

## PERFORMANCE

### Processor

#### Processor Family

9th Generation Intel® Core™ i5 / i7 / i9 Processor

#### Processor

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Core i5-9300H	4	8	2.4GHz	4.1GHz	8MB	DDR4-2666	Intel UHD Graphics 630
Core i5-9400H	4	8	2.5GHz	4.3GHz	8MB	DDR4-2666	Intel UHD Graphics 630
Core i7-9750H	6	12	2.6GHz	4.5GHz	12MB	DDR4-2666	Intel UHD Graphics 630
Core i7-9850H	6	12	2.6GHz	4.6GHz	12MB	DDR4-2666	Intel UHD Graphics 630
Core i9-9880H	8	16	2.3GHz	4.8GHz	16MB	DDR4-2666	Intel UHD Graphics 630

### Operating System

#### Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

### Graphics

#### Graphics

Graphics	Type	Memory	Key Features
Intel UHD Graphics 630	Integrated	Shared	DirectX® 12
NVIDIA® GeForce® GTX 1650 Max-Q	Discrete	4GB GDDR5	DirectX 12

### Monitor Support

#### Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or Thunderbolt™ (up to 5K@60Hz)

### Chipset

#### Chipset

Intel CM246 chipset

### Memory

#### Memory Type

DDR4-2666

#### Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

#### Max Memory<sup>[1]</sup>

Up to 64GB DDR4-2666

#### Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

### Storage

#### Storage Support

Up to two drives, 2x M.2 2280 SSD

- M.2 2280 SSD up to 2TB
- RAID 0/1 support

# ThinkPad X1 Extreme (2nd Gen)

## RAID

RAID 0/1 support

### Storage Type

Disk Type	Interface	RPM	Security
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	-
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal2

## Removable Storage

### Optical

None

### Card Reader

SD card reader, supports UHS-II SD card

## Multi-Media

### Audio Chip

High Definition (HD) Audio, Synaptic® CX11880 codec

### Speakers

Stereo speakers, 2W x2, Dolby® Atmos®

### Microphone<sup>[1]</sup>

- Dual array microphone, 360° far-field
- No microphone

### Camera<sup>[2]</sup>

- 720p, with ThinkShutter, fixed focus
- IR & 720p, with ThinkShutter, fixed focus
- No camera

#### Notes:

1. Microphone not configured is for speical bid only
2. Camera not configured is for speical bid only

## Battery

### Battery

Integrated Li-Polymer 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

### Max Battery Life<sup>[1]</sup>

MobileMark® 2014: 14 hr

#### Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

## Power Adapter

### Power Adapter<sup>[1]</sup>

135W slim tip AC adapter

#### Notes:

1. 170W for i9-10885H model only

## DESIGN

## Display

### Display<sup>[2]</sup>

Size	Resolution	Touch	Type	Brightness	Surface	Aspect	Contrast	Color	Viewing	Key
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						Ratio	Ratio	Gamut	Angle	Features
15.6"	FHD (1920x1080)	None	IPS	300 nits	Anti-glare	16:9	700:1	72% NTSC	170°	-
15.6"	FHD (1920x1080)	None	IPS	500 nits	Anti-glare	16:9	1200:1	72% NTSC	170°	Dolby Vision™, HDR
15.6"	UHD (3840x2160)	None	IPS	500 nits	Anti-glare	16:9	1200:1	100% Adobe® RGB	170°	Dolby Vision, HDR
15.6"	UHD (3840x2160)	Multi-touch	OLED	SDR 400nit, HDR 500nit (peak)	Anti-reflection Anti-smudge	16:9	100000:1	100% DCI-P3	170°	Dolby Vision, HDR

### Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

### Touchscreen

- Capacitive-type multi-touch, supports 10-point touch
- Non-touch

### Notes:

1. California Electronic Waste Recycling Fee  
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. HDR on non-OLED displays is only supported under hybrid mode

## Input Device

### Pen<sup>(1)</sup>

- Lenovo Pen Pro (for multi-touch display)
- No pen (pen needs to be purchased separately)
- Not support (non-touch display doesn't support pen input)

### Keyboard

6-row, spill-resistant, multimedia Fn keys

### Keyboard Backlight

LED backlight

### UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad

### Notes:

1. Bundled Lenovo Pen Pro is only available for special bid models

## Mechanical

### Dimensions (WxDxH)

Models	Dimensions
Non-touch models	361.8 x 245.7 x18.4 mm (14.24 x 9.67 x 0.72 inches)
Touch models	361.8 x 245.7 x18.7 mm (14.24 x 9.67 x 0.74 inches)

### Weight

Models	Weight
Non-touch models	1.7 kg (3.75 lbs)
Touch models	1.8 kg (3.97 lbs)

### Case Color

- Black, paint
- Black, weave

### Case Material

CFRP + GFRP hybrid (top), Aluminium alloy (bottom)

## CONNECTIVITY

### Network

#### Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad® Ethernet Extension Cable
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Cable

#### WLAN + Bluetooth™<sup>[1]</sup>

- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

#### WWAN

Not Support

#### SIM Card

No SIM card

#### NFC

Not support

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#### Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions  
Bluetooth 5.2 is supported with driver version 22.30 and later

### Ports

#### Standard Ports<sup>[2]</sup>

- 1x USB 3.1 Gen 1
- 1x USB 3.1 Gen 1 (Always On)
- 2x USB-C 3.1 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x power connector

#### Optional Ports

1x Smart card reader

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#### Notes:

1. Depending on many factors, actual data transfer speed may be lower than theoretical speed
2. Power Delivery only supports power-out for charging peripherals

### Monitor Cable

#### Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

## SECURITY & PRIVACY

### Security

#### Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

#### Physical Locks

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Kensington® Security Slot

## Smart Card Reader

- Smart card reader
- No smart card reader

## Fingerprint Reader

Touch style fingerprint reader on keyboard bezel, match-on-chip

## BIOS Security

- Power-on password
- Supervisor password
- Hard disk password
- Self-healing BIOS

## Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

## MANAGEABILITY

### System Management

#### System Management

- Intel vPro Technology, DASH
- None

## SERVICE

### Warranty

#### Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 1-year depot with 2-year system board service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

## ACCESSORIES

### Bundled Accessories

#### Bundled Accessories

- ThinkPad Ethernet Extension Cable
- None

## CERTIFICATIONS

### Green Certifications

#### Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

### Other Certifications

#### Mil-Spec Test

MIL-STD-810G military test passed

