

## PERFORMANCE

### Processor

#### Processor Family

8th generation Intel® Core™ i5 / i7 Processor

#### Processor

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Core i5-8265U	4	8	1.6GHz	3.9GHz	6MB	DDR4-2400	Intel UHD Graphics
Core i5-8365U	4	8	1.6GHz	4.1GHz	6MB	DDR4-2400	Intel UHD Graphics
Core i7-8565U	4	8	1.8GHz	4.6GHz	8MB	DDR4-2400	Intel UHD Graphics
Core i7-8665U	4	8	1.9GHz	4.8GHz	8MB	DDR4-2400	Intel UHD Graphics

### 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	Integrated	Shared	DirectX® 12
NVIDIA® GeForce® MX250	Discrete	2GB GDDR5	DirectX 12

### Monitor Support

#### Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), Thunderbolt™ (up to 4096x2304@60Hz)

### Chipset

#### Chipset

Intel SoC (System on Chip) platform

### Memory

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

DDR4-2400

#### Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

#### Max Memory<sup>[2]</sup>

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-2400
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-2400

#### Notes:

1. Installed memory is actually 2666MHz but run at 2400MHz due to processor limitation
2. 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

One drive, 1x M.2 2280 SSD or 1x M.2 2242 SSD

- M.2 2280 SSD up to 2TB
- M.2 2242 SSD up to 128GB

- Optional Intel Optane™ Memory integrated with SSD, M.2

### Storage Type

Disk Type	Interface	RPM	Security
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
M.2 2280 SSD	SATA 6Gb/s	-	Opal2
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal2
Intel Optane Memory with Solid State Storage, M.2 2280	PCIe NVMe, PCIe 3.0 x4	-	-

## Removable Storage

### Optical

None

### Card Reader

MicroSD card reader

## Multi-Media

### Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

### Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

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

- Dual array microphone, far-field
- No microphone

### Camera

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

### Notes:

1. Microphone not configured is for special bid only

## Battery

### Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

### Max Battery Life<sup>[2]</sup>

MobileMark® 2014: 14.98 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.
2. 9.5 hr for UHD model with discrete graphics

## Power Adapter

### Power Adapter

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

## DESIGN

## Display

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

Size	Resolution	Touch	Type	Brightness	Surface	Aspect	Contrast	Color	Viewing	Key Features
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						Ratio	Ratio	Gamut	Angle	
15.6"	FHD (1920x1080)	None	IPS	250 nits	Anti-glare	16:9	700:1	45% NTSC	170°	-
15.6"	FHD (1920x1080)	Multi-touch	IPS	250 nits	Anti-glare	16:9	700:1	45% NTSC	170°	-
15.6"	UHD (3840x2160)	None	IPS	500 nits	Anti-glare	16:9	1200:1	100% Adobe® RGB	170°	Dolby Vision™, HDR

**Touchscreen**

- On-cell 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>

**Input Device****Keyboard**

6-row, spill-resistant, multimedia Fn keys, numeric keypad

**Keyboard Backlight**

- LED backlight
- Not support

**UltraNav™**

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

**Mechanical****Dimensions (WxDxH)**

365.8 x 248 x 19.1 mm (14.40 x 9.76 x 0.75 inches)

**Weight**

Models	Weight
UHD models	1.74 kg (3.84 lbs)
FHD non-touch models	1.81 kg (3.99 lbs)
FHD touch models	1.81 kg (3.99 lbs)

**Case Color**

Black

**Case Material**

PPS / 50% GF (top), PA / 50% GF (bottom)

**CONNECTIVITY****Network****Onboard Ethernet**

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

**WLAN + Bluetooth™<sup>[1]</sup>**

- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1
- No WLAN and Bluetooth

**WWAN<sup>[2]</sup>**

- Wireless WAN upgradable
- Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card
- Not Support

### SIM Card

- Gemalto eSIM
- Nano-SIM Card, Verizon LTE (US)
- No SIM card

### NFC

- Near Field Communication
- Not support

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#### Notes:

1. BT5.1 is supported on Windows 10 version 2004 or above (limited to BT5.0 on earlier version)
2. In EMEA, WWAN upgradable is for special bid only  
Fibocom L830-EB is only available in EMEA  
For non-WWAN model, it means the model is NOT WWAN upgradable

## Ports

### Standard Ports<sup>[1]</sup>

- 1x USB 3.1 Gen 1
- 1x USB 3.1 Gen 1 (Always On)
- 1x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.1 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

### Optional Ports

- 1x Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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#### Notes:

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

## Monitor Cable

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

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

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#### Notes:

1. Lenovo USB-C to VGA Adapter and Lenovo USB-C to DisplayPort Adapter are NOT available in EMEA

## 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 palm rest, match-on-chip
- No fingerprint reader

**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

**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

