratio (typical)** 3M:1

**Color Gamut** 99% sRGB, 90% DCI-P3 **Color Support (typical)** 1.07 Billion

CONNECTIVITY

Video Input Signals HDMI 2.0 + DP 1.2

**Audio Signal** 1 x Audio Out (3.5mm)

#### POWER

Power Consumption (Typical/Max) 28W / 48W

Power Consumption Sleep/Off Mode <0.3W

Power Consumption Switch Off-Mode <0.3W

Power Supply Internal

Energystar Power Consumption (Pon/ErEc) 28W / 87kwh

Voltage Required AC 90 to 264 V (50/60 Hz)

#### DIMENSIONS

**Size Packed (D x H x W) (mm/inch)** 127 x 723 x 452 mm / 5 x 28.46 x 17.80 inches

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest position) 229.99 x 450.82 x 636.94 mm / 9.05 x 17.72 x 25.08 inches **Size Unpacked w/o stand (D x H x W)** (mm/inch) (Highest position) 229.99 x 450.82 x 636.94 mm / 9.05 x 17.72 x 25.08 inches

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only) 49.2 x 373.68 x 636.94 mm / 1.94 x 14.71 x 25.08 inches

Weight Packed 7.0 kg / 15.43 lbs.

Weight Unpacked 5.24 kg / 11.55 lbs.

Weight (Monitor Head Only) 4.58 kg / 10.10 lbs.

#### SPECIAL FEATURES

**Anti-glare** Yes

ThinkCentre Tiny Support Yes

#### MECHANICAL

Tilt Angle (front/back) -5° / 22°

**VESA Mount Capability** Yes (100 x 100 mm)

Kensington<sup>™</sup> Lock Slot Yes

**Bezel Color** Raven Black

Bezel Width (side) 2.0 mm

Bezel Width (top/bottom) 2.0 / 22.8 mm

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m) 1 x HDMI cable (1.8 m) Quick setup guide

#### CERTIFICATIONS

ENERGY STAR® Rating 8.0

**CCC** Yes

**TCO** 8.0

TCO Edge 2.0

**EPEAT™** Silver

**RoHS (EU 2002/95/EC)** Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 2

**TÜV Rheinland Eye Comfort** Yes



Windows

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.2 Gen2 & 20 Gbit/s for USB 3.2.

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# ThinkVision T25d-10

#### DISPLAY

Panel Size 25.0 inches

Screen Dimensions (H x V) 533.45 x 338.76mm

Panel Type In-Plane Switching

Backlight WLED

Aspect Ratio

**Resolution** 1920 x 1200 pixels

Refresh Rate 60Hz

**Pixel Pitch (H x V)** 0.2789 x 0.2823mm

Viewing Angle (H x V) 178°/178°

Response Time (gray to gray) 4ms (extreme mode) 6ms (normal mode)

Contrast Ratio (typical) 1000:1

**Dynamic Contrast Ratio (typical)** 3M:1

**Brightness (typical)** 300 cd/m<sup>2</sup>

Color Gamut sRGB (CIE 1931) 99% **Color Support** 16.7M

#### CONNECTIVITY

Video Input Signals HDMI 1.4 + DP 1.2 + VGA

> Video Cables Supplied DP + HDMI\*

Video Cable Length 1.8m

**USB Hub** Yes

USB Upstream 1 x USB 3.1 Gen1

USB Downstream 4 x USB 3.1 Gen1 (with 1 BC

Audio Out Yes (3.5mm)

#### POWER

Power Consumption (Typical/Max) 25W/66W

Power Consumption Sleep/Off Mode <0.5W

Power Consumption Switch Off-Mode <0.3W

Power Supply Internal

ENERGY STAR® (P<sub>on</sub>) 16.54W **ENERGY STAR® (E**<sub>tec</sub>) 52.06kWh

**Voltage Required** 100-240VAC (50/60Hz)

#### DIMENSIONS

**Size Packed (D x H x W)** 706 x 450 x 160mm/ 27.79 x 17.72 x 6.30 inches

Size Unpacked w/stand (D x H x W)(mm/inch) (Lowest position) 260.4 x 399.5 x 548.7mm/ 10.25 x 15.73 x 21.60 inches

Size Unpacked w/stand (D x H x W)(mm/inch) (Highest position) 260.4 x 509.5 x 548.7mm/ 10.25 x 20.06 x 21.60 inches

Size Unpacked w/o stand (D x H x W)(mm/inch) (Head Only) 43.0 x 369.1 x 548.7mm/ 1.69 x 14.53 x 21.60 inches

Weight Packed 7.8kg/17.20lbs.

Weight Unpacked 5.5kg/12.13lbs.

Weight (Monitor Head Only) 3.58kg/7.89lbs.

#### SPECIAL FEATURES

**Anti-glare** Yes

**Optional Soundbar Support** Yes

ThinkCentre Tiny Support Yes

#### MECHANICAL

**Tilt Angle (front/back)** -5°/30°

Swivel Angle (left/right) +/-45°

**Lift** Yes (110mm)

**Pivot** +/-90°

**VESA Mount Capability** Yes (100 x 100mm)

Kensington<sup>™</sup> Lock Slot Yes

Bezel Width (Side) 2.0mm

Bezel Width (top/bottom) 2.0/22.2mm

#### WHAT'S IN THE BOX

Monitor with stand 1 × Power Cable 1 × USB 3.1 Gen1 Cable 1 × HDMI<sup>™</sup> Cable<sup>\*</sup> 1 × DP Cable Quick Setup Guide

#### CERTIFICATIONS

ENERGY STAR® Rating 7.1

**EU RoHS** Yes

**CCC** Yes

TCO 8.0/TCO Edge 2.0

Windows Certification Windows 7, Windows 10

**China Energy Efficiency Standard** Tier 2

**TÜV Eye Comfort** Yes

**ULE** Gold









\*For NA and LA only

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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# ThinkVision T25m-10

#### DISPLAY

Panel Size 25.0 inches

Screen Dimensions (H x V) 535 45 x 338 76mm

Panel Type In-Plane Switching

Backlight WIFD

Aspect Ratio 16.10

Resolution 1920 x 1200 pixels

Pixel Pitch (H x V) 02789 x 02823mm

Viewing Angle (H x V) 178°/178°

Response Time (gray to gray) 4ms (extreme mode) 6ms (normal mode)

Contrast Ratio (typical) 1000.1

Dynamic Contrast Ratio (typical) 3M:1

Brightness (typical) 300 cd/m<sup>2</sup>

Color Gamut sRGB (CIE 1931) 99%

Color Support 16 7 M

#### CONNECTIVITY

Video Input Signals HDMI 1.4 + DP 1.2 + USB 3.1 Type-C<sup>™</sup> (DP 1.2 Alt Mode)

Video Cables Supplied USB 3.1 Type-C™

Video Cable Length 1.8m

USB Hub Yes

USB Upstream 1 x USB 3.1 Gen1 (by USB Type-C<sup>™</sup>)

USB Downstream 4 x USB 3.1 Gen1 (with 1 BC)

Audio Out Yes (3.5mm)

#### POWFR

Power Consumption (Typical/Max) 30W/150W

Power Consumption Sleep/Off Mode < 0.5W

Power Consumption Switch Off-Mode < 0.3W

Power Supply Internal

ENERGY STAR<sup>®</sup> (P<sub>op</sub>) 17.05W

ENERGY STAR<sup>®</sup> (E<sub>TEC</sub>) 63.12kWh

**Power Voltage** 100-240VAC (50/60Hz)

#### DIMENSIONS

Size Packed (D x H x W) 706 x 450 x 160mm/ 27.79 x 17.72 x 6.30 inches

Size Unpacked w/stand  $(D \times H \times W)$  (mm/inch) (Lowest position) 260.4 x 399.5 x 548.7mm/ 10.25 x 15.73 x 21.60 inches

Size Unpacked w/stand (D x H x W) (mm/inch)(Highest position) 260.4 x 509.5 x 548.7mm/ 10.25 x 20.06 x 21.60 inches

Size Unpacked w/o stand  $(D \times H \times W) (mm/inch)$ (Head Only) 43.0 x 369.1 x 548.7mm/ 1.69 x 14.53 x 21.60 inches

Weight Packed 7.8kg/17.20lbs.

Weight Unpacked 5.5kg/12.13lbs.

Weight (Monitor Head Only) 3.58kg/7.89lbs.

#### SPECIAL FEATURES

Anti-glare Yes

ThinkCentre Tiny Support Yes

**Optional Soundbar Support** Yes

Internal Speakers Yes  $(3W \times 2)$ 

#### MECHANICAL

Tilt Angle (front/back) -5°/30°

Swivel Angle (left/right) +/-45°

Lift Yes (110mm)

Pivot +/-90°

**VESA Mount Capability** Yes (100 x 100mm)

Kensington<sup>™</sup> Lock Slot Yes

Bezel Width (Side) 2.0mm

Bezel Width (top/bottom) 2.0/22.2mm

#### WHAT'S IN THE BOX

Monitor with stand 1 × Power Cable 1 × USB Type-C<sup>™</sup> to Type-C<sup>™</sup> cable Quick Setup Guide

#### CERTIFICATIONS

**ENERGY STAR®** Rating

7.1 EU RoHS Yes

CCC

Yes TCO

TCO 8.0/TCO Edge 2.0

Windows Certification Windows 7. Windows 10

China Energy Efficiency Standard Tier 2

TÜV Eye Comfort Yes

ULE Gold







\*The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to other devices. 75W power delivery by USB Type-C can be achieved when downstream USB ports are not connected and OSD brightness setting is <31.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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#### Smart Power\* Yes













# ThinkVision T27h-20

#### DISPLAY

Panel Size 27-inch

Screen Dimensions 596.74 mm x 335.66 mm

Panel Type 3-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio 16:9

Resolution 2560 x 1440

Pixel Pitch 0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI) 109

Viewing Angle (H x V @ CR 10:1) 178° / 178°

**Response Time** 4ms (extreme mode) 6ms (normal mode)

**Refresh Rate** 60 Hz

Brightness (typical) 350 cd/m<sup>2</sup>

Contrast Ratio (typical) 1000:1

Dynamic Contrast Ratio (typical) 3M:1

Color Gamut 99% sRGB

Color Support (typical) 16.7 Million

Anti-glare Yes

#### CONNECTIVITY

Video Signal 1 x USB Type-C Gen1 (DP 1.2 Alt Mode) 1 x HDMI 1.4 1 x DP 1.2

Audio Signal 1 x Audio out (3.5 mm)

USB Hub Yes

USB Upstream 1 x USB 3.1 Gen1 (by USB Type-C)

USB Downstream 4 x USB 3.1 Gen1 (1 BC)

#### POWER

Power Consumption (typical/max) 23W / 122W

Power Consumption Sleep/Off Mode < 0.5W

Power Consumption Switch-off Mode < 0.3W

Energystar Power Consumption ( $P_{u}/E_{TEC}$ ) 18.1W / 57.6kWh

Power Supply Internal

USB Type-C Power Delivery (W) up to 75W\*

Smart Power Yes

Voltage Required AC 100 to 240 V (50/60 Hz)

#### MECHANICAL

Tilt Angle (front/back) -5° / 35°

Swivel Angle (left/right) +45° / -45°

Lift (max range) 135 mm

Pivot -90° / 90°

VESA Mount Capability Yes (100 x 100 mm)

Kensington Lock Slot

Yes

Raven Black

2 / 23.87 mm

Size Packed (D x H x W. mm/inch) 694 x 163 x 480 mm

Size Unpacked w/ Stand  $(D \times H \times W. mm/inch)$ (lowest position) 614 x 429.4 x 208 mm 2417 x 16.9 x 819 inches

Size Unpacked w/ Stand  $(D \times H \times W. mm/inch)$ (highest position) 614 x 564.4 x 208 mm 24.17 x 22.22 x 8.19 inches

Size Unpacked w/o Stand (head only) ( $D \times H \times W$ , mm/inch) 614 x 369.1 x 46.7 mm 24.17 x 14.53 x 1.84 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 85.2 mm

Max. Distance from Table to Panel (highest pixel at top of screen. mm) 564.4 mm

Weight Packed (kg/lbs.) 9.75 kg / 21.50 lbs.

Weight Unpacked (kg/lbs.) 7.6 kg / 16.76 lbs.

Weight (monitor head only) (kg/lbs.) 5.09 kg / 11.22 lbs.

**Full Container Load** (40' STD / 20' STD) 952 / 448 units

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m) 1 x DP cable (1.8 m) (NA & LA only) 1 x USB Type-C to Type-C cable (1.8 m) 1 x USB Type-C to Type-A cable (1.8 m) (NA & LA only) Quick setup guide

#### CERTIFICATION

**ENERGY STAR Rating** 8.0

CCC Yes

тсо 8.0

TCO Edge 2.0

EPEAT Silver

RoHS (EU 2002/95/EC) Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 1

**TÜV Rheinland Eye Comfort** Yes









\*Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Yes

Cable Management

Bezel Color

Bezel Width (side) 2 mm

Bezel Width (top/bottom)

DIMENSION

27.32 x 6.42 x 18.90 inches









# ThinkVision® T27i-10

#### DISPLAY

Panel Size 27 inch

**Screen Dimensions (H x V) (mm)** 597.89 (H) × 336.31 (V)

Panel Type In-Plane Switching

Backlight WLED

Aspect Ratio

**Resolution** 1920 × 1080

**Pixel Pitch (H x V) (mm)** 0.3110 × 0.3110

**Viewing angle (H x V)** 178°/178°

Response Time (gray to gray) 4 ms (extreme mode) 6 ms (normal mode)

**Contrast Ratio (typical)** 1000:1

Dynamic Contrast Ratio (typical) 3M:1

Color Gamut NTSC (CIE 1931) 72%

Color Support 16.7M

#### CONNECTIVITY

Video Input Signals VGA + HDMI 1.4 + DP 1.2

#### USB Hub

Yes 1 x USB 3.0 (Upstream) 4 x USB 3.0 (Downstream, incl. 1BC)

**Cable Length** 1.8 m

Audio Out Yes (3.5 mm)

Power Consumption 22W (Typical) / 58W (max) at On mode; <0.5W at Sleep mode; <0.3W at Switch off mode

#### MULTI-MEDIA

**Optional Soundbar Support** Yes

#### DIMENSIONS

**Size Packed (D x H x W) (mm/inch)** 187 x 455 x 715 mm / 7.362 x 17.913 x 28.15 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest Position) 269.8 x 403.3 x 611.9 mm / 10.62 x 15.88 x 24.09 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Highest Position) 269.8 x 513.3 x 611.9 mm / 10.62 x 20.21 x 24.09 inch

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only) 49.9 x 366.5 x 611.9 mm / 1.96 x 14.43 x 24.09 inch

Weight Packed (kg/lbs.) 9.32kg / 20.55 lbs.

Weight Unpacked (kg/lbs.) 6.55kg / 14.44 lbs.

Weight (Monitor Head Only) (kg/lbs.) 4.60kg / 10.14 lbs.

#### SPECIAL FEATURES

**Anti-Glare** Yes

Thin Client Support (Tiny)

(by Tiny Clamp Bracket Kit+VESA mount PN:4XF0N82412+ PN:4XF0N03161)

#### MECHANICAL

**Tilt Angle (front/back)** -5°/30°

Swivel Angle (left/right) -45°/+45°

Lift (Max range)

**Pivot** -90°/90°

VESA Mount Yes (100 mm)

Kensington<sup>™</sup> Lock Slot Yes

Cable Management Yes

Bezel Color Raven Black

Bezel Width (Side) 2.0 mm

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable 1 x VGA cable 1 x DP-DP cable 1 x HDMI cable (NA only) 1 x USB 3.0 cable Quick setup guide

#### CERTIFICATIONS

**ENERGY STAR Rating** 7.0

CCC Yes

тсо

7.0

#### EPEAT™

Silver ULE Gold

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 2

Ambient Operating Temperature  $0^{\circ}C$  to  $40^{\circ}C$ 

Eye Comfort Certification Yes





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# ThinkVision T27p-10

#### DISPLAY

Panel Size 27.0 inches

Screen Dimensions (H x V) 596.74 x 335.66mm

Panel Type In-Plane Switching

Backlight WLED

Aspect Ratio 16.9

Resolution 3840 x 2160 pixels

Pixel Pitch (H x V) 0.1554 x 0.1554mm

Viewing Angle (H x V) 178°/178°

Response Time (gray to gray) 4ms (extreme mode) 6ms (normal mode)

**Refresh Rate** 60H7

Contrast Ratio (typical) 1000:1

**Dynamic Contrast Ratio** (typical) 3M:1

**Brightness (typical)** 350 cd/m<sup>2</sup>

Color Gamut sRGB (CIE 1931) 99%

Color Support 1.07 Billion

#### POWER

Power Consumption (Typical/Max) 50W/140W

Power Consumption Sleep/Off Mode <0.5W

Power Consumption Switch Off-Mode <0.3W

**Power Supply** Internal

ENERGY STAR<sup>®</sup> (P<sub>an</sub>) 23.40W

ENERGY STAR<sup>®</sup> (E....) 101.94kWh

Voltage Required 100-240VAC (50/60Hz)

#### CONNECTIVITY

Video Input Signals HDMI 2.0 + DP 1.2 + USB 3.1 Type-C<sup>™</sup> (DP 1.2 Alt Mode)

Video Cables Supplied USB 3.1 Type-C<sup>™</sup> + HDMI

Video Cable Length 1.8m

**USB Hub** Yes

USB Upstream 1 x USB 3.1 Gen1 (by USB Type-C<sup>™</sup>)

USB Downstream 4 x USB 3.1 Gen1 (with 1 BC)

### Audio Out

Yes (3.5mm)

#### DIMENSIONS

Size Packed (D x H x W) 732 x 210 x 453mm/ 28.82 x 8.27 x 17.83 inches

Size Unpacked w/stand (D x H x W) (mm/inch)269.8 x 403.3 x 611.6mm/ 10.62 x 15.88 x 24.08 inches

Size Unpacked w/o stand (D x H x W) (mm/inch)(Head Only) 45.5 x 368.4 x 611.6mm/ 1.79 x 14.5 x 24.08 inches

Weight Packed 11.00kg/24.25lbs.

Weight Unpacked 6.95kg/15.32lbs.

Weight (Monitor Head Only) 5.0kg/11.02lbs.

#### SPECIAL FEATURES

Smart Power\* Yes

ThinkCentre Tiny Support Yes

**Optional Soundbar Support** Yes

#### **MECHANICAL**

Tilt Angle (front/back) -5°/30°

Swivel Angle (left/right) +/-45°

Lift Yes (110mm)

Pivot +/-90°

**VESA Mount Capability** Yes (100 x 100mm)

Kensington<sup>™</sup> Lock Slot Yes

Bezel Width (Side) 2.0mm

Bezel Width (top/bottom) 2.0/24.5mm

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power Cable 1 x HDMI Cable 1 x USB Type-C<sup>™</sup> to Type-C<sup>™</sup> cable Quick Setup Guide

CERTIFICATIONS

**ENERGY STAR®** Rating 71

EU RoHS Yes

CCC Yes

Windows Certification Windows 7. Windows 10

China Energy Efficiency Standard Tier 2

TÜV Eye Comfort Yes

TCO TCO 8.0/TCO Edge 2.0

ULE Gold









\*The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to each device. 75W power delivery can be achieved when downstream USB ports are not connected and OSD brightness setting is <61.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Anti-glare Yes













# ThinkVision T27q-20

#### DISPLAY

Panel Size 27-inch

Screen Dimensions 596.74 mm x 335.66 mm

Panel Type 3-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio

**Resolution** 2560 x 1440

**Pixel Pitch** 0.2331 x 0.2331 mm

**Dot/Pixel Per Inch (DPI/PPI)** 109

Viewing angle (H x V @ CR 10:1)  $178^{\circ}/\,178^{\circ}$ 

**Response Time** 4ms (extreme mode) 6ms (normal mode)

Refresh Rate 60 Hz

**Brightness (typical)** 350 cd/m<sup>2</sup>

**Contrast Ratio (typical)** 1000:1

**Dynamic Contrast Ratio (typical)** 3M:1

**Color Gamut** 99% sRGB **Color Support (typical)** 16.7 Million

**Anti-glare** Yes

#### CONNECTIVITY

Video Signal 1 x HDMI 1.4 1 x DP 1.2

Audio Signal 1 x Audio Out (3.5 mm)

**USB Hub** Yes

USB Upstream 1 x USB 3.1 Gen1 (by USB Type-B)

USB Downstream 4 x USB 3.1 Gen1 (1 BC)

#### POWER

Power Consumption (typical/max) 23W / 65W

Power Consumption Sleep/Off Mode < 0.5W

Power Consumption Switch-off Mode < 0.3W

Energystar Power Consumption (P<sub>on</sub>/E<sub>TEC</sub>) 17.4W / 54.4kWh

Power Supply Internal

**Voltage Required** AC 100 to 240 V (50/60 Hz)

#### MECHANICAL

Tilt Angle (front/back) -5° / 35°

Swivel Angle (left/right) +45° / -45°

Lift (max range) 135 mm

**Pivot** -90° / 90°

VESA Mount Capability Yes (100 x 100 mm)

Kensington Lock Slot Yes

Cable Management Yes

Bezel Color Raven Black

Bezel Width (side) 2 mm

Bezel Width (top/bottom) 2 / 23.87 mm

#### DIMENSION

**Size Packed** (D x H x W, mm/inch) 694 x 163 x 480 mm 27.32 x 6.42 x 18.9 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position) 614 x 429.4 x 208 mm 24.17 x 16.9 x 8.19 inches Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position) 614 x 564.4 x 208 mm 24.17 x 22.22 x 8.19 inches

**Size Unpacked w/o Stand** (head only)(D x H x W, mm/inch) 614 x 369.1 x 46.7 mm 24.17 x 14.53 x 1.84 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 85.2 mm

Max. Distance from Table to Panel (highest pixel at bottom of screen, mm) 564.4 mm

Weight Packed (kg/lbs.) 9.59 kg / 21.14 lbs.

Weight Unpacked (kg/lbs.) 7.44 kg / 16.4 lbs.

Weight (Monitor Head Only) (kg/lbs.) 4.93 kg / 10.87 lbs.

**Full Container Load** (40' STD / 20' STD) 952 / 448 units

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power Cable (1.8 m) 1 x DP cable (1.8 m) 1 x USB Type-B to Type-A cable (1.8 m) Quick setup guide

#### CERTIFICATION

**ENERGY STAR Rating** 8.0

**CCC** Yes

тсо

8.0

TCO Edge 2.0

**EPEAT** Silver

**RoHS (EU 2002/95/EC)** Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 1

**TÜV Rheinland Eye Comfort** Yes





Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.2 Gen2 & 20 Gbit/s for USB 3.2.

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# ThinkVision T32h-20 Monitor

#### DISPLAY

Panel Size 315-inch

Screen Dimensions 698.11 mm x 392.69 mm

Panel Type 3-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio 16:9

Resolution 2560 x 1440

**Pixel Pitch** 0.2727 x 0.2727 mm

Dot/Pixel Per Inch (DPI/PPI) 94

Viewing Angle (H x V @ CR 10:1) 178° / 178°

Response Time 4ms (extreme mode) 6ms (normal mode)

Refresh Rate 60 Hz

**Brightness (typical)** 350 cd/m<sup>2</sup>

Contrast Ratio (typical) 1000:1

Dynamic Contrast Ratio (typical) 3M·1

Color Gamut 99% sRGB

Color Support (typical) 1.07 Billion

Anti-glare Yes

#### CONNECTIVITY

Video Signal 1 x USB Type-C Gen1 (DP 1.2 Alt Mode) 1 x HDMI 1.4 1 x DP 1.2

Audio Signal 1 x Audio out (3.5 mm)

USB Hub Yes

USB Upstream 1 x USB 3.1 Gen1 (by USB Type-C)

USB Downstream 4 x USB 3.1 Gen1 (1 BC)

#### POWER

Power Consumption (typical/max) 28W / 138W

Power Consumption Sleep/Off Mode < 0.5W

Power Consumption Switch-off Mode < 0.3W

**Energystar Power** Consumption ( $P_{on}/E_{TEC}$ ) 21.6W / 69.2kWh

**Power Supply** Internal

USB Type-C Power Delivery (W) up to 75 W\*

Smart Power Yes

Voltage Required AC 100 to 240 V (50-60 Hz)

#### MECHANICAL

Tilt Angle (front/back) -5° / 35°

Swivel Angle (left/right) -45° / 45°

Lift (max range) 135 mm

-90° / 90°

Yes (100 x 100 mm)

Yes

Cable Management Yes

Bezel Color Raven Black

Bezel Width (side) 2.0 mm

2.0 / 24.12 mm

#### DIMENSION

Size Packed (D x H x W, mm/inch) 528.0 x 190.0 x 845.0 mm / 20.79 x 7.48 x 32.27 inches

Size Unpacked w/ Stand (D x H x W, mm/inch)(lowest position) 235.0 x 469.4 x 714.6 mm / 9.25 x 18.48 x 28.13 inches

Size Unpacked w/ Stand (D x H x W, mm/inch)(highest position) 235.0 x 604.4 x 714.6 mm / 9.25 x 23.79 x 28.13 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch) 714.6 x 426.0 x 51.0 mm / 28.13 x 16.77 x 2.01 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 692 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 461.8 mm

Weight Packed (kg/lbs.) 12.96 kg / 28.57 lbs.

Weight Unpacked (kg/lbs.) 9.85 kg / 21.72 lbs.

Weight (monitor head only) (kg/lbs.) 6.78 kg / 14.95 lbs.

Full Container Load (40' STD / 20' STD) 672 / 320 units

#### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m) 1 x DP cable (1.8 m) (NA & LA only) 1 x USB Type-C to Type-A cable (1.8 m) (NA & LA only) 1 x USB Type-C to Type-C cable (1.8 m) Quick setup guide

#### CERTIFICATION

ENERGY STAR Rating 8.0

CCC

Yes TCO

80

TCO Edge 20

EPEAT Silver

RoHS (EU 2002/95/EC) Yes

Windows Certification Windows 7. Windows 10

China Energy Efficiency Standard Tier 1

**TÜV Rheinland Eye Comfort** Yes



# **Windows**<sup>®</sup>





\*Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Pivot

**VESA Mount Capability** 

Kensington Lock Slot

Bezel Width (top/bottom)













# ThinkVision T32p-20

#### DISPLAY

Panel Size 31.5-inch

Screen Dimensions 698.11 mm x 392.69 mm

Panel Type 3-side NearEdgeless In-Plane Switching

Backlight WLED

Aspect Ratio 16:9

Resolution 3840 x 2160

Pixel Pitch 0.1816 x 0.1816 mm

Dot/Pixel Per Inch (DPI/PPI) 140

Viewing Angle (H x V @ CR 10:1) 178° / 178°

**Response Time** 6ms (normal mode) 4ms (extreme mode)

**Refresh Rate** 60 Hz

**Brightness (typical)** 350 cd/m<sup>2</sup>

Contrast Ratio (typical) 1000:1

**Dynamic Contrast Ratio** (typical) 3M:1

Color Gamut 99% sRGB

Color Support (typical) 1.07 Billion

Anti-glare Yes

#### CONNECTIVITY

Video Signal 1 x USB Type-C Gen1 (DP1.2 Alt Mode)\*\* 1 x HDMI 2.0 1 x DP 1.2

Audio Signal 1 x Audio Out (3.5 mm)

**USB Hub** Yes

USB Upstream 1 x USB3.1 Gen1 (by USB Type-C)

**USB** Downstream 4 x USB3.1 Gen1 (1 BC)

#### POWER

Power Consumption (typical/max) 39W / 135W

Power Consumption Sleep/Off Mode < 0.5W

Power Consumption Switch-off Mode < 0.3W

**ENERGY STAR Power Consumption**  $(P_{on}/E_{TEC})$ 26.9W / 84.9kWh

Power Supply Internal

USB Type-C power delivery (W) up to 75W\*

Smart Power Yes

Voltage Required AC 100 to 240 V (50-60 Hz)

#### **MECHANICAL**

Tilt Angle (front/back) -5° / 35°

Swivel Angle (left/right) +45°/-45°

Lift (max range) 135 mm

Pivot -90° / 90°

**VESA Mount Capability** Yes (100 x 100 mm)

Kensington Lock Slot Yes

Cable Management Yes

**Bezel Color** Raven Black

Bezel Width (side) 2.0 mm

Bezel Width (top/bottom) 2.0 / 24.12 mm

#### DIMENSION

Size Packed (D x H x W, mm/inch) 190 x 528 x 845 mm 7.48 x 20.79 x 32.27 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position) 235.0 x 469.4 x 714.6 mm 9.25 x 18.48 x 28.13 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position) 235.0 x 604.4 x 714.6 mm 9.25 x 23.79 x 28.13 inches

Size Unpacked w/o Stand (head only) ( $D \times H \times W$ , mm/inch) 51.0 x 426.0 x 714.6 mm 2.01 x 16.77 x 28.13 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 69.2 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 461.8 mm

Weight Packed (kg/lbs.) 12.96 kg / 28.57 lbs.

Weight Unpacked (kg/lbs.) 9.85 kg / 21.72 lbs.

Weight (monitor head only) (kg/lbs.) 6.78 kg / 14.95 lbs.

672 / 320 units



\*Listed as the maximum capacity of power delivery. The actual capacity of power delivery may vary depending upon devices connected or monitor configuration and may decline with downstream USB ports connected or higher brightness settings.

\*\*When connecting one cable USB Type-C at 4K 60Hz, the USB downstream will be USB2.0 by default due to technical limitations, Users can still use USB 3.0 by selecting in OSD and as a result, the display will be adjusted to 4K 30Hz

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

### WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m)  $1 \times DP$  cable (1.8 m) (NA&LA only) 1 x USB Type-C to Type-C cable (1.8 m) 1 x USB Type-C to Type-A cable (1.8 m) (NA&LA only) Quick setup guide

#### CERTIFICATION

<b>ENERGY</b> 8.0	STAR	Rating
<b>ccc</b> Yes		

тсо

8.0

TCO Edge 20

EPEAT Silver

RoHS (EU 2002/95/EC) Yes

Windows Certification Windows 7, Windows 10

China Energy Efficiency Standard Tier 1

**TÜV Rheinland Eye Comfort** Yes

Full Container Load (40' STD / 20' STD)













# ThinkVision T34w-20

# **Specifications**

# DISPLAY

Panel Size 34-inch

Screen Dimensions 797.2 mm x 333.7 mm

Panel Type 3-side NearEdgeless VA

Curvature 1500R

Backlight WLED

Aspect Ratio 21:9

**Resolution** 3440 × 1440

**Pixel Pitch** 0.23175 x 0.23175 mm

Dot/Pixel Per Inch (DPI/PPI) 109

Viewing Angle (H x V @ CR 10:1) 178° / 178°

Response Time 4ms (extreme mode) 6ms (normal mode)

Refresh Rate 60 Hz

Brightness (typical) 350 cd/m<sup>2</sup>

Contrast Ratio (typical) 3000:1

**Dynamic Contrast Ratio (typical)** 3M:1

**Colour Gamut** 99% sRGB

**Color Support (typical)** 16.7 Million

Anti-glare Yes

## CONNECTIVITY

Video Signal 1 x USB Type-C Gen1 (DP1.2 Alt Mode) 1 x HDMI 2.0 1 x DP 1.2

**Audio Signal** 1 x Audio Out (3.5 mm)

USB Upstream 1 x USB 3.1 Gen1 (by USB Type-C)

USB Downstream 4 x USB 3.1 Gen1 (1 BC)

## POWER

Power Consumption (typical/max) 46W / 140W

Power Consumption Sleep/Off Mode < 0.5W

Power Consumption Switch-off Mode < 0.5W

Energystar Power Consumption (P<sub>on</sub>/E<sub>TEC</sub>) 34W / 107kWh

USB Type-C Power Delivery (W) Up to 75W\*

Smart Power Yes

Voltage Required AC 100 to 240 V (50-60 Hz)

# MECHANICAL

**Tilt Angle (front/back)** -5°/ 35°

Swivel Angle (left/right)  $+45^{\circ}/-45^{\circ}$ 

Lift (max range) 135 mm

**VESA Mount Capability** Yes (100 x 100 mm)

Kensington Lock Slot Yes

Cable Management Yes

**Bezel Color** Raven Black

Bezel Width (side) 2.2 mm

Bezel Width (top/bottom) 2.2 mm / 27.8 mm

# DIMENSION

Size Packed (D x H x W, mm/inch) 523.0 x 250.0 x 980.0 mm / 20.59 x 9.84 x 38.58 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position) 245.0 x 462.4 x 808.6 mm / 9.65 x 18.21 x 31.84 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)

245.0 x 597.4 x 808.6 mm / 9.65 x 23.52 x 31.84 inches **Size Unpacked w/o Stand** (head only) (D x H x W, mm/inch) 106.1 x 372.6 x 808.6 mm / 4.18 x 14.67 x 31.84 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm) 119.1 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm) 587.9 mm

Weight Packed (kg/lbs.) 13.85 kg / 30.53 lbs.

Weight Unpacked (kg/lbs.) 9.91 kg / 21.85 lbs.

Weight (monitor head only) (kg/lbs.) 6.91 kg / 15.23 lbs.

Full Container Load (40' STD / 20' STD) 432 / 216 units

## WHAT'S IN THE BOX

Monitor with stand 1 x Power cable (1.8 m) 1 x DP cable (1.8 m) (NA & LA only) 1 x USB Type-C to Type-A cable (1.8 m) (NA & LA only) 1 x USB Type-C to Type-C cable (1.8 m) Quick setup guide

## CERTIFICATION

ENERGY STAR Rating 8.0

**CCC** Yes

**TCO** 8.0

TCO Edge 2.0

EPEAT Silver

**RoHS (EU 2002/95/EC)** Yes

Windows Certification Windows 7, Windows 10

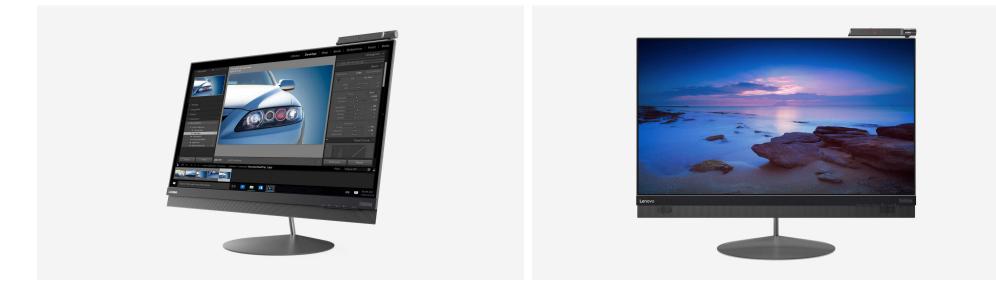
**China Energy Efficiency Standard** Tier 2

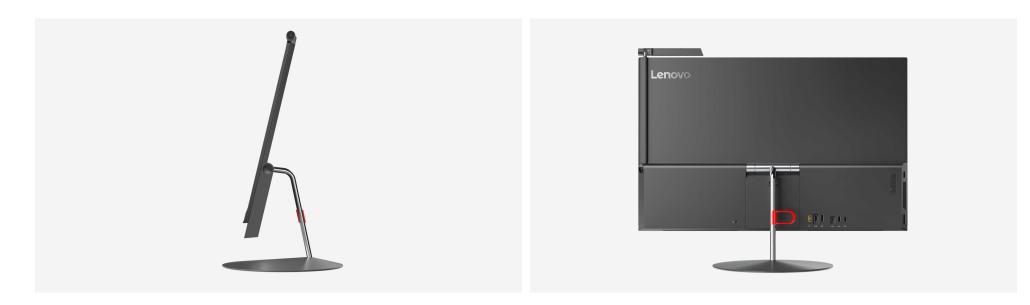
**TÜV Rheinland Eye Comfort** Yes



\*Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.



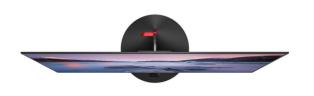


## Lenovo ThinkVision X1

NameX1 Wide Flat Panel MonitorFeaturesCase colorBlack60E2GAR1US / 60E2GAT1EUType-model60E2GAR1US / 60E2GAT1EUPanelTFT-LCD, IPS (In-Plane Switching), White LED backlight23.49" x 13.21" (596.7mm x 335.7mm)Viewable image size27" (684.7mm) diagonal 23.49" x 13.21" (596.7mm x 335.7mm)-5-Ports USB hub, support USB Type-C 3watts x 2 stereo speakers • Microsoft® Windows® 7 certifiedViewable rate600MHz 600MHz-600MHz 16:9Pixel pitch (mm)0.16 x 0.16mm 163 dpi0.16 x 0.16mmDot/Pixel per Inch163 dpi-16.9	
Type-filodel       60E2GAT 105 / 60E2GAT 160 / 60E2GAT 160         Panel       TFT-LCD, IPS (In-Plane Switching),         White LED backlight       White LED backlight         Viewable image size       27" (684.7mm) diagonal         Max view area (W x H)       23.49" x 13.21" (596.7mm x 335.7mm)         Optimum resolution       3840x2160         Max pixel rate       600MHz         Aspect ratio       16:9         Pixel pitch (mm)       0.16 x 0.16mm         Dot/Pixel per Inch       163 dpi	
Viewable image size       27" (684.7mm) diagonal         Viewable image size       27" (684.7mm) diagonal         Max view area (W x H)       23.49" x 13.21" (596.7mm x 335.7mm)         Optimum resolution       3840x2160         Max pixel rate       600MHz         Aspect ratio       16:9         Pixel pitch (mm)       0.16 x 0.16mm         Dot/Pixel per Inch       163 dpi	
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Pixel pitch (mm)         0.16 x 0.16mm           Dot/Pixel per Inch         163 dpi	
Dot/Pixel per Inch 163 dpi	
Brightness 300 nits or cd/m <sup>2</sup> (typical)	
Contrast ratio 1300:1 (typical)	
Pixel response time 6ms	
Color gamut 99%	
Viewing angle at 10:1 CR 178° horizontal, 178° vertical Stand Tilt stand	
Bezel width Sides: 0.088" (2.23mm)	
Dimensions 19.35" H x 24.19" W x 10.63" D;	in the second second
(HxWxD, including stand) 491.4mm H x 614.5mm W x 270.0mm D	and the second se
Power supply 40 watts typical,	and the second
130 watts maximum (with USB),	
<0.5 watts sleep/off; <0.5 watts switch off	
Weight 14.11 lb; 6.40kg (including stand)	1th and
Limited warranty <sup>4</sup> 3 year	100
Available date March 2016	
	Contraction of the
VESA-compliant <sup>2</sup> VESA DDC2B/CI	
Power management ENERGY STAR® 7.0	Initia
Ergonomics ISO 9241-307	
Emission standards FCC Class B Environmental TCO Displays 7.0. BoHS. EPEAT™ Silver rating.	
Environmental TCO Displays 7.0, RoHS, EPEAT™ Silver rating, ULE Gold	
Preset resolutions VGA: 640x350, 640x480, 720x400	
SVGA: 800x600	
XGA: 1024x768, 1152x864	
SXGA: 1280x1024	
WXGA: 1280x720, 1280x768, 1280x800, 1360x768 WXGA+: 1440x900, 1600x900	
WXGA+: 14403900, 1000x900 WSXGA+: 1680x1050	
Full HD: 1920x1080, 1920x1200 ThinkVision X1 Monitor	
UHD: 3840x2160	
Propeto ( upor pottingo ) Standard execute 20: upor pottingo: 20	
Presets / user settings Standard presets: 20; user settings: 20	
Viewing adjustments Tilt: 22° back, -5° forward;	
Viewing adjustments III. 22 Dack, -5 IOIWalu,	
Rotating screen None	
Rotating screenNoneOn screen displayOn screen display with digital user controls (8 languages)Control featuresDirect access (touch buttons on front) for menu, mute, volume up/down, and brightness	
Rotating screenNoneOn screen displayOn screen display with digital user controls (8 languages)Control featuresDirect access (touch buttons on front) for menu, mute, volume up/down, and brightnessUSB hubUSB Hub: one USB 3.1 Type-C upstream port, four USB 3.0 Type-A downstream ports	
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Rotating screenNoneOn screen displayOn screen display with digital user controls (8 languages)Control featuresDirect access (touch buttons on front) for menu, mute, volume up/down, and brightnessUSB hubUSB Hub: one USB 3.1 Type-C upstream port, four USB 3.0 Type-A downstream portsMultimediaIntegrated stereo speakers (3 watts x 2), bulit-in microphoneCameraFull HD camera with LED lightMultiple inputSupport HDMI, DisplayPortMonitor connectors(1) HDMI (1.4), digital, HDCP-compliantSignal cables(2) detachable, HDMI at each end, digital, 1.8 meter(2) detachable, DisplayPort at each end, digital, 1.8 meter	)0mm mount)
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Rotating screen       None         On screen display       On screen display with digital user controls (8 languages)         Control features       Direct access (touch buttons on front) for menu, mute, volume up/down, and brightness         USB hub       USB Hub: one USB 3.1 Type-C upstream port, four USB 3.0 Type-A downstream ports         Multimedia       Integrated stereo speakers (3 watts x 2), bulit-in microphone         Camera       Full HD camera with LED light         Multiple input       Support HDMI, DisplayPort         Monitor connectors       (1) HDMI (1.4), digital, HDCP-compliant         (2) DisplayPort (1.2), digital, HDCP-compliant         (2) detachable, HDMI at each end, digital, 1.8 meter         (2) detachable, DisplayPort at each end, digital, 1.8 meter         (2) detachable, DisplayPort at each end, digital, 1.8 meter         (2) detachable, DisplayPort at each end, digital, 1.8 meter         (2) detachable, DisplayPort at each end, digital, 1.8 meter         Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPMI® (10)         Security	,
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Rotating screen On screen displayNoneNoneOn screen display Control features USB hub Multimedia Camera Multiple inputOn screen display with digital user controls (8 languages) Direct access (touch buttons on front) for menu, mute, volume up/down, and brightness USB A.1 Type-C upstream port, four USB 3.0 Type-A downstream ports Integrated stereo speakers (3 watts x 2), bulit-in microphone Full HD camera with LED light Support HDMI, DisplayPort (1) HDMI (1.4), digital, <b>HDCP-compliant</b> (2) DisplayPort (1.2), digital, <b>HDCP-compliant</b> (2) DisplayPort at each end, digital, 1.8 meter (2) detachable, DisplayPort at each end, digital, 1.8 meter (2) detachable, DisplayPort at each end, digital, 1.8 meter (2) detachable, DisplayPort at each end, digital, 1.8 meter (2) detachable, DisplayPort at each end, digital, 1.8 meter 	,
Rotating screen On screen display Control features       None       On screen display with digital user controls (8 languages)         Control features       Direct access (touch buttons on front) for menu, mute, volume up/down, and brightness         USB hub       USB Hub: one USB 3.1 Type-C upstream port, four USB 3.0 Type-A downstream ports         Multimedia       Integrated stereo speakers (3 watts x 2), bulit-in microphone         Camera       Full HD camera with LED light         Multiple input       Support HDMI, DisplayPort         Monitor connectors       (1) HDMI (1.4), digital, HDCP-compliant         Signal cables       (2) DisplayPort (1.2), digital, HDCP-compliant         Mounting features       (2) detachable, HDMI at each end, digital, 1.8 meter         Security       Security use for attachment of optional cable lock (Kensington® lock-compatible)         Ship group       Monitor, detachable stand, Quick start and safety poster, 1.8 meter DisplayPort cable, 1.8 meter HDMI c         Ship group       Monitor, detachable stand, Quick start and safety poster, 1.8 meter black power cord, mini DP to DP adapter, power adapter (135W)         Limited Warranty       Accessories         See details at http://support.lenovo.com/en_US/guides-and-manuals/de-       Accessories	able,
Rotating screen On screen displayNoneNoneOn screen display Control features USB hub Multimedia Camera Multiple inputOn screen display with digital user controls (8 languages) 	,
Rotating screen       None         On screen display       On screen display         Control features       Direct access (touch buttons on front) for menu, mute, volume up/down, and brightness         USB hub       USB Hub: one USB 3.1 Type-C upstream port, four USB 3.0 Type-A downstream ports         Multimedia       Integrated stereo speakers (3 watts x 2), built-in microphone         Camera       Full HD camera with LED light         Multiple input       Support HDMI, DisplayPort         Monitor connectors       (1) HDMI (1.4), digital, <b>HDCP-compliant</b> (2) DisplayPort (1.2), digital, <b>HDCP-compliant</b> (2) detachable, HDMI at each end, digital, 1.8 meter         Mounting features       (2) detachable, DisplayPort at each end, digital, 1.8 meter         Mounting features       Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPMI® (10) Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)         Ship group       Monitor, detachable stand, Quick start and safety poster, 1.8 meter DisplayPort cable, 1.8 meter HDMI c         1.8 meter USB Type-C cable, 1.8 meter (135W)       Accessories         Limited Warranty       Accessories         See details at http://support.lenovo.com/en_US/guides-and-manuals/de-tail.page?DocID=UM008281       Kensington MicroSaver Cable Lock	73P2582
Rotating screen       None         On screen display       On screen display with digital user controls (8 languages)         Control features       Direct access (touch buttons on front) for menu, mute, volume up/down, and brightness         USB hub       USB Hub: one USB 3.1 Type-C upstream port, four USB 3.0 Type-A downstream ports         Multimedia       Integrated stereo speakers (3 watts x 2), bulit-in microphone         Camera       Full HD camera with LED light         Multiple input       Support HDMI, DisplayPort         Monitor connectors       (1) HDMI (1.4), digital, HDCP-compliant         (2) DisplayPort (1.2), digital, HDCP-compliant         Signal cables       (1) detachable, HDMI at each end, digital, 1.8 meter         (2) detachable, DisplayPort at each end, digital, 1.8 meter         Mounting features       Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPMI® (10)         Security       Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)         Ship group       Monitor, detachable stand, Quick start and safety poster, 1.8 meter DisplayPort cable, 1.8 meter HDMI c         1.8 meter USB Type-C cable, 1.8 meter USB Type-C to Type-A cable, 1.8 meter black power cord, mini DP to DP adapter, power adapter (135W)         Limited Warranty       Accessories         Kensington MicroSaver Cable Lock       Kensington MicroSaver Cable Lock	73P2582 45K1620 57Y4303
Rotating screen       None         On screen display       On screen display with digital user controls (8 languages)         Control features       Direct access (touch buttons on front) for menu, mute, volume up/down, and brightness         USB hub       USB Hub: one USB 3.1 Type-C upstream port, four USB 3.0 Type-A downstream ports         Multimedia       Integrated stereo speakers (3 watts x 2), bulit-in microphone         Camera       Full HD camera with LED light         Multiple input       Support HDMI, DisplayPort         Monitor connectors       (1) HDMI (1.4), digital, HDCP-compliant         (2) DisplayPort (1.2), digital, HDCP-compliant       (2) detachable, HDMI at each end, digital, 1.8 meter         (2) detachable, DisplayPort at each end, digital, 1.8 meter       (2) detachable, BisplayPort at each end, digital, 1.8 meter         Mounting features       Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPMI® (10) Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)         Ship group       Monitor, detachable stand, Quick start and safety poster, 1.8 meter DisplayPort cable, 1.8 meter HDMI c         None       None       None         See details at http://support.lenovo.com/en_US/guides-and-manuals/de-       Kensington MicroSaver Cable Lock         Kensington Twin Head Cable Lock       Kensington Twin Head Cable Lock	73P2582 45K1620 57Y4303
Rotating screen       None         On screen display       On screen display with digital user controls (8 languages)         Control features       Direct access (touch buttons on front) for menu, mute, volume up/down, and brightness         USB hub       USB Hub: one USB 3.1 Type-C upstream port, four USB 3.0 Type-A downstream ports         Multimedia       Integrated stereo speakers (3 watts x 2), bulit-in microphone         Camera       Full HD camera with LED light         Multiple input       Support HDMI, DisplayPort         Monitor connectors       (1) HDMI (1.4), digital, HDCP-compliant         (2) DisplayPort (1.2), digital, HDCP-compliant         Signal cables       (1) detachable, HDMI at each end, digital, 1.8 meter         (2) detachable, DisplayPort at each end, digital, 1.8 meter         Mounting features       Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPMI® (10)         Security       Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)         Ship group       Monitor, detachable stand, Quick start and safety poster, 1.8 meter DisplayPort cable, 1.8 meter HDMI c         1.8 meter USB Type-C cable, 1.8 meter USB Type-C to Type-A cable, 1.8 meter black power cord, mini DP to DP adapter, power adapter (135W)         Limited Warranty       Accessories         Kensington MicroSaver Cable Lock       Kensington MicroSaver Cable Lock	73P2582 45K1620 57Y4303 oraccessories

See footnotes for important warranty information





(intel) inside



(intel)



(intel)

# ThinkVision X1 (2nd GEN) MONITOR

# EXTREME STYLISH, EXTREME FOREFRONT.



# THE MILESTONE OF X-SERIES, 27" FULL-SCREEN, 4K, THUNDERBOLT™ 3 MONITOR.

Pushing the limit of screen share ratio with innovative technology, the 27" Lenovo<sup>™</sup> ThinkVision<sup>®</sup> X1 (2nd GEN) display brings full-screen and ultra-slim appearance in elegant design. With 4K resolution and >99% sRGB color gamut, you will be assured of excellent watching experience and Thunderbolt<sup>™</sup> 3 interface will bring the best user experience. "Motor" camera is first used on monitor, which will move up and down automatically and with it you will own standard VoIP system.

## WHY YOU SHOULD BUY THE LENOVO THINKVISION X1 (2nd GEN) MONITOR



#### Full-screen appearance

With world's slimmest (4.7 mm) 27" 4K TBT monitor you will experience full-screen 4-side Near-Edgeless display with the screen ratio of approximately 93%. The monitor also comes with a metal stand and a base.



### Brilliant performance

The 4K UHD IPS screen displays 3840 x 2160 resolution at 60 Hz, 99% sRGB color gamut, 10-bit depth, with 1.07 billion color support assures you stunning visuals and superb color experience.

### THE LENOVO THINKVISION X1 (2nd GEN) MONITOR IS BEST SUITED FOR



The Executives and CXO of company.



SOHO and Gold Collars with high income.



Trendsetters who pursue an extreme and forefront monitor.

**Convenient user experience** 

45W PD + motor-camera with

dual-array microphone. A Think

Total versatility with

Thunderbolt<sup>™</sup> 3 interface supporting 4K + USB 3.0 &

RedDot tracking button is

integrated in the back cover.











# Think Vision X1 (2nd GEN) MONITOR



# SPECIFICATIONS

#### DISPLAY

Panel Size Panel Type Backlight Resolution Aspect Ratio Anti-Glare Screen Dimensions (W x H) (mm) Maximum Brightness (Typical) Viewing Angle (H/V at CR 10:1) Contrast Ratio (Typical) Dynamic Contrast Ratio Pixel Pitch (W x H) (mm) Dot/Pixel Per Inch (DP/PPI) Color Gamut (CIE 1931)
Color Gamut (CIE 1931) Response Time (Extreme/Typical/Off)
Response nine (Extreme/Typical/OIT)

27" IPS WLED 3840 (H) x 2160 (V) 16:9 Yes 596.7 (H) x 335.7 (V) 350 cd/m<sup>2</sup> 178°/178° 1000:1 3M:1 0.1554 x 0.1554 163 99% sRGB 4/6/14 ms (G-to-G)

65 W

135 W

0.5 W

0.5 W

18 m

N/A

Yes

External

100 VAC - 240 VAC

DisplayPort<sup>™</sup> 1.2 + HDMI<sup>™</sup> 2.0

HDMI<sup>™</sup> + Thunderbolt<sup>™</sup> 3

50 Hz - 60 Hz

+ Thunderbolt<sup>™</sup> 3

Yes (4 x USB 3.0)

30 kHz - 136 kHz

2 Buttons + Tracking Point

English, French, Italian, German, Spanish, Japanese, Chinese, Russian

30 Hz - 60 Hz

3840 x 2160

20 Gbps

<sup>-</sup>5° / 30°

N/A

N/A

N/A

N/A

Yes

Yes

N/A

1.2 / 0.05"

1.2 / 0.05"

1.2 / 0.05"

6500K 24

#### POWER CONSUMPTION

Typical Maximum Sleep-Mode Switch Off-Mode Power Supply Power Voltage Voltage Dynamic Frequency

#### SIGNAL INPUT

Video Input Signals Video Cables Supplied Video Cable Length USB Hub USB Cable Supplied Audio-Jack

#### SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency Vertical Frequency Native Resolution Maximum Pixel Clock Speed/ Bandwidth Default Color Temperature Preset Modes OSD Buttons OSD Languages

#### MECHANICAL

Tilt Angle (Front / Back) Swivel Angle (Left / Right) Lift (mm) Pivot VESA\* Mount (mm) Kensington\* Lock Slot Cable Management Bezel Color Bezel Width Top (mm / inches) Bottom (mm / inches) Sides (mm / inches)



# 

#### Temperature Operating Non-Operating Humidity Operating Non-Operating Altitude Operating Non-Operating Arsenic-Free Glass PVC-Free Mercury-Free PCC % of Plastic Resins

### DIMENSIONS (W x D x H)

Size Packed (mm) (inches) Size Unpacked with Stand (mm) (inches) Size Unpacked without Stand (Monitor Head Only) (mm)(inches) Distance from Table to Panel Lowest Pixel at Bottom of Screen (mm / inches) Highest Pixel at Top of Screen (mm / inches) Stand Base Footprint Area (mm)(inches) Weight Packed Unpacked Monitor Head Only

# 718 × 140 × 470 28.27" × 5.51" × 18.5" 609.74 × 234.81 × 474.76 24" × 9.24" × 18.69" 609.74 × 32.7 × 351.71 24" × 1.29" × 13.85" 134 / 5.276"

450 / 17.717"

0°C - 45°C

8% - 80%

5% - 95%

16 000 ft

40,000 ft

Yes (W/O cable)

Yes

Yes

25%

-20°C - 60°C

234.81 x 234.81 9.24" x 9.24"

Starting at 18.45 lbs (8.37 kg) Starting at 12.21 lbs (5.54 kg) Starting at 9.46 lbs (4.29 kg)

COMPLIANCE EPEAT™ ENERGY STAR® Rating ULE TCO® RoHS Windows Certification China Energy Label

#### Silver 7.0 Silver 7.0 Yes Windows 10 Grade 2

# WARRANTY AND AVAILABILITY

#### Warranty 3 Years Geography Availability WW

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shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

*Expedited Depot:* Parts and labor coverage with expedited turnaround. Shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

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**Included software:** may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

**Battery life:** Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

Visit **http://psref.lenovo.com/** for the latest version of Product Specifications Reference.

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