## ThinkPad X1 Carbon Gen 8 Platform Specifications

### Processor

<table>
<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>4</td>
<td>8</td>
<td>1.6 GHz</td>
<td>4.2 GHz</td>
<td>6MB</td>
<td>LPDDR3-2133</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>i5-10310U</td>
<td>4</td>
<td>8</td>
<td>1.7 GHz</td>
<td>4.4 GHz</td>
<td>6MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i7-10510U</td>
<td>8</td>
<td>8</td>
<td>1.8 GHz</td>
<td>4.9 GHz</td>
<td>8MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i7-10610U</td>
<td>8</td>
<td>8</td>
<td>1.8 GHz</td>
<td>4.9 GHz</td>
<td>8MB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Graphics

Intel UHD Graphics in processor; supports up to 3 independent displays via native display and two external monitors; supports external monitors via HDMI (up to 4K @ 24 Hz) or Thunderbolt (5K @ 60 Hz)

### Chipset

Intel SoC (System on Chip) platform

8GB or 16GB / 2133MHz LPDDR3 / soldered to systemboard, no sockets

### Display

<table>
<thead>
<tr>
<th>Size</th>
<th>Resolution</th>
<th>Type</th>
<th>Surface</th>
<th>Touch</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&quot; FHD (1920x1080)</td>
<td>IPS Anti-glare</td>
<td>-</td>
<td>400 nits</td>
<td>16:9</td>
<td>800:1</td>
<td>72%</td>
<td>170°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.0&quot; FHD (1920x1080)</td>
<td>IPS Anti-glare</td>
<td>Multi-touch</td>
<td>400 nits</td>
<td>16:9</td>
<td>700:1</td>
<td>72%</td>
<td>170°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.0&quot; FHD (1920x1080)</td>
<td>IPS Anti-glare</td>
<td>Multi-touch</td>
<td>500 nits</td>
<td>16:9</td>
<td>1000:1</td>
<td>72%</td>
<td>170°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.0&quot; WQHD (2560x1440)</td>
<td>IPS Anti-glare</td>
<td>-</td>
<td>300 nits</td>
<td>16:9</td>
<td>1000:1</td>
<td>72%</td>
<td>170°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.0&quot; UHD (3840x2160)</td>
<td>IPS Glossy</td>
<td>-</td>
<td>500 nits</td>
<td>16:9</td>
<td>1500:1</td>
<td>90% DCI-P3</td>
<td>170°</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* WQHD is NOT available in EMEA

### Multi-touch (opt)

Capacitive-type multi-touch, supports 10-finger gesture, anti-reflection (AR) / anti-smudge (AS) coating

### Storage

- M.2 2280 SSD / PCIe NVMe 3.0 x 4
- M.2 2280, PCIe NVMe 3.0 x 4 None

### Optical

Native Intel Ethernet Connection i219-V (Non-vPro) or i219-LM (vPro) via optional ThinkPad Ethernet Extension Adapter Gen 2

### Ethernet

Native Intel Ethernet Connection i219-V (Non-vPro) or i219-LM (vPro)

* Intel Wi-Fi 6 AX201, Wi-Fi 2x2 802.11ax + Bluetooth 5.1

* Intel Wi-Fi 6 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 (optional)

- Wireless WAN upgradable
- Integrated Mobile Broadband 4G LTE, Quectel E850C, M.2 card
- 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)

- Gemalto eSIM
- Nano-SIM card, Lenovo Connect 4 months, 4G LTE

### Smart card reader

None

### Media reader

None

### Ports

- Two USB 3.2 Gen 1 (one Always On), two USB 3.2 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), headset, microphone combo jack, side docking connector, security keyhole

* Depending on many factors, actual data transfer speed may be lower than theoretical speed

### Camera

- HD720p camera with ThinkShutter camera privacy, fixed focus
- HD720p camera with ThinkShutter camera privacy, fixed focus
  - IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus

### Audio support

- Dolby Atmos speaker system, 2W x 2, 0.8 x 2 / four 360 ° far-field microphones, headphone / microphone combo jack
- HD Audio, USI 4551-513711-00 codec

### Keyboard

- 6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, LED backlight
- TrackPoint® pointing device and buttonless glass surface multi-touch touchpad

### Security chip

- Power-on password, hard disk password, supervisor password, security keyhole
- Firmware TPM 2.0 integrated in chipset
- Discrete TPM 2.0 TCG Certified

### Security

- Intel vPro Technology
- Fingerprint reader
- Touch style match on chip fingerprint reader on the palm rest
- NFC (optional)
- Near Field Communication

### Security chip

- Battery
- Integrated Li-Polymer 51Wh battery
- Supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

### Battery

- MobileMark® 2014: 19.5 hr
- MobileMark® 2018: 13.8 hr

### Max battery life

- AC adapter
  - 45W USB-C AC adapter
  - 65W USB-C AC adapter
  - 65W USB-C slim AC adapter

### Operating system

- Windows® 10 Home 64
- Windows 10 Pro 64

### Limited warranty

- 1-year depot repair service
- 1-year depot with 2-year system board repair service
- 1-year limited onsite service
- 1-year + 2-year depot repair service
- 1-year + 2-year limited onsite service
- 3-year/1-yr battery depot repair service
- 3-year/1-yr battery limited onsite service

### Mil-Spec test

- MIL-STD-810G military testing

### Environment

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

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