

Processor Specifications

Processor specifications	
8th Generation Intel Core i5	<ul style="list-style-type: none">Processor: 8th Generation Intel Core i5Wattage: 45 WCore count: 4Thread count: 8Speed: Up to 4 GHzL2 cache: 1 MBL3 cache: 9 MBIntegrated graphics: Intel UHD graphics 630
8th Generation Intel Core i7	<ul style="list-style-type: none">Processor: 8th Generation Intel Core i7Wattage: 45 WCore count: 6Thread count: 12Speed: Up to 4.1 GHzL2 cache: 1.5 MBL3 cache: 9 MBIntegrated graphics: Intel UHD graphics 630
9th Generation Intel Core i7	<ul style="list-style-type: none">Processor: 9th Generation Intel Core i7Wattage: 45 WCore count: 6Thread count: 12Speed: Up to 4.5 GHzL2 cache: 1.5 MBL3 cache: 9 MBIntegrated graphics: Intel UHD graphics 630

Operating System

Operating System	
Operating System	<ul style="list-style-type: none">Windows 10 Home (64-bit)Windows 10 Professional (64-bit)

Chipset

Chipset specifications	
Chipset	HM 370
Processor	<ul style="list-style-type: none">8th Generation Intel Core i5/i79th Generation Intel Core i7
DRAM bus width	64-bit
Flash EPROM	16 MB
PCIe bus	PCIe Gen3
External bus frequency	8 GT/s

Memory

Memory specifications	
Slots	Two SODIMM slots
Type	Dual-channel DDR4
Speed	2666 MHz
Maximum memory	32 GB
Minimum memory	8 GB
Memory per slot	4 GB, 8 GB and 16 GB
Configurations supported	<ul style="list-style-type: none">8 GB DDR4 at 2666 MHz (2 x 4 GB)16 GB DDR4 at 2666 MHz (2 x 8 GB)32 GB DDR4 at 2666 MHz (2 x 16 GB)

Storage

Storage specifications	
One 2.5-inch hard drive	SATA AHCI, up to 6 Gbps, Up to 1 TB
One M.2 2230/2280 solid-state drive	<ul style="list-style-type: none">SATA AHCI, up to 6 GbpsPCIe Gen3x4 NVMe, up to 32 Gbps , Up to 1 TB
One M.2 2280 Intel Optane storage	PCIe Gen3x2 NVMe, up to 16 Gbps, Up to 118 GB

Storage

Storage	
Storage	<ul style="list-style-type: none">One 2.5-inch hard driveOne M.2 PCIe solid-state driveOne M.2 PCIe solid-state drive and one 2.5-inch hard driveOne M.2 Intel Optane and one 2.5-inch hard driveTwo M.2 PCIe solid-state drives

Storage

Storage	
Storage	<ul style="list-style-type: none">NOTE: The primary drive of your computer varies depending on the storage configuration.

Storage

Storage	
Storage	<ul style="list-style-type: none">with a M.2 drive, the M.2 drive is the primary drive.without M.2 drive, the 2.5-inch drive is the primary drive.

Dimensions and Weight

Dimensions and weight	
Height:	
Front	13.97 mm (0.55 in.)
Rear	21.76 mm (0.86 in.)
Width	410 mm (16.14 in.)
Depth	292 mm (11.50 in.)
Weight (minimum)	2.63 kg (5.79 lbs)

Display

Display specifications	
Full High Definition (FHD)	<ul style="list-style-type: none">Type: Full High Definition (FHD)Panel technology: Wide Viewing angle (WVA)Luminance (typical): 300 nitsDimensions (active area):Height: 214.81 mm (8.46 in.)Width: 381.89 mm (15.04 in.)Diagonal: 438.16 mm (17.25 in.)Native resolution: 1920 x 1080Megapixels: 2.07Pixels Per Inch (PPI): 127Contrast ratio (minimum): 500:1Response time (maximum): 35 msec rise/fallRefresh rate: 60 HzHorizontal view angle: +/- 85 degreesVertical view angle: +/- 85 degreesPixel pitch: 0.199 mmPower consumption (maximum): 8 WAnti-glare vs glossy finish: Anti-glareTouch options: Not supported
Ultra High Definition (UHD)	<ul style="list-style-type: none">Type: Ultra High Definition (UHD)Panel technology: Wide Viewing angle (WVA)Luminance (typical): 400 nitsDimensions (active area):Height: 214.94 mm (8.46 in.)Width: 382.12 mm (15.04 in.)Diagonal: 438.42 mm (17.26 in.)Native resolution: 3840 x 2160Megapixels: 8.29Pixels Per Inch (PPI): 255Contrast ratio (minimum): 800:1Response time (maximum): 35 msec rise/fallRefresh rate: 60 HzHorizontal view angle: +/- 85 degreesVertical view angle: +/- 85 degreesPixel pitch: 0.0995 mmPower consumption (maximum): 14 WAnti-glare vs glossy finish: Anti-glareTouch options: Not supported

Video (Discrete graphics)

Discrete graphics specifications	
NVIDIA GeForce GTX 1050 Ti	<ul style="list-style-type: none">One HDMI 2.0b portOne mini-DisplayPort 1.4 , 4 GB, GDDR5
NVIDIA GeForce RTX 2060	<ul style="list-style-type: none">One HDMI 2.0b portOne mini-DisplayPort 1.4 , 6 GB, GDDR6
NVIDIA GeForce RTX 2070 Max-Q	<ul style="list-style-type: none">One HDMI 2.0b portOne mini-DisplayPort 1.4 , 8 GB, GDDR6
NVIDIA GeForce RTX 2080 Max-Q	<ul style="list-style-type: none">One HDMI 2.0b portOne mini-DisplayPort 1.4 , 8 GB, GDDR6

Video

Integrated graphics specifications	
Intel UHD Graphics 630	<ul style="list-style-type: none">One Thunderbolt 3 (USB Type-C), Shared system memory8th Generation Intel Core i5/i79th Generation Intel Core i7

Camera

Camera specifications	
Number of cameras	One
Type	FHD fixed focus
Location	Front
Sensor type	CMOS sensor technology
Resolution:	
Still image	2.0 megapixel (FHD)
Video	1920 x 1080 (FHD) at 30 fps
Diagonal viewing angle	74.9 degrees

Audio

Audio specifications	
Type	4 channel High Definition Audio
Controller	Realtek ALC3281-CG
Stereo conversion	Supported
Internal interface	High-definition audio interface
External interface	Universal Audio Jack supports Headset/Headphone/Line-out/Microphone/Line-in function
Speakers	Supported
Internal speaker amplifier	Supported
External volume controls	Supported
Speaker output:	
Average	2 W
Peak	2.5 W
Subwoofer output	Not supported
Microphone	Digital-array microphones in camera assembly

Ports and connectors

External ports and connectors specifications	
Network	One RJ-45 port
USB	<ul style="list-style-type: none">Two USB 3.1 Gen 1 portsOne USB 3.1 Gen 1 with PowerShareOne Thunderbolt 3 (USB Type-C)
Audio	One headset port
Video	<ul style="list-style-type: none">One HDMI 2.0b portOne mini DisplayPort 1.4One external graphics port
Media-card reader	Not supported
Power adapter port	7.4 mm DC-in
Security	One security-cable slot (wedge-shaped)

Ports and connectors

Internal ports and connectors specifications	
M.2	<ul style="list-style-type: none">One M.2 slot for Wi-Fi and Bluetooth combo cardTwo M.2 PCIe/SATA slots for 2230/2280 solid-state drive or 2280 Intel Optane

Communication wireless module

Ethernet specifications	
Model number	Killer E2400 PCI-E Gigabit Ethernet Controller
Transfer rate	10/100/1000 Mbps

Communication wireless module

Wireless module specifications	
Qualcomm QCA61x4A (DW1820)	<ul style="list-style-type: none">Model number: Qualcomm QCA61x4A (DW1820)Transfer rate: 867 Mbps (maximum)Frequency bands supported: Dual band 2.4 GHz/5 GHzWireless standards: Wi-Fi 802.11b/g/a/n/acEncryption<ul style="list-style-type: none">64-bit/128-bit WEPAES-CCMPTKIPBluetooth: Bluetooth 4.2
Killer 1550	<ul style="list-style-type: none">Model number: Killer 1550Transfer rate: 1733 Mbps (maximum)Frequency bands supported: Dual band 2.4 GHz/5 GHzWireless standards: Wi-Fi 802.11b/g/a/n/acEncryption<ul style="list-style-type: none">64-bit/128-bit WEPAES-CCMPTKIPBluetooth: Bluetooth 5.0

keyboard

Keyboard specifications	
Type	4-zone RGB backlit keyboard
Layout	QWERTY
Number of keys	<ul style="list-style-type: none">United States and Canada: 101 keysUnited Kingdom: 102 keysJapan: 105 keys
Size	<ul style="list-style-type: none">X = 19.05 mm key pitchY = 18.05 mm key pitch
Shortcut keys	Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. To type the alternate character, press Shift and the desired key. To perform secondary functions, press Fn and the desired key.

TouchPad

Touchpad specifications	
Resolution:	
Horizontal	1229
Vertical	749
Dimensions:	
Horizontal	105 mm (4.13 in.)
Vertical	65 mm (2.56 in.)

Power Adapter

Power adapter specifications	
130 W	<ul style="list-style-type: none">Type: 130 WDiameter (connector): 7.4 mmInput voltage: 100 VAC-240 VACInput frequency: 50 Hz-60 HzInput current (maximum): 2.34 AOutput current (continuous): 6.70 ARated output voltage: 19.50 VDCTemperature range:<ul style="list-style-type: none">Operating: 0°C to 40°C (32°F to 104°F)Storage: -40°C to 70°C (-40°F to 158°F)
180 W	<ul style="list-style-type: none">Type: 180 WDiameter (connector): 7.4 mmInput voltage: 100 VAC-240 VACInput frequency: 50 Hz-60 HzInput current (maximum): 2.34 AOutput current (continuous): 9.23 ARated output voltage: 19.50 VDCTemperature range:<ul style="list-style-type: none">Operating: -40°C to 70°C (-40°F to 158°F)Storage: -40°C to 70°C (-40°F to 158°F)

Power Adapter

Power Adapter	
Power Adapter	<ul style="list-style-type: none">NOTE: This computer supports Hybrid power feature during heavy loading. For more information, see Hybrid power.