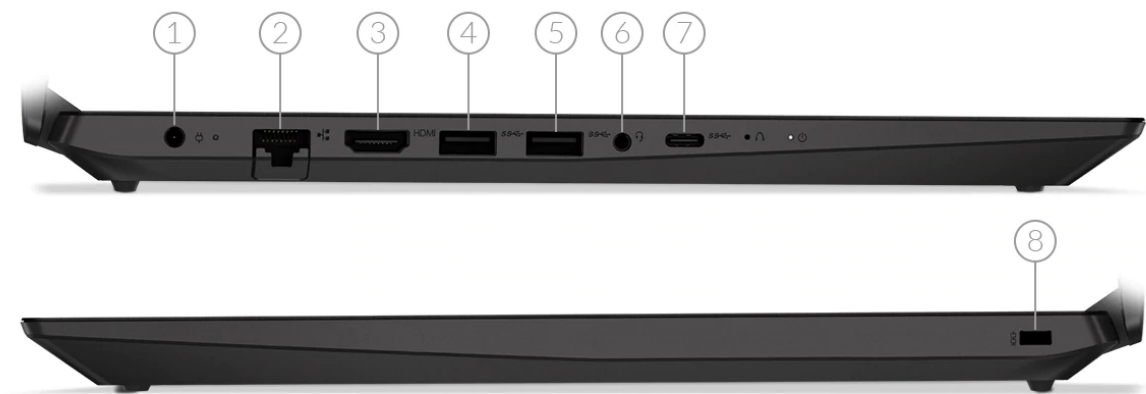# OVERVIEW

1. Power connector	5. USB 3.1 Gen 1
2. Ethernet (RJ-45)	6. Headphone / microphone combo jack (3.5mm)
3. HDMI 2.0	7. USB-C 3.1 Gen 1 (data transfer only)
4. USB 3.1 Gen 1	8. Kensington Security Slot

PERFORMANCE

Processor

Processor Family

9th Generation Intel® Core™ i5 / i7 Processor

Processor

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Core i5-9300H	4	8	2.4GHz	4.1GHz	8MB	DDR4-2666	Intel UHD Graphics 630
Core i5-9300HF	4	8	2.4GHz	4.1GHz	8MB	DDR4-2666	-
Core i7-9750H	6	12	2.6GHz	4.5GHz	12MB	DDR4-2666	Intel UHD Graphics 630
Core i7-9750HF	6	12	2.6GHz	4.5GHz	12MB	DDR4-2666	-

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- FreeDOS

Graphics

Graphics

Graphics	Type	Memory	Key Features
NVIDIA® GeForce® GTX 1050	Discrete	3GB GDDR5	DirectX® 12
NVIDIA GeForce GTX 1650	Discrete	4GB GDDR5	DirectX 12

Monitor Support

Monitor Support

Supports up to 2 independent displays via native display and 1 external monitor; supports external monitor via HDMI® (up to 4096x2160@60Hz)

Chipset

Chipset

Intel HM370 chipset

Memory

Max Memory[1]

- Up to 16GB (16GB SO-DIMM) DDR4-2400 offering
- 4GB soldered memory, not upgradable

Memory Slots

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

Memory Type

DDR4-2400

Notes:

1. 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 2 drives, 1x 2.5″ HDD + 1x M.2 2242/2280 SSD
• 2.5″ HDD up to 2TB
• M.2 2242 SSD up to 512GB
• M.2 2280 SSD up to 1TB
• Optional Intel Optane™ Memory or Optane Memory integrated with SSD, M.2

Storage Type

Disk Type	Interface	RPM	Security
2.5" SATA HDD	SATA 6Gb/s	5.4K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	-
Intel Optane Memory with Solid State Storage, M.2 2280	PCIe NVMe, PCIe 3.0 x4	-	-

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio

Speakers

Stereo speakers, 1.5W x2, Dolby® Audio™

Microphone

Dual array microphone

Camera

720p, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life[1]

MobileMark® 2014: 9 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.

Power Adapter

Power Adapter

135W slim tip AC adapter

DESIGN

Display

Display[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Key Features
15.6"	FHD (1920x1080)	None	TN	220 nits	Anti-glare	16:9	-	-	-	-
15.6"	FHD (1920x1080)	None	IPS	250 nits	Anti-glare	16:9	-	-	-	-

Touchscreen

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, multimedia Fn keys, numeric keypad

Keyboard Backlight

Blue LED backlight

Touchpad

Buttonless Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

363 x 254.6 x 23.9 mm (14.29 x 10.02 x 0.94 inches)

Weight[1]

2.19kg (4.83 lbs)

Case Color

- Gradient
- Granite black

Surface Treatment

- IMR
- NCVM IMR

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet

WLAN + Bluetooth™

- 802.11ac 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- 802.11ac 2x2 Wi-Fi + Bluetooth 4.2, M.2 card

Ports[1]

Standard Ports[2]

- 2x USB 3.1 Gen 1
- 1x USB-C 3.1 Gen 1 (support data transfer only)
- 1x HDMI 2.0
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x power connector

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely USB 3.1 Gen 2): 10 Gbit/s;
   USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
   Thunderbolt™ 3: 40 Gbit/s;
   FireWire 400: 400 Mbit/s;

FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Fingerprint Reader

No fingerprint reader

BIOS Security

- Power-on password
- Supervisor password
- Hard disk password

Other Security

Camera privacy shutter

SERVICE

Warranty

Base Warranty

- 1-year mail-in service
- 1-year depot service
- 2-year (1-yr battery) depot service

ENVIRONMENTAL

Operating Environment

Temperature

- At altitudes up to 2438 m (8,000 ft)
  - Operating: 5°C to 35°C (41°F to 95°F)
  - Storage: 5°C to 43°C (41°F to 109°F)
- At altitudes above 2438 m (8,000 ft)
  - Maximum temperature when operating under the unpressurized condition: 31.3°C (88°F)

Humidity

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

Altitude

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

CERTIFICATIONS

Green Certifications

Green Certifications

- ENERGY STAR® 8.0
- ErP Lot 3
- RoHS compliant