# **OVERVIEW**





1. Thunderbolt 4	5. Headphone / microphone combo jack (3.5mm)
2. Thunderbolt 4	6. Nano-SIM card slot *
3. USB 3.2 Gen 1	7. USB 3.2 Gen 1 (Always On)
4. HDMI	8. Kensington Nano Security Slot

Notes:

• Items with \* are only available on selected models

# ThinkPad X1 Carbon Gen 11

# PERFORMANCE

# **Processor**

### **Processor Family**

### 13th Generation Intel® U or P Series Core™ i5 / i7 Processor

### Processor\*\*[1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
Core i5-1335U	10 (2 P-core + 8 E-core)	12	P-core 1.3GHz / E-core 0.9GHz	P-core 4.6GHz / E-core 3.4GHz	12MB	Intel Iris® Xe Graphics
Core i5-1340P	12 (4 P-core + 8 E- core)	16	P-core 1.9GHz / E-core 1.4GHz	P-core 4.6GHz / E-core 3.4GHz	12MB	Intel Iris Xe Graphics
Core i5-1345U	10 (2 P-core + 8 E-core)	12	P-core 1.6GHz / E-core 1.2GHz	P-core 4.7GHz / E-core 3.5GHz	12MB	Intel Iris Xe Graphics
Core i7-1355U	10 (2 P-core + 8 E-core)	12	P-core 1.7GHz / E-core 1.2GHz	P-core 5.0GHz / E-core 3.7GHz	12MB	Intel Iris Xe Graphics
Core i7-1360P	12 (4 P-core + 8 E- core)	16	P-core 2.2GHz / E-core 1.6GHz	P-core 5.0GHz / E-core 3.7GHz	18MB	Intel Iris Xe Graphics
Core i7-1365U	10 (2 P-core + 8 E-core)	12	P-core 1.8GHz / E-core 1.3GHz	P-core 5.2GHz / E-core 3.9GHz	12MB	Intel Iris Xe Graphics
Core i7-1370P	14 (6 P-core + 8 E-core)	20	P-core 1.9GHz / E-core 1.4GHz	P-core 5.2GHz / E-core 3.9GHz	24MB	Intel Iris Xe Graphics

#### Notes:

[1] Intel Core i5-1340P, i5-1350P and i7-1360p are for special bid only.

# **Operating System**

### Operating System\*\*

- Fedora Linux<sup>[1]</sup>
- Linux<sup>[2]</sup>
- Ubuntu Linux<sup>[3]</sup>
- Windows® 11 DG Windows 10 Pro 64
- Windows 11 Home
- Windows 11 Home Single Language
- Windows 11 Pro
- No operating system

### Notes:

[1], [2], [3] Some features may not be supported on the system with Linux preload, including but not limited to Intel RST RAID, MIPI computer vision camera, WWAN, Human Presence Detection, etc.

# **Graphics**

## Graphics

Graphics	Туре	Memory	TGP	Key Features	
Intel Iris Xe Graphics	Integrated	Shared	Share CPU TDP	DirectX® 12.1	

# **Monitor Support**

### Monitor Support<sup>[1]</sup>

Supports up to 4 independent displays (native display and 3 external monitors via Thunderbolt<sup>™</sup> and HDMI®)

- Thunderbolt supports up to 5K@60Hz
- HDMI supports up to 4K@60Hz

### Notes:

[1] Refresh rates >60hz also supported, however max resolution will be limited.

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# Chipset

## Chipset

Intel SoC (System on Chip) platform

# Memory

# Max Memory

- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable
- 64GB soldered memory, not upgradable

### Memory Slots

Memory soldered to systemboard, no slots, 8-channel

### Memory Type\*\*

- LPDDR5/x-6000 (32GB)<sup>[1]</sup>
- LPDDR5/x-6400 (16GB)<sup>[2]</sup>
- LPDDR5x-6000 (64GB)<sup>[3]</sup>

### Notes:

Installed memory is actually LPDDR5-6400 or LPDDR5x-7500 but run at 6000MHz due to platform limitation.
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# Storage

### Storage Support<sup>[1]</sup>

One drive, up to 2TB M.2 2280 SSD

### Storage Slot

One M.2 2280 PCIe® 4.0 x4 slot

## Storage Type\*\*

Disk Type	Interface	Offering	Security
M.2 2280 SSD	PCIe NVMe®, PCIe 4.0 x4	256GB / 512GB / 1TB	Opal 2.0
M.2 2280 SSD	PCIe NVMe, PCIe 4.0 x4 Performance	512GB / 1TB / 2TB	Opal 2.0

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

# **Removable Storage**

## Card Reader

No card reader

# Multi-Media

## Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

### Speakers

Stereo speakers, 2W x2 woofers and 0.8W x2 tweeters, Dolby® Atmos®

## Microphone

Quad-microphone array, 360° far-field, Dolby Voice

## Camera\*\*

- FHD 1080p + IR discrete, with privacy shutter, MIPI, fixed focus, Computer Vision
- FHD 1080p + IR hybrid, with privacy shutter, fixed focus
- FHD 1080p, with privacy shutter, fixed focus
- HD 720p, with privacy shutter, fixed focus

# Battery

## Battery

# ThinkPad X1 Carbon Gen 11

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Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter **Battery Life**<sup>(1)</sup>

Configuration 1 (max battery life) MobileMark® 25: up to 13.95 hr with 658 performance score @250nits JEITA 2.0: up to 28.5 hr @150nits Local video playback: up to 22.9 hr @150nits

Alternate configuration 2 MobileMark 25: up to 13.63 hr with 654 performance score @250nits JEITA 2.0: up to 26.4 hr @150nits Local video playback: up to 20.5 hr @150nits

Alternate configuration 3 MobileMark 25: up to 13.48 hr with 642 performance score @250nits JEITA 2.0: up to 24.8 hr @150nits Local video playback: up to 19.8 hr @150nits

Notes:

[1] Configuration 1 (max battery life): WUXGA (non-touch), Intel i5-1345U, 16GB LPDDR5x, Win 11, 57Wh battery, best power efficiency power mode

Alternate configuration 2: WUXGA (non-touch), Intel i5-1340P, 16GB LPDDR5x, Win 11, 57Wh battery, best power efficiency power mode

Alternate configuration 3: WUXGA (non-touch), Intel i5-1350P, 16GB LPDDR5x, Win 11, 57Wh battery, best power efficiency power mode

All battery life claims are approximate maximum and based on results using <u>MobileMark 2018</u>, <u>MobileMark 25</u>, JEITA 2.0, continuous 1080p local video playback (using default Media Player in Fullscreen mode with 150nits brightness and default volume level), or Google Power Load Test (PLT) battery-life benchmark tests.

Actual battery life will vary depending on many factors such as product configuration, software, wireless functionality, power management settings, and screen brightness.

The maximum capacity of the battery will decrease with time, ambient temperature and use.

Refer to <u>Microsoft<sup>®</sup> link</u> for more information about the Windows Performance power slider.

# **Power Adapter**

Power Adapter\*\*[1]

- 45W USB-C<sup>®</sup> (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 45W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- No power adapter<sup>[2]</sup>

Notes:

[1] AC adapter offerings depend on the country.

[2] No power adapter is for special bid only.

# DESIGN

# **Display**

### Display\*\*

0	Size	Resolution	Touch	Туре	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle (L/R/U/D)	Key Features
1	4"	WUXGA (1920x1200)	None	IPS <sup>[1]</sup>	400nits	Anti-glare	16:10	1000:1	100% sRGB	85°/85°/85°/85°	Low power, Eyesafe® Certified 2.0
1	14″	WUXGA (1920x1200)	Multi- touch	IPS <sup>[2]</sup>	400nits	Anti-glare	16:10	1000:1	100% sRGB	85°/85°/85°/85°	Low power, Eyesafe Certified 2.0

# ThinkPad X1 Carbon Gen 11

Lenovo PSREF Product Specifications Reference

14″	WUXGA (1920x1200)	Multi- touch	IPS <sup>[3]</sup>	500nits	Anti-glare	16:10	1000:1	100% sRGB	85°/85°/85°/85°	ThinkPad® Privacy Guard
14″	2.2K (2240x1400)	None	IPS <sup>[4]</sup>	300nits	Anti-glare	16:10	1500:1	100% sRGB	85°/85°/85°/85°	TÜV Low Blue Light Method 2
14″	2.8K (2880x1800)	None	OLED	400nits	Anti-glare, anti- reflection, anti- smudge	16:10	100,000:1	100% DCI-P3	85°/85°/85°/85°	DisplayHDR™ True Black 500, Dolby Vision™, Eyesafe Certified 2.0

#### Touchscreen

- On-cell multi-touch, supports 10-point touch
- Non-touch

#### Notes:

[1], [2], [3], [4] IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

# **Input Device**

### Keyboard

6-row, spill-resistant, air intake design, multimedia Fn keys with Unified Communications controls

#### **Keyboard Backlight**

LED backlight

### UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad, 56 x 110 mm (2.20 x 4.33 inches)

# **Mechanical**

### Dimensions (WxDxH)[1]

Models	Dimensions
Models with 720p camera	315.6 x 222.5 x 14.96 mm (12.43 x 8.76 x 0.59 inches)
Models with other camera	315.6 x 222.5 x 15.36 mm (12.43 x 8.76 x 0.60 inches)

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

Starting at 1.12 kg (2.48 lbs)

### Case Color\*\*

- Deep black, paint
- Deep black, weave

### Case Material

Carbon fiber (top), aluminium (bottom)

## Notes:

[1] The system dimensions may vary depending on configurations.

[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

# CONNECTIVITY

# Network

# Ethernet

No onboard Ethernet<sup>[1]</sup>

# WLAN + Bluetooth®

Intel Wi-Fi $^{\circ}$  6E AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.3<sup>[2]</sup>

# WWAN\*\*

- Wireless WAN upgradable to 4G or 5G (with antenna ready)
- Fibocom L860-GL-16, 4G LTE CAT16, MIMO 4x4, M.2 card, with embedded eSIM functionality

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- Fibocom FM350-GL, 5G Sub-6 GHz, M.2 Card, with embedded eSIM functionality
- No support

### SIM Card

No physical SIM card inbox

### NFC

- Near Field Communication
- No support

### Notes:

[1] Ethernet support via optional Lenovo USB-C to Ethernet Adapter.

[2] Wi-Fi 6E full features might be limited by country-level restrictions.

Wi-Fi 6E is only enabled on Windows 11 and operates as Wi-Fi 6 with Windows 10.

6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation.

Bluetooth 5.3 operation requires Windows 11. For more information please see <u>General Bluetooth Support Information on</u> <u>Microsoft</u>.

## **Ports**<sup>III</sup>

### **Standard Ports**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4® 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.1, up to 4K/60Hz
- 1x Headphone / microphone combo jack (3.5mm)

### **Optional Ports**

1x Nano-SIM card slot (WWAN support models)

#### Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB4 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt 3/4: 40 Gbit/s.

# Docking

## Docking

Various docking solutions supported via Thunderbolt / USB-C. For more compatible docking solutions, please visit <u>Docking for ThinkPad X1 Carbon Gen 11</u>

## **Monitor Cable**

### **Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- No monitor cable

# **SECURITY & PRIVACY**

# Security

### Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 certified

### Physical Locks

Kensington<sup>®</sup> Nano Security Slot™, 2.5 x 6 mm

### Smart Card Reader

No smart card reader

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# **Fingerprint Reader**

Touch style fingerprint reader integrated in power button, match-on-chip

### **BIOS Security**

- Power-on password
- Supervisor password
- System management password
- NVMe password
- FIDO (Fast Identity Online) authentication
- Certificate based BIOS authentication
- Self-healing BIOS

### **Other Security**

- Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert
- Glance by Mirametrix®
- (Optional) Computer Vision-based User Presence Sensing including lock on leave

# MANAGEABILITY

# **System Management**

### System Management\*\*

- Intel vPro<sup>®</sup> Enterprise<sup>[1]</sup>
- Intel vPro Essentials<sup>[2]</sup>
- Non-vPro

### Notes:

[1], [2] Intel vPro offers a superset of DASH's defined capabilities.

# SERVICE

# Warranty

## Base Warranty\*\*

- 1-year courier or carry-in service
- 1-year courier or carry-in with 2-year system board service (Korea only)
- 1-year limited onsite service
- 3-year (1-yr battery) courier or carry-in service
- 3-year (1-yr battery) limited onsite service
- No base warranty

# ENVIRONMENTAL

# **Operating Environment**

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

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping package: -20°C (-4°F ) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

### Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

# Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

[1] When you charge the battery, its temperature must be no lower than 10°C (50°F).

# ACCESSORIES

# **Bundled Accessories**

# Bundled Accessories<sup>[1]</sup>

- Lenovo USB-C to Ethernet Adapter (1Gbps)
- None

Notes:

[1] For more compatible accessory solutions, please visit <u>Accessories for ThinkPad X1 Carbon Gen 11</u>.

# CERTIFICATIONS

# **Green Certifications**<sup>III</sup>

## **Green Certifications**

- (Optional) ENERGY STAR<sup>®</sup> 8.0
- (Optional) EPEAT<sup>™</sup> Gold Registered<sup>[2]</sup>
- ErP Lot 6/26
- RoHS compliant
- TCO Certified 9.0

### Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or selfdeclaration.

[2] EPEAT is registered where applicable, please see https://www.epeat.net for registration status by country.

# **Other Certifications**

## Mil-Spec Test

MIL-STD-810H military test passed

### **Other Certifications**

- (Optional) Intel Evo™ Platform
- (Optional) Eyesafe Certified 2.0
- (Optional) TÜV Rheinland® Low Blue Light Method 2
- TÜV Rheinland Dynamic Privacy Filter (DPF) Certification (Privacy Guard models)

• Feature with \*\* means that only one offering listed under the feature is configured on selected models.

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