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</tbody>
</table>
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.

June 5, 2019 - Version 543

Additions in this update
► New product(s)
  None
► New model(s)
  None
► Others
  None

Changes in this update
► None

Withdrawals in this update
► Withdrawn product(s)
  None
## ThinkPad X1 Tablet (3rd Gen) Platform Specifications

<table>
<thead>
<tr>
<th>Processor 8th Generation Intel® Core™ i5 / i7 Processor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor Number</strong></td>
</tr>
<tr>
<td>I5-8250U</td>
</tr>
<tr>
<td>I5-8350U</td>
</tr>
<tr>
<td>I7-8550U</td>
</tr>
<tr>
<td>I7-8650U</td>
</tr>
</tbody>
</table>

| Graphics | Intel UHD Graphics 620 in processor; supports external digital monitor via USB Type-C |
| Chipset | Intel SoC (System on Chip) platform |
| Memory | 8GB, or 16GB / 2133MHz LPDDR3 / soldered to system board, no sockets |

| Display | 13.0” (330mm) QHD+ (3000x2000), glossy, LED backlight, IPS, anti-finger print display with Corning® Gorilla® Glass, WideView (160° viewing), 400 nits, 3:2 aspect ratio, 1200:1 contrast ratio |
| Multi-touch Pen | Capacitive touch panel, supports ten-finger gesture |
| Kick stand | Opening angle up to 170 degrees |

| Storage | Some: M.2 SSD / SATA 6.0Gb/s (e.g. xxxG SSD)  |
| Optical Storage extension | None |

| Ethernet | None |
| WWAN (optional) | Integrated Mobile Broadband 4G LTE-A, Qualcomm Snapdragon™ X7 LTE-A (Sierra Wireless EM7455) |

| SIM card (opt) | Nano-SIM card slot, in the combo slot with nano-SIM card reader |

| Dimensions | Tablet only: 11.97” x 8.9” x 0.35”; 304.1mm x 226mm x 8.9mm  |
| Weight | Tablet + keyboard: 11.97” x 8.9” x 0.57”; 304.1mm x 226mm x 14.4mm  |
| Case color | Black |
| Case material | Magnesium / Aluminum |

| Ports | Two USB 3.1 Type-C Gen 1 / Thunderbolt 3 / Power Delivery 3.0, one Pogo keyboard connector, one Pen holder slot, headphone / microphone combo jack, combo slot of nano-SIM card (WWAN models) and microSD card reader |

| Control buttons | Power button, volume control button, reset switch |
| Dock | Optional: Hybrid dock |
| Monitor cable (opt) | None |
| Adapter (optional) | USB-C to RJ45: Lenovo USB-C to Ethernet Adapter  |
| | USB-C to VGA: Lenovo USB-C to VGA Plus Power Adapter  |
| | USB-C to HDMI: Lenovo USB-C to HDMI Plus Power Adapter  |
| Camera | Front camera: 2.0-megapixel, fixed focus  |
| IR Camera | Optional: IR camera, fixed focus (Not available with NFC)  |
| Audio support | Realtek® ALC3278 codec / stereo speakers, 1W x 2 / two microphones, combo audio / microphone jack  |
| Pogo keyboard | Magnetic attached thin keyboard, with TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch, backlit |
| Keyboard color | Black |
| Security | Kensington lock slot |
| Security chip | Discrete TPM 2.0 TCG Certified  |
| vPro (optional) | Intel vPro Technology  |
| Fingerprint reader | Optional: Touch style Fingerprint reader |
| NFC (optional) | Near Field Communication (Not available with the IR camera) |
| Battery | Integrated Li-Ion 42Wh battery  |
| Max battery life | MobileMark® 2014: 9.5 hr  |
| AC adapter | 45W or 65W USB Type-C AC adapter  |
| Light sensor | Ambient Light Sensor  |
| G-sensor | 3D accelerometer  |
| Compass | 3D compass  |
| Gyroscope | 3D gyrometer  |
| GPS | GPS function is integrated into WWAN module  |
| Preload | Some: Windows 10 Pro 64  |
| Limited warranty | One of the following, customizable by model:  |
| | • 1-year depot repair service  |
| | • 3-year/1-year battery depot repair service  |
| | • 3-year/1-year battery limited onsite service  |
| MIL-Spec test | MIL-STD-810G military certification  |
| Environment | EPEAT® Gold, GREENGUARD, Low Halogen, RoHS  |

Lenovo  
March 2019
## ThinkPad L380 Yoga Platform Specifications

### Processor

<table>
<thead>
<tr>
<th>Processor</th>
<th>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>i5-7200U</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>2.5 GHz</td>
<td>3.1 GHz</td>
<td>3MB</td>
<td>DDR4-2133</td>
<td>Intel HD Graphics 620</td>
</tr>
<tr>
<td>i5-8250U</td>
<td>4</td>
<td>8</td>
<td></td>
<td>1.6 GHz</td>
<td>3.4 GHz</td>
<td>6MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
<tr>
<td>i5-8350U</td>
<td>4</td>
<td>8</td>
<td></td>
<td>1.7 GHz</td>
<td>3.6 GHz</td>
<td>6MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
<tr>
<td>i5-8550U</td>
<td>4</td>
<td>8</td>
<td></td>
<td>1.8 GHz</td>
<td>4.0 GHz</td>
<td>8MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
</tbody>
</table>

### 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)

### Chipset

Intel SoC (System on Chip) platform

### Memory

Up to 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets

### Display

- **Type**: 13.3" (338mm) FHD (1920x1080), glossy, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle
- **Cameras**: HD720p resolution, low light sensitive, fixed focus
- **Audio**: HD Audio, Realtek ALC3287 codec, Dolby® Advance / stereo speakers, 2W x 2 / dual array microphone, headphone / microphone combo jack
- **Screen**: Capacitive-type multi-touch, AR (anti-reflection), supports 10-finger gesture
- **Batteries**: Integrated Li-Ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter
- **Battery Life**: 12.85 hr
- **AC Adapter**: MobileMark® 2014: 12.85 hr
- **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-year battery depot repair service
  - 3-year/1-year battery limited onsite service

### Security

- Power-on password, hard disk password, supervisor password, security keyhole
- Security chip: Discrete TPM 2.0, TCG Certified
- Fingerprint reader: Optional: Touch style fingerprint reader on the keyboard bezel, anti-spoofing technology
- NFC: Near Field Communication (mutually exclusive with smart card reader)

### Networking

Optane Memory

- None

### 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)
- None

### Ethernet

Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Cable Gen 2

### WLAN + Bluetooth™

- Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + Bluetooth 4.1, M.2 card
  - * Wireless card supports BT4.2 but is limited to BT4.1 by Windows OS

### WWAN

- None

### SIM card

- None

---

**Dimensions**: WxDxH: 12.67" x 8.82" x 0.74"; 322mm x 224.2mm x 18.8mm
**Weight**: Starting at 3.44 lb / 1.56 kg
**Case color**: Black or Silver
**Case material**: Display cover: Aluminum
**Bottom**: GFRP

**Smart card reader**: None
**Media reader**: MicroSD card reader
**Ports**: Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 1, HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, microSD card reader, security keyhole

* 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 VGA**: Lenovo USB-C to VGA Adapter
**USB-C to DP**: Lenovo USB-C to DisplayPort Adapter

---

**Product Specifications Reference (PSREF)**

Lenovo

March 2019
## ThinkPad L390 Yoga Platform Specifications

**Product Specifications Reference (PSREF)**

### Processor

<table>
<thead>
<tr>
<th>Processor Number</th>
<th># of Cores</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>i3-8145U</td>
<td>2</td>
<td>2.1 GHz</td>
<td>3.9 GHz</td>
<td>4MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
<tr>
<td>i5-8265U</td>
<td>4</td>
<td>1.6 GHz</td>
<td>3.9 GHz</td>
<td>6MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
</tbody>
</table>

### 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)

### Chipset

- Intel SoC (System on Chip) platform
- 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets

### Display

- 13.3” (338mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, 72% gamut, 170° viewing angle
- Capacitive-type multi-touch, AR (anti-reflection), supports 10-finger gesture
- Yoga hinge, 360 degree
- Multi-mode:
  - Yoga 1: Notebook, stand, tent, tablet
  - Yoga 2: Yoga hinge, 360 degree

### Storage

- One of the following, configurable by model:
  - M.2 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

### Optical Memory

<table>
<thead>
<tr>
<th>Optical Memory</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

### 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)

### 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

### WLAN

- 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

### WWAN

- None

### Monitor cable (optional)

- USB-C to VGA: Lenovo USB-C to VGA Adapter
- USB-C to HDMI: Lenovo USB-C to HDMI Adapter
- USB-C to HDMI + Power Adapter: Lenovo USB-C to HDMI Plus Power Adapter
- USB-C to DP: Lenovo USB-C to DisplayPort Adapter
- USB-C to RJ45: Lenovo USB-C to Ethernet Adapter
- USB-C to USB-A: Lenovo USB-C to USB-A Adapter
- USB-C to USB-C: Lenovo USB-C to USB-C Cable 2M

### Smart card reader

- None

### iOS software

- Windows 10 Home 64 or Windows 10 Pro 64
- Limited warranty:
  - 3-year/1-yr limited warranty

### Battery

- Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter
- MobileMark 2014: 12.17 hr
- 45W or 65W USB Type-C AC adapter

### Ports

- Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 1, HDMI 1.4b, Ethernet extension connector, headphone / microphone combo jack, microSD card reader, security keyhole
- Wi-Fi + Bluetooth combo adapter
- * Depending on many factors, actual data transfer speed may be lower than theoretical speed

### Audio support

- HD Audio, Realtek ALC3287 codec, Dolby Audio Premium / stereo speakers, 2W x 2 / dual array microphone, headphone / microphone combo jack
- * Depending on many factors, actual data transfer speed may be lower than theoretical speed

### Camera

- 720p: HD720p resolution, low light sensitive, fixed focus
- IR & 720p: IR camera and HD720p camera, fixed focus (black model only)
- World facing: 5MP resolution, auto focus
- (mutually exclusive with fingerprint reader)

### Security chip

- Power-on password, hard disk password, supervisor password, security keyhole
- Discrete TPM 2.0, TCG Certified

### Fingerprint reader

- Optional: Touch style fingerprint reader on the palm rest
- (mutually exclusive with World facing camera)

### 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: 12.17 hr
- Battery life varies significantly with settings, usage, & other factors

### AC adapter

- 45W or 65W USB Type-C AC adapter

### 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

### Milo Spec test

- MIL-STD-810G military certification

### Environment

- ENERGY STAR 7.0; RoHS-compliant

---

Lenovo
March 2019
## ThinkPad X1 Yoga (3rd Gen) 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>Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-8250U</td>
<td>4</td>
<td>8</td>
<td>1.6 GHz</td>
<td>3.4 GHz</td>
<td>6MB</td>
<td>LPDDR3-2133</td>
<td>Intel UHD Graphics 620</td>
</tr>
<tr>
<td>8-8350U</td>
<td>4</td>
<td>8</td>
<td>1.7 GHz</td>
<td>3.6 GHz</td>
<td>8MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-8550U</td>
<td>4</td>
<td>8</td>
<td>1.8 GHz</td>
<td>4.0 GHz</td>
<td>8MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-8650U</td>
<td>4</td>
<td>8</td>
<td>1.9 GHz</td>
<td>4.2 GHz</td>
<td>8MB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Graphics

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; soldered to systemboard, no sockets

### Display

**Some:**
- 14.0" (355mm) FHD (1920x1080), LED backlight, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 170° viewing angle, IPS
- 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 170° viewing angle, IPS
- 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

**Some:**
- 14.0" (355mm) QHD (2560x1440), LED backlight, 300 nits, 16:9 aspect ratio, 700:1 contrast ratio, 72% gamut, 170° viewing angle, IPS

### 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

### Convert-mode Pen (optional)

ThinkPad Pen Pro, active pen for multi-touch display, on-board rechargeable

### Storage

**Some:** M.2 SSD / SATA 6.0 Gb/s (e.g. xxxG SSD)

**Some:** M.2 SSD / PCle NVMe, PCle 3.0 x 4, 32Gb/s (e.g. xxxG SSD PCle NVMe)

### Optical

None

### Ethernet

Native Intel Ethernet Connection WGI219-LM (vPro)

via optional ThinkPad Ethernet Extension Cable

### WLAN

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

### Bluetooth™

Integrated Mobile Broadband 4G LTE-A, Intel XMM™ 7360 (Fibocom L850-GL), M.2 card

NANO-SIM Card slot, optional Verizon LTE (US) SIM card

### Limited warranty

One of the following, configurable by model:

- 1-year depot repair service
- 3-year/1-yr battery depot repair service

### Security

- Power-on password, hard disk password, supervisor password, security keyhole
- Discrete TPM 2.0 TCG Certified

### Audio

HD Audio, Realtek ALC3266 codec, Dolby® Audio™ Premium / stereo speakers, 1W x 2 / dual array microphone, headphone / microphone combo jack

### Camera

One of the following, configurable by model:

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

* WWAN models and HDR panel models can not support IR camera

### Monitor cable

USB-C to DisplayPort Adapter

Lenovo USB-C to DisplayPort Adapter

### Media reader

MicroSD card reader, supports UHS-II

### Ports

Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3, HDMI 1.4, Ethernet extension connector, nano-SIM card slot (WWAN models), headphone / microphone combo jack, microSD card reader

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

### WiGig dock

None

### Monitor cable

HDMI to VGA™: Lenovo HDMI to VGA Monitor Adapter (optional): USB-C to VGA: Lenovo USB-C to VGA Adapter USB-C to DP: Lenovo USB-C to DisplayPort Adapter

### Camera (optional)

One of the following, configurable by model:

- 720p HD720p camera with ThinkShutter camera privacy, fixed focus
- IR & 720p: IR camera and HD720p camera, fixed focus

### Audio support

HD Audio, Realtek ALC3266 codec, Dolby® Audio™ Premium / stereo speakers, 1W x 2 / dual array microphone, headphone / microphone combo jack

### Keyboard

6-row wave keyboard (rise & fall), spill-resistant, multimedia Fn keys, LED backlight

TrackPoint® pointing device and 3+2 buttons multi-touch clickpad

### Security

Power-on password, hard disk password, supervisor password, security keyhole

Discrete TPM 2.0 TCG Certified

### Battery

Integrated Li-Ion 54Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

with 65W USB Type-C AC adapter

### ADP

MobileMark® 2014: 15.4 hr

* Battery life varies significantly with settings, usage, & other factors

### AC adapter

45W or 65W USB Type-C AC adapter

### Light sensor

Ambient Light Sensor

### G-sensor

3D accelerometer and 3D magnetometer

### Compass

None

### Gyroscope

3D gyrometer

### Preload

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 certification

### Environment

EPEAT® Gold; ENERGY STAR®; RoHS-compliant

Lenovo
March 2019
### Processor

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<tr>
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<td>4.2 GHz</td>
<td>8MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
</tbody>
</table>

### Graphics
- Intel UHD Graphics 620 in processor only.
- Supports three independent displays.
- Max resolution: 4096x2304 @ 60Hz (USB Type-C); 4096x2160 @ 30Hz (HDMI)

### Chipset
- Intel SoC (System on Chip) platform

### Display
- 13.3” (337.8mm) FHD (1920x1080), LED backlight, IPS
- 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle

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

### Hinge
- Yoga hinge, 360 degree

### Convert-mode Pen
- Laptop, tent, stand, yoga and tablet

### Storage
- Some: M.2 SSD / SATA 6.0Gbps (e.g. xxxG SSD)
- Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s (e.g. xxxG SSD PCIe NVMe)

### Optane Memory
- None

### Ethernet
- Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Cable

### WLAN
- 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

### Bluetooth™
- Bluetooth 4.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter

### WWAN (optional)
- Integrated Mobile Broadband 4G LTE
- M.2 card (EMEA only)

### SIM card (optional)
- Nano-SIM card slot

### Graphics
- Intel UHD Graphics 620 in processor only.
- Supports three independent displays.
- Max resolution: 4096x2304 @ 60Hz (USB Type-C); 4096x2160 @ 30Hz (HDMI)

### Chipset
- Intel SoC (System on Chip) platform

### Display
- 13.3” (337.8mm) FHD (1920x1080), LED backlight, IPS
- 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, 170° viewing angle

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

### Hinge
- Yoga hinge, 360 degree

### Convert-mode Pen
- Laptop, tent, stand, yoga and tablet

### Storage
- Some: M.2 SSD / SATA 6.0Gbps (e.g. xxxG SSD)
- Some: M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s (e.g. xxxG SSD PCIe NVMe)

### Optane Memory
- None

### Ethernet
- Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Cable

### WLAN
- 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

### Bluetooth™
- Bluetooth 4.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter

### WWAN (optional)
- Integrated Mobile Broadband 4G LTE
- Intel XMM™ 7626 (Fibocom L830-EB), M.2 card (EMEA only)

### SIM card (optional)
- Nano-SIM card slot

### Dimensions
- Width x Depth x Height: 12.34” x 8.75” x 0.72”; 313.5mm x 222.2mm x 18.2mm

### Weight
- Starting at 3.17 lb (1.43kg)

### Case color
- Black or silver

### Case Material
- Carbon-Fiber Hybrid

### Smart card reader
- Optional: Smart card reader (mutually exclusive with NFC)

### Media reader
- One microSD card slot (microSD, microSDHC, microSDXC), UHS-I

### Ports
- Two USB 3.1 Gen 1 (one Always On), Ethernet extension connector, one USB 3.1 Type-C Gen 2 / Thunderbolt 3, HDMI 1.4b, microSD card reader, nano-SIM card slot (WWAN models), headphone / microphone combo jack
- * Depending on many factors, actual data transfer speed may be lower than theoretical speed

### WiGig dock
- None

### Monitor cable (optional)
- 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

### Camera
- One of the following, configurable by model:
  - 720p: HD720p camera, fixed focus
  - 1080p: 1080p camera and HD720p camera, fixed focus

### Audio support
- HD Audio, Conexant® CX11771 codec / stereo speakers, 2W x 2 / dual array microphone, headphone / microphone combo jack

### Keyboard
- 6-row, spill-resistant, multimedia Fn keys, LED backlight
- TrackPoint® pointing device and 3+2 buttons Mylar surface multi-touch click pad

### Security
- Power-on password, hard disk password, supervisor password, security keyhole
- Intel vPro Technology
- Discrete TPM 2.0 TCG Certified

### Security chip
- vPro (optional)
- Fingerprint reader (optional)
- Touch style match on chip fingerprint reader on the palm rest

### NFC (optional)
- Near Field Communication (mutually exclusive with smart card reader)

### Battery
- Li-Ion 51Wh battery
- MobileMark® 2014: 13.6 hr
- * Battery life varies significantly with settings, usage, & other factors

### AC adapter
- 45W or 65W AC adapter (slim tip), 45W or 65W USB Type-C AC adapter

### Light sensor
- Ambient Light Sensor
- 3D accelerometer and 3D magnetometer
- 3D compass
- 3D gyrometer

### Preload
- Some: Windows 10 Home 64
- Some: 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 certification

### Environment
- EPEAT™ Gold, ENERGY STAR®; RoHS-compliant

Lenovo
March 2019
## ThinkPad X390 Yoga 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>i5-8255U</td>
<td>4</td>
<td>8</td>
<td>1.6 GHz</td>
<td>3.9 GHz</td>
<td>6MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
<tr>
<td>i5-8365U</td>
<td>4</td>
<td>8</td>
<td>1.6 GHz</td>
<td>4.1 GHz</td>
<td>6MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
<tr>
<td>i7-8565U</td>
<td>4</td>
<td>8</td>
<td>1.8 GHz</td>
<td>4.6 GHz</td>
<td>8MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
</tbody>
</table>

### 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@24Hz (HDMI) **Note**: Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation

### Chipset

Intel SoC (System on Chip) platform 8GB or 16GB / 2400MHz DDR4 / soldered to systemboard, no sockets

### Display

13.3" (337.8mm) FHD (1920x1080), LED backlight, IPS, Glossy, 300 nits, 16:9 aspect ratio, 800:1 contrast ratio, Color Gamut 72%, 170° viewing angle, capacitive-type multi-touch, AR (anti-reflection), AS (anti-smudge) supports 10-finger gesture: Yoga hinge, 360 degree

### Storage

- **M.2 SSD** / PCIe NVMe, PCIe 3.0 x 2
- **M.2 SSD** / SATA 6.0Gb/s

### Optane™ memory

- **Intel Optane Memory, PCIe NVMe, PCIe 3.0 x 2**

### 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

One of the following, configurable by model:
- 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 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter

### Bluetooth™

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

### WWAN (optional)

- Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card
- For non-WWAN models, it means the model is NOT WWAN upgradable

### Media reader

MicroSD card reader, in the combo slot with nano-SIM card

### 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 Display Port), 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

### Monitor cable

* Depending on many factors, actual data transfer speed may be lower than theoretical speed
- USB-C to HDMI: Lenovo USB-C to HDMI Adapter
- USB-C to VGA: Lenovo USB-C to VGA Adapter
- USB-C to DP: Lenovo USB-C to DisplayPort Adapter

### Bundled Accy

Optional: ThinkPad Ethernet Extension Adapter Gen 2

### Camera

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
- HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack

### Audio support

HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array microphone, headphone / microphone combo jack

### Security

Power-on password, hard disk password, supervisor password, security keyhole

### Security chip

- **Intel vPro Technology**
- **Fingerprint reader**
- **Touch style match on chip fingerprint reader on the palm rest**
- **Near Field Communication**

### Battery

Integrated Li-ion 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter

### Max battery life

MobileMark® 2014: 14.5 hrs

### AC adapter

45W or 65W USB Type-C AC adapter

### Limited warranty

One of the following, configurable by model:
- 1-year depot repair service (optional)
- 3-year/1-yr battery depot repair service (optional)
- 3-year/1-yr battery limited onsite service

### Mil-Spec test

MIL-STD-810G military certification

### Environment

EPEAT™ Bronze; ENERGY STAR® 7.0; RoHS-compliant

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**Lenovo**

April 2019
## ThinkPad Yoga 11e (5th Gen) Platform Specifications

**Product Specifications Reference (PSREF)**

### Processor

<table>
<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 Controller</th>
<th>Processor Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td>m3-7Y30</td>
<td>2</td>
<td>4</td>
<td>1.0 GHz</td>
<td>2.6 GHz</td>
<td>4MB</td>
<td>LPDDR3-1866</td>
<td>Intel HD Graphics 615</td>
</tr>
<tr>
<td>i5-7Y54</td>
<td>2</td>
<td>4</td>
<td>1.2 GHz</td>
<td>3.2 GHz</td>
<td>4MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cel N4100</td>
<td>4</td>
<td>4</td>
<td>1.1 GHz</td>
<td>2.4 GHz</td>
<td>4MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 600</td>
</tr>
<tr>
<td>Pen N5000</td>
<td>4</td>
<td>4</td>
<td>1.1 GHz</td>
<td>2.7 GHz</td>
<td>4MB</td>
<td></td>
<td>Intel UHD Graphics 605</td>
</tr>
</tbody>
</table>

- **Processor**: 7th Generation Intel® Core™ m / i5 Processor, Intel Celeron® processor, or Intel Pentium® Silver processor
- **Processor 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)

### Graphics

- **Chipset**: Intel SoC (System on Chip) platform
- **Memory**: 4GB or 8GB / 1866MHz LPDDR3 or 2400MHz DDR4 / soldered to systemboard, no sockets
- **Display**: 11.6" (295mm) HD (1366x768), anti-glare, LED backlight, IPS 250 nits, 16:9 aspect ratio, 801 contrast ratio, 170° viewing angle
- **MultiTouch**: Capacitive-type multi-touch, support 10 fingers
- **Hinge**: Yoga hinge, 360 degree convertible mode
- **Pen**: Some: Active pen, batteries required, on-board garage
- **Storage**: eMMC flash memory on board or M.2 SSD / PCIe NVMe, PCIe 3.0 x 2, 16Gb/s
- **Optical**: None
- **Ethernet**: Realtek RTL8111GUS-CG Gigabit Network Connection
- **WLAN**: 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
  - Bluetooth wireless, integrated in Wi-Fi + Bluetooth combo adapter
- **WWAN**: None

### Dimensions

- **WxDxH**: 11.81" x 8.27" x 0.89"; 300mm x 210mm x 22.5mm
- **Weight**: from 3.4 lb (1.54kg)

### Media reader

- **Ports**: MicroSD card reader
- **Two USB 3.1 Gen 1, one USB 3.1 Type-C Gen 1, HDMI1.4, Ethernet (RJ-45), headphone / microphone combo jack, microSD card reader, security keyhole
- **Control buttons**: Power button, volume control button

### Camera

- **Audio support**: One of the following, configurable by model:
  - HD Audio, Realtek® ALC3287 codec Dolby Audio / stereo speakers, 2W x 2 / monaural microphone, headphone / microphone combo jack

### Keyboard

- **UltraNav™**: 6-row, multimedia Fn keys
- **Security**: Power-on password, hard disk password, supervisor password, security keyhole
- **Security chip**: Discrete TPM 2.0, TCG Certified
- **Fingerprint reader**: None

### Security

- **Battery**: Integrated Li-Ion 42Wh battery
- **Battery life**: MobileMark® 2014: 12 hr
- **Limitation**: Battery life varies significantly with settings, usage, & other factors
- **AC adapter**: 45W or 65W slim tip AC adapter or USB Type-C AC adapter
- **Preload**: Some: Windows 10 Home 64
- **Limited warranty**: 1-year depot repair service

### Environmental

- **EPEAT® Gold; ENERGY STAR® 6.1; RoHS-compliant

**Lenovo**

**March 2019**
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Limited warranty: Support unrelated to a warranty issue may be subject to additional charges.

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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.

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.