ThinkPad L590 Platform Specifications

Processor

Intel® Celeron® Processor or 8th Generation Intel Core™ i3 / i5 / i7 Processor

Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics
Cel 4305U	2	2	2.2 GHz	-	2MB	DDR4-2133	Intel UHD Graphics 610
i3-8145U	2	4	2.1 GHz	3.9 GHz	4MB	DDR4-2400	Intel UHD Graphics 620
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		
i7-8665U	4	8	1.9 GHz	4.8 GHz	8MB		

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)

Chipset

Intel SoC (System on Chip) platform

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*

Display

Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle
15.6"	HD (1366x768)	TN	Anti-glare	220 nits	16:9	400:1	45%	90°
15.6"	FHD (1920x1080)	IPS	Anti-glare	250 nits	16:9	700:1	45%	170°

Multi-touch

None

Storage

- 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*

Optane™ memory

Optional: Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2

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 4.2, 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

WWAN *(optional)*

One of the following, configurable by model:

- 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

** For non-WWAN model, it means the model is NOT WWAN upgradable*

SIM card

None

Dimensions

WxDxH: 14.82" x 10.02" x 0.90"; 376.5mm x 254.5mm x 22.95mm

Weight

Starting at 4.48 lb / 2.0 kg

Case color

Black

Case material

PC/ABS plastic

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 (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
** 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)*

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, 2W x 2, Dolby® Advanced Audio /
dual array microphone, headphone / microphone combo jack

Keyboard

6-row, spill-resistant, multimedia Fn keys, numeric keypad, 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

System Mgt *(opt)*

Intel vPro Technology

Fingerprint reader

Optional: Touch style fingerprint reader on the palm rest

NFC *(optional)*

Near Field Communication

Battery

Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter

Max battery life

MobileMark® 2014: 12 hr
* Battery life varies significantly with settings, usage, & other factors

AC adapter

45W or 65W USB Type-C AC adapter

Preload

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

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.