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Product Specifications Reference

Version 554, January 2020

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Lenovo ThinkPad Laptops

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Version 554, January 2020

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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.

January 22, 2020 - Version 554

Additions in this update

▶ **New product(s)**

None

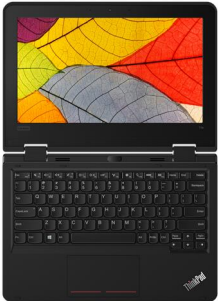
▶ **Others**

None

Withdrawals in this update

▶ **Withdrawn product(s)**

None



ThinkPad 11e (5th Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ m / i5 Processor, Intel Celeron® processor, or Intel Pentium® Silver processor									Dimensions	WxDxH: 11.81" x 8.27" x 0.86"; 300mm x 210mm x 21.9mm		
	Processor Number	# of Cores	# of Threads	Base Frequency	Burst Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 2.99 lb / 1.36 kg			
	m3-7Y30	2	4	1.0 GHz	2.6 GHz	4MB	LPDDR3-1866	Intel HD Graphics 615	Case color	Black			
	i5-7Y54			1.2 GHz	3.2 GHz	4MB		Case material	Display cover: PC/ABS+GF; Bottom: PC/ABS plastic				
	Celeron N4100	4	4	1.1 GHz	2.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 600	Smart card reader	None			
	Celeron N4120			1.1 GHz	2.6 GHz	4MB		Media reader	MicroSD card reader				
	Pentium Silver N5000			1.1 GHz	2.7 GHz	4MB		Ports	Two USB 3.1 Gen 1, 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, microSD card reader, security keyhole <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>				
Graphics	Intel HD Graphics 615, Intel UHD Graphics 600 or 605 in processor, supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 3840x2160@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)									Camera	HD720p camera, fixed focus		
Chipset	Intel SoC (System on Chip) platform									Audio support	HD Audio, Realtek® ALC3287 codec, stereo speakers, 2W x 2, Dolby® Audio™, mono digital microphone, combo audio/microphone jack		
Memory	4GB or 8GB / 1866MHz LPDDR3 or 2400MHz DDR4 / soldered to systemboard, no sockets									Keyboard	6-row, spill-resistant, multimedia Fn keys		
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Touchpad	Buttonless Mylar surface touchpad below keyboard, multi-touch		
	11.6" HD (1366x768)	TN	Anti-glare	250 nits	16:9	400:1 or 500:1	45%	90°	Security	Power-on password, supervisor password, security keyhole			
	11.6" HD (1366x768)	IPS	Anti-glare	250 nits	16:9	800:1	45%	170°	Security chip	Discrete TPM 2.0, TCG Certified			
Multi-touch (opt)	Capacitive-type multi-touch, supports 10-finger gesture (HD IPS only)									System Mgt	None		
Storage	eMMC flash memory on board or M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s									Fingerprint reader	None		
Optical	None									NFC	None		
Ethernet	Realtek RTL8111GUS Gigabit Network Connection									Battery	Integrated Li-ion 42Wh battery		
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)									Max battery life	MobileMark® 2014: 13.9 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>		
WWAN	None									AC adapter	45W or 65W slim tip AC adapter, 45W or 65W USB Type-C AC adapter		
										Operating system	One of the following, configurable by model: • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro in S mode		
										Limited warranty	One of the following, configurable by model: • 1-year depot repair service • 3-year/1-yr battery depot repair service		
										Mil-Spec test	MIL-STD-810G military testing		
										Environment	EPEAT™ Silver; ENERGY STAR® 6.1; RoHS-compliant		

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

Lenovo
December 2019



ThinkPad Yoga 11e (5th Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ m / i5 Processor, Intel Celeron® processor, or Intel Pentium® Silver processor	Dimensions Weight Case color Case material	<i>WxDxH:</i> 11.81" x 8.27" x 0.89"; 300mm x 210mm x 22.5mm From 3.4 lb / 1.54kg Black <i>Display cover:</i> PC/ABS+GF; <i>Bottom:</i> PC/ABS plastic																																							
	<table border="1"> <thead> <tr> <th>Processor Number</th> <th># of Cores</th> <th># of Threads</th> <th>Base Frequency</th> <th>Burst Frequency</th> <th>Cache</th> <th>Memory Types</th> <th>Processor Graphics</th> </tr> </thead> <tbody> <tr> <td>m3-7Y30</td> <td rowspan="2">2</td> <td rowspan="2">4</td> <td>1.0 GHz</td> <td>2.6 GHz</td> <td>4MB</td> <td rowspan="2">LPDDR3-1866</td> <td>Intel HD Graphics 615</td> </tr> <tr> <td>i5-7Y54</td> <td>1.2 GHz</td> <td>3.2 GHz</td> <td>4MB</td> <td>Intel UHD Graphics 600</td> </tr> <tr> <td>Celeron N4100</td> <td rowspan="3">4</td> <td rowspan="3">4</td> <td>1.1 GHz</td> <td>2.4 GHz</td> <td>4MB</td> <td rowspan="3">DDR4-2400</td> <td>Intel UHD Graphics 600</td> </tr> <tr> <td>Celeron N4120</td> <td>1.1 GHz</td> <td>2.6 GHz</td> <td>4MB</td> <td>Intel UHD Graphics 605</td> </tr> <tr> <td>Pentium Silver N5000</td> <td>1.1 GHz</td> <td>2.7 GHz</td> <td>4MB</td> <td></td> </tr> </tbody> </table>	Processor Number	# of Cores	# of Threads	Base Frequency	Burst Frequency	Cache	Memory Types	Processor Graphics	m3-7Y30	2	4	1.0 GHz	2.6 GHz	4MB	LPDDR3-1866	Intel HD Graphics 615	i5-7Y54	1.2 GHz	3.2 GHz	4MB	Intel UHD Graphics 600	Celeron N4100	4	4	1.1 GHz	2.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 600	Celeron N4120	1.1 GHz	2.6 GHz	4MB	Intel UHD Graphics 605	Pentium Silver N5000	1.1 GHz	2.7 GHz	4MB		Media reader Ports Control buttons	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, 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> Power button, volume control button
Processor Number	# of Cores	# of Threads	Base Frequency	Burst Frequency	Cache	Memory Types	Processor Graphics																																			
m3-7Y30	2	4	1.0 GHz	2.6 GHz	4MB	LPDDR3-1866	Intel HD Graphics 615																																			
i5-7Y54			1.2 GHz	3.2 GHz	4MB		Intel UHD Graphics 600																																			
Celeron N4100	4	4	1.1 GHz	2.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 600																																			
Celeron N4120			1.1 GHz	2.6 GHz	4MB		Intel UHD Graphics 605																																			
Pentium Silver N5000			1.1 GHz	2.7 GHz	4MB																																					
Graphics	Intel HD Graphics 615, Intel UHD Graphics 600 or 605 in processor, supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 3840x2160@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)	Camera Audio support	<i>One of the following, configurable by model:</i> <i>720p:</i> HD720p resolution, low light sensitive, fixed focus <i>World facing:</i> Rear camera, 5MP resolution, auto focuss HD Audio, Realtek® ALC3287 codec Dolby Audio™ / stereo speakers, 2W x 2 / monaural microphone, headphone / microphone combo jack																																							
Chipset Memory	Intel SoC (System on Chip) platform 4GB or 8GB / 1866MHz LPDDR3 or 2400MHz DDR4 / soldered to systemboard, no sockets	Keyboard UltraNav™	6-row, multimedia Fn keys Two buttons click pad below keyboard, multi-touch																																							
Display MultiTouch Hinge Convertible mode Pen	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 Capacitive-type multi-touch, supports 10 fingers Yoga hinge, 360 degree Laptop, tent, stand and tablet <i>Optional:</i> ThinkPad Pen Pro, batteries required, on-board garage	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 None None																																							
Storage Optical Ethernet	eMMC flash memory on board or M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s None Realtek RTL8111GUS-CG Gigabit Network Connection	Battery Max battery life AC adapter	Integrated Li-Ion 42Wh battery <i>MobileMark® 2014:</i> 12 hrs <i>* Battery life varies significantly with settings, usage, & other factors</i> 45W or 65W slim tip AC adapter or USB Type-C AC adapter																																							
WLAN	<i>One of the following, configurable by model:</i> • 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	Preload	<i>One of the following, configurable by model:</i> • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro in S mode																																							
Bluetooth™ WWAN	Bluetooth wireless, integrated in Wi-Fi + Bluetooth combo adapter None	Limited warranty MIL-Spec test Environment	<i>One of the following, configurable by model:</i> • 1-year depot repair service • 3-year depot repair service MIL-STD-810G military testing EPEAT™ Gold; ENERGY STAR® 6.1; RoHS-compliant																																							



ThinkPad E14 Platform Specifications

Product Specifications Reference (PSREF)

Processor	10th Generation Intel® Core™ i3 / i5 / i7 Processor								Dimensions	<table border="1"> <tr> <th>Case Material</th> <th>Dimensions (WxDxH)</th> </tr> <tr> <td>Aluminum</td> <td>12.80" x 9.13" x 0.70"; 325mm x 232mm x 17.9mm</td> </tr> <tr> <td>PC/ABS</td> <td>12.80" x 9.13" x 0.81"; 325mm x 232mm x 20.5mm</td> </tr> <tr> <td>Aluminum Display cover + PC/ABS Bottom</td> <td>12.80" x 9.13" x 0.74"; 325mm x 232mm x 18.9mm</td> </tr> </table>		Case Material	Dimensions (WxDxH)	Aluminum	12.80" x 9.13" x 0.70"; 325mm x 232mm x 17.9mm	PC/ABS	12.80" x 9.13" x 0.81"; 325mm x 232mm x 20.5mm	Aluminum Display cover + PC/ABS Bottom	12.80" x 9.13" x 0.74"; 325mm x 232mm x 18.9mm
	Case Material	Dimensions (WxDxH)																	
	Aluminum	12.80" x 9.13" x 0.70"; 325mm x 232mm x 17.9mm																	
	PC/ABS	12.80" x 9.13" x 0.81"; 325mm x 232mm x 20.5mm																	
	Aluminum Display cover + PC/ABS Bottom	12.80" x 9.13" x 0.74"; 325mm x 232mm x 18.9mm																	
Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	<table border="1"> <tr> <th>Case Material</th> <th>Weight</th> </tr> <tr> <td>Aluminum</td> <td>starting at 3.81 lb / 1.73 kg</td> </tr> <tr> <td>PC/ABS</td> <td>starting at 3.90 lb / 1.77 kg</td> </tr> <tr> <td>Aluminum Display cover + PC/ABS Bottom</td> <td>starting at 3.74 lb / 1.69 kg</td> </tr> </table>		Case Material	Weight	Aluminum	starting at 3.81 lb / 1.73 kg	PC/ABS	starting at 3.90 lb / 1.77 kg	Aluminum Display cover + PC/ABS Bottom	starting at 3.74 lb / 1.69 kg	
Case Material	Weight																		
Aluminum	starting at 3.81 lb / 1.73 kg																		
PC/ABS	starting at 3.90 lb / 1.77 kg																		
Aluminum Display cover + PC/ABS Bottom	starting at 3.74 lb / 1.69 kg																		
i3-10110U	2	4	2.1 GHz	4.1 GHz	4MB	DDR4-2666	Intel UHD Graphics	Case color Case material	Black or silver Display cover: Aluminum or PC/ABS plastic; Bottom: Aluminum or PC/ABS plastic										
i5-10210U	4	8	1.6 GHz	4.2 GHz	6MB														
i7-10510U			1.8 GHz	4.9 GHz	8MB														
i7-10710U			1.1 GHz	4.7 GHz	12MB														
Graphics	<table border="1"> <tr> <th>Integrated Graphics</th> <th>Discrete Graphics (Memory)</th> </tr> <tr> <td>Intel UHD Graphics</td> <td>-</td> </tr> <tr> <td>Intel UHD Graphics</td> <td>AMD Radeon 625 (2GB GDDR5)</td> </tr> <tr> <td>Intel UHD Graphics</td> <td>AMD Radeon RX 640 Graphics (2GB GDDR5)</td> </tr> </table>		Integrated Graphics	Discrete Graphics (Memory)	Intel UHD Graphics	-	Intel UHD Graphics	AMD Radeon 625 (2GB GDDR5)	Intel UHD Graphics	AMD Radeon RX 640 Graphics (2GB GDDR5)	Smart card reader Media reader Ports	None							
Integrated Graphics	Discrete Graphics (Memory)																		
Intel UHD Graphics	-																		
Intel UHD Graphics	AMD Radeon 625 (2GB GDDR5)																		
Intel UHD Graphics	AMD Radeon RX 640 Graphics (2GB GDDR5)																		
supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 3840x2160@60Hz (USB Type-C); 3840x2160@30Hz (HDMI)								None											
Chipset	Intel SoC (System on Chip) platform								None										
Memory	16GB max / 2666MHz DDR4, one DDR4 SO-DIMM socket								None										
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	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, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed										
	14.0" FHD (1920x1080)		TN	Anti-glare	220 nits	16:9	400:1	90°	None None										
	14.0" FHD (1920x1080)		IPS	Anti-glare	250 nits	16:9	700:1	170°											
Multi-touch	None								Monitor cable	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™ • 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 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4								Camera	HD720p camera with optional ThinkShutter camera privacy, fixed focus									
									Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack									
Optical	None								Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight									
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad									
WLAN + Bluetooth™	One of the following, configurable by model: • 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 Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0, M.2 card								Security	Power-on password, hard disk password, supervisor password, security keyhole									
WWAN	None								Security chip	Integrated model: discrete TPM 2.0, TCG Certified Discrete model: firmware TPM 2.0 integrated in chipset									
SIM card	None								System Mgt	None									
									Fingerprint reader	Optional: Touch style fingerprint reader on power button									
									NFC	None									
									Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter									
									Max battery life	MobileMark® 2014: 12.8 hr * Battery life varies significantly with settings, usage, & other factors									
									AC adapter	45W or 65W USB Type-C AC adapter									
									Operating system (optional)	One of the following, configurable by model: • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro in S mode • No OS									
									Limited warranty (optional)	• 1-year mail-in repair service • 1-year depot repair service • 1-year depot with 2-year system board repair service • 1-year limited onsite service									
									Mil-Spec test	MIL-STD-810G military testing (by the end of Dec. 2019)									
									Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant									

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



ThinkPad E15 Platform Specifications

Product Specifications Reference (PSREF)

Processor	10th Generation Intel® Core™ i3 / i5 / i7 Processor								Dimensions	<i>WxDxH:</i> 14.49" x 9.65" x 0.74"; 368mm x 245mm x 18.9mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 4.3 lb / 1.9 kg
	i3-10110U	2	4	2.1 GHz	4.1 GHz	4MB	DDR4-2666	Intel UHD Graphics	Case color	Black or silver
	i5-10210U	4	8	1.6 GHz	4.2 GHz	6MB			Case material	<i>Display cover:</i> Aluminum; <i>Bottom:</i> PC/ABS plastic
	i7-10510U			1.8 GHz	4.9 GHz	8MB			Smart card reader	None
i7-10710U	6	12	1.1 GHz	4.7 GHz	12MB	Media reader			None	
Graphics	Integrated Graphics		Discrete Graphics (Memory)						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, security keyhole <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
	Intel UHD Graphics		-						Monitor cable	None
	Intel UHD Graphics		AMD Radeon 625 (2GB GDDR5)						Bundled Accy	None
	Intel UHD Graphics		AMD Radeon RX 640 Graphics (2GB GDDR5)						Camera	HD720p camera with optional ThinkShutter camera privacy, fixed focus
	supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 3840x2160@60Hz (USB Type-C); 3840x2160@30Hz (HDMI)									
Chipset	Intel SoC (System on Chip) platform								Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack
Memory	16GB max / 2666MHz DDR4, one DDR4 SO-DIMM socket								Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
	15.6"	FHD (1920x1080)	TN	Anti-glare	220 nits	16:9	400:1	90°	Security	Power-on password, hard disk password, supervisor password, security keyhole
	15.6"	FHD (1920x1080)	IPS	Anti-glare	250 nits	16:9	700:1	170°	Security chip	<i>Integrated model:</i> discrete TPM 2.0, TCG Certified <i>Discrete model:</i> firmware TPM 2.0 integrated in chipset
Multi-touch	None								System Mgt	None
Storage	Up to two drives (one M.2 SSD and one HDD)								Fingerprint reader	<i>Optional:</i> Touch style fingerprint reader on power button
	<ul style="list-style-type: none"> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ 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 Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 								NFC	None
									Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
Optical	None								Max battery life	<i>MobileMark® 2014:</i> 12.2 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS								AC adapter	45W or 65W USB Type-C AC adapter
WLAN + Bluetooth™	One of the following, configurable by model: <ul style="list-style-type: none"> Realtek® RTL8822CE, 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 								Operating system (optional)	<ul style="list-style-type: none"> Windows® 10 Home 64 Windows 10 Pro 64 Windows 10 Pro in S mode
WWAN	None								Limited warranty (optional)	<ul style="list-style-type: none"> 1-year mail-in repair service 1-year depot repair service 1-year depot with 2-year system board repair service
SIM card	None								Mil-Spec test	MIL-STD-810G military testing (by the end of Jan. 2020)
									Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant

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

Lenovo
December 2019



ThinkPad E480 Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i3 / i5 Processor (i3-7130U is NOT available in US and EMEA) 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 Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	
	i3-7020U	2	4	2.3 GHz	-	3MB	DDR4-2133	Intel HD Graphics 620	Starting at 3.87 lb / 1.75kg	
	i3-7130U			2.7 GHz	-	3MB			Case color	Black or silver
	i5-7200U			2.5 GHz	3.1 GHz	3MB			Case material	Display cover: Aluminum or PC/ABS plastic; Bottom: PC/ABS plastic
	8th Generation Intel Core i3 / i5 / i7 Processor							Smart card reader	None	
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader	
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	MicroSD card reader	
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB			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), 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
	i7-8550U			1.8 GHz	4.0 GHz	8MB			Camera	HD720p camera, fixed focus
Graphics	Intel HD Graphics 620 or Intel UHD Graphics 620 in processor only or Intel HD Graphics 620 or Intel UHD Graphics 620 in processor and AMD Radeon RX 550 Graphics, 2GB GDDR5 memory; supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 1920x1080 (HDMI) @60Hz							Audio support	HD Audio, Synaptic® CX11852 codec / stereo speakers, 1.5W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack	
Chipset	Intel SoC (System on Chip) platform							Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight	
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * System clocks down for processors with lower memory controller							UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad	
Display	Some: 14.0" (355mm) HD (1366x768), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 400:1 contrast ratio Some: 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 400:1 contrast ratio							Security	Power-on password, hard disk password, supervisor password, security keyhole	
Multi-touch	None							Security chip (opt)	Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified	
Storage	Up to 2 drives (one M.2 SSD and one HDD) Some: HDD / SATA 6.0Gb/s, 2.5" wide, removable, upgradable, Active Protection System™ Some: M.2 SSD / PCIe NVMe							vPro	None	
Optane™ memory	Optional: Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2							Fingerprint reader	Optional: Touch style fingerprint reader on the palm rest	
Optical	None							NFC	None	
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS							Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter	
WLAN + Bluetooth™	One of the following, configurable by model: • Realtek® RTL8821CE, Wi-Fi 1x1 802.11ac + Bluetooth 4.1, M.2 card • Realtek RTL8822BE, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card • Intel Dual Band Wireless-AC 3165, 1x1, Wi-Fi + Bluetooth 4.1, M.2 Card * Intel 3165ac card supports BT4.2 but is limited to BT4.1 by Windows OS							Max battery life	MobileMark® 2014: 13.51 hr * Battery life varies significantly with settings, usage, & other factors	
WWAN	None							AC adapter	45W or 65W USB Type-C AC adapter	
SIM card	None							Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64	
								Limited warranty	One of the following, configurable by model: • 1-year mail-in repair service • 1-year depot repair service	
								Mil-Spec test	MIL-STD-810G military testing	
								Environment	EPEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant	

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

Lenovo
August 2019



ThinkPad E490 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i3 / i5 / i7 Processor								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 Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 3.87 lb / 1.75 kg
	i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	Case color	Black or silver
	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB			Case material	Display cover: Aluminum or PC/ABS plastic; Bottom: PC/ABS plastic
	i5-8365U			1.6 GHz	4.1 GHz	6MB			Smart card reader	None
	i7-8565U			1.8 GHz	4.6 GHz	8MB			Media reader	MicroSD card reader
	* i5-8365U is for special bid only								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), 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
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)								Monitor cable	None
Chipset Memory	Intel 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 Intel limitation								Bundled Accy	None
Display	Size / Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch	Camera	HD720p camera, fixed focus
	14.0" HD (1366x768)	Anti-glare	TN	220 nits	16:9	400:1	90°	Non-touch	Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 1.5W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack
	14.0" FHD (1920x1080)	Anti-glare	TN	220 nits	16:9	400:1	90°	Non-touch	Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight
	14.0" FHD (1920x1080)	Anti-glare	IPS	250 nits	16:9	600:1	170°	Non-touch	UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Multi-touch	None								Security	Power-on password, hard disk password, supervisor 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™ • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 * Installed M.2 2280 SSD is PCIe 3x4 but run at PCIe 3x2 due to M.2 SSD adapter limitation								Security chip	Integrated model: discrete TPM 2.0, TCG Certified Discrete model: firmware TPM 2.0 integrated in chipset
Optane™ memory	Optional: Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2								System Mgt	None
Optical	None								Fingerprint reader	Optional: Touch style fingerprint reader on the palm rest
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS								NFC	None
WLAN + Bluetooth™	One of the following, configurable by model: • Realtek® RTL8822BE, 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								Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
WWAN SIM card	None								Max battery life	MobileMark® 2014: 13 hr * Battery life varies significantly with settings, usage, & other factors
									AC adapter	45W or 65W USB Type-C AC adapter
									Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64
									Limited warranty	One of the following, configurable by model: • 1-year mail-in repair service • 1-year depot repair service • 1-year limited onsite service
									Mil-Spec test	MIL-STD-810G military testing
									Environment	EPPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant

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

Lenovo
December 2019



ThinkPad E490s Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor								Dimensions	<i>WxDxH:</i> 12.96" x 9.13" x 0.70"; 329mm x 232mm x 17.9mm																								
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 3.68 lb / 1.67 kg																								
	i5-8265U i7-8565U	4	8	1.6 GHz 1.8 GHz	3.9 GHz 4.5 GHz	6MB 8MB	DDR4-2400	Intel UHD Graphics 620	Case color	Black or silver																								
Graphics	Intel UHD Graphics 620 in processor only or Intel UHD Graphics 620 in processor and AMD Radeon RX 540X Graphics, 2GB GDDR5 memory; supports external digital monitor via HDMI or USB Type-C; supports three independent display; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@24Hz (HDMI)								Case material	Aluminum																								
									Smart card reader	None																								
Chipset	Intel SoC (System on Chip) platform								Media reader	MicroSD card reader																								
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation</i>								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), 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>																								
Display	<table border="1"> <thead> <tr> <th>Size / Resolution</th> <th>Surface</th> <th>Type</th> <th>Brightness</th> <th>Aspect Ratio</th> <th>Contrast Ratio</th> <th>Viewing Angle</th> <th>Multi-touch</th> </tr> </thead> <tbody> <tr> <td>14.0" FHD (1920x1080)</td> <td>Anti-glare</td> <td>TN</td> <td>220 nits</td> <td>16:9</td> <td>400:1</td> <td>90°</td> <td>Non-touch</td> </tr> <tr> <td>14.0" FHD (1920x1080)</td> <td>Anti-glare</td> <td>IPS</td> <td>250 nits</td> <td>16:9</td> <td>600:1</td> <td>170°</td> <td>Non-touch</td> </tr> </tbody> </table>								Size / Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch	14.0" FHD (1920x1080)	Anti-glare	TN	220 nits	16:9	400:1	90°	Non-touch	14.0" FHD (1920x1080)	Anti-glare	IPS	250 nits	16:9	600:1	170°	Non-touch	Monitor cable	None
									Size / Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch																		
									14.0" FHD (1920x1080)	Anti-glare	TN	220 nits	16:9	400:1	90°	Non-touch																		
14.0" FHD (1920x1080)	Anti-glare	IPS	250 nits	16:9	600:1	170°	Non-touch																											
Bundled Accy	None																																	
Camera	HD720p camera, fixed focus								Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack																								
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, hard disk password, supervisor password, security keyhole																								
Multi-touch	None								Security chip	<i>Integrated model:</i> discrete TPM 2.0, TCG Certified <i>Discrete model:</i> firmware TPM 2.0 integrated in chipset																								
Storage	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 <i>* Installed M.2 2280 SSD is PCIe 3x4 but run at PCIe 3x2 due to M.2 SSD adapter limitation</i>								System Mgt	None																								
									Fingerprint reader	Touch style fingerprint reader on the palm rest																								
Optical	None								NFC	None																								
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS								Battery	Integrated Li-ion 42Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter																								
WLAN + Bluetooth™	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> Realtek® RTL8822BE, 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 								Max battery life	<i>MobileMark® 2014:</i> 11.5 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>																								
									AC adapter	45W or 65W USB Type-C AC adapter																								
WWAN	None								Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64																								
SIM card	None								Limited warranty	1-year depot repair 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.

Lenovo
September 2019



ThinkPad E495 Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryzen™ Mobile Processors with Radeon™ Vega Graphics								Dimensions <i>Aluminum (WxDxH):</i> 12.96" x 9.53" x 0.78"; 329mm x 242mm x 19.9mm <i>PC/ABS (WxDxH):</i> 12.96" x 9.53" x 0.83"; 329mm x 242mm x 21.9mm																							
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Controller	Processor Graphics		Weight Starting at 3.87 lb / 1.75 kg Case color Black Case material <i>Display cover:</i> Aluminum or PC/ABS plastic; <i>Bottom:</i> PC/ABS plastic																						
	Ryzen 3 3200U	2	4	2.6 GHz	3.5 GHz	1MB L2 / 4MB L3	DDR4-2400	Radeon Vega 3 Graphics																								
	Ryzen 5 3500U	4	8	2.1 GHz	3.7 GHz	2MB L2 / 4MB L3		Radeon Vega 8 Graphics																								
Ryzen 7 3700U	2.3 GHz			4.0 GHz	2MB L2 / 4MB L3	Radeon RX Vega 10 Graphics																										
Graphics	AMD Radeon Vega 3, Vega 8, or RX Vega 10 Graphics in processor; supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 3840x2160@60Hz (USB Type-C); 3840x2160@30Hz (HDMI)								Smart card reader None Media reader MicroSD card reader 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, microSD card reader, security keyhole <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i> Monitor cable None Bundled Accy None Camera HD720p camera, fixed focus Audio support HD Audio, Synaptic® CX11880 codec / stereo speakers, 1.5W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack																							
Chipset	AMD SoC (System on Chip) platform																															
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* Installed memory is actually 2666MHz but run at 2400MHz due to AMD limitation</i>																															
Display	<table border="1"> <thead> <tr> <th>Size / Resolution</th> <th>Surface</th> <th>Type</th> <th>Brightness</th> <th>Aspect Ratio</th> <th>Contrast Ratio</th> <th>Viewing Angle</th> <th>Multi-touch</th> </tr> </thead> <tbody> <tr> <td>14.0" HD (1366x768)</td> <td>Anti-glare</td> <td>TN</td> <td>220 nits</td> <td>16:9</td> <td>400:1</td> <td>90°</td> <td>Non-touch</td> </tr> <tr> <td>14.0" FHD (1920x1080)</td> <td>Anti-glare</td> <td>IPS</td> <td>250 nits</td> <td>16:9</td> <td>600:1</td> <td>170°</td> <td>Non-touch</td> </tr> </tbody> </table>									Size / Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch	14.0" HD (1366x768)	Anti-glare	TN	220 nits	16:9	400:1	90°	Non-touch	14.0" FHD (1920x1080)	Anti-glare	IPS	250 nits	16:9	600:1	170°
Size / Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch																									
14.0" HD (1366x768)	Anti-glare	TN	220 nits	16:9	400:1	90°	Non-touch																									
14.0" FHD (1920x1080)	Anti-glare	IPS	250 nits	16:9	600:1	170°	Non-touch																									
Multi-touch	None								Keyboard 6-row, spill-resistant, multimedia Fn keys UltraNav™ TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad Security Power-on password, hard disk password, supervisor password, security keyhole Security chip Discrete TPM 2.0, TCG Certified Fingerprint reader None NFC None Battery Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter Max battery life <i>MobileMark® 2014:</i> 11 hr <i>* Battery life varies significantly with settings, usage, & other factors</i> AC adapter 45W or 65W USB Type-C AC adapter Operating system <i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64 Limited warranty • 1-year mail-in repair service • 1-year depot repair service Mil-Spec test MIL-STD-810G military testing Environment EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant																							
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™ • 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																															
Optical	None																															
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS																															
WLAN + Bluetooth™	One of the following, configurable by model: • Realtek® RTL8822BE, 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																															
WWAN SIM card	None																															

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

Lenovo
December 2019



ThinkPad E580 Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i3 / i5 Processor or							WLAN + Bluetooth™	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • Realtek® RTL8821CE, Wi-Fi 1x1 802.11ac + Bluetooth 4.1, M.2 card • Realtek RTL8822BE, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card • Intel Dual Band Wireless-AC 3165, 1x1, Wi-Fi + Bluetooth 4.1, M.2 Card * Intel 3165ac card supports BT4.2 but is limited to BT4.1 by Windows OS 	
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types			Processor Graphics
	i3-7020U	2	4	2.3 GHz	-	3MB	DDR4-2133			Intel HD Graphics 620
	i3-7130U			2.7 GHz	-	3MB				
i5-7200U	2.5 GHz			3.1 GHz	3MB					
Processor	8th Generation Intel Core i3 / i5 / i7 Processor							WLAN + Bluetooth™	<i>None</i> WWAN SIM card <i>None</i>	
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types			Processor Graphics
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB	DDR4-2400			Intel UHD Graphics 620
	i5-8250U			1.6 GHz	3.4 GHz	6MB				
i7-8550U	1.8 GHz			4.0 GHz	8MB					
* i3-7130U is NOT available in US and EMEA										
Graphics	Intel HD Graphics 620 or Intel UHD Graphics 620 in processor only or Intel HD Graphics 620 or Intel UHD Graphics 620 in processor and AMD Radeon RX 550 Graphics, 2GB GDDR5 memory; supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 1920x1080 (HDMI) @60Hz							Dimensions Weight Case color Case material Smart card reader Media reader Ports Camera Audio support	<i>WxDxH: 14.53" x 9.92" x 0.78"; 369mm x 252mm x 19.95mm</i> Starting at 4.7 lb / 2.1kg Black or silver Display cover: Aluminum; Bottom: PC/ABS plastic None MicroSD card reader 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 HD720p camera, fixed focus HD Audio, Synaptic® CX11852 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack	
Chipset	Intel SoC (System on Chip) platform									
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * System clocks down for processors with lower memory controller									
Display	<i>Some:</i> 15.6" (396mm) HD (1366x768), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 400:1 contrast ratio <i>Some:</i> 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 600:1 contrast ratio									
Multi-touch	None							Keyboard UltraNav™ Security Security chip (opt) vPro Fingerprint reader NFC Battery Max battery life AC adapter	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad Power-on password, hard disk password, supervisor password, security keyhole Firmware TPM 2.0 integrated in chipset or discrete TPM 2.0 TCG Certified None Optional: Touch style fingerprint reader on the palm rest None Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter MobileMark® 2014: 12.23 hr * Battery life varies significantly with settings, usage, & other factors 45W or 65W USB Type-C AC adapter	
Storage	Up to 2 drives (one M.2 SSD and one HDD) Some: HDD / SATA 6.0Gb/s, 2.5" wide, removable, upgradable, Active Protection System™ Some: M.2 SSD / PCIe NVMe									
Optane™ memory	Optional: Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2									
Optical	None									
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS							Operating system Limited warranty Mil-Spec test Environment	Optional: Windows® 10 Home 64 or Windows 10 Pro 64 One of the following, configurable by model: <ul style="list-style-type: none"> • 1-year mail-in repair service • 1-year depot repair service MIL-STD-810G military testing EPEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant	

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

Lenovo
August 2019



ThinkPad E590 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i3 / i5 / i7 Processor								Dimensions	<i>WxDxH:</i> 14.53" x 9.94" x 0.78"; 369mm x 252.5mm x 19.9mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 4.68 lb / 2.12 kg
	i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	Case color	Black or silver
	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB			Case material	<i>Display cover:</i> Aluminum; <i>Bottom:</i> PC/ABS plastic
i7-8565U	1.8 GHz			4.6 GHz	8MB	Smart card reader			None	
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)								Media reader	MicroSD card reader
Chipset	Intel SoC (System on Chip) platform								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), 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>
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation</i>								Monitor cable	None
Display	Size / Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch	Bundled Accy	None
	15.6" HD (1366x768)	Anti-glare	TN	220 nits	16:9	400:1	90°	Non-touch	Camera	HD720p camera, fixed focus
	15.6" FHD (1920x1080)	Anti-glare	IPS	250 nits	16:9	600:1	170°	Non-touch	Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack
Multi-touch	None								Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight
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™ • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 <i>* Installed M.2 2280 SSD is PCIe 3x4 but run at PCIe 3x2 due to M.2 SSD adapter limitation</i>								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Optane™ memory	Optional: Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2								Security	Power-on password, hard disk password, supervisor password, security keyhole
Optical	None								Security chip	<i>Integrated model:</i> discrete TPM 2.0, TCG Certified <i>Discrete model:</i> firmware TPM 2.0 integrated in chipset
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS								System Mgt	None
WLAN + Bluetooth™	One of the following, configurable by model: • Realtek® RTL8822BE, 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								Fingerprint reader	<i>Optional:</i> Touch style fingerprint reader on the palm rest
WWAN	None								NFC	None
SIM card	None								Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
									Max battery life	<i>MobileMark® 2014:</i> 11 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
									AC adapter	45W or 65W USB Type-C AC adapter
									Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64
									Limited warranty	One of the following, configurable by model: • 1-year mail-in repair service • 1-year depot repair 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.

Lenovo
August 2019



ThinkPad E595 Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryzen™ Mobile Processors with Radeon™ Vega Graphics								Dimensions	WxDxH: 14.53" x 9.92" x 0.78"; 369mm x 252mm x 19.9mm		
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Controller	Processor Graphics	Weight	Starting at 4.7 lb / 2.1 kg		
	Ryzen 3 3200U	2	4	2.6 GHz	3.5 GHz	1MB L2 / 4MB L3	DDR4-2400	Radeon Vega 3 Graphics	Case color	Black		
	Ryzen 5 3500U	4	8	2.1 GHz	3.7 GHz	2MB L2 / 4MB L3		Radeon Vega 8 Graphics	Case material	Display cover: Aluminum; Bottom: PC/ABS plastic		
Ryzen 7 3700U	2.3 GHz			4.0 GHz	2MB L2 / 4MB L3	Radeon RX Vega 10 Graphics		Smart card reader	None			
Graphics	AMD Radeon Vega 3, Vega 8, or RX Vega 10 Graphics in processor; supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 3840x2160@60Hz (USB Type-C); 3840x2160@30Hz (HDMI)								Media reader	MicroSD card reader		
Chipset	AMD SoC (System on Chip) platform								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, microSD card reader, security keyhole <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>		
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* Installed memory is actually 2666MHz but run at 2400MHz due to AMD limitation</i>								Monitor cable	None		
Display	Size / Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Multi-touch	Bundled Accy	None		
	15.6" HD (1366x768)	Anti-glare	TN	220 nits	16:9	400:1	90°	Non-touch	Camera	HD720p camera, fixed focus		
	15.6" FHD (1920x1080)	Anti-glare	IPS	250 nits	16:9	600:1	170°	Non-touch	Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack		
Multi-touch	None								Keyboard	6-row, spill-resistant, multimedia Fn keys		
Storage	Up to two drives (one M.2 SSD and one HDD)								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad		
	<ul style="list-style-type: none"> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ 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 								Security chip	Power-on password, hard disk password, supervisor password, security keyhole		
Optical	None								Security chip	Discrete TPM 2.0, TCG Certified		
Ethernet	Gigabit Ethernet Connection, Realtek R8111GUS								Fingerprint reader	None		
WLAN + Bluetooth™	One of the following, configurable by model: <ul style="list-style-type: none"> Realtek® RTL8822BE, 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 								NFC	None		
WWAN SIM card	None								Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter		
									Max battery life	MobileMark® 2014: 10.3 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>		
									AC adapter	45W or 65W USB Type-C AC adapter		
									Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64		
									Limited warranty	One of the following, configurable by model: <ul style="list-style-type: none"> 1-year mail-in repair service 1-year depot repair 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.

Lenovo
November 2019



ThinkPad L13 Platform Specifications

Product Specifications Reference (PSREF)

Processor	10th Generation Intel® Core™ i3 / i5 / i7 Processor								Smart card reader	<i>Optional</i> : Smart card reader	
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader	MicroSD card reader	
	i3-10110U	2	4	2.1 GHz	4.1 GHz	4MB	DDR4-2666	Intel UHD Graphics	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), HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole	
	i5-10210U	4	8	1.6 GHz	4.2 GHz	6MB					* Depending on many factors, actual data transfer speed may be lower than theoretical speed
	i7-10510U			1.8 GHz	4.9 GHz	8MB					
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)								Monitor cable (optional)	<ul style="list-style-type: none"> • Lenovo USB-C to VGA Adapter • Lenovo USB-C to HDMI Adapter • Lenovo USB-C to DisplayPort Adapter • Lenovo HDMI to VGA Monitor Adapter • Lenovo USB-C to USB-A Adapter • Lenovo USB-C to USB-C Cable 2m • Lenovo USB-C to Ethernet Adapter • ThinkPad Ethernet Extension Adapter Gen 2 	
Chipset	Intel SoC (System on Chip) platform								Bundled Accessories (optional)		
Memory	4GB, 8GB, or 16GB / 2666MHz DDR4 / soldered to systemboard, no sockets										
Display	Size	Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	Camera	<i>One of the following, configurable by model:</i>	
	13.3"	HD (1366x768)	Anti-glare	TN	250 nits	16:9	500:1	90°		• HD720p camera with ThinkShutter camera privacy, fixed focus	
	13.3"	FHD (1920x1080)	Anti-glare	IPS	250 nits (non-touch) 300 nits (multi-touch)	16:9	800:1 (non-touch) 700:1 (multi-touch)	170°	Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack	
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)								Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight	
Storage	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch	
Optical	None								Security	Power-on password, hard disk password, supervisor password, security keyhole	
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								Security chip	Discrete TPM 2.0, TCG Certified	
WLAN + Bluetooth™	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • 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 								System Mgt (opt)	Intel vPro Technology	
WWAN	None								Fingerprint reader	<i>Optional</i> : Touch style fingerprint reader on the palm rest	
SIM card	None								NFC	None	
Dimensions	WxDxH: 12.26" x 8.62" x 0.69"; 311.5mm x 219mm x 17.6mm								Battery	Integrated Li-ion 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter	
Weight	Starting at 3.06 lb / 1.38 kg								Max battery life	<i>MobileMark® 2014</i> : 14.1 hr	
Case color	Black or Silver								AC adapter	45W, 65W, or 65W slim USB-C AC adapter	
Case material	<i>Display cover</i> : Aluminum <i>Bottom</i> : GFRP								Operating system (optional)	<ul style="list-style-type: none"> • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro in S mode 	
									Limited warranty (optional)	<ul style="list-style-type: none"> • 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	EPPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant	

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

Lenovo
December 2019



ThinkPad L13 Yoga Platform Specifications

Product Specifications Reference (PSREF)

Processor	10th Generation Intel® Core™ i3 / i5 / i7 Processor									Smart card reader Media reader Ports	<i>Optional:</i> Smart card reader 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 <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>	
	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	DDR4-2666	Intel UHD Graphics				
i5-10210U	4	8	1.6 GHz	4.2 GHz	6MB							
i7-10510U			1.8 GHz	4.9 GHz	8MB							
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)									Monitor cable <i>(optional)</i>	<ul style="list-style-type: none"> • Lenovo USB-C to VGA Adapter • Lenovo USB-C to HDMI Adapter • Lenovo USB-C to DisplayPort Adapter • Lenovo HDMI to VGA Monitor Adapter • Lenovo USB-C to USB-A Adapter • Lenovo USB-C to USB-C Cable 2m • Lenovo USB-C to Ethernet Adapter • ThinkPad Ethernet Extension Adapter Gen 2 	
Chipset	Intel SoC (System on Chip) platform									Bundled Accessories <i>(optional)</i>	Camera	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus • World facing camera, 5MP resolution, auto focus (fingerprint model only)
Memory	4GB, 8GB, or 16GB / 2666MHz DDR4 / soldered to systemboard, no sockets											
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch	
	13.3"	FHD (1920x1080)	IPS	Anti-reflection	300 nits	16:9	800:1	72%	170°			
Multi-touch	Capacitive-type multi-touch, supports 10-finger gesture, anti-reflection (AR), could reduce the brightness by up to 10%									Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified	
Hinge	Yoga hinge, 360 degree											System Mgt <i>(opt)</i>
Convert-mode	Laptop, tent, stand and tablet									Fingerprint reader	<i>Optional:</i> Touch style fingerprint reader on the palm rest	
Pen	ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable											NFC
Storage	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 									Battery	Integrated Li-ion 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter <i>MobileMark® 2014: 12.23 hr</i> <i>* Battery life varies significantly with settings, usage, & other factors</i>	
Optical	None									Max battery life	45W, 65W, or 65W slim USB-C AC adapter	
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									Light sensor	None	
WLAN + Bluetooth™	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • 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 									G-sensor	Yes	
WWAN	None									Gyroscope	None	
SIM card	None									Operating system <i>(optional)</i>	<ul style="list-style-type: none"> • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro in S mode 	
Dimensions	WxDxH: 12.26" x 8.62" x 0.69"; 311.5mm x 219mm x 17.6mm									Limited warranty <i>(optional)</i>	<ul style="list-style-type: none"> • 1-year depot repair service • 1-year depot with 2-year system board repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service 	
Weight	Starting at 3.17lb / 1.43kg									Mil-Spec test	MIL-STD-810G military testing	
Case color	Black or Silver									Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant	
Case material	<i>Display cover:</i> Magnesium / Aluminum <i>Bottom:</i> GFRP											

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

Lenovo
December 2019



ThinkPad L380 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron® Processor, 7th Generation Intel Core™ i3 / i5 Processor or								Dimensions	<i>WxDxH:</i> 12.67" x 8.83" x 0.74"; 321.8mm x 224.2mm x 18.8mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 3.22 lb / 1.46 kg
	Cel 3965U	2	2	2.2 GHz	-	2MB	DDR4-2133	Intel HD Graphics 610	Case color	Black or Silver
	i3-7020U			2.3 GHz	-	3MB		Intel HD Graphics 620		
	i3-7130U			2.7 GHz	-	3MB				
	i5-7200U			2.5 GHz	3.1 GHz	3MB				
	8th Generation Intel Core i5 / i7 Processor								Smart card reader	None
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader	MicroSD card reader
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB	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), HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, microSD card reader, security keyhole
	i5-8250U			1.6 GHz	3.4 GHz	6MB				
i5-8350U	1.7 GHz			3.6 GHz	6MB					
i7-8550U	1.8 GHz			4.0 GHz	8MB					
Graphics	Intel HD Graphics 610, 620 or 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)								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
Chipset	Intel SoC (System on Chip) platform								Bundled Accy	Optional: ThinkPad Ethernet Extension Cable
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* System clocks down for processors with lower memory controller</i>								Camera	HD720p camera, fixed focus
Display	<i>Some:</i> 13.3" (338mm) HD (1366x768), anti-glare, LED backlight, 250 nits, 16:9 aspect ratio, 500:1 contrast ratio <i>Some:</i> 13.3" (338mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 170° viewing angle								Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ / dual array microphone, headphone / microphone combo jack
Multi-touch (opt)	on-cell touch, supports 10-finger gesture								Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight
Storage	<i>One of the following, configurable by model:</i> • 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)								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch
Optical	None								Security	Power-on password, hard disk password, supervisor password, security keyhole
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Cable								Security chip	Discrete TPM 2.0, TCG Certified
WLAN + Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card <i>* Intel 8265ac card supports BT4.2 but is limited to BT4.1 by Windows OS</i>								vPro (optional)	Intel vPro Technology
WWAN	None								Fingerprint reader	Optional: Touch style fingerprint reader on the keyboard bezel, anti-spoofing technology
SIM card	None								NFC (optional)	Near Field Communication
									Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
									Max battery life	MobileMark® 2014: 16.1 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
									AC adapter	45W or 65W USB Type-C AC adapter
									Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64
									Limited warranty	<i>One of the following, configurable by model:</i> • 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™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant

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

Lenovo
August 2019



ThinkPad L380 Yoga Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i3 / i5 Processor								Dimensions	<i>WxDxH:</i> 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	Starting at 3.44 lb / 1.56 kg
	i3-7020U	2	4	2.3 GHz	-	3MB	DDR4-2133	Intel HD Graphics 620	Case color	Black or Silver
	i3-7130U			2.7 GHz	-	3MB			Case material	<i>Display cover:</i> Aluminum
	i5-7200U			2.5 GHz	3.1 GHz	3MB			<i>Bottom:</i> GFRP	
	8th Generation Intel Core i3 / i5 / i7 Processor								Smart card reader	None
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader	MicroSD card reader
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB	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), HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, microSD card reader, security keyhole
	i5-8250U			1.6 GHz	3.4 GHz	6MB			* <i>Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>	
	i5-8350U	1.7 GHz	3.6 GHz	6MB	Monitor cable (optional)	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter				
	i7-8550U	1.8 GHz	4.0 GHz	8MB	<i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter	<i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter				
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: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)								Camera	<i>720p:</i> HD720p resolution, low light sensitive, fixed focus <i>IR & 720p:</i> IR camera and HD720p camera, fixed focus <i>World facing:</i> Rear camera, 5MP resolution, auto focus
Chipset	Intel SoC (System on Chip) platform								Audio support	HD Audio, Realtek ALC3287 codec, Dolby® Advance / stereo speakers, 2W x 2 / dual array microphone, headphone / microphone combo jack
Memory	Up to 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * System clocks down for processors with lower memory controller								Keyboard	6-row, multimedia Fn keys, optional LED backlight
Display	13.3" (338mm) FHD (1920x1080), LED backlight, IPS, 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle, AR (anti-reflection) Capacitive-type multi-touch, AR (anti-reflection), supports 10-finger gesture								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch
Multi-touch (opt)	Yoga hinge, 360 degree								Security	Power-on password, hard disk password, supervisor password, security keyhole
Hinge	Laptop, tent, stand, yoga and tablet								Security chip	Discrete TPM 2.0, TCG Certified
Convert-mode	ThinkPad Pen Pro, active pen for multi-touch display, on-board garage								System Mgt (opt)	Intel vPro Technology
Pen									Fingerprint reader	<i>Optional:</i> Touch style fingerprint reader on the keyboard bezel, anti-spoofing technology
Storage	<i>One of the following, configurable by model:</i> • 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)								NFC (optional)	Near Field Communication
Optical	None								Battery	Integrated Li-Ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Cable								Max battery life	<i>MobileMark® 2014:</i> 12.85 hrs * <i>Battery life varies significantly with settings, usage, & other factors</i>
WLAN + Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card * <i>Wireless card supports BT4.2 but is limited to BT4.1 by Windows OS</i>								AC adapter	45W or 65W USB Type-C AC adapter
WWAN	None								Preload	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64
SIM card	None								Limited warranty	<i>One of the following, configurable by model:</i> • 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
									Mil-Spec test	MIL-STD-810G military testing
									Environment	EPEAT™ Gold; ENERGY STAR® 6.1; RoHS-compliant



ThinkPad L390 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron® Processor or 8th Generation Intel Core™ i3 / i5 / i7 Processor								Smart card reader	None
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader	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 <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i> USB-C to VGA Adapter: Lenovo USB-C to VGA Adapter USB-C to VGA (plus Power) Adapter: Lenovo USB-C to VGA plus Power Adapter USB-C to HDMI Adapter: Lenovo USB-C to HDMI Adapter USB-C to HDMI (plus Power) Adapter: Lenovo USB-C to HDMI plus Power Adapter USB-C to DisplayPort Adapter: Lenovo USB-C to DisplayPort Adapter USB-C to Ethernet Adapter: Lenovo USB-C to Ethernet Adapter USB-C to USB-A Adapter: Lenovo USB-C to USB-A Adapter USB-C to USB-C Cable 2m: Lenovo USB-C to USB-C Cable 2m
	Cel 4305U	2	2	2.2 GHz	-	2MB	DDR4-2133	Intel UHD Graphics 610	Ports	
	i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	Monitor cable (optional)	
	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				
Graphics	Intel UHD Graphics 610 or 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)								Camera	HD720p camera, fixed focus
Chipset	Intel SoC (System on Chip) platform								Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation</i>								Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight
Display	Size	Resolution	Surface	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle	UltraNav™	TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch
	13.3"	HD (1366x768)	Anti-glare	TN	250 nits	16:9	500:1	90°	Security chip	Power-on password, hard disk password, supervisor password, security keyhole
	13.3"	FHD (1920x1080)	Anti-glare	IPS	250 nits	16:9	700:1 (non-touch) 800:1 (multi-touch)	170°	Discrete TPM 2.0, TCG Certified	
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)								System Mgt (opt)	Intel vPro Technology
Storage	One of the following, configurable by model: • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4								Fingerprint reader	Optional: Touch style fingerprint reader on the palm rest
Optical	None								NFC (optional)	Near Field Communication
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Cable or Lenovo USB-C to Ethernet Adapter								Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
WLAN	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card								Max battery life	MobileMark® 2014: 14.61 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter								AC adapter	45W or 65W USB Type-C AC adapter
WWAN	None								Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64
SIM card	None								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
Dimensions	WxDxH: 12.67" x 8.83" x 0.74"; 321.8mm x 224.2mm x 18.8mm								Mil-Spec test	MIL-STD-810G military testing
Weight	Starting at 3.22 lb / 1.46 kg								Environment	EPPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant
Case color	Black or Silver									
Case material	Display cover: Aluminum Bottom: GFRP									

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

Lenovo
November 2019



ThinkPad L390 Yoga Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i3 / i5 / i7 Processor										Smart card reader	None
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics			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 <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
	i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB	DDR4-2400	Intel UHD Graphics 620			Monitor cable (optional) • Lenovo USB-C to VGA Adapter • Lenovo USB-C to VGA plus Power Adapter • Lenovo USB-C to HDMI Adapter • Lenovo USB-C to HDMI plus Power Adapter • Lenovo USB-C to DisplayPort Adapter • Lenovo USB-C to Ethernet Adapter • Lenovo USB-C to USB-A Adapter • Lenovo USB-C to USB-C Cable 2m	
	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						
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)										Bundled Accessories (optional)	
Chipset Memory	Intel SoC (System on Chip) platform 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation</i>										Camera	One of the following, configurable by model: • HD720p camera, fixed focus • IR camera and HD720p camera, fixed focus (black model only) • World facing camera, 5MP resolution, auto focus (mutually exclusive with fingerprint reader)
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle		Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack
	13.3"	FHD (1920x1080)	IPS	Anti-reflection	300 nits	16:9	800:1	72%	170°		Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch
Multi-touch	Capacitive-type multi-touch, supports 10-finger gesture, anti-reflection (AR), could reduce the brightness by up to 10%										Security	Power-on password, hard disk password, supervisor password, security keyhole
Hinge	Yoga hinge, 360 degree										Security chip	Discrete TPM 2.0, TCG Certified
Multi-mode	Laptop, tent, stand and tablet										System Mgt (opt)	Intel vPro Technology
Pen (optional)	ThinkPad Pen Pro, active pen for multi-touch display, on-board garage										Fingerprint reader	Optional: Touch style fingerprint reader on the palm rest (mutually exclusive with World facing camera)
Storage	One of the following, configurable by model: • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4										NFC (optional)	Near Field Communication
Optical	None										Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Cable or Lenovo USB-C to Ethernet Adapter										Max battery life	MobileMark® 2014: 12.17 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
WLAN Bluetooth™	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter										AC adapter	45W or 65W USB-C AC adapter
WWAN	None										Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64
SIM card	None										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 depot repair service • 3-year/1-yr battery limited onsite service
Dimensions	WxDxH: 12.67" x 8.83" x 0.74"; 321.8mm x 224.2mm x 18.8mm										Mil-Spec test	MIL-STD-810G military testing
Weight	Starting at 3.44 lbs / 1.56 kg										Environment	EPPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant
Case color	Black or Silver											
Case material	Display cover: Magnesium / Aluminum Bottom: GFRP											

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

Lenovo
December 2019



ThinkPad L480 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron® Processor, 7th Generation Intel Core™ i3 / i5 Processor or							WWAN (optional)	One of the following, configurable by model: <ul style="list-style-type: none"> Wireless WAN upgradable Integrated Mobile Broadband 4G LTE, Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only) Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card <i>* For non-VWAN model, it means the model is NOT WWAN upgradable</i>
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	SIM card (opt) * For non-VWAN model, it means the model is NOT WWAN upgradable Nano-SIM card slot, optional Verizon LTE (US) SIM card
	Cel 3965U	2	4	2.2 GHz	-	2MB	DDR4-2133	Intel HD Graphics 610	
	i3-7020U			2.3 GHz	-	3MB		Intel HD Graphics 620	
	i3-7130U			2.7 GHz	-	3MB			
	i5-7200U			2.5 GHz	3.1 GHz	3MB			
	i5-7300U	2.6 GHz	3.5 GHz	3MB					
	8th Generation Intel Core i3 / i5 / i7 Processor								
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB			
	i5-8350U			1.7 GHz	3.6 GHz	6MB			
	i7-8550U			1.8 GHz	4.0 GHz	8MB			
	<i>* i3-7130U is NOT available in US and EMEA</i>								
Graphics	Intel HD Graphics 610 / 620 or Intel UHD Graphics 620 in processor only or Intel HD Graphics 620 or Intel UHD Graphics 620 in processor and AMD Radeon 530, 2GB GDDR5 memory (discrete models are NOT available in EMEA); supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)							Monitor cable (optional)	One of the following, configurable by model: • HD720p camera, fixed focus • IR camera and HD720p camera, fixed focus HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ / dual array microphone, headphone / microphone combo jack
Chipset	Intel SoC (System on Chip) platform							Camera (optional)	One of the following, configurable by model: • HD720p camera, fixed focus • IR camera and HD720p camera, fixed focus HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ / dual array microphone, headphone / microphone combo jack
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* System clocks down for processors with lower memory controller</i>							Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ / dual array microphone, headphone / microphone combo jack
Display	Some: 14.0" (355mm) HD (1366x768), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio Some: 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle							Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)							UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Storage	System has one HDD slot or one M.2 2280 slot exclusively for storage 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) Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s Some: 128GB M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s, in WWAN slot as 2nd Storage, mutually exclusive with WWAN							Security	Power-on password, hard disk password, supervisor password, security keyhole
Optical	None							Security chip	Discrete TPM 2.0, TCG Certified
Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)							vPro (optional)	Intel vPro Technology
WLAN + Bluetooth™ (optional)	One of the following, configurable by model: • Realtek® RTL8822BE, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card (US only) • Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card <i>* Intel 8265ac card supports BT4.2 but is limited to BT4.1 by Windows OS</i>							Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the keyboard bezel, anti-spoofing technology
								NFC (optional)	Near Field Communication
								Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
								Max battery life	MobileMark® 2014: 12.2 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
								AC adapter	45W or 65W USB Type-C AC adapter
								Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64
								Limited warranty (optional)	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	PEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant

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

Lenovo
November 2019



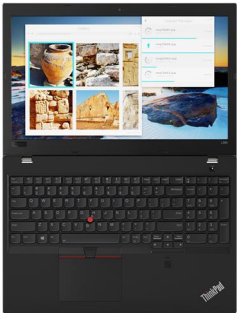
ThinkPad L490 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron® Processor or 8th Generation Intel Core™ i3 / i5 / i7 Processor									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	Processor Graphics		Weight	Starting at 3.72 lb / 1.69 kg
	Cel 4305U	2	2	2.2 GHz	-	2MB	DDR4-2133	Intel UHD Graphics 610		Case color	Black
	i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB	DDR4-2400	Intel UHD Graphics 620		Case material	PC/ABS plastic
	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB				Smart card reader	<i>Optional:</i> Smart card reader
	i5-8365U	4	8	1.6 GHz	4.1 GHz	6MB				Media reader	MicroSD card reader
i7-8565U	4	8	1.8 GHz	4.6 GHz	8MB	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), 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), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole	
i7-8665U	4	8	1.9 GHz	4.8 GHz	8MB			* Depending on many factors, actual data transfer speed may be lower than theoretical speed			
Graphics	Intel UHD Graphics 610 or 620 in processor only or Intel UHD Graphics 620 in processor and AMD Radeon 535, 2GB GDDR5 memory (discrete models are NOT available in EMEA); supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@24Hz (HDMI)									Monitor cable (<i>optional</i>)	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
Chipset	Intel SoC (System on Chip) platform									Camera (<i>optional</i>)	<i>One of the following, configurable by model:</i>
Memory	64GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * Installed memory is actually 2666MHz but run at 2133MHz or 2400MHz due to Intel limitation									Audio support	• HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight UltraNav™ TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
	14.0"	HD (1366x768)	TN	Anti-glare	220 nits	16:9	500:1	45%	90°		
	14.0"	FHD (1920x1080)	IPS	Anti-glare	250 nits	16:9	800:1	45%	170°	Security	Power-on password, hard disk password, supervisor password, security keyhole
Multi-touch (<i>opt</i>)	On-cell touch, supports 10-finger gesture (FHD only)									Security chip	Discrete TPM 2.0, TCG Certified
Storage	<ul style="list-style-type: none"> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 * Installed M.2 2280 SSD is PCIe 3x4 but run at PCIe 3x2 due to M.2 SSD adapter limitation									System Mgt (<i>opt</i>)	Intel vPro Technology
Optane™ memory	<i>Optional:</i> Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2									Fingerprint reader	<i>Optional:</i> Touch style fingerprint reader on the palm rest
Optical	None									NFC (<i>optional</i>)	Near Field Communication
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)									Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
WLAN + Bluetooth™ (<i>optional</i>)	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> Realtek® RTL8822BE, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card (NOT available in EMEA) Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0 									Max battery life	<i>MobileMark® 2014:</i> 12 hr * Battery life varies significantly with settings, usage, & other factors
WWAN (<i>optional</i>)	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 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-A, Fibocom L850-GL, M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable									AC adapter	45W, 65W, or 65W slim USB-C AC adapter
SIM card	None									Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64
										Limited warranty	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 1-year depot repair service 3-year/1-yr battery depot repair 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.

Lenovo
October 2019



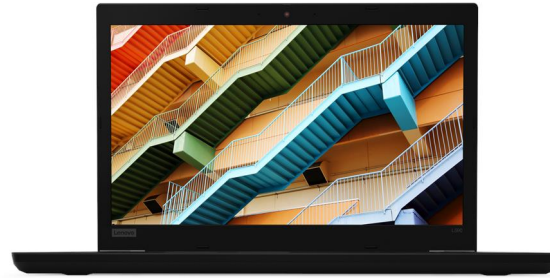
ThinkPad L580 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron® Processor, 7th Generation Intel Core™ i3 / i5 Processor or								WWAN (optional) <i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> Integrated Mobile Broadband 4G LTE, Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only) Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card <i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i>
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	
	Cel 3965U	2	4	2.2 GHz	-	2MB	DDR4-2133	Intel HD Graphics 610	
	i3-7020U			2.3 GHz	-	3MB		Intel HD Graphics 620	
	i3-7130U			2.7 GHz	-	3MB			
	i5-7200U			2.5 GHz	3.1 GHz	3MB			
	i5-7300U			2.6 GHz	3.5 GHz	3MB			
	8th Generation Intel Core i3 / i5 / i7 Processor								SIM card (opt) Dimensions Weight Case color Case material ExpressCard Smart card reader Media reader Ports Monitor cable (optional) Camera (optional) Audio support Keyboard UltraNav™ Security Security chip vPro (optional) Fingerprint reader NFC (optional) Battery Max battery life AC adapter Operating system Limited warranty Mil-Spec test Environment
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB			
	i5-8350U			1.7 GHz	3.6 GHz	6MB			
	i7-8550U			1.8 GHz	4.0 GHz	8MB			
	* i3-7130U is NOT available in US and EMEA								
Graphics	Intel HD Graphics 610, 620 or Intel UHD Graphics 620 in processor only or Intel HD Graphics 620 or Intel UHD Graphics 620 in processor and AMD Radeon 530, 2GB GDDR5 memory (discrete models are NOT available in EMEA); supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)								
Chipset	Intel SoC (System on Chip) platform								
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* System clocks down for processors with lower memory controller</i>								
Display	Some: 15.6" (396mm) HD (1366x768), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio Some: 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle								
Multi-touch	None								
Storage	System has one HDD slot or one M.2 2280 slot exclusively for storage 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) Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s Some: 128GB M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s, in WWAN slot as 2nd Storage, mutually exclusive with WWAN								
Optical	None								
Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)								
WLAN + Bluetooth™ (optional)	One of the following, configurable by model: • Realtek® RTL8822BE, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card (US only) • 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								

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

Lenovo
August 2019



ThinkPad L590 Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron® Processor or 8th Generation Intel Core™ i3 / i5 / i7 Processor									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	Processor Graphics		Weight	Starting at 4.48 lb / 2.0 kg		
	Cel 4305U	2	2	2.2 GHz	-	2MB	DDR4-2133	Intel UHD Graphics 610		Case color	Black		
	i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB	DDR4-2400	Intel UHD Graphics 620		Case material	PC/ABS plastic		
	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB				Smart card reader	<i>Optional:</i> Smart card reader		
	i5-8365U	4	8	1.6 GHz	4.1 GHz	6MB				Media reader	MicroSD card reader		
i7-8565U	4	8	1.8 GHz	4.6 GHz	8MB	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), 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), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole			
i7-8665U	4	8	1.9 GHz	4.8 GHz	8MB				* Depending on many factors, actual data transfer speed may be lower than theoretical speed				
Graphics	Intel UHD Graphics 610 or 620 in processor only or Intel UHD Graphics 620 in processor and AMD Radeon 535, 2GB GDDR5 memory (discrete models are NOT available in EMEA); supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@24Hz (HDMI)									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		
Chipset	Intel SoC (System on Chip) platform									Camera (optional)	One of the following, configurable by model:		
Memory	64GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * Installed memory is actually 2666MHz but run at 2133MHz or 2400MHz due to Intel limitation									Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack		
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	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"	HD (1366x768)	TN	Anti-glare	220 nits	16:9	500:1	45%	90°				
Multi-touch	None									Security Security chip Discrete TPM 2.0, TCG Certified System Mgt (opt) Intel vPro Technology Fingerprint reader <i>Optional:</i> Touch style fingerprint reader on the palm rest NFC (optional) Near Field Communication			
	15.6"	FHD (1920x1080)	IPS	Anti-glare	250 nits	16:9	800:1	45%	170°				
Storage	<ul style="list-style-type: none"> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 * Installed M.2 2280 SSD is PCIe 3x4 but run at PCIe 3x2 due to M.2 SSD adapter limitation									Battery	Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter		
Optane™ memory	<i>Optional:</i> Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2									Max battery life	MobileMark® 2014: 12 hr * Battery life varies significantly with settings, usage, & other factors		
Optical	None									AC adapter	45W, 65W, or 65W slim USB-C AC adapter		
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)									Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64		
WLAN + Bluetooth™ (optional)	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> Realtek® RTL8822BE, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card (NOT available in EMEA) Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0 									Limited warranty	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 1-year depot repair service 3-year/1-yr battery depot repair service 3-year/1-yr battery limited onsite service 		
WWAN (optional)	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 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-A, Fibocom L850-GL, M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable									Mil-Spec test	MIL-STD-810G military testing		
SIM card	None									Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant		

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

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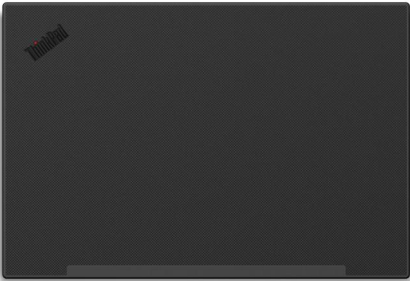
ThinkPad P1 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor or Intel Xeon® E Processor								Smart card reader	<i>Optional</i> : Smart card reader
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	ExpressCard	None
	i5-8400H	4	8	2.5 GHz	4.2 GHz	8MB	DDR4-2666	Intel UHD Graphics 630	Media reader	SD Card reader (SD, SDHC, SDXC), supports UHS-II SD card
	i7-8750H	6	12	2.2 GHz	4.1 GHz	9MB			Ports	Two USB 3.1 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
	i7-8850H			2.6 GHz	4.3 GHz	9MB		Intel UHD Graphics P630		
	E-2176M			2.7 GHz	4.4 GHz	12MB		Intel UHD Graphics P630		* Power Delivery only supports power-out for charging peripherals * Depending on many factors, actual data transfer speed may be lower than theoretical speed
Graphics	Intel UHD Graphics 630 or P630 in processor and NVIDIA® Quadro® P1000 or P2000, 4GB GDDR5 memory; supports external digital monitor via HDMI or Thunderbolt™; supports four independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (HDMI)								Monitor cable (<i>optional</i>)	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter
Chipset	Mobile Intel CM246 Chipset								Bundled Accy	<i>Optional</i> : ThinkPad Ethernet Extension Cable
Memory	64GB max / 2666MHz DDR4, ECC or non-ECC (ECC function supported only on Xeon processor), dual-channel capable, two DDR4 SO-DIMM sockets								Camera (<i>optional</i>)	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus
Display	<i>Some</i> : 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 <i>Some</i> : 15.6" (396mm) UHD (3840x2160), anti-reflection, LED backlight, IPS, 400 nits, 16:9 aspect ratio, 1200:1 contrast ratio, 100% gamut, 170° viewing angle, multi-touch								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
Multi-touch (<i>opt</i>)	Capacitive-type multi-touch, supports 10-finger gesture (4K only)								Keyboard	6-row, spill-resistant, multimedia Fn keys, LED backlight
Pen (<i>optional</i>)	Lenovo Pen Pro								UltraNav™	TrackPoint® pointing device and buttonless glass surface multi-touch touchpad
Storage	<i>Up to two M.2 SSD, supports single sided M.2 2280 drives only</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s								Security	Power-on password, hard disk password, supervisor password, security keyhole
RAID (<i>optional</i>)	RAID 0/1 support								Security chip	Discrete TPM 2.0, TCG Certified
Optical	None								vPro (<i>optional</i>)	Intel vPro Technology
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								Fingerprint reader	Touch style match on chip fingerprint reader on the keyboard bezel
WLAN	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card								Color calibration	None
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter								NFC	None
WWAN	None								Battery	Integrated Li-ion 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
SIM card	None								Max battery life (<i>MobileMark 2014</i>)	<i>Discrete mode</i> : 7.36 hr; <i>Hybrid mode</i> : 13.87 hr * Battery life varies significantly with settings, usage, & other factors
Dimensions	<i>WxDxH (non-touch)</i> : 14.24" x 9.67" x 0.72"; 361.8mm x 245.7mm x 18.4mm <i>WxDxH (multi-touch)</i> : 14.24" x 9.67" x 0.74"; 361.8mm x 245.7mm x 18.7mm								AC adapter	135W slim tip AC adapter
Weight	<i>Non-touch model</i> : starting at 3.76 lb / 1.7 kg; <i>Multi-touch model</i> : starting at 4.06 lb / 1.8 kg								Operating system	<i>One of the following, configurable by model:</i> • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro 64 for Workstations
Case color	Black								Limited warranty	<i>One of the following, configurable by model:</i> • 1-year depot repair service • 1-year depot with 2-year system board repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
Case material	<i>Display cover</i> : CFRP/GFRP hybrid; <i>Bottom</i> : Aluminum alloy								Mil-Spec test	MIL-STD-810G military testing
									Environment	EPPEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant

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

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November 2019



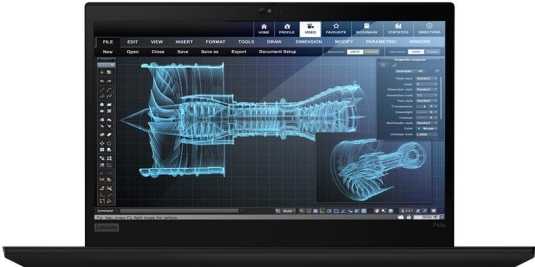
ThinkPad P1 (2nd Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	9th Generation Intel® Core™ i5 / i7 / i9 Processor or Intel Xeon® E Processor									Dimensions	<i>WxDxH (non-touch):</i> 14.24" x 9.67" x 0.72"; 361.8mm x 245.7mm x 18.4mm <i>WxDxH (multi-touch):</i> 14.24" x 9.67" x 0.74"; 361.8mm x 245.7mm x 18.7mm		
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		Weight	<i>Non-touch model:</i> starting at 3.75 lb / 1.7 kg; <i>Multi-touch model:</i> starting at 4.0 lb / 1.81 kg		
	i5-9400H	4	8	2.5 GHz	4.3 GHz	8MB	DDR4-2666	Intel UHD Graphics 630		Case color	Black paint (FHD model) or black weave (UHD model)		
	i7-9750H	6	12	2.6 GHz	4.5 GHz	12MB				Case material	<i>Display cover:</i> CFRP/GFRP hybrid; <i>Bottom:</i> Aluminum alloy		
	i7-9850H	6	12	2.6 GHz	4.6 GHz	12MB					Smart card reader <i>Optional:</i> Smart card reader		
	i9-9880H	8	16	2.3 GHz	4.8 GHz	16MB					Media reader	SD Card reader (SD, SDHC, SDXC), supports UHS-II SD card	
	E-2276M	6	12	2.8 GHz	4.7 GHz	12MB			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 <i>* Power Delivery only supports power-out for charging peripherals</i> <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>			
Graphics	Intel UHD Graphics 630 in processor only or Intel UHD Graphics 630 or P630 in processor and NVIDIA® Quadro® T1000 or T2000, 4GB GDDR5 memory; supports external digital monitor via HDMI or Thunderbolt™; supports four independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (HDMI)									Monitor cable (optional)	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter		
Chipset	Mobile Intel CM246 Chipset									Bundled Accy	<i>Optional:</i> ThinkPad Ethernet Extension Cable		
Memory	64GB max / 2666MHz DDR4, ECC or non-ECC (ECC function supported only on Xeon processor), dual-channel capable, two DDR4 SO-DIMM sockets									Camera (optional)	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus		
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual array far-field microphone, headphone / microphone combo jack, Dolby Atmos® sound system		
	15.6"	FHD (1920x1080)	IPS	Anti-glare	300 nits	16:9	700:1	72% NTSC	170°	Keyboard	6-row, spill-resistant, multimedia Fn keys, LED backlight UltraNav™ TrackPoint® pointing device and buttonless glass surface multi-touch touchpad		
	15.6"	FHD (1920x1080) Dolby Vision™ HDR	IPS	Anti-glare	500 nits	16:9	1200:1	72% NTSC	170°	Security	Power-on password, hard disk password, supervisor password, security keyhole		
	15.6"	UHD (3840x2160) Dolby Vision HDR	IPS	Anti-glare	500 nits	16:9	1200:1	100% Adobe	170°	Security chip	Discrete TPM 2.0, TCG Certified		
	15.6"	UHD (3840x2160) Dolby Vision HDR, Multi-touch	OLED	Anti-reflection / Anti-smudge	SDR 400nit, HDR 500nit (peak)	16:9	100000:1	100% DCI-P3	170°	System Mgt (opt)	Intel vPro Technology		
Multi-touch (opt)	Capacitive-type multi-touch, supports 10-finger gesture (UHD OLED only), AR (anti-reflection) / AS (anti-smudge) coating									Fingerprint reader	Touch style match on chip fingerprint reader on the keyboard bezel		
Pen (optional)	Lenovo Pen Pro (special bid only)									Color calibration	<i>Optional:</i> X-Rite Pantone factory color calibration (UHD model only)		
Storage	Up to two M.2 SSD, supports single sided M.2 2280 drives only M.2 2280 SSD / PCIe NVMe 3.0 x 4									NFC	None		
RAID (optional)	RAID 0/1 support									Battery	Integrated Li-ion 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr)		
Optical	None									Max battery life	<i>MobileMark® 2014:</i> 13.8 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>		
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via bundled or optional ThinkPad Ethernet Extension Cable									AC adapter	135W slim tip AC adapter		
WLAN (optional)	Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0									Operating system	<i>One of the following, configurable by model:</i> • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro 64 for Workstations		
Bluetooth™ (opt)	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									Limited warranty	<i>One of the following, configurable by model:</i> • 1-year depot repair service • 1-year depot with 2-year system board repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service		
WWAN	None									Mil-Spec test	MIL-STD-810G military testing		
SIM card	None									Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant		

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

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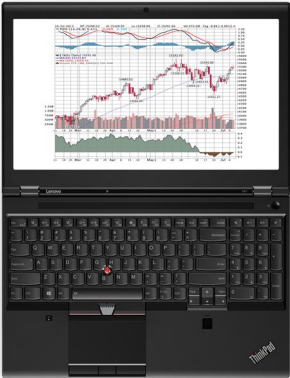
ThinkPad P43s Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i7 Processor								Dimensions Weight	<i>WxDxH:</i> 12.95" x 8.94" x 0.70"; 329mm x 227mm x 17.9mm			
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		Models	FHD	FHD Low Power	WQHD
Graphics	i5-8365U	4	8	1.6 GHz	4.1 GHz	6MB	DDR4-2400	Intel UHD Graphics 620	Black				
	i7-8565U			1.8 GHz	4.6 GHz	8MB			<i>Display cover:</i> PPS / 50% GF;				
	i7-8665U			1.9 GHz	4.8 GHz	8MB			<i>Bottom:</i> PA / 50% GF				
Chipset	Intel SoC (System on Chip) platform								Smart card reader Media reader Ports	Optional: Smart card reader			
Memory	48GB max / 2400MHz DDR4, dual-channel capable, 8GB or 16GB memory soldered to systemboard, one DDR4 SO-DIMM socket <i>* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation</i>									MicroSD card reader			
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	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, microSD card reader, side docking connector, security keyhole <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>			
	14.0"	FHD (1920x1080)	IPS	Anti-glare	250 nits (non-touch) 300 nits (multi-touch)	16:9	700:1	45%	170°	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter			
	14.0"	FHD (1920x1080) Low Power	IPS	Anti-glare	400 nits	16:9	800:1	72%	170°	USB-C to VGA: Lenovo USB-C to VGA Adapter			
	14.0"	FHD (1920x1080) ThinkPad Privacy Guard	IPS	Anti-glare	400 nits	16:9	1000:1	72%	170°	USB-C to HDMI: Lenovo USB-C to HDMI Adapter			
	14.0"	WQHD (2560x1440) Dolby Vision™ HDR	IPS	Glossy	500 nits	16:9	1500:1	100% Adobe	170°	USB-C to DP: Lenovo USB-C to DisplayPort Adapter			
Multi-touch (opt) Pen	On-cell touch, supports 10-finger gesture (FHD only) None								Bundled Accy	None			
Storage	Supports single sided M.2 2280 drives only								Camera (optional)	One of the following, configurable by model:			
	<ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 									<ul style="list-style-type: none"> HD720p camera with ThinkShutter camera privacy, fixed focus IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus 			
Optical	None								Audio support	HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual array far-field microphone, headphone / microphone combo jack			
Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)								Keyboard	6-row, spill-resistant, multimedia Fn keys, LED backlight			
WLAN	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad			
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter								Security	Power-on password, hard disk password, supervisor password, security keyhole			
WWAN (optional)	One of the following, configurable by model:								Security chip	Discrete TPM 2.0, TCG Certified			
SIM card (opt)	<ul style="list-style-type: none"> 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-A, Fibocom L850-GL, M.2 card <i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i>								System Mgt (opt)	Intel vPro Technology			
	Nano-SIM card slot, optional Verizon LTE (US) SIM card								Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the palm rest			
									NFC (optional)	Near Field Communication			
								Battery	Integrated Li-ion 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr)				
								Max battery life	MobileMark® 2014: 14.7 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>				
								AC adapter	65W or 65W slim USB Type-C AC adapter				
								Operating system	Windows® 10 Home 64 or Windows 10 Pro 64				
								Limited warranty	One of the following, configurable by model:				
								<ul style="list-style-type: none"> 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.

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ThinkPad P51 Platform Specifications

Product Specifications Reference (PSREF)

Processor	6th or 7th Generation Intel® Core™ i7 Processor or Intel Xeon® Processor E3 v5 or v6 Family							Dimensions	<i>WxDxH:</i> 14.86" x 9.93" x 0.96-1.16"; 377.4mm x 252.3mm x 24.5-29.4mm <i>WxDxH(Touch):</i> 14.86" x 9.93" x 1.02-1.21"; 377.4mm x 252.3mm x 25.8-30.7mm												
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	<table border="1"> <thead> <tr> <th>Models</th> <th>4-cell</th> <th>6-cell</th> </tr> </thead> <tbody> <tr> <td>Non-touch</td> <td>5.6 lb / 2.55kg</td> <td>5.9 lb / 2.67kg</td> </tr> <tr> <td>Multi-touch</td> <td>6.2 lb / 2.82kg</td> <td>6.4 lb / 2.90kg</td> </tr> </tbody> </table>			Models	4-cell	6-cell	Non-touch	5.6 lb / 2.55kg	5.9 lb / 2.67kg	Multi-touch	6.2 lb / 2.82kg	6.4 lb / 2.90kg
Models	4-cell	6-cell																			
Non-touch	5.6 lb / 2.55kg	5.9 lb / 2.67kg																			
Multi-touch	6.2 lb / 2.82kg	6.4 lb / 2.90kg																			
	i7-6820HQ	4	8	2.7 GHz	3.6 GHz	8MB	DDR4-2133	Intel HD Graphics 530	Case color	Black											
	E3-1505M v5			2.8 GHz	3.7 GHz			Intel HD Graphics P530	Case material	<i>Display cover:</i> Glass-Fiber Reinforced Plastic; <i>Bottom:</i> Magnesium/Aluminum											
	i7-7700HQ			2.8 GHz	3.8 GHz			6MB	DDR4-2400	Intel HD Graphics 630	Smart card reader	<i>Optional:</i> Smart card reader									
	i7-7820HQ			2.9 GHz	3.9 GHz	8MB	Intel HD Graphics P630	ExpressCard		One slot (ExpressCard/34)											
	E3-1505M v6			3.0 GHz	4.0 GHz		Intel HD Graphics P630	Media reader		4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card											
	E3-1535M v6			3.1 GHz	4.2 GHz	Ports	Four USB 3.1 Gen 1 (USB 3.0, one Always On), USB Type-C / Thunderbolt 3, Mini DisplayPort 1.2a, HDMI 1.4b, Ethernet (RJ-45), Dock connector <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>														
Graphics	Intel HD Graphics 530, 630, P530, or P630 in processor and NVIDIA Quadro® M1200 or M2200, 4GB memory; supports external digital monitor via HDMI, Mini DisplayPort, or Thunderbolt™; supports four independent displays; Max resolution: 3840x2160@60Hz (DisplayPort via Mini DisplayPort cable); 3840x2160@60Hz (Thunderbolt); 4096x2160@24Hz (HDMI)							Camera (optional)	HD720p resolution, fixed focus												
Chipset	Mobile Intel CM238 Chipset							Audio support	HD Audio, Realtek® ALC3268 codec / stereo speakers, 2W x 2 / dual array microphone, combo audio/microphone jack												
Memory	64GB max / 2400MHz DDR4, ECC or non-ECC (ECC function supported only on Xeon processor), dual-channel capable, four DDR4 SO-DIMM sockets <i>* System clocks down for processors with lower memory controller</i>							Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight												
Display	<i>Some:</i> 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 160° viewing angle <i>Some:</i> 15.6" (396mm) 4K (3840x2160), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 1000:1 contrast ratio, 100% gamut, 170° viewing angle							UltraNav™	3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad												
Multi-touch (opt)	Capacitive-type multi-touch, supports 10-finger gesture, 220 nits (FHD only)							Security	Power-on password, hard disk password, supervisor password, security keyhole												
Pen (optional)	ThinkPad Pen Pro, active pen for multi-touch display							Security chip	Discrete TPM 2.0, TCG Certified												
Storage	<i>Up to 3 drives (two M.2 SSD and one HDD), supports single sided M.2 2280 drives only</i> <i>Some:</i> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s							vPro (optional)	Intel vPro Technology												
RAID (optional)	RAID 0/1 support							Fingerprint reader	Touch style match on chip fingerprint reader on the palm rest												
Optical	None							Color calibration	<i>Optional:</i> Pantone® color calibrator by X-Rite® color calibration sensor in palm rest												
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)							NFC	None												
WLAN	<i>One of the following, configurable by model:</i> • 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							Battery	Lithium Polymer 4-cell (66Wh) or 6-cell (90Wh)												
Bluetooth™	Bluetooth 4.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter <i>* Intel 8260ac / 8265ac card support BT4.2 but is limited to BT4.1 by Windows OS</i>							Max battery life ¹⁰	<table border="1"> <thead> <tr> <th>Model</th> <th>4-cell</th> <th>6-cell</th> </tr> </thead> <tbody> <tr> <td>Discrete Graphics</td> <td>4.5 hr</td> <td>6.1 hr</td> </tr> <tr> <td>Hybrid Graphics</td> <td>6.5 hr</td> <td>8.9 hr</td> </tr> </tbody> </table>			Model	4-cell	6-cell	Discrete Graphics	4.5 hr	6.1 hr	Hybrid Graphics	6.5 hr	8.9 hr	
Model	4-cell	6-cell																			
Discrete Graphics	4.5 hr	6.1 hr																			
Hybrid Graphics	6.5 hr	8.9 hr																			
WWAN (optional)	<i>One of the following, configurable by model:</i> • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE-A, Qualcomm® Snapdragon™ X7 LTE-A (Sierra Wireless EM7455), M.2 card							(MobileMark® 2014)	<i>* Battery life varies significantly with settings, usage, & other factors</i>												
SIM card (opt)	Micro-SIM card slot, opt Verizon LTE (US) or Lenovo® Connect (EMEA) SIM card							AC adapter	170W slim tip AC adapter												
								Operating system	<i>One of the following, configurable by model:</i> • Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64 • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro 64 for Workstations												
								Limited warranty	<i>One of the following, configurable by model:</i> • 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™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant												

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

Lenovo
November 2019



ThinkPad P52 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i7 / i9 Processor or Intel Xeon® E Processor								Dimensions	<i>WxDxH:</i> 14.86" x 9.93" x 0.96-1.16"; 377.4mm x 252.3mm x 24.5-29.4mm <i>WxDxH(Touch):</i> 14.86" x 9.93" x 1.02-1.21"; 377.4mm x 252.3mm x 25.8-30.7mm <i>Non-touch model:</i> starting at 5.4 lb / 2.45kg; <i>Multi-touch model:</i> starting at 6.4 lb / 2.9kg
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Black <i>Display cover:</i> Glass-Fiber Reinforced Plastic; <i>Bottom:</i> Magnesium/Aluminum
	i7-8750H	6	12	2.2 GHz	4.1 GHz	9MB	DDR4-2400	Intel UHD Graphics 630	Case color Case material	<i>Optional:</i> Smart card reader ExpressCard None
	i7-8850H			2.6 GHz	4.3 GHz	9MB				
	i9-8950HK			2.9 GHz	4.8 GHz	12MB		Intel UHD Graphics P630		
E-2176M	2.7 GHz			4.4 GHz	12MB					
Graphics	Intel UHD Graphics 630 or P630 in processor and NVIDIA Quadro® P1000 (4GB memory), P2000 (4GB memory), or P3200 (6GB memory, VR ready); supports external digital monitor via HDMI, Mini DisplayPort, or Thunderbolt™; supports four independent displays; Max resolution: 3840X2160@60Hz (DisplayPort via Mini DisplayPort cable); 5120X2880@30Hz (Thunderbolt); 4096x2160@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 <i>* Power Delivery only supports power-out for charging peripherals</i> <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
Chipset 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 <i>* Installed DIMMs are actually 2666MHz but run at 2400MHz due to Intel limitation</i> <i>* 128GB non-ECC memory for special bid only</i>								Camera (optional)	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus
Display	<i>Some:</i> 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 <i>Some:</i> 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								Audio support	HD Audio, Realtek® ALC3286 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual array microphone, headphone / microphone combo jack, Dolby Atmos® headphone
Multi-touch (opt) Pen	Capacitive-type multi-touch, supports 10-finger gesture (4K only) Supports pen accessory, please see the accessory compatibility for details								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
Storage	<i>Up to 3 drives (two M.2 SSD and one HDD), supports single sided M.2 2280 drives only</i> <i>Some:</i> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s								Security Security chip	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified
Optane™ memory RAID (optional) Optical	<i>Optional:</i> Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2 RAID 0/1 support None								vPro (optional) Fingerprint reader Color calibration NFC (optional)	Intel vPro Technology Touch style match on chip fingerprint reader on the palm rest None Near Field Communication
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)								Battery	Swappable Li-ion 90Wh battery
WLAN Bluetooth™	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter								Max battery life AC adapter	<i>Discrete mode:</i> 6.1 hr; <i>Hybrid mode:</i> 8.9 hr <i>(MobileMark® 2014)</i> <i>* Battery life varies significantly with settings, usage, & other factors</i> 170W slim tip AC adapter
WWAN (optional)	<i>One of the following, configurable by model:</i> • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card								Operating system	<i>One of the following, configurable by model:</i> • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro 64 for Workstations
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card								Limited warranty (optional)	<i>One of the following, configurable by model:</i> • 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® 6.1; RoHS-compliant

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

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ThinkPad P52s Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor								Dimensions Weight Case color Case material	<i>WxDxH:</i> 14.40" x 9.95" x 0.79-0.80"; 365.8mm x 252.8mm x 19.95-20.2mm starting at 4.39 lb / 1.99 kg Black <i>Display cover:</i> GFRP + PPS; <i>Bottom:</i> GFRP											
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics													
	i5-8350U	4	8	1.7 GHz	3.6 GHz	6MB	DDR4-2400	Intel UHD Graphics 620													
	i7-8550U			1.8 GHz	4.0 GHz	8MB															
i7-8650U	1.9 GHz			4.2 GHz	8MB																
Graphics	Intel UHD Graphics 620 in processor and NVIDIA Quadro® P500, 2GB GDDR5 memory; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)								Smart card reader Media reader Ports Monitor cable (optional) Camera (optional) Audio support Keyboard UltraNav™ Security Security chip vPro (optional) Fingerprint reader NFC (optional) Battery Max battery life (MobileMark® 2014) AC adapter Operating system Limited warranty Mil-Spec test Environment												
Chipset	Intel SoC (System on Chip) platform																				
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * System clocks down for processors with lower memory controller																				
Display	<i>Some:</i> 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 45% gamut, 170° viewing angle <i>Some:</i> 15.6" (396mm) UHD (3840x2160), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 1000:1 contrast ratio, 72% gamut, 170° viewing angle																				
Multi-touch (opt) Pen	On-cell touch, supports 10-finger gesture (FHD only) None								<i>Optional:</i> Smart card reader 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 * Depending on many factors, actual data transfer speed may be lower than theoretical speed <i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter 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 / stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual array microphone, headphone / microphone combo jack 6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified Intel vPro Technology <i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest anti-spoofing technology Near Field Communication Optional integrated Li-ion 32Wh battery and swappable Li-ion 24Wh, 48Wh, or 72Wh battery <table border="1"> <thead> <tr> <th>Models</th> <th>48Wh</th> <th>72Wh</th> <th>32Wh + 24Wh</th> <th>32Wh + 48Wh</th> <th>32Wh + 72Wh</th> </tr> </thead> <tbody> <tr> <td>Max battery life</td> <td>12.2 hr</td> <td>18.5 hr</td> <td>13.5 hr</td> <td>20.1 hr</td> <td>26.3 hr</td> </tr> </tbody> </table> * Battery life varies significantly with settings, usage, & other factors 65W USB Type-C AC adapter Windows® 10 Home 64 or Windows 10 Pro 64 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 depot repair service • 3-year/1-yr battery limited onsite service • 3-year (including battery) limited onsite service MIL-STD-810G military testing EPEAT™ Silver; ENERGY STAR® 6.1; RoHS-compliant	Models	48Wh	72Wh	32Wh + 24Wh	32Wh + 48Wh	32Wh + 72Wh	Max battery life	12.2 hr	18.5 hr	13.5 hr	20.1 hr	26.3 hr
Models	48Wh	72Wh	32Wh + 24Wh	32Wh + 48Wh	32Wh + 72Wh																
Max battery life	12.2 hr	18.5 hr	13.5 hr	20.1 hr	26.3 hr																
Storage	System has one HDD slot or one M.2 2280 slot exclusively for storage, and supports single sided M.2 2280 drives only <i>Some:</i> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>Some:</i> SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high (e.g. xxxGB SSD) <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s <i>Some:</i> 128GB M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s, in WWAN slot as 2nd Storage, mutually exclusive with WWAN																				
Optane™ memory Optical	<i>Optional:</i> Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2 None																				
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)																				
WLAN + Bluetooth™	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																				
WWAN (optional)	One of the following, configurable by model: • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE, Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only) • Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable																				
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card																				

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

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ThinkPad P53 Platform Specifications

Product Specifications Reference (PSREF)

Processor	<p>9th Generation Intel® Core™ i5 / i7 / i9 Processor or Intel Xeon® E Processor</p> <table border="1"> <thead> <tr> <th>Processor Number</th> <th># of Cores</th> <th># of Threads</th> <th>Base Frequency</th> <th>Max Turbo Frequency</th> <th>Cache</th> <th>Memory Types</th> <th>Processor Graphics</th> </tr> </thead> <tbody> <tr> <td>i5-9400H</td> <td>4</td> <td>8</td> <td>2.5 GHz</td> <td>4.3 GHz</td> <td>8MB</td> <td rowspan="4">DDR4-2666</td> <td rowspan="4">Intel UHD Graphics 630</td> </tr> <tr> <td>i7-9750H</td> <td>6</td> <td>12</td> <td>2.6 GHz</td> <td>4.5 GHz</td> <td>12MB</td> </tr> <tr> <td>i7-9850H</td> <td>6</td> <td>12</td> <td>2.6 GHz</td> <td>4.6 GHz</td> <td>12MB</td> </tr> <tr> <td>i9-9880H</td> <td>8</td> <td>16</td> <td>2.3 GHz</td> <td>4.8 GHz</td> <td>16MB</td> </tr> <tr> <td>E-2276M</td> <td>6</td> <td>12</td> <td>2.8 GHz</td> <td>4.7 GHz</td> <td>12MB</td> <td></td> <td>Intel UHD Graphics P630</td> </tr> </tbody> </table>	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	i5-9400H	4	8	2.5 GHz	4.3 GHz	8MB	DDR4-2666	Intel UHD Graphics 630	i7-9750H	6	12	2.6 GHz	4.5 GHz	12MB	i7-9850H	6	12	2.6 GHz	4.6 GHz	12MB	i9-9880H	8	16	2.3 GHz	4.8 GHz	16MB	E-2276M	6	12	2.8 GHz	4.7 GHz	12MB		Intel UHD Graphics P630	Dimensions	<p><i>WxDxH (non-touch):</i> 14.86" x 9.93" x 0.96-1.16"; 377.4mm x 252.3mm x 24.5-29.4mm</p> <p><i>WxDxH (multi-touch):</i> 14.86" x 9.93" x 1.02-1.21"; 377.4mm x 252.3mm x 25.8-30.7mm</p>			
Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics																																									
i5-9400H	4	8	2.5 GHz	4.3 GHz	8MB	DDR4-2666	Intel UHD Graphics 630																																									
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i9-9880H	8	16	2.3 GHz	4.8 GHz	16MB																																											
E-2276M	6	12	2.8 GHz	4.7 GHz	12MB		Intel UHD Graphics P630																																									
Graphics	<p>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™; supports five independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (USB-C or HDMI)</p>	Weight	<p><i>Non-touch model:</i> starting at 5.51 lb / 2.5 kg; <i>Multi-touch model:</i> starting at 6.4 lb / 2.9 kg</p>																																													
Case color	Mobile Intel CM246 Chipset	Case material	<p>Black</p> <p><i>Display cover:</i> Glass-Fiber Reinforced Plastic; <i>Bottom:</i> Magnesium/Aluminum</p>																																													
Memory	<p>128GB max / 2666MHz DDR4 (ECC function supported only on Xeon processor), dual-channel capable, four DDR4 SO-DIMM sockets</p>	Smart card reader	<p><i>Optional:</i> Smart card reader</p>																																													
Display	<table border="1"> <thead> <tr> <th>Size</th> <th>Resolution</th> <th>Type</th> <th>Surface</th> <th>Brightness</th> <th>Aspect Ratio</th> <th>Contrast Ratio</th> <th>Color Gamut</th> <th>Viewing Angle</th> </tr> </thead> <tbody> <tr> <td>15.6"</td> <td>FHD (1920x1080)</td> <td>IPS</td> <td>Anti-glare</td> <td>300 nits</td> <td>16:9</td> <td>700:1</td> <td>72%</td> <td>160°</td> </tr> <tr> <td>15.6"</td> <td>FHD (1920x1080) Dolby Vision™ HDR</td> <td>IPS</td> <td>Anti-glare</td> <td>500 nits</td> <td>16:9</td> <td>1200:1</td> <td>72%</td> <td>160°</td> </tr> <tr> <td>15.6"</td> <td>UHD (3840x2160) Dolby Vision HDR</td> <td>IPS</td> <td>Anti-glare</td> <td>500 nits</td> <td>16:9</td> <td>1200:1</td> <td>100%</td> <td>170°</td> </tr> <tr> <td>15.6"</td> <td>UHD (3840x2160) Dolby Vision HDR, Multi-touch</td> <td>OLED</td> <td>Anti-reflection / Anti-smudge</td> <td>SDR 400nit, HDR 500nit (peak)</td> <td>16:9</td> <td>100000:1</td> <td>100% DCI-P3</td> <td>170°</td> </tr> </tbody> </table>	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	15.6"	FHD (1920x1080)	IPS	Anti-glare	300 nits	16:9	700:1	72%	160°	15.6"	FHD (1920x1080) Dolby Vision™ HDR	IPS	Anti-glare	500 nits	16:9	1200:1	72%	160°	15.6"	UHD (3840x2160) Dolby Vision HDR	IPS	Anti-glare	500 nits	16:9	1200:1	100%	170°	15.6"	UHD (3840x2160) Dolby Vision HDR, Multi-touch	OLED	Anti-reflection / Anti-smudge	SDR 400nit, HDR 500nit (peak)	16:9	100000:1	100% DCI-P3	170°	ExpressCard	<p>None</p>
Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle																																								
15.6"	FHD (1920x1080)	IPS	Anti-glare	300 nits	16:9	700:1	72%	160°																																								
15.6"	FHD (1920x1080) Dolby Vision™ HDR	IPS	Anti-glare	500 nits	16:9	1200:1	72%	160°																																								
15.6"	UHD (3840x2160) Dolby Vision HDR	IPS	Anti-glare	500 nits	16:9	1200:1	100%	170°																																								
15.6"	UHD (3840x2160) Dolby Vision HDR, Multi-touch	OLED	Anti-reflection / Anti-smudge	SDR 400nit, HDR 500nit (peak)	16:9	100000:1	100% DCI-P3	170°																																								
Multi-touch (opt)	<p>Capacitive-type multi-touch, supports 10-finger gesture (UHD only), anti-reflection (AR), anti-smudge (AS) coating</p>	Media reader	<p>4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card</p>																																													
Pen (optional)	<p>Lenovo Pen Pro (special bid only)</p>	Ports	<p>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</p> <p><i>* Power Delivery only supports power-out for charging peripherals</i> <i>* USB-C Dock is not supported in right-side USB-C port</i> <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i></p>																																													
Storage	<p><i>Up to 3 drives (3x M.2 SSD or 1x HDD + 2x M.2 SSD), supports single sided M.2 2280 drives only</i></p> <ul style="list-style-type: none"> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 <p><i>* HDD is only available for T1000 and T2000 graphics model</i></p>	Monitor cable (optional)	<p><i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter</p>																																													
Optane™ memory	<p><i>Optional:</i> Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2</p>	Bundled Accy	<p>None</p>																																													
RAID (optional)	<p>RAID 0/1/5 support</p>	Camera (optional)	<p><i>One of the following, configurable by model:</i></p> <ul style="list-style-type: none"> HD720p camera with ThinkShutter camera privacy, fixed focus IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus 																																													
Optical	<p>None</p>	Audio support	<p>HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2 / optional dual array far-field microphone, headphone / microphone combo jack, Dolby Atmos® sound system</p>																																													
Ethernet	<p><i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)</p>	Keyboard	<p>6-row, spill-resistant, multimedia Fn keys, numeric keypad, LED backlight</p>																																													
WLAN (optional)	<p>Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0</p>	UltraNav™	<p>3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad</p>																																													
Bluetooth™ (opt)	<p>Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter</p>	Security	<p>Power-on password, hard disk password, supervisor password, security keyhole</p>																																													
WWAN (optional)	<p><i>One of the following, configurable by model:</i></p> <ul style="list-style-type: none"> Wireless WAN upgradable (special bid only in EMEA) Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card <p><i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i></p>	Security chip	<p>Discrete TPM 2.0, TCG Certified</p>																																													
SIM card (opt)	<p>Nano-SIM card slot, optional Verizon LTE (US) SIM card</p>	vPro (optional)	<p>Intel vPro Technology</p>																																													

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Lenovo
November 2019



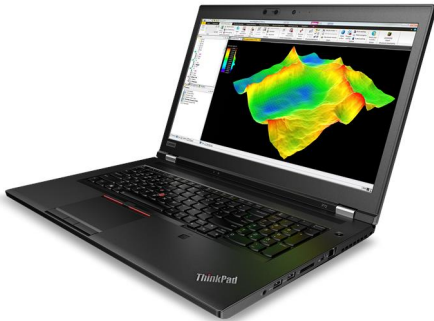
ThinkPad P53s Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i7 Processor									Dimensions Weight Case color Case material	<i>WxDxH:</i> 14.40" x 9.76" x 0.75"; 365.8mm x 248mm x 19.1mm starting at 3.87 lb / 1.75 kg Black <i>Display cover:</i> PPS / 50% GF; <i>Bottom:</i> PA / 50% GF
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics			
	i7-8565U	4	8	1.8 GHz	4.6 GHz	8MB	DDR4-2400	Intel UHD Graphics 620		Smart card reader Media reader Ports	<i>Optional:</i> Smart card 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), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
	i7-8665U			1.9 GHz	4.8 GHz	8MB					
Graphics	Intel UHD Graphics 620 in processor and NVIDIA Quadro® P520, 2GB GDDR5 memory; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 3840x2160@60Hz (USB-C); 3840x2160@30Hz (HDMI)									Monitor cable (optional)	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter
Chipset	Intel SoC (System on Chip) platform 48GB max / 2400MHz DDR4, dual-channel capable, 8GB or 16GB memory soldered to systemboard, one DDR4 SO-DIMM socket * Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation										
Memory										Bundled Accy	None
	Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut		
	15.6"	FHD (1920x1080)	IPS	Anti-glare	250 nits	16:9	700:1	45%	170°	Camera (optional)	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus
	15.6"	UHD (3840x2160) Dolby Vision™ HDR	IPS	Anti-glare	500 nits	16:9	1200:1	100% Adobe	170°		
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)									Audio support	HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual array far-field microphone, headphone / microphone combo jack
Pen	None										
Storage	Supports single sided M.2 2280 drives only • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4									Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight
Optical	None									UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
	Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)									Security
WLAN	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0									Security chip	Discrete TPM 2.0, TCG Certified
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									System Mgt (opt)	Intel vPro Technology
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-A, Fibocom L850-GL, M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable									Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the palm rest
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card									NFC (optional)	Near Field Communication
										Battery	Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
										Max battery life	MobileMark® 2014: 15 hr (FHD model) / 10 hr (UHD model) * Battery life varies significantly with settings, usage, & other factors
										AC adapter	65W USB Type-C AC adapter
										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 • 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	EPPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant

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

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ThinkPad P72 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i7 Processor or Intel Xeon® E Processor								Dimensions	<i>WxDxH:</i> 16.38" x 11.06" x 0.96-1.16"; 416mm x 281mm x 24.5-29.4mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 7.5 lb / 3.4kg
	i7-8750H	6	12	2.2 GHz	4.1 GHz	9MB	DDR4-2400	Intel UHD Graphics 630	Case color	Black
	i7-8850H			2.6 GHz	4.3 GHz	9MB		Case material	<i>Display cover:</i> GFRP + PPS; <i>Bottom:</i> Magnesium/Aluminum	
	E-2176M			2.7 GHz	4.4 GHz	12MB		Intel UHD Graphics P630		
E-2186M	2.9 GHz			4.8 GHz	12MB					
Graphics	Intel UHD Graphics 630 or P630 in processor and NVIDIA Quadro® P600 (4GB memory), P2000 (4GB memory), P3200 (6GB memory), P4200 (8GB memory), or P5200 (16GB memory); supports external digital monitor via HDMI, Mini DisplayPort, or Thunderbolt™; supports four independent displays; Max resolution: 3840X2160@60Hz (DisplayPort via Mini DisplayPort cable); 5120X2880@30Hz (Thunderbolt); 4096x2160@60Hz (HDMI)								Smart card reader	<i>Optional:</i> Smart card reader
Chipset	Mobile Intel CM246 Chipset								ExpressCard	None
Memory	128GB non-ECC or 64GB ECC max / 2400MHz DDR4 (ECC function supported only on Xeon processor), dual-channel capable, four DDR4 SO-DIMM sockets <i>* Installed DIMMs are actually 2666MHz but run at 2400MHz due to Intel limitation</i>								Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card
Display	<i>Some:</i> 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 <i>Some:</i> 17.3" (439mm) UHD (3840x2160), anti-glare, LED backlight, IPS, 400 nits, 16:9 aspect ratio, 1000:1 contrast ratio, 100% Adobe gamut, 170° viewing angle								Ports	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 <i>* Power Delivery only supports power-out for charging peripherals</i> <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
Multi-touch	None								Monitor cable	<i>Optional:</i> Lenovo Mini-DisplayPort to DisplayPort Monitor Cable
Pen	None								Camera (<i>optional</i>)	IR camera and HD720p camera, fixed focus
Storage	<i>Up to 3 drives (two M.2 SSD and one HDD), supports single sided M.2 2280 drives only</i> <i>Some:</i> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s								Audio support	HD Audio, Realtek® ALC3286 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual array microphone, headphone / microphone combo jack, Dolby Atmos® headphone
Optane™ memory	<i>Optional:</i> Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2								Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, LED backlight
RAID (<i>optional</i>)	RAID 0/1 support								UltraNav™	3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad
Optical	None								Security	Power-on password, hard disk password, supervisor password, security keyhole
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)								Security chip	Discrete TPM 2.0, TCG Certified
WLAN	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card								vPro (<i>optional</i>)	Intel vPro Technology
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter								Fingerprint reader	Touch style match on chip fingerprint reader on the palm rest
WWAN	None								Color calibration	None
SIM card	None								NFC (<i>optional</i>)	Near Field Communication
									Battery	Li-ion 99Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
									Max battery life	<i>MobileMark® 2014:</i> 16 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
									AC adapter	230W slim tip AC adapter
									Operating system (<i>optional</i>)	<i>One of the following, configurable by model:</i> • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro 64 for Workstations
									Limited warranty	<i>One of the following, configurable by model:</i> • 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	EPPEAT™ Gold (US only); ENERGY STAR® 7.0; RoHS-compliant

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ThinkPad P73 Platform Specifications

Product Specifications Reference (PSREF)

Processor	9th Generation Intel® Core™ i5 / i7 / i9 Processor or Intel Xeon® E Processor									Dimensions WxDxH: 16.38" x 11.06" x 1.02-1.22"; 416mm x 281mm x 25.9-31mm Weight Starting at 7.5 lb (3.4kg) Case color Black Case material Display cover: GFRP + PPS; Bottom: Magnesium/Aluminum
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		
	i5-9400H	4	8	2.5 GHz	4.3 GHz	8MB	DDR4-2666	Intel UHD Graphics 630		
	i7-9750H	6	12	2.6 GHz	4.5 GHz	12MB		Intel UHD Graphics 630		
	i7-9850H	6	12	2.6 GHz	4.6 GHz	12MB		Intel UHD Graphics 630		
	i9-9880H	8	16	2.3 GHz	4.8 GHz	16MB		Intel UHD Graphics 630		
E-2276M	6	12	2.8 GHz	4.7 GHz	12MB	Intel UHD Graphics P630				
Graphics	Intel UHD Graphics 630 or P630 in processor and NVIDIA Quadro® P620 (4GB GDDR5), T2000 (4GB GDDR5), RTX 3000 (6GB GDDR6, VR ready), RTX 4000 Max-Q (8GB GDDR6, VR ready), or RTX 5000 Max-Q (16GB GDDR6, VR ready); supports external digital monitor via HDMI or Thunderbolt™; supports five independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (USB-C or HDMI)									Smart card reader Optional: Smart card reader ExpressCard None Media reader 4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card 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), 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 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 Bundled Accy None Camera (optional) IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus Audio support HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2 / dual array far-field microphone, headphone / microphone combo jack, Dolby Atmos® sound system Keyboard 6-row, spill-resistant, multimedia Fn keys, numeric keypad, LED backlight UltraNav™ 3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad Security Power-on password, hard disk password, supervisor password, security keyhole Security chip Discrete TPM 2.0, TCG Certified vPro (optional) Intel vPro Technology Fingerprint reader Touch style match on chip fingerprint reader on the palm rest Color calibration Optional: X-Rite Pantone factory color calibration (UHD model only) NFC (optional) Near Field Communication Battery Integrated Li-ion 99Wh battery, supports Rapid Charge (charge up to 80% in 1hr) Max battery life MobileMark® 2014: 17.2 hr * Battery life varies significantly with settings, usage, & other factors AC adapter 170W or 230W slim tip AC adapter Operating system One of the following, configurable by model: • Windows® 10 Home 64 • Windows 10 Pro 64 • Windows 10 Pro 64 for Workstations 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 Environment EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant
Chipset	Mobile Intel CM246 Chipset									
Memory	128GB max / 2666MHz DDR4 (ECC function supported only on Xeon processor), dual-channel capable, four DDR4 SO-DIMM sockets									
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	
	17.3"	FHD (1920x1080)	IPS	Anti-glare	300 nits	16:9	700:1	72%	160°	
	17.3"	UHD (3840x2160) Dolby Vision™ HDR	IPS	Anti-glare	400 nits	16:9	1000:1	100%	170°	
Multi-touch	None									
Pen	None									
Storage	Up to 3 drives (two M.2 SSD and one HDD), supports single sided M.2 2280 drives only • HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 Optane™ memory Optional: Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2 RAID (optional) RAID 0/1 support Optical None									
Ethernet	Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)									
WLAN (optional)	Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0									
Bluetooth™ (opt)	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									
WWAN	None									
SIM card	None									

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

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ThinkPad T470 Platform Specifications

Product Specifications Reference (PSREF)

Processor	6th Generation Intel® Core™ i5 / i7 Processor or							WWAN (optional) <i>One of the following, configurable by model (WWAN can coexist with WiGig):</i> <ul style="list-style-type: none"> Wireless WAN upgradable Integrated Mobile Broadband 4G LTE-A, Qualcomm® Snapdragon™ X7 LTE-A (Sierra Wireless EM7455), M.2 card Integrated Mobile Broadband 4G LTE, Intel XMM™ 7160 (Fibocom L831-EAU), M.2 card (EMEA only) SIM card (opt) Micro-SIM card slot, opt Verizon LTE (US) or Lenovo® Connect (EMEA) SIM card
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	
	i5-6200U	2	4	2.3 GHz	2.8 GHz	3MB	DDR4-2133	Intel HD Graphics 520
	i5-6300U			2.4 GHz	3.0 GHz	3MB		
	i7-6500U			2.5 GHz	3.1 GHz	4MB		
	i7-6600U			2.6 GHz	3.4 GHz	4MB		
	7th Generation Intel Core i3 / i5 / i7 Processor							
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics
	i3-7100U	2	4	2.4 GHz	-	3MB	DDR4-2133	Intel HD Graphics 620
	i5-7200U			2.5 GHz	3.1 GHz	3MB		
	i5-7300U			2.6 GHz	3.5 GHz	3MB		
	i7-7500U			2.7 GHz	3.5 GHz	4MB		
	i7-7600U			2.8 GHz	3.9 GHz	4MB		
	* i7-6500U is NOT available in EMEA							
Graphics	Intel HD Graphics 520 or 620 in processor only, or Intel HD Graphics 620 in processor and NVIDIA GeForce® 940MX, 2GB 2.5GHz GDDR5 memory (discrete models are NOT available in EMEA); supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@24Hz (HDMI)							
Chipset	Intel SoC (System on Chip) platform							
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * System clocks down for processors with lower memory controller							
Display	<i>Some:</i> 14.0" (355mm) HD (1366x768), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 400:1 contrast ratio <i>Some:</i> 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 400:1 or 500:1 contrast ratio <i>Some:</i> 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 170° viewing angle							
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD IPS panel with PPS cover only)							
Storage	<i>System has one HDD slot or one M.2 2280 slot exclusively for storage</i> <i>Some:</i> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>Some:</i> SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high (e.g. xxxGB SSD) <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s <i>Some:</i> 128GB M.2 SSD / SATA 6.0Gb/s, in WWAN slot as 2nd Storage, mutually exclusive with WWAN and WiGig							
Optical	None							
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)							
WLAN	<i>One of the following, configurable by model (WiGig can coexist with WWAN):</i> <ul style="list-style-type: none"> Realtek® RTL8822BE, Wi-Fi 2x2 802.11ac + BT4.1, M.2 card 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, M.2 card 							
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							
Dimensions	WxDxH: 13.25" x 9.15" x 0.79"; 336.6mm x 232.5mm x 19.95mm							
Weight	Models	3-cell or 3 + 3-cell		6-cell or 3 + 6-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				
Case color	Black							
Case material	Display cover: Magnesium Hybrid or PPS; Bottom: Glass-Fiber Reinforced Plastic							
Smart card reader	Optional: Smart card reader							
Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC), supports SD 3.0, UHS-I							
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), HDMI 1.4b, Ethernet (RJ-45), Dock connector * Depending on many factors, actual data transfer speed may be lower than theoretical speed							
WiGig dock (opt)	ThinkPad WiGig dock							
Monitor cable	Optional: Lenovo USB-C to VGA Adapter							
Camera (optional)	720p: HD720p resolution, fixed focus IR & 720p: IR camera and HD720p camera (mutually exclusive with WiGig)							
Audio support	HD Audio, Realtek ALC3268 codec / stereo speakers, 2W x 2 / dual array microphone, combo audio/microphone jack							
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, hard disk password, supervisor password, security keyhole							
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 keyboard bezel							
NFC (optional)	Near Field Communication							
Internal battery	Optional: Integrated Li-Polymer 3-cell (24Wh)							
External battery	Li-Polymer 3-cell (24Wh) or Li-ion 6-cell (48Wh or 72Wh)							
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	
	Integrated	6.9 hr	13.9 hr	13.9 hr	20.9 hr	20.9 hr	27.1 hr	
	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							
AC adapter	45W or 65W slim tip AC adapter, 45W or 65W USB Type-C AC adapter							
Operating system	One of the following, configurable by model: <ul style="list-style-type: none"> Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64 Windows 10 Home 64 Windows 10 Pro 64 							
Limited warranty	One of the following, configurable by model: <ul style="list-style-type: none"> 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® 6.1; RoHS-compliant							

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

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December 2019



ThinkPad T470s Platform Specifications

Product Specifications Reference (PSREF)

Processor	6th Generation Intel® Core™ i5 / i7 Processor								Dimensions	<i>WxDxH:</i> 13.03" x 8.93" x 0.67-0.74"; 331mm x 226.8mm x 16.9-18.8mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 2.9 lb / 1.32 kg
	i5-6200U	2	4	2.3 GHz	2.8 GHz	3MB	DDR4-2133	Intel HD Graphics 520	Case color	Black or Silver
	i5-6300U			2.4 GHz	3.0 GHz	3MB			Case material	<i>Display cover:</i> CFRP Hybrid; <i>Bottom:</i> Magnesium
i7-6600U	2.6 GHz			3.4 GHz	4MB					
or 7th Generation Intel Core i5 / i7 Processor	or 7th Generation Intel Core i5 / i7 Processor								Smart card reader	<i>Optional:</i> Smart card reader
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC)
	i5-7200U	2	4	2.5 GHz	3.1 GHz	3MB	DDR4-2133	Intel HD Graphics 620	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), HDMI 1.4b, Ethernet (RJ-45), Dock connector <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
	i5-7300U			2.6 GHz	3.5 GHz	3MB			WiGig dock (opt)	ThinkPad WiGig dock, mutually exclusive with WWAN
i7-7500U	2.7 GHz			3.5 GHz	4MB	Monitor cable (optional)			<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter	
i7-7600U	2.8 GHz			3.9 GHz	4MB					
Graphics	Intel HD Graphics 520 or 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@24Hz (HDMI)								Camera (optional)	HD720p resolution, fixed focus (models without camera are NOT available in EMEA)
Chipset	Intel SoC (System on Chip) platform								Audio support	HD Audio, Realtek® ALC3268 codec / stereo speakers, 1W x 2 / dual array microphone, combo audio/microphone jack
Memory	20GB or 24GB max ⁷ / 2400MHz DDR4, dual-channel capable, 4GB or 8GB memory soldered to systemboard, one DDR4 SO-DIMM socket <i>* System clocks down for processors with lower memory controller</i>								Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight
Display	<i>Some:</i> 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 160° viewing angle								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
	<i>Some:</i> 14.0" (355mm) WQHD (2560x1440), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 160° viewing angle								Security	Power-on password, hard disk password, supervisor password, security keyhole
Multi-touch (opt)	On-cell touch, supports 10-finger gesture, 250 nits (FHD only)								Security chip	Discrete TPM 2.0, TCG Certified
Storage	<i>One of the following, configurable by model:</i> • 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)								vPro (optional)	Intel vPro Technology
Optical	None								Fingerprint reader	<i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)								NFC (optional)	Near Field Communication
WLAN	<i>One of the following, configurable by model (WiGig is mutually exclusive with WWAN):</i> • 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, M.2 card								Internal battery	Front Li-Polymer 3-cell (23Wh) and rear Li-ion 3-cell (26Wh), both Integrated
Bluetooth™	Bluetooth 4.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter <i>* Intel 8265ac / 18265ac card support BT4.2 but is limited to BT4.1 by Windows OS</i>								Max battery life	<i>MobileMark® 2014:</i> up to 10.5 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
WWAN (optional)	<i>One of the following, configurable by model (mutually exclusive with WiGig):</i> • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE-A, Qualcomm® Snapdragon™ X7 LTE-A (Sierra Wireless EM7455), M.2 card								AC adapter	45W slim tip AC adapter, 45W or 65W USB Type-C AC adapter
SIM card (opt)	• Micro-SIM card slot, opt Verizon LTE (US) or Lenovo® Connect (EMEA) SIM card								Operating system	<i>One of the following, configurable by model:</i> • Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64 • Windows 10 Home 64 • Windows 10 Pro 64
									Limited warranty	<i>One of the following, configurable by model:</i> • 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™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant



ThinkPad T480 Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i5 Processor							Dimensions Weight	WxDxH: 13.25" x 9.15" x 0.79"; 336.6mm x 232.5mm x 19.95mm						
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types		Processor Graphics	Models	24Wh or 24Wh + 24Wh	48Wh, 72Wh, or 24Wh + 48Wh / 72Wh			
	i5-7200U	2	4	2.5 GHz	3.1 GHz	3MB	DDR4-2133	Intel HD Graphics 620	Integrated Magnesium	3.49 lb / 1.58 kg		3.92 lb / 1.78 kg			
	i5-7300U			2.6 GHz	3.5 GHz	3MB			Integrated PPS	3.63 lb / 1.65 kg		4.08 lb / 1.85 kg			
	or 8th Generation Intel Core i3 / i5 / i7 Processor							Case color Case material	Black Display cover: Magnesium Hybrid or PPS; Bottom: Glass-Fiber Reinforced Plastic						
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types		Processor Graphics	Smart card reader	Optional: Smart card reader				
	i3-8130U	4	8	2.2 GHz	3.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC)					
	i5-8250U			1.6 GHz	3.4 GHz	6MB			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), 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 media reader (MMC, SD, SDHC, SDXC), side docking connector, security keyhole					
	i5-8350U			1.7 GHz	3.6 GHz	6MB			Monitor cable (optional)	* 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					
	i7-8550U			1.8 GHz	4.0 GHz	8MB			Camera (optional)	One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus					
	i7-8650U			1.9 GHz	4.2 GHz	8MB			Audio support	HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone (optional for special bid model), headphone / microphone combo jack					
Graphics	Intel HD Graphics 620 or Intel UHD Graphics 620 in processor only or Intel HD Graphics 620 or Intel UHD Graphics 620 in processor and NVIDIA® GeForce® MX150, 2GB GDDR5 memory (discrete graphics is available only on i7 models in EMEA); supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)							Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad						
Chipset	Intel SoC (System on Chip) platform							Security	Power-on password, hard disk password, supervisor password, security keyhole						
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets * System clocks down for processors with lower memory controller							Security chip	Discrete TPM 2.0, TCG Certified						
Display	Some:	14.0" (355mm) HD (1366x768), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 400:1 contrast ratio						vPro (optional)	Intel vPro Technology						
	Some:	14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 170° viewing angle						Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the keyboard bezel, anti-spoofing technology						
	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						NFC (optional)	Near Field Communication						
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)							Battery	Optional integrated Li-ion 24Wh battery and external Li-ion 24Wh, 48Wh, or 72Wh battery						
Storage	System has one HDD slot or one M.2 2280 slot exclusively for storage 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) Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 4 Some: 128GB M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, in WWAN slot as 2nd Storage, mutually exclusive with WWAN * Installed M.2 SSD is PCIe 3.0 x 4 but run at PCIe 3.0 x 2 due to M.2 SSD adapter limitation							Max battery life (MobileMark® 2014)	Models	24Wh	48Wh	72Wh	24Wh + 24Wh	24Wh + 48Wh	24Wh + 72Wh
Optane™ memory	Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2								Integrated model	7.2 hr	14.4 hr	21.8 hr	14.4 hr	21.8 hr	29.0 hr
Optical	None								Discrete model	6.6 hr	13.2 hr	19.8 hr	13.6 hr	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 varies significantly with settings, usage, & other factors 45W or 65W USB Type-C AC adapter						
WLAN + Bluetooth™ (opt)	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							Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64						
WWAN (optional)	One of the following, configurable by model (mutually exclusive with Intel Optane memory): • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE, Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only) • Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card							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 • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service • 3-year/3-yr battery limited onsite service						
SIM card (opt)	* 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-STD-810G military testing						
								Environment	EPEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant						

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

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December 2019



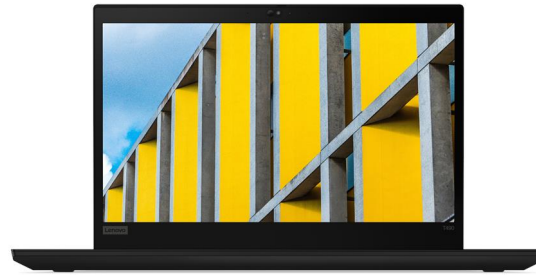
ThinkPad T480s Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i5 Processor							Dimensions	<i>WxDxH:</i> 13.03" x 8.93" x 0.73"; 331mm x 226.8mm x 18.45mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight Starting at 2.9 lb / 1.32 kg
	i5-7200U	2	4	2.5 GHz	3.1 GHz	3MB	DDR4-2133	Intel HD Graphics 620	Case color Black or Silver
	i5-7300U			2.6 GHz	3.5 GHz	3MB			Case material <i>Display cover:</i> CFRP Hybrid; <i>Bottom:</i> Magnesium
	or 8th Generation Intel Core i5 / i7 Processor							Smart card reader	<i>Optional:</i> Smart card reader
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader 4-in-1 reader (MMC, SD, SDHC, SDXC)
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB	DDR4-2400	Intel UHD Graphics 620	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), 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,
	i5-8350U			1.7 GHz	3.6 GHz	6MB			
	i7-8550U			1.8 GHz	4.0 GHz	8MB			
	i7-8650U			1.9 GHz	4.2 GHz	8MB			
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); supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)							Monitor cable <i>(optional)</i>	<i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter
Chipset	Intel SoC (System on Chip) platform							Camera	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus
Memory	20GB or 24GB max / 2400MHz DDR4, dual-channel capable, 4GB or 8GB memory soldered to systemboard, one DDR4 SO-DIMM socket <i>* System clocks down for processors with lower memory controller</i>							Audio support	HD Audio, Realtek® ALC3287 codec / stereo speakers, 1W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack
Display	<i>Some:</i> 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 170° viewing angle, supports ThinkPad Privacy Guard on some models <i>Some:</i> 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							Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight
Multi-touch <i>(opt)</i>	On-cell touch, supports 10-finger gesture, 250 nits (FHD only)							UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Storage	<i>One of the following, configurable by model:</i> • M.2 SSD / SATA 6.0Gb/s • M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s							Security	Power-on password, hard disk password, supervisor password, security keyhole
Optical	None							Security chip	Discrete TPM 2.0, TCG Certified
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)							vPro <i>(optional)</i>	Intel vPro Technology
WLAN + Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card <i>* Intel 8265ac card supports BT4.2 but is limited to BT4.1 by Windows OS</i>							Fingerprint reader	<i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest, anti-spoofing technology
WWAN <i>(optional)</i>	<i>One of the following, configurable by model:</i> • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE, Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only) • Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card							NFC <i>(optional)</i>	Near Field Communication
SIM card <i>(opt)</i>	Nano-SIM card slot, optional Verizon LTE (US) SIM card							Battery	Integrated Li-ion 57Wh battery, supports Rapid Charge (0-80% in 60 mins) with 65W USB Type-C AC adapter
								Max battery life	<i>MobileMark® 2014:</i> 15.6 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>
								AC adapter	45W or 65W USB Type-C AC adapter
								Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64
								Limited warranty	<i>One of the following, configurable by model:</i> • 1-year depot repair service • 1-year depot with 2-year system board 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	EPPEAT™ Silver; ENERGY STAR® 6.1; RoHS-compliant

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

Lenovo
August 2019



ThinkPad T490 Platform Specifications

Product Specifications Reference (PSREF)

<p>Processor</p>	<p>8th Generation Intel® Core™ i5 / i7 Processor</p> <table border="1"> <thead> <tr> <th>Processor Number</th> <th># of Cores</th> <th># of Threads</th> <th>Base Frequency</th> <th>Max Turbo Frequency</th> <th>Cache</th> <th>Memory Types</th> <th>Processor Graphics</th> </tr> </thead> <tbody> <tr> <td>i5-8265U</td> <td rowspan="4">4</td> <td rowspan="4">8</td> <td>1.6 GHz</td> <td>3.9 GHz</td> <td>6MB</td> <td rowspan="4">DDR4-2400</td> <td rowspan="4">Intel UHD Graphics 620</td> </tr> <tr> <td>i5-8365U</td> <td>1.6 GHz</td> <td>4.1 GHz</td> <td>6MB</td> </tr> <tr> <td>i7-8565U</td> <td>1.8 GHz</td> <td>4.6 GHz</td> <td>8MB</td> </tr> <tr> <td>i7-8665U</td> <td>1.9 GHz</td> <td>4.8 GHz</td> <td>8MB</td> </tr> </tbody> </table> <p>or 10th Generation Intel Core i5 / i7 Processor (NOT available in EMEA)</p> <table border="1"> <thead> <tr> <th>Processor Number</th> <th># of Cores</th> <th># of Threads</th> <th>Base Frequency</th> <th>Max Turbo Frequency</th> <th>Cache</th> <th>Memory Types</th> <th>Processor Graphics</th> </tr> </thead> <tbody> <tr> <td>i5-10210U</td> <td rowspan="2">4</td> <td rowspan="2">8</td> <td>1.6 GHz</td> <td>4.2 GHz</td> <td>6MB</td> <td rowspan="2">DDR4-2400</td> <td rowspan="2">Intel UHD Graphics</td> </tr> <tr> <td>i7-10510U</td> <td>1.8 GHz</td> <td>4.9 GHz</td> <td>8MB</td> </tr> </tbody> </table>	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	DDR4-2400	Intel UHD Graphics 620	i5-8365U	1.6 GHz	4.1 GHz	6MB	i7-8565U	1.8 GHz	4.6 GHz	8MB	i7-8665U	1.9 GHz	4.8 GHz	8MB	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	i5-10210U	4	8	1.6 GHz	4.2 GHz	6MB	DDR4-2400	Intel UHD Graphics	i7-10510U	1.8 GHz	4.9 GHz	8MB	<p>Dimensions WxDxH: 12.95" x 8.94" x 0.70"; 329mm x 227mm x 17.9mm</p> <table border="1"> <thead> <tr> <th>Models</th> <th>HD</th> <th>FHD</th> <th>FHD Low Power / WQHD</th> <th>Privacy Guard</th> </tr> </thead> <tbody> <tr> <td>Weight</td> <td>3.37 lb / 1.53 kg</td> <td>3.41 lb / 1.55 kg</td> <td>3.23 lb / 1.46 kg</td> <td>3.56 lb / 1.61 kg</td> </tr> </tbody> </table> <p>Case color: Black Case material: Display cover: PPS / 50% GF; Bottom: PA / 50% GF</p> <p>Smart card reader: Optional: Smart card reader Media reader: MicroSD card reader 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), 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</p> <p>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 HDMI: Lenovo USB-C to HDMI Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter</p> <p>Bundled Accy: None</p>	Models	HD	FHD	FHD Low Power / WQHD	Privacy Guard	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
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<p>Chipset Memory</p>	<p>Intel SoC (System on Chip) platform 48GB max / 2400MHz DDR4, dual-channel capable, 8GB or 16GB memory soldered to systemboard, one DDR4 SO-DIMM socket * Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation</p>	<p>Keyboard: 6-row, spill-resistant, multimedia Fn keys, optional LED backlight UltraNav™: TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad</p> <p>Security: Power-on password, hard disk password, supervisor password, security keyhole Security chip: Discrete TPM 2.0, TCG Certified System Mgt (opt): Intel vPro Technology Fingerprint reader: Optional: Touch style match on chip fingerprint reader on the palm rest NFC (optional): Near Field Communication</p>																																																										
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14.0"	WQHD (2560x1440) HDR, Dolby Vision™	IPS	Glossy	500 nits	16:9	1500:1	100% Adobe	170°																																																				
<p>Multi-touch (opt)</p>	<p>On-cell touch, supports 10-finger gesture (FHD only)</p>	<p>Operating system (optional): Windows® 10 Home 64, Windows 10 Pro 64, Windows 10 Pro in S mode</p>																																																										
<p>Storage</p>	<ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s (NOT available in EMEA) M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 	<p>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 • 3-year/1-yr battery depot repair service • 1-year + 2-year/1-yr battery limited onsite service • 3-year/1-yr battery limited onsite service</p>																																																										
<p>Optical</p>	<p>None</p>	<p>Mil-Spec test: MIL-STD-810G military testing</p>																																																										
<p>Ethernet</p>	<p>Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville) vPro model: Intel Ethernet Connection I219-LM (Jacksonville)</p>	<p>Environment: EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant</p>																																																										
<p>WLAN + Bluetooth™ (optional)</p>	<p>One of the following, configurable by model: • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 • Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0 (AX201 for 10th Gen processor only)</p>																																																											
<p>WWAN (optional)</p>	<p>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-A, Fibocom L850-GL, M.2 card • Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4, M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable</p>																																																											
<p>SIM card (opt)</p>	<p>Nano-SIM card slot, optional Verizon LTE (US) SIM card</p>																																																											

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



ThinkPad T490 Secure Access / Healthcare Edition Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor									Dimensions WxDxH: 12.95" x 8.94" x 0.70"; 329mm x 227mm x 17.9mm		
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics			Weight	
Graphics	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	DDR4-2400	Intel UHD Graphics 620		Models	FHD	Privacy Guard
	i5-8365U			1.6 GHz	4.1 GHz	6MB				Weight	3.41 lb / 1.55 kg 3.56 lb / 1.61 kg	
	i7-8565U			1.8 GHz	4.6 GHz	8MB				Case color: Black		
	i7-8665U			1.9 GHz	4.8 GHz	8MB				Case material: Display cover: PPS / 50% GF; Keyboard cover: PC/ABS + Magnesium alloy (with ISO 22196 compliant anti-microbial surface treatment); Bottom: PA / 50% GF		
Chipset	Intel SoC (System on Chip) platform									Smart card reader: None		
Memory	48GB max / 2400MHz DDR4, dual-channel capable, 8GB or 16GB memory soldered to systemboard, one DDR4 SO-DIMM socket * Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation										RFID reader: RFID reader supporting RFID / NFC	
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Media reader: MicroSD card reader		
	14.0"	FHD (1920x1080)	IPS	Anti-glare	250 nits (non-touch) 300 nits (multi-touch)	16:9	700:1	45%	170°	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), 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 model), 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		
Monitor cable (optional)										HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter		
Bundled Accy										USB-C to VGA: Lenovo USB-C to VGA Adapter		
Camera (optional)										USB-C to HDMI: Lenovo USB-C to HDMI Adapter		
Audio support										USB-C to DP: Lenovo USB-C to DisplayPort Adapter		
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)									None		
Storage	<ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 									Camera (optional) One of the following, configurable by model: <ul style="list-style-type: none"> HD720p camera with ThinkShutter camera privacy, fixed focus IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus 		
Optical	None									Keyboard: 6-row, spill-resistant, multimedia Fn keys, optional LED backlight		
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)									UltraNav™: TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad		
WLAN (optional)	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0									Security: Power-on password, hard disk password, supervisor password, security keyhole		
Bluetooth™ (opt)	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									Security chip: Discrete TPM 2.0, TCG Certified		
WWAN (optional)	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> Wireless WAN upgradable (special bid only) Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card <i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i>									System Mgt (opt): Intel vPro Technology		
SIM card (opt)	None									Fingerprint reader: FIPS 201 fingerprint reader on palm rest		
										NFC: NFC support via RFID reader		
										Battery: Integrated Li-ion 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr)		
										Max battery life: <i>MobileMark® 2014:</i> 16.11 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>		
										AC adapter: 45W, 65W, or 65W slim USB-C AC adapter		
										Operating system: <i>Optional:</i> Windows® 10 Pro 64		
										Limited warranty: <i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 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.

Lenovo
December 2019



ThinkPad T490s Platform Specifications

Product Specifications Reference (PSREF)

Processor	<p>8th Generation Intel® Core™ i5 / i7 Processor</p> <table border="1"> <thead> <tr> <th>Processor Number</th> <th># of Cores</th> <th># of Threads</th> <th>Base Frequency</th> <th>Max Turbo Frequency</th> <th>Cache</th> <th>Memory Types</th> <th>Processor Graphics</th> </tr> </thead> <tbody> <tr> <td>i5-8265U</td> <td rowspan="4">4</td> <td rowspan="4">8</td> <td>1.6 GHz</td> <td>3.9 GHz</td> <td>6MB</td> <td rowspan="4">DDR4-2400</td> <td rowspan="4">Intel UHD Graphics 620</td> </tr> <tr> <td>i5-8365U</td> <td>1.6 GHz</td> <td>4.1 GHz</td> <td>6MB</td> </tr> <tr> <td>i7-8565U</td> <td>1.8 GHz</td> <td>4.6 GHz</td> <td>8MB</td> </tr> <tr> <td>i7-8665U</td> <td>1.9 GHz</td> <td>4.8 GHz</td> <td>8MB</td> </tr> </tbody> </table>	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	DDR4-2400	Intel UHD Graphics 620	i5-8365U	1.6 GHz	4.1 GHz	6MB	i7-8565U	1.8 GHz	4.6 GHz	8MB	i7-8665U	1.9 GHz	4.8 GHz	8MB	Dimensions	<p><i>WxDxH (black with FHD / Privacy Guard):</i> 12.95" x 8.90" x 0.66"; 329.0mm x 226.15mm x 16.7mm</p> <p><i>WxDxH (black with FHD Low Power / WQHD):</i> 12.94" x 8.89" x 0.63"; 328.8mm x 225.8mm x 16.1mm</p> <p><i>WxDxH (silver):</i> 12.96" x 8.92" x 0.68"; 329.15mm x 226.45mm x 17.2mm</p>																	
Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics																																									
i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	DDR4-2400	Intel UHD Graphics 620																																									
i5-8365U			1.6 GHz	4.1 GHz	6MB																																											
i7-8565U			1.8 GHz	4.6 GHz	8MB																																											
i7-8665U			1.9 GHz	4.8 GHz	8MB																																											
Graphics	<p>Intel UHD Graphics 620 in processor; supports external digital monitor via HDMI or Thunderbolt; supports three independent displays; Max resolution: 4096x2304@60Hz (Thunderbolt); 4096x2160@24Hz (HDMI)</p>	Weight	<table border="1"> <thead> <tr> <th>Models</th> <th>Black with FHD</th> <th>Black with FHD Low Power / WQHD / Privacy Guard</th> <th>Silver</th> </tr> </thead> <tbody> <tr> <td>Weight</td> <td>2.98 lb / 1.35 kg</td> <td>2.81 lb / 1.27 kg</td> <td>3.29 lb / 1.49 kg</td> </tr> </tbody> </table>	Models	Black with FHD	Black with FHD Low Power / WQHD / Privacy Guard	Silver	Weight	2.98 lb / 1.35 kg	2.81 lb / 1.27 kg	3.29 lb / 1.49 kg																																					
Models	Black with FHD	Black with FHD Low Power / WQHD / Privacy Guard	Silver																																													
Weight	2.98 lb / 1.35 kg	2.81 lb / 1.27 kg	3.29 lb / 1.49 kg																																													
Chipset Memory	<p>Intel SoC (System on Chip) platform 8GB, 16GB or 32GB / 2400MHz DDR4 / soldered to systemboard, no sockets * Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation</p>	Case color	Black or Silver																																													
Display	<table border="1"> <thead> <tr> <th>Size</th> <th>Resolution</th> <th>Type</th> <th>Surface</th> <th>Brightness</th> <th>Aspect Ratio</th> <th>Contrast Ratio</th> <th>Color Gamut</th> <th>Viewing Angle</th> </tr> </thead> <tbody> <tr> <td>14.0"</td> <td>FHD (1920x1080)</td> <td>IPS</td> <td>Anti-glare</td> <td>250 nits (non-touch) 300 nits (multi-touch)</td> <td>16:9</td> <td>700:1</td> <td>45%</td> <td>170°</td> </tr> <tr> <td>14.0"</td> <td>FHD (1920x1080) Low Power</td> <td>IPS</td> <td>Anti-glare</td> <td>400 nits</td> <td>16:9</td> <td>800:1</td> <td>72%</td> <td>170°</td> </tr> <tr> <td>14.0"</td> <td>FHD (1920x1080) ThinkPad Privacy Guard</td> <td>IPS</td> <td>Anti-glare</td> <td>400 nits</td> <td>16:9</td> <td>1000:1</td> <td>72%</td> <td>170°</td> </tr> <tr> <td>14.0"</td> <td>WQHD (2560x1440) HDR, Dolby Vision™</td> <td>IPS</td> <td>Glossy</td> <td>500 nits</td> <td>16:9</td> <td>1500:1</td> <td>100% Adobe</td> <td>170°</td> </tr> </tbody> </table>	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	14.0"	FHD (1920x1080)	IPS	Anti-glare	250 nits (non-touch) 300 nits (multi-touch)	16:9	700:1	45%	170°	14.0"	FHD (1920x1080) Low Power	IPS	Anti-glare	400 nits	16:9	800:1	72%	170°	14.0"	FHD (1920x1080) ThinkPad Privacy Guard	IPS	Anti-glare	400 nits	16:9	1000:1	72%	170°	14.0"	WQHD (2560x1440) HDR, Dolby Vision™	IPS	Glossy	500 nits	16:9	1500:1	100% Adobe	170°	Case material	<p><i>Display cover:</i> CFRP Hybrid (black) or Aluminum (silver); <i>Bottom:</i> Magnesium</p>
Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle																																								
14.0"	FHD (1920x1080)	IPS	Anti-glare	250 nits (non-touch) 300 nits (multi-touch)	16:9	700:1	45%	170°																																								
14.0"	FHD (1920x1080) Low Power	IPS	Anti-glare	400 nits	16:9	800:1	72%	170°																																								
14.0"	FHD (1920x1080) ThinkPad Privacy Guard	IPS	Anti-glare	400 nits	16:9	1000:1	72%	170°																																								
14.0"	WQHD (2560x1440) HDR, Dolby Vision™	IPS	Glossy	500 nits	16:9	1500:1	100% Adobe	170°																																								
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)	Smart card reader	Optional: Smart card reader																																													
Storage	<ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 	Media reader	MicroSD card reader																																													
Optical	None	Ports	<p>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 extension connector, 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</p> <p><i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter <i>Optional:</i> ThinkPad Ethernet Extension Adapter Gen 2</p>																																													
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via bundled or optional ThinkPad Ethernet Extension Adapter Gen 2	Monitor cable (optional)	None																																													
WLAN + Bluetooth™ (optional)	<p><i>One of the following, configurable by model:</i></p> <ul style="list-style-type: none"> Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0 	Bundled Accy	None																																													
WWAN (optional)	<p><i>One of the following, configurable by model:</i></p> <ul style="list-style-type: none"> Wireless WAN upgradable 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 <p>* For non-WWAN model, it means the model is NOT WWAN upgradable</p>	Camera	<p><i>One of the following, configurable by model:</i></p> <ul style="list-style-type: none"> HD720p camera with ThinkShutter camera privacy, fixed focus IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus <p>HD Audio, Realtek® ALC3287 codec / stereo speakers, 1W x 2, Dolby® Audio™ Premium / dual array far-field microphone (optional for special bid model), headphone / microphone combo jack</p>																																													
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card	Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint™ pointing device and buttonless Mylar surface multi-touch touchpad																																													
Security	None	UltraNav™	None																																													
Fingerprint reader	None	Security chip	Discrete TPM 2.0, TCG Certified																																													
NFC (optional)	None	System Mgt (opt)	Intel vPro Technology																																													
Battery	None	Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the palm rest																																													
Max battery life	None	NFC (optional)	Near Field Communication																																													
AC adapter	None	Battery	Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter																																													
Operating system	None	Max battery life	<p><i>MobileMark® 2014:</i> 20 hr * Battery life varies significantly with settings, usage, & other factors</p>																																													
Limited warranty	None	AC adapter	45W, 65W, or 65W slim USB-C AC adapter																																													
Mil-Spec test	None	Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64																																													
Environment	None	Security	<p><i>One of the following, configurable by model:</i></p> <ul style="list-style-type: none"> 1-year depot repair service 1-year depot with 2-year system board repair service 3-year/1-yr battery depot repair service 3-year/1-yr battery limited onsite service 																																													

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

Lenovo
October 2019



AMD



AMD



AMD



AMD



AMD



AMD

ThinkPad T495 Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryzen™ PRO Mobile Processors with Radeon™ Vega Graphics									Dimensions WxDxH: 12.95" x 8.94" x 0.70"; 329mm x 227mm x 17.9mm
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Controller	Processor Graphics		
	Ryzen 3 Pro 3300U	4	4	2.1 GHz	3.5 GHz	2MB L2 / 4MB L3	DDR4-2400	Radeon Vega 6 Graphics		
	Ryzen 5 Pro 3500U	4	8	2.1 GHz	3.7 GHz	2MB L2 / 4MB L3		Radeon Vega 8 Graphics		
Ryzen 7 Pro 3700U	4	8	2.3 GHz	4.0 GHz	2MB L2 / 4MB L3	Radeon Vega 10 Graphics				
Graphics	AMD Radeon Vega 6, Vega 8, or Vega 10 Graphics in processor; supports external digital monitor via USB-C or HDMI; supports four independent displays; Max resolution: 4096x2304@60Hz (USB-C); 4096x2160@60Hz (HDMI)									Case color Black Case material Display cover: PPS / 50% GF; Bottom: PA / 50% GF
Chipset	AMD SoC (System on Chip) platform									
Memory	32GB max / 2400MHz DDR4, dual-channel capable, 8GB or 16GB memory soldered to systemboard, one DDR4 SO-DIMM socket * Installed memory is actually 2666MHz but run at 2400MHz due to AMD limitation									
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	
	14.0"	HD (1366x768)	TN	Anti-glare	220 nits	16:9	400:1	45%	90°	
	14.0"	FHD (1920x1080)	IPS	Anti-glare	250 nits (non-touch) 300 nits (multi-touch)	16:9	700:1	45%	170°	
	14.0"	FHD (1920x1080) Low Power	IPS	Anti-glare	400 nits	16:9	800:1	72%	170°	
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)									Smart card reader Optional: Smart card reader Media reader MicroSD card reader Ports One USB 3.1 Gen 1 (Always On), one USB 3.1 Gen 2, 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, microSD card reader, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed 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 Bundled Accy None
Storage	<ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 									
Optical	None									
Ethernet	Realtek® RTL8111 Gigabit Ethernet connection									
WLAN	One of the following, configurable by model: <ul style="list-style-type: none"> Realtek® RTL8822BE, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 									Camera (optional) One of the following, configurable by model: <ul style="list-style-type: none"> HD720p camera with ThinkShutter camera privacy, fixed focus IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus Audio support HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array far-field microphone (optional for special bid model), headphone / microphone combo jack
Bluetooth™	Bluetooth 4.2 or 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									
WWAN (optional)	One of the following, configurable by model: <ul style="list-style-type: none"> Wireless WAN upgradable Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable									
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card									
Battery	Integrated Li-ion 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter									Keyboard UltraNav™ 6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad
Max battery life	MobileMark® 2014: 13.4 hr * Battery life varies significantly with settings, usage, & other factors									
AC adapter	45W or 65W USB Type-C AC adapter									
Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64									
Limited warranty (optional)	One of the following, configurable by model: <ul style="list-style-type: none"> 1-year depot repair service 3-year/1-yr battery depot repair service 1-year + 2-year/1-yr battery limited onsite service 3-year/1-yr battery limited onsite service 									Security Power-on password, hard disk password, supervisor password, security keyhole Security chip Discrete TPM 2.0, TCG Certified System Mgt DASH Management Fingerprint reader Optional: Touch style match on chip fingerprint reader on the palm rest NFC None
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.

Lenovo
December 2019



AMD



AMD



AMD



AMD



AMD



AMD

ThinkPad T495s Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryzen™ PRO Mobile Processors with Radeon™ Vega Graphics									Dimensions	<i>WxDxH (FHD / Privacy Guard):</i> 12.95" x 8.90" x 0.66"; 329.0mm x 226.15mm x 16.7mm			
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Controller	Processor Graphics			<i>WxDxH (Low Power):</i> 12.94" x 8.89" x 0.63"; 328.8mm x 225.8mm x 16.1mm			
Graphics	Ryzen 5 Pro 3500U	4	8	2.1 GHz	3.7 GHz	2MB L2 / 4MB L3	DDR4-2400	Radeon Vega 8 Graphics		Weight	Models	FHD	FHD Low Power	FHD Privacy Guard
	Ryzen 7 Pro 3700U	4	8	2.3 GHz	4.0 GHz	2MB L2 / 4MB L3		Radeon Vega 10 Graphics			Weight	2.92 lb / 1.33 kg	2.76 lb / 1.25 kg	2.89 lb / 1.31 kg
Chipset	AMD SoC (System on Chip) platform									Case color	Black			
Memory	8GB or 16GB / 2400MHz DDR4 / soldered to systemboard, no sockets <i>* Installed memory is actually 2666MHz but run at 2400MHz due to AMD limitation</i>									Case material	<i>Display cover:</i> CFRP Hybrid; <i>Bottom:</i> Magnesium/Aluminum			
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Smart card reader	Optional: Smart card reader			
	14.0"	FHD (1920x1080)	IPS	Anti-glare	250 nits (non-touch) 300 nits (multi-touch)	16:9	700:1	45%	170°	Media reader	MicroSD card reader			
	14.0"	FHD (1920x1080) Low Power	IPS	Anti-glare	400 nits	16:9	800:1	72%	170°	Ports	One USB 3.1 Gen 1 (Always On), one USB 3.1 Gen 2, two USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort), HDMI 2.0, Ethernet extension connector, nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>			
	14.0"	FHD (1920x1080) Guard	IPS	Anti-glare	400 nits	16:9	1000:1	72%	170°	Monitor cable (optional)	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter Optional: ThinkPad Ethernet Extension Adapter Gen 2			
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)									Camera	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus			
Storage	M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4									Audio support	HD Audio, Realtek® ALC3287 codec / stereo speakers, 1W x 2, Dolby® Audio™ Premium / dual array far-field microphone, headphone / microphone combo jack			
Optical	None									Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight UltraNav™ TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad			
Ethernet	Realtek® RTL8111EPV Gigabit Ethernet connection									Security	Power-on password, hard disk password, supervisor password, security keyhole			
WLAN (optional)	Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0									Security chip	Discrete TPM 2.0, TCG Certified			
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									System Mgt	DASH Management			
WWAN (optional)	<i>One of the following, configurable by model:</i> • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card <i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i>									Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the palm rest			
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card									NFC	None			
										Battery	Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter			
										Max battery life	MobileMark® 2014: 16.4 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>			
										AC adapter	45W or 65W USB Type-C AC adapter			
										Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64			
										Limited warranty	<i>One of the following, configurable by model:</i> • 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.

Lenovo
December 2019



ThinkPad T580 Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i5 Processor							Dimensions Weight	<i>WxDxH:</i> 14.40" x 9.95" x 0.79-0.80"; 365.8mm x 252.8mm x 19.95-20.2mm <i>Integrated model:</i> starting at 4.29 lb / 1.95 kg; <i>Discrete model:</i> starting at 4.39 lb / 1.99 kg																				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types		Processor Graphics	Case color	Black																		
	i5-7200U	2	4	2.5 GHz	3.1 GHz	3MB	DDR4-2133	Intel HD Graphics 620	Case material	<i>Display cover:</i> GFRP + PPS; <i>Bottom:</i> GFRP																			
	i5-7300U			2.6 GHz	3.5 GHz	3MB			Case material																				
	or 8th Generation Intel Core i5 / i7 Processor							Smart card reader	<i>Optional:</i> Smart card reader																				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC)																			
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB	DDR4-2400	Intel UHD Graphics 620	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), 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 <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>																			
	i5-8350U			1.7 GHz	3.6 GHz	6MB																							
	i7-8550U			1.8 GHz	4.0 GHz	8MB																							
	i7-8650U			1.9 GHz	4.2 GHz	8MB																							
Graphics	Intel HD Graphics 620 or Intel UHD Graphics 620 in processor only or Intel HD Graphics 620 or Intel UHD Graphics 620 in processor and NVIDIA® GeForce® MX150, 2GB GDDR5 memory; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)							Monitor cable (optional)	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter																				
Chipset	Intel SoC (System on Chip) platform							Camera (optional)	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus																				
Memory	32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets <i>* System clocks down for processors with lower memory controller</i>							Audio support	HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone (optional for special bid model), headphone / microphone combo jack																				
Display	<i>Some:</i> 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 170° viewing angle <i>Some:</i> 15.6" (396mm) UHD (3840x2160), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 1000:1 contrast ratio, 72% gamut, 170° viewing angle							Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight																				
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)							UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad																				
Storage	<i>System has one HDD slot or one M.2 2280 slot exclusively for storage</i> <i>Some:</i> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>Some:</i> SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high (e.g. xxxGB SSD) <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s <i>Some:</i> 128GB M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s, in WWAN slot as 2nd Storage, mutually exclusive with WWAN							Security	Power-on password, hard disk password, supervisor password, security keyhole																				
Optane™ memory	<i>Optional:</i> Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2							Security chip	Discrete TPM 2.0, TCG Certified																				
Optical	None							vPro (optional)	Intel vPro Technology																				
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)							Fingerprint reader	<i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest, anti-spoofing technology																				
WLAN + Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card <i>* Intel 8265ac card supports BT4.2 but is limited to BT4.1 by Windows OS</i>							NFC (optional)	Near Field Communication																				
WWAN (optional)	<i>One of the following, configurable by model:</i> • Wireless WAN upgradable (special bid only) • Integrated Mobile Broadband 4G LTE, Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only) • Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card							Battery	Optional integrated Li-ion 32Wh battery and external Li-ion 24Wh, 48Wh, or 72Wh battery																				
SIM card (opt)	<i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i> Nano-SIM card slot, optional Verizon LTE (US) SIM card							Max battery life (MobileMark® 2014)	<table border="1"> <tr> <td><i>Models</i></td> <td>24Wh</td> <td>48Wh</td> <td>72Wh</td> <td>32Wh + 24Wh</td> <td>32Wh + 48Wh</td> <td>32Wh + 72Wh</td> </tr> <tr> <td><i>Max battery life</i></td> <td>5.8 hr</td> <td>12.5 hr</td> <td>18.1 hr</td> <td>13.8 hr</td> <td>20.3 hr</td> <td>26.1 hr</td> </tr> </table>							<i>Models</i>	24Wh	48Wh	72Wh	32Wh + 24Wh	32Wh + 48Wh	32Wh + 72Wh	<i>Max battery life</i>	5.8 hr	12.5 hr	18.1 hr	13.8 hr	20.3 hr	26.1 hr
<i>Models</i>	24Wh	48Wh	72Wh	32Wh + 24Wh	32Wh + 48Wh	32Wh + 72Wh																							
<i>Max battery life</i>	5.8 hr	12.5 hr	18.1 hr	13.8 hr	20.3 hr	26.1 hr																							
								AC adapter	<i>* Battery life varies significantly with settings, usage, & other factors</i> 45W or 65W USB Type-C AC adapter																				
								Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64																				
								Limited warranty (optional)	<i>One of the following, configurable by model:</i> • 1-year depot repair service • 1-year depot with 2-year system board 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® 6.1; RoHS-compliant																				

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

Lenovo
December 2019



ThinkPad T590 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor									Dimensions Weight Case color Case material	<i>WxDxH:</i> 14.40" x 9.76" x 0.75"; 365.8mm x 248mm x 19.1mm <i>FHD model:</i> 3.87 lb / 1.75 kg; <i>UHD model:</i> 3.86 lb / 1.75 kg Black <i>Display cover:</i> PPS / 50% GF; <i>Bottom:</i> PA / 50% GF
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics			
	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	DDR4-2400	Intel UHD Graphics 620			
	i5-8365U			1.6 GHz	4.1 GHz	6MB					
	i7-8565U			1.8 GHz	4.6 GHz	8MB					
i7-8665U	1.9 GHz			4.8 GHz	8MB						
Graphics	Intel UHD Graphics 620 in processor only or Intel UHD Graphics 620 in processor and NVIDIA® GeForce® MX250, 2GB GDDR5 memory; supports external digital monitor via HDMI or Thunderbolt; supports three independent displays; Max resolution: 4096x2304@60Hz (Thunderbolt); 4096x2160@24Hz (HDMI)									Smart card reader Media reader Ports	<i>Optional:</i> Smart card 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), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
Chipset Memory	Intel SoC (System on Chip) platform 48GB max / 2400MHz DDR4, dual-channel capable, 8GB or 16GB memory soldered to systemboard, one DDR4 SO-DIMM socket * Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation									Monitor cable (optional) Bundled Accy	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter (NOT available in EMEA) <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter (NOT available in EMEA) None
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Camera (optional) Audio support	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array far-field microphone (optional for special bid model), headphone / microphone combo jack
	15.6"	FHD (1920x1080)	IPS	Anti-glare	250 nits	16:9	700:1	45%	170°		
	15.6"	UHD (3840x2160) HDR, Dolby Vision™	IPS	Anti-glare	500 nits	16:9	1200:1	100% Adobe	170°		
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)									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	<ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 									Security Security chip System Mgt (opt) Fingerprint reader NFC (optional)	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified Intel vPro Technology <i>Optional:</i> Touch style match on chip fingerprint reader on the palm rest Near Field Communication
Optical	None									Battery	Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)									Max battery life AC adapter	<i>MobileMark® 2014:</i> 14.98 hr (9.5 hr for UHD model with discrete graphics) <i>* Battery life varies significantly with settings, usage, & other factors</i> 45W or 65W USB Type-C AC adapter
WLAN (optional) Bluetooth™	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64
WWAN (optional)	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 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-A, Fibocom L850-GL, M.2 card <i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i>									Limited warranty	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 1-year depot repair service 1-year depot with 2-year system board repair service 3-year/1-yr battery depot repair service 3-year/1-yr battery limited onsite service
SIM card	Nano-SIM card slot, optional Verizon LTE (US) SIM card									Mil-Spec test Environment	MIL-STD-810G military testing EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant

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

Lenovo
August 2019



ThinkPad X1 Carbon (6th Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i5 Processor								Dimensions	<i>WxDxH:</i> 12.74" x 8.55" x 0.63"; 323.5mm x 217.1mm x 15.95mm	
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	Starting at 2.49 lb / 1.13 kg	
	i5-7300U	2	4	2.6 GHz	3.5 GHz	3MB	LPDDR3-1866	Intel HD Graphics 620	Case color	Black or Silver (silver case is NOT available in EMEA)	
	or 8th Generation Intel Core i5 / i7 Processor								Case material	<i>Display cover:</i> CFRP/GFRP hybrid; <i>Bottom:</i> magnesium alloy / PPS hybrid	
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Smart card reader	None	
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB	LPDDR3-2133	Intel UHD Graphics 620	Media reader	MicroSD card reader, supports UHS-II	
	i5-8350U			1.7 GHz	3.6 GHz	6MB			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), headphone / microphone combo jack, microSD card reader, side docking connector, security keyhole	
	i7-8550U			1.8 GHz	4.0 GHz	8MB			Monitor cable	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter	
	i7-8650U			1.9 GHz	4.2 GHz	8MB			<i>(optional)</i>	<i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter	
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)								Bundled Accy	<i>Optional:</i> ThinkPad Ethernet Extension Adapter Gen 2	
Chipset	Intel SoC (System on Chip) platform								Camera <i>(optional)</i>	<i>One of the following, configurable by model:</i>	
Memory	8GB or 16GB / 2133MHz LPDDR3 / soldered to systemboard, no sockets <i>* System clocks down for processors with lower memory controller</i>								Audio support	<ul style="list-style-type: none"> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, fixed focus 	
Display	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 170° viewing angle • 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 • 14.0" (355mm) HDR WQHD (2560x1440) with Dolby Vision™, glossy, LED backlight, IPS, 500 nits, 16:9 aspect ratio, 1500:1 contrast ratio, 100% gamut, 170° viewing angle 								Keyboard	6-row, spill-resistant, multimedia Fn keys, LED backlight	
Multi-touch <i>(opt)</i>	On-cell touch, supports 10-finger gesture (FHD only)								UltraNav™	TrackPoint® pointing device and buttonless glass surface multi-touch touchpad	
Storage	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • 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) 								Security chip	Power-on password, hard disk password, supervisor password, security keyhole	
Optical	None								vPro <i>(optional)</i>	Intel vPro Technology	
Ethernet	Native Intel Ethernet Connection I219-V (<i>Non-vPro</i>) or I219-LM (<i>vPro</i>) via bundled or optional ThinkPad Ethernet Extension Adapter Gen 2								Fingerprint reader	Touch style match on chip fingerprint reader on the palm rest, anti-spoofing technology	
WLAN + Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card <i>* Intel 8265ac card supports BT4.2 but is limited to BT4.1 by Windows OS</i>								NFC <i>(optional)</i>	Near Field Communication	
WWAN <i>(optional)</i>	Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card <i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i>								Battery	Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter	
SIM card <i>(opt)</i>	Nano-SIM card slot, optional Verizon LTE (US) SIM card								Max battery life	<i>MobileMark® 2014:</i> 19.3 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>	
									AC adapter	45W, 65W, or 65W Low Halogen USB-C AC adapter	
									Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64	
									Limited warranty	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • 1-year depot repair service • 1-year depot with 2-year system board 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™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant	



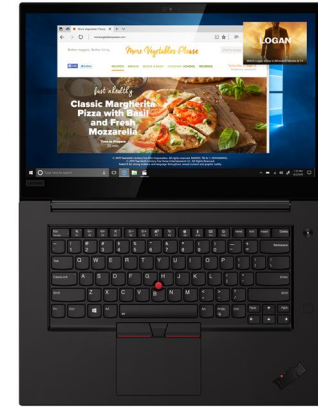
ThinkPad X1 Carbon (7th Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor									WWAN (optional) <i>One of the following, configurable by model:</i> • Wireless WAN upgradable (special bid only) • Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card • Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable SIM card (opt) Nano-SIM card slot, optional Verizon LTE (US) SIM card
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		
	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	LPDDR3-2133	Intel UHD Graphics 620		
	i5-8365U			1.6 GHz	4.1 GHz	6MB				
	i7-8565U			1.8 GHz	4.6 GHz	8MB				
	i7-8665U			1.9 GHz	4.8 GHz	8MB				
	or 10th Generation Intel Core i5 / i7 Processor (NOT available in EMEA)									Dimensions <i>WxDxH (Privacy Guard):</i> 12.72" x 8.54" x 0.61"; 323mm x 217mm x 15.4mm <i>WxDxH (other model):</i> 12.72" x 8.54" x 0.59"; 323mm x 217mm x 14.95mm Weight <i>Privacy Guard model:</i> starting at 2.66 lb / 1.21 kg; <i>Other model:</i> starting at 2.4 lb / 1.09 kg Case color Black paint or black weave Case material <i>Display cover:</i> Carbon Fiber; <i>Bottom:</i> magnesium alloy
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		
	i5-10210U	4	8	1.6 GHz	4.2 GHz	6MB	LPDDR3-2133	Intel UHD Graphics		
	i7-10510U			1.8 GHz	4.9 GHz	8MB				
	i7-10710U	6	12	1.1 GHz	4.7 GHz	12MB				
Graphics	Intel UHD Graphics 620 or Intel UHD Graphics in processor; supports external digital monitor via HDMI or USB Type-C / Thunderbolt; supports three independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@24Hz (HDMI)									Smart card reader None Media reader None 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), 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
Chipset	Intel SoC (System on Chip) platform									
Memory	8GB or 16GB / 2133MHz LPDDR3 / soldered to systemboard, no sockets									Monitor cable Bundled Accy Camera (optional) <i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus Audio support 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
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	
	14.0"	FHD (1920x1080) Multi-touch	IPS	Anti-reflection Anti-smudge	300 nits	16:9	700:1	72%	170°	
	14.0"	FHD (1920x1080) Low Power	IPS	Anti-glare	400 nits	16:9	800:1	72%	170°	
	14.0"	FHD (1920x1080) ThinkPad Privacy Guard	IPS	Anti-glare	400 nits	16:9	1000:1	72%	170°	
	14.0"	WQHD (2560x1440)	IPS	Anti-glare	300 nits	16:9	700:1	72%	170°	
	14.0"	UHD (3840x2160) HDR 400, Dolby Vision™	IPS	Glossy	500 nits	16:9	1400:1	90%	170°	
Multi-touch (opt)	Capacitive-type multi-touch, supports 10-finger gesture (FHD only), anti-reflection (AR) / anti-smudge (AS) coating									Keyboard 6-row, spill-resistant, multimedia Fn keys, LED backlight UltraNav™ TrackPoint® pointing device and buttonless glass surface multi-touch touchpad
Storage	One of the following, configurable by model: • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2280 SSD / PCIe NVMe 3.0 x 4 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4									
Optical	None									Security Power-on password, hard disk password, supervisor password, security keyhole Security chip Discrete TPM 2.0, TCG Certified System Mgt (opt) Intel vPro Technology Fingerprint reader Touch style match on chip fingerprint reader on the palm rest NFC (optional) Near Field Communication
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Adapter Gen 2									
WLAN + Bluetooth™	One of the following, configurable by model: • Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 • Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.0 (AX201 for 10th Gen processor only and NOT available in AP)									Battery Integrated Li-ion 51Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter Max battery life <i>MobileMark® 2014:</i> 18.3 hr * Battery life varies significantly with settings, usage, & other factors AC adapter 45W, 65W, or 65W slim USB-C AC adapter Operating system <i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64 Limited warranty <i>One of the following, configurable by model:</i> • 1-year depot repair service • 1-year depot with 2-year system board repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
	None									
	None									Mil-Spec test MIL-STD-810G military testing
	None									Environment EPEAT™ Gold; ENERGY STAR® 7.1; RoHS-compliant

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

Lenovo
December 2019



ThinkPad X1 Extreme (2nd Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	9th Generation Intel® Core™ i5 / i7 / i9 Processor									Dimensions	<i>WxDxH (non-touch):</i> 14.24" x 9.67" x 0.72"; 361.8mm x 245.7mm x 18.4mm <i>WxDxH (multi-touch):</i> 14.24" x 9.67" x 0.74"; 361.8mm x 245.7mm x 18.7mm			
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		Weight	<i>Non-touch model:</i> starting at 3.75 lb / 1.7 kg; <i>Multi-touch model:</i> starting at 4.0 lb / 1.81 kg			
	i5-9300H	4	8	2.4 GHz	4.1 GHz	8MB	DDR4-2666	Intel UHD Graphics 630		Case color	Black paint (FHD model) or black weave (UHD model)			
	i5-9400H	4	8	2.5 GHz	4.3 GHz	8MB				Case material	<i>Display cover:</i> CFRP/GFRP hybrid; <i>Bottom:</i> Aluminum alloy			
	i7-9750H	6	12	2.6 GHz	4.5 GHz	12MB				Smart card reader	<i>Optional:</i> Smart card reader			
	i7-9850H	6	12	2.6 GHz	4.6 GHz	12MB				Media reader	SD Card reader (SD, SDHC, SDXC), supports UHS-II SD card			
	i9-9880H	8	16	2.3 GHz	4.8 GHz	16MB				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 <i>* Power Delivery only supports power-out for charging peripherals</i> <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>			
Graphics	Intel UHD Graphics 630 in processor and NVIDIA® GeForce® GTX 1650, 4GB GDDR5 memory; supports external digital monitor via HDMI or Thunderbolt™; supports four independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@60Hz (HDMI)									Monitor cable (optional)	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter			
Chipset	Mobile Intel CM246 Chipset									Bundled Accy	<i>Optional:</i> ThinkPad Ethernet Extension Cable			
Memory	64GB max / 2666MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets									Camera (optional)	<i>One of the following, configurable by model:</i> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus			
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Audio support	HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / optional dual 360° far-field microphone, headphone / microphone combo jack, Dolby Atmos® sound system			
	15.6"	FHD (1920x1080)	IPS	Anti-glare	300 nits	16:9	700:1	72% NTSC	170°	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless glass surface multi-touch touchpad			
	15.6"	FHD (1920x1080) Dolby Vision™ HDR	IPS	Anti-glare	500 nits	16:9	1200:1	72% NTSC	170°		Security	Power-on password, hard disk password, supervisor password, security keyhole		
	15.6"	UHD (3840x2160) Dolby Vision HDR	IPS	Anti-glare	500 nits	16:9	1200:1	100% Adobe	170°		Security chip	Discrete TPM 2.0, TCG Certified		
	15.6"	UHD (3840x2160) Dolby Vision HDR, Multi-touch	OLED	Anti-reflection Anti-smudge	SDR 400nit, HDR 500nit (peak)	16:9	100000:1	100% DCI-P3	170°		System Mgt (opt)	Intel vPro Technology		
Multi-touch (opt)	Capacitive-type multi-touch, supports 10-finger gesture (UHD OLED only), anti-reflection (AR), anti-smudge (AS) coating									Fingerprint reader	Touch style match on chip fingerprint reader on the keyboard bezel			
Pen (optional)	Lenovo Pen Pro (special bid only)									Color calibration	<i>Optional:</i> X-Rite Pantone factory color calibration (UHD model only)			
Storage	<i>Up to two M.2 SSD</i> M.2 2280 SSD / PCIe NVMe 3.0 x 4									NFC	None			
RAID (optional)	RAID 0/1 support									Battery	Integrated Li-ion 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr)			
Optical	None									Max battery life	<i>MobileMark® 2014:</i> 14 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>			
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via bundled or optional ThinkPad Ethernet Extension Cable									AC adapter	135W slim tip AC adapter			
WLAN (optional)	Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0									Operating system	<i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64			
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									Limited warranty	<i>One of the following, configurable by model:</i> • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service			
WWAN	None									Mil-Spec test	MIL-STD-810G military testing			
SIM card	None									Environment	EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant			

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

Lenovo
December 2019



ThinkPad X1 Yoga (3rd Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i5 Processor								Smart card readerNone Media readerMicroSD card reader, supports UHS-II PortsTwo 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), headphone / microphone combo jack, microSD card reader <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	
	i5-7300U	2	4	2.6 GHz	3.5 GHz	3MB	LPDDR3-1866	Intel HD Graphics 620	
	8th Generation Intel Core i5 / i7 Processor								WiGig dockNone 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
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB	LPDDR3-2133	Intel UHD Graphics 620	
	i5-8350U			1.7 GHz	3.6 GHz	6MB			
	i7-8550U			1.8 GHz	4.0 GHz	8MB			
	i7-8650U			1.9 GHz	4.2 GHz	8MB			
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)								
Chipset	Intel SoC (System on Chip) platform								Keyboard6-row wave keyboard (rise & fall), spill-resistant, multimedia Fn keys, LED backlit UltraNav™TrackPoint® pointing device and 3+2 buttons multi-touch clickpad
Memory	8GB or 16GB / 2133MHz LPDDR3 / soldered to systemboard, no sockets								
Display	<i>Some:</i> 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) <i>Some:</i> 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) <i>Some:</i> 14.0" (355mm) HDR WQHD (2560x1440) with Dolby Vision™, LED backlight, 500 nits, 16:9 aspect ratio, 1500:1 contrast ratio, 100% gamut, 170° viewing angle, IPS, AR (anti-reflection)								SecurityPower-on password, hard disk password, supervisor password, security keyhole Security chipDiscrete TPM 2.0 TCG Certified System Mgt (opt)Intel vPro Technology Fingerprint readerTouch style match on chip fingerprint reader on the palm rest NFC (optional)Near Field Communication
Multi-touch	Capacitive-type multi-touch, AR (anti-reflection), AS (anti-smudge), supports 10-finger gesture, reduces overall display brightness by 10%								
Hinge	Yoga hinge, 360 degree								BatteryIntegrated Li-Ion 54Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter Max battery lifeMobileMark® 2014: 15.4 hrs <i>* Battery life varies significantly with settings, usage, & other factors</i>
Convert-mode	Laptop, tent, stand, and tablet								
Pen (optional)	ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable								AC adapter45W or 65W USB Type-C AC adapter
Storage	<i>Some:</i> M.2 SSD / SATA 6.0Gb/s (e.g. xxxG SSD) <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s (e.g. xxxG SSD PCIe NVMe)								
Optical	None								Light sensorAmbient Light Sensor G-sensor3D accelerometer Gyroscope3D gyrometer GPSGPS function is integrated into WWAN module
Ethernet	Native Intel Ethernet Connection WGI219-LM (vPro) via optional ThinkPad Ethernet Extension Cable								
WLAN	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 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 								PreloadWindows® 10 Pro 64
Bluetooth™	Bluetooth 4.2 wireless, integrated in Wi-Fi + Bluetooth combo adapter								
WWAN (optional)	Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card								Limited warranty (optional) <i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> 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
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card								
Dimensions	WxDxH: 13.11" x 9.02" x 0.67"; 333mm x 229mm x 17.05mm								Mil-Spec testMIL-STD-810G military testing EnvironmentEPEAT™ Silver; ENERGY STAR®; RoHS-compliant
Weight	Starting at 3.08 lb / 1.4kg								
Case color	Black or silver								
Case material	<i>Display cover:</i> Carbon-Fiber and Glass-Fiber hybrid; <i>Bottom:</i> magnesium-PPS hybrid								



ThinkPad X1 Yoga (4th Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor										WWAN (optional) One of the following, configurable by model: <ul style="list-style-type: none"> • Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card • Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card SIM card (opt) Nano-SIM card slot, optional Verizon LTE (US) SIM card
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics			
	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	LPDDR3-2133	Intel UHD Graphics 620			
	i5-8365U			1.6 GHz	4.1 GHz	6MB					
	i7-8565U			1.8 GHz	4.6 GHz	8MB					
	i7-8665U			1.9 GHz	4.8 GHz	8MB					
	or 10th Generation Intel Core i5 / i7 Processor (NOT available in EMEA)										
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics			
	i5-10210U	4	8	1.6 GHz	4.2 GHz	6MB	LPDDR3-2133	Intel UHD Graphics			
	i7-10510U			1.8 GHz	4.9 GHz	8MB					
	i7-10710U	6	12	1.1 GHz	4.7 GHz	12MB					
Graphics	Intel UHD Graphics 620 or Intel UHD Graphics in processor; supports external digital monitor via HDMI or USB Type-C / Thunderbolt; supports three independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@24Hz (HDMI)										Dimensions WxDxH (Privacy Guard): 12.71" x 8.58" x 0.63"; 323mm x 218mm x 15.95mm WxDxH (other model): 12.71" x 8.58" x 0.61"; 323mm x 218mm x 15.5mm Weight Privacy Guard model: starting at 3.24 lb / 1.47 kg; Other model: starting at 2.99 lb / 1.36 kg
Chipset	Intel SoC (System on Chip) platform										Case color Iron Grey
Memory	8GB or 16GB / 2133MHz LPDDR3 / soldered to systemboard, no sockets										Case material Display cover: Aluminium; Bottom: Magnesium
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Smart card reader None	
	14.0"	FHD (1920x1080) Low Power	IPS	Anti-reflection Anti-smudge	400 nits	16:9	800:1	72%	170°	Media reader None	
	14.0"	FHD (1920x1080) ThinkPad Privacy Guard	IPS	Anti-reflection Anti-smudge	400 nits	16:9	1000:1	72%	170°	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), headphone / microphone combo jack, side docking connector, security keyhole * Depending on many factors, actual data transfer speed may be lower than theoretical speed	
	14.0"	WQHD (2560x1440)	IPS	Anti-reflection Anti-smudge	300 nits	16:9	800:1	72%	170°	Optional: Lenovo HDMI to VGA Monitor Adapter	
	14.0"	UHD (3840x2160) HDR 400, Dolby Vision™	IPS	Anti-reflection Anti-smudge	500 nits	16:9	1400:1	90%	170°	Optional: ThinkPad Ethernet Extension Adapter Gen 2	
Multi-touch	Capacitive-type multi-touch, supports 10-finger gesture, AR (anti-reflection) / AS (anti-smudge) coating, could reduce the brightness by up to 10%										Monitor cable Bundled Accy
Hinge	Yoga hinge, 360 degree										Camera (optional) One of the following, configurable by model: <ul style="list-style-type: none"> • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus Audio support 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
Convert-mode	Laptop, tent, stand and tablet										Keyboard UltraNav™ 6-row, spill-resistant, multimedia Fn keys, LED backlight TrackPoint® pointing device and buttonless glass surface multi-touch touchpad
Pen	ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable										Security Security chip Discrete TPM 2.0, TCG Certified System Mgt (opt) Intel vPro Technology Fingerprint reader Touch style match on chip fingerprint reader on the palm rest NFC (optional) Near Field Communication
Storage	One of the following, configurable by model: <ul style="list-style-type: none"> • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2280 SSD / PCIe NVMe 3.0 x 4 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 										Battery Integrated Li-ion 51Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter Max battery life MobileMark® 2014: 18.1 hr * Battery life varies significantly with settings, usage, & other factors AC adapter 45W, 65W, or 65W slim USB-C AC adapter
Optical	None										Operating system Optional: Windows® 10 Home 64 or Windows 10 Pro 64
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Adapter Gen 2										Limited warranty (optional) <ul style="list-style-type: none"> • 1-year depot repair service • 1-year depot with 2-year system board repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
WLAN	Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0										Mil-Spec test MIL-STD-810G military testing
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter										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								Dimensions													
6th Generation Intel® Core™ i3 / i5 / i7 Processor								WxDxH: 12.03" x 8.21" x 0.80"; 305.5mm x 208.5mm x 20.3mm													
Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight													
i3-6006U	2	4	2.0 GHz	-	3MB	DDR4-2133	Intel HD Graphics 520	<i>Models</i>	<i>No + 3-cell</i>	<i>3-cell + 3-cell</i>	<i>3 + 6-cell</i>										
i3-6100U			2.3 GHz	-	3MB			<i>Weight</i>	2.79 lb / 1.27 kg	2.98 lb / 1.36 kg	3.33 lb / 1.52 kg										
i5-6200U			2.3 GHz	2.8 GHz	3MB																
i5-6300U			2.4 GHz	3.0 GHz	3MB																
i7-6500U			2.5 GHz	3.1 GHz	4MB																
i7-6600U			2.6 GHz	3.4 GHz	4MB																
or 7th Generation Intel Core i3 / i5 / i7 Processor																					
Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics														
i3-7100U	2	4	2.4 GHz	-	3MB	DDR4-2133	Intel HD Graphics 620														
i5-7200U			2.5 GHz	3.1 GHz	3MB																
i5-7300U			2.6 GHz	3.5 GHz	3MB																
i7-7500U			2.7 GHz	3.5 GHz	4MB																
i7-7600U			2.8 GHz	3.9 GHz	4MB																
Case color	Black																				
Case material	<i>Display cover:</i> Glass-Fiber Reinforced Plastic; <i>Bottom:</i> Glass-Fiber Reinforced Plastic																				
Smart card reader	Optional: Smart card reader																				
Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC)																				
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), HDMI 1.4b, Ethernet (RJ-45), Dock connector * Depending on many factors, actual data transfer speed may be lower than theoretical speed																				
WiGig dock (opt)	ThinkPad WiGig dock, mutually exclusive with WWAN (US only)																				
Monitor cable (optional)	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter																				
Camera (optional)	HD720p resolution, fixed focus																				
Audio support	HD Audio, Realtek ALC3268 codec / stereo speakers, 1.5W x 2 / dual array microphone, combo audio/microphone jack																				
Graphics	Intel HD Graphics 520 or 620 in processor; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2160@60Hz (USB Type-C); 4096x2160@24Hz (HDMI)							Keyboard UltraNav™ 6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint™ pointing device and buttonless Mylar surface multi-touch touchpad													
Chipset	Intel SoC (System on Chip) platform							Security Security chip Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified													
Memory	16GB max / 2400MHz DDR4, one DDR4 SO-DIMM socket * System clocks down for processors with lower memory controller							vPro (optional) Intel vPro Technology Fingerprint reader Optional: Touch style match on chip fingerprint reader on the palm rest NFC (optional) Near Field Communication													
Display	<i>Some:</i> 12.5" (317.5mm) HD (1366x768), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 500:1 contrast ratio <i>Some:</i> 12.5" (317.5mm) HD (1366x768), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle <i>Some:</i> 12.5" (317.5mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 170° viewing angle							Internal battery <i>Optional:</i> Integrated Li-ion or Li-Polymer 3-cell (23Wh) External battery Li-ion 3-cell (23Wh) or 6-cell (48Wh or 72Wh) Max battery life (MobileMark® 2014) <table border="1"> <thead> <tr> <th>Models</th> <th>No + 3-cell</th> <th>3-cell + 3-cell</th> <th>3-cell + 6-cell 48Wh</th> <th>3-cell + 6-cell 72Wh</th> </tr> </thead> <tbody> <tr> <td><i>Max battery life</i></td> <td>6.52 hr</td> <td>13.04 hr</td> <td>20.1 hr</td> <td>26.9 hr</td> </tr> </tbody> </table> * Battery life varies significantly with settings, usage, & other factors				Models	No + 3-cell	3-cell + 3-cell	3-cell + 6-cell 48Wh	3-cell + 6-cell 72Wh	<i>Max battery life</i>	6.52 hr	13.04 hr	20.1 hr	26.9 hr
Models	No + 3-cell	3-cell + 3-cell	3-cell + 6-cell 48Wh	3-cell + 6-cell 72Wh																	
<i>Max battery life</i>	6.52 hr	13.04 hr	20.1 hr	26.9 hr																	
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)							AC adapter 45W slim tip AC adapter or 45W USB Type-C AC adapter													
Storage	System has one HDD slot or one M.2 2280 slot exclusively for storage <i>Some:</i> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™ <i>Some:</i> SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high (e.g. xxxGB SSD) <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s <i>Some:</i> 128GB M.2 SSD / SATA 6.0Gb/s, in WWAN slot as 2nd Storage, mutually exclusive with WWAN and WiGig							Operating system <i>One of the following, configurable by model:</i> • Windows® 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64 • Windows 10 Home 64 • Windows 10 Pro 64													
Optical	None							Limited warranty <i>One of the following, configurable by model:</i> • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service													
Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)							MIL-Spec test MIL-STD-810G military testing													
WLAN	<i>One of the following, configurable by model (WiGig is mutually exclusive with WWAN):</i> • Realtek® RTL8822BE, Wi-Fi 2x2 802.11ac + BT4.1 • Intel Dual Band Wireless-AC 8260, Wi-Fi 2x2 802.11ac + BT4.1 • Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + BT4.1 • Intel Tri-Band Wireless-AC 18265, WiGig 802.11ad + Wi-Fi 2x2 802.11ac + BT4.1 (US only)							Environment EPEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant													
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																				
WWAN (optional)	<i>One of the following, configurable by model (mutually exclusive with WiGig):</i> • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE-A, Qualcomm® Snapdragon™ X7 LTE-A (Sierra Wireless EM7455) • Integrated Mobile Broadband 4G LTE, Intel XMM™ 7160 (Fibocom L831-EAU) (EMEA only)																				
SIM card (opt)	Micro-SIM card slot, opt Verizon LTE (US) or Lenovo® Connect (EMEA) SIM card																				



ThinkPad X280 Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i3 / i5 Processor <i>* i3-7130U is NOT available in US and EMEA; i5-7200U is NOT available in US</i>							Dimensions	WxDxH: 12.11" x 8.26" x 0.69-0.70"; 307.7mm x 209.8mm x 17.4-17.8mm		
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	Weight	FHD non-touch model: 2.49 lb / 1.13 kg; HD non-touch model: 2.78 lb / 1.26 kg; FHD multi-touch model: 2.79 lb / 1.27 kg	
	i3-7020U	2	4	2.3 GHz	-	3MB	DDR4-2133	Intel HD Graphics 620	Case color	Black	
	i3-7130U			2.7 GHz	-	3MB			Case material	Display cover: Carbon Fiber (FHD non-touch model) or Glass Fiber (HD & FHD multi-touch model);	
	i5-7200U			2.5 GHz	3.1 GHz	3MB			Bottom: Magnesium/Aluminum		
	i5-7300U			2.6 GHz	3.5 GHz	3MB					
	or 8th Generation Intel 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	Media reader	MicroSD card reader, in the combo slot with nano-SIM card	
	i3-8130U	2	4	2.2 GHz	3.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	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), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), 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 <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>	
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB			Monitor cable (optional)	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter	
	i5-8350U			1.7 GHz	3.6 GHz	6MB			Bundled Accy	USB-C to VGA: Lenovo USB-C to VGA Adapter	
	i7-8550U			1.8 GHz	4.0 GHz	8MB			Camera (optional)	Optional: ThinkPad Ethernet Extension Adapter Gen 2	
	i7-8650U			1.9 GHz	4.2 GHz	8MB			Audio support	One of the following, configurable by model: • HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera, 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: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)							Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad		
Chipset	Intel SoC (System on Chip) platform 4GB, 8GB, or 16GB / 2400MHz DDR4 / soldered to systemboard, no sockets <i>* 4GB memory is NOT available in US and EMEA</i> <i>* System clocks down for processors with lower memory controller</i>							Security	Power-on password, hard disk password, supervisor password, security keyhole		
Memory								Security chip	Discrete TPM 2.0, TCG Certified		
Display	Some: 12.5" (317.5mm) HD (1366x768), anti-glare, LED backlight, 220 nits, 16:9 aspect ratio, 400:1 contrast ratio Some: 12.5" (317.5mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 170° viewing angle							vPro (optional)	Intel vPro Technology		
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only) <i>* FHD non-touch model is NOT available in US</i>							Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the palm rest, anti-spoofing technology		
Storage	One of the following, configurable by model: • 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)							NFC (optional)	Near Field Communication		
Optical	None							Battery	Integrated Li-ion 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter		
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via bundled or optional ThinkPad Ethernet Extension Adapter Gen 2							Max battery life	MobileMark® 2014: 16.6 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>		
WLAN + Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card <i>* Intel 8265ac card supports BT4.2 but is limited to BT4.1 by Windows OS</i>							AC adapter	45W or 65W USB-C AC adapter		
WWAN (optional)	One of the following, configurable by model: • Integrated Mobile Broadband 4G LTE, Intel XMM™ 7262 (Fibocom L830-EB), M.2 card (EMEA only) • Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card <i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i>							Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64		
SIM card (opt)	Nano-SIM card slot, in the combo slot with microSD card reader, optional Verizon LTE (US) SIM card							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 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® 6.1; RoHS-compliant		

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

Lenovo
September 2019



ThinkPad X380 Yoga Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i5 Processor								Smart card reader Media reader Ports	Optional: Smart card reader (mutually exclusive with NFC) One microSD card slot (microSD, microSDHC, microSDXC), UHS-I Two USB 3.1 Gen 1 (one Always On), Ethernet extension connector, one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (Power Delivery, DisplayPort, Data transfer), HDMI 1.4b, microSD card reader, nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>
	Processor Number	# of Cores	# of Threads	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	WiGig dock Monitor cable (optional)	
	i5-7300U			2.6 GHz	3.5 GHz	3MB				
	or 8th Generation Intel Core i3 / i5 / i7 Processor								Camera	None USB-C to VGA: Lenovo USB-C to VGA Plus Power Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		
	i3-8130U	4	8	2.2 GHz	3.4 GHz	4MB	DDR4-2400	Intel UHD Graphics 620	Audio support	
	i5-8250U			1.6 GHz	3.4 GHz	6MB				
	i5-8350U			1.7 GHz	3.6 GHz	6MB				
	i7-8550U			1.8 GHz	4.0 GHz	8MB				
	i7-8650U			1.9 GHz	4.2 GHz	8MB				
Graphics	Intel UHD Graphics 620 in processor only; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@30Hz (HDMI)								Keyboard	6-row, spill-resistant, multimedia Fn keys, LED backlight UltraNav™ TrackPoint® pointing device and 3+2 buttons Mylar surface multi-touch click pad
Chipset	Intel SoC (System on Chip) platform								Security	Power-on password, hard disk password, supervisor password, security keyhole
Memory	8GB or 16GB / 2400MHz DDR4 / soldered to systemboard, no sockets <i>* System clocks down for processors with lower memory controller</i>								Security chip	Discrete TPM 2.0 TCG Certified
Display	13.3" (337.8mm) FHD (1920x1080), LED backlight, IPS 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle, AR (anti-reflection)								System Mgt (opt)	Intel vPro Technology
Multi-touch	Capacitive-type multi-touch, AR (anti-reflection), AS (anti-smudge), supports 10-finger gesture								Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the palm rest
Hinge	Yoga hinge, 360 degree								NFC (optional)	Near Field Communication (mutually exclusive with smart card reader)
Convert-mode	Laptop, tent, stand, yoga and tablet								Battery	Li-Ion 51Wh battery
Pen	ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable								Max battery life	MobileMark® 2014: 13.6 hrs <i>* Battery life varies significantly with settings, usage, & other factors</i>
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)								AC adapter	45W or 65W AC adapter (slim tip), 45W or 65W USB Type-C AC adapter
Optical	None								Light sensor	Ambient Light Sensor
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Cable								G-sensor/	3D accelerometer and 3D magnetometer
WLAN	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card								eCompass	3D compass
Bluetooth™	Bluetooth 4.2 wireless, integrated in Wi-Fi + Bluetooth combo adapter								Gyroscope	3D gyrometer
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								Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64
SIM card (opt)	Nano-SIM card slot								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
Dimensions	WxDxH: 12.34" x 8.75" x 0.72"; 313.5mm x 222.2mm x 18.2mm								Mil-Spec test	MIL-STD-810G military testing
Weight	Starting at 3.17 lb / 1.43kg								Environment	EPEAT™ Gold; ENERGY STAR®; RoHS-compliant
Case color	Black or silver									
Case Material	Carbon-Fiber Hybrid									



ThinkPad X390 Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i3 / i5 / i7 Processor								Dimensions	Models	FHD Non-touch	HD / FHD Multi-touch		
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		Carbon Fiber	311.9mm x 217.0mm x 16.5mm 12.28" x 8.54" x 0.65"	-		
Processor	or 10th Generation Intel Core i5 / i7 Processor (NOT available in EMEA)								Weight	PPS	312.0mm x 217.2mm x 16.9mm 12.28" x 8.55" x 0.67"	312mm x 217.2mm x 16.9mm 12.28" x 8.55" x 0.67"		
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		Models	FHD Non-touch	HD	FHD Multi-touch	
Processor	or 10th Generation Intel Core i5 / i7 Processor (NOT available in EMEA)								Case color	Black				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		Case material	<i>Display cover:</i> Carbon Fiber (FHD non-touch only) or PPS; <i>Bottom:</i> Magnesium/Aluminum			
Processor	or 10th Generation Intel Core i5 / i7 Processor (NOT available in EMEA)								Smart card reader	Optional: Smart card reader				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		Media reader	MicroSD card reader, in the combo slot with nano-SIM card			
Processor	or 10th Generation Intel Core i5 / i7 Processor (NOT available in EMEA)								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), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), 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 <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>				
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		Monitor cable (optional)	<i>HDMI to VGA:</i> Lenovo HDMI to VGA Monitor Adapter <i>USB-C to VGA:</i> Lenovo USB-C to VGA Adapter <i>USB-C to DP:</i> Lenovo USB-C to DisplayPort Adapter			
Graphics	Intel UHD Graphics 620 or Intel UHD Graphics in processor; supports external digital monitor via HDMI or USB Type-C; supports three independent displays; Max resolution: 4096x2304@60Hz (Thunderbolt); 4096x2160@24Hz (HDMI)								Bundled Accy	Optional: ThinkPad Ethernet Extension Adapter Gen 2				
Chipset	Intel SoC (System on Chip) platform								Camera (optional)	• HD720p camera with ThinkShutter camera privacy, fixed focus • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus				
Memory	4GB, 8GB, 16GB or 32GB / 2400MHz DDR4 / soldered to systemboard, no sockets <i>* 32GB memory is NOT available for models with 10th Gen processor</i> <i>* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation</i>									Audio support	HD Audio, Realtek® ALC3287 codec / stereo speakers, 1W x 2, Dolby® Audio™ Premium / dual array far-field microphone (optional for special bid model), headphone / microphone combo jack			
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle		Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight		
	13.3"	HD (1366x768)	TN	Anti-glare	250 nits	16:9	500:1	45%	90°	UltraNav™		TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad		
	13.3"	FHD (1920x1080)	IPS	Anti-glare	300 nits	16:9	800:1 (non-touch) 700:1 (multi-touch)	72%	170°			Security	Power-on password, hard disk password, supervisor password, security keyhole	
13.3"	FHD (1920x1080) ThinkPad Privacy Guard	IPS	Anti-glare	400 nits	16:9	1000:1	72%	178°	Security chip		Discrete TPM 2.0, TCG Certified			
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)									System Mgt (opt)	Intel vPro Technology			
	Storage	• M.2 2280 SSD / SATA 6.0Gb/s • M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 • Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4									Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the palm rest		
Optical		None								NFC (optional)		Near Field Communication		
	Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via bundled or optional ThinkPad Ethernet Extension Adapter Gen 2									Battery	Integrated Li-ion 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter		
WLAN (optional)		• Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 • Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0								Max battery life		MobileMark® 2014: 17.6 hr <i>* Battery life varies significantly with settings, usage, & other factors</i>		
	Bluetooth™ (opt)	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									AC adapter	45W, 65W, or 65W slim USB-C AC adapter		
WWAN (optional)		• 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-A, Fibocom L850-GL, M.2 card <i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i>								Operating system		Optional: Windows® 10 Home 64 or Windows 10 Pro 64		
	SIM card (opt)	Nano-SIM card slot, in the combo slot with microSD card reader, optional Verizon LTE (US) SIM card									Limited warranty (optional)	• 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; ENERGY STAR® 7.1; RoHS-compliant					

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

Lenovo
December 2019



ThinkPad X390 Yoga Platform Specifications

Product Specifications Reference (PSREF)

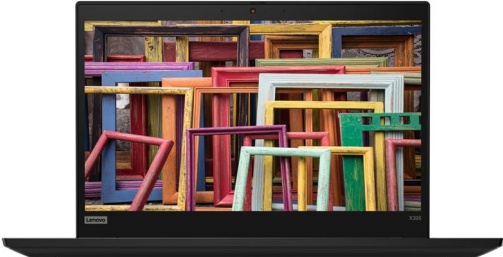
Processor	8th Generation Intel® Core™ i5 / i7 Processor									Dimensions WxDxH: 12.22" x 8.62" x 0.63"; 310.4mm x 219mm x 15.95mm Weight Starting at 2.85 lb / 1.29 kg Case color Black or silver (silver is NOT available in EMEA) Case material Display cover: CF Hybrid PA + 50% GF Bottom: CF Hybrid PA + 50% GF
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		
	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	DDR4-2400	Intel UHD Graphics 620		
	i5-8365U			1.6 GHz	4.1 GHz	6MB				
	i7-8565U			1.8 GHz	4.6 GHz	8MB				
i7-8665U	1.9 GHz			4.8 GHz	8MB					
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 (Thunderbolt); 4096x2160@24Hz (HDMI)									Smart card reader Optional: Smart card reader Media reader MicroSD card reader 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), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), HDMI 1.4b, Ethernet extension connector, 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 Monitor cable (optional) HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter Bundled Accy Optional: ThinkPad Ethernet Extension Adapter Gen 2 Camera (optional) 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 Audio support HD Audio, Realtek® ALC3287 codec / stereo speakers, 1W x 2, Dolby® Audio™ Premium / dual array far-field microphone, headphone / microphone combo jack Keyboard 6-row, spill-resistant, multimedia Fn keys, LED backlight UltraNav™ TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad Security Power-on password, hard disk password, supervisor password, security keyhole Security chip Discrete TPM 2.0, TCG Certified System Mgt (opt) Intel vPro Technology Fingerprint reader Touch style match on chip fingerprint reader on the palm rest NFC (optional) Near Field Communication Battery Integrated Li-ion 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter Max battery life MobileMark® 2014: 14.5 hr * Battery life varies significantly with settings, usage, & other factors AC adapter 45W, 65W, or 65W slim USB-C AC adapter Light sensor None G-sensor 3D accelerometer Gyroscope 3D gyrometer Operating system Optional: Windows® 10 Home 64 or Windows 10 Pro 64 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 • 3-year/1-yr battery depot repair service • 3-year/3-yr battery depot repair 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™ Silver; ENERGY STAR® 7.1; RoHS-compliant
Chipset	Intel SoC (System on Chip) platform									
Memory	8GB or 16GB / 2400MHz DDR4 / soldered to systemboard, no sockets * Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation									
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	
	13.3"	FHD (1920x1080)	IPS	Anti-reflection	300 nits	16:9	800:1	72%	170°	
Multi-touch	Capacitive-type multi-touch, supports 10-finger gesture, anti-reflection (AR), AS (anti-smudge), could reduce the brightness by up to 10%									
Hinge	Yoga hinge, 360 degree									
Convert-mode	Laptop, tent, stand and tablet									
Pen	ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable									
Storage	<ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 									
Optical	None									
Ethernet	Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via bundled or optional ThinkPad Ethernet Extension Adapter Gen 2									
WLAN (optional)	One of the following, configurable by model: <ul style="list-style-type: none"> Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0 Intel Wi-Fi 6 AX200, Wi-Fi 2x2 802.11ax + Bluetooth 5.0 									
Bluetooth™ (opt)	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									
WWAN (optional)	One of the following, configurable by model: <ul style="list-style-type: none"> 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									
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card for special bid only									

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

Lenovo
January 2020



AMD



AMD



AMD



AMD



AMD



AMD

ThinkPad X395 Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Ryzen™ PRO Mobile Processors with Radeon™ Vega Graphics									Dimensions WxDxH: 12.28" x 8.55" x 0.67"; 311.9mm x 217.2mm x 16.9mm	Weight	<table border="1"> <tr> <th>Models</th> <th>HD / FHD multi-touch</th> <th>FHD non-touch</th> <th>FHD Privacy Guard</th> </tr> <tr> <td></td> <td>2.91 lb / 1.32 kg</td> <td>2.82 lb / 1.28 kg</td> <td>3.01 lb / 1.37 kg</td> </tr> </table>				Models	HD / FHD multi-touch	FHD non-touch	FHD Privacy Guard		2.91 lb / 1.32 kg	2.82 lb / 1.28 kg	3.01 lb / 1.37 kg
	Models	HD / FHD multi-touch	FHD non-touch	FHD Privacy Guard																			
		2.91 lb / 1.32 kg	2.82 lb / 1.28 kg	3.01 lb / 1.37 kg																			
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Controller	Processor Graphics															
Ryzen 3 Pro 3300U	4	4	2.1 GHz	3.5 GHz	2MB L2 / 4MB L3	DDR4-2400	Radeon Vega 6 Graphics																
Ryzen 5 Pro 3500U	4	8	2.1 GHz	3.7 GHz	2MB L2 / 4MB L3		Radeon Vega 8 Graphics																
Ryzen 7 Pro 3700U	4	8	2.3 GHz	4.0 GHz	2MB L2 / 4MB L3		Radeon Vega 10 Graphics																
Graphics	AMD Radeon Vega 6, Vega 8, or Vega 10 Graphics in processor; supports external digital monitor via USB-C or HDMI; supports three independent displays; Max resolution: 4096x2304@60Hz (USB-C); 4096x2160@24Hz (HDMI)									Case color	Black												
Chipset	AMD SoC (System on Chip) platform									Case material	Display cover: PPS/GF; Bottom: Magnesium/Aluminum												
Memory	8GB or 16GB / 2400MHz DDR4 / soldered to systemboard, no sockets * Installed memory is actually 2666MHz but run at 2400MHz due to AMD limitation									Smart card reader	Optional: Smart card reader												
Display	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Media reader	MicroSD card reader, in the combo slot with nano-SIM card												
	13.3"	HD (1366x768)	TN	Anti-glare	250 nits	16:9	300:1	45%	90°	Ports	One USB 3.1 Gen 1 (Always On), one USB 3.1 Gen 2, 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, 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												
	13.3"	FHD (1920x1080)	IPS	Anti-glare	300 nits	16:9	800:1 (non-touch) 700:1 (multi-touch)	72%	170°	Monitor cable (optional)	HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter USB-C to VGA: Lenovo USB-C to VGA Adapter												
	13.3"	FHD (1920x1080) ThinkPad Privacy Guard	IPS	Anti-glare	400 nits	16:9	1000:1	72%	178°	Bundled Accy	Optional: ThinkPad Ethernet Extension Adapter Gen 2												
Multi-touch (opt)	On-cell touch, supports 10-finger gesture (FHD only)									Camera (optional)	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												
Storage	<ul style="list-style-type: none"> M.2 2280 SSD / SATA 6.0Gb/s M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4 									Audio support	HD Audio, Realtek ALC3287 codec / stereo speakers, 1W x 2, Dolby® Audio™ Premium / dual array far-field microphone, headphone / microphone combo jack												
Optical	None									Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight												
Ethernet	Native Realtek® RTL8153 Gigabit Ethernet connection via bundled or optional ThinkPad Ethernet Extension Adapter Gen 2									UltraNav™	TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad												
WLAN (optional)	Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0									Security	Power-on password, hard disk password, supervisor password, security keyhole												
Bluetooth™	Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									Security chip	Discrete TPM 2.0, TCG Certified												
WWAN (optional)	One of the following, configurable by model: • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card * For non-WWAN model, it means the model is NOT WWAN upgradable									System Mgt	DASH Management												
SIM card (opt)	Nano-SIM card slot, optional Verizon LTE (US) SIM card									Fingerprint reader	Optional: Touch style match on chip fingerprint reader on the palm rest												
										NFC	None												
										Battery	Integrated Li-ion 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter												
										Max battery life	MobileMark® 2014: 14.5 hr * Battery life varies significantly with settings, usage, & other factors												
										AC adapter	45W or 65W USB Type-C AC adapter												
										Operating system	Optional: Windows® 10 Home 64 or Windows 10 Pro 64												
										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												
										Environment	EPPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant												

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

Lenovo
December 2019

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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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Lenovo **ThinkPad** Tablets

PSREF



Product Specifications Reference

Version 550, October 2019

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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 (3rd Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	8th Generation Intel® Core™ i5 / i7 Processor								Control buttons Dock (<i>Optional</i>)	Power button, volume control button, reset switch • Thin Keyboard (Magnetic Detachable) • USB-C Dock Gen 2
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics		
	i5-8250U	4	8	1.6 GHz	3.4 GHz	6MB	LPDDR3-2133	Intel UHD Graphics 620		
	i5-8350U			1.7 GHz	3.6 GHz	6MB				
	i7-8550U			1.8 GHz	4.0 GHz	8MB				
i7-8650U	1.9 GHz			4.2 GHz	8MB					
Graphics	Intel UHD Graphics 620 in processor, supports external digital monitor via USB Type-C								Monitor cable Bundled Accy (<i>optional</i>)	None <i>USB-C to RJ45:</i> Lenovo USB-C to Ethernet Adapter <i>USB-C to VGA:</i> Lenovo USB C to VGA Plus Power Adapter <i>USB-C to HDMI:</i> Lenovo USB-C to HDMI Plus Power Adapter
Chipset	Intel SoC (System on Chip) platform								Camera	<i>Front camera:</i> 2.0-megapixel, fixed focus <i>Rear camera:</i> 8.0-megapixel, auto focus
Memory	8GB or 16GB / 2133MHz LPDDR3, soldered to systemboard, no sockets								IR Camera	<i>Optional:</i> IR camera, fixed focus (mutually exclusive with NFC)
Display	13.0" (330mm) QHD+ (3000x2000), glossy, LED backlight, IPS, anti-fingerprint display with Corning® Gorilla® Glass, WideView (160° viewing), 400 nits, 3:2 aspect ratio, 1200:1 contrast ratio								Audio support	Realtek® ALC3278 codec / stereo speakers, 1W x 2 / dual array microphones, combo audio/microphone jack
Multi-touch Pen (<i>optional</i>)	Capacitive touch panel, supports ten-finger gesture								Pogo keyboard	Magnetic attached thin keyboard, with TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch, backlit
Kick stand	Lenovo Pen Pro or Lenovo Active Pen (ThinkPad Pen Pro)								Keyboard color	Black
Storage	<i>One of the following, configurable by model:</i> • M.2 2280 SSD / SATA 6.0Gb/s • M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s								Security	Kensington lock slot
Optical	None								Security chip	Discrete TPM 2.0 TCG Certified
Storage extension	One microSD card reader, in the combo slot with nano-SIM card, support USH-I, microSDHC, microSDXC								System Mgt (<i>opt</i>)	Intel vPro Technology
Ethernet	None								Fingerprint reader	<i>Optional:</i> Touch style Fingerprint reader
WLAN	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card								NFC (<i>optional</i>)	Near Field Communication (mutually exclusive with IR camera)
Bluetooth™	Bluetooth 4.2 wireless, integrated in Wi-Fi + Bluetooth combo adapter								Battery	Integrated Li-Ion 42Wh battery
WWAN (<i>optional</i>)	Integrated Mobile Broadband 4G LTE-A, Qualcomm® Snapdragon™ X7 LTE-A (Sierra Wireless EM7455)								Max battery life	<i>MobileMark® 2014:</i> 9.5 hrs <i>* Battery life varies significantly with settings, usage, & other factors</i>
SIM card (<i>opt</i>)	Nano-SIM card slot, in the combo slot with microSD card reader								AC adapter	45W or 65W USB Type-C AC adapter
Dimensions	<i>Tablet only:</i> 11.97" x 8.9" x 0.35"; 304.1mm x 226mm x 8.9mm <i>Tablet + keyboard:</i> 11.97" x 8.9" x 0.57"; 304.1mm x 226mm x 14.4mm								Light sensor	Ambient Light Sensor
Weight	<i>Tablet only:</i> starting at 1.96 lb / 0.89kg <i>Tablet+ keyboard:</i> starting at 2.8 lb / 1.27kg								G-sensor	3D accelerometer
Case color	Black								Gyroscope	3D gyrometer
Case material	Magnesium/Aluminum								GPS (<i>optional</i>)	GPS function is integrated into WWAN module
Ports	Two USB 3.1 Type-C Gen 1 ((with the function of Power Delivery and DisplayPort), one Pogo keyboard connector, one Pen holder slot, headphone / microphone combo jack, combo slot of nano-SIM card (WWAN models) and microSD card reader <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>								Preload	<i>One of the following, configurable by model:</i> • Windows® 10 Pro 64 • Windows 10 Home 64
									Limited warranty	<i>One of the following, configurable by model:</i> • 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
									Mil-Spec test	MIL-STD-810G military testing
									Environment	EPEAT™ Silver, GREENGUARD, Low Halogen, RoHS

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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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PSREF



Product Specifications Reference

Version 554, January 2020

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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.

January 2020 - Version 554

Additions in this update

▶ **New product(s)**

ThinkSmart Edition Tiny M920q for Zoom Rooms

▶ **New model(s)**

None

▶ **Others**

None

Withdrawals in this update

▶ **Withdrawn product(s)**

None



ThinkCentre M820z Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 series						WLAN <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 Bluetooth™ Ethernet <i>Some:</i> Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter Gigabit ethernet, Realtek RTL8111G, Wake on LAN®
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	
	Celeron G4900	2 / 2	3.1G	2 MB	DDR4-2400	UHD 610	
	Celeron G4920	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	
	Celeron G4930	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	
	Celeron G4950	2 / 2	3.3G	2 MB	DDR4-2400	UHD 610	
	Pentium Gold G5400	2 / 4	3.7G	4 MB	DDR4-2400	UHD 610	
	Pentium Gold G5420	2 / 4	3.8G	4 MB	DDR4-2400	UHD 610	
	Pentium Gold G5500	2 / 4	3.8G	4 MB	DDR4-2400	UHD 630	
	Pentium Gold G5600	2 / 4	3.9G	4 MB	DDR4-2400	UHD 630	
	Pentium Gold G5620	2 / 4	4.0G	4 MB	DDR4-2400	UHD 630	
	Core i3-8100	4 / 4	3.6G	6 MB	DDR4-2400	UHD 630	
	Core i3-8300	4 / 4	3.7G	8 MB	DDR4-2400	UHD 630	
	Core i5-8400	6 / 6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	
	Core i5-8500	6 / 6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	
	Core i5-8600	6 / 6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630	
	Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	
	Core i3-9100	4 / 4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	
	Core i3-9300	4 / 4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	
	Core i5-9400	6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	
Core i5-9500	6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630		
Core i5-9600	6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630		
Core i7-9700	8 / 8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630		
Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630		
Memory	32GB max (16GB SO-DIMM only available via special bid models), DDR4-2666*, two 260-pin SO-DIMM sockets, dual-channel capable * System clocks down for the processors with lower memory controller						
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 SSD (2242 / 2280) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4 <i>Some:</i> Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2 <i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)						
Optical	<i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)						
Media reader	Optional 3-in-1 media card reader						
Graphics	Intel HD Graphics 610/630 in processor, uses main memory, DirectX® 12, external monitor support via DisplayPort™; <i>Max resolution:</i> 4096x2304 (DP) @60Hz, 1920x1080 (Panel) @60Hz						
Display	21.5" (546.1mm) Full HD 1080p (1920x1080) TFT color , Borderless design, TFT-LCD, In-Plane Switching technology (In-Plane Switching may refer to IPS, PLS, ADS, AHVA, and AA), wide viewing angle (+/- 89°), LED backlight, 250 nits, 16:9 aspect ratio, 1000:1 contrast ratio, anti-glare, support Low Blue Light Mode Optional multi-touch, supports 10-point, AIT (Advanced In-cell Touch) technology Optional 1080p camera, with dual microphone, LED indicator, physical switch on/off, supports multi-degree rotation (horizontal 0° to 180°, vertical -25° to 25°)						
Multi-touch							
Camera							
Controls	Physical buttons on side for microphone mute and power on/off						
Chipset	Intel B360 Chipset						
Rear ports*	Four USB 3.1 Gen1 (one supports Smart Power On), one ethernet (RJ-45), one DisplayPort, one optional serial (9-pin),						
Side ports*	one USB 3.1 Gen2 (one is Always On and fast charge), one USB 3.1 Type-C Gen 1, one optional card reader, one headphone / microphone combo jack (3.5mm) * Depending on many factors, actual data transfer speed may be lower than theoretical speed						
M.2 card slot	Two M.2 Card slots (one for WLAN, one for SSD/Optane)						
Audio support	High Definition (HD) Audio, Realtek ALC233 / two internal speakers (2W x 2), Dolby® Audio™ Premium						
Power supply	150 watts, autosensing, 90% PSU						
Limited warranty ³	<i>Some:</i> 1-year or 3-year, depot repair service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available						
Preload	Preloaded operating system <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> 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						
Environment	ENERGY STAR® 7.0*, EPEAT™ Silver rating* (*not for non-OS models), ErP Lot 3, TCO AIO Computer certified, GREENGUARD® 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						
MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus)						
Accessories	For compatible accessories, please go to http://smartfind.lenovo.com						

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

Lenovo, June 2019



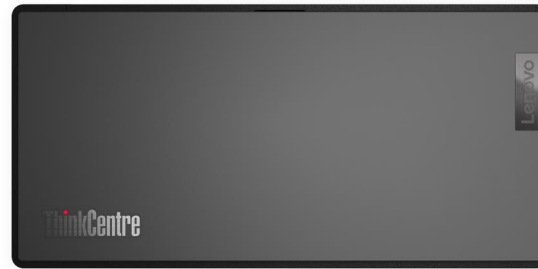
ThinkCentre M920z Platform Specifications

Product Specifications Reference (PSREF)

Processor		Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 series							Audio support	High Definition (HD) Audio, Realtek ALC233 / two internal speakers (3W x 2), Dolby® Audio™ Premium		
		Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	WLAN	<i>Some:</i> 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8821CE (dual band), 1x1 <i>Some:</i> 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8822BE (dual band), 2x2 <i>Some:</i> 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 3165, 1x1 <i>Some:</i> 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 8265,, 2x2 <i>Some:</i> 11ac Wi-Fi + BT 5.0, M.2 Card, Intel Wireless-AC 9560 (dual band), Intel vPro technology support, 2x2			
		Celeron G4900	2 / 2	3.1G	2 MB	DDR4-2400	UHD 610	Bluetooth™ Ethernet	<i>Some:</i> Bluetooth 4.2/5.0 wireless, integrated in Wi-Fi + BT combo adapter Gigabit ethernet, Intel Ethernet Connection I219-LM (Jacksonville), Wake on LAN®			
		Celeron G4920	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	Manageability	Intel Active Management Technology 12.0 (Intel AMT 12.0); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection)			
		Celeron G4930	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	Security chip	Discrete TPM 2.0, TCG Certified			
		Celeron G4950	2 / 2	3.3G	2 MB	DDR4-2400	UHD 610	Security features	<ul style="list-style-type: none">Security slot (in rear for attachment of optional Kensington® MicroSaver® cable; Kensington lock also locks chassis)Smart USB protection, allows keyboard/ mouse only, blocks all storage devicesPower-on, admin, hard disk passwordBoot sequence controlBoot without keyboard and mouseIndividual USB port disablementOptional Chassis intrusion switch			
		Pentium Gold G5400	2 / 4	3.7G	4 MB	DDR4-2400	UHD 610	Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black			
		Pentium Gold G5420	2 / 4	3.8G	4 MB	DDR4-2400	UHD 610	Mouse	<i>Some:</i> Lenovo Calliope Mouse (USB connector), black <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			
		Pentium Gold G5500	2 / 4	3.8G	4 MB	DDR4-2400	UHD 630	Mechanical	<ul style="list-style-type: none">Business black colorToolless back cover, stand, disk, memory removalSupport VESA mount (100mm)			
		Pentium Gold G5600	2 / 4	3.9G	4 MB	DDR4-2400	UHD 630	Memory		32GB max (16GB SO-DIMM only available via special bid models), DDR4-2666*, two 260-pin SO-DIMM sockets, dual-channel capable * System clocks down for the processors with lower memory controller		
		Pentium Gold G5620	2 / 4	4.0G	4 MB	DDR4-2400	UHD 630					
		Core i3-8100	4 / 4	3.6G	6 MB	DDR4-2400	UHD 630	Storage		<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm, supports up to two HDDs (2nd HDD occupies ODD bay), RAID0/1 support (RAID preset only available via special bid model) <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 SSD (2242 / 2280) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4 <i>Some:</i> Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2 <i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)		
		Core i3-8300	4 / 4	3.7G	8 MB	DDR4-2400	UHD 630					
		Core i5-8400	6 / 6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	Optical		Optional 3-in-1 media card reader		
		Core i5-8500	6 / 6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630					
		Core i5-8600	6 / 6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630	Media reader				
		Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630					
		Core i3-9100	4 / 4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	Graphics		Intel HD Graphics 610/630 in processor, uses main memory, DirectX® 12, external monitor support via DisplayPort™; <i>Max resolution:</i> 4096x2304 (DP)@60Hz, 1920x1080 (Panel)@60Hz 23.8" (604.5mm) Full HD 1080p (1920x1080) TFT color , Borderless design, In-Plane Switching technology (In-Plane Switching may refer to IPS, PLS, ADS, AHVA, and AA), wide viewing angle (+/- 89°), LED backlight, 250 nits, 16:9 aspect ratio, 1000:1 contrast ratio, anti-glare, support Low Blue Light Mode, work as stand-alone monitor via DisplayPort (DP in / out combo)		
		Core i3-9300	4 / 4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630					
		Core i5-9400	6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Display		Optional multi-touch, supports 10-point, AIT (Advanced In-cell Touch) technology <i>Some:</i> 1080p camera, with dual microphone, LED indicator, physical switch on/off, supports multi-degree rotation (horizontal 0° to 180°, vertical -25° to 25°) <i>Some:</i> RGBIR camera, 1080p, with dual microphone, physical switch on/off, supports multi-degree rotation (horizontal 0° to 180°, vertical -25° to 25°) Windows Hello support, only available via special bid models		
		Core i5-9500	6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630					
		Core i5-9600	6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Multi-touch Camera		Physical buttons on side for microphone mute and power on/off		
		Core i7-9700	8 / 8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630					
		Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630	Chipset		Intel Q370 Chipset		
		Core i3-8100	4 / 4	3.6G	6 MB	DDR4-2400	UHD 630	Rear ports*		Four USB 3.1 Gen1 (one supports Smart Power On), one ethernet (RJ-45), one DisplayPort in/out combo port, one optional serial (9-pin)		
		Core i3-8300	4 / 4	3.7G	8 MB	DDR4-2400	UHD 630	Side ports*		one USB 3.1 Gen2 (one is Always On and fast charge), one USB 3.1 Gen1, one USB 3.1 Type-C Gen 1, one optional card reader, one headphone / microphone combo jack (3.5mm)		
		Core i5-8400	6 / 6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	M.2 card slot		Two M.2 Card slots (one for WLAN, one for SSD/Optane)		
		Core i5-8500	6 / 6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	Power supply		150 watts, autosensing, 90% PSU		
		Core i5-8600	6 / 6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630	Limited warranty ³		<i>Some:</i> 1-year or 3-year, depot repair service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available		
		Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Preload		Preloaded operating system <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none">Lenovo VantageMicrosoft Office preloaded; purchase a product key to activateCyberlink PowerDVD (only for models with DVD / DVD±RW)Cyberlink Power2GO (only for models with DVD±RW)LinkedIn		
		Core i3-9100	4 / 4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	Environment		ENERGY STAR® 7.0*, EPEAT™ Silver rating* (*not for non-OS models), ErP Lot 3, TCO AIO Computer certified, GREENGUARD® certified, TÜV Eye comfort certified, TÜV Low Blue Light certified, TÜV Ultra Low Noise certified (on some models), RoHS-compliant		
		Core i3-9300	4 / 4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	MIL-SPEC test		MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus)		
		Core i5-9400	6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Accessories		For compatible accessories, please go to http://smartfind.lenovo.com		
		Core i5-9500	6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630					
		Core i5-9600	6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630					
		Core i7-9700	8 / 8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630					
		Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630					

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

Lenovo, June 2019



ThinkCentre M90n-1 Nano Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® 8th Generation Intel Core™ i3 / i5 / i7 Processor						Manageability Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection)						
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics		Security chip Discrete TPM 2.0, TCG Certified Security features <ul style="list-style-type: none"> • Security slot (in rear for optional Kensington® MicroSaver® cable) • Chassis intrusion switch • Power-on password • Administrator password • Hard disk password • Boot sequence control • Boot without keyboard and mouse • Individual USB port disablement • Smart USB protection, allows keyboard/mouse only, blocks all storage devices 					
	Core i3-8145U	2 / 4	2.1G / 3.9G	4 MB	DDR4-2400	UHD 620							
	Core i5-8265U	4 / 8	1.6G / 3.9G	6 MB	DDR4-2400	UHD 620							
	Core i5-8365U	4 / 8	1.6G / 4.1G	6 MB	DDR4-2400	UHD 620							
Core i7-8665U	4 / 8	1.9G / 4.8G	8 MB	DDR4-2400	UHD 620								
Memory	8GB or 16GB / DDR4-2666* / soldered to systemboard, no sockets, non-ECC * System automatically clocks down for the processors with lower memory controller						Keyboard <i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black Mouse <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <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						
Storage	Support up to two M.2 SSD <i>Some:</i> M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4* <i>Some:</i> M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 <i>Some:</i> Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 (not support Celeron) * M.2 SSD / Optane with SSD in PCIe 3.0 x 2 M.2 slot can only run at PCIe 3.0 x2												
RAID Optical	RAID 0/1 support (RAID preset only available via special bid model) None						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 <table border="1" data-bbox="1228 576 1963 657"> <thead> <tr> <th></th> <th>Dimensions (WxDxH)</th> <th>Weight (Approx.)</th> </tr> </thead> <tbody> <tr> <td>M90n-1 Nano (with fan, 0.35L)</td> <td>7.05" X 3.46" X 0.87" 179mm X 88mm X 22mm</td> <td>1.11 lb (0.505 kg), vary by config</td> </tr> </tbody> </table>		Dimensions (WxDxH)	Weight (Approx.)	M90n-1 Nano (with fan, 0.35L)	7.05" X 3.46" X 0.87" 179mm X 88mm X 22mm	1.11 lb (0.505 kg), vary by config
	Dimensions (WxDxH)	Weight (Approx.)											
M90n-1 Nano (with fan, 0.35L)	7.05" X 3.46" X 0.87" 179mm X 88mm X 22mm	1.11 lb (0.505 kg), vary by config											
Graphics	Intel UHD Graphics 620 in processor, uses main memory, DirectX® 12, one DisplayPort™, one USB 3.1 Type-C Gen2 with display function, up to 2 independent displays; <i>Max resolution:</i> 4096x2304 (DP) @60Hz; 4096x2304 (Type-C)@60Hz;												
Monitor cable	Optional DP to VGA dongle, DP to HDMI dongle, Type-C to VGA dongle, Type-C to HDMI dongle, Type-C to DP dongle						Mounting <i>Some:</i> VESA mount bracket kit, supports VESA 75mm <i>Some:</i> VESA mount bracket kit with adapter holder, supports VESA 75mm <i>Some:</i> DIN rail mount bracket kit Floor Stand None						
Chipset	Intel SoC (System on Chip) platform												
Front ports (Std.)*	2x USB 3.1 Gen2, 1x USB 3.1 Type-C Gen 2, one headphone / microphone combo jack (3.5mm)						Power supply 65 watts AC/DC adapter, autosensing, 88% PSU (Not for TIO models)						
Rear ports (Std.)*	2x USB 3.1 Gen2, 1x USB 3.1 Type-C Gen 2 (with display function, support power-in [20V and >45W]), 1x ethernet (RJ-45), 1x DisplayPort * Depending on many factors, actual data transfer speed may be lower than theoretical speed												
Audio support	Realtek ALC233VB / internal speaker (1 watt)						Preload Preloaded operating system <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit						
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9462 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, Intel vPro technology support, 2x2												
Bluetooth	<i>Some:</i> Bluetooth 5.0 wireless, integrated in Wi-Fi + BT combo adapter						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, REACH						
Ethernet	Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN®												
MIL-SPEC test MIL-STD-810H (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Solar Radiation)													
Accessories For compatible accessories, please go to http://smartfind.lenovo.com													

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

Lenovo, July 2019



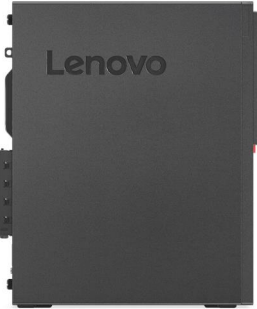
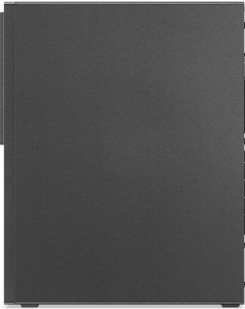
ThinkCentre M90n-1 Nano IoT Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron® or 8th Generation Intel Core™ i3 Processor						Manageability Security chip Security features	None Discrete TPM 2.0, TCG Certified ● Security slot (in rear for optional Kensington® MicroSaver® cable) ● Chassis intrusion switch ● Power-on password ● Administrator password ● Hard disk password	● Boot sequence control ● Boot without keyboard and mouse ● Individual USB port disablement
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics			
	Celeron 4205U	2 / 2	1.8G	2 MB	DDR4-2133	UHD 610			
	Core i3-8145U	2 / 4	2.1G / 3.9G	4 MB	DDR4-2400	UHD 620			
Memory	4GB / DDR4-2666* / soldered to systemboard, no sockets, non-ECC * System automatically clocks down for the processors with lower memory controller								
Storage	Support up to two M.2 SSD <i>Some:</i> M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4* <i>Some:</i> M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 <i>Some:</i> Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 (not support Celeron) * M.2 SSD / Optane with SSD in PCIe 3.0 x 2 M.2 slot can only run at PCIe 3.0 x2						Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black	
RAID	RAID 0/1 support (RAID preset only available via special bid model)						Mouse	<i>Some:</i> Lenovo Calliope Mouse (USB connector), black <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	None						Mechanical	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), one for WLAN, and one for WWAN	
Graphics	Intel UHD Graphics 610/620 in processor, uses main memory, DirectX® 12, one DisplayPort™, one USB 3.1 Type-C Gen2 with display function, up to 2 independent displays; <i>Max resolution:</i> 4096x2304 (DP)@60Hz; 4096x2304 (Type-C)@60Hz;								
Monitor cable	Optional DP to VGA dongle, DP to HDMI dongle, Type-C to VGA dongle, Type-C to HDMI dongle, Type-C to DP dongle								
Chipset	Intel SoC (System on Chip) platform								
Front ports (Std.)	2x USB 3.1 Gen2, 1x USB 3.1 Type-C Gen 2, one headphone / microphone combo jack (3.5mm), 2x serial						Mounting	<i>Some:</i> VESA mount bracket kit, supports VESA 75mm <i>Some:</i> VESA mount bracket kit with adapter holder, supports VESA 75mm <i>Some:</i> DIN rail mount bracket kit	
Rear ports (Std.)	<i>With Celeron:</i> 1x USB 2.0, 1x USB 3.1 Type-C Gen 2 (with display function, support power-in [20V, > 45W]), 1x ethernet (RJ-45), 1x DisplayPort <i>With Core i3:</i> 1x USB 3.1 Gen2, 1x USB 3.1 Type-C Gen 2 (with display function, support power-in [20V, > 45W]), 2x ethernet (RJ-45), 1x DisplayPort						Floor Stand	None	
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 * Depending on many factors, actual data transfer speed may be lower than theoretical speed						Power supply	<i>Some:</i> 65 watts AC/DC adapter*, autosensing, 88% PSU <i>Some:</i> 65 watts AC/DC adapter (wide temperature)*, autosensing, 88% PSU (only for Machine Type 11AS) * Not for the models with I/O box	
Audio support	Realtek ALC233VB / internal speaker (1watt)						Limited warranty	<i>Some:</i> 1-year, limited onsite service / service upgrades available <i>Some:</i> 3-year, limited onsite service / service upgrades available	
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9462 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, Intel vPro technology support, 2x2						Preload	Preloaded operating system <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit <i>Some:</i> Windows 10 IoT Enterprise (only available via special bid model)	
Bluetooth	<i>Some:</i> Bluetooth 5.0 wireless, integrated in Wi-Fi + BT combo adapter						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, REACH * Not for the models with I/O box	
Ethernet	<i>With Celeron:</i> Gigabit ethernet, Realtek RTL8111K, 1x RJ-45, Wake on LAN® <i>With Core i3:</i> Two gigabit ethernet, Realtek RTL8111K and RTL8111HN, 2x RJ-45 Wake on LAN®						MIL-SPEC test	MIL-STD-810H* (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Solar Radiation) * Not for the models with I/O box	
							Accessories	For compatible accessories, please go to http://smartfind.lenovo.com	

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

Lenovo, January 2020



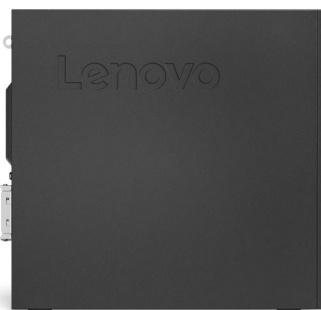
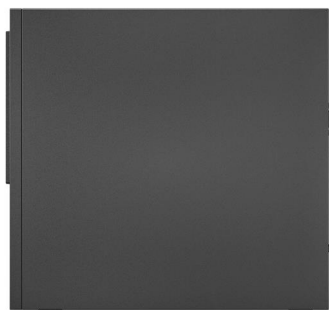
ThinkCentre M710 SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 6/7th Generation Intel Core™ i3 / i5 / i7 Processor	Security features	<ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/mouse only, blocks all storage devices Optional cable lock to physically lock both keyboard and mouse Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch 																																																																								
	<table border="1"> <thead> <tr> <th>Processor</th> <th>Cores / Threads</th> <th>Frequency Base/Max(GHz)</th> <th>Cache</th> <th>Memory Support (Up to)</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr> <td>Pentium G4400</td> <td>2 / 2</td> <td>3.3G</td> <td>3 MB</td> <td>DDR4-2133</td> <td>HD 510</td> </tr> <tr> <td>Pentium G4560</td> <td>2 / 4</td> <td>3.5G</td> <td>3 MB</td> <td>DDR4-2400</td> <td>HD 610</td> </tr> <tr> <td>Pentium G4600</td> <td>2 / 4</td> <td>3.6G</td> <td>3 MB</td> <td>DDR4-2400</td> <td>HD 630</td> </tr> <tr> <td>Core i3-6100</td> <td>2 / 4</td> <td>3.7G</td> <td>3 MB</td> <td>DDR4-2133</td> <td>HD 530</td> </tr> <tr> <td>Core i5-6500</td> <td>4 / 4</td> <td>3.2G / 3.6G</td> <td>6 MB</td> <td>DDR4-2133</td> <td>HD 530</td> </tr> <tr> <td>Core i7-6700</td> <td>4 / 8</td> <td>3.4G / 4.0G</td> <td>8 MB</td> <td>DDR4-2133</td> <td>HD 530</td> </tr> <tr> <td>Core i3-7100</td> <td>2 / 4</td> <td>3.9G</td> <td>3 MB</td> <td>DDR4-2400</td> <td>HD 630</td> </tr> <tr> <td>Core i5-7400</td> <td>4 / 4</td> <td>3.0G / 3.5G</td> <td>6 MB</td> <td>DDR4-2400</td> <td>HD 630</td> </tr> <tr> <td>Core i5-7500</td> <td>4 / 4</td> <td>3.4G / 3.8G</td> <td>6 MB</td> <td>DDR4-2400</td> <td>HD 630</td> </tr> <tr> <td>Core i5-7600</td> <td>4 / 4</td> <td>3.5G / 4.1G</td> <td>6 MB</td> <td>DDR4-2400</td> <td>HD 630</td> </tr> <tr> <td>Core i7-7700</td> <td>4 / 8</td> <td>3.6G / 4.2G</td> <td>8 MB</td> <td>DDR4-2400</td> <td>HD 630</td> </tr> </tbody> </table>	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Pentium G4400	2 / 2	3.3G	3 MB	DDR4-2133	HD 510	Pentium G4560	2 / 4	3.5G	3 MB	DDR4-2400	HD 610	Pentium G4600	2 / 4	3.6G	3 MB	DDR4-2400	HD 630	Core i3-6100	2 / 4	3.7G	3 MB	DDR4-2133	HD 530	Core i5-6500	4 / 4	3.2G / 3.6G	6 MB	DDR4-2133	HD 530	Core i7-6700	4 / 8	3.4G / 4.0G	8 MB	DDR4-2133	HD 530	Core i3-7100	2 / 4	3.9G	3 MB	DDR4-2400	HD 630	Core i5-7400	4 / 4	3.0G / 3.5G	6 MB	DDR4-2400	HD 630	Core i5-7500	4 / 4	3.4G / 3.8G	6 MB	DDR4-2400	HD 630	Core i5-7600	4 / 4	3.5G / 4.1G	6 MB	DDR4-2400	HD 630	Core i7-7700	4 / 8	3.6G / 4.2G	8 MB	DDR4-2400	HD 630	Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
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Core i5-7500	4 / 4	3.4G / 3.8G	6 MB	DDR4-2400	HD 630																																																																						
Core i5-7600	4 / 4	3.5G / 4.1G	6 MB	DDR4-2400	HD 630																																																																						
Core i7-7700	4 / 8	3.6G / 4.2G	8 MB	DDR4-2400	HD 630																																																																						
Memory	64GB max, UDIMM, DDR4-2400, four 288-pin DIMM sockets, non-ECC, dual-channel capable* * System automatically clocks down for the processors with lower memory controller	Mouse																																																																									
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s <i>Some:</i> Intel Optane™ Memory (models with 7th gen Core processor), M.2 <i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)	Mechanical	<ul style="list-style-type: none"> SFF (8.4L), black color; metal case (WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm Approx. 13.2 lb (6.0 kg), weight may vary by configuration Toolless cover, disk, optical removal Optional dust filter Bay 1: Slim external ODD bay Bay 2: 3.5", 1" high, internal, HDD/SSD Bay 3: 2.5", internal, HDD/SSD (optional bay) Slot 1: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x16* Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x1* Slot 3: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x1* Slot 4: no slot, only bracket for optional port extension* M.2 card slots: Two (one for WLAN, one for SSD/Optane) * Optional 2 front USB3.1 Type-C ports module occupies PCIe x16 slot (x4 card), optional rear 2x USB2.0 / parallel / 2nd serial occupies one expansion slot 																																																																								
Optical	Three onboard SATA 6.0Gb/s connectors Optional 7-in-1 media reader	Floor Stand	Optional system floor stand for vertical orientation																																																																								
Onboard SATA Media reader		Power supply	<i>Some:</i> 180 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 92% PSU (only available via special bid)																																																																								
Graphics	Intel HD Graphics 510/530/610/630 in processor, uses main memory, DirectX® 12, one VGA, two DisplayPort™, supports 3 independent displays, works along with discrete graphics to support more displays; Max resolution: 4096x2304 (DP) @60Hz; 2048x1536 (VGA) @50Hz <i>Some:</i> NVIDIA GeForce® GT 730, DirectX 12, 2GB, PCIe 2.0 x8 adapter, two DisplayPort, 35 watts; Max resolution: 3840x2160 (DisplayPort) @60Hz;	Limited warranty ³	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available																																																																								
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4	Preload	Preloaded operating system <i>Some:</i> Windows® 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit (not available with 7th Gen Intel processor) <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none"> Microsoft Office preloaded; purchase a product key to activate - Only for Window 10 Lenovo Companion - Only for Window 7 Lenovo Solution Center Lenovo ThinkVantage Tools Create Recovery Media Adobe® Reader® Cyberlink PowerDVD Create (DVD±RW) 																																																																								
Chipset	Intel B250 Chipset	Environment	ENERGY STAR® 6.1, EPEAT™ Gold rating (North America), ErP Lot 3, GREENGUARD®, RoHS-compliant, TUV low noise verified (on some models)																																																																								
Front ports*	Four USB 3.1 Gen1, optional two USB 3.1 Type-C Gen 2 (only available via special bid), microphone (3.5mm), headphone (3.5mm)	Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com																																																																								
Rear ports*	Two USB 3.1 Gen1, two USB 2.0, optional two USB 2.0, serial (9-pin), optional 2nd serial (9-pin), optional parallel (25-pin), ethernet (RJ-45), one VGA, two DisplayPort, two PS/2 ports (keyboard/mouse); additional DisplayPort on optional graphics on some models																																																																										
Rear audio ports* IEEE 1394*	Line-in (3.5mm), line-out (3.5mm), microphone-in (3.5mm) None * Depending on many factors, actual data transfer speed may be lower than theoretical speed																																																																										
Audio support	High Definition (HD) Audio, Realtek ALC662 / optional internal speaker (1.5 watt)																																																																										
WLAN ¹³	<i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.1 combo adapter, 2x2																																																																										
Bluetooth™	<i>Some:</i> Bluetooth 4.1 wireless, integrated in Wi-Fi + BT combo adapter																																																																										
Ethernet	Gigabit ethernet, Realtek RTL8111GN, Wake on LAN®																																																																										
Modem	None																																																																										
Manageability	None																																																																										
Security chip	TPM (Trusted Platform Module) 2.0, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS																																																																										

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

Lenovo, June 2017



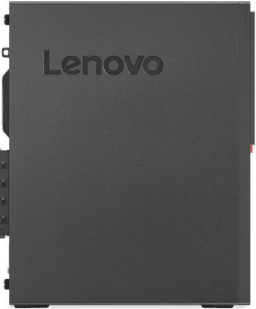
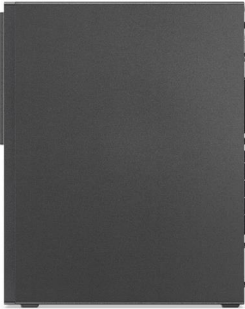
ThinkCentre M710e SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 6/7th Generation Intel Core™ i3 / i5 / i7 Processor						<p>Security features</p> <ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/ mouse only, blocks all storage devices Optional smart cable clip to physically lock both keyboard and mouse Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch <p>Keyboard Some: Lenovo Calliope Keyboard (USB connector), black Some: Lenovo Traditional Keyboard (USB connector), black</p> <p>Mouse Some: Lenovo Calliope Mouse (USB connector), black Some: Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black</p> <p>Mechanical</p> <ul style="list-style-type: none"> SFF (7.4L), black color, metal case (WxDxH) 3.9" X 11.9" X 10.8"; 100mm X 303.5mm X 273.5mm Approx. 9.37 lb (4.25 kg), weight may vary by configuration Bay 1: Slim external ODD bay Bay 2: 3.5", 1" high, internal, supports 2.5" or 3.5" HDD/SSD (2.5 to 3.5 bracket comes with disk) Slot 1: low-profile (length < 152mm, height < 64mm), PCIe 3.0 x16* Slot 2: low-profile (length < 152mm, height < 64mm), PCIe 3.0 x1* M.2 card slots: one for SSD *Optional rear 2x USB2.0 / parallel occupies one expansion slot <p>Floor Stand Optional system floor stand for vertical orientation</p>
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	
	Celeron G3900	2 / 2	2.8G	2 MB	DDR4-2133	HD 510	
	Celeron G3930	2 / 2	2.9G	3 MB	DDR4-2133	HD 610	
	Pentium G4400	2 / 2	3.3G	3 MB	DDR4-2133	HD 510	
	Pentium G4500	2 / 2	3.5G	3 MB	DDR4-2133	HD 530	
	Pentium G4560	2 / 4	3.5G	3 MB	DDR4-2400	HD 610	
	Pentium G4600	2 / 4	3.6G	3 MB	DDR4-2400	HD 630	
	Core i3-6100	2 / 4	3.7G	3 MB	DDR4-2133	HD 530	
	Core i5-6400	4 / 4	2.7G / 3.3G	6 MB	DDR4-2133	HD 530	
	Core i5-6500	4 / 4	3.2G / 3.6G	6 MB	DDR4-2133	HD 530	
	Core i7-6700	4 / 8	3.4G / 4.0G	8 MB	DDR4-2133	HD 530	
	Core i3-7100	2 / 4	3.9G	3 MB	DDR4-2400	HD 630	
	Core i3-7300	2 / 4	4.0G	4 MB	DDR4-2400	HD 630	
	Core i5-7400	4 / 4	3.0G / 3.5G	6 MB	DDR4-2400	HD 630	
	Core i5-7500	4 / 4	3.4G / 3.8G	6 MB	DDR4-2400	HD 630	
	Core i5-7600	4 / 4	3.5G / 4.1G	6 MB	DDR4-2400	HD 630	
Core i7-7700	4 / 8	3.6G / 4.2G	8 MB	DDR4-2400	HD 630		
Memory	32GB max, UDIMM, DDR4-2400*, two 288-pin DIMM sockets, non-ECC, dual-channel capable *System automatically clocks down for the processors with lower memory controller						
Storage	Some: Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm 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						
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)						
Onboard SATA	Two onboard SATA 6.0Gb/s connectors						
Media reader	Optional 7-in-1 media reader						
Graphics	Intel HD Graphics 510/530/610/630 in processor, uses main memory, DirectX® 12, one VGA, one DisplayPort™, supports 2 independent displays, works along with discrete graphics to support more displays; Max resolution: 4096x2160 (DP)@60Hz; 1920x1200 (VGA)@60Hz Some: NVIDIA GeForce® GT 730, DirectX 12, 2GB, PCIe 2.0 x8 adapter, two DisplayPort, 35 watts; Max resolution: 3840x2160 (DisplayPort)@60Hz;						
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4						
Chipset	Intel B250 Chipset						
Front ports*	Two USB 3.1 Gen1, microphone (3.5mm), one headphone / microphone combo jack (3.5mm)						
Rear ports*	Two USB 3.1 Gen1, two USB 2.0, optional two USB 2.0, serial (9-pin), optional 2nd serial (9-pin), optional parallel (25-pin), ethernet (RJ-45), one VGA, one DisplayPort, optional external USB to PS/2 ports cable (for PS/2 keyboard / mouse); additional DisplayPort on optional graphics on some models						
Rear audio ports*	Line-out jack (3.5mm)						
IEEE 1394*	None * Depending on many factors, actual data transfer speed may be lower than theoretical speed						
Audio support	High Definition (HD) Audio, Realtek ALC233 / internal speaker (1.5 watt)						
WLAN ¹³	None						
Bluetooth™	None						
Ethernet	Gigabit ethernet, Realtek RTL8111HN, Wake on LAN®						
Modem	None						
Manageability	None						
Security chip	TPM (Trusted Platform Module) 2.0, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS						
Packaging	• (WxDxH) 7.7" X 15.4" X 19.7"; 195mm X 390mm X 500mm • Cross weight (approx.) 14.22 lb (6.45 kg)						
Power supply	Some: 180 watts, autosensing, 85% PSU						
Limited warranty ³	Some: 1-year or 3-year, depot service / service upgrades available Some: 1-year or 3-year, limited onsite service / service upgrades available						
Preload	<p>Preloaded operating system</p> <p>Some: Windows® 10 Pro 64-bit Some: Windows 10 Home 64-bit Some: Windows 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit(not available with 7th Gen Intel processor)</p> <p>Preloaded applications (only some listed)</p> <ul style="list-style-type: none"> Microsoft Office preloaded; purchase a product key to activate Cyberlink PowerDVD (DVD, DVD±RW) Cyberlink PowerDVD Create (DVD±RW) - Only for Window 10 Lenovo Companion - Only for Window 7 Lenovo Solution Center Lenovo System Update Create Recovery Media Adobe® Reader® 						
Environment	ENERGY STAR® 6.1, EPEAT™ Silver rating (North America), ErP Lot 3, RoHS-compliant, WEEE						
Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com						

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

Lenovo, January 2018



ThinkCentre M715 SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD A6 / A8 / A10 / A12 series APU and Ryzen 3 / 5 / 7 series processor	Security features	<ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/ mouse only, blocks all storage devices Optional cable lock to physically lock both keyboard and mouse Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch 																																																												
	<table border="1"> <thead> <tr> <th>APU / processor</th> <th>Cores / Threads</th> <th>Frequency (Base/Max)</th> <th>L2 Cache</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr> <td>Ryzen 3 PRO 1200</td> <td>4 / 4</td> <td>3.1 / 3.4</td> <td>2MB</td> <td>None</td> </tr> <tr> <td>Ryzen 3 PRO 1300</td> <td>4 / 4</td> <td>3.5 / 3.7</td> <td>2MB</td> <td>None</td> </tr> <tr> <td>Ryzen 5 PRO 1500</td> <td>4 / 8</td> <td>3.5 / 3.7</td> <td>2MB</td> <td>None</td> </tr> <tr> <td>Ryzen 7 PRO 1700</td> <td>8 / 16</td> <td>3.0 / 3.7</td> <td>4MB</td> <td>None</td> </tr> <tr> <td>PRO A6-8570</td> <td>2 / 2</td> <td>3.5 / 3.8</td> <td>1MB</td> <td>Radeon R5 Series</td> </tr> <tr> <td>PRO A10-8770</td> <td>4 / 4</td> <td>3.5 / 3.8</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> <tr> <td>PRO A12-8870</td> <td>4 / 4</td> <td>3.7 / 4.2</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> <tr> <td>PRO A6-9500</td> <td>2 / 2</td> <td>3.5 / 3.8</td> <td>1MB</td> <td>Radeon R5 Series</td> </tr> <tr> <td>PRO A8-9600</td> <td>4 / 4</td> <td>3.1 / 3.4</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> <tr> <td>PRO A10-9700</td> <td>4 / 4</td> <td>3.5 / 3.8</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> <tr> <td>PRO A12-9800</td> <td>4 / 4</td> <td>3.8 / 4.2</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> </tbody> </table>	APU / processor	Cores / Threads	Frequency (Base/Max)	L2 Cache	Integrated Graphics	Ryzen 3 PRO 1200	4 / 4	3.1 / 3.4	2MB	None	Ryzen 3 PRO 1300	4 / 4	3.5 / 3.7	2MB	None	Ryzen 5 PRO 1500	4 / 8	3.5 / 3.7	2MB	None	Ryzen 7 PRO 1700	8 / 16	3.0 / 3.7	4MB	None	PRO A6-8570	2 / 2	3.5 / 3.8	1MB	Radeon R5 Series	PRO A10-8770	4 / 4	3.5 / 3.8	2MB	Radeon R7 Series	PRO A12-8870	4 / 4	3.7 / 4.2	2MB	Radeon R7 Series	PRO A6-9500	2 / 2	3.5 / 3.8	1MB	Radeon R5 Series	PRO A8-9600	4 / 4	3.1 / 3.4	2MB	Radeon R7 Series	PRO A10-9700	4 / 4	3.5 / 3.8	2MB	Radeon R7 Series	PRO A12-9800	4 / 4	3.8 / 4.2	2MB	Radeon R7 Series	Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
APU / processor	Cores / Threads	Frequency (Base/Max)	L2 Cache	Integrated Graphics																																																											
Ryzen 3 PRO 1200	4 / 4	3.1 / 3.4	2MB	None																																																											
Ryzen 3 PRO 1300	4 / 4	3.5 / 3.7	2MB	None																																																											
Ryzen 5 PRO 1500	4 / 8	3.5 / 3.7	2MB	None																																																											
Ryzen 7 PRO 1700	8 / 16	3.0 / 3.7	4MB	None																																																											
PRO A6-8570	2 / 2	3.5 / 3.8	1MB	Radeon R5 Series																																																											
PRO A10-8770	4 / 4	3.5 / 3.8	2MB	Radeon R7 Series																																																											
PRO A12-8870	4 / 4	3.7 / 4.2	2MB	Radeon R7 Series																																																											
PRO A6-9500	2 / 2	3.5 / 3.8	1MB	Radeon R5 Series																																																											
PRO A8-9600	4 / 4	3.1 / 3.4	2MB	Radeon R7 Series																																																											
PRO A10-9700	4 / 4	3.5 / 3.8	2MB	Radeon R7 Series																																																											
PRO A12-9800	4 / 4	3.8 / 4.2	2MB	Radeon R7 Series																																																											
		Mouse	<i>Some:</i> Lenovo Calliope Mouse (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black <i>Some:</i> Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black																																																												
Memory	64GB max, UDIMM, DDR4-2400, four 288-pin DIMM sockets, non-ECC, dual-channel capable* * System automatically clocks down for the processors with lower memory controller	Mechanical	<ul style="list-style-type: none"> SFF (8.4L), black color; metal case (WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm Approx. 13.2 lb (6.0 kg), weight may vary by configuration Toolless cover, disk, optical removal Optional dust filter Bay 1: Slim external ODD bay Bay 2: 3.5", internal, HDD/SSD 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* Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1* Slot 3: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1* Slot 4: no slot, only bracket for optional port extension* M.2 card slots: two (one for WLAN, one for SSD) * Optional front USB3.1 Type-C x2 module occupies PCIe x16 slot (x4 card), optional rear 2x USB2.0 / parallel / 2nd serial occupies one expansion slot 																																																												
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s	Floor Stand	Optional system floor stand for vertical orientation																																																												
Optical	<i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)	Power supply	<i>Some:</i> 180 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 92% PSU (only available via special bid)																																																												
Onboard SATA Media reader	Three onboard SATA 6.0Gb/s connectors Optional 7-in-1 media reader	Limited warranty	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available																																																												
Graphics	AMD Radeon™ Graphics in processor (not for AMD Ryzen processor), uses main memory, DirectX® 12, one VGA, two DisplayPort™ (Onboard VGA and DP ports are invalid on the models with AMD Ryzen processor), supports 3 independent displays, works along with AMD discrete graphics to support more displays; <i>Max resolution:</i> 4096x2160 (DP) @60Hz; 1920x1200 (VGA) @60Hz <i>Some:</i> NVIDIA GeForce® GT 730 , DirectX 12, 2GB, PCIe 2.0 x8 adapter, two DisplayPort, 35 watts; <i>Max resolution:</i> 3840x2160 (DisplayPort) @60Hz;	Preload	Preloaded operating system <i>Some:</i> Windows® 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit (Only available with Pro A6/A10/A12-8xxx APUs) <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none"> Microsoft Office preloaded; purchase a product key to activate Only for Window 10 Lenovo Companion Only for Window 7 Lenovo Solution Center Lenovo ThinkVantage Tools Create Recovery Media Adobe® Reader® Cyberlink Power2Go Create (DVD±RW) 																																																												
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4	Environment	ENERGY STAR® 6.1, EPEAT™ Gold rating (North America), ErP Lot 3, GREENGUARD®, RoHS-compliant																																																												
Chipset	AMD B350 Chipset	Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com																																																												
Front ports*	Two USB 3.1 Gen2, two USB 3.1 Gen1, optional two USB 3.1 Type-C Gen 2 (only available via special bid), microphone (3.5mm), headphone (3.5mm)																																																														
Rear ports*	Two USB 3.1 Gen1, two USB 2.0, optional two USB 2.0, serial (9-pin), optional 2nd serial (9-pin), optional parallel (25-pin), ethernet (RJ-45), one VGA and two DisplayPort (not available on models with AMD Ryzen processor), two PS/2 ports (keyboard / mouse); additional DisplayPort on optional graphics on some models																																																														
Rear audio ports*	Line-in (3.5mm), line-out (3.5mm), microphone-in (3.5mm)																																																														
IEEE 1394*	None * Depending on many factors, actual data transfer speed may be lower than theoretical speed																																																														
Audio support	High Definition (HD) Audio, Realtek ALC662 / optional internal speaker (1.5 watt)																																																														
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821AE (dual band), Wi-Fi + Bluetooth 4.0 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377 (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 1x1																																																														
Bluetooth™	<i>Some:</i> Bluetooth 4.0 or 4.1 wireless, integrated in Wi-Fi + BT combo adapter																																																														
Ethernet	Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN®																																																														
Modem	None																																																														
Manageability	DASH																																																														
Security chip	TPM (Trusted Platform Module) 2.0, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS																																																														

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

Lenovo, July 2017



ThinkCentre M720 SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 Processor						<p><i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2</p> <p><i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.2 combo adapter, 1x1</p> <p><i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2</p> <p><i>Some:</i> Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter</p>	
	Processor		Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)		Integrated Graphics
	Celeron G4900		2 / 2	3.1G	2 MB	DDR4-2400		UHD 610
	Celeron G4920		2 / 2	3.2G	2 MB	DDR4-2400		UHD 610
	Pentium Gold G5400		2 / 4	3.7G	4 MB	DDR4-2400		UHD 610
	Pentium Gold G5500		2 / 4	3.8G	4 MB	DDR4-2400		UHD 630
	Pentium Gold G5600		2 / 4	3.9G	4 MB	DDR4-2400		UHD 630
	Core i3-8100		4 / 4	3.6G	6 MB	DDR4-2400		UHD 630
	Core i3-8300		4 / 4	3.7G	8 MB	DDR4-2400		UHD 630
	Core i5-8400		6 / 6	2.8G / 4.0G	9 MB	DDR4-2666		UHD 630
	Core i5-8500		6 / 6	3.0G / 4.1G	9 MB	DDR4-2666		UHD 630
	Core i5-8600		6 / 6	3.1G / 4.3G	9 MB	DDR4-2666		UHD 630
	Core i7-8700		6 / 12	3.2G / 4.6G	12 MB	DDR4-2666		UHD 630
	Core i3-9100		4 / 4	3.6G / 4.2G	6 MB	DDR4-2400		UHD 630
	Core i3-9300		4 / 4	3.7G / 4.3G	8 MB	DDR4-2400		UHD 630
Core i3-9320		4 / 4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630		
Core i5-9400		6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630		
Core i5-9500		6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630		
Core i5-9600		6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630		
Core i7-9700		8 / 8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630		
Core i9-9900		8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630		
Memory	64GB max, UDIMM, DDR4-2666, four 288-pin DIMM sockets, non-ECC, dual-channel capable*							
	* System automatically clocks down for the processors with lower memory controller							
Storage	<p><i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm</p> <p><i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5"</p> <p><i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4*, 32Gb/s</p> <p>* M.2 SSD (2242) PCIe NVMe only supports PCIe 3.0 x 2, 16Gb/s</p> <p><i>Some:</i> Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2</p> <p><i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm)</p> <p><i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)</p>							
Optical	Three onboard SATA 6.0Gb/s connectors							
Onboard SATA Media reader	Optional 7-in-1 media reader							
Graphics	<p>Intel UHD Graphics 610/630 in processor, uses main memory, DirectX® 12, one VGA (up to 2048x1536@50Hz), two DisplayPort™ (up to 4096x2304@60Hz), supports 3 independent displays, more displays support via discrete graphics</p> <p><i>Some:</i> NVIDIA GeForce® GT 730 (End Of Life), DirectX 12, 2GB GDDR5, PCIe 2.0 x16, 35 watts, two DisplayPort (up to 3840x2160@60Hz)</p> <p><i>Some:</i> AMD Radeon™ 520, DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, two DisplayPort (up to 4096x2160@60Hz)</p>							
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							
Chipset	Intel B360 Chipset							
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)							
Front ports* (Opt.)	Optional: 1x media reader							
Rear ports* (Std.)	4x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort, 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							
Audio support	High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt)							
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 1x1							
Bluetooth™	<i>Some:</i> Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter							
Ethernet Ethernet (Opt.)	Gigabit ethernet, Intel Ethernet Connection I219-V (Jacksonville), Wake on LAN® <i>Some:</i> Intel Ethernet Server Adapter I350-T4*, gigabit ethernet, 4x RJ-45, PCIe x4 <i>Some:</i> Bitland BN8E88*, gigabit ethernet, PCIe x1 (only available via special bid) * Choose either I350-T4 or BN8E88							
Manageability Security chip Security features	<p>None</p> <p>Discrete TPM 2.0, TCG Certified</p> <ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Optional cable lock to physically lock both keyboard and mouse Optional chassis intrusion switch Optional chassis E-Lock (special bid) Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Smart USB protection, allows keyboard/mouse only, blocks all storage devices 							
Keyboard	<p><i>Some:</i> Lenovo Calliope Keyboard (USB connector), black</p> <p><i>Some:</i> Lenovo Traditional Keyboard (USB connector), black</p> <p><i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black</p> <p><i>Some:</i> Lenovo Keyboard (PS/2 connector), black (only available via special bid)</p>							
Mouse	<p><i>Some:</i> Lenovo Calliope Mouse (USB connector), black</p> <p><i>Some:</i> Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black</p> <p><i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black</p> <p><i>Some:</i> Lenovo Mouse (PS/2 connector), black (only available via special bid)</p>							
Mechanical	<ul style="list-style-type: none"> SFF (8.4L), black color; metal case (WxDxH) 3.64" X 11.44" X 13.52"; 92.5mm X 290.5mm X 343.5mm Approx. 13.24 lb (6.0 kg), weight may vary by configuration Toolless cover, disk, optical, and extension card removal Optional dust filter Bay 1: Slim external ODD bay Bay 2: 3.5", 1" high, internal, HDD/SSD Bay 3: 2.5", internal, HDD/SSD (optional bay) Slot 1: low-profile (length < 147mm, height < 68.9mm), PCIe 3.0 x16 Slot 2: low-profile (length < 147mm, height < 68.9mm), PCIe 3.0 x1 Slot 3: low-profile (length < 147mm, height < 68.9mm), PCIe 3.0 x1 Slot 4: no slot, only bracket for optional port extension M.2 card slots: Two (one for WLAN, one for SSD/Optane) Optional system floor stand for vertical orientation 							
Floor Stand	Optional system floor stand for vertical orientation							
Power supply	<p><i>Some:</i> 180 watts, autosensing, 85% PSU</p> <p><i>Some:</i> 210 watts, autosensing, 85% PSU</p> <p><i>Some:</i> 260 watts, autosensing, 92% PSU (only available via special bid)</p>							
Limited warranty ³	<p><i>Some:</i> 1-year or 3-year, depot service / service upgrades available</p> <p><i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available</p>							
Preload	<p>Preloaded operating system</p> <p><i>Some:</i> Windows® 10 Pro 64-bit</p> <p><i>Some:</i> Windows 10 Home 64-bit</p> <p>Preloaded applications (only some listed)</p> <ul style="list-style-type: none"> 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 							
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							
Accessories	For compatible accessories, please go to http://smartfind.lenovo.com							

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

Lenovo, December 2019



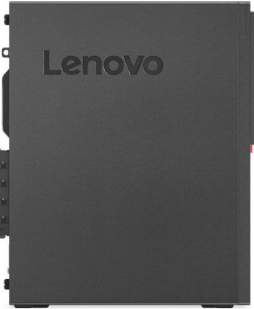
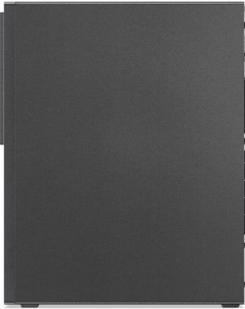
ThinkCentre M720e SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 Processor	Manageability	None																																																																																																																								
	<table border="1"> <thead> <tr> <th>Processor</th> <th>Cores / Threads</th> <th>Frequency Base/Max(GHz)</th> <th>Cache</th> <th>Memory Support (Up to)</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr><td>Celeron G4900</td><td>2 / 2</td><td>3.1G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Celeron G4920</td><td>2 / 2</td><td>3.2G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Celeron G4930</td><td>2 / 2</td><td>3.2G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Celeron G4950</td><td>2 / 2</td><td>3.3G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Pentium Gold G5500</td><td>2 / 4</td><td>3.8G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Pentium Gold G5600</td><td>2 / 4</td><td>3.9G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Pentium Gold G5420</td><td>2 / 4</td><td>3.8G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Pentium Gold G5620</td><td>2 / 4</td><td>4.0G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i3-8100</td><td>4 / 4</td><td>3.6G</td><td>6 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i5-8400</td><td>6 / 6</td><td>2.8G / 4.0G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i5-8500</td><td>6 / 6</td><td>3.0G / 4.1G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i7-8700</td><td>6 / 12</td><td>3.2G / 4.6G</td><td>12 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i3-9100</td><td>4 / 4</td><td>3.6G / 4.2G</td><td>6 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i3-9300</td><td>4 / 4</td><td>3.7G / 4.3G</td><td>8 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i5-9400</td><td>6 / 6</td><td>2.9G / 4.1G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i5-9500</td><td>6 / 6</td><td>3.0G / 4.4G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i5-9600</td><td>6 / 6</td><td>3.1G / 4.6G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i7-9700</td><td>8 / 8</td><td>3.0G / 4.7G</td><td>12 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i9-9900</td><td>8 / 16</td><td>3.1G / 5.0G</td><td>16 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> </tbody> </table>	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Celeron G4900	2 / 2	3.1G	2 MB	DDR4-2400	UHD 610	Celeron G4920	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	Celeron G4930	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	Celeron G4950	2 / 2	3.3G	2 MB	DDR4-2400	UHD 610	Pentium Gold G5500	2 / 4	3.8G	4 MB	DDR4-2400	UHD 630	Pentium Gold G5600	2 / 4	3.9G	4 MB	DDR4-2400	UHD 630	Pentium Gold G5420	2 / 4	3.8G	4 MB	DDR4-2400	UHD 610	Pentium Gold G5620	2 / 4	4.0G	4 MB	DDR4-2400	UHD 630	Core i3-8100	4 / 4	3.6G	6 MB	DDR4-2400	UHD 630	Core i5-8400	6 / 6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	Core i5-8500	6 / 6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Core i3-9100	4 / 4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	Core i3-9300	4 / 4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	Core i5-9400	6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Core i5-9500	6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630	Core i5-9600	6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Core i7-9700	8 / 8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630	Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630	Security chip	Discrete TPM 2.0, TCG Certified
Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics																																																																																																																						
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Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630																																																																																																																						
		Security features	<ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/ mouse only, blocks all storage devices Optional smart cable clip to physically lock both keyboard and mouse Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch 																																																																																																																								
		Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black																																																																																																																								
		Mouse	<i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <i>Some:</i> Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black																																																																																																																								
		Mechanical	<ul style="list-style-type: none"> SFF (7.4L), black color, metal case (WxDxH) 3.9" X 11.9" X 10.8"; 100mm X 303.5mm X 274.8mm Approx. 9.37 lb (4.25 kg), weight may vary by configuration Bay 1: Slim ODD bay Bay 2: 3.5" disk bay, supports 2.5" HDD (2.5 to 3.5 bracket comes with 2.5" disk) Slot 1: low-profile (length < 152mm, height < 64mm), PCIe 3.0 x16* Slot 2: low-profile (length < 152mm, height < 64mm), PCIe 3.0 x1* M.2 card slot: one for SSD *Optional rear 2x USB2.0 / parallel occupies one expansion slot 																																																																																																																								
		Floor Stand	Optional system floor stand for vertical orientation																																																																																																																								
		Packaging	<ul style="list-style-type: none"> (WxDxH) 7.7" X 15.4" X 19.7"; 195mm X 390mm X 500mm Cross weight (approx.) 14.48 lb (6.57 kg) 																																																																																																																								
Memory	32GB max, UDIMM, DDR4-2666*, two 288-pin DIMM sockets, non-ECC, dual-channel capable * Memory may be underclocked to DDR4-2400 for the lower memory controller in processor	Power supply	180 watts, autosensing, 85% PSU																																																																																																																								
		Limited warranty ³	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available																																																																																																																								
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4	Preload	Preloaded operating system <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit <i>Some:</i> Linux Ubuntu																																																																																																																								
Optane memory	<i>Some:</i> Intel Optane™ Memory, M.2 2280, PCIe NVMe, PCIe 3.0 x 2	Environment	ENERGY STAR® 7, EPEAT™ Silver rating (North America), ErP Lot 3, RoHS-compliant, WEEE																																																																																																																								
Optical	<i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)	Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com																																																																																																																								
Onboard SATA	Two onboard SATA 6.0Gb/s connectors																																																																																																																										
Media reader	Optional 7-in-1 media reader																																																																																																																										
Graphics	Intel HD Graphics 610/630 in processor, uses main memory, DirectX® 12, one VGA, one DisplayPort™, supports 2 independent displays, works along with discrete graphics to support more displays; <i>Max resolution:</i> 4096x2304 (DP)@60Hz; 2048x1536 (VGA)@50Hz <i>Some:</i> AMD Radeon™ 520 , DirectX 12, 2GB GDDR5, PCIe 3.0 x8 adapter, one VGA, one HDMI, 30 watts (Max); <i>Max resolution:</i> 3840x2160 (HDMI)@30Hz; 2048x1536 (VGA)@85Hz																																																																																																																										
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4																																																																																																																										
Chipset	Intel B365 Chipset																																																																																																																										
Front ports* (Std.)	Two USB 3.1 Gen1, microphone (3.5mm), one headphone / microphone combo jack (3.5mm)																																																																																																																										
Front ports* (Opt.)	None																																																																																																																										
Rear ports* (Std.)	Two USB 3.1 Gen1, two USB 2.0, serial (9-pin), ethernet (RJ-45), one VGA, one DisplayPort, Line-out jack (3.5mm)																																																																																																																										
Rear ports* (Opt.)	optional two USB 2.0, optional 2nd serial (9-pin), optional parallel (25-pin), optional external USB to PS/2 ports cable (for PS/2 keyboard / mouse); additional video ports or RJ-45 on optional graphics / ethernet card on some models * 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)																																																																																																																										
WLAN ¹³	None																																																																																																																										
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Ethernet	Gigabit ethernet, Realtek RTL8111HN, Wake on LAN®																																																																																																																										
Ethernet (Opt.)	<i>Some:</i> Bitland BN8E88*, gigabit ethernet, PCIe x1																																																																																																																										
Modem	None																																																																																																																										

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

Lenovo, September 2019



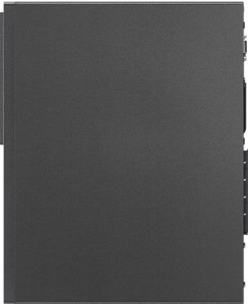
ThinkCentre M725 SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD A6 / A8 / A10 / A12 and Ryzen 3 / 5 / 7 series processor	Ethernet	Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN®																																																																		
	<table border="1"> <thead> <tr> <th>Processor</th> <th>Cores / Threads</th> <th>Frequency (Base/Max)</th> <th>L2 / L3 Cache</th> <th>Memory Support (Up to)</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr> <td>PRO A6-9500</td> <td>2 / 2</td> <td>3.5 / 3.8</td> <td>1MB</td> <td>DDR4-2400</td> <td>Radeon R5</td> </tr> <tr> <td>PRO A8-9600</td> <td>4 / 4</td> <td>3.1 / 3.4</td> <td>2MB</td> <td>DDR4-2400</td> <td>Radeon R7</td> </tr> <tr> <td>PRO A10-9700</td> <td>4 / 4</td> <td>3.5 / 3.8</td> <td>2MB</td> <td>DDR4-2400</td> <td>Radeon R7</td> </tr> <tr> <td>PRO A12-9800</td> <td>4 / 4</td> <td>3.8 / 4.2</td> <td>2MB</td> <td>DDR4-2400</td> <td>Radeon R7</td> </tr> <tr> <td>Ryzen 3 2300X</td> <td>4 / 4</td> <td>3.5 / 4.0</td> <td>2MB / 8MB</td> <td>DDR4-2933</td> <td>None</td> </tr> <tr> <td>Ryzen 5 2500X</td> <td>4 / 8</td> <td>3.6 / 4.0</td> <td>2MB / 8MB</td> <td>DDR4-2933</td> <td>None</td> </tr> <tr> <td>Ryzen 3 PRO 2200G</td> <td>4 / 4</td> <td>3.5 / 3.6</td> <td>2MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 8</td> </tr> <tr> <td>Ryzen 5 PRO 2400G</td> <td>4 / 8</td> <td>3.6 / 3.8</td> <td>2MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon RX Vega 11</td> </tr> <tr> <td>Ryzen 5 PRO 2600</td> <td>6 / 12</td> <td>3.4 / 3.9</td> <td>3MB / 16MB</td> <td>DDR4-2933</td> <td>None</td> </tr> <tr> <td>Ryzen 7 PRO 2700</td> <td>8 / 16</td> <td>3.2 / 4.1</td> <td>4MB / 16MB</td> <td>DDR4-2933</td> <td>None</td> </tr> </tbody> </table>	Processor	Cores / Threads	Frequency (Base/Max)	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics	PRO A6-9500	2 / 2	3.5 / 3.8	1MB	DDR4-2400	Radeon R5	PRO A8-9600	4 / 4	3.1 / 3.4	2MB	DDR4-2400	Radeon R7	PRO A10-9700	4 / 4	3.5 / 3.8	2MB	DDR4-2400	Radeon R7	PRO A12-9800	4 / 4	3.8 / 4.2	2MB	DDR4-2400	Radeon R7	Ryzen 3 2300X	4 / 4	3.5 / 4.0	2MB / 8MB	DDR4-2933	None	Ryzen 5 2500X	4 / 8	3.6 / 4.0	2MB / 8MB	DDR4-2933	None	Ryzen 3 PRO 2200G	4 / 4	3.5 / 3.6	2MB / 4MB	DDR4-2933	Radeon Vega 8	Ryzen 5 PRO 2400G	4 / 8	3.6 / 3.8	2MB / 4MB	DDR4-2933	Radeon RX Vega 11	Ryzen 5 PRO 2600	6 / 12	3.4 / 3.9	3MB / 16MB	DDR4-2933	None	Ryzen 7 PRO 2700	8 / 16	3.2 / 4.1	4MB / 16MB	DDR4-2933	None	Ethernet (Opt.)	Some: Bitland BN8E88, gigabit ethernet, 1x RJ-45, PCIe x1 (special bid only)
Processor	Cores / Threads	Frequency (Base/Max)	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics																																																																
PRO A6-9500	2 / 2	3.5 / 3.8	1MB	DDR4-2400	Radeon R5																																																																
PRO A8-9600	4 / 4	3.1 / 3.4	2MB	DDR4-2400	Radeon R7																																																																
PRO A10-9700	4 / 4	3.5 / 3.8	2MB	DDR4-2400	Radeon R7																																																																
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Ryzen 3 2300X	4 / 4	3.5 / 4.0	2MB / 8MB	DDR4-2933	None																																																																
Ryzen 5 2500X	4 / 8	3.6 / 4.0	2MB / 8MB	DDR4-2933	None																																																																
Ryzen 3 PRO 2200G	4 / 4	3.5 / 3.6	2MB / 4MB	DDR4-2933	Radeon Vega 8																																																																
Ryzen 5 PRO 2400G	4 / 8	3.6 / 3.8	2MB / 4MB	DDR4-2933	Radeon RX Vega 11																																																																
Ryzen 5 PRO 2600	6 / 12	3.4 / 3.9	3MB / 16MB	DDR4-2933	None																																																																
Ryzen 7 PRO 2700	8 / 16	3.2 / 4.1	4MB / 16MB	DDR4-2933	None																																																																
Memory	64GB max, UDIMM, DDR4-2666*, four 288-pin DIMM sockets, non-ECC, dual-channel capable * Systemboard supports up to DDR4-2666, memory frequency may automatically clock down for the lower capability of memory controller in processor	Manageability	DASH 10/1.1																																																																		
Storage	Some: Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm 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 and AMD A6 / A8 / A10 / A12 processor only supports PCIe 3.0 x 2, 16Gb/s	Security chip	Discrete TPM 2.0, TCG Certified																																																																		
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)	Security features	<ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/ mouse only, blocks all storage devices Optional cable lock to physically lock both keyboard and mouse Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch 																																																																		
Onboard SATA	Three onboard SATA 6.0Gb/s connectors, RAID 0/1 support (RAID preset only available via special bid model)	Keyboard	Some: Lenovo Calliope Keyboard (USB connector), black Some: Lenovo Traditional Keyboard (USB connector), black Some: Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black Some: Lenovo Keyboard (PS/2 connector), black (only available via special bid)																																																																		
Media reader	Optional 7-in-1 media reader	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)																																																																		
Graphics	AMD Radeon™ Graphics in processor (only for some processors), uses main memory, DirectX® 12, one VGA, two DisplayPort™ (Onboard VGA and DP ports are only available on the models with integrated graphics), supports 3 independent displays, works along with AMD discrete graphics to support more displays; <i>Max resolution: 4096x2160 (DP) @60Hz; 1920x1200 (VGA) @60Hz</i> Some: NVIDIA GeForce® GT 730 , DirectX 12, 2GB GDDR5, PCIe 2.0 x16 (x8 elec.) adapter, two DisplayPort, 35 watts; <i>Max resolution: 3840x2160 (DisplayPort) @60Hz</i>	Mechanical	<ul style="list-style-type: none"> SFF (8.4L), black color; metal case (WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm Approx. 13.2 lb (6.0 kg), weight may vary by configuration Toolless cover, disk, optical removal Optional dust filter <p>Bay 1: Slim external ODD bay Bay 2: 3.5", internal, HDD/SSD 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 Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1 Slot 3: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1 Slot 4: low-profile (length < 150mm, height < 68mm), PCI 3.0 M.2 card slots: two (one for WLAN, one for SSD) Optional system floor stand for vertical orientation</p>																																																																		
Monitor cable	Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle, or DP to HDMI 1.4 dongle	Floor Stand	Optional system floor stand for vertical orientation																																																																		
Chipset	AMD B450 Chipset	Power supply	Some: 180 watts, autosensing, 85% PSU Some: 210 watts, autosensing, 85% PSU Some: 260 watts, autosensing, 92% PSU (only available via special bid)																																																																		
Front ports* (Std.)	2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x microphone (3.5mm), 1x headphone (3.5mm)	Limited warranty	1-year or 3-year, limited onsite service / service upgrades available																																																																		
Front ports* (Opt.)	Optional: 1x media reader, 2x USB 3.1 Type-C Gen2 via PCIe card (special bid only)	Preload	Preloaded operating system Some: Windows 10 Pro 64-bit Some: Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none"> Lenovo Vantage Microsoft Office preloaded; purchase a product key to activate Cyberlink Power2GO (only for models with DVD / DVD±RW) Cyberlink Power2GO (only for models with DVD±RW) LinkedIn 																																																																		
Rear ports* (Std.)	2x USB 3.1 Gen1, 2x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA**, 2x DisplayPort**, 2x PS/2 ports (keyboard / mouse); 1x line-in (3.5mm), 1x line-out (3.5mm), 1x microphone (3.5mm)	Environment	ENERGY STAR® 7.0*, EPEAT™ Silver rating* (*not for non-OS models); ERP Lot 3; RoHS-compliant																																																																		
Rear ports* (Opt.)	Optional: 2x USB 2.0, 1x 2nd serial (9-pin), 1x parallel (25-pin), 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 ** only available on the models with integrated graphics	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com																																																																		
Audio support	High Definition (HD) Audio, Realtek ALC662 / optional internal speaker (1 watt)																																																																				
WLAN	Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 Some: 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377A (dual band), 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 Some: 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2																																																																				
Bluetooth™	Some: Bluetooth 4.2* wireless, integrated in Wi-Fi + BT combo adapter * Hardware supports BT 4.2, but Win10 RS3 and earlier only supports BT 4.1																																																																				

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

Lenovo, July 2018



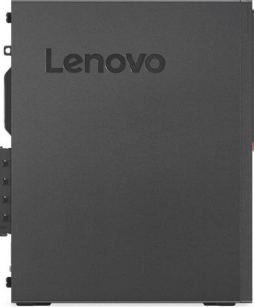
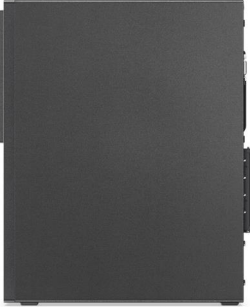
ThinkCentre M75s-1 SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Athlon PRO and Ryzen 3 / 5 / 7 PRO series processor						Ethernet	Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN®																																										
	<table border="1"> <thead> <tr> <th>Processor</th> <th>Cores / Threads</th> <th>Frequency (Base/Max)</th> <th>L2 / L3 Cache</th> <th>Memory Support (Up to)</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr> <td>Athlon PRO 300GE</td> <td>2 / 4</td> <td>3.4 / 3.4</td> <td>1MB / 4MB</td> <td>DDR4-2666</td> <td>Radeon Vega 3</td> </tr> <tr> <td>Ryzen 3 PRO 3200G</td> <td>4 / 4</td> <td>3.6 / 4.0</td> <td>2MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 8</td> </tr> <tr> <td>Ryzen 5 PRO 3400G</td> <td>4 / 8</td> <td>3.7 / 4.2</td> <td>2MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 11</td> </tr> <tr> <td>Ryzen 5 PRO 3600</td> <td>6 / 12</td> <td>3.6 / 4.2</td> <td>3MB / 32MB</td> <td>DDR4-3200</td> <td>None</td> </tr> <tr> <td>Ryzen 7 PRO 3700</td> <td>8 / 16</td> <td>3.6 / 4.4</td> <td>4MB / 32MB</td> <td>DDR4-3200</td> <td>None</td> </tr> <tr> <td>Ryzen 9 PRO 3900</td> <td>12 / 24</td> <td>3.1 / 4.3</td> <td>6MB / 64MB</td> <td>DDR4-3200</td> <td>None</td> </tr> </tbody> </table>						Processor	Cores / Threads	Frequency (Base/Max)	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics	Athlon PRO 300GE	2 / 4	3.4 / 3.4	1MB / 4MB	DDR4-2666	Radeon Vega 3	Ryzen 3 PRO 3200G	4 / 4	3.6 / 4.0	2MB / 4MB	DDR4-2933	Radeon Vega 8	Ryzen 5 PRO 3400G	4 / 8	3.7 / 4.2	2MB / 4MB	DDR4-2933	Radeon Vega 11	Ryzen 5 PRO 3600	6 / 12	3.6 / 4.2	3MB / 32MB	DDR4-3200	None	Ryzen 7 PRO 3700	8 / 16	3.6 / 4.4	4MB / 32MB	DDR4-3200	None	Ryzen 9 PRO 3900	12 / 24	3.1 / 4.3	6MB / 64MB	DDR4-3200	None	Ethernet (Opt.)	None
	Processor	Cores / Threads	Frequency (Base/Max)	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics																																												
	Athlon PRO 300GE	2 / 4	3.4 / 3.4	1MB / 4MB	DDR4-2666	Radeon Vega 3																																												
	Ryzen 3 PRO 3200G	4 / 4	3.6 / 4.0	2MB / 4MB	DDR4-2933	Radeon Vega 8																																												
	Ryzen 5 PRO 3400G	4 / 8	3.7 / 4.2	2MB / 4MB	DDR4-2933	Radeon Vega 11																																												
	Ryzen 5 PRO 3600	6 / 12	3.6 / 4.2	3MB / 32MB	DDR4-3200	None																																												
Ryzen 7 PRO 3700	8 / 16	3.6 / 4.4	4MB / 32MB	DDR4-3200	None																																													
Ryzen 9 PRO 3900	12 / 24	3.1 / 4.3	6MB / 64MB	DDR4-3200	None																																													
						Manageability	DASH 10/1.1																																											
						Security chip	Discrete TPM 2.0, TCG Certified																																											
						Security features	<ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/ mouse only, blocks all storage devices Optional smart cable clip to physically lock both keyboard and mouse 																																											
							<ul style="list-style-type: none"> Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch 																																											
Memory	64GB max, UDIMM, DDR4-2666*, four 288-pin DIMM sockets, non-ECC, dual-channel capable * Memory may be underclocked to DDR4 -1866, DDR4-2133, or DDR4-2400 for the lower capability of memory controller in processor						Keyboard	<i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <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)																																										
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> M.2 SSD (2242 / 2280) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4						Mouse	<i>Some:</i> Lenovo Calliope Mouse (USB connector), black <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 <i>Some:</i> Lenovo Mouse (PS/2 connector), black (only available via special bid)																																										
Optical	<i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)						Mechanical	<ul style="list-style-type: none"> SFF (8.4L), black color; metal case (WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm Approx. 13.2 lb (6.0 kg), weight may vary by configuration Toolless cover, disk, optical, and extension card removal Optional dust filter 																																										
Onboard SATA	Three onboard SATA 6.0Gb/s connectors, RAID 0/1 support (RAID preset only available via special bid model)							Bay 1: Slim external ODD bay Bay 2: 3.5", internal, HDD/SSD 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 Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1 Slot 3: low-profile (length < 150mm, height < 68mm), PCIe 2.0 x1 Slot 4: low-profile (length < 150mm, height < 68mm), PCI 3.0 M.2 card slots: two (one for WLAN, one for SSD)																																										
Media reader	Optional 7-in-1 media reader						Floor Stand	Optional system floor stand for vertical orientation																																										
Graphics	AMD Radeon™ Graphics in processor (only for some processors), uses main memory, DirectX® 12, one VGA, two DisplayPort™ (Onboard VGA and DP ports are only available on the models with integrated graphics), supports 3 independent displays, works along with AMD discrete graphics to support more displays; <i>Max resolution:</i> 4096x2160 (DP) @60Hz; <i>Some:</i> AMD Radeon™ 520 , DirectX 12, 2GB GDDR5, PCIe 3.0 x8 adapter, two DisplayPort, 30 watts (Max); <i>Max resolution:</i> 4096x2160 (DP) @60Hz						Power supply	<i>Some:</i> 180 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 85% PSU <i>Some:</i> 260 watts, autosensing, 92% PSU (only available via special bid)																																										
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4						Limited warranty	1-year or 3-year, limited onsite service / service upgrades available																																										
Chipset	AMD PRO 560 FCH						Preload	Preloaded operating system <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit <i>Some:</i> Windows 10 IoT Enterprise <i>Some:</i> Linux Ubuntu																																										
Front ports* (Std.)	2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x microphone (3.5mm), 1x headphone (3.5mm)						Environment	ENERGY STAR® 7.0*, EPEAT™ Silver rating* (*not for non-OS models); ErP Lot 3; RoHS-compliant, WEEE																																										
Front ports* (Opt.)	<i>Optional:</i> 1x media reader						Accessories	For compatible accessories, please go to http://smartfind.lenovo.com																																										
Rear ports* (Std.)	2x USB 3.1 Gen1 (one support Smart Power-On), 2x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA**, 2x DisplayPort**, 2x PS/2 ports (keyboard / mouse); 1x line-in (3.5mm), 1x line-out (3.5mm), 1x microphone (3.5mm)																																																	
Rear ports* (Opt.)	<i>Optional:</i> 2x USB 2.0, 1x parallel (25-pin), additional video ports available on optional graphics card																																																	
	* Depending on many factors, actual data transfer speed may be lower than theoretical speed ** only available on the models with integrated graphics																																																	
Audio support	High Definition (HD) Audio, Realtek ALC662 / optional internal speaker (1 watt)																																																	
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9260 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2																																																	
Bluetooth™	<i>Some:</i> Bluetooth 4.2 / 5.0 wireless, integrated in Wi-Fi + BT combo adapter																																																	

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

Lenovo, September 2019



ThinkCentre M910 SFF Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 6/7th Generation Intel Core™ i3 / i5 / i7 Processor						Security features <ul style="list-style-type: none"> ● Security slot (in rear for optional Kensington® MicroSaver® cable) ● Padlock loop ● Smart USB protection, allows keyboard/ mouse only, blocks all storage devices ● Optional cable lock to physically lock both keyboard and mouse ● Power-on password ● Administrator password ● Hard disk password ● Boot sequence control ● Boot without keyboard and mouse ● Individual USB port disablement ● Optional chassis intrusion switch
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	
	Core i5-6500	4 / 4	3.2G / 3.6G	6 MB	DDR4-2133	HD 530	
	Core i7-6700	4 / 8	3.4G / 4.0G	8 MB	DDR4-2133	HD 530	
	Core i3-7300	2 / 4	4.0G / --	4 MB	DDR4-2400	HD 630	
	Core i5-7400	4 / 4	3.0G / 3.5G	6 MB	DDR4-2400	HD 630	
	Core i5-7500	4 / 4	3.4G / 3.8G	6 MB	DDR4-2400	HD 630	
	Core i5-7600	4 / 4	3.5G / 4.1G	6 MB	DDR4-2400	HD 630	
	Core i7-7700	4 / 8	3.6G / 4.2G	8 MB	DDR4-2400	HD 630	
Memory	64GB max, UDIMM, DDR4-2400*, four 288-pin DIMM sockets, non-ECC, dual-channel capable * System automatically clocks down for the processors with lower memory controller						Mechanical <ul style="list-style-type: none"> ● SFF (8.4L), black color, metal case ● (WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm ● Approx. 11.92 lb (5.4 kg), weight may vary by configuration ● Toolless cover, disk, optical, graphic card removal ● Optional dust filter Bay 1: Slim external ODD bay Bay 2: 3.5", 1" high, internal, HDD/SSD Bay 3: 2.5", internal, HDD/SSD (optional bay) Slot 1: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x16* Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x1* Slot 3: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x16 (x4 signal)* Slot 4: no slot, only bracket for optional port extension* M.2 card slots: Two (one for WLAN, one for SSD/Optane) * Optional 2 front USB3.1 Type-C ports module occupies PCIe x16 (x4 signal) slot, optional rear 2x USB2.0 / parallel / 2nd serial / cable lock / Wi-Fi antenna occupies one expansion slot Floor Stand Optional system floor stand for vertical orientation
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s <i>Some:</i> Intel Optane™ Memory (models with 7th gen Core processor), M.2 <i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)						
Optical	Four onboard SATA 6.0Gb/s connectors, RAID 0/1 support (RAID preset only available via special bid model)						
Onboard SATA	Optional 7-in-1 media reader						
Media reader	Intel HD Graphics 510/530/610/630 in processor, uses main memory, DirectX® 12, one VGA, two DisplayPort™, supports 3 independent displays, works along with discrete graphics to support more displays; <i>Max resolution:</i> 4096x2304 (DP)@60Hz; 2048x1536 (VGA)@50Hz <i>Some: NVIDIA GeForce® GT 730</i> , DirectX 12, 2GB, PCIe 2.0 x8 adapter, two DisplayPort, 35 watts; <i>Max resolution:</i> 3840x2160 (DisplayPort)@60Hz;						
Graphics	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4						
Monitor cable	Intel Q270 Chipset						
Chipset	Four USB 3.1 Gen1, optional two USB 3.1 Type-C Gen 2 (only available via special bid), microphone (3.5mm), headphone (3.5mm)						
Front ports*	Four USB 3.1 Gen1, optional two USB 2.0, serial (9-pin), optional 2nd serial (9-pin), optional parallel (25-pin), ethernet (RJ-45), one VGA, two DisplayPort, optional two PS/2 ports (keyboard/mouse); additional DisplayPort on optional graphics on some models						
Rear ports*	Line-in (3.5mm), line-out (3.5mm), microphone-in (3.5mm)						
Rear audio ports* IEEE 1394*	None * Depending on many factors, actual data transfer speed may be lower than theoretical speed						
Audio support	High Definition (HD) Audio, Realtek ALC662 / optional internal speaker (1.5 watt)						
WLAN ¹³	<i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.1 combo adapter, Intel vPro technology support, 2x2						
Bluetooth™ Ethernet Modem	<i>Some:</i> Bluetooth 4.1 wireless, integrated in Wi-Fi + BT combo adapter Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN® None						
Manageability	Intel Active Management Technology 11.0 (Intel AMT 11.0); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection)						
Security chip	TPM (Trusted Platform Module) 2.0, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS						
Limited warranty ³	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available						
Preload	Preloaded operating system <i>Some:</i> Windows® 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit (not available with 7th Gen Intel processor) <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none"> ● Microsoft Office preloaded; purchase a product key to activate - Only for Window 10 ● Lenovo Companion - Only for Window 7 ● Lenovo Solution Center ● Lenovo ThinkVantage Tools ● Create Recovery Media ● Adobe® Reader® ● Cyberlink PowerDVD Create (DVD±RW) 						
Environment	ENERGY STAR® 6.1, EPEAT™ Gold rating (North America), ErP Lot 3, GREENGUARD®, RoHS-compliant, TUV low noise verified (on some models)						
Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com						

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

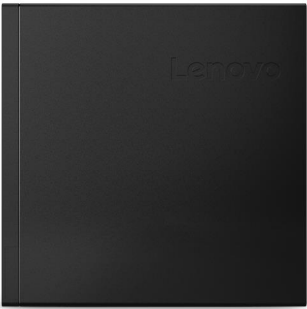
Lenovo, August 2017



ThinkCentre M920 SFF Platform Specifications

Processor	Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 Processor	Audio support	High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt)																																																																																																																																															
	<table border="1"> <thead> <tr> <th>Processor</th> <th>Cores / Threads</th> <th>Frequency Base/Max(GHz)</th> <th>Cache</th> <th>Memory Support (Up to)</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr><td>Celeron G4900</td><td>2 / 2</td><td>3.1G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Celeron G4920</td><td>2 / 2</td><td>3.2G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Celeron G4930</td><td>2 / 2</td><td>3.2G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Celeron G4950</td><td>2 / 2</td><td>3.3G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Pentium Gold G5400</td><td>2 / 4</td><td>3.7G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Pentium Gold G5500</td><td>2 / 4</td><td>3.8G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Pentium Gold G5600</td><td>2 / 4</td><td>3.9G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Pentium Gold 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G4930	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	Celeron G4950	2 / 2	3.3G	2 MB	DDR4-2400	UHD 610	Pentium Gold G5400	2 / 4	3.7G	4 MB	DDR4-2400	UHD 610	Pentium Gold G5500	2 / 4	3.8G	4 MB	DDR4-2400	UHD 630	Pentium Gold G5600	2 / 4	3.9G	4 MB	DDR4-2400	UHD 630	Pentium Gold G5420	2 / 4	3.8G	4 MB	DDR4-2400	UHD 610	Pentium Gold G5620	2 / 4	4.0G	4 MB	DDR4-2400	UHD 630	Core i3-8100	4 / 4	3.6G	6 MB	DDR4-2400	UHD 630	Core i3-8300	4 / 4	3.7G	8 MB	DDR4-2400	UHD 630	Core i5-8400	6 / 6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	Core i5-8500	6 / 6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	Core i5-8600	6 / 6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630	Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Core i3-9100	4 / 4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	Core i3-9300	4 / 4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	Core i3-9320	4 / 4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630	Core i5-9400	6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Core i5-9500	6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630	Core i5-9600	6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Core i7-9700	8 / 8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630	Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630	<p>WLAN <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, Intel vPro technology support, 2x2</p> <p>Bluetooth Ethernet Ethernet (Opt.) <i>Some:</i> Bluetooth 4.2/5.0 wireless, integrated in Wi-Fi + BT combo adapter <i>Some:</i> Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN® <i>Some:</i> Intel Ethernet Server Adapter I350-T4, gigabit ethernet, 4x RJ-45, PCIe x4 <i>Some:</i> Bitland BN8E88, gigabit ethernet, 1x RJ-45, PCIe x1 (special bid only)</p> <p>Manageability Intel Active Management Technology 12 (Intel AMT 12); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection)</p> <p>Security chip Discrete TPM 2.0, TCG Certified</p> <p>Security features</p> <ul style="list-style-type: none"> ● Security slot (in rear for optional Kensington® MicroSaver® cable) ● Padlock loop ● Optional cable lock to physically lock both keyboard and mouse ● Optional chassis intrusion switch ● Optional chassis E-Lock (special bid) ● Power-on password ● Administrator password ● Hard disk password ● Boot sequence control ● Boot without keyboard and mouse ● Individual USB port disablement ● Smart USB protection, allows keyboard/mouse only, blocks all storage devices <p>Keyboard <i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <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) <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <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 <i>Some:</i> Lenovo Mouse (PS/2 connector), black (only available via special bid)</p> <p>Mouse</p> <p>Mechanical</p> <ul style="list-style-type: none"> ● SFF (8.4L), black color, metal case ● (WxDxH) 3.6" X 11.4" X 13.5"; 92.5mm X 290.5mm X 343.5mm ● Approx. 13.23 lb (6 kg), weight may vary by configuration ● Toolless cover, disk, optical, extension card removal ● Optional dust filter Bay 1: Slim external ODD bay Bay 2: 3.5", 1" high, internal, HDD/SSD Bay 3: 2.5", internal, HDD/SSD (optional bay) Slot 1: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x16 Slot 2: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x1 Slot 3: low-profile (length < 150mm, height < 68mm), PCIe 3.0 x16 (x4 signal) Slot 4: no slot, only bracket for optional port extension M.2 card slots: Two (one for WLAN, one for SSD/Optane) <p>Floor Stand Optional system floor stand for vertical orientation</p> <p>Power supply <i>Some:</i> 180 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 85% PSU <i>Some:</i> 260 watts, autosensing, 92% PSU (only available via special bid)</p> <p>Limited warranty <i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available</p> <p>Preload <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit</p> <p>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</p> <p>Accessories For compatible accessories, please go to http://smartfind.lenovo.com</p>
Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics																																																																																																																																													
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Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630																																																																																																																																													
Memory	64GB max, DDR4-2666*, four 288-pin DIMM sockets, dual-channel capable * System automatically clocks down for the processors with lower memory controller																																																																																																																																																	
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 Solid State Drive (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 <i>Some:</i> Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2 <i>Some:</i> DVD-ROM, SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)																																																																																																																																																	
Optical	Four onboard SATA 6.0Gb/s connectors, RAID 0/1 support (RAID preset only available via special bid model)																																																																																																																																																	
Onboard SATA	Optional 7-in-1 media reader																																																																																																																																																	
Media reader																																																																																																																																																		
Graphics	Intel UHD Graphics 610/630 in processor, uses main memory, DirectX® 12, one VGA (up to 2048x1536@50Hz), two DisplayPort™ (up to 4096x2304@60Hz), supports 3 independent displays, more displays support via discrete graphics <i>Some:</i> NVIDIA GeForce® GT 730 (End Of Life), DirectX 12, 2GB GDDR5, PCIe 2.0 x16, 35 watts, two DisplayPort (up to 3840x2160@60Hz) <i>Some:</i> AMD Radeon™ 520 , DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, two DisplayPort (up to 4096x2160@60Hz)																																																																																																																																																	
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																																																																																																																																																	
Chipset	Intel Q370 Chipset																																																																																																																																																	
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)																																																																																																																																																	
Front ports* (Opt.)	<i>Optional:</i> 1x media reader																																																																																																																																																	
Rear ports* (Std.)	4x USB 3.1 Gen1, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort, 1x line-out (3.5mm)																																																																																																																																																	
Rear ports* (Opt.)	<i>Optional:</i> 2x USB 2.0, 2x USB 3.1 Gen1 via PCIe 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), 1x Thunderbolt 3 (combo USB3.1 Type-C Gen 2 / DisplayPort) via PCIe x4 (available on 09/30/2018), 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																																																																																																																																																	

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



ThinkCentre M625 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD A9 series APU						Keyboard Mouse	Some: Fullsize USB Keyboard (USB connector), black, Lenovo logo Some: USB Optical Wheel Mouse, black, Lenovo logo	
	APU	Cores	Frequency Base/Max	L2 Cache	Memory Support (Up to)	Integrated Graphics		Mechanical	Tiny (1L), black color; metal case • Toolless chassis open (for models with optional toolless chassis screw) • Toolless HDD, SSD, memory, Wi-Fi removal • Optional dust filter M625 Tiny 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 VESA mount Optional VESA mount bracket kit, supports VESA 75mm and 100mm Floor Stand Optional system floor stand for vertical orientation
Memory	8GB max, DDR4-2666, one 260-pin SO-DIMM socket * System frequency automatically clocks down for the lower capability of memory controller in processor						Disk		Power supply
Optical	None							Onboard SATA	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models)
Media reader	None						Graphics		Limited warranty ³
Graphics	AMD Radeon™ Graphics in processor, uses main memory, DirectX® 12, two DisplayPort™, one optional port (VGA or USB 2.0 Type-C with DisplayPort Alternate Mode), supports up to 2 independent displays; Max resolution: 3840x2160 (DP)@60Hz; 2048x1280 (VGA)@60Hz; 3840x2160 (USB 2.0 Type-C)@60Hz							Preload	Preloaded operating system Some: Windows® 10 Pro 64-bit Some: Windows 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64-bit
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), or DP to HDMI 1.4 dongle						Chipset		Preloaded applications (only some listed) - Windows 10 only • Lenovo Vantage • LinkedIn • Microsoft Office preloaded; purchase a product key to activate - Windows 7 only • Lenovo Solution Center • Lenovo System Update • Factory Recovery • User Guide Viewer • Microsoft Office preloaded; purchase a product key to activate • Adobe® Reader®
Front ports*	Two USB 3.1 Gen1 (one is Always On and fast charge), one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)							Rear ports*	
I/O box	None						Audio support		
WLAN ¹³	Some: 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2 Some: 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2							Environment	ENERGY STAR® 6.1*, EPEAT™ Silver rating* (*Not for non-OS models), ErP Lot 3, RoHS-compliant, WEEE, TCO
Bluetooth™	Some: Bluetooth 4.2* wireless, integrated in Wi-Fi + BT combo adapter * Win 10 RS3 and Win10 earlier version only support Bluetooth 4.1						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	Gigabit ethernet, Realtek RTL8111HN, Wake on LAN®							Accessories	For compatible accessories, please go to http://smartfind.lenovo.com
Manageability	None						Security chip		
Security features	Discrete TPM 2.0, TCG Certified • 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 • Hard disk password • Boot sequence control • Boot without keyboard and mouse • Individual USB port disablement • Chassis intrusion switch								



ThinkCentre M625 Tiny Thin Client Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD E2 series APU						Keyboard Mouse	<i>Some:</i> Fullsize USB Keyboard (USB connector), black, Lenovo logo <i>Some:</i> USB Optical Wheel Mouse, black, Lenovo logo
	APU	Cores	Frequency Base/Max	L2 Cache	Memory Support (Up to)	Integrated Graphics	Mechanical	Tiny (1L), fan-less design, black color, metal case <ul style="list-style-type: none"> • Toolless chassis open (for models with optional toolless chassis screw) • Toolless SSD, memory, Wi-Fi removal 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 Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation
Memory	8GB max, DDR4-2666, one 260-pin SO-DIMM socket * System frequency automatically clocks down for the lower capability of memory controller in processor						VESA mount Floor Stand	
Disk	<i>Some:</i> 32GB M.2 Solid State Drive (SSD) / SATA interface <i>Some:</i> 128GB M.2 Solid State Drive (SSD) / PCIe NVMe interface						Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models)
Optical Onboard SATA Media reader	None one SATA 6.0Gb/s connector on planar						Limited warranty ³	<i>Some:</i> 1-year, depot service / service upgrades available <i>Some:</i> 1-year, limited onsite service / service upgrades available
Graphics	AMD Radeon™ Graphics in processor, uses main memory, DirectX® 12, two DisplayPort™, one optional port (VGA or USB 2.0 Type-C with DisplayPort Alternate Mode), supports up to 2 independent displays; <i>Max resolution:</i> 3840x2160 (DP) @60Hz; 2048x1280 (VGA) @60Hz; 3840x2160 (USB 2.0 Type-C) @60Hz						Preload	Preloaded operating system <i>Some:</i> Windows Embedded Standard 7 V2 (WES 7 V2) <i>Some:</i> Windows 10 IoT Enterprise <i>Some:</i> LeTOS V2 (Lenovo Terminal Operating System, Linux-based)
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), or DP to HDMI 1.4 dongle						Environment	ENERGY STAR® 6.1*, EPEAT™ Silver rating* (*Not for non-OS models), ErP Lot 3, RoHS-compliant, WEEE, TCO
Chipset	AMD SoC platform						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)
Front ports*	Two USB 3.1 Gen1 (one is Always On and fast charge), one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)						Accessories	For compatible accessories, please go to http://smartfind.lenovo.com
Rear ports*	One USB 3.1 Gen1, three USB 2.0, ethernet (RJ-45), two DisplayPort, two optional ports (Port 1 for VGA / serial / USB 2.0 Type-C (with DisplayPort Alternate Mode), Port 2 for serial) * Depending on many factors, actual data transfer speed may be lower than theoretical speed							
I/O box	None							
Audio support	High Definition (HD) Audio, Realtek ALC233-VB2-CG / internal speaker (1.5 watt)							
WLAN ¹³	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377 (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9260 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2							
Bluetooth™	<i>Some:</i> Bluetooth 4.2/5.0* wireless, integrated in Wi-Fi + BT combo adapter * Win 10 RS3 and Win10 earlier version only support Bluetooth 4.1							
Ethernet Modem	Gigabit ethernet, Realtek RTL8111HN, Wake on LAN® None							
Manageability Security chip Security features	None Discrete TPM 2.0, TCG Certified <ul style="list-style-type: none"> • 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 • Hard disk password • Boot sequence control • Boot without keyboard and mouse • Individual USB port disablement • Chassis intrusion switch 							



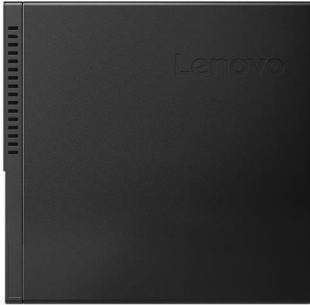
ThinkCentre M630e Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Pentium®, or 8th Generation Intel Core™ i3 / i5 Processor						Manageability Security chip Security features	None Firmware TPM 2.0, integrated in chipset <ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Chassis intrusion switch Power-on password Administrator password Hard disk password <ul style="list-style-type: none"> Boot sequence control Boot without keyboard and mouse Individual USB port disablement Smart USB protection, allows keyboard/mouse only, blocks all storage devices 						
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics								
	Pentium Gold 5405U	2 / 4	2.3G	2 MB	DDR4-2133	UHD 610								
	Core i3-8145U	2 / 4	2.1G / 3.9G	4 MB	DDR4-2400	UHD 620								
	Core i5-8265U	4 / 8	1.6G / 3.9G	6 MB	DDR4-2400	UHD 620								
Memory	16GB max, DDR4-2666*, one 260-pin SO-DIMM sockets, non-ECC * System automatically clocks down for the processors with lower memory controller						Keyboard Mouse	Some: Lenovo Calliope Keyboard (USB connector), black Some: Lenovo Calliope Mouse (USB connector), black						
Storage	Some: Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm Some: Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" Some: M.2 SSD (2280) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s Some: M.2 SSD (2242) / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s						Mechanical	Tiny (1L), black color; metal case <ul style="list-style-type: none"> Optional dust filter One 2.5" bay for HDD/SSD, two M.2 slots (one for WLAN, one for M.2 SSD) <table border="1"> <thead> <tr> <th></th> <th>Dimensions (WxDxH)</th> <th>Weight (Approx.)</th> </tr> </thead> <tbody> <tr> <td>Tiny only</td> <td>7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm</td> <td>2.91 lb (1.32 kg), vary by config</td> </tr> </tbody> </table>		Dimensions (WxDxH)	Weight (Approx.)	Tiny only	7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm	2.91 lb (1.32 kg), vary by config
	Dimensions (WxDxH)	Weight (Approx.)												
Tiny only	7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm	2.91 lb (1.32 kg), vary by config												
Onboard SATA	One onboard SATA 6.0Gb/s connector													
Graphics	Intel HD Graphics 610/620 in processor, uses main memory, DirectX® 12, one DisplayPort™, one HDMI, up to 2 independent displays; Max resolution: 4096x2304 (DP) @60Hz; 4096x2304 (HDMI) @24Hz						VESA mount Floor Stand	Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation						
Monitor cable	Optional DP to VGA dongle or DP to HDMI 1.4 dongle						Power supply	Some: 65 watts adapter, autosensing, 88% PSU						
Chipset	Intel SoC (System on Chip) platform						Limited warranty	Some: 1-year, depot service / service upgrades available Some: 1-year, limited onsite service / service upgrades available						
Front ports* (Std.)	One USB 3.1 Gen1, one USB 3.1 Type-C Gen 1, one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)						Preload	Preloaded operating system Some: Windows® 10 Pro 64-bit Some: Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none"> Lenovo Vantage Microsoft Office preloaded; purchase a product key to activate LinkedIn 						
Rear ports* (Std.)	Two USB 3.1 Gen1, two USB 2.0, one ethernet (RJ-45), one DisplayPort, one HDMI													
Rear ports* (Opt.)	None * Depending on many factors, actual data transfer speed may be lower than theoretical speed						Environment	ENERGY STAR® 7.0, EPEAT™ Silver rating, ErP Lot 3, TCO, RoHS-compliant, WEEE, REACH						
Audio support	Realtek ALC233VB / internal speaker (1.5 watt)						MIL-SPEC test	Coming soon						
WLAN	Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), 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 Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, 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						Accessories	For compatible accessories, please go to http://smartfind.lenovo.com						
Bluetooth	Some: Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter													
Ethernet	Gigabit ethernet, Realtek RTL8111HN-CG													
Ethernet (Opt.)	None													

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

Lenovo, October 2019

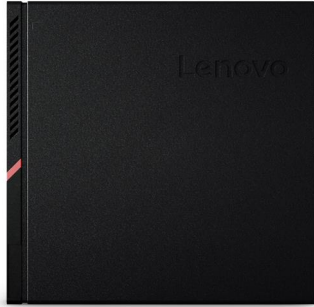


ThinkCentre M710 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 6/7th Generation Intel Core™ i3 / i5 / i7 Processor						Security features <ul style="list-style-type: none"> 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 Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Chassis intrusion switch
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	
	Pentium G4400T	2 / 2	2.9G	3 MB	DDR4-2133	HD 510	
	Pentium G4560T	2 / 4	2.9G	3 MB	DDR4-2400	HD 610	
	Pentium G4600T	2 / 4	3.0G	3 MB	DDR4-2400	HD 630	
	Core i3-6100T	2 / 4	3.2G	3 MB	DDR4-2133	HD 530	
	Core i5-6500T	4 / 4	2.5G / 3.1G	6 MB	DDR4-2133	HD 530	
	Core i7-6700T	4 / 8	2.8G / 3.6G	8 MB	DDR4-2133	HD 530	
	Core i3-7100T	2 / 4	3.4G	3 MB	DDR4-2400	HD 630	
	Core i5-7400T	4 / 4	2.4G / 3.0G	6 MB	DDR4-2400	HD 630	
	Core i5-7500T	4 / 4	2.7G / 3.3G	6 MB	DDR4-2400	HD 630	
Core i5-7600T	4 / 4	2.8G / 3.7G	6 MB	DDR4-2400	HD 630		
Core i7-7700T	4 / 8	2.9G / 3.8G	8 MB	DDR4-2400	HD 630		
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 controller						
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s <i>Some:</i> Intel Optane™ Memory (models with 7th gen Core processor), M.2 <i>Some:</i> DVD-ROM, slim (9.0mm), via USB external ODD box <i>Some:</i> DVD Burner (DVD±RW), slim (9.0mm), via USB external ODD box						
Optical	None						
Onboard SATA Media reader	One onboard SATA 6.0Gb/s connector						
Graphics	Intel HD Graphics 510/530/610/630 in processor, uses main memory, DirectX® 12, two DisplayPort™, one optional video port (HDMI, VGA, 3rd DP, or USB 3.1 Type-C with DisplayPort Alternate Mode), up to 3 independent displays; <i>Max resolution:</i> 4096x2304 (DP) @60Hz; 4096x2304 (Type-C) @60Hz; 4096x2160 (HDMI) @24Hz; 1920x1200 (VGA) @60Hz						
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4						
Chipset	Intel B250 Chipset						
Front ports*	Two USB 3.1 Gen1 (one is Always On and fast charge), one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)						
Rear ports*	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 DisplayPort, two optional ports (Port 1 for VGA / 3rd DP / HDMI / serial / USB 3.1 Type-C Gen 1 (with DisplayPort Alternate Mode), Port 2 for serial)						
I/O box*	Optional external I/O box, extends two USB 2.0, two USB 3.1 Gen1, and one serial on rear, two USB 2.0 on front, via USB cable (occupy two specific USB 3.1 Gen1 of Tiny) * Depending on many factors, actual data transfer speed may be lower than theoretical speed						
Audio support	High Definition (HD) Audio, Realtek ALC294 / optional internal speaker (1w or 2w)						
WLAN ¹³	<i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.1 combo adapter, 2x2						
Bluetooth™ Ethernet Modem	<i>Some:</i> Bluetooth 4.1 wireless, integrated in Wi-Fi + BT combo adapter Gigabit ethernet, Intel Ethernet Connection I219-V (Jacksonville), Wake on LAN® None						
Manageability Security chip	None TPM (Trusted Platform Module) 2.0*, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS						
VESA mount Floor Stand	Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation						
Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models) 90 watts AC/DC adapter, autosensing, 88% PSU (only for models with I/O box)						
Limited warranty ³	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available						
Preload	<i>Some:</i> Windows® 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit (not available with 7th Gen Intel processor) <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none"> Microsoft Office preloaded; purchase a product key to activate - Only for Window 10 Lenovo Companion - Only for Window 7 Lenovo Solution Center Lenovo ThinkVantage Tools Create Recovery Media Adobe® Reader® Cyberlink PowerDVD Create (DVD±RW) 						
Environment	ENERGY STAR® 6.1, EPEAT™ Gold rating (North America), ErP Lot 3, GREENGUARD®, RoHS-compliant, TUV low noise verified (on some models)						
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)						
Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com						

See footnotes for more detailed information



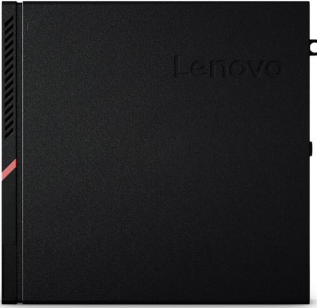
ThinkCentre M715 Tiny (2nd Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Athlon, A6, A10, A12, or Ryzen processor	Security features	<ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Administrator password Padlock loop Hard disk password Smart USB protection, allows keyboard/mouse only, blocks all storage devices Boot sequence control Power-on password Boot without keyboard and mouse Individual USB port disablement Chassis intrusion switch 																																																																								
	<table border="1"> <thead> <tr> <th>Processor</th> <th>Cores / Threads</th> <th>Frequency Base/Max</th> <th>L2 / L3 Cache</th> <th>Memory Support (Up to)</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr> <td>Athlon 200GE</td> <td>2 / 4</td> <td>3.2 GHz</td> <td>1 MB / 4MB</td> <td>DDR4-2666</td> <td>Radeon Vega 3</td> </tr> <tr> <td>Athlon PRO 200GE</td> <td>2 / 4</td> <td>3.2 GHz</td> <td>1 MB / 4MB</td> <td>DDR4-2666</td> <td>Radeon Vega 3</td> </tr> <tr> <td>PRO A6-8570E</td> <td>2 / 2</td> <td>3.0 / 3.4 GHz</td> <td>1 MB / -</td> <td>DDR4-2400</td> <td>Radeon R5</td> </tr> <tr> <td>PRO A10-8770E</td> <td>4 / 4</td> <td>2.8 / 3.5 GHz</td> <td>2 MB / -</td> <td>DDR4-2400</td> <td>Radeon R7</td> </tr> <tr> <td>PRO A6-9500E</td> <td>2 / 2</td> <td>3.0 / 3.4 GHz</td> <td>1 MB / -</td> <td>DDR4-2400</td> <td>Radeon R5</td> </tr> <tr> <td>PRO A10-9700E</td> <td>4 / 4</td> <td>3.0 / 3.5 GHz</td> <td>2 MB / -</td> <td>DDR4-2400</td> <td>Radeon R7</td> </tr> <tr> <td>PRO A12-9800E</td> <td>4 / 4</td> <td>3.1 / 3.8 GHz</td> <td>2 MB / -</td> <td>DDR4-2400</td> <td>Radeon R7</td> </tr> <tr> <td>Ryzen 3 2200GE</td> <td>4 / 4</td> <td>3.2 / 3.6 GHz</td> <td>2 MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 8</td> </tr> <tr> <td>Ryzen 3 PRO 2200GE</td> <td>4 / 4</td> <td>3.2 / 3.6 GHz</td> <td>2 MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 8</td> </tr> <tr> <td>Ryzen 5 2400GE</td> <td>4 / 8</td> <td>3.2 / 3.8 GHz</td> <td>2 MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon RX Vega 11</td> </tr> <tr> <td>Ryzen 5 PRO 2400GE</td> <td>4 / 8</td> <td>3.2 / 3.8 GHz</td> <td>2 MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon RX Vega 11</td> </tr> </tbody> </table>	Processor	Cores / Threads	Frequency Base/Max	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics	Athlon 200GE	2 / 4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3	Athlon PRO 200GE	2 / 4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3	PRO A6-8570E	2 / 2	3.0 / 3.4 GHz	1 MB / -	DDR4-2400	Radeon R5	PRO A10-8770E	4 / 4	2.8 / 3.5 GHz	2 MB / -	DDR4-2400	Radeon R7	PRO A6-9500E	2 / 2	3.0 / 3.4 GHz	1 MB / -	DDR4-2400	Radeon R5	PRO A10-9700E	4 / 4	3.0 / 3.5 GHz	2 MB / -	DDR4-2400	Radeon R7	PRO A12-9800E	4 / 4	3.1 / 3.8 GHz	2 MB / -	DDR4-2400	Radeon R7	Ryzen 3 2200GE	4 / 4	3.2 / 3.6 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8	Ryzen 3 PRO 2200GE	4 / 4	3.2 / 3.6 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8	Ryzen 5 2400GE	4 / 8	3.2 / 3.8 GHz	2 MB / 4MB	DDR4-2933	Radeon RX Vega 11	Ryzen 5 PRO 2400GE	4 / 8	3.2 / 3.8 GHz	2 MB / 4MB	DDR4-2933	Radeon RX Vega 11	Keyboard	<ul style="list-style-type: none"> <i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
Processor	Cores / Threads	Frequency Base/Max	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics																																																																						
Athlon 200GE	2 / 4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3																																																																						
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Ryzen 3 PRO 2200GE	4 / 4	3.2 / 3.6 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8																																																																						
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Ryzen 5 PRO 2400GE	4 / 8	3.2 / 3.8 GHz	2 MB / 4MB	DDR4-2933	Radeon RX Vega 11																																																																						
		Mouse	<ul style="list-style-type: none"> <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <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 																																																																								
Memory	32GB max, DDR4 2666*, two 260-pin SO-DIMM sockets, dual-channel capable * System automatically clocks down for the lower memory controller	Mechanical	<ul style="list-style-type: none"> Tiny (1L), black color; metal case Toolless chassis open (need optional toolless chassis screw) Optional dust filter <p>M715 Gen2 Tiny only: 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 configuration</p> <p>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</p>																																																																								
Disk	<ul style="list-style-type: none"> <i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> 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 	VESA mount Floor Stand	<ul style="list-style-type: none"> Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation 																																																																								
Optical	<ul style="list-style-type: none"> <i>Some:</i> DVD-ROM, 9.0mm high, via USB external ODD box <i>Some:</i> DVD±RW, 9.0mm high, via USB external ODD box 	Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models)																																																																								
Onboard SATA	One SATA cable (1-drop to device), one SATA 6.0Gb/s connector on planar	Limited warranty	1-year or 3-year, limited onsite service / service upgrades available																																																																								
Graphics	AMD Radeon™ Graphics in processor, uses main memory, DirectX® 12, two DisplayPort™, one optional port (HDMI, VGA, or 3rd DP), supports 3 independent displays (supports maximum of 2 concurrent HDMI/DVI displays when using HDMI port or DP to DVI/HDMI dongles, and Athlon / Athlon PRO only support 2 displays); <i>Max resolution:</i> 4096x2160 (DP) @60Hz; 4096x2160 (HDMI) @30Hz; 1920x1200 (VGA) @60Hz	Preload	Preloaded operating system <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit <i>Some:</i> Windows 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64-bit																																																																								
Monitor cable	Optional DP to VGA dongle, DP to DVI-D dongle, or DP to HDMI 1.4 dongle	Preloaded applications (only some listed)	<ul style="list-style-type: none"> - Windows 10 only • 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 - Windows 7 only • Lenovo Solution Center • ThinkVantage System Update • Create Recovery Media • Microsoft Office preloaded; purchase a product key to activate • Adobe® Reader® 																																																																								
Chipset	AMD B300 Chipset	Environment	ENERGY STAR® 7.0*, EPEAT™ Silver rating* (*Not for non-OS models); ErP Lot 3; ; RoHS-compliant																																																																								
Front ports* (Std.)	Two USB 3.1 Gen1 (one is Always On and fast charge), one microphone (stereo, 3.5mm), one headphone / microphone combo jack (stereo, 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)																																																																								
Rear ports* (Std.)	One USB 3.1 Gen1 and three USB 2.0, ethernet (RJ-45), two DisplayPort, one headphone	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com																																																																								
Rear ports* (Opt.)	One optional port (VGA**, 3rd DP**, HDMI**, or serial on some models) * Depending on many factors, actual data transfer speed may be lower than theoretical speed ** Not support VGA, 3rd DP, HDMI for the models with Athlon / Athlon PRO																																																																										
Audio support	High Definition (HD) Audio, Realtek ALC233-VB2 / internal speaker (1.5 watt)																																																																										
WLAN	<ul style="list-style-type: none"> <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377 (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2 <i>Some:</i> Bluetooth 4.2* wireless, integrated in Wi-Fi + BT combo adapter * Hardware supports BT 4.2, but Win10 RS3 and earlier only supports BT 4.1																																																																										
Bluetooth																																																																											
Ethernet	Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN®																																																																										
Manageability	DASH 1.0/1.1																																																																										
Security chip	Discrete TPM 2.0, TCG Certified																																																																										

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

Lenovo, July 2018



ThinkCentre M715 Tiny Thin Client (2nd Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Athlon, A6, A10, or Ryzen processor						Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <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
	APU	Cores / Threads	Frequency Base/Max	L2 / L3 Cache	Memory Sup-port (Up to)	Integrated Graphics	Mouse	
	Athlon PRO 200GE	2 / 4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3		
	PRO A6-8570E	2 / 2	3.0 / 3.4 GHz	1 MB / -	DDR4-2400	Radeon R5		
	PRO A10-8770E	4 / 4	2.8 / 3.5 GHz	2 MB / -	DDR4-2400	Radeon R7		
	Ryzen 3 PRO 2200GE	4 / 4	3.2 / 3.6 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8		
Memory	8GB max, DDR4 2666*, two 260-pin SO-DIMM sockets, dual-channel capable * System automatically clocks down for the lower memory controller						Mechanical	Tiny (1L), black color; metal case • Toolless chassis open (need optional toolless chassis screw) • Optional dust filter M715 Gen2 Tiny only: 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 configuration VESA mount Optional VESA mount bracket kit, supports VESA 75mm and 100mm Floor Stand Optional system floor stand for vertical orientation
Disk	<i>Some:</i> 32GB M.2 Solid State Drive (SSD) / SATA interface <i>Some:</i> 128GB M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 2						Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models)
Optical	None						Limited warranty	1-year or 3-year, limited onsite service / service upgrades available
Onboard SATA	One SATA cable (1-drop to device), one SATA 6.0Gb/s connector on planar						Preload	Preloaded operating system <i>Some:</i> Windows Embedded Standard 7 V2 (WES 7 V2) <i>Some:</i> Windows 10 IoT Enterprise <i>Some:</i> LeTOS V2 (Lenovo Terminal Operating System, Linux-based)
Graphics	AMD Radeon™ Graphics in processor, uses main memory, DirectX® 12, two DisplayPort™, one optional port (HDMI, VGA, or 3rd DP), supports 3 independent displays (supports maximum of 2 concurrent HDMI/DVI displays when using HDMI port or DP to DVI/HDMI dongles, and Athlon / Athlon PRO only support 2 displays); <i>Max resolution:</i> 4096x2160 (DP) @60Hz; 4096x2160 (HDMI) @30Hz; 1920x1200 (VGA) @60Hz						Environment	ENERGY STAR® 6.1*, EPEAT™ Silver rating* (*not for non-OS models); ErP Lot 3; RoHS-compliant
Monitor cable	Optional DP to VGA dongle, DP to DVI-D dongle, or DP to HDMI 1.4 dongle						MIL-SPEC test	MIL-STD-810G military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock)
Chipset	AMD B300 Chipset						Accessories	For compatible accessories, please go to http://smartfind.lenovo.com
Front ports* (Std.)	Two USB 3.1 Gen1 (one is Always On and fast charge), one microphone (stereo, 3.5mm), one headphone / microphone combo jack (stereo, 3.5mm)							
Rear ports* (Std.)	One USB 3.1 Gen1 and three USB 2.0, ethernet (RJ-45), two DisplayPort, one headphone							
Rear ports* (Opt.)	One optional port (VGA**, 3rd DP**, HDMI**, or serial on some models) * Depending on many factors, actual data transfer speed may be lower than theoretical speed ** Not support VGA, 3rd DP, HDMI for the models with Athlon / Athlon PRO							
Audio support	High Definition (HD) Audio, Realtek ALC233-VB2 / internal speaker (1.5 watt)							
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377 (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2* combo adapter, 2x2 <i>Some:</i> Bluetooth 4.2* wireless, integrated in Wi-Fi + BT combo adapter							
Bluetooth	* Hardware supports BT 4.2, but Win10 RS3 and earlier only supports BT 4.1							
Ethernet	Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN®							
Manageability	DASH 1.0/1.1							
Security chip	Discrete TPM 2.0, TCG Certified							
Security features	<ul style="list-style-type: none"> • Security slot (in rear for optional Kensington® MicroSaver® cable) • Padlock loop • Smart USB protection, allows keyboard/ mouse only, blocks all storage devices • Power-on password • Administrator password • Hard disk password • Boot sequence control • Boot without keyboard and mouse • Individual USB port disablement • Chassis intrusion switch 							

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

Lenovo, July 2018



ThinkCentre M720 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 Processor						Manageability None Security chip Discrete TPM 2.0, TCG Certified Security features <ul style="list-style-type: none"> • Security slot (in rear for optional Kensington® MicroSaver® cable) • Chassis intrusion switch • Power-on password • Administrator password • Hard disk password <ul style="list-style-type: none"> • Boot sequence control • Boot without keyboard and mouse • Individual USB port disablement • Smart USB protection, allows keyboard/mouse only, blocks all storage devices 						
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics							
	Celeron G4900T	2 / 2	2.9G	2 MB	DDR4-2400	UHD 610							
	Pentium Gold G5400T	2 / 4	3.1G	4 MB	DDR4-2400	UHD 610							
	Pentium Gold G5500T	2 / 4	3.2G	4 MB	DDR4-2400	UHD 630							
	Core i3-8100T	4 / 4	3.1G	6 MB	DDR4-2400	UHD 630							
	Core i3-8300T	4 / 4	3.2G	8 MB	DDR4-2400	UHD 630							
	Core i5-8400T	6 / 6	1.7G / 3.3G	9 MB	DDR4-2666	UHD 630							
	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							
	Core i7-8700T	6 / 12	2.4G / 4.0G	12 MB	DDR4-2666	UHD 630							
	Core i3-9100T	4 / 4	3.1G / 3.7G	6 MB	DDR4-2400	UHD 630							
	Core i3-9300T	4 / 4	3.2G / 3.8G	8 MB	DDR4-2400	UHD 630							
	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							
	Core i5-9600T	6 / 6	2.3G / 3.9G	9 MB	DDR4-2666	UHD 630							
	Core i7-9700T	8 / 8	2.0G / 4.3G	12 MB	DDR4-2666	UHD 630							
Core i9-9900T	8 / 16	2.1G / 4.4G	16 MB	DDR4-2666	UHD 630								
Memory	32GB max, DDR4-2666*, two 260-pin SO-DIMM sockets, non-ECC, dual-channel capable * System automatically clocks down for the processors with lower memory controller												
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> 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 <i>Some:</i> Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2 <i>Some:</i> DVD-ROM, slim (9.0mm), via USB external ODD box <i>Some:</i> DVD Burner (DVD±RW), slim (9.0mm), via USB external ODD box One onboard SATA 6.0Gb/s connector												
Optical													
Onboard SATA	One onboard SATA 6.0Gb/s connector												
Graphics	Intel HD Graphics 610/630 in processor, uses main memory, DirectX® 12, one DisplayPort™, one HDMI, one optional video port (2nd HDMI, VGA, 2nd DP, or USB 3.1 Type-C Gen1 with DisplayPort function), up to 3 independent displays; <i>Max resolution:</i> 4096x2304 (DP)@60Hz; 4096x2304 (Type-C)@60Hz; 4096x2160 (onboard HDMI)@24Hz; 2048x1536 (VGA)@50Hz 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												
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												
Chipset	Intel B360 Chipset												
Front ports* (Std.)	one USB 3.1 Gen1 (Always On and fast charge), one USB 3.1 Type-C Gen 1, one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)												
Rear ports* (Std.)	2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x ethernet (RJ-45), 1x DisplayPort, 1x HDMI												
Rear ports* (Opt.)	Two optional ports (mutually exclusive with PCIe card): Port 1 for VGA / 2nd DP / 2nd HDMI / 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 * Depending on many factors, actual data transfer speed may be lower than theoretical speed												
Audio support	Realtek ALC233VB2 / optional internal speaker (1.5 watt or 2 watt)												
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2												
Bluetooth	<i>Some:</i> Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter												
Ethernet	Gigabit ethernet, Intel Ethernet Connection I219-V (Jacksonville), Wake on LAN®												
Ethernet (Opt.)	<i>Some:</i> Intel Ethernet Server Adapter I350-T4, gigabit ethernet, 4x RJ-45, PCIe x4												
		<table border="1"> <thead> <tr> <th></th> <th>Dimensions (WxDxH)</th> <th>Weight (Approx.)</th> </tr> </thead> <tbody> <tr> <td>Tiny only</td> <td>7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm</td> <td>2.91 lb (1.32 kg), vary by config</td> </tr> <tr> <td>With VESA mount & ODD box</td> <td>7.42" X 7.30" X 2.48" 188.4mm X 185.38mm X 63mm</td> <td>3.66 lb (1.66 kg), vary by config</td> </tr> </tbody> </table>			Dimensions (WxDxH)	Weight (Approx.)	Tiny only	7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm	2.91 lb (1.32 kg), vary by config	With VESA mount & ODD box	7.42" X 7.30" X 2.48" 188.4mm X 185.38mm X 63mm	3.66 lb (1.66 kg), vary by config	
	Dimensions (WxDxH)	Weight (Approx.)											
Tiny only	7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm	2.91 lb (1.32 kg), vary by config											
With VESA mount & ODD box	7.42" X 7.30" X 2.48" 188.4mm X 185.38mm X 63mm	3.66 lb (1.66 kg), vary by config											
VESA mount	Optional VESA mount bracket kit, supports VESA 75mm and 100mm												
Floor Stand	Optional system floor stand for vertical orientation												
Power supply	<i>Some:</i> 65 watts AC/DC adapter, autosensing, 88% PSU <i>Some:</i> 90 watts AC/DC adapter, autosensing, 88% PSU <i>Some:</i> 135 watts AC/DC adapter, autosensing, 88% PSU												
Limited warranty	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available												
Preload	Preloaded operating system <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none"> • Lenovo Vantage • Microsoft Office preloaded; purchase a product key to activate • Cyberlink Power2GO (only for models with DVD / DVD±RW) • Cyberlink Power2GO (only for models with DVD±RW) • LinkedIn 												
Environment	ENERGY STAR® 7.0, EPEAT™ Gold rating (North America), ErP Lot 3, TCO, TUV ultra low noise verified (coming soon, on some models), RoHS-compliant												
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)												
Accessories	For compatible accessories, please go to http://smartfind.lenovo.com												

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

Lenovo, June 2019



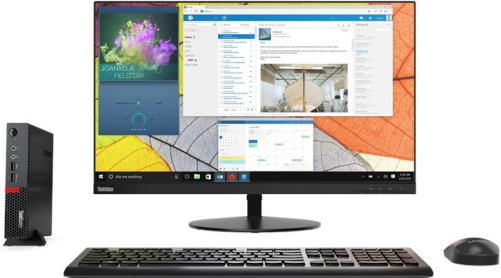
ThinkCentre M75q-1 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	AMD Athlon PRO or Ryzen 3 / 5 PRO series processor	Security features	<ul style="list-style-type: none"> 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 Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Chassis intrusion switch 																																										
	<table border="1"> <thead> <tr> <th>Processor</th> <th>Cores / Threads</th> <th>Frequency Base/Max</th> <th>L2 / L3 Cache</th> <th>Memory Support (Up to)</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr> <td>Athlon PRO 200GE</td> <td>2 / 4</td> <td>3.2 GHz</td> <td>1 MB / 4MB</td> <td>DDR4-2666</td> <td>Radeon Vega 3</td> </tr> <tr> <td>Athlon PRO 300GE</td> <td>2 / 4</td> <td>3.4 GHz</td> <td>1 MB / 4MB</td> <td>DDR4-2666</td> <td>Radeon Vega 3</td> </tr> <tr> <td>Ryzen 3 PRO 2200GE</td> <td>4 / 4</td> <td>3.2 / 3.6 GHz</td> <td>2 MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 8</td> </tr> <tr> <td>Ryzen 5 PRO 2400GE</td> <td>4 / 8</td> <td>3.2 / 3.8 GHz</td> <td>2 MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 11</td> </tr> <tr> <td>Ryzen 3 PRO 3200GE</td> <td>4 / 4</td> <td>3.3 / 3.8 GHz</td> <td>2 MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 8</td> </tr> <tr> <td>Ryzen 5 PRO 3400GE</td> <td>4 / 8</td> <td>3.3 / 4.0 GHz</td> <td>2 MB / 4MB</td> <td>DDR4-2933</td> <td>Radeon Vega 11</td> </tr> </tbody> </table>	Processor	Cores / Threads	Frequency Base/Max	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics	Athlon PRO 200GE	2 / 4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3	Athlon PRO 300GE	2 / 4	3.4 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3	Ryzen 3 PRO 2200GE	4 / 4	3.2 / 3.6 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8	Ryzen 5 PRO 2400GE	4 / 8	3.2 / 3.8 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 11	Ryzen 3 PRO 3200GE	4 / 4	3.3 / 3.8 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8	Ryzen 5 PRO 3400GE	4 / 8	3.3 / 4.0 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 11	Keyboard	<i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <i>Some:</i> Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black (only available via special bid models) <i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
Processor	Cores / Threads	Frequency Base/Max	L2 / L3 Cache	Memory Support (Up to)	Integrated Graphics																																								
Athlon PRO 200GE	2 / 4	3.2 GHz	1 MB / 4MB	DDR4-2666	Radeon Vega 3																																								
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Ryzen 3 PRO 2200GE	4 / 4	3.2 / 3.6 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8																																								
Ryzen 5 PRO 2400GE	4 / 8	3.2 / 3.8 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 11																																								
Ryzen 3 PRO 3200GE	4 / 4	3.3 / 3.8 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 8																																								
Ryzen 5 PRO 3400GE	4 / 8	3.3 / 4.0 GHz	2 MB / 4MB	DDR4-2933	Radeon Vega 11																																								
Memory	32GB max, DDR4-2666*, two 260-pin SO-DIMM sockets, dual-channel capable * System automatically clocks down for the lower memory controller	Mechanical	Tiny (1L), black color; metal case <ul style="list-style-type: none"> Toolless chassis open (need optional toolless chassis screw) Toolless HDD, SSD, memory removal Optional dust filter M75q Tiny only: 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 configuration 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																																										
Disk	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm <i>Some:</i> M.2 SSD (2242 / 2280) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4	VESA mount	Optional VESA mount bracket kit, supports VESA 75mm and 100mm																																										
Optical	<i>Some:</i> DVD-ROM, 9.0mm high, via USB external ODD box <i>Some:</i> DVD±RW, 9.0mm high, via USB external ODD box	Floor Stand	Optional system floor stand for vertical orientation																																										
Onboard SATA	One SATA 6.0Gb/s connector on system board	Power supply	<i>Some:</i> 65 watts adapter, autosensing, 88% PSU (not included for TIO models) <i>Some:</i> 135 watts adapter, autosensing, 88% PSU (not included for TIO models)																																										
Graphics	AMD Radeon™ Graphics in processor, uses main memory, DirectX® 12, one DisplayPort™, one HDMI, one optional port (VGA, 2nd DP, or 2nd HDMI), supports 3 independent displays (supports maximum of 2 concurrent HDMI/DVI displays when using HDMI port or DP to DVI/HDMI dongles, and Athlon / Athlon PRO only support 2 displays); <i>Max resolution:</i> 4096x2160 (DP)@60Hz; 4096x2160 (HDMI)@30Hz; 1920x1200 (VGA)@60Hz	Limited warranty	1-year or 3-year, limited onsite service / service upgrades available																																										
Monitor cable	Optional DP to VGA dongle, DP to DVI-D dongle, DP to dual DP dongle, or DP to HDMI 1.4 dongle	Preload	Preloaded operating system <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit <i>Some:</i> Windows 10 IoT Enterprise <i>Some:</i> Linux Ubuntu																																										
Chipset	AMD B300 Chipset	Environment	ENERGY STAR® 7.1*, EPEAT™ Silver rating* (*Not for non-OS models); ErP Lot 3; RoHS-compliant; TUV low noise verified																																										
Front ports* (Std.)	one USB 3.1 Gen1 (Always On and fast charge), one USB 3.1 Type-C Gen 1, one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)	MIL-SPEC test	MIL-STD-810H military certification (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)																																										
Rear ports* (Std.)	1x USB 3.1 Gen1, 3x USB 2.0, 1x ethernet (RJ-45), 1x DisplayPort, 1x HDMI	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com																																										
Rear ports* (Opt.)	Two optional ports: Port 1 for VGA / 2nd DP / 2nd HDMI / serial; Port 2 for serial; * Depending on many factors, actual data transfer speed may be lower than theoretical speed																																												
Audio support	High Definition (HD) Audio, Realtek ALC222CG / internal speaker (1.5 watt)																																												
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9260 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2																																												
Bluetooth	<i>Some:</i> Bluetooth 4.2 / 5.0 wireless, integrated in Wi-Fi + BT combo adapter																																												
Ethernet	Gigabit ethernet, Realtek RTL8111EPV-CG, Wake on LAN®																																												
Manageability	DASH 1.0/1.1																																												
Security chip	Discrete TPM 2.0, TCG Certified																																												

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

Lenovo, October 2019



ThinkCentre M910 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 6/7th Generation Intel Core™ i3 / i5 / i7 Processor						Security features <ul style="list-style-type: none"> 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 Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Chassis intrusion switch
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	
	Core i5-6500T	4 / 4	2.5G / 3.1G	6 MB	DDR4-2133	HD 530	
	Core i7-6700T	4 / 8	2.8G / 3.6G	8 MB	DDR4-2133	HD 530	
	Core i5-7500T	4 / 4	2.7G / 3.3G	6 MB	DDR4-2400	HD 630	
	Core i5-7600T	4 / 4	2.8G / 3.7G	6 MB	DDR4-2400	HD 630	
Core i7-7700T	4 / 8	2.9G / 3.8G	8 MB	DDR4-2400	HD 630		
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 controller						
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm, APS <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s <i>Some:</i> Intel Optane™ Memory (models with 7th gen Core processor), M.2 <i>Some:</i> DVD-ROM, slim (9.0mm), via USB external ODD box <i>Some:</i> DVD Burner (DVD±RW), slim (9.0mm), via USB external ODD box						
Optical	One onboard SATA 6.0Gb/s connector						
Onboard SATA Media reader	None						
Graphics	Intel HD Graphics 510/530/610/630 in processor, uses main memory, DirectX® 12, two DisplayPort™, one optional video port (HDMI, VGA, 3rd DP, or USB 3.1 Type-C with DisplayPort Alternate Mode), up to 3 independent displays; <i>Max resolution:</i> 4096x2304 (DP)@60Hz; 4096x2304 (Type-C)@60Hz; 4096x2160 (HDMI)@24Hz; 1920x1200 (VGA)@60Hz						
Monitor cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4						
Chipset	Intel Q270 Chipset						
Front ports*	Two USB 3.1 Gen1 (one is Always On and fast charge), one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)						
Rear ports*	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 DisplayPort, two optional ports (Port 1 for VGA / 3rd DP / HDMI / serial / USB 3.1 Type-C Gen 1 (with DisplayPort Alternate Mode), Port 2 for serial)						
I/O box*	Optional external I/O box, extends two USB 2.0, two USB 3.1 Gen1, and one serial on rear, two USB 2.0 on front, via USB cable (occupy two specific USB 3.1 Gen1 of Tiny) * Depending on many factors, actual data transfer speed may be lower than theoretical speed						
Audio support	High Definition (HD) Audio, Realtek ALC294 / optional internal speaker (1w or 2w)						
WLAN ¹³	<i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377A (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.2 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, Intel vPro technology support, 2x2						
Bluetooth™	<i>Some:</i> Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter * Hardware supports BT 4.2, but Win10 RS3 and earlier only supports BT 4.1						
Ethernet	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 adapter to enable vPro function through wireless connection)						
Security chip	TPM (Trusted Platform Module) 2.0*, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS						
Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black						
Mouse							
Mechanical	Tiny (1L), black color; metal case <ul style="list-style-type: none"> Toolless chassis open Toolless HDD, SSD, memory removal Optional toolless chassis screw Optional dust filter 						
VESA mount Floor Stand	Optional VESA mount bracket kit, supports VESA 75mm and 100mm Optional system floor stand for vertical orientation						
Power supply	65 watts AC/DC adapter, autosensing, 88% PSU (not included for TIO models) 90 watts AC/DC adapter, autosensing, 88% PSU (only for models with I/O box)						
Limited warranty ³	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available						
Preload	<i>Some:</i> Windows® 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit (not available with 7th Gen Intel processor) <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit						
Environment	ENERGY STAR® 6.1, EPEAT™ Gold rating (North America), ErP Lot 3, GREENGUARD®, RoHS-compliant, TUV low noise verified (on some models)						
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)						
Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com						

See footnotes for more detailed information



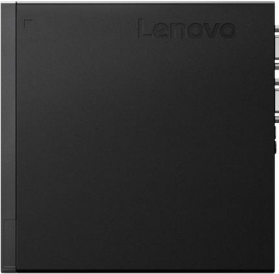
ThinkCentre M920 Tiny Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 Processor						Bluetooth Ethernet (Opt.) 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	
	Celeron G4900T	2 / 2	2.9G	2 MB	DDR4-2400	UHD 610	
	Celeron G4930T	2 / 2	3.0G	2 MB	DDR4-2400	UHD 610	
	Pentium Gold G5400T	2 / 4	3.1G	4 MB	DDR4-2400	UHD 610	
	Pentium Gold G5500T	2 / 4	3.2G	4 MB	DDR4-2400	UHD 630	
	Pentium Gold G5600T	2 / 4	3.3G	4 MB	DDR4-2400	UHD 630	
	Pentium Gold G5420T	2 / 4	3.2G	4 MB	DDR4-2400	UHD 610	
	Core i3-8100T	4 / 4	3.1G	6 MB	DDR4-2400	UHD 630	
	Core i3-8300T	4 / 4	3.2G	8 MB	DDR4-2400	UHD 630	
	Core i5-8400T	6 / 6	1.7G / 3.3G	9 MB	DDR4-2666	UHD 630	
	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	
	Core i7-8700T	6 / 12	2.4G / 4.0G	12 MB	DDR4-2666	UHD 630	
	Core i3-9100T	4 / 4	3.1G / 3.7G	6 MB	DDR4-2400	UHD 630	
	Core i3-9300T	4 / 4	3.2G / 3.8G	8 MB	DDR4-2400	UHD 630	
	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		
Core i5-9600T	6 / 6	2.3G / 3.9G	9 MB	DDR4-2666	UHD 630		
Core i7-9700T	8 / 8	2.0G / 4.3G	12 MB	DDR4-2666	UHD 630		
Core i9-9900T	8 / 16	2.1G / 4.4G	16 MB	DDR4-2666	UHD 630		
Memory	32GB max, DDR4-2666*, two 260-pin SO-DIMM sockets, dual-channel capable * System automatically clocks down for the processors with lower memory controller						Manageability Intel Active Management Technology 12 (Intel AMT 12); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection) Security chip Security features ● Security slot (in rear for optional Kensington® MicroSaver® cable) ● Chassis intrusion switch ● Power-on password ● Administrator password ● Hard disk password ● Boot sequence control ● Boot without keyboard and mouse ● Individual USB port disablement ● Smart USB protection, allows keyboard/mouse only, blocks all storage devices
Storage	Some: Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm 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 Some: DVD-ROM, slim (9.0mm), via USB external ODD box Some: DVD Burner (DVD±RW), slim (9.0mm), via USB external ODD box						
Optical	One onboard SATA 6.0Gb/s connector						
Onboard SATA	One onboard SATA 6.0Gb/s connector						
Graphics	Intel HD Graphics 610/630 in processor, uses main memory, DirectX® 12, one DisplayPort™, one HDMI, one optional video port (2nd HDMI, VGA, 2nd DP, or USB 3.1 Type-C Gen1 with DisplayPort function), up to 3 independent displays; Max resolution: 4096x2304 (DP)@60Hz; 4096x2304 (Type-C)@60Hz; 4096x2160 (onboard HDMI)@24Hz; 2048x1536 (VGA)@50Hz						
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						
Chipset	Intel Q370 Chipset						
Front ports (Std.)*	one USB 3.1 Gen1 (Always On and fast charge), one USB 3.1 Type-C Gen 1, one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)						
Rear ports (Std.)*	2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x ethernet (RJ-45), 1x DisplayPort, 1x HDMI						
Rear ports (Opt.)*	Two optional ports (mutually exclusive with PCIe card): Port 1 for VGA / 2nd DP / 2nd HDMI / 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, 1x Thunderbolt 3 (combo USB3.1 Type-C Gen 2 / DisplayPort) via PCIe x4 * Depending on many factors, actual data transfer speed may be lower than theoretical speed						
Audio support	Realtek ALC233VB2 / optional internal speaker (1.5 watt or 2 watt)						
WLAN	Some: 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), 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 Some: 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, 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						
MIL-SPEC test	ENERGY STAR® 7.0, EPEAT™ Gold rating (North America), ErP Lot 3, TCO, TUV ultra low noise verified (coming soon, on some models), RoHS-compliant						
Accessories	For compatible accessories, please go to http://smartfind.lenovo.com						
VESA mount	Optional VESA mount bracket kit, supports VESA 75mm and 100mm						
Floor Stand	Optional system floor stand for vertical orientation						
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						
Limited warranty	Some: 1-year or 3-year, depot service / service upgrades available Some: 1-year or 3-year, limited onsite service / service upgrades available						
Preload	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 ● Intel Unite (Machine Type 10V8 models only)						
Dimensions (WxDxH)	Tiny only		7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm		2.91 lb (1.32 kg), vary by config		
Weight (Approx.)	With VESA mount & ODD box		7.42" X 7.30" X 2.48" 188.4mm X 185.38mm X 63mm		3.66 lb (1.66 kg), vary by config		

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

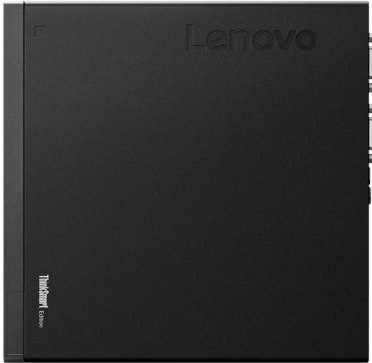
Lenovo, June 2019



ThinkCentre M920x Tiny Platform Specifications

Processor	Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 Processor						4x Mini DisplayPort, up to 4 independent displays, works along with onboard DP and HDMI to support up to 6 independent displays; <i>Max resolution:</i> 5120x2880 @60Hz ((up to 2 Mini DisplayPort); 4096x2160 @60Hz ((up to 4 Mini DisplayPort)									
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	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, Mini DP to DP									
	Celeron G4900	2 / 2	3.1G	2 MB	DDR4-2400	UHD 610	Monitor cable									
	Celeron G4920	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610										
	Celeron G4930	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	Chipset									
	Celeron G4950	2 / 2	3.3G	2 MB	DDR4-2400	UHD 610										
	Pentium Gold G5400	2 / 4	3.7G	4 MB	DDR4-2400	UHD 610	Front ports (Std.)*									
	Pentium Gold G5500	2 / 4	3.8G	4 MB	DDR4-2400	UHD 630										
	Pentium Gold G5600	2 / 4	3.9G	4 MB	DDR4-2400	UHD 630	Rear ports (Std.)*									
	Pentium Gold G5420	2 / 4	3.8G	4 MB	DDR4-2400	UHD 610										
	Pentium Gold G5620	2 / 4	4.0G	4 MB	DDR4-2400	UHD 630	Rear ports (Opt.)*									
	Core i3-8100	4 / 4	3.6G	6 MB	DDR4-2400	UHD 630										
	Core i3-8300	4 / 4	3.7G	8 MB	DDR4-2400	UHD 630	Audio support									
	Core i5-8400	6 / 6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630										
	Core i5-8500	6 / 6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	WLAN									
	Core i5-8600	6 / 6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630										
	Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Bluetooth									
	Core i3-9100	4 / 4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630										
	Core i3-9300	4 / 4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	Ethernet									
	Core i3-9320	4 / 4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630										
	Core i5-9400	6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Ethernet (Opt.)									
	Core i5-9500	6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630										
	Core i5-9600	6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Manageability									
	Celeron G4900T	2 / 2	2.9G	2 MB	DDR4-2400	UHD 610										
	Celeron G4930T	2 / 2	3.0G	2 MB	DDR4-2400	UHD 610	Security chip									
	Pentium Gold G5400T	2 / 4	3.1G	4 MB	DDR4-2400	UHD 610										
	Pentium Gold G5500T	2 / 4	3.2G	4 MB	DDR4-2400	UHD 630	Security features									
	Pentium Gold G5600T	2 / 4	3.3G	4 MB	DDR4-2400	UHD 630										
	Pentium Gold G5420T	2 / 4	3.2G	4 MB	DDR4-2400	UHD 610	Keyboard									
	Core i3-8100T	4 / 4	3.1G	6 MB	DDR4-2400	UHD 630										
	Core i3-8300T	4 / 4	3.2G	8 MB	DDR4-2400	UHD 630	Mouse									
	Core i5-8400T	6 / 6	1.7G / 3.3G	9 MB	DDR4-2666	UHD 630										
	Core i5-8500T	6 / 6	2.1G / 3.5G	9 MB	DDR4-2666	UHD 630	Mechanical									
	Core i5-8600T	6 / 6	2.3G / 3.7G	9 MB	DDR4-2666	UHD 630										
	Core i7-8700T	6 / 12	2.4G / 4.0G	12 MB	DDR4-2666	UHD 630	Tiny (1L), black color; metal case • Toolless chassis open (need optional toolless chassis screw) • Toolless HDD, SSD, memory removal • Optional dust filter 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 i3-9100T	4 / 4	3.1G / 3.7G	6 MB	DDR4-2400	UHD 630										
	Core i3-9300T	4 / 4	3.2G / 3.8G	8 MB	DDR4-2400	UHD 630	<table border="1"> <thead> <tr> <th></th> <th>Dimensions (WxDxH)</th> <th>Weight (Approx.)</th> </tr> </thead> <tbody> <tr> <td>Tiny only</td> <td>7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm</td> <td>2.91 lb (1.32 kg), vary by config</td> </tr> <tr> <td>With VESA mount & ODD box</td> <td>7.42" X 7.30" X 2.48" 188.4mm X 185.38mm X 63mm</td> <td>3.66 lb (1.66 kg), vary by config</td> </tr> </tbody> </table>		Dimensions (WxDxH)	Weight (Approx.)	Tiny only	7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm	2.91 lb (1.32 kg), vary by config	With VESA mount & ODD box	7.42" X 7.30" X 2.48" 188.4mm X 185.38mm X 63mm	3.66 lb (1.66 kg), vary by config
	Dimensions (WxDxH)	Weight (Approx.)														
Tiny only	7.05" X 7.20" X 1.36" 179mm X 182.9mm X 34.5mm	2.91 lb (1.32 kg), vary by config														
With VESA mount & ODD box	7.42" X 7.30" X 2.48" 188.4mm X 185.38mm X 63mm	3.66 lb (1.66 kg), vary by config														
	Core i5-9400T	6 / 6	1.8G / 3.4G	9 MB	DDR4-2666	UHD 630	VESA mount									
	Core i5-9500T	6 / 6	2.2G / 3.7G	9 MB	DDR4-2666	UHD 630										
	Core i5-9600T	6 / 6	2.3G / 3.9G	9 MB	DDR4-2666	UHD 630	Floor Stand									
	Core i7-9700T	8 / 8	2.0G / 4.3G	12 MB	DDR4-2666	UHD 630										
	Core i9-9900T	8 / 16	2.1G / 4.4G	16 MB	DDR4-2666	UHD 630	Power supply									
Memory	32GB max, DDR4-2666*, two 260-pin SO-DIMM sockets, dual-channel capable * System automatically clocks down for the processors with lower memory controller							Optional VESA mount bracket kit, supports VESA 75mm and 100mm								
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 SSD (support up to two M.2 SSD) / PCIe NVMe, PCIe 3.0 x 4", 32Gb/s, RAID 0/1 support (RAID preset only available via special bid model) * 128GB SSD M.2 (2242) PCIe NVMe only supports PCIe 3.0 x 2, 16Gb/s <i>Some:</i> Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2						Optional system floor stand for vertical orientation									
Optical	<i>Some:</i> DVD-ROM, slim (9.0mm), via USB external ODD box <i>Some:</i> DVD Burner (DVD±RW), slim (9.0mm), via USB external ODD box						135 watts AC/DC adapter, autosensing, 88% PSU									
Onboard SATA	One onboard SATA 6.0Gb/s connector						Limited warranty									
Graphics	Intel HD Graphics 610/630 in processor, uses main memory, DirectX® 12, one DisplayPort™, one HDMI, one optional video port (2nd HDMI, VGA, 2nd DP, or USB 3.1 Type-C Gen1 with DisplayPort function), up to 3 independent displays; <i>Max resolution:</i> c4096x2304 (DP) @60Hz; 4096x2304 (Type-C) @60Hz; 4096x2160 (onboard HDMI) @24Hz; 2048x1536 (VGA) @50Hz <i>Some:</i> AMD Radeon™ RX 560, DirectX 12, 4GB GDDR5, PCIe 3.0 x8 adapter,						<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available									
							Preload									
							<i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit									
							Environment									
							ENERGY STAR® 7.0, EPEAT™ Gold rating (North America), ErP Lot 3, TCO, TUV ultra low noise verified (coming soon, on some models), RoHS-compliant									
							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)									
							Accessories									
							For compatible accessories, please go to http://smartfind.lenovo.com									

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



ThinkSmart Edition Tiny M920q for Zoom Rooms Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® 9th Gen Core™ i7 Processor						Keyboard	Lenovo Traditional Keyboard (USB connector), black	
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Mouse	Lenovo Calliope Mouse (USB connector), black	
	Core i7-9700T	8 / 8	2.0G / 4.3G	12 MB	DDR4-2666	UHD 630	Mechanical	Tiny (1L), black color; metal case	
Memory	16GB (8GB x 2) DDR4-2666, two 260-pin SO-DIMM sockets, dual-channel capable								
Storage	128GB SSD M.2 (2242) PCIe NVMe only supports PCIe 3.0 x 2, 16Gb/s								
Optical	None								
Onboard SATA	One onboard SATA 6.0Gb/s connector								
Graphics	Intel HD Graphics 630 in processor, uses main memory, DirectX® 12, one DisplayPort™, one HDMI (onboard), one 2nd HDMI (internal DP to HDMI dongle), up to 3 independent displays; Max resolution: 4096x2304 (DP) @60Hz; 4096x2160 (onboard HDMI)@24Hz								
Monitor cable	None								
Chipset	Intel Q370 Chipset								
Front ports (Std.)*	one USB 3.1 Gen1 (Always On and fast charge), one USB 3.1 Type-C Gen 1, one microphone (3.5mm), one headphone / microphone combo jack (3.5mm)						VESA mount	VESA mount bracket kit, supports VESA 75mm and 100mm	
Rear ports (Std.)*	2x USB 3.1 Gen2, 2x USB 3.1 Gen1, 1x ethernet (RJ-45), 1x DisplayPort, 2x HDMI * Depending on many factors, actual data transfer speed may be lower than theoretical speed						Floor Stand	Optional system floor stand for vertical orientation	
Audio support	Realtek ALC233VB2 / optional internal speaker (1.5 watt or 2 watt)						Power supply	135 watts AC/DC adapter, autosensing, 88% PSU	
WLAN	11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, Intel vPro technology support, 2x2						Limited warranty	3-year, limited onsite service with premier support / service upgrades available	
Bluetooth	Bluetooth 5.0 wireless, integrated in Wi-Fi + BT combo adapter						Preload	Preloaded operating system	
Ethernet	Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN®						Environment	ENERGY STAR® 7.0, EPEAT™ Silver rating, ErP Lot 3, TCO, TUV ultra low noise verified (on some models), RoHS-compliant	
Manageability	Intel Active Management Technology 12 (Intel AMT 12); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection)						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	Discrete TPM 2.0, TCG Certified						Accessories	For compatible accessories, please go to http://smartfind.lenovo.com	
Security features	<ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Chassis intrusion switch Power-on password Administrator password Hard disk password 		<ul style="list-style-type: none"> Boot sequence control Boot without keyboard and mouse Individual USB port disablement Smart USB protection, allows keyboard/ mouse only, blocks all storage devices 						

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	<i>Non-touch model:</i> 10R1PAR1++/10R1PAT1++; <i>Touch model:</i> 10R0PAR1++/10R0PAT1++			Mounting features	Wall or desk mounting using the extend arm or third-party accessories meeting the VESA FPMPI® (100mm mount)																
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			Adjustable stand	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.3" (110mm); <i>swivel:</i> +/-45°; <i>Pivot:</i> clockwise 0° to 90°																
Compatible Tiny:	P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M93/p* / M83 / M73* / M53 / Chromebox Tiny * Non-TIO models can't be turned on by pressing power button of TIO			Power supply	90 watts AC/DC adapter, 88% PSU, universal																
Panel	TFT-LCD, In-Plane Switching technology**, White LED backlight <i>Notes:</i> In-Plane Switching may refer to VA, PLS, and IPS panels			Power consumption	19 watts typical, 32 watts maximum, <0.5 watts standby / suspend																
Viewable image size	21.5" (546.1mm) diagonal			Limited warranty	3-years , Customer Carry-In or Mail-In via Rapid Replacement Service																
Max view area (W x H)	18.74" x 10.54" / 476.1mm x 267.8mm			VESA-compliant	VESA DDC2B/CI, VESA DPMS-compliant																
Bezel Width	Top / Side: 2mm, Bottom: 22.1mm			Ergonomics	ISO 9241-307, TUV Eye Comfort certified																
Native resolution	1920x1080			Emission standards	FCC Class B																
Multi-touch	Optional 10-point multi-touch, supports Wake on Touch			Environmental	TCO 7.0, TCO Edge 2.0, WEEE, RoHS, ENERGY STAR® 7.0, EPEAT™ Silver rating, ULE Gold, TUV, VOC																
Aspect ratio	16:9			Windows certifications	Windows 7 and Windows 10 certified																
Pixel pitch (mm)	0.24795mm			Ship group	TIO (Monitor), detachable stand, AC/DC power adapter, power cord, user's guide and driver CD, quick start and safety poster																
Dot/Pixel per Inch	102.4 dpi			Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com																
Brightness	250 nits or cd/m² (typical)			<table border="1"> <thead> <tr> <th colspan="4">ThinkCentre Tiny-in-One 22 Gen3 Compatible list</th> </tr> </thead> <tbody> <tr> <td>Model</td> <td>P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M83 / M53 Tiny M90n Nano (with TIO kit)</td> <td>M93/p Tiny, M73 Tiny</td> <td>Chromebox</td> </tr> <tr> <td>Turn on TIO and Tiny together via Alt + P on USB KB</td> <td>All models</td> <td>All models</td> <td>Not support</td> </tr> <tr> <td>Turn on TIO and Tiny together via TIO Power Button</td> <td>All models</td> <td>TIO models</td> <td>All models</td> </tr> </tbody> </table>		ThinkCentre Tiny-in-One 22 Gen3 Compatible list				Model	P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M83 / M53 Tiny M90n Nano (with TIO kit)	M93/p Tiny, M73 Tiny	Chromebox	Turn on TIO and Tiny together via Alt + P on USB KB	All models	All models	Not support	Turn on TIO and Tiny together via TIO Power Button	All models	TIO models	All models
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Contrast ratio	1000:1 (typical)																				
Pixel response time	14ms (default), over drive to 4ms, 6ms																				
Color gamut	72%																				
Anti-reflective	Anti-glare																				
Viewing angle at 10:1 CR	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical																				
Preset resolutions	640x350 @ 70Hz 640x480 @ 60Hz, 66Hz, 72Hz, 75Hz 720x400 @ 70Hz 800x600 @ 60Hz, 72Hz, 75Hz 1024x768 @ 60Hz, 70Hz, 75Hz 1152x864 @ 75Hz 1280x800 @ 60Hz 1280x1024 @ 60Hz, 72Hz, 75Hz 1366x768 @ 60Hz 1440x900 @ 60Hz, 75Hz 1600x1200 @ 60Hz, 70Hz, 75Hz 1680x1050 @ 60Hz 1920x1080 @ 60Hz																				
Presets / user settings	Presets: 25; user settings: 25																				
On screen display	On screen display with digital user controls (8 languages)																				
Control features	<i>Font:</i> Exit button, Left / Mode-switching button (TIO / monitor mode), Right / Brightness button, Enter / Menu button, Power button <i>Bottom:</i> Volume up button, Volume down button																				
Tiny-in-One Power On	Pressing Alt + P on keyboard or pressing Power button positioned on TIO can turn on both TIO and Tiny (only some Tiny support, see compatible list)																				
Side ports (TIO)	One USB 3.1 Gen1 / USB 2.0 (when M73 or M53 installed or USB 2.0 connected via USB upstream port) <i>Notes:</i> The USB port is only available when a Tiny is installed or a PC is connected via USB upstream port																				
Side ports (Tiny)	Side ports offered by installed Tiny (optional)																				
Rear ports	One DisplayPort in port, one USB upstream port, one power connector																				
3-in-1 Cable	Undetachable 3-in-1 cable (Power connector, USB [supports USB 3.1 Gen1 / USB 2.0], DisplayPort), only for connecting to Tiny installed (optional)																				
Camera	720p camera with dual microphone for VOIP, LED indicator																				
Internal Speaker	2 watt x2																				
Security	Security keyhole for attachment of optional cable lock (Kensington® lock compatible), locks optional Tiny with TIO together, more security features offered by Tiny installed (optional)																				
Mechanical	<table border="1"> <thead> <tr> <th>Dimensions</th> <th>TIO without stand</th> <th>TIO with stand</th> </tr> </thead> <tbody> <tr> <td>W x D x H (inch)</td> <td>19.26 x 2.85 x 13.35</td> <td>19.26 x 10.76 x 14.59 - 18.93</td> </tr> <tr> <td>W x D x H (mm)</td> <td>489.3 x 72.5 x 339</td> <td>489.3 x 273.3 x 370.7 - 480.7</td> </tr> <tr> <td>Weight (Approx.)</td> <td>7.01 lb / 3.19 kg</td> <td>11.77 lb / 5.34 kg</td> </tr> </tbody> </table>			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						
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Weight (Approx.)	7.01 lb / 3.19 kg	11.77 lb / 5.34 kg																			



ThinkCentre Tiny-in-One (TIO) 24 Gen3

Product Specifications Reference (PSREF)

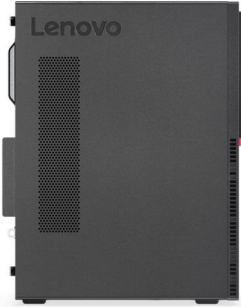
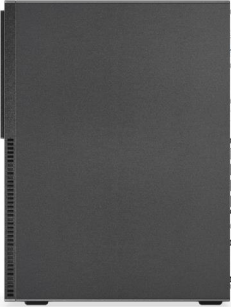
Model	<i>Non-touch model:</i> 10QYPAR1++/10QYPAT1++; <i>Touch model:</i> 10QXPAR1++/10QXPAT1++			Mounting features	Wall or desk mounting using the extend arm or third-party accessories meeting the VESA FPMPI® (100mm mount)																
Form factor	Tiny-in-One, offers a full All-In-One experience when optional Tiny slots into the back of TIO, clean cabling and effortless setup			Adjustable stand	<i>Tilt:</i> 30° back, -5° forward; <i>lift:</i> 4.3" (110mm); <i>swivel:</i> +/-45°; <i>Pivot:</i> clockwise 0° to 90°																
Compatible Tiny:	P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M93/p* / M83 / M73* / M53 / Chromebox Tiny * Non-TIO models can't be turned on by pressing power button of TIO			Power supply	90 watts AC/DC adapter, 88% PSU, universal																
Panel	TFT-LCD, In-Plane Switching technology**, White LED backlight <i>Notes:</i> In-Plane Switching may refer to VA, PLS, and IPS panels			Power consumption	19 watts typical, 32 watts maximum, <0.5 watts standby / suspend																
Viewable image size	23.8" (604.7mm) diagonal			Limited warranty	3-years , Customer Carry-In or Mail-In via Rapid Replacement Service																
Max view area (W x H)	21.06" x 12.32" / 535.0mm x 313.0mm			VESA-compliant	VESA DDC2B/CI, VESA DPMS-compliant																
Bezel Width	Top / Side: 2mm, Bottom: 22.1mm			Ergonomics	ISO 9241-307, TUV Eye Comfort certified																
Native resolution	1920x1080			Emission standards	FCC Class B																
Multi-touch	Optional 10-point multi-touch, supports Wake on Touch			Environmental	TCO 7.0, TCO Edge 2.0, WEEE, RoHS, ENERGY STAR® 7.0, EPEAT™ Silver rating, ULE Gold, TUV, VOC																
Aspect ratio	16:9			Windows certifications	Windows 7 and Windows 10 certified																
Pixel pitch (mm)	0.2745mm			Ship group	TIO 24 (Monitor), detachable stand, AC/DC power adapter, power cord, user's guide and driver CD, quick start and safety poster																
Dot/Pixel per Inch	92.6 dpi			Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com																
Brightness	250 nits or cd/m² (typical)			<table border="1"> <thead> <tr> <th colspan="4">ThinkCentre Tiny-in-One 24 Gen3 Compatible list</th> </tr> </thead> <tbody> <tr> <td>Model</td> <td>P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M83 / M53 Tiny M90n Nano (with TIO kit)</td> <td>M93/p Tiny, M73 Tiny</td> <td>Chromebox</td> </tr> <tr> <td>Turn on TIO and Tiny together via Alt + P on USB KB</td> <td>All models</td> <td>All models</td> <td>Not support</td> </tr> <tr> <td>Turn on TIO and Tiny together via TIO Power Button</td> <td>All models</td> <td>TIO models</td> <td>All models</td> </tr> </tbody> </table>		ThinkCentre Tiny-in-One 24 Gen3 Compatible list				Model	P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M83 / M53 Tiny M90n Nano (with TIO kit)	M93/p Tiny, M73 Tiny	Chromebox	Turn on TIO and Tiny together via Alt + P on USB KB	All models	All models	Not support	Turn on TIO and Tiny together via TIO Power Button	All models	TIO models	All models
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Color gamut	72%																				
Anti-reflective	Anti-glare																				
Viewing angle at 10:1 CR	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical																				
Preset resolutions	640x350 @ 70Hz 640x480 @ 60Hz, 67Hz, 72Hz, 75Hz 720x400 @ 70Hz 800x600 @ 60Hz, 72Hz, 75Hz 1024x768 @ 60Hz, 70Hz, 75Hz 1152x864 @ 75Hz 1280x800 @ 60Hz 1280x1024 @ 60Hz, 72Hz, 75Hz 1366x768 @ 60Hz 1440x900 @ 60Hz, 75Hz 1600x1200 @ 60Hz, 70Hz, 75Hz 1680x1050 @ 60Hz 1920x1080 @ 60Hz																				
Presets / user settings	Presets: 25; user settings: 25																				
On screen display	On screen display with digital user controls (8 languages)																				
Control features	Front: Exit button, Left / Mode-switching button (TIO / monitor mode), Right / Brightness button, Enter / Menu button, Power button Bottom: Volume up button, Volume down button																				
Tiny-in-One Power On	Pressing Alt + P on keyboard or pressing Power button positioned on TIO can turn on both TIO and Tiny (only some Tiny support, see compatible list)																				
Side ports (TIO)	One USB 3.1 Gen1 / USB 2.0 (when M73 or M53 installed or USB 2.0 connected via USB upstream port) <i>Notes:</i> The USB port is only available when a Tiny is installed or a PC is connected via USB upstream port																				
Side ports (Tiny)	Side ports offered by installed Tiny (optional)																				
Rear ports	One DisplayPort in port, one USB upstream port, one power connector																				
3-in-1 Cable	Undetachable 3-in-1 cable (Power connector, USB [supports USB 3.1 Gen1 / USB 2.0], DisplayPort), only for connecting to Tiny installed (optional)																				
Camera	1080p camera with dual microphone for VOIP, LED indicator																				
Internal Speaker	2 watt x2																				
Security	Security keyhole for attachment of optional cable lock (Kensington® lock compatible), locks optional Tiny with TIO together, more security features offered by Tiny installed (optional)																				
Mechanical	<table border="1"> <thead> <tr> <th>Dimensions</th> <th>TIO without stand</th> <th>TIO with stand</th> </tr> </thead> <tbody> <tr> <td>W x D x H (inch)</td> <td>21.25 x 2.85 x 14.47</td> <td>21.25 x 11.11 x 15.72 - 20.06</td> </tr> <tr> <td>W x D x H (mm)</td> <td>539.8 x 72.5 x 367.6</td> <td>539.8 x 282.3 x 399.4 - 509.4</td> </tr> <tr> <td>Weight (Approx.)</td> <td>7.96 lb /3.61 kg</td> <td>12.92 lb /5.86 kg</td> </tr> </tbody> </table>			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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Weight (Approx.)	7.96 lb /3.61 kg	12.92 lb /5.86 kg																			



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	<table border="1"> <tr> <td></td> <td>TIO without stand</td> <td>TIO with stand</td> </tr> <tr> <td>Dimensions (W x D x H mm / inch)</td> <td>614.0 x 73.89 x 413.1 / 24.17 x 2.91 x 16.26</td> <td>614.0 x 329.0 x 444.25 - 554.25 / 24.17 x 12.95 x 17.49 - 21.82</td> </tr> <tr> <td>Weight (Approx.)</td> <td>4.91 kg / 10.82 lb</td> <td>7.95 kg / 17.53 lb</td> </tr> </table>			TIO without stand	TIO with stand	Dimensions (W x D x H mm / inch)	614.0 x 73.89 x 413.1 / 24.17 x 2.91 x 16.26	614.0 x 329.0 x 444.25 - 554.25 / 24.17 x 12.95 x 17.49 - 21.82	Weight (Approx.)	4.91 kg / 10.82 lb	7.95 kg / 17.53 lb							
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Weight (Approx.)	4.91 kg / 10.82 lb	7.95 kg / 17.53 lb																		
Compatible Tiny:	ThinkCentre Tiny, ThinkCentre Nano, and ThinkStation Tiny	Mounting features	Wall or desk mounting using the extend arm or third-party accessories meeting the VESA FPMPI® (100mm mount)																	
Panel	TFT-LCD, In-Plane Switching technology**, White LED backlight **Notes: In-Plane Switching may refer to IPS, PLS, ADS, AHVA, and AA	Adjustable stand	<i>Tilt:</i> 35° back, -5° forward; <i>lift:</i> 4.3" (110mm); <i>swivel:</i> +/-45°; <i>Pivot:</i> clockwise -5° to 90°																	
Viewable image size	27" (685.8mm) diagonal	Power supply	170 watts adapter, 88% PSU, universal																	
Max view area (W x H)	23.49" x 13.22" / 596.7mm x 335.7mm	Power consumption	37 watts typical, 57 watts maximum, <0.5 watts standby / suspend																	
Bezel Width	Top / Side: 2mm, Bottom: 23.3mm	Limited warranty	3-years , Product Exchange Service (US and EMEA) or Customer Carry-In Service (EMEA)																	
Native resolution	2560x1440	VESA-compliant	VESA DDC/CI, VESA DPMS-compliant																	
Multi-touch	None	Ergonomics	ISO 9241-307, TUV Eye Comfort certified																	
Aspect ratio	16:9	Emission standards	FCC Class B																	
Pixel pitch (mm)	0.2331mm	Environmental	TCO 8.0, TCO Edge 2.0, WEEE, RoHS, ENERGY STAR® 7.0, EPEAT™ Silver rating, ULE Gold, TUV, VOC																	
Dot/Pixel per Inch	109 dpi	Windows certifications	Windows 7 and Windows 10 certified																	
Brightness	350 nits or cd/m² (typical)	Ship group	TIO 27 (Monitor), detachable stand, power adapter, power cord, reference and driver CD																	
Contrast ratio	1000:1 (typical)	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com																	
Pixel response time	14ms (default), over drive to 4ms, 6ms	<table border="1"> <thead> <tr> <th colspan="4">ThinkCentre Tiny-in-One 27 Compatible Matrix</th> </tr> </thead> <tbody> <tr> <td>Model</td> <td>P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M83 / M53 Tiny M90n Nano (with TIO kit)</td> <td>M93/p Tiny, M73 Tiny</td> <td>Chromebox</td> </tr> <tr> <td>Turn on TIO and Tiny together via Alt + P on USB KB</td> <td>All models</td> <td>All models</td> <td>Not support</td> </tr> <tr> <td>Turn on TIO and Tiny together via TIO Power Button</td> <td>All models</td> <td>TIO models</td> <td>All models</td> </tr> </tbody> </table>			ThinkCentre Tiny-in-One 27 Compatible Matrix				Model	P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M83 / M53 Tiny M90n Nano (with TIO kit)	M93/p Tiny, M73 Tiny	Chromebox	Turn on TIO and Tiny together via Alt + P on USB KB	All models	All models	Not support	Turn on TIO and Tiny together via TIO Power Button	All models	TIO models	All models
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Color gamut	99% sRGB																			
Anti-glare	Yes (25%)																			
Viewing angle at 10:1 CR	178° (+/- 89°) horizontal, 178° (+/- 89°) vertical																			
Preset resolutions	640x350 @ 70Hz 640x480 @ 60Hz, 66Hz, 72Hz, 75Hz 720x400 @ 70Hz 800x600 @ 60Hz, 72Hz, 75Hz 1024x768 @ 60Hz, 70Hz, 75Hz 1152x864 @ 75Hz 1280x768 @ 60Hz 1280x800 @ 60Hz 1280x1024 @ 60Hz, 72Hz, 75Hz 1366x768 @ 60Hz 1440x900 @ 60Hz, 75Hz 1600x1200 @ 60Hz, 70Hz, 75Hz 1680x1050 @ 60Hz 1920x1080 @ 60Hz 2560x1440 @ 60Hz																			
Presets / user settings	Presets: 27; user settings: 25																			
On screen display	On screen display with digital user controls (8 languages)																			
Control features	Font: Exit button, Left / Mode-switching button (TIO / monitor mode), Right / Brightness button, Enter / Menu button, Power button Bottom: Volume up button, Volume down button																			
Tiny-in-One Power On	Pressing Alt + P on keyboard or pressing Power button positioned on TIO can turn on both TIO and Tiny (only some support, see Compatible Matrix)																			
Side ports (TIO)	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 combo jack <i>Notes:</i> 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 (Tiny)	Side ports offered by the installed Tiny (optional)																			
Rear ports	One DisplayPort(in) port, one HDMI(in) port, one USB (Type-B) upstream port, one power connector																			
3-in-1 Cable	Undetachable 3-in-1 cable, connecting to the power connector, one USB, and one DisplayPort of the installed Tiny (optional)																			
Camera	RGBIR camera with dual microphone, supports Window Hello and Facial Recognition, Think Shutter for Privacy Security, LED indicator																			
Internal Speaker	2 watt x2																			
Security	Security keyhole for attachment of optional cable lock (Kensington® lock compatible), locks optional Tiny with TIO together, more security features offered by Tiny installed (optional)																			



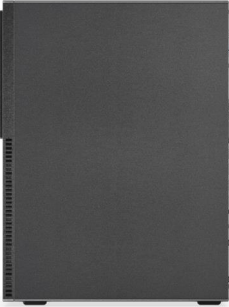
ThinkCentre M710 Tower Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 6/7th Generation Intel Core™ i3 / i5 / i7 Processor						Manageability None Security chip TPM (Trusted Platform Module) 2.0, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS Security features <ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/mouse only, blocks all storage devices Optional cable lock to physically lock both keyboard and mouse Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	
	Pentium G4400	2 / 2	3.3G	3 MB	DDR4-2133	HD 510	
	Pentium G4560	2 / 4	3.5G	3 MB	DDR4-2400	HD 610	
	Pentium G4600	2 / 4	3.6G	3 MB	DDR4-2400	HD 630	
	Core i3-6100	2 / 4	3.7G	3 MB	DDR4-2133	HD 530	
	Core i5-6500	4 / 4	3.2G / 3.6G	6 MB	DDR4-2133	HD 530	
	Core i7-6700	4 / 8	3.4G / 4.0G	8 MB	DDR4-2133	HD 530	
	Core i3-7100	2 / 4	3.9G	3 MB	DDR4-2400	HD 630	
	Core i5-7400	4 / 4	3.0G / 3.5G	6 MB	DDR4-2400	HD 630	
	Core i5-7500	4 / 4	3.4G / 3.8G	6 MB	DDR4-2400	HD 630	
Core i5-7600	4 / 4	3.5G / 4.1G	6 MB	DDR4-2400	HD 630		
Core i7-7700	4 / 8	3.6G / 4.2G	8 MB	DDR4-2400	HD 630		
Memory	64GB max, UDIMM, DDR4-2400*, four 288-pin DIMM sockets, non-ECC, dual-channel capable * System automatically clocks down for the processors with lower memory controller						
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s <i>Some:</i> Intel Optane™ Memory (models with 7th gen Core processor), M.2 <i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)						
Optical	Three onboard SATA 6.0Gb/s connectors Optional 7-in-1 media reader						
Onboard SATA Media reader	Optional 7-in-1 media reader						
Graphics	Intel HD Graphics 510/530/610/630 in processor, uses main memory, DirectX® 12, one VGA, two DisplayPort™, supports 3 independent displays, works along with discrete graphics to support more displays; <i>Max resolution:</i> 4096x2304 (DP) @60Hz; 2048x1536 (VGA) @50Hz <i>Some:</i> NVIDIA GeForce® GT 730 , DirectX 12, 2GB, PCIe 2.0 x8 adapter, two DisplayPort, 35 watts; <i>Max resolution:</i> 3840x2160 (DisplayPort) @60Hz; <i>Some:</i> AMD Radeon™ R7 350 , DirectX 11, 2GB, PCIe 3.0 x8 adapter, one VGA, one HDMI, 75 watts, occupies two slots; <i>Max resolution:</i> 4096x2160 (HDMI) @24Hz; 2048x1536 (VGA) @85Hz						
Power supply	<i>Some:</i> 180 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 92% PSU (only available via special bid)						
Limited warranty ³	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available						
Preload	Preloaded operating system <i>Some:</i> Windows® 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit (not available with 7th Gen Intel processor) <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit Preloaded applications (only some listed) <ul style="list-style-type: none"> Microsoft Office preloaded; purchase a product key to activate Only for Window 10 Lenovo Companion Only for Window 7 Lenovo Solution Center Lenovo ThinkVantage Tools Create Recovery Media Adobe® Reader® Cyberlink PowerDVD Create (DVD±RW) 						
Monitor Cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4						
Chipset	Intel B250 Chipset						
Front ports*	Four USB 3.1 Gen1, optional two USB 3.1 Type-C Gen 2 (only available via special bid), microphone (3.5mm), headphone (3.5mm)						
Rear ports*	Two USB 3.1 Gen1, two USB 2.0, optional two USB 2.0, serial (9-pin), optional 2nd serial (9-pin), optional parallel (25-pin), ethernet (RJ-45), one VGA, two DisplayPort, two PS/2 ports (keyboard/mouse); additional VGA, DisplayPort, or HDMI on optional graphics on some models						
Rear audio ports* IEEE 1394*	Line-in (3.5mm), line-out (3.5mm), microphone-in (3.5mm) None * Depending on many factors, actual data transfer speed may be lower than theoretical speed						
Audio support	High Definition (HD) Audio, Realtek ALC662 / optional internal speaker (1.5 watt)						
WLAN ¹³	<i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.1 combo adapter, 2x2						
Bluetooth™	<i>Some:</i> Bluetooth 4.1 wireless, integrated in Wi-Fi + BT combo adapter						
Ethernet	Gigabit ethernet, Realtek RTL8111GN, Wake on LAN®						
Modem	None						
Environment	ENERGY STAR® 6.1, EPEAT™ Gold rating (North America), ErP Lot 3, GREENGUARD®, RoHS-compliant, TUV low noise verified (on some models)						
Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com						

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

Lenovo, June 2017



ThinkCentre M715 Tower Platform Specifications

Product Specifications Reference (PSREF)

Processor	<p>AMD A6 / A8 / A10 / A12 series APU and Ryzen 3 / 5 / 7 series processor</p> <table border="1"> <thead> <tr> <th>APU / processor</th> <th>Cores / Threads</th> <th>Frequency (Base/Max)</th> <th>L2 Cache</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr> <td>Ryzen 3 PRO 1200</td> <td>4 / 4</td> <td>3.1 / 3.4</td> <td>2MB</td> <td>None</td> </tr> <tr> <td>Ryzen 3 PRO 1300</td> <td>4 / 4</td> <td>3.5 / 3.7</td> <td>2MB</td> <td>None</td> </tr> <tr> <td>Ryzen 5 PRO 1500</td> <td>4 / 8</td> <td>3.5 / 3.7</td> <td>2MB</td> <td>None</td> </tr> <tr> <td>Ryzen 7 PRO 1700</td> <td>8 / 16</td> <td>3.0 / 3.7</td> <td>4MB</td> <td>None</td> </tr> <tr> <td>PRO A6-8570</td> <td>2 / 2</td> <td>3.5 / 3.8</td> <td>1MB</td> <td>Radeon R5 Series</td> </tr> <tr> <td>PRO A10-8770</td> <td>4 / 4</td> <td>3.5 / 3.8</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> <tr> <td>PRO A12-8870</td> <td>4 / 4</td> <td>3.7 / 4.2</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> <tr> <td>PRO A6-9500</td> <td>2 / 2</td> <td>3.5 / 3.8</td> <td>1MB</td> <td>Radeon R5 Series</td> </tr> <tr> <td>PRO A8-9600</td> <td>4 / 4</td> <td>3.1 / 3.4</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> <tr> <td>PRO A10-9700</td> <td>4 / 4</td> <td>3.5 / 3.8</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> <tr> <td>PRO A12-9800</td> <td>4 / 4</td> <td>3.8 / 4.2</td> <td>2MB</td> <td>Radeon R7 Series</td> </tr> </tbody> </table>	APU / processor	Cores / Threads	Frequency (Base/Max)	L2 Cache	Integrated Graphics	Ryzen 3 PRO 1200	4 / 4	3.1 / 3.4	2MB	None	Ryzen 3 PRO 1300	4 / 4	3.5 / 3.7	2MB	None	Ryzen 5 PRO 1500	4 / 8	3.5 / 3.7	2MB	None	Ryzen 7 PRO 1700	8 / 16	3.0 / 3.7	4MB	None	PRO A6-8570	2 / 2	3.5 / 3.8	1MB	Radeon R5 Series	PRO A10-8770	4 / 4	3.5 / 3.8	2MB	Radeon R7 Series	PRO A12-8870	4 / 4	3.7 / 4.2	2MB	Radeon R7 Series	PRO A6-9500	2 / 2	3.5 / 3.8	1MB	Radeon R5 Series	PRO A8-9600	4 / 4	3.1 / 3.4	2MB	Radeon R7 Series	PRO A10-9700	4 / 4	3.5 / 3.8	2MB	Radeon R7 Series	PRO A12-9800	4 / 4	3.8 / 4.2	2MB	Radeon R7 Series	<p>Manageability DASH</p> <p>Security chip TPM (Trusted Platform Module) 2.0, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS</p> <p>Security features</p> <ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/mouse only, blocks all storage devices Optional cable lock to physically lock both keyboard and mouse Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch <p>Keyboard <i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black</p> <p>Mouse <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black <i>Some:</i> Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black</p>
APU / processor	Cores / Threads	Frequency (Base/Max)	L2 Cache	Integrated Graphics																																																										
Ryzen 3 PRO 1200	4 / 4	3.1 / 3.4	2MB	None																																																										
Ryzen 3 PRO 1300	4 / 4	3.5 / 3.7	2MB	None																																																										
Ryzen 5 PRO 1500	4 / 8	3.5 / 3.7	2MB	None																																																										
Ryzen 7 PRO 1700	8 / 16	3.0 / 3.7	4MB	None																																																										
PRO A6-8570	2 / 2	3.5 / 3.8	1MB	Radeon R5 Series																																																										
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Memory	<p>64GB max, UDIMM, DDR4-2400*, four 288-pin DIMM sockets, non-ECC, dual-channel capable * System automatically clocks down for the processors with lower memory controller</p>	<p>Mechanical</p> <ul style="list-style-type: none"> Tower (15L), black color, metal case (WxDxH) 5.7" X 11.5" X 14.4"; 145mm X 292.7mm X 366mm Approx. 14.3 lb (6.5 kg), weight may vary by configuration Optional dust filter Bay 1: Slim external ODD bay Bay 2: 3.5", internal, HDD/SSD Bay 3: 2.5", internal, HDD/SSD Slot 1: half-length full-height (length < 189mm, height < 104mm), PCIe 3.0 x16* Slot 2: half-length full-height (length < 189mm, height < 104mm), PCIe 2.0 x1* Slot 3: half-length full-height (length < 189mm, height < 104mm), PCIe 2.0 x1* Slot 4: no slot, only bracket for optional port extension* M.2 card slots: two (one for WLAN, one for SSD) * Optional front USB3.1 Type-C x2 module occupies PCIe x16 slot (x4 card), optional rear 2x USB2.0 / parallel / 2nd serial occupies one expansion slot 																																																												
Storage	<p><i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5"</p>	<p>Power supply</p> <p><i>Some:</i> 180 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 85% PSU <i>Some:</i> 210 watts, autosensing, 92% PSU (only available via special bid)</p>																																																												
Optical	<p><i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s <i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm)</p>	<p>Limited warranty <i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available</p>																																																												
Onboard SATA Media reader	<p><i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm) Three onboard SATA 6.0Gb/s connectors Optional 7-in-1 media reader</p>	<p>Preload Preloaded operating system <i>Some:</i> Windows® 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit (Only available with Pro A6/A10/A12-8xxx APUs) <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit</p> <p>Preloaded applications (only some listed)</p> <ul style="list-style-type: none"> Microsoft Office preloaded; purchase a product key to activate Only for Window 10 Lenovo Companion Only for Window 7 Lenovo Solution Center Lenovo ThinkVantage Tools Create Recovery Media Adobe® Reader® Cyberlink PowerDVD Create (DVD±RW) 																																																												
Graphics	<p>AMD Radeon™ Graphics in processor (not for AMD Ryzen processor), uses main memory, DirectX® 12, one VGA, two DisplayPort™ (Onboard VGA and DP ports are invalid on the models with AMD Ryzen processor), supports 3 independent displays, works along with AMD discrete graphics to support more displays; <i>Max resolution:</i> 4096x2160 (DP)@60Hz; 1920x1200 (VGA)@60Hz <i>Some:</i> NVIDIA GeForce® GT 730, DirectX 12, 2GB, PCIe 2.0 x8 adapter, two DisplayPort, 35 watts; <i>Max resolution:</i> 3840x2160 (DisplayPort)@60Hz; <i>Some:</i> AMD Radeon™ RX 550, DirectX 12, 2GB, PCIe 3.0 x8 adapter, one VGA, one HDMI, one DisplayPort, 50 watts, occupies two slots; <i>Max resolution:</i> 4096x2160 (HDMI)@60Hz; 2048x1536 (VGA)@60Hz; 5120x2880 (DP)@60Hz</p>	<p>Environment ENERGY STAR® 6.1, EPEAT™ Gold rating (North America), ErP Lot 3, GREENGUARD®, RoHS-compliant</p>																																																												
Monitor Cable	<p>Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4</p>	<p>Accessories For compatible accessories, please go to http://www.lenovoquickpick.com</p>																																																												
Chipset	<p>AMD B350 Chipset</p>																																																													
Front ports*	<p>Two USB 3.1 Gen2, two USB 3.1 Gen1, optional two USB 3.1 Type-C Gen 2 (only available via special bid), microphone (3.5mm), headphone (3.5mm)</p>																																																													
Rear ports*	<p>Two USB 3.1 Gen1, two USB 2.0, optional two USB 2.0, serial (9-pin), optional 2nd serial (9-pin), optional parallel (25-pin), ethernet (RJ-45), one VGA and two DisplayPort (not available on models with AMD Ryzen processor), two PS/2 ports (keyboard / mouse); additional VGA, DisplayPort, or HDMI on optional graphics on some models</p>																																																													
Rear audio ports* IEEE 1394*	<p>Line-in (3.5mm), line-out (3.5mm), microphone-in (3.5mm) None * Depending on many factors, actual data transfer speed may be lower than theoretical speed</p>																																																													
Audio support	<p>High Definition (HD) Audio, Realtek ALC662 / optional internal speaker (1.5 watt)</p>																																																													
WLAN	<p><i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821AE (dual band), Wi-Fi + Bluetooth 4.0 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377 (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 1x1</p>																																																													
Bluetooth™	<p><i>Some:</i> Bluetooth 4.0 or 4.1 wireless, integrated in Wi-Fi + BT combo adapter</p>																																																													
Ethernet	<p>Gigabit ethernet, Realtek RTL8111EPV, Wake on LAN®</p>																																																													
Modem	<p>None</p>																																																													

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

Lenovo, July 2017



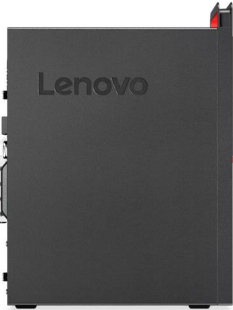
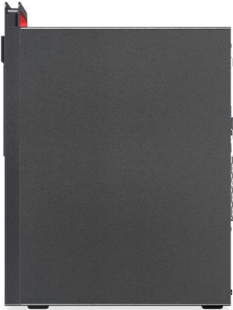
ThinkCentre M720 Tower Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 8th / 9th Gen Intel Core™ i3 / i5 / i7 / i9 Processor	WLAN ¹³	<p><i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8821CE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 1x1</p> <p><i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822BE (dual band), Wi-Fi + Bluetooth 4.2 combo adapter, 2x2</p> <p><i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.2 combo adapter, 1x1</p> <p><i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2 combo adapter, 2x2</p> <p><i>Some:</i> Bluetooth 4.2 wireless, integrated in Wi-Fi + BT combo adapter</p>																																																																																																																								
	<table border="1"> <thead> <tr> <th>Processor</th> <th>Cores / Threads</th> <th>Frequency Base/Max(GHz)</th> <th>Cache</th> <th>Memory Support (Up to)</th> <th>Integrated Graphics</th> </tr> </thead> <tbody> <tr><td>Celeron G4900</td><td>2 / 2</td><td>3.1G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Celeron G4920</td><td>2 / 2</td><td>3.2G</td><td>2 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Pentium Gold G5400</td><td>2 / 4</td><td>3.7G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 610</td></tr> <tr><td>Pentium Gold G5500</td><td>2 / 4</td><td>3.8G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Pentium Gold G5600</td><td>2 / 4</td><td>3.9G</td><td>4 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i3-8100</td><td>4 / 4</td><td>3.6G</td><td>6 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i3-8300</td><td>4 / 4</td><td>3.7G</td><td>8 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i5-8400</td><td>6 / 6</td><td>2.8G / 4.0G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i5-8500</td><td>6 / 6</td><td>3.0G / 4.1G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i5-8600</td><td>6 / 6</td><td>3.1G / 4.3G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i7-8700</td><td>6 / 12</td><td>3.2G / 4.6G</td><td>12 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i3-9100</td><td>4 / 4</td><td>3.6G / 4.2G</td><td>6 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i3-9300</td><td>4 / 4</td><td>3.7G / 4.3G</td><td>8 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i3-9320</td><td>4 / 4</td><td>3.7G / 4.4G</td><td>8 MB</td><td>DDR4-2400</td><td>UHD 630</td></tr> <tr><td>Core i5-9400</td><td>6 / 6</td><td>2.9G / 4.1G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i5-9500</td><td>6 / 6</td><td>3.0G / 4.4G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i5-9600</td><td>6 / 6</td><td>3.1G / 4.6G</td><td>9 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i7-9700</td><td>8 / 8</td><td>3.0G / 4.7G</td><td>12 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> <tr><td>Core i9-9900</td><td>8 / 16</td><td>3.1G / 5.0G</td><td>16 MB</td><td>DDR4-2666</td><td>UHD 630</td></tr> </tbody> </table>	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Celeron G4900	2 / 2	3.1G	2 MB	DDR4-2400	UHD 610	Celeron G4920	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	Pentium Gold G5400	2 / 4	3.7G	4 MB	DDR4-2400	UHD 610	Pentium Gold G5500	2 / 4	3.8G	4 MB	DDR4-2400	UHD 630	Pentium Gold G5600	2 / 4	3.9G	4 MB	DDR4-2400	UHD 630	Core i3-8100	4 / 4	3.6G	6 MB	DDR4-2400	UHD 630	Core i3-8300	4 / 4	3.7G	8 MB	DDR4-2400	UHD 630	Core i5-8400	6 / 6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	Core i5-8500	6 / 6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	Core i5-8600	6 / 6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630	Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	Core i3-9100	4 / 4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	Core i3-9300	4 / 4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	Core i3-9320	4 / 4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630	Core i5-9400	6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630	Core i5-9500	6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630	Core i5-9600	6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630	Core i7-9700	8 / 8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630	Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630	Bluetooth™	<p><i>Some:</i> Gigabit ethernet, Intel Ethernet Connection I219-V (Jacksonville), Wake on LAN®</p> <p><i>Some:</i> Intel Ethernet Server Adapter I350-T4*, gigabit ethernet, 4x RJ-45, PCIe x4</p> <p><i>Some:</i> Bitland BN8E88*, gigabit ethernet, 1x RJ-45, PCIe x1 (special bid only)</p> <p>* Choose either I350-T4 or BN8E88</p>
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		Ethernet Ethernet (Opt.)																																																																																																																									
		Manageability Security chip Security features	<p>None</p> <p>Discrete TPM 2.0, TCG Certified</p> <ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Optional cable lock to physically lock both keyboard and mouse Optional chassis intrusion switch Optional chassis E-Lock (special bid) <ul style="list-style-type: none"> Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Smart USB protection, allows keyboard/mouse only, blocks all storage devices 																																																																																																																								
		Keyboard	<p><i>Some:</i> Lenovo Calliope Keyboard (USB connector), black</p> <p><i>Some:</i> Lenovo Traditional Keyboard (USB connector), black</p> <p><i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black</p> <p><i>Some:</i> Lenovo Keyboard (PS/2 connector), black (only available via special bid)</p> <p><i>Some:</i> Lenovo Calliope Mouse (USB connector), black</p> <p><i>Some:</i> Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black</p> <p><i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black</p> <p><i>Some:</i> Lenovo Mouse (PS/2 connector), black (only available via special bid)</p>																																																																																																																								
Memory	64GB max, UDIMM, DDR4-2666*, four 288-pin DIMM sockets, non-ECC, dual-channel capable * System automatically clocks down for the processors with lower memory controller	Mouse																																																																																																																									
Storage	<p><i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm</p> <p><i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5"</p> <p><i>Some:</i> M.2 SSD (2242 / 2280) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4</p> <p><i>Some:</i> Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2</p> <p><i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm)</p> <p><i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)</p>	Mechanical	<ul style="list-style-type: none"> Tower (15L), black color, metal case (WxDxH) 5.91" X 10.65" X 14.17"; 150mm X 270.5mm X 360mm Approx. 15.21 lb (6.9 kg), weight may vary by configuration Optional dust filter Bay 1: Slim external ODD bay Bay 2: 3.5", 1" high, internal, HDD/SSD Bay 3: 3.5", 1" high, internal, HDD/SSD (optional bay) Slot 1: half-length full-height (length < 189mm, height < 104mm), PCIe 3.0 x16 Slot 2: half-length full-height (length < 189mm, height < 104mm), PCIe 3.0 x1 Slot 3: half-length full-height (length < 189mm, height < 104mm), PCIe 3.0 x1 Slot 4: no slot, only bracket for optional port extension M.2 card slots: Two (one for WLAN, one for SSD/Optane) 																																																																																																																								
Optical	<p><i>Some:</i> DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm)</p> <p><i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)</p>	Power supply	<p><i>Some:</i> 180 watts, autosensing, 85% PSU</p> <p><i>Some:</i> 210 watts, autosensing, 85% PSU</p> <p><i>Some:</i> 260 watts, autosensing, 92% PSU (only available via special bid)</p>																																																																																																																								
Onboard SATA Media reader	Three onboard SATA 6.0Gb/s connectors Optional 7-in-1 media reader	Limited warranty ³	<p><i>Some:</i> 1-year or 3-year, depot service / service upgrades available</p> <p><i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available</p>																																																																																																																								
Graphics	<p>Intel UHD Graphics 610/630 in processor, uses main memory, DirectX® 12, one VGA (up to 2048x1536@50Hz), two DisplayPort™ (up to 4096x2304@60Hz), supports 3 independent displays, more displays support via discrete graphics</p> <p><i>Some:</i> NVIDIA GeForce® GT 730 (End Of Life), DirectX 12, 2GB, PCIe 2.0 x16, 35 watts, two DisplayPort (up to 3840x2160@60Hz)</p> <p><i>Some:</i> AMD Radeon™ 520, DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, two DisplayPort (up to 4096x2160@60Hz)</p> <p><i>Some:</i> AMD Radeon RX 550X, DirectX 12, 4GB GDDR5, PCIe 3.0 x8, 50 watts, one DisplayPort (up to 3840x2160@60Hz), one HDMI (up to 4096x2160@60Hz), one VGA (up to 2048x1536@85Hz)</p>	Preload	<p>Preloaded operating system</p> <p><i>Some:</i> Windows® 10 Pro 64-bit</p> <p><i>Some:</i> Windows 10 Home 64-bit</p> <p>Preloaded applications (only some listed)</p> <ul style="list-style-type: none"> 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 																																																																																																																								
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	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																																																																																																																								
Chipset	Intel B360 Chipset	Accessories	For compatible accessories, please go to http://smartfind.lenovo.com																																																																																																																								
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)																																																																																																																										
Front ports* (Opt.)	Optional: 1x media reader																																																																																																																										
Rear ports* (Std.)	4x USB 2.0, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort, 1x line-out (3.5mm)																																																																																																																										
Rear ports* (Opt.)	Optional: 2x USB 3.1 Gen1 via PCIe 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																																																																																																																										
Audio support	High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt)																																																																																																																										

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

Lenovo, November 2019



ThinkCentre M910 Tower Platform Specifications

Product Specifications Reference (PSREF)

Processor						Ethernet Modem	Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN®
Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics		
Core i5-6500	4 / 4	3.2G / 3.6G	6 MB	DDR4-2133	HD 530		
Core i7-6700	4 / 8	3.4G / 4.0G	8 MB	DDR4-2133	HD 530		
Core i3-7300	2 / 4	4.0G / --	4 MB	DDR4-2400	HD 630		
Core i5-7400	4 / 4	3.0G / 3.5G	6 MB	DDR4-2400	HD 630		
Core i5-7500	4 / 4	3.4G / 3.8G	6 MB	DDR4-2400	HD 630		
Core i5-7600	4 / 4	3.5G / 4.1G	6 MB	DDR4-2400	HD 630		
Core i7-7700	4 / 8	3.6G / 4.2G	8 MB	DDR4-2400	HD 630		
Memory	64GB max, UDIMM, DDR4-2400*, four 288-pin DIMM sockets, non-ECC, dual-channel capable * System automatically clocks down for the processors with lower memory controller					Ethernet Modem	Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN®
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 Solid State Drive (SSD) / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s <i>Some:</i> Intel Optane™ Memory (models with 7th gen Core processor), M.2 <i>Some:</i> Front accessible and removable HDD, 3.5", lockable via physical key <i>Some:</i> DVD-ROM, SATA 1.5Gb/s, 5.25" or slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s, 5.25" or slim (9.0mm)					Manageability	Intel Active Management Technology 11.0 (Intel AMT 11.0); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection)
Optical	<i>Some:</i> DVD-ROM, SATA 1.5Gb/s, 5.25" or slim (9.0mm) <i>Some:</i> DVD Burner (DVD±RW), SATA 1.5Gb/s, 5.25" or slim (9.0mm)					Security chip	TPM (Trusted Platform Module) 2.0, TCG Certified * Downgrade to TPM1.2 for the models with Win10 DG Win7 32 OS
Onboard SATA	Four onboard SATA 6.0Gb/s connectors (1x eSATA and 3x SATA), RAID 0/1 support (RAID preset only available via special bid model)					Security features	<ul style="list-style-type: none"> Security slot (in rear for optional Kensington® MicroSaver® cable) Padlock loop Smart USB protection, allows keyboard/mouse only, blocks all storage devices Optional cable lock to physically lock both keyboard and mouse Power-on password Administrator password Hard disk password Boot sequence control Boot without keyboard and mouse Individual USB port disablement Optional chassis intrusion switch
Media reader	Optional 7-in-1 media reader					Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
Graphics	Intel HD Graphics 510/530/610/630 in processor, uses main memory, DirectX® 12, one VGA, two DisplayPort™, supports 3 independent displays, works along with discrete graphics to support more displays; <i>Max resolution:</i> 4096x2304 (DP) @60Hz; 2048x1536 (VGA) @50Hz <i>Some:</i> NVIDIA GeForce® GT 730 , DirectX 12, 2GB, PCIe 2.0 x8 adapter, two DisplayPort, 35 watts; <i>Max resolution:</i> 3840x2160 (DisplayPort) @60Hz; <i>Some:</i> AMD Radeon™ R7 350 , DirectX 11, 2GB, PCIe 3.0 x8 adapter, one VGA, one HDMI, 75 watts, occupies two slots; <i>Max resolution:</i> 4096x2160 (HDMI) @24Hz; 2048x1536 (VGA) @85Hz <i>Some:</i> NVIDIA GeForce GTX™ 1080 (only available via special bid model), DirectX 12, 8GB, PCIe 3.0 x16 adapter, one DVI-D, one HDMI, three DisplayPort, 180 watts, occupies two slots; <i>Max resolution:</i> 2560x1600 (DVI-D) @60Hz; 4096x2160 (HDMI) @60Hz 7680x4320 (with Single DP) @60Hz					Mouse	<i>Some:</i> Lenovo Calliope Mouse (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
Monitor Cable	Optional DP to VGA, DP to DVI-D (single link), DP to dual DP, or DP to HDMI 1.4					Mechanical	<ul style="list-style-type: none"> Tower (18L), black color, metal case (WxDxH) 6.5" X 12.65" X 16.15"; 165mm X 321.35mm X 410.25mm Approx. 15.45 lb (7 kg), weight may vary by configuration Toolless cover, disk, optical, graphic card removal Optional carry handle, dust filter Bay 1: Slim external ODD bay Bay 2: 5.25", 1.6" high, external, ODD / optional front access HDD Bay 3: 3.5", 1" high, internal, HDD/SSD Bay 4: 3.5", 1" high, internal, HDD/SSD (optional bay, bay comes with disk) Bay 5: 2.5", internal, HDD/SSD (optional bay) Notes: M910 Tower supports up to 3 SATA devices (ODD/HDD/SSD) and 1 eSATA device (front access HDD) Slot 1: full-length full-height (length < 268mm, height < 112mm), PCIe 3.0 x16* Slot 2: full-length full-height (length < 268mm, height < 112mm), PCIe 3.0 x1* Slot 3: full-length full-height (length < 268mm, height < 112mm), PCIe 3.0 x16 (x4 signal)* Slot 4: no slot, only bracket for optional port extension* M.2 card slots: Two (one for WLAN, one for SSD/Optane) * Optional 2 front USB3.1 Type-C ports module occupies PCIe x16 (x4 signal) slot, optional rear 2x USB2.0 / parallel / 2nd serial occupies one expansion slot
Chipset	Intel Q270 Chipset					Power supply	<i>Some:</i> 180 watts, autosensing, 85% PSU <i>Some:</i> 250 watts, autosensing, 85% PSU <i>Some:</i> 400 watts, autosensing, 92% PSU (only available via special bid)
Front ports*	Four USB 3.1 Gen1, optional two USB 3.1 Type-C Gen 2 (only available via special bid), microphone (3.5mm), headphone (3.5mm)					Limited warranty	<i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available
Rear ports*	Four USB 3.1 Gen1, optional two USB 2.0, serial (9-pin), optional 2nd serial (9-pin), optional parallel (25-pin), ethernet (RJ-45), one VGA, two DisplayPort, optional two PS/2 ports (keyboard/mouse); additional VGA, DisplayPort, DVI-D, or HDMI on optional graphics on some models					Preload	Preloaded operating system <i>Some:</i> Windows® 7 Professional 32/64 preinstalled through downgrade rights in Windows 10 Pro 64-bit (not available with 7th Gen Intel processor) <i>Some:</i> Windows 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit
Rear audio ports* IEEE 1394*	Line-in (3.5mm), line-out (3.5mm), microphone-in (3.5mm) None * Depending on many factors, actual data transfer speed may be lower than theoretical speed					Preloaded applications (only some listed)	<ul style="list-style-type: none"> Microsoft Office preloaded; purchase a product key to activate Only for Window 10 Lenovo Companion Only for Window 7 Lenovo Solution Center Lenovo ThinkVantage Tools Create Recovery Media Adobe® Reader® Cyberlink PowerDVD Create (DVD±RW)
Audio support	High Definition (HD) Audio, Realtek ALC662 / optional internal speaker (1.5 watt)					Environment	ENERGY STAR® 6.1, EPEAT™ Gold rating (North America), ErP Lot 3, GREENGUARD®, RoHS-compliant, TUV low noise verified (on some models)
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA9377A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Qualcomm Atheros QCA6174A (dual band), Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.1 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.1 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.1 combo adapter, Intel vPro technology support, 2x2					Accessories	For compatible accessories, please go to http://www.lenovoquickpick.com
Bluetooth™	<i>Some:</i> Bluetooth 4.1 wireless, integrated in Wi-Fi + BT combo adapter						

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

Lenovo, August 2017



ThinkCentre M920 Tower Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron®, Intel Pentium®, or 8th /9th Gen Intel Core™ i3 / i5 / i7 / i9 Processor						USB3.1 Type-C Gen 2 / DisplayPort) via PCIe x4 (available on 09/30/2018), 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
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics	Audio support High Definition (HD) Audio, Realtek ALC233VB2 / internal speaker (2 watt) WLAN <i>Some:</i> 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8821CE (dual band), 1x1 <i>Some:</i> 11ac Wi-Fi + BT 4.2, M.2 Card, Realtek RTL8822BE (dual band), 2x2 <i>Some:</i> 11ac Wi-Fi + BT 4.2, M.2 Card, Intel Dual Band Wireless-AC 3165, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Dual Band Wireless-AC 8265, 2x2 <i>Some:</i> 11ac Wi-Fi + BT 5.0, M.2 Card, Intel Wireless-AC 9560 (dual band), Intel vPro technology support, 2x2 Bluetooth™ Ethernet Ethernet (Opt.) <i>Some:</i> Bluetooth 4.2/5.0 wireless, integrated in Wi-Fi + BT combo adapter Gigabit ethernet, Intel Ethernet Connection I219-LM(Jacksonville), Wake on LAN® <i>Some:</i> Intel Ethernet Server Adapter I350-T4, gigabit ethernet, 4x RJ-45, PCIe x4 <i>Some:</i> Bitland BN8E88, gigabit ethernet, 1x RJ-45, PCIe x1 (special bid only) Manageability Intel Active Management Technology 12 (Intel AMT 12); Intel vPro technology on some models (require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection) Security chip Discrete TPM 2.0, TCG Certified Security features <ul style="list-style-type: none"> ● Security slot (in rear for optional Kensington® MicroSaver® cable) ● Padlock loop ● Optional cable lock to physically lock both keyboard and mouse ● Optional chassis intrusion switch ● Optional chassis E-Lock (special bid) ● Power-on password ● Administrator password ● Hard disk password ● Boot sequence control ● Boot without keyboard and mouse ● Individual USB port disablement ● Smart USB protection, allows keyboard/mouse only, blocks all storage devices Keyboard <i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <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) Mouse <i>Some:</i> Lenovo Calliope Mouse (USB connector), black <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 <i>Some:</i> Lenovo Mouse (PS/2 connector), black (only available via special bid) Mechanical <ul style="list-style-type: none"> ● Tower (18L), black color, metal case ● (WxDxH) 6.5" X 12.65" X 16.15"; 165mm X 321.35mm X 410.25mm ● Approx. 15.45 lb (7 kg), weight may vary by configuration ● Toolless cover, disk, optical, extension card removal ● Optional carry handle, dust filter Bay 1: Slim external ODD bay Bay 2: 5.25", 1.6" high, external, ODD / optional front access HDD Bay 3: 3.5", 1" high, internal, HDD/SSD Bay 4: 3.5", 1" high, internal, HDD/SSD (optional bay, bay comes with disk) Bay 5: 2.5", internal, HDD/SSD (optional bay) <i>Notes:</i> M920 Tower supports up to 3 SATA devices (ODD/HDD/SSD) and 1 eSATA device (front access HDD) Slot 1: full-length (< 268mm) full-height (< 112mm), PCIe 3.0 x16 Slot 2: full-length (< 268mm) full-height (< 112mm), PCIe 3.0 x1 Slot 3: full-length (< 268mm) full-height (< 112mm), PCIe 3.0 x16 (x4 signal) Slot 4: no slot, only bracket for optional port extension M.2 card slots: Two (one for WLAN, one for SSD/Optane) Power supply <i>Some:</i> 180 watts, autosensing, 85% PSU <i>Some:</i> 250 watts, autosensing, 85% PSU <i>Some:</i> 400 watts, autosensing, 92% PSU (only available via special bid) Limited warranty <i>Some:</i> 1-year or 3-year, depot service / service upgrades available <i>Some:</i> 1-year or 3-year, limited onsite service / service upgrades available Preload <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit 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 Accessories For compatible accessories, please go to http://smartfind.lenovo.com
	Celeron G4900	2 / 2	3.1G	2 MB	DDR4-2400	UHD 610	
	Celeron G4920	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	
	Celeron G4930	2 / 2	3.2G	2 MB	DDR4-2400	UHD 610	
	Celeron G4950	2 / 2	3.3G	2 MB	DDR4-2400	UHD 610	
	Pentium Gold G5400	2 / 4	3.7G	4 MB	DDR4-2400	UHD 610	
	Pentium Gold G5500	2 / 4	3.8G	4 MB	DDR4-2400	UHD 630	
	Pentium Gold G5600	2 / 4	3.9G	4 MB	DDR4-2400	UHD 630	
	Pentium Gold G5420	2 / 4	3.8G	4 MB	DDR4-2400	UHD 610	
	Pentium Gold G5620	2 / 4	4.0G	4 MB	DDR4-2400	UHD 630	
	Core i3-8100	4 / 4	3.6G	6 MB	DDR4-2400	UHD 630	
	Core i3-8300	4 / 4	3.7G	8 MB	DDR4-2400	UHD 630	
	Core i5-8400	6 / 6	2.8G / 4.0G	9 MB	DDR4-2666	UHD 630	
	Core i5-8500	6 / 6	3.0G / 4.1G	9 MB	DDR4-2666	UHD 630	
	Core i5-8600	6 / 6	3.1G / 4.3G	9 MB	DDR4-2666	UHD 630	
	Core i7-8700	6 / 12	3.2G / 4.6G	12 MB	DDR4-2666	UHD 630	
	Core i3-9100	4 / 4	3.6G / 4.2G	6 MB	DDR4-2400	UHD 630	
	Core i3-9300	4 / 4	3.7G / 4.3G	8 MB	DDR4-2400	UHD 630	
	Core i3-9320	4 / 4	3.7G / 4.4G	8 MB	DDR4-2400	UHD 630	
Core i5-9400	6 / 6	2.9G / 4.1G	9 MB	DDR4-2666	UHD 630		
Core i5-9500	6 / 6	3.0G / 4.4G	9 MB	DDR4-2666	UHD 630		
Core i5-9600	6 / 6	3.1G / 4.6G	9 MB	DDR4-2666	UHD 630		
Core i7-9700	8 / 8	3.0G / 4.7G	12 MB	DDR4-2666	UHD 630		
Core i9-9900	8 / 16	3.1G / 5.0G	16 MB	DDR4-2666	UHD 630		
Memory	64GB max, DDR4-2666*, four 288-pin DIMM sockets, dual-channel capable * System automatically clocks down for the processors with lower memory controller						
Storage	<i>Some:</i> Hard Drive / SATA 6.0Gb/s, 2.5" or 3.5", 5400 rpm or 7200 rpm <i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" <i>Some:</i> M.2 SSD (2242 / 2280) / PCIe NVMe, PCIe 3.0 x2 or PCIe 3.0 x4 <i>Some:</i> Intel Optane™ Memory (not support Celeron / Pentium Processor), M.2						
Optical	Optional DVD-ROM or DVD Burner (DVD±RW), SATA 1.5Gb/s Drive, slim (9.0mm)						
Onboard SATA	Four onboard SATA 6.0Gb/s connectors, RAID 0/1 support (RAID preset only available via special bid model)						
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@50Hz), two DisplayPort™ (up to 4096x2304@60Hz), supports 3 independent displays, more displays support via discrete graphics <i>Some:</i> NVIDIA GeForce® GT 730 (End Of Life), DirectX 12, 2GB GDDR5, PCIe 2.0 x16, 35 watts, two DisplayPort (up to 3840x2160@60Hz) <i>Some:</i> AMD Radeon™ 520 , DirectX 12, 2GB GDDR5, PCIe 3.0 x8, 30 watts, two DisplayPort (up to 4096x2160@60Hz) <i>Some:</i> AMD Radeon RX 550X , DirectX 12, 4GB GDDR5, PCIe 3.0 x8, 50 watts, one DisplayPort (up to 3840x2160@60Hz), one HDMI (up to 4096x2160@60Hz), one VGA (up to 2048*1536@85Hz) <i>Some:</i> NVIDIA GeForce GTX 1060 (special bid only), DirectX 12, 6GB GDDR5, PCIe 3.0 x16, 120 watts, 1x DVI-D (up to 2560x1600@60Hz), 1x HDMI (up to 4096x2160@60Hz), 3x DP (up to 5120x3200@60Hz), occupies two slots						
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						
Chipset	Intel Q370 Chipset						
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)						
Front ports* (Opt.)	Optional: 1x media reader						
Rear ports* (Std.)	4x USB 3.1 Gen1, 1x serial (9-pin), 1x ethernet (RJ-45), 1x VGA, 2x DisplayPort, 1x line-out (3.5mm)						
Rear ports* (Opt.)	Optional: 2x USB 2.0, 2x USB 3.1 Gen1 via PCIe 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), 1x Thunderbolt 3 (combo)						

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

Lenovo, November 2019

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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.

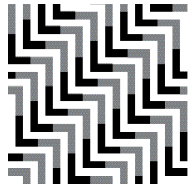
Battery life: Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

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Lenovo ThinkStation.

PSREF



Product Specifications Reference

Version 553, December 2019

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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.

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 ThinkStation 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

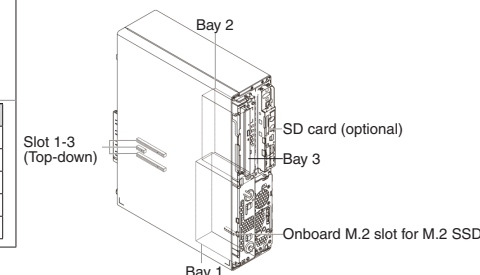


ThinkStation P330 SFF Gen 2 (30D1 and 30D2) Platform Specifications

Components	Specification					
Form factor	8.4L mini-tower					
Dimensions	Height: 343.5 mm (13.5 in). Width: 92.5 mm (3.6 in). Depth: 305.6 mm (12 in)					
Weight	Maximum configuration: 13.23 lb (6.0kg) Supports one of the following processor:					
Processor	Xeon E-2278G 8C/16T/3.4GHz/16MB/80W/DDR4-2666 (260W PSU needed)					
	Xeon E-2276G 6C/12T/3.8GHz/12MB/80W/DDR4-2666					
	Xeon E-2274G 4C/8T/4.0GHz/8MB/83W/DDR4-2666					
	Xeon E-2246G 6C/12T/3.6GHz/12MB/80W/DDR4-2666					
	Xeon E-2244G 4C/8T/3.8GHz/8MB/71W/DDR4-2666					
	Xeon E-2236 6C/12T/3.4GHz/12MB/80W/DDR4-2666					
	Xeon E-2234 4C/8T/3.6GHz/8MB/71W/DDR4-2666					
	Xeon E-2226G 6C/6T/3.4GHz/12MB/80W/DDR4-2666					
	Xeon E-2224G 4C/4T/3.5GHz/8MB/71W/DDR4-2666					
	Xeon E-2224 4C/4T/3.4GHz/8MB/71W/DDR4-2666					
	Xeon E-2174G 4C/8T/3.8GHz/8MB/71W/DDR4-2666					
	Core i9-9900 8C/16T/3.1GHz/16MB/65W/DDR4-2666					
	Core i7-9700 8C/8T/3.0GHz/12MB/65W/DDR4-2666					
	Core i7-8700 6C/12T/3.2GHz/12MB/65W/DDR4-2666					
	Core i5-9600 6C/6T/3.1GHz/9MB/65W/DDR4-2666					
	Core i5-9500 6C/6T/3.0GHz/9MB/65W/DDR4-2666					
	Core i5-9400 6C/6T/2.9GHz/9MB/65W/DDR4-2666					
	Core i5-8500 6C/6T/3.0GHz/9MB/65W/DDR4-2666					
	Core i3-9300 4C/4T/3.7GHz/8MB/62W/DDR4-2400					
	Core i3-9100 4C/4T/3.6GHz/6MB/65W/DDR4-2400					
	Core i3-8300 4C/4T/3.7GHz/8MB/62W/DDR4-2400					
	Core i3-8100 4C/4T/3.6GHz/6MB/65W/DDR4-2400					
Pentium Gold G5620 2C/4T/4.0GHz/4MB/54W/DDR4-2400						
Chipset	Intel C246 Chipset					
Memory Sockets	4 DIMM sockets with 2 channels					
Memory Types	8GB/16GB DDR4-2666 UDIMM ECC or 4GB/8GB/16GB/32GB DDR4-2666 UDIMM non-ECC					
Memory Capacity	64GB with 4 x 16GB for UDIMM ECC or 128GB with 4 x 32GB UDIMM non-ECC					
Memory Protection	ECC on models with UDIMM ECC memory					
Expansion slots	Three PCIe 3.0 slots as following:					
	Slot 1 PCIe 3.0 x16, low profile, links to CPU					
	Slot 2 PCIe 3.0 x1, low profile, links to PCH					
	Slot 3 PCIe 3.0 x16 (negotiable link width x4), low profile, links to PCH					
Processor graphics	Integrated Intel UHD Graphics P630 in -G suffix Xeon processors, or Intel UHD Graphics 630 in Core i5 or i3 processors. Works along with discrete graphics to support multi-display, enables three rear display connectors (2 DP standard, 1 DP or HDMI optional)					
Discrete graphics card	Up to two PCIe 3.0 x16 slots for discrete graphics adapter (Slot 1 and 3). Supports the following graphics adapters:					
	Adapter	Cores	Memory	Power	Connectors	Max qty
	Quadro P400	256	2GB GDDR5	30W	3x miniDP	2
	Quadro P620	512	2GB GDDR5	40W	4x miniDP	2
	Quadro P1000	640	4GB GDDR5	47W	4x miniDP	2
Storage Controller	Storage Controller	Type	Interface	Disk Type	RAID	
	Onboard Intel RST SATA RAID	Std	SATA 6Gb/s	HDD or SSD	0/1	
	Onboard Intel RST PCIe RAID	Std	PCIe NVMe	M.2 PCIe SSD	0/1	
	Notes: M.2 SSD support is limited, please see Storage bay section for more information					
Storage Support	Disk Type	Interface	RPM	Offering	Max Qty	
	3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/2TB/4TB	1	
	2.5" SATA HDD	SATA 6Gb/s	7.2K	500GB FIPS	2	
	2.5" SATA SSD	SATA 6Gb/s		256GB/512GB/1TB	2	
	Optane Memory	PCIe NVMe		32GB	1, used with HDD/SSD	
	M.2 PCIe SSD	PCIe NVMe		256GB/512GB/1TB	3	

Components	Specification	
Storage bay	Up to 3 bays with two disk bays and one slim optical bay:	
	Bay 1	Primary 3.5" SATA bay
	Bay 2	2.5" SATA bay (Optional)
	Bay 3	9mm Slim ODD bay
	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
M.2 slot for Wi-Fi and 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	
Media reader	Optional SD card reader on most models	
Network interfaces	One onboard GbE port via integrated gigabit ethernet Intel i219LM, supports Wake-on-LAN. Optional PCIe ethernet adapters are available	
Security features	Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant. Optional chassis intrusion switch, E-lock, cable lock, Kensington lock, and pad lock	
Intel vPro	Supports Intel vPro on Xeon models. vPro also requires Wireless-AC 9560 if Wi-Fi is needed	
Intel AMT	Intel Active Management Technology 12 on Xeon models, 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	
HD Audio	Intel HD Audio interface with Realtek ALC233 Codec	
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 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 210W or 260W power supply.	
	210W is 100V - 240V, 85% PSU, Climate Savers Computing Bronze and 80 PLUS Bronze qualified. 260W is 100V - 240V, 92% PSU, Climate Savers Computing Platinum and 80 PLUS Platinum qualified	
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](mailto:ThinkStation_PSREF_developer)





ThinkStation P330 Tiny Platform Specifications - I of II

Product Specifications Reference (PSREF)

Components	Specification	Components	Specification															
Form factor	1L. Optional VESA mount bracket kit, supports VESA 75mm and 100mm. Optional floor stand for vertical orientation. Optional tool-less chassis open. Optional dust filter	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 adapter															
Dimensions	Height: 179 mm (7.0 in). Width: 37 mm (1.5 in). Depth: 183 mm (7.2 in)	Graphics	65W or 62W processor models supports processor graphics only. 35W processor models come with processor graphics plus a discrete graphics adapter															
Weight	Maximum configuration: 2.9 lb (1.3kg)	Graphics - Processor graphics	Integrated Intel UHD Graphics 630. Works along with discrete graphics to support multi-display															
Recommended monitors	Lenovo recommends ThinkVision P series monitors for best display performance and productivity	Graphics - Discrete graphics card	One of the following discrete graphics cards on 35W processor models: <table border="1"> <thead> <tr> <th>Adapter</th> <th>Cores</th> <th>Memory</th> <th>Power</th> <th>Connectors</th> </tr> </thead> <tbody> <tr> <td>Quadro P620</td> <td>512</td> <td>2GB GDDR5</td> <td>40W</td> <td>4x miniDP</td> </tr> <tr> <td>Quadro P1000</td> <td>640</td> <td>4GB GDDR5</td> <td>47W</td> <td>4x miniDP</td> </tr> </tbody> </table>	Adapter	Cores	Memory	Power	Connectors	Quadro P620	512	2GB GDDR5	40W	4x miniDP	Quadro P1000	640	4GB GDDR5	47W	4x miniDP
Adapter	Cores	Memory	Power	Connectors														
Quadro P620	512	2GB GDDR5	40W	4x miniDP														
Quadro P1000	640	4GB GDDR5	47W	4x miniDP														
Processor	Supports one of the following:								Storage controllers	Integrated Intel SATA AHCI controller in chipset, 6Gbps SATA, one onboard SATA port for 2.5" HDD								
	Processor Number	Cores	Threads	Base Frequency	Cache	TDP	Memory Types	Processor Graphics	Internal storage bay	Up to one 2.5" HDD on models without discrete graphics card								
	Core i9-9900T	8	16	2.1GHz	16MB	35W	DDR4-2666	Intel UHD Graphics 630	Disks	2.5" HDD supports up to 2TB, SATA 6Gbps, 5.4K; or 1TB SATA 6Gbps, 7.2K								
	Core i7-9700T	8	8	2.0GHz	12MB	35W	DDR4-2666	Intel UHD Graphics 630	M.2 slot for SSD	Two onboard M.2 slots for M.2 SSD, one for M.2 2280 SSD, one for M.2 2280 or 2242 SSD								
	Core i7-9700	8	8	3.0GHz	12MB	65W	DDR4-2666	Intel UHD Graphics 630	M.2 SSD	M.2 2280 SSD supports up to 1TB each, optional Opal. M.2 2242 SSD supports up to 512GB each								
	Core i5-9600T	6	6	2.3GHz	9MB	35W	DDR4-2666	Intel UHD Graphics 630	Optane memory	Up to one 16GB Optane memory per system. Optane memory must work with a 2.5" HDD								
	Core i5-9600	6	6	3.1GHz	9MB	65W	DDR4-2666	Intel UHD Graphics 630	M.2 slot for Wi-Fi and Bluetooth	One dedicated M.2 2230 slot for optional Wi-Fi card, supports one of the following: Intel Wireless-AC 9560, 2x2, 2.4GHz/5GHz (160MHz channels), 802.11ac, Bluetooth 5, up to 1.73Gbps. Intel Wireless-AC 8265, 2x2, 2.4GHz/5GHz, 802.11ac, Bluetooth 4.2, up to 867Mbps. <i>Note: Wi-Fi card, or specific functions of Wi-Fi card may not be supported in some countries</i>								
	Core i5-9500T	6	6	2.2GHz	9MB	35W	DDR4-2666	Intel UHD Graphics 630	Wi-Fi antenna	Optional Tiny 2.4GHz/5GHz SMA antenna kit								
	Core i5-9500	6	6	3.0GHz	9MB	65W	DDR4-2666	Intel UHD Graphics 630	Optical	Optional one 9.0mm optical drive via optical drive kit, DVD-ROM or DVD±RW. VESA mount is required								
	Core i5-9400T	6	6	1.8GHz	9MB	35W	DDR4-2666	Intel UHD Graphics 630	Media reader	None. Using USB adapter								
	Core i5-9400	6	6	2.9GHz	9MB	65W	DDR4-2666	Intel UHD Graphics 630	Network interfaces	One onboard GbE port via integrated gigabit ethernet Intel i219LM, supports Wake-on-LAN. Optional Intel i350-T4 for 4x GbE ports, using PCIe slot								
	Core i3-9320	4	4	3.7GHz	8MB	62W	DDR4-2400	Intel UHD Graphics 630	Security features	Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant. Chassis intrusion switch. Optional Kensington lock								
	Core i3-9300T	4	4	3.2GHz	8MB	35W	DDR4-2400	Intel UHD Graphics 630	Intel vPro Technology	Supports vPro on models with the following processors: Core i7-8700T, Core 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 i3-9300	4	4	3.7GHz	8MB	62W	DDR4-2400	Intel UHD Graphics 630	Systems management	Intel Active Management Technology 12 on vPro models, Intel Standard Manageability on other models								
	Core i3-9100T	4	4	3.1GHz	6MB	35W	DDR4-2400	Intel UHD Graphics 630	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 i3-9100	4	4	3.6GHz	6MB	65W	DDR4-2400	Intel UHD Graphics 630	HD Audio	Intel HD Audio interface with Realtek ALC233 Codec								
	Core i7-8700T	6	12	2.4GHz	12MB	35W	DDR4-2666	Intel UHD Graphics 630	Front standard ports	1x USB 3.1 Gen 1 Type A (charging). 1x USB 3.1 Gen 1 Type-C. 1x Mic-in. 1x Combo jack								
	Core i7-8700	6	12	3.2GHz	12MB	65W	DDR4-2666	Intel UHD Graphics 630	Rear standard ports	2x USB 3.1 Gen 2 Type A. 2x USB 3.1 Gen 1 Type-A. 1x RJ-45. 1x DP. 1x HDMI								
	Core i5-8600T	6	6	2.3GHz	9MB	35W	DDR4-2666	Intel UHD Graphics 630	Optional rear ports - via punch out cable	Up to two optional rear ports via punch out cable. Port 1 supports one of the following: 1x USB 3.1 Gen 1 Type-C, also supports DP function. 1x COM. 1x VGA. 1x DP. 1x HDMI. Port 2 supports one COM								
	Core i5-8600	6	6	3.1GHz	9MB	65W	DDR4-2666	Intel UHD Graphics 630										
	Core i5-8500T	6	6	2.1GHz	9MB	35W	DDR4-2666	Intel UHD Graphics 630										
	Core i5-8500	6	6	3.0GHz	9MB	65W	DDR4-2666	Intel UHD Graphics 630										
	Core i5-8400T	6	6	1.7GHz	9MB	35W	DDR4-2666	Intel UHD Graphics 630										
	Core i5-8400	6	6	2.8GHz	9MB	65W	DDR4-2666	Intel UHD Graphics 630										
	Core i3-8300T	4	4	3.2GHz	8MB	35W	DDR4-2400	Intel UHD Graphics 630										
	Core i3-8300	4	4	3.7GHz	8MB	62W	DDR4-2400	Intel UHD Graphics 630										
	Core i3-8100T	4	4	3.1GHz	6MB	35W	DDR4-2400	Intel UHD Graphics 630										
	Core i3-8100	4	4	3.6GHz	6MB	65W	DDR4-2400	Intel UHD Graphics 630										
Chipset	Intel Q370 Chipset																	
Memory	2 DIMM sockets. DDR4-2666. SoDIMM. Non-ECC																	
Memory Capacity	64GB (2x 32GB)																	

ThinkStation P330 Tiny Platform Specifications - II of II

Product Specifications Reference (PSREF)

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 <i>Note: Punch out cable and PCIe adapter are mutually exclusive</i>
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 qualified
Power supply	Supports one 135W power adapter, 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

Product Specifications Reference (PSREF)

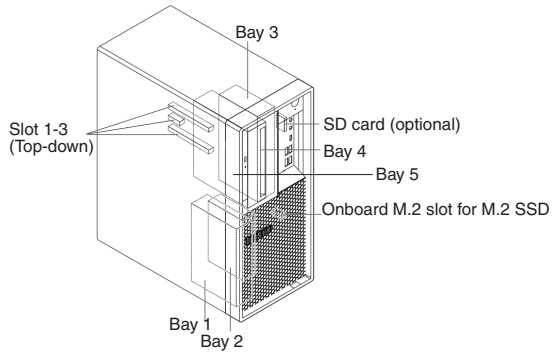
Components	Specification																																																																																																																																																																								
Form factor	18L Tower																																																																																																																																																																								
Dimensions	Height: 376 mm (14.8 in). Width: 165 mm (6.5 in). Depth: 328 mm (12.9 in)																																																																																																																																																																								
Weight	Maximum configuration: 28.22 lb (12.8kg)																																																																																																																																																																								
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	<table border="1"> <thead> <tr> <th>Processor</th> <th>CPU</th> <th>Cache</th> <th>Memory</th> <th>Power</th> <th>PSU</th> </tr> </thead> <tbody> <tr><td>Xeon E-2286G</td><td>6C/12T/4.0GHz/12MB/95W/DDR4-2666</td><td></td><td></td><td></td><td>400W PSU needed</td></tr> <tr><td>Xeon E-2278G</td><td>8C/16T/3.4GHz/16MB/80W/DDR4-2666</td><td></td><td></td><td></td><td>400W PSU needed</td></tr> <tr><td>Xeon E-2276G</td><td>6C/12T/3.8GHz/12MB/80W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2274G</td><td>4C/8T/4.0GHz/8MB/83W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2246G</td><td>6C/12T/3.6GHz/12MB/80W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2244G</td><td>4C/8T/3.8GHz/8MB/71W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2236</td><td>6C/12T/3.4GHz/12MB/80W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2234</td><td>4C/8T/3.6GHz/8MB/71W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2226G</td><td>6C/6T/3.4GHz/12MB/80W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2224G</td><td>4C/4T/3.5GHz/8MB/71W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2224</td><td>4C/4T/3.4GHz/8MB/71W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Xeon E-2186G</td><td>6C/12T/3.8GHz/12MB/95W/DDR4-2666</td><td></td><td></td><td></td><td>400W PSU needed</td></tr> <tr><td>Xeon E-2174G</td><td>4C/8T/3.8GHz/8MB/71W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i9-9900K</td><td>8C/16T/3.6GHz/16MB/95W/DDR4-2666</td><td></td><td></td><td></td><td>400W PSU needed</td></tr> <tr><td>Core i9-9900</td><td>8C/16T/3.1GHz/16MB/65W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i7-9700K</td><td>8C/8T/3.6GHz/12MB/95W/DDR4-2666</td><td></td><td></td><td></td><td>400W PSU needed</td></tr> <tr><td>Core i7-9700</td><td>8C/8T/3.0GHz/12MB/65W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i7-8700</td><td>6C/12T/3.2GHz/12MB/65W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i5-9600K</td><td>6C/6T/3.7GHz/9MB/95W/DDR4-2666</td><td></td><td></td><td></td><td>400W PSU needed</td></tr> <tr><td>Core i5-9600</td><td>6C/6T/3.1GHz/9MB/65W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i5-9500</td><td>6C/6T/3.0GHz/9MB/65W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i5-9400</td><td>6C/6T/2.9GHz/9MB/65W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i5-8500</td><td>6C/6T/3.0GHz/9MB/65W/DDR4-2666</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i3-9300</td><td>4C/4T/3.7GHz/8MB/62W/DDR4-2400</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i3-9100</td><td>4C/4T/3.6GHz/6MB/65W/DDR4-2400</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i3-8300</td><td>4C/4T/3.7GHz/8MB/62W/DDR4-2400</td><td></td><td></td><td></td><td></td></tr> <tr><td>Core i3-8100</td><td>4C/4T/3.6GHz/6MB/65W/DDR4-2400</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	Processor	CPU	Cache	Memory	Power	PSU	Xeon E-2286G	6C/12T/4.0GHz/12MB/95W/DDR4-2666				400W PSU needed	Xeon E-2278G	8C/16T/3.4GHz/16MB/80W/DDR4-2666				400W PSU needed	Xeon E-2276G	6C/12T/3.8GHz/12MB/80W/DDR4-2666					Xeon E-2274G	4C/8T/4.0GHz/8MB/83W/DDR4-2666					Xeon E-2246G	6C/12T/3.6GHz/12MB/80W/DDR4-2666					Xeon E-2244G	4C/8T/3.8GHz/8MB/71W/DDR4-2666					Xeon E-2236	6C/12T/3.4GHz/12MB/80W/DDR4-2666					Xeon E-2234	4C/8T/3.6GHz/8MB/71W/DDR4-2666					Xeon E-2226G	6C/6T/3.4GHz/12MB/80W/DDR4-2666					Xeon E-2224G	4C/4T/3.5GHz/8MB/71W/DDR4-2666					Xeon E-2224	4C/4T/3.4GHz/8MB/71W/DDR4-2666					Xeon E-2186G	6C/12T/3.8GHz/12MB/95W/DDR4-2666				400W PSU needed	Xeon E-2174G	4C/8T/3.8GHz/8MB/71W/DDR4-2666					Core i9-9900K	8C/16T/3.6GHz/16MB/95W/DDR4-2666				400W PSU needed	Core i9-9900	8C/16T/3.1GHz/16MB/65W/DDR4-2666					Core i7-9700K	8C/8T/3.6GHz/12MB/95W/DDR4-2666				400W PSU needed	Core i7-9700	8C/8T/3.0GHz/12MB/65W/DDR4-2666					Core i7-8700	6C/12T/3.2GHz/12MB/65W/DDR4-2666					Core i5-9600K	6C/6T/3.7GHz/9MB/95W/DDR4-2666				400W PSU needed	Core i5-9600	6C/6T/3.1GHz/9MB/65W/DDR4-2666					Core i5-9500	6C/6T/3.0GHz/9MB/65W/DDR4-2666					Core i5-9400	6C/6T/2.9GHz/9MB/65W/DDR4-2666					Core i5-8500	6C/6T/3.0GHz/9MB/65W/DDR4-2666					Core i3-9300	4C/4T/3.7GHz/8MB/62W/DDR4-2400					Core i3-9100	4C/4T/3.6GHz/6MB/65W/DDR4-2400					Core i3-8300	4C/4T/3.7GHz/8MB/62W/DDR4-2400					Core i3-8100	4C/4T/3.6GHz/6MB/65W/DDR4-2400				
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Chipset	Intel C246 Chipset																																																																																																																																																																								
Memory Sockets	4 DIMM sockets with 2 channels																																																																																																																																																																								
Memory Types	8GB/16GB DDR4-2666 UDIMM ECC or 4GB/8GB/16GB/32GB DDR4-2666 UDIMM non-ECC																																																																																																																																																																								
Memory Capacity	64GB with 4 x 16GB for UDIMM ECC or 128GB with 4 x 32GB UDIMM non-ECC																																																																																																																																																																								
Memory Protection	ECC on models with UDIMM ECC memory																																																																																																																																																																								
Expansion slots	Three PCIe 3.0 slots as following:																																																																																																																																																																								
	Slot 1 PCIe 3.0 x16, full height, half length, links to CPU																																																																																																																																																																								
	Slot 2 PCIe 3.0 x1, full height, full length, links to PCH																																																																																																																																																																								
	Slot 3 PCIe 3.0 x16 (negotiable link width x4), full height, half length, links to PCH																																																																																																																																																																								
Processor graphics	Integrated Intel UHD Graphics P630 in -G suffix Xeon processors, or Intel UHD Graphics 630 in Core i7, i5, i3, or Pentium processors. Works along with discrete graphics to support multi-display, enables three rear display connectors (2 DP standard, 1 DP or HDMI optional)																																																																																																																																																																								
Discrete Graphics Offering	Up to two PCIe 3.0 x16 slots for discrete graphics card (Slot 1 and 3). Supports the following graphics adapters:																																																																																																																																																																								
	<table border="1"> <thead> <tr> <th>Graphics</th> <th>Memory</th> <th>Power</th> <th>Connector</th> <th>Max Qty</th> </tr> </thead> <tbody> <tr><td>Quadro P400</td><td>2GB GDDR5</td><td>30W</td><td>3x miniDP</td><td>2</td></tr> <tr><td>Quadro P620</td><td>2GB GDDR5</td><td>40W</td><td>4x miniDP</td><td>2</td></tr> <tr><td>Quadro P1000</td><td>4GB GDDR5</td><td>50W</td><td>4x miniDP</td><td>2</td></tr> <tr><td>Quadro P2000</td><td>5GB GDDR5</td><td>75W</td><td>4x DP</td><td>2</td></tr> <tr><td>Quadro P2200</td><td>5GB GDDR5X</td><td>75W</td><td>4x DP</td><td>2</td></tr> <tr><td>Quadro P4000</td><td>8GB GDDR5</td><td>105W</td><td>4x DP</td><td>1</td></tr> <tr><td>Quadro P5000</td><td>16GB GDDR5X</td><td>180W</td><td>DVI-D DL + 4x DP</td><td>1</td></tr> <tr><td>Quadro RTX 4000</td><td>8GB GDDR6</td><td>160W</td><td>3x DP, 1x VirtualLink</td><td>1</td></tr> </tbody> </table>	Graphics	Memory	Power	Connector	Max Qty	Quadro P400	2GB GDDR5	30W	3x miniDP	2	Quadro P620	2GB GDDR5	40W	4x miniDP	2	Quadro P1000	4GB GDDR5	50W	4x miniDP	2	Quadro P2000	5GB GDDR5	75W	4x DP	2	Quadro P2200	5GB GDDR5X	75W	4x DP	2	Quadro P4000	8GB GDDR5	105W	4x DP	1	Quadro P5000	16GB GDDR5X	180W	DVI-D DL + 4x DP	1	Quadro RTX 4000	8GB GDDR6	160W	3x DP, 1x VirtualLink	1																																																																																																																											
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Quadro RTX 4000	8GB GDDR6	160W	3x DP, 1x VirtualLink	1																																																																																																																																																																					
<i>Note: 2x Quadro P2000, Quadro P4000, Quadro P5000, or Quadro RTX 4000 needs 400W PSU</i>																																																																																																																																																																									

Components	Specification																														
Storage Controller	Storage Controller																														
	Onboard Intel RST SATA RAID																														
	Onboard Intel RST PCIe RAID																														
Storage Support	<table border="1"> <thead> <tr> <th>Disk Type</th> <th>Interface</th> <th>RPM</th> <th>Offering</th> <th>Max Qty</th> </tr> </thead> <tbody> <tr><td>3.5" SATA HDD</td><td>SATA 6Gb/s</td><td>7.2K</td><td>1TB/2TB/4TB</td><td>3</td></tr> <tr><td>2.5" SATA HDD</td><td>SATA 6Gb/s</td><td>7.2K</td><td>500GB FIPS</td><td>4</td></tr> <tr><td>2.5" SATA SSD</td><td>SATA 6Gb/s</td><td></td><td>256GB/512GB/1TB</td><td>4</td></tr> <tr><td>Optane Memory</td><td>PCIe NVMe</td><td></td><td>32GB</td><td>1, used with HDD/SSD</td></tr> <tr><td>M.2 PCIe SSD</td><td>PCIe NVMe</td><td></td><td>256GB/512GB/1TB</td><td>3</td></tr> </tbody> </table>	Disk Type	Interface	RPM	Offering	Max Qty	3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/2TB/4TB	3	2.5" SATA HDD	SATA 6Gb/s	7.2K	500GB FIPS	4	2.5" SATA SSD	SATA 6Gb/s		256GB/512GB/1TB	4	Optane Memory	PCIe NVMe		32GB	1, used with HDD/SSD	M.2 PCIe SSD	PCIe NVMe		256GB/512GB/1TB	3
	Disk Type	Interface	RPM	Offering	Max Qty																										
	3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/2TB/4TB	3																										
	2.5" SATA HDD	SATA 6Gb/s	7.2K	500GB FIPS	4																										
	2.5" SATA SSD	SATA 6Gb/s		256GB/512GB/1TB	4																										
	Optane Memory	PCIe NVMe		32GB	1, used with HDD/SSD																										
M.2 PCIe SSD	PCIe NVMe		256GB/512GB/1TB	3																											
Storage Bays	Up to five bays with four disk bays plus one slim optical bay, supports up to 3x 3.5" HDD plus 1x 2.5" SSD, or 4x 2.5" HDD/SSD																														
	Bay 1 Primary disk bay, 3.5" or 2.5"																														
	Bay 2 2.5" SATA bay, cannot be available when 2nd Quadro P2000 is used																														
	Bay 3 Secondary disk bay, 3.5" or 2.5"																														
	Bay 4 5.25" Flex bay, supports one of the following: <ul style="list-style-type: none"> Flex module for optional front eSATA/Thunderbolt/IEEE1394 3rd disk bay, 3.5" or 2.5", removable, via Front Access Storage Enclosure, using SATA 4 connector as eSATA mode 3rd disk bay, 3.5" or 2.5", via 5.25" to 3.5" HDD Kit 																														
	Bay 5 9mm Slim ODD bay																														
M.2 3x M.2 SSD (1 onboard, 2 via PCIe to M.2 adapter)																															
Media reader	Optional SD card reader on most models																														
Network interfaces	One onboard GbE port via integrated gigabit ethernet Intel i219LM, supports Wake-on-LAN. Optional PCIe ethernet adapters are available																														
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																														
Security features	Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant. Optional chassis intrusion switch, E-lock, cable lock, Kensington lock, and pad lock																														
Intel vPro	Supports Intel vPro on Xeon models. vPro also requires Wireless-AC 9560 if Wi-Fi is needed																														
Intel AMT	Intel Active Management Technology 12 on Xeon models, 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																														
HD Audio	Intel HD Audio interface with Realtek ALC233 Codec																														
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 <i>Notes: DP needs Core, Pentium, or -G suffix Xeon processor</i>																														
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. <i>Notes: DP or HDMI needs Core, Pentium, or -G suffix Xeon processor</i>																														
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)																														

Components	Specification
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						
Dimensions	165mm/6.5" W x 460mm/18.1" D x 440mm/17.3" H (with feet)						
Weight	Maximum configuration: 52.91 lb (24kg)						
Processor Support	Processor	# of Cores	# of Threads	Base Frequency	Cache	TDP	Memory Types
	Xeon W-2295	18	36	3.0GHz	24.75MB	165W	DDR4-2933
	Xeon W-2275	14	28	3.3GHz	19.25MB	165W	DDR4-2933
	Xeon W-2265	12	24	3.5GHz	19.25MB	165W	DDR4-2933
	Xeon W-2255	10	20	3.7GHz	19.25MB	165W	DDR4-2933
	Xeon W-2245	8	16	3.9GHz	16.5MB	155W	DDR4-2933
	Xeon W-2235	6	12	3.8GHz	8.25MB	130W	DDR4-2933
	Xeon W-2225	4	8	4.1GHz	8.25MB	105W	DDR4-2933
	Xeon W-2223	4	8	3.6GHz	8.25MB	120W	DDR4-2666
	Xeon W-2195	18	36	2.3GHz	24.75MB	140W	DDR4-2666
	Xeon W-2175	14	28	2.5GHz	19MB	140W	DDR4-2666
	Xeon W-2155	10	20	3.3GHz	13.75MB	140W	DDR4-2666
	Xeon W-2145	8	16	3.7GHz	11MB	140W	DDR4-2666
	Xeon W-2135	6	12	3.7GHz	8.25MB	140W	DDR4-2666
	Xeon W-2133	6	12	3.6GHz	8.25MB	140W	DDR4-2666
	Xeon W-2125	4	8	4.0GHz	8.25MB	120W	DDR4-2666
	Xeon W-2123	4	8	3.6GHz	8.25MB	120W	DDR4-2666
Xeon W-2104	4	4	3.2GHz	8.25MB	120W	DDR4-2400	
Xeon W-2102	4	4	2.9GHz	8.25MB	120W	DDR4-2400	
Processor Sockets	1x FCLGA2066						
Chipset	Intel C422 Chipset						
Memory Sockets	8 DIMM sockets with 4 channels						
Memory Types	DDR4-2666 RDIMM or DDR4-2933 RDIMM						
Memory Capacity	512GB with 8 x 64GB DDR4-2933 RDIMMs						
Memory Protection	ECC						
Expansion slots	Slot 1 (CPU)	PCIe 3.0 x8, full height, full length, 25W, open ended					
	Slot 2 (CPU)	PCIe 3.0 x16, full height, full length, 75W, double-width					
	Slot 3 (PCH)	PCIe 3.0 x4, full height, half length, 25W, open ended					
	Slot 4 (CPU)	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					
Discrete Graphics Offering	Graphics	Memory	Power	Connector	SLI / NV-link	Max Qty	
	NVS 810	4GB DDR3	68W	8xmini DP		2	
	Quadro P400	2GB GDDR5	30W	3xminiDP		2	
	Quadro P600	2GB GDDR5	45W	4xminiDP		2	
	Quadro P620	2GB GDDR5	40W	4xminiDP		2	
	Quadro P1000	4GB GDDR5	50W	4xminiDP		2	
	Quadro P2000	5GB GDDR5	75W	4xDP		2	
	Quadro P4000	8GB GDDR5	120W	4xDP		2	
	Quadro P5000	16GB GDDR5X	180W	DVI-D DL+4xDP	SLI	2	
	Quadro P6000	24GB GDDR5X	250W	DVI-D DL+4xDP		1	
	Quadro RTX 4000	8GB GDDR6	160W	3xDP, 1xVirtualLink		2	
	Quadro RTX 5000	16GB GDDR6	265W	4xDP, 1xVirtualLink		1	
	Quadro RTX 6000	24GB GDDR6	295W	4xDP, 1xVirtualLink		1	
	Quadro RTX 8000	48GB GDDR6	295W	4xDP, 1xVirtualLink		1	
Quadro GP100	16GB HBM2	235W	1xDVI-D DL, 4xDP	NVLink	2		
Quadro GV100	32GB HBM2	250W	4xDP		1		
Storage Controller	Storage Controller	Type	Interface	RAID	Cache		
	Onboard Intel RSTe	Std	SATA 6Gb/s	0/1/10/5			
	9440-8i PCIe	Opt	SAS 12Gb/s, SATA 6Gb/s	0/1/10/5			
	9460-16i PCIe	Opt	SAS 12Gb/s, SATA 6Gb/s	0/1/10/5/6	4GB DDR4, SuperCap		
	NVMe Basic	Opt	PCIe NVMe	0/1/10			
	NVMe Premium	Opt	PCIe NVMe	0/1/10/5			
	NVMe for Intel SSD	Opt	PCIe NVMe	0/1/10/5			

Storage Support	Disk Type	Interface	RPM	Offering	Max Qty
	3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/2TB/4TB/6TB	6
	2.5" SATA HDD	SATA 6Gb/s	7.2K	500GB/500GB FIPS	6
	2.5" SATA SSD	SATA 6Gb/s		256GB/512GB/1TB/2TB	6
	M.2 PCIe SSD	PCIe NVMe		256GB/512GB/1TB/2TB	9
	PCIe AIC SSD	PCIe NVMe		480GB	2 (1 when quad M.2 adapter used)
Storage Bays	Bay Type	Maximum Drives Qty			
	M.2 slot	9x M.2 SSD (2 onboard, 7 via PCIe to M.2 adapter)			
	Flex Bay	2 flex bays. Supports the following: <ul style="list-style-type: none"> • 2x half-height optical drives • 2x 5.25" 9.0mm optical drives • 1x 5.25" 9.0mm optical drive + 2x 3.5"/2.5" SATA SSD/HDD • 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure 1x flex module for the following options: <ul style="list-style-type: none"> • Tray 1: 9.0mm optical • Tray 2: 15-in-1 USB 3.1 Gen 1 reader, 2x Thunderbolt, or 4-digit diagnostic display • Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA • 2x M.2 SSD with 2x Front Removable Drive Enclosures 			
	Disk bay	Up to 4x 3.5" or 2.5" disks with 4 disk bays (2 bays standard, 2 bays optional)			
Max Storage	Supports up to 9x M.2 SSD + 6x 3.5" HDD/6x 2.5" SATA disks/4x 2.5" SAS HDD + 1x PCIe AIC SSD. All HDD: 36TB using 6x 3.5" HDD All SSD: 30.48TB using 6x 2.5" SATA SSD, 9x M.2 SSD, and 1x PCIe AIC SSD				
Power supply	Supports one of the following: <ul style="list-style-type: none"> • One fixed 690W, autosensing, 92%, 80 PLUS Platinum qualified • One fixed 900W, autosensing, 92%, 80 PLUS Platinum qualified 				
Media reader	SD USB 2.0 card reader on most models. Optional UHS-II 15-in-1 USB 3.1 Gen 1 reader on flex module				
Network interfaces	Integrated one gigabit ethernet (Intel i219LM), supports Wake-on-LAN. Optional PCIe ethernet or wireless adapters 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. 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 panel warning LED. ThinkStation 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, 1x RJ-45, 3x analog audio ports (line-in, line-out, mic-in), 2x PS/2				
Optional ports	Front:				
	<ul style="list-style-type: none"> • 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:				
<ul style="list-style-type: none"> • 1x COM port • 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W 					
Internal:					
<ul style="list-style-type: none"> • 1x internal USB 3.1 Gen 1 port 					

ThinkStation P520 Platform Specifications - II of II

Product Specifications Reference (PSREF)

Environmental specification	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)
	Temperature - storage (with package)	-40 °F to 140 °F (-40 °C to 60 °C)
	Altitude - operating	(Unpressurized): -50ft-10000ft (-15.2m-3048m)
	Humidity - operating	10%~80%, non-condensing
	Humidity - storage (with package)	10%~90%, non-condensing
Environmental Certifications	RoHS-compliant. GREENGUARD. EPEAT Silver rating. ENERGY STAR 6.1 qualified on model 30BE0008US and 30BE0009US	
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 P520c Platform Specifications

Product Specifications Reference (PSREF)

Form factor	25L Tower						
Dimensions	175mm/6.89" W x 426mm/16.77" D x 376mm/14.8" H (with feet)						
Weight	Maximum configuration: 31.97 lb (14.5kg)						
Processor Support	Processor	# of Cores	# of Threads	Base Frequency	Cache	TDP	Memory Types
	Xeon W-2245	8	16	3.9GHz	16.5MB	155W	DDR4-2933
	Xeon W-2235	6	12	3.8GHz	8.25MB	130W	DDR4-2933
	Xeon W-2225	4	8	4.1GHz	8.25MB	105W	DDR4-2933
	Xeon W-2223	4	8	3.6GHz	8.25MB	120W	DDR4-2666
	Xeon W-2195	18	36	2.3GHz	24.75MB	140W	DDR4-2666
	Xeon W-2175	14	28	2.5GHz	19MB	140W	DDR4-2666
	Xeon W-2155	10	20	3.3GHz	13.75MB	140W	DDR4-2666
	Xeon W-2145	8	16	3.7GHz	11MB	140W	DDR4-2666
	Xeon W-2135	6	12	3.7GHz	8.25MB	140W	DDR4-2666
	Xeon W-2133	6	12	3.6GHz	8.25MB	140W	DDR4-2666
	Xeon W-2125	4	8	4.0GHz	8.25MB	120W	DDR4-2666
	Xeon W-2123	4	8	3.6GHz	8.25MB	120W	DDR4-2666
Xeon W-2104	4	4	3.2GHz	8.25MB	120W	DDR4-2400	
Xeon W-2102	4	4	2.9GHz	8.25MB	120W	DDR4-2400	
Processor Sockets	1x FCLGA2066						
Chipset	Intel C422 Chipset						
Memory Sockets	4 DIMM sockets with 4 channels						
Memory Types	DDR4-2666 RDIMM or DDR4-2933 RDIMM						
Memory Capacity	256GB with 4 x 64GB RDIMMs						
Memory Protection	ECC						
Expansion slots	Slot 1 (CPU)	PCIe 3.0 x16, full height, full length, 75W,					
	Slot 2 (CPU)	PCIe 3.0 x8, full height, full length, 25W, open ended					
	Slot 3 (CPU)	PCIe 3.0 x16, full height, full length, 75W					
	Slot 4 (PCH)	PCIe 3.0 x4, full height, half length, 25W, open ended					
Discrete Graphics Offering	Graphics	Memory	Power	Connector	SLI / NV-link	Max Qty	
	NVS 810	4GB DDR3	68W	8xmini DP		1	
	Quadro P400	2GB GDDR5	30W	3xminiDP		2	
	Quadro P600	2GB GDDR5	45W	4xminiDP		2	
	Quadro P620	2GB GDDR5	40W	4x miniDP		2	
	Quadro P1000	4GB GDDR5	50W	4xminiDP		2	
	Quadro P2000	5GB GDDR5	75W	4xDP		2	
	Quadro P4000	8GB GDDR5	120W	4xDP		2	
Quadro P5000	16GB GDDR5X	180W	DVI-D DL+4xDP		1		
Quadro RTX 4000	8GB GDDR6	160W	3xDP, 1xVirtualLink		1		
Storage Controller	Storage Controller	Type	Interface		RAID	Cache	
	Onboard Intel RSTe	Std	SATA 6Gb/s		0/1/10/5	-	
	9440-8i PCIe	Opt	SAS 12Gb/s, SATA 6Gb/s		0/1/10/5	-	
	NVMe Basic	Opt	PCIe NVMe		0/1/10	-	
	NVMe for Intel SSD	Opt	PCIe NVMe		0/1/10/5	-	
Storage Support	Disk Type	Interface	RPM	Offering		Max Qty	
	3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/2TB/4TB/6TB		4	
	2.5" SATA HDD	SATA 6Gb/s	7.2K	500GB/500GB FIPS		4	
	2.5" SATA SSD	SATA 6Gb/s		256GB/512GB/1TB/2TB		4	
	M.2 PCIe SSD	PCIe NVMe		256GB/512GB/1TB/2TB		5	

Max Storage	Supports up to 5x M.2 SSD + 4x 3.5" HDD/4x 2.5" SSD/4x 2.5" HDD All HDD: 24TB using 4x 3.5" HDD All SSD: 18TB using 4x 2.5" SATA SSD and 5x M.2 SSD												
Power supply	One fixed 500W, autosensing, 92%, 80 PLUS Platinum qualified												
Media reader	SD USB 2.0 card reader on most models. Optional UHS-II 15-in-1 USB 3.1 Gen 1 reader on flex module												
Network interfaces	Integrated one gigabit ethernet (Intel i219LM), supports Wake-on-LAN. Optional PCIe ethernet or wireless adapters 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. 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	ThinkStation Diagnostics for Windows. 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	2x USB 3.1 Gen 1, microphone (3.5mm), headphone (3.5mm)												
Rear ports	2x USB 2.0, 4x USB 3.1 Gen 1, 1x RJ-45, 3x analog audio ports (line-in, line-out, mic-in), 2x PS/2												
Optional ports	Supports the following optional ports: Front: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 1x COM port 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W Internal: <ul style="list-style-type: none"> 1x internal USB 3.1 Gen 1 port 												
	Environmental specification	<table border="1"> <tr> <td>Temperature - operating</td> <td>50 °F to 95 °F (10 °C to 35 °C)</td> </tr> <tr> <td>Temperature - storage (no package)</td> <td>14 °F to 140 °F (-10 °C to 60 °C)</td> </tr> <tr> <td>Temperature - storage (with package)</td> <td>-40 °F to 140 °F (-40 °C to 60 °C)</td> </tr> <tr> <td>Altitude - operating</td> <td>(Unpressurized): -50ft-10000ft (-15.2m-3048m)</td> </tr> <tr> <td>Humidity - operating</td> <td>10%~80%, non-condensing</td> </tr> <tr> <td>Humidity - storage (with package)</td> <td>10%~90%, non-condensing</td> </tr> </table>	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)	Temperature - storage (with package)	-40 °F to 140 °F (-40 °C to 60 °C)	Altitude - operating	(Unpressurized): -50ft-10000ft (-15.2m-3048m)	Humidity - operating	10%~80%, non-condensing	Humidity - storage (with package)
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)												
Temperature - storage (with package)	-40 °F to 140 °F (-40 °C to 60 °C)												
Altitude - operating	(Unpressurized): -50ft-10000ft (-15.2m-3048m)												
Humidity - operating	10%~80%, non-condensing												
Humidity - storage (with package)	10%~90%, non-condensing												
Environmental Certifications	RoHS-compliant. GREENGUARD. EPEAT Silver rating. ENERGY STAR 6.1 qualified on model 30BX0008US and 30BX0009US												
ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/												
Storage Bays	Bay Type	Maximum Drives Qty											
	M.2 slot	5x M.2 SSD (2 onboard, 3 via PCIe to M.2 adapter)											
	Flex Bay	2 flex bays. Supports the following: <ul style="list-style-type: none"> 2x half-height optical drives 2x 5.25" 9.0mm optical drives 1x 5.25" 9.0mm optical drive + 2x 3.5"/2.5" SATA SSD/HDD 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure 1x flex module for the following options: <ul style="list-style-type: none"> Tray 1: 9.0mm optical Tray 2: 15-in-1 USB 3.1 Gen 1 reader, 2x Thunderbolt, or 4-digit diagnostic display Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA 2x M.2 SSD with 2x Front Removable Drive Enclosures 											
Disk bay	Up to 2x 3.5"/2.5" disks with 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](#)



Expansion slots

Slot 1 (CPU2)	PCIe 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

900W PSU supports two 6+2-pin aux power connectors.
690W PSU supports one 6+2-pin aux power connector.

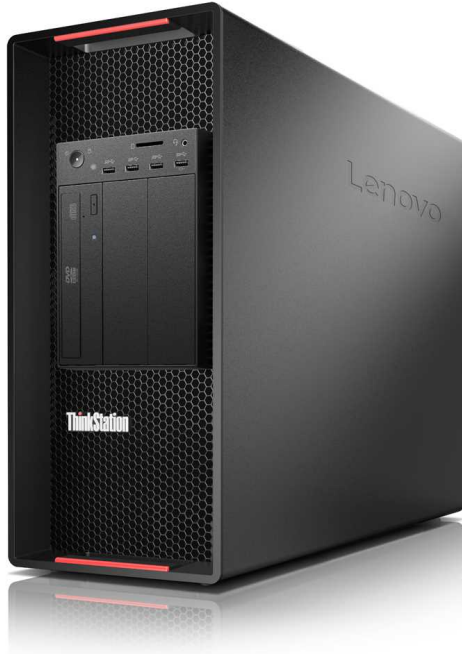
Note: All expansion cards are optional

ThinkStation P720 Platform Specifications

Power supply	Supports one of the following: <ul style="list-style-type: none"> • One fixed 690W, autosensing, 92%, 80 PLUS Platinum qualified • One fixed 900W, autosensing, 92%, 80 PLUS Platinum qualified 	
Media reader	SD USB 2.0 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 panel warning LED. ThinkStation Diagnostics for Windows. Photo-audio transfer with Lenovo PC Diagnostics 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	Supports the following optional ports: Front: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 1x COM port • 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W Internal: <ul style="list-style-type: none"> • 1x internal USB 3.1 Gen 1 port 	
Environmental specification	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)
	Temperature - storage (with package)	-40 °F to 140 °F (-40 °C to 60 °C)
	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)
	Humidity - operating	10%~80%, non-condensing
	Humidity - storage (with package)	10%~90%, non-condensing
Environmental Certifications	RoHS-compliant. GREENGUARD. EPEAT Silver rating. ENERGY STAR 6.1 qualified 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 (PSREF)

Form factor	55L Tower
Dimensions	200mm/7.87" W x 620mm/24.4" D x 446mm/17.56" H (with feet)
Weight	Maximum configuration: 71.3 lb (32.3kg)
Processor Sockets	2x FCLGA3647
Processor Support	Up to two 205 W Gen 1 or Gen 2 Intel Xeon Scalable family processors, Bronze, Silver, Gold, or Platinum

	Processor	# of Cores	# of Threads	Base Frequency	Cache	TDP	Memory Types
	Processor Offering	Xeon Platinum 8280	28	56	2.7GHz	39MB	205W
Xeon Gold 6254		18	36	3.1GHz	25MB	200W	DDR4-2933
Xeon Gold 6244		8	16	3.6GHz	25MB	150W	DDR4-2933
Xeon Gold 6242		16	32	2.8GHz	22MB	150W	DDR4-2933
Xeon Gold 6238T		22	44	1.9GHz	30MB	125W	DDR4-2933
Xeon Gold 6234		8	16	3.3GHz	25MB	130W	DDR4-2933
Xeon Gold 6230		20	40	2.1GHz	28MB	125W	DDR4-2933
Xeon Gold 6226		12	24	2.7GHz	19MB	125W	DDR4-2933
Xeon Gold 5222		4	8	3.8GHz	16.5MB	105W	DDR4-2933
Xeon Gold 5218		16	32	2.3GHz	22MB	125W	DDR4-2666
Xeon Gold 5217		8	16	3.0GHz	11MB	115W	DDR4-2666
Xeon Gold 5215		10	20	2.5GHz	13.75MB	85W	DDR4-2666
Xeon Silver 4216		16	32	2.1GHz	22MB	100W	DDR4-2400
Xeon Silver 4215		8	16	2.5GHz	11MB	85W	DDR4-2400
Xeon Silver 4214		12	24	2.2GHz	17MB	85W	DDR4-2400
Xeon Silver 4210		10	20	2.2GHz	14MB	85W	DDR4-2400
Xeon Silver 4209T		8	16	2.2GHz	11MB	70W	DDR4-2400
Xeon Silver 4208		8	16	2.1GHz	11MB	85W	DDR4-2400
Xeon Bronze 3204		6	6	1.9GHz	8.25MB	85W	DDR4-2133
Xeon Platinum 8160T		24	48	2.1GHz	33MB	150W	DDR4-2666
Xeon Gold 6154	18	36	3.0GHz	24.75MB	200W	DDR4-2666	
Xeon Gold 6142	16	32	2.6GHz	22MB	150W	DDR4-2666	
Xeon Gold 6136	12	24	3.0GHz	24.75MB	150W	DDR4-2666	
Xeon Gold 6134	8	16	3.2GHz	24.75MB	130W	DDR4-2666	
Xeon Gold 6128	6	12	3.4GHz	19.25MB	115W	DDR4-2666	
Xeon Gold 5122	4	8	3.6GHz	16.5MB	105W	DDR4-2666	
Xeon Gold 5120T	14	28	2.2GHz	19.25MB	105W	DDR4-2400	
Xeon Gold 5118	12	24	2.3GHz	16.5MB	105W	DDR4-2400	
Xeon Gold 5115	10	20	2.4GHz	13.75MB	85W	DDR4-2400	
Xeon Silver 4116	12	24	2.1GHz	16.5MB	85W	DDR4-2400	
Xeon Silver 4114T	10	20	2.2GHz	13.75MB	85W	DDR4-2400	
Xeon Silver 4114	10	20	2.2GHz	13.75MB	85W	DDR4-2400	
Xeon Silver 4112	4	8	2.6GHz	8.25MB	85W	DDR4-2400	
Xeon Silver 4110	8	16	2.1GHz	11MB	85W	DDR4-2400	
Xeon Silver 4109T	8	16	2.0GHz	11MB	70W	DDR4-2400	
Xeon Silver 4108	8	16	1.8GHz	11MB	85W	DDR4-2400	

Chipset	Intel C621 Chipset
Memory Sockets	16 DIMM sockets with 12 channels. 8 DIMM sockets with 6 channels per processor
Memory Types	DDR4-2666 RDIMM, DDR4-2666 LRDIMM, or DDR4-2933 RDIMM
Memory Capacity	1TB (DDR4-2666 LRDIMM or DDR4-2933 RDIMM) or 512GB (DDR4-2666 RDIMM)
Memory Protection	ECC

Expansion slots	Slot 1 (CPU1)	PCIe 3.0 x16, full height, full length, 75W, double-width
	Slot 2 (CPU1)	PCIe 3.0 x4, full height, full length, 25W, open ended
	Slot 3 (CPU1)	PCIe 3.0 x16, full height, full length, 75W, double-width
	Slot 4 (CPU1)	PCIe 3.0 x4, full height, full length, 25W, open ended
	Slot 5 (PCH)	PCIe 3.0 x4, full height, half length, 25W, open ended
	Slot 6 (CPU2)	PCIe 3.0 x16, full height, half length, 75W
	Slot 7 (CPU2)	PCIe 3.0 x16, full height, full length, 75W, double-width
	Slot 8 (CPU2)	PCIe 3.0 x16, full height, full length, 75W

	Graphics	Memory	Power	Connector	SLI / NVLink	Max Qty
	Discrete Graphics Offering	NVS 810	4GB DDR3	68W	8xmini DP	
Quadro P400		2GB GDDR5	30W	3xminiDP		5
Quadro P600		2GB GDDR5	45W	4xminiDP		4
Quadro P620		2GB GDDR5	40W	4xminiDP		4
Quadro P1000		4GB GDDR5	50W	4xminiDP		4
Quadro P2000		5GB GDDR5	75W	4xDP		4
Quadro P4000		8GB GDDR5	120W	4xDP		4
Quadro P5000		16GB GDDR5X	180W	DVI-D DL+4xDP	SLI	3
Quadro P6000		24GB GDDR5X	250W	DVI-D DL+4xDP	SLI	3
Quadro RTX 4000		8GB GDDR6	160W	3xDP, 1xVirtualLink		3
Quadro RTX 5000		16GB GDDR6	265W	4xDP, 1xVirtualLink	NVLink	3
Quadro RTX 6000		24GB GDDR6	295W	4xDP, 1xVirtualLink	NVLink	2
Quadro RTX 8000		48GB GDDR6	295W	4xDP, 1xVirtualLink	NVLink	2
Quadro GP100		16GB HBM2	235W	1xDVI-D DL, 4xDP	NVLink	3
Quadro GV100		32GB HBM2	250W	4xDP	NVLink	3

	Storage Controller	Type	Interface	RAID	Cache
	Storage Controller	Onboard Intel RSTe	Std	SATA 6Gb/s	0/1/10/5
9440-8i PCIe		Opt	SAS 12Gb/s, SATA 6Gb/s	0/1/10/5	
9460-16i PCIe		Opt	SAS 12Gb/s, SATA 6Gb/s	0/1/10/5/6	4GB DDR4, SuperCap
NVMe Basic		Opt	PCIe NVMe	0/1/10	
NVMe Premium		Opt	PCIe NVMe	0/1/10/5	
NVMe for Intel SSD		Opt	PCIe NVMe	0/1/10/5	

	Disk Type	Interface	RPM	Offering	Max Qty (9460 used)
	Storage Support	3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/2TB/4TB/6TB
2.5" SATA HDD		SATA 6Gb/s	7.2K	500GB/500GB FIPS	10
2.5" SAS HDD		SAS 12Gb/s	10K	300GB/600GB	8
2.5" SATA SSD		SATA 6Gb/s		256GB/512GB/1TB/2TB	10
2.5" PCIe SSD		PCIe NVMe		1.5TB	4
M.2 PCIe SSD		PCIe NVMe		256GB/512GB/1TB/2TB	9
PCIe AIC SSD		PCIe NVMe		480GB	2

	Bay Type	Maximum Drives Qty
	Storage Bays	M.2 slot
Flex Bay		2x 3.5" or 2.5" disks. Supports the following: <ul style="list-style-type: none"> • 3x half-height optical drives • 2x 5.25" 9.0mm optical drives • 1x 5.25" 9.0mm optical drive + 1x 3.5"/2.5" SATA SSD/HDD • 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 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 <ul style="list-style-type: none"> • 3x M.2 SSD with 3x Front Removable Drive Enclosures
Disk bay		8 disk drives with 4 bays (2 bays standard, 2 bays optional). Supports one of the following configurations: <ul style="list-style-type: none"> • 4x 3.5" SATA HDD • 4x 3.5" SATA HDD + 4x 2.5" SATA SSD/HDD • 8x 2.5" SATA SSD/HDD or 8x 2.5" SAS HDD

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	SD USB 2.0 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 1x COM port • 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W Internal: <ul style="list-style-type: none"> • 1x internal USB 3.1 Gen 1 port 	
Environmental specification	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)
	Temperature - storage (with package)	-40 °F to 140 °F (-40 °C to 60 °C)
	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)
	Humidity - operating	10%~80%, non-condensing
	Humidity - storage (with package)	10%~90%, non-condensing
Environmental Certifications	RoHS-compliant. GREENGUARD. EPEAT Silver rating. ENERGY STAR 6.1 qualified on model 30BC0008US and 30BC0009US	
ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/	

Note:

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2. Any questions or advice on ThinkStation PSREF, please contact [ThinkStation PSREF developer \(houyf@lenovo.com\)](mailto:houyf@lenovo.com)

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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.

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

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PSREF

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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.

January, 2020 - Version 554

Additions in this update

▶ **New product(s)**

ThinkVision P27q-20

ThinkVision T27q-20

ThinkVision T27h-20

ThinkVision T32h-20

ThinkVision S28u-10

▶ **New model(s)**

None

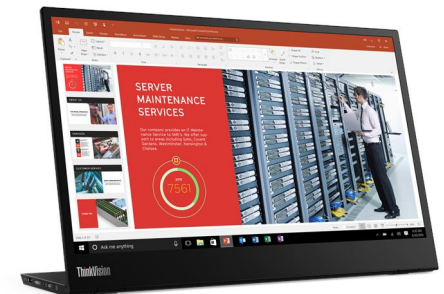
▶ **Others**

None

Withdrawals in this update

▶ **Withdrawn product(s)**

None



ThinkVision M14 USB-C MOBILE MONITOR

Lenovo



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.



Extreme Portability



Superior Connectivity



Remarkable Flexibility

ACHIEVE TARGETS ON THE GO

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.



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



Weight
570g



Screen Size
14 inches



Brightness
300 nits (Typical)



EXPERIENCE ADVANCED CONNECTIVITY

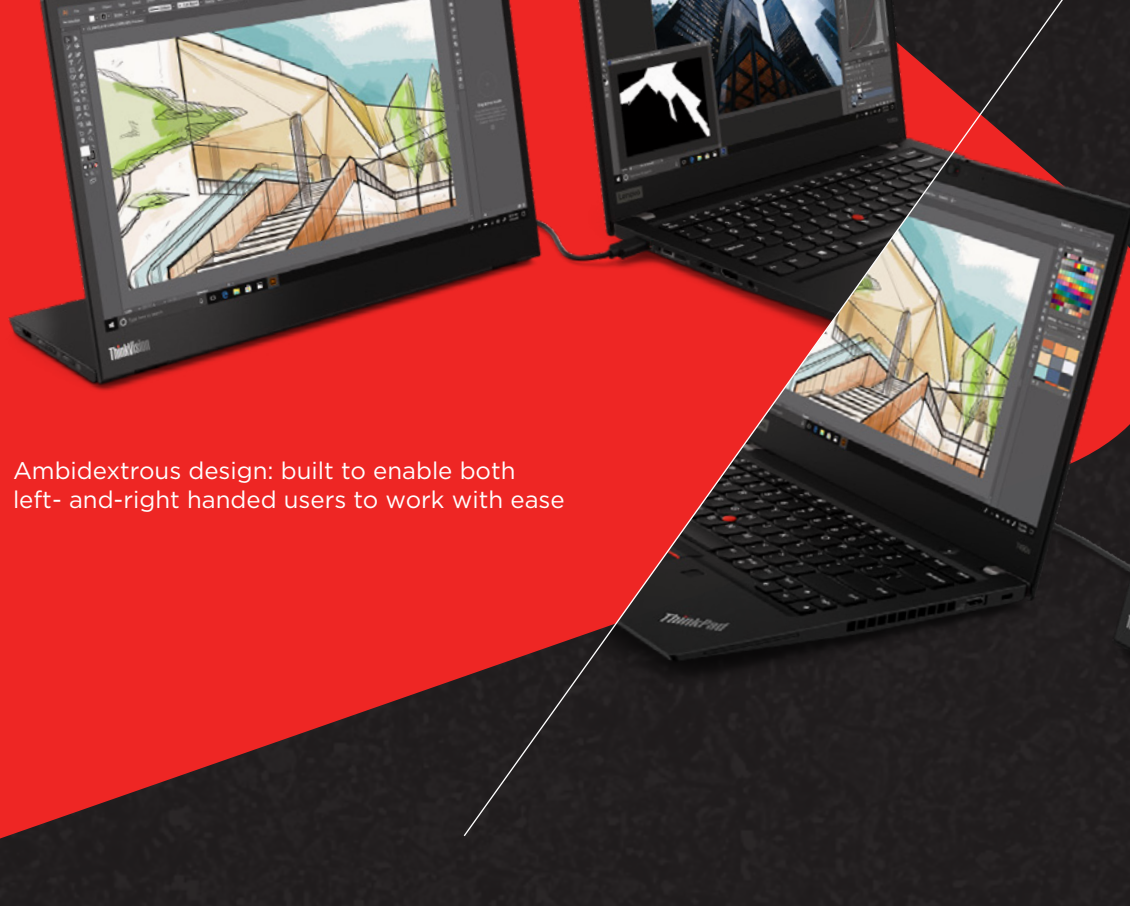
Two innovative USB Type-C ports on either side of the monitor make connectivity effortless. These ports support both power and video delivery simultaneously from a single port. The ThinkVision M14 also offers a 'power pass through' design that powers the mobile monitor by an adapter and charges the notebook 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



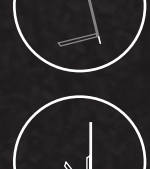
Cable
USB Type-C to C



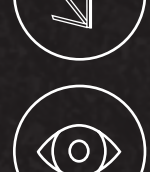
Ambidextrous design: built to enable both left- and right-handed users to work with ease

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 0°-90°



Monitor Stand
Tilt -5°-90°



Eye-care Technology
Low blue light



Height Adjustable Foot
Tilt angle: 0°-90°

Monitor Stand
Tilt angle: -5°-90°

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

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

TECH SPECS

LCD PANEL

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

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/m²

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

CONNECTIVITY

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

POWER

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

ENERGY STAR® Power Consumption (P_{on})
4.88 W

ENERGY STAR® Power Consumption (E_{TEC})
15.53 kWh

Power Consumption Sleep/Off Mode
< 0.3 W

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

MECHANICAL

Tilt Angle (front/back)
-5° / 90°

Mounting Support
Yes (100 mm)

Kensington™ 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

DIMENSIONS

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 (mm²)
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.

WHATS IN THE BOX

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

ENVIRONMENTAL

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

Altitude - Non-operating
0 to 40,000 ft

Arsenic-free Glass
Yes

PVC free
Yes

Mercury free
Yes

PCC % of plastic resins
85%

WARRANTY

Geography Availability
WW

Warranty
3 Years

CERTIFICATIONS

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)




© 2019 Lenovo. All rights reserved. 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. These products are available while supplies last. Prices shown are subject to change without notice. For any questions concerning prices, please contact your Lenovo Account Executive. Lenovo is not responsible for photographic or typographic errors. Warranty: For a copy of applicable warranties, write to: Warranty Information, 500 Park Offices Drive, RTP, NC 27709, Attn: Dept. 229VA/B600. Lenovo makes no representation or warranty regarding third-party products or services. Trademarks: Lenovo, the Lenovo logo, Rescue and Recovery, ThinkPad, ThinkCentre, ThinkStation, ThinkVantage, and ThinkVision are trademarks or registered trademarks of Lenovo. Microsoft, Windows, and Vista are registered trademarks of Microsoft Corporation. Intel, the Intel logo, Intel Inside, Intel Core, and Core Inside are trademarks of Intel Corporation in the U.S. and/or other countries. Other company, product, and service names may be trademarks or service marks of others.




<p>Name E1922s Wide Flat Panel Monitor Case color Black Type-model 60G2AAR6US / 60G2AAT6EU Panel TFT-LCD, twisted nematic (TN), White LED backlight Viewable image size 18.5" (470mm) diagonal Max view area (W x H) 16.1" x 9.1" / 409.8mm x 230.4mm Native resolution 1366x768 Aspect ratio 16:9 Pixel pitch (mm) 0.3mm Dot/Pixel per Inch 85 dpi Brightness 200 nits or cd/m² (typical) Contrast ratio 600:1 (typical) Pixel response time 5ms (typical) Color gamut 72% Viewing angle at 10:1 CR 180° (+/- 90°) horizontal, 100° (+/- 50°) vertical Stand Tilt adjustable stand Bezel width Sides: 0.73" (18.5mm) Dimensions (HxWxD) 13.44" H x 17.65" W x 6.58" D; 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 warranty⁴ 3 year (includes backlight) Available date March 2014</p>	<p>Features</p> <ul style="list-style-type: none"> • Widescreen 18.5-inch monitor • Supports HD 1366x768 resolution • Supports VESA mount (100mm) • Mercury free panel and arsenic free glass • Kensington lock slot ready for enhanced security • Support Lenovo Tiny PC via VESA mount • Supports optional soundbar • Microsoft® Windows® 7 certified • Microsoft Windows 8 / Windows 8.1 certified 				
<p>VESA-compliant² VESA DPMS-compliant Power management ENERGY STAR® 7.0 Ergonomics ISO 9241-307 Emission standards FCC Class B Environmental TCO (TCO Displays 7.0), WEEE, RoHS, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision E1922s Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600, 832x624 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA: 1366x768</p> <p>Presets / user settings Standard presets: 15 user settings: 16</p>					
<p>Viewing adjustments Tilt: 20° backward, -5° forward Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (control buttons on front) for automatic image setup and adjustment for brightness Multiple input None Monitor connectors 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 FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship group Monitor with stand, 1.8 meter analog signal cable, 1.8 meter black power cord</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				




<p>Name E2054 Wide Flat Panel Monitor Case color Raven black Type-model 60DFAAR1US / 60DFAAT1EU Panel TFT-LCD, In-Plane Switching (IPS), LED backlight Viewable image size 19.5" (494mm) diagonal Max view area (W x H) 16.48" x 10.33" / 418.6mm x 262.4mm Native resolution 1440x900 Aspect ratio 16:10 Pixel pitch (mm) 0.097mm x 0.292mm Dot/Pixel per Inch 87 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 7ms (typical) Color gamut 72% Viewing angle at 10:1 CR 178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Stand Tilt adjustable stand Bezel width Top: 0.71" (18.0mm) Bottom: 0.70" (17.9mm) Sides: 1.02" (26.0mm) Dimensions (HxWxD) 14.65" H x 17.95" W x 7.41" D; 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</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 19.5-inch monitor • Supports HD 1440x900 resolution • Supports VESA mount (100mm) • Mercury free panel and arsenic free glass • Kensington lock slot ready for enhanced security • Support Lenovo Tiny PC via VESA mount • Microsoft® Windows® 7 certified • Microsoft Windows 8 / Windows 8.1 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DPMS-compliant Power management ENERGY STAR® 6.0 Ergonomics ISO 9241-307 Emission standards FCC Class B Environmental TCO (TCO Displays 6.0), WEEE, RoHS, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision E2054 Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x480, 720x400 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x768, 1280x1024 WXGA: 1366x768 WXGA+: 1440x900</p> <p>Presets / user settings Standard presets: 18 user settings: 10</p>					
<p>Viewing adjustments Tilt: 22° backward, -5° forward Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (control buttons on front) for automatic image setup and adjustment for brightness Multiple input None Monitor connectors 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 FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship group Monitor with stand, 1.8 meter analog signal cable, 1.8 meter black power cord</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				




<p>Name LT1913p Square Flat Panel Monitor Case color Black Type-model 60FBHAR1US / 60FBHAT1EU Panel TFT-LCD, In-Plane Switching (IPS), White LED backlight</p> <p>Viewable image size 19.0" (480.0mm) diagonal Max view area (W x H) 14.76" x 11.80" (374.7mm x 299.8mm) Optimum resolution 1280x1024 Max pixel rate 205MHz (VGA), 165MHz (DVI) Aspect ratio 5:4 Pixel pitch (mm) 0.0976 (H) x 0.2928 (V) mm Dot/Pixel per Inch 86.8 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 7ms (typical) Color gamut 72% Viewing angle at 10:1 CR 178° horizontal, 178° vertical</p> <p>Stand Tilt, swivel, pivot, and height adjustable stand Bezel width <i>Sides: 0.68" (17.4mm); top: 0.68" (17.4mm); bottom: 0.68" (17.4mm)</i></p> <p>Dimensions (HxWxD) 14.63" H x 16.18" W x 10.40" D; 371.5mm H x 411.0mm W x 264.2mm D</p> <p>Power supply 24 watts typical, 27 watts maximum, <0.5 watts standby/suspend, universal, integrated (no external brick-like power supply) 10.69 lb; 4.85kg</p> <p>Weight 10.69 lb; 4.85kg Limited warranty⁴ 3 year (includes backlight) Available date April 2015</p>	<p>Features</p> <ul style="list-style-type: none"> • 19-inch Square IPS LED backlight panel • Supports 1280x1024 resolution • Supports ThinkCentre Tiny Clamp Bracket • Mercury and arsenic free glass • Low Halogen • Recycled content in plastic material • Supports optional soundbar • Microsoft® Windows® 7 certified • Microsoft Windows 8 / Windows 8.1 certified • Microsoft Windows 10 certified 								
<p>VESA-compliant² VESA DDC2B/C1, 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, EPEAT™ Silver rating, ULE Gold</p> <p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600, 823x624 XGA: 1024x768, 1152x864, 1152x900 SXGA: 1280x1024</p> <p>Presets / user settings Standard presets: 20; user settings: 20</p>	 <p>ThinkVision LT1913p Square Monitor</p>								
<p>Viewing adjustments <i>Tilt: 30° back, -5° forward; lift: 4.3" (110mm); swivel: +/- 45°</i> Rotating screen Screen pivots 90 degrees from landscape to portrait On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for automatic image setup, input switch, and brightness Multiple input Dual input (two different PCs attach to two different connectors; 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, HDCP-compliant</p> <p>Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 1.8 meter (2) detachable, DVI-D at each end, digital, 1.8 meter</p> <p>Mounting features Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p> <p>Ship group Monitor, attached stand, Setup poster, Safety and Warranty Information, 1.8 meter analog signal cable, 1.8 meter DVI-D cable, 1.8 meter black power cord</p>									
<p>Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p>Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td>73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td>45K1620</td> </tr> <tr> <td>Lenovo Security Cable Lock</td> <td>57Y4303</td> </tr> <tr> <td>Lenovo Easy Reach Monitor Stand</td> <td>55Y9258</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620	Lenovo Security Cable Lock	57Y4303	Lenovo Easy Reach Monitor Stand	55Y9258
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<p>Name T1714 Square Flat Panel Monitor Case color Black Type-model 60FDHAR1US / 60FDHAT1EU Panel TFT-LCD, twisted nematic (TN), White LED backlight Viewable image size 17.0" (432mm) diagonal Max view area (W x H) 13.3" x 10.6" (337.9mm x 270.3mm) Optimum resolution 1280x1024 Aspect ratio 5:4 Pixel pitch (mm) 0.264mm Dot/Pixel per Inch 96 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) 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) Dimensions (HxWxD, including stand) 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) Weight 5.75 lb; 2.61kg Limited warranty 3 year (includes backlight) Available date September 2015</p>	<p>Features</p> <ul style="list-style-type: none"> • 17-inch Square LCD monitor • Supports SXGA 1280x1024 resolution • Includes dual input connection for attachment to two systems concurrently (analog and digital) • Mercury Arsenic free glass • Supports optional soundbar • Microsoft® Windows® 7 certified • Microsoft Windows 8 certified • Microsoft Windows 8.1 certified • Microsoft Windows 10 certified 						
<p>VESA-compliant VESA DDC2B/CI Power management 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, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision T1714 Monitor</p> </div>						
<p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600 XGA: 1024x768, 1152x864, SXGA: 1280x800, 1280x1024</p> <p>Presets / user settings Standard presets: 17; user settings: 17</p>							
<p>Viewing adjustments Tilt: 22° back, -5° forward Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for automatic image setup and brightness Multiple input Dual input (two different PCs attach to two different connectors; 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, HDCP-compliant Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 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 FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>							
<p>Ship group Monitor and stand, Setup poster, Safety and Warranty Information, 1.8 meter analog signal cable, 1.8 meter DVI-D cable, 1.8 meter black power cord</p>	<p>Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p> <p>Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td>73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td>45K1620</td> </tr> <tr> <td>Lenovo Easy Reach Monitor Stand</td> <td>55Y9258</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620	Lenovo Easy Reach Monitor Stand	55Y9258
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Lenovo Easy Reach Monitor Stand	55Y9258						



<p>Name T1714p Square Flat Panel Monitor Case color Black Type-model 60FELAR1US / 60FELAT1EU Panel TFT-LCD, twisted nematic (TN), White LED backlight Viewable image size 17.0" (432mm) diagonal Max view area (W x H) 13.3" x 10.6" (337.9mm x 270.3mm) Optimum resolution 1280x1024 Aspect ratio 5:4 Pixel pitch (mm) 0.264mm Dot/Pixel per Inch 96 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 5ms (typical) Color gamut 72% Viewing angle at 10:1 CR 170° (+/- 85°) horizontal, 160° (+/- 80°) vertical Stand Tilt height adjustable stand Bezel width Sides: 0.69" (17.5mm) Dimensions (HxWxD, including stand) 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</p>	<p>Features</p> <ul style="list-style-type: none"> • 17-inch Square LCD monitor • Supports SXGA 1280x1024 resolution • Includes dual input connection for attachment to two systems concurrently (analog and digital) • Mercury Arsenic free glass • Supports Lenovo Tiny PC and 3rd party thin client via optional Lenovo bracket • Supports optional soundbar • Microsoft® Windows® 7 certified • Microsoft Windows 8 certified • Microsoft Windows 8.1 certified • Microsoft Windows 10 certified 						
<p>VESA-compliant VESA DDC2B/CI Power management 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, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision T1714p Monitor</p> </div>						
<p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600 XGA: 1024x768, 1152x864, SXGA: 1280x800, 1280x1024 Presets / user settings Standard presets: 22; user settings: 22</p>							
<p>Viewing adjustments Tilt: 22° back, -5° forward; lift: 4.3" (110mm) Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for automatic image setup and brightness Multiple input Dual input (two different PCs attach to two different connectors; 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, HDCP-compliant (3) DisplayPort, digital, black, HDCP-compliant Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 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 FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>	<p>Ship group Monitor and stand, Setup poster, Safety and Warranty Information, 1.8 meter analog signal cable, 1.8 meter DVI-D cable, 1.8 meter black power cord</p>						
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> <tr> <td>Lenovo Easy Reach Monitor Stand</td> <td style="text-align: right;">55Y9258</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620	Lenovo Easy Reach Monitor Stand	55Y9258
Kensington MicroSaver Cable Lock	73P2582						
Kensington Twin Head Cable Lock	45K1620						
Lenovo Easy Reach Monitor Stand	55Y9258						



Lenovo™ ThinkVision® T2054p Monitor

SPECIFICATIONS

DISPLAY		MECHANICAL	
Panel Size	19.45"	Tilt Angle (Front / Back)	-5° - 22°
Panel Type	IPS	Swivel Angle (Left / Right)	-45° - 45°
Backlit	WLED	Lift (mm)	110
Viewable Area (Diagonal)	19.45"	Pivot	No
Screen Dimensions (W x H) (mm)	262.35 x 418.61	VESA [®] Mount (mm)	100 x 100
Resolution	1440 x 900	Kensington [®] Lock Slot	Yes
Aspect Ratio	16:10	Cable Management	Yes
Viewing Angle (H/V at CR 10:1)	178° / 178°	Ambient Light Sensor	No
Maximum Brightness (Typical)	250 cd/m ²	Control Buttons	Yes
Contrast Ratio (Typical)	1000:1	Bezel Color	Raven Black
Pixel Pitch (W x H) (mm)	0.0969 x 0.2915	Bezel Width (Side) (mm / inches)	17 / 0.67"
Dot/Pixel Per Inch (DP / PPI)	87.3	Bezel Width (Top / Bottom) (mm / inches)	17 / 0.67"
Color Gamut (CIE 1931)	72%		
Number of Colors	16.7 M		
Response Time	7 ms		
Anti-Glare	Yes		
SIGNAL INPUT		SIGNAL INTERFACE / PERFORMANCE	
Video Input Signals	VGA, HDMI™, DisplayPort™	Horizontal Frequency	30 kHz - 81 kHz
Video Cables Supplied	VGA	Vertical Frequency	50 Hz - 75 Hz
Video Cable Length	1.8 m	Native Resolution	1440 x 900
USB Hub	No	Maximum Pixel Clock Speed / Bandwidth	VGA : 150 MHz HDMI™ : 150 MHz DisplayPort™: 150 MHz
USB Cable Supplied	No	Default Color Temperature	7200K
		Preset Display Modes	22
		User-defined Display Modes	16
		OSD Buttons	5
		OSD Languages	8
POWER CONSUMPTION		COMPLIANCE	
Power Consumption		EPEAT™	Silver
Typical	14.5 W	ENERGY STAR® Rating	6.0
Max. without USB Hub	21 W	ULE	Gold
Max. with USB Hub	N/A	TCO [®]	6.0
Sleep-Mode	0.3 W	TCO [®] Edge	2.0
Off-Mode	0.3 W	TUV	Yes
Heat Dissipation		GREENGUARD [®]	No
Typical	49.45 Btu/h	RoHS (EU 2002/95/EC)	Yes
Max.	71.61 Btu/h	Windows Certification	Windows 7, Windows 8, Windows 8.1, Windows 10
Power Supply	Internal	China Energy Efficiency Standard	Tier 1
Power Voltage	90 - 264 VAC, 1.5 A		
Voltage Dynamic Frequency	47 - 63 Hz		
DIMENSIONS (W X D X H)		ENVIRONMENTAL	
Size Packed		Temperature	
(mm)	509 x 176 x 368	Operating	0 °C - 45 °C
(inches)	20.04" x 6.93" x 14.49"	Non-operating	-20 °C - 60 °C (non-condensing)
Size Unpacked with Stand		Humidity	
(mm)	454.2 x 242.6 x 345.9 - 455.9	Operating	10% - 80%
(inches)	17.88" x 9.55" x 13.62" - 17.95"	Non-operating	5% - 95% (non-condensing)
Size Unpacked without Stand (Head Only)		Altitude	
(mm)	454.2 x 53 x 297.9	Operating	8,000 ft
(inches)	17.88" x 2.09" x 11.73"	Non-operating	40,000 ft
Distance from Table to Panel	(mm / inches)	Arsenic-free Glass	Yes
Lowest Pixel at Bottom of Screen	65.8 / 2.59"	PVC Free	Yes
Highest Pixel at Top of Screen	328.2 / 12.92"	Mercury Free	Yes
Stand Base Footprint Area		PCC % of Plastic Resins	85%
(mm / inches)	Diameter 240 / 9.45"	Low Halogen	No
Weight		WARRANTY AND AVAILABILITY	
Packed	Starting at 10.8 lbs (4.9 kg)	Warranty	3 Years
Unpacked	Starting at 8.15 lbs (3.7 kg)	Geography Availability	World Wide
Monitor Head	Starting at 4.85 lbs (2.2 kg)	ThinkVision [®] Logo	Yes
		Global Model	Yes




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<p>Name E21 Wide Flat Panel Monitor Bezel color Black Type-model 61B9JAR1US / 61B9JAT1EU Panel TFT-LCD, twisted nematic (TN), White LED backlight Viewable image size 20.7" (525.78mm) diagonal Max view area (W x H) 18.03" x 10.14" (457.92mm x 257.58mm) Native resolution 1920x1080 Aspect ratio 16:9 Pixel pitch (mm) 0.2385 x 0.2385 mm Dot/Pixel per Inch 106 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 5ms (typical) Color gamut 72% Viewing angle at 10:1 CR 170° (+/- 85°) horizontal, 160° (+/- 80°) vertical Stand Tilt adjustable stand Bezel width Sides: 0.6" (15.3mm) Dimensions (HxWxD) 14.6" H x 19.31" W x 8.07" D; 370.9mm H x 490.5mm 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 5.82 lb; 2.64 kg Limited warranty 3 year (includes backlight) Available date August 2017</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • 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 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision E21 Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600, 832x624 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA+: 1440x900 WSXGA+: 1680x1050 Full HD: 1920x1080</p> <p>Presets display modes Standard presets: 22</p>					
<p>Viewing adjustments Tilt: 22° back, -5° forward Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for power, menu, input source select and brightness USB hub None Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) VGA 15-pin D-shell, analog, blue (2) DisplayPort (1.2), digital, black, HDCP-compliant Signal cables (1) 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, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship group Monitor with stand, Safety and Warranty Information, 1.8 meter analog signal cable, 1.8 meter black power cord</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				




<p>Name E24 Wide Flat Panel Monitor Bezel color Black Type-model 61B7JAR6US / 61B7JAT6EU Panel TFT-LCD, In-Plane Switching (IPS), White LED backlight Viewable image size 23.8" (604.7mm) diagonal Max view area (W x H) 20.75" x 11.67" (527.04mm x 296.46mm) Native resolution 1920x1080 Aspect ratio 16:9 Pixel pitch (mm) 0.2745 x 0.2745 mm Dot/Pixel per Inch 92.5 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 6ms (typical) Color gamut 72% Viewing angle at 10:1 CR 178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Stand Tilt adjustable stand Bezel width <i>Sides:</i> 0.51" (13mm) Dimensions (HxWxD) 15.9" H x 21.81" W x 8.07" D; 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 8.2 lb; 3.7 kg Limited warranty 3 year (includes backlight) Available date August 2017</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 23.8-inch monitor • Supports 1920x1080 resolution • Supports ThinkCentre Tiny VESA mount • Supports optional soundbar • Includes dual input connection for attachment to two systems concurrently • EPEAT Gold certified • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision E24 Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600, 832x624 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA: 1366x768 WXGA+: 1440x900, 1600x900 WSXGA+: 1680x1050 Full HD: 1920x1080</p> <p>Presets display modes Standard presets: 24; user settings: 20</p>					
<p>Viewing adjustments <i>Tilt:</i> 22° back, -5° forward Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for power, menu, input source select and brightness USB hub None Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) VGA 15-pin D-shell, analog, blue (2) DisplayPort, digital, black, HDCP-compliant Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 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, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship 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</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>					



<p>Name P24h Wide Flat Panel Monitor Bezel color Black Type-model 61AEGAR3US / 61AEGAT3EU Panel TFT-LCD, In-Plane Switching (IPS), White LED backlight Viewable image size 23.8" (604.7mm) diagonal Max view area (W x H) 20.74" x 11.67" (526.9mm x 296.4mm) Native resolution 2560x1440 Aspect ratio 16:9 Pixel pitch (mm) 0.2058x 0.2058 mm Dot/Pixel per Inch 124 dpi Brightness 300 nits or cd/m² (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) Dimensions (HxWxD) 14.7" H x 21.26" W x 10.3" D; 373.4mm H x 540.2mm W x 261.75mm D Power supply 24 watts typical, 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</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 23.8-inch monitor • Supports 2560x1440 resolution • Supports optional soundbar • Supports ThinkCentre Tiny Clamp Bracket • Includes dual input connection for attachment to two systems concurrently • EPEAT Gold certified • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision P24h Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x480, 720x400 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x1024 WXGA: 1366x768 WXGA+: 1440x900, 1680x900 WSXGA+: 1680x1050 Full HD: 1920x1080, 1920x1200 QHD: 2560x1440 Presets display modes HDMI: 22; DP: 14</p>					
<p>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 languages) Control features Direct access (buttons on front) for power, menu, input source select and brightness USB hub USB Hub: one USB 3.1 Type-C upstream port, four USB 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, DisplayPort-out Monitor connectors (1) 2*HDMI (1.4), digital, HDCP-compliant (2) DisplayPort (1.2), digital, HDCP-compliant (3) DisplayPort-out, digital (4) USB 3.1 Type-C Signal cables (1) USB 3.1 Type-C cable, 1.8 meter Mounting features Wall or desk mounting using the Extend Arm or third-party accessories, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship group Monitor with stand, Safety and Warranty Information, 1.8 meter USB 3.1 Type-C cable, 1.8 meter black power cord</p>	<p style="text-align: center;">Accessories</p> <table border="0" style="width: 100%;"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>					



<p>Name P24q Wide Flat Panel Monitor Case color Black Type-model 61A5GAR3US / 61A5GAT3EU Panel TFT-LCD, IPS (In-Plane Switching), White LED backlight Viewable image size 23.8" (604.5mm) diagonal Max view area (W x H) 20.74" x 11.67" (526.85mm x 296.35mm) Optimum resolution 2560x1440 Max pixel rate 300MHz Aspect ratio 16:9 Pixel pitch (mm) 0.2058 x 0.2058mm Dot/Pixel per Inch 123 dpi Brightness 300 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 4ms Color gamut 99% sRGB 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) Dimensions (HxWxD, including stand) 373.4mm H x 540.2mm W x 261.75mm D Power supply 24 watts typical, 67 watts maximum (with USB), <0.5 watts sleep/off; <0.5 watts switch off integrated (no external brick-like power supply) Weight 12.35 lb; 5.6kg (including stand) Limited warranty 3 year Available date January 2017</p>	<p>Features</p> <ul style="list-style-type: none"> • 23.8-inch IPS LED backlight monitor • Supports 2560x1440 resolution • 5-Ports USB hub, support USB 3.0 • Support ThinkCentre Tiny • Supports optional soundbar • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 						
<p>VESA-compliant VESA DDC2B/CI Power management ENERGY STAR® 7.0 Ergonomics ISO 9241-307 Emission standards FCC Class B Environmental TCO Displays 7.0, RoHS, EPEAT™ Silver rating, ULE Gold</p>	 <p>ThinkVision P24q Monitor</p>						
<p>Preset resolutions VGA: 640x480, 720x400 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x1024 WXGA: 1366x768 WXGA+: 1440x900, 1600x900 WSXGA+: 1680x1050 Full HD: 1920x1080, 1920x1200 QHD: 2560x1440</p> <p>Presets / user settings Standard presets: 20; user settings: 24</p>							
<p>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 portrait On screen display On screen display with digital user controls (8 languages) Control features Direct access for menu, source switch, and brightness USB hub USB Hub: one USB 3.0 upstream port, four USB 3.0 downstream ports Multimedia Audio-out, optional sound bar supported Camera None Multiple input Support HDMI, DisplayPort, mini DisplayPort, DisplayPort-out Monitor connectors (1) 2*HDMI (1.4), digital, HDCP-compliant (2) DisplayPort (1.2), digital, HDCP-compliant (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-party accessories meeting the VESA FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>							
<p>Ship group Monitor, detachable stand, Quick start and safety poster, 1.8 meter USB 3.0 cable, 1.8 meter mini DP to DP cable, 1.8 meter black power cord</p>	<p>Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p> <p>Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td>73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td>45K1620</td> </tr> <tr> <td>Lenovo Security Cable Lock</td> <td>57Y4303</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620	Lenovo Security Cable Lock	57Y4303
Kensington MicroSaver Cable Lock	73P2582						
Kensington Twin Head Cable Lock	45K1620						
Lenovo Security Cable Lock	57Y4303						

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 x 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/m²

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
≤ 0.5W

Power Consumption Switch-off Mode
≤ 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
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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Specifications may vary depending upon region.

Lenovo



ThinkVision® S22e-19

DISPLAY

Panel Size

21.5 inch

Screen Dimensions (H x V) (mm)

476.06 (H) × 267.79 (V)

Panel Type

VA

Backlight

WLED

Aspect Ratio

16:9

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

Yes

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™ 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°C to 40°C

Low Blue Light

Yes



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Specifications may vary depending upon region.

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ThinkVision® 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/m²

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
Yes

CONNECTIVITY

Video Signal
1 x VGA
1 x HDMI 1.4

Video Cable Length
1.8 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)
-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 / 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 x H x 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 x H x 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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Specifications may vary depending upon region.

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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/m²

Brightness (peak)

300 cd/m²

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_{on}/E_{TEC})

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™ 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

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 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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Specifications may vary depending upon region.




<p>Name T2224d Wide Flat Panel Monitor Bezel color Black Type-model 60EBJAR1US / 60EBJAT1EU Panel TFT-LCD, Vertical Alignment panel (VA), White LED backlight Viewable image size 21.5" (546mm) diagonal Max view area (W x H) 18.74" x 10.54" (476.1mm x 267.8mm) Native resolution 1920x1080 Aspect ratio 16:9 Pixel pitch (mm) 0.248 x 0.248 mm Dot/Pixel per Inch 102 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 3000:1 (typical) Pixel response time 7ms (typical); 4ms (extreme mode) Color gamut 72% Viewing angle at 10:1 CR 178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Stand Tilt stand Bezel width <i>Sides:</i> 0.69" (17.6mm) Dimensions (HxWxD) 15.02" H x 20.19" W x 8.06" D; 381.4mm H x 512.9mm W x 204.9mm D Power supply 20 watts typical, 25 watts maximum <0.5 watts standby/suspend, universal, integrated (no external brick-like power supply) Weight 6.48 lb; 2.94 kg Limited warranty 3 year (includes backlight) Available date July 2016</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 21.5-inch monitor • Supports 1920x1080 resolution • Supports optional soundbar • Supports ThinkCentre Tiny via VESA back mount • Includes dual input connection for attachment to two systems concurrently (analog and digital) • EPEAT Silver certified • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ SILVER rating</p>	<div style="text-align: center;">  <p>ThinkVision T2224d Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600, 832x624 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA: 1280x768, 1280x800 WXGA+: 1440x900 WSXGA+: 1680x1050 Full HD: 1920x1080 Presets / user settings Standard presets: 22; user settings: 22</p>					
<p>Viewing adjustments <i>Tilt:</i> 22° back, -5° forward Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for automatic image setup, dual input and brightness USB hub None Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) VGA 15-pin D-shell, analog, blue (2) DisplayPort, digital, black, HDCP-compliant Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 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, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship 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</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0" style="width: 100%;"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				



<p>Name T2254 Wide Flat Panel Monitor Bezel color Raven black Type-model 60F6HAR1EU Panel TFT-LCD, twisted nematic (TN), White LED backlight Viewable image size 22.0" (559mm) diagonal Max view area (W x H) 18.70" x 11.70" (473.8mm x 296.1mm) Native resolution 1680x1050 Aspect ratio 16:10 Pixel pitch (mm) 0.282 x 0.282 mm Dot/Pixel per Inch 90 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 5ms (typical) Color gamut 72% Viewing angle at 10:1 CR 170° (+/- 85°) horizontal, 160° (+/- 80°) vertical Stand Tilt and height adjustable stand Bezel width Sides: 0.67" (17mm) Dimensions (HxWxD) 14.97" H x 20.05" W x 9.61" D; 380.2mm H x 509.3mm W x 244.2mm D Power supply 16 watts typical, 22 watts maximum, <0.5 watts standby/suspend, universal, integrated (no external brick-like power supply) Weight 10.38 lb; 4.71 kg Limited warranty 3 year (includes backlight) Available date March 2015</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • 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 				
<p>VESA-compliant VESA DDC2B/CI Power management ENERGY STAR® qualified Ergonomics ISO 9241-307 Emission standards None Environmental TCO Displays 7.0, TCO Certified Edge 2.0, WEEE, RoHS, EPEAT™ Gold rating</p>	<div style="text-align: center;">  <p>ThinkVision T2254 Wide Monitor</p> </div>				
<p>Preset resolutions 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: 26; user settings: 20</p>					
<p>Viewing adjustments Tilt: 30° back, -5° forward; lift: 4.3" (110mm) Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for automatic image setup, dual input and brightness USB hub None Multiple input Dual input (two different PCs attach to two different connectors; 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, HDCP-compliant Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 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, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship group Monitor with stand, Safety and Warranty Information, 1.8 meter analog signal cable, 1.8 meter DVI-D cable, 1.8 meter black power cord</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				



<p>Name T2254p Wide Flat Panel Monitor Bezel color Raven black Type-model 61BAMAR2US / 60E1MAR2US / 60CCMAR2US / 60CCMAT2EU / 61BAMAT2EU Panel TFT-LCD, twisted nematic (TN), White LED backlight Viewable image size 22.0" (559mm) diagonal Max view area (W x H) 18.70" x 11.70" (473.8mm x 296.1mm) Native resolution 1680x1050 Aspect ratio 16:10 Pixel pitch (mm) 0.282 x 0.282 mm Dot/Pixel per Inch 90 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 5ms (typical) Color gamut 72% Viewing angle at 10:1 CR 170° (+/- 85°) horizontal, 160° (+/- 80°) vertical Stand Tilt, swivel, pivot, and height adjustable Bezel width Sides: 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, <0.5 watts standby/suspend, universal, integrated (no external brick-like power supply) Weight 10.14 lb; 4.60 kg Limited warranty 3 year (includes backlight) Available date March 2015</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 22.0-inch monitor • Supports 1680x1050 resolution • Supports ThinkCentre Tiny Clamp Bracket • Supports optional soundbar • Includes dual input connection for attachment to two systems concurrently (analog and digital) • EPEAT Gold certified • Microsoft® Windows® 7 certified • Microsoft Windows 8 / Windows 8.1 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ Gold rating</p>	<div style="text-align: center;">  <p>ThinkVision T2254p Wide Monitor</p> </div>				
<p>Preset resolutions 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; user settings: 20</p>					
<p>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 languages) Control features Direct access (buttons on front) for automatic image setup, dual input and brightness USB hub None Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) VGA 15-pin D-shell, analog, blue (2) HDMI (1.4), digital, HDCP-compliant (3) DisplayPort, digital, black, HDCP-compliant Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 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, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship 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</p>	<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p> <p style="text-align: center;">Accessories</p> <table border="0" style="width: 100%;"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				



ThinkVision T22i-10 MONITOR



Lenovo™

SPECIFICATIONS

DISPLAY		DIMENSIONS (W x D x H)	
Panel Size	21.5" Wide	Size Packed (mm)	577 x 378 x 191
Panel Type	IPS	(inches)	22.7" x 14.9" x 7.5"
Backlight	WLED	Size Unpacked with Stand (mm)	489.7 x 251.9 x 357.6
Resolution (H x V)	1920 x 1080	(inches)	19.28" x 9.92" x 14.08"
Aspect Ratio	16:9	Size Monitor Head Only (mm)	489.7 x 43.5 x 297
Anti-Glare	Yes	(inches)	19.28" x 1.71" x 11.69"
Borderless Screen	Yes	Stand Base Footprint Area (mm)	240 x 240
Screen Dimensions (W x H)		(inches)	9.45" x 9.45"
(mm)	476.064 x 267.786	Weight	
(inches)	18.74" x 10.54"	Packed	Starting at 16.36 lbs (7.42 kg)
Maximum Brightness (Typical)	250 cd/m ²	Unpacked	Starting at 10.85 lbs (4.92 kg)
Viewing Angle (H/V at CR 10:1)	178°/178°	Monitor Head Only	Starting at 6.94 lbs (3.15 kg)
Contrast Ratio (Typical)	1000:1		
Dynamic Contrast Ratio	3M:1		
Pixel Pitch (mm)	0.248 x 0.248		
Color Gamut NTSC (CIE 1931)	72%		
Color Support (Typical)	16.7 Million		
Response Time	4/6/14 ms		
CONNECTIVITY		POWER CONSUMPTION	
Video Input Signals	VGA + HDMI™ 1.4 + DisplayPort™ 1.2	Typical	20 W
Video Cables Supplied (Length)	1.8 m	Maximum	55 W
Audio	Audio-Out	Sleep-Mode	<0.5 W
OSD Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian	Switch Off-Mode	<0.5 W
		Power Supply	Internal
		Power Voltage	100 VAC - 240 VAC
MECHANICAL		COMPLIANCE	
Tilt Angle (Front / Back)	-5° / 30°	Arsenic-Free Glass	Yes
Swivel Angle (Left / Right)	+/-45°	PVC-Free	Yes; Without Cable
Lift (mm / inches)	110 / 4.33"	Mercury-Free	Yes
Pivot	-90° / 90°	EPEAT™	Silver
Cable Management	Yes	ENERGY STAR® Rating	7.0
Kensington® Lock	Yes	TCO®	7.0
VESA® Mounting	Yes (100 mm)	TCO Edge	2.0
Bezel Color	Raven Black	RoHS (EU 2002/95/EC)	Yes
Bezel Width		China Energy Efficiency Standard	Tier 2
Top (mm / inches)	2 / 0.08"	Windows Certification	Windows 7 / Windows 10
Bottom (mm / inches)	21.4 / 0.84"		
Sides (mm / inches)	2 / 0.08"		



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ThinkVision T22v-10 MONITOR

SPECIFICATIONS

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


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¹ 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.




<p>Name T2324d Wide Flat Panel Monitor Bezel color Black Type-model 60F3JAR2US / 60F3JAT2EU Panel TFT-LCD, twisted nematic (TN), White LED backlight Viewable image size 23.0" (584mm) diagonal Max view area (W x H) 20.07" x 11.29" (509.8mm x 286.7mm) Native resolution 1920x1080 Aspect ratio 16:9 Pixel pitch (mm) 0.2655 x 0.2655 mm Dot/Pixel per Inch 96 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) 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: 0.68" (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 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 Limited warranty 3 year (includes backlight) Available date June 2016</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 23.0-inch monitor • Supports 1920x1080 resolution • Supports optional soundbar • Supports ThinkCentre Tiny via VESA back mount • Includes dual input connection for attachment to two systems concurrently (analog and digital) • EPEAT Gold certified • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ Gold rating</p>	<div style="text-align: center;">  <p>ThinkVision T2324d Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA: 1280x768, 1280x800, 1366x768 WXGA+: 1440x900 WSXGA+: 1680x1050 Full HD: 1920x1080</p> <p>Presets / user settings Standard presets: 26; user settings: 16</p>					
<p>Viewing adjustments Tilt: 22° back, -5° Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for automatic image setup, dual input and brightness USB hub None Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) VGA 15-pin D-shell, analog, blue (2) DisplayPort, digital, black, HDCP-compliant Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 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, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship 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</p>	<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p> <p style="text-align: center;">Accessories</p> <table border="0" style="width: 100%;"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				

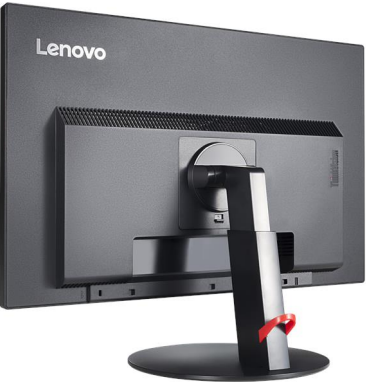



<p>Name T23d-10 Wide Flat Panel Monitor Bezel color Black Type-model 61C3MAR6US / 61C3MAT6EU Panel TFT-LCD, In-Plane Switching (IPS), White LED backlight Viewable image size 22.5" (571.5mm) diagonal Max view area (W x H) 19.5" x 12.4" (496.2mm x 313.9mm) Native resolution 1920x1200 Aspect ratio 16:10 Pixel pitch (mm) 0.25 x 0.25 mm Dot/Pixel per Inch 100.6 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 6ms (typical) Color gamut 72% Viewing angle at 10:1 CR 178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Stand 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, integrated (no external brick-like power supply) Weight 10.67 lb; 4.85 kg Limited warranty 3 year (includes backlight) Available date June 2018</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 22.5-inch monitor • Supports 1920x1200 resolution • Supports ThinkCentre Tiny Clamp Bracket • Supports optional soundbar • Includes dual input connection for attachment to two systems concurrently • EPEAT Gold certified • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision T23d-10 Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x480, 720x400 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x1024 WXGA: 1366x768 WXGA+: 1440x900 WSXGA+: 1680x1050 Full HD: 1920x1080 WUXGA: 1920x1200</p> <p>Presets display modes Standard presets: 27; user settings: 20</p>					
<p>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 languages) Control features Direct access (buttons on front) for power, menu, input source select and brightness USB hub None Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) VGA 15-pin D-shell, analog, blue (2) HDMI (1.4), digital, HDCP-compliant (3) DisplayPort, digital, black, HDCP-compliant Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 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, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship 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)</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				

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



<p>Name T23i Wide Flat Panel Monitor Bezel color Black Type-model 61ABMAR1US / 61ABMAT1EU Panel TFT-LCD, In-Plane Switching (IPS), White LED backlight Viewable image size 23" (584.2mm) diagonal Max view area (W x H) 20.36" x 11.92" (517.2mm x 302.8mm) Native resolution 1920x1080 Aspect ratio 16:9 Pixel pitch (mm) 0.2652 x 0.2652 mm Dot/Pixel per Inch 95.8 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 6ms (typical) Color gamut 72% Viewing angle at 10:1 CR 178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Stand Tilt, swivel, pivot, and height adjustable stand Bezel width Sides: 0.08" (2.0mm) Dimensions (HxWxD) 13.3" H x 20.56" W x 10.4" D; 337.7mm H x 522.2mm W x 264.2mm D Power supply 16 watts typical, 45 watts maximum (with USB 3.0 hub), <0.5 watts standby/suspend, universal, integrated (no external brick-like power supply) Weight 10.85 lb; 4.92 kg Limited warranty 3 year (includes backlight) Available date April 2017</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 23-inch monitor • Supports 1920x1080 resolution • Supports ThinkCentre Tiny Clamp Bracket • Includes dual input connection for attachment to two systems concurrently • EPEAT Silver certified • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ SILVER rating</p>	<div style="text-align: center;">  <p>ThinkVision T23i Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x480, 720x400 SVGA: 800x600 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA+: 1440x900 WSXGA+: 1680x1050 Full HD: 1920x1080</p> <p>Presets display modes HDMI: 18; DP: 18</p>					
<p>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 languages) Control features Direct access (buttons on front) for power, menu, input source select and brightness and automatic image setup USB hub USB 3.0 Hub: 1 port into PC (USB 3.0); 4 ports for accessories (4 USB 3.0) Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) VGA 15-pin D-shell, analog, blue (2) HDMI (1.4), digital, HDCP-compliant (3) DisplayPort, digital, black, HDCP-compliant</p> <p>Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 1.8 meter (2) detachable, DisplayPort at each end, digital, 1.8 meter (3) detachable, HDMI at each end, digital, 1.8 meter (NA)</p>					
<p>Mounting features Wall or desk mounting using the Extend Arm or third-party accessories, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p> <p>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 signal cable, 1.8 meter black power cord</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0" style="width: 100%;"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				



<p>Name T2454p Wide Flat Panel Monitor Bezel color Raven black Type-model 60F9MAR1US / 60F9MAT1EU Panel TFT-LCD, In-Plane Switching (IPS), White LED backlight</p> <p>Viewable image size 24.0" (609.6mm) diagonal Max view area (W x H) 20.41" x 12.76" (518.4mm x 324.0mm) Native resolution 1920x1200 Aspect ratio 16:10 Pixel pitch (mm) 0.270 x 0.270 mm Dot/Pixel per Inch 94 dpi Brightness 300 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 7ms (typical) Color gamut 77.4% Viewing angle at 10:1 CR 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</p> <p>Power supply 24 watts typical, 27 watts maximum (without USB 3.0 hub), 54 watts maximum (with USB 3.0 hub), <0.5 watts standby/suspend, universal, integrated (no external brick-like power supply) Weight 13.60 lb; 6.15 kg Limited warranty 3 year (includes backlight) Available date March 2015</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 24.0-inch monitor • Supports 1920x1200 resolution • Supports ThinkCentre Tiny Clamp Bracket • Supports optional soundbar • Includes dual input connection for attachment to two systems concurrently (analog and digital) • EPEAT Gold certified • Microsoft® Windows® 7 certified • Microsoft Windows 8 / Windows 8.1 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ Gold rating</p> <p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x1024 WXGA: 1280x720, 1280x768, 1280x800 WXGA+: 1440x900 WSXGA+: 1680x1050, 1600x1200 Full HD: 1920x1080, 1920x1200</p> <p>Presets / user settings Standard presets: 21; user settings: 20</p>	 <p style="text-align: center;">ThinkVision T2454p Wide Monitor</p>				
<p>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 languages) Control features Direct access (buttons on front) for automatic image setup, dual input and brightness USB hub USB 3.0 Hub: 1 port into PC (USB 3.0); 4 ports for accessories (4 USB 3.0) Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) VGA 15-pin D-shell, analog, blue (2) HDMI (1.4), digital, HDCP-compliant (3) DisplayPort, digital, black, HDCP-compliant</p> <p>Signal cables (1) detachable, VGA 15-pin D-shell at each end, analog, 1.8 meter (2) detachable, DisplayPort at each end, digital, 1.8 meter</p> <p>Mounting features Wall or desk mounting using the Extend Arm or third-party accessories, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship group Monitor with stand, Safety and Warranty Information, 1.8 meter analog signal cable, 1.8 meter DisplayPort cable, 1.8 meter USB signal cable, 1.8 meter black power cord</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				



ThinkVision T24d-10 MONITOR

SPECIFICATIONS

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

* NA only.

¹ 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 T24i-10 MONITOR



SPECIFICATIONS

DISPLAY		DIMENSIONS (W x D x H)	
Panel Size	23.8" Wide	Size Packed	422 x 622 x 190
Panel Type	In-Plane Switchng	(mm)	16.61" x 24.48" x 7.48"
Backlight	WLED	(inches)	
Resolution (H x V)	1920 x 1080	Size Unpacked with Stand	
Aspect Ratio	16:9	Lowest Position	
Anti-Glare	Yes	(mm)	540.2 x 261.75 x 373.4
Near Edgeless Screen	Yes	(inches)	21.26" x 10.3" x 14.7"
Screen Dimensions (W x H)		Highest Position	
(mm)	527.04 x 296.46	(mm)	540.2 x 261.75 x 483.4
(inches)	20.75" x 11.67"	(inches)	21.26" x 10.3" x 19"
Maximum Brightness (Typical)	250 cd/m ²	Size Unpacked without Stand	
Viewing Angle (H/V at CR 10:1)	178°/178°	(Monitor Head Only)	
Contrast Ratio (Typical)	1000:1	(mm)	540.2 x 46.45 x 325.98
Dynamic Contrast Ratio	3M:1	(inches)	21.26" x 1.82" x 12.83"
Pixel Pitch (mm)	0.2745 x 0.2745	Stand Base Footprint Area	
Color Gamut (CIE 1931)	72% NTSC	(mm)	250 x 250
Color Support (Typical)	16.7 Million	(inches)	9.84" x 9.84"
Response Time (gray to gray)	4 ms (Extreme mode)	Weight	
OSD Controls	6 ms (Normal mode)	Packed	Starting at 16.39 lbs (7.45 kg)
Buttons	5	Unpacked	Starting at 11.33 lbs (5.15 kg)
Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian	Monitor Head Only	Starting at 7.26 lbs (3.3 kg)
		Full Container Load	1140 / 540 Units
		(40' STD / 20' STD)	
CONNECTIVITY		POWER CONSUMPTION	
Video Input Signals	VGA + HDMI™ 1.4 + DisplayPort™ 1.2	Typical	16.5 W
Video Cables Supplied (Length)	1.8 m	Maximum	55 W
USB Hub	1 x USB 3.0 ¹ (Upstream) 4 x USB 3.0 ¹ (Downstream, Incl. 1 BC)	Sleep-Mode	<0.5 W
Audio Out	Yes (3.5 mm)	Switch Off-Mode	<0.3 W
		Power Supply	Internal
		Power Voltage	90 VAC - 264 VAC
MECHANICAL		WHAT'S IN THE BOX	
Tilt Angle (Front / Back)	-5° / 30°	Monitor with Stand	
Swivel Angle (Left / Right)	+/-45°	1 x Power Cable	
Lift Range (mm)	110	1 x VGA Cable	
Pivot	+/-90°	1 x DisplayPort™ - DisplayPort™ Cable	
Cable Management	Yes	1 x HDMI™ Cable (NA Only)	
Kensington® Lock	Yes	Quick Setup Guide	
VESA® Mount (mm x mm)	Yes (100 X 100)		
Bezel Color	Raven Black	CERTIFICATIONS	
Bezel Width		EPEAT™	Silver
Top (mm / inches)	2 / 0.08"	ENERGY STAR® Rating	7.1
Sides (mm / inches)	2 / 0.08"	TCO®	7.0
		TCO Edge	2.0
		RoHS (EU 2002/95/EC)	Yes
		China Energy Efficiency Standard	Tier 2
		Windows Certification	Windows 7 / Windows 10
		TüV Eye Comfort Certification	Yes

¹ 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 T24i-19 MONITOR



SPECIFICATIONS

DISPLAY		DIMENSIONS (W x D)	
Panel Size	23.8" Wide	Size Packed (mm)	422 x 622 x 190
Panel Type	In-Plane-Switching	(inches)	16.61" x 24.48" x 7.48"
Backlight	WLED	Size Unpacked with Stand Lowest Position (mm)	540.2 x 261.75 x 373.4
Resolution	FHD (1920 x 1080)	(inches)	21.26" x 10.3" x 14.7"
Aspect Ratio	16:9	Highest Position (mm)	540.2 x 261.75 x 483.4
Anti-Glare	Yes	(inches)	21.26" x 10.3" x 19"
Near Edgeless Screen	Yes	Size Unpacked without Stand (Monitor Head Only) (mm)	540.2 x 46.45 x 325.98
Screen Dimensions (W x H) (mm)	527.04 x 296.46	(inches)	21.26" x 1.82" x 12.83"
(inches)	20.75" x 11.67"	Stand Base Footprint Area (mm)	250 x 250
Brightness	250 nits	(inches)	9.84" x 9.84"
Viewing Angle (H/V at CR 10:1)	178°/178°	Weight Packed	Starting at 16.39 lbs (7.45 kg)
Contrast Ratio (Typical)	1000:1	Unpacked	Starting at 11.33 lbs (5.15 kg)
Dynamic Contrast Ratio	3M:1	Monitor Head Only	Starting at 7.26 lbs (3.3 kg)
Speakers	2 x 2W	Full Container Load (40' STD / 20' STD)	1140 / 540 Units
Pixel Pitch (mm)	0.2745 x 0.2745		
Color Gamut (CIE 1931)	72% NTSC		
Color Depth	8 bit		
Color Support (Typical)	16.7 Million		
Response Time (GtG) Extreme / Normal	4 ms / 6 ms		
OSD Controls Buttons	5		
Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian		
CONNECTIVITY		POWER CONSUMPTION	
Video Input Signals	VGA + HDMI™ + DisplayPort™	Typical	16.5 W
Video Cables Supplied	VGA, DisplayPort™, USB, Power, HDMI™ (for NA only)	Maximum	59 W
USB Hub	USB 3.0 ¹ (4 x down, 1 x BC)	Sleep-Mode	<0.5 W
Audio Out	Yes (3.5 mm)	Switch Off-Mode	<0.3 W
Power	Internal	Power Supply	Internal
Soundbar Support*	Yes	Power Voltage	90 VAC – 264 VAC
		ENERGY STAR® (P _{on})	13.67 W
		ENERGY STAR® (E _{TEC})	43.51 kWh
MECHANICAL		WHAT'S IN THE BOX	
Tilt Angle (Front / Back)	-5° / 30°	Monitor with Stand	
Swivel Angle (Left / Right)	+/-45°	1 x Power Cable	
Lift Range (mm)	110	1 x VGA Cable	
Pivot	+/-90°	1 x DisplayPort™ - DisplayPort™ Cable	
Stand	LTPS	1 x HDMI™ Cable (NA Only)	
Cable Management	Yes	Quick Setup Guide	
Kensington® Lock	Yes	CERTIFICATIONS	
VESA® Mount (mm x mm)	Yes (100 X 100)	EPEAT™	Silver
Bezel Color	Raven Black	ENERGY STAR® Rating	7.1
Bezel Width		TCO®	7.0
Top (mm / inches)	2 / 0.08"	TCO Edge	2.0
Sides (mm / inches)	2 / 0.08"	ULE	Yes
		RoHS (EU 2002/95/EC)	Yes
		China Energy Efficiency Standard	Tier 2
		Windows Certification	Windows 7 / Windows 10
		TÜV Eye Comfort Certification	Yes
		TINY Support	Yes

* Optional.

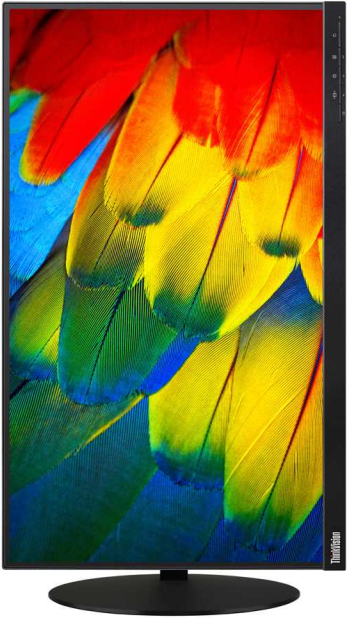
¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data 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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<p>Name T24m Wide Flat Panel Monitor Bezel color Black Type-model 61B8RAR3US / 61B8RAT3EU Panel TFT-LCD, In-Plane Switching (IPS), White LED backlight Viewable image size 23.8" (604.7mm) diagonal Max view area (W x H) 20.75" x 11.67" (527.04mm x 296.46mm) Native resolution 1920x1080 Aspect ratio 16:9 Pixel pitch (mm) 0.2745 x 0.2745 mm Dot/Pixel per Inch 92 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 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 Bezel width <i>Sides:</i> 0.08" (2.0mm) Dimensions (HxWxD) 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</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 23.8-inch monitor • Supports 1920x1080 resolution • Supports ThinkCentre Tiny Clamp Bracket • Supports optional soundbar • EPEAT Gold certified • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 				
<p>VESA-compliant VESA DDC2B/CI 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, RoHS, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision T24m Wide Monitor</p> </div>				
<p>Preset resolutions VGA: 640x480 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x1024 WXGA: 1366x768 WXGA+: 1440x900, 1600x900 WSXGA+: 1680x1050 Full HD: 1920x1080, 1920x1200 HDMI: 19; DP: 11</p>					
<p>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 languages) Control features Direct access (buttons on front) for power, menu, input source select and brightness USB hub USB 3.0 Hub: 1 port into PC (USB 3.0); 4 ports for accessories (4 USB 3.0) Multimedia Audio-out, optional sound bar supported Multiple input Support HDMI, DisplayPort, USB 3.1 Type-C Monitor connectors (1) HDMI (1.4), digital, HDCP-compliant (2) DisplayPort (1.2), digital, HDCP-compliant (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-party accessories, 100mm x 100mm mount Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship group Monitor with stand, Safety and Warranty Information, 1.8 meter USB Type-C to USB Type-C cable, 1.8 meter black power cord</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				



ThinkVision T24v-10 MONITOR

SPECIFICATIONS


DISPLAY		ENVIRONMENTAL	
Panel Size	23.8"	Temperature	
Panel Type	In-Plane Switching	Operating	0°C – 40°C
Backlight	WLED	Non-Operating	-20°C – 60°C
Resolution	1920 x 1080	Humidity	
Aspect Ratio	16:9	Operating	10% – 80%
Anti-Glare	Yes	Non-Operating	5% – 95%
Screen Dimensions (W x H) (mm)	527.04 x 296.46	Altitude	
Maximum Brightness (Typical)	250 cd/m ²	Operating	0 m – 8000 m
Viewing Angle (H/V at CR 10:1)	178°/178°	Non-Operating	0 ft – 40,000 ft
Contrast Ratio (Typical)	1000:1	Arsenic-Free Glass	Yes
Dynamic Contrast Ratio	3M:1	PVC-Free	Yes
Pixel Pitch (W x H) (mm)	0.25 x 0.25	Mercury-Free	Yes
Dot/Pixel Per Inch (DP/PPI)	102	PCC % of Plastic Resins	>85%
Color Gamut (CIE 1931)	72% sRGB		
Response Time (Extreme/Typical/Off)	4/6/14 ms (G-to-G)		
POWER CONSUMPTION		DIMENSIONS (W x D x H)	
Typical	20 W	Size Packed	
Maximum	45 W	(mm)	608 x 395 x 187
Sleep-Mode	<0.5 W	(inches)	23.94" x 15.55" x 7.36"
Switch Off-Mode	<0.3 W	Size Unpacked with Stand	
Power Supply	Internal	Lowest Position	
Power Voltage	90 VAC – 264 VAC	(mm)	540.2 x 261.9 x 390.5
Voltage Dynamic Frequency	47 Hz – 63 Hz	(inches)	21.28" x 10.32" x 15.39"
		Highest Position	
		(mm)	540.2 x 261.9 x 500.5
		(inches)	21.28" x 10.32" x 19.72"
		Size Unpacked without Stand	
		(Monitor Head Only)	
		(mm)	540.2 x 43.8 x 343.7
		(inches)	21.27" x 1.72" x 13.53"
		Distance from Table to Panel	
		Lowest Pixel at Bottom of Screen	
		(mm / inches)	69.6 / 2.74"
		Highest Pixel at Top of Screen	
		(mm / inches)	69.6 / 2.74"
		Stand Base Footprint Area	
		(mm / inches)	242.5 x 212.8 / 9.55" x 8.38"
		Weight	
		Packed	Starting at 15.78 lbs (7.16 kg)
		Unpacked	Starting at 11.18 lbs (5.07 kg)
		Monitor Head Only	Starting at 7.3 lbs (3.31 kg)
SIGNAL INPUT		COMPLIANCE	
Video Input Signals	HDMI™ 1.4 + DisplayPort™ 1.2 + VGA	EPEAT™	Silver
Video Cables Supplied	HDMI™ (ROW) + DisplayPort™ + VGA + USB 3.0 ¹	ENERGY STAR® Rating	7.0
Video Cable Length	1.8 m	ULE	Gold
USB Hub	Yes	TCO®	TCO Display 7.0 / TCO Edge 2.0
USB Cable Supplied	Yes	RoHS (EU 2002/95/EC)	Yes
Audio-Out	Yes (3.5 mm)	Windows Certification	Windows 7 / Windows 10
		China Energy Efficiency Standard	Grade 2
		TÜV Eye Comfort	Yes
SIGNAL INTERFACE / PERFORMANCE		WARRANTY AND AVAILABILITY	
Horizontal Frequency	30 kHz – 81 kHz	Warranty	
Vertical Frequency	50 Hz – 75 Hz	ROW	3 Years
Native Resolution	1920 x 1080	PRC	18 Months
Maximum Pixel Clock Speed/ Bandwidth	VGA : 205 MHz HDMI™ : 165 MHz DisplayPort™ : 165 MHz	Geography Availability	WW
Default Color Temperature	6500K		
Preset/User Modes	27/21		
OSD Buttons	5+2 Buttons		
OSD Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian		
MECHANICAL			
Tilt Angle (Front / Back)	-5° / 30°		
Swivel Angle (Left / Right)	+/-45°		
Lift (mm)	Yes (110)		
Pivot	+/-90°		
VESA® Mount (mm)	Yes (100 x 100)		
Kensington® Lock Slot	Yes		
Cable Management	Yes		
Bezel Color	Raven Black		
Bezel Width			
Top (mm / inches)	2 / 0.08"		
Bottom (mm / inches)	22 / 0.87"		
Sides (mm / inches)	2 / 0.08"		

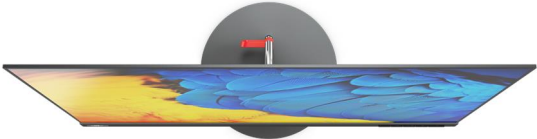



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¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device 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.



<p>Name X24 Pro Wide Flat Panel Monitor Bezel color Black Type-model 60E4ECR1US / 60E4ECT1US / 60E4ECT1EU Panel TFT-LCD, AH-IPS (In-Plane Switching), White LED backlight Viewable image size 23.8" (604.5mm) diagonal Max view area (W x H) 20.75" x 11.67" (527.0mm x 296.5mm) Native resolution 1920x1080 Aspect ratio 16:9 Pixel pitch (mm) 0.2745 x 0.2745 mm Dot/Pixel per Inch 92 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) 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 <i>Sides:</i> 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, 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</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 23.8-inch monitor • Supports 1920x1080 resolution • Includes dual input connection for attachment to two systems concurrently • EPEAT Silver certified • Intel RealSense 3D camera • Stereo speakers 3 watts x 2 • One cable docking through USB 3.1 Type C with power delivery • Windows Hello certified • Microsoft® Windows® 10 certified 				
<p>Power management ENERGY STAR® qualified Ergonomics ISO 9241-307 Emission standards FCC Class B Environmental TCO Displays 6.0, WEEE, RoHS, EPEAT™ Silver rating</p> <p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x1024 WXGA: 1366x768 WXGA+: 1440x900, 1600x900 WSXGA+: 1680x1050 Full HD: 1920x1080</p> <p>Presets / user settings Standard presets: 16; user settings: 20</p>	<div style="text-align: center;">  <p>ThinkVision X24 Pro Wide Monitor</p> </div>				
<p>Viewing adjustments <i>Tilt:</i> 22° back, -5° forward Rotating screen None On screen display On screen display with digital user controls Control features Direct access (buttons on side bezel) for dual input and 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), built-in microphone Camera RealSense 3D camera SR300 Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) mDP, Mini DisplayPort, digital, HDCP-compliant (2) USB Type-C, digital Signal cables (1) detachable, mDP to DP, digital, 2.0 meter (2) DP to mDP adapter (3) Micro USB 3.0 cable Mounting features None Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>	<p>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)</p>				
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				




<p>Name X24-20 Flat Panel Monitor Bezel color Raven black Type-model 61BDGAR3US / 61BDGAT3EU Panel TFT-LCD, IPS (In-Plane Switching), White LED backlight Viewable image size 23.8" (604.5mm) diagonal Max view area (W x H) 20.75" x 11.67" (527.0mm x 296.5mm) Native resolution 1920x1080 Aspect ratio 16:9 Pixel pitch (mm) 0.2745 x 0.2745 mm Dot/Pixel per Inch 92 dpi Brightness 250 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 6ms (typical) Color gamut 72% (NTSC) Viewing angle at 10:1 CR 178° (+/- 89°) horizontal, 178° (+/- 89°) vertical Stand Tilt stand Bezel width <i>Sides:</i> 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, 25 watts maximum, <0.5 watts standby/suspend, universal, external power supply Weight 7.3 lb; 3.3 kg Limited warranty 3 year (includes backlight) Available date December 2017</p>	<p style="text-align: center;">Features</p> <ul style="list-style-type: none"> • Widescreen 23.8-inch monitor • Supports 1920x1080 resolution • Includes dual input connection for attachment to two systems concurrently • EPEAT Silver certified • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 				
<p>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, RoHS, EPEAT™ Silver rating</p>	<div style="text-align: center;">  <p>ThinkVision X24-20 Monitor</p> </div>				
<p>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: 18; user settings: 0</p>					
<p>Viewing adjustments <i>Tilt:</i> 30° back, -5° forward Rotating screen None On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on side bezel) for power, dual input and brightness USB hub None Multiple input Dual input (two different PCs attach to two different connectors; one PC shows image; select via button) Monitor connectors (1) HDMI (1.4a), digital, HDCP-compliant (2) DisplayPort, digital, black, HDCP-compliant Signal cables (1) detachable, HDMI at each end, digital, 1.8 meter Mounting features None Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>					
<p>Ship group Monitor with stand, Safety and Warranty Information, 1.8 meter HDMI signal cable, 1.8 meter black power cord</p>					
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0" style="width: 100%;"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620
Kensington MicroSaver Cable Lock	73P2582				
Kensington Twin Head Cable Lock	45K1620				



<p>Name P27h Wide Flat Panel Monitor Case color Black Type-model 61AFGAR1US / 61AFGAT1EU Panel TFT-LCD, IPS (In-Plane Switching), White LED backlight Viewable image size 27" (685.8mm) diagonal Max view area (W x H) 23.49" x 13.21" (596.7mm x 335.7mm) Optimum resolution 2560x1440 Max pixel rate 300MHz Aspect ratio 16:9 Pixel pitch (mm) 0.2331 x 0.2331mm Dot/Pixel per Inch 109 dpi Brightness 350 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 4ms (extreme) / 6ms (typical) Color gamut 99% sRGB Viewing angle at 10:1 CR 178° horizontal, 178° vertical Stand Tilt, swivel, pivot, and height adjustable stand Bezel width Sides: 0.08" (2mm) Dimensions 20.21" H x 24.08" W x 10.62" D; (HxWxD, including stand) 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) Weight 15.43 lb; 7.0kg (including stand) Limited warranty 3 year Available date April 2017</p>	<p>Features</p> <ul style="list-style-type: none"> • 27-inch IPS LED backlit monitor • Supports 2560x1440 resolution • 5-Ports USB hub, support USB 3.0 • Supports optional soundbar • Support ThinkCentre Tiny • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 						
<p>VESA-compliant VESA DDC2B/CI Power management ENERGY STAR® 7.0 Ergonomics ISO 9241-307 Emission standards FCC Class B Environmental TCO Displays 7.0, RoHS, EPEAT™ Silver rating, ULE Gold</p>	<div data-bbox="987 659 1451 1024" data-label="Image"> </div> <p data-bbox="1094 1159 1360 1184" style="text-align: center;">ThinkVision P27h Monitor</p>						
<p>Preset resolutions VGA: 640x480, 720x400 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x1024 WXGA: 1366x768 WXGA+: 1440x900, 1680x900 WSXGA+: 1680x1050 Full HD: 1920x1080, 1920x1200 QHD: 2560x1440</p>							
<p>Presets display modes HDMI: 22; DP: 14</p>							
<p>Viewing adjustments Tilt: 30° back, -5° forward; lift: 4.33" (110mm); swivel: +/-45° Rotating screen Screen pivots 90 degrees from landscape to portrait On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for power, menu, input source select and brightness USB hub USB Hub: one USB 3.1 Type-C upstream port, four USB 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, DisplayPort-out Monitor connectors (1) 2*HDMI (1.4), digital, HDCP-compliant (2) DisplayPort (1.2), digital, HDCP-compliant (3) DisplayPort-out, digital (4) USB 3.1 Type-C Signal cables (1) USB 3.1 Type-C cable, 1.8 meter Mounting features Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>							
<p>Ship group Monitor, detachable stand, Quick start and safety poster, 1.8 meter USB 3.1 Type-C cable, 1.8 meter black power cord</p>							
<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> <tr> <td>Lenovo Security Cable Lock</td> <td style="text-align: right;">57Y4303</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620	Lenovo Security Cable Lock	57Y4303
Kensington MicroSaver Cable Lock	73P2582						
Kensington Twin Head Cable Lock	45K1620						
Lenovo Security Cable Lock	57Y4303						



<p>Name P27q Wide Flat Panel Monitor Case color Black Type-model 61A8GAT1EU Panel TFT-LCD, IPS (In-Plane Switching), White LED backlight Viewable image size 27" (685.8mm) diagonal Max view area (W x H) 23.49" x 13.21" (596.7mm x 335.7mm) Optimum resolution 2560x1440 Max pixel rate 300MHz Aspect ratio 16:9 Pixel pitch (mm) 0.2331 x 0.2331mm Dot/Pixel per Inch 109 dpi Brightness 350 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 4ms Color gamut 99% sRGB 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) Dimensions (HxWxD, including stand) 513mm H x 614mm W x 269.8mm D Power supply 38 watts typical, 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</p>	<p>Features</p> <ul style="list-style-type: none"> • 27-inch IPS LED backlight monitor • Supports 2560x1440 resolution • 5-Ports USB hub, support USB 3.0 • Support ThinkCentre Tiny • Supports optional soundbar • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 						
<p>VESA-compliant VESA DDC2B/CI Power management ENERGY STAR® 7.0 Ergonomics ISO 9241-307 Emission standards FCC Class B Environmental TCO Displays 7.0, RoHS, EPEAT™ Silver rating, ULE Gold</p>	 <p>ThinkVision P27q Monitor</p>						
<p>Preset resolutions VGA: 640x480, 720x400 SVGA: 800x600 XGA: 1024x768 SXGA: 1280x1024 WXGA: 1366x768 WXGA+: 1440x900, 1600x900 WSXGA+: 1680x1050 Full HD: 1920x1080, 1920x1200 QHD: 2560x1440</p> <p>Presets / user settings Standard presets: 20; user settings: 24</p>							
<p>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 portrait On screen display On screen display with digital user controls (8 languages) Control features Direct access for menu, source switch, and brightness USB hub USB Hub: one USB 3.0 upstream port, four USB 3.0 downstream ports Multimedia Audio-out, optional sound bar supported Camera None Multiple input Support HDMI, DisplayPort, mini DisplayPort, DisplayPort-out Monitor connectors (1) 2*HDMI (1.4), digital, HDCP-compliant (2) DisplayPort (1.2), digital, HDCP-compliant (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-party accessories meeting the VESA FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>							
<p>Ship group Monitor, detachable stand, Quick start and safety poster, 1.8 meter USB 3.0 cable, 1.8 meter mini DP to DP cable, 1.8 meter black power cord</p>	<p>Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p> <p>Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td>73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td>45K1620</td> </tr> <tr> <td>Lenovo Security Cable Lock</td> <td>57Y4303</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620	Lenovo Security Cable Lock	57Y4303
Kensington MicroSaver Cable Lock	73P2582						
Kensington Twin Head Cable Lock	45K1620						
Lenovo Security Cable Lock	57Y4303						



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
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/m²

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 (P_{on}/E_{TEC})
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 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.

Lenovo



<p>Name P27u Wide Flat Panel Monitor Case color Black Type-model 61CBGAR1US / 61CBGAT1EU / 61CBGAR1EU / 61B0GAR1US / 61B0GAT1EU Panel TFT-LCD, IPS (In-Plane Switching), White LED backlight Viewable image size 27" (684.7mm) diagonal Max view area (W x H) 23.49" x 13.21" (596.74mm x 335.66mm) Optimum resolution 3840x2160 Max pixel rate 600MHz Aspect ratio 16:9 Pixel pitch (mm) 0.1554 x 0.1554mm Dot/Pixel per Inch 163 dpi Brightness 350 nits or cd/m² (typical) Contrast ratio 1000:1 (typical) Pixel response time 6ms (typical) Color gamut 1.457 sRGB Viewing angle at 10:1 CR 178° horizontal, 178° vertical Stand Tilt, swivel, pivot, and height adjustable stand Bezel width Sides: 0.08" (2mm) Dimensions (HxWxD, including stand) 20.21" H x 24.08" W x 10.62" D; 513.3mm H x 611.6mm W x 269.8mm D Power supply 50 watts typical, 160 watts maximum (with USB), <0.5 watts sleep/off; <0.3 watts switch off integrated (no external brick-like power supply) Weight 15.32 lb; 6.95kg (including stand) Limited warranty 3 year Available date August 2017</p>	<p>Features</p> <ul style="list-style-type: none"> • 27-inch IPS LED backlight monitor • Supports 3840x2160 resolution • 5-Ports USB hub, support USB 3.0 • Support ThinkCentre Tiny • Supports optional soundbar • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 						
<p>VESA-compliant VESA DDC2B/CI Power management 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, EPEAT™ Silver rating, ULE Gold</p>	 <p>ThinkVision P27u Monitor</p>						
<p>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</p> <p>Presets / user settings Standard presets: 27; user settings: 20</p>							
<p>Viewing adjustments Tilt: 30° back, -5° forward; lift: 4.33" (110mm); swivel: +/-45° Rotating screen Screen pivots 90 degrees from landscape to portrait On screen display On screen display with digital user controls (8 languages) Control features Direct access (buttons on front) for power, menu, input source select and brightness USB hub USB Hub: one USB 3.1 Type-C port, four USB 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 Monitor connectors (1) 2*HDMI (2.0), digital, HDCP-compliant (2) DisplayPort (1.2), digital, HDCP-compliant (3) USB 3.1 Type-C Signal cables (1) detachable, DisplayPort to DisplayPort, digital, 1.8 meter Mounting features Wall or desk mounting using the Extend Arm or third-party accessories meeting the VESA FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>							
<p>Ship group Monitor, detachable stand, Quick start and safety poster, 1.8 meter USB Type-C to USB Type-C cable, 1.8 meter DP to DP cable, 1.8 meter HDMI to HDMI cable (NA only), 1.8 meter black power cord, 1.8 meter USB Type-C to USB Type-A cable</p>							
<p>Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p>	<p>Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td>73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td>45K1620</td> </tr> <tr> <td>Lenovo Security Cable Lock</td> <td>57Y4303</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620	Lenovo Security Cable Lock	57Y4303
Kensington MicroSaver Cable Lock	73P2582						
Kensington Twin Head Cable Lock	45K1620						
Lenovo Security Cable Lock	57Y4303						



ThinkVision® 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™ 3
In + Thunderbolt™ 3 Out

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

Audio Out
Yes (3.5mm)

USB Hub
Yes
2 x USB 3.0 (Upstream,
1 by Thunderbolt™ 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

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 x H x 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 x H x 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)
-5°/22°

Swivel Angle (left/right)
-45°/+45°

Lift (Max range)
110mm

Pivot
-90°/90°

VESA Mount Capability
Yes (100 x 100mm)

Kensington™ 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™ 3 cable (20Gbps)
1 x CD (ThinkColor)
Factory calibration report
Quick setup guide

CERTIFICATIONS

ENERGY STAR® Rating
7.1

EPEAT™
Silver

CCC
Yes

RoHS
Yes

ULE
Gold

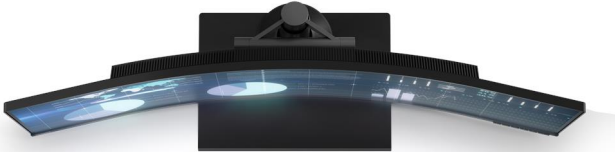
TCO
7.0

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 2

TÜV Eye Comfort
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 x 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)

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,

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°

Swivel Angle (left/right)
±30°

Lift (Max. range)
Yes (130mm)

VESA Mount Capability
Yes (100 x 100mm)

Kensington™ Lock Slot
Yes

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® 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



*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	16:9
Resolution	1920 x 1080
Pixel Pitch (H x V) (mm)	0.3110 x 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
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:4XFON03161)

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°C to 40°C
TÜV Eye Confort Certification	Yes



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Specifications may vary depending upon region.

Lenovo™







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
16:10

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/m²

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_{on})
16.54W

ENERGY STAR® (E_{rec})
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™ 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 x Power Cable
1 x USB 3.1 Gen1 Cable
1 x HDMI™ Cable*
1 x DP 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



*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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Specifications may vary depending upon region.

Lenovo



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
WLED

Aspect Ratio
16:10

Resolution
1920 x 1200 pixels

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/m²

Color Gamut sRGB (CIE 1931)
99%

Color Support
16.7M

CONNECTIVITY

Video Input Signals
HDMI 1.4 + DP 1.2 + USB 3.1 Type-C™
(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™)

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

Audio Out
Yes (3.5mm)

POWER

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® (P_{on})
17.05W

ENERGY STAR® (E_{TEC})
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 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

Smart Power*
Yes

ThinkCentre Tiny Support
Yes

Optional Soundbar Support
Yes

Internal Speakers
Yes (3W x 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™ 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 x Power Cable
1 x USB Type-C™ to Type-C™ 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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Specifications may vary depending upon region.

Lenovo



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/m²

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_{on}/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

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 18.90 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 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

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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Specifications may vary depending upon region.





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
60Hz

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Brightness (typical)
350 cd/m²

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® (P_{on})
23.40W

ENERGY STAR® (E_{TEC})
101.94kWh

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

CONNECTIVITY

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

Video Cables Supplied
USB 3.1 Type-C™ + HDMI

Video Cable Length
1.8m

USB Hub
Yes

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

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

Anti-glare
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™ 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™ to Type-C™ cable
Quick Setup Guide

CERTIFICATIONS

ENERGY STAR® Rating
7.1

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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Specifications may vary depending upon region.





ThinkVision T32h-20 Monitor

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
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/m²

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

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)
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)
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.

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
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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Specifications may vary depending upon region.

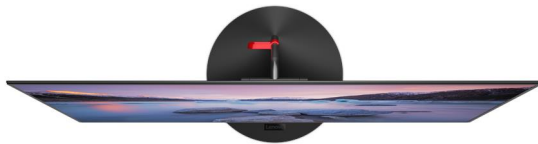
Lenovo





<p>Name X1 Wide Flat Panel Monitor Case color Black Type-model 60E2GAR1US / 60E2GAT1US / 60E2GAT1EU Panel TFT-LCD, IPS (In-Plane Switching), 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 Brightness 300 nits or cd/m² (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 (HxWxD, including stand) 19.35" H x 24.19" W x 10.63" D; 491.4mm H x 614.5mm W x 270.0mm D Power supply 40 watts typical, 130 watts maximum (with USB), <0.5 watts sleep/off; <0.5 watts switch off Weight 14.11 lb; 6.40kg (including stand) Limited warranty⁴ 3 year Available date March 2016</p>	<p>Features</p> <ul style="list-style-type: none"> • 27-inch IPS LED backlight monitor with speaker • Supports 3840x2160 resolution • 5-Ports USB hub, support USB Type-C • 3watts x 2 stereo speakers • Microsoft® Windows® 7 certified • Microsoft Windows 10 certified 						
<p>VESA-compliant² VESA DDC2B/CI Power management ENERGY STAR® 7.0 Ergonomics ISO 9241-307 Emission standards FCC Class B Environmental TCO Displays 7.0, RoHS, EPEAT™ Silver rating, ULE Gold</p>	 <p style="text-align: center;">ThinkVision X1 Monitor</p>						
<p>Preset resolutions VGA: 640x350, 640x480, 720x400 SVGA: 800x600 XGA: 1024x768, 1152x864 SXGA: 1280x1024 WXGA: 1280x720, 1280x768, 1280x800, 1360x768 WXGA+: 1440x900, 1600x900 WSXGA+: 1680x1050 Full HD: 1920x1080, 1920x1200 UHD: 3840x2160</p> <p>Presets / user settings Standard presets: 20; user settings: 20</p>							
<p>Viewing adjustments <i>Tilt: 22° back, -5° forward;</i> 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), built-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 FPMPI® (100mm mount) Security Security keyhole for attachment of optional cable lock (Kensington® lock-compatible)</p>							
<p>Ship group Monitor, detachable stand, Quick start and safety poster, 1.8 meter DisplayPort cable, 1.8 meter HDMI cable, 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)</p>	<p style="text-align: center;">Limited Warranty</p> <p>See details at http://support.lenovo.com/en_US/guides-and-manuals/detail.page?DocID=UM008281</p> <p style="text-align: center;">Accessories</p> <table border="0"> <tr> <td>Kensington MicroSaver Cable Lock</td> <td style="text-align: right;">73P2582</td> </tr> <tr> <td>Kensington Twin Head Cable Lock</td> <td style="text-align: right;">45K1620</td> </tr> <tr> <td>Lenovo Security Cable Lock</td> <td style="text-align: right;">57Y4303</td> </tr> </table> <p>See details at www.lenovo.com/support/monitoraccessories</p> <p>See all monitors at www.lenovo.com/thinkvision</p>	Kensington MicroSaver Cable Lock	73P2582	Kensington Twin Head Cable Lock	45K1620	Lenovo Security Cable Lock	57Y4303
Kensington MicroSaver Cable Lock	73P2582						
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See footnotes for important warranty information



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™ ThinkVision® 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™ 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.



Convenient user experience

Total versatility with Thunderbolt™ 3 interface supporting 4K + USB 3.0 & 45W PD + motor-camera with dual-array microphone. A Think RedDot tracking button is integrated in the back cover.

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

1

The Executives and CXO of company.

2

SOHO and Gold Collars with high income.

3

Trendsetters who pursue an extreme and forefront monitor.



ThinkVision X1 (2nd GEN) MONITOR



SPECIFICATIONS

DISPLAY		ENVIRONMENTAL	
Panel Size	27"	Temperature Operating	0°C - 45°C
Panel Type	IPS	Temperature Non-Operating	-20°C - 60°C
Backlight	WLED	Humidity Operating	8% - 80%
Resolution	3840 (H) x 2160 (V)	Humidity Non-Operating	5% - 95%
Aspect Ratio	16:9	Altitude Operating	16,000 ft
Anti-Glare	Yes	Altitude Non-Operating	40,000 ft
Screen Dimensions (W x H) (mm)	596.7 (H) x 335.7 (V)	Arsenic-Free Glass	Yes
Maximum Brightness (Typical)	350 cd/m ²	PVC-Free	Yes (W/O cable)
Viewing Angle (H/V at CR 10:1)	178°/178°	Mercury-Free	Yes
Contrast Ratio (Typical)	1000:1	PCC % of Plastic Resins	25%
Dynamic Contrast Ratio	3M:1		
Pixel Pitch (W x H) (mm)	0.1554 x 0.1554		
Dot/Pixel Per Inch (DP/PPI)	163		
Color Gamut (CIE 1931)	99% sRGB		
Response Time (Extreme/Typical/Off)	4/6/14 ms (G-to-G)		
POWER CONSUMPTION		DIMENSIONS (W x D x H)	
Typical	65 W	Size Packed (mm)	718 x 140 x 470
Maximum	135 W	Size Packed (inches)	28.27" x 5.51" x 18.5"
Sleep-Mode	0.5 W	Size Unpacked with Stand (mm)	609.74 x 234.81 x 474.76
Switch Off-Mode	0.5 W	Size Unpacked with Stand (inches)	24" x 9.24" x 18.69"
Power Supply	External	Size Unpacked without Stand (Monitor Head Only) (mm)	609.74 x 32.7 x 351.71
Power Voltage	100 VAC - 240 VAC	Size Unpacked without Stand (Monitor Head Only) (inches)	24" x 1.29" x 13.85"
Voltage Dynamic Frequency	50 Hz - 60 Hz	Distance from Table to Panel Lowest Pixel at Bottom of Screen (mm / inches)	134 / 5.276"
SIGNAL INPUT		Distance from Table to Panel Highest Pixel at Top of Screen (mm / inches)	450 / 17.717"
Video Input Signals	DisplayPort™ 1.2 + HDMI™ 2.0 + Thunderbolt™ 3	Stand Base Footprint Area (mm)	234.81 x 234.81
Video Cables Supplied	HDMI™ + Thunderbolt™ 3	Stand Base Footprint Area (inches)	9.24" x 9.24"
Video Cable Length	1.8 m	Weight Packed	Starting at 18.45 lbs (8.37 kg)
USB Hub	Yes (4 x USB 3.0)	Weight Unpacked	Starting at 12.21 lbs (5.54 kg)
USB Cable Supplied	N/A	Weight Monitor Head Only	Starting at 9.46 lbs (4.29 kg)
Audio-Jack	Yes		
SIGNAL INTERFACE / PERFORMANCE		COMPLIANCE	
Horizontal Frequency	30 kHz - 136 kHz	EPEAT™	Silver
Vertical Frequency	30 Hz - 60 Hz	ENERGY STAR® Rating	7.0
Native Resolution	3840 x 2160	ULE	Silver
Maximum Pixel Clock Speed/Bandwidth	20 Gbps	TCO®	7.0
Default Color Temperature	6500K	RoHS	Yes
Preset Modes	24	Windows Certification	Windows 10
OSD Buttons	2 Buttons + Tracking Point	China Energy Label	Grade 2
OSD Languages	English, French, Italian, German, Spanish, Japanese, Chinese, Russian		
MECHANICAL		WARRANTY AND AVAILABILITY	
Tilt Angle (Front / Back)	-5° / 30°	Warranty	3 Years
Swivel Angle (Left / Right)	N/A	Geography Availability	WW
Lift (mm)	N/A		
Pivot	N/A		
VESA® Mount (mm)	N/A		
Kensington® Lock Slot	Yes		
Cable Management	Yes		
Bezel Color	N/A		
Bezel Width Top (mm / inches)	1.2 / 0.05"		
Bezel Width Bottom (mm / inches)	1.2 / 0.05"		
Bezel Width Sides (mm / inches)	1.2 / 0.05"		



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

Lenovo Services:

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.

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

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