PERFORMANCE

Processor

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

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

Operating System

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

Graphics

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Type</th>
<th>Memory</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel UHD Graphics 630</td>
<td>Integrated</td>
<td>Shared</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>NVIDIA® GeForce® GTX 1650 Max-Q</td>
<td>Discrete</td>
<td>4GB GDDR5</td>
<td>DirectX 12</td>
</tr>
</tbody>
</table>

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

Intel CM246 chipset

Memory

Memory Type
DDR4-2666

Memory Slots
Two DDR4 SO-DIMM slots, dual-channel capable

Max Memory
Up to 64GB DDR4-2666

Notes:
- 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

RAID
RAID 0/1 support

Storage Type

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</th>
<th>Security</th>
</tr>
</thead>
</table>

ThinkPad X1 Extreme (2nd Gen) - January 05 2021
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 x 2, Dolby® Atmos®

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

Notes:
- Microphone not configured is for special bid only

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

Notes:
- Camera not configured is for special bid only

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

Max Battery Life
MobileMark® 2014: 14 hr

Notes:
- 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
135W slim tip AC adapter

Notes:
- 170W for i9-10885H model only

DESIGN

Display

<table>
<thead>
<tr>
<th>Size</th>
<th>Resolution</th>
<th>Touch</th>
<th>Type</th>
<th>Brightness</th>
<th>Surface</th>
<th>Aspect Ratio</th>
<th>Contrast Ratio</th>
<th>Color Gamut</th>
<th>Viewing Angle</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.6&quot;</td>
<td>FHD (1920x1080)</td>
<td>None</td>
<td>IPS</td>
<td>300 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>700:1</td>
<td>72% NTSC</td>
<td>170°</td>
<td>-</td>
</tr>
</tbody>
</table>
### Color Calibration
- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

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

### Input Device
**Pen**
- 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)

**Notes:**
- Bundled Lenovo Pen Pro is only available for special bid models

### Keyboard
- 6-row, spill-resistant, multimedia Fn keys

### Keyboard Backlight
- LED backlight

### UltraNav™
- TrackPoint® pointing device and glass surface multi-touch touchpad

### Mechanical
#### Dimensions (Wx Dx H)

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-touch models</td>
<td>361.8 x 245.7 x 18.4 mm (14.24 x 9.67 x 0.72 inches)</td>
</tr>
<tr>
<td>Touch models</td>
<td>361.8 x 245.7 x 18.7 mm (14.24 x 9.67 x 0.74 inches)</td>
</tr>
</tbody>
</table>

#### Weight

<table>
<thead>
<tr>
<th>Models</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-touch models</td>
<td>1.7 kg (3.75 lbs)</td>
</tr>
<tr>
<td>Touch models</td>
<td>1.8 kg (3.97 lbs)</td>
</tr>
</tbody>
</table>

### Case Color
- Black, paint
- Black, weave

### Case Material
- CFRP + GFRP hybrid (top), Aluminium alloy (bottom)

### Connectivty
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™
- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- No WLAN and Bluetooth

Notes:
- Intel WiFi 6 full features might be limited by country level restrictions
- BT5.1 is supported on Windows 10 version 2004 or above (limited to BT5.0 on earlier version)

WWAN
Not Support

SIM Card
No SIM card

NFC
Not support

Ports

Standard Ports
- 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

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

Optional Ports
1x Smart card reader

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
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
- 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
- ThinkPad Ethernet Extension Cable
- None

CERTIFICATIONS

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

Other Certifications
Mil-Spec Test
MIL-STD-810G military test passed